VPG Transducers

Celtron • Revere • Sensortronics • Tedea-Huntleigh

Databook 2021/22



Load Cells
Electronics
Force Sensors
Accessories

vpgtransducers.com

VPG Transducers

Celtron • Revere • Sensortronics • Tedea-Huntleigh

Databook 2021/22

www.vpgtransducers.com

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About Us

Meeting Needs. Exceeding Expectations.

VPG Transducers, a Vishay Precision Group, Inc. (VPG) brand, provides the performance, precision and expertise that only the largest load cell and transducer manufacturer worldwide can deliver. Tedea-Huntleigh, Sensortronics, Revere and Celtron – brands recognized as high-quality suppliers of weighing and force measurement products for decades – are united under VPG Transducers to bring demanding customers a wide range of solutions and dedication to uncompromising quality.

Superior load cells and vast strain gage know-how enable us to deliver the most advanced sensor technology available for measuring weight, torque and pressure. Our product portfolio ranges from bonding strain gages and analogue weigh indicators to load cells and digital weighing solutions.

VPG Transducers products are known for delivering lower cost of ownership, ease of installation and use, and reliable quality and performance. Our solutions are found in retail and industrial scales, machinery automation and safety systems, on-board vehicle weighing, applications in hazardous environments, process weighing and more.

Going beyond standard products, VPG Transducers' extensive experience and proven design capabilities perfectly position us to generate a wide range of custom-made products and solutions.

CELTRON

Revere Transducers

SENSORTRONICS

TEDEA th HUNTLEIGH

Our History

Physicist and entrepreneur Dr. Felix Zandman invented Bulk Metal® Foil technology in 1962. Since its introduction, Bulk Metal® Foil technology remains the gold standard in applications that require precision, stability and reliability.

Today, we use foil-based strain gages in VPG Transducers force and load sensor application solutions, across many industries, to accurately and reliably measure weight, force and torque.

In 2008, our Celtron, Sensortronics, Tedea-Huntleigh and Revere acquisitions were united under VPG Transducers, creating one of the largest load cell and transducer manufacturers in the world.

About Our Services

Strain Gage Installation Services (SGIS)

VPG Transducers offers a comprehensive strain gage installation service, built on a half-century of proven experience. Our customers have the additional confidence in knowing that we are certified according to ISO 9001 standards. BSSM-qualified technicians handle everything from a single R&D prototype sensor to high volume custom installations – whatever your situation requires.

We keep your needs in mind and complete your project in the manner that's most efficient and convenient for you – installations can take place at VPG Transducers' facilities or on-site at your location. A variety of options to protect installations in harsh environments are available.



VPG Transducers' comprehensive R&D and production facilities offer a full range of services to provide specialized weighing and force measurement solutions. With a customer-focused approach to both specifications and schedules, we can serve as an extension of your own engineering team, working with your R&D, stress analysis and prototyping departments to create products that meet unique requirements, in whatever shape and capacity your application calls for.

OEM Customization Services

For many VPG Transducers customers, sensor customization is crucial for success. Our dedicated team of account managers, engineers and production experts is focused on fully understanding your specific needs – and delivering the exact solution your situation demands.

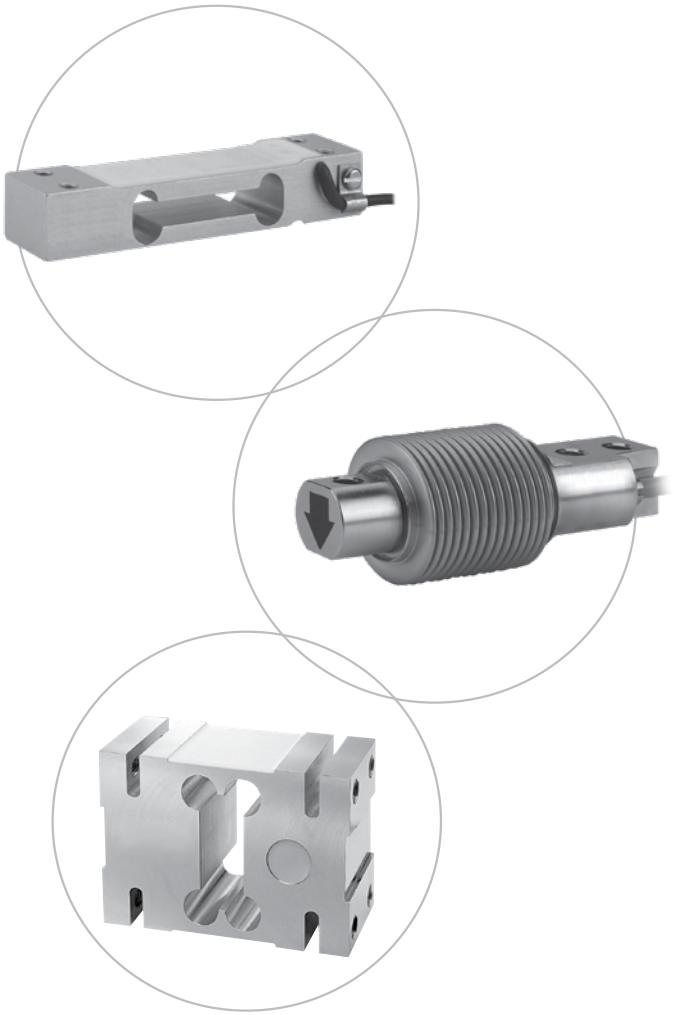
We have many years' experience with applications for everything from construction to agriculture to health care. Our team has worked extensively with industry leaders in these sectors, addressing key issues such as safety, patient monitoring and evolving EU and global regulations.



Our deep understanding of market needs, along with a proven commitment to implementing unique and effective solutions, has led many long-term business partners to consider us as their custom sensor provider of choice.

Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com

Load Cells—
Single Point Bending Beams



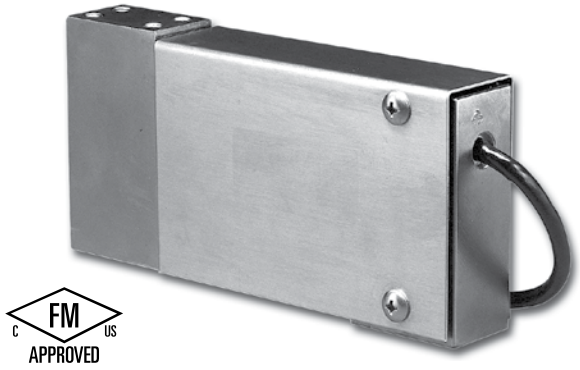
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Low Profile Platform Cell

FEATURES

- Rated capacities of 25 to 1000 pounds
- Constructed of alloy steel, stainless steel
- Moment-compensated design for minimal sensitivity to moments induced by off-center loading
- Exceeds NIST H-44 requirements
- Provides optimum protection under adverse loading conditions
- *Sensorgage*™ sealed to IP67 standards
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G. Also, non-incendive ratings (No barriers!)



APPLICATIONS

- Single-point platform scales
- Belt conveyor scales
- Bench and counting scales
- Checkweighing scales
- Hopper scales and netweighing

DESCRIPTION

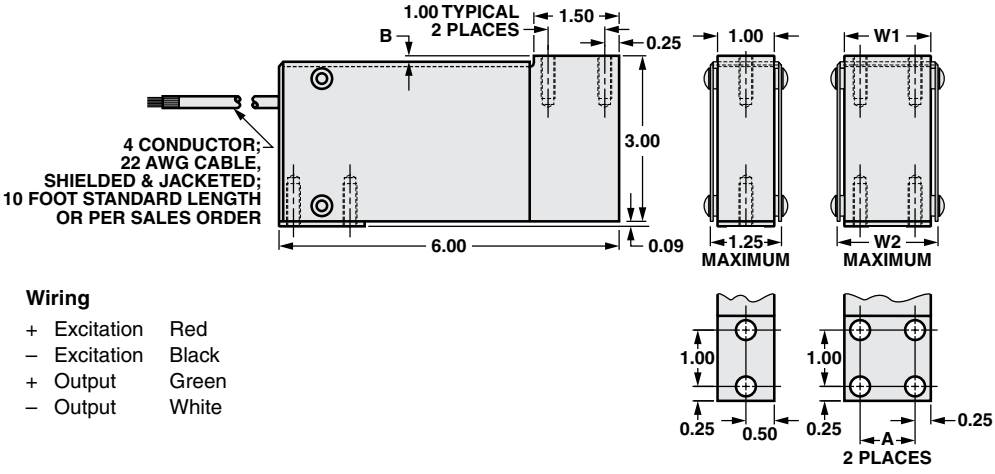
The 60048 is a high precision, alloy steel, stainless steel, single point platform load cell.

This product's availability in capacities ranging from 25 to 1000 lbs. makes it ideal for many low to mid range capacity weighing applications. This load cell is most commonly used in platform scales, but can be adapted for use in many process weighing applications.

The stainless steel construction and IP67 sealing make this load cell ideal for harsh environment applications.

This product is rated intrinsically safe by the Factory Mutual System (FM); making it suitable for use in potentially explosive environments.

OUTLINE DIMENSIONS in inches



Wiring

+	Excitation	Red
–	Excitation	Black
+	Output	Green
–	Output	White

CAPACITY	W1	W2	A	B	THREAD
25	--	--	--	0.04	1/4-28 UNF-2B THREAD X 0.75 MIN., 4 PLACES
50–100	--	--	--	0.04	1/4-28 UNF-2B THREAD X 0.75 MIN., 4 PLACES
200	--	--	--	0.04	1/4-28 UNF-2B THREAD X 0.75 MIN., 4 PLACES
400–500	1.00	1.25	0.50	0.04	1/4-28 UNF-2B THREAD X 0.75 MIN., 4 PLACES
1k	1.50	1.75	1.00	0.18	5/16-24 UNF-2B THREADX 0.75 MIN., 8 PLACES

Capacities are in pounds.

Low Profile Platform Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Rated capacity—R.C. (E_{max})	25, 50, 100, 200, 400, 500, 1000		lbs
NTEP/OIML accuracy class	Non-Approved		
Rated output-R.O.	2.0		mV/V
Rated output tolerance	+0.25 ... –10%		±% mV/V
Zero balance	1.0		±% FSO
Combined error	0.03		±% FSO
Non-repeatability	0.01		±% FSO
Creep error (20 minutes)	0.03		±% FSO
Temperature effect on zero	0.0015		±% FSO/°F
Temperature effect on output	0.0008		±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)		°F (°C)
Operating temperature range	0 to 150 (–18 to 65)		°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)		°F (°C)
Sideload rejection ratio	500:1		
Safe sideload	30		% of R.C.
Maximum safe central overload	150		% of R.C.
Ultimate central overload	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	380–450		Ω
Output impedance	349–355		Ω
Insulation resistance at 50 VDC	>1000		MΩ
Material	Alloy steel, stainless steel		
Environmental protection	IP67		
Moment compensation	25–200 lbs	400–1000 lbs	
Moment sensitivity	0.070	0.050	±% of load/inch
Maximum moment	10 x capacity	15000	lbs-inches
Platform size	20 x 20	30 x 30	inches

FSO—Full Scale Output

All specifications subject to change without notice.

Low Profile Platform Cell

FEATURES

- Rated capacities of 10 to 200 pounds
- Stainless steel construction
- Moment-compensated design for minimal sensitivity to moments induced by off-center loading
- *Sensorgage*™ sealed to IP67 standards
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G. Also, non-incendive ratings (No barriers!)



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APPLICATIONS

- Single-point platform scales
- Bench, counting and deli scales
- Checkweighing scales
- Hopper scales and netweighing

DESCRIPTION

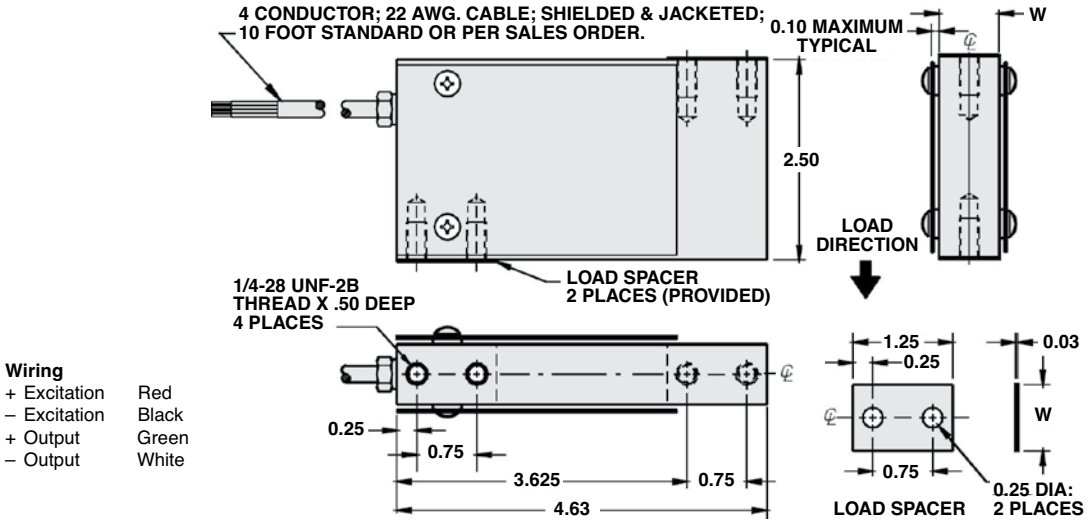
The 60051 is a low profile high precision, stainless steel, single point platform load cell.

This product's low profile makes it ideal for many low to mid range capacity weighing applications where space is at a premium. This load cell is most commonly used in platform scales, but can be adapted for use in many process weighing applications.

The stainless steel construction and IP67 rating make this load cell ideal for any environmental installation. This load cell is specifically designed for use in corrosive and wet environments that are not appropriate for common aluminum load cells.

This product is rated intrinsically safe by the Factory Mutual System (FM); making it suitable for use in potentially explosive environments.

OUTLINE DIMENSIONS in inches



Low Profile Platform Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Rated capacity—R.C. (E_{max})	10, 15, 25, 50, 100, 200		lbs
NTEP/OIML accuracy class	Standard		
Maximum no. of intervals (n)	—		
Rated output—R.O.	2.0		mV/V
Rated output tolerance	+0.25...–10		±% mV/V
Zero balance	1.0		±% FSO
Combined error	0.03		±% FSO
Non-repeatability	0.01		±% FSO
Creep error (20 minutes)	0.03		±% FSO
Temperature effect on zero	0.0015		±% FSO/°F
Temperature effect on output	0.0008		±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)		°F (°C)
Operating temperature range	0 to 150 (–18 to 65)		°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)		°F (°C)
Maximum safe central overload	150		% of R.C.
Ultimate central overload	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	380–450		Ω
Output impedance	349–355		Ω
Insulation resistance at 50 VDC	>1000		MΩ
Material	Stainless steel		
Environmental protection	IP67		
Moment compensation	10–25 lbs	50–200 lbs	
Moment sensitivity	0.015	0.100	±% of load/inch
Maximum moment	5 x capacity	6 x capacity	lbs-inches
Platform size	8 x 10	12 x 12	inches

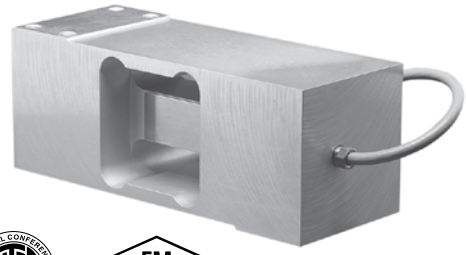
FSO—Full Scale Output

All specifications subject to change without notice.

Low Profile Platform Load Cell

FEATURES

- Rated capacities of 100 to 2000 pounds
- Unique shear beam design—aluminum construction
- Moment-compensated design for minimal sensitivity to moments induced by off-center loading
- Ideal for situations exceeding the capabilities of similar "brick" design load cells
- Trade certified for NTEP Class III:5000 divisions; Class IIIL:10000 divisions and OIML R60 3000 divisions
- *Sensorgage*™ sealed to IP67 standards
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G. Also, non-incendive ratings (No barriers!)
- Also available in stainless steel



OIML NTEP FM APPROVED

APPLICATIONS

- Single-point platform scales
- Belt conveyor scales
- Bench and counting scales
- Checkweighing scales
- Hopper scales and netweighing

DESCRIPTION

The Model 60060 is a single point load cell designed for direct mounting of large platforms.

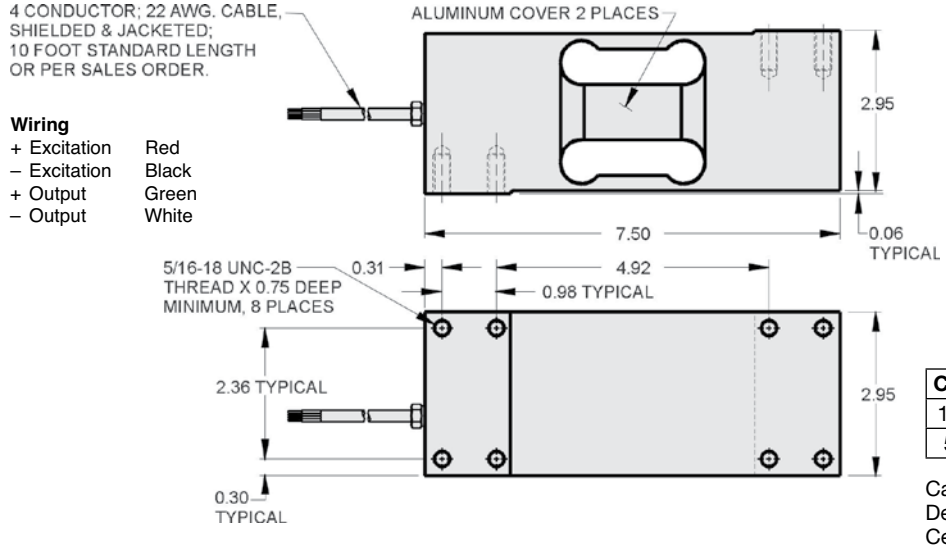
The product is a cost-effective load cell for use on counting, weighing, bench or floor scale products.

This high accuracy load cell is approved to OIML R60, NTEP and other stringent approval standards. Suitable for use in hazardous environments, these load cells can be provided with European approval to EEx ia IIC T4 and are FM approved to Class I, II, III, Division I.

A special humidity-resistant protective coating assures long term stability over the entire compensated temperature range.

The two additional sense wires, sample the bridge supply voltage at the load cell. Complete compensation of change in the lead wires resistance due to temperature change and/or cable extension, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in inches



Wiring

+ Excitation	Red
– Excitation	Black
+ Output	Green
– Output	White

Capacity	Deflection	Weight
100–250	0.010	6.0
500–2k	0.006	6.0

Capacities are in pounds.
Deflection is ±10%.
Certified drawings are available.

Low Profile Platform Load Cell

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated capacity—R.C. (E_{max})	100, 250, 500, 750, 1K, 2K			lbs
NTEP/OIML accuracy class	NTEPIIIL	Standard	OIML R60*	
Maximum no. of intervals (n)	10,000 multiple	—	3000	
Y = E_{max}/V_{min}	See NTEP Cert. No. 98-038			Maximum available
Rated output—R.O.	2.0			mV/V
Rated output tolerance	±10			±% mV/V
Zero balance	1.0			±% FSO
Combined error	0.02	0.03	0.02	±% FSO
Non-repeatability	0.010	0.015	0.010	±% FSO
Creep error (30 minutes)	0.03	0.05	0.017	±% of applied load
Temperature effect on zero	0.0010	0.0015	0.0010	±% FSO/°F
Temperature effect on output	0.0008	0.0008	0.0007	±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)			°F (°C)
Operating temperature range	0 to 150 (–18 to 65)			°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)			°F (°C)
Safe sideload	100			% of R.C.
Safe overload	300			% of R.C.
Sideload rejection ratio	500:1			
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	15			VDC or VAC RMS
Input impedance	400 nominal –20/+0			Ω
Output impedance	350 –1/+5			Ω
Sealing	IP67			
Material	Aluminum**			
Moment compensation	250–1k lbs	2k lbs		
Moment sensitivity	≤0.005	≤0.005		% of applied load/inch
Maximum moment	10 x capacity	10000		lbs-inches
Platform size	30 x 30	30 x 30		inches

* 100 lbs is not approved by OIML

** Stainless steel also available

FSO–Full Scale Output

All specifications subject to change without notice.

Low Profile Off-Center Single-Point

FEATURES

- Capacities: 5 to 1000 kg
- Cost-effective load cell for scales of simple construction
- Anodized aluminum alloy
- NTEP Class III 5000S approval from 5 kg to 500 kg
- OIML C3 approval from 5 kg to 500 kg
- OIML C6 approval from 500 kg to 1000 kg
- **Optional**
  - FM approval available
  - Stainless Steel version available



APPLICATIONS

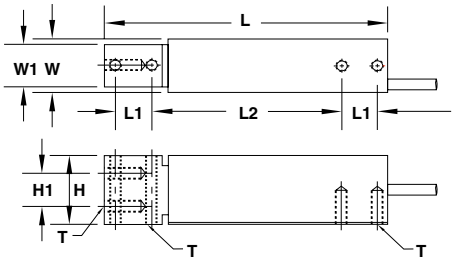
- Platform scales (single load cell)
- Packaging machines
- Dosing/filling
- Belt scales/conveyor scales
- In-motion check weigher

DESCRIPTION

The Model LOC is a low profile single-point load cell designed for platform scales and hanging scales. It is a cost-effective load cell for scales of simple construction.

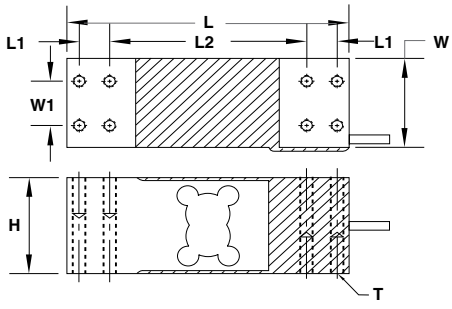
The LOC is constructed of anodized aluminum, and is environmentally sealed up to IP66 levels providing excellent protection against moisture and humidity.

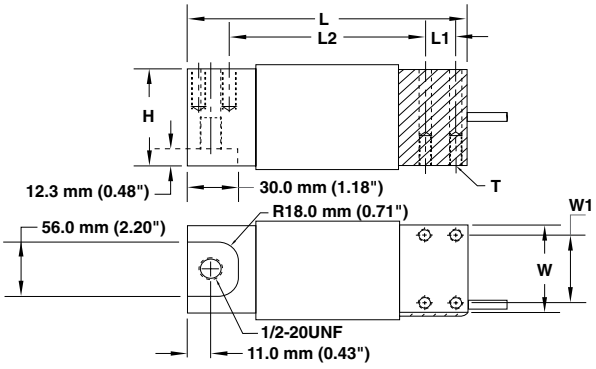
OUTLINE DIMENSIONS in inches (millimeters)



SE
5–150 kg
Cable Length: 3.3'/1m
Platform Size:
16"x16"/ 40 cm x 40 cm

ME
50–800 kg
Cable Length: 6.7'/2m
Platform Size:
16" x 24"/ 40 cm x 60 cm





Wiring diagram
+ Excitation Red
– Excitation Black
+ Signal Green
– Signal White

LE
100–1000 kg
Cable Length: 10'/3m
Platform Size:
16" x 24"/ 40 cm x 60 cm

	CAPACITY (kg)		L	L_1	L_2	W	W_1	H	H_1	T
SE	5/7/10/15/20/30/50/60/75/100/150	mm	150.0	19.0	100.0	30.0	24.0	39.5	19.0	M6x1.0 1/4-20UNF
		(inch)	5.91	0.75	3.94	1.18	0.94	1.56	0.75	
ME	50/100/150/250/300/500/635/800 45A/100A/150A/250A/300A/500A/635A	mm	174.0	19.0	122.0	60.0	30.0	65.0	–	M8 x 1.25 5/16-18UNC
		(inch)	6.85	0.75	4.80	2.36	1.18	2.56	–	
LE	100/250/100A/150A/250A/300A/500A/ 635A/800A/1000A	mm	191.0	25.0	125.0	76.2	60.0	75.0	–	
		(inch)	7.52	0.98	4.92	3.00	2.36	2.95	–	

*A: American Standard Thread

Low Profile Off-Center Single-Point

SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
NTEP/OIML accuracy class	NTEP III*	Non-Approved	C3**	C6***	
Maximum no. of intervals (n)	5000 single	1000	3000	6000	
Y = E_{max}/V_{min}	8000	1400	10000	12000	Maximum available
Standard capacities (E_{max})	5, 7, 10, 15, 20, 30, 50, 60, 75, 100, 150, 250, 300, 500, 635, 800, 1000				kg
Rated output—R.O.	2.0				mV/V
Rated output tolerance	10				±% of rated output
Zero balance	1				±% of rated output
Non-linearity	0.020	0.025	0.020	0.015	±% of rated output
Hysteresis	0.020	0.025	0.020	0.015	±% of rated output
Non-repeatability	0.020				±% of rated output
Creep error (20 minutes)	0.021	0.030	0.025	0.012	±% of rated output
Zero return (20 minutes)	0.01	0.030	0.017	0.008	±% of rated output
Temperature effect on min. dead load output	0.0026	0.0026	0.0014	0.0012	±% of rated output/°C
Temperature effect on sensitivity	0.0010	0.0015	0.008	0.008	±% of applied output/°C
Compensated temperature range	–10 to +40				°C
Operating temperature range	–20 to +60				°C
Safe overload	150				% of R.C.
Ultimate overload	200				% of R.C.
Excitation, recommended	10				VDC or VAC RMS
Excitation, maximum	15				VDC or VAC RMS
Input impedance	410±10				Ω
Output impedance	350±3				Ω
Insulation resistance	>5000				MΩ
Construction	Anodized aluminum. Stainless steel available.				
Environmental protection	IP66				

* Capacities 5–500 kg

** Capacities 5–500 kg

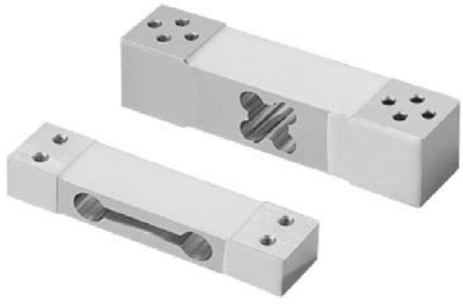
*** Capacities 500–1000 kg

All specifications are subject to change without notice.

Low Profile Single-Point

FEATURES

- Capacities: 0.6 to 200 kg
- Small size with low profile
- Anodized aluminum
- NTEP Class III 5000S approval from 3 kg to 30 kg
- OIML C3 approval from 6 kg to 35 kg
- Platform size: 16”x16”/ 40 cm x 40 cm
- **Optional**
  - FM approval available



APPLICATIONS

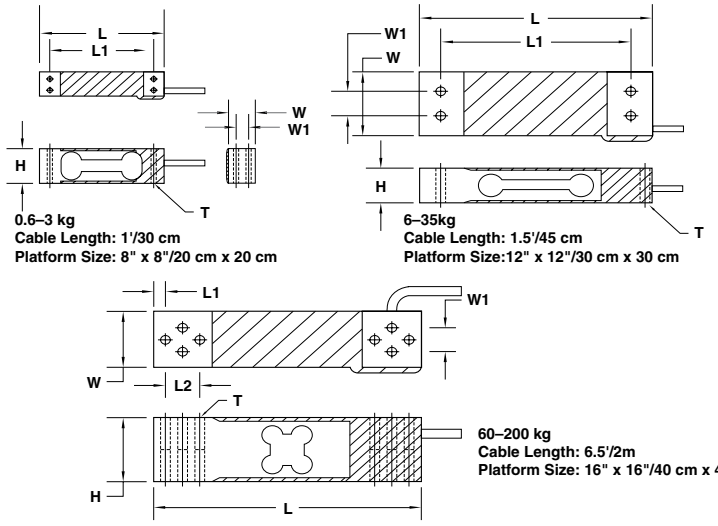
- Packaging machines
- Dosing/filling
- Belt scales/conveyor scales
- In-motion check weigher
- Retail scales/counting scales

DESCRIPTION

The Model LPS is designed for electronic scales and platform scales where only one load cell can be used and low profile is required. It is the lightest model of Celtron single-point load cell family. The design is most suitable for mass production operations.

The LPS is constructed of anodized aluminum and is fully potted to IP66 levels, providing excellent protection against moisture ingression.

OUTLINE DIMENSIONS



Wiring diagram

+ Excitation	Red
– Excitation	Black
+ Signal	Green
– Signal	White

CAPACITY (kg)		L	L_1	L_2	W	W_1	H	T
0.6/1/2/3	mm	70.0	58.0	–	15.0	7.0	22.0	M3 x 0.5
	(inch)	2.76	2.28	–	0.59	0.28	0.87	
6/10/15/20	mm	130.0	106.0	–	30.0	15.0	22.0	M6 x 1.0
	(inch)	5.12	4.17	–	1.18	0.59	0.87	
30/35	mm	130.0	106.0	–	40.0	15.0	22.0	M6 x 1.0
	(inch)	5.12	4.17	–	1.57	0.59	0.87	
60/100/200	mm	150.0	7.0	19.0	35.0	15.0	40.0	M6 x 1.0
	(inch)	5.91	0.28	0.75	1.38	0.59	1.57	

Low Profile Single-Point

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
NTEP/OIML accuracy class	NTEP III	Non-Approved	C3	
Maximum no. of intervals (n)	5000 single [1]	1000	3000 [2]	
Y = E_{max}/V_{min}	8000	1400	6000	Maximum available 12000
Standard capacities (E_{max})	0.6, 1, 2, 3, 6, 10, 15, 20, 30, 35, 60, 100, 200			kg
Rated output—R.O.	2.0 [3]			mV/V
Rated output tolerance	10			±% of rated output
Zero balance	3			±% of rated output
Non-linearity	0.025	0.030	0.020	±% of rated output
Hysteresis	0.025	0.030	0.020	±% of rated output
Non-repeatability	0.020			±% of rated output
Creep error (20 minutes)	0.030	0.030	0.017	±% of rated output
Zero return (20 minutes)	0.030	0.030	0.017	±% of rated output
Temperature effect on min. dead load output	0.0026	0.0026	0.014	±% of rated output/°C
Temperature effect on sensitivity	0.0015	0.0015	0.008	±% of applied load/°C
Compensated temperature range	–10 to +40			°C
Operating temperature range	–20 to +60			°C
Safe overload	150			% of R.C.
Ultimate overload	200			% of R.C.
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	15			VDC or VAC RMS
Input impedance	410±10			Ω
Output impedance	350±3			Ω
Insulation resistance	>5000			MΩ
Construction	Anodized aluminum			
Environmental protection	IP66			

Notes

[1] Capacities 3–30 kg

[2] Capacities 6–35 kg

[3] 1 mV/V for 1 kg and below

All specifications subject to change without notice.

FM Approval

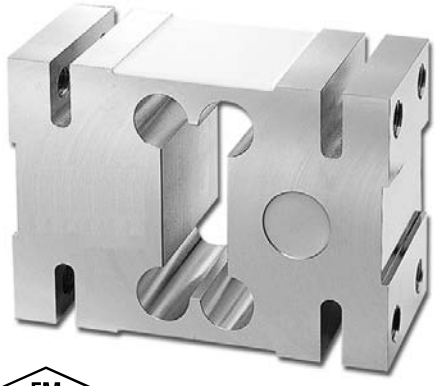
Intrinsically Safe: Class I, II, III; Div. 1 Groups A-G

Non-Incendive: Class I; Div. 2 Groups A-D

High Capacity Off-Center Single-Point Load Cell

FEATURES

- Capacities: 750, 1000, and 2000 kg
- Fully sealed for water resistance
- Side mount construction
- Anodized aluminum alloy
- OIML C3 approval
- Platform size: 48” x 48”/120 cm x 120 cm
- **Optional**
  - FM approval available



OIML

FM C US APPROVED

APPLICATIONS

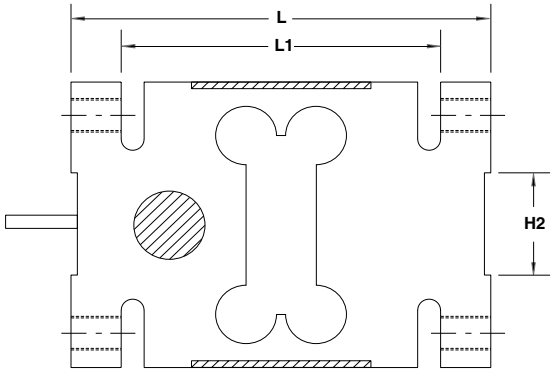
- Platform scales (single load cell)
- Packaging machines
- Dosing/filling
- Belt scales/conveyor scales

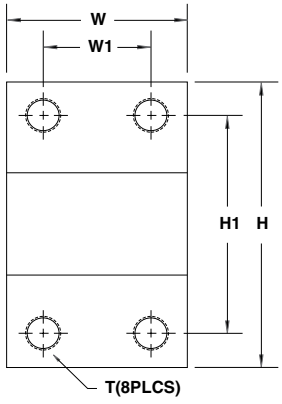
DESCRIPTION

The Model HOC is a single-point load cell of side mount construction designed for platform scales, and hanging scales. It is a cost-effective load cell for scales of simple construction.

The HOC is constructed of anodized aluminum, and is environmentally sealed up to IP66, providing excellent protection against moisture and humidity.

OUTLINE DIMENSIONS





Wiring

+ Excitation	Red
– Excitation	Black
+ Signal	Green
– Signal	White

All Capacity
Cable Length: 10'/3.1m
Platform Size: 48" x 48"/120 cm x 120 cm

CAPACITY (kg)		L	L_1	W	W_1	H	H_1	H_2	T
750/1000/2000	mm	176.0	134.5	76.0	46.0	125.0	95.0	45.0	M16 x 2.0
	(inch)	6.93	5.30	2.99	1.81	4.92	3.74	1.77	

High Capacity Off-Center Single-Point Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
NTEP/OIML accuracy class	Non-Approved	C3	
Maximum no. of intervals (n)	1000	3000	
Y = E_{max}/V_{min}	5000	10000	Maximum available
Standard capacities (E_{max})	750, 1000, 2000		kg
Rated output—R.O.	2.0		mV/V
Rated output tolerance	10		±% of rated output
Zero balance	1		±% of rated output
Non-linearity	0.020	0.015	±% of rated output
Hysteresis	0.020	0.015	±% of rated output
Non-repeatability	0.020		±% of rated output
Creep error (20 minutes)	0.030	0.020	±% of rated output
Zero return (20 minutes)	0.030	0.020	±% of rated output
Temperature effect effect on min. dead load output	0.0026	0.014	±% of rated output/°C
Temperature effect on sensitivity	0.0015	0.008	±% of applied load/°C
Compensated temperature range	–10 to +40		°C
Operating temperature range	–20 to +60		°C
Safe overload	150		% of R.C.
Ultimate overload	200		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	410±10		Ω
Output impedance	350±3		Ω
Insulation resistance	>5000		MΩ
Construction	Anodized aluminum		
Environmental protection	IP66		

All specifications subject to change without notice.

FM Approval

Intrinsically Safe: Class I, II, III; Div. 1 Groups A-G

Non-Incendive: Class I; Div. 2 Groups A-D

Single-Point Load Cell

FEATURES

- Capacities: 6–60 kg
- Fully welded, stainless steel construction
- Hermetically sealed, IP66 and IP68
- Certified to OIML R-60, 3000d
- Comprehensive mounting hole facility
- Moment insensitive, platform size to 350 x 350 mm
- **Optional**
  - ATEX and FM certified versions are available for use in potentially explosive atmospheres
  - IP69K full hermetic construction with true glass to metal seal



APPLICATIONS

- Food platforms
- Process weighing
- Multi-head packaging machines
- Marine hybrid scales

DESCRIPTION

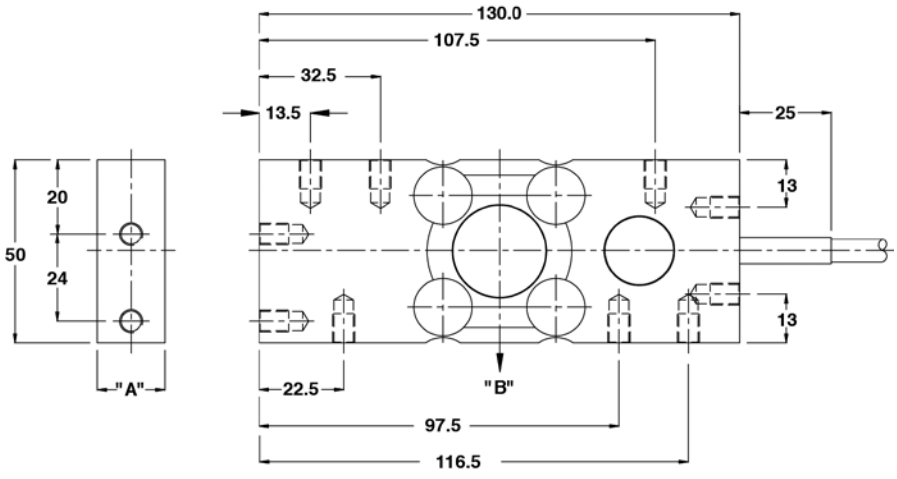
The Model HPS is a unique fully welded all stainless steel single point (moment insensitive) load cell.

This product is suitable for low capacity platform scales, multi-head packaging machines, check weighers, loss-in-weight feeders, belt scales, and general process weighing applications.

The unique construction ensures that this product can be used successfully in demanding environments found in the food, chemical, and allied industries.

This product meets the stringent Weights and Measures requirements throughout Europe.

OUTLINE DIMENSIONS in millimeters



Cable specifications
Cable length: 7m

Excitation +	Green
Excitation –	Black
Output +	White
Output –	Red
Sense +	Yellow
Sense –	Blue
Shield	Transparent

Cable screen is not connected to the load cell body.

Capacity (kg)	6, 12, 30	60
A	18.5	23.5
B	Central load axis	
Max. recommended platform size 350 mm		
All threads M6x1 (8 Deep)		

Single-Point Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Standard capacities (E_{max})	6, 12, 30, 60		kg
Accuracy class according to OIML R-60	Non-Approved	C3	
Max. no. of verfication intervals		3000	
Min. verification interval (V_{min})		E_{max}/12000	
Rated output (=S)	2		mV/V
Rated output tolerance	0.2		±% mV/V
Zero balance	1.0		±% FSO
Combined error	0.0500	0.0200	±% FSO
Non-repeatability	0.0200	0.0100	±% FSO
Minimum dead load output return	0.0500	0.0167	±% applied load
Creep error (30 minutes)	0.0600	0.0245	±% applied load
Temperature effect on min. dead load output	0.0250	0.0058	±% FSO/5°C (/°F)
Temperature effect on sensitivity	0.0250	0.0045	±% applied load/5°C (/°F)
Eccentric load effect*	0.03		±% FSO
Minimum dead load	0		% E_{max}
Maximum safe overload	150		% E_{max}
Ultimate overload	300		% E_{max}
Maximum safe side load	100		% E_{max}
Deflection at E_{max}	0.24±0.02 / 0.19±0.01 / 0.15±0.01 / 0.22±0.03		mm
Excitation voltage	5 to 12		V
Maximum excitation voltage	15		V
Input resistance	400±6	400±6	Ω
Output resistance	350±7		Ω
Insulation resistance	≥5000		MΩ
Compensated temperature range	–10 to +40		°C
Operating temperature range	–40 to +80		°C
Storage temperature range	–40 to +90		°C
Element material (DIN)	Stainless steel 1.4542		
Sealing (DIN 40.050 / EN60.529)	IP66 and IP68		
Recommended torque on fixation bolts	6		N*m

* Applies at 50% x Rated Load at 150 mm radius

All specifications subject to change without notice.

Aluminum Single-Point Load Cell

FEATURES

- Capacities 0.5–20 kg for 350 ohm
- Capacities 5–30 kg for 1000 ohm
- Aluminum construction
- Single-point 200 x 200 mm platform
- IP66 protection



APPLICATIONS

- Small scales
- Grocery scales

DESCRIPTION

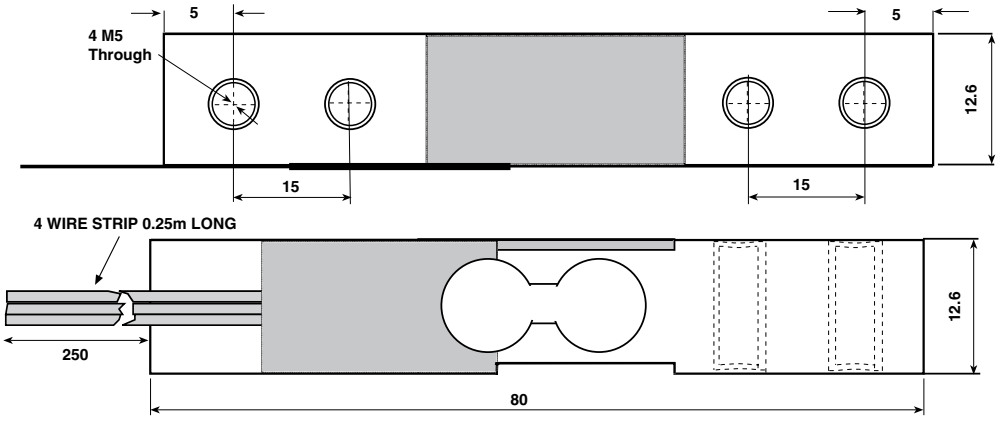
The Model 1002 is a very small, low capacity, aluminum single-point load cell, equally suitable for simple weighing scales or for industrial measurement and medical applications.

The Model 1002 has the advantage of very small size. It is, therefore, both versatile and easy to use in a wide variety of industrial measurement applications.

Optional 1000-ohm strain gages are particularly suitable for connection to battery-powered equipment (designated Model 1002-K).

Typical applications include packing machines, filling machines, weaving machines, industrial process control, and low-force medical applications, as well as small-platform weighing.

OUTLINE DIMENSIONS in millimeters



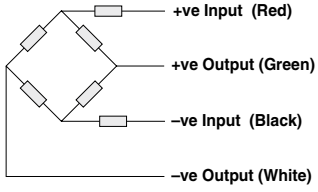
Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
Document No.: 12001
Revision: 23-Feb-2018

Aluminum Single-Point Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Model	1002	1002-K	
Accuracy class	Non-Approved		
Maximum no. of intervals (n)	1000		
Rated capacity—R.C. (E_{max})	0.5, 1, 2, 3, 5, 8, 10, 15, 20	5, 8, 10, 15, 20, 30	kg
Rated output—R.O.	0.5	1.5	mV/V
Rated output tolerance	10		±% mV/V
Zero balance	0.4	0.2	±mV/V
Zero return, 30 min.	0.050		±% of applied load
Total error	0.1		±% of rated output
Temperature effect on zero	N/A		±% of rated output/°C
Temperature effect on output	N/A		±% of load/°C
Eccentric loading error	0.16		±% of rated load/cm
Temperature range, compensated	–10 to +40		°C
Temperature range, safe	–20 to +70		°C
Maximum safe central overload	150		% of R.C.
Ultimate central overload	300		% of R.C.
Excitation, recommended	5		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	350±50	1000±50	Ω
Output impedance	350±50	1000±50	Ω
Insulation resistance	>2000		MΩ
Cable length	0.25		m
Cable type	4 wire, PVC		Standard
Construction	Aluminum		
Environmental protection	IP66		
Platform size (max)	200 x 200		mm
Recommended torque	2		N*m

All specifications subject to change without notice.

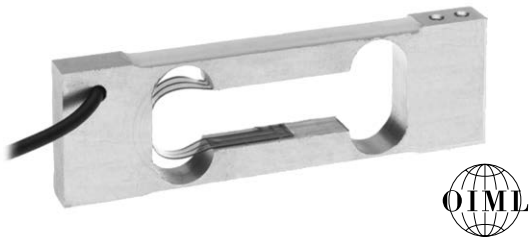
Wiring Schematic Diagram
(Balanced bridge configuration)



Aluminum Single-Point Load Cell

FEATURES

- Capacities 0.3–3 kg
- Aluminum construction
- Single-point 200 × 200 mm platform
- IP66 protection
- Total error better than 0.0067% of R.O.
- OIML C3 and C6 approved



APPLICATIONS

- Low capacity scales
- Precision scales
- Jewelry scales
- Pharmaceutical scales

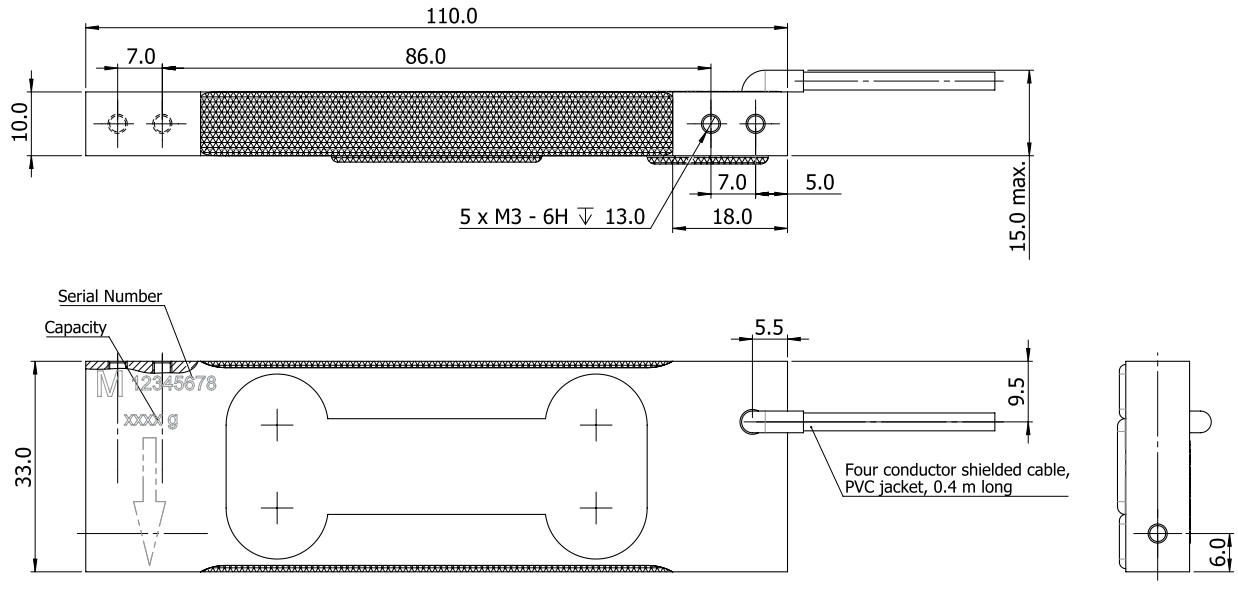
DESCRIPTION

The Model 1004 is a very low capacity, very high precision single-point load cell designed for direct mounting in low capacity scales and precision balances. This load cell is suitable for applications including jewelry scales, analytical balances, medical equipment, medical and pharmaceutical research, and low-level force measurement.

The Model 1004 offers up to 30,000 divisions of short-term precision at a stable room temperature. A special two-stage humidity resistant protective coating assures long-term reliability

An overload protection device can be easily included in the application design. A threaded hole is provided in the loading end of the load cell for this purpose.

OUTLINE DIMENSIONS in millimeters



Aluminum Single-Point Load Cell

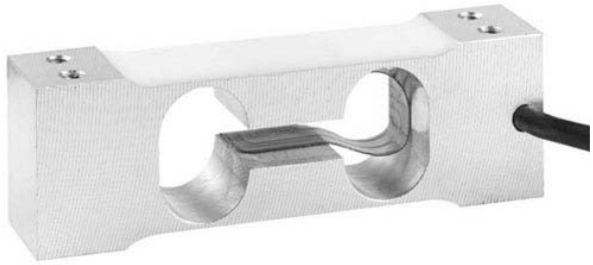
SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Accuracy type designation	**G8**	**G6**	**J8**	
OIML Accuracy class	C3	C3	C6MR10	
Minimum utilization	85	60	80	%
$Y=E_{max}/V_{min}$	3500	5000	7500	
Maximum number of intervals	3000	3000	6000	
Rated capacity—R.C. (E_{max})	0.3	0.6, 1.0, 1.2, 1.5, 2.0, 3.0	0.6, 1.0, 1.2, 1.5, 2.0, 3.0	kg
Rated output—R.O.	0.9			mV/V
Rated output tolerance	0.10			±mV/V
Zero balance	0.04	0.05	0.05	±mV/V
Total Cell Error per OIML R60	0.02	0.02	0.010	±% of R.O.
Creep, 30 minutes	0.0245	0.0245	0.013	±% of load
Zero return, 30 minutes	0.017	0.017	0.0083	±% of load
Temperature effect on zero	0.004	0.004	0.0014	±% of R.O./°C
Temperature effect on output	0.001	0.001	0.00058	±% of load/°C
Eccentric loading error	0.0033	0.0033	0.0024	±% of load/°cm
Temperature range, compensated	+5 to +40	–10 to +40	–10 to +40	°C
Temperature range, operating	–20 to +65			°C
Temperature range, storage	–30 to +80			°C
Maximum safe static overload	150			% of R.C
Ultimate static overload	200			% of R.C
Excitation, recommended	10			VDC or VAC RMS
Excitation range	5 to 15			VDC or VAC RMS
Input impedance	350 to 450			Ω
Output impedance	349 to 370			Ω
Insulation resistance	>2000			MΩ
Cable length	0.4			m
Weight (nominal)	0.06			kg
Cable type	4 conductors , 28 AWG, floating Spiral braid shielded, PVC jacket			
Color code	+Exc: Green, +Sig: Red, –Exc: Black, –Sig: White			
Construction	Aluminum			
Environmental protection	IP66			
Maximum recommended plat. size	200 × 200			mm

All specifications are subject to change without notice.

Aluminum Single-Point Load Cell

FEATURES

- Capacities 2–5 kg
- Aluminum construction
- Single-point 200 x 200 mm platform
- IP66 protection



APPLICATIONS

- Bench scales
- Counting scales
- Grocery scales

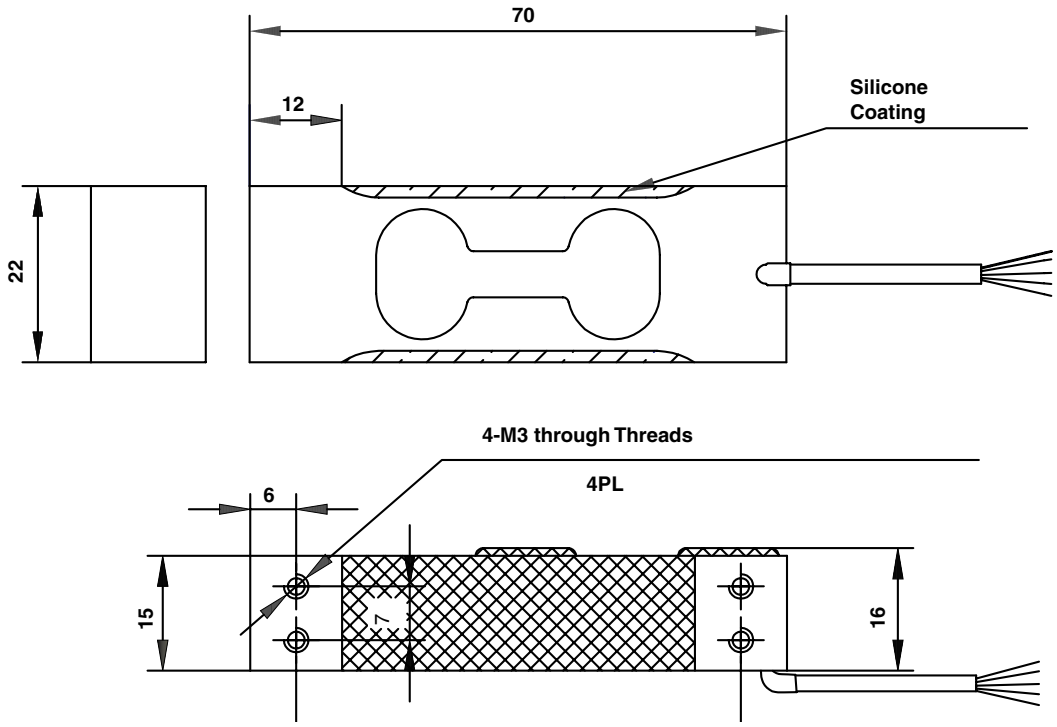
DESCRIPTION

The Model 1006 is a very low capacity, high precision single-point load cell designed for direct mounting in low capacity scales.

This load cell is suitable for applications including postal scales, counting scales and general-purpose weighing scales. It is also suitable for a wide variety of force measurement applications, such as industrial process control or specialist medical devices.

The Model 1006 offers very high performance from a very small size. It is very easy to use, and easy to apply in a wide variety of applications, where the acting center of force application is within 100 mm of the load cell vertical axis.

OUTLINE DIMENSIONS in millimeters



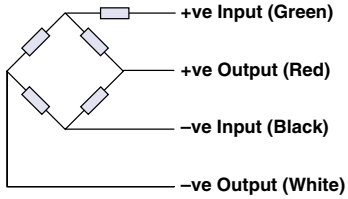
Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
Document No.: 12003
Revision: 23-Feb-2018

Aluminum Single-Point Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Accuracy class	Non-Approved	G	
Maximum no. of intervals (n)	1000	3000	
Rated capacity—R.C. (E_{max})	2, 3, 5		kg
Rated output—R.O.	2.0		mV/V
Rated output tolerance	0.2		±mV/V
Zero balance	0.2		±mV/V
Zero return, 30 min.	0.050	0.0170	±% of applied load
Total error	0.0300	0.0200	±% of rated output
Temperature effect on zero	0.0100	0.0040	±% of rated output/°C
Temperature effect on output	0.0030	0.0010	±% of load/°C
Eccentric loading error	0.0085	0.0057	±% of rated load/cm
Temp. range, compensated	–10 to +40		°C
Temp. range, safe	–20 to +70		°C
Maximum safe central overload	150		% of R.C.
Ultimate central overload	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	415±20		Ω
Output impedance	350±3		Ω
Insulation resistance	>2000		MΩ
Cable length	0.4		m
Cable type	4 wire, PVC, single floating screen		Standard
Construction	Aluminum		
Environmental protection	IP66		
Platform size (max)	200 x 200		mm
Recommended torque	2 and 3 kg: 4.0 5 kg: 6.0		N*m

All specifications subject to change without notice.

Wiring Schematic Diagram
(Unbalanced bridge configuration)



Aluminum Single-Point Load Cell

FEATURES

- Capacities 3–90 kg
- Aluminum construction
- Single-point 400 x 400 mm platform
- NTEP approved (not applicable for 3 and 90 kg)
- IP65 protection
- Available with metric and UNC threads
- **Optional**
  - FM approval available
  - IP67 available



APPLICATIONS

- Bench scales
- Counting scales
- Grocery scales

DESCRIPTION

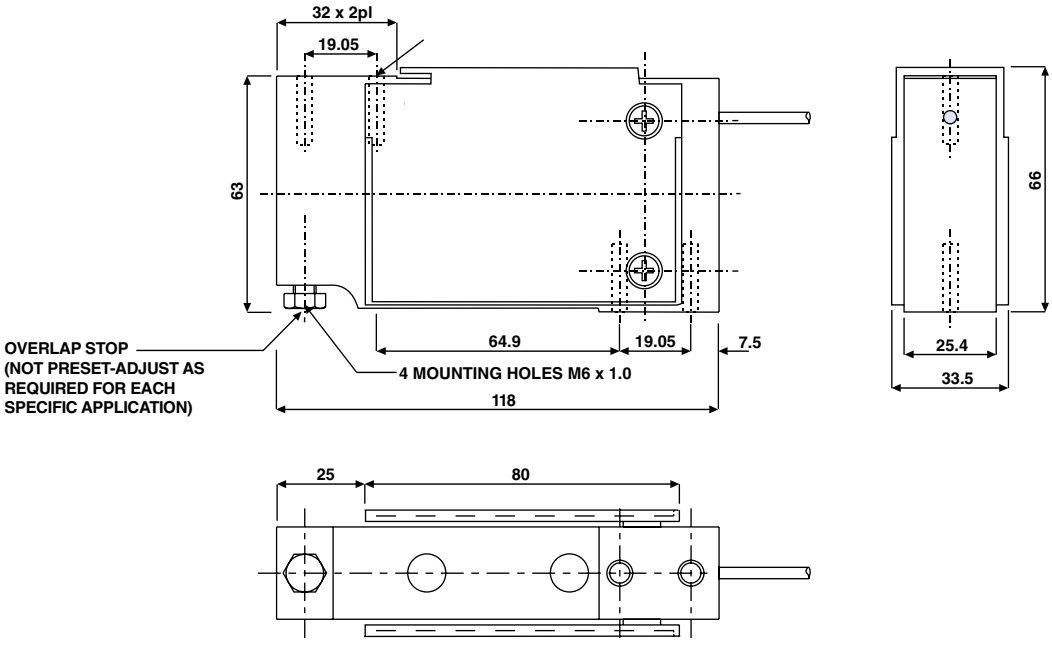
The Model 1010 is a single-point load cell designed for direct mounting of low cost, low capacity weighing platforms.

Its use in large platforms, combined with its high accuracy and low cost, makes this load cell ideally suited for a large range of weighing applications, including bench scales and counting scales.

A special humidity resistant protective coating is available which ensures long-term reliability. The Model 1010's built-in overload stop can provide mechanical protection against overloading.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance due to temperature change and/or cable extension is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters



Aluminum Single-Point Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE***		**UNIT**
Rated capacity—R.C. (E_{max})	3**, 5, 7, 10, 15, 20, 30, 50, 90**		kg
NTEP/OIML accuracy class	NTEP	Non-Approved	
Maximum no. of intervals (n)	5000 single	3000	
Y = E_{max}/V_{min}	10000	10000	Maximum available
Rated output—R.O.	2.0		mV/V
Rated output tolerance	0.2		±mV/V
Zero balance	0.2		±mV/V
Zero return, 30 min.	0.0330	0.0170	±% of applied load
Total error (per OIML R60)	0.0200	0.0200	±% of rated output
Temperature effect on zero	0.0023	0.004	±% of rated output/°C
Temperature effect on output	0.001	0.0010	±% of applied load/°C
Eccentric loading error	Up to 30 kg—0.0049 Over 30 kg—0.0057		±% of rated load/cm
Temperature range, compensated	–10 to +40		°C
Temperature range, safe	–20 to +70		°C
Maximum safe central overload	150		% of R.C.
Ultimate central overload	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	415±15		Ω
Output impedance	350±3		Ω
Insulation resistance	>5000		MΩ
Cable length	1.0		m
Cable type	6 wire, PVC, single floating screen		Standard
Construction	Plated (anodize) aluminum		
Environmental protection	IP65***		
Maximum recommended platform size	Up to 30 kg—40 x 40 Over 30 kg—35 x 35		cm
Recommended torque	Up to 30 kg: 7.0 50 kg and up: 10.0		N-m

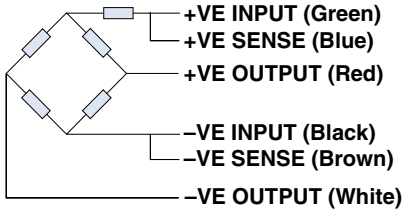
* 1010 is non-balanced load cell (non-balanced bridge), 1015 is balanced

** 3 and 90 kg capacity are not available with NTEP approval

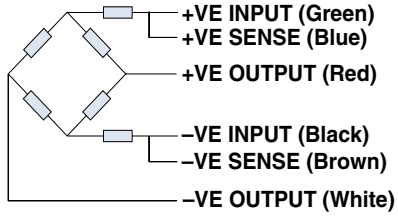
*** IP67 available upon request

All specifications are subject to change without notice.

WIRING SCHEMATIC DIAGRAM (1010)
(Unbalanced bridge configuration)



WIRING SCHEMATIC DIAGRAM (1015)
(Balanced temperature compensation)



Single-Point Aluminum Load Cell

FEATURES

- Capacities: 3–200 kg
- Only 22 mm high
- Aluminum construction
- Single-point 350 x 350 mm platform
- IP66 protection
- OIML R60 and NTEP approved
- **Optional**
  - ATEX, FM and IECEx approvals available
  - Symmetric configuration available



APPLICATIONS

- Bench scales
- Counting scales
- Grocery scales

DESCRIPTION

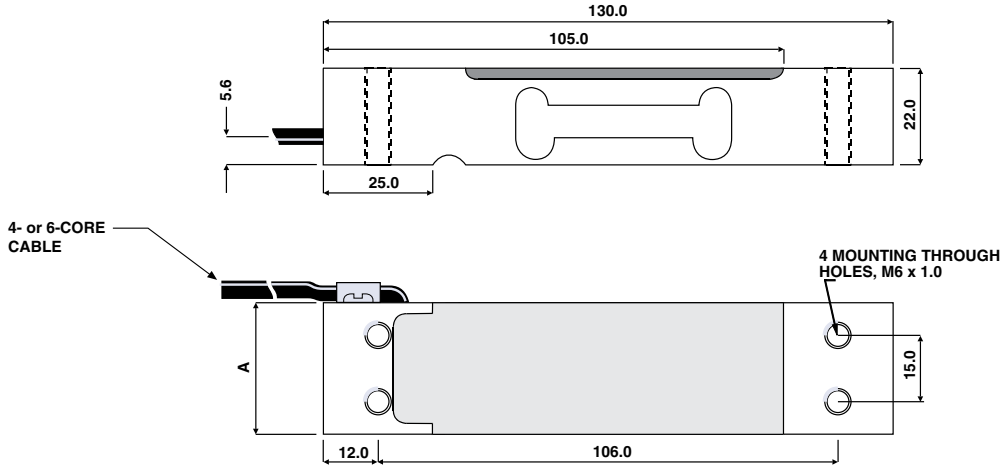
The Model 1022 is a low profile single-point load cell designed for direct mounting in low cost weighing platforms.

Its small physical size, combined with high accuracy and aluminum construction, makes this low cost load cell ideally suited for retail, bench and counting scales.

Using Model 1022 load cells simplifies scale construction, which results in significant parts and labor savings.

The Model 1022 is available in a range of capacities: from 3 to 150 kg, approved to OIML R60 (4000d); to 20 to 150 kg, approved to OIML R60 (6000d); to 3 to 100 kg, approved to NTEP (5000d, single). Environmental protection to IP66 is provided as standard. For hazardous environments, ATEX approved versions are available.

OUTLINE DIMENSIONS in millimeters*



CAPACITY	A
3, 5, 7 kg	25.4
10, 15, 20, 30, 35, 50, 75 kg	30.0
35, 100, 150, 200 kg	40.0

* Double-sided bonding is available on request

Single-Point Aluminum Load Cell

SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Rated capacity—R.C. (E_{max})	3, 5, 7, 10, 15, 20, 30, 35, 50, 100, 150, 200***				kg
NTEP/OIML accuracy class	NTEP	Non-Approved	C3*	C4	
Maximum no. of intervals (n)	5000 single**	1000	3000	4000	
$Y = E_{max}/V_{min}$	10000	1400	6000	10000	Maximum available 12000
Rated output—R.O.	2.0				mV/V
Rated output tolerance	0.2				±mV/V
Zero balance	0.1				±mV/V
Zero return, 30 min.	0.01	0.05	0.0170	0.0125	±% of applied load
Total error (per OIML R60)	0.0200	0.03	0.0200	0.0150	±% of rated output
Temperature effect on zero	0.0014	0.0100	0.0023	0.0014	±% of rated output/°C
Temperature effect on output	0.0010	0.0030	0.0010	0.00075	±% of rated output/°C
Eccentric loading error	0.0057	0.0085	0.0057	0.0042	±% of rated load/cm
Temperature range, compensated	–10 to +40				°C
Temperature range, safe	–30 to +70				°C
Maximum safe central overload	150				% of R.C.
Ultimate central overload	300				% of R.C.
Excitation, recommended	10				VDC or VAC RMS
Excitation, maximum	15				VDC or VAC RMS
Input impedance	415±15				Ω
Output impedance	350±3				Ω
Insulation resistance	>2000				MΩ
Cable length	0.5, other lengths available				m
Cable type	4 or 6 wire, PVC, single floating screen or grounded to element body				Standard
Construction	Aluminum				
Environmental protection	IP66				
Platform size (max.)	350 × 350				mm
Recommended torque	Up to 30 kg: 7.0 35 kg and up: 10.0				N*m

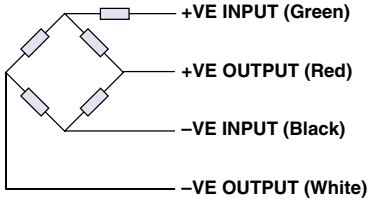
* 50% utilization

** Also available at 50% utilization

*** 150–200 kg are not approved by NTEP, 200 kg is not approved by OIML

All specifications subject to change without notice.

WIRING SCHEMATIC DIAGRAM**
(Unbalanced bridge configuration)



**** Balanced bridge available with 6 sense wires

Low Profile Single-Point Load Cell

FEATURES

- Capacities: 2–15 kg
- Aluminum construction
- Single-point 350 x 350 mm platform
- OIML R60
- IP65 protection
- Available with UNC threads
- **Optional**
  - FM approval available
  - IP67 protection available



APPLICATIONS

- Bench scales
- Counting scales
- Grocery scales

DESCRIPTION

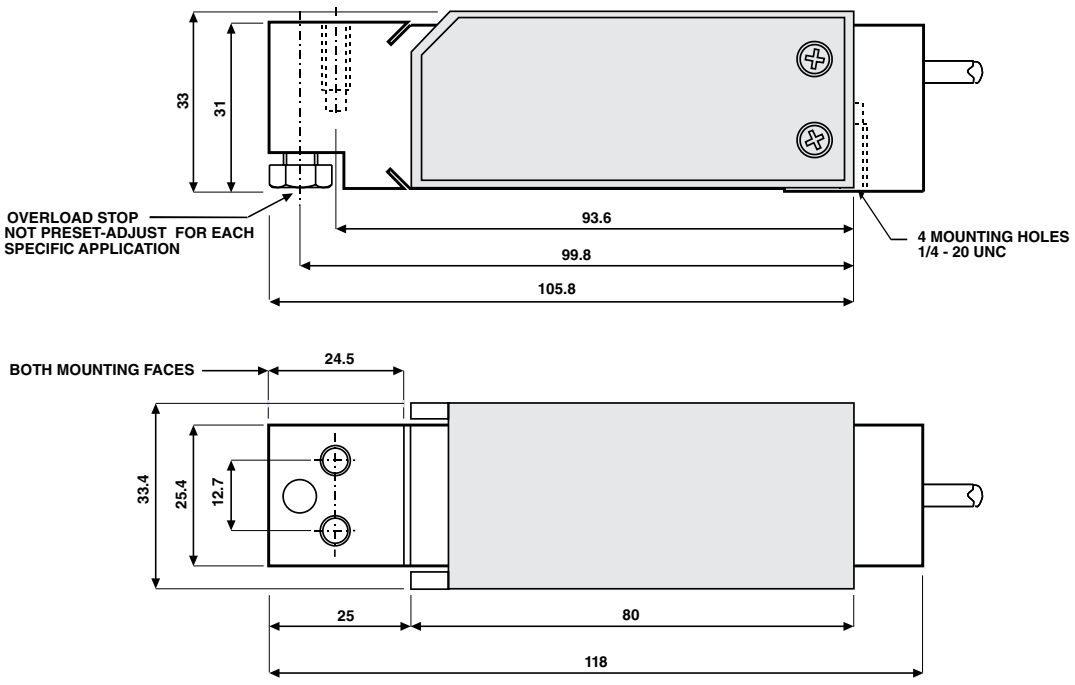
The Model 1030 is a single-point load cell designed for direct mounting of low cost, low capacity weighing platforms.

Its use in relatively large platforms, combined with high accuracy and low cost, makes this load cell ideally suited for a wide range of weighing applications, including bench scales, laboratory, money counting and process weighing.

A special humidity resistant protective coating is available as an option which assures long-term reliability. The Model 1030's built in overload stop can provide mechanical protection against overloading.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance due to temperature change and/or cable extension, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters



Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
Document No.: 12008
Revision: 23-Feb-2018

Low Profile Single-Point Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE[1]**		**UNIT**
OIML accuracy class	Non-Approved	C2.5	
Maximum no. of intervals (n)	1000	2500	
Y = E_{max}/V_{min}	3333	7000	
Rated output—R.C. (E_{max})	2[2], 3, 5, 7, 10, 15		kg
Rated output—R.O.	2.0		mV/V
Rated output tolerance	0.2		±mV/V
Zero balance	0.2		±mV/V
Zero return, 30 min.	0.0500	0.0170	±% of applied load
Total error	0.0300	0.0200	±% of rated output
Temperature effect on zero	0.0100	0.0040	±% of rated output/°C
Temperature effect on output	0.0030	0.0010	±% of applied load/°C
Eccentric loading error	0.0085	0.0057	±% of rated load/cm
Temp. range, compensated	–10 to +40		°C
Temp. range, safe	–30 to +70		°C
Maximum safe central overload	150		% of R.C.
Ultimate central overload	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	415±15		Ω
Output impedance	350±3		Ω
Insulation resistance	>5000		MΩ
Cable length	1.0		m
Cable type	4 wire, PVC, single floating screen		Standard
Construction	Anodized aluminum		
Environmental protection	IP65[3]		
Platform size (max)	350 x 350		mm
Recommended torque	7.0		N*m

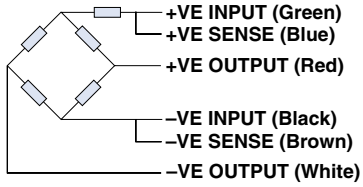
[1] 1030 is a non-balanced bridge load cell

[2] 2 kg is not OIML approved

[3] IP67 available upon request

All specifications subject to change without notice.

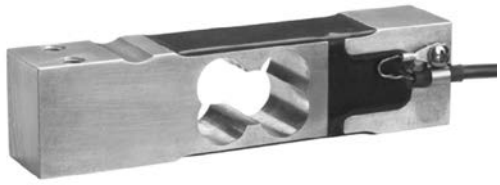
WIRING SCHEMATIC DIAGRAM
(Unbalanced bridge configuration)



Low Profile Single-Point Load Cell

FEATURES

- Capacities 10–30 kg
- Aluminum construction
- Single-point 400 × 400 mm platform
- OIML R60 approved
- IP66 protection
- Available with metric and UNC threads
- **Optional**
  - ATEX and IECEx approvals available
  - High stiffness version available for dynamic weighing applications



APPLICATIONS

- Bench scales
- Counting scales
- Grocery scales

DESCRIPTION

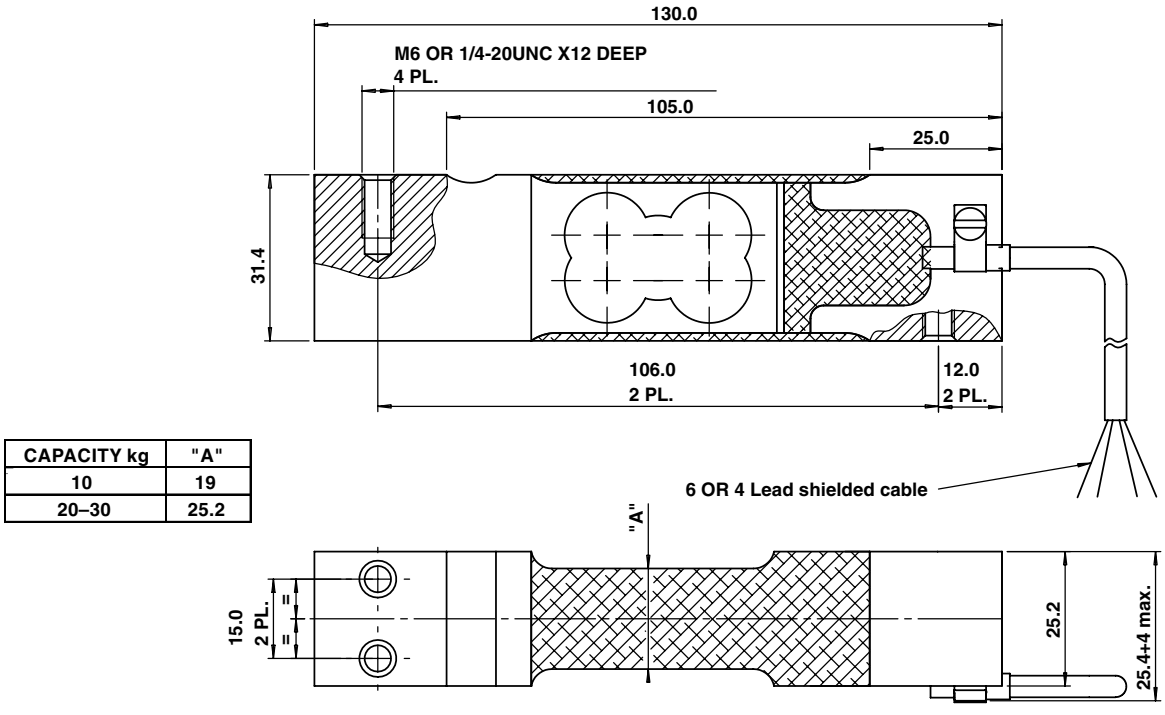
The Model 1033 is a low profile single-point load cell designed for direct mounting of low cost weighing platforms.

Its small physical size, combined with high accuracy and low cost, makes this load cell ideally suited for retail, bench and counting scales.

A humidity resistant protective coating assures long term stability over the entire compensated temperature range.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance due to temperature change and/or cable extenstion, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters



CAPACITY kg	"A"
10	19
20–30	25.2

Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
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Revision: 23-Feb-2018

Low Profile Single-Point Load Cell

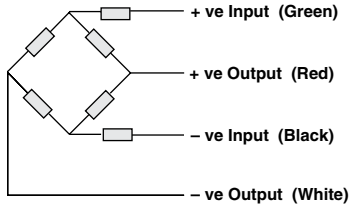
SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated capacity—R.C. (E_{max})	10, 15, 30			kg
OIML accuracy class	Non-Approved	C3[1]	C6[2]	
Maximum no. of intervals (n)	1000	3000	6000	
$Y = E_{max}/V_{min}$	2000	10000	15000	Maximum available
Rated output—R.O.	2.0			mV/V
Rated output tolerance	0.2			±mV/V
Zero balance	0.2			±mV/V
Zero return, 30 min.	0.0300	0.0170	0.0083	±% of applied load
Total error	0.0500	0.0200	0.0100	±% of rated output
Temperature effect on zero	0.0100	0.0023	0.0014	±% of rated output/°C
Temperature effect on output	0.0030	0.0010	0.00058	±% of rated output/°C
Eccentric loading error	0.0057	0.0057	0.0024	±% of rated load/cm
Temperature range, compensated	–10 to +40			°C
Temperature range, safe	–20 to +70			°C
Maximum safe central overload	150			% of R.C.
Ultimate central overload	300			% of R.C.
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	15			VDC or VAC RMS
Input impedance	415±15			Ω
Output impedance	350±3			Ω
Insulation resistance	>2000			MΩ
Cable length	0.5			m
Cable type	4-wire, PVC, single floating screen			Standard
Construction	Aluminum			
Environmental protection	IP66			
Platform size (max.)	400 × 400			mm
Recommended torque	7.0			N*m

[1] 50% utilization

[2] 60% utilization

All specifications subject to change without notice.

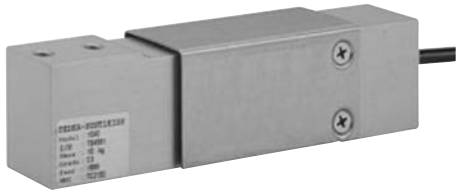
Wiring Schematic Diagram
(Balanced temperature compensation)



Low Capacity Single-Point Aluminum Load Cells

FEATURES

- Capacities 5–100 kg
- Aluminum construction
- Single-point 400 x 400 mm platform
- OIML R60 and NTEP approved
- IP65 protection
- Available with metric and UNC threads
- **Optional**
  - FM approval available
  - IP67 available



APPLICATIONS

- Bench scales
- Counting scales
- Grocery scales

DESCRIPTION

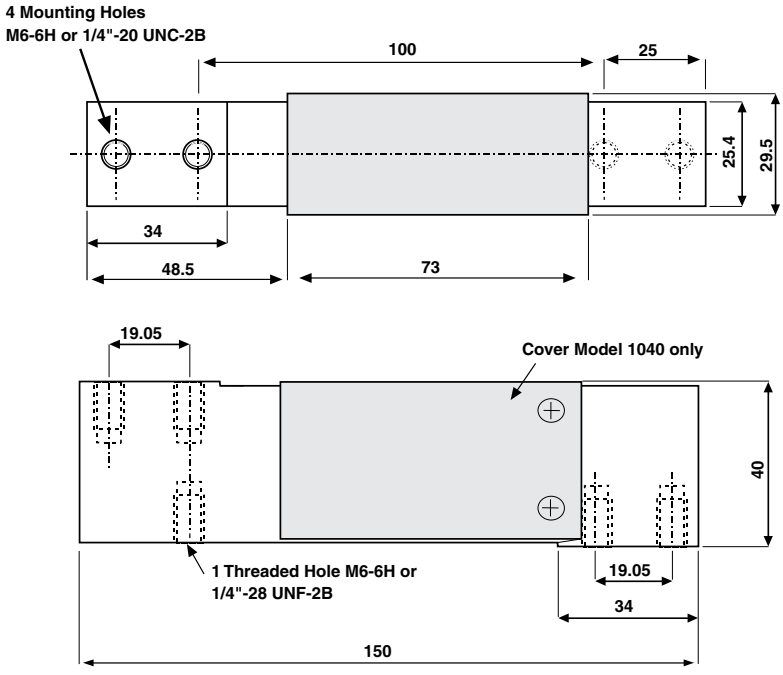
The Models 1040 and 1041 are low profile single-point load cells designed for direct mounting of low cost weighing platforms.

Their small physical size, combined with high accuracy and low cost, makes these load cells ideally suited for retail, bench and counting scales.

Available in anodized aluminum, these high accuracy load cells are approved to NTEP and other stringent approval standards, including OIML R60. An optional special humidity resistant protective coating assures long-term stability over the entire compensated temperature range.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance due to temperature change and/or cable extension, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters



Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
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Low Capacity Single-Point Aluminum Load Cells

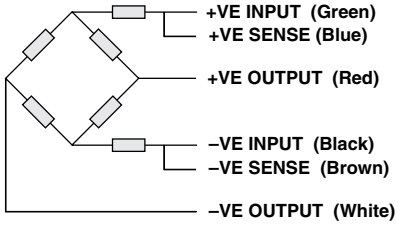
SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
NTEP/OIML accuracy class	NTEP	Non-Approved	C3*	
Maximum no. of intervals (n)	5000 single	1000	3000	
Rated capacity—R.C. (E_{max})	5, 7, 10, 15, 20, 30, 50, 75, 100			kg
Rated output—R.O.	2.0			mV/V
Rated output tolerance	0.2			±mV/V
Zero balance	0.2			±mV/V
Zero return, 30 min.	0.0330	0.0300	0.0170	±% of applied load
Total error	0.0200	0.0500	0.0200	±% of rated output
Temperature effect on zero	0.0023	0.0100	0.0023	±% of rated output/°C
Y = E_{max}/V_{min}	6000	1400	6000	Maximum available 10000
Temperature effect on output	0.0010	0.0030	0.0010	±% of applied load/°C
Eccentric loading error	0.0049	0.0074	0.0049	±% of rated load/cm
Temp. range, compensated	–10 to +40			°C
Temp. range, safe	–20 to +70			°C
Maximum safe central overload	150			% of R.C.
Ultimate central overload	300			% of R.C.
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	15			VDC or VAC RMS
Input impedance	415±15			Ω
Output impedance	350±3			Ω
Insulation resistance	>2000			MΩ
Cable length	1040: 1.0 1041: 0.5			m
Cable type	6 wire, PVC, single floating screen			Standard
Construction	Plated (anodized) aluminum 1040 aluminum—1041			
Environmental protection	IP65**			
Platform size (max)	400 x 400			mm
Recommended torque	Up to 30 kg: 7.0 50 kg and up: 10.0			N*m

* 50% utilization. Other utilization factors available upon request.

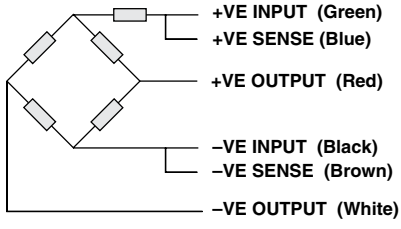
** Available also in IP67

All specifications are subject to change without notice.

Wiring Schematic Diagram
(1040 Balanced bridge configuration)



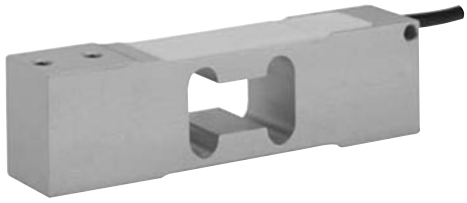
Wiring Schematic Diagram
(1041 Unbalanced bridge configuration)



Low Profile Aluminum Load Cell

FEATURES

- Capacities 1–200 kg
- Aluminum construction
- Single-point 400 x 400 mm platform
- OIML R60 and NTEP approved
- IP66 protection
- Available with metric and UNC threads
- **Optional**
  - ATEX, FM, and IECEx approvals available
  - High stiffness version available for dynamic weighing applications



APPLICATIONS

- Bench scales
- Counting scales
- Grocery scales

DESCRIPTION

The Model 1042 is a low profile single-point load cell designed for direct mounting in weighing platforms.

Its small physical size, combined with high accuracy and low cost, makes this load cell ideally suited for retail, bench and counting scales.

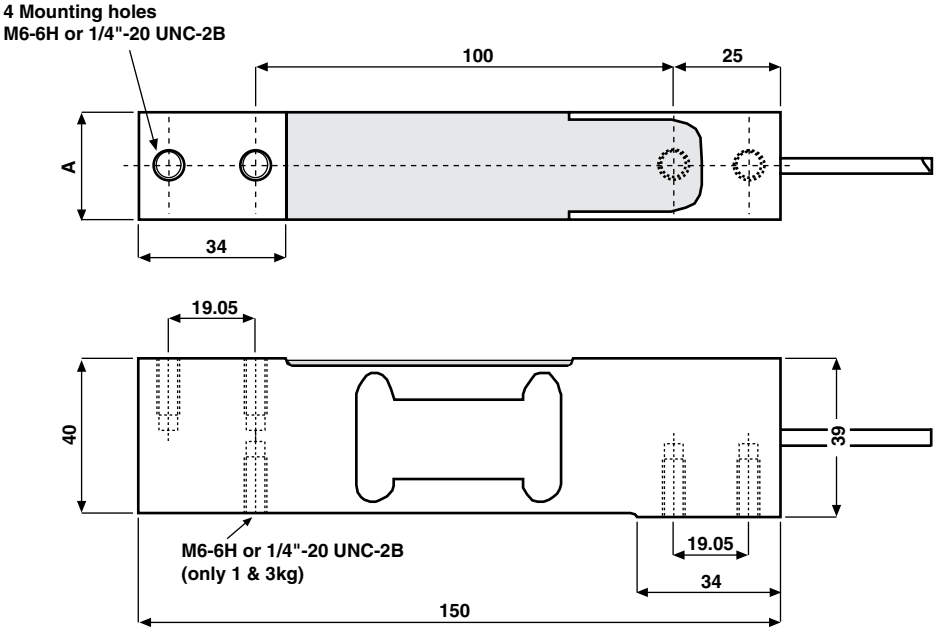
Capacities of 5 kg and above are supplied as standard in anodized aluminum. This high accuracy load cell is approved to NTEP and other stringent approval standards, including OIML R60.

A humidity resistant protective coating assures long-term stability over the entire compensated temperature range.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance due to temperature change and/or cable extenstion, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters

Capacity, kg	A
1–30	20
50–200	25.4



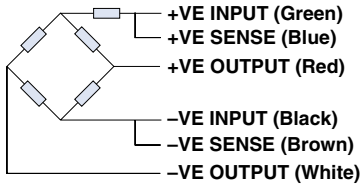
Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
Document No.: 12010
Revision: 23-Feb-2018

Low Profile Aluminum Load Cell

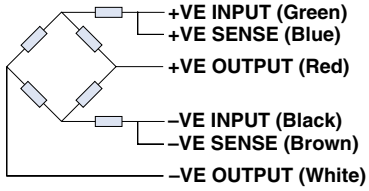
SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Rated capacity—R.C. (E_{max})	1[1], 3, 5, 7, 10, 15, 20, 30, 50, 75, 100, 150[1], 200[1]				kg
NTEP/OIML accuracy class	NTEP	Non-Approved	C3[2]	C6[3]	
Maximum no. of intervals (n)	5000 single	1000	3000	6000[4]	
Y = E_{max}/V_{min}	10000	1400	6000	10000	Maximum available 20000
Rated output—R.O.	2.0				mV/V
Rated output tolerance	0.2				±mV/V
Zero balance	0.2				±mV/V
Zero return, 30 min.	0.0100	0.0500	0.0170	0.0083	±% of applied load
Total error (per OIML R60)	0.0200	0.0300	0.0200	0.0100	±% of rated output
Temperature effect on zero	0.0014	0.0100	0.0023	0.0014	±% of rated output/°C
Temperature effect on output	0.0010	0.0030	0.0010	0.00058	±% of applied load/°C
Eccentric loading error	0.0042	0.0074	0.0049	0.0024	±% of rated load/cm
Temp. range, compensated	–10 to +40				°C
Temp. range, safe	–30 to +70				°C
Maximum safe central overload	150				% of R.C.
Ultimate central overload	300				% of R.C.
Excitation, recommended	10				VDC or VAC RMS
Excitation, maximum	15				VDC or VAC RMS
Input impedance	415±20				Ω
Output impedance	350±3				Ω
Insulation resistance	>2000				MΩ
Cable length	1[5]				m
Cable type	6 wire, PVC, single floating screen				Standard
Construction	Plated (anodize) aluminum				
Environmental protection	IP66				
Platform size (max)	400 x 400				mm
Recommended torque	Up to 30 kg: 7.0 35 kg and above: 10.0				N*m

[1] 1 kg and 200 kg not approved by OIML; 150 and 200 kg are not approved by NTEP.
[2] 50% utilization.
[3] 60% utilization.
[4] 6000 divisions from 20 kg to 100 kg.
[5] Options: 4-wire cable; different cable lengths; side cable entry.
All specifications subject to change without notice.

WIRING SCHEMATIC DIAGRAM
(Unbalanced bridge configuration)



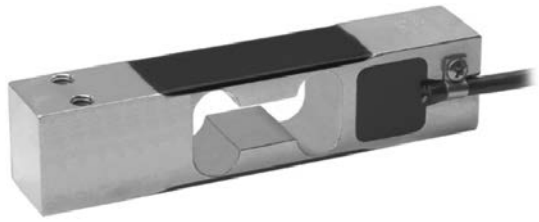
WIRING SCHEMATIC DIAGRAM
(Balanced bridge configuration)



Stainless Steel Single-Point Load Cell

FEATURES

- Capacities 7–100 kg
- Stainless steel construction
- Single-point 400 × 400 mm platform
- OIML R60 and NTEP approved
- IP66 protection
- Available with metric and UNC threads
- **Optional**
  - ATEX, FM and IECEx approvals available



APPLICATIONS

- Demanding environment small platforms
- Demanding environment check weighing

DESCRIPTION

The Model 1130 is a low profile stainless steel single-point load cell ideally designed for direct mounting in bench and platform scales, packaging and process weighing equipment, and is built to perform in demanding environments.

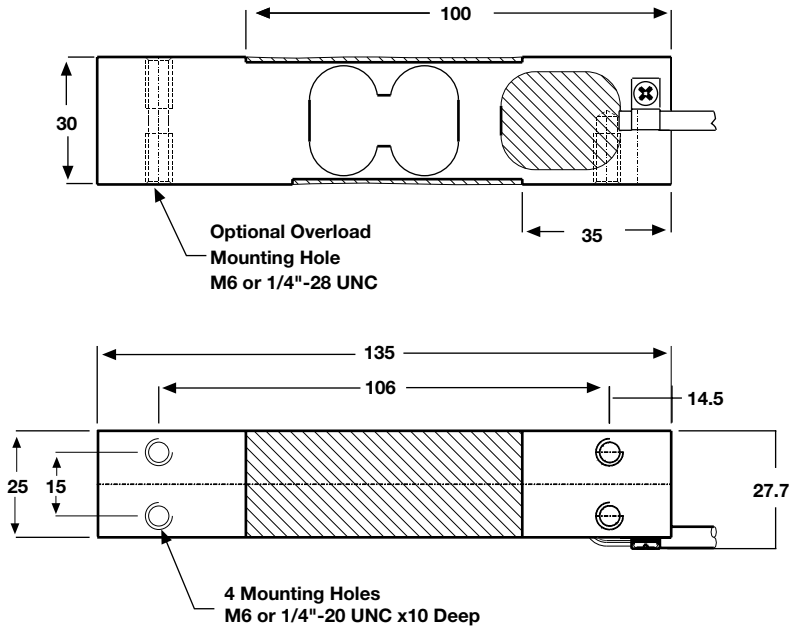
The small physical size, combined with high accuracy and low cost, makes this load cell ideally suited for low profile

bench and counting scales. A special humidity resistant protective coating assures long-term stability over the entire compensated temperature range.

Constructed in stainless steel, this high accuracy load cell is approved to stringent approval standards, e.g., OIML and NTEP.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance due to temperature change and/or cable extension, is acheived by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters



Stainless Steel Single-Point Load Cell

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated capacity—R.C. (E_{max})	7, 10, 15, 20, 30, 50, 75, 100			kg
NTEP/OIML accuracy class	NTEP[1]	Non-Approved	C3[2]	
Maximum no. of intervals (n)	4000 single	1000	3000[3]	
Y = E_{max}/V_{min}	15000	2000	15000	
Rated output—R.O.	2.0			mV/V
Rated output tolerance	0.2			±mV/V
Zero balance	0.2			±mV/V
Zero return, 30 min.	0.0250	0.0300	0.0170	±% of applied load
Total error (per OIML R60)	0.0015	0.0500	0.0200	±% of rated output
Temperature effect on zero	0.0030	0.0100	0.0023	±% of rated output/°C
Temperature effect on output	0.0008	0.0030	0.0010	±% of applied load/°C
Eccentric loading error	0.0035	0.0074	0.0049	±% of rated load/cm
Temp. range, compensated	–10 to +40			°C
Temp. range, safe	–20 to +70			°C
Maximum safe central overload	150			% of R.C.
Ultimate central overload	300			% of R.C.
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	15			VDC or VAC RMS
Input impedance	385±15			Ω
Output impedance	350±3			Ω
Insulation resistance	>2000			MΩ
Cable length	1.5			m
Cable type	6-wire, PVC, single floating screen			Standard
Construction	Stainless steel			
Environmental protection	IP66			
Platform size (max.)	400 × 400			mm
Recommended torque	13.0			N*m

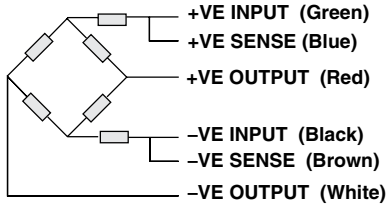
[1] Capacities 75 and 100kg are not NTEP approved

[2] 50% utilization

[3] Capacities 7–75 kg

All specifications are subject to change without notice.

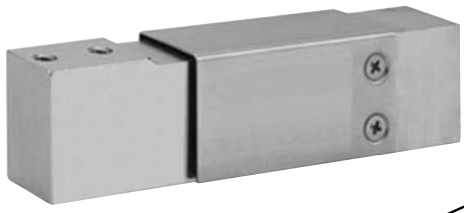
WIRING SCHEMATIC DIAGRAM
(Balanced Temperature Compensation)



Stainless Steel Single-Point Load Cell

FEATURES

- Capacities 15–150 kg
- Stainless steel construction
- Single-point 400 x 400 mm platform
- IP65 protection
- Available with UNC threads only
- **Optional**
  - FM approval available



FM C US APPROVED

APPLICATIONS

- Demanding environment small platforms
- Demanding environment check weighing

DESCRIPTION

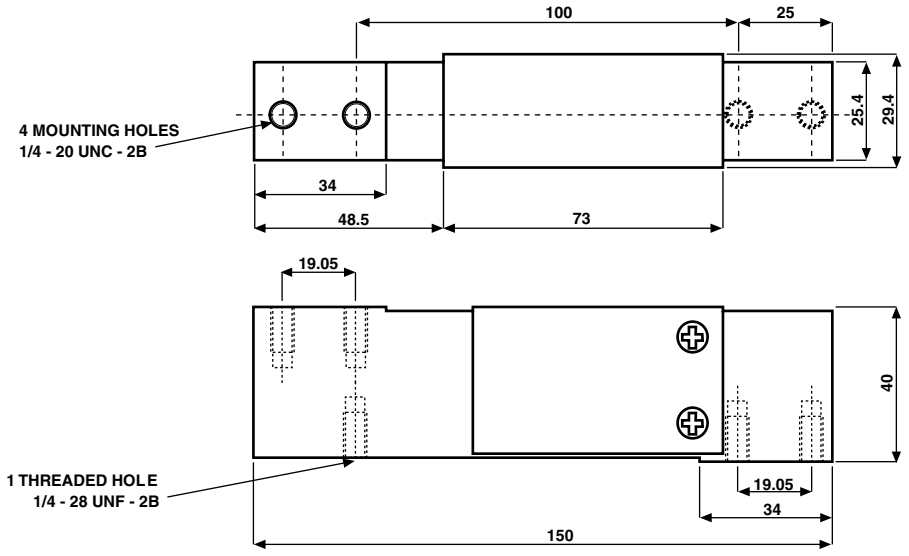
The Model 1140 is a low profile single-point load cell designed for direct mounting of low cost weighing platforms.

The small physical size, combined with high accuracy and low cost, makes this load cell ideally suited for low profile bench and counting scales. For wash-down protection an optional IP65 encapsulation protection is available.

Constructed from stainless steel, this high accuracy load cell is approved to Factory Mutual and other stringent approval standards.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance due to temperature change and/or cable extension, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters



Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com

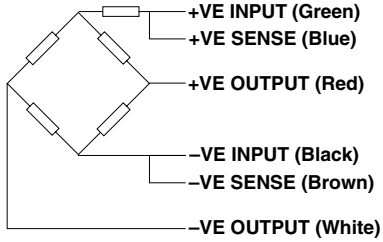
Stainless Steel Single-Point Load Cell

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Rated capacity—R.C. (E_{max})	15, 20, 30, 50, 75, 100, 150	kg
NTEP/OIML accuracy class	Non-Approved	
Maximum no. of intervals (n)	3000	
Rated output—R.O.	2.0	mV/V
Rated output tolerance	0.2	±mV/V
Zero balance	0.2	±mV/V
Zero return, 30 min.	0.0170	±% of applied load
Total error (per OIML R60)	0.0200	±% of rated output
Temperature effect on zero	0.004	±% of rated output/°C
Temperature effect on output	0.0010	±% of load/°C
Eccentric loading error	0.0074	±% of rated load/cm
Temp. range, compensated	–10 to +40	°C
Temp. range, safe	–20 to +70	°C
Maximum safe central overload	150	% of R.C.
Ultimate central overload	300	% of R.C.
Excitation, recommended	10	VDC or VAC RMS
Excitation, maximum	15	VDC or VAC RMS
Input impedance	385±15	Ω
Output impedance	350±3	Ω
Insulation resistance	>2000	MΩ
Cable length	1.0	m
Cable type	6-wire, PVC, single floating screen	Standard
Construction	Stainless steel	
Environmental protection	IP65*	
Platform size (max)	400 x 400	mm
Recommended torque	Up to 30 kg: 7.0 50 kg and above: 10.0	N*m

* IP67 available on request

All specifications are subject to change without notice.

WIRING SCHEMATIC DIAGRAM



Aluminum Medium Capacity Single-Point Load Cell

FEATURES

- Capacities 50–250 kg
- Aluminum construction
- Single-point 400 × 400 mm platform
- OIML R60 and NTEP approved
- IP66 protection
- Available with metric and UNC threads
- **Optional**
  - ATEX, FM and IECEx approvals available



APPLICATIONS

- Small platforms
- Hanging scales
- Personal scales

DESCRIPTION

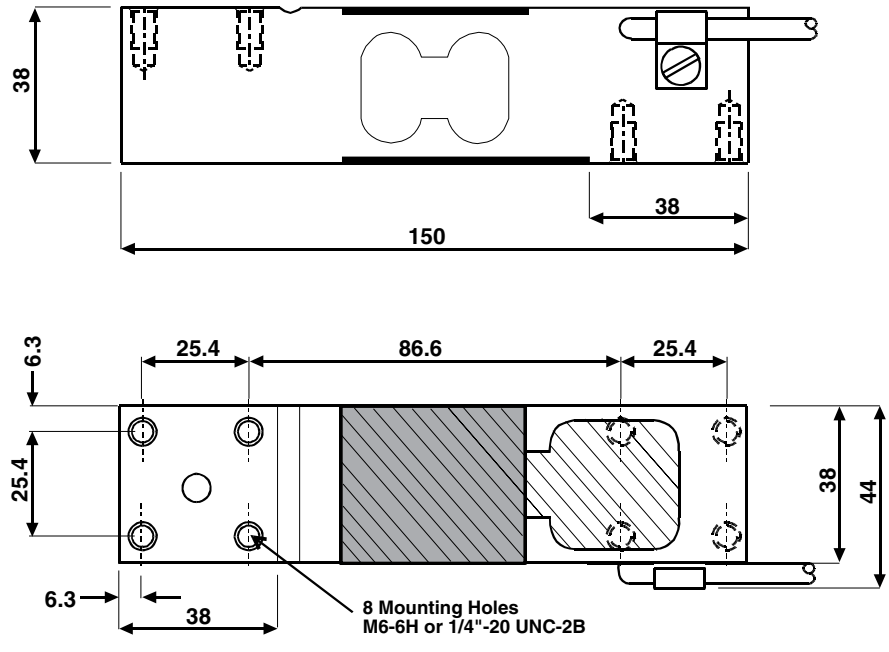
The Model 1242 is a high accuracy, low profile, low cost, two-beam, single-point load cell ideally suited for industrial applications where space is limited. Typical applications include platforms, hanging scales and personal weighers.

This high accuracy load cell is OIML R60 class C6 approved. For hazardous environments this load cell has ATEX approval, as well as Factory Mutual approval.

A special humidity resistant protective coating assures long-term stability over the entire compensated temperature range.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance due to temperature change and/or cable extension can be achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters



Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
Document No.: 12016
Revision: 23-Feb-2018

Aluminum Medium Capacity Single-Point Load Cell

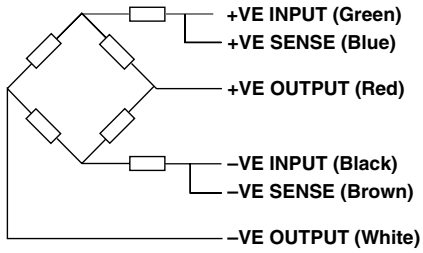
SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Rated capacity—R.C. (E_{max})	50, 100, 150, 200, 250				kg
NTEP/OIML accuracy class	NTEP	Non-Approved	C3*	C6**	
Maximum no. of intervals (n)	5000 single	1000	3000	6000	
$Y = E_{max}/V_{min}$	10000	1400	6000	10000	Max. available
Rated output—R.O.	2.0				mV/V
Rated output tolerance	0.2				±mV/V
Zero balance	0.2				±mV/V
Zero return, 30 min.	0.0330	0.0300	0.0170	0.0083	±% of applied load
Total error	0.0200	0.0500	0.0200	0.0100	±% of rated output
Temperature effect on zero	0.0023	0.0100	0.0023	0.0014	±% of rated output/°C
Temperature effect on output	0.0010	0.0030	0.0010	0.00058	±% of applied load/°C
Eccentric loading error	0.0049	0.0085	0.0049	0.0024	±% of rated load/cm
Temperature range, compensated	–10 to +40				°C
Temperature range, safe	–20 to +70				°C
Maximum safe central overload	150				% of R.C.
Ultimate central overload	300				% of R.C.
Excitation, recommended	10				VDC or VAC RMS
Excitation, maximum	15				VDC or VAC RMS
Input impedance	415±15				Ω
Output impedance	351±5				Ω
Insulation resistance	>2000				MΩ
Cable length	1.5				m
Cable type	6-wire, PVC, single floating screen				Standard
Construction	Plated (anodize) aluminum				
Environmental protection	IP66				
Platform size (max.)	400 × 400				mm
Recommended torque	10.0				N*m

* 50% utilization

** 60% utilization

All specifications subject to change without notice.

WIRING SCHEMATIC DIAGRAM
(Balanced temperature compensation)



Aluminum High Capacity Single-Point Load Cell

FEATURES

- Capacities 50–1500 kg
- Aluminum construction
- Single-point 800 x 800 mm platform
- OIML R60 and NTEP approved
- IP65 protection
- Available with metric and UNC threads
- **Optional**
  - EEx ia IIC T4 hazardous area approval
  - FM and IECEx approvals available
  - IP67 option available



APPLICATIONS

- Large platform scales
- Hanging scales
- Check weighing

DESCRIPTION

The Model 1250 is a single-point load cell designed for direct mounting of large platforms.

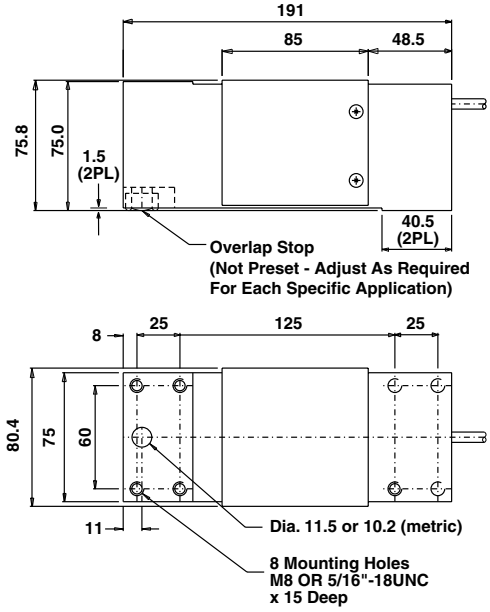
This product is a cost-effective load cell for use on counting, weighing, bench or floor scale products.

This high accuracy load cell is approved to OIML R60, NTEP and other stringent approval standards. Suitable for use in hazardous environments, this load cell can be provided with European approval to EEx ia IIC T4 and are FM approved to class I, II, III, Division I.

A special humidity-resistant protective coating assures long-term stability over the entire compensated temperature range.

The two additional sense wires, sample the bridge supply voltage at the load cell. Complete compensation of change in the lead wires resistance, due to temperature change and/or cable extension, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters



Aluminum High Capacity Single-Point Load Cell

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated capacity—R.C. (E_{max})	50, 75, 100 , 150, 200, 250, 300, 500, 635, 750, 1000, 1500			kg
NTEP/OIML accuracy class	NTEP	Non-Approved	C3*	
Maximum no. of intervals (n)	5000 single	1000	3000	
Y = E_{max}/V_{min}	10000	1400	10000	Max. available
Rated output—R.O.	2.0			mV/V
Rated output tolerance	0.2			± mV/V
Zero balance	0.2			± mV/V
Zero return, 30 min.	0.0250	0.0300	0.0170	±% of applied load
Total error (per OIML R60)	0.0200	0.0500	0.0200	±% of rated output
Temperature effect on zero	0.0023	0.0100	0.0023	±% of rated output/°C
Temperature effect on output	0.0010	0.0030	0.0010	±% of applied load/°C
Eccentric loading error	0.0033	0.0050	0.0033	±% of rated load/cm
Temperature range, compensated	–10 to +40			°C
Temperature range, safe	–20 to +70			°C
Maximum safe central overload	150			% of R.C.
Ultimate central overload	300			% of R.C.
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	15			VDC or VAC RMS
Input impedance	415±15			Ω
Output impedance	350±3			Ω
Insulation resistance	>5000			MΩ
Cable length	3.0			m
Cable type	6-wire, braided, Polyurethane, floating screen			Standard
Construction	Plated (anodized) aluminum			
Environmental protection	IP65**			
Platform size (max)	800 x 800***			mm
Recommended torque	Up to 1000 kg: 16.0 1500 kg: 32.0			N*m

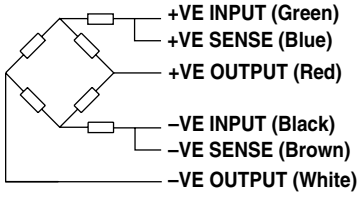
* 50% utilization
3500 divisions also available

** Available also in IP67

*** 635–1500 kg capacities: platform size 600 x 600 mm

All specifications subject to change without notice.

WIRING SCHEMATIC DIAGRAM
(Balanced temperature compensation)



Aluminum Single-Point Load Cell

FEATURES

- Capacity range: 75–635 kg
- Aluminum construction
- Single-point 600 × 600 mm platform
- OIML R60
- IP65 protection
- Available with metric and UNC threads
- **Optional**
  - ATEX, FM and IECEx approvals available



APPLICATIONS

- Large platform scales
- Hanging scales
- Check weighing

DESCRIPTION

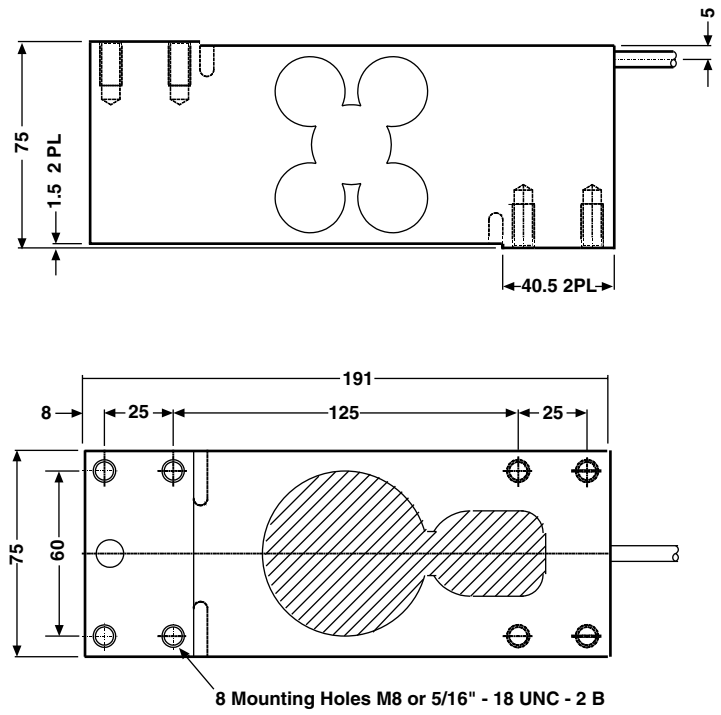
The Model 1252 is a high capacity single-point load cell fully interchangeable with the Model 1250, designed for direct mounting of the weighing platform or side cell applications.

Resulting from simpler scale construction, the Model 1252 is a cost-effective load cell for use in counting, weighing, bench or floor scale productions.

A special humidity-resistant protective coating assures long-term stability over the entire compensated temperature range. This load cell has Factory Mutual approval and IP66 protection.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of change in the lead wires resistance, due to temperature change and/or cable extension, is achieved by feeding this voltage into the appropriate electronics

OUTLINE DIMENSIONS in millimeters



Aluminum Single-Point Load Cell

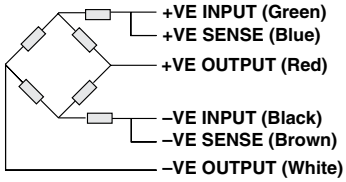
SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Rated capacity—R.C. (E_{max})	75, 100,150, 200, 300, 500, 635**		kg
NTEP/OIML accuracy class	Non-Approved	C3*	
Maximum no. of intervals (n)	1000	3000	
$Y = E_{max}/V_{min}$	2000	10000	Max. available
Rated output—R.O.	2.0		mV/V
Rated output tolerance	0.2		±mV/V
Zero balance	0.2		±mV/V
Zero return, 30 min.	0.05	0.0170	±% of applied load
Total error (per OIML R60)	0.0500	0.0200	±% of rated output
Temperature effect on zero	0.0100	0.004	±% of rated output/°C
Temperature effect on output	0.0030	0.0010	±% of applied load/°C
Eccentric loading error	0.0050	0.0033	±% of rated load/cm
Temperature range, compensated	–10 to +40		°C
Temperature range, safe	–30 to +70		°C
Maximum safe central overload	150		% of R.C.
Ultimate central overload	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	415±15		Ω
Output impedance	350±3		Ω
Insulation resistance	>2000		MΩ
Cable length	3.0		m
Cable type	6-wire, braided, Polyurethane, floating screen		Standard
Construction	Plated (anodized) aluminum		
Environmental protection	IP65		
Platform size (max.)	600 x 600		mm
Recommended torque	16.0		N*m

* 50% utilization

** Capacities 500 and 635 are not approved

All specifications subject to change without notice.

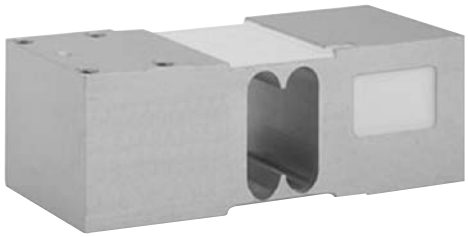
WIRING SCHEMATIC DIAGRAM
(Balanced bridge temperature compensation)



Aluminum High Capacity Single-Point Load Cell

FEATURES

- Capacities 50–635 kg
- Aluminum construction
- Single-point 600 × 600 mm platform
- OIML R60 and NTEP approved
- IP66 protection
- Available with metric and UNC threads
- **Optional**
  - ATEX, FM and IECEx approvals available



APPLICATIONS

- Large platform scales
- Hanging scales
- Check weighing

DESCRIPTION

The Model 1260 is a high performance, high capacity single-point load cell designed for direct mounting of large platforms.

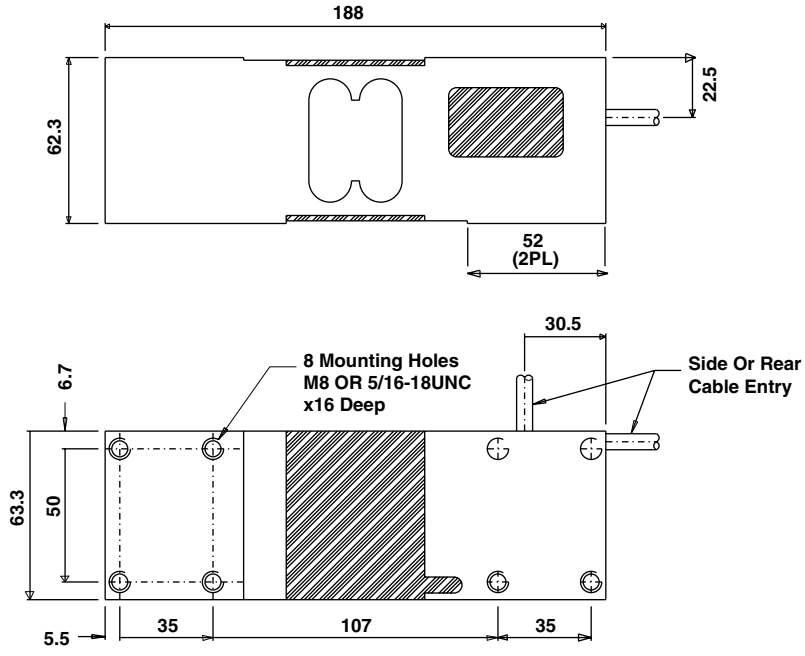
Its rugged construction offers high resistance to side forces, making it suitable for a wide range of weighing applications, including bench scales and check weighing.

A special humidity resistant protective coating assures long-term stability over the entire compensated temperature range.

For hazardous environments this load cell has an ATEX and FM approval.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance due to temperature change and/or cable extension, is achieved by feeding this voltage into appropriate electronics.

OUTLINE DIMENSIONS in millimeters



Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
Document No.: 12019
Revision: 01-Oct-2018

Aluminum High Capacity Single-Point Load Cell

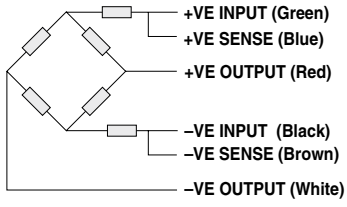
SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated capacity—R.C. (E_{max})	50, 75, 100, 150, 200, 250, 300, 500, 635, 1000			kg
NTEP/OIML accuracy class	NTEP[1]	Non-Approved	C3[2]	
Maximum no. of intervals (n)	5000 single	1000	3000	
Y = E_{max}/V_{min}	1000	3333	15000	Maximum available
Rated output—R.O.	2.0			mV/V
Rated output tolerance	0.2			±mV/V
Zero balance	0.2			±mV/V
Zero return, 30 min.	0.0330	0.0300	0.0170	±% of applied load
Total error	0.0350	0.0500	0.0200	±% of rated output
Temperature effect on zero	0.0028	0.0100	0.0023	±% of rated output/°C
Temperature effect on output	0.0011	0.0030	0.0010	±% of applied load/°C
Eccentric loading error	0.0020	0.0050	0.0033	±% of rated load/cm
Temperature range, compensated	–10 to +40			°C
Temperature range, safe	–20 to +70			°C
Maximum safe central overload	150			% of R.C.
Ultimate central overload	300			% of R.C.
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	15			VDC or VAC RMS
Input impedance	415±15			Ω
Output impedance	350±3			Ω
Insulation resistance	>2000			MΩ
Cable length	3			m
Cable type	6-wire, braided, polyurethane, dual floating screen			Standard
Construction	Plated (anodized) aluminum			
Environmental protection	IP66			
Platform size (max.)	600 × 600			mm
Recommended torque	16.0			N*m

[1] Capacity 635 kg is not NTEP approved.

[2] 50% utilization

All specifications are subject to change without notice.

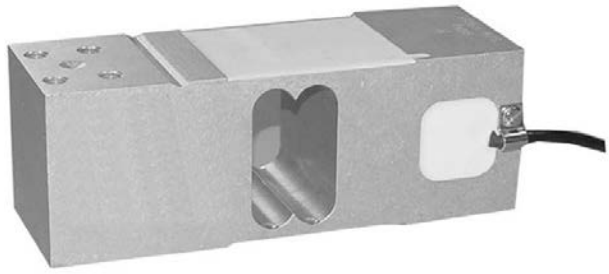
Wiring Schematic Diagram
(Balanced temperature compensation)



Aluminum High Capacity Single-Point Load Cell

FEATURES

- Capacities 50–635 kg
- Aluminum construction
- Single-point 600 × 600 mm platform
- OIML R60 approved
- IP66 protection
- Available with metric threads
- **Optional**
  - ATEX and IECEx approvals available



APPLICATIONS

- Large platform scales
- Hanging scales
- Check weighing

DESCRIPTION

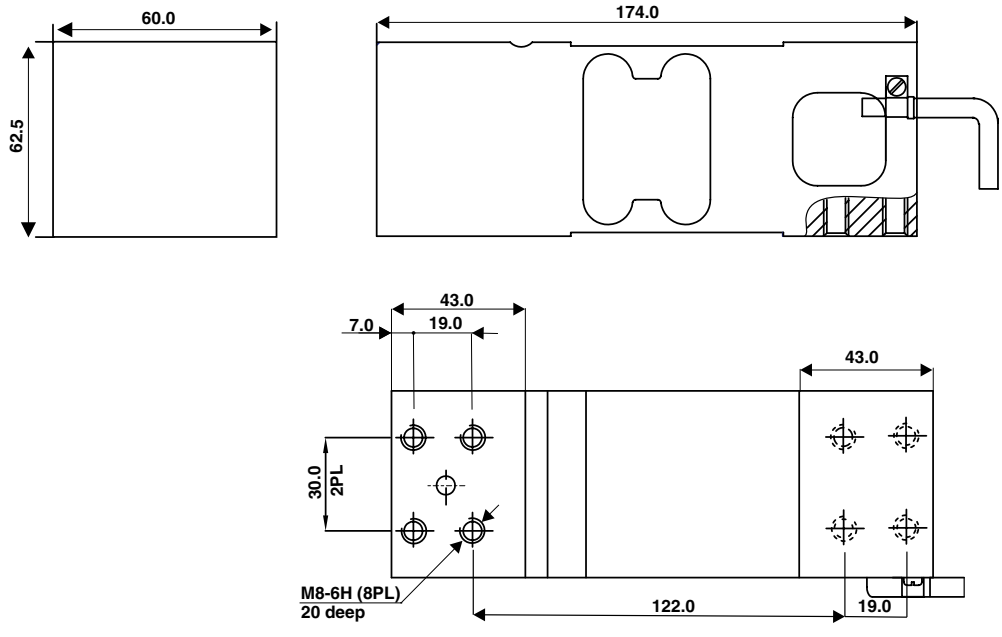
The Model 1263 is a high performance, high capacity single-point load cell designed for direct mounting of large weighing platforms.

The rugged construction offers high resistance to side forces, making it suitable for a wide range of weighing applications, including bench scales, check weighing and process weighing.

A special humidity resistant protective coating assures long-term stability over the entire compensated temperature range.

The Model 1263 provides scale manufacturers with a high accuracy, low cost sensor to meet today's needs.

OUTLINE DIMENSIONS in millimeters



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vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
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Revision: 23-Feb-2018

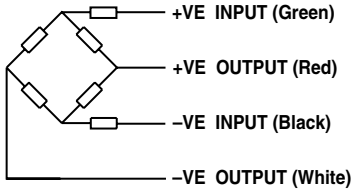
Aluminum High Capacity Single-Point Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Rated capacity—R.C. (E_{max})	50, 100, 150, 200, 250, 300, 500, 635		kg
NTEP/OIML accuracy class	Non-Approved	C3*	
Maximum no. of intervals (n)	1000	3000	
$Y = E_{max}/V_{min}$	2000	15000	Maximum available
Rated output—R.O.	2.0		mV/V
Rated output tolerance	0.2		±mV/V
Zero balance	0.2		±mV/V
Zero return, 30 min.	0.050	0.0170	±% of applied load
Total error	0.0300	0.0200	±% of rated output
Temperature effect on zero	0.0100	0.0023	±% of rated output/°C
Temperature effect on output	0.0030	0.0010	±% of applied load/°C
Eccentric loading error	0.0050	0.0033	±% of rated load/cm
Temperature range, compensated	–10 to +40		°C
Temperature range, safe	–20 to +70		°C
Maximum safe central overload	150		% of R.C.
Ultimate central overload	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	415±15		Ω
Output impedance	350±3		Ω
Insulation resistance	>2000		MΩ
Cable length	1.5		m
Cable type	4-wire, PVC, single floating screen		Standard
Construction	aluminum		
Environmental protection	IP66		
Platform size (max.)	600 × 600 mm		mm
Recommended torque	Up to 300 kg: 25.0 Above 300 kg: 30.0		N*m

* 50% utilization

All specifications subject to change without notice.

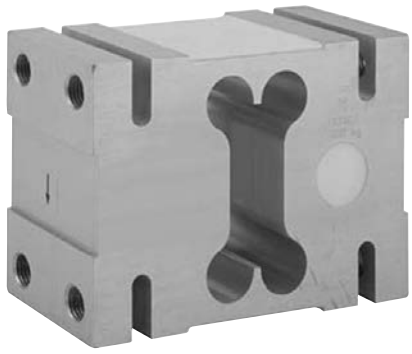
WIRING SCHEMATIC DIAGRAM



High Capacity Single-Point Load Cell

FEATURES

- Capacities 1000–2000 kg
- Aluminum construction
- Single-point 1200 × 1200 mm platform
- OIML R60 and NTEP approved
- IP66 protection
- Available with metric threads
- **Optional**
  - ATEX, FM and IECEx approvals available



APPLICATIONS

- Very large platform scales
- Hanging scales
- Check weighing

DESCRIPTION

The Model 1320 is a high capacity single-point load cell, designed for direct mounting of low profile, high capacity weighing platforms up to 1200 × 1200 mm.

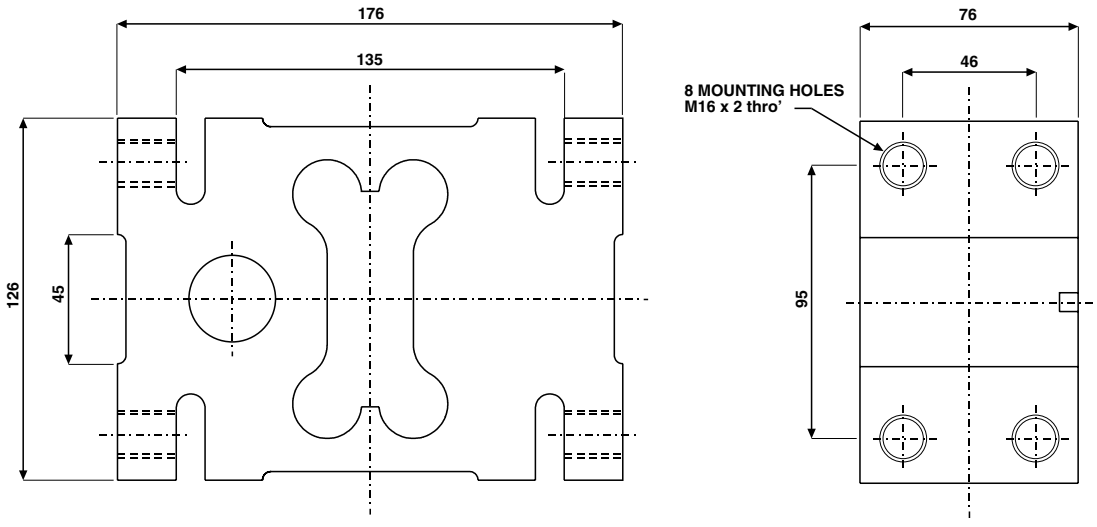
Its large platform size simplifies the construction of floor scales, weigh bars, hanging scales and other types of weighing machines with a capacity up to 2000 kg.

All load cells are individually adjusted to eliminate corner errors, tested and calibrated to meet OIML specifications.

A special humidity resistant coating assures long-term reliability.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance, due to temperature change and/or cable extension, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters



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Revision: 23-Feb-2018

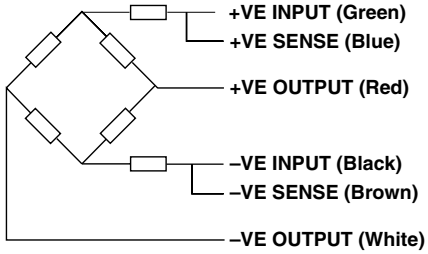
High Capacity Single-Point Load Cell

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated capacity—R.C. (E_{max})	1000, 1500, 2000			kg
NTEP/OIML accuracy class	NTEP	Non-Approved	C3	
Maximum no. of intervals (n)	3000 single	1000	3000*	
$Y = E_{max}/V_{min}$	1000	3333	10000	Maximum available
Rated output—R.O.	2.0			mV/V
Rated output tolerance	0.2			±mV/V
Zero balance	0.2			±mV/V
Zero return, 30 min.	0.0330	0.0300	0.0170	±% of applied load
Total error	0.0200	0.0500	0.0200	±% of rated output
Temperature effect on zero	0.0040	0.0100	0.0023	±% of rated output/°C
Temperature effect on output	0.0010	0.0030	0.0010	±% of applied load/°C
Eccentric loading error	0.0033	0.0025	0.0017	±% of rated load/cm
Temperature range, compensated	–10 to +40			°C
Temperature range, safe	–30 to +70			°C
Maximum safe central overload	150			% of R.C.
Ultimate central overload	300			% of R.C.
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	15			VDC or VAC RMS
Input impedance	415±15			Ω
Output impedance	350±3			Ω
Insulation resistance	>2000			MΩ
Cable length	5			m
Cable type	6 wire, braided, polyurethane, dual floating screen			Standard
Construction	Plated (anodized) aluminum			
Environmental protection	IP66			
Recommended torque	165.0			N*m

* 50% utilization

All specifications subject to change without notice.

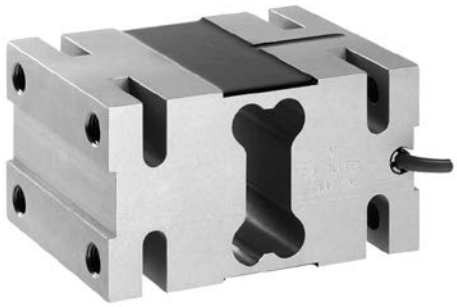
WIRING SCHEMATIC DIAGRAM



Aluminum Single-Point Load Cell

FEATURES

- Capacities 500–1000 kg
- Aluminum construction
- Single-point 800 x 800 mm platform
- Certified to OIML R60 3000d
- IP66 protection
- Available with metric threads



APPLICATIONS

- Large platform scales
- Hanging scales
- Check weighing

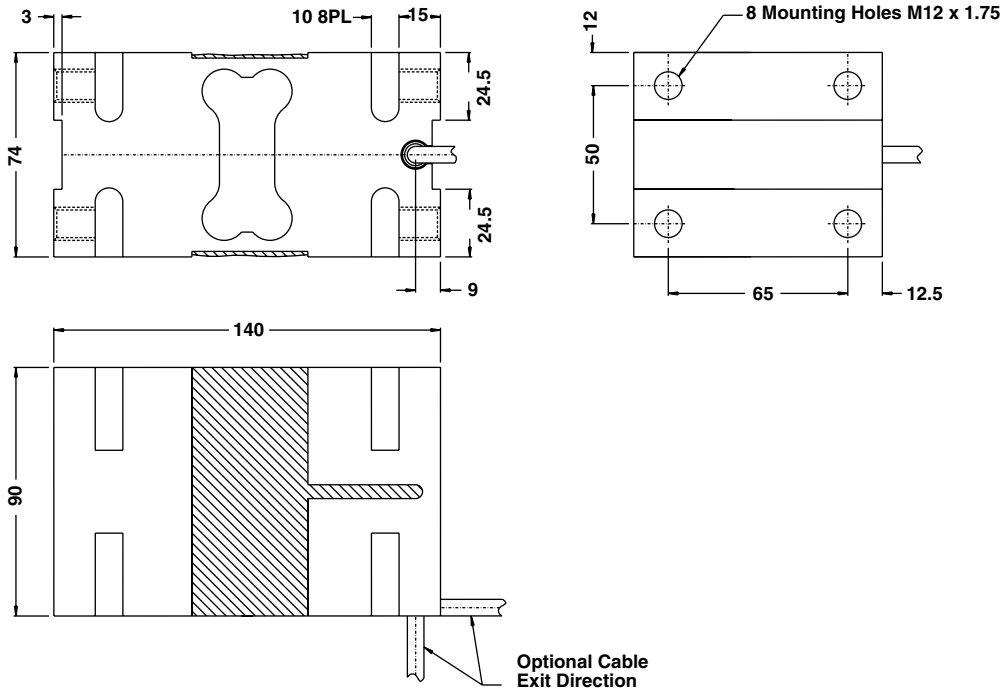
DESCRIPTION

The Model 1330 is a high capacity single-point load cell, designed for direct mounting of low profile high capacity weighing platforms up to 800 x 800 mm.

The large platform size simplifies the construction of floor scales, baggage scales, hanging scales and other types of weighing machines.

A special humidity resistant protective coating assures long-term reliability. The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance, due to temperature change and/or cable extension, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters



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Revision: 23-Feb-2018

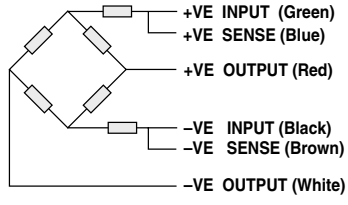
Aluminum Single-Point Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Rated capacity—R.C. (E_{max})	500, 750, 1000		kg
NTEP/OIML accuracy class	Non-Approved	C3*	
Maximum no. of intervals (n)	1000	3000	
Y = E_{max}/V_{min}	2000	15000	Maximum available
Rated output—R.O.	2.0		mV/V
Rated output tolerance	0.2		±mV/V
Zero balance	0.2		±mV/V
Zero return, 30 min.	0.050	0.0170	±% of applied load
Total error	0.0300	0.0200	±% of rated output
Temperature effect on zero	0.0100	0.0023	±% of rated output/°C
Temperature effect on output	0.0030	0.0010	±% of applied load/°C
Eccentric loading error	0.0037	0.0025	±% of rated load/cm
Temperature range, compensated	–10 to +40		°C
Temperature range, safe	–20 to +70		°C
Maximum safe central overload	150		% of R.C.
Ultimate central overload	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	415±15		Ω
Output impedance	350±3		Ω
Insulation resistance	>2000		MΩ
Cable length	3		m
Cable type	6-wire, braided, polyurethane, floating screen		Standard
Construction	Plated (anodized) aluminum		
Environmental protection	IP66		
Platform size (max)	800 x 800		mm
Recommended torque	130		N*m

* 50% utilization

All specifications subject to change without notice.

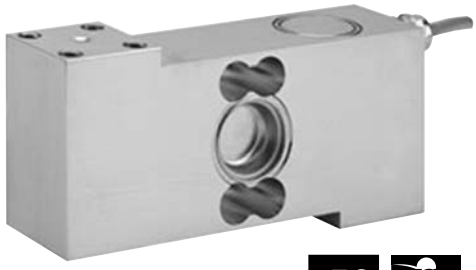
WIRING SCHEMATIC DIAGRAM
(Balanced temperature compensation)



Hermetically Sealed Single-Point Load Cell

FEATURES

- Capacity range: 100–500 kg
- Stainless steel construction
- Single-point 600 x 600 mm platform
- OIML R60 and NTEP approved
- IP68 protection
- **Optional**
  - EEx ia IIC T6 hazardous area approval
  - FM and IECEx approvals available
  - Platform size 600 x 800 mm available



APPLICATIONS

- Food industry platforms
- Marine and hybrid scales
- Process weighing hoppers
- Demanding environments

DESCRIPTION

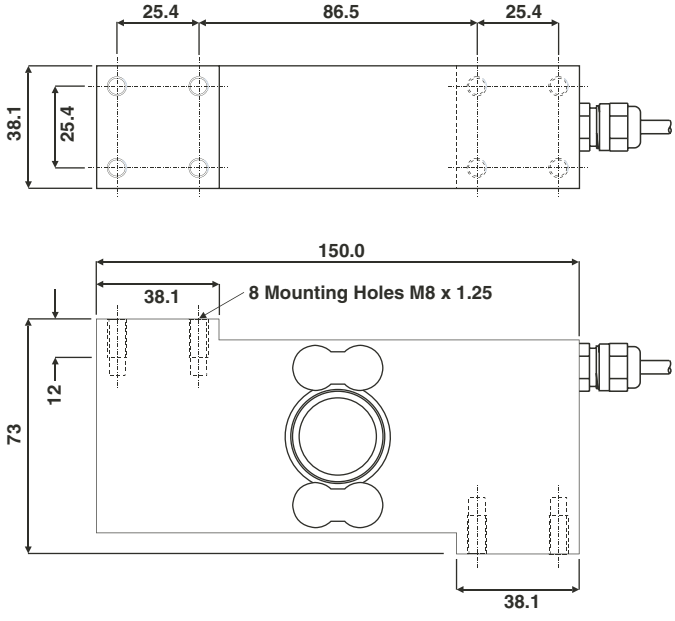
The Model 1510 is a high accuracy single-point load cell ideally suited to industrial applications which undergo regular washdown, typically platforms, wall scales and other process weighing applications in the food industry.

Hermetically sealed against moisture, the all welded construction of the 1510 in combination with a polyurethane dual shielded cable, enables continuous operation in demanding environments while maintaining a high operating specification.

The two additional sense wires feed back the voltage reaching the load cell.

Complete compensation of changes in lead resistance, due to temperature change and/or cable extension, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters



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vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com

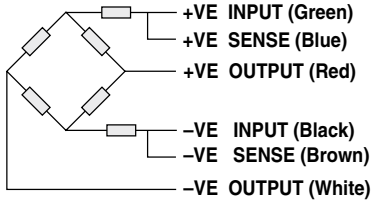
Hermetically Sealed Single-Point Load Cell

SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Rated capacity—R.C. (E_{max})	100, 250, 500				kg
NTEP/OIML accuracy class	NTEP	Non-approved	C3*	C4*	
Maximum no. of intervals (n)	5000 single	1000	3000	4000	
Y = E_{max}/V_{min}	11425	1400	10000	12000	Maximum available 12500
Rated output—R.O.	2.0				mV/V
Rated output tolerance	0.2				±mV/V
Zero balance	0.2				±mV/V
Zero return, 30 min.	0.0170	0.0060	0.0170	0.0130	±% of applied load
Total Error	0.0200	0.0300	0.0200	0.0150	±% of rated output
Temperature effect on zero	0.0023	0.010	0.0014	0.0011	±% of rated output/°C
Temperature effect on output	0.001	0.0040	0.0010	0.0008	±% of applied load/°C
Eccentric loading error	0.0016	0.0035	0.0011	0.0008	±% of rated load/cm
Temperature range, compensated	–10 to +40				°C
Temperature range, safe	–20 to +70				°C
Maximum safe central overload	150				% of R.C.
Ultimate central overload	300				% of R.C.
Excitation, recommended	10				VDC or VAC RMS
Excitation, maximum	15				VDC or VAC RMS
Input impedance	380±10				Ω
Output impedance	350±2				Ω
Insulation resistance	>1000				MΩ
Cable length	3				m
Cable type	6-wire, braided, polyurethane, dual floating screen				Standard
Construction	Stainless steel				
Environmental protection	IP68				
Recommended torque	22.0				N*m

* 35% utilization

All specifications subject to change without notice.

WIRING SCHEMATIC DIAGRAM



Single-Point Stainless Steel Load Cell

FEATURES

- Capacity range: 10–150 kg
- Stainless steel construction
- Single-point 400 × 400 mm platform
- Sealed to IP66
- Compact size: only 40 mm high
- OIML approved to C3 (20–100 kg) and NTEP Class III/5000
- Choice of mounting threads: ¼-20 UNC or M6 × 12
- **Optional**
  - ATEX, FM and IECEx approvals available
  - Grounded version includes shield wire in load cell cable



APPLICATIONS

- Platform scales
- Bench scales
- Counting scales
- Grocery scales

DESCRIPTION

The Model 1142 is a stainless steel single-point load cell, suitable for direct mounting with platform, bench, counting, and a wide range of other scale applications. Small physical size, combined with high accuracy and low cost, makes the 1142 load cell the perfect choice for new or retrofit scale construction.

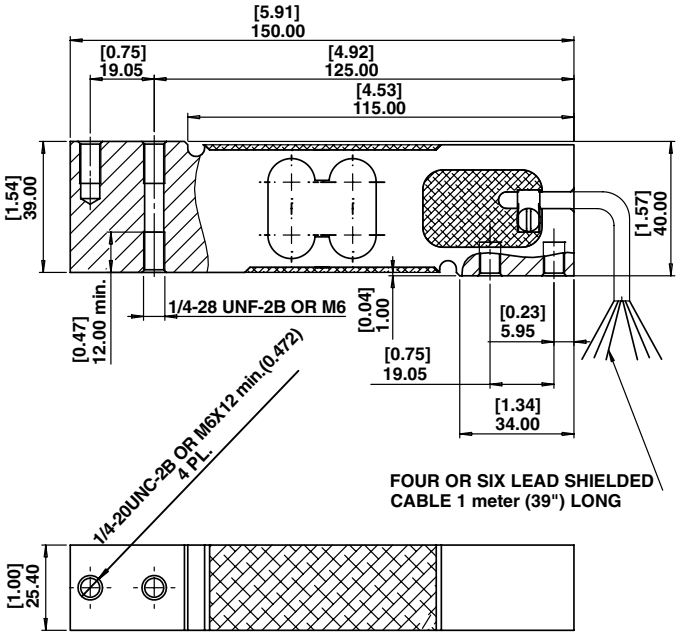
A humidity-resistant protective coating assures stable operation in damp environments over the entire compensated range and conforms to IP66 (IEC 60529).

Also available with ATEX approved version for hazardous areas.

The six-wire cable includes two sense wires that compensate for changes in lead resistance due to temperature changes and cable extension.

Model 1142 options offer a choice of bolt threads, ¼-20 UNC or M6 × 12, and a grounded version that includes a "shield" wire in the load cell cable.

OUTLINE DIMENSIONS in millimeters [inches]



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vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com

Document No.: 12064
Revision: 23-Feb-2018

Single-Point Stainless Steel Load Cell

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated capacity—R.C. (E_{max})	10, 15, 20, 30, 50, 75, 100, 150**, 200**			kg
OIML accuracy class	Non-Approved	C3*		
NTEP accuracy class			III/5000	
Maximum no. of intervals (n)	1000	3000	5000 single	
Y = E_{max}/V_{min}	4000	15000	10000	Maximum available
Rated output—R.O.	2.0			mV/V
Rated output tolerance	0.2			±mV/V
Zero balance	0.2			±mV/V
Zero return, 30 min.	0.0500	0.0167	0.0100	±% of applied load
Total error	0.0300	0.0200	0.0200	±% of rated output
Temperature effect on zero	0.0070	0.0023	0.0014	±% of rated output/°C
Temperature effect on output	0.0030	0.0010	0.0010	±% of applied load/°C
Eccentric loading error	0.0074	0.0049	0.0042	±% of rated load/cm
Temperature range, compensated	–10 to +40			°C
Temperature range, safe	–30 to +70			°C
Maximum safe central overload	150			% of R.C.
Ultimate central overload	300			% of R.C.
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	15			VDC or VAC RMS
Input impedance	415±15			Ω
Output impedance	350±3			Ω
Insulation resistance	>2000			MΩ
Cable length	1			m
Cable type	6-wire, PVC, single floating screen			Standard
Construction	Stainless steel			
Environmental protection	IP66			
Platform size (max.)	400 × 400			mm
Recommended torque	Up to 30 kg: 7.0 50 kg and up: 10.0			N*m

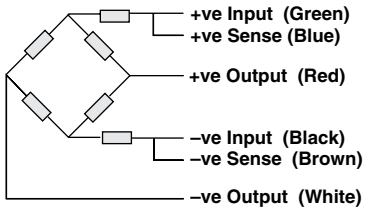
* 50% utilization

** 10, 15, 150, and 200 kg are not OIML approved

All specifications are subject to change without notice.

Wiring Schematic Diagram

(Balanced bridge temperature compensation)



Co-Planar Beam Load Cell

FEATURES

- Capacity range: 7.5–250 kg
- Only 2.5–8 mm high
- Very low profile
- Aluminum construction
- IP65 protection
- 1000Ω input impedance
- Provides freedom in rectangular scale size design
- Matched output and current calibration circuitry
- Eliminates need for spyder in typical bench top scales



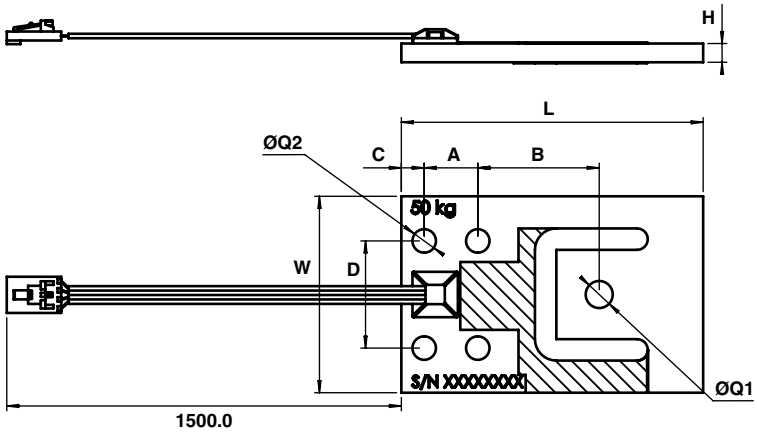
APPLICATIONS

- Personal scales
- Commonly used in low profile infant and adult medical scales
- Large and medium low profile platform scales
- Airport baggage scales
- Postal scales

DESCRIPTION

The Model 380 is a very low profile planar beam design, allowing direct mounting in low profile platform scales. The range of capacities and low profile make the Model 380 most suitable for use in a wide range of applications.

OUTLINE DIMENSIONS in millimeters



Type	L	A	B	C	D	W	H	Q1	Q2
PB-7.5 kg	70	14	28	4.9	27.8	39	2.5	5.1	5.1
PB-15 kg	70	14	28	4.9	27.8	39	4.1	6.2	5.1
PB-37.5 kg	76.2	15	29.3	6	30	44.5	4.8	6.2	6.6
PB-50 kg	84.5	15	34	6.4	30	55	5.3	7.6	6.6
PB-75 kg	84.5	15	34	6.4	30	55	6.4	7.6	6.6
PB-150 kg	107.5	22.8	45.9	7.8	44.5	70	8	5/16UNC	8.1
PB-250 kg	107.3	22.9	45.8	7.9	44.5	70	10.0	9.1	8.1

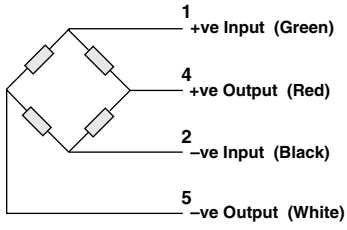
Co-Planar Beam Load Cell

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated capacity—R.C. (E_{max})	7.5, 37.5, 50, 75, 150, 250			kg
Accuracy class	E	G4	H5	
OIML Accuracy class	NA	C3	C4	
Maximum no. of intervals (n)	NA	3000	4000	
Y = E_{max}/V_{min}*	NA	7500*	7500*	
Rated output—R.O.	1.0			mV/V
Rated output tolerance	0.10	0.001		±mV/V
Zero balance	0.10			±mV/V
Creep, 30 min.	0.074	0.024	0.018	±% of load
Zero return, 30 min.	0.05	0.0167	0.0125	±% of load
Temperature effect on output	0.002	0.001	0.00075	±% of load/°C
Temperature effect on zero	0.007	0.00186	0.00186	±% of R.O./°C
Input impedance	1160±15			Ω
Output impedance	1000±10			Ω
Insulation resistance	5000			MΩ
Temperature range, compensated	–10 to +40			°C
Temperature range, safe	–30 to +70			°C
Maximum safe central overload	300			% of R.C.
Ultimate static overload	400			% of R.C.
Safe side load	200			% of R.C.
Cable type	4 conductors, 26AWG, flat, PVC			
Cable length	1.5			m
Color code	+Exc: Green, +Sig: Red, -Exc: blk, -Sig: wht			
Construction	Aluminum, RTV potting			
Environmental protection	IP65			
Outline dimensions drawing	378.000.003			

* Consult factory for higher Y values availability

All specifications subject to change without notice.

Wiring Schematic Diagram

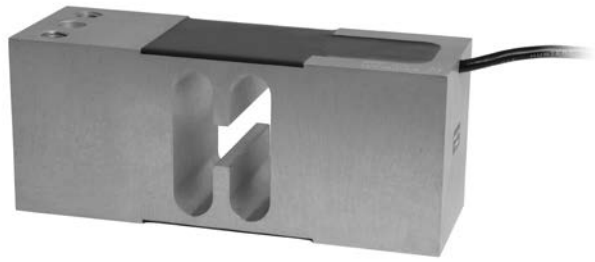


The load cell is provided with a 4 conductor ribbon cable and with optional AMP#103957-4 connector

Aluminum High Capacity Single-Point Load Cell

FEATURES

- Capacities 100–250 kg
- Aluminum construction
- Single-point 400 x 400 mm platform
- IP66 protection
- Available with metric threads



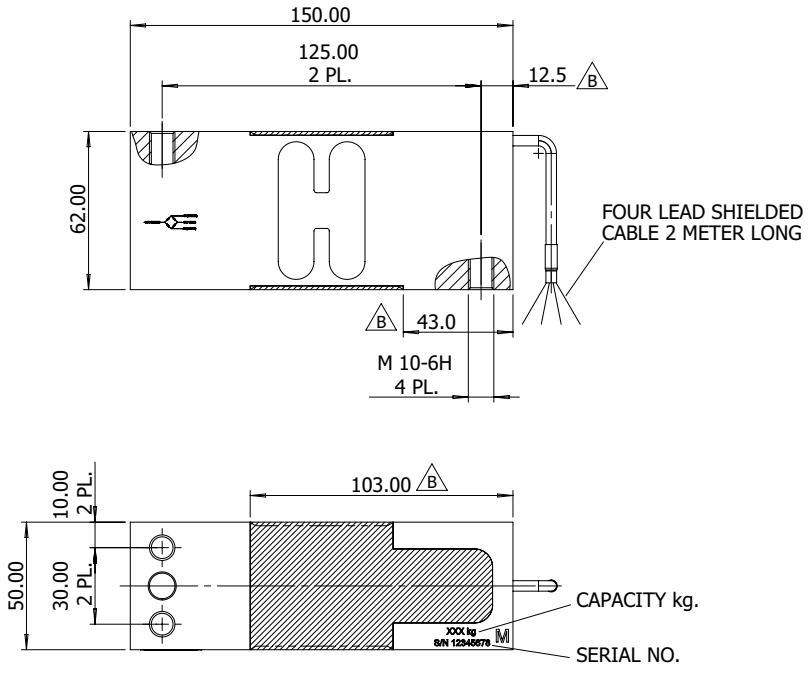
APPLICATIONS

- Large platform scales
- Hanging scales
- Check weighing

DESCRIPTION

The Model 1262 is a high performance, high capacity single- point load cell designed for direct mounting of large weighing platforms.

OUTLINE DIMENSIONS in millimeters

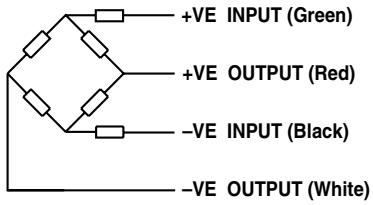


Aluminum High Capacity Single-Point Load Cell

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Rated capacity—R.C. (E_{max})	100, 250	kg
Accuracy class	C1	
Rated output—R.O.	2.0	mV/V
Rated output tolerance	0.5	±mV/V
Zero balance	0.1	±mV/V
Zero return, 30 min.	0.05	±% of applied load
Total error	0.03	±% of rated output
Temperature effect on zero	0.008	±% of rated output/°C
Temperature effect on output	0.003	±% of applied load/°C
Eccentric loading error	0.0035	±% of rated load/cm
Temperature range, compensated	–10 to +50	°C
Temperature range, safe	–30 to +70	°C
Maximum safe central overload	150	% of R.C.
Ultimate central overload	300	% of R.C.
Excitation, recommended	10	VDC or VAC RMS
Excitation, maximum	15	VDC or VAC RMS
Input impedance	415±15	Ω
Output impedance	350±3	Ω
Insulation resistance	>2000	MΩ
Cable length	2	m
Cable type	4 conductors, 26 AWG, shielded, PVC jacket	Standard
Construction	Aluminum	
Environmental protection	IP66	
Platform size (max)	400 x 400	mm

All specifications subject to change without notice.

WIRING SCHEMATIC DIAGRAM



Single-Point Aluminum Load Cell

FEATURES

- Capacities 1–5 kg
- Aluminum construction
- Maximum platform size up to 70×70 mm



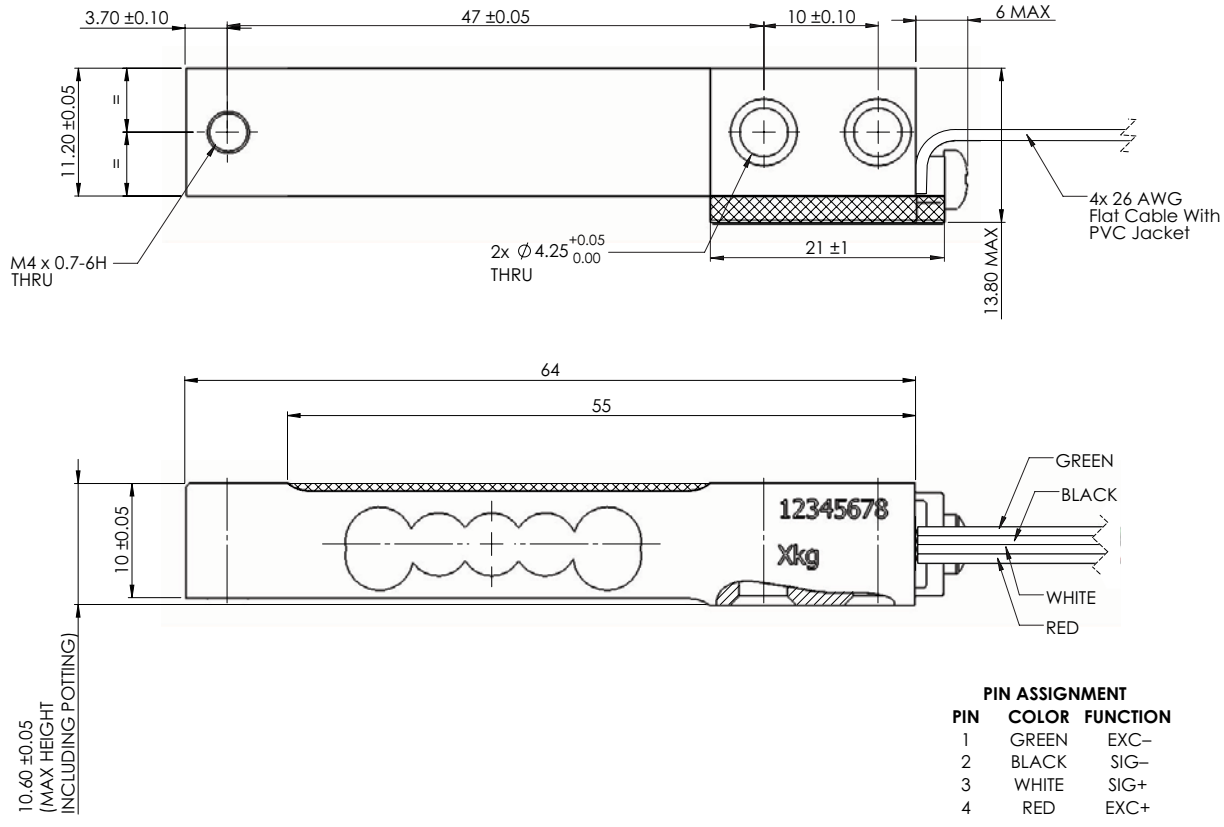
APPLICATIONS

- Low capacity scales
- Precision scales
- Jewelry scales
- Pharmaceutical scales

DESCRIPTION

The very small size of the Model 1005 makes this load cell uniquely versatile and easy-to-use in a wide variety of applications. Designed for low capacity and high precision, the 1005 load cell is suitable for a broad range of uses, such as low capacity scales, precision scales, jewelry scales, pharmaceutical scales, and any other basic weighing scale in industrial and medical applications.

OUTLINE DIMENSIONS



PIN ASSIGNMENT

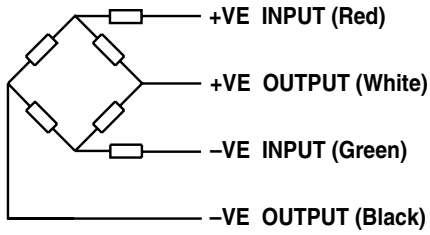
PIN	COLOR	FUNCTION
1	GREEN	EXC–
2	BLACK	SIG–
3	WHITE	SIG+
4	RED	EXC+

Single-Point Aluminum Load Cell

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Rated capacity (R.C.)	1, 3, 5	kg
Rated output (R.O.)	2.0	mV/V
Rated output tolerance	0.2	±mV/V
Zero balance	0.2	±mV/V
Linearity	0.03	±% of R.O.
Hysteresis	0.05	±% of R.O.
Repeatability	0.01	±% of R.O.
Creep (30 min)	0.03	±% of R.O.
Temperature effect **on zero** **on output**	 0.05 0.1	 ±% of R.O./°C ±% of load/°C
Eccentric loading error	0.01	±% of load/cm
Temperature range, **compensated** **safe**	 18 to 28 –30 to +70	 °C °C
Maximum safe static overload (central loading)	150	% of R.C.
Excitation, **recommended** **maximum**	 10 15	 VDC or VAC RMS VDC or VAC RMS
Maximum platform size	70×70	mm
Input impedance	350 ±25	Ω
Output impedance	350 ±25	Ω
Insulation resistance, **@ 50 VDC**	>2000	MΩ
Cable length	0.5	m
Cable type	Flat, 4 wire, 26 AWG	
Environmental protection	IP66	

All specifications subject to change without notice.

WIRING SCHEMATIC DIAGRAM



Single-Point Alloy Steel Load Cell

FEATURES

- Capacity: 100 to 1500 kg
- Alloy steel construction
- Single-point 900 × 900mm platform
- IP66 protection
- **Optional**
  - Stainless steel construction



APPLICATIONS

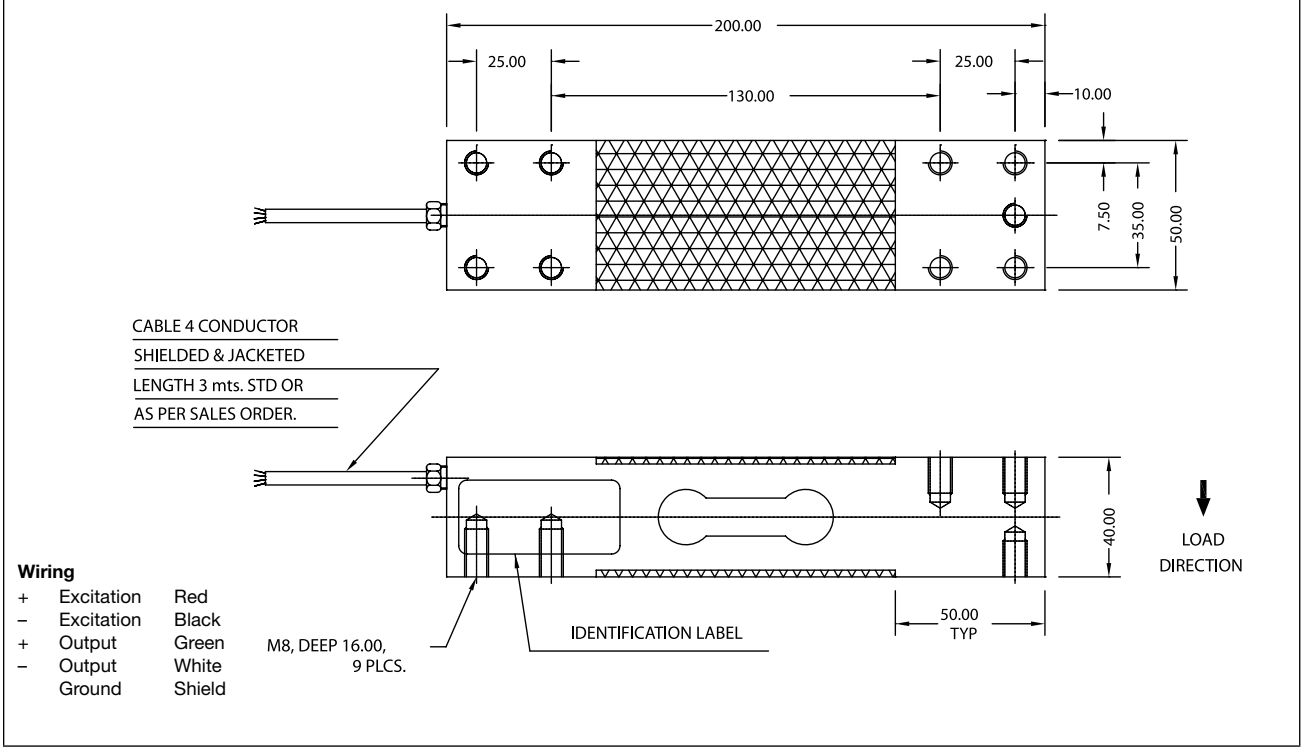
- Large platform scales
- Bench scales
- Counting scales
- Check weighing scales

DESCRIPTION

The Model 92001 is an alloy steel single-point load cell designed for direct mounting in large platform scale applications. The cost effective load cell is ideal for use in counting, bench and floor scales.

This model provides scale manufacturers with a high-accuracy, low-cost sensor for their most demanding technical requirements.

OUTLINE DIMENSIONS in millimeters



Wiring

+	Excitation	Red
–	Excitation	Black
+	Output	Green
–	Output	White
	Ground	Shield

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vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com

Document No.: 11655
Revision: 23-Feb-2018

Single-Point Alloy Steel Load Cell

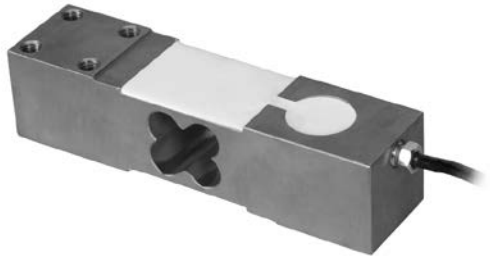
SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Rated output-R.O.	2.0	mV/V
Rated output tolerance	10	± % FSO
Zero balance	1	± % FSO
Combined error	<0.030	± % FSO
Non-Linearity	<0.025	± % FSO
Hysteresis	<0.020	± % FSO
Non-repeatability	<0.010	± % FSO
Creep error (30 minutes)	<0.025	± % FSO
Temperature effect on zero	<0.002	± %/°C
Temperature effect on output	0.001	± %/°C
Operating temperature range	–20 to +70	°C
Maximum safe central overload	150	% FSO
Ultimate central overload	300	% FSO
Excitation, recommended	10	VDC
Excitation, maximum	15	VDC
Input impedance	360–450	Ω
Output impedance	349–355	Ω
Insulation resistance at 50 VDC	>1000	MΩ
Material	Alloy steel with electroless nickel-plated	
Environmental protection	IP66	
Platform size	Up to 900 × 900	mm

All specifications subject to change without notice.

Single-Point Alloy Steel Load Cell

FEATURES

- Capacity range: 50–1500 kg
- Alloy steel construction
- Single-point for the following platform sizes:
  - 50–750 kg: 600 × 600 mm platform
  - 1000–1250 kg: 750 × 750 mm platform
  - 1500 kg: 900 × 900 mm platform
- **Optional**
  - Stainless steel construction



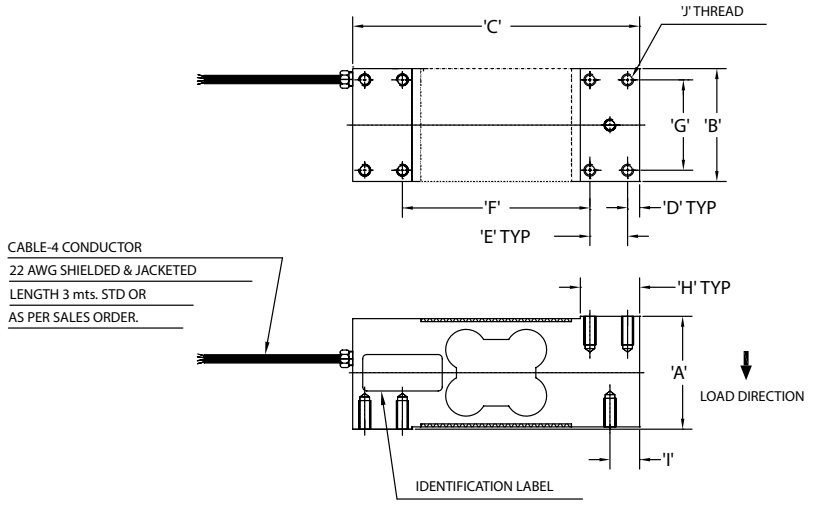
APPLICATIONS

- Large platform scales
- Bench and counting scales
- Check weighing scales

DESCRIPTION

The Model 92001 is an alloy steel single-point load cell designed for direct mounting in large platform scale applications. It has a very similar design to the Model 92006 with some key differences. The Model 92001 can register smaller loads but it requires different platform sizes depending on the desired capacity range. The cost effective load cell is ideal for use in counting, bench and floor scales. This model provides scale manufacturers with a high accuracy, low-cost sensor for their most demanding technical requirements.

OUTLINE DIMENSIONS in millimeters



Wiring

+	Excitation	Red
–	Excitation	Black
+	Output	Green
–	Output	White
	Ground	Shield

CAPACITY	A	B	C	D	E	F	G	H	I	J THREAD
50,100,150,200,250,300, 350,500,600,750 kg	38.0	38.0	150.0	6.3	25.4	86.6	25.4	38.0	18.0	M8 x 1.25 DEEP 15.0, 9 PLCS
1000, 1250 kg	74.9	74.9	190.5	10.4	18.5	132.6	56.0	39.3	19.7	M8 x 1.25-6H x 19.0 DEEP 9 PLCS
1500 kg	74.9	74.9	190.5	10.4	18.5	132.6	56.0	39.3	19.7	M10 x 1.5-6H x 26.0 DEEP 9 PLCS

Single-Point Alloy Steel Load Cell

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Rated output-R.O.	2.0	mV/V
Rated output tolerance	10	± % FSO
Zero balance	1	± % FSO
Combined error	<0.045	± % FSO
Non-linearity	<0.025	± % FSO
Hysteresis	<0.020	± % FSO
Non-repeatability	<0.010	± % FSO
Creep error (30 minutes)	<0.025	± % FSO
Temperature effect on zero	<0.002	± %/°C
Temperature effect on output	0.001	± %/°C
Operating temperature range	–20 to +70	°C
Maximum safe central overload	150	% FSO
Ultimate central overload	300	% FSO
Excitation, recommended	10	VDC
Excitation, maximum	15	VDC
Input impedance	380–400	Ω
Output impedance	349–355	Ω
Insulation resistance at 50 VDC	>1000	MΩ
Material	Alloy steel with electroless nickel-plated	
Environmental protection	IP66	
Platform size	50–750 kg: 600 × 600 1000–1250 kg: 750 × 750 1500 kg: 900 × 900	

All specifications subject to change without notice.

Single-Point Stainless Steel Load Cell

FEATURES

- Capacity range: 10–100 kg
- Stainless steel construction
- Single-point 350 × 350 mm platform
- IP66 protection

APPLICATIONS

- Retail scales
- Counting scales
- Bench scales
- Harsh environments

DESCRIPTION

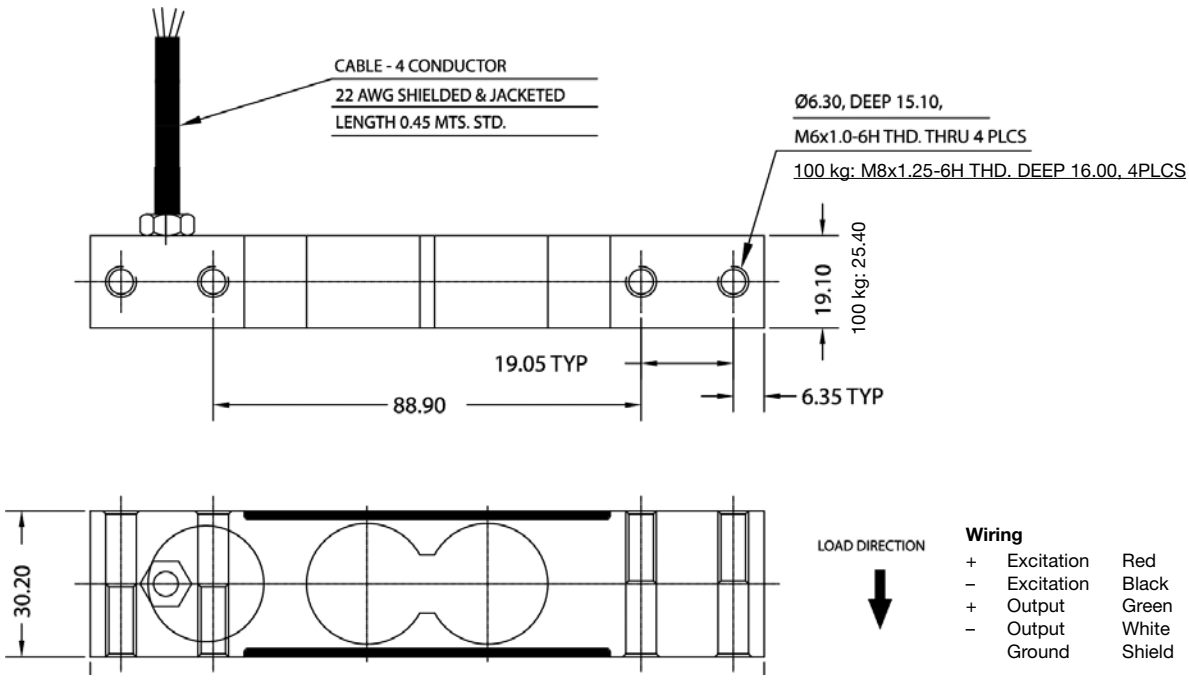
The Model 93006 is a low profile single-point load cell designed for direct mounting in retail, bench, and counting scales and a wide range of other scale applications.



Its small physical size combined with high accuracy and low cost makes this load cell ideally suited for new scale construction.

This load cell's stainless steel construction makes it ideal for use in corrosive and wet environments that are not appropriate for common aluminum load cells.

OUTLINE DIMENSIONS in millimeters



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Single-Point Stainless Steel Load Cell

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Rated capacity—R.C. (Emax)	10, 20, 30, 40, 60, 100	kg
Rated output–R.O.	2.0	mV/V
Rated output tolerance	10	± %FSO
Zero balance	1	± %FSO
Combined error	<0.025	± %FSO
Non-repeatability	<0.010	± %FSO
Creep error (30 minutes)	<0.025	± %FSO
Temperature effect on zero	<0.002	± %/°C
Temperature effect on output	0.001	± %/°C
Operating temperature range	–20 to +70	°C
Maximum safe central overload	150	% FSO
Ultimate central overload	300	% FSO
Excitation, recommended	10	VDC
Excitation, maximum	15	VDC
Input impedance	430–525	Ω
Output impedance	349–355	Ω
Insulation resistance at 50 VDC	>1000	MΩ
Material	Stainless steel with electropolish	
Environmental protection	IP66	
Platform size	350 × 350	mm

All specifications subject to change without notice.

Single-Ended Bending Beam

FEATURES

- Standard capacity: 6150 kg
  - Other capacities are available upon request
- Coated alloy steel construction
- EDOC (Electrodeposited organic coating)



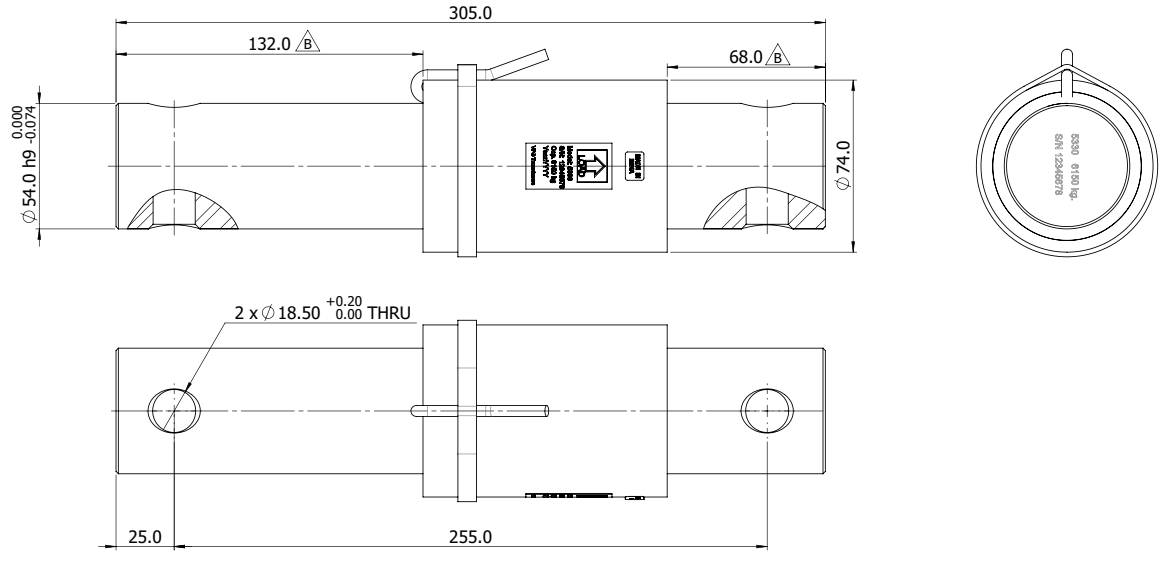
APPLICATIONS

- Feed and stationary mixers
- Manure spreaders
- Harvest trailer
- Bins, tanks and grain carts
- TMR mixers and feedlot spreaders

DESCRIPTION

The Model 5330 Agribar™ is a heavy-duty, single-ended bending beam load cell, specifically designed for use in the agricultural industry. The beam is constructed from alloy steel with an electrodeposited organic coating, resulting in superior resistance against corrosion and abrasion. This load cell is highly durable and delivers an impressive temperature tolerance and maximum weight capacity. It is best suited for installation into large agricultural machinery, where it can be used to measure and control dispensing and accumulation of commodity, and more.

OUTLINE DIMENSIONS in millimeters (dimensions may vary for other capacities)



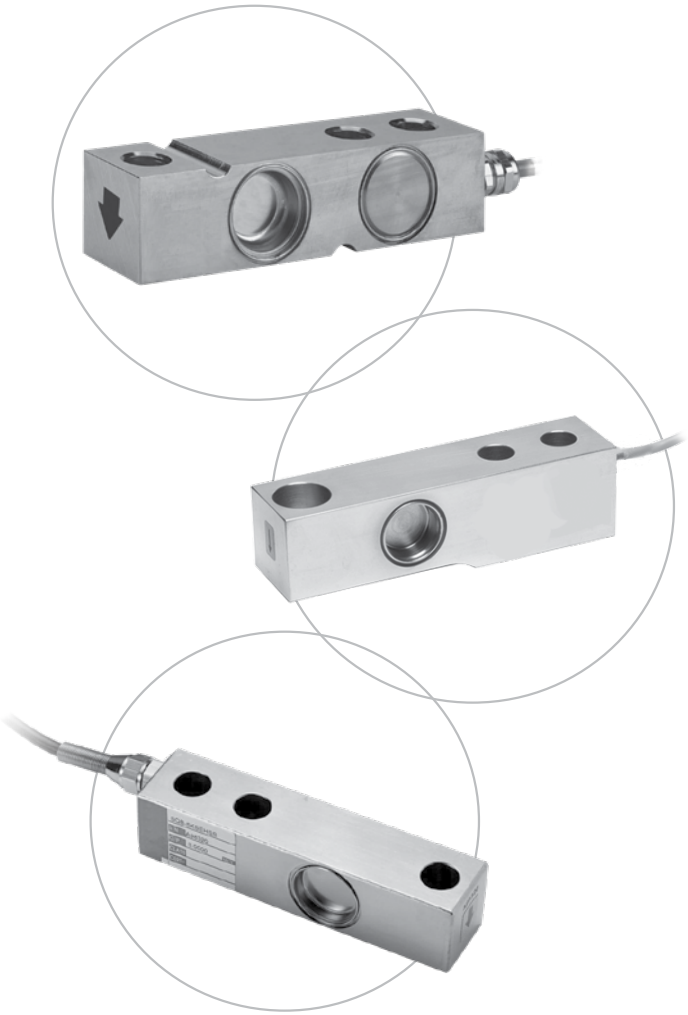
Single-Ended Bending Beam

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Rated capacity—R.C. (E_{max}) **Static** **Dynamic**	 6150* (4100)	kg
Rated output—R.O. **Static** **Dynamic**	 1.45±0.007 (0.966)	mV/V
Zero balance	±0.0100	mV/V
Sensor error	±0.10	% of R.O.
Creep (30 min.)	±0.08	% of load
Zero return (30 min.)	±0.08	% of load
Temperature effect on zero	±0.010	% of R.O./°C
Temperature effect on output	±0.010	% of load/°C
Temperature range, compensated	0 to +50	°C
Temperature range, service	–20 to +60	°C
Temperature range, storage	–30 to +70	°C
Maximum safe static overload	9225	kg
Ultimate static overload	15375	kg
Excitation, recommended	10	VDC
Excitation, range	5–15	VDC
Input impedance	349–450	Ω
Output impedance	349–356	Ω
Insulation resistance	>2000	MΩ @ 50 VDC
Cable length	6.5	m
Cable type	4 conductor, 24 AWG, polyurethane jacket, floating shield	
Color code (4 conductors)	+exc – red, +sig – grn, –exc – blk, –sig – wht	
Construction	Coated alloy steel	
Compensation circuit type	Unbalanced on +Exc terminal	
Environmental protection	IP67/IP69K	

* Other capacities are available upon request.

All specifications are subject to change without notice.

Load Cells—
Single Ended Shear Beams



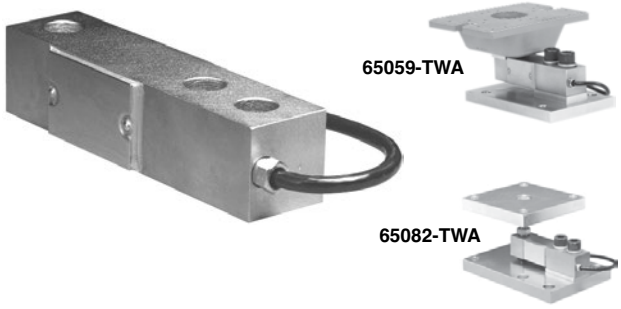
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Shear Beam Load Cell

FEATURES

- Rated capacities of 250 to 20,000 pounds, 125 to 10,000 kg
- "Thru" or "threaded" load hole configurations
- Low sensitivity to axial loads
- Low profile (ultra-low profile available in 1000 to 2500 pound ranges)
- Sensorgage™ sealed to IP67 standards
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G. Also, non-incendive ratings (No barriers!).
- Trade certified for NTEP Class III: 5000d, IIIL: 10000d and OIML R-60 3000d available
- **Optional**
  - Ex ia IIC T4, Ex ia IIIC T135°C hazardous area approval
  - Stainless steel versions available
  - 65059 TWA companion weighing assemblies available
  - EDOC option available; product appearance will differ from the photograph due to coating



APPLICATIONS

- Floor scales
- Tank weighing
- Bin and hopper weighing

DESCRIPTION

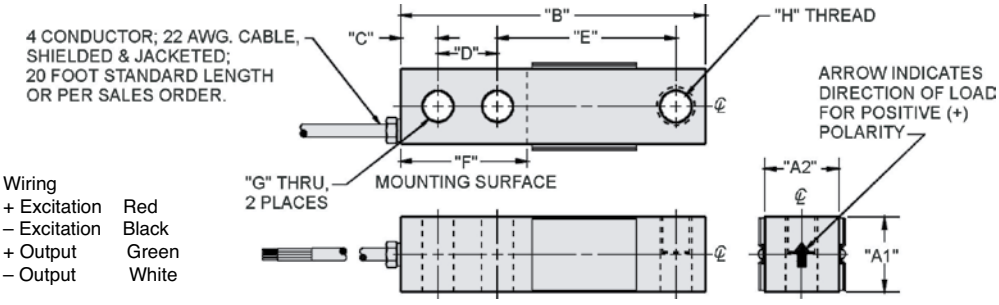
The Model 65023 is a low profile shear beam load cell designed for high accuracy platform scales, pallet scales and process weighing applications.

It has high immunity to shock or side loading and is available in 2 or 3 mV/V sensitivity. Approved to OIML and NTEP standards. For hazardous environments this load cell is available with EEx ia IIC T6 level of European approval.

Nickel plating and full environmental sealing assures long-term reliability. A stainless steel option is available for the lb versions for use in harsh or corrosive environments.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance, due to temperature change and/or cable extension is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in inches (millimeters)



CAPACITY	A1	A2	B	C	D	E	F	G	H	DEFLECTION	WEIGHT
250–500 lbs	1.00	1.25	5.12	0.62	1.00	3.00	2.25	0.53	1/2-20 UNF-2B, Ø0.53 x 0.50 DP C'BORE	0.013	1.7
1–4k	1.25	1.25	5.12	0.62	1.00	3.00	2.25	0.53	1/2-20 UNF-2B, Ø0.53 x 0.62 DP C'BORE	0.017–0.025	4.0
5k–10k	1.50	1.50	6.75	0.75	1.50	3.75	3.00	0.78	3/4-16 UNF-2B, Ø0.78 x 0.75 DP C'BORE	0.025–0.035	6.5
5k (SE version)	1.22	1.22	5.12	0.62	1.00	3.00	2.12	0.53	1/2-20 UNF-2B, Ø0.53 x 0.62 DP C'BORE	0.200	1.5
15k–20k	2.00	2.00	8.88	1.00	2.00	4.88	4.00	1.03	1"-14 UNF-2B, Ø1.03 x 1.00 DP C'BORE	0.048–0.063	9.0
(125–250 kg)	(25.0)	(31.0)	(130.0)	(16.0)	(25.0)	(76.0)	(57.0)	(13.0)	M12 x 1.75-6H, Ø13 x 15 DP C'BORE	(0.33)	(0.8)
(500 kg–2 t)	(32.0)	(32.0)	(130.0)	(16.0)	(25.0)	(76.0)	(57.0)	(13.0)	M12 x 1.75-6H, Ø13 x 15 DP C'BORE	(0.432–0.635)	(1.8)
(3 t–5 t)	(38.0)	(38.0)	(171.0)	(19.0)	(38.0)	(95.0)	(76.0)	(20.7)	M20 x 2.5-6H, Ø20.5 x 19 DP C'BORE	(0.635–0.889)	(2.9)
(10 t)	(51.0)	(51.0)	(226.0)	(25.0)	(51.0)	(124.0)	(102.0)	(25.0)	M24 x 2-6H, Ø25.4 x 25 DP C'BORE	(1.219–1.600)	(4.1)

Capacities are in pounds (kg/t). Deflection is ±10%. Certified drawings are available. Above dimensions apply to non-EDOC-coated load cells.

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Document No.: 11575
Revision: 23-Feb-2018

Shear Beam Load Cell

SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Rated capacity—R.C. (E_{max})	250, 500, 1k, 1.5k, 2k, 2.5k, 4k, 5k, 10k, 15k, 20k				lbs
	125, 250, 500, 750, 1000, 2000, 5000, 10,000 [1]				kg
NTEP/OIML accuracy class	NTEP III	NTEP IIIL	Standard	OIML R60	
Maximum no. of intervals (n)	3000 single	10000 multiple		3000 [1]	
Y = E_{max}/V_{min}	NTEP Cert. No. 86-044A2			6250	Maximum available
Rated output—R.O.	3.0				mV/V
Rated output tolerance	0.25				±% mV/V
Zero balance	1.0				±% FSO
Combined error	0.02	0.02	0.03	0.02	±% FSO
Non-repeatability	0.01				±% FSO
Creep error (30 minutes)	0.025	0.03	0.03	0.017	±% FSO
Temperature effect on zero	0.0010	0.0010	0.0015	0.0010	±% FSO/°F
Temperature effect on output	0.0008	0.0008	0.0008	0.0007	±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)				°F (°C)
Operating temperature range	0 to 150 (–18 to 65)				°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)				°F (°C)
Sideload rejection ratio	500:1				
Safe sideload	100				% of R.C.
Maximum safe central overload	150				% of R.C.
Ultimate central overload	300				% of R.C.
Excitation, recommended	10				VDC or VAC RMS
Excitation, maximum	15				VDC or VAC RMS
Input impedance	343–357				Ω
Output impedance	349–355				Ω
Insulation resistance at 50 VDC	>1000				MΩ
Material	Nickel-plated alloy tool steel [2]				
Environmental protection	IP67				
Recommended torque	All capacities up to 5000 kg–136.0 5000 kg–205.0				N*m

Notes

[1] OIML approval 1k–10k lbs and 500–5000 kg only

[2] Stainless steel available

FSO—Full Scale Output

All specifications subject to change without notice.

Shear Beam Load Cell

FEATURES

- Capacities 250–2000 kg and 1000–4000 lbs
- Steel and stainless steel construction
- OIML R60 and NTEP approved
- IP67 protection
- Spiral bending support on cable
- **Optional**
  - EEx ia IIC T6 hazardous area approval
  - FM and IECEx approvals available
  - EDOC option available; product appearance will differ from the photograph due to coating



APPLICATIONS

- Low profile platforms
- Pallet truck weighing
- Tank and silo weighing

DESCRIPTION

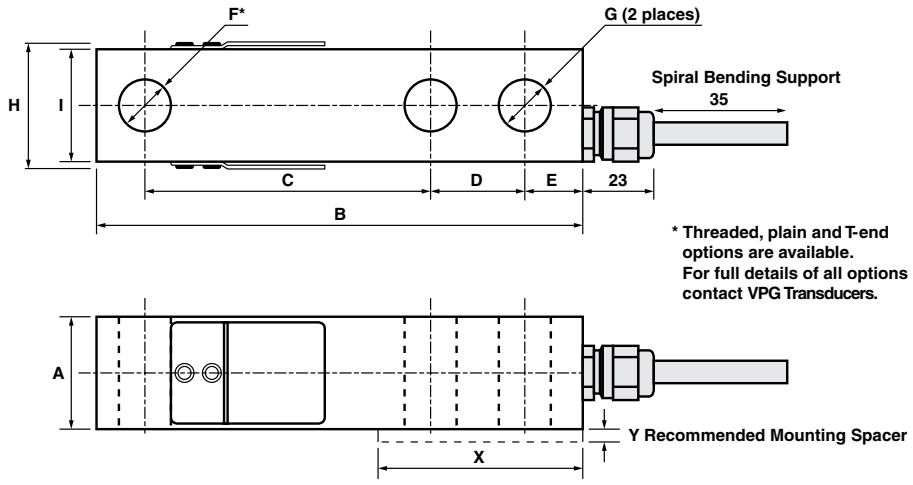
The Model 3410 is a low profile shear beam load cell designed for high accuracy platform scales, pallet scales and process weighing applications.

It has high immunity to shock or side loading and is available in 2 or 3 mV/V sensitivity. Approved to OIML and NTEP standards. For hazardous environments this load cell is available with EEx ia IIC T6 level of European approval.

Nickel plating and full environmental sealing assures long-term reliability. A stainless steel option is available for the lb versions for use in harsh or corrosive environments.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance, due to temperature change and/or cable extension, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters



CAPACITY	A	B	C	D	E	ØF	ØG	H	I	X	Y
1000, 1500, 2500, 4000 lbs	30.5	130	76.2	25.4	16	Ø13.5	Ø13.5	34.0	30.5	57	4
250, 500, 1000 kg	30.5	130	76.2	25.4	16	M12*	Ø13.5	34.0	30.5	57	4
2000 kg	36	130	76.2	25.4	16	M12*	Ø13.5	34.0	30.5	57	4
* Tapped M12 X 1.75 & counterbored Ø13.5 X 14.5 Deep											

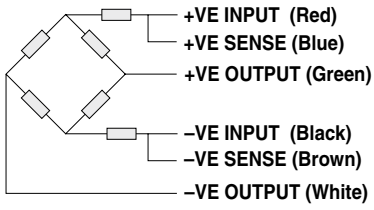
Shear Beam Load Cell

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated capacity—R.C. (E_{max})	250, 500, 1000, 2000			kg
Rated capacity—R.C. (E_{max})	1000, 1500, 2500, 4000			lbs
NTEP/OIML accuracy class	NTEP	Non-Approved	C3	
Maximum no. of intervals (n)	3000 single 5000 multiple	1000	3000(1)	
Y = E_{max}/V_{min}	6666	1400	10000	Maximum available
Rated output-R.O.	2.0 for kg and 3.0 for lbs			mV/V
Rated output tolerance	0.1			±% of rated output
Zero balance	2			±% of rated output
Zero return, 30 min.	0.0250	0.0300	0.0170	±% of applied load
Total error (per OIML R60)	0.0200	0.0500	0.0200	±% of rated output
Temperature effect on zero	0.0023	0.0100	0.0023	±% of rated output/°C
Temperature effect on output	0.0010	0.0030	0.0010	±% of applied load/°C
Temperature range	–10 to +40			°C
Temperature range, safe	–20 to +70			°C
Maximum safe central overload	150			% of R.C.
Ultimate central overload	300			% of R.C.
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	15			VDC or VAC RMS
Input impedance	385±10			Ω
Output impedance	351±5			Ω
Insulation resistance	>2000			MΩ
Cable length	3.0—3410 6.0—3411			m
Cable type	6-wire, braided, polyurethane, floating screen			Standard
Construction	Nickel-plated alloy steel and stainless steel			
Environmental protection	IP67			
Recommended torque	136			N*m

* 50% utilization

All specifications subject to change without notice.

WIRING SCHEMATIC DIAGRAM



Single-Ended Beam

FEATURES

- Capacities: 500 to 20k lbs, 250 to 5000 kg
- High side-load tolerance
- Electroless nickel-plated-alloy tool steel
- NTEP Class III 5000M for SQB, SQB-F and SQB-SS available from 1k to 10k lbs
- SQB-SS stainless steel construction
- **Optional**
  - FM approval available
  - EDOC option available; product appearance will differ from the photograph due to coating



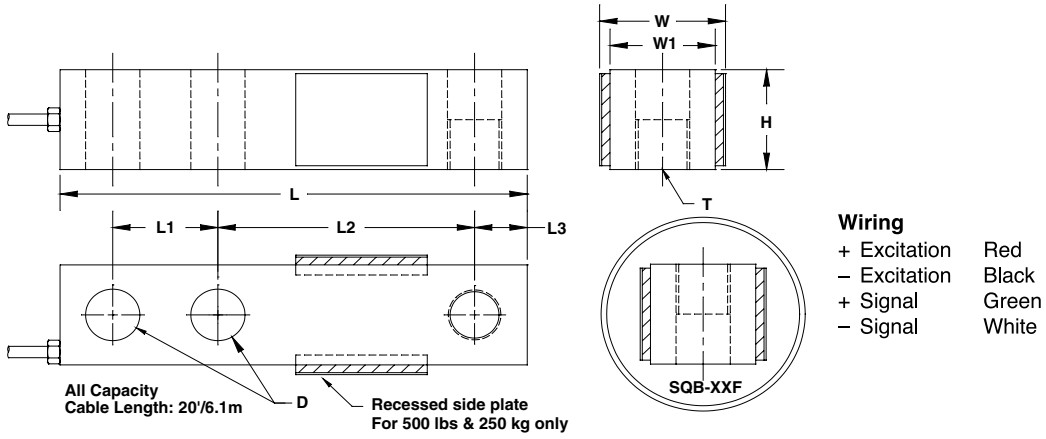
APPLICATIONS

- Truck/rail scales
- Silo/hopper/tank weighing
- Platform scales (multiple load cells)
- Pallet truck scales
- Packaging machines

DESCRIPTION

The Model SQB is a single-ended shear beam load cell designed for multiple cell applications, such as low profile platform or small tank scales, when used with proper mounting accessories. It is insensitive to side loading and capable of reversed loading. The Models SQB and SQB-F are constructed of alloy steel and fully potted with special chemical compounds to IP67 to protect the cell from water and moisture damage.

OUTLINE DIMENSIONS



Wiring

+ Excitation	Red
– Excitation	Black
+ Signal	Green
– Signal	White

CAPACITY		L	L_1	L_2	L_3	W	W_1	H	D	T
250 kg	mm	130.2	25.4	76.2	12.7	31.7	31.7	24.8	13.5	M12 x 1.75
500 lbs	(inch)	5.12	1.00	3.00	0.50	1.23	1.23	0.98	0.53	1/2-20UNF
500/1000/1500/2000 kg	mm	130.2	25.4	76.2	12.7	37.2	31.2	31.2	13.5	M12 x 1.75
1k/2k/2.5k/3k/4k/5kSE lbs	(inch)	5.12	1.00	3.00	0.50	1.46	1.23	1.23	0.53	1/2-20UNF
2500/5000 kg	mm	171.5	38.1	95.3	19.0	43.6	37.6	37.6	19.8	M20 x 1.5
5k/10k lbs	(inch)	6.75	1.50	3.75	0.75	1.74	1.48	1.48	0.78	3/4-16UNF
15k/20k lbs	mm	225.6	50.8	123.9	25.4	56.9	50.8	50.8	26.2	-----
	(inch)	8.88	2.00	4.88	1.00	2.24	2.00	2.00	1.02	1-14UNS

Above dimensions apply to non-EDOC-coated load cells.

Single-Ended Beam

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
NTEP/OIML accuracy class	NTEP III	Non-Approved	
Maximum no. of intervals (n)	3000 single [1] 5000 multiple [1]	1000	
Y = E_{max}/V_{min}	10000	5000	Maximum available
Standard capacities (E_{max})	250, 500, 1000, 1500, 2000, 2500, 5000		kg
Standard capacities (E_{max})	500, 1k, 2k, 2.5k, 3k, 4k, 5kSE, 5k, 10k, 15k, 20k		lbs
Rated output—R.O.	3.0		mV/V
Rated output tolerance	0.25		±% of rated output
Zero balance	1		±% of rated output
Non-linearity	0.025	0.030 (SS: 0.05)	±% of rated output
Hysteresis	0.025	0.030 (SS: 0.05)	±% of rated output
Non-repeatability	0.020	0.020	±% of rated output
Creep error (20 minutes)	0.025	0.030	±% of rated output
Zero return (20 minutes)	0.025	0.030	±% of rated output
Temperature effect on min. dead load output	0.0017	0.0026	±% of rated output/°C
Temperature effect on sensitivity	0.0010	0.0015	±% of applied load/°C
Compensated temperature range	–10 to +40		°C
Operating temperature range	–20 to +60		°C
Safe overload	150		% of R.C.
Ultimate overload	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	385±5		Ω
Output impedance	350±3		Ω
Insulation resistance	>5000		MΩ
Construction	Nickel-plated alloy steel [2]		
Environmental protection	IP67		

Notes:

[1] Capacities 1k–10k lbs

[2] Stainless steel available

All specifications subject to change without notice.

FM Approval

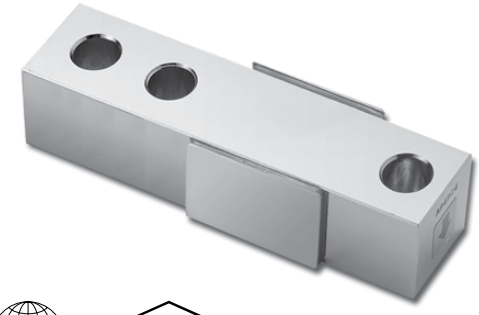
Intrinsically Safe: Class I, II, III; Div. 1 Groups A-G

Non-Incendive: Class I; Div. 2 Groups A-D

Single-Ended Beam

FEATURES

- Capacities: 500 kg, 1 t, 1.5 t, 2 t, and 2.5 t
- High side-load tolerance
- Electroless nickel-plated-alloy tool steel
- OIML C3 approval from 500 kg to 2.5 t
- **Optional**
  - FM approval available



OIML

FM APPROVED

APPLICATIONS

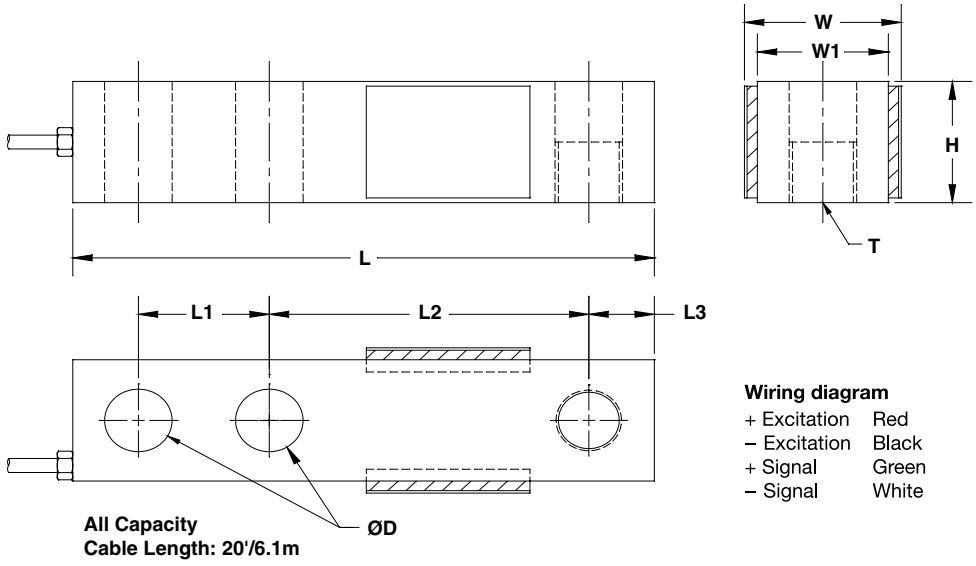
- Truck/rail scales
- Silo/hopper/tank weighing
- Platform scales (multiple load cells)
- Pallet truck scales
- Packaging machines

DESCRIPTION

The Model SEB is a single-ended shear beam load cell designed for multiple cell applications, such as low profile platform or small tank scales, when used with proper mounting accessories. It is insensitive to side loading and capable of reversed loading.

The Model SEB is constructed of alloy steel and fully potted with special chemical compounds to IP67 to protect the cell from water and moisture damage.

OUTLINE DIMENSIONS



Wiring diagram

+ Excitation	Red
– Excitation	Black
+ Signal	Green
– Signal	White

CAPACITY		L	L_1	L_2	L_3	W	W_1	H	D	T
500 kg / 1 t / 1.5 t / 2 t	mm	130.0	25.4	76.2	12.7	38.1	31.2	31.2	13.5	M12 × 1.75
	(in)	5.12	1.00	3.00	0.50	1.50	1.25	1.25	0.53	
2.5 t	mm	171.5	38.1	95.3	19.0	44.2	38.1	38.1	19.8	M20 × 1.5
	(in)	6.75	1.50	3.75	0.75	1.74	1.50	1.50	0.78	

Single-Ended Beam

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
NTEP/OIML accuracy class	C3	
Maximum no. of intervals (n)	3000	
$Y = E_{max}/V_{min}$	10000	Maximum available
Standard capacities (E_{max})	500, 1000, 1500, 2000, 2500	kg
Rated output—R.O.	3.0	mV/V
Rated output tolerance	0.25	±% of rated output
Zero balance	1	±% of rated output
Non-linearity	0.025	±% of rated output
Hysteresis	0.025	±% of rated output
Non-repeatability	0.020	±% of rated output
Creep error (20 minutes)	0.030	±% of rated output
Zero return (20 minutes)	0.030	±% of rated output
Temperature effect on min. dead load output	0.0014	±% of rated output/°C
Temperature effect on sensitivity	0.0008	±% of applied load/°C
Compensated temperature range	–10 to +40	°C
Operating temperature range	–20 to +60	°C
Safe overload	150	% of R.C.
Ultimate overload	300	% of R.C.
Excitation, recommended	10	VDC or VAC RMS
Excitation, maximum	15	VDC or VAC RMS
Input impedance	385±5	Ω
Output impedance	350±3	Ω
Insulation resistance	>5000	MΩ
Construction	Nickel-plated alloy steel	
Environmental protection	IP67	

All specifications subject to change without notice.

FM Approval
Intrinsically Safe: Class I, II, III; Div. 1 Groups A-G
Non-Incendive: Class I; Div. 2 Groups A-D

Single-Ended Beam Load Cell

FEATURES

- Capacities: 500–5000 kg, 1k–10k lbs.
- Low profile construction
- Certified to OIML R-60, 3000d and NTEP class III, 3000 divisions
- Sealing: IP67 (DIN 40.050)
- Nickel-plated alloy steel construction
- Threaded load hole
- **Optional**
  - FM certified for use in potentially explosive atmospheres



APPLICATIONS

- Floor scales
- Tank weighing
- Bin and hopper weighing

DESCRIPTION

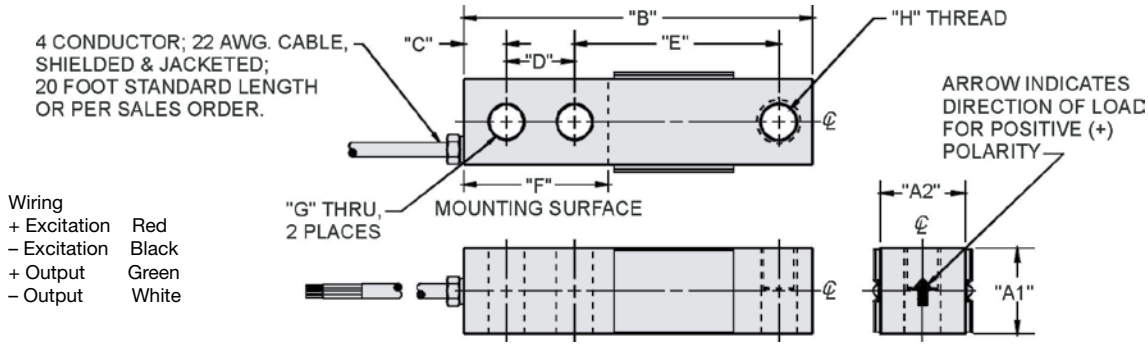
The Model 5123 is a low profile single-ended shear beam type load cell made from nickel-plated tool steel.

This product is suitable for small and medium platform scales, overhead track scales, hopper scales, and process weighing applications.

Reliable sealing is ensured by the proprietary TRANSEAL potting compound and additional mechanical protection of the strain gage area.

Ease of installation is made possible through the use of a partially threaded hole to accept levelling feet, load buttons, or loading cables.

OUTLINE DIMENSIONS in inches [millimeters]



CAPACITY	A_1	A_2	B	C	D	E	F	G	H	DEFLECTION	WEIGHT
1k–4k lbs.	1.25	1.25	5.12	0.62	1.00	3.00	2.25	0.53	1/2-20 UNF-2B, Ø0.53 x 0.62 DP C'BORE	0.017 - 0.025	4.0
5k–10k lbs.	1.50	1.50	6.75	0.75	1.50	3.75	3.00	0.78	3/4-16 UNF-2B, Ø0.78 x 0.75 DP C'BORE	0.025 - 0.035	6.5
[500 kg–2T]	[32.0]	[32.0]	[130.0]	[16.0]	[25.0]	[76.0]	[57.0]	[13.0]	M12 x 1.75-6H, Ø13 x 15 DP C'BORE	[0.432 - 0.635]	[1.8]
[3T–5T]	[38.0]	[38.0]	[171.0]	[19.0]	[38.0]	[95.0]	[76.0]	[20.7]	M20 x 2.5-6H, Ø20.5 x 19 DP C'BORE	[0.635 - 0.889]	[2.9]

Capacities are in pounds [kg/T]. Deflection is ±10%. Certified drawings are available.

Single-Ended Beam Load Cell

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Standard capacities (E_{max})	500, 1000, 2000, 5000 (1)			kg
Standard capacities (E_{max})	1k, 2.5k, 4k, 5k, 10k (1)			lbs.
Accuracy class according to OIML R-60 /NTEP	NTEP III	Non-Approved	C3	
Max. no. of verfication intervals	3000		3000	
Min. verification interval ($V_{min}=E_{max}/Y$)			E_{max}/6000	
Min. verification interval, type MR			E_{max}/10000	
Rated output (=S)	3			mV/V
Rated output tolerance	0.0075			±mV/V
Zero balance	1.0			±% FSO
Combined error	0.0200	0.050	0.023	±% FSO
Minimum dead load output return	0.0250	0.050	0.017	±% FSO
Minimum dead load output return, type MI8			0.0063	±% FSO
Non-repeatability	0.0100	0.01	0.01	±% FSO
Creep error (30 minutes)		0.060	0.025	±% FSO
Temp. effect on min. dead load output	(0.0008)	0.0250	0.0120	±% FSO/5°C (/°F)
Temp. effect on min. dead load output, type MR			0.0070	±% FSO/5°C
Temperature effect on sensitivity	(0.0010)	0.0250	0.0088	±% FSO/5°C (/°F)
Minimum dead load	0			% E_{max}
Maximum safe overload	150			% E_{max}
Ultimate overload	300			% E_{max}
Maximum safe side load	100			% E_{max}
Deflection at E_{max}	0.4 / 0.8 / 1.0 / 1.1—kg 0.4 / 0.8 / 1.0 / 0.9 / 1.1—lbs.			mm
Excitation voltage	5 to 12			V
Maximum excitation voltage	15			V
Input resistance	350±7			Ω
Output resistance	352±3			Ω
Insulation resistance	>1000			MΩ
Compensated temperature range	–10 to +40			°C
Operating temperature range	–18 to +65			°C
Storage temperature range	–50 to +85			°C
Element material	Nickel-plated alloy steel			
Sealing (DIN 40.050 / EN 60.529)	IP67			
Recommended torque on fixation bolts	0.5–2T and 1k–4k lbs.: 136 5k lbs. and 5T and over: 205			N*m

(1) 5T and 10k lbs. are not approved by OIML

FSO—Full Scale Output

Correct mounting of the load cell is essential to ensure optimum performance. Further information is available on request.

All specifications are subject to change without notice

Alloy Steel Shear Beam Load Cell

FEATURES

- Capacity range: 5,000–10,000 lbs
- Steel and stainless steel construction
- NTEP approved
- IP67 protection
- **Optional**
  - FM approval available



APPLICATIONS

- Low profile platforms
- Pallet truck weighing
- Tank and silo weighing

DESCRIPTION

The Model 3420 is a low profile shear beam load cell designed for high accuracy platform scales, pallet scales and process weighing applications.

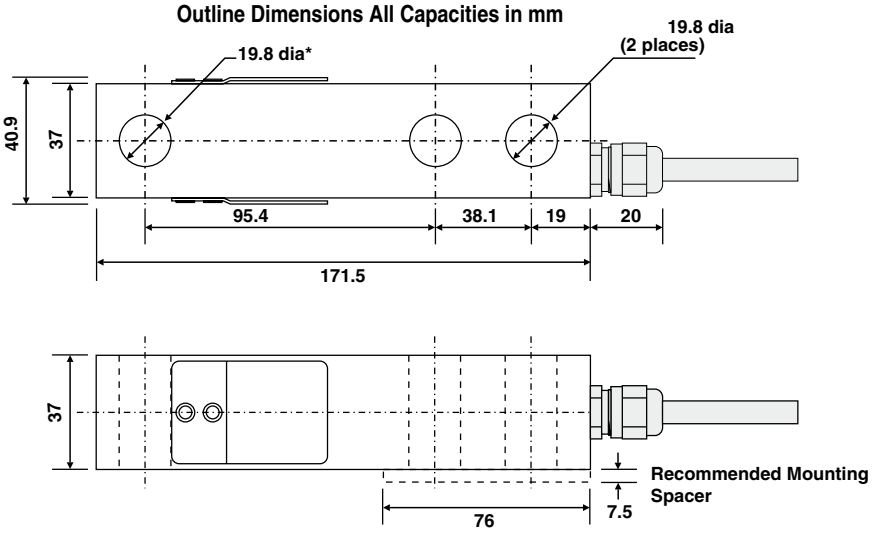
It has a high resistance to shock or side loading, and is approved to NTEP standards. For hazardous environments this load cell is available with Factory Mutual approval.

Nickel plating and full environmental sealing assure long-term reliability. A stainless steel option is available for use in harsh or corrosive environments.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance, due to temperature change and/or cable extension, can be achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters

Outline Dimensions All Capacities in mm



***Threaded options are available For full details of all options contact VPG Transducers.**

3420 plain, M18 or ¾ - 16 Helicoil type UNF (inner diam approx 19.5 mm) threaded mounting hole

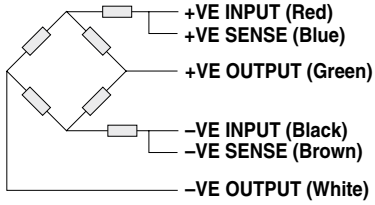
3421 - ¾ - 16 regular UNF thread (inner diam approx 17.5 mm)

Alloy Steel Shear Beam Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Rated capacity—R.C. (E_{max})	5000, 7500, 10000		lbs
NTEP/OIML accuracy class	NTEP	Non-Approved	
Maximum no. of intervals (n)	3000 single 5000 multiple	3000	
Y = E_{max}/V_{min}	6666	10000	
Rated output—R.O.	3.0		mV/V
Rated output tolerance	0.1		±% of rated output
Zero balance	2		±% of rated output
Zero return, 30 min.	0.0250	0.0170	±% of applied load
Total error (per OIML R60)	0.0200	0.0200	±% of rated output
Temperature effect on zero	0.0023	0.0023	±% of rated output/°C
Temperature effect on output	0.0010	0.0010	±% of applied load/°C
Temperature range, compensated	–10 to +40		°C
Temperature range, safe	–20 to +70		°C
Maximum safe central overload	150		% of R.C.
Ultimate central overload	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	385±10		Ω
Output impedance	351±5		Ω
Insulation resistance	>2000		MΩ
Cable length	3.0m—3420 20 ft.—3421		
Cable type	6-wire, braided, polyurethane, floating screen		Standard
Construction	Nickel-plated alloy steel		
Environmental protection	IP67		
Recommended torque	205		N*m

All specifications subject to change without notice.

Wiring Schematic Diagram
(Balanced temperature compensation)



Miniature Bending Beam

FEATURES

- Capacities: 50, 100, 150, and 250 lbs
- Low profile for low-capacity scales
- Electroless nickel-plated alloy tool steel
- **Optional**
  - FM approval available



APPLICATIONS

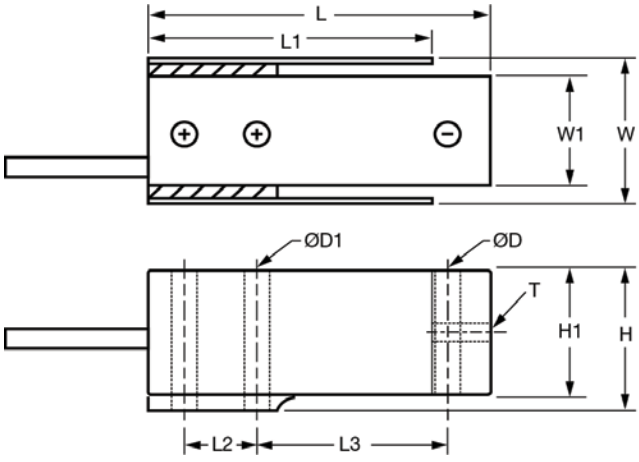
- Silo/hopper/tank weighing
- Packaging machines
- Dosing/filling
- Belt scales/conveyor scales

DESCRIPTION

The Model MBB is designed for low profile platform scales and tank scales in low capacities. It is constructed of high alloy tool steel which offers superior performance in creep characteristics and shock load capabilities over standard aluminum units.

The Model MBB is fully potted and sealed with special chemical compounds to IP66, providing excellent protection against moisture and humidity.

OUTLINE DIMENSIONS



Wiring

+ Excitation	Red
– Excitation	Black
+ Signal	Green
– Signal	White

All Capacity
Cable Length: 5' / 1.5m

CAPACITY		L	L_1	L_2	L_3	W	W_1	H	H_1	D_1	D	T
50/100/150 lbs	mm	60.33	50	12.7	33.66	19.5	12.7	24.8	22.2	4.5	4.5	–
	(inch)	2.38	1.97	0.50	1.33	0.77	0.5	0.98	0.87	0.18	0.18	
250 lbs	mm	60.33	50	12.7	33.66	25.4	19.05	24.8	22.2	4.5	4.5	–
	(inch)	2.38	1.97	0.50	1.33	1.00	0.75	0.98	0.87	0.18	0.18	
50/100/150 lbs OL	mm	60.33	50	12.7	33.66	21	12.7	24.8	22.2	4.4	4.4	–
	(inch)	2.38	1.97	0.50	1.33	0.83	0.5	0.98	0.87	0.17	0.17	
100/250 lbs VT	mm	60.33	50	12.7	33.66	25.4	19.05	24.8	22.2	6.8		–
	(inch)	2.38	1.97	0.50	1.33	1.00	0.75	0.98	0.87	0.26	1/4-20UNF	
100 lbs BCI	mm	60.33	50	12.7	33.66	25.4	19.05	24.8	22.2	6.4	6.4	–
	(inch)	2.38	1.97	0.50	1.33	1.00	0.75	0.98	0.87	0.25	0.25	
250 lbs BCI	mm	60.33	50	12.7	33.66	25.4	19.05	24.8	22.2	6.4	4.5	–
	(inch)	2.38	1.97	0.50	1.33	1.00	0.75	0.98	0.87	0.25	0.18	
250 lbs LT	mm	60.33	50	12.7	–	25.4	19.05	24.8	22.2	4.4	–	1/4-28UNF
	(inch)	2.38	1.97	0.50		1.00	0.75	0.98	0.87	0.17		

Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
Document No.: 11723
Revision: 23-Feb-2018

Miniature Bending Beam

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
NTEP/OIML accuracy class	Non-Approved	
Maximum no. of intervals (n)	3000	
Y = E_{max}/V_{min}	5000	Maximum available
Standard capacities (E_{max})	50, 100, 150, 250	lbs
Rated output—R.O.	3.0	mV/V
Rated output tolerance	10	±% of rated output
Zero balance	1	±% of rated output
Non-linearity	0.030	±% of rated output
Hysteresis	0.030	±% of rated output
Non-repeatability	0.020	±% of rated output
Creep error (20 minutes)	0.030	±% of rated output
Zero return (20 minutes)	0.030	±% of rated output
Temperature effect on min. dead load output	0.0026	±% of rated output/°C
Temperature effect on sensitivity	0.0015	±% of applied load/°C
Compensated temperature range	–10 to +40	°C
Operating temperature range	–20 to +60	°C
Safe overload	150	% of R.C.
Ultimate overload	300	% of R.C.
Excitation, recommended	10	VDC or VAC RMS
Excitation, maximum	15	VDC or VAC RMS
Input impedance	385±5	Ω
Output impedance	350±3	Ω
Insulation resistance	>5000	MΩ
Construction	Nickel-plated alloy steel	
Environmental protection	IP66	

All specifications subject to change without notice.

FM Approval

Intrinsically Safe: Class I, II, III; Div. 1 Groups A-G
Non-Incendive: Class I; Div. 2 Groups A-D

Stainless Steel Shear Beam Load Cell

FEATURES

- Capacities 500–2000 kg
- Stainless steel construction
- OIML R60 approved
- Sealed to IP67
- **Optional**
  - EEx ia IIC T6 hazardous area approval
  - IECEx approval available



APPLICATIONS

- Low profile platforms
- Pallet truck weighing
- Tank and silo weighing
- Food industry platforms

DESCRIPTION

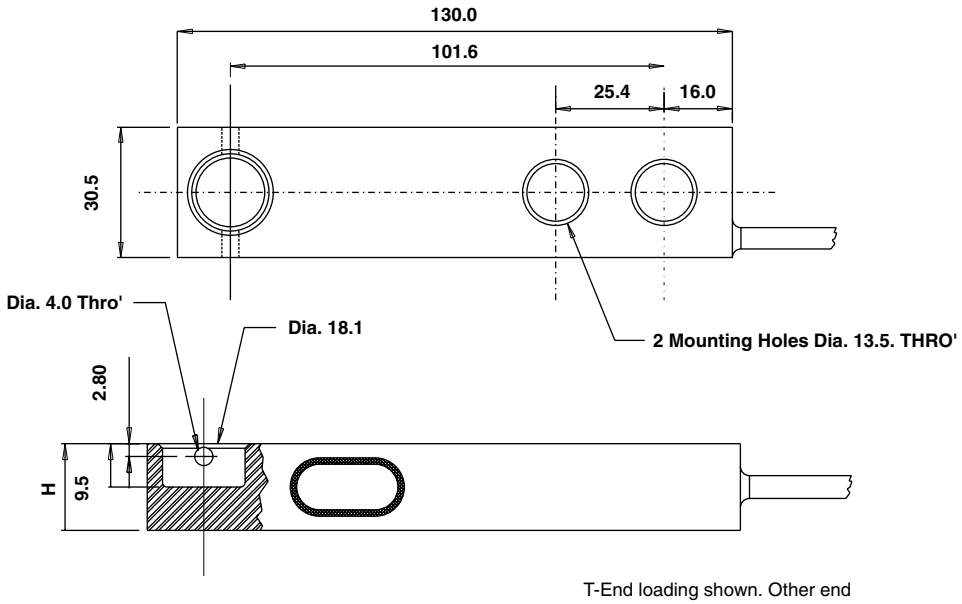
The Model 3520 is a low profile shear beam load cell designed for high accuracy platform scales, pallet scales and process weighing applications.

It has high resistance to shock or side loading, and is available in 2 mV/V sensitivity and is approved to OIML 6000 divisions.

Sealed to IP67 as standard, the 3520 is ideally suited for harsh industrial applications where performance and durability are paramount.

The extremely low profile makes this load cell ideal for today's modern low profile industrial platforms.

OUTLINE DIMENSIONS in millimeters



T-End loading shown. Other end options include M12 threaded.

CAPACITY (kg)	H
500	19.0 (0.748")
1000	19.0 (0.748")
2000	28.0 (1.102")

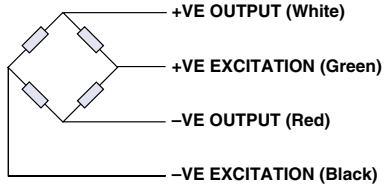
Stainless Steel Shear Beam Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Rated capacity—R.C. (E_{max})	500, 1000, 2000		kg
OIML accuracy class	Non-Approved	C3 (1)	
Maximum no. of intervals (n)	1000	3000	
Y = E_{max}/V_{min}	2000	6000	Maximum available 15000
Rated output—R.O	2.0		mV/V
Rated output tolerance	0.1		±% of rated output
Zero balance	2		±% of rated output
Zero return, 30 min.	0.050	0.017	±% of applied load
Total error	0.0500	0.0200	±% of rated output
Temperature effect on zero	0.007	0.0023	±% of rated output/°C
Temperature effect on output	0.0030	0.0010	±% of applied load/°C
Temperature range, compensated	–10 to +40		°C
Temperature range, safe	–30 to +90		°C
Maximum safe central overload	150		% of R.C.
Ultimate central overload	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	380±15		Ω
Output impedance	350±3		Ω
Insulation resistance	>2000		MΩ
Cable length	3		m
Cable type	4-wire, braided, polyurethane, floating screen		Standard
Construction	Stainless steel		
Environmental protection	IP67		
Recommended torque	136.0		N*m

(1) 50% utilization

All specifications subject to change without notice.

WIRING SCHEMATIC DIAGRAM



Single-Ended Beam Load Cell

FEATURES

- Capacities: 500–5000 kg, 1k–20k lbs.
- Low profile construction
- Certified to OIML R-60, 4000d and NTEP III, 5000 divisions
- Sealing: IP67 (DIN 40.050)
- Stainless steel construction
- Threaded load hole
- **Optional**
  - FM certified for use in potentially explosive atmospheres



APPLICATIONS

- Low profile platforms
- Pallet truck weighing
- Tank and silo weighing

DESCRIPTION

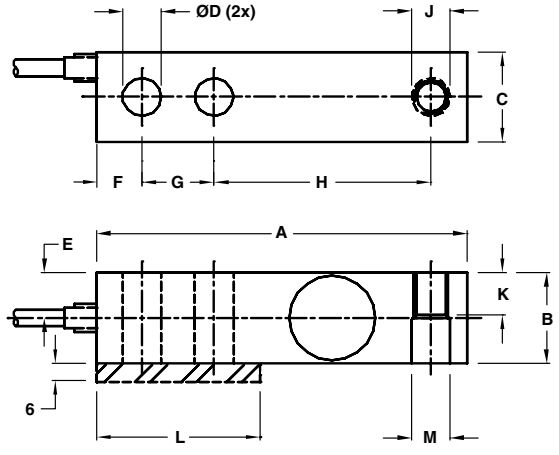
The Model 9123 is a low profile single-ended shear beam type load cell. The 9123 is made from stainless steel.

This load cell is suitable for small and medium platform scales, overhead track scales, hopper scales, and process weighing applications.

Reliable sealing is ensured by the proprietary TRANSEAL potting compound and additional mechanical protection of the strain gage area.

Ease of installation is made possible through the use of a partially threaded hole to accept levelling feet, load buttons, or loading cables.

OUTLINE DIMENSIONS in millimeters



Capacity	Dimensions in mm		Dimensions in inches		
	0.5T–2T	5T	1k–4k	5k–15k	20k
A	130.0	171.5	5.12	6.75	8.75
B	31.5	37.8	1.23	1.45	1.95
C	31.8	38.1	1.23	1.45	1.95
ØD	13.5	20.7	0.53	0.78	1.06
E	15.7	19.1	0.62	0.72	0.98
F	15.7	19.1	0.62	0.75	1.00
G	25.4	38.1	1.00	1.50	2.00
H	76.2	95.3	3.00	3.75	4.75
J	M12x1.75-6H	M20x2.5-6H	½-20UNF-2B	¾-16UNF-2B	1-12UNF-2B
K	15.7	19.1	0.62	0.75	0.98
L	57.2	76.2	2.25	3.12	4.00
ØM	13.5	20.7	0.53	0.78	1.030

Cable specifications:

Cable length: 6m

+ Excitation	Red
– Excitation	Black
+ Output	Green
– Output	White
Shield	Transparent

Cable screen is not connected to load cell body. Performance may be affected if load cell cables are shortened.

Single-Ended Beam Load Cell

SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Standard capacities (E_{max})	500, 1000, 2000, 5000 [1]				kg
Standard capacities (E_{max})	1k, 2.5k, 4k, 5k, 10k, 15k, 20k [1]				lbs
Accuracy class according to OIML R-60 /NTEP	NTEP III	Non-Approved	C3	C4	
Max. no. of verfication intervals	5000		3000	4000	
Min. verification interval ($V_{min}=E_{max}/Y$)			E_{max}/6000	E_{max}/8000	
Min. verification interval, type MR			E_{max}/10000	E_{max}/18000	
Rated output (=S)	3				mV/V
Rated output tolerance	0.003				±mV/V
Zero balance	1.0				±% FSO
Combined error	0.0200	0.050	0.023	0.018	±% FSO
Minimum dead load output return	0.0250	0.050	0.017	0.013	±% applied load
Non-repeatability	0.0100	0.070	0.035	0.026	±% FSO
Creep error (30 minutes)		0.060	0.025	0.018	±% applied load
Temp. effect on min. dead load output	(0.0008)	0.0250	0.0120	0.0088	±% FSO/5°C (/°F)
Temp. effect on min. dead load output, type MR			0.0070	0.0039	±% FSO/5°C
Temperature effect on sensitivity	(0.0010)	0.0250	0.0088	0.0065	% applied load/5°
Minimum dead load	0				% E_{max}
Maximum safe overload	150				% E_{max}
Ultimate overload	300				% E_{max}
Maximum safe side load	100				% E_{max}
Deflection at E_{max}	0.4 / 0.8 / 1.0 / 1.1—kg 0.4 / 0.8 / 1.0 / 0.9 / 1.1—lbs				mm
Excitation voltage	5 to 12				V
Maximum excitation voltage	15				V
Input resistance	350±3.5				Ω
Output resistance	350±3.5				Ω
Insulation resistance	≥5000				MΩ
Compensated temperature range	–10 to +40				°C
Operating temperature range	–40 to +80				°C
Storage temperature range	–50 to +90				°C
Element material	Stainless steel				
Sealing (DIN 40.050 / EN60.529)	IP67				
Recommended torque on fixation bolts	0.5–2T and 1k–4k lbs.: 149 5k lbs. and 5T and over: 271				N*m

[1] 5T and 10k lbs. are not approved by OIML

FSO—Full Scale Output

Correct mounting of the load cell is essential to ensure optimum performance.
Further information is available on request.

All specifications subject to change without notice.

Stainless Steel, Welded Seal Shear Beam Load Cell

FEATURES

- Rated capacities of 1000 to 20,000 pounds
- Stainless steel, welded seal construction
- Trade certified for NTEP Class IIIL 10000 and III 5000 divisions and OIML R-60 3000 divisions
- Hostile or clean environment
- Sealed to IP67, IP68 or IP69K rating
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G. Also, non-incendive ratings (No barriers!)
- **Optional**
  - Integral conduit adaptor with teflon jacketed cable available
  - EDOC option available; product appearance will differ from the photograph due to coating





65080-TWA

APPLICATIONS

- Hostile environments: food and beverage processing, chemical and plastics processing, pharmaceutical and biomedical processing
- Tank, bin and hopper weighing
- Batching, blending and mixing systems

DESCRIPTION

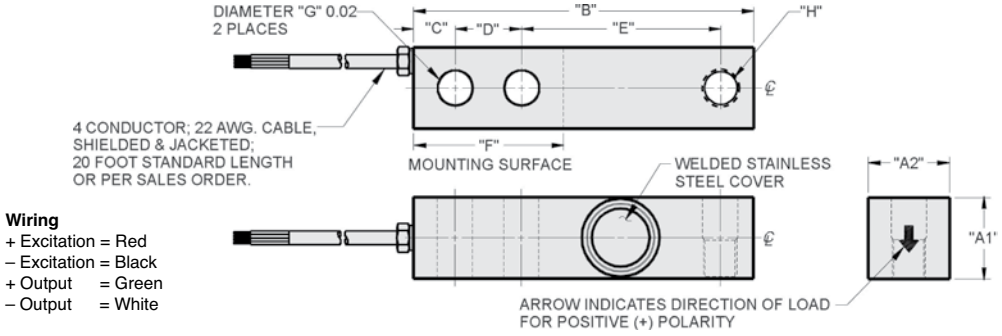
The Model 65083 provides the weighing industry with excellent protection necessary for today's hostile environments in an economical low profile range suitable for platform scale manufacture.

Its low profile and fully welded sealing, combined with high accuracy, makes this load cell ideally suited for low profile platforms, pallet truck weighers, tanks and silos. The guide slots incorporated into the upper and lower mounting faces enable manufacturers to easily position the load cell.

Hermetically sealed against moisture, the construction of the model 65083 in combination with a polyurethane dual shielded cable, enables continuous operation in harsh environments while maintaining a high operating specification.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance, due to temperature change and/or cable extension, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in inches



CAPACITY	A1	A2	B	C	D	E	F	G	H	DEFLECTION	WEIGHT
1k–4k	1.22	1.22	5.12	0.62	1.00	3.00	2.25	0.53	1/2-20 UNF-2B, Ø0.53 x 0.61 DEEP C'BORE	0.008–0.026	4.0
5k–10k	1.50	1.50	6.75	0.75	1.50	3.75	3.00	0.78	3/4-16 UNF-2B, Ø0.78 x 0.75 DEEP C'BORE	0.030–0.055	6.5
15k–20k	2.00	2.00	8.75	1.00	2.00	4.88	4.00	1.06	1-14 UNS-2B, Ø1.06 x 1.00 DEEP C'BORE	0.025–0.032	9.0

Capacities are in pounds. Deflection is ±10%. Certified drawings are available. Above dimensions apply to non-EDOC-coated load cells.

Stainless Steel, Welded Seal Shear Beam Load Cell

SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Rated capacity—R.C. (E_{max})	1k, 1.5k, 2.5k, 4k, 5k, 10k, 15k, 20k [1] 500 kg, 750 kg, 1 t, 2 t, 3 t, 5 t [1]				lbs kg/t
NTEP/OIML accuracy class	NTEP III	NTEP IIIL	Standard	OIML R60	
Maximum no. of intervals (n)	5000 single	10000 multiple		3000 [1]	
Y = E_{max}/V_{min}	NTEP Cert. No. 98-058			8333	Maximum available
Rated output—R.O.	2.0	2.0	3.0	2.0	mV/V
Rated output tolerance	0.25				±% mV/V
Zero balance	1.0				±% FSO
Combined error	0.02	0.02	0.03	0.02	±% FSO
Non-repeatability	0.01				±% FSO
Creep error (30 minutes)	0.025	0.03	0.03	0.017	±% FSO
Temperature effect on zero	0.0010	0.0010	0.0015	0.0010	±% FSO/°F
Temperature effect on output	0.0008	0.0008	0.0008	0.0007	±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)				°F (°C)
Operating temperature range	0 to 150 (–18 to 65)				°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)				°F (°C)
Sideload rejection ratio	500:1				
Safe sideload	100				% of R.C.
Maximum safe central overload	150				% of R.C.
Ultimate central overload	300				% of R.C.
Excitation, recommended	10				VDC or VAC RMS
Excitation, maximum	15				VDC or VAC RMS
Input impedance	343–357				Ω
Output impedance	349–355				Ω
Insulation resistance at 50 VDC	>1000				MΩ
Material	Stainless steel				
Environmental protection	IP68, IP69K				
Recommended torque	All capacities up to 5000 kg–136.0 5000 kg–205.0				N*m

Notes

[1] OIML approval 1–10k lbs and 500–5000 kg only
NTEP approval 1–10k lbs only (kg/metric capacities are not approved)

FSO—Full Scale Output

All specifications subject to change without notice.

Hermetically Sealed Stainless Steel Shear Beam Load Cell

FEATURES

- Rated capacities of 1000 to 10,000 pounds
  500 kg to 5 metric tonnes
- Stainless steel, welded seal construction
- Interchangeable with Sensortronics model 65023 shear beam
- Trade certified for NTEP Class III: 5000 Divisions and Class IIIL: 10000 Divisions; OIML R60: 3000 Divisions
- Hermetically *Sensorgage*™ sealed to IP68 standards
- *Cell Guard*™ two year warranty
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G.
  Also, non-incendive ratings (No barriers!)
- **Optional**
  - Companion weigh module is Model 65080 Stainless Steel *TantaMount*





65080-TWA

APPLICATIONS

- Hostile environments: Food and beverage processing
  Chemical and plastics processing
  Pharmaceutical and biomedical processing
- Washdown and Clean-In-Place environments
- High performance weighing modules and assemblies

DESCRIPTION

The Model 65083H provides the weighing industry with the ultimate protection necessary for today's hostile environments in an economical, low profile range suitable for platform scale manufacture.

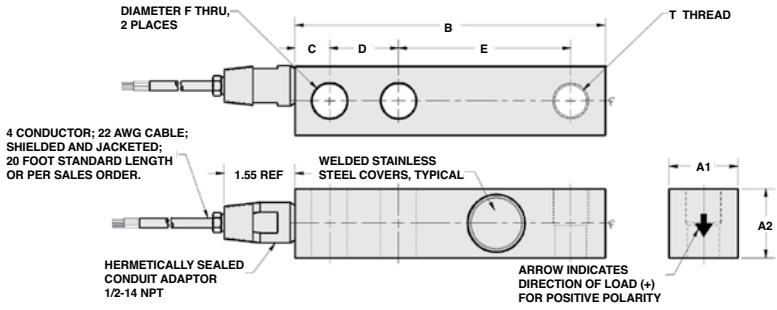
Its low profile and fully welded sealing combined with high accuracy makes this load cell ideally suited for low profile platforms, pallet truck weighers, tanks and silos. The guide slots incorporated into the upper and lower mounting faces enable manufacturers to easily position the load cell.

Hermetically sealed against moisture, the construction of the model 65083H, in combination with a polyurethane dual shielded cable, enables continuous operation in demanding environments while maintaining a high operating specification.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance, due to temperature change and/or cable extension, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in inches [millimeters]

Wiring
+ Excitation = Red
– Excitation = Black
+ Output = Green
– Output = White



CAPACITY	A1	A2	B	C	D	E	F	G-THREAD	DEFLECTION	WEIGHT
1k–4k	1.22	1.25	5.12	0.62	1.00	3.00	0.53	1/2-20 UNF-2B, Ø 0.53 × 0.61 DP C'BORE	0.012	2.4
5k–SE*	1.22	1.50	5.12	0.62	1.00	3.00	0.53	1/2-20 UNF-2B, Ø 0.53 × 0.61 DP C'BORE	0.012	2.4
5k–10k	1.50	2.00	6.75	0.75	1.50	3.75	0.78	3/4-16 UNF-2B, Ø 0.78 × 0.75 DP C'BORE	0.030	3.9
[500 kg–2 t]	[31.0]	[31.0]	[130.0]	[16.0]	[25.0]	[76.0]	[13.0]	M12 × 1.75-6H	[0.305]	[1.1]
[500 kg–2 t]	[31.0]	[32.0]	[130.0]	[16.0]	[25.0]	[76.0]	[13.0]	M12 × 1.75-6H	[0.305]	[1.1]
[3 t–5 t]	[38.0]	[38.0]	[171.0]	[19.0]	[38.0]	[95.0]	[20.0]	M20 × 2.5-6H	[0.762]	[1.8]

Capacities are in pounds. Deflection is ±10%. Certified drawings are available.
* SE denotes "Small Envelope". A 5k capacity is available in the 1k/4k dimensional envelope.

Hermetically Sealed Stainless Steel Shear Beam Load Cell

SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Rated capacity—R.C. (E_{max})	1k, 1.5k, 2.5k, 4k, 5k, 10k 500 kg, 750 kg, 1 t, 2 t, 5 t				lbs kg/t
NTEP/OIML accuracy class	NTEP III	NTEP IIIL	Standard	OIML R60	
Maximum no. of intervals (n)	5000 multiple	10000 multiple		3000	
Y = E_{max}/V_{min}	NTEP Cert. No. 98-175			8333	Maximum available
Rated output—R.O.	2.0	2.0	3.0	2.0	mV/V
Rated output tolerance	0.25				±% mV/V
Zero balance	1.0				±% FSO
Combined error	0.02	0.02	0.03	0.02	±% FSO
Non-repeatability	0.01				±% FSO
Creep error (30 minutes)	0.03	0.03	0.03	0.017	±% FSO
Temperature effect on zero	0.0010	0.0010	0.0015	0.0010	±% FSO/°F
Temperature effect on output	0.0008	0.0008	0.0008	0.0007	±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)				°F (°C)
Operating temperature range	0 to 150 (–18 to 65)				°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)				°F (°C)
Sideload rejection ratio	500:1				
Safe sideload	100				% of R.C.
Maximum safe central overload	150				% of R.C.
Ultimate central overload	300				% of R.C.
Excitation, recommended	10				VDC or VAC RMS
Excitation, maximum	15				VDC or VAC RMS
Input impedance	343–357				Ω
Output impedance	349–355				Ω
Insulation resistance at 50 VDC	>1000				MΩ
Material	Stainless steel				
Environmental protection	IP68 welded seals, glass to metal cable!!				Special
Recommended torque	All capacities up to 5000 kg–136.0 5000 kg–205.0				N*m

FSO—Full Scale Output

All specifications subject to change without notice.

Hermetically Sealed Single-Ended Beam

FEATURES

- Capacities: 1k to 10k lbs and 500 to 5000 kg
- High side-load tolerance
- Easy installation
- Electroless nickel-plated-alloy tool steel or stainless steel
- NTEP III 5000M approval 1k to 10k lbs
- **Optional**
  - FM approval available
  - SQB-H(HSS) hermetically sealed stainless steel



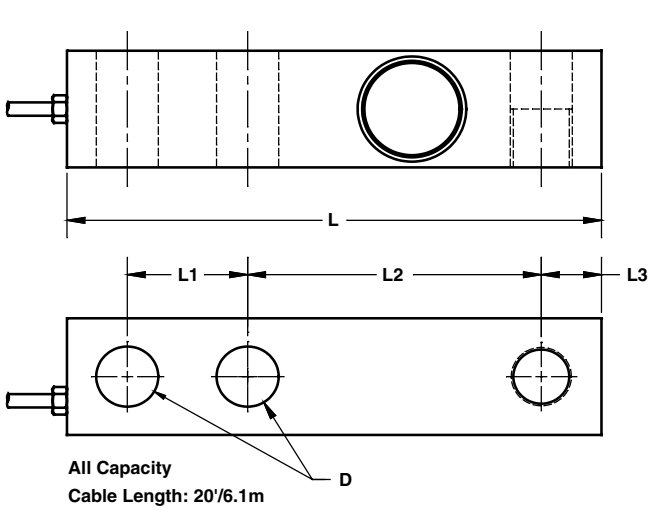
APPLICATIONS

- Truck/rail scales
- Silo/hopper/tank weighing
- Platform scales (multiple load cells)
- Pallet truck scales
- Packaging machines

DESCRIPTION

The Model SQB-H(HSS) is a single-ended shear beam load cell designed for multiple cell applications such as low profile platform or small tank scales when used with proper mounting accessories. It is insensitive to side loading and capable of reversed loading. The SQB-H(HSS) is constructed of stainless steel and is hermetically sealed to IP68, providing excellent protection against corrosive and washdown environments.

OUTLINE DIMENSIONS



Wiring diagram
+ Excitation Red
– Excitation Black
+ Signal Green
– Signal White

CAPACITY		L	L1	L2	L3	W	H	D	T
500, 1000, 2000 kg	mm	130.2	25.4	76.2	12.7	31.2	31.2	13.5	M12 x 1.75
1k/2k/2.5k/3k/4k/5k(SE) lbs	(inch)	5.12	1.00	3.00	0.50	1.22	1.22	0.53	1/2-20UNF
1500 kg	mm	130.2	25.4	88.9	12.7	31.2	31.2	13.5	M12 x 1.75
5000 kg	mm	171.5	38.1	95.3	19.0	38.1	38.1	19.8	M20 x 1.5
5k/10k lbs	(inch)	6.75	1.50	3.75	0.75	1.50	1.50	0.78	3/4-16UNF

Hermetically Sealed Single-Ended Beam

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
NTEP/OIML accuracy class	NTEP III	Non-Approved	
Maximum no. of intervals (n)	3000 single 5000 multiple	1000	
Y = E_{max}/V_{min}	10000	5000	Maximum available
Standard capacities (E_{max})	1k, 2k, 2.5k, 3k, 4k, 5kSE, 5k, 10k		lbs
Standard capacities (E_{max})	500, 1000, 1500, 2000, 5000		kg
Rated output—R.O.	3.0		mV/V
Rated output tolerance	0.25		±% of rated output
Zero balance	1		±% of rated output
Non-linearity	0.025	0.030 (SS: 0.05)	±% of rated output
Hysteresis	0.025	0.030 (SS: 0.05)	±% of rated output
Non-repeatability	0.020	0.020	±% of rated output
Creep error (20 minutes)	0.025	0.030	±% of rated output
Zero return (20 minutes)	0.025	0.030	±% of rated output
Temperature effect on min. dead load output	0.0017	0.0026	±% of rated output/°C
Temperature effect on sensitivity	0.0010	0.0015	±% of rated output/°C
Compensated temperature range	–10 to +40		°C
Operating temperature range	–20 to +60		°C
Safe overload	150		% of R.C.
Ultimate overload	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	385±5		Ω
Output impedance	350±3		Ω
Insulation resistance	>5000		MΩ
Construction	Nickel-plated alloy steel [1]		
Environmental protection	IP68		

Notes

[1] Stainless steel available

All specifications subject to change without notice.

FM Approval

Intrinsically Safe: Class I, II, III; Div. 1 Groups A-G

Non-Incendive: Class I; Div. 2 Groups A-D

Single-Ended Beam Load Cell

FEATURES

- Capacities: 500 kg, 1 t, 2 t, and 5 t
- Low profile, stainless steel construction
- Hermetically sealed, IP66 and IP68
- Certified to OIML R60, 6000d
- 1000 Ω bridge impedance
- Current calibration output (SC) ensures easy and accurate connection of multiple load cells
- Integral mounting step
- **Optional**
  - ATEX versions are available for use in potentially explosive atmospheres, caused by gas or dust



APPLICATIONS

- Platform scales
- Belt scales
- Overhead track scales
- Silo hopper weighing

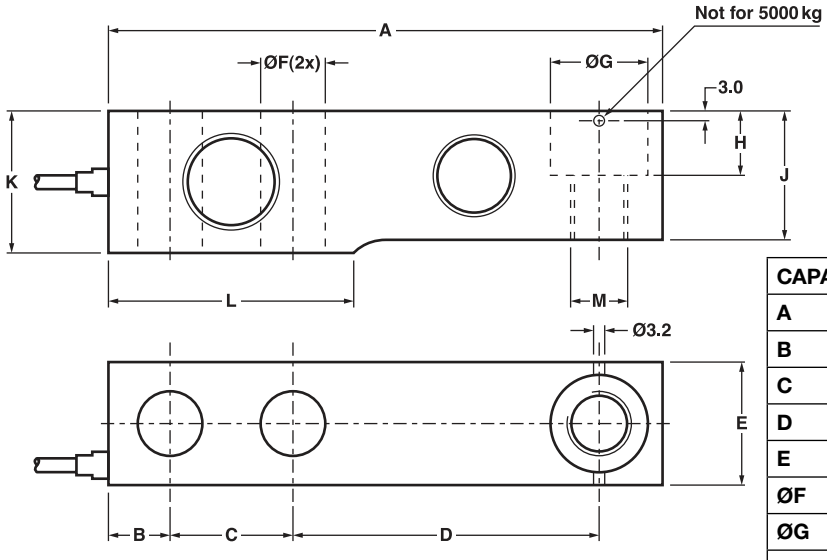
DESCRIPTION

The Model ACB is a high performance stainless steel beam type load cell. An integral mounting step removes the need for spacer plates and ensures optimum “bolt down” conditions.

This product is suitable for small and medium platform scales, hybrid scales, pallet weighers, and process weighing.

The fully welded construction and the cable entry ensure that this product can be used successfully in demanding environments found in the food, chemical, and allied process industries.

OUTLINE DIMENSIONS in millimeters



Cable specifications:

Cable length: 3 m for 500 kg, 1 t
6 m for 2 t, 5 t

Excitation +	Green
Excitation –	Black
Sense +	Yellow
Sense –	Blue
Output +	White
Output –	Red
Shield	Transparent

CAPACITY	500 kg	1000 kg	2000 kg	5000 kg
A	130.0	130.0	130.0	172.0
B	15.5	15.5	15.5	19.1
C	25.4	25.4	25.4	38.1
D	76.2	76.2	76.2	95.3
E	31.8	31.8	31.8	38.0
ØF	13.0	13.0	13.0	20.5
ØG	20.5	20.5	20.5	30.2
H	14.2	14.2	14.2	20.0
J	26.0	27.95	31.95	40.0
K	31.8	31.8	35.8	44.0
L	57.1	57.1	57.1	76.2
M	M12	M12	M12	M20

Single-Ended Beam Load Cell

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Standard capacities (E_{max})	500, 1000, 2000, 5000			kg
Accuracy class according to OIML R-60	Non-Approved	C3	C6 [1]	
Maximum no. of verfication intervals (n)		3000	6000	
Minimum verification interval, (V_{min} E_{max}/Y)		E_{max}/6000	E_{max}/12,000	
Minimum verification interval, Type MR		E_{max}/15,000	E_{max}/20,000	
Rated output (=S)	2			mV/V
Tolerance on rated output	0.02			±mV/V
Zero balance	1.0			±% FSO
Combined error	0.0500	0.0230	0.0120	±% FSO
Non-repeatability	0.070	0.035	0.018	±% FSO
Minimum dead load output return	0.0500	0.017	0.008	±% of applied load
Creep error (30 minutes)	0.0600	0.0245	0.012	±% of applied load
Temperature effect on minimum dead load	0.0250	0.0117	0.0058	±% FSO/5°C
Temperature effect on sensitivity	0.0250	0.0088	0.0045	±% applied load/5°C
Maximum safe over load	150			% E_{max}
Ultimate over load	300			% E_{max}
Maximum safe side load	100			% E_{max}
Deflection at E_{max}	0.20, 0.20, 0.22, 0.31			mm
Excitation voltage	5 to 12			V
Maximum excitation voltage	15			V
Input resistance	1000±50			Ω
Output resistance	1000±10			Ω
Insulation resistance	>5000			MΩ
Compensated temperature range	–10 to +40			°C
Operating temperature range	–40 to +80			°C
Storage temperature range	–40 to +90			°C
Element material (DIN)	Stainless steel 1.4542			
Sealing (DIN 40.050 / EN60.529)	IP66 and IP68			
SC-Version (current calibration)	Standard			
Recommended torque on fixation bolts	150			N*m

[1] 500 kg is approved to C3 only

FSO—Full Scale Output

SC-version: The rated output and the output resistance are balanced in such a way, that the output current is calibrated to within 0.05% of a reference value. This allows easy parallel connection of the load cells.

All specifications subject to change without notice.

Single-Ended Load Beam

FEATURES

- Capacities: 0.5 t, 1 t, 2 t, 5 t, 10 t, 1k lbs, 2k lbs, 5k lbs, and 10k lbs
- Fully welded, stainless steel construction
- Hermetically sealed, IP66 and IP68
- Certified to OIML R-60, 4000d and NTEP 10000d
- Current calibration output (SC version) ensures easy and accurate parallel connection of multiple load cells
- Digital version available (model SBC)
- **Optional**
  - ATEX- EEx ib IIC T6 hazardous area approval
  - FM approval available



APPLICATIONS

- Platform scales
- Belt scales
- Pallet scales
- Overhead track scales
- On-board weighing
- Silo hopper weighing

DESCRIPTION

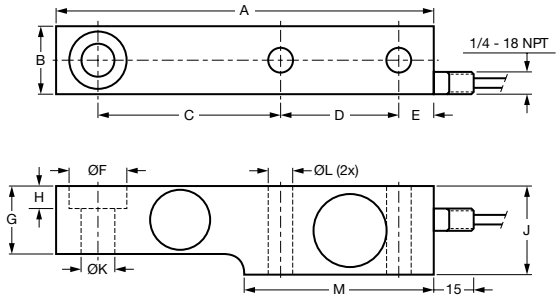
The Model SSB is a stainless steel single-ended shear beam type load cell.

This robust product is suitable for a wide range of platform scales, pallet scales, overhead track scales, and process weighing applications.

The fully welded construction and water block cable entry ensure that this product can be used successfully in demanding environments found in the food, chemical, and allied process industries.

This product meets the stringent Weights and Measures requirements throughout Europe and the USA.

OUTLINE DIMENSIONS in millimeters [inches}



Cable specifications:

Cable length: 5m

+ Excitation	Green
– Excitation	Black
+ Output	White
– Output	Red
Shield	Transparent

CAPACITY (kg)	500–2000		5000	
	mm	in	mm	in
A	203.2	8.00	235.0	9.25
B	36.5	1.44	47.5	1.87
C	98.4	3.87	123.8	0.50
D	63.5	2.50	66.7	2.63
E	19.1	0.75	20.6	0.81
F	$30.2^{+0.2/-0}$	$1.19^{+0.008/-0}$	$41.3^{+0.2/-0}$	$1.63^{+0.008/-0}$
G	36.5	1.44	47.6	1.87
H	11.9	0.47	15.8	0.62
J	47.6	1.87	69.9	2.75
K	17.5 H11	0.69 H11	25.5 H11	1 H11
L	14.0	0.55	22.0	0.87
M	101.6	4.00	111.2	4.38

For 10 t capacity, please consult factory

Single-Ended Load Beam

SPECIFICATIONS						
PARAMETER	**VALUE**					**UNIT**
Standard capacities (E_{max})	0.5, 1, 2, 5 (1)			2, 5 (1)		t
Accuracy class according to OIML R-60	NTEP III	Non-Approved	C3	C3MI8	C4	
Max. no. of verfication intervals	10000		3000	3000	4000	
Min. verification interval ($V_{min}=E_{max}/Y$)			E_{max}/10000	E_{max}/15,000	E_{max}/10000	
MDLOR ($Z=E_{max}/2*DR$)			–	8000	–	
Min. verification interval, type MR			E_{max}/20000		E_{max}/20000	
Rated output (=S)	2					mV/V
Rated output tolerance	0.02					±mV/V
Zero balance	1.0					±% FSO
Combined error	0.0200	0.0500	0.0200	0.0200	0.0170	±% FSO
Non-repeatability	0.0100	0.0200	0.0100	0.0100	0.0090	±% FSO
Minimum dead load output return	0.0250	0.0500	0.0167	0.0063	0.0125	±% applied load
Creep error (30 minutes)		0.0600	0.0245	0.0245	0.0184	±% applied load
Creep error (20 minutes)	0.030	0.0200	0.0053	0.0053	0.0039	±% applied load
Temp. effect on min. dead load output	(0.001)	0.0250	0.0070	0.0050	0.0070	±% FSO/5°C (/°F)
Temp. effect on min. dead load output, type MR			0.0035		0.0035	±% FSO/5°C
Temperature effect on sensitivity	(0.0008)	0.0250	0.0050	0.0050	0.0045	±% applied load/ 5°C(/°F)
Minimum dead load	0					% E_{max}
Maximum safe over load	150					% E_{max}
Ultimate over load	300					% E_{max}
Maximum safe side load	100					% E_{max}
Deflection at E_{max}	0.5 max.					mm
Excitation voltage	5 to 15					V
Maximum excitation voltage	18					V
Input resistance	350±3.5					Ω
Output resistance	353±3					Ω
Insulation resistance	≥5000					MΩ
Compensated temperature range	–10 to +40					°C
Operating temperature range	–40 to +80					°C
Storage temperature range	–40 to +90					°C
Element material	Stainless steel 1.4542					
Sealing (DIN 40.050 / EN60.529)	IP66 & IP68					
SC-Version (current calibration)	Standard					
Recommended torque on fixation bolts	0.5-2 t: 110 / 5 t: 540					N*m

(1) For 10 t capacity please consult factory

FSO—Full Scale Output

SC-version: The rated output and the output resistance are balanced in such a way that the output current is calibrated to within 0.05% of a reference value. This allows easy parallel connection of the load cells.

All specifications subject to change without notice.

Stainless Steel Shear Beam Load Cell

FEATURES

- Capacities 300–5000 kg, 1000–5000 lbs
- Stainless steel construction
- OIML R60 and NTEP approved
- Hermetically sealed to IP68 and IP69K
- Specially designed for demanding environments
- **Optional**
  - EEx ia IIC T6 hazardous area approval
  - FM and IECEx approvals available
  - 1100Ω impedance available



APPLICATIONS

- Low profile platforms
- Pallet truck weighing
- Tank and silo weighing
- Demanding environment weighing
- Food industry weighing

DESCRIPTION

The Model 3510 provides the weighing industry with the ultimate protection necessary for today's hostile environments in an economical, low profile range suitable for platform scale manufacture.

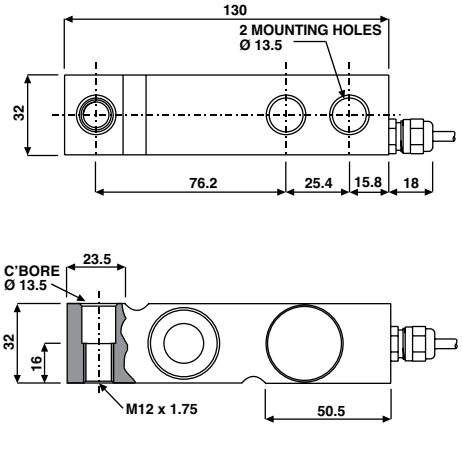
Its low profile and fully welded sealing combined with high accuracy makes this load cell ideally suited for low profile platforms, pallet truck weighers, tanks and silos. The guide slots incorporated into the upper and lower mounting faces enable manufacturers to easily position the load cell.

Hermetically sealed against moisture, the construction of the Model 3510, in combination with a polyurethane dual shielded cable, enables continuous operation in demanding environments while maintaining a high operating specification.

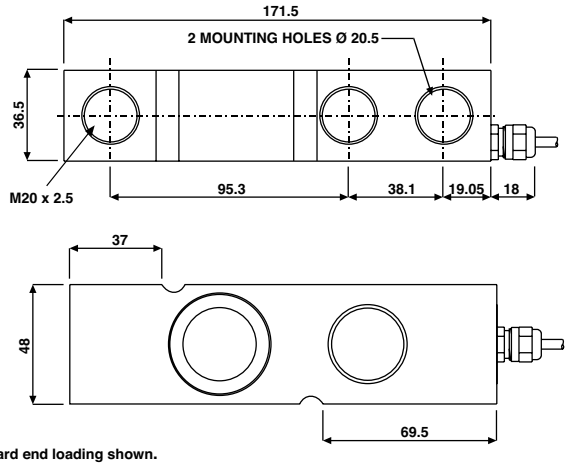
The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance, due to temperature change and/or cable extension, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters

DIMENSIONS FOR CAPACITIES 300, 500, 1000 and 2000 kg



DIMENSIONS FOR CAPACITIES 3000 and 5000 kg



Standard end loading shown.

Options include:

'Through-hole' - plain or threaded.
'T-End' - supplied current and voltage matched for platforms.
Imperial capacities can be manufactured with M12 or 1/2"-20 UNC threading

Stainless Steel Shear Beam Load Cell

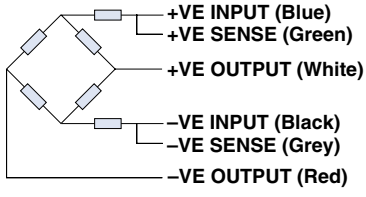
SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Rated capacity—R.C. (E_{max})	300, 500, 750, 1000, 1200, 2000, 3000, 5000				kg
Rated capacity—R.C. (E_{max})	1000, 1500, 2500, 4000				lbs
NTEP/OIML accuracy class	NTEP	Non-Approved	C3	C6	
Maximum no. of intervals (n)	3000 single 5000 multiple	1000	3000 (1)	6000(2)	
Y = E_{max}/V_{min}	12500	1400	12000	20000	Maximum available 20000
Rated output—R.O	2.0 for kg and 3.0 for lbs				mV/V
Rated output tolerance	0.1				±% of rated output
Zero balance	2				±% of rated output
Zero return, 30 min.	0.015% for III/3000 Single 0.010% for III/5000 Multiple	0.0300	0.0170	0.0083	±% of applied load
Total error	0.0200	0.0500	0.0200	0.0100	±% of rated output
Temperature effect on zero	0.0023	0.0100	0.0023	0.0007	±% of rated output/°C
Temperature effect on output	0.0010	0.0030	0.0010	0.00058	±% of applied load/°C
Temperature range, compensated	–10 to +40				°C
Temperature range, safe	–30 to +80				°C
Maximum safe central overload	150				% of R.C.
Ultimate central overload	300				% of R.C.
Excitation, recommended	10				VDC or VAC RMS
Excitation, maximum	15				VDC or VAC RMS
Input impedance	380±10				Ω
Output impedance	355±5				Ω
Insulation resistance	>2000				MΩ
Cable length	5				m
Cable type	6-wire, braided, polyurethane, dual floating screen				Standard
Construction	Stainless steel				
Environmental protection	IP68, IP69K				
Recommended torque	136.0 (3000 and 5000 kg—205.0)				N*m

(1) 50 % utilization

(2) Capacities 300–1200 kg, and 1000–2500 lbs only

All specifications subject to change without notice.

WIRING SCHEMATIC DIAGRAM



Single-Ended Load Beam

FEATURES

- Capacities: 5–500 kg
- Fully welded, stainless steel construction
- Hermetically sealed, IP66 and IP68
- Certified to OIML R-60, 4000d and NTEP class IIIL, 10000 divisions
- Current calibration output (SC version) ensures easy and accurate parallel connection of multiple load cells
- **Optional**
  - ATEX and FM certified versions are available for use in potentially explosive atmospheres



APPLICATIONS

- Platform scales
- Belt scales
- Packaging machines
- Silo/hopper weighing

DESCRIPTION

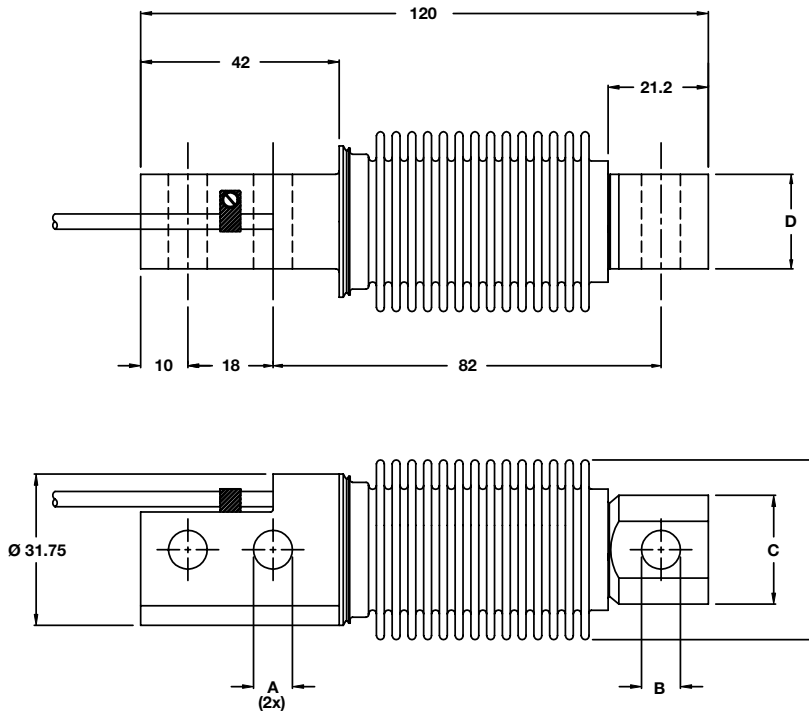
The Model SHBxR is a fully weld-sealed stainless steel bending beam type load cell.

This product is suitable for low capacity platform scales, packaging machines, hybrid scales and process weighing.

Fully welded construction and water block cable-entry ensure that this product can be used successfully in demanding environments found in the food, chemical and allied industries.

This product meets the stringent Weights and Measures requirements throughout Europe.

OUTLINE DIMENSIONS in millimeters



Capacity (kg)	5–200	350 / 500
A	8.2	10.3
B	$8.2\ ^{+0.1}_{0}$	$10.3\ ^{+0.1}_{0}$
C	23.0	24.0
D	20.0	19.0

Note: Dimensions in millimeters

Cable specifications:

Cable length	3m
Excitation +	Green
Excitation –	Black
Output +	White
Output –	Red
(Sense +	Yellow)
(Sense –	Blue)
Shield	Transparent

4-wire cable standard,
6-wire cable optional

Single-Ended Load Beam

SPECIFICATIONS						
PARAMETER	**VALUE**					**UNIT**
Standard capacities (E_{max})	5, 10, 20, 30, 50, 100, 200, 350, 500 (1)				100, 200, 350, 500 (2)	kg
Accuracy class according to OIML R-60 /NTEP	NTEP IIIL	Non-Approved	C3	C4	C3MI7.5	
Max. no. of verfication intervals	10000		3000	4000	3000	
Min. verification interval ($V_{min}=E_{max/Y}$)			E_{max}/15,000	E_{max}/15,000	E_{max}/15,000	
MDLOR ($Z=E_{max}/2*DR$)					7500	
Rated output (=S)	2					mV/V
Rated output tolerance	0.02					±mV/V
Zero balance	1.0					±% FSO
Combined error	0.0200	0.05000	0.0200	0.0170	0.0200	±% FSO
Non-repeatability	0.0100	0.0200	0.0100	0.0090	0.0100	±% FSO
Minimum dead load output return	0.0250	0.0500	0.0167	0.0125	0.0067	±% applied load
Creep error (30 minutes)		0.0600	0.0245	0.0184	0.0245	±% applied load
Creep error (20 - 30 minutes)	0.0300	0.0500				±% applied load
Temp. effect on min. dead load output	(0.0008)	0.0250	0.0047	0.0047	0.0047	±% FSO/5 °C (/°F)
Temperature effect on sensitivity	(0.0010)	0.0250	0.0050	0.0045	0.0050	±% applied load/5°C (/°F)
Minimum dead load	0					% E_{max}
Maximum safe over load	150					% E_{max}
Ultimate over load	300					% E_{max}
Maximum safe side load	100					% E_{max}
Deflection at E_{max}	0.30±0.03					mm
Excitation voltage	5 to 12					V
Maximum excitation voltage	15					V
Input resistance	460±50					Ω
Output resistance	350±3.5					Ω
Insulation resistance	≥5000					MΩ
Compensated temperature range	–10 to +40					°C
Operating temperature range	–40 to +80					°C
Storage temperature range	–40 to +90					°C
Element material (DIN)	Stainless steel 1.4542					
Sealing (DIN 40.050 / EN60.529)	IP66 and IP68					
SC-Version (current calibration)	Standard					
Recommended torque on fixation bolts	23 (70 for 350/500 kg)					N*m

(1) 5 and 10 kg capacities are not approved by NTEP.
5 kg is not approved by OIML.

(2) $D_{max} = 0.75 * E_{max}$

FSO—Full Scale Output

SC-version: The rated output and the output resistance are balanced in such a way that the output current is calibrated to within 0.05% of a reference value. This allows easy parallel connection of the load cells.

All specifications subject to change without notice.

Hermetically-Sealed Bending Beam

FEATURES

- Capacities: 10, 20, 30, 50, 75, 100, 200 and 250 kg
- Stainless steel or alloy steel construction
- Stainless steel version hermetically-sealed
- High side load tolerance
- Easy installation
- OIML C3 approval from 50 kg to 250 kg



APPLICATIONS

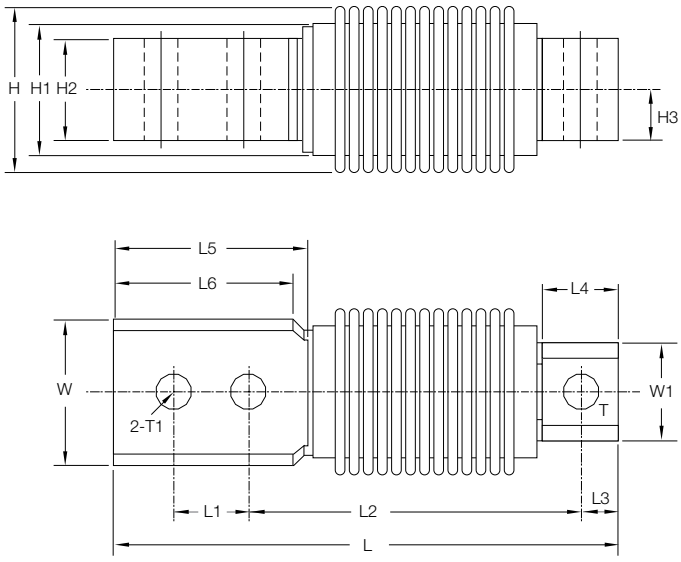
- Platform scales (multiple load cells)
- Silo/hopper/tank weighing
- Packaging machines
- Dosing/filling
- Belt scales/conveyor scales

DESCRIPTION

The Model HBB is a single-ended bending beam load cell designed for multiple cell applications, such as low profile platform scales or small tank scales, when used with proper mounting accessories. It is insensitive to side load and capable of reversed loading.

The Model HBB is constructed of stainless steel or alloy steel. The strainless steel version is hermetically-sealed to IP68, providing excellent protection against corrosive and wash-down environments.

OUTLINE DIMENSIONS



Wiring Diagram

Stainless Steel:

+ Excitation	Red
– Excitation	Black
+ Signal	Green
– Signal	White
+ Sense	Brown
– Sense	Yellow

Alloy Steel:

+ Excitation	Red
– Excitation	Black
+ Signal	Green
– Signal	White

Stainless Steel Capacities (kg)		L	L1	L2	L3	L4	L5	L6	H	H1	H2	H3	W	W1	T	T1
10, 20, 50, 100, 200*, 250	mm	120	18	82	10	19	41	38	41.6	28.2	20	10	31.5	26.6	Ø 8.2	Ø 8.2
	inch	4.72	0.71	3.23	0.39	0.75	1.61	1.5	1.64	1.11	0.79	0.39	1.24	1.05	Ø 0.32	Ø 0.32

* Threaded hole version "200KGT" available: T = M10 × 1.5

Alloy Steel Capacities (kg)		L	L1	L2	L3	L4	L5	L6	H	H1	H2	H3	W	W1	T	T1
10, 20,30, 50, 75, 100, 200, 250	mm	120	18	82	10	19	41	38	41.6	31.5	20	10	31.5	26.6	M10 × 1.5	Ø 8.2
	inch	4.72	0.71	3.23	0.39	0.75	1.61	1.5	1.64	1.24	0.79	0.39	1.24	1.05	M10 × 1.5	Ø 0.32

Hermetically-Sealed Bending Beam

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
NTEP/OIML Accuracy class	Non-Approved	C3 (stainless steel version only)	
Maximum no. of intervals (n)	1000	3000*	
Y = E_{max}/V_{min}	5000	10000	Maximum available
Standard capacities (E_{max})	10, 20, 30**, 50, 75**, 100, 200, 250		kg
Rated output—RO	2.0		mV/V
Rated output tolerance	0.25		±% of rated output
Zero balance	1		±% of rated output
Non linearity	0.030	0.025	±% of rated output
Hysteresis	0.030	0.025	±% of rated output
Non-repeatability	0.020		±% of rated output
Creep error (20 minutes)	0.030	0.020	±% of rated output
Zero return (20 minutes)	0.030	0.020	±% of rated output
Temperature effect on min. dead load output	0.0026	0.0014	±% of rated output/°C
Temperature effect on sensitivity	0.0015	0.0010	±% of rated output/°C
Compensated temperature range	–10 to +40		°C
Operating temperature range	–20 to +60		°C
Safe overload	150		% of RC
Ultimate overload	300		% of RC
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	385±5		Ω
Output impedance	350±3		Ω
Insulation resistance	>5000		MΩ
Cable length	3		m
Construction	Stainless steel or alloy steel		
Environmental protection	IP68 (stainless steel version only)		

* Capacities: 50–250 kg
** Capacities of 30 kg and 75 kg as alloy steel version only

All specifications listed subject to change without notice.

Single-Ended Beam Load Cell

FEATURES

- Capacities: 200–2500 lbs.
- Low profile, stainless steel construction
- Hermetically sealed, IP66 and IP68
- Certified to OIML R-60, 5000d and NTEP class III, 5000 divisions
- Current calibration output (SC version) ensures easy and accurate parallel connection of multiple load cells
- Interchangeable with existing Model 5102
- **Optional**
  - ATEX and FM certified versions are available for use in potentially explosive atmospheres



APPLICATIONS

- Platform scales
- Belt scales
- Silo/hopper weighing
- Overhead track scales

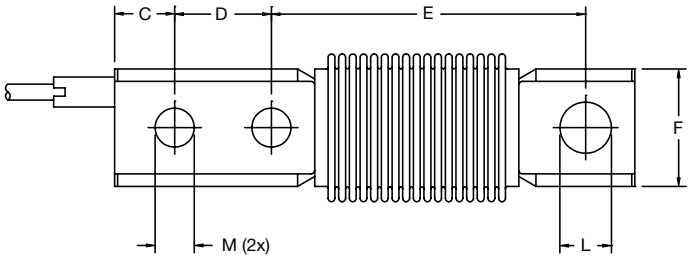
DESCRIPTION

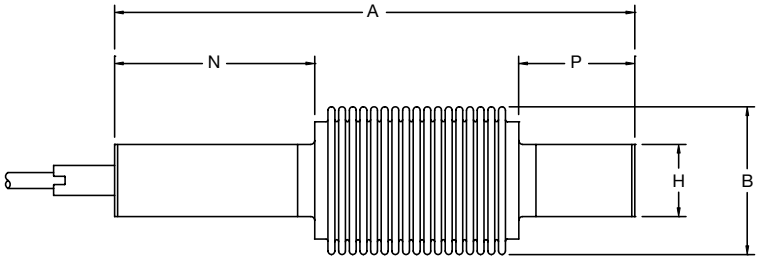
The Model 9102 is a stainless steel single-ended beam type load cell.

This product is suitable for small and medium platform scales, overhead track scales and process weighing.

The fully welded construction and water block cable entry ensure that this product can be used successfully in demanding environments found in the food, chemical and allied process industries.

OUTLINE DIMENSIONS in millimeters





Capacity (lbs)	200	500–1000	2500
A	127.0	136.7	136.7
B	39.6	39.6	39.6
C	9.7	15.8	15.8
D	15.9	25.4	25.4
E	88.9	82.6	82.6
F	31.2	31.2	31.2
H	19.0	19.0	19.0
L_{THRU}	9.9	10.3	13.5
M_{THRU}	6.8	10.3	10.3
N	38.1	52.6	52.6
P	31.8	30.5	30.5

Cable specifications:

Cable length	3m
Excitation +	Red
Excitation –	Black
Output +	Green
Output –	White
Shield	Transparent

Cable screen is not connected to load cell body. Performance may be affected if load cell cables are shortened.

Single-Ended Beam Load Cell

SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Standard capacities (=E_{max})	200, 500, 1000, 2500				lbs.
Accuracy class according to OIML R-60 /	NTEP III	Non-Approved	C3	C5	
Max. no. of verification intervals (n)	5000		3000	5000	
Minimum verification interval (V_{min})			E_{max}/15000	E_{max}/15000	
Rated output (=S)	2				mV/V
Rated output tolerance	0.02				±mV/V
Zero balance	1.0				±% FSO
Combined error	0.0200	0.0500	0.0200	0.0100	±% FSO
Non-repeatability	0.0100	0.0200	0.0100	0.0070	±% FSO
Minimum dead load output return	0.0250	0.0500	0.0167	0.0100	±% applied load
Creep error (30 minutes)		0.0600	0.0245	0.0147	±% applied load
Creep error (20-30 minutes)		0.0200	0.0053	0.0032	±% applied load
Temp. effect on min. dead load output	(0.0008)	0.0250	0.0047	0.0047	±% FSO/5°C (/°F)
Temp. effect on sensitivity	(0.0010)	0.0250	0.0055	0.0035	±% applied load/5°C (/°F)
Minimum dead load	0				% E_{max}
Maximum safe overload	150				% E_{max}
Ultimate overload	300				% E_{max}
Maximum safe side load	100 (50 for 200 lbs.)				% E_{max}
Deflection at E_{max}	0.2/ 0.2/ 0.8/ 0.8				mm
Excitation voltage	5 to 12				V
Maximum excitation voltage	15				V
Input resistance	350±3.5				Ω
Output resistance	350±3.5				Ω
Insulation resistance	>5000				MΩ
Compensated temperature range	–10 to +40				°C
Operating temperature range	–40 to +80				°C
Storage temperature range	–40 to +90				°C
Element material	Stainless steel 1.4542				
Sealing (DIN 40.050 / EN 60.529)	IP66 and IP68				
SC-Version	Standard				
Recommended torque on fixation bolts	80 (70 for 200 lbs.)				N*m

FSO—Full Scale Output

SC-version: The rated output and the output resistance are balanced in such a way that the output current is calibrated to within 0.05% of a reference value. This allows easy parallel connection of the load cells.

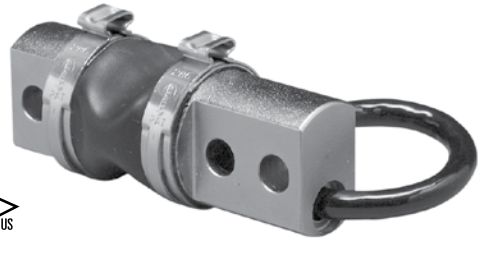
Correct mounting of the load cells is essential to ensure optimum performance. Further information is available on request.

All specifications are subject to change without notice.

Low Profile Bending Beam

FEATURES

- Rated capacities of 25 to 500 pounds
- Tension or compression loading capabilities
- Compact, low profile design
- *Sensorgage*™ sealed to IP65 standards
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G. Also, non-incendive ratings (No barriers!)
- **Optional**
  - Companion tank weighing assemblies available (Model 65059-TWA)



FM C US APPROVED

APPLICATIONS

- Bin and hopper weighing
- Belt conveyor scales
- Netweighing

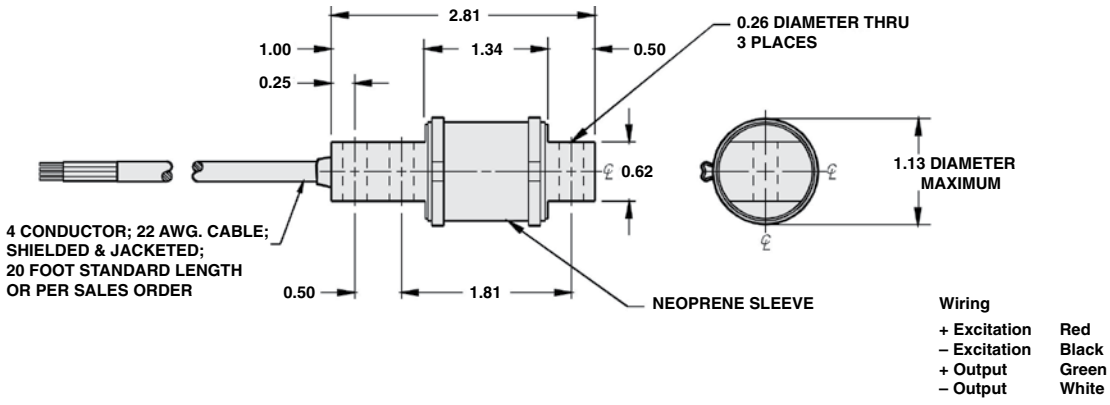
DESCRIPTION

The Model 60040 is a compact, low capacity, alloy-steel, high-precision bending-beam load cell.

This product's small size and accuracy makes it ideal for applications that demand high performance from a small package. This load cell is commonly used in platform scales, conveyer scales, and varied process weighing applications.

This product is rated intrinsically safe by the Factory Mutual System (FM); making it suitable for use in potentially explosive environments. A mounting accessory, the Model 65059-TWA, is available for the Model 60048.

OUTLINE DIMENSIONS in inches



Wiring

+ Excitation	Red
– Excitation	Black
+ Output	Green
– Output	White

Low Profile Bending Beam

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Rated capacity—R.C. (E_{max})	25, 50, 100, 150, 250, 500	lbs
NTEP/OIML accuracy class	Standard	
Maximum no. of intervals (n)	–	
Rated output—R.O.	2.0	mV/V
Rated output tolerance	+0.25 to –10	±% mV/V
Zero balance	1.0	±% FSO
Combined error	0.03	±% FSO
Non-repeatability	0.01	±% FSO
Creep error (20 minutes)	0.03	±% FSO
Temperature effect on zero	0.0015	±% FSO/°F
Temperature effect on output	0.0008	±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)	°F (°C)
Operating temperature range	0 to 150 (–18 to 65)	°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)	°F (°C)
Maximum safe central overload	150	% of R.C.
Ultimate central overload	300	% of R.C.
Excitation, recommended	10	VDC or VAC RMS
Excitation, maximum	15	VDC or VAC RMS
Input impedance	380–450	Ω
Output impedance	349–355	Ω
Insulation resistance at 50 VDC	>1000	MΩ
Material	Nickel-plated alloy steel	
Environmental protection	IP65	

FSO—Full Scale Output

All specifications subject to change without notice.

Welded, Hermetically Sealed Load Cell

FEATURES

- Capacities 5–500 kg
- Stainless steel construction
- OIML R60 and NTEP approved
- IP68 protection
- **Optional**
  - EEx ia IIC T6 hazardous area approval
  - FM and IECEx approvals available



APPLICATIONS

- Low profile platforms
- Loss-in-weight feeders
- Marine and hybrid scales
- Belt weighers
- Demanding food industry environments

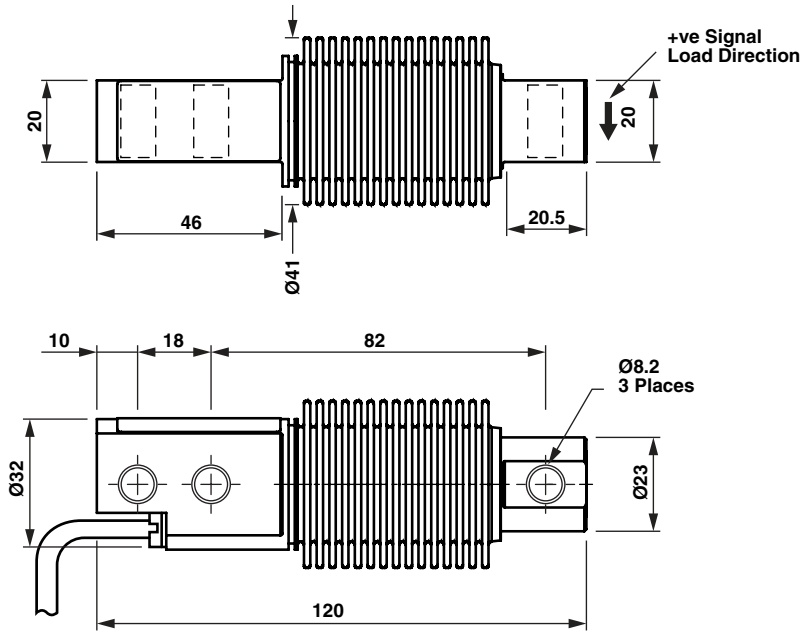
DESCRIPTION

The Model 355 is a welded bending load cell manufactured in stainless steel. Hermetically sealed against moisture, the Model 355's construction and polyurethane shielded cable enables the load cell to function in demanding environments while maintaining its operating specifications.

The low profile, high accuracy and sealing makes this load cell highly suitable for applications such as low profile platforms, weighing and packing machines, conversion of mechanical and a variety of other applications where sealed cells are required. For hazardous environments this load cell is available with EEx ia IIC T6 level of approval as an option.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of change in the lead resistance, due to temperature change and/or cable extension, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters



Welded, Hermetically Sealed Load Cell

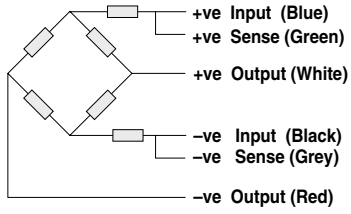
SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Rated capacity—R.C. (E_{max})	5, 10, 20, 30, 50, 100, 200, 250, 500				kg
NTEP/OIML accuracy class	NTEP	Non-Approved	C3[1]	C4[2]	
Maximum no. of intervals (n)	4000 single	1000	3000	4000	
Y = E_{max}/V_{min}	5800	2000	15000	13333	Maximum available 15000
Rated output—R.O.	2.00 (UR matched = 2.02)				mV/V
Rated output tolerance	0.002				±mV/V
Zero balance	0.04				±mV/V
Zero return, 30 min.	0.0125	0.0500	0.0170	0.0125	±% of applied load
Total error	0.0200	0.05	0.0200	0.0150	±% of rated output
Temperature effect on zero	0.0023	0.007	0.0009	0.0011	±% of rated output/°C
Temperature effect on output	0.001	0.0040	0.0010	0.0008	±% of applied load/°C
Temperature range, compensated	–10 to +40				°C
Temperature range, safe	–20 to +70				°C
Maximum safe central overload	150				% of R.C.
Ultimate central overload	300				% of R.C.
Excitation, recommended	10				VDC or VAC RMS
Excitation, maximum	15				VDC or VAC RMS
Input impedance	380±10				Ω
Output impedance	355±5				Ω
Insulation resistance	>2000				MΩ
Cable length	3				m
Cable type	6-wire, braided, polyurethane, dual floating screen				Standard
Construction	Stainless steel				
Environmental protection	IP68				
Recommended torque	22.0				N*m

[1] 20% utilization

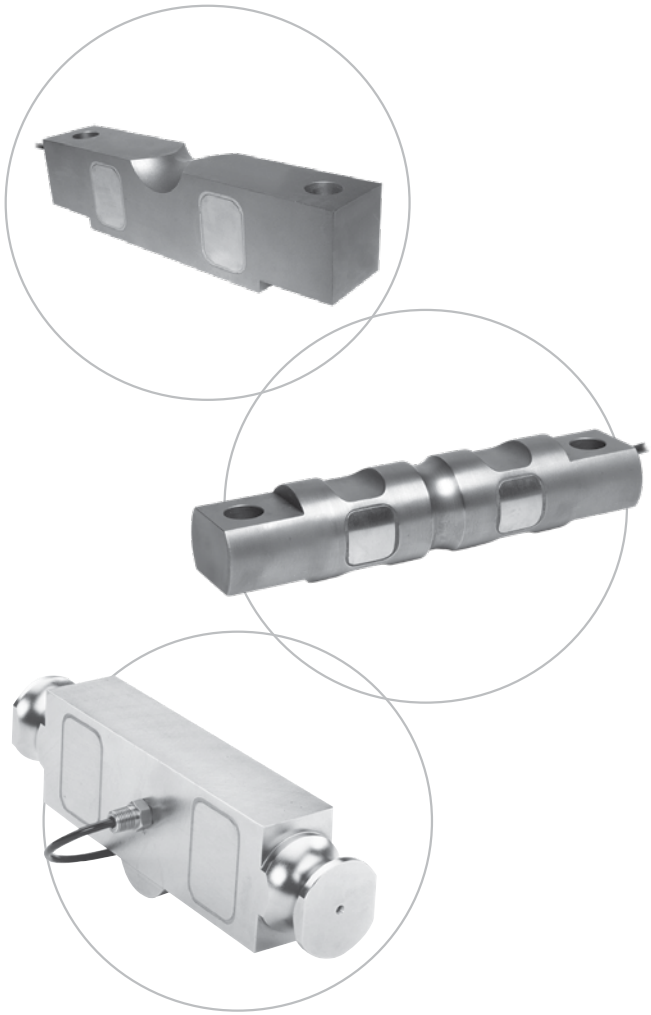
[2] 30% utilization

All specifications subject to change without notice.

Wiring Schematic Diagram



Load Cells—
Double Ended Shear Beams



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Double-Ended Shear Beam

FEATURES

- Capacities 1k–75k lbs
- Double-ended center-load shear beam design
- Rationalized outputs
- Free of horizontal movement
- Insensitive to side load
- Electroless nickel-plated alloy tool steel
- **Optional**
  - Hermetically sealed version available
  - Stainless steel version available
  - FM approval available
  - EDOC option available; product appearance will differ from the photograph due to coating



APPLICATIONS

- Silo/hopper/tank weighing

DESCRIPTION

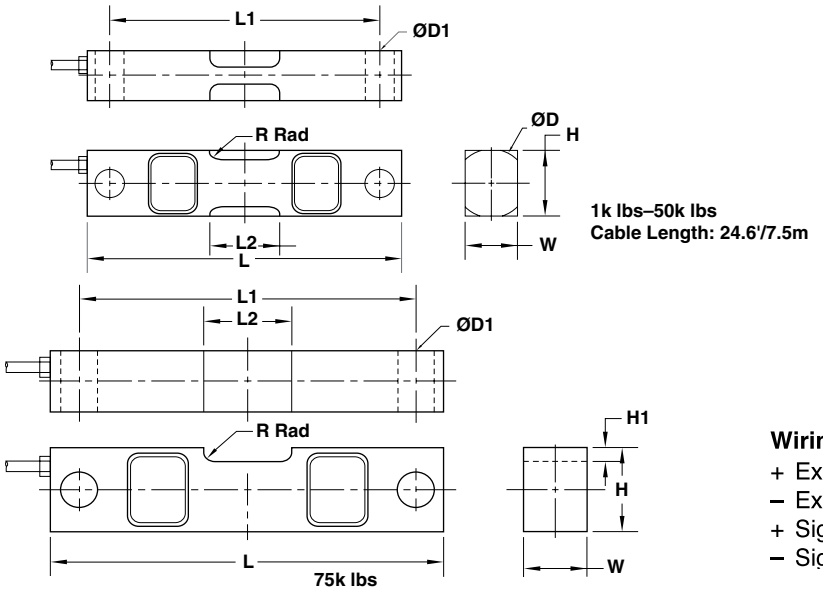
The Model DSR is constructed of alloy tool steel and is potted to IP67 providing excellent protection against moisture and humidity.

The double-ended mounting provides good restraint to possible movement of the tanks and, in many cases, eliminates the need for check rods.

The shear beam design gives excellent performance for high capacity loading.

The output is rationalized to facilitate multiple-cell application.

OUTLINE DIMENSIONS



Wiring

+ Excitation	Red
– Excitation	Black
+ Signal	Green
– Signal	White

CAPACITY		L	L_1	L_2	W	H	H_1	D	D_1	R
1k / 1.5k / 2k / 2.5k / 3k / 5k lbs	mm	190.5	158.8	35.4	31.7	31.7	-	31.7	12.7	5.0
	(inch)	7.50	6.25	1.39	1.25	1.25	-	1.25	0.50	0.20
10k / 15k / 20k / 25k lbs	mm	222.3	190.5	50.0	36.6	49.3	-	50.8	20.6	5.0
	(inch)	8.75	7.50	1.97	1.44	1.94	-	2.00	0.81	0.20
50k / 75k lbs	mm	342.9	292.1	82.6	62.0	74.7	4.6	76.2	33.3	5.0
	(inch)	13.50	11.50	3.25	2.44	2.94	0.18	3.00	1.31	0.20

Above dimensions apply to non-EDOC-coated load cells.

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Revision: 25-Mar-2018

Double-Ended Shear Beam

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
NTEP/OIML accuracy class	Non-Approved	
Y = E_{max}/V_{min}	5000	Maximum available
Standard capacities (E_{max})	1k, 1.5k, 2k, 3k, 5k, 10k, 15k, 20k, 25k, 50k, 75k	lbs
Rated output—R.O.	3.0	mV/V
Rated output tolerance	0.25	±% of rated output
Zero balance	1	±% of rated output
Non-linearity	0.030 (SS: 0.07%)	±% of rated output
Hysteresis	0.030 (SS: 0.07%)	±% of rated output
Non-repeatability	0.02	±% of rated output
Creep error (20 minutes)	0.030	±% of rated output
Zero return (20 minutes)	0.030	±% of rated output
Temperature effect on min. dead load output	0.0026	±% of rated output/°C
Temperature effect on sensitivity	0.0015	±% of applied load/°C
Compensated temperature range	–10 to +40	°C
Operating temperature range	–20 to +60	°C
Safe overload	150	% of R.C.
Ultimate overload	300	% of R.C.
Excitation, recommended	10	VDC or VAC RMS
Excitation, maximum	15	VDC or VAC RMS
Input impedance	770±10	Ω
Output impedance	700±5	Ω
Insulation resistance	>5000	MΩ
Construction	Nicke-plated alloy steel	
Environmental protection	IP67	

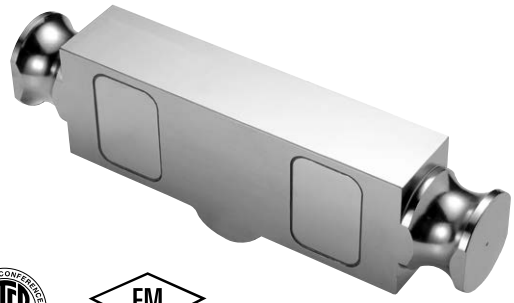
All specifications subject to change without notice.

FM Approval
Intrinsically Safe: Class I, II, III; Div. 1 Groups A-G
Non-Incendive: Class I; Div. 2 Groups A-D

Double-Ended Link Shear Beam

FEATURES

- Capacities 25k–125k lbs
- Center-mounted with double-linked shear beam design
- Free of horizontal movement
- Insensitive to side load
- Electroless nickel-plated alloy tool steel
- NTEP Class IIIL 10000 for whole series
- **Optional**
  - Surge protection optional for 60k lbs
  - FM approval available



APPLICATIONS

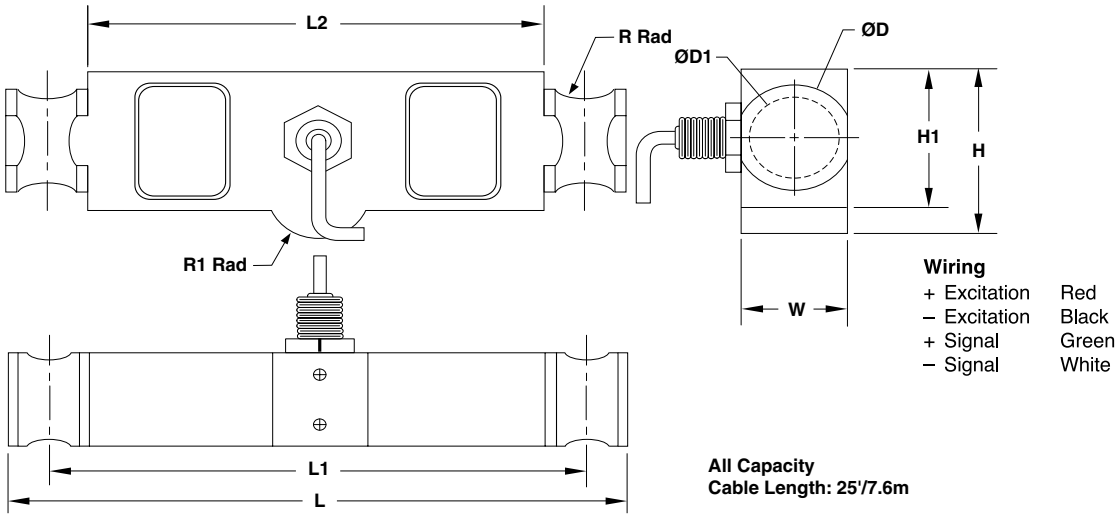
- Truck/rail scales
- Silo/hopper/tank weighing
- Fork-lift scales

DESCRIPTION

The Model DLB is designed to be center-mounted with double-linked loading. This design provides free movement in all horizontal directions virtually eliminating binding or friction points. The Shear Beam design gives excellent performance for high capacity loading.

The Model DLB is constructed of alloy steel and is fully potted and sealed with special compounds to IP67, providing excellent protection against moisture and humidity.

OUTLINE DIMENSIONS



CAPACITY		L	L_1	L_2	W	H	H_1	D	D_1	R	R_1
25k/40k lbs	mm	209.6	184.2	158.8	49.3	75.5	62.0	50.8	41.4	12.7	12.7
	(inch)	8.25	7.25	6.25	1.94	2.97	2.44	2.00	1.63	0.50	0.50
50k/60k/75k lbs	mm	292.1	254.0	215.9	49.3	88.2	74.7	55.9	43.2	19.1	25.4
	(inch)	11.50	10.00	8.50	1.94	3.47	2.94	2.20	1.70	0.75	1.00
100k/125k lbs	mm	368.3	317.5	266.7	73.7	118.9	98.0	81.3	62.0	25.4	38.1
	(inch)	14.50	12.50	10.5	2.90	4.68	3.86	3.20	2.44	1.00	1.50

Double-Ended Link Shear Beam

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
NTEP/OIML accuracy class	NTEP IIIL	Non-Approved	
Maximum no. of intervals (n)	10000 multiple		
Y = E_{max}/V_{min}	14000	5000	Maximum available
Standard capacities (E_{max})	25k, 40k, 50k, 60k, 75k, 100k, 125k		lbs
Rated output—R.O.	3.0		mV/V
Rated output tolerance	0.25		±% of rated output
Zero balance	1		±% of rated output
Non-linearity	0.025		±% of rated output
Hysteresis	0.025		±% of rated output
Non-repeatability	0.02		±% of rated output
Creep error (20 minutes)	0.030		±% of rated output
Zero return (20 minutes)	0.030		±% of rated output
Temperature effect on min. dead load output	0.0010	0.0026	±% of rated output/°C
Temperature effect on sensitivity	0.0010	0.0015	±% of applied load/°C
Compensated temperature range	–10 to +40		°C
Operating temperature range	–20 to +60		°C
Safe overload	150		% of R.C.
Ultimate overload	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	770±10		Ω
Output impedance	700±5		Ω
Insulation resistance	>5000		MΩ
Construction	Nickel-plated alloy steel		
Environmental protection	IP67		

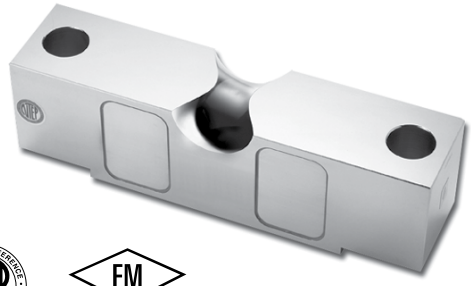
All specifications subject to change without notice.

FM Approval
Intrinsically Safe: Class I, II, III; Div. 1 Groups A-G
Non-Incendive: Class I; Div. 2 Groups A-D

Double-Ended Shear Beam

FEATURES

- Capacities 20k–125k lbs
- Free of horizontal movement
- Insensitive to side load
- Electroless nickel-plated alloy tool steel
- NTEP Class IIIL 10000 approval from 20k lbs to 125k lbs
- **Optional**
  - FM approval available



APPLICATIONS

- Truck/rail scales
- Silo/hopper/tank weighing
- Fork-lift scales

DESCRIPTION

The Model CLB is constructed of alloy steel and is fully potted with special chemical compounds to IP67 providing excellent protection against moisture and humidity.

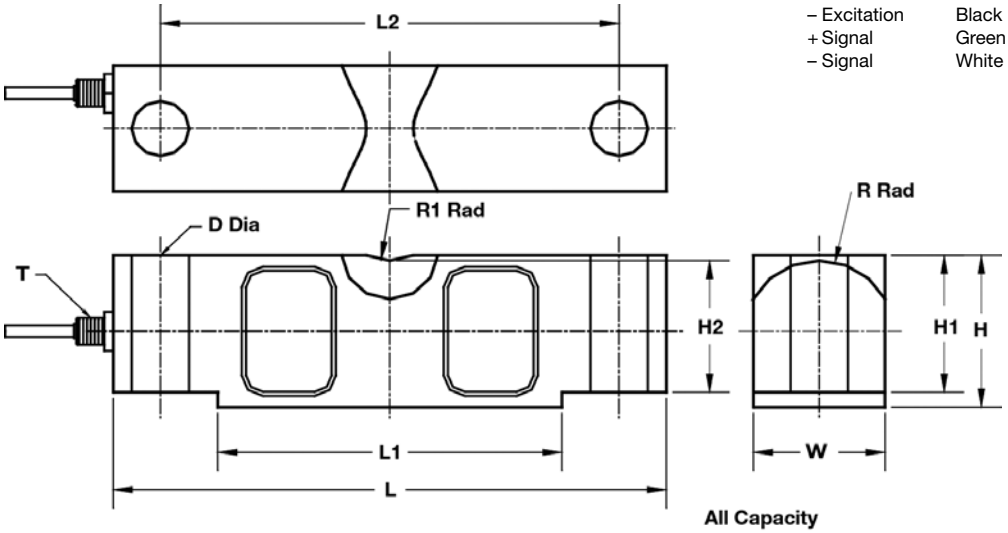
The double-ended mounting provides good restraint for possible movement of the tanks and, in many cases, eliminates the need for check rods.

The shear beam design gives excellent performance for high capacity loading.

OUTLINE DIMENSIONS

Wiring diagram:

+ Excitation	Red
– Excitation	Black
+ Signal	Green
– Signal	White



All Capacity
Cable Length: 25'/7.6m

CAPACITY		L	L_1	L_2	W	H	H_1	H_2	D	R	R_1	T
20k/25k lbs	mm	196.9	126.7	165.1	42.9	49.3	43.2	41.4	17.3	22.9	19.1	
	(inch)	7.75	4.99	6.50	1.69	1.94	1.70	1.63	0.68	0.90	0.75	1/4-18NPT
40k lbs	mm	260.4	162.3	215.9	49.3	62.0	53.3	50.8	20.6	28.5	25.4	
	(inch)	10.25	6.39	8.50	1.94	2.44	2.10	2.00	0.81	1.12	1.00	1/4-18NPT
50k/60k/75k lbs	mm	260.4	162.3	215.9	62.0	74.7	67.3	64.5	26.9	34.8	25.4	
	(inch)	10.25	6.39	8.50	2.44	2.94	2.65	2.54	1.06	1.37	1.00	1/2-14NPT
100k/125k lbs	mm	387.4	228.4	323.9	73.7	98.0	87.1	83.8	41.2	45.7	38.1	
	(inch)	15.25	8.99	12.75	2.90	3.86	2.43	3.30	1.62	1.80	1.50	1/2-14NPT

Double-Ended Shear Beam

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
NTEP/OIML accuracy class	NTEP IIIL	Non-Approved	
Maximum no. of intervals (n)	10000 multiple	1000	
Y = E_{max}/V_{min}	14000	5000	Maximum available
Standard capacities (E_{max})	20k, 25k, 40k, 50k, 60k, 75k, 100k, 125k		lbs
Rated output—R.O.	3.0		mV/V
Rated output tolerance	0.25		±% of rated output
Zero balance	1		±% of rated output
Non-linearity	0.025		±% of rated output
Hysteresis	0.025		±% of rated output
Non-repeatability	.02		±% of rated output
Creep error (20 minutes)	0.030		±% of rated output
Zero return (20 minutes)	0.030		±% of rated output
Temperature effect on min. dead load output	0.0010	0.0026	±% of rated output/°C
Temperature effect on sensitivity	0.0010	0.0015	±% of applied load/°C
Compensated temperature range	–10 to +40		°C
Operating temperature range	–20 to +60		°C
Safe overload	150		% of R.C.
Ultimate overload	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	770±10		Ω
Output impedance	700±5		Ω
Insulation resistance	>5000		MΩ
Construction	Nickel-plated alloy steel		
Environmental protection	IP67		

All specifications subject to change without notice.

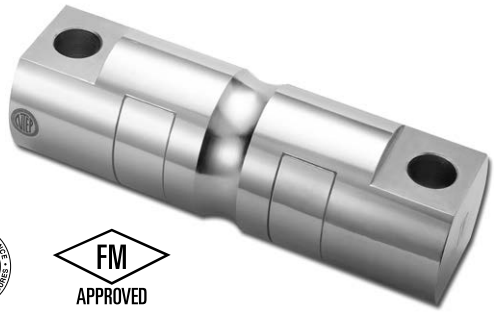
FM Approval

Intrinsically Safe: Class I, II, III; Div. 1 Groups A-G
Non-Incendive: Class I; Div. 2 Groups A-D

Cylindrical Double-Ended Shear Beam

FEATURES

- Capacities 5k–150k lbs
- Center-loaded double-ended shear beam design
- Free of horizontal movement
- Insensitive to side load
- Electroless nickel-plated alloy tool steel
- NTEP Class IIIL 10000 approval from 20k lbs to 150k lbs
- **Optional**
  - FM approval available
  - EDOC option available; product appearance will differ from the photograph due to coating



NTEP

FM APPROVED

APPLICATIONS

- Truck/rail scales
- Silo/hopper/tank weighing
- Fork-lift scales

DESCRIPTION

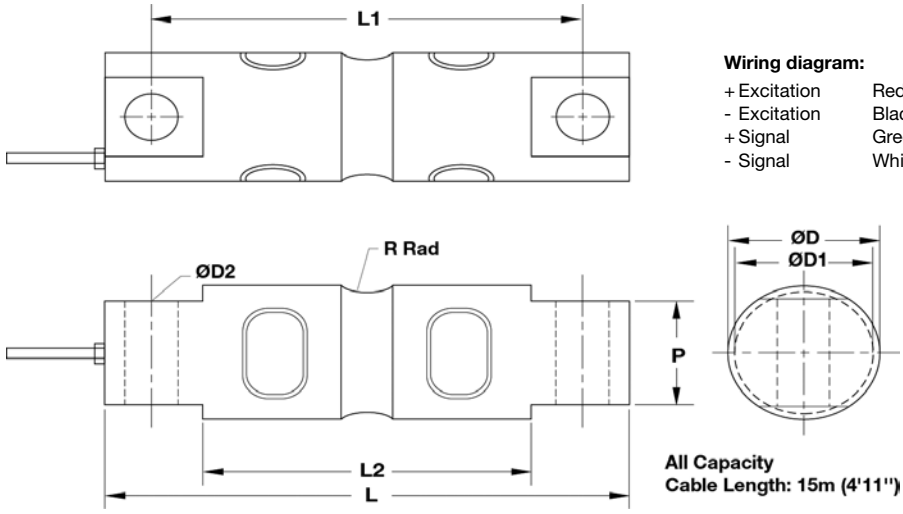
The Model CSB is constructed of alloy steel and is fully potted with special chemical compounds to IP67, providing excellent protection against moisture and humidity.

The double-ended mounting provides good restraint for possible movement of tanks and, in many cases, eliminates the need for check rods.

The shear beam design gives excellent performance for high capacity loading.

The cylindrical construction provides easy installation with simple loading features.

OUTLINE DIMENSIONS



Wiring diagram:

+ Excitation	Red
- Excitation	Black
+ Signal	Green
- Signal	White

All Capacity
Cable Length: 15m (4'11")

CAPACITY		L	L1	L2	D	D1	D2	P	R
5k/10k lbs	mm	206.3	174.8	133.1	43.2	37.7	16.8	28.5	12.7
	(inch)	8.12	6.88	5.24	1.70	1.48	0.66	1.12	0.50
20k lbs	mm	206.3	174.8	133.1	49.5	37.9	16.8	28.5	12.7
	(inch)	8.12	6.88	5.24	1.95	1.49	0.66	1.12	0.50
30k/40k/50k/60k lbs	mm	260.4	215.9	164.8	76.2	69.4	26.9	60.2	25.4
	(inch)	10.25	8.50	6.49	3.20	2.73	1.06	2.37	1.00
100k lbs	mm	285.8	241.3	190.2	88.9	82.3	26.9	63.5	25.4
	(inch)	11.25	9.50	7.49	3.5	3.24	1.06	2.50	1.00
150k lbs	mm	285.8	241.3	190.2	99.1	92.5	26.9	71.1	38.1
	(inch)	11.25	9.50	7.49	3.90	3.64	1.06	2.80	1.50

Above dimensions apply to non-EDOC-coated load cells.

Cylindrical Double-Ended Shear Beam

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
NTEP/OIML accuracy class	NTEP IIIL	Non-Approved	
Maximum no. of intervals (n)	10000 multiple*		
Y = E_{max}/V_{min}	14000	5000	Maximum available
Standard capacities (E_{max})	5k, 10k, 20k, 30k, 40k, 50k, 60k, 100k, 150k		lbs
Rated output—R.O.	3.0		mV/V
Rated output tolerance	0.25		±% of rated output
Zero balance	1		±% of rated output
Non-linearity	0.025		±% of rated output
Hysteresis	0.025		±% of rated output
Non-repeatability	.02		±% of rated output
Creep error (20 minutes)	0.030		±% of rated output
Zero return (20 minutes)	0.030		±% of rated output
Temperature effect on min. dead load output	0.0010	0.0026	±% of rated output/°C
Temperature effect on sensitivity	0.0010	0.0015	±% of applied load/°C
Compensated temperature range	–10 to +40		°C
Operating temperature range	–20 to +60		°C
Safe overload	150		% of R.C.
Ultimate overload	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	770±10		Ω
Output impedance	700±5		Ω
Insulation resistance	>5000		MΩ
Construction	Nickel-plated alloy steel		
Environmental protection	IP67		

*Capacities 20k–150k lbs only

All specifications subject to change without notice.

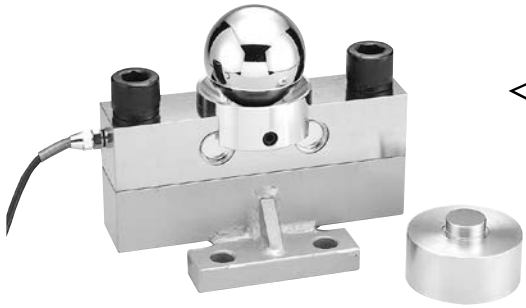
FM Approval

Intrinsically Safe: Class I, II, III; Div. 1 Groups A-G
Non-Incendive: Class I; Div. 2 Groups A-D

Miniature Double-Ended Beam

FEATURES

- Capacities: 10–50 t
- High side load tolerance
- Electroless nickel-plated alloy tool steel
- Surge protection optional for 10 t to 50 t
- **Optional**
  - Hermetically sealed version available
  - FM approval available



FM APPROVED

APPLICATIONS

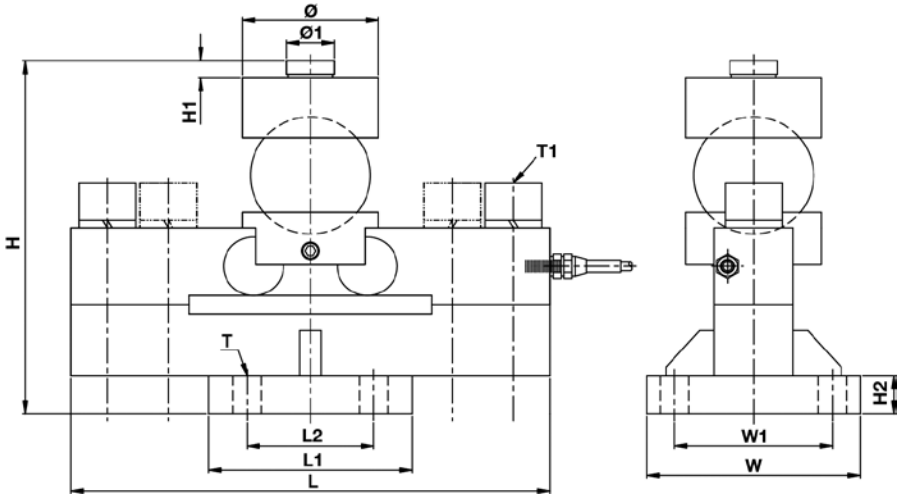
- Truck/rail scales
- Silo/hopper/tank weighing

DESCRIPTION

The Model MDB is designed for truck and rail scales in high capacities with low profile. The “load-ball” design means the model is insensitive to side load forces.

The Model MDB is constructed of alloy steel and is fully potted and sealed with special chemical compounds to IP67, providing excellent protection against water and moisture attack. With hermetic sealing, the MDB is rated for IP68 providing excellent protection against corrosive and wash-down environments.

OUTLINE DIMENSIONS



Wiring diagram:

+ Excitation	Red
- Excitation	Black
+ Signal	Green
- Signal	White

CAPACITY		L	L_1	L_2	H	H_1	H_2	Ø	Ø1	W	W_1	T	T_1
10 / 20 / 25 / 30 t	mm	240	125	80	230	11	20	88	30	135	100	4-Ø18	2-M24
	(inch)	9.45	4.92	3.15	8.85	0.43	0.79	3.46	1.18	5.31	3.94		
40–50 t	mm	340	160	124	261	11	20	98	40	160	124	4-Ø21	4-M24
	(inch)	13.38	6.30	4.88	10.28	0.43	0.79	3.86	1.57	6.30	4.88		

Miniature Double-Ended Beam

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
NTEP/OIML accuracy class	Non-Approved	
Maximum no. of intervals (n)	3000	
Y = E_{max}/V_{min}	5000	Maximum available
Standard capacities (E_{max})	10000, 20000, 25000, 30000, 40000, 50000	kg
Rated output—R.O.	2.0	mV/V
Rated output tolerance	0.2	±% of rated output
Zero balance	1	±% of rated output
Non-linearity	0.030	±% of rated output
Hysteresis	0.030	±% of rated output
Non-repeatability	0.020	±% of rated output
Creep error (20 minutes)	0.030	±% of rated output
Zero return (20 minutes)	0.030	±% of rated output
Temperature effect on min. dead load output	0.0026	±% of rated output/°C
Temperature effect on sensitivity	0.0015	±% of applied load/°C
Compensated temperature range	–10 to +40	°C
Operating temperature range	–20 to +60	°C
Safe overload	150	% of R.C.
Ultimate overload	300	% of R.C.
Excitation, recommended	10	VDC or VAC RMS
Excitation, maximum	15	VDC or VAC RMS
Input impedance	770±10	Ω
Output impedance	700±5	Ω
Insulation resistance	>5000	MΩ
Cable length	13.5	m
Construction	Nickel-plated alloy steel	
Environmental protection	IP67	

All specifications subject to change without notice.

FM Approval

Intrinsically Safe: Class I, II, III; Div. 1 Groups A-G
Non-Incendive: Class I; Div. 2 Groups A-D

Double-Link Beam Load Cell

FEATURES

- Capacities: 50k to 100k lbs.
- Nickel-plated element
- Certified to OIML R60 3000d and NTEP class IIIL 10000 divisions
- Sealing: IP67 (DIN 40.050)
- Low profile, self-checking, and self-centering
- Optimized design specially for weigh-bridge use
- **Optional**
  - Conduit adapter
  - FM approved for use in potentially explosive atmospheres



APPLICATIONS

- Truck scales
- Railroad track scales
- "Legal-for-Trade" tank, bin and hopper weighing

DESCRIPTION

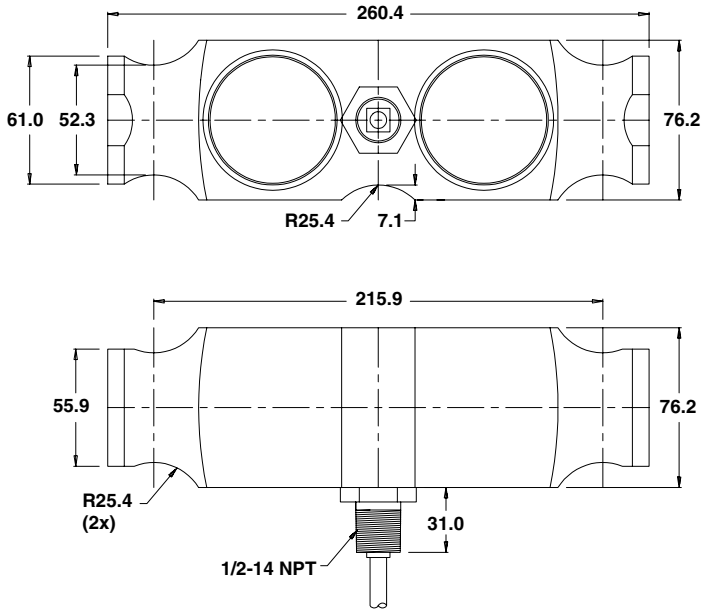
The Model 5223 is a hermetically sealed, end loaded, center supported double-ended shear beam.

This product is suitable for a wide range of truck and rail scales. It is designed to use parallel link loading, considered by many weighing experts to be advantageous when compared to other loading techniques.

Fully welded stainless steel seals ensure high environmental integrity and provided that additional cable sealing is used, occasional submersion can occur without damage.

These products meet the stringent Weights and Measures requirements throughout Europe.

OUTLINE DIMENSIONS in millimeters



Cable specifications:

Cable length: 12m

+ Excitation	Red
– Excitation	Black
+ Output	Green
– Output	White
Shield	Transparent

Cable screen is not connected to load cell body. Performance may be affected if load cell cables are shortened.

Double-Link Beam Load Cell

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Standard capacities (E_{max})	50k, 65k, 100k			lbs.
Accuracy class according to OIML R-60 / NTEP	NTEP IIIL	Non-Approved	C3	
Max. no. of verfication intervals (n_{lc})	10000		3000	
Min. verification interval (V_{min})			E_{max}/10000	
Rated output (=S)	3			mV/V
Rated output tolerance	0.003			±mV/V
Zero balance	1.0			±% FSO
Combined error	0.0200	0.0300	0.0200	±% FSO
Non-repeatability	0.0100	0.0100	0.0100	±% FSO
Minimum dead load output return	0.0250	0.0300	0.0167	±% applied load
Creep error (30 minutes)		0.0300	0.0245	±% applied load
Creep error (20 minutes)	0.0027	0.0045		±% applied load
Temp. effect on min. dead load output	(0.0008)	0.0140	0.0070	±% FSO/5°C (/°F)
Temperature effect on sensitivity	(0.0010)	0.0070	0.0045	±% applied load/5°C(/°F)
Minimum dead load	0			% E_{max}
Maximum safe over load	150			% E_{max}
Ultimate over load	300			% E_{max}
Maximum safe side load	100			% E_{max}
Deflection at E_{max}	0.5 / 0.6 / 0.9			mm
Excitation voltage	5 to 18			V
Maximum excitation voltage	20			V
Input resistance	700±7			Ω
Output resistance	700±7			Ω
Insulation resistance	≥5000			MΩ
Compensated temperature range	–10 to +40			°C
Operating temperature range	–40 to +80			°C
Storage temperature range	–40 to +90			°C
Element material (DIN)	Nickel-plated alloy steel			
Sealing (DIN 40.050 / EN60.529)	IP67			

FSO—Full Scale Output

All specifications subject to change without notice.

Double-Link Beam Load Cell

FEATURES

- Capacities: 50k to 125k lbs
- Stainless steel construction
- Certified to NTEP class IIIL 10000 divisions
- Sealing: IP68
- Low profile, self-checking and self-centering
- Optimized design specially for weighbridge use
- Optional conduit adapter
- **Optional**
  - FM approved for use in potentially explosive atmospheres



APPLICATIONS

- Truck scales
- Railroad track scales
- “Legal for Trade” tank, bin and hopper weighing

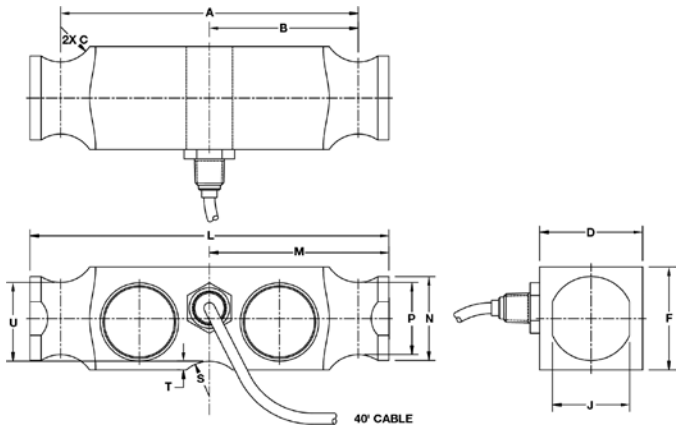
DESCRIPTION

The Model 9223 is a hermetically sealed, end loaded, center supported double-ended shear beam.

This product is suitable for a wide range of truck and rail scales. It is designed to use parallel link loading, considered by many weighing experts to be advantageous when compared to other loading techniques.

Fully welded stainless steel seals ensure high environmental integrity and provided that additional cable sealing is used, occasional submersion can occur without damage. These products meet the stringent Weights and Measures requirements throughout USA.

OUTLINE DIMENSIONS in inches



Cable specifications:
Cable length: 40 feet

+	Excitation	Red
–	Excitation	Black
+	Output	Green
–	Output	White
	Shield	Transparent

Cable screen is not connected to load cell body. Performance may be affected if load cell cables are shortened.

CAPACITY (lbs)	50k, 65k, 100k, 125k
A	8.50
B	4.25
C RAD	1.00
D	2.94
F	2.94
J	2.20
L	10.25
M	5.13
N	2.40
P	2.06
S RAD	1.00
T	0.25
U	2.25

Double-Link Beam Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Standard capacities (E_{max})	50k, 65k, 100k, 125k		lbs
Accuracy class according to NTEP	NTEP IIIL	Non-Approved	
Maximum no. of verfication intervals (n_{lc})	10000		
Rated output (=S)	3		mV/V
Rated output tolerance	0.003		±% mV/V
Zero balance	1.0		±% FSO
Combined error	0.0200	0.0500	±% FSO
Non-repeatability	0.0100	0.0200	±% FSO
Creep error (20–30 minutes)	0.0300	0.0300	±% applied load
Temperature effect on minimum dead load output	0.0008	(0.0140)	±% FSO/°F (/5°C)
Temperature effect on sensitivity	0.0010	(0.0070)	±% applied load/°F (/5°C)
Compensated temperature range	–10 to +40 (+14 to 104)		°C (°F)
Operating temperature range	–53 to +93 (-65 to +200)		°C (°F)
Safe load limit	150		% E_{max}
Ultimate load	300		% E_{max}
Safe side load limit	100		% E_{max}
Excitation voltage recommended	10		V
Excitation voltage maximum	15		V
Input resistance	700±7		Ω
Output resistance	700±7		Ω
Insulation resistance	≥5000		MΩ
Environmental protection	IP68		
Element material	Stainless steel		ASTM

FSO—Full Scale Output

All specifications subject to change without notice.

Double-Ended Beam Load Cell

FEATURES

- Capacities: 5k to 250k lbs
- Low profile construction
- Nickel-plated alloy steel construction
- Certified to OIML R60 3000d, NTEP CoC—10000d
- Sealing: IP67 (DIN 40.050)
- **Optional**
  - FM approved for use in hazardous locations
  - ATEX versions are available for use in potentially explosive atmospheres
  - EDOC option available; product appearance will differ from the photograph due to coating



APPLICATIONS

- Platform scales
- On-board weighing
- Weighbridges
- Silo hopper weighing

DESCRIPTION

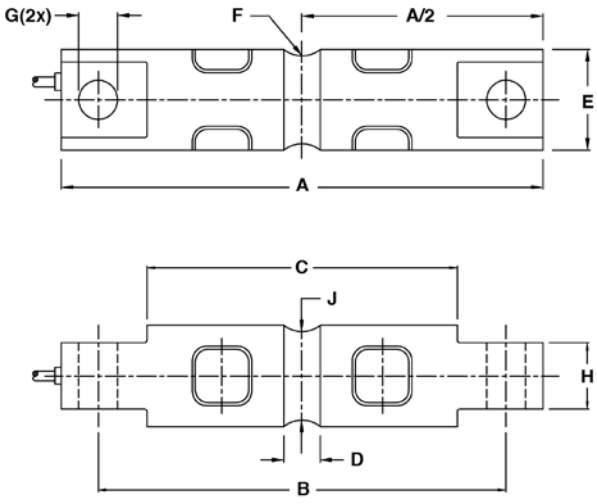
The Model 5103 transducers are double-ended, center-loaded shear beam load cells. The Model 5103 is constructed of nickel-plated alloy steel.

These products are suitable for tank weighing systems, low cost weighbridges, and axle weighers.

A reliable sealing is ensured by the proprietary TRANSEAL potting compound and additional mechanical protection of the strain gage area.

A specially designed mounting arrangement is available, providing the ideal solution for vessel / tank weighing.

OUTLINE DIMENSIONS in millimeters



Capacity (lbs)	5k, 10k	20k	30k–60k	100k	150k	200k, 250k
A	206.2	206.2	260.4	285.8	285.8	406.9
B	174.6	174.6	215.9	241.3	241.3	330.2
C	133.1	133.1	165.1	190.5	190.5	254.0
D	15.7	21.3	25.4	31.8	31.8	33.0
E	43.2	49.5	76.2	88.9	99.1	136.5
F	12.7	12.7	25.4	38.1	38.1	50.8
G	16.7	16.7	26.9	26.9	26.9	39.6
H	28.4	28.4	60.2	63.5	71.1	116.8
J	37.6	37.6	69.3	82.3	92.5	131.4

Cable specifications
Cable length 10 m (6 m for 5k–20k)

Excitation +	Red
Excitation –	Black
Output +	Green
Output –	White
Shield	Transparent

Above dimensions apply to non-EDOC-coated load cells.

Double-Ended Beam Load Cell

SPECIFICATIONS				
PARAMETER	**UNIT**			**VALUE**
Standard capacities (E_{max})	2.3*, 4.5*, 9.1, 13.6, 18.2, 22.7, 27.2, 45.4, 68*, 91*, 113*			t
Standard capacities (E_{max})	5k*, 10k*, 20k, 30k, 40k, 50k, 60k, 100k, 150k*, 200k*, 250k*			lbs
Accuracy class according to OIML / NTEP	**NTEP**	**Non-Approved**	**C3**	
Max. number of verification intervals (n_{lc})	IIIL 10000	D3	3000	
Minimum verification interval (v_{min})			E_{max}/10,000	
Rated output (= S)	3.0			mV/V
Rated output tolerance	0.003			±mV/V
Zero balance	1.0			±% FSO
Combined error	0.0200	0.0300	0.0200	±% FSO
Non-repeatability	0.0100	0.0100	0.0100	±% FSO
Minimum dead load output return	0.0250	0.0300	0.0167	±% applied load
Creep error (30 minutes)		0.0300	0.0245	±% applied load
Creep error (20 minutes)	0.030	0.0450	0.0053	±% applied load
Temp. effect on min. dead load output	(0.001)	0.0140	0.0070	±% FSO/5°C (/°F)
Temperature effect on sensitivity	(0.0008)	0.0070	0.0050	±% applied load/5°C (/°F)
Minimum dead load	0			% E_{max}
Maximum safe overload	150			% E_{max}
Ultimate overload	300			% E_{max}
Maximum safe side load	100			% E_{max}
Deflection at E_{max}	0.5/0.6/1.1/0.5/0.5/0.5/0.6/0.5/0.5/0.9/0.9			mm
Excitation voltage	5 to 12			V
Maximum excitation voltage	15			V
Input resistance	700±7			Ω
Output resistance	700±7			Ω
Insulation resistance	≥5000			MΩ
Compensated temperature range	–10 to +40			°C
Operating temperature range	–40 to +80			°C
Storage temperature range	–40 to +90			°C
Element material (DIN)	Nickel-plated alloy steel			
Sealing (DIN 40.050 / EN 60.529)	IP67			
Recommended torque on fixation bolts	12 to 14			N*m

* Only 20k–100k lbs (9.1–45.4 t) capacities are OIML approved.

FSO—Full Scale Output
All specifications subject to change without notice.

Double-Ended Beam Load Cell

FEATURES

- Capacities: 1k to 75k lbs
- Environmental protection: IP67 (DIN 40.050)
- Material: nickel-plated steel
- Center-loaded design
- **Optional**
  - FM certified versions are available for use in potentially explosive atmospheres



APPLICATIONS

- Silo, tank, hopper weighing
- Custom system designs
- Low capacity vehicle scales

DESCRIPTION

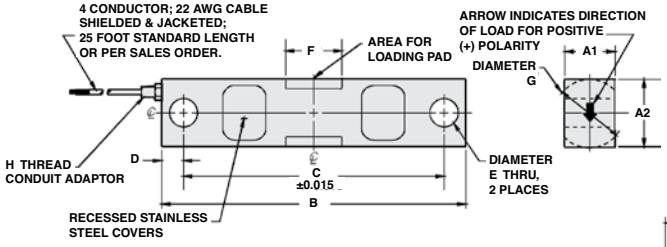
The Model 5203 is a double-ended shear beam type load cell.

A reliable sealing and mechanical protection of the strain gage area is ensured by the use of potting compound with a metal cover.

The center-loaded design results in minimal sensitivity to off-center forces.

OUTLINE DIMENSIONS in inches

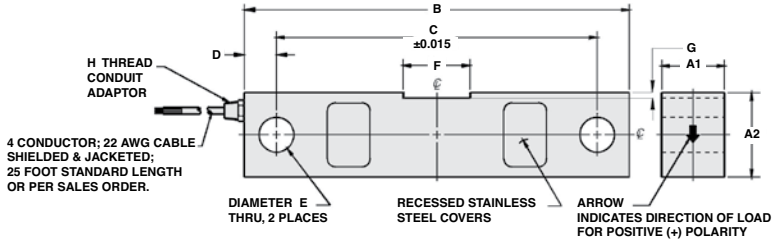
1000 to 50000 lb capacities



Wiring

+ Excitation	Red
– Excitation	Black
+ Output	Green
– Output	White

75000 lb capacity



CAPACITY	A1	A2	B	C	D	E	F	G	H
1k–5k	1.25	1.25	7.50	6.25	0.62	0.50	1.22	1.25	1/4-18NPT
10k–25k	1.44	1.94	8.75	7.50	0.62	0.81	1.62	1.99	1/4-18NPT
35k	1.50	2.50	8.75	7.50	0.62	0.81	1.62	2.50	1/4-18NPT
50k	2.44	2.94	13.50	11.50	1.00	1.31	3.25	2.99	1/2-14NPT
75k	2.44	2.94	13.50	11.50	1.00	1.31	3.12	0.18	1/2-14NPT

Capacities are in pounds.

Double-Ended Beam Load Cell

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Standard capacities (E_{max})	1k, 1.5k, 2k, 2.5k, 5k, 10k, 15k, 20k, 25k, 35k, 50k, 75k	lbs
Accuracy class	Non Approved - D3	
Rated output (=S)	3	mV/V
Rated output tolerance	0.008	±mV/V
Zero balance	1.0	±% FSO
Combined error	0.03	±% FSO
Creep error (20 minutes)	0.03	±% FSO
Temperature effect on minimum dead load output	0.0015	±% FSO/°F (/5°C)
Temperature effect on sensitivity	0.0008	±% FSO/°F (/5°C)
Maximum safe overload	150	% E_{max}
Ultimate overload	300	% E_{max}
Maximum safe side load	100	% E_{max}
Excitation voltage	10	V
Maximum excitation voltage	15	V
Input resistance	700±14	Ω
Output resistance	697±4	Ω
Insulation resistance	≥1000	MΩ
Compensated temperature range	–10 to +40 (+14 to +104)	°C (°F)
Operating temperature range	–18 to +65 (0 to +150)	°C (°F)
Element material (DIN)	Nickel-plated alloy steel	
Sealing (DIN 40.050 / EN60.529)	IP67	

FSO—Full Scale Output
All specifications subject to change without notice.

Double-Ended Beam Load Cell

FEATURES

- Capacities: 5k to 150k lbs
- Low profile construction
- Stainless steel construction
- Certified to NTEP class IIIL, 10000 divisions
- Sealing: IP67 (DIN 40.050)
- **Optional**
  - FM and ATEX certified versions are available for use in potentially explosive atmospheres
  - EDOC option available; product appearance will differ from the photograph due to coating



APPLICATIONS

- Platform scales
- On-board weighing
- Weighbridges
- Silo hopper weighing

DESCRIPTION

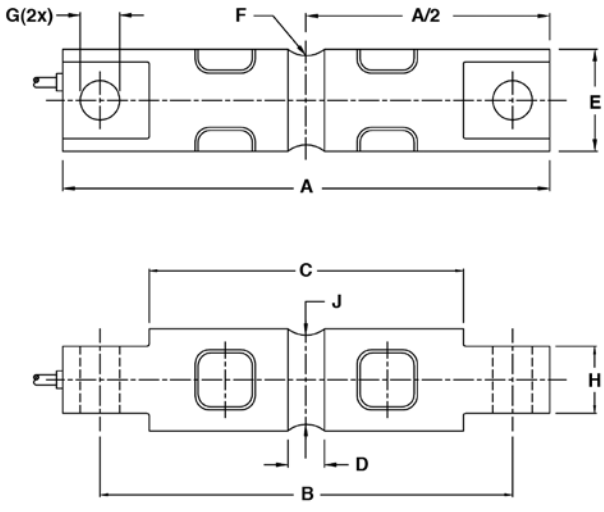
The Model 9103 is a double-ended, center-loaded shear beam type load cell constructed of stainless steel.

This product is suitable for tank weighing systems, low cost weighbridges and axle weighers.

A reliable sealing is ensured by the proprietary TRANSEAL potting compound and additional mechanical protection of the strain gage area.

A specially designed mounting arrangement is available, providing the ideal solution for vessel/tank weighing.

OUTLINE DIMENSIONS in millimeters



Cable specifications
Cable length: 10 m (6 m for 5–20k)

Excitation +	Red
Excitation –	Black
Output +	Green
Output –	White
Shield	Transparent

Cable screen is not connected to the load cell body.

Capacity (lbs)	5k, 10k	20k	30–60k	100k	150k
A	206.2	206.2	260.4	285.8	285.8
B	174.6	174.6	215.9	241.3	241.3
C	133.1	133.1	165.1	190.5	190.5
D	15.7	21.3	25.4	31.8	31.8
E	43.2	49.5	76.2	88.9	99.1
F	12.7	12.7	25.4	38.1	38.1
G	16.7	16.7	26.9	26.9	26.9
H	28.4	28.4	60.2	63.5	71.1
J	37.6	37.6	69.3	82.3	92.5

Above dimensions apply to non-EDOC-coated load cells.

Double-Ended Beam Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Standard capacities (E_{max})	5k*, 10k, 20k, 30k, 40k, 50k, 60k, 100k, 150k*		lbs
Metric equivalents	2.3*, 4.5, 9.1, 13.6, 18.2, 22.7, 27.2, 45.4, 68*		t
Accuracy class according to NTEP	NTEP IIIL	Non-Approved	
Maximum no. of verfication intervals (n_{lc})	10000		
Rated output (=S)	3.0		mV/V
Rated output tolerance	0.003		±mV/V
Zero balance	2.0		±% FSO
Combined error	0.0200	0.1000	±% FSO
Non-repeatability	0.0100	0.0200	±% FSO
Minimum dead load output return	0.015	0.0500	±% applied load
Creep error (30 minutes)		0.0600	±% applied load
Creep error (20–30 minutes)		0.0200	±% applied load
Temperature effect on minimum dead load output	(0.0008)	(0.0140)	±% FSO/°F (/5°C)
Temperature effect on sensitivity	0.0010	(0.0070)	±% applied load/°F (/5°C)
Minimum dead load	0		% E_{max}
Maximum safe overload	150		% E_{max}
Ultimate overload	300		% E_{max}
Maximum safe side load	100		% E_{max}
Deflection at E_{max}	0.5/0.6/1.1/0.5/0.5/0.5/0.6/0.5/0.5/0.9/0.9		mm
Excitation voltage	5 to 12		V
Maximum excitation voltage	15		V
Input resistance	700±7		Ω
Output resistance	700±7		Ω
Insulation resistance	≥5000		MΩ
Compensated temperature range	–10 to +40		°C
Operating temperature range	–40 to +80		°C
Storage temperature range	–40 to +90		°C
Element material (DIN)	Stainless steel		
Sealing (DIN 40.050 / EN60.529)	IP67		
Recommended torque on fixation bolts	12 to 14		N*m

* Capacities 5k and 150k lbs are not approved by NTEP

FSO—Full Scale Output
All specifications subject to change without notice.

Double-Ended Beam Load Cell

FEATURES

- Capacities: 10k to 125k lbs
- Environmental protection: IP67 (DIN 40.050)
- Material: Stainless steel
- Certified by NTEP class IIIL, 10000 divisions
- **Optional**
  - FM aproved for use in potentially explosive atmospheres



APPLICATIONS

- Silos, tanks and hoppers
- Weighbridges

DESCRIPTION

The Model 9303 is a link-loaded stainless steel double-ended shear beam type load cell, specifically designed for truck scales, track scales and high capacity weighing applications.

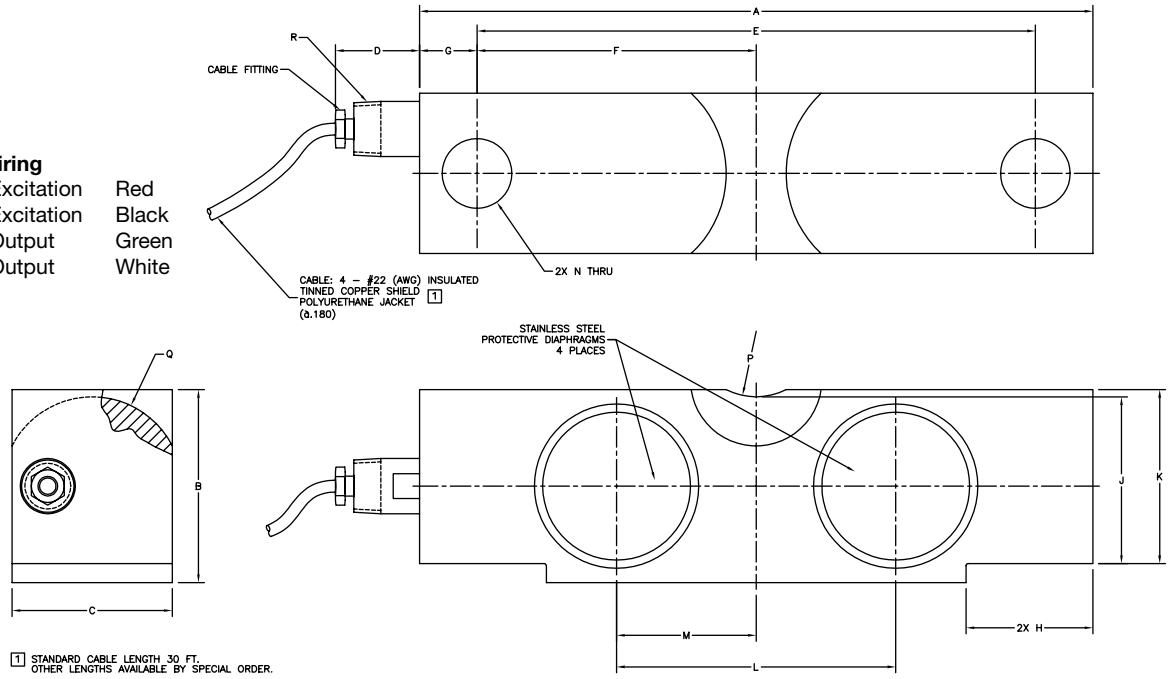
A reliable sealing and mechanical protection of the strain gage area is ensured by the use of a potting compound with a metal cover.

This load cell is rated intrinsically safe by FM approvals, making it suitable for use in potentially explosive atmospheres.

OUTLINE DIMENSIONS in inches

Wiring

+ Excitation	Red
- Excitation	Black
+ Output	Green
- Output	White



CAPACITY	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
10k, 15k, 20k	7.75	1.94	1.69	1.28	6.50	3.25	0.63	1.38	1.63	1.70	3.00	1.50	∅0.68	R0.75	R0.90	1/4”-18 NPT
30k, 40k	10.25	2.44	1.94		8.50	4.25	0.88	1.93	2.00	2.10	4.25	2.13	∅0.81	R1.00	R1.12	1/4”-18 NPT
50k, 60k, 75k	10.25	2.94	2.44		8.50	4.25	0.88	1.93	2.54	2.65	4.25	2.13	∅1.06	R1.00	R1.37	1/2”-14 NPT
100k, 125k	15.25	3.86	2.90		12.75	6.38	1.25	3.13	3.30	3.43	6.38	3.19	∅1.62	R1.50	R1.80	1/2”-14 NPT

Capacities are in pounds.

Double-Ended Beam Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Standard capacities (E_{max})	10k, 15k, 20k, 30k, 40k, 50k, 60k, 75k, 100k, 125k [1]		lbs
Accuracy class according to NTEP	NTEP IIIL	Non-Approved	
Maximum no. of verfication intervals (n_{lc})	10000 Multiple		
Rated output (=S)	3		mV/V
Rated output tolerance	0.003		±mV/V
Zero balance	1.0		±% FSO
Combined error	0.0200	0.0300	±% FSO
Temperature effect on zero	0.0090	0.0135	±% FSO/5°C (/°F)
Temperature effect on output	0.0072	0.0072	±% load/5°C (/°F)
Compensated temperature range	–10 to +40 (+14 to 104)		°C (°F)
Operating temperature range	–53° to +93° (–65° to +200°)		°C (°F)
Safe load limit	150		% E_{max}
Ultimate load	300		% E_{max}
Safe side load limit	100		% E_{max}
Excitation voltage recommended	10		VDC
Excitation voltage maximum	15		VDC
Input resistance	700±7		Ω
Output resistance	700±7		Ω
Insulation resistance	≥1000		MΩ
Environmental protection	IP67		
Element material	Stainless steel		

[1] 10k is not approved by NTEP

FSO—Full Scale Output

Mounting:
Correct mounting of the load cells is essential to ensure optimum accuracy and performance. Further information is available upon request. No mounts available for 9303.

All specifications subject to change without notice.

Double-Ended Beam Load Cell

FEATURES

- Capacities: 10k to 75k lbs
- Environmental protection: IP67 (DIN 40.050)
- Material: Stainless steel
- Certified to NTEP class IIIL, 10000 divisions
- **Optional**
  - FM approved for use in potentially explosive atmospheres



APPLICATIONS

- Weighbridges
- Silos, tanks and hoppers

DESCRIPTION

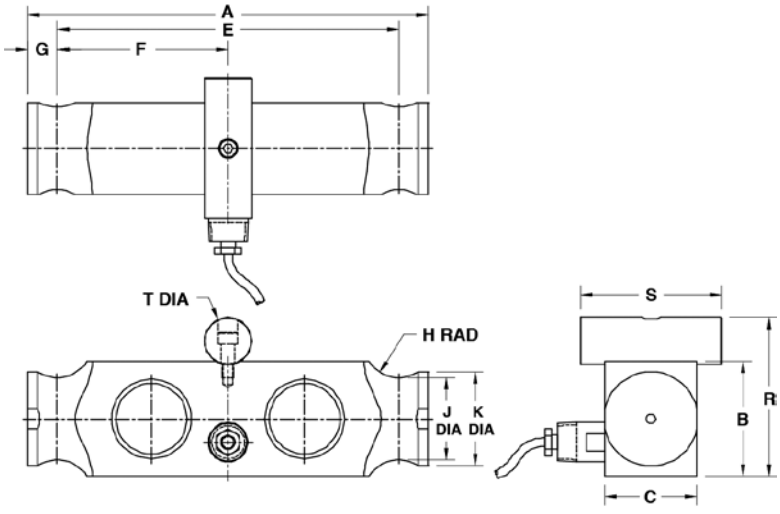
The Model 9423 is a medium capacity double-ended beam type load cell made of stainless steel.

This product is designed for use in certified truck and rail scales and is available in capacities from 10k to 75k lbs.

A reliable sealing and mechanical protection of the strain gage area is ensured by the use of a potting compound with a metal cover.

This load cell is rated intrinsically safe by the FM system, making it suitable for use in potentially explosive atmospheres.

OUTLINE DIMENSIONS in inches



Cable specifications
Cable length: 9m (30 ft)

Excitation +	Red
Excitation –	Black
Output +	Green
Output –	White
Shield	Transparent

Cable screen is not connected to the load cell body.

Capacity (lbs)	10k, 15k, 20k, 25k	30k, 40k, 50k, 60k, 75k
A	8.00	8.50
B	1.94	2.45
C	1.44	1.95
E	7.12	7.25
F	3.56	3.62
G	0.44	0.63
H RAD	0.38	0.75
J	0.80	1.75
K	1.00	2.00
R	2.57	3.38
S	1.94	3.00
T	0.75	1.00

Double-Ended Beam Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Capacities	10k*, 15k*, 20k, 25k, 30k, 40k, 50k, 60k, 75k		lbs
Accuracy class according to NTEP	NTEP IIIL	Non-Approved	
Max. no. of verification intervals	10000d		
Rated output (=S)	3		mV/V
Rated output tolerance	0.003		±mV/V
Zero balance	1.0		±% FSO
Combined error	0.0200	0.0300	±% FSO
Creep error (20-30 minutes)	0.0300	0.0300	±% applied load
Temperature effect on min. dead load output	0.0090 (0.0010)	0.0135 (0.0015)	±% FSO/5°C (/°F)
Temperature effect on sensitivity	0.0072 (0.0008)		±% applied load/5°C (/°F)
Compensated temperature range	–10 to +40 (+14 to 104)		°C (°F)
Operating temperature range	–53 to +93 –65 to +200)		°C (°F)
Safe load limit	150		% E_{max}
Ultimate load	300		% E_{max}
Safe side load limit	100		% E_{max}
Excitation voltage recommended	10		V
Excitation voltage maximum	15		V
Input resistance	700±7		Ω
Output resistance	700±7		Ω
Insulation resistance	≥5000		MΩ
Environmental protection	IP67		
Element material	Stainless steel		ASTM

* Capacities 10k and 15k are not NTEP approved.

FSO—Full Scale Output

Correct mounting of the load cells is essential to ensure optimum accuracy and performance. Further information is available upon request.

All specifications subject to change without notice.

Double-Ended Beam Load Cell

FEATURES

- Capacities: 25k to 75k lbs
- Environmental protection: IP67 (DIN 40.050)
- Material: Stainless steel
- Certified by NTEP class IIIL, 10000 divisions
- **Optional**
  - FM approved for use in potentially explosive atmospheres



APPLICATIONS

- Weighbridges
- Silos, tanks and hoppers

DESCRIPTION

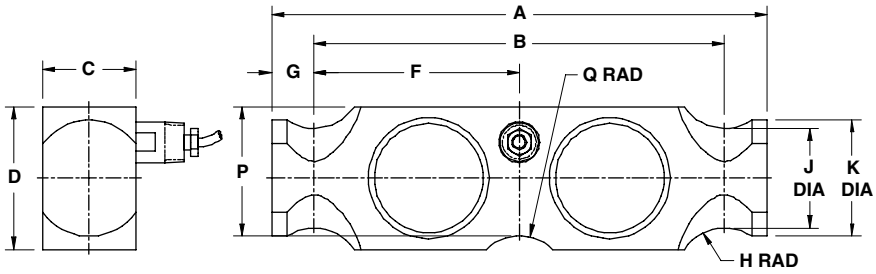
The Model 9803 is a medium to high capacity double-ended beam type load cell, made of stainless steel.

This product is designed for use in certified truck and rail scales and is available in capacities from 25k to 75k lbs.

A reliable sealing and mechanical protection of the strain gage area is ensured by the use of potting compound with a metal cover.

This load cell is rated intrinsically safe by the FM system, making it suitable for use in potentially explosive atmospheres.

OUTLINE DIMENSIONS in inches



Cable specifications
Cable length: 6m

Excitation +	Red
Excitation –	Black
Output +	Green
Output –	White
Shield	Transparent

Cable screen is not connected to the load cell body.

Capacity (lbs)	25k, 50k, 65k, 75k
A	10.25
B	8.50
C	1.94
D	2.94
F	4.25
G	0.88
H Rad	1.00
ØK	2.40
ØJ	2.06
P	2.66
Q Rad	1.00

Double-Ended Beam Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Standard capacities (E_{max})	25k, 50k, 65k, 75k		lbs
Accuracy class according to NTEP	NTEP IIIL	Non-Approved	
Maximum no. of verfication intervals (n)	10000d		
Rated output (=S)	3		mV/V
Rated output tolerance	0.003		±mV/V
Zero balance	1.0		±%FSO
Combined error	0.0200	0.0500	±%FSO
Creep error (20 - 30 minutes)	0.0300	0.0300	±% applied load
Temperature effect on zero	0.0090 (0.0010)	0.025	±% FSO/5°C (/°F)
Temperature effect on output	0.0072 (0.0008)	0.025	±% applied load/5°C (/°F)
Compensated temperature range	–10 to +40 (+14 to +104)		°C (°F)
Operating temperature range	–53 to +93 –65 to +200)		°C (°F)
Safe load limit	150		% E_{max}
Ultimate load	300		% E_{max}
Safe side load limit	100		% E_{max}
Excitation voltage recommended	10		V
Excitation voltage maximum	15		V
Input resistance	700±7		Ω
Output resistance	700±7		Ω
Insulation resistance	≥5000		MΩ
Environmental protection	IP67		
Element material	Stainless steel		ASTM

FSO—Full Scale Output

Mounting:
Correct mounting of the load cells is essential to ensure optimum accuracy and performance. Further information is available upon request.

All specifications subject to change without notice.

Alloy Steel Double-Ended Shear Beam

FEATURES

- Capacities 10k–75k lbs
- Low profile design for weigh bridge and silo applications
- Nickel plated alloy steel construction
- NTEP approved
- IP67 protection
- **Optional**
  - EEx ia IIC T6 hazardous area approval
  - FM and IECEx approvals available



APPLICATIONS

- Weigh bridges
- Tank and silo weighing

DESCRIPTION

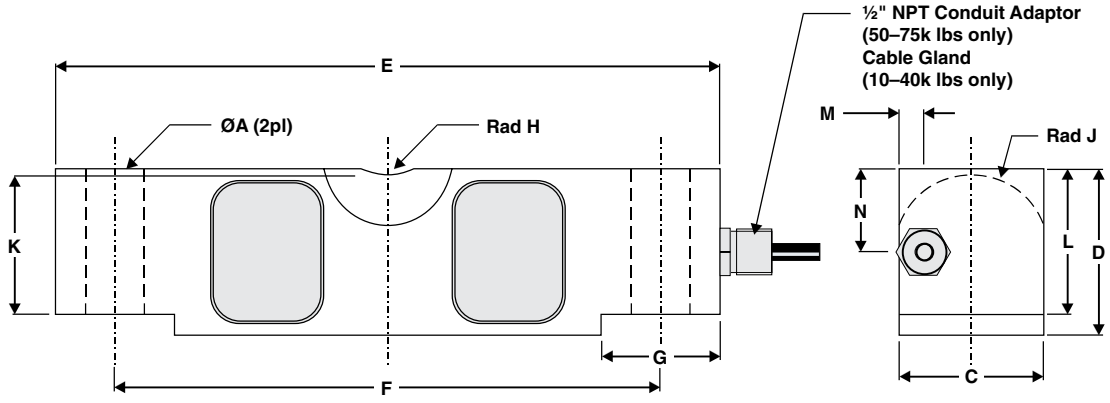
The Model 4158 is a double-ended shear beam load cell designed for high capacity silo weighing applications.

This high accuracy load cell is designed to meet NTEP standards. When combined with suitable mounting arrangements, this load cell will provide a simple, accurate and reliable weighing system.

Nickel plated and full environmental sealing assure long-term reliability. For hazardous environments, this load cell has a EEX ia IIC T6 approved option.

When used in conjunction with Tedea-Huntleigh's custom designed mount, the unit combines ease of installation with both side load and lift-off protection.

OUTLINE DIMENSIONS in millimeters



CAPACITY	ØA	C	D	E	F	G	RadH	Rad J	K	L	M	N
10–25k lbs	17.3	42.9	49.3	196.9	165.1	35.9	19.1	22.9	41.4	43.2	8.8	13.6
40k lbs	20.6	49.3	62.0	260.4	215.9	49.0	25.4	28.5	50.8	53.3	9.0	31.0
50–75k lbs	26.9	62.0	74.7	260.4	215.9	49.0	25.4	34.8	64.5	67.3	10.4	37.4

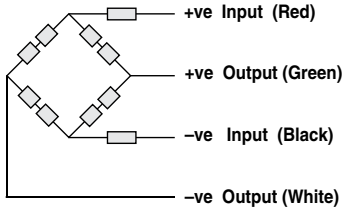
Alloy Steel Double-Ended Shear Beam

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Rated capacity—R.C. (E_{max})	10, 20, 25, 40, 50, 60, 75[1]		Klbs
NTEP/OIML accuracy class	NTEP	Non-Approved	
Maximum no. of intervals (n)	10000 IIIL	1000	
Y = E_{max}/V_{min}	12000	4000	Maximum available
Rated output—R.O.	3.0		mV/V
Rated output tolerance	0.075		±mV/V
Zero balance	0.09		±mV/V
Zero return, 30 min.	0.030	0.050	±% of applied load
Total error	0.30	0.050	±% of rated output
Temperature effect on zero	0.0013	0.0067	±% of rated output/°C
Temperature effect on output	0.0025	0.0040	±% of applied load/°C
Temperature range, compensated	–10 to 40		°C
Temperature range, safe	–30 to +70		°C
Maximum safe central overload	150		% of R.C.
Ultimate central overload	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	780±20		Ω
Output impedance	705±5		Ω
Insulation resistance	>1000		MΩ
Cable length	7.5		m
Cable type	6-wire, braided, PVC, dual floating screen		Standard
Construction	Nickel-plated alloy steel		
Environmental protection	IP67		

[1]10k lbs is not approved by NTEP

All specifications subject to change without notice.

Wiring Schematic Diagram



Double-Ended Shear Beam Load Cell

FEATURES

- Capacities: 50k to 100k lbs
- Stainless steel construction



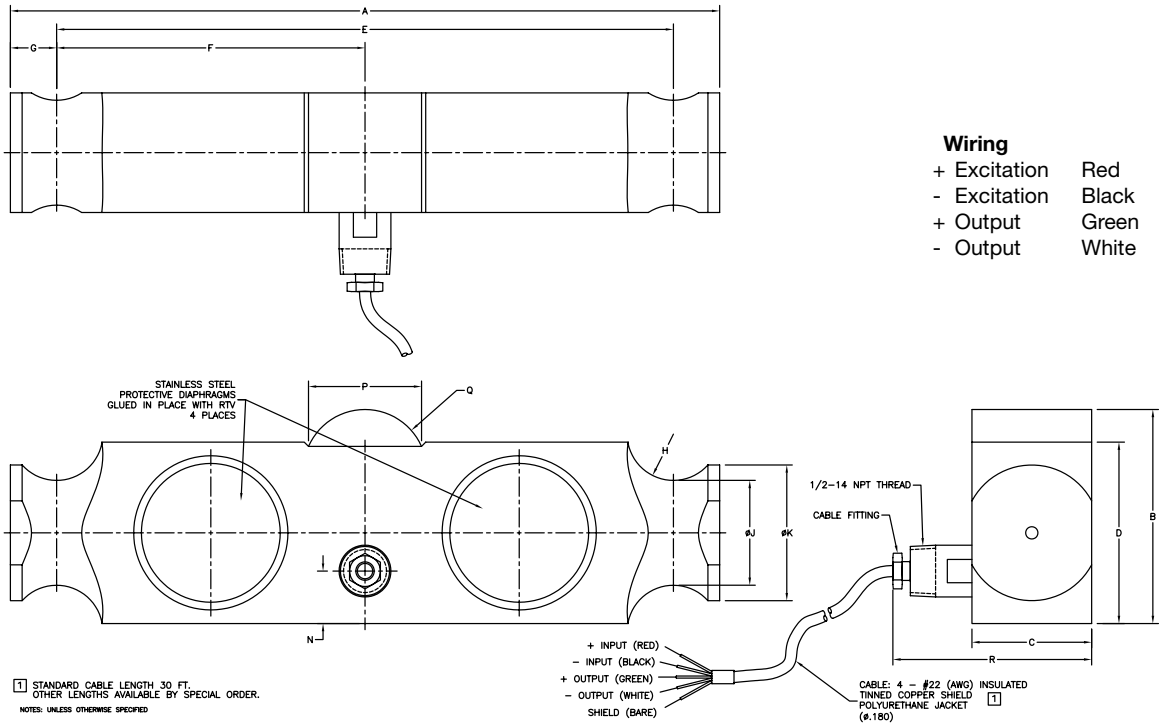
APPLICATIONS

- Hopper/silo/tank weighing
- Weighbridges

DESCRIPTION

The Model 9903 is a double-ended beam-type load cell with a low profile design, specifically designed for applications where space is limited or special mounting required.

OUTLINE DIMENSIONS in millimeters



Wiring

+ Excitation	Red
- Excitation	Black
+ Output	Green
- Output	White

MODEL	CAPACITY	A	B	C	D	E	F	G	H	J	K	N	P	Q	R
Standard	50k, 60k, 75k, 100k	11.50	3.47	1.94	2.94	10.00	5.00	0.75	R.75	∂1.70	∂2.20	0.85	1.83	R1.00	3.22
Rat Proof															4.10
Capacities are in pounds.															

Double-Ended Shear Beam Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Standard Capacities	50k, 60k, 75k, 100k		lbs
Accuracy approval	NTEP		
Accuracy designation	A6	B10	
Acurracy class	IIIM	IIILM	
Certificate of conformance	00-050	00-050	
Maximum divisions, multipole cells	6000	10000	n_{max}
Minimum divisions size, single cell	0.0129	0.0043	v_{min}
Excitation voltage	10 nom, 15 max		VDC
Rated output	3 ±0.003		mV/V
Input resistance	700.0 ±7.0		Ω
Output resistance	700.0 ±7.0		Ω
Zero balance	1		±% FS
Insulation resistance at 50 VDC	≥5000		MΩ
Minimum dead load	0		% E_{max}
Maximum safe load limit	150		% E_{max}
Ultimate over load	300		% E_{max}
Safe side load limit	100		% E_{max}
Combined error	0.02		% FS
Non-linearlity	0.02		% FS
Hysteresis	0.02		% FS
Non-repeatability	0.01		% FS
Zero return	0.0083	0.015	% load/30 min
Creep	0.025	0.03	% load/30 min
Temperature effect on output	0.08		% load/100°F
Temperature effect on zero	0.1		% FS/100°F
Compensated temperature range	–10 to +40 (+14 to +104)		°C (°F)
Operating temperature range	–53 to +93 (–65 to +200)		°C (°F)
Environmental protection	IP67		
Cable length	9 (30)		m (ft)
Cable type	4-wire shielded; shield is not connected to load cell body		
Element material	Stainless steel		

All specifications subject to change without notice.

Wiring color code:

+	Excitation	Red
-	Excitation	Black
+	Output	Green
-	Output	White

Double-Ended Shear Beam Load Cell

FEATURES

- Rated capacities of 10,000 to 225,000 lbs
- Center-link loaded
- Integral conduit adaptor
- Trade certified for NTEP Class IIIL: 10000 divisions; Class III: 5000 divisions and OIML R60 3000 divisions in 20,000 to 100,000 lbs range
- *Sensorgage*™ sealed to IP67 standards
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G. Also, non-incendive ratings (No barriers!).
- **Optional**
  - EDOC (Electrodeposited organic coating): product appearance will differ from the photograph due to coating
  - 65058S stainless steel, welded seal version available
  - 65058-TSA companion assemblies for vehicle scales
  - 65069-TWA companion assemblies for vessel weighing





65058-TSA



65069-TWA

APPLICATIONS

- Truck scales
- Railroad track scales
- Precision tank, bin and silo weighing
- Level and inventory monitoring

DESCRIPTION

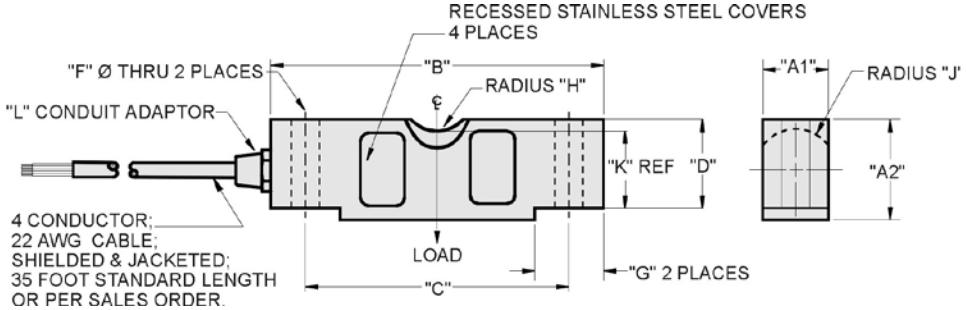
The Model 65058 is a mid to high capacity, nickel-plated alloy steel, double ended Shear beam load cell.

This product is designed for use in certified truck and rail scales and is available in capacities ranging from 10,000 to 250,000 lbs.

This load cell is rated intrinsically safe by the Factory Mutual System (FM); making it suitable for use in potentially explosive environments.

This load cell is certified for legal for trade applications by both American NTEP and International OIML standards.

OUTLINE DIMENSIONS in inches



Wiring

+ Excitation	Red
– Excitation	Black
+ Output	Green
– Output	White

CAPACITY	A1	A2	B	C	D	F	G	H	J	K	L
10K, 15K, 20K, 25K	1,69	1,94	7,75	6,5	1,7	0,68	1,38	0,75	0,9	1,63	¼ – 18 NPT
50K, 60K, 75K	2,44	2,94	10,25	8,5	2,65	1,06	1,93	1	1,37	2,54	½ – 14 NPT
100K, 125K, 150K	2,9	3,86	15,25	12,75	3,43	1,62	3,13	1,5	1,8	3,3	½ – 14 NPT
200K-225K	3,8	5,8	19,25	15,25	5,12	1,62	4	2	2,37	4,44	½ – 14 NPT

Capacities are in pounds.

Double-Ended Shear Beam Load Cell

SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Rated capacity—R.C. (E_{max})	10k, 15k, 20k, 25k, 50k, 60k, 75k, 100k, 125k, 150k, 200k, 225k[1]				lbs
NTEP/OIML accuracy class	NTEP III	NTEP IIIL	Standard	OIML R60	
Maximum no. of intervals (n)	5000 multiple	10000 multiple		3000	
Y = E_{max}/V_{min}	See NTEP cert. 86-046A3			6667	Maximum available
Rated output—R.O.	3.0				mV/V
Rated output tolerance	0.25				±% mV/V
Zero balance	1.0				±% FSO
Combined error	0.02	0.02	0.03	0.02	±% FSO
Non-repeatability	0.01	0.01	0.015	0.01	±% FSO
Creep error (30 minutes)	0.025	0.030	0.030	0.017	±% FSO
Temperature effect on zero	0.0010	0.0010	0.0015	0.0010	±% FSO/°F
Temperature effect on output	0.0008	0.0008	0.0008	0.0007	±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)				°F (°C)
Operating temperature range	0 to 150 (–18 to 65)				°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)				°F (°C)
Sideload rejection ratio	500:1				
Safe sideload	100				% of R.C.
Maximum safe central overload	150				% of R.C.
Ultimate central overload	300				% of R.C.
Excitation, recommended	10				VDC or VAC RMS
Excitation, maximum	25				VDC or VAC RMS
Input impedance	686–714				Ω
Output impedance	699–707				Ω
Insulation resistance at 50 VDC	>1000				MΩ
Material	Nickel-plated alloy tool steel[2]				
Environmental protection	IP67				

Notes

[1] Consult factory for capacities over 100k
NTEP approval 20–200k lbs only

[2] Stainless steel available—model name is 65058S

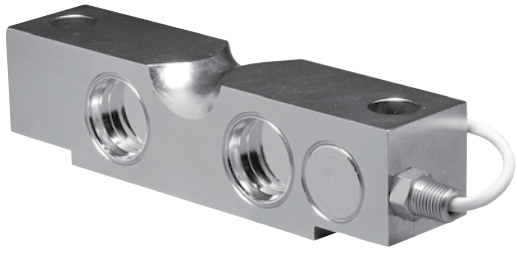
FSO—Full Scale Output

All specifications subject to change without notice.

Welded Seal Double-Ended Shear Beam Load Cell

FEATURES

- Rated capacities of 15,000 to 125,000 lbs
- Stainless steel, welded seal construction
- Center-link recessed pivot load
- Insensitive to side loads and bending moments
- Load cells have matched outputs for multi-cell systems
- Integrated conduit adaptor
- Trade certified for NTEP Class III: 5000 divisions and Class IIIL: 10000 divisions
- *Sensorgage*™ sealed to IP68 and IP69K standards
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G.
  Also, non-incendive ratings (No barriers!)
- **Optional**
  - 65058-TSA companion assemblies for vehicle scales
  - 65069-TWA companion assemblies for vessel weighing





65069-TWA



65058-TSA

APPLICATIONS

- Hostile environments:
  Food and beverage processing, Chemical processing, Pharmaceutical and biomedical processing
- High performance weighing modules and assemblies
- Tank and reactor weighing
- Batching, blending and mixing systems

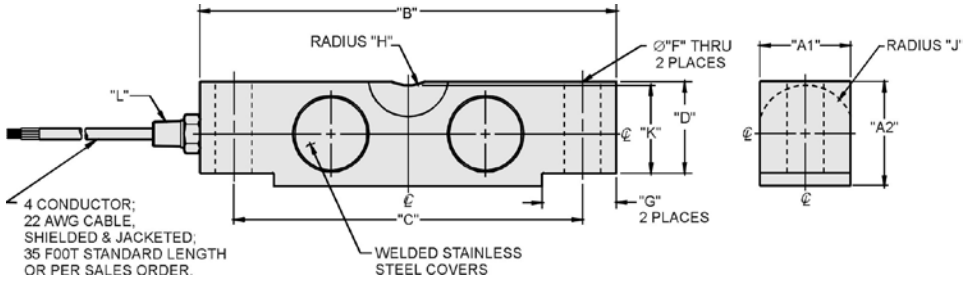
DESCRIPTION

The Model 65058S is specifically designed to be installed in demanding environments. It is specially suitable for the food processing, chemical and pharmaceutical industries.

Protected to meet IP68 and IP69K requirements, the construction of the 65058S load cell uses double-redundant sealing methods, to ensure long and reliable service and constant calibration.

The additional sense wires compensate for changes in lead resistance due to temperature change and/or cable extension. Complete compensation of changes in lead resistance is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in inches



Wiring

+ Excitation	Red
– Excitation	Black
+ Output	Green
– Output	White

CAPACITY	A1	A2	B	C	D	F	G	H	J	K	L
15K, 20K, 25K	1,69	1,94	7,75	6,5	1,7	0,68	1,38	R0.75	R0.90	1,63	¼ – 18 NPT
35K, 40K, 50K, 60K, 75K	2,44	2,94	10,3	8,5	2,65	1,06	1,93	R1.00	R1.37	2,54	½ – 14 NPT
100K	2,44	3,44	10,3	8,5	2,65	1,06	1,93	R1.00	R1.37	2,55	½ – 14 NPT
125K	2,9	3,86	15,3	12,8	3,43	1,62	3,13	R1.50	R1.80	3,3	½ – 14 NPT

Capacities are in pounds.

Welded Seal Double-Ended Shear Beam Load Cell

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated capacity—R.C. (E_{max})	15k, 20k, 25k, 35k, 40k, 50k, 60k, 75k, 100k, 125k[1]			lbs
NTEP/OIML accuracy class	NTEP III	NTEP IIIL	Standard	
Maximum no. of intervals (n)	5000 multiple	10000 multiple		
Y = E_{max}/V_{min}	See NTEP cert. 86-046A3			Maximum available
Rated output—R.O.	3.0			mV/V
Rated output tolerance	±0.25			±% mV/V
Zero balance	1.0			±% FSO
Combined error	0.02	0.02	0.03	±% FSO
Non-repeatability	0.01			±% FSO
Creep error (20 minutes)	0.03	0.03	0.03	±% FSO
Temperature effect on zero	0.0015	0.0010	0.0015	±% FSO/°F
Temperature effect on output	0.0008	0.0008	0.0008	±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)			°F (°C)
Operating temperature range	0 to 150 (–18 to 65)			°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)			°F (°C)
Sideload rejection ratio	500:1			
Safe sideload	100			% of R.C.
Maximum safe central overload	150			% of R.C.
Ultimate central overload	300			% of R.C.
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	25			VDC or VAC RMS
Input impedance	686–714			Ω
Output impedance	699–707			Ω
Insulation resistance at 50 VDC	>1000			MΩ
Material	Stainless steel			
Environmental protection	IP68, IP69K			

Notes
[1] NTEP approval 20–125k lbs only
FSO—Full Scale Output
All specifications subject to change without notice.

Double-Ended Beam Load Cell

FEATURES

- Capacities: 25k to 125k lbs
- Environmental protection: IP67 (DIN 40.050)
- Material: Nickel-plated steel
- Certified to NTEP class IIIL, 10000 divisions
- **Optional**
  - FM approved for use in potentially explosive atmosphere



APPLICATIONS

- Weighbridges
- Silos, tanks and hoppers

DESCRIPTION

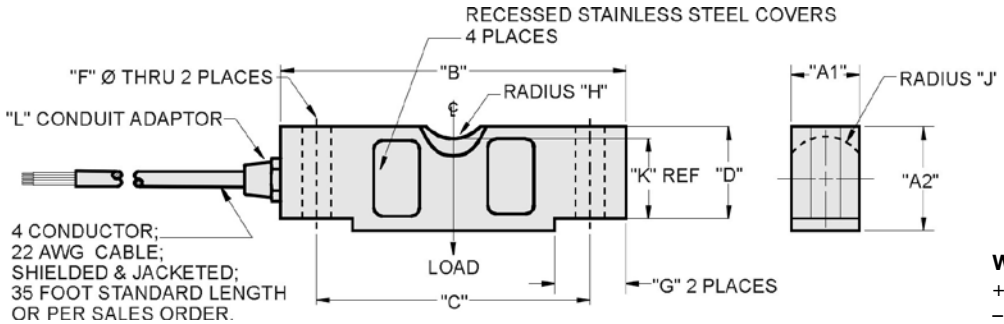
The Model 5303 is a link loaded mid to high capacity, nickel-plated alloy steel double-ended shear beam type load cell.

This product is designed for use in certified truck and rail scales and is available in capacities from 25k to 125k lbs.

This load cell is rated intrinsically safe by the FM system, making it suitable for use in potentially explosive atmospheres.

This load cell is certified for trade applications by American NTEP standards.

OUTLINE DIMENSIONS in inches



Wiring

+ Excitation	Red
– Excitation	Black
+ Output	Green
– Output	White

CAPACITY	A_1	A_2	B	C	D	F	G	H	J	K	L
25k	1.69	1.94	7.75	6.50	1.70	0.68	1.38	0.75	0.90	1.63	1/4 - 18 NPT
40k	1.94	2.44	10.25	8.50	2.10	0.81	1.93	1.00	1.12	2.00	1/4 - 18 NPT
50k–75k	2.44	2.94	10.25	8.50	2.65	1.06	1.93	1.00	1.37	2.54	1/2 - 14 NPT
100k–125k	2.90	3.86	15.25	12.75	3.43	1.62	3.13	1.50	1.80	3.30	1/2 - 14 NPT

Capacities are in pounds

Double-Ended Beam Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Standard capacities (E_{max})	25k, 40k, 50k, 60k, 75k, 100k, 125k		lbs
Accuracy class according to NTEP	NTEP IIIL	Non-Approved	
Maximum no. of verification intervals (n/c)	10000d		
Rated output (=S)	3.0		mV/V
Rated output tolerance	0.0075		±% mV/V
Zero balance	1.0		±% FSO
Combined error	0.0200	0.0500	±% FSO
Temperature effect on min minimum dead load output	0.0010	0.0250	±% FSO/5°C (/°F)
Temperature effect on sensitivity	0.0008	0.0250	±% FSO/5°C (/°F)
Compensated temperature range	–10 to +40 (+14 to 104)		°C (°F)
Operating temperature range	–18 to +65 (0 to +150)		°C (°F)
Safe load limit	150		% E_{max}
Ultimate load	300		% E_{max}
Safe side load limit	100		% E_{max}
Excitation voltage recommended	10		V
Excitation voltage maximum	15		V
Input resistance	700±14		Ω
Output resistance	703±4		Ω
Insulation resistance	Š1000		MΩ
Environmental protection	IP67		
Element material	Nickel-plated steel		ASTM

Mounting:
Correct mounting of the load cells is essential to ensure optimum accuracy and performance. Further information is available upon request.

FSO—Full Scale Output

All specifications subject to change without notice.

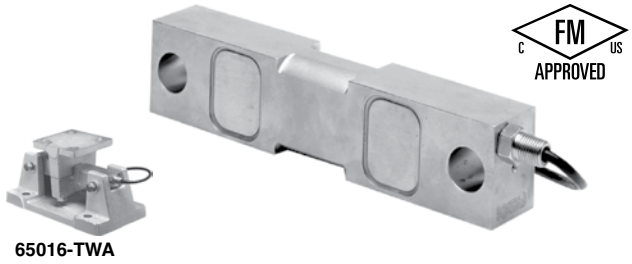
Double-Ended Shear Beam Load Cell

FEATURES

- Rated capacities of 1000 to 100,000 pounds
- Insensitive to side loads and bending moments
- High output—well suited to high deadload/low liveload applications
- Load cells have matched outputs for multi-cell systems
- Excellent combined error and repeatability
- Integral conduit adaptor
- *Sensorgage*™ sealed to IP67 standards
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G. Also, non-incendive ratings (No barriers!);
- **Optional**
  - Weighing assemblies available—65016 TWA
  - EDOC option available; product appearance will differ from the photograph due to coating

APPLICATIONS

- Tank, bin, and silo weighing
- Batching, blending and mixing systems
- Level and inventory monitoring



65016-TWA

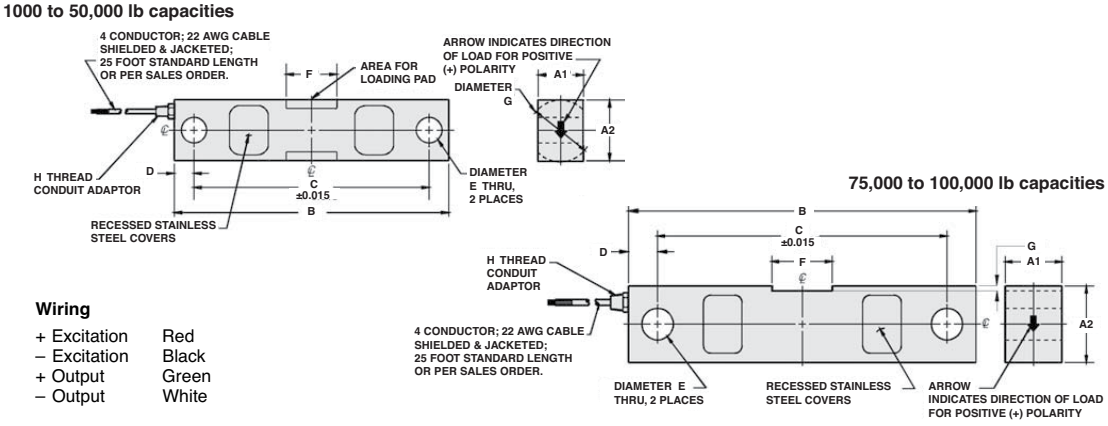
DESCRIPTION

The Model 65016 is a double-ended shear beam load cell constructed from nickel-plated alloy steel. The double-ended mounting provides good restraint to possible movement of the tanks and, in many cases, eliminates the need for check rods. The double Shear Beam design gives excellent performance for high capacity loading.

The output is rationalized to facilitate multiple-cell applications.

This load cell is constructed of alloy tool steel and is potted to IP67 providing excellent protection against moisture and humidity.

OUTLINE DIMENSIONS in millimeters



Wiring

+ Excitation	Red
– Excitation	Black
+ Output	Green
– Output	White

CAPACITY	A1	A2	B	C	D	E	F	G	H
1k–5k	1.25	1.25	7.50	6.25	0.62	0.50	1.22	1.25	1/4-18NPT
10k–25k	1.44	1.94	8.75	7.50	0.62	0.81	1.62	1.99	1/4-18NPT
35k	1.50	2.50	8.75	7.50	0.62	0.81	1.62	2.50	1/4-18NPT
50k	2.44	2.94	13.50	11.50	1.00	1.31	3.25	2.99	1/2-14NPT
75k	2.44	2.94	13.50	11.50	1.00	1.31	3.12	0.18	1/2-14NPT
100k	2.94	3.94	18.50	15.00	1.75	1.63	3.25	0.25	1/2-14NPT

Above dimensions apply to non-EDOC-coated load cells.

Double-Ended Shear Beam Load Cell

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Rated capacity—R.C. (E_{max})	1k, 1.5k, 2.5k, 5k, 10k, 15k, 25k, 35k, 50k, 75k, 100k	lbs
NTEP/OIML accuracy class	Standard	
Maximum no. of intervals (n)	—	
Rated output—R.O.	3.0	mV/V
Rated output tolerance	0.25	±% mV/V
Zero balance	1.0	±% FSO
Combined error	0.03	±% FSO
Non-repeatability	0.01	±% FSO
Creep error (20 minutes)	0.03	±% FSO
Temperature effect on zero	0.0015	±% FSO/°F
Temperature effect on output	0.0008	±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)	°F (°C)
Operating temperature range	0 to 150 (–18 to 65)	°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)	°F (°C)
Sideload rejection ratio	500:1	
Safe sideload	100	% of R.C.
Maximum safe central overload	150	% of R.C.
Ultimate central overload	300	% of R.C.
Excitation, recommended	15	VDC or VAC RMS
Excitation, maximum	25	VDC or VAC RMS
Input impedance	700±14	Ω
Output impedance	703±4	Ω
Insulation resistance at 50 VDC	>1000	MΩ
Material	Nickel-plated alloy tool steel	
Environmental protection	IP67	

Notes

FSO—Full Scale Output

All Specifications subject to change without notice.

Welded, Stainless Steel Double-Ended Shear Beam Load Cell

FEATURES

- Rated capacities of 1000 to 100,000 pounds
- Stainless steel, welded seal construction
- Insensitive to side loads and bending moments
- High output—well suited to high deadload/low liveload applications
- Load cells have matched outputs for multi-cell systems
- Integral conduit adaptor
- *Sensorgage*™ sealed to IP67 standards
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G. Also, non-incendive ratings (No barriers!)
- **Optional**
  - Fully hermetically sealed version available





65016-TWA



65086

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APPLICATIONS

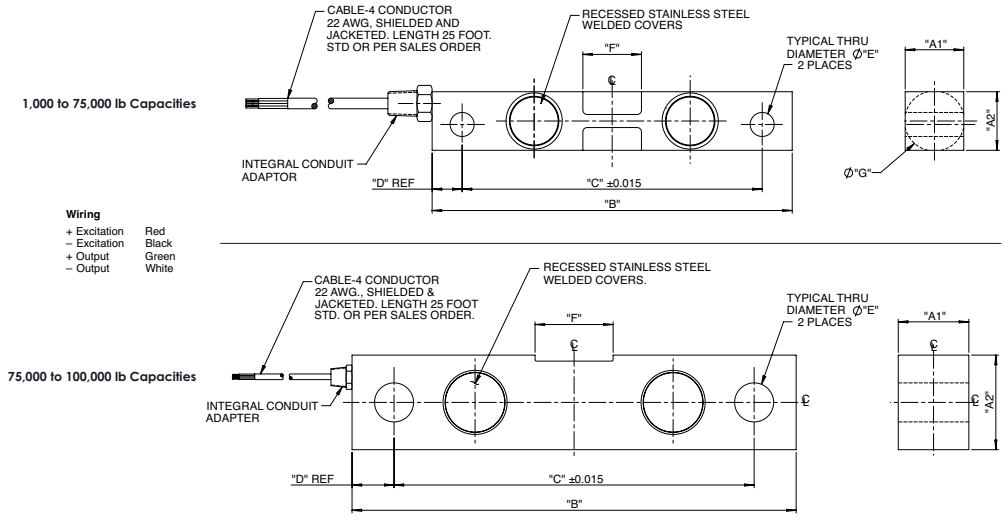
- Hostile environments:
  Food and beverage processing
  Chemical and plastics processing
  Pharmaceutical and biomedical processing
- Tank, bin, and silo weighing
- Batching, blending and mixing systems
- Level and inventory monitoring

DESCRIPTION

The Model 65016-W is designed to be center-mounted with double-linked loading. This design provides free movement in all horizontal directions, virtually eliminating binding or friction points. The double Shear Beam design gives an excellent performance for high capacity loading.

The Stainless steel construction and IP67 rating make this load cell ideal for any environmental installation.

OUTLINE DIMENSIONS in inches



CAPACITY	A1	A2	B	C	D	E	F	G	THREAD	LOADING SURFACE
1k–5k	1.22	1.22	7.50	6.25	0.62	0.50	1.12	1.25	1/4-18NPT	Round
10k–25k	1.44	1.94	8.75	7.50	0.62	0.81	1.62	1.99	1/4-18NPT	Round
35k	1.44	2.44	8.75	7.50	0.62	0.81	1.62	2.50	1/4-18NPT	Round
50k–60k and 75k*	2.44	2.94	13.50	11.50	1.00	1.31	3.75	2.99	1/2-14NPT	Round
75k*–80k	2.44	2.94	13.50	11.50	1.00	1.31	3.25	–	1/2-14NPT	Square
100k	2.94	3.94	18.50	15.00	1.75	1.63	3.25	–	1/2-14NPT	Square
Capacities are in pounds.										

* Only 75k capacity is possible in either round or square loading surface.

Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com

Welded, Stainless Steel Double-Ended Shear Beam Load Cell

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Rated capacity—R.C. (E_{max})	1k, 1.5k, 2.5k, 5k, 10k, 15k, 25k, 35k, 50k, 60k, 75k, 80k, 100k	lbs
NTEP/OIML accuracy class	Standard	
Maximum no. of intervals (n)	—	
Rated output—R.O.	3.0	mV/V
Rated output tolerance	0.25	±% mV/V
Zero balance	1.0	±% FSO
Non-linearity	0.07%	±% FSO
Hysteresis	0.07%	±% FSO
Non-repeatability	0.01	±% FSO
Creep error (20 minutes)	0.03	±% FSO
Temperature effect on zero	0.0015	±% FSO/°F
Temperature effect on output	0.0008	±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)	°F (°C)
Operating temperature range	0 to 150 (–18 to 65)	°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)	°F (°C)
Sideload rejection ratio	500:1	
Safe sideload	100	% of R.C.
Maximum safe central overload	150	% of R.C.
Ultimate central overload	300	% of R.C.
Excitation, recommended	15	VDC or VAC RMS
Excitation, maximum	25	VDC or VAC RMS
Input impedance	686–714	Ω
Output impedance	699–707	Ω
Insulation resistance at 50 VDC	>1000	MΩ
Material	Stainless steel	
Environmental protection	IP67 IP68 welded seals, glass to metal seal	Standard Special

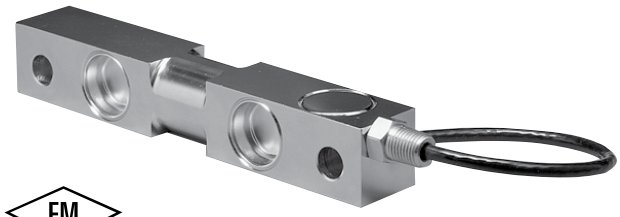
FSO—Full Scale Output

All specifications subject to change without notice.

Double-Ended Beam Load Cell

FEATURES

- Capacities: 1k to 75k lbs
- Environmental protection: IP67 (DIN 40.050)
- Material: stainless steel
- Center loaded design
- Welded covers for all capacities
- **Optional**
  - FM certified versions are available for use in potentially explosive atmospheres



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APPLICATIONS

- Silo, tank, hopper weighing
- Custom system designs
- Low capacity vehicle scales

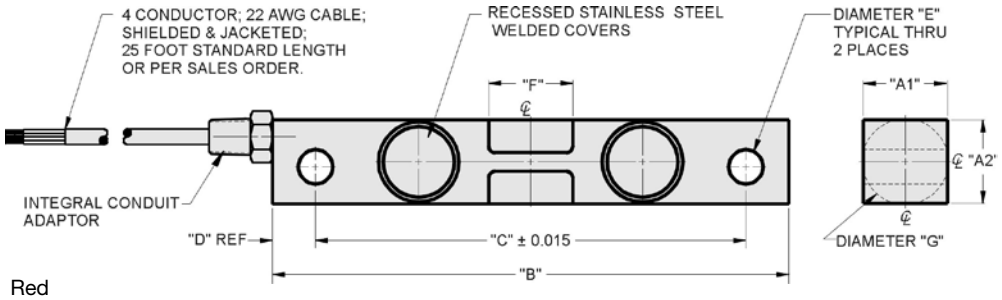
DESCRIPTION

The Model 9203 is a stainless steel double-ended shear beam type load cell.

A reliable sealing and mechanical protection of the skin gage area is ensured by the use of a potting compound with a metal cover.

The center-loaded design results in minimal sensitivity to off-center forces.

OUTLINE DIMENSIONS in inches



Wiring

+Excitation	Red
– Excitation	Black
+Output	Green
– Output	White

CAPACITY	A_1	A_2	B	C	D	E	F	G	Thread
1k–5k	1.22	1.22	7.50	6.25	0.62	0.50	1.12	1.25	1/4-18NPT
10k–25k	1.44	1.94	8.75	7.50	0.62	0.81	1.62	1.99	1/4-18NPT
35k	1.44	2.44	8.75	7.50	0.62	0.81	1.62	2.50	1/4-18NPT
50k–75k	2.44	2.94	13.50	11.50	1.00	1.31	3.25	2.99	1/2-14NPT

Capacities are in pounds.

Double-Ended Beam Load Cell

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Standard capacities (E_{max})	1k, 1.5k, 2k, 2.5k, 5k, 10k, 15k, 20k, 25k, 35k, 50k, 75k	lbs
Accuracy class	Non Approved—D3	
Rated output (=S)	3.0	mV/V
Rated output tolerance	0.008	±mV/V
Zero balance	1.0	±% FSO
Combined error	0.03	±% FSO
Creep error (20 minutes)	0.03	±% FSO
Temp. effect on min. dead load output	0.0015	±% FSO/5°C (/°F)
Temperature effect on sensitivity	0.0008	±% FSO/5°C (/°F)
Maximum safe overload	150	% E_{max}
Ultimate overload	300	% E_{max}
Maximum safe side load	100	% E_{max}
Excitation voltage	10	V
Maximum excitation voltage	15	V
Input resistance	700±14	Ω
Output resistance	703±4	Ω
Insulation resistance	≥1000	MΩ
Compensated temperature range	–10 to +40 (+14 to +104)	°C (°F)
Operating temperature range	–18 to +65 (0 to +150)	°C (°F)
Element material (DIN)	Stainless steel	
Sealing	IP67	

FSO—Full Scale Output

All specifications subject to change without notice.

Double-Ended Shear Beam Load Cell

FEATURES

- Rated capacities of 25,000 to 125,000 pounds, 10 to 45 metric tons
- Center supported, external pivot loading
- Integral conduit adaptor
- Trade certified for NTEP Class IIIL:10000 divisions and OIML R60 3000 divisions
- Sensorgage™ sealed to IP67 standards
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G. Also, non-incendive ratings (No barriers!)
- **Optional**
  - Stainless steel available as 65040W
  - Internal pivot loading available as 65040-1122

APPLICATIONS

- Truck scales
- Railroad track scales
- "Legal-for-Trade" tank, bin, and hopper weighing





65040-1122

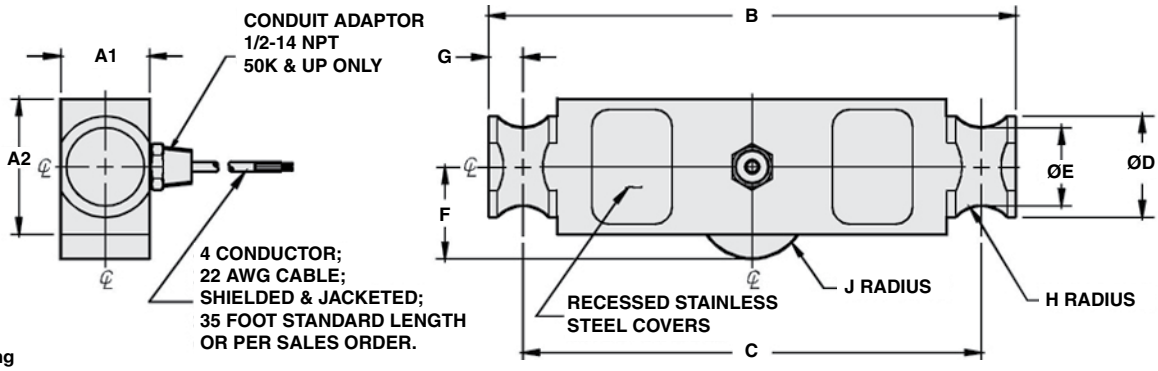
DESCRIPTION

The Model 65040 is a mid to high capacity nickel-plated alloy steel, double-ended shear beam load cell.

This product is designed for use in certified truck and rail scales and is available in capacities ranging from 25k to 125k lbs.

This load cell is rated intrinsically safe by the Factory Mutual System (FM); making it suitable for use in potentially explosive environments. This load cell is certified for Legal-for-Trade applications by both American NTEP and International OIML standards.

OUTLINE DIMENSIONS in millimeters



Wiring

+	Excitation	Red
–	Excitation	Black
+	Output	Green
–	Output	White

CAPACITY	A1	A2	B	C	D	E	F	G	H	J
25k–40k	1.94	2.44	8.25	7.25	2.0	1.63	1.75	0.50	0.50	0.50
50k–75k	1.94	2.94	11.50	10.00	2.2	1.70	2.00	0.75	0.75	1.00
100k–125k	2.90	3.86	14.50	12.50	3.2	2.44	2.75	1.00	1.00	1.50
[10T]	[49.3]	[61.9]	[209.6]	[184.2]	[50.8]	[41.4]	[44.5]	[12.7]	[12.7]	[12.7]
[25–35T]	[49.3]	[74.7]	[292.1]	[254.0]	[55.9]	[43.2]	[50.8]	[19.1]	[19.1]	[25.4]
[45T]	[73.7]	[98.0]	[368.3]	[317.5]	[81.3]	[62.0]	[69.9]	[25.4]	[25.4]	[38.1]

Capacities are in pounds [kg/T].

Double-Ended Shear Beam Load Cell

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated capacity—R.C. (E_{max})	25k, 40k, 50k, 60k, 75k, 100k, 125k 10T, 25T, 35T, 45T			lbs kg/metric tons
NTEP/OIML accuracy class	NTEP IIIL	Standard	OIML R60	
Maximum no. of intervals (n)	10000 multiple		3000	
Y = E_{max}/V_{min}	See NTEP cert. 86-045A1		6250	Maximum available
Rated output—R.O.	3.0			mV/V
Rated output tolerance	0.25			±% mV/V
Zero balance	1.0			±% FSO
Combined error	0.02	0.03	0.02	±% FSO
Non-repeatability	0.01			±% FSO
Creep error (30 minutes)	0.025	0.03	0.017	±% FSO
Temperature effect on zero	0.0009	0.0015	0.0010	±% FSO/°F
Temperature effect on output	0.0008	0.0008	0.0007	±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)			°F (°C)
Operating temperature range	0 to 150 (–18 to 65)			°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)			°F (°C)
Sideload rejection ratio	500:1			
Safe sideload	100			% of R.C.
Maximum safe central overload	150			% of R.C.
Ultimate central overload	300			% of R.C.
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	25			VDC or VAC RMS
Input impedance	686–714			Ω
Output impedance	699–707			Ω
Insulation resistance at 50 VDC	>1000			MΩ
Material	Nickel-plated alloy tool steel*			
Environmental protection	IP67			

* Stainless steel available as 65040W

FSO—Full Scale Output

All specifications subject to change without notice.

Alloy Tool Steel, Welding Sealed, Double-Ended Shear Beam Load Cell

FEATURES

- Rated capacities of 50,000 to 100,000 pounds, 20 to 50 metric tonnes
- Center supported, internal pivot loading
- Replaces Revere Model 5223 and compatible load cells
- Trade certified for NTEP Class IIIL: 10000 divisions and OIML R60: 3000 divisions
- *Sensorgage*™ sealed to IP68 standards
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G. Also, non-incendive ratings (No barriers!)



APPLICATIONS

- Truck scales
- Railroad track scales

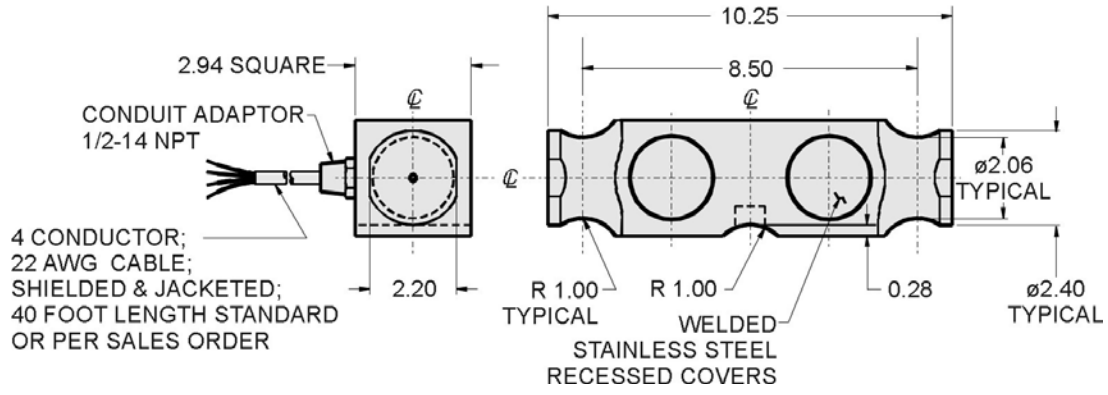
DESCRIPTION

The Model 65040-1127W is a mid to high capacity, nickel plated alloy steel double-ended shear beam load cell with welded seals. Its sealing provides the cell with extremely high protection for demanding environmental conditions.

This double ended shear beam is designed for use in certified truck and rail scales and is available in capacities ranging from 50k through 100k lbs, and 20 to 50 t.

This load cell is rated intrinsically safe by the Factory Mutual System (FM); making it suitable for use in potentially explosive environments. This load cell is certified for Legal For Trade applications by both American NTEP and International OIML standards.

OUTLINE DIMENSIONS in inches



Wiring

+ Excitation	Red
– Excitation	Black
+ Output	Green
– Output	White

Model 65040-1127W

Tedea-Huntleigh

Alloy Tool Steel, Welding Sealed, Double-Ended Shear Beam Load Cell

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated capacity—R.C. (E_{max})	50k, 65k, 100k 20t, 30t, 50t			lbs t
NTEP/OIML accuracy class	NTEP IIIL**	Standard	OIML R60	
Maximum no. of intervals (n)	10000 multiple		3000	
Y = E_{max}/V_{min}	NTEP Cert. No 86-045A1		6250	Maximum available
Rated output—R.O.	3.0			mV/V
Rated output tolerance	0.25			±% mV/V
Zero balance	1.0			±% FSO
Combined error	0.02	0.03	0.02	±% FSO
Non-repeatability	0.01			±% FSO
Creep error (30 minutes)	0.025	0.03	0.017	±% FSO
Temperature effect on zero	0.0009	0.0015	0.0010	±% FSO/°F
Temperature effect on output	0.0008	0.0008	0.0007	±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)			°F (°C)
Operating temperature range	0 to 150 (–18 to 65)			°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)			°F (°C)
Sideload rejection ratio	500:1			
Safe sideload	100			% of R.C.
Maximum safe central overload	150			% of R.C.
Ultimate central overload	300			% of R.C.
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	25			VDC or VAC RMS
Input impedance	686–714			Ω
Output impedance	699–707			Ω
Insulation resistance at 50 VDC	>1000			MΩ
Material	Nickel-plated alloy steel*			
Environmental protection	IP68			

* Stainless steel available as 65040W

** Only imperial capacities are NTEP approved

FSO—Full Scale Output

All specifications subject to change without notice.

Stainless Steel, Welding Sealed Double-Ended Shear Beam Load Cell

FEATURES

- Rated capacities of 25,000 to 75,000 lbs (higher capacities also available)
- Welded seal, stainless steel construction
- Center supported, external pivot loading
- Integral conduit adaptor
- Trade certified for NTEP Class IIIL: 10000 divisions
- *Sensorgage*™ sealed to IP68 standards
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G. Also, non-incendive ratings (No barriers!)





65040 Steel

APPLICATIONS

- Hostile environments:
  Food and beverage processing
  Chemical and plastics processing
  Pharmaceutical and biomedical processing
- Truck scales
- Railroad track scales

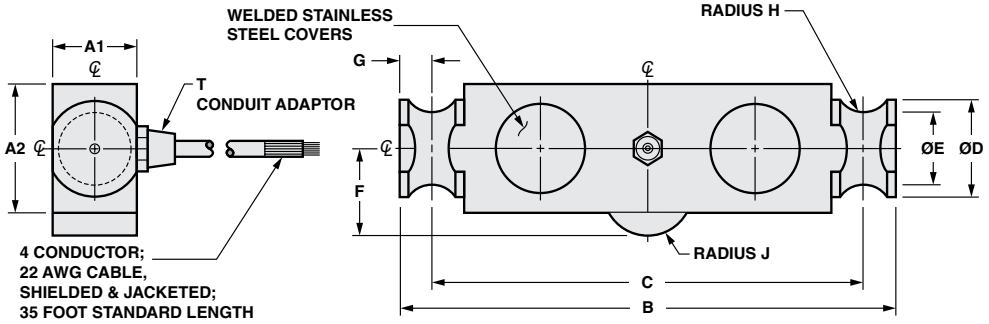
DESCRIPTION

The Model 65040W is a mid to high capacity welded stainless steel, double-ended shear beam load cell.

This product is designed for use in certified truck and rail scales and is available in capacities ranging from 25k through 75k lbs. (For higher capacities, please consult factory.)

This load cell is rated intrinsically safe by the Factory Mutual System (FM); making it suitable for use in potentially explosive environments. This load cell is certified for Legal For Trade applications by American NTEP standards.

OUTLINE DIMENSIONS in inches



Wiring

+ Excitation	Red
– Excitation	Black
+ Output	Green
– Output	White

CAPACITY	A1	A2	B	C	D	E	F	G	H	J	T-THREAD
25k–40k	1.94	2.44	8.25	7.25	2.0	1.63	1.75	0.50	0.50	0.50	1/4-18NPT
50k–75k	1.94	2.94	11.50	10.00	2.2	1.70	2.00	0.75	0.75	1.00	1/2-14NPT

Capacities are in pounds.

Stainless Steel, Welding Sealed Double-Ended Shear Beam Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Rated capacity—R.C. (E_{max})	25k, 40k, 50k, 75k*		lbs
NTEP/OIML accuracy class	NTEP IIIL	Standard	
Maximum no. of intervals (n)	10000 multiple		
Y = E_{max}/V_{min}	See NTEP cert. 86-045A1		Maximum available
Rated output—R.O.	3.0		mV/V
Rated output tolerance	0.25		±% mV/V
Zero balance	1.0		±% FSO
Combined error	0.02	0.03	±% FSO
Non-repeatability	0.01	0.015	±% FSO
Creep error (30 minutes)	0.025	0.03	±% FSO
Temperature effect on zero	0.0009	0.0015	±% FSO/°F
Temperature effect on output	0.0008	0.0008	±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)		°F (°C)
Operating temperature range	0 to 150 (–18 to +65)		°F (°C)
Storage temperature range	–60 to 185 (–50 to +85)		°F (°C)
Sideload rejection ratio	500:1		
Safe sideload	100		% of R.C.
Maximum safe central overload	150		% of R.C.
Ultimate central overload	300		% of R.C.
Excitation, recommended	10–15		VDC or VAC RMS
Excitation, maximum	25		VDC or VAC RMS
Input impedance	686–714		Ω
Output impedance	699–707		Ω
Insulation resistance at 50 VDC	>1000		MΩ
Material	17-4 Ph stainless steel**		
Environmental protection	IP68		

* Consult factory for higher capacities

** Alloy steel available as 65040

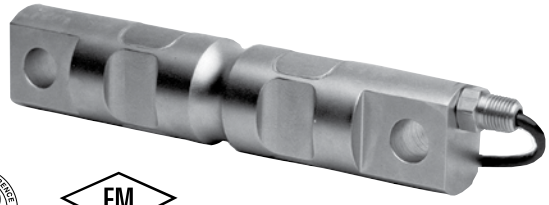
FSO—Full Scale Output

All specifications subject to change without notice.

Double-Ended Shear Beam Load Cell

FEATURES

- Rated capacities of 5,000 to 100,000 pounds, 2.3 to 45 metric tonnes
- High quality alloy tool steel construction
- Nickel plated for outstanding corrosion resistance
- Replacement for RTI model 5103 (EZM1)
- Integral conduit adaptor
- *Sensorgage*™ sealed to IP67 standards
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G. Also, non-incendive ratings (No barriers!)
- **Optional**
  - EDOC option available; product appearance will differ from the photograph due to coating



APPLICATIONS

- Tank, bin, and silo weighing
- Railroad track scales
- Truck scales

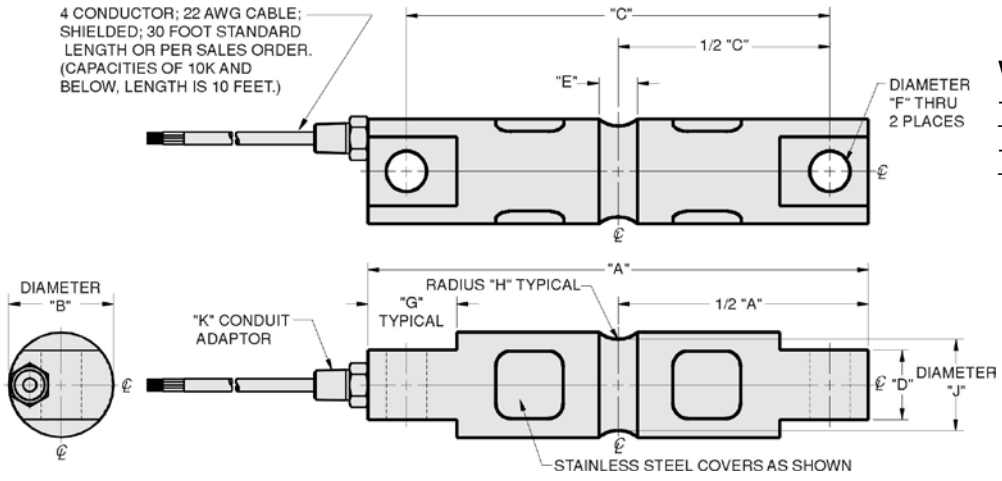
DESCRIPTION

The Model 60058 is a mid to high capacity nickel-plated alloy steel, double-ended shear beam load cell.

This product is designed for use in industrial and outdoor environments. Nickel plated steel construction limits corrosion from outdoor use. The IP67 sealing makes it suitable for applications that are subject to high-pressure wash down. Tank weighing is made simple when this load cell is combined with the EZ mount mounting hardware it was designed for. Its high accuracy and availability in high capacities make it ideal for certified truck and rail scales.

This load cell is rated intrinsically safe by the Factory Mutual System (FM); making it suitable for use in potentially explosive environments. This load cell is certified for Legal For Trade applications by the American NTEP standards.

OUTLINE DIMENSIONS in inches (millimeters)



Wiring

+ Excitation	Red
– Excitation	Black
+ Output	Green
– Output	White

CAPACITY	A	B	C	D	E	F	G	H	J	K-THREAD
5k–20k	8.12	1.70	6.88	1.13	0.63	0.65	1.44	0.50	1.48	1/4-18 NPT
30k–60k	10.25	2.97	8.50	2.38	0.95	1.06	1.94	1.00	2.73	1/2-14 NPT
100k	11.25	3.50	9.50	2.50	1.25	1.06	1.88	1.50	3.24	1/2-14 NPT
(2.3–9 t)	(206.2)	(43.2)	(174.8)	(28.7)	(16.0)	(16.5)	(36.6)	(12.7)	(37.6)	1/4-18 NPT
(13.6–27 t)	(260.4)	(75.4)	(215.9)	(60.5)	(24.1)	(26.9)	(49.3)	(25.4)	(69.3)	1/2-14 NPT
(45 t)	(285.8)	(88.9)	(241.3)	(63.5)	(31.8)	(26.9)	(47.8)	(38.1)	(82.3)	1/2-14 NPT

Capacities are in pounds (kg/t). Above dimensions apply to non-EDOC-coated load cells.

Double-Ended Shear Beam Load Cell

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated capacity—R.C. (E_{max})	5k, 10k, 20k, 30k, 40k, 50k, 60k, 100k 2.3, 4.5, 9.0, 13.6, 18.0, 23.0, 27.0, 45.0			lbs t
NTEP/OIML accuracy class	NTEP III	NTEP IIIL	Standard	
Maximum no. of intervals (n)	5000 multiple	10000 multiple		
Y = E_{max}/V_{min}	See NTEP cert. 97-042A1			Maximum available
Rated output—R.O.	3.0			mV/V
Rated output tolerance	0.25			±% mV/V
Zero balance	1.0			±% FSO
Combined error	0.02	0.02	0.03	±% FSO
Non-repeatability	0.01	0.01	0.01	±% FSO
Creep error (20 minutes)	0.030	0.030	0.03	±% FSO
Temperature effect on zero	0.0015	0.0010	0.0015	±% FSO/°F
Temperature effect on output	0.0008	0.0008	0.0008	±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)			°F (°C)
Operating temperature range	0 to 150 (–18 to 65)			°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)			°F (°C)
Safe sideload	100			% of R.C.
Maximum safe central overload	150			% of R.C.
Ultimate central overload	300			% of R.C.
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	15			VDC or VAC RMS
Input impedance	686–714			Ω
Output impedance	699–707			Ω
Insulation resistance at 50 VDC	>1000			MΩ
Material	Nickel-plated alloy tool steel			
Environmental protection	IP67			

FSO—Full Scale Output
R.C.—Rated Capacity
All specifications subject to change without notice.

Miniature Double-Ended Beam

FEATURES

- Capacities: 10–40 t
- High side load tolerance
- Electroless nickel-plated alloy tool steel



APPLICATIONS

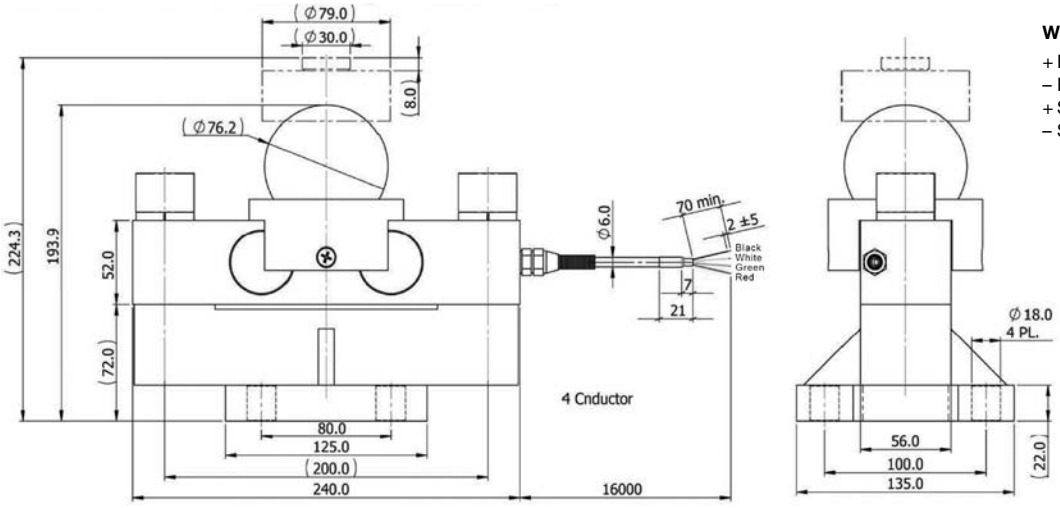
- Truck/rail scales
- Silo/hopper/tank weighing

DESCRIPTION

The Model MDB2 is designed for truck and rail scales in high capacities with low profile. The design of loading through a ball is insensitive to side load.

The Model MDB2 is constructed of alloy steel and is hermetically-sealed to IP68 providing excellent protection against water and moisture attack. MDB2 can work well in corrosive and wash-down environments.

OUTLINE DIMENSIONS



Wiring diagram:

+ Excitation	Red
– Excitation	Black
+ Signal	Green
– Signal	White

Miniature Double-Ended Beam

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
NTEP/OIML accuracy class	Non-Approved	
Y = E_{max}/V_{min}	7000	Maximum available
Standard capacities (E_{max})	10000, 20000, 25000, 30000, 40000	kg
Rated output—R.O.	2.0	mV/V
Rated output tolerance	0.1	±% of rated output
Zero balance	1	±% of rated output
Non-linearity	0.020	±% of rated output
Hysteresis	0.020	±% of rated output
Non-repeatability	0.010	±% of rated output
Creep error (30 minutes)	0.020	±% of rated output
Zero return (30 minutes)	0.02	±% of rated output
Temperature effect on min. dead load output	0.02	±% of rated output/10°C
Temperature effect on sensitivity	0.02	±% of applied load/10°C
Compensated temperature range	–10 to +40	°C
Operating temperature range	–20 to +70	°C
Safe overload	150	% of R.C.
Ultimate overload	200	% of R.C.
Excitation, recommended	5–15	VDC or VAC RMS
Input impedance	775±5	Ω
Output impedance	702±2	Ω
Insulation resistance	>3000	MΩ
Cable length	16	m
Construction	Alloy steel, welded seal	
Environmental protection	IP68	

All specifications subject to change without notice.

Digital Miniature Double-Ended Beam

FEATURES

- Easy corner compensation of the weighbridge
- Capacities: 10–40 t
- Digital output via RS485 interface
- High side load tolerance
- Electroless nickel-plated alloy tool steel
- Extensive internal diagnostics
- External resolution 240,000 counts
- Internal resolution 1,000,000 counts
- Maximum transmission distance 1200 m



APPLICATIONS

- Truck/rail scales
- Silo/hopper/tank weighing

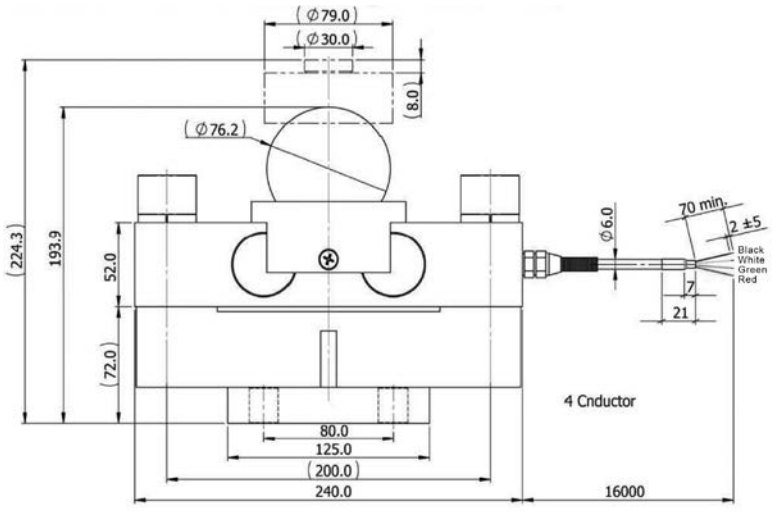
DESCRIPTION

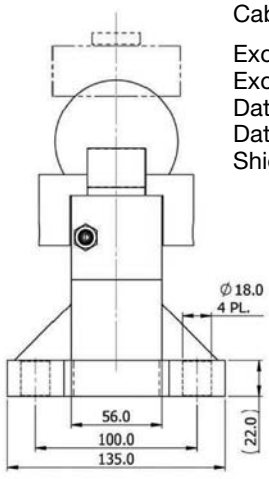
The MDBD2 is designed for truck and rail scales in high capacities with low profile. The design of loading through a ball is insensitive to side load.

The MDBD2 is constructed of alloy steel and is fully potted and sealed with special chemical compounds to IP67 providing excellent protection against water and moisture attack.

The digital output enables the user to communicate with each MDBD2 independently of the others in the system, thus offering advantages in system setup, system control, corner correction, fault finding and load cell replacement.

OUTLINE DIMENSIONS in millimeters





Cable specifications:

Cable length: 16 m

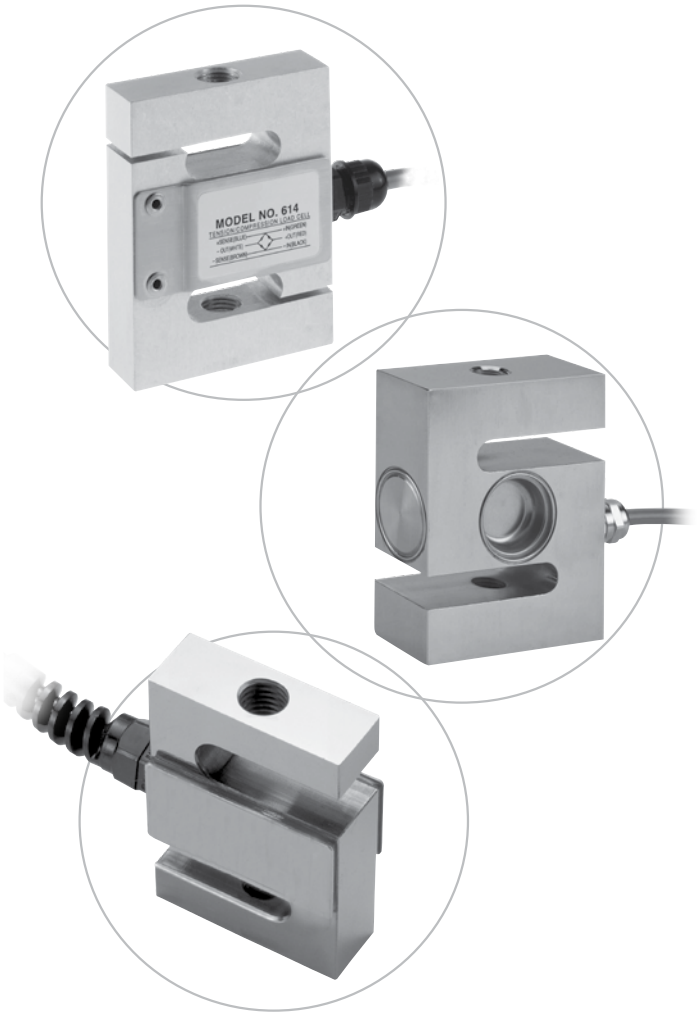
Excitation +	Red
Excitation –	Black
Data +	Green
Data –	White
Shield	Yellow

Digital Miniature Double-Ended Beam

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Standard capacities (E_{max})	10, 20, 25, 30, 40	ton
Rated output—R.O.	240,000	counts
Rated output tolerance	160	±counts
Zero balance	1600	±counts
Combined error	0.03	±% of rated output
Creep error (30 minutes)	0.025	±% of rated output
Zero return (30 minutes)	0.02	±% of rated output
Temperature effect on span	0.012	±% of rated output/10°C
Temperature effect on zero	0.023	±% of rated output/10°C
Compensated temperature range	–10 to +40	°C
Operating temperature range	–40 to +70	°C
Storage temperature range	–40 to +90	°C
Minimum dead load	0	% of Emax
Safe dead load	150	% of Emax
Ultimate load	300	% of Emax
Excitation voltage	8 to 24	VDC
Recommended excitation voltage	12	VDC
Maximum current consumption	50	mA
Start up current	150	mA
Element material	Alloy steel	
Sealing (DIN 40.050/EN60.529/IEC 529)	IP66/IP67	
Signal update per second	1, 10, 20, 40, 67, 100	
Baudrate	9600	Bits/s
Transmission type	Asynchronous serial transmission	
Start bits	1	
Data bits	7	
Stop bits	1	
Parity	Odd	
Maximum transmission cable length	1200	m
Data transmission interface	RS485 (2 communication wires)	

All specifications subject to change without notice.

Load Cells—
S-Type



CONTENTS

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Model 60063 182
Model STC 184
Model BSP 188
Model 363 190
Model 9363 192
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Model 615 and Model 616 196
Model 619 198
Model 620 200
Model 91002 202

S-Beam Load Cell

FEATURES

- Rated capacities of 25 to 20,000 pounds, 50 kilograms to 10 metric tonnes
- Designed for single or multiple load cell applications
- Constructed of high quality alloy tool steel
- Nickel plated for outstanding corrosion resistance
- *Sensorgage*™ sealed to IP67 standards
- Trade certified for NTEP Class III: 5000d, IIIL: 10000d and OIML R-60 3000d available
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G. Also, non-incendive ratings (No barriers!).
- **Optional**
  - Stainless steel version is Model 60050
  - EDOC option available; product appearance will differ from the photograph due to coating



APPLICATIONS

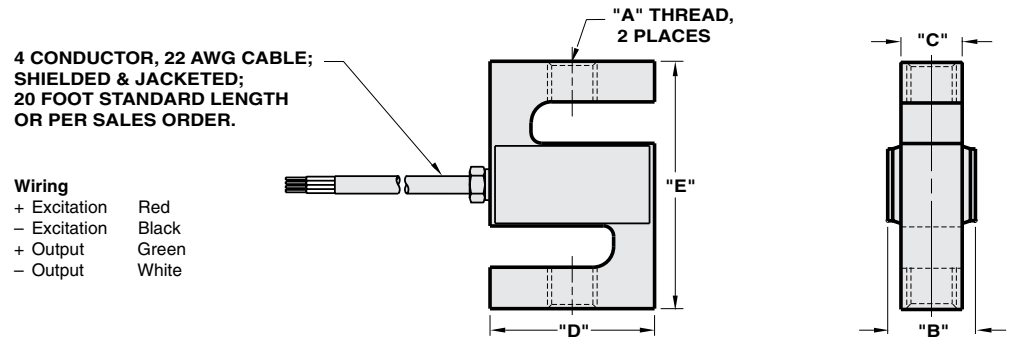
- Tank, bin and hopper weighing
- Level and inventory monitoring
- Truck scale conversions
- Tension and compression measurements

DESCRIPTION

The Model 60001 is a tension-compression load cell with a humidity-resistant coating and shielded cables, which enable its use in harsh environments while maintaining operating specifications. Additional sense wires compensate for changes in lead resistance due to temperature change and/or cable extension.

Ideally suited for lever conversions, hanging scales, force measurement and a wide range of other industrial applications. Nickel-plated for outstanding corrosion resistance.

OUTLINE DIMENSIONS in inches (millimeters)



CAPACITY	A	B	C	D	E	DEFLECTION	WEIGHT
25–200	1/4-28 UNF-2B	0.65	0.50	2.00	2.50	0.015–0.010	4.0
250–300	3/8-24 UNF-2B	0.75	0.50	2.00	3.00	0.010	4.0
500–2k	1/2-20 UNF-2B	1.00	0.75	2.00	3.00	0.010–0.012	6.5
2.5k–4k	1/2-20 UNF-2B	1.25	1.00	2.00	3.00	0.012	6.5
5k	3/4-16 UNF-2B	1.25	1.00	3.00	4.25	0.017	6.5
10k	3/4-16 UNF-2B	1.25	1.00	3.50	4.75	0.025	6.5
15k	1-14 UNS-2B	1.50	1.25	4.00	5.50	0.025	9.0
20k	1-1/4-12 UNF-2-B	2.25	2.00	5.00	7.00	0.025	9.0
(50–100 kg)	M8.0 x 1.25-6H	(16.5)	(12.7)	(50.8)	(63.5)	(0.03–0.004)	(0.8)
(250 kg–1 t)	M12 x 1.75-6H	(25.4)	(19.1)	(50.8)	(76.0)	(0.004)	(1.8)
(2.5 t)	M20 x 1.5-6H	(31.8)	(25.4)	(76.2)	(108.0)	(0.008)	(2.9)
(5 t)	M20 x 1.5-6H	(31.8)	(25.4)	(88.9	(120.7)	(0.011)	(2.9)
(10 t)	M30 x 2.0-6H	(57.2)	(50.8)	(127.0)	(177.8)	(0.011)	(4.0)

Capacities are in pounds (kg/t). Deflection is ±10%. Certified drawings are available. Above dimensions apply to non-EDOC-coated load cells.

S-Beam Load Cell

SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Rated capacity—R.C. (E_{max})	25, 50, 75, 100, 150, 200, 250, 300, 500, 750, 1k, 1.5k, 2k, 2.5k, 3k, 5k, 10k, 15k, 20k 50 kg, 100 kg, 250 kg, 500 kg, 1 t, 2.5 t, 5 t, 10 t*				lbs kg/metric tonne
NTEP/OIML accuracy class	NTEP III	NTEP IIIL	Standard	OIML R60	
Maximum no. of intervals (n)	5000 single	10000 single		3000*	
Y = E_{max}/V_{min}	NTEP Cert. No. 86-043A1			6667	Maximum available
Rated output—R.O. lbs	3.0				mV/V
Rated output tolerance lbs	25–3k: +25 / –10 5k–20k: ±0.25				%
Rated output—R.O. kg	3.0				mV/V
Rated output tolerance kg	50 kg–1 t: +25 / –10 2.5 t–3 t: ±0.25				%
Zero balance	1.0				±% FSO
Combined error	0.02	0.02	0.03	0.02	±% FSO
Non-repeatability	0.01				±% FSO
Creep error (30 minutes)	0.03	0.025	0.03	0.017	±% FSO
Temperature effect on zero	0.0010	0.0010	0.0015	0.0010	±% FSO/°F
Temperature effect on output	0.0008	0.0008	0.0008	0.0007	±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)				°F (°C)
Operating temperature range	0 to 150 (–18 to 65)				°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)				°F (°C)
Safe sideload	30				% of R.C.
Maximum safe central overload	150				% of R.C.
Ultimate central overload	300				% of R.C.
Excitation, recommended	10				VDC or VAC RMS
Excitation, maximum	15				VDC or VAC RMS
Input impedance	343–450				Ω
Output impedance	349–355				Ω
Insulation resistance at 50 VDC	>1000				MΩ
Material	Nickel-plated alloy tool steel**				
Environmental protection	IP67				

Notes

* OIML approval 100–5k lbs and 50–2500 kg only
NTEP approval from 25–20k lbs only

** Stainless steel available–Model Number 60050

FSO–Full Scale Output

All specifications subject to change without notice.

Stainless Steel, Welded Seal S-Beam Load Cell

FEATURES

- Rated capacities of 500 to 20,000 pounds
- Stainless steel, welded seal construction
- Integrated loading brackets
- Compatible with TCM tension mounting hardware
- Designed for single or multiple load cell applications
- Trade certified for NTEP Class IIIL: 10000d and III: 5000d
- *Sensorgage*™ sealed to IP68 standards
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G. Also, non-incendive ratings (No barriers!)
- **Optional**
  - Mounting and loading accessory hardware available



APPLICATIONS

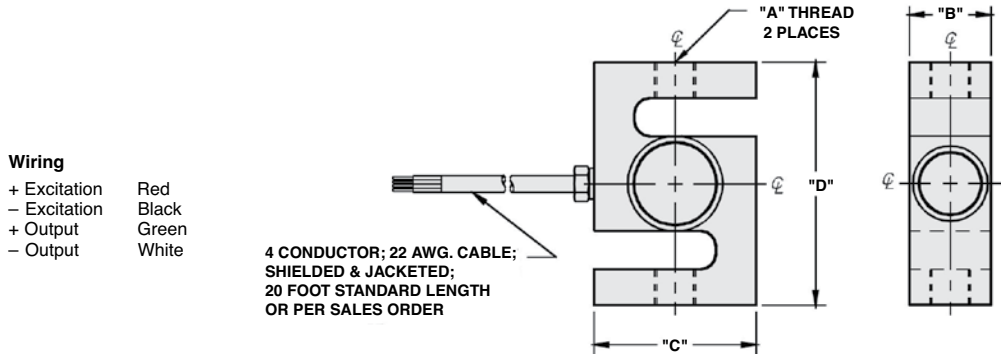
- Hostile environments: Food and beverage processing Chemical and plastics processing Pharmaceutical and biomedical
- Bin, hopper and belt conveyor scales
- Level and inventory monitoring
- Tension and compression measurements

DESCRIPTION

The Model 60063 is a stainless steel S-Type load cell. Its welded sealing, combined with high accuracy, make this load cell ideally suited for a wide range of applications of process weighing and force measurement.

Approvals included NTEP III 5000d single and NTEP IIIL10000d multiple. Also available are versions approved for hazardous areas - FM I, II, III Division 1.

OUTLINE DIMENSIONS IN INCHES



CAPACITY	A	B	C	D	DEFLECTION	WEIGHT
500–3k	1/2-20	1.00	2.00	3.00	0.010	3.0
5k–10k	3/4-16	1.00	3.50	4.75	0.010	5.00
15k	1-14	1.25	4.00	5.50	—	—
20k	1-1/4-12	2.00	5.00	7.00	—	—

Capacities are in pounds. Deflection is ±10%. Certified drawings are available.

Stainless Steel, Welded Seal S-Beam Load Cell

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated capacity—R.C. (E_{max})	500, 750, 1k, 1.5k, 2k, 2.5k, 3k, 5k, 10k*, 15k, 20k			lbs
NTEP/OIML accuracy class	NTEP III	NTEP IIIL	Standard	
Maximum no. of intervals (n)	5000 multiple	10000 multiple		
Y = E_{max}/V_{min}	See NTEP cert. 98-019			Maximum available
Rated output—R.O.	2.0			mV/V
Rated output tolerance	+25%...–10%			±% mV/V
Zero balance	1.0			±% FSO
Combined error	0.02	0.02	0.03	±% FSO
Non-repeatability	0.01	0.01	0.015	±% FSO
Creep error (30 minutes)	0.025	0.03	0.03	±% FSO
Temperature effect on zero	0.0010	0.0010	0.0015	±% FSO/°F
Temperature effect on output	0.0008	0.0008	0.0008	±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)			°F (°C)
Operating temperature range	0 to 150 (–18 to 65)			°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)			°F (°C)
Maximum safe central overload	150			% of R.C.
Ultimate central overload	300			% of R.C.
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	15			VDC or VAC RMS
Input impedance	349–450			Ω
Output impedance	349–355			Ω
Insulation resistance at 50VDC	>1000			MΩ
Material	Stainless steel			
Environmental protection	IP68			

Note: * NTEP approval 500–5k lbs only.
FSO—Full Scale Output

All specifications subject to change without notice.

S-Type Load Cell

FEATURES

- Capacities:
  Aluminum construction—5, 10, 20 kg;
  Alloy Steel construction— 25 to 5000 kg, 250 to 40k lbs
- Bi-directional (tension/compression)
- Rationalized output
- NTEP Class III 5000S, IIIL10000 approval from 250 lbs to 20k lbs
- **Optional**
  - Stainless steel available
  - FM approval available
  - EDOC option available; product appearance will differ from the photograph due to coating



APPLICATIONS

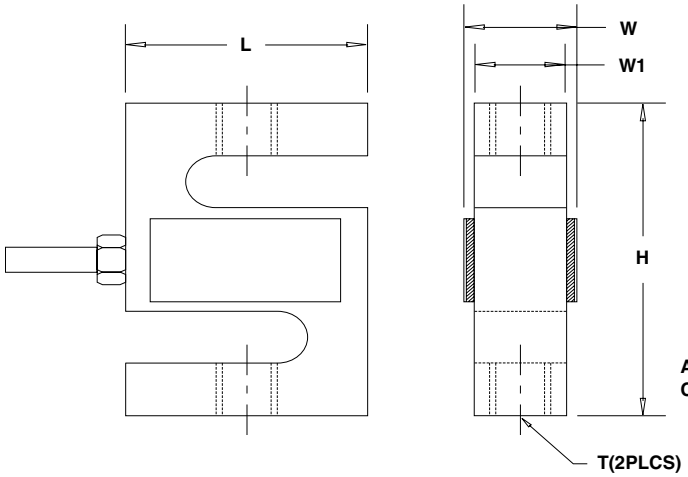
- Electro-mechanical conversion scales
- Silo/hopper/tank weighing
- Crane scales
- Fork-lift scales
- Dosing/filling
- Universal material tester
- Tensile/pulling force measurement

DESCRIPTION

The Model STC is made of Aluminum, Alloy Steel or Stainless Steel, sealed to IP67 providing excellent protection against moisture and humidity.

The S-type load cell, as the name indicates, can be easily identified by its S-shaped body. They can be loaded either in tension or compression, and used for single or multiple-cell application if the output is rationalized.

OUTLINE DIMENSIONS—ALUMINUM in inches (millimeters)



Wiring

+ Excitation	Red
– Excitation	Black
+ Signal	Green
– Signal	White

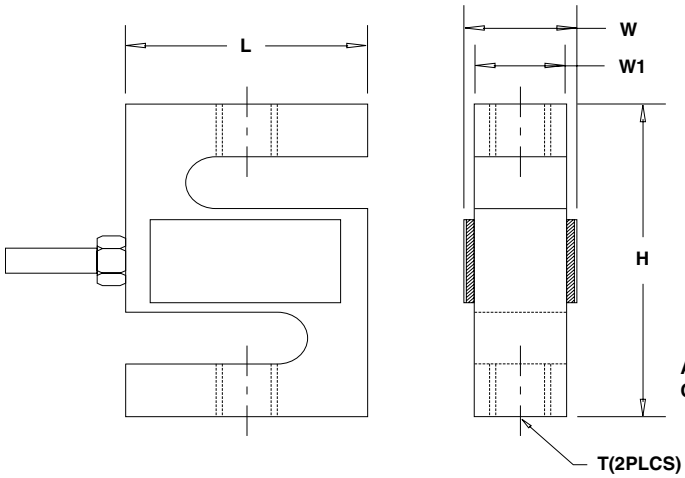
All Capacity
Cable Length: 20'/6.1m

CAPACITY		L	W	W_1	H	T
5 / 10 / 20 kg	mm	50.8	16.6	16.6	63.5	M6 x 1.0
	(inch)	0.65	1.05	0.65	2.50	
Above dimensions apply to non-EDOC-coated load cells.						

Outline dimension for Alloy Steel supplied on next page

S-Type Load Cell

OUTLINE DIMENSIONS—ALLOY STEEL in inches [millimeters]



Wiring

+ Excitation	Red
– Excitation	Black
+ Signal	Green
– Signal	White

All Capacity
Cable Length: 20'/6.1m

CAPACITY		L	W	W_1	H	T
25 / 50 / 75 kg	mm	50.8	26.7	12.7	63.5	M6 x 1.0
	(inch)	2.00	1.05	0.50	2.50	
100 / 150 kg	mm	50.8	22.92	19.1	76.2	M10 x 1.5
	(inch)	2.00	0.9	0.75	3.00	
250 / 300 lbs	mm	50.8	26.7	12.7	76.2	3/8-24UNF
	(inch)	2.00	1.05	0.50	3.00	
250 kg	mm	50.8	30.4	19.1	76.2	M12 x 1.75
500 / 750 lbs	(inch)	2.00	1.2	0.75	3.00	1/2-20UNF
500 / 750 kg	mm	50.8	25.4	19.1	76.2	M12 x 1.75
	(inch)	2.00	1.00	0.75	3.00	
1k / 1.5k lbs	mm	50.8	26.1	19.1	76.2	1/2-20UNF
	(inch)	2.00	1.03	0.75	3.00	
1000 / 1500 kg	mm	50.8	31.8	25.4	76.2	M12 x 1.75
2k / 2.5k / 3k lbs	(inch)	2.00	1.25	1.00	3.00	1/2-20UNF
5k / 7.5k lbs	mm	76.2	31.8	25.4	107.9	3/4-16UNF
	(inch)	3.00	1.25	1.00	4.25	
2000 / 2500 / 5000 kg	mm	76.2	38.1	31.8	100.4	M20 x 1.5
	(inch)	3.00	1.50	1.25	3.95	
10k lbs	mm	88.9	31.8	25.4	120.7	3/4-16UNF
	(inch)	3.50	1.25	1.00	4.75	
15k lbs	mm	101.6	38.1	31.8	139.7	1-14UNS
	(inch)	4	1.50	1.25	5.50	
20k lbs	mm	127	55.7	50.8	177.8	11/4-12UNF
	(inch)	5	2.19	2	7.00	
40k lbs	mm	152.4	69.9	63.5	254.0	11/2-12UNF
	(inch)	6.00	2.75	2.50	10.00	

Above dimensions apply to non-EDOC-coated load cells.

S-Type Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
NTEP/OIML accuracy class	NTEP III & IIIL	Non-Approved	
Maximum no. of intervals (n)	III 5000 single* IIIL10000 single*	2000	
Y = E_{max}/V_{min}	10000	5000	Maximum available
Standard capacities (E_{max}) (Aluminum)	5, 10, 20		kg
Standard capacities (E_{max}) (Steel)	25, 50, 75, 100, 250, 500, 750, 1000, 1500, 2000, 2500, 5000		kg
	250, 300, 500, 750, 1k, 1.5k, 2k, 2.5k, 3k, 5k, 7.5k, 10k, 15k, 20k, 40k		lbs
Rated output—R.O. (Aluminum)	2.0		mV/V
Rated output—R.O. (Steel)	3.0		mV/V
Rated output tolerance	0.25		±% of rated output
Zero balance	1		±% of rated output
Non-linearity	0.020	0.020 (SS: 0.05)	±% of rated output
Hysteresis	0.020	0.020 (SS: 0.05)	±% of rated output
Non-repeatability	0.020		±% of rated output
Creep error (20 minutes)	0.030		±% of rated output
Zero return (20 minutes)	0.030		±% of rated output
Temperature effect on min. dead load output	0.0015	0.0026	±% of rated output/°C
Temperature effect on sensitivity	0.0010	0.0015	±% of applied load/°C
Compensated temperature range	–10 to +40		°C
Operating temperature range	–20 to +60		°C
Safe overload	150		% of R.C.
Ultimate overload	200 (Aluminum) / 300 (Steel)		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	410±5 (Aluminum) / 385±5 (Steel)		Ω
Output impedance	350±3		Ω
Insulation resistance	>5000		MΩ
Construction	Aluminium or Nickel-plated alloy steel **		
Environmental protection	IP67		

* Capacities 250–20k lbs

** Stainless steel available

All specifications subject to change without notice.

FM Approval
Intrinsically Safe: Class I, II, III; Div. 1 Groups A-G
Non-Incendive: Class I; Div. 2 Groups A-D

Universal Load Cell

FEATURES

- Capacities: 50–5000 kg, 100–10k lbs
- Fully welded, stainless steel construction
- Hermetically sealed, IP66 and IP68
- Certified to OIML R-60, 3000d
- Integrated overload stop (50–500 kg)
- Current calibration output (SC version) ensures easy and accurate parallel connection of multiple load cells
- **Optional**
  - ATEX and FM certified versions are available for use in potentially explosive atmospheres



APPLICATIONS

- Hybrid scales
- Process weighing
- Belt checkweighers
- Dynamometers
- Material testing machines

DESCRIPTION

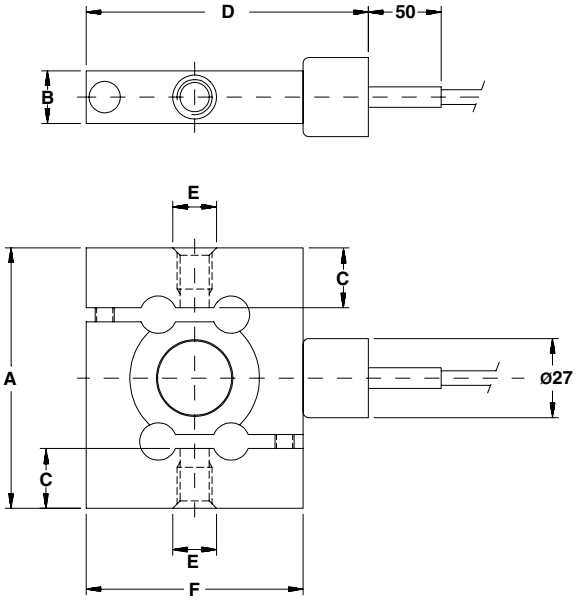
The Model BSP is a stainless steel S-type load cell that can be used in either tension or compression.

This product is suitable for a wide range of hybrid scales, overhead track scales, belt scales, and process weighing applications.

The fully welded construction and water block cable entry ensure that this product can be used successfully in the demanding environments found in the food, chemical, and allied process industries.

This product fully meets the stringent Weights and Measures requirements throughout Europe.

OUTLINE DIMENSIONS in millimeters



Cable specifications
Cable length: 10m

Excitation +	Green
Excitation –	Black
Output +	White
Output –	Red
Shield	Transparent

Cable screen is not connected to the load cell body.
Performance may be affected if load cell cables are shortened.
Tension applications result in a negative output signal.

Capacity (kg)	50, 125	250	500	1250	2500, 5000
A	84.3	88.9	88.9	95.2	120.6
B	23.9	18.0	18.0	24.1	36.6
C thread	12.7	14.0	14.0	14.0	29.2
D	85.7	84.1	96.8	84.1	84.1
E	M8x1.25		M12x1		M24x2
F	63.5	61.9	74.6	61.9	61.9

Capacity (lb)	100, 250	500	1k	2.5k	5k, 10k
A	3.32	3.50	3.50	3.75	4.75
F	2.48	2.44	2.94	2.44	2.44
B	0.94	0.71	0.71	0.95	1.44
D	3.36	3.32	3.81	3.31	3.31
E threads	3/8-24UNF-3B	1/2-20 UNF-3B			1-14 UNS-3B

Universal Load Cell

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Standard capacities (E_{max})	50, 125, 250, 500, 1250, 2500, 5000			kg
Standard capacities (E_{max})	100, 250, 500, 1000, 2500, 5000, 10000			lbs
Accuracy class according to OIML R-60 /NTEP	NTEP IIIL	Non-Approved	C3	
Maximum number of verfication intervals	10000		3000	
Minimum verification interval = $V_{min}/E_{max}/Y$)			E_{max}/10000	
Rated output (=S)	3 (2 for 2500 and 5000 kg)			mV/V
Rated output tolerance	0.03 (0.02 for 2500 and 5000 kg)			± mV/V
Zero balance	1.0			±% FSO
Combined error	0.0200	0.0500	0.0200	±% FSO
Non-repeatability	0.0100	0.0200	0.0100	±% FSO
Minimum dead load output return		0.0500	0.0167	±% FSO
Creep error (30 minutes)		0.0600	0.0245	±% FSO
Creep error (20–30 minutes)	0.0300	0.0200		±% FSO
Temp. effect on minimum dead load output	(0.0008)	0.0250	0.0070	±% FSO/5°C (/°F)
Temperature effect on sensitivity	(0.0010)	0.0250	0.0050	±% FSO/5°C (/°F)
Minimum dead load	0			% E_{max}
Maximum safe overload	150			% E_{max}
Ultimate overload	300			% E_{max}
Maximum safe side load	100			% E_{max}
Deflection at E_{max}	0.28 max.			mm
Excitation voltage	5 to 15			V
Maximum excitation voltage	18			V
Input resistance	350±3.5			Ω
Output resistance	350±3.5			Ω
Insulation resistance	≥5000			MΩ
Compensated temperature range	–10 to +40			°C
Operating temperature range	–40 to +80			°C
Storage temperature range	–40 to +90			°C
Element material (DIN)	Stainless steel 1.4542			
Sealing (DIN 40.050 / EN60.529)	IP66 and IP68			
SC-Version (current calibration)	Standard			

FSO—Full Scale Output

SC-version: The rated output and the output resistance are balanced in such a way that the output current is calibrated to within 0.05% of a reference value. This allows easy parallel connection of the load cells.

All specifications subject to change without notice.

Universal Load Cell

FEATURES

- Capacities 50 to 10000 kg (50 to 20k lbs)
- Nickel-plated steel construction
- Certified to NTEP class III 3000d and class IIIL 10000d
- Suitable for compression and tension applications
- Trimmed output versions available
- Sealing: IP65
- **Optional**
  - FM approved for use in potentially explosive atmospheres



APPLICATIONS

- Suspended hoppers
- Overhead track scales
- Force measurement

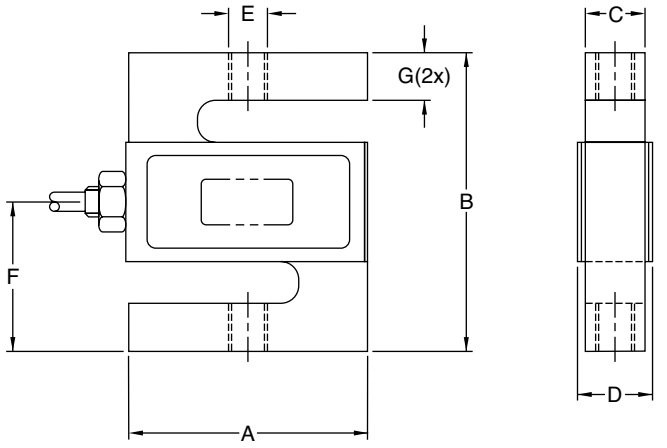
DESCRIPTION

The Model 363 is a multi-purpose nickel-plated S-Type load cell which can be used in tension or compression.

This product is suitable for a wide range of hybrid scales, overhead track scales, belt scales, and process weighing applications.

Reliable sealing is ensured by the proprietary TRANSEAL potting compound and additional mechanical protection of the strain gage area.

OUTLINE DIMENSIONS in millimeters



Cable specifications
Cable length: 6m

Excitation +	Red
Excitation –	Black
Output +	Green
Output –	White
Shield	Transparent

Cable screen is not connected to the load cell body.

Cap (kg)	50, 100	250, 500	1000	2500	5000	7500	10000
Cap (lbs)	**50–300**	**500–1.5k**	**2k, 2.5k**	**3k*, 5k**	**10k**	**15k**	**20k**
A	50.8	50.8	50.8	76.2	74.7	87.4	112.8
B	61.0	61.0	61.0	99.1	99.1	139.7	177.8
C	11.7	18.0	24.4	24.4	30.7	37.1	42.9
D_{max}	16.5	22.9	29.2	29.2	35.6	41.4	47.8
E (kg)	M8x1.25 - 6H	M12x1.75 - 6H		M20x1.5 - 6H		M24x2 - 6H	M30x2 - 6H
E (lbs)	¼ - 28UNF - 2B	½ - 20UNF - 2B		¾ - 16UNF - 2B		1 - 14UNS - 2B	1¼ - 12UNF - 2B
F	30.5	30.5	30.5	49.5	49.3	69.9	88.9
G	8.9	8.9	8.9	14.0	15.7	22.4	31.8

Universal Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Standard capacities (E_{max})	50, 100, 250, 500, 1000, 2500, 5000, 7500, 10000		kg
Standard capacities (E_{max})	50, 75, 100, 150, 200, 250, 300, 500, 750, 1k, 1.5k, 2k, 2.5k, 3k, 5k, 10k, 15k, 20k		lbs
Accuracy class per NTEP	NTEP IIIL	Non-Approved	
Maximum no. of verification intervals (n)	10000		mV/V
Rated output—R.O.	3.3±0.3		mV/V
Rated output—R.O. (trimmed option)	3.0±0.0075		mV/V
Zero balance	1.0		±%FSO
Combined error	0.0200	0.05	±%FSO
Non-repeatability	0.0100	0.0200	±%FSO
Minimum dead load output return	0.0500		±% applied load
Creep error (30 minutes)	-	0.0600	±% applied load
Creep error (20 minutes)	0.0030	0.0200	±% applied load
Temperature effect on min. dead load output	0.0090	0.0250	±% FSO/5°C
Temperature effect on sensitivity	0.0072	0.0250	±% applied load/5°C
Minimum dead load	0		% E_{max}
Maximum safe overload	150		% E_{max}
Ultimate overload	300		% E_{max}
Maximum safe side load	100		% E_{max}
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	390±15		Ω
Output impedance	350±3.5		Ω
Insulation resistance	≥5000		MΩ
Compensated temperature range	–10 to +40		°C
Operating temperature range	–40 to +80		°C
Storage temperature range	–40 to +90		°C
Element material	Nickel-plated alloy steel		
Sealing	IP65		

FSO—Full Scale Output

All specifications subject to change without notice.

Model 9363

Revere

VPG Transducers

Celtron • Revere • Sensortronics • Tedea-Huntleigh

Universal Load Cell

FEATURES

- Capacities: 50 to 10,000 kg (50 to 20,000 lbs)
- Stainless steel construction
- Suitable for compression and tension applications
- Trimmed output versions standard
- Sealing: IP67
- Certified to OIML R-60, 3000d, NTEP class IIIL, 10000 divisions
- **Optional**
  - FM approved for use in potentially explosive atmospheres



APPLICATIONS

- Suspended hoppers
- Overhead track scales
- Force measurement

DESCRIPTION

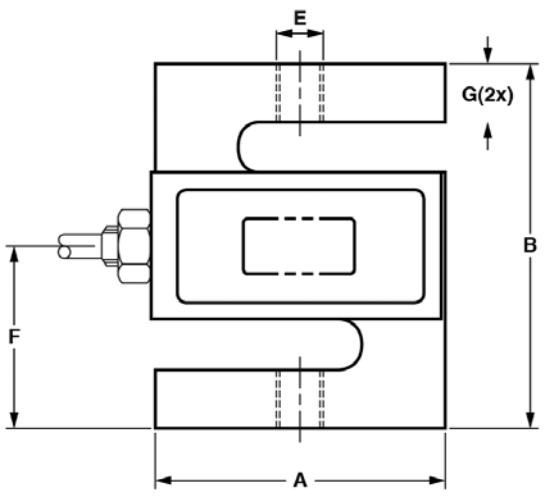
The Model 9363 is a multipurpose stainless steel S-type load cell which can be used in tension or compression.

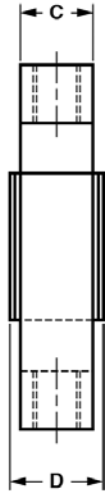
This product is suitable for a wide range of hybrid scales, overhead track scales, belt scales, and process weighing applications.

Reliable sealing is ensured by the proprietary TRANSEAL potting compound and additional mechanical protection of the strain gage area.

This product meets the stringent Weights and Measures requirements throughout Europe and the USA.

OUTLINE DIMENSIONS in millimeters





Cable specifications

Cable length:	6m
Excitation +	Red
Excitation –	Black
Output +	Green
Output –	White
Shield	Transparent

Cable screen is not connected to the load cell body.

Cap (kg)	50, 100	250, 500	1000	2500	5000	7500	10000
Cap (lbs)	**50, 100, 200, 300**	**500–1.5k**	**2k, 2.5k**	**3k*, 5k**	**10k**	**15000**	**20000**
A	50.8	50.8	50.8	76.2	74.7	87.4	112.8
B	61.0	61.0	61.0	99.1	99.1	139.7	177.8
C	11.7	18.0	24.4	24.4	30.7	37.1	42.9
D max	16.5	22.9	29.2	29.2	35.6	41.4	47.8
E (kg)	M8 x 1.25-6H	M12 x 1.75-6H		M20 x 1.5-6H8		M24 x 2-6H	M30 x 2-6H
E (lbs)	1/4-28UNF-2B	1/2-20UNF-2B		3/4-16UNF-2B		1”-14UNS-2B	1 1/4-12UNF-2B
F	30.5	30.5	30.5	49.5	49.3	69.9	88.9
G	8.9	8.9	8.9	14.0	15.7	22.4	31.8

*3k lb version has 1/2-20UNF-2B holes.

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Document No.: 11875
Revision: 25-Mar-2018

Universal Load Cell

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Standard capacities (E_{max})	50, 100, 250, 500, 1000, 2500, 5000, 7500, 10000*			kg
Standard capacities (E_{max})	50, 75, 100, 150, 200, 250, 300, 500, 750, 1k, 1.5k, 2k, 3k, 5k, 10k, 15k, 20k			lbs
Accuracy class per OIML R-60 / NTEP	NTEP IIIL	Non-Approved	OIML C3	
Maximum no. of verification intervals (n)	10000	D3	3000	
Minimum verification intervals (V_{min})			E_{max}/9000	
Rated output (=FS)	3.0			mV/V
Rated output tolerance	0.0075			±mV/V
Zero balance	1.0			±% FSO
Combined error	0.0200	0.0300	0.0200	±% FSO
Non-repeatability	0.0100	0.0100	0.0100	±% FSO
Minimum dead load output return		0.0300	0.0165	±% applied load
Temp. effect on min. dead load output	(0.001)	(0.0015)	0.0140	±% FSO/5°C (/°F)
Temperature effect on sensitivity	(0.0008)	(0.0008)	0.0055	±% applied load/5°C (/°F)
Maximum safe overload	150			% E_{max}
Ultimate overload	250			% E_{max}
Excitation voltage	5 to 12			V
Maximum excitation voltage	15			V
Input resistance	390±15			Ω
Output resistance	350±3.5			Ω
Insulation resistance	≥5000			MΩ
Compensated temperature range	14 to +104°F	–10 to +40		°C
Operating temperature range	–65 to +200°F	–40 to +80		°C
Element material (DIN)	Stainless steel			
Sealing (DIN 40.050)	IP67			

* 10000 kg is not OIML approved

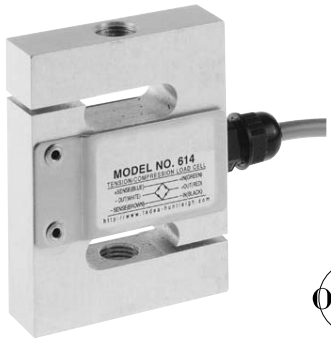
FSO—Full Scale Output

All specifications subject to change without notice.

Tension Compression Load Cell

FEATURES

- Capacities 50–500 kg
- Anodized aluminum construction
- OIML R60 approved
- IP67 protection
- For use in tension or compression
- 6 wire (sense) circuit



APPLICATIONS

- Hopper (Tank weighing)
- Hybrid scales
- Belt weighing
- Lever arm conversions
- Material testing machines
- Vibrations filling equipment
- Dynamometers

DESCRIPTION

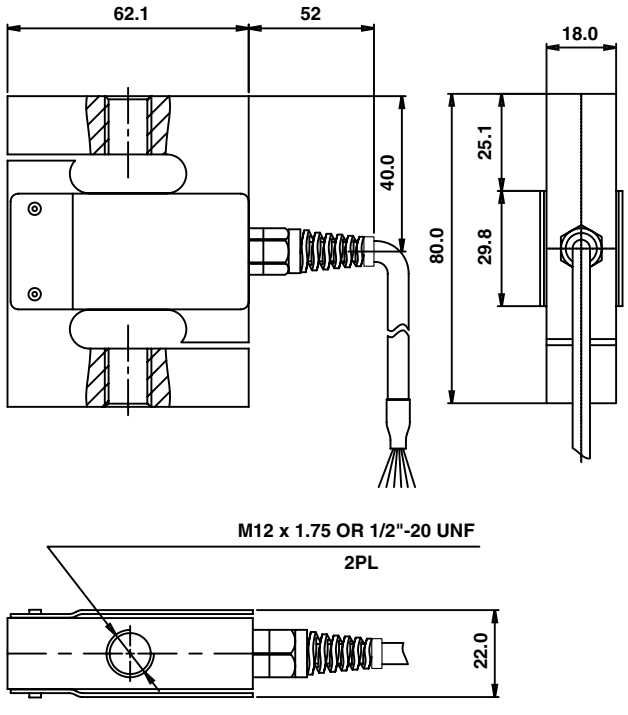
The Model 614 is a tension-compression load cell. Humidity resistant coating and shielded cables enable this load cell to be used in demanding environments while maintaining its operating specifications.

The additional sense wires compensate for changes in lead resistance due to temperature change and/or cable extension.

Ideally suited for lever conversions, hanging scales, force measurement and a wide range of other industrial applications.

The Model 614 is made from aluminum.

OUTLINE DIMENSIONS in millimeters



Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com

Tension Compression Load Cell

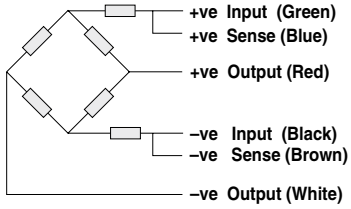
SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated capacity—R.C. (E_{max})	50, 100, 150, 200, 300, 500			kg
Accuracy class	Non-Approved	C3*		
Maximum no. of intervals (n)	1000	3000		
Y = E_{max}/V_{min}	2500	8000	12000**	
Rated output—R.O.	2.0			mV/V
Rated output tolerance	0.2			±% mV/V
Zero balance	0.02			±% mV/V
Zero return, 30 min.	0.05	0.017		±% of applied load
Total error (per OIML R60)	0.05	0.020		±% of rated output
Temperature effect on zero	0.01	0.0023		±% of rated output/°C
Temperature effect on output	0.003	0.0012		±% of load/°C
Temperature range, compensated	–10 to +40			°C
Temperature range, safe	–30 to +70			°C
Maximum safe central overload	150			% of R.C.
Ultimate central overload	300			% of R.C.
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	15			VDC or VAC RMS
Input impedance	415±15			Ω
Output impedance	350±3			Ω
Insulation resistance	>2000			MΩ
Cable length	3.0			m
Cable type	6-wire, braided PVC, dual floating screen			Standard
Construction	Plated (anodized) aluminum			
Environmental protection	IP67			

* 50% utilization

** Y=8000 for capacities 50–200 kg. Y=12000 for capacities 300–500 kg

All specifications are subject to change without notice.

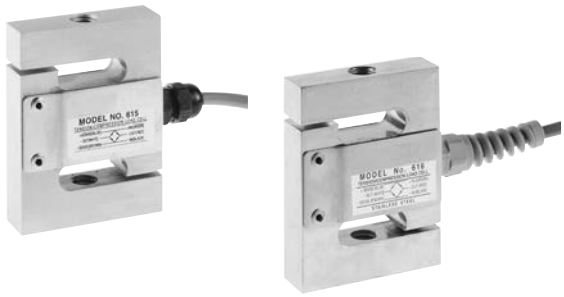
Wiring Schematic Diagram
(Balanced bridge configuration)



Tension Compression Load Cells

FEATURES

- Capacities 50–1000 kg
- Nickel-plated alloy steel (615) or stainless steel (616) construction
- Protection: Model 616—IP66; Model 615—IP67
- For use in tension or compression
- 6-wire (sense) circuit
- Output standardised to ±0.1%



APPLICATIONS

- Hopper (tank weighing)
- Hybrid scales
- Belt weighing
- Lever arm conversions
- Material testing machines
- Vibration filling equipment
- Dynamometers

DESCRIPTION

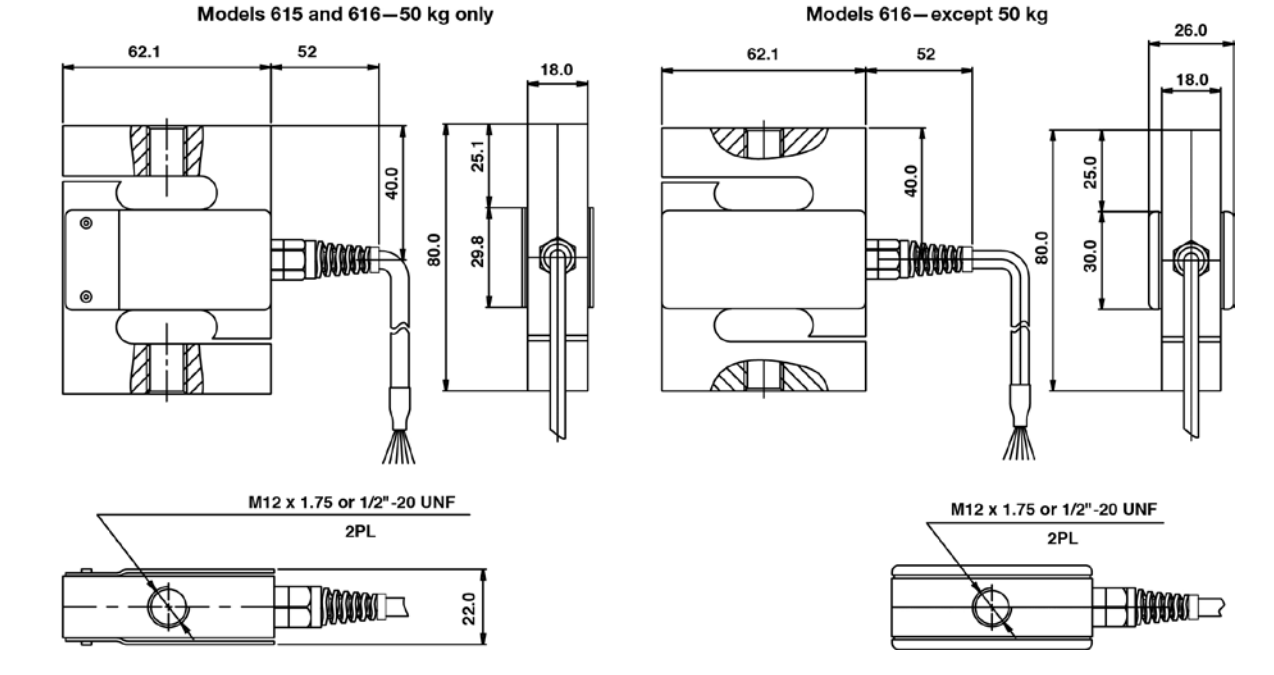
The Models 615 and 616 are tension compression load cells which share the same dimensions. Humidity-resistant coating and shielded cables enable these load cells to be used in harsh environments while maintaining their operating specifications.

The additional sense wires compensate for changes in lead resistance due to temperature change and/or cable extension.

Ideally suited for lever conversions, hanging scales, force measurement and a wide range of other industrial applications.

The Model 616 is made from stainless steel and has bonded covers for additional protection (except 50 kg). The Model 615 is an alternative, lower cost version made from alloy steel with riveted covers.

OUTLINE DIMENSIONS in millimeters



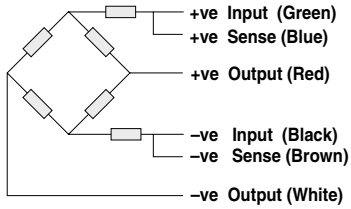
Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
Document No.: 12066
Revision: 25-Mar-2018

Tension Compression Load Cells

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Accuracy class	Non-Approved	G	
Maximum no. of intervals (n)	1000	3000	
Rated capacity—R.C. (Emax)	50, 100, 150, 200, 300, 500, 750, 1000*		kg
Rated output—R.O.	2.0		mV/V
Rated output tolerance	0.002		±mV/V
Zero balance	0.2		±mV/V
Zero return, 30 min.	0.05	0.017	±% of applied load
Total error (per OIML R60)	0.05	0.02	±% of rated output
Temperature effect on zero	0.01	0.004	±% of rated output/°C
Temperature effect on output	0.003	0.0012	±% of load/°C
Temperature range, compensated	–10 to +40		°C
Temperature range, safe	–30 to +70		°C
Maximum safe central overload	150		% of R.C.
Ultimate central overload	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	400±20		Ω
Output impedance	350±3		Ω
Insulation resistance	>2000		MΩ
Cable length	3.0		m
Cable type	6-wire, PVC, braid shield		Standard
Construction	Model 615—alloy steel; Model 616—stainless steel		
Environmental protection	Model 616—IP66; Model 615—IP67		

All specifications are subject to change without notice.

Wiring Schematic Diagram
(Balanced bridge configuration)



S-Type Alloy Steel Load Cell

FEATURES

- Capacities 1500–5000 kg
- Alloy steel construction
- Sealing: welded to IP67
- S-Type design for use in tension and compression
- 6 Wire cable (sense circuit)



APPLICATIONS

- Hopper (tank weighing)
- Hybrid scales
- Belt weighing
- Lever arm conversions
- Material testing machines
- Vibrations filling equipment
- Dynamometers

DESCRIPTION

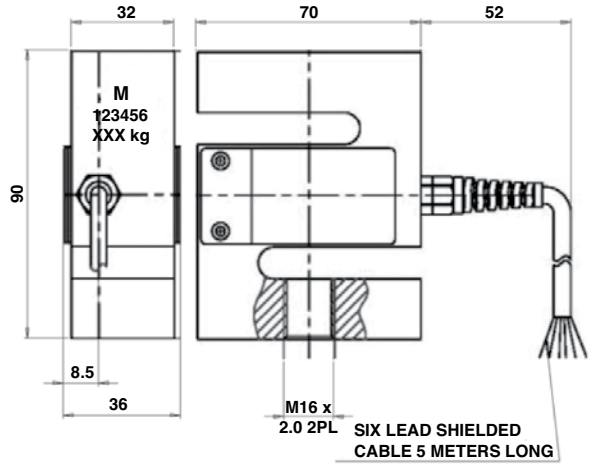
The Model 619 is a low cost tension-compression load cell made from nickel plated alloy steel and has bonded covers for additional protection. It is suitable for use in a wide range of weighing, process weighing, force measurement and industrial process control applications.

Protected to meet IP67 requirements, the construction of the 619 load cell allows its use in most industrial process applications.

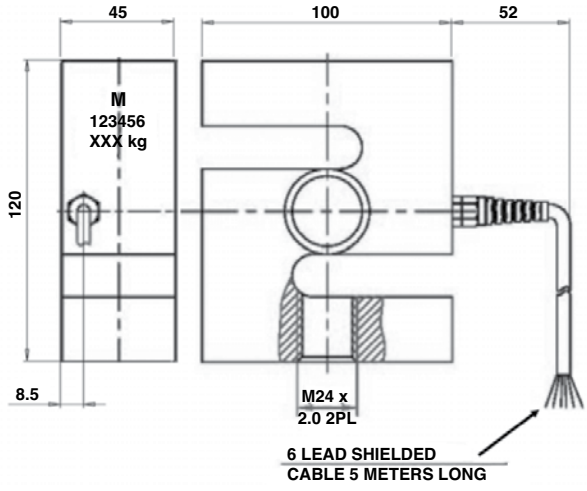
For IP68 requirements, select the fully-welded stainless steel Model 620, which shares the same dimensions as Model 619.

The additional sense wires compensate for changes in lead resistance, due to temperature change and/or cable extension. Complete compensation of changes in lead resistance is achieved by feeding this voltage into appropriate electronics.

OUTLINE DIMENSIONS in millimeters



1500, 2000 kg cell outline



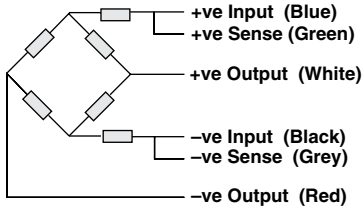
3000, 5000 kg cell outline

S-Type Alloy Steel Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Rated capacity—R.C. (E_{max})	1500, 2000, 3000, 5000		kg
Accuracy class	E	G	
Maximum no. of intervals (n)	1000	3000	
Rated output—R.O.	2.0		mV/V
Rated output tolerance	0.002		±mV/V
Zero balance	0.04		±mV/V
Zero return, 30 min.	0.050	0.0170	±% of applied load
Total error	0.050	0.020	±% of rated output
Temperature effect on zero	0.030	0.0040	±% of rated output/°C
Temperature effect on output	0.0030	0.0012	±% of applied load/°C
Temperature range, compensated	–10 to +40		°C
Temperature range, safe	–20 to +70		°C
Maximum safe central overload	150		% of R.C.
Ultimate central overload	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	380±20		Ω
Output impedance	350±3		Ω
Insulation resistance	>2000		MΩ
Cable length	5.0		m
Cable type	6-wire, braided, PVC, dual floating screen		Standard
Construction	Nickel-plated alloy tool steel		
Environmental protection	IP67		

All specifications are subject to change without notice.

Wiring Schematic Diagram



S-Type Stainless Steel Load Cell

FEATURES

- Capacity range: 500–5000 kg
- Stainless steel construction
- Sealed by welding to IP68
- S-type design for use in tension and compression
- OIML approved to 3000d (500–5000 kg)
- NTEP approved to 5000d (500–5000 kg)
- Choice of mounting threads metric or unified systems
- 6-Wire cable (sense circuit)
- **Optional**
  - Ex ia IIC T6-ATEX hazardous area approval
  - Class I, II, III Division 1 – FM hazardous area approval
  - IECEx approval available



APPLICATIONS

- Hopper (tank Weighing)
- Hybrid scales
- Belt weighing
- Lever arm conversions
- Material testing machines
- Vibrations filling equipment
- Dynamometers

DESCRIPTION

The Model 620 is a stainless steel S-type load cell. Its welded sealing combined with high accuracy, make this load cell ideally suited for a wide range of applications of process weighing and force measurements.

Approvals include OIML C3 (3000d); NTEP 3000d single and NTEP 5000d multiple.

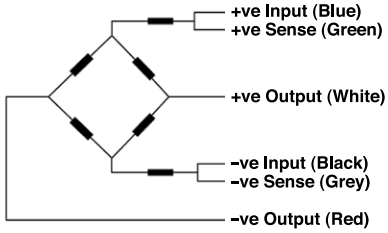
Also available are versions approved for hazardous areas—ATEX II 1 GD Ex ia T6 for Europe and FM I, II, III Division 1 for the USA.

The six-wire cable includes two sense wires that compensate for changes in lead resistance due to temperature changes and cable extension.

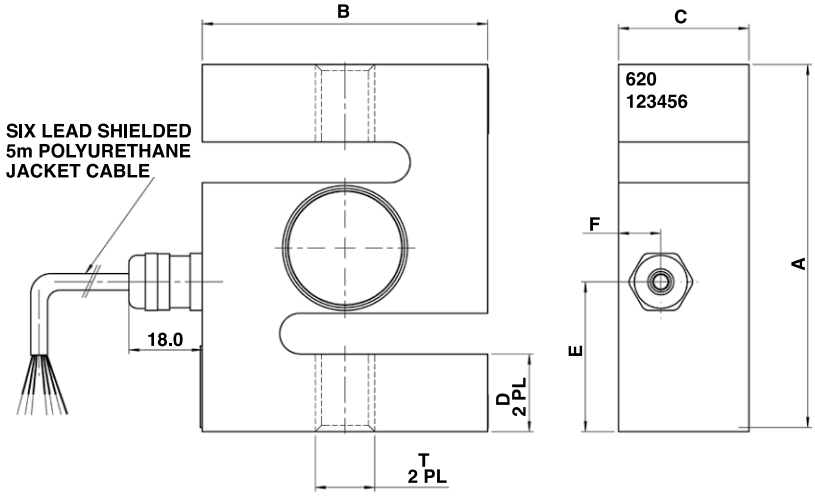
The Model 620 offers a choice of bolt threads in metric or unified systems; see table below.

OUTLINE DIMENSIONS in millimeters

Wiring Schematic Diagram



Thread Type "T" by Capacity		
Capacity	Metric	Unified
500 kg	M12 x 1.75	1/2-20 UNF
1000 kg	M16 x 2.0	1/2-20 UNF
2000 kg	M16 x 2.0	3/4-16 UNF
5000 kg	M24 x 2.0	1 - 12 UNF



Optional rod end bearings for use with all VPG Transducers S-type load cells are available—consult the sales office.

Capacity	A	B	C	D	E	F
500, 1000, 2000 kg	90	70	32	19	36.6	10.4
5000 kg	120	100	45	26	60	13.8

S-Type Stainless Steel Load Cell

SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Rated capacity—R.C. (E_{max})	500, 1000, 2000, 5000				kg
NTEP/OIML	NTEP	Non-Approved	C2/50	C3/50	
Maximum no. of intervals (n)	Class III	1000	2000*	OIML 3000	
Y = E_{max}/V_{min}	5000	2000	4000	6000	
Rated output—R.O.	2.0				mV/V
Rated output tolerance	0.002				±mV/V
Zero balance	0.04	0.06	0.04	0.04	±mV/V
Total error (per OIML R60)	0.0200	0.0500	0.0300	0.0200	±% of R.O.
Zero return, 30 min.	0.010	0.0500	0.0250	0.0170	±% of applied load
Temperature effect on zero	0.00112 (0.00062)	0.0070	0.0035	0.0023	±% of R.O./°C (/°F)
Temperature effect on output	0.0018 (0.0010)	0.0400	0.0014	0.0012	±% of applied load/°C (/°F)
Temperature range, compensated	–10 to +40				°C
Temperature range, safe	–30 to +90				°C
Maximum safe static overload	150				% of R.C.
Excitation, recommended	10				VDC or VAC RMS
Excitation, maximum	15				VDC or VAC RMS
Input impedance	400±20				Ω
Output impedance	350±3				Ω
Insulation resistance	>1000	>2000	>2000	>2000	MΩ
Construction	Stainless steel				
Environmental protection	IP68				

All specifications subject to change without notice.

Crane Scale Load Cell

FEATURES

- Capacity: 1.5 t to 30 t
- Alloy steel construction
- Integrated overload protection for both tension and compression loading
- Direct mounting of weight indicator
- IP67 protection



APPLICATIONS

- Crane scales
- Hanging scales

DESCRIPTION

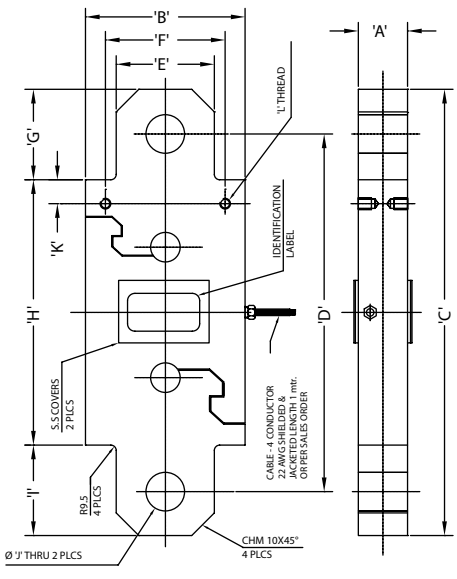
The Model 91002 is an alloy steel shear beam load cell designed for crane scale and hanging scale applications. The load cell design features integrated overload protection for both tension and compression loading with a rated output of 1.5 mV/V.

The Model 91002 is supplied with a Teflon cable which makes the load cell ideal for demanding environments. The design also allows for direct mounting of the weight indicator which is typical for crane scale applications.

OUTLINE DIMENSIONS in millimeters

CAPACITY	A	B	C	D	E	F	G	H	I	J	K	L THREAD
1.5, 3.0, 5.0 t	29.7	69.5	289.0	238.6	50.0	50.0	49.0	130.0	110.0	19.0	10.0	M6 x 1.0, DEEP 12.0, 4 PLCS
7.5, 15.0 t	37.0	120.0	399.5	295.5	73.8	90.0	100.0	199.5	100.0	36.0	18.0	M12 x 1.75 DEEP 12.0, 4 PLCS

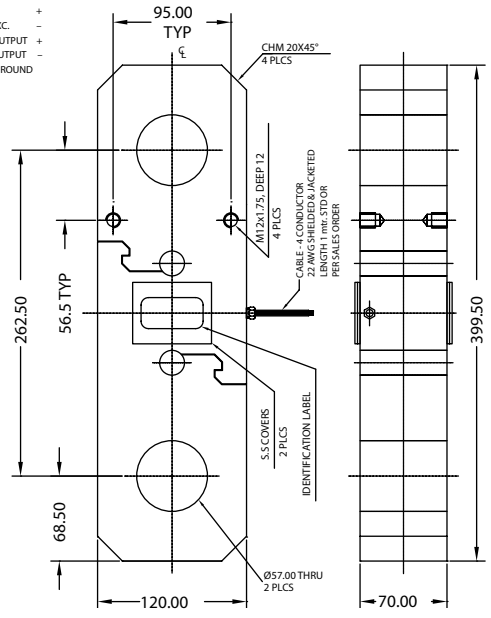
1.5-15.0 t



WIRING

RED EXC.	+
BLACK EXC.	–
GREEN OUTPUT	+
WHITE OUTPUT	–
SHIELD GROUND	

30.0 t

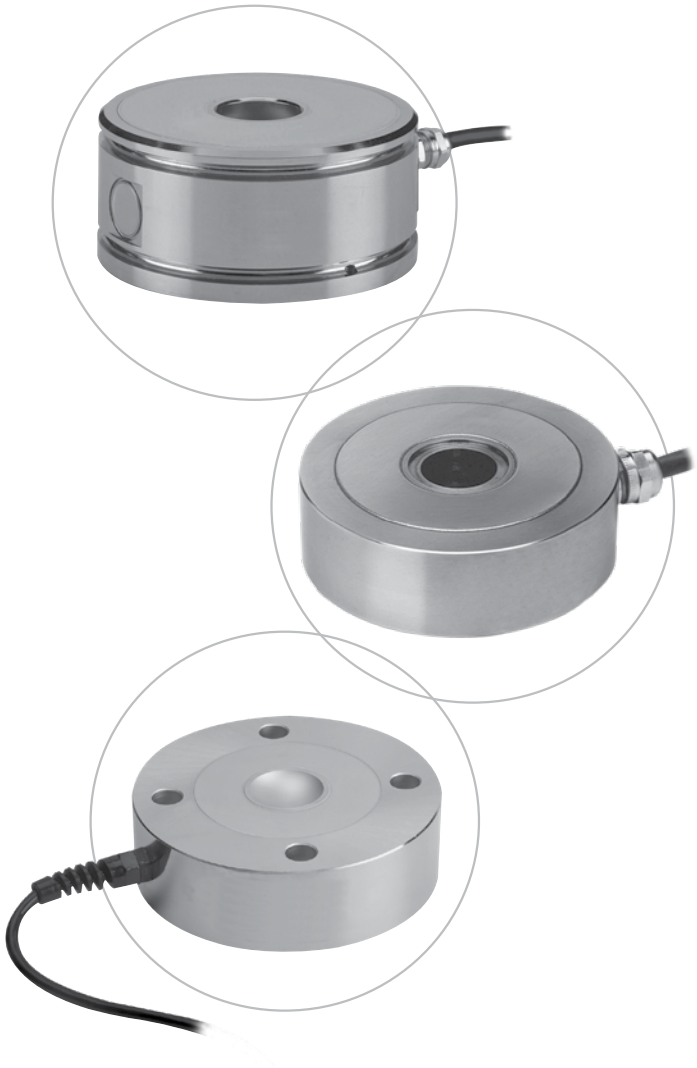


Crane Scale Load Cell

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Rated output—R.O.	1.5	mV/V
Rated output tolerance	5	±% FSO
Zero balance	1	±% FSO
Combined error	<0.050	±% FSO
Non-linearity	<0.030	±% FSO
Hysteresis	<0.020	±% FSO
Non-repeatability	<0.020	±% FSO
Creep error (30 minutes)	<0.020	±% FSO
Temperature effect on zero	<0.002	± %/°C
Temperature effect on output	0.001	± %/°C
Operating temperature range	–20 to +70	°C
Maximum safe central overload	150	% FSO
Ultimate central overload	300	% FSO
Excitation, recommended	10	VDC
Excitation, maximum	15	VDC
Input impedance	360–450	Ω
Output impedance	349–355	Ω
Insulation resistance at 50 VDC	>1000	MΩ
Material	Alloy steel with electroless nickel-plated	
Environmental protection	IP67	

All specifications subject to change without notice.

Load Cells—
Tension/Compression Disks



CONTENTS

Model MFT 206
Model RLC 210
Model 220 212
Model PSD 214
Model LCD 220
Model 98001 222

Low Profile Compression Disc

FEATURES

- Capacities 0.1, 0.2, 0.3, 0.5, 60, 200 t
- IP66 protection
- Compact size with low profile
- Alloy steel construction
- (Low capacities 0.1, 0.2, 0.3 and 0.5 t aluminum construction)



APPLICATIONS

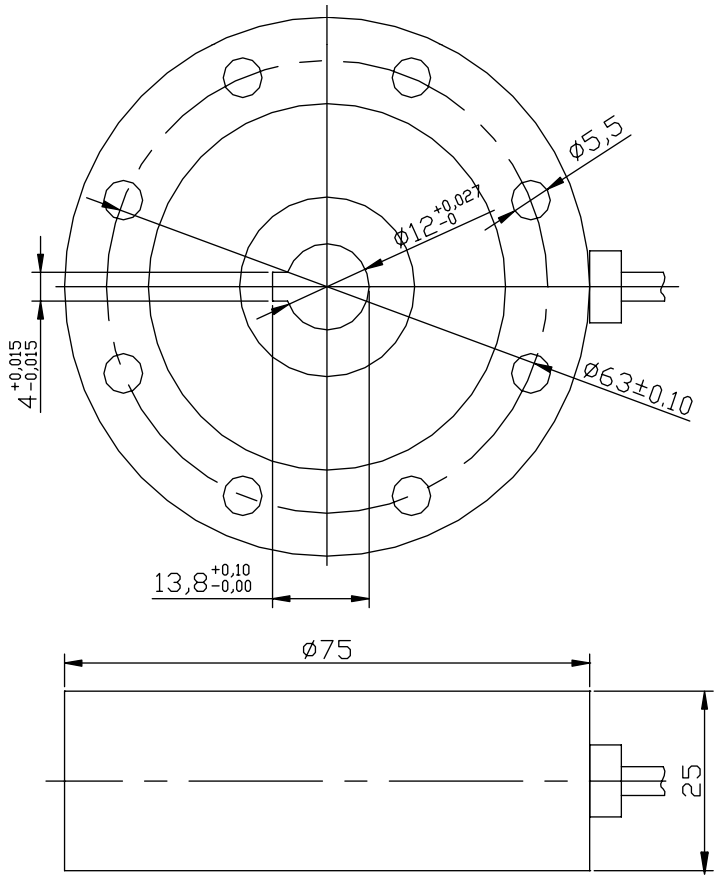
- Testing machines
- Hopper/tank/vessel weighing

DESCRIPTION

The Model MFT compression disc is a suitable solution for applications in which height is a major safety concern. The shear web design provides excellent performance even when side forces are inevitable.

This product is suitable for testing machines, platform scales, hoppers and tank weighing.

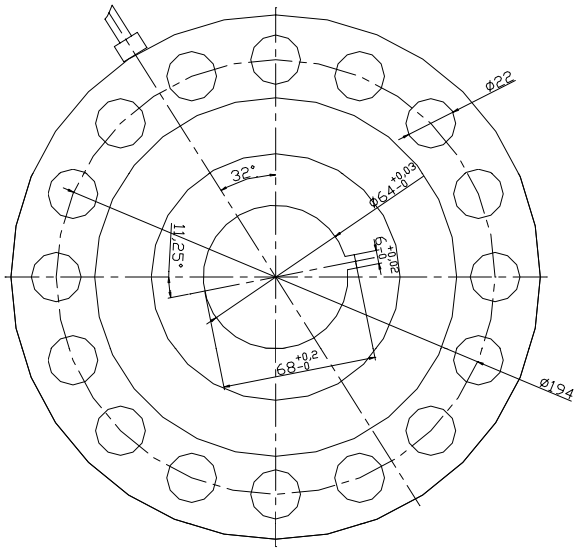
OUTLINE DIMENSIONS (100, 200, 300, 500 kg) in millimeters



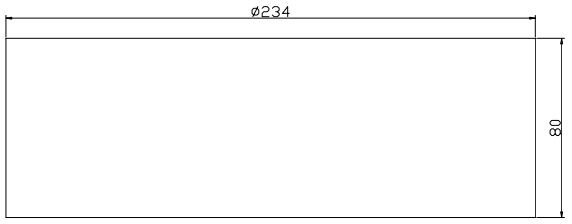
Cable specification
Cable length: 4 m
Excitation +: Red
Excitation –: Black
Output +: Green
Output –: White

Low Profile Compression Disc

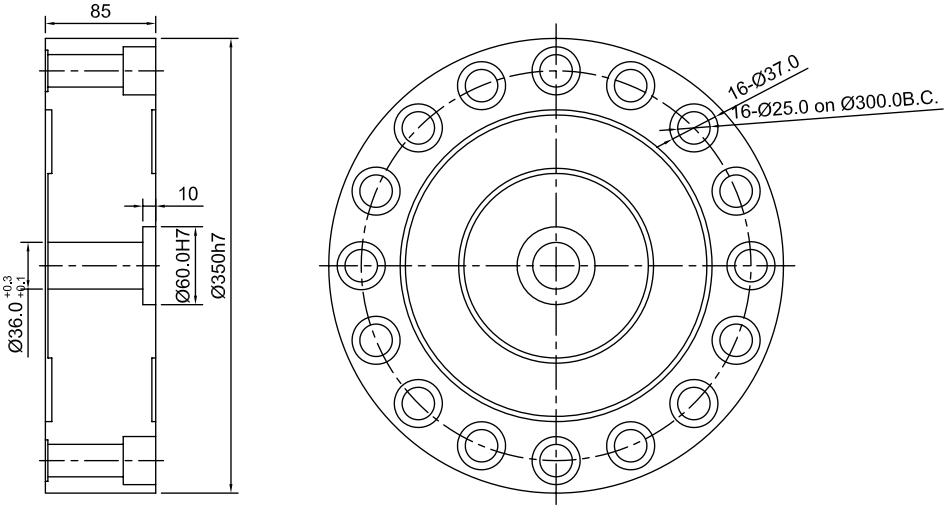
OUTLINE DIMENSIONS (60 t) in millimeters



Cable specification:
Cable length: 8 m
Excitation +: Red
Excitation –: Black
Output +: Green
Output –: White



OUTLINE DIMENSIONS (200 t) in millimeters



Low Profile Compression Disc

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Rated capacity—RC (Emax)	0.1, 0.2, 0.3, 0.5, 60, 200		t
Rated output—RO	2.0		mV/V
Rated output tolerance	10.0 (0.1, 0.2, 0.3, 0.5 t), 1.0 (60 t), 5.0 (200 t)		±% of RO
Zero balance	1.0 (0.1~60 t)	3.0 (200 t)	±% of RO
Zero return, 30 min.	0.03 (200 t)		±% of applied load
Zero return, 20 min.	0.05 (0.1–60 t)		±% of applied load
Temperature effect **on zero** **on span**	 0.0026 (0.1~200 t) 0.0015 (0.1–60 t), 0.003 (200 t)		 ±% of RO/°C ±% of RO/°C
Nonlinearity	0.1 (0.1–200 t)		±% of RO
Nonrepeatability	0.05 (0.1–60 t), 0.02 (200 t)		±% of RO
Creep error (20 minutes)	0.05 (0.1–60 t)		±% of applied load
Creep error (30 minutes)	0.03 (200 t)		±% of applied load
Deflection at rated load	<0.5 (0.1–60 t), <1 (200 t)		mm
Hysteresis error	0.10 (0.1, 0.2, 0.3, 0.5, 200 t), 0.15 (60 t)		±% of RO
Temperature range, compensated	–10 to +40		°C
Temperature operating range, safe	–20 to +60		°C
Maximum safe central overload	150		% of RC
Ultimate central overload	200		% of RC
Excitation, **recommended** **maximum**	 10 15		 VDC VDC
Input impedance	1050 ±20 (0.1, 0.2 t), 350 ±15 (0.3, 0.5 t), 385 ±15 (60 t), 410 ±10 (200 t)		Ω
Output impedance	1050 ±20 (0.1, 0.2 t), 350 ±15 (0.3, 0.5 t), 350 ±15 (60 t), 350 ±3 (200 t)		Ω
Insulation resistance	>5000		MΩ
Cable length	4 (0.1–0.5 t), 8 (60 t), 10 (200 t)		m

RO—Rated Output
RC—Rated Capacity

All specifications are subject to change without notice.

Ring Torsion Load Cell

FEATURES

- Capacity range: 250 kg to 60 t
- Low profile, stainless steel construction
- Hermetically sealed, IP66 and IP68; IP69K is available for 250 kg, 5 t and 10 t versions
- Meets OIML R-60 and NTEP 6000d
- Outputs are matched to ensure easy and accurate parallel connection of multiple load cells
- **Optional**
  - ATEX certified versions are available for use in potentially explosive atmospheres
  - Multi-interval and multiple-range versions are available



APPLICATIONS

- Platform scales
- Belt scales
- Silo hopper weighing

DESCRIPTION

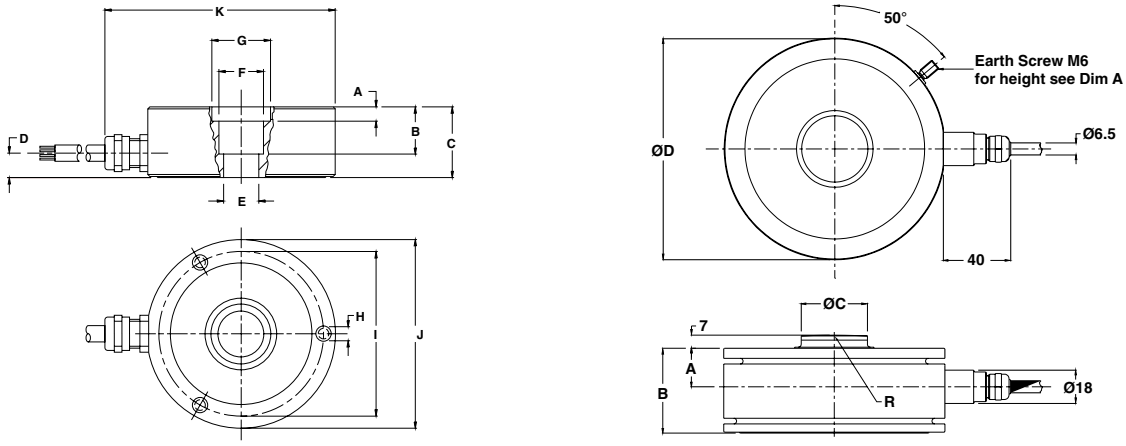
The RLC is a low profile, high performance stainless steel ring torsion type load cell.

The fully welded constuction and glass-to-metal cable-entry ensure that this product can be used successfully in harsh environments found in the food, chemical and allied process industries.

This product is suitable for small and medium platform scales, hoppers and process weighing.

This product meets the stringent Weights and Measures requirements throughout Europe and USA.

OUTLINE DIMENSIONS in millimeters



CAPACITY (t)	0.25, 0.5, 1	2, 3.5, 5	10
A	1.0	6.0	-
B	15.0	20.0	14.8
C	25.0	30.0	35.0
D	9.5	8.5	10.0
E	M10	15 H7	Ø24.9
F	Ø19	Ø19	Ø29.1
G	Ø25	Ø25	
H	M6 (3X120°) 8 Deep		
I	Ø70	Ø70	Ø83
J	Ø80	Ø80	Ø95
K	97.5	97.5	112.5

Cable specifications
Cable length: 3 m for 0.25–1 t, 5 m for 3–10 t, 10m for 28 t, 15 m for 60 t

Excitation +	Pink
Excitation –	Grey
Output +	Brown
Output –	White

Cable screen is connected to load cell body. For capacities 28 and 60 ton cable screen is not connected to body.

CAPACITY (t)	28	60
A	21	28
B	46	62
C	35.9	47.9
D	120	140
R	400	600

Ring Torsion Load Cell

SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Standard capacities (E_{max})	0.25, 0.5, 1, 2, 3.5, 5, 10, 28, 60				t
Accuracy class according to OIML	NTEP IIIL	D3	C3[3]	C6[2]	
Maximum no. of verfication intervals (nlc)	10000		3000	6000	
Minimum verification interval			Emax/10000	Emax/15000	
Minimum verification interval type MR			Emax/20000[1]	Emax/28000	
Rated output (=S)	2 (1.75 for 0.25 t, 2.05 for 10 t)				mV/V
Output accuracy for multiple LC systems	0.01				±% mV/V
Zero balance	1.0				±% FSO
Combined error	0.0200	0.0300	0.0230	0.0115	±% FSO
Creep error (30 minutes)			0.0245	0.0123	±% FSO
Temperature effect on zero	(0.0010)	(0.0010)	0.0070	0.0045	±% FSO/5°C (/°F)
Temperature effect on sensitivity (output)	(0.0008)	(0.0008)	0.0050	0.0025	±% FSO/5°C (/°F)
Minimum dead load	0				% E_{max}
Maximum safe overload	150				% E_{max}
Ultimate overload	300				% E_{max}
Maximum safe side load	100% up to 10 t 50% for 28 & 60 t				% E_{max}
Deflection at E_{max}	0.12–0.20				mm
Excitation voltage	5 to 15				V
Maximum excitation voltage	30				V
Input resistance	1110±50 (1100±50 for 0.25 t and 10 t) 1075±100 for 28 t 1350±100 for 60 t				Ω
Output resistance	1025±25 (1025±50 for 0.25 t and 10 t) 930±0.5 for 28 t 1175±0.5 for 60 t				Ω
Insulation resistance	≥5000 (20 for 28 and 60 t)				MΩ
Compensated temperature range	-10 to +40				°C
Operating temperature range	-30 to +70				°C
Storage temperature range	-50 to +80				°C
Element material (DIN)	Stainless steel 1.4542				
Sealing (DIN 40.050 / EN60.529)	IP66 and IP68; IP69K available for 250 kg, 5 t and 10 t				
Recommended torque on fixation bolts	12 to 14				N*m
ATEX opt. for potent. explosive atmospheres	II2G EEx ib IIC T4/T6, II2D, IIID T70 II3G nA II T4/T6				

(1) Capacities of 28 and 60 ton E_{max}/15,000 approved to OIML C3 only

(2) 250 kg and 10 t capacities are approved to OIML C3 only. Maximum application range for 0.5 t is 0.75*E_{max}.

(3) The following accuracy classes are available (from 0.5 t to 10 t): C3MI6 and C3MI7.5. Minimum dead load output return is ½ E_{max}/6000 and ½ E_{max} /7500 respectively

FSO—Full Scale Output

All specifications subject to change without notice.

High Accuracy Compression Load Cell

FEATURES

- Capacities 5–50 t
- Stainless steel construction
- OIML R60 and NTEP approved
- IP68 protection
- **Optional**
  - EEx ia IIC T6 hazardous area approval
  - FM and IECEx approvals available



APPLICATIONS

- Truck scales
- Hopper for process weighing
- Tank and silo weighing
- Harsh environment

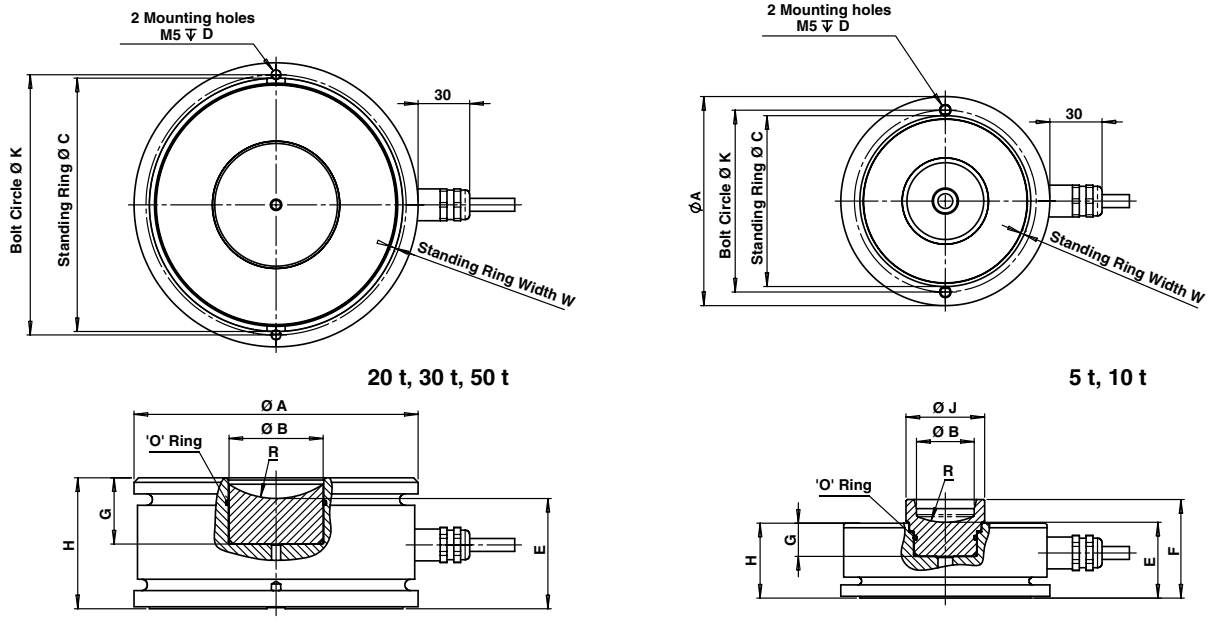
DESCRIPTION

The Model 220 is a low profile bending ring load cell designed for high capacity weighing applications, including weighbridges, tanks, silos and high capacity platform scales as well as force measurement.

Its small physical size, combined with high accuracy and low cost, makes this load cell ideally suited for modern low profile designs in both approved applications and process weighing.

This high accuracy load cell has factory Mutual approval and is OIML R60 approved to 6000 divisions. For hazardous environments, this load cell has an EEx ia IIC T6 approved option. When combined with Tedea-Huntleigh mounting accessories, this load cell will provide a simple, accurate and reliable weighing system.

OUTLINE DIMENSIONS in millimeters



	A	B	C	D	E	F	G	H	J	K	W	R
5 t	80.0	25.4	71.0	7.0	33.4	43.4	20.0	30.0	34.6	70.0	1.0	31.0
10 t	92.0	25.4	75.2	6.0	33.4	43.4	14.6	33.0	34.6	80.0	1.5	31.0
20 t, 30 t	110.0	28.4	101.0	7.5	39.1		26.3	50.1		102.0	1.5	31.0
50 t	125.0	41.4	111.5	8.0	48.5		29.2	57.7		114.5	2.3	37.3

High Accuracy Compression Load Cell

SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Rated capacity—R.C. (E_{max})	5000, 10000, 20000, 30000, 50000***				kg
NTEP/OIML accuracy class	NTEP	C1	C3*	C4**	
Maximum no. of intervals (n)	10000 IIIL multiple	1000	3000	4000	
$Y = E_{max}/V_{min}$	11000	5000	14000	14000	
Rated output—R.O.	2.0				mV/V
Rated output tolerance	0.1				±% of rated output
Zero balance	2				±% of rated output
Zero return, 30 min.	0.0330	0.0500	0.0170	0.0125	±% of applied load
Total error (per OIMP R60)	0.0200	0.0500	0.0200	0.0150	±% of rated output
Temperature effect on zero	0.0023	0.0028	0.0010	0.0010	±% of rated output/°C
Temperature effect on output	0.001	0.0020	0.0010	0.0008	±% of applied load/°C
Temperature range, compensated	–10 to +40				°C
Temperature range, safe	–30 to +70				°C
Maximum safe central overload	150				% of R.C.
Ultimate central overload	300				% of R.C.
Excitation, recommended	10				VDC or VAC RMS
Excitation, maximum	20				VDC or VAC RMS
Input impedance	1065±60				Ω
Output impedance	1025±20				Ω
Insulation resistance	>2000				MΩ
Cable length	5 m (5 t), 10 m (10 and 20 t), 20 m (30 and 50 t)				m
Cable type	6-wire, braided, polyurethane, double floating screen				Standard
Construction	Stainless Steel				
Environmental protection	IP68				

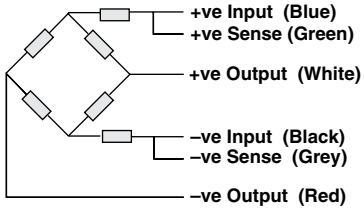
* 20% utilization

** 40% utilization

*** Capacities 5–20 t available in C6 45% utilization

All specifications subject to change without notice.

Wiring Schematic Diagram



Precision Shear Web Disk

FEATURES

- Capacities:
  - PSD: 2.5, 5, 10, 25
  - PSD-SJTH: 0.5, 1, 2, 5, 10, 20, 25, 30
  - PSD-SJTT: 0.2, 0.5, 1, 1.5, 2.5, 5, 10, 20, 25, 30, 50, 100 t
- Compact size with low profile
- Low deflection for high output
- Electroless nickel-plated alloy tool steel construction
- Off center load compensated
- OIML C3 available for the entire series
- **Optional**
  - PSD-SJTT and PSD-SJTH models have different mounting holes and capacities from default PSD – see below for details.



APPLICATIONS

- Testing machines
- Platform scales
- Hopper and vessel weighing
- Truck scales

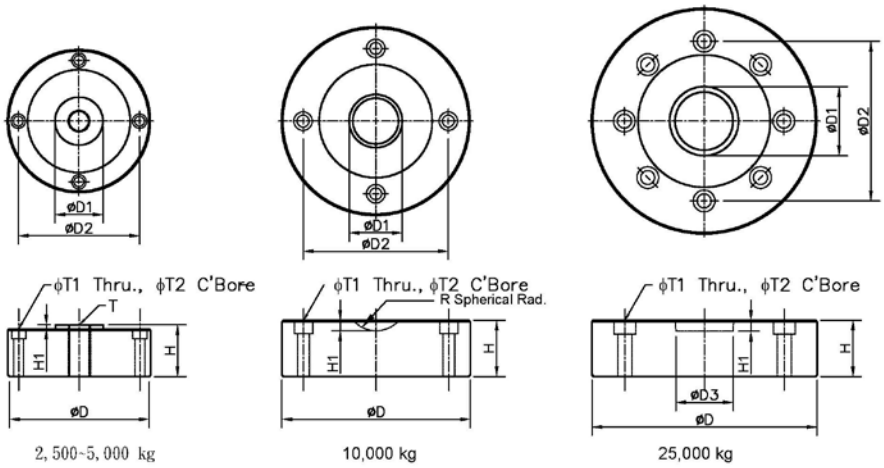
DESCRIPTION

The model PSD is a precision shear web disk, a specialized compression load cell. A low profile design makes the PSD the most suitable application when height is a primary safety concern. The shear web design provides excellent performance even when side forces are inevitable in normal operations. A typical example would be in motor truck scales. The PSD is fully potted with special chemical compounds to the IP67 standard. This protects the cell from water and moisture attack. The PSD-SJTT and PSD-SJTH are low-profile compression disks specially designed for testing machines.

Outline drawings and specifications follow on next pages.

Precision Shear Web Disk

OUTLINE DIMENSIONS – PSD 2.5 TO 25 t



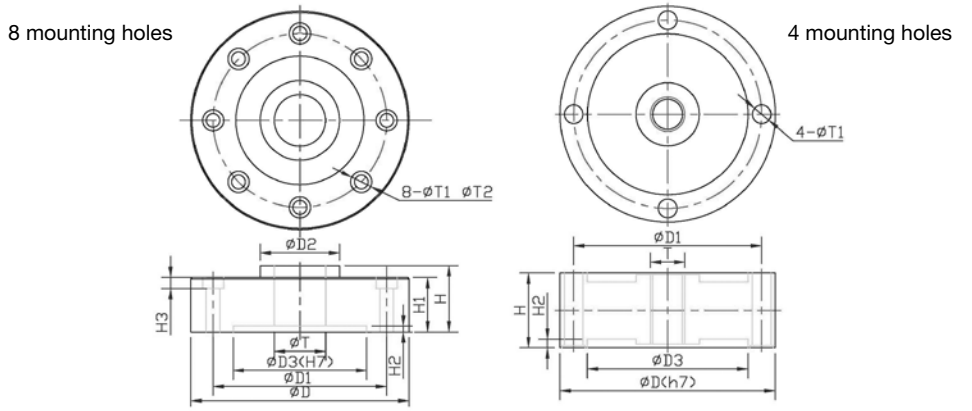
Wiring

+ Excitation	Red
– Excitation	Black
+ Signal	Green
– Signal	White

Please note:
The shape of the Model PSD varies between capacities. Please consult the dimensions table below carefully.

CAPACITY		D	D_1	D_2	D_3	H	H_1	R	T	T_1	T_2
2.5 t / 5 t	mm	104.7	32	88.9	–	34.8	3.05	–	M16 × 1.5	4 - 7.2	10.5 × 7.2DP
	in	4.12	1.26	3.5	–	1.37	0.12	–		0.28	0.41 × 0.28DP
10 t	mm	138	38.9	106.4	–	41.1	7.61	22.0	–	4 - 8.7	13.5 × 9.7DP
	in	5.43	1.53	4.19	–	1.62	0.3	0.87	–	0.34	0.53 × 0.38DP
25 t	mm	165	50.4	116.8	42	41.1	8	–	–	8 - 10.3	18.5 × 10.2DP
	in	6.5	1.98	4.6	1.65	1.62	0.31	–	–	0.41	0.73 × 0.40DP

OUTLINE DIMENSIONS – PSD-SJTT 0.2 TO 30 t



Wiring

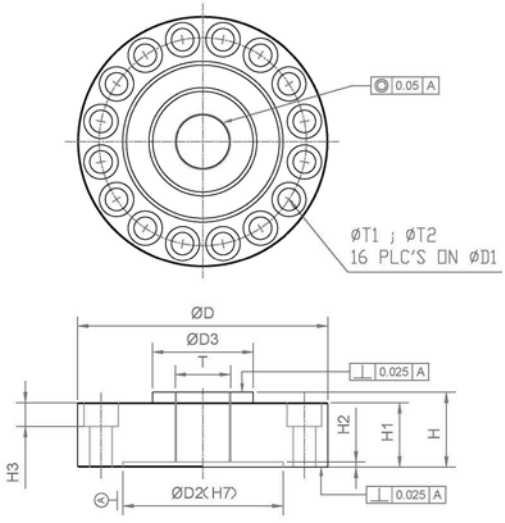
+ Excitation	Red
– Excitation	Black
+ Signal	Green
– Signal	White

Please note:
The shape of the Model PSD varies between capacities. Please consult the dimensions table below carefully.

CAPACITY		D	D_1	D_2	D_3	H	H_1	H_2	T	T_1	T_2	H_3
0.2 t	mm	75	65.5	–	56	26	–	1.2	M12 × 1.75	4 - 6.5	–	–
	in	2.95	2.58	–	2.20	1.02	–	0.05	–	0.25	–	–
0.5 / 1 t	mm	90	78	22	65	43	40	3	M12 × 1.75	8 - 6.6	10.5	6
	in	3.54	3.07	0.87	2.56	1.69	1.57	0.12	–	0.26	0.41	0.24
1.5 / 2.5 t	mm	105	89	32	75	35	32	3	M16 × 2	8 - 7.2	10.5	7.2
	in	4.13	3.5	1.26	2.95	1.38	1.26	0.12	–	0.28	0.41	0.28
5/10 t	mm	138	110	44	88	46	41	3	M27 × 2	8 - 13.2	19	12
	in	5.43	4.33	1.73	3.46	1.81	1.62	0.12	–	0.52	0.75	0.47
20/25/30 t	mm	165	130	55	96	50	41	3	M36 × 2	8 - 21	31	20
	in	6.5	5.11	2.17	3.78	1.97	1.62	0.12	–	0.83	1.22	0.79

Precision Shear Web Disk

OUTLINE DIMENSIONS – PSD-SJTT 50 AND 100 t



Wiring

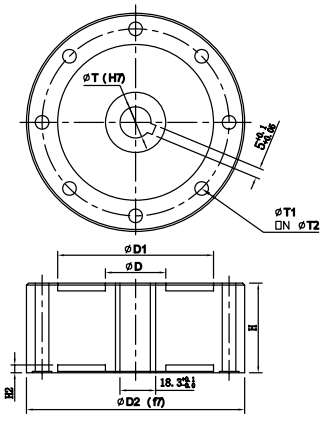
+ Excitation	Red
– Excitation	Black
+ Signal	Green
– Signal	White

Please note:
The shape of the Model PSD varies between capacities. Please consult the dimensions table below carefully.

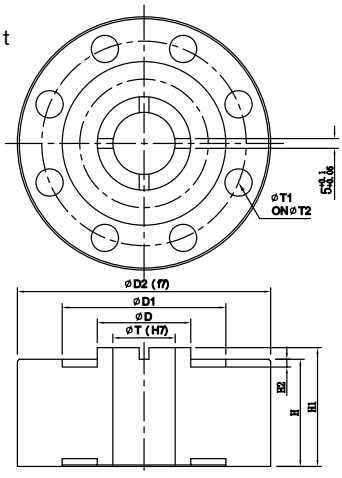
CAPACITY		D	D_1	D_2	D_3	H	H_1	H_2	H_3	T	T_1	T_2
50 t	mm	234	194	150	94	60.0	55	4.7	22	M52 × 2-6H	21.0	32.0
	in	9.2	7.6	5.9	3.7	2.4	2.2	0.2	0.9		0.8	1.3
100 t	mm	258	218	174	120	60.0	57	3	22	M76 × 2	21.0	32.0
	in	10.2	8.6	6.9	4.72	2.4	2.24	0.12	0.9		0.8	1.3

OUTLINE DIMENSIONS – PSD-SJTH

500 kg to 2 t



5 to 30 t



Wiring

+ Excitation	Red
– Excitation	Black
+ Signal	Green
– Signal	White

Please note:
The shape of the Model PSD varies between capacities. Please consult the dimensions table below carefully.

CAPACITY		D	D_1	D_2	H	H_1	H_2	T	T_1	T_2
500 kg / 1 t / 2 t	mm	31	80	112	46	–	4	16	7.0	96.0
	in	1.22	3.15	4.41	1.81	–	0.16	0.63	0.28	3.78
5 / 10 t	mm	48	84	130	55	61	4	32	14.0	105.0
	in	1.89	3.31	5.12	2.17	2.4	0.16	1.26	0.43	4.13
20 / 25 / 30 t	mm	72	130	182	80.	86	4	39	15.0	154.0
	in	2.83	5.12	7.17	3.15	3.39	0.16	1.54	0.59	6.06

Precision Shear Web Disk

SPECIFICATIONS PSD AND PSD SJTH			
PARAMETER	**VALUE**		**UNIT**
Model	**PSD**	**PSD SJTH**	
Standard capacities	2.5, 5, 10, 25	0.5, 1, 2, 5, 10, 20, 25, 30	t
Rated output – R.O.	3 (±0.25%)		mV/V
Rated output tolerance	0.25		±% of rated output
Zero balance	±1	±1	±% of rated output
Non-linearity	0.025%	0.05%	±% of rated output
Hysteresis	0.025%	0.05%	±% of rated output
Non-repeatability	0.02%		±% of rated output
Creep error (20 minutes)	0.03%		±% of rated output
Zero return (20 minutes)	0.03%		±% of rated output
Compensated temperature range	–10 to +40		°C
Operating temperature range	–20 to +60		°C
Safe overload	150		% of R.C.
Ultimate overload	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	385±5	385±5	Ω
Output impedance	350±3	350±3	Ω
Insulation resistance	>5000		MΩ
Construction	Nickel-plated alloy steel	Nickel-plated alloy steel	
Environmental protection	IP67		

SPECIFICATIONS PSD-SJTT				
PARAMETER	**VALUE**			**UNIT**
Model	**PSD-SJTT**	**PSD-SJTT Aluminium**	**PSD-SJTT 50 t & 100 t Models**	
Standard capacities	0.5, 1, 1.5, 2.5, 5, 10, 20, 25, 30	0.2	50, 100	t
Rated output – R.O.	3 (±0.25%)	2 (±0.25%)	50 t: 3 (±0.25%) 100 t: 2 (±0.25%)	mV/V
Rated output tolerance	0.25			±% of rated output
Zero balance	±1			±% of rated output
Non-linearity	0.05%	0.05%	0.10%	±% of rated output
Hysteresis	0.05%	0.05%	0.10%	±% of rated output
Non-repeatability	0.02%			±% of rated output
Creep error (20 minutes)	0.03%			±% of rated output
Zero return (20 minutes)	0.03%			±% of rated output
Compensated temperature range	–10 to +40			°C
Operating temperature range	–20 to +60			°C
Safe overload	150			% of R.C.
Ultimate overload	300			% of R.C.
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	15			VDC or VAC RMS
Input impedance	385±5	385±5	770±10	Ω
Output impedance	350±3	350±3	700± 0	Ω
Insulation resistance	>5000			MΩ
Construction	Nickel-plated alloy steel	Aluminium	Nickel-plated alloy steel	
Environmental protection	IP67		IP67	

Precision Shear Web Disk

SPECIFICATIONS ALL MODELS			
PARAMETER	**VALUE**		**UNIT**
NTEP/OMIL accuracy class	**C3**	**Non-approved**	
Maximum no. of intervals (n)	3000	1000	
$Y = E_{max}/V_{min}$	8000	5000	Maximum available
Temperature effect on min. dead load output	0.0014	0.0026	±% of applied load/°C
Temperature effect on sensitivity	0.001	0.0015	±% of applied load/°C

All specifications subject to change without notice.

Low Profile Compression Disk

FEATURES

- Capacities: 5k, 10k, 25k, 50k, 100k lbs
- Electroless nickel-plated alloy tool steel
- Compact size with low profile
- Surge protection optional for 5k–100k lbs
- **Optional**
  - Stainless steel version available
  - FM approval available
  - LCD-TT/M/MH with different loading holes



APPLICATIONS

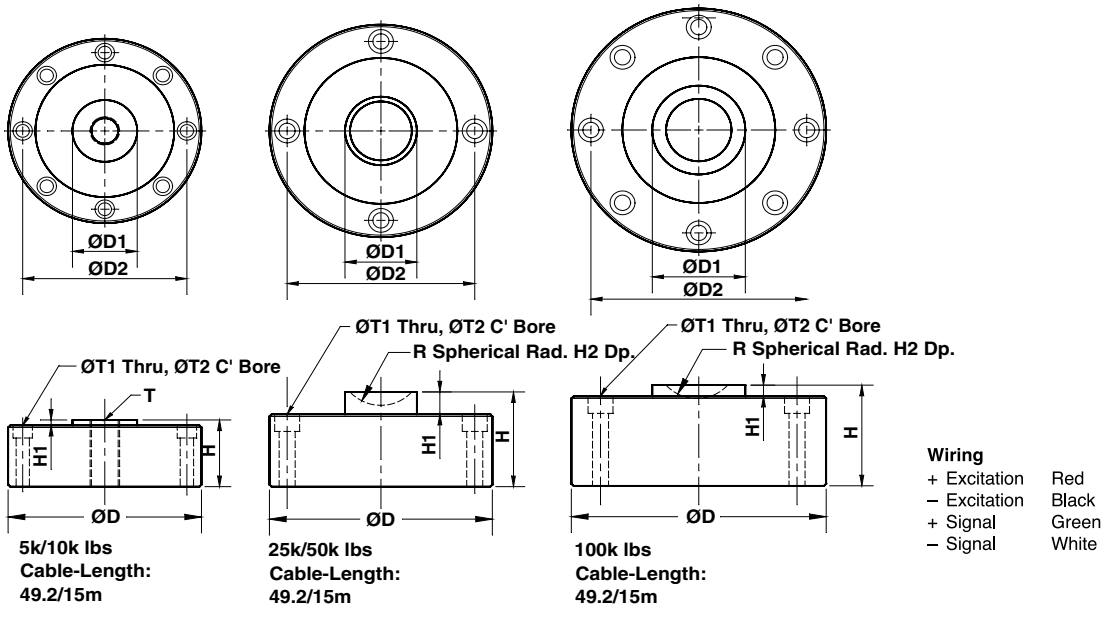
- Truck/rail scales
- Silo/hopper/tank weighing
- Universal material tester
- Tensile/pulling force measurement

DESCRIPTION

The Model LCD is constructed of alloy steel and fully potted with special chemical compounds to IP67 providing excellent protection against moisture and humidity.

The low profile compression disk is designed as the ultimate solution for some difficult applications in which height is a major safety concern. The shear web design provides excellent performance even when side force inevitably exists in normal operations. A typical example of such side force can be found in motor truck scales, making the model LCD perfect for such applications.

OUTLINE DIMENSIONS



CAPACITY		D	D_1	D_2	H	H_1	H_2	R	T	T_1	T_2
5k/10k lbs	mm	104.7	32.0	88.9	34.8	3.05	---	---	5/8-18UNF	7.2	10.5 x 7.2DP
	(inch)	4.12	1.26	3.50	1.37	0.12	---	---	---	0.28	0.41 x 0.28DP
25k/50k lbs	mm	120.7	38.9	101.6	53.8	12.7	7.6	22.2	---	8.7	13.5 x 9.7DP
	(inch)	4.75	1.53	4.00	2.12	0.50	0.30	0.87	---	0.34	0.53 x 0.38DP
100k lbs	mm	138	50.4	116.8	57.2	6.4	7.6	2.2	---	10.13	16.5 x 11.0DP
	(inch)	5.43	1.98	4.60	2.25	0.25	0.30	0.87	---	0.41	0.65 x 0.43DP

Low Profile Compression Disk

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
NTEP/OIML accuracy class	Non-Approved	
Maximum no. of intervals (n)	2000	
Y = E_{max}/V_{min}	5000	Maximum available
Standard capacities (E_{max})	5k, 10k, 25k, 50k, 100k	lbs
Rated output—R.O.	4.0	mV/V
Rated output tolerance	0.25	±% of rated output
Zero balance	1	±% of rated output
Non-linearity	0.050	±% of rated output
Hysteresis	0.050	±% of rated output
Non-repeatability	0.020	±% of rated output
Creep error (20 minutes)	0.030	±% of rated output
Zero return (20 minutes)	0.030	±% of rated output
Temperature effect on min. dead load output	0.0026	±% of rated output/°C
Temperature effect on sensitivity	0.0015	±% of applied load/°C
Compensated temperature range	–10 to +40	°C
Operating temperature range	–20 to +60	°C
Safe sideload	150	% of R.C.
Ultimate overload	300	% of R.C.
Excitation, recommended	10	VDC or VAC RMS
Excitation, maximum	15	VDC or VAC RMS
Input impedance	385±5*	Ω
Output impedance	350±3**	Ω
Insulation resistance	>5000	MΩ
Construction	Nickel-plated alloy steel	
Environmental protection	IP67	

* 770±10 Ohms for 100k lbs

** 700±5 Ohms for 100k lbs

All specifications subject to change without notice.

FM Approval

Intrinsically Safe: Class I, II, III; Div. 1 Groups A-G

Non-Incendive: Class I; Div. 2 Groups A-D

Low Profile Universal Load Cell

FEATURES

- Capacity: 0.5–100 t
- Alloy steel construction
- Universal load cell
- Integrated overload protection (in compression)
- Tension and compression loading
- **Optional**
  - Model 98005 without base mounting plate (for compression applications only)
  - Metric and imperial threads



APPLICATIONS

- Universal testing machines

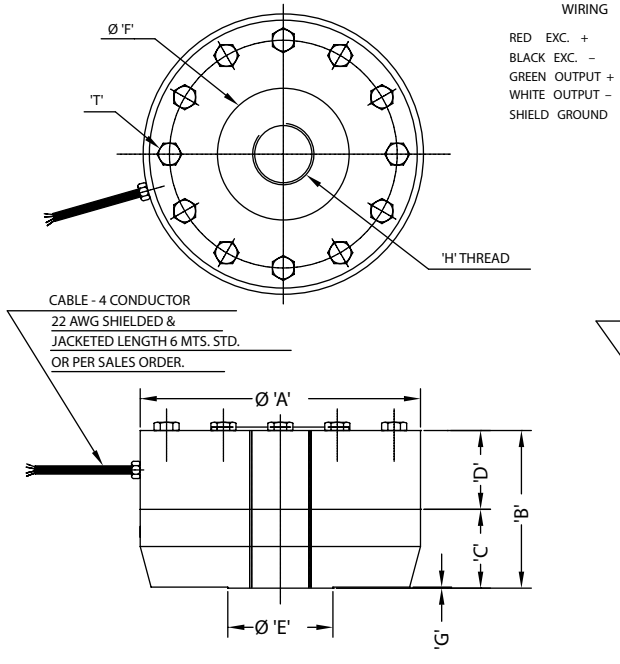
DESCRIPTION

The Model 98001 is a universal alloy steel shear beam load cell ideal for testing machine applications employing both tension and compression loading. This shear beam design load cell provides excellent immunity to impact and side forces. This load cell includes integrated overload protection for compression loading applications.

OUTLINE DIMENSIONS in millimeters

CAPACITY	Ø A	B	C	D	Ø E	Ø F	G	H THREAD	T
500 kg, 1.0, 2.0, 3.0, 5.0 t	105.0	66.40	35.00	31.4	34.0	34.0	7.80	M16 × 1.5	M8, 12 PLCS ON PCD 90.0
10, 15, 20, 25, 30 t	154.0	89.00	44.50	44.5	57.0	63.0	0.76	M30 × 2.0	M10, 12 PLCS ON PCD 130.0
40, 50, 60 t	203.0	115.06	51.56	63.5	76.0	95.5	0.76	1 3/4"-12 UNF-2B	M12, 16 PLCS ON PCD 165.0
100 t	279.0	166.10	77.20	88.9	114.0	122.0	0.80	M72 × 2.0	M16, 16 PLCS ON PCD 221.4

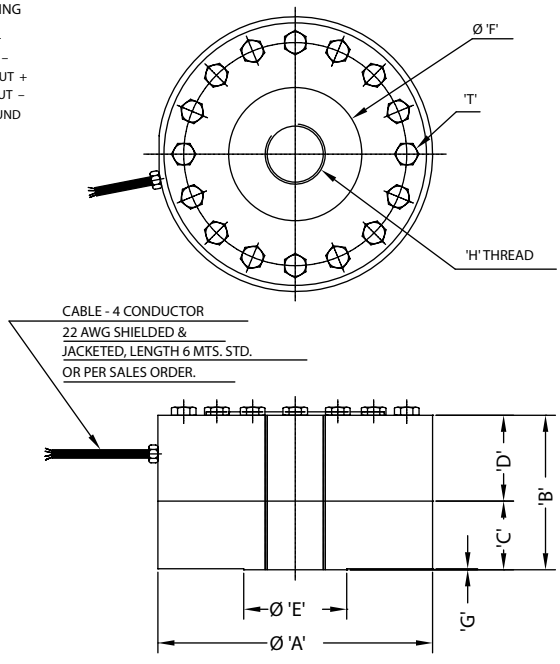
500 kg–30.0 t



WIRING

RED EXC. +
BLACK EXC. –
GREEN OUTPUT +
WHITE OUTPUT –
SHIELD GROUND

40.0–100.0 t



Low Profile Universal Load Cell

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Rated output—R.O.	2.0	mV/V
Rated output tolerance	10	±% FSO
Zero balance	1	±% FSO
Combined error	<0.10	±% FSO
Non-linearity	<0.050	±% FSO
Hysteresis	<0.050	±% FSO
Non-repeatability	<0.020	±% FSO
Creep error (30 minutes)	<0.002	±% FSO
Temperature effect on zero	<0.001	± %/°C
Temperature effect on output	0.001	± %/°C
Operating temperature range	–20 to +70	°C
Maximum safe central overload	150	% FSO
Ultimate central overload	300	% FSO
Excitation, recommended	10	VDC
Excitation, maximum	15	VDC
Input impedance	699–750	Ω
Output impedance	699–750	Ω
Insulation resistance at 50 VDC	>1000	MΩ
Material	Alloy steel with electroless nickel-plated	
Environmental protection	IP67	

Specifications also apply for optional Model 98005 (for compression only)
All specifications subject to change without notice.

Load Cells—Canister



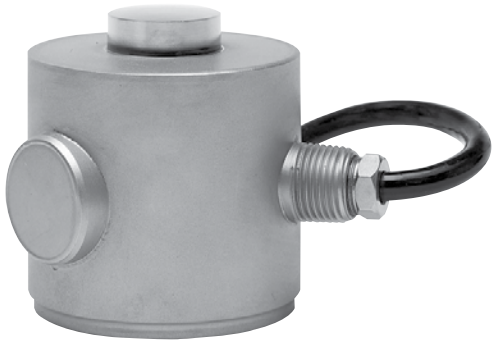
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Stainless Steel, Multi-Column Compression Load Cell

FEATURES

- Capacity ranges of 25,000 to 200,000 pounds, 10 to 100 metric tonnes
- Stainless steel, welded seal construction
- Single piece multi-column design
- 3 times more side load capacity than other designs
- Integral conduit adaptor
- 35 feet (10.7m) standard cable length
- Trade certified for NTEP Class III:5000d, IIIL:10000d and OIML R-60 3000d
- Welded *Sensorgage*™ sealed to IP67 standards



APPLICATIONS

- Truck scales
- Railroad track scales
- Tank, bin and hopper weighing

DESCRIPTION

The Model 65088 is a high capacity, low profile, stainless steel compression load cell.

The unique four column design offers excellent insensitivity to eccentric loads. This design is one of the most successful compression cells ever produced and is suitable for use in truck scales, rail scales and high capacity silo weighing applications.

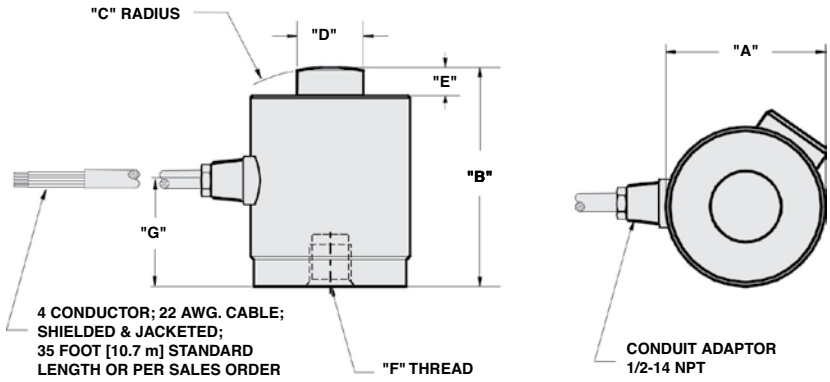
This product's stainless steel construction, welded seals and IP67 rating ensures ultimate survivability under harsh conditions.

This load cell is certified for Legal For Trade applications by both American NTEP and International OIML standards.

OUTLINE DIMENSIONS in inches (millimeters)

Wiring

+ Excitation	Green
– Excitation	Black
+ Output	White
– Output	Red



CAPACITY	A	B	C	D	E	F	G
25k, 50k	3.00	3.25	6.00	1.25	0.40	1/2-20 UNF - 2B x .31 Deep	1.68
100k	4.00	5.00	6.00	2.31	0.51	3/4-16 UNF - 2B x .56 Deep	2.49
200k	6.00	7.25	17.00	3.13	1.04	3/4-16 UNF - 2B x .75 Deep	3.28
(10 t, 25 t)	(76.2)	(82.6)	(152.4)	(31.7)	(10.2)	(M12 x 1.75 - 6H x 8 Deep)	(42.7)
(40 t, 50 t)	(101.6)	(127.0)	(152.4)	(58.7)	(13.0)	(M20 x 2.5 - 6H x 14 Deep)	(63.2)
(100 t)	(152.4)	(184.2)	(431.8)	(79.5)	(26.4)	(M20 x 2.5 - 6H x 19 Deep)	(83.3)

Capacities are in pounds (kg/t).

Stainless Steel, Multi-Column Compression Load Cell

SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Rated capacity—R.C. (E_{max})	25k, 50k, 100k, 200k 10 t, 25 t, 40 t, 50 t, 100 t				lbs t
NTEP/OIML accuracy class	NTEP III	NTEP IIIL	Standard	OIML R60	
Maximum no. of intervals (n)	5000 multiple	10000 multiple		3000	
Y = E_{max}/V_{min}	NTEP Cert. No. 95-134			8333	Maximum available
Rated output—R.O.	2				mV/V
Rated output tolerance	0.25				±% mV/V
Zero balance	≤1.0				±% FSO
Combined error	0.02	0.02	0.03	0.02	±% FSO
Non-repeatability	0.01				±% FSO
Creep error (20 minutes)	0.025	0.03	0.03	0.017	±% FSO
Temperature effect on zero	0.0010	0.0010	0.0015	0.0010	±% FSO
Temperature effect on output	0.0008	0.0008	0.0008	0.0007	±% FSO/°F
Compensated temperature range	14 to 104 (–10 to 40)				°F (°C)
Operating temperature range	0 to 150 (–18 to 65)				°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)				°F (°C)
Safe sideload	30				% of R.C.
Maximum safe central overload	150				% of R.C.
Ultimate central overload	400				% of R.C.
Excitation, recommended	5–20				VDC or VAC RMS
Excitation, maximum	25				VDC or VAC RMS
Input impedance	445.5–454.5				Ω
Output impedance	475.2–484.8				Ω
Insulation resistance at 50 VDC	>1000				MΩ
Material	Stainless steel				
Environmental protection	IP67				

FSO—Full Scale Output
R.C.—Rated Capacity
All specifications subject to change without notice.

Stainless Steel, Single-Column Compression Load Cell

FEATURES



- Rated capacities of 50,000 to 100,000 pounds; 25 to 50 metric tonnes
- Stainless steel, welded seal construction
- 30 feet standard cable length
- Trade certified for NTEP Class IIIL: 10000 divisions and OIML R60 3000 divisions
- Welded *Sensorgage*™ sealed to IP67 standards
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G. Also, non-incendive ratings (No barriers!)
- **Optional**
  - Hermetically sealed version available, meets IP66/68 standards

APPLICATIONS

- Truck scales
- Tank, bin, and hopper weighing

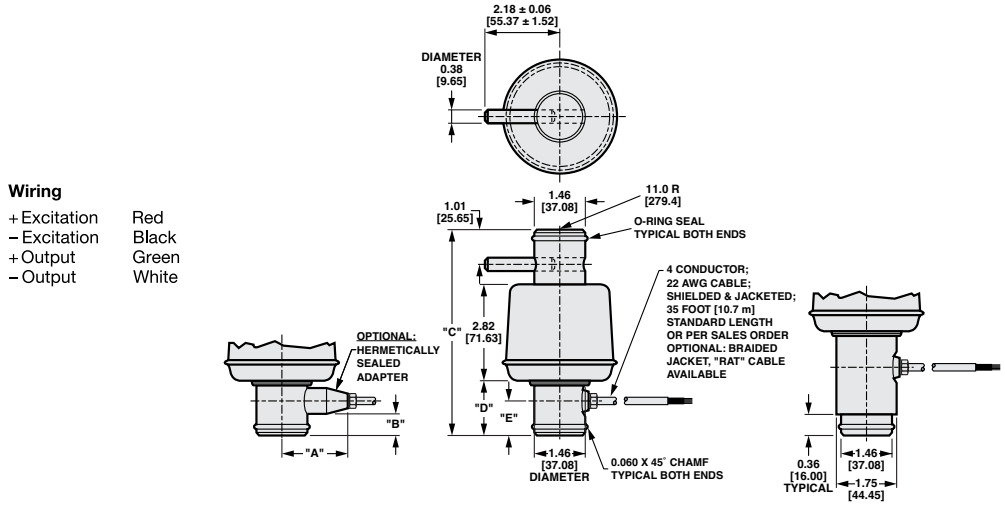
DESCRIPTION

The Model 65114 is a high capacity, stainless steel single-column compression load cell.

This product is specifically designed for use in rugged outdoor environments. Made from stainless steel, IP67 welded sealing comes standard, with optional, fully hermetic, IP68 sealing available upon request. This load cell is used primarily in truck and train scales, but can just as easily be used to weigh tanks and silos.

This load cell is rated intrinsically safe by the Factory Mutual System (FM); making it suitable for use in potentially explosive environments. This load cell is certified for Legal-for-Trade applications by both American NTEP and International OIML standards.

OUTLINE DIMENSIONS in inches (millimeters)



CAPACITY	A	B	C	D	E
50k	1.91	0.62	6.00	1.59	1.00
100k	2.08	2.01	8.86	3.04	2.01
25 t	(48.51)	(15.75)	(152.40)	(40.39)	(25.40)
35 t–50 t	(52.83)	(51.05)	(225.04)	(77.22)	(51.05)
Capacities are in pounds (kg/t).					

Stainless Steel, Single-Column Compression Load Cell

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated capacity—R.C. (E_{max})	50k, 100k 25, 35, 50			lbs t
NTEP/OIML accuracy class	NTEP IIIL	Standard	OIML R60	
Maximum no. of intervals (n)	10000 multiple		3000	
Y = E_{max}/V_{min}	NTEP cert. 97-081		8333	Maximum available
Rated output—R.O.	2.0			mV/V
Rated output tolerance	0.25			±% mV/V
Zero balance	1.0			±% FSO
Combined error	0.02	0.03	0.02	±% FSO
Non-repeatability	0.010	0.015	0.010	±% FSO
Creep error (30 minutes)	0.03	0.05	0.017	±% FSO
Temperature effect on zero	0.0010	0.0015	0.0010	±% FSO/°F
Temperature effect on output	0.0008	0.0008	0.0007	±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)			°F (°C)
Operating temperature range	0 to 150 (–18 to 65)			°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)			°F (°C)
Maximum safe central overload	150			% of R.C.
Ultimate central overload	300			% of R.C.
Excitation, recommended	5–20			VDC or VAC RMS
Excitation, maximum	25			VDC or VAC RMS
Input impedance	1000 nominal			Ω
Output impedance	990–1010			Ω
Insulation resistance at 50 VDC	>1000			MΩ
Material	Stainless steel			
Environmental protection	IP67*			

* Hermetically sealed to IP68 upon request

FSO—Full Scale Output

All specifications subject to change without notice.

Compression Load Cell

FEATURES

- Capacities: 30, 40, 50, and 60 t
- Self-aligning, stainless steel single column
- Hermetically sealed, IP66/IP68/IP69K
- Certified for OIML R60 C6 and NTEP class IIIL 10000 divisions
- Built-in surge protection tubes (GDTs)
- Current calibration output (SC) ensures easy and accurate parallel connection of multiple load cells
- **Optional**
  - Digital version available (model DSC)



APPLICATIONS

- Weighbridges
- Silo hopper weighing

DESCRIPTION

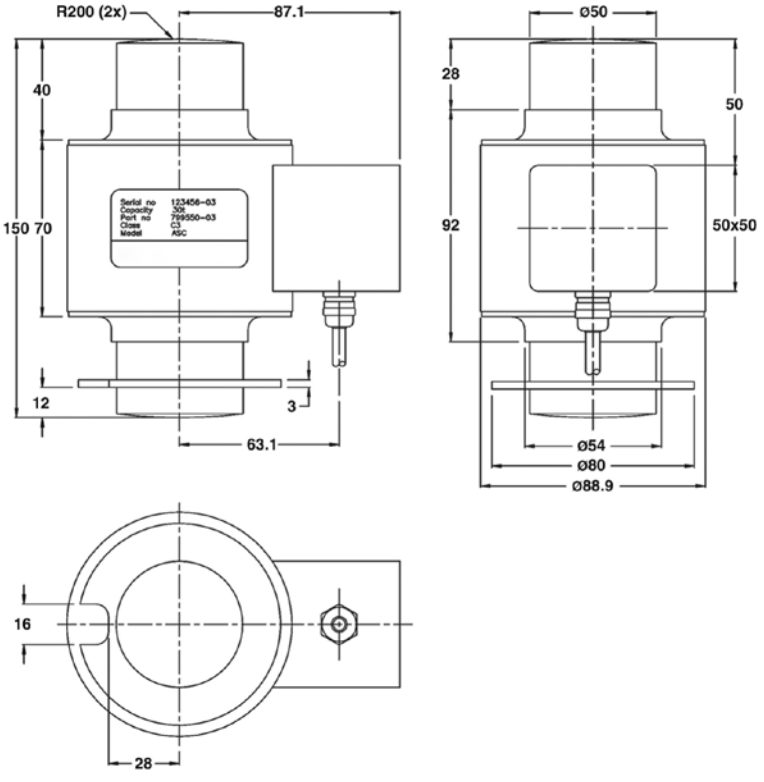
The Model ASC is a single column, stainless steel compression load cell.

This product is suitable for use in road and rail weigh bridges and process weighing applications.

The welded construction and built-in surge protection ensure that this product can be used successfully in harsh environments.

This load cell meets the stringent Weights and Measures requirements throughout Europe and the USA.

OUTLINE DIMENSIONS in millimeters



Cable specifications

Cable length:	15 m
Excitation +	Green
Excitation –	Black
Output +	White
Output –	Red
Shield	Transparent/Yellow

Shield is not connected to the load cell body.

Compression Load Cell

SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Standard capacities (E_{max})	30, 40, 50, 60				t
Accuracy class according to OIML R-60	NTEP IIIL	Non-Approved	C3	C6	
Max. no. of verfication intervals	10000		3000	6000	
Min. verification interval ($V_{min}=E_{max}/Y$)			E_{max}/6,000	E_{max}/12,000	
Min. verification interval, type MR			E_{max}/15,000	E_{max}/30,000	
Rated output (=S)	2				mV/V
Rated output tolerance	0.02				±mV/V
Zero balance	1.0				±% FSO
Combined error	0.0200	0.05000	0.0230	0.0120	±% FSO
Non-repeatability	0.0100	0.07	0.035	0.018	±% FSO
Minimum dead load output return	0.015	0.0500	0.0167	0.008	±% FSO
Creep error (30 minutes)	0.05	0.075	0.0245	0.0120	±% FSO
Creep error (20–30 minutes)	0.030	0.0200	0.0053	0.0026	±% FSO
Temperature effect on min. dead load output	0.009	0.0250	0.0117	0.0058	±% FSO/5°C (/°F)
Temp. effect on min. dead load output, type MR	0.0072		0.0047	0.0023	±% FSO/5°C
Temperature effect on sensitivity	(0.0008)	0.0250	0.006	0.0045	±% FSO/5°C (/°F)
Minimum dead load	0				% E_{max}
Maximum safe overload	150				% E_{max}
Ultimate overload	300				% E_{max}
Deflection at E_{max}	0.5 max.				mm
Excitation voltage	5 to 20				V
Maximum excitation voltage	25				V
Input resistance	700±35				Ω
Output resistance	700±7				Ω
Insulation resistance	≥5000				MΩ
Compensated temperature range	–10 to +40				°C
Operating temperature range	–40 to +80				°C
Storage temperature range	–40 to +90				°C
Element material	Stainless steel 1.4542				
Sealing (DIN 40.050 / EN60.529)	IP66/IP67/IP69K				
SC-Version (current calibration*)	Standard				

FSO—Full Scale Output

*SC-version: The rated output and the output resistance are balanced in such a way, that the output current is calibrated to within 0.05% of a reference value. This allows easy parallel connection of the load cells.

All specifications subject to change without notice.

Compression Load Cell

FEATURES

- Capacities: 30, 40 and 50 t
- Self-aligning, stainless steel single column
- Hermetically sealed, IP66/68/69K
- Certified to OIML R60 5500d and NTEP IIIL/10,000 d
- Built-in surge protection
- Current calibration output ensures the easy and accurate parallel calibration of multiple load cells
- Compatible with original Model ASC
- **Optional**
  - Digital version available (Model DSC2)
  - ATEX and IECEx approvals available



APPLICATIONS

- Weighbridges
- Process weighing

DESCRIPTION

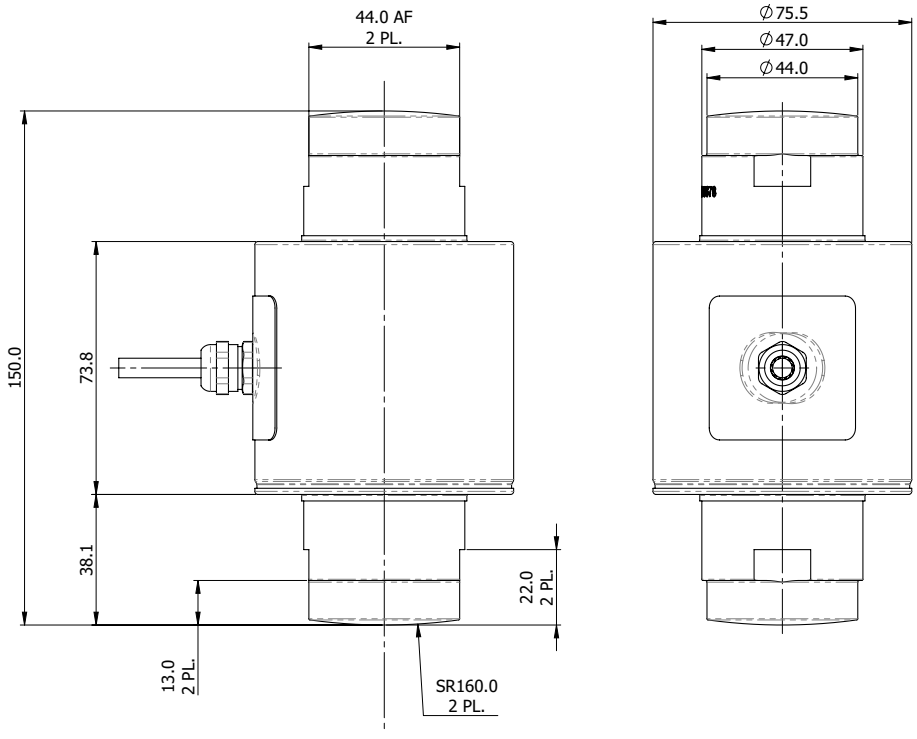
The Model ASC2 is a single column, stainless steel compression load cell fully compatible with original Model ASC.

This product is suitable for use in road and rail weighbridges and process weighing applications.

The fully welded construction and built-in surge protection ensures that this product can be used successfully in many demanding environments.

This load cell meets the stringent Weights and Measures requirements throughout Europe and the Americas.

OUTLINE DIMENSIONS in millimeters



Cable specifications

Cable length:	15m
Excitation +	Green
Excitation –	Black
Output +	White
Output –	Red

Shield is a bare twisted braid.

Compression Load Cell

SPECIFICATIONS							
PARAMETER	**VALUE**						**UNIT**
VPG Accuracy class	I3 (NTEP)	F3	G5	G3	H4	J6	
Minimum utilization		33	50	32	43	64	% of R.C.
NTEP Accuracy class/ n_{max}	IIIL/10000 Multiple						
OIML Accuracy class		C2	C3	C3MR10	C4MR10	C5.5MR10	
Maximum no. of intervals (n)	10000	2000	3000	3000	4000	5500	
Rated capacity—R.C. (E_{max})	30, 40, 50						t
Rated output—R.O.	2.0						mV/V
Rated output tolerance	0.02						±mV/V
Zero balance	0.02						±mV/V
Nominal U/R ratio	1.9740						µA/Ω
U/R ratio error	0.08						±%
Creep (30 min.)	0.050	0.025	0.025	0.025	0.018	0.013	±% of load
Zero return (30 min.)	0.015	0.025	0.017	0.017	0.0125	0.009	±% of load
Total error	0.030	0.030	0.020	0.020	0.015	0.010	±% of R.O.
Temperature effect on output	0.0012	0.0012	0.0012	0.0012	0.00075	0.006	±% of load/°C
Temperature effect on zero	0.0014	0.0023	0.0023	0.0014	0.0014	0.0014	±% of R.O./°C
Y = E_{max}/V_{min}	9400	6000	6000	9400	9400	9400	
Temp. range, compensated	–10 to +40						°C
Temp. range, safe	–30 to +70						°C
Temp. range, storage	–40 to +90						°C
Maximum safe static overload	150						% of R.C.
Ultimate static overload	300						% of R.C.
Excitation, recommended	10						VDC or VAC RMS
Excitation, range	5–15						VDC or VAC RMS
Input impedance	1160 ±60						Ω
Output impedance	1011.5 ±11.5						Ω
Insulation resistance	>2000						MΩ
Cable length	15 (49)						m (ft)
Cable type	4 conductors, 24 AWG, polyurethane jacket						
Color code	+exc. Green, –exc. Black, +sig. White, –sig. Red Shield (floating): Bare, twisted braid						
Construction	Stainless steel, welded seal						
Compensation circuit type	Balanced						
Balance symmetry	5.0						Ω
Environmental protection	IP66/IP68 (100 hr at 1 m) / IP69K						
Outline dimensions DWG	264.000.00						

All specifications subject to change without notice.

Compression Load Cell

FEATURES

- Capacities: 50k lbs and 100k lbs
- Environmental protection: IP68 (DIN 40.050)
- Material: Stainless steel
- Hermetically sealed
- **Optional**
  - FM approved for use in potentially explosive atmospheres



APPLICATIONS

- Silo, tanks and hoppers
- Suspended silos, tanks and hoppers
- Railroad scales
- Weighbridges

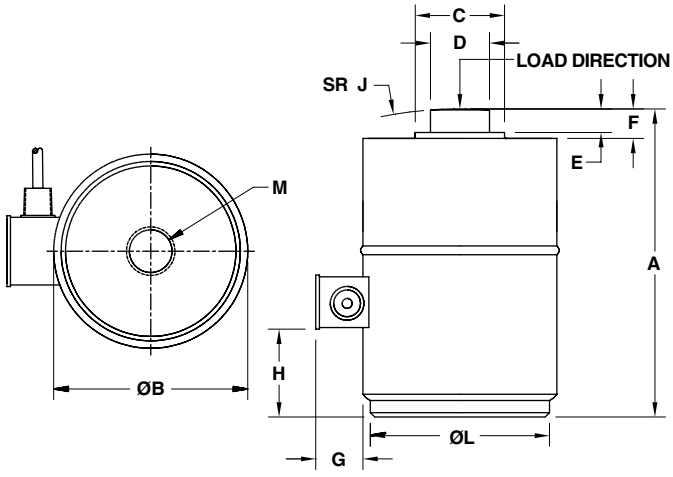
DESCRIPTION

The 92 canister is designed for compression applications. Its stainless steel construction combined with hermetically sealing allows the 92 to be used in demanding environments.

A large range of capacities is available.

Hermetic sealing offers excellent protection from moisture and provides long-term stability and reliability.

OUTLINE DIMENSIONS in inches



Cable specifications

Cable length:	12.2m (40 ft)
Excitation +	Red
Excitation –	Black
Output +	Green
Output –	White
Shield	Transparent

Cable screen is not connected to the load cell body.

Capacity	50k	100k
A	6.00	8.50
B	4.25	5.03
C	1.63	2.45
D	1.50	1.75
E	0.10	0.10
F	0.50	0.63
G	1.18	1.25
H	1.49	2.90
M UNF deep	3/4-16 0.56	3/4-16 0.56
J	6.00	12.00

Compression Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
	Imperial		
Capacities	50k, 100k		lbs
Accuracy class	Non-Approved		
Rated output (=S)	Model 92: 2±0.002	Model 93: 3±0.003	mV/V
Zero balance	1.0		±% FSO
Combined error	0.0500		±% FSO
Creep error (20 minutes)	0.0300		±% applied load
Temperature effect on zero	0.0090 (0.0010)		±% FSO/5°C (/°F)
Temperature effect on output	0.0135 (0.0015)		±% applied load/5°C (/°F)
Compensated temperature range	–10 to +40 (+14 to +104)		°C (°F)
Operating temperature range	–53 to +93 (–65 to +200)		°C (°F)
Safe load limit	150		% E_{max}
Ultimate load	200		% E_{max}
Safe side load limit	10		% E_{max}
Excitation voltage recommended	10		V
Excitation voltage maximum	15		V
Input resistance	350±3.5		Ω
Output resistance	350±3.5		Ω
Insulation resistance at 50VDC	≥5000		MΩ
Environmental protection	IP68		
Element material	Stainless steel		

FSO—Full Scale Output

Mounting:

Correct mounting of the load cells is essential to ensure optimum accuracy and performance. Further information is available upon request.

All specifications subject to change without notice.

High Capacity Compression Load Cell

FEATURES

- Capacities 3–50 t
- Stainless steel housing
- Surge arrestors fitted
- Simple to install
- 0.02% total error
- 6 wire sense circuit
- Output tolerance 0.1%



APPLICATIONS

- Truck weighbridges
- Silo and hopper weighing
- Train “rail” scales
- Process weighing

DESCRIPTION

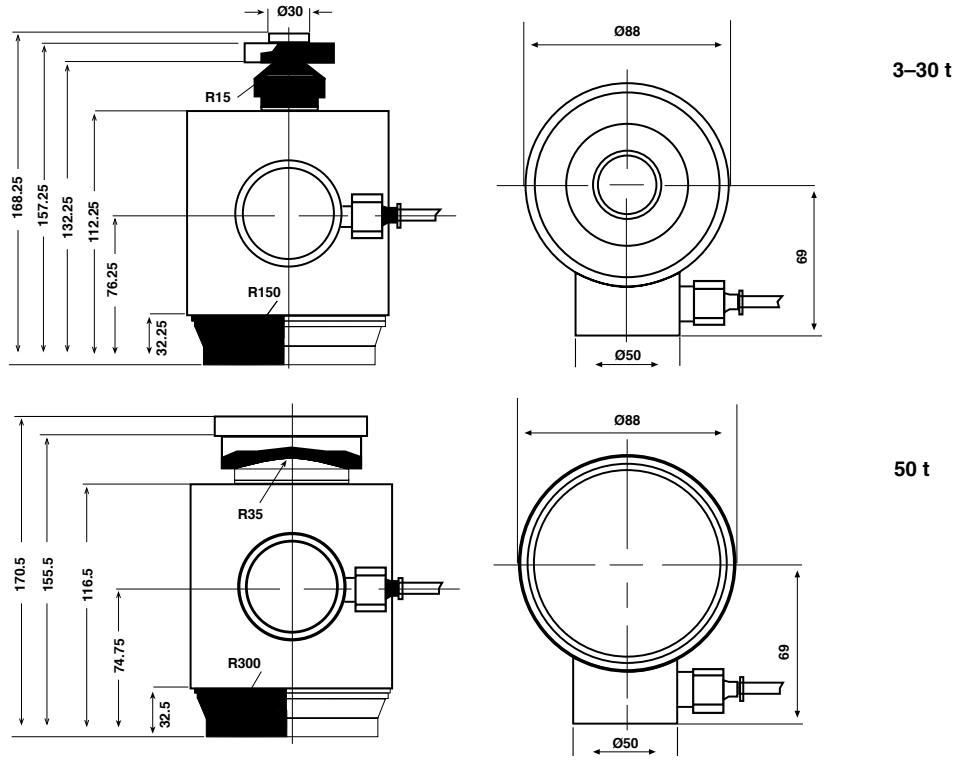
The Model 120 is a high capacity truck scale and silo load cell which is supplied complete with its own unique rocker mounting components.

Suitable for all heavy duty weighing applications, the Model 120 gives the user high accuracy and low installation cost.

The Model 120 has a stainless steel housing to protect against corrosion. The alloy steel compression element is nickel-plated, and the rocker mounting accessories are zinc-plated alloy steel.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of change in lead resistance, due to temperature change and/or cable extension, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters



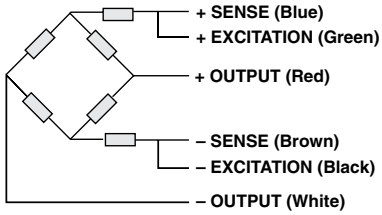
High Capacity Compression Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Rated capacity—R.C. (E_{max})	3, 5, 10, 20, 30, 50		t
NTEP/OIML accuracy class	Non-Approved*		
Maximum no. of intervals (n)	1000	3000	
Y = E_{max}/V_{min}	2000	6000	
Rated output—R.O.	1.5		mV/V
Rated output tolerance	0.0015		±mV/V
Zero balance	0.15		±mV/V
Zero return, 30 min.	0.0500	0.0200	±% of applied load
Total error (per OIML R60)	0.0500	0.0200	±% of rated output
Temperature effect on zero	0.0100	0.0040	±% of rated output/°C
Temperature range, compensated	–10 to +40		°C
Temperature range, safe	–30 to +70		°C
Maximum safe central overload	150		% of R.C.
Ultimate central overload	200		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	24		VDC or VAC RMS
Input impedance	670±15		Ω
Output impedance	605±5		Ω
Insulation resistance	>2000		MΩ
Cable length	15		m
Cable type	6-wire, braided, polyurethane, dual floating screen		Standard
Construction	Stainless steel housing, plated alloy steel element		
Environmental protection	IP68		

* Typical 80% utilization

All specifications subject to change without notice.

WIRING SCHEMATIC DIAGRAM



Heavy Duty Compression Load Cell

FEATURES

- Capacities 50–150 t
- Ideal for multi-cell applications
- Compact, economical column design
- Hermetically sealed to IP68
- 6-Wire (sense) circuit
- Stainless steel housing as standard



APPLICATIONS

- Hopper and tank weighing
- Truck weighbridges

DESCRIPTION

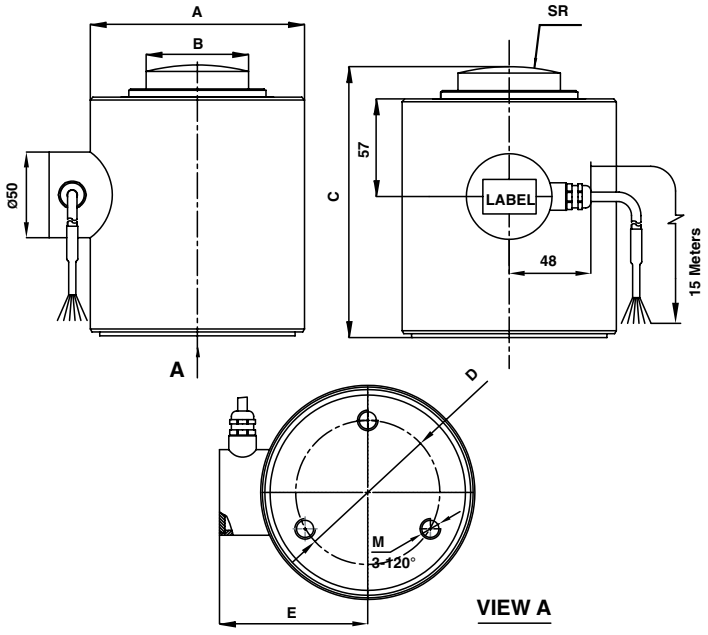
Model 122 is a heavy duty general purpose compression load cell particularly well suited for hopper and tank weighing and many other large scale industrial applications, including weighbridges for truck weighing.

The simple, compact column design and rugged hermetically sealed construction of the Model 122 load cell assures its long-term life in all types of field installations.

The Model 122 load cell is often used in multi-cell installations, therefore its standard output tolerance is within 0.1%.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance due to temperature change and/or cable extension, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters



CAPACITY	A	B	C	D	E	M	SR
50 t	Ø88	Ø45	122	Ø50	69	M10	SR35
100 t, 150 t	Ø125	Ø59.8	158	Ø84	86.5	M12	SR120

Heavy Duty Compression Load Cell

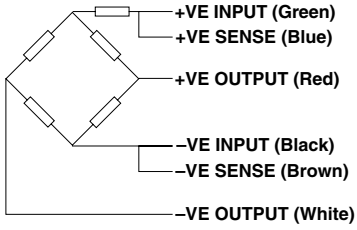
SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated capacity—R.C. (E_{max})	50	100	150	t
NTEP/OIML accuracy class	Non-Approved[1]			
Maximum no. of intervals (n)	2000			
Y = E_{max}/V_{min}	2000			
Rated output—R.O.	1.5		2	mV/V
Rated output tolerance	0.0015			±mV/V
Zero balance	0.015		0.02	±mV/V
Zero return, 30 min.	0.030			±% of applied load
Total error (per OIML R60)	0.030			±% of rated output
Temperature effect on zero	0.03			±% of rated output/°C
Temperature effect on output, unbalanced	0.0080[2]			±% of load/°C
Temperature range, compensated	5 to +45			°C
Temperature range, safe	–20 to +60			°C
Maximum safe central overload	150			% of R.C.
Ultimate central overload	200			% of R.C.
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	15			VDC or VAC RMS
Input impedance	670±15	1270±20	1350±30	Ω
Output impedance	600±5	1205±5	1205±5	Ω
Insulation resistance	>2000			MΩ
Cable length	15			m
Cable type	6 wire, braided, PVC, single floating screen			Standard
Construction	Stainless steel housing, plated alloy steel sensor			
Environmental protection	IP68			

(1) Typical 80% utilization

(2) Balanced span compensation is available upon request

All specifications subject to change without notice.

WIRING SCHEMATIC DIAGRAM
(Unbalanced bridge configuration)



Compression Load Cell

FEATURES

- Capacities: 10–100 t
- Low profile, multi-column stainless steel construction
- Hermetically sealed, IP66, IP68, and IP69K
- Certified to OIML R-60, 4000d and NTEP class IIIL 10000 divisions
  - Model CSP offers klb capacity, imperial thread and NTEP approval
  - Model CSP-M offers metric capacity, thread and OIML approval
- Built-in surge protection tubes (GDTs)
- Current calibration output (SC version) ensures easy and accurate parallel connection of multiple load cells
- **Optional**
  - ATEX and FM certified versions are available for use in potentially explosive atmospheres
  - Multi-interval and multiple range versions available
  - Imperial capacities (25k, 50k, 100k, 200k lbs) not OIML approved



APPLICATIONS

- Truck and rail weighbridges
- Silo and hopper weighing
- Process weighing

DESCRIPTION

The Model CSP is a multi-column, low profile, stainless steel compression load cell. The unique four column design offers excellent insensitivity to eccentric loads while maintaining accuracy.

This product is suitable for use in road and rail weighbridges and process weighing applications.

The fully leak-tested welded construction, advanced cable entry, and built-in surge protection tubes ensure that this product can be used successfully in demanding environments.

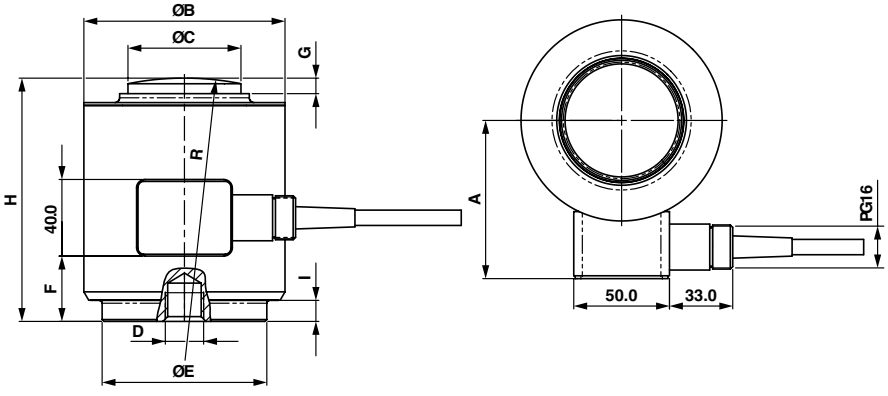
This product meets the stringent Weights and Measures requirements throughout Europe.

OUTLINE DIMENSIONS in millimeters

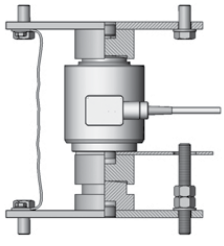
Cable specifications

Standard Cable length	20 m
Excitation +	Green
Excitation –	Black
Output +	White
Output –	Red
Shield	Transparent

Cable screen is not connected to load cell body. Performance may be affected if load cell cables are shortened.



Optional mounting kit—consult Sales Office



Capacity	A	B	C	D	E	F	G	H	I	R
CSP-M										
10–25 t	63	72	32	M12 x 8 Deep	57	13	7	83	2	150
40–60 t	83	105	59	M20 x 20 Deep	82.5	35	8	127	11	150
100 t	107	150	80	M20 x 20 Deep	124	70	22	185	20	430
CSP										
10–50 klb	63	72	32	1/2″ x 11 Deep	57	13	7	83	2	150
100 klb	83	105	59	3/4″ x 20 Deep	82.5	35	8	127	11	150
200–30 klb	107	150	80	3/4″ x 20 Deep	124	70	22	185	20	430
500 klb	122	167	94	3/4″ x 20 Deep	136	91	15	228	25	432

Compression Load Cell

SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Standard capacities (E_{max})	10, 25, 40, 60, 100[1] 10[2], 25, 40, 50, 60, 75, 100, 150, 200, 300[2], 500[2]				t klb
Accuracy class according to OIML R-60/NTEP	NTEP IIIL	NTEP IIIL	C3	C4	
Maximum no. of verification intervals	10000	3000	3000	4000	
Minimum verification interval ($V_{min}=E_{max}/Y$)[3]	E_{max}/5200	E_{max}/29000	E_{max}/12,500	E_{max}/12,500	
Minimum verification interval, type MR			E_{max}/17,500	E_{max}/17,500	
Rated output (=S)	2				±mV/V
Rated output tolerance	0.02				±mV/V
Zero balance	1.0				mV/V
Total error	0.02	0.05	0.023	0.017	±% FSO
Nonrepeatability	0.01	0.01	0.01	0.009	±% FSO
Zero return	0.015	0.0167	0.0167	0.0125	±% applied load
Creep error (30 minutes)	0.05	0.035	0.0245	0.0184	±% applied load
Temp. effect on min. dead load output	0.00144	0.0027	0.0011	0.0011	±% FSO/°C
Temp. effect on min. dead load output, type MR			0.0008	0.008	±% FSO/°C
Temperature effect on sensitivity	0.00144	0.00144	0.001	0.0007	±% applied load/5
Maximum safe static overload	150				% E_{max}
Ultimate static overload	400				% E_{max}
Maximum safe side load	10				% E_{max}
Excitation voltage	5 to 20				V
Excitation recommended	10				V
Input resistance	450 ±4.5				Ω
Output resistance	480 ±4.8				Ω
Insulation resistance	>5000				MΩ
Compensated temperature range	–10 to +40				°C
Operating temperature range	–40 to +80				°C
Storage temperature range	–50 to +90				°C
Element material	Stainless steel 1.4542				
Sealing (DIN 40.050 / EN60.529)	IP66 and IP68				

[1] 100 t only has C1 grade of OIML

[2] 10, 300, 500 klb are not NTEP approved

[3] Approval limit: Class III $V_{min}=E_{max}/10000$ (0.0014%Of FSO/°C); Class IIIL $V_{min}=E^{max}/30000$ (0.0014%Of FSO/°C)

FSO—Full Scale Output

SC-version: The rated output and the output resistance are balanced in such a way, that the output current is calibrated to within 0.05% of a reference value. This allows easy parallel connection of the load cells.

All specifications subject to change without notice.

Rocker Column Load Cell

FEATURES

- Capacities: 30T and 40T
- Self-restoring rocker column
- High performance compact design
- Environmentally sealed, IP66/IP68 (5 bar)
- Certificate: OIML R60 (NTEP Class IIIL: 10,000d Pending)
- Current calibration output ensures easy and accurate parallel connection of multiple load cells
- Anti-rotation pin



APPLICATIONS

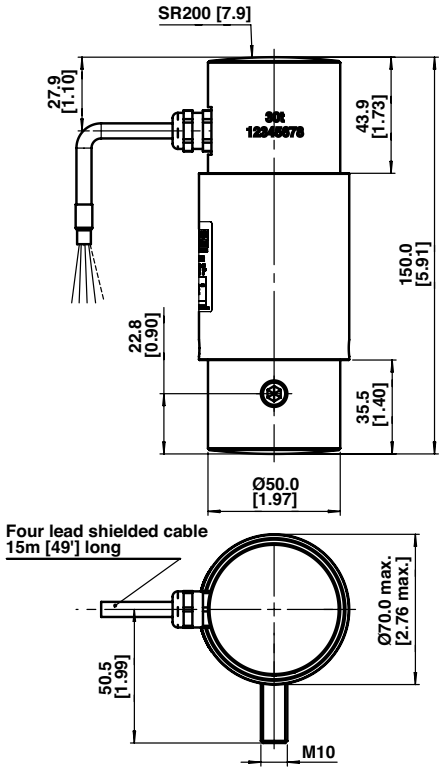
- Weighbridges
- Silo and hopper weighing
- Process weighing

DESCRIPTION

The Model 116 is a high-capacity single-column load cell, designed around a nickel-plated, alloy steel element. It is environmentally sealed and the use of redundant O-rings and high-grade potting material provide excellent ingress protection.

The Model 116 is suitable for all heavy weighing applications and provides the user with excellent overall value.

OUTLINE DIMENSIONS in millimeters [inches]



Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com

Document No.: 11628
Revision: 25-Mar-2018

Rocker Column Load Cell

SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Rated capacity—R.C. (E_{max})	30, 40				T
Accuracy class designation	Non-Approved	NTEP IIIL	OIML C3	OIML C3MR	
Accuracy class	E	I3	G5	G3	
Minimum utilization	NA	33	50	30	% of R.C.
Maximum no. of intervals (n)	NA	10000 Mult	3000		
Rated output—R.O.	2.0				mV/V
Rated output tolerance	0.02				±mV/V
Zero balance	0.02				±mV/V
Creep, 30 min.	0.074	0.050	0.025		±% of load
Zero return, 30 min.	0.050	0.015	0.017		±% of load
Total error	0.060	0.03	0.020		±% of R.O.
Temperature effect on output	0.0023	0.0012	0.0012		±% of load/°C
Temperature effect on zero	0.0046	0.0014	0.0023	0.0014	±% of R.O./°C
Y = E_{max}/V_{min}	NA	30000	6000	10000	
Temperature range, compensated	-10 to +40				°C
Temperature range, safe	-30 to +70				°C
Temperature range, storage	-40 to +90				°C
Maximum safe static overload	150				% of R.C.
Ultimate static overload	300				% of R.C.
Excitation, recommended	10				VDC or VAC RMS
Excitation, range	5 to 20				VDC or VAC RMS
Input impedance	1160±60				Ω
Output impedance	1000±10				Ω
Insulation resistance	>2000				MΩ
Cable length	15				m
Cable type	4 conductors, AWG 24, PU jacket				
Color code	+Exc: Green, +Sig: White, -Exc: Black, -Sig: Red Shield: Bare, twisted braid				
Construction	Coated alloy steel, coated aluminum housing, environmental potting, quadruple o-ring seal				
Environmental protection	IP66/IP68—5 bar				

All specifications are subject to change without notice.

High Capacity Compression Load Cell

FEATURES

- Capacities: 10T–50T
- Stainless steel housing
- Surge arrestors fitted
- Simple to install
- 0.03% total error
- 6-wire sense circuit
- Output tolerance 0.1%
- **Optional**
  - EEx ia IIC T4—hazardous area approval
  - Anti-rotation groove



APPLICATIONS

- Truck weighbridges
- Silo and hopper weighing
- Train “rail” scales
- Process weighing

DESCRIPTION

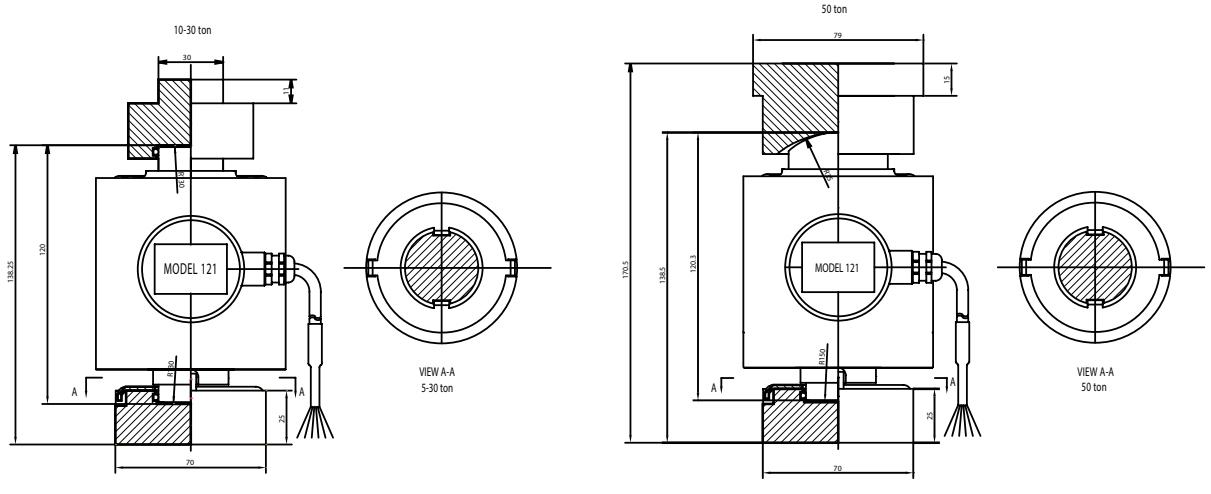
The Model 121 is a high capacity truck scale and silo load cell which is supplied with its own unique rocker mounting components.

Suitable for all heavy duty weighing applications, the Model 121 gives the user high accuracy and low installation cost.

The Model 121 has a stainless steel housing to protect against corrosion. The alloy steel compression element is nickel plated, and the rocker mounting accessories are zinc plated alloy steel.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of change in lead resistance, due to temperature change and/or cable extension, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters



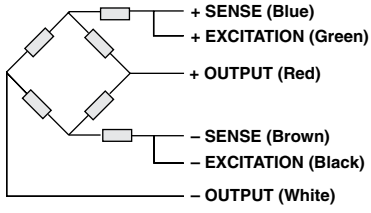
Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
Document No.: 12076
Revision: 25-Mar-2018

High Capacity Compression Load Cell

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Rated capacity—R.C. (E_{max})	10, 20, 30, 50		ton
NTEP/OIML Accuracy class	**Non-Approved**		
Maximum no. of intervals (n)	1000	3000	
Y = E_{max} /V_{min}	2000	6000	
Rated output—R.O.	1.5		±mV/V
Rated output tolerance	0.0015		±mV/V
Zero balance	0.015		±mV/V
Zero return, 30 min.	0.0500	0.0300	±% of applied load
Total error (per OIML R60)	0.0500	0.0300	±% of rated output
Temperature effect on zero	0.0300		±% of rated output/°C
Temperature range, compensated	–10 to +40		°C
Temperature range, safe	–30 to +70		°C
Maximum safe central overload	150		% of R.C.
Ultimate central overload	200		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	24		VDC or VAC RMS
Input impedance	670±15		Ω
Output impedance	605±5		Ω
Insulation resistance	>2000		MΩ
Cable length	15		m
Cable type	6 conductors, 26 AWG, Floating Screen, PVC jacket		Standard
Construction	Stainless steel housing, plated alloy steel element		
Environmental protection	IP68		

All specifications subject to change without notice.

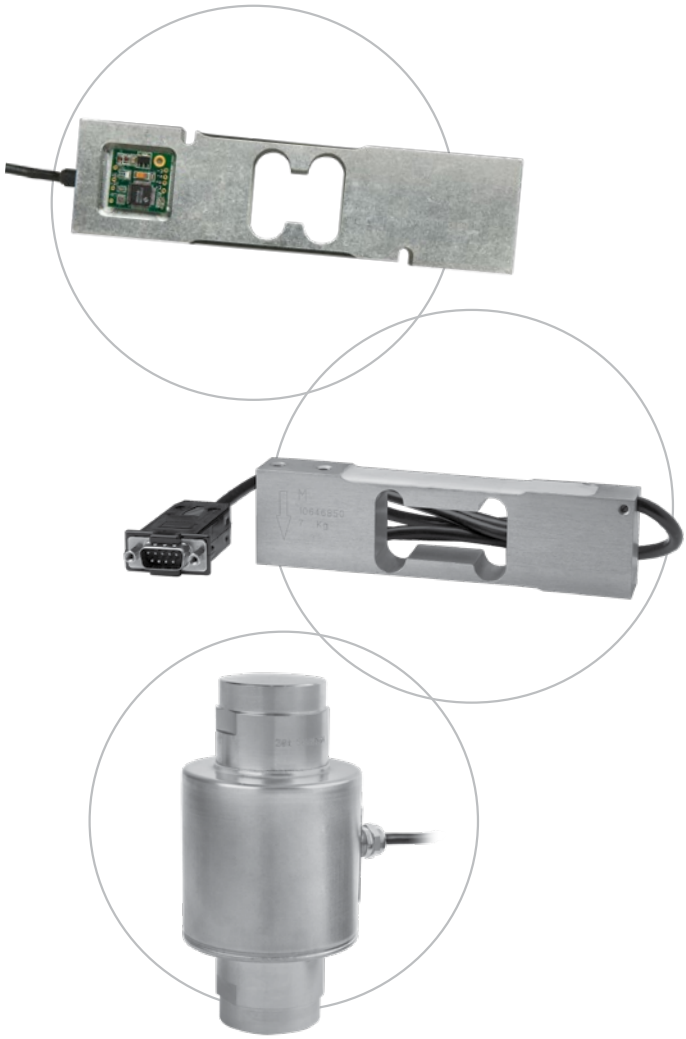
WIRING SCHEMATIC DIAGRAM



Load Cells—Digital

CONTENTS

Model DSC2 248
Model DLC08 250



Digital Compression Load Cell

FEATURES

- Capacities: 20, 25, 30, 35, 40 and 50 t
- Self-aligning, stainless steel single column
- Welded seal, IP66/IP68/IP69K
- Certified to OIML (25 t to 50 t)
- Built-in surge protection
- RS485/RS422 2-wire, half-duplex
- Built-in overload detection
- **Optional**
  - 4-wire, full-duplex



APPLICATIONS

- Weighbridges
- Silo hopper weighing

DESCRIPTION

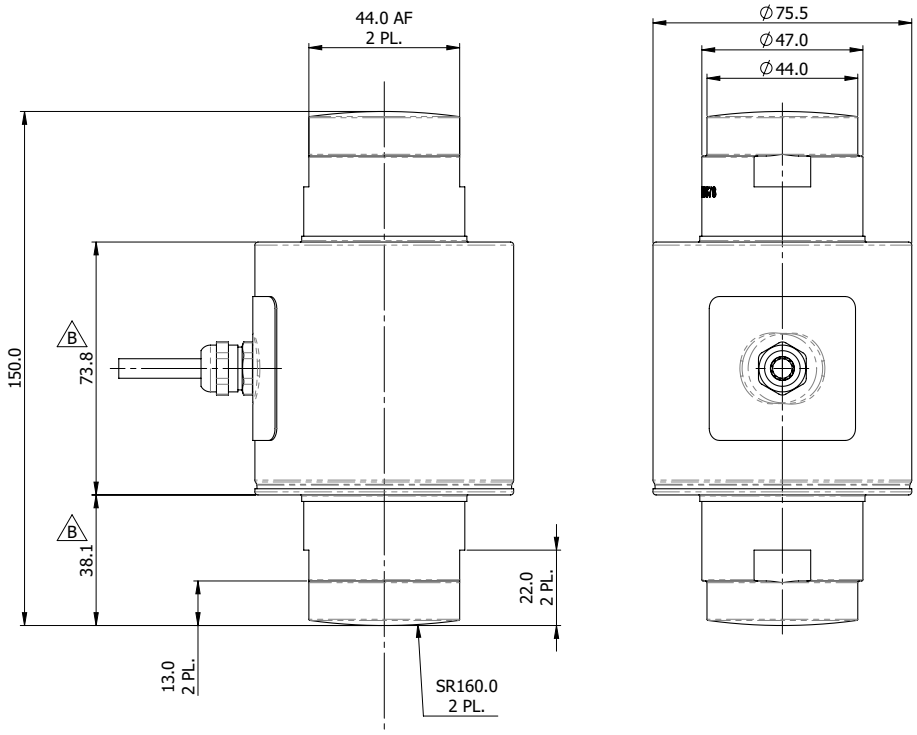
The DSC2 is a stainless steel compression load cell with a digital output.

This digital output enables the user to communicate with each DSC2 independent of the others in the system, thus offering advantages in system setup, system control, corner correction, fault finding and load cell replacement.

This product is suitable for use in road and rail weighbridges and process weighing applications.

The welded construction and built-in surge protection ensure that this product can be used successfully in demanding environments.

OUTLINE DIMENSIONS in millimeters



Cable Specifications

Cable length: 15m

Standard Half Duplex:

V In Pos	Green
V In Neg	Black
TX	Red
RX	Gray

Optional Full Duplex:

V In Pos	Green
V In Neg	Black
TX	Red
TX n	White
RX	Gray
RX n	Blue

Braided shield
Shield is a bare twisted braid

Digital Compression Load Cell

SPECIFICATIONS								
PARAMETER	**VALUE**							**UNIT**
VPG Accuracy class	I3 (NTEP)[1]	F3	G5	G3	G2	G1	H3[2]	
Minimum utilization	33	33	50	30	20	12	33	% of R.C.
NTEP Accuracy class/ n_{max}	IIIL/10000 Multiple							
OIML Accuracy class[3]		C2	C3	C3MR10	C3MR15	C3MR25	C4MR12	
Maximum no. of intervals (n)		2000	3000	3000	3000	3000	4000	
Rated capacity—R.C. (E_{max})	20, 30, 40, 50	20[3], 25, 30, 35, 40, 50						t
Rated output—R.O.	200,000							Counts
Rated output tolerance	Standard: 160; Optional: 30							±Counts
Zero balance	1600							±Counts
Creep (30 min.)	0.050	0.025	0.025	0.025	0.025	0.025	0.018	±% of load
Zero return (30 min.)	0.015	0.025	0.017	0.017	0.017	0.017	0.0125	±% of load
Total Error	0.030	0.030	0.020	0.020	0.020	0.020	0.015	±% of R.O.
Temperature effect on output	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.00075	±% of load/°C
Temperature effect on zero	0.0016	0.0026	0.0026	0.0016	0.0010	0.00064	0.0013	±% of R.O./°C
$Y = E_{max}/V_{min}$	30000	6000	6000	10000	15000	25000	12000	
Temp. range, compensated	–10 to +40							°C
Temp. range, safe	–40 to +70							°C
Temp. range, storage	–50 to +90							°C
Maximum safe static overload	150							% of R.C.
Ultimate static overload	300							% of R.C.
Supply, recommended	12							VDC
Supply, range	8–24							VDC
Current, max.	50							mA
Resolution	18							Bit (at 1 Hz)
Signal update per second	1/10/20/40/67/100/200							Samples/s
Baud rate	1200–115200							bits/s
Transmission type	Serial asynchronous data transmission							
Protocol type	Non-standard ASCII multi-drop							
Number of network address	32							
Data error detection	Odd/even parity, checksum							
Encryption	None/custom							
Data transmission interface	**Standard:** RS485/RS422 (2-wire, half-duplex) **Optional:** RS485/RS422 (4-wire, full-duplex)							
Cable length	**Standard:** 15 (49); **Max:** 100 (328)							m (ft)
Max. transmission cable length	1200							m
Cable type	Braided shield, 26 AWG, polyurethane jacket							
Construction	Stainless steel, welded seal							
Environmental protection	IP66/IP68 (1m@100h)/IP69K							
Outline dimensions DWG.	294.000.00-3							

[1] Class I3 (NTEP) is NTEP class IIIL approved.

[2] Class H3 is not OIML approved.

[3] Rated capacity 20 t is not OIML approved.

All specifications subject to change without notice.

High-Performance Digital Load Cell Interface

FEATURES

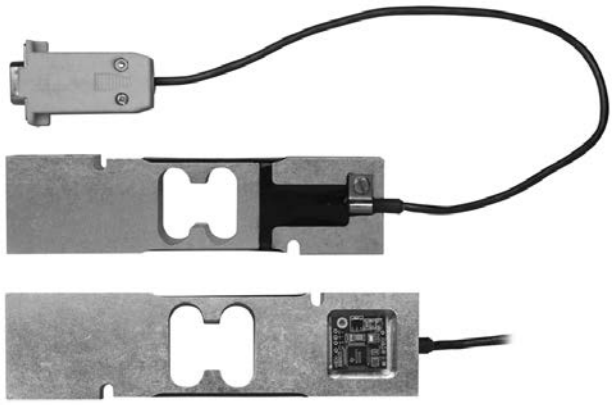
- Serial interface (RS-485)
- All settings made through the serial interface
- Simple calibration, test and setting via HyperTerminal programming, or via software
- Automatic unit conversion, zero tracking
- Gravity factor compensation
- Tare function
- Suitable for PC-base, µC, PLC application
- Weight result format: six digits, eight announciators
- Up to 64 nodes
- ESD protection up to 15 kV
- **Optional**
  - USB interface
  - Tilt sensor

APPLICATIONS

- OEM machinery
- Load cell digitizers
- Inventory and level control

DESCRIPTION

The Model DLC08 is a high-performance, digital load cell interface for precision measurement of strain gage transducers. With DLC08 technology, any analog load cell can be converted to a fully functioning digital load cell.



The interface circuit board can either be embedded in the load cell (space permitting), or installed in a 9 pin “D” type connector at the load cell cable end.

Simple RS-485 wiring connects the DLC08 to any PC, PLC, or DCS device. All calibration and operating procedures are fully documented on the accompanying installation CD ROM. The DLC08’s software is classified as “open architecture”, and provides instant access to all configuration and calibration parameters.

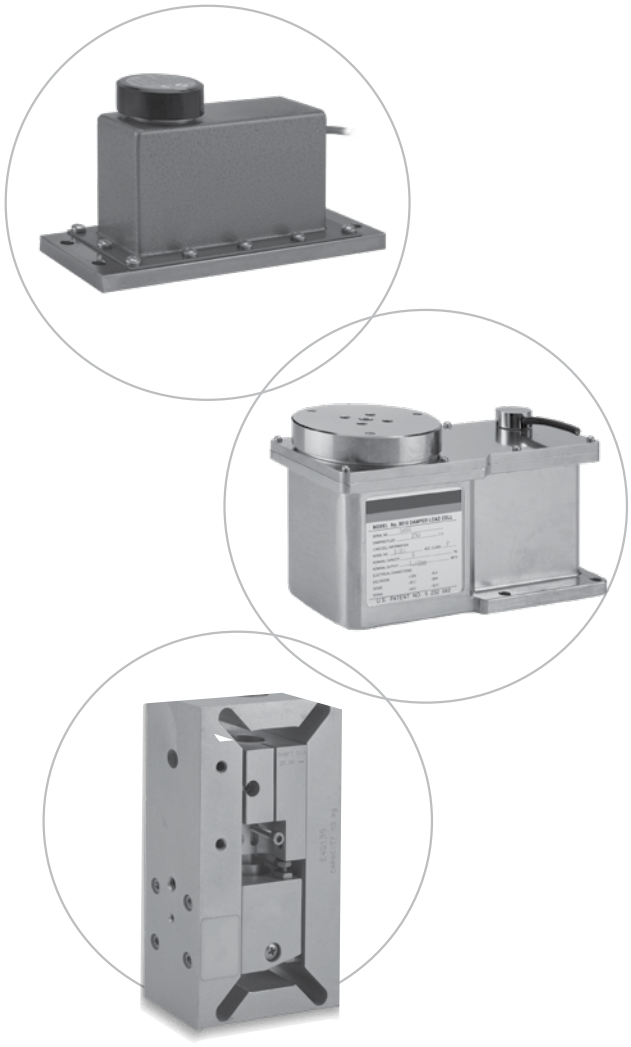
When paired with a DLC-08, a summing junction box can digitally interface with multiple load cell scales via the DLC08’s RS-485 serial bus.

High-Performance Digital Load Cell Interface

SPECIFICATIONS					
PARAMETER	**SYMBOL**	**MIN**	**TYP**	**MAX**	**UNIT**
Bridge input					
Bridge excitation	V_{exc}	4.8	5.0	5.2	V
Bridge resistance	R_{LC}	315	350		Ω
Full scale input sensitive	F_S				
PGA = 1				3.50	mV/V
PGA = 2				1.85	mV/V
PGA = 4				0.90	mV/V
PGA = 8				0.45	mV/V
Common mode voltage		1.50	2.50	3.50	V
Input impedance		10^9			Ω
Digital Bus – RS-485 protocol					
Baud rate			19,200		Bit/sec
Communication mode		Point-to-point or RS-485 multi-drop communication			
Built-in termination resistor			8,870		Ω
Cable length (with suitable Rt)				1,000	m
Performance					
Internal resolution			24		Bits
Noise (Ref to input, filter 4/4/4)				0.30	±µV RMS
Digital filters		3 filters, software selectable			
Nonlinearity (in Ts)			0.008	0.011	$\%F_S$
Sample rate	C_S		15		Hz
Zero stability (in Ts)			10	15	$\pm ppmF_S/°C$
Span stability (in Ts)			1.6	2.3	$\pm ppmF_S/°C$
Environmental conditions					
Specification temperature (Full performance)	T_S	-10	+20	+40	°C
Operating temperature		-40		+85	°C
Storage temperature		-40		+85	°C
Power supply – DC only					
Supply voltage	V_P	7.5	12	15	V
Supply current			32	45	mA
Maximum rating power supply (T ≤ 500 ms)				30	V
Reverse power protection				-60	V

All specifications subject to change without notice.

Load Cells—Damped



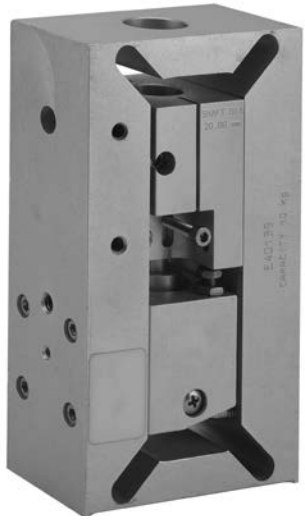
CONTENTS

Model 1410 254
Model 240 256
Model 9010 258
Model 1430 262

Load Cell for Rotary Filling Machines

FEATURES

- The first and only load cell specifically designed for use in rotary filling machines
- Short settling times
- High resistance to side loads
- Effective isolation of base vibrations
- Centrifugal forces do not affect accuracy
- Two mounting options
- **Optional:**
  - FM approval available



FM APPROVED

APPLICATIONS

- Rotary filling machines

DESCRIPTION

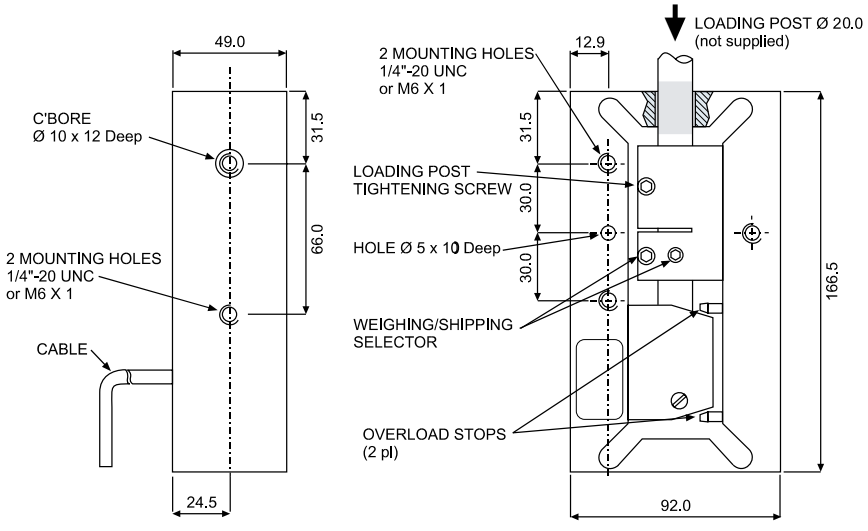
The Model 1410 represents a radical new concept in load cell design, which alleviates many of the problems encountered when conventional load cells are used in rotary weighing machines.

Due to a patented damping system, typical settling times of 700 ms are dramatically reduced to less than 300 ms (depending upon conditions), significantly reducing cycle times and increasing throughput capabilities.

Centrifugal forces are handled in such away that their effect on output is very small. For example, when tested up to 20 rpm, the total dynamic error amounted to less than 0.2 gram per kg. Also, the Model 1410 provides excellent isolation of base vibrations. Both features enable the use of higher machine speeds without losing accuracy.

The uniquely rugged construction of the Model 1410 is very resistant to side loads and can therefore withstand bottle jams and other mishaps.

OUTLINE DIMENSIONS in millimeters



For different mounting configuration consult factory.

Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com

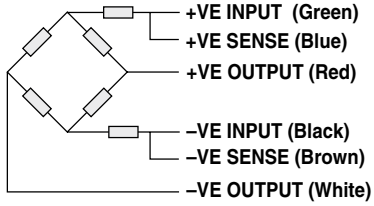
Document No.: 12023
Revision: 25-Mar-2018

Load Cell for Rotary Filling Machines

SPECIFICATIONS			
PARAMETER	**VALUE**		**UNIT**
Rated capacity—R.C. (E_{max})	10, 20, 30		kg
Accuracy class	E	G	
Rated output—R.O.	2		mV/V
Rated output tolerance	0.3		±% mV/V
Zero balance	–0.0 / +0.2		±% mV/V
Total static error at room temperature per OIML	0.05	0.02	±% of R.O.
Dynamic error: speed range of 0 to 15 rpm, rotational radius of 1m, load placed on platform located 14 cm above top surface of load cell and connected by 3/4" or 20 mm dia. steel shaft	0.04		±% of the static reading at same load
Creep and zero return (30 min.)	0.05	0.025	±% of load
Temperature effect on zero	0.010	0.004	±% of R.O./°C
Temperature effect on output	0.003	0.001	±% of load/°C
Temperature range, compensated	+5 to +40		°C
Temperature range, safe	–30 to +70		°C
Maximum safe static overload, positive	160 Factory adjusted to 120 ... 160% of R.C.		% of R.C.
Maximum safe static overload, negative	–120 Factory adjusted to -30 ... –120% of R.C.		% of R.C.
Ultimate static overload (central loading)	300		% of R.C.
Excitation, recommended	10		VDC or VAC RMS
Excitation, maximum	15		VDC or VAC RMS
Input impedance	415±15		Ω
Output impedance	350±3		Ω
Insulation resistance	>2000		MΩ
Cable length	0.6		m
Construction	Anodized aluminum		
Damping	Internal silicone fluid damping. Piston has two positions: working and shipping. In shipping position the cylinder is sealed.		

All specifications are subject to change without notice.

WIRING SCHEMATIC DIAGRAM
(Unbalanced bridge configuration)



Fluid-Damped Single-Point Load Cell

FEATURES

- Capacities 2–50 kg
- Painted steel construction
- OIML R60 and NTEP approved
- IP66 protection
- Available with metric and UNC threads
- **Optional**
  - Stainless steel construction



APPLICATIONS

- Multi-head filling machines
- Check weighing
- Grading machines
- Liquid filling
- Dynamic weighing

DESCRIPTION

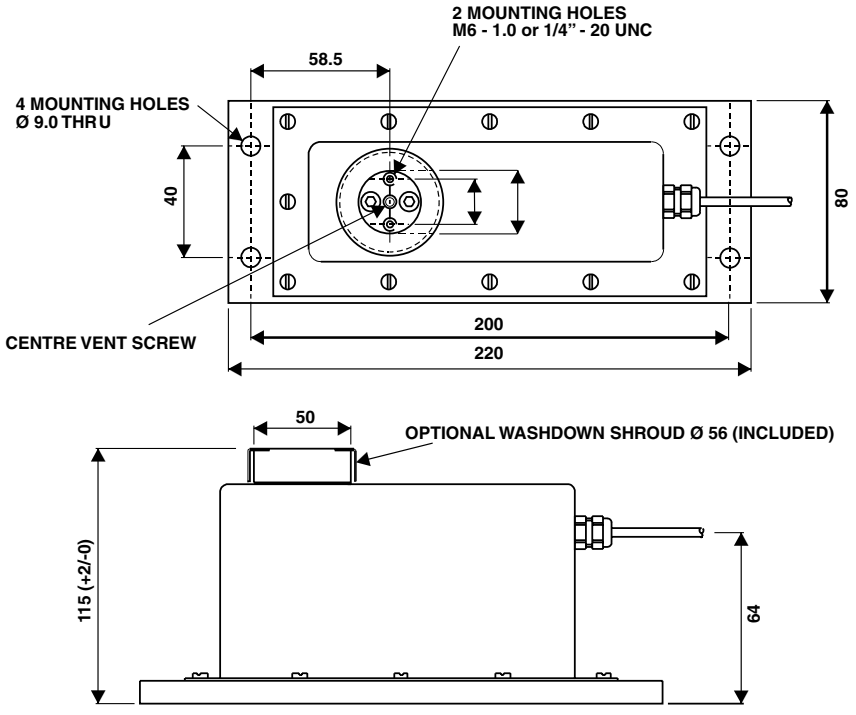
The Model 240 is specifically designed to be used where the fast acquisition of a stable load signal is paramount. The Model 240's unique fluid damping system allows the load cell to be used in applications that previously required the use of LVDT's or similar measuring devices.

The Model 240 brings load cell adaptability into check weighing and grading applications.

Approved to OIML R60 and NTEP standards, sealed to IP66 level and available in coated steel or stainless steel, the Model 240 is suitable for most wash-down applications.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance due to temperature change and/or cable extension, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters



Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
Document No.: 12030
Revision: 25-Mar-2018

Fluid-Damped Single-Point Load Cell

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated capacity—R.C. (E_{max})	2, 3, 5, 7, 10, 15, 20, 30, 50**			kg
OIML accuracy class	NTEP	Non-Approved	C3*	
Maximum no. of intervals (n)	5000	1000	3000	
Y = E_{max}/V_{min}	12000	1750	9000	Maximum available
Rated output—R.O.	2.0			mV/V
Rated output tolerance	0.2			±mV/V
Zero balance	0.1			±mV/V
Zero return, 30 min.	0.033	0.050	0.015	±% of applied load
Total error	0.050	0.025	0.015	±% of rated output
Temperature effect on zero	0.0026	NA	0.0026	±% of rated output/°C
Temperature effect on output	0.0010	NA	0.0010	±% of rated output/°C
Temperature range, compensated	–10 to +40			°C
Temperature range, safe	–30 to +70			°C
Maximum safe central overload	150			% of R.C.
Ultimate central overload	300			% of R.C.
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	15			VDC or VAC RMS
Input impedance	415±15			Ω
Output impedance	350±3			Ω
Insulation resistance	>1000			MΩ
Cable length	To suit			m
Cable type	6-wire, braided, polyurethane, silicone gel impregnation			Standard
Construction	Painted mild steel***			
Environmental protection	IP66			

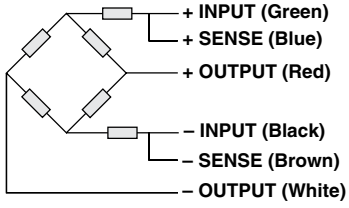
* 50% utilization

** 2 and 3 kg are not approved by NTEP or OIML

*** Stainless steel available

All specifications subject to change without notice.

WIRING SCHEMATIC DIAGRAM



Self-Contained Weighing Module

FEATURES

- Capacities 3–90 kg
- Unique adjustable tare load cancelling mechanism
- Highly effective viscous damping
- 6 Built-in overload limit stops in three directions
- Weighing speed is much faster than standard load cell
- IP65 protection
- **Optional**
  - Stainless steel version
  - IP66 with additional breather tube
  - OIML and FM approvals available



OIML

FM C US APPROVED

DESCRIPTION

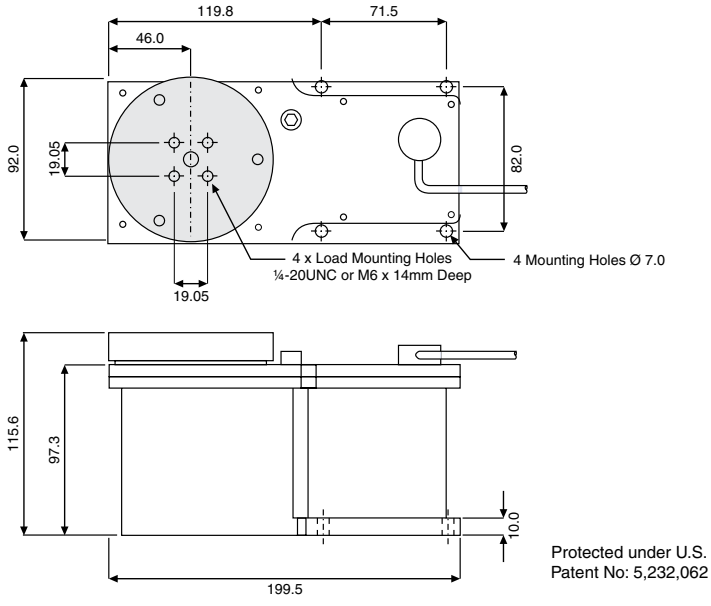
The Model 9010 is a self-contained weighing module for use in repeated shock-loading applications or where fast weighing and settling times are required, such as multihead weighers, check weighers and other static and dynamic weighing applications characterized by sudden or impact loading.

The Model 9010's unique fluid damping system allows the load cell to be used in applications that previously required the use of LVDT's or similar types of measuring devices.

The Model 9010 has a unique adjustable tare load cancellation feature which brings load cell adaptability into check weighing and grading applications.

The two additional sense wires feed back the voltage reaching the load cell. Complete compensation of changes in lead resistance, due to temperature change and/or cable extension, is achieved by feeding this voltage into the appropriate electronics.

OUTLINE DIMENSIONS in millimeters



Protected under U.S. Patent No: 5,232,062

Model 9010
Tedea-Huntleigh

Self-Contained Weighing Module

HIGH PERFORMANCE DYNAMIC WEIGHING

The Weigh Module 9010 consists of a Tedea-Huntleigh single-point load cell enclosed in an environmentally protected, electroless nickel-plated aluminum housing. The Module integrates load cell performance, viscous damping, an adjustable tare offset mechanism and overload protection.

LOAD CELL

Tedea-Huntleigh's Model 1010, 1040 or 1140 single-point load cells can be used in the Model 9010. The capacities supported as standard are 3 kg to 90 kg; for higher capacities, consult VPG Transducers.

OVERLOAD PROTECTION

Model 9010 is equipped with built-in overload stops for positive (push), negative (pull) and twisting loads. These stops are factory adjusted for each specific application.

DAMPING

Model 9010 features a unique viscous damping technique originally developed and patented by Tedea-Huntleigh, which provides:

- Faster settling time
- Higher weighing speeds
- Load cell protection (extended working life)

Damping parameters are factory set for each specific application.

TARE LOAD CANCELLING

Model 9010 features an adjustable tare load cancelling mechanism which provides a tare offset of up to 35 kg (in several ranges). The tare offset is factory set but may be adjusted by the user. This feature enables the use of a lower capacity load cell, resulting in electronic circuits with lower gains, lower noise, higher stability and lower temperature drifts.

An example for the power of tare cancelling:

Assume an application with 5 kg dead load and 2 kg (useful) load.

1. Without tare cancelling: Total load of 5+2 is 7 kg, therefore, a load cell with capacity of at least 10 kg has to be selected.
2. With tare cancelling: The 5 kg dead load can be opposed and effectively cancelled by the Tare Cancellation Mechanism, leaving a load of 2 kg only, hence a capacity of 3 kg can be selected.
3. Results: A capacity of 3 kg rather than of 10 kg is enabled by the Tare Cancellation feature for a gain of over 3 times in resolution and noise.

LOAD CELL LIFE

Because of the design and unique features of the Model 9010, the life of the load cell is increased substantially. For example, in one typical set of life tests, the undamped load cell failed after approximately 300,000 cycles. The damped load cell held without any significant deterioration for more than 300 million cycles. In this test a Model 1010 10-kg load cell was used. A dead load of 2.5 kg was mounted 150 mm from the mounting center. A 4.5 kg impact was applied at that point at a rate of 8 times/sec.

ENVIRONMENTAL PROTECTION

The load cell in the Model 9010 is completely enclosed in a rugged, electroless nickel-plated aluminium or stainless steel housing to withstand splashing. It is environmentally protected to IP65; a special "breather valve" allows atmospheric pressure equalization while excluding splashing liquids.

With an optional addition of a breather tube the protection is rendered IP66. A built-in shut-off valve is used for shipping.

SETTLING TIME

Settling time is the elapsed time from the instant of loading to the time the load cell's signal remains within the user specified accuracy. Settling time is affected by the following parameters:

1. Total mass on the module and it's distance from the mounting center
2. Impact loading characteristics
3. Environmental temperature change

For optimum performance, the above parameters must be specified by the user for each order.

Self-Contained Weighing Module

APPLICATION AND ORDER DATA

TO BE COMPLETED BY THE CUSTOMER

CUSTOMER'S NAME ..... ORDER No. .....

CONTACT PERSON ..... DATE .....

APPLICATION ..... No. of UNITS .....

TOTAL TARE WEIGHT (DEAD LOAD).....kg; FOR EACH UNIT.....kg

TOTAL USEFUL WEIGHT (LIVE LOAD) .....kg; FOR EACH UNIT.....kg

DESCRIBE LIVE LOAD (POWDER, FRUIT, SCREWS ETC) .....

REQUIRED SETTLING TIME .....msec; ACCURACY.....

OPERATING TEMPERATURE RANGE °C: .....

MOUNTING THREADS .....mm (6x1) ....inch (1/4 UNC)

PREFERRED LOAD CELL, IF ANY.....

1. CHECK WEIGHER (SEE SKETCH BELOW):.....

SIZE OF CONVEYOR PLATFORM: .....

WIDTH..... cm; A ..... cm; B .....cm; C.....cm

SPEED OF BELT ..... cm/sec; SIZE OF WEIGHED PRODUCT IN MOVEMENT DIRECTION.....cm

TARE WEIGHT DISTRIBUTION: CONVEYOR: ..... kg; MOTOR:.....kg

2. HOPPER OR OTHER APPLICATION (SEE SKETCH BELOW): .....

CENTER OF GRAVITY (CofG) OF DEAD LO AD, (ESTIMATE IF NECESSARY): D.....cm; F .....cm

LOADING POSITION: D .....cm; F ..... cm; DROP HEIGHT:.....cm

IF LOAD CofG VARIES, MAX DIST. BETWEEN EXTREMES ....cm

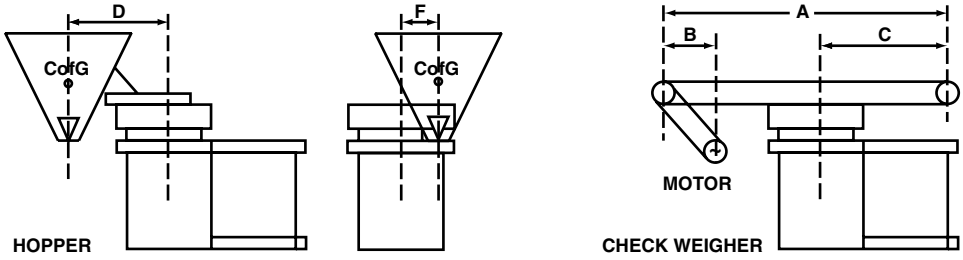
SPECIAL REQUIREMENTS

CABLE LENGTH IF NOT STANDARD (1 m) ..... ; DELIVERY REQUESTED .....

CORNERS ACCURACY: TEST WIGHT (MAX. ALLOWED 1/3 OF LOAD CELL CAPACITY) .....kg

DISTANCE FROM CENTER .....cm VARIATION ALLOWED .....

DEFINITION OF LOADING POSITION RELATIVE TO 9010



Self-Contained Weighing Module

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Rated capacity—R.C.	3, 5, 7, 10, 15, 20, 30, 50, 90	kg
Accuracy class	G	
Maximum no. of intervals (n)	3000	
Rated output—R.O.	2.0	mV/V
Rated output tolerance	0.2	± mV/V
Total error*	0.030	±% of R.O.
Temperature effect on span*	0.002	±% of R.O./°C
Temperature effect on zero: load cell	0.004	±% of load/°C
Temperature effect on zero: buoyancy	0.15	+gr/°C rise
Temperature effect on zero: tare offset	0.25 x tare offset (kg)	+gr/°C rise
Temperature range - standard*	10 to 30	°C
Tare offset ranges	0 to 35	kg
Safe static overload **downward at mounting center** **upward at mounting center** **200 mm in front or side of mounting center**	 800 400 200	 % of R.C. % of R.C. % of R.C.
Settling time—typical	40–300	millisecond
Temperature effect on settling time	2	%/°C
Excitation, recommended	10	VDC or VAC RMS
Excitation, maximum	15	VDC or VAC RMS
Input impedance	415±15	Ω
Output impedance	350±5	Ω
Insulation resistance	>5000	MΩ
Weight	3	kg
Construction	Anodized body, electroless nickel plating**	
Environmental protection	IP65***	

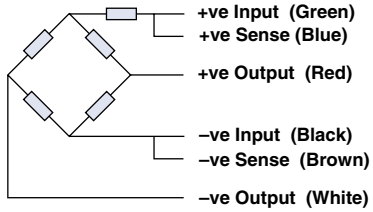
* Extended temperature ranges and smaller temperature effects are available upon request.

** Optional stainless steel coating available upon request.

*** IP66 available with additional breather tube.

All specifications are subject to change without notice.

Wiring Schematic Diagram



Damped Load Cells for Rotary Filling Machines

FEATURES

- Capacities: 3 kg, 17 lbs, 23 lbs
- Stainless steel construction
- Insensitive to rotary dynamic forces
- Single-point performance
- Rotary speed to 13 rpm at 1m radius
- Sealed wash down configuration



APPLICATIONS

- Rotary filling machines

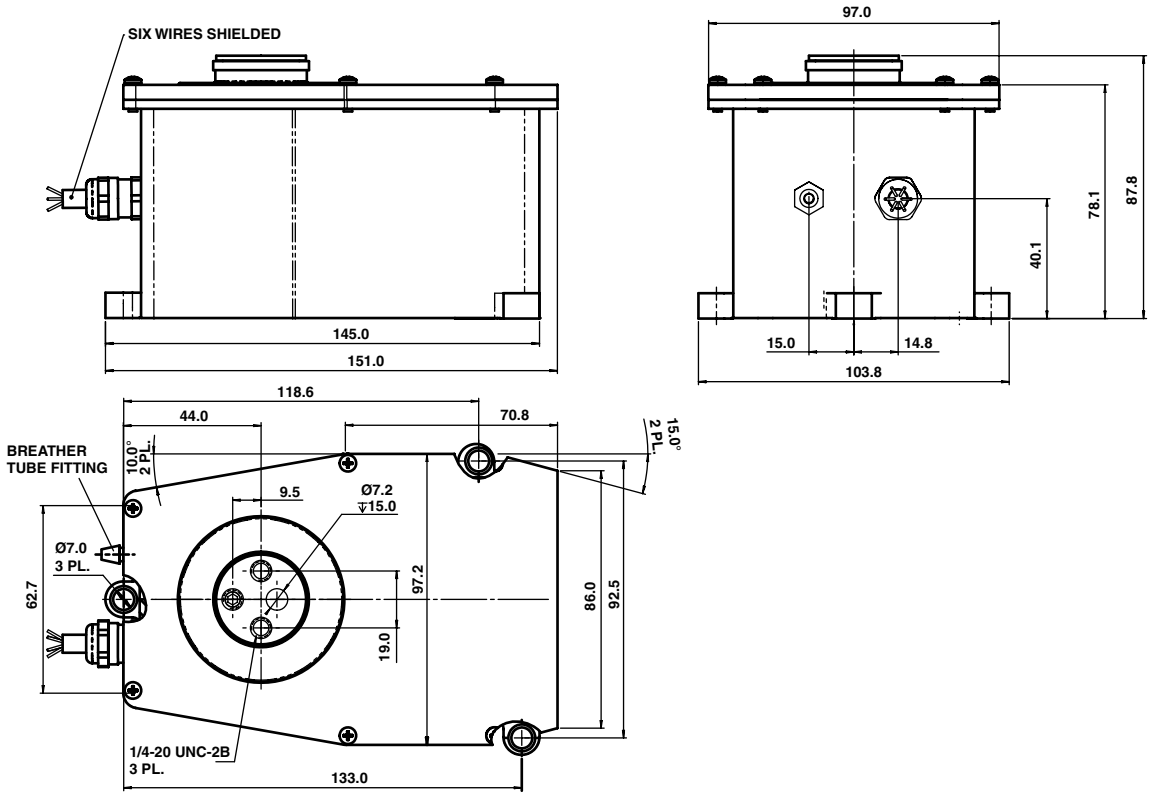
DESCRIPTION

The Model 1430 is uniquely designed to reduce weighing errors resulting from dynamic forces occurring on rotary liquid filling machines. The Model 1430 will provide high weighing accuracies when operated over a range of 0 to 13 rpm at a mounting location up to 1 meter radius.

The sealed stainless steel construction of the Model 1430 provides safe operation in applications subjected to caustic or heavy wash down environments. The rugged construction provides significant overload protection both in the weighing axis as well as against side loading. Side loads, such as occurring in bottle jams of up to 300 kg, have been applied to units with no significant zero change.

The Model 1430 features adjustable viscous damping for shorter settling times and for faster machine cycles.

OUTLINE DIMENSIONS in millimeters



Damped Load Cells for Rotary Filling Machines

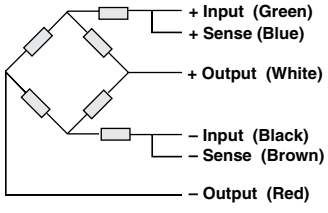
SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Rated capacity—R.C.	3	kg
Rated capacity—R.C.	17, 23	lb
Accuracy class	C1	
Maximum no. of intervals (n)	1000	
Rated output—R.O.	2	mV/V
Rated output tolerance	0.3	±mV/V
Zero balance—3 kg: **(3 kg std.), 17 lb, 23 lb:**	–0.6000±0.0500 ±0.2000	mV/V
Total static error at room temperature per OIML	0.03	±% of R.O.
Dynamic error: speed range of 0 to 15 rpm, rotational radius of 1m, load placed on platform located 14 cm above top surface of load-cell & connected by 3/4" or 20 mm dia. steel shaft	0.04	±% of the static reading at same load
Creep and zero return (30 min.)	0.05	±% of load
Temperature effect on zero	0.010	±% of R.O./°C
Temperature effect on output	0.003	±% of load/°C
Temperature range, compensated	+5 to +40	°C
Temperature range, safe	–30 to +70	°C
Maximum safe static overload, positive	160[2]	% of R.C.
Maximum safe static overload, negative	-120	% of R.C.
Ultimate static overload (central loading)	300	% of R.C.
Excitation, recommended	10	VDC or VAC RMS
Excitation, maximum	15	VDC or VAC RMS
Input impedance	415±15	Ω
Output impedance	350±3	Ω
Insulation resistance	>2000	MΩ
Cable type	6-wire, 26 AWG, shielded, PVC jacket	
Cable length	6	m
Construction	Aluminum sensor enclosed in stainless steel box	
Damping	Internal silicone fluid damping[1]	

[1] Silicone fluid is shipped separately from load cell, dosed in syringe. Silicone fluid is filled in cylinder before installation of load cell.

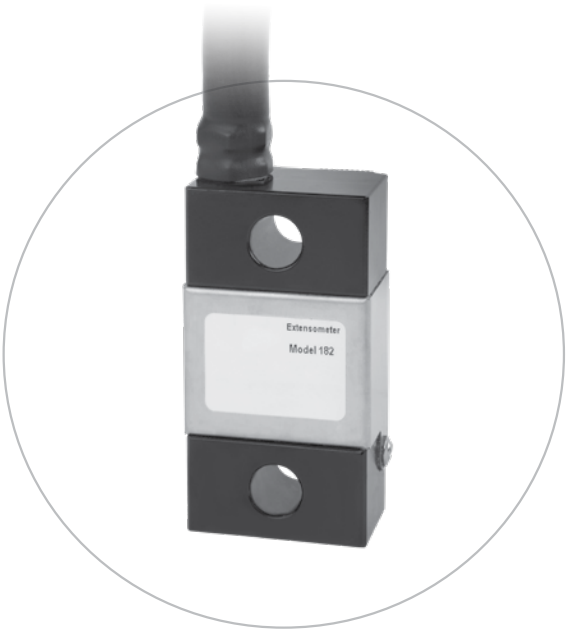
[2] Factory adjusted to 170% of R.C.

All specifications subject to change without notice.

Wiring Schematic Diagram



Force Sensors—Extensometers



CONTENTS

Model 182 266
Model 174 268
Model 178 270

Extensometer

FEATURES

- Strain gage-based sensor, redundant option available
- Coated alloy steel construction
- 2 bolt holes, M10 12.9 required
- 15,000 PLd capable
- EDOC (Electrodeposited organic coating)



APPLICATIONS

- Off-highway vehicles, agricultural equipment
- Construction equipment
- Lifting machines
- Telescopic loaders

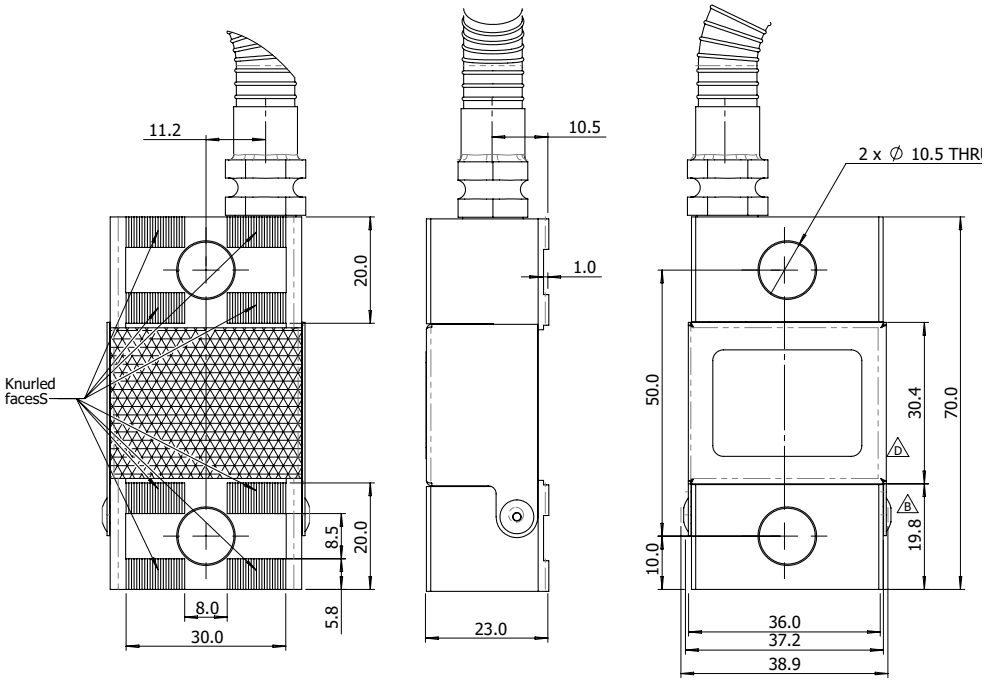
DESCRIPTION

The Model 182 Extensometer is a sensor-based instrument that is designed to measure the deformation of a load-bearing specimen.

The design of the Model 182 features a robust construction and provides good repeatability, even in demanding environments. This extensometer can be mounted on any machinery or vehicle. Applications include: telescopic loaders, scissor lifts, boom lifts, forklifts and other load lifting machinery. The device is an ideal choice for industrial vehicle applications, especially where safety is a critical factor in preventing loss of life.

Flexibility is also a unique feature that the Model 182 offers. This device is available with several output level trim options. Ranging from different connectors (M12 or DT type) to different protocols (mV/V, CAN Bus, CAN Open or J1939), the Model 182 extensometer is an excellent solution for load lifting safety concerns.

OUTLINE DIMENSIONS



Connector Pin Assignment with optional DT04-6P connector

Pin	Function
1	Shield
2	CAN V+
3	CAN GND
4	CAN H
5	CAN L
6	No connection

Extensometer

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
VPG Transducers accuracy class	Z	
Eq. rated capacity – RC*	120	kg
Eq. rated output – RO*	1.6–2.3	mV/V
Zero balance	0.2	±mV/V
Temperature effect on zero	0.00026	mV/V/°C
	0.02	±% of R.O./°C
Temperature range, compensated	–30 to +80	°C
Temperature range, safe	–40 to +90	°C
Temperature range, storage	–40 to +100	°C
Cable type	CAN ready, PU jacket, DT04-4P receptacle, grounded shield	
Cable length	0.2, 0.5, 1.0	m
Construction	Coated alloy steel sensor, stainless steel electronics housing, RTV potting	
Environmental protection	IP67	

* When sensing 500 με

All specifications are subject to change without notice.

Extensometer

FEATURES

- Strain gage based sensor
- Alloy steel construction
- 2 bolt holes
- IP67 Hermetically sealed protection
- **Optional**
  - Redundant sensor (model 176)
  - Digital output (LIN-Bus)



APPLICATIONS

- Lifting machines
- Telescopic loaders

DESCRIPTION

The 174 extensometer is a sensor used for safety applications in lifting devices.

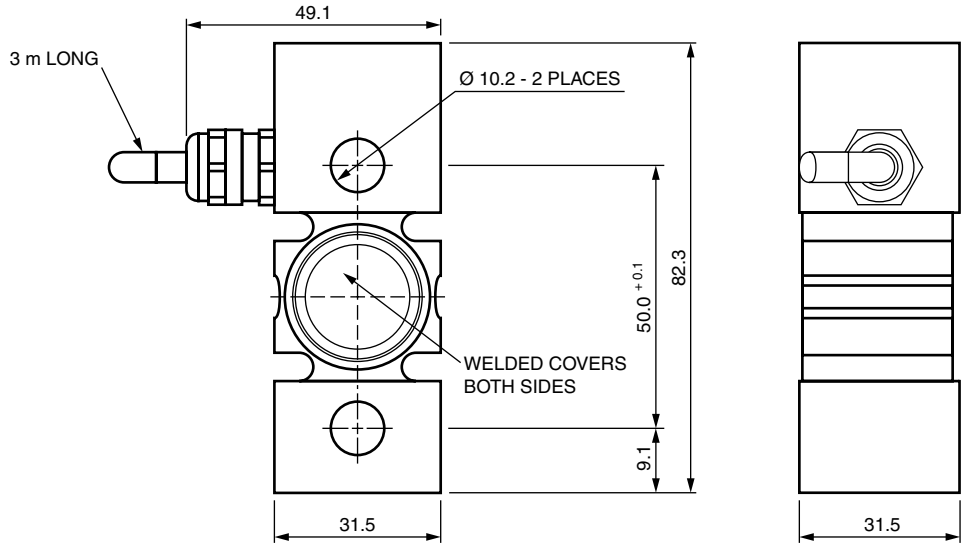
This product is used widely in many lifting machines, telescopic loaders and any other moment sensitive lifting device.

The 174 extensometer is a strain gage based sensor which can be supplied with analog or digital output.

The digital version is supplied widely as a set together with the Model LMI524 Display.

The 174 extensometer is usually installed on the rear side of the device and it measures the load decrease on the rear shaft.

OUTLINE DIMENSIONS in millimeters



Extensometer

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Calibrated output	1.00	mV/V at 500 με
Overload capability (zero)	300	% of rated output
Overload capability (max)	500	% of rated output
Input resistance	385±5	Ω
Output resistance	350±5	Ω
Insulation resistance	>2000	M Ω
Excitation, recommended	10	VDC
Excitations, range	5–20	VDC
Thermal effect on zero	0.025	±% of FSO/°C
Compensated temperature range	–30 to +80	°C
Construction	Painted steel	
Environmental protection	IP67	

All specifications subject to change without notice.

Extensometer

FEATURES

- Strain gage based sensor
- Alloy steel construction
- 2 Bolt holes
- IP66 Hermetically sealed protection
- **Optional**
  - EEx ia IIC T4 Hazardous area approval



APPLICATIONS

- Tank weighing or level systems
- Agricultural equipment
- Rolling mill sensing
- Moment sensing
- Structural loading measurements
- Bridge structures

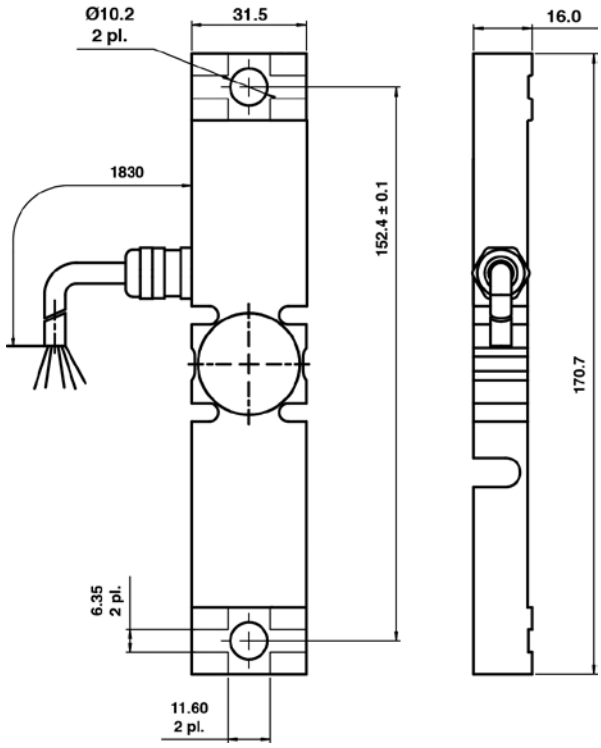
DESCRIPTION

The Model 178 extensometer is a load sensor designed for force measurement on any load-bearing structure. This extensometer is a complete solution for weighing, level control, stress and fatigue monitoring. The design also allows multiple sensors to be permanently mounted for more complex stress profiling and analysis.

The Model 178 extensometer provides an ideal solution for non-intrusive level measurements for materials that are subject to uneven buildup, bridging, or sidewall collection. Also, liquids or wetted materials that are not suited for direct contact level measurement are an ideal application for the Model 178 extensometer.

The design of the Model 178 makes it an excellent solution for retrofitting existing structures without compromising the integrity of the vessel or structure.

OUTLINE DIMENSIONS in millimeters



Wiring diagram:

\+ Excitation Red
– Excitation Black
\+ Output Green
– Output White

Extensometer

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Calibrated output	1.7	mV/V at 500 με
Overload capability (zero)	300	% of rated output
Overload capability (max)	500	% of rated output
Input resistance	350±10	Ω
Output resistance	350±10	Ω
Insulation resistance	>2000	MΩ
Excitation, recommended	10	VDC
Excitations, range	5–20	VDC
Thermal effect on zero	0.025	±% of FSO/°C
Compensated temperature range	–30 to +80	°C
Construction	Painted steel	
Environmental protection	IP66	

All specifications subject to change without notice.

Force Sensors—
Load Pins



CONTENTS

Model 5113 274
Model 5117 276

Load Pin

FEATURES

- Load ranges: 25–60 kN
- Rugged design with zinc-plated, hardened alloy steel construction
- Ratio metric voltage output converter embedded



APPLICATIONS

- Agriculture equipment
- Force measurement devices
- Off-road vehicles

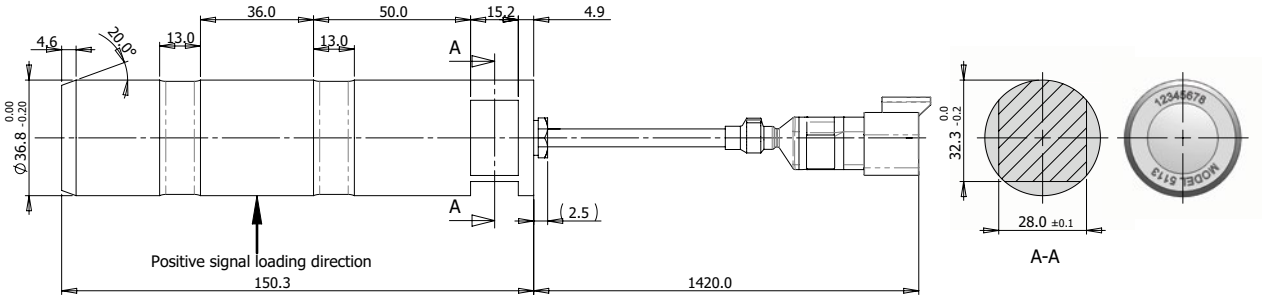
DESCRIPTION

The Model 5113 load pin is designed to provide force measurement on an applied load across it. It uses VPG's own internally manufactured, state-of-the-art foil-based strain gages, bonded onto a robust zinc-plated, hardened alloy steel body, making it an ideal sensor for any demanding environment application.

This compact, rugged 38 mm load pin is available in three capacities up to 60 kN and, with a safe overload capability of up to 250 kN, delivers excellent long term stability and reliable operation, even under severe load conditions. These features make the Model 5113 able to perform repeatable measurements in any given control or safety system.

The Model 5113 load pin is an ideal partner for a wide variety of applications, such as those found in tractor hitch systems, plowing vehicles, cranes or tensioning systems that employ rope, chain or brake anchors. This load pin may be used in lieu of hydraulic pressure or draft pin sensors.

OUTLINE DIMENSIONS in millimeters



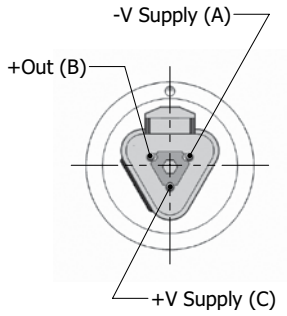
Drawing showing standard connector DT04-3P.

Load Pin

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated load	±25	±40	±60	kN
Safe overload	±250			kN
Excitation for built-in amplifying circuit	8.0 (recommended)			VDC
Allowed supply voltage	6 ÷ 12			VDC
Maximum current, all conditions	50			mA
Output at zero load (20°C)	4.000 ±0.090			VDC
Output at rated tensile load (20°C)	6.000 ±0.18			VDC
Output at rated compressive load (20°C)	2.000 ±0.18			VDC
Linearity, max. deviation	50			±mV
Hysteresis, max. deviation	50			±mV
Operating temperature range	–30 to +70			°C
Output at zero load	4.000 ±0.1			VDC
Output at rated tensile load	6.000 ±0.26			VDC
Output at rated compressive load	2.000 ±0.19			VDC
EMC, effect at 20°C (per EEG-011)	50			±mV
Environmental protection	IP66			—
Vibration protection, 0 to 2000 Hz	5			g
Endurance test at ±30,000 lb.	1,000,000			Cycles
Storage temperature range	–40 to +85			°C
Cable length	1.42 ±0.02			m
Construction	Hardened alloy steel, zinc plated			—

All specifications are subject to change without notice.

WIRING SCHEMATIC DIAGRAM



Connector Pin Assignment		
Pin	**Color**	**Function**
A	Black	– Excitation
B	White	+ Signal
C	Red	+ Excitation

Load Pin

FEATURES

- Capacity 45 kN
- Rugged design with zinc-plated, hardened alloy steel construction
- Embedded ratio metric voltage output converter



APPLICATIONS

- Agriculture equipment
- Force measurement devices

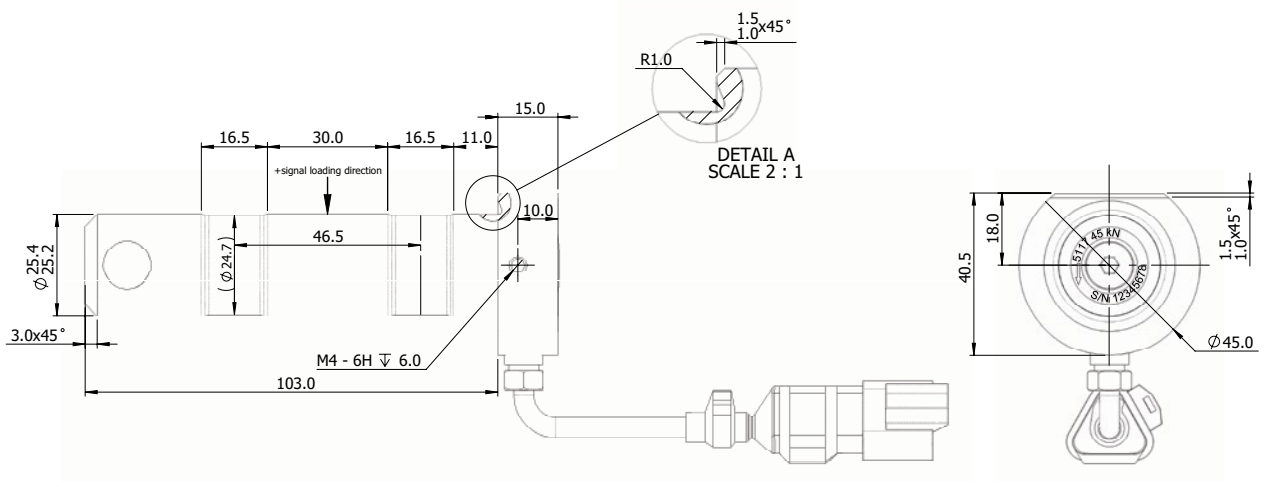
DESCRIPTION

The Model 5117 load pin is designed to provide force measurement on an applied load across it. It uses VPG's own internally manufactured, state-of-the-art foil-based strain gages, bonded onto a robust zinc-plated, hardened alloy steel body, making it an ideal sensor for any demanding environment application. The Model 5117 load pin is typically mounted on the top arm of a 3-position hitch. Its rugged design provides excellent long term stability and reliable operation, even under severe conditions.

This compact, 25 mm diameter load pin offers high repeatability and performance. This load pin may be used in lieu of hydraulic pressure or draft pin sensors.

The Model 5117 load pin is an ideal solution for a wide variety of applications, such as those found in tractor hitch systems, plowing vehicles, cranes or tensioning systems that employ rope, chain or brake anchors.

OUTLINE DIMENSIONS in millimeters



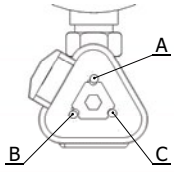
Drawing showing standard connector DT04-3P.

Load Pin

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Rated load, positive	45	kN
Rated load, negative	45	kN
Safe overload, positive	110	kN
Safe overload, negative	110	kN
Excitation for built-in amplifying circuit, V_S	8.00 ±1%, (recommended)	VDC
Maximum current, all conditions	50	mA
Output at zero load (20°C)	50 (4.00 ±0.08)	%V_S (VDC)
Output at rated positive load (20°C)	75 (6.00 ±0.16)	%V_S (VDC)
Output at rated negative load (20°C)	25 (2.00 ±0.16)	%V_S (VDC)
Linearity, when loaded in positive direction	±2 (±0.16)	%V_S (VDC)
Hysteresis, when loaded in positive direction	±3 (±0.24)	%V_S (VDC)
Operating temperature range	–30 to +70	°C
Output at zero load, –30 to +70°C	50 (4.000 ±0.10)	%V_S (VDC)
Output at rated positive load, –30 to +70°C	75 (6.000 ±0.26)	%V_S (VDC)
Output at rated negative load, –30 to +70°C	25 (2.000 ±0.26)	%V_S (VDC)
EMC, effect at 20°C (per EEG-011)	0.05	±V
Environmental protection	IP66	—
Storage temperature range	–30 to +85	°C
Cable length	0.5	m
Cable type	4 x 24 AWG, PU jacket, PVC protective tube	—
Construction	Hardened alloy steel, zinc plated	—

All specifications are subject to change without notice.

WIRING SCHEMATIC DIAGRAM



Connector Pin Assignment		
Pin	**Color**	**Function**
A	Black	– Excitation
B	White	+ Signal
C	Red	+ Excitation

Force Sensors—
In-Situ Sensor

CONTENTS

Model GZ-10 280



Gozinta® Force Transducer

FEATURES

- Simple press fit mounting
- Stainless steel construction
- Hermetically sealed
- Corrosion resistant
- Low temperature sensitivity
- Field installable into existing structures
- Measures tension, compression, shear, bending, torsion
- Full double bridge configuration
- Single capacity for all applications



APPLICATIONS

- Agricultural equipment
- Rolling mill sensing
- Stamping press control
- Lift trucks
- Machine tool wear sensing
- Intrusion alarms
- Structural load measuring
- Moment sensing
- Tank weighing systems
- In-rail weighing systems

DESCRIPTION

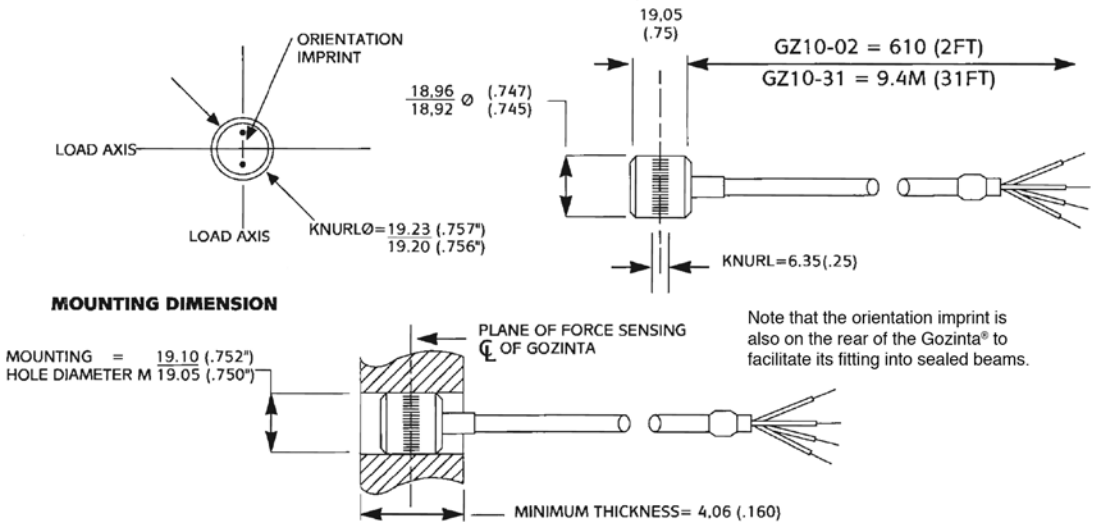
An innovative approach to sensor design, combined with proven strain gage technology, has resulted in a small, accurate stainless steel sensor with wide-ranging application possibilities. The Gozinta overcomes a number of current sensor problems and limitations such as installation ease, size, load limit, location and operating temperature conditions. In addition, the Gozinta has unchallenged application versatility: a wide range of machines, devices or structures can use Gozinta sensors as a cost-effective, accurate solution to sensing needs.

The Gozinta sensor is mounted into the machine or structure and the sensor's output can be calibrated to meet the system needs.

As a result, the maximum load of the system is determined by the structure, rather than by the sensor. Sensitivity to thermal effects is minimal due to the Gozinta's unique patented design.

The Gozinta is configured with a full bridge circuit for low non-linearity, hysteresis and non-repeatability. A certain degree of care should be taken when positioning or locating the sensor in a structure. In addition, the number of sensors used in a structure, the amount of strain an individual Gozinta senses, and the material of the structure will affect the overall accuracy. Installation is optimized through the use of specific installation tools, supported by extensive application notes.

OUTLINE DIMENSIONS in millimeters



Gozinta® Force Transducer

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Excitation voltage	up to 15	VAC/VDC
Zero balance	0.00±0.05 (Prior to installation)	mV/V
Bridge configuration	Full/Double bridge	
Input resistance	700±20	Ω
Output resistance	700±20	Ω
Insulation resistance	≥5000	MΩ
Nonlinearity	±1.0	% FS[1]
Hysteresis	±0.05	% FS[1]
Non-repeatability	±0.1	% FS[1]
Temperature coefficient: Output	0.036	% of reading/°C
Zero	0.35 (–1° to +45°C)	% FS/°C
Temperature range: Storage	–50 to +90	°C
Temperature range: Operating	–40 to +80	°C
Maximum safe output[(2)]		
Tension	2.5	mV/V
Compression	2.5	mV/V
Shear	4.0	mV/V

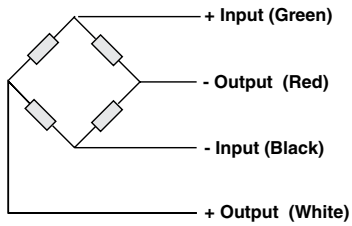
[(1)] Specifications for the Gozinta GZ-10 installed into a mild steel test block (90 x 38 x 305) and subjected to a tensile force of 24000N. Nominal output is 1mV/V. Other specifications are given for uninstalled GZ-10.

[(2)] The maximum safe output for the Gozinta based on 10^4 full negative to full positive operating cycles (zero to minus to plus to zero).

Caution: The endurance limits of the beam must be determined separately.

All specifications subject to change without notice.

Wiring Schematic Diagram



Instruments—Indicators



CONTENTS

Model Intuition 20i 284
Model Intuition 22i 288
Model VT 100 292
Model VT 200/220 294
Model VT 300 298
Model VT 300D 302
Model VT 400 306
Model VTRD10 310
Model WT1 312
Model WT2 316
Model WG3 320
Model WT14 324
Model WT15 328

Weight Indicator

FEATURES

- Large six-digit LED display (0.8 in, 21 mm)
- Built-in weighing and counting modes
- Alibi memory retains last 100k transactions
- Drives up to 10 x 350 Ω load cells (4/6 wires) or 20 × 700 Ω load cells
- Two serial ports (RS232) for printing and networking, including various serial stream formats
- Selectable standard Digital I/O with four dry-relay outputs/two opto-isolated inputs
- Standard RS 485, full duplex Interface
- Compatible with digital load cell interface
- 20 mA serial port for a remote display
- Stainless steel enclosure (IP67)
- Custom ticket printing—gross, net and setpoint format can be customized up to 300 characters and print time and date, unit ID, and consecutive ticket number
- Accumulation—weights are totaled, with armed print function
- Batching—up to eight batch steps with latched or continuous outputs for gross, net and delay setpoint. Actions include trip high or low, wait for standstill, print, accumulate and tare
- Keyed tare—preset tare value can be entered when the gross weight is at zero
- Local/remote—remote unit displays weight and transmits key press commands to the local unit
- User and operator password protection
- Audit trail tracking
- Time and date
- Plug and play ready for option card interchange



OPTIONS

- Rechargeable battery 5.3 A/h, 18 h operation
- Analog output 0/2–10 VDC or 0/4–20 mA
- Additional digital I/O card, four dry-relay outputs/two opto-isolated inputs for setpoints and batching
- Ethernet TCP/IP and USB 2.0 board

APPLICATIONS

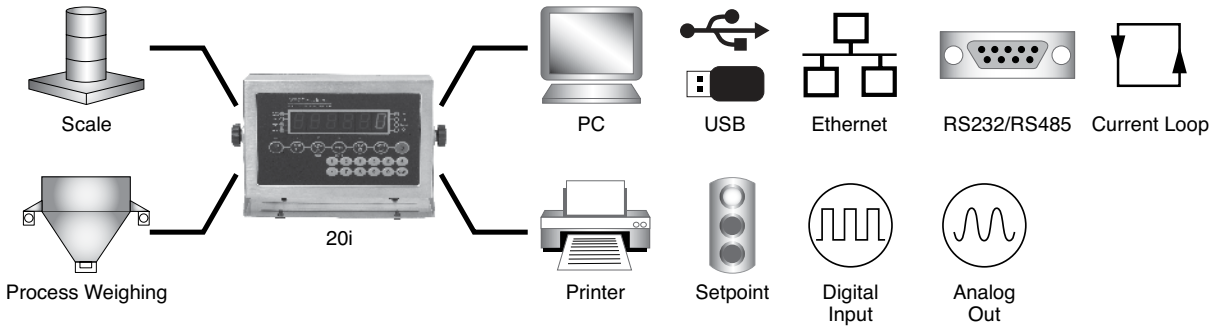
- Bench and floor scales
- Counting scales
- Inventory control
- Process weighing
- Truck scales
- Various industrial systems

DESCRIPTION

The INTUITION 20i is a versatile, general-purpose weight indicator, with a wide range of industrial and commercial applications. The seven-key panel enables easy operation, calibration, and setup of the instrument. Two password protection levels allow both the user and operator to access the instrument's setup and configuration menu. An integral printer interface allows easy, programmable, ticket formatting. Automatic date and time storage with the real-time clock option clearly documents all printout records.

A broad range of communication interfaces allows streaming and printing in several channels.

CONFIGURATION



Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
Document No.: 82000
Revision: 19-Feb-2018

Weight Indicator

SPECIFICATIONS

PERFORMANCE

Resolution
Selectable up to 100000 dd

Conversion Speed
5–40 samples per second (selectable)

Sensitivity
0.5 µV/Vsi for approved scales,
0.1 µV/Vsi for non-approved scales

Full Scale Range
Up to 4 mV/V (20 mV)

Analog Input Range
1 mV/V–4 mV/V

Linearity
Within 0.01% of full scale

Excitation
+5 V ±0.1 VDC with sense (6 wires)

Number of cells
Up to 10 x 350 Ω load cells

Filters
Rolling average or adaptive filter (selectable)

Offset Drift
≤13 nV/°C

Span Drift
≤13 ppm/°C

A/D Converter Type
Sigma-Delta, ratiometric

Count By
x1, x2, x5, x10, x20, x50

Decimal Point
Between any digits of the weight display

Calibration Methods
Dead load and span with optional post calibration tuning of mV/V values

Weighing Functions
Automatic zero tracking, motion detection, overload and underload detection, auto-zero on power-up, manual zero, manual tare, preset tare, net mode, unit selection (lb/kg/oz/tn/t/g)

Operating Modes
Normal (weigh), piece counting, configuration setup, user menu setup, test

Supported Applications
Custom ticket printing, basic weighing, accumulation, batching mode (up to 8 setpoints), preset tare, local and remote

Supported Features
Time and date, ALIBI memory (100k weight registrations), audit trail tracking, unit ID, sleep mode with automatic wakeup

ENVIRONMENTAL

Operating Temperature
–10°C to +40°C (14°F to 104°F)

Storage Temperature
–25°C to +70°C (–13°F to +158°F)

Relative Humidity
0–95% RH, non-condensing

DISPLAY AND KEYBOARD

Display
6 digits, 7 segments, LED

Digit Height
20 mm

Status Enunciators
Gross, net, center of zero, standstill, kg/primary units, lb/secondary units, counting, preset tare

Keypads
7-functions + 12 numeric keys (standard)

ELECTRICAL

Voltage
230 VAC @ 50/60 Hz

Current (typical)
2 A

Power Consumption (typical)
11 W

Battery Operation (Optional)
3.7 V, 5300 mA/h internal rechargeable battery, discharge time 18 h; standby time 56 h
(1 x 350 Ω load cell, no options installed)

DIGITAL INPUTS AND OUTPUTS

X2 Logic Input per Board
2 inputs, opto-isolated, up to 24 V input, active-low

X4 Logic Output per Board
4 outputs, dry-relay contacts, rating: 2 A, 30 VDC
(up to 2 x I/O boards can be installed)

Without removing the standard digital I/O, user can have additional digital I/O as an option making a total of 8 logic outputs (dry-relay contact) or 4 opto-isolated voltage inputs.

SERIAL COMMUNICATION

Serial Port 1 or 2
RS-232, programmable

Serial Port 3
RS485, programmable
4/6 wires, fully isolated

Baud Rate
9600–19200 bps, full duplex
7/8 data bits, even/odd/none

Weight Indicator

Applications
Printer output, weight output, EDP output, local-remote protocols, and continuous output, remote printer

Ethernet Port (Optional)
TCP/IP server and client with DHCP

Applications
Printer output, weight output, EDP output, continuous output, remote printer

USB 2.0 Port (Optional)
Host PC Device (OTG)

Applications
Printer output, weight output, EDP output, Load and save configuration data to flash drive

Note: The Ethernet and USB ports are located on the same optional board.

ANALOG OUTPUT (OPTIONAL)

Resolution
16 bit DAC

Voltage Output
0–10 V

Current
0–20 mA or 4–20 mA

Linearity
Voltage Output: 0.01% of full scale
Current Output: 0.08% of full scale

Offset Drift
Voltage Output: ±2 ppm/C° of full scale
Current Output: ±3 ppm/C° of full scale

ENCLOSURE—STAINLESS STEEL

Dimensions (L x H x D)
9.5 in x 6 in x 2.75 in
24 cm x 15 cm x 7 cm

Mounting
Tilt mount

Protection
IP67

Wiring Connections
Cable glands

APPROVALS (ACCURACY CLASS III)

OIML R-76
10000d single interval
Test certificate no.TC8084

CE Marking

Ordering Information is on next page.

Weight Indicator

ORDERING INFORMATION FOR INTUITION 20i

MOD - K - E - P - OP1 / OP2

MODEL
20i = LED display

KEYPAD
S = With 12 numeric keyboard + 7-functions

ENCLOSURE
S = Stainless Steel

POWER
1 = 230 VAC, Europe, type F plug
2 = 230 VAC, UK, type G plug
3 = 230 VAC, India, type D plug
4 = 220 VAC, China, type I plug
5 = 115 VAC, US, type B plug

OP1 / OP2 — See below for description

Standard units will come with RS 485 and D I/O as default.

OP1 / OP2

OPTION CARD (OP1)*
ANA = 1 x analog output card
DIO = 1 x digital I/O card
ETU = 1 x Ethernet Kit + USB card with 4 types of cable
NC1 = No option card, not in combination of NBT

BATTERY OPTION (OP2)
BAT = Rechargeable battery
NBT = No battery included

***CARD OPTION RESTRICTIONS**

- Maximum of up to two option cards per device can be installed at one time.
- Option card(s) selected in this section will be shipped with the main unit, unassembled.
- See the “Spares and Components” section below for additional card purchase.

Example Completed Part Numbers:

20i-S-S-1-NC1-NBT is the part number for a standard, unmodified 20i indicator with the correct power option for the European region.
20i-S-S-4-ANA-BAT: unit comes with 220 VAC, China, type I plug; analog O/P card; and with battery, unassembled.
20i-S-S-2-ETU-NBT: unit comes with 230 VAC, UK, type G plug; USB card with 4 different cable types; and it does not come with a battery.

SPARES AND COMPONENTS

RTSP XXXX

RTSP0070 = Bracket for option cards (supports up to two card slots)
RTSP0580 = USB and Ethernet card installation kit
RTSP0590 = Analog output card installation kit
RTSP0600 = Digital I/O card installation kit
RTSP0090 = Rechargeable battery
RTSP0870 = RS485 card installation kit

Weight Indicator

FEATURES

- Large six-digit LCD display (0.8 in, 21 mm)
- Built-in weighing and counting modes
- Alibi memory retains last 100k transactions
- Drives up to 10 x 350 Ω load cells (4/6 wires) or 20 × 700 Ω load cells
- Two serial ports (RS232) for printing and networking, including various serial stream formats
- Selectable standard Digital I/O with four dry-relay outputs/two opto-isolated inputs
- Standard RS 485, full duplex Interface
- Compatible with digital load cell interface
- 20 mA serial port for a remote display
- Stainless steel enclosure (IP67)
- Custom ticket printing—gross, net and setpoint format can be customized up to 300 characters and print time and date, unit ID, and consecutive ticket number
- Accumulation—weights are totaled, with armed print function
- Batching—up to eight batch steps with latched or continuous outputs for gross, net and delay setpoint. Actions include trip high or low, wait for standstill, print, accumulate and tare
- Keyed tare—preset tare value can be entered when the gross weight is at zero
- Local/remote—remote unit displays weight and transmits key press commands to the local unit
- User and operator password protection
- Audit trail tracking
- Time and date
- Plug and play ready for option card interchange



OPTIONS

- Rechargeable battery 5.3 A/h, 18 h operation
- Analog output 0/2–10 VDC or 0/4–20 mA
- Additional digital I/O card, four dry-relay outputs/two opto-isolated inputs for setpoints and batching
- Ethernet TCP/IP and USB 2.0 board

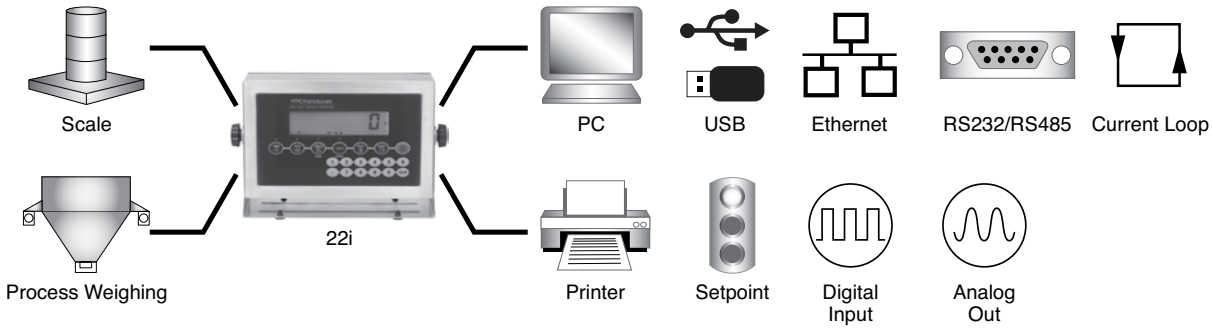
APPLICATIONS

- Bench and floor scales
- Counting scales
- Inventory control
- Process weighing
- Truck scales
- Various industrial systems

DESCRIPTION

The INTUITION 22i is a versatile, general-purpose weight indicator equipped with a large LCD and a wide range of industrial and commercial applications. With its bluish backlight display, the indicator is the perfect solution for a low-intensity-light environment. In addition, the unit is equipped with an optional rechargeable battery, which allows up to 42 hours of operation time.The 19-key panel enables easy operation, calibration, and setup of the instrument. Two password protection levels allow both the user and operator to access the instrument's setup and configuration menu. An integral printer interface allows easy, programmable, ticket formatting. Automatic date and time storage with the real-time clock option clearly documents all printout records. A broad range of communication interfaces allows streaming and printing in several channels.

CONFIGURATION



Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
Document No.: 82001
Revision: 15-Jan-2018

Weight Indicator

SPECIFICATIONS

PERFORMANCE

Resolution
Selectable up to 100000 dd

Conversion Speed
5–40 samples per second (selectable)

Sensitivity
0.5 µV/Vsi for approved scales,
0.1 µV/Vsi for non-approved scales

Full Scale Range
Up to 4 mV/V (20 mV)

Analog Input Range
1 mV/V–4 mV/V

Linearity
Within 0.01% of full scale

Excitation
+5 V ±0.1 VDC with sense (6 wires)

Number of cells
Up to 10 x 350 Ω load cells

Filters
Rolling average or adaptive filter (selectable)

Offset Drift
≤13 nV/°C

Span Drift
≤13 ppm/°C

A/D Converter Type
Sigma-Delta, ratiometric

Count By
x1, x2, x5, x10, x20, x50

Decimal Point
Between any digits of the weight display

Calibration Methods
Dead load and span with optional post calibration tuning of mV/V values

Weighing Functions
Automatic zero tracking, motion detection, overload and underload detection, auto-zero on power-up, manual zero, manual tare, preset tare, net mode, unit selection (lb/kg/oz/tn/t/g)

Operating Modes
Normal (weigh), piece counting, configuration setup, user menu setup, test

Supported Applications
Custom ticket printing, basic weighing, accumulation, batching mode (up to 8 setpoints), preset tare, local and remote

Supported Features
Time and date, ALIBI memory (100k weight registrations), audit trail tracking, unit ID, sleep mode with automatic wakeup

ENVIRONMENTAL

Operating Temperature
–10°C to +40°C (14°F to 104°F)

Storage Temperature
–25°C to +70°C (–13°F to +158°F)

Relative Humidity
0–95% RH, non-condensing

DISPLAY AND KEYBOARD

Display
6 digits, 7 segments, LCD

Digit Height
21 mm

Status Enunciators
Gross, net, center of zero, standstill, kg/primary units, lb/secondary units, counting, preset tare

Keypads
7-functions + 12 numeric keys (standard)

ELECTRICAL

Voltage
230 VAC @ 50/60 Hz

Current (typical)
2 A

Power Consumption (typical)
11 W

Battery Operation (Optional)
3.7 V, 5300 mA/h internal rechargeable battery, discharge time 18 h; standby time 56 h
(1 x 350 Ω load cell, no options installed)

DIGITAL INPUTS AND OUTPUTS

X2 Logic Input per Board
2 inputs, opto-isolated, up to 24 V input, active-low

X4 Logic Output per Board
4 outputs, dry-relay contacts, rating: 2 A, 30 VDC
(up to 2 x I/O boards can be installed)

Without removing the standard digital I/O, user can have additional digital I/O as an option making a total of 8 logic outputs (dry-relay contact) or 4 opto-isolated voltage inputs.

SERIAL COMMUNICATION

Serial Port 1 or 2
RS-232, programmable

Serial Port 3
RS485, programmable
4/6 wires, fully isolated

Baud Rate
9600–19200 bps, full duplex
7/8 data bits, even/odd/none

Weight Indicator

Applications
Printer output, weight output, EDP output, local-remote protocols, and continuous output, remote printer

Ethernet Port (Optional)
TCP/IP server and client with DHCP

Applications
Printer output, weight output, EDP output, continuous output, remote printer

USB 2.0 Port (Optional)
Host PC Device (OTG)

Applications
Printer output, weight output, EDP output, Load and save configuration data to flash drive

Note: The Ethernet and USB ports are located on the same optional board.

ANALOG OUTPUT (OPTIONAL)

Resolution
16 bit DAC

Voltage Output
0–10 V

Current
0–20 mA or 4–20 mA

Linearity
Voltage Output: 0.01% of full scale
Current Output: 0.08% of full scale

Offset Drift
Voltage Output: ±2 ppm/C° of full scale
Current Output: ±3 ppm/C° of full scale

Without removing the standard digital I/O, user can have additional digital I/O as an option making a total of 8 logic outputs (dry-relay contact) or 4 opto-isolated voltage inputs

ENCLOSURE—STAINLESS STEEL

Dimensions (L x H x D)
9.5 in x 6 in x 2.75 in
24 cm x 15 cm x 7 cm

Mounting
Tilt mount

Protection
IP67

Wiring Connections
Cable glands

APPROVALS (ACCURACY CLASS III)

OIML R-76
10000d single interval
Test certificate no.TC8084

CE Marking

Ordering Information is on next page.

Weight Indicator

ORDERING INFORMATION FOR INTUITION 22i

MOD - K - E - P - OP1 / OP2

MODEL
20i = LED display

KEYPAD
S = With 12 numeric keyboard + 7-functions

ENCLOSURE
S = Stainless Steel

POWER
1 = 230 VAC, Europe, type F plug
2 = 230 VAC, UK, type G plug
3 = 230 VAC, India, type D plug
4 = 220 VAC, China, type I plug
5 = 115 VAC, US, type B plug

OP1 and **OP2** — See below for description

Standard units will come with RS 485 and D I/O as default.

OP1 / OP2

OPTION CARD (OP1)*
ANA = 1 x analog output card
DIO = 1 x digital I/O card
ETU = 1 x Ethernet Kit + USB card with 4 types of cable
NC1 = No option card, not in combination of NBT

BATTERY OPTION (OP2)
BAT = Rechargeable battery
NBT = No battery included

***CARD OPTION RESTRICTIONS**

- Maximum of up to two option cards per device can be installed at one time.
- Option card(s) selected in this section will be shipped with the main unit, unassembled.
- See the “Spares and Components” section below for additional card purchase.

Example Completed Part Numbers:

22i-S-S-1-NC1-NBT is the part number for a standard, unmodified 22i indicator with the correct power option for the European region.
22i-S-S-4-ANA-BAT: unit comes with 220 VAC, China, type I plug; analog O/P card; and with battery, unassembled.
22i-S-S-2-ETU-NBT: unit comes with 230 VAC, UK, type G plug; USB card with 4 different cable types; and it does not come with a battery.

SPARES AND COMPONENTS

RTSP XXXX

RTSP0070 = Bracket for option cards (supports up to two card slots)
RTSP0580 = USB and Ethernet card installation kit
RTSP0590 = Analog output card installation kit
RTSP0600 = Digital I/O card installation kit
RTSP0090 = Rechargeable battery
RTSP0870 = RS485 card installation kit

Weight Indicator

FEATURES

- Economical general-purpose weighing indicator
- Large 6 digit LED display
- Two serial ports for simultaneous printer and PC connection
- Heavy duty ABS enclosure
- Sample rate up to 30 conversions per second
- OIML R-76 and NTEP approved to 10000d
- 3 level digital filtering
- Programmable ticket format (up to 185 characters)
- Consecutive transaction numbering
- **Optional**
  - UL power adaptor
  - TUV power adapter
  - UK power adapter
  - High tilt stand
  - Low tilt stand

APPLICATIONS

- Shipping and receiving scales
- Floor scales
- Bench scales

NOT AVAILABLE IN THE FOLLOWING REGIONS:

- North America, Central America, South America



DESCRIPTION

The VT 100 is an economical, general purpose weighing indicator for platform scales and other industrial applications.

Two serial ports, RS-232 and current loop, provide simultaneously PC and printer interface capability. Ticket formats may be edited and downloaded. Programmable details include ticket numbering, date and time.

Load cells are connected using a quick disconnect plug, allowing simple installation and maintenance.

The heavy duty ABS enclosure easily adjusts for desktop, wall (tilt), or post mounting.

CONFIGURATION



Weight Indicator

SPECIFICATIONS

PERFORMANCE

Resolution
10000 or 100000 dd (selectable)

Conversion Speed
3, 7, 15, or 30 samples (selectable)

Sensitivity
1.0 µV/Vsi for approved scales,
0.5 µV/Vsi for non-approved scales

Full Scale Range
3 mV/V

Linearity
0.01% of full scale

Long-Term Stability
0.005% of full scale per year

Excitation
+5 VDC with sense (6 wires)

Number of Cells
Up to 8, 350Ω load cells

Filter
Digital filter - 3 stages

Offset Drift
3.5 ppm/°C

Span Drift
3.5 ppm/°C

A/D Converter Type
Sigma-Delta, ratiometric

Count By
x1, x2, x5, x10, x50

Decimal Point
Between any digits of the weight display

Calibration Methods
Dead load and span, store in EEPROM

Weighing Functions
Automatic zero tracking, motion detection, auto-zero on power-up, zero, tare, gross/net, print, units conversion

ENVIRONMENTAL

Operating Temperature
–10°C to +40°C [14°F to 104°F]

Storage Temperature
–10°C to +70°C [–4°F to 158°F]

Relative Humidity
40–90% RH, non-condensing

DISPLAY AND KEYBOARD

Display
6 digit, 7-segment, LED, 20.3 mm

Status Enunciators
No motion, zero, net, units (kg, g)

Weight Digits
4, 5 or 6 (setup selectable)

Keyboard
5 key membrane keyboard, with tactile feedback

ELECTRICAL

Voltage
9 VDC or 115 or 230 VAC using power adapter

Power
8W

SERIAL COMMUNICATION

Serial Output #1
RS-232

Baud Rate
1200–38400 baud, full duplex

Applications
Continuous or printer output, PC interface

Serial Output #2
20 mA current loop–output only

Baud Rate
1200–9600 baud

Applications
Printer port

ENCLOSURE—HEAVY GAGE ABS

Dimensions
186.3 x 103 x 95 mm L x H x D
[7.32 x 4.05 x 3.74 in. L x H x D]

Mounting
Desktop, wall and tilt mount

APPROVALS (ACCURACY CLASS III)

OIML R-76
10000d EU-type approval no. T6877

NTEP
10000d single interval

VPG Transducers is continually seeking to improve product quality and performance. Specifications may change accordingly.

Weight Indicator

FEATURES

- Large 6 digit LED (VT 200) or LCD (VT 220) display
- Built-in weighing and counting modes
- Two opto-isolated setpoints
- Alibi (Flash) memory retains the last 10,000 transactions
- Two serial ports for printing and networking (one standard)
- Stainless steel enclosure (IP65), aluminum enclosure (IP40)
- Programmable ticket format
- High sample rate—up to 228 conversions per second
- OIML R-76 approved to 10000d
- Battery operation (optional with aluminum enclosure)
- **Optional**
  - Aluminum enclosure
  - Stainless steel enclosure
  - Dual scale operation
  - UL/TUV/UK power adapter
  - LED/LCD display
  - Analog input
  - Analog output
  - Second RS-232 port
  - RS-485 port
  - Real-time clock
  - Battery (for aluminum versions only)
  - USB slave port (for aluminum versions only)



OIML

APPLICATIONS

- Bench and floor scales
- Counting scales
- Inventory control
- Various industrial weighing systems

DESCRIPTION

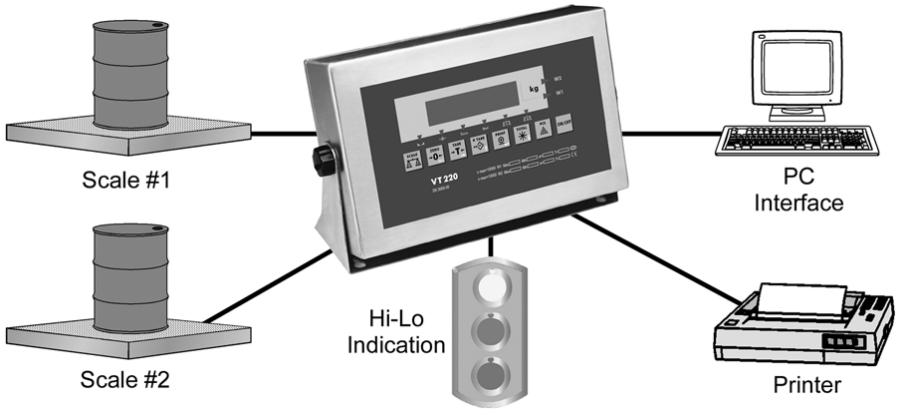
The Model VT 200 / VT 220 units are versatile, general purpose weight indicators, with a wide range of industrial and commercial applications.

The eight key panel enables easy operation, calibration, and setup of the instrument. An integral printer interface allows easy, programmable, ticket formatting. Automatic date and time storage with a real-time clock option clearly documents all printout records.

The VT 220 with the LCD display includes an internal rechargeable battery option for stand-alone autonomous operation.

Enclosure selections include tilted, wall mount, and desktop arrangements.

CONFIGURATION



Weight Indicator

SPECIFICATIONS

PERFORMANCE

Resolution
Selectable up to 990000 dd

Conversion Speed
3–228 samples per second (selectable)

Sensitivity
0.25 µV/Vsi for approved scales,
0.1 µV/Vsi for non-approved scales

Full Scale Range
–0.25 to 1.75 mV/V [–1.25 mV to 8.75 mV] or
–0.25 to 3.75 mV/V [–1.25 mV to 18.75 mV]

Linearity
0.002% of full scale

Long-Term Stability
0.005% of full scale per year

Excitation
+5V alternating polarity or +5 VDC (selectable), with sense (6 wires)

Number of Cells
Up to 10; 350Ω load cells

Filter
FIR automatically adjusted to conversion speed, rolling average

Offset Drift
≤2 ppm/°C

Span Drift
≤2 ppm/°C

A/D Converter Type
Sigma-Delta, ratiometric

Count By
x1, x2, x5, x10, x50, x100, x200

Decimal Point
Between any digits of the weight display

Calibration Methods
Dead load and span, or data sheets calibration, via the mV/V output values of the load cell. Calibration of two analog inputs (optional) with individual coefficients.

Weighing Functions
Automatic zero tracking, motion detection, auto-zero on power-up, zero tare, preset tare, net mode, multiple test functions

Memory Allocation
Calibration data EEPROM, Flash tally-roll (Alibi) memory capable of 10,000 weight registrations

Piece Counting Mode
Real-Time Clock (Optional)

ENVIRONMENTAL

Operating Temperature
–10°C to +40°C [14°F to 104°F]

Storage Temperature
–10°C to +70°C [– 4°F to 158°F]

Relative Humidity
40–90% RH, non-condensing

DISPLAY AND KEYBOARD

Display
6 digit, 7 segment, LED or LCD

Digit Height
20 mm (VT 200), 16 mm (VT 220)

Status Enunciators
No motion, zero, tare in use, net, scale in operation (#1 or #2 or sum #1+2, if second scale connected), piece counting mode

Weight Digits
4, 5 or 6 (setup selectable)

Keyboard
8 key membrane keyboard, with tactile feedback

ELECTRICAL

Voltage
85–265 VAC

Current
500 mA

Battery Operation (Optional)
Internal rechargeable battery (VT 220)
Aluminum version only

ISOLATED ANALOG OUTPUT (OPTIONAL)

Resolution
16 bit DAC

Voltage Output
0.02–10V

Current
0–20 mA or 4–20 mA

Linearity
0.002% of full scale

Offset Drift
≤2 ppm/°C

INPUT AND OUTPUTS

(x1) Logic Input
9-24 VDC, negative common, opto-isolated to 2.5 kV

(x2) Logic Output
24 VDC ±10%, positive common, max current 100 mA, opto-isolated to 2.5 kV

SERIAL COMMUNICATION

Serial Output #1
RS-232C Full duplex, programmable

Baud Rate
1200-9600 baud , full duplex

Applications
Continuous, print (on demand), alibi print

Weight Indicator

Serial Output #2 (Optional)
RS-232, RS-485 or slave USB (Aluminum only) setup programmable

Modbus ASCII

Baud Rate
2400-115200 baud, half duplex

Applications
EDP output, master-slave protocols, continuous output, remote printer

ENCLOSURES

Stainless Steel Enclosure

Dimensions
252 x 152 x 62 mm L x H x D
[10 x 6 x 2.5 in. L x H x D]

Mounting
Wall and tilt mount

Protection
IP65

Wiring Connections
Cable glands

Aluminium Enclosure

Dimensions
194 x 100 x 107 mm L x H x D
[7.64 x 3.94 x 4.21 in. L x H x D]

Mounting
Desktop

Protection
IP40

Wiring Connections
D-sub connectors

APPROVALS (ACCURACY CLASS III / IIIL)

OIML R-76
10000d single or dual interval
EU-type approval no. 0200-NAWI-03996

VPG Transducers is continually seeking to improve product quality and performance. Specifications may change accordingly.

Weighbridge Weigh Indicator

FEATURES

- Specially designed as a weighbridge terminal
- Large, 16-character LCD display
- 27-key keyboard featuring alphanumeric and function keys
- Up to three serial ports with printing and networking (one standard)
- Two opto-isolated weight setpoints
- Alibi (Flash) memory and programmable database of transaction records
- Real-time clock
- Stainless steel enclosure (IP65), aluminum enclosure (IP40)
- Weighing and counting operating modes
- OIML R-76 approved to 10000d
- 4 programmable ticket formats
- Gravity calibration
- **Optional**
  - Aluminum enclosure
  - Stainless steel enclosure
  - Dual scale operation (optional)
  - UL/TUV/UK/China/Japan plug
  - Second RS-232 port
  - RS-485 port
  - Analog input
  - Analog output for PLC interface
  - Battery (for aluminum version only)
  - USB slave port (for aluminum versions only)
  - Third RS232 print port (for aluminum version only)
  - PS2 keyboard interface (for aluminum version only)

APPLICATIONS

- Weighbridges
- Inventory control
- Industrial weighing systems
- Bench, floor, and counting scales



OIML

DESCRIPTION

The Model VT 300 is a powerful alphanumeric terminal, designed for weighbridges, inventory control, and other demanding weighing applications.

The extended keyboard includes alphanumeric and function keys for easy data entry and setup.

A 16-character dot-matrix LCD display supports the required user interface in complex industrial applications.

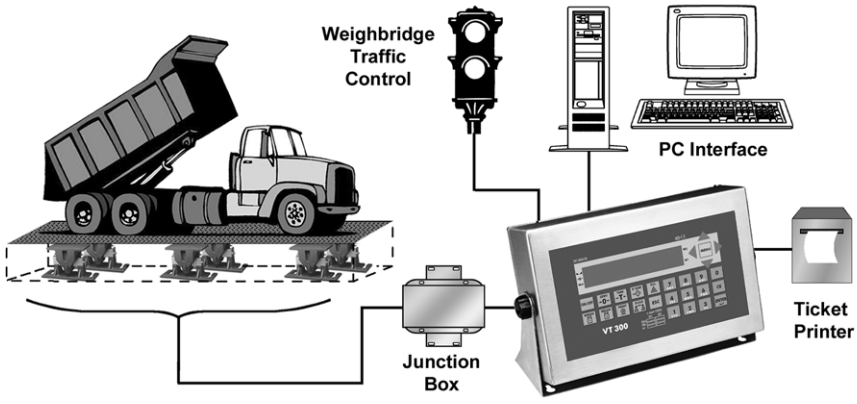
The VT 300 software manages various transactions allowing choices of customer, material type, or truck identification.Documented records of all daily activities are maintained in memory and made available for computer reporting.Printable tickets and reports are easily formatted and edited.

Enclosure selections include tilted, wall-mount, and desktop.

See next page for further data.

Weighbridge Weigh Indicator

CONFIGURATION



SPECIFICATIONS

PERFORMANCE

Resolution
Selectable up to 990000 dd

Conversion Speed
3–228 samples per second (selectable)

Sensitivity
0.25 µV/Vsi for approved scales,
0.1 µV/Vsi for non-approved scales

Full Scale Range
–0.25 to 1.75 mV/V [–1.25 mV to 8.75 mV] or
–0.25 to 3.75 mV/V [–1.25 mV to 18.75 mV]

Linearity
0.002% of full scale

Long-Term Stability
0.005% of full scale per year

Excitation
+5V alternating polarity or +5 VDC (selectable), with sense (6 wires)

Number of Cells
Up to 10; 350Ω load cells

Filter
FIR automatically adjusted to conversion speed, rolling average.

Offset Drift
≤2 ppm/°C

Span Drift
≤2 ppm/°C

A/D Converter Type
Sigma-Delta, ratiometric, 550,000 internal counts

Count By
x1, x2, x5, x10, x50, x100, x200

Decimal Point
Between any digits of the weight display

Calibration Methods
Dead load and span, or data sheets calibration, via the mV/V output values of the load cell. Calibration of two analog inputs (optional) with individual coefficients

Weighing Functions
Automatic zero tracking, no motion detection, auto-zero on power-up, zero tare, preset tare, net mode, multiple test functions.

Memory Allocation
Calibration data EEPROM, flash tally-roll (Alibi) memory capable of 10,000 weight registrations, 250 records database (trucks)

Piece Counting Mode

Real-Time Clock

ENVIRONMENTAL

Operating Temperature
–10°C to +40°C [14°F to 104°F]

Storage Temperature
–10°C to +70°C [–4°F to 158°F]

Relative Humidity
40–90% RH, non-condensing

DISPLAY AND KEYBOARD

Display
16 character, LCD, backlit

Digital Height
14.5 mm [0.57 in.]

Weighbridge Weigh Indicator

Status Enunciators
No motion, zero, tare in use, net, scale in operation (#1 or #2 or sum # 1+2, if second scale connected), piece counting mode

Weight Digits
4, 5 or 6 (setup selectable)

Keyboard
Pseudo-alphanumeric, 27 keys, with tactile feedback

ELECTRICAL

Voltage
85–265 VAC

Current
500 mA

Battery Operation (Optional)
Internal rechargeable battery, 6V/3Ah (aluminum version only)

ISOLATED ANALOG OUTPUT (OPTIONAL)

Resolution
16 bit DAC

Voltage Output
0.02–10V

Current
0–20 mA or 4–20 mA

Linearity
0.01% of full scale

Thermal Stability
50 ppm/°C typical

INPUTS and OUTPUTS

(x1) Logic Input
9-24 VDC, negative common, opto-isolated to 2.5 kV

(x2) Logic Output
24 VDC ±10%, positive common, max current 100 mA, opto-isolated to 2.5 kV

SERIAL COMMUNICATION

Serial Output #1
RS-232C Full duplex, programmable

Baud Rate
1200-9600 baud, full duplex

Applications
Printer output, Weight output

Serial Output #2 (optional)
RS-232, RS-485 or slave USB (Aluminum only) setup programmable

Modbus ASCII

Baud Rate
2400-115200 baud, half duplex

Applications
EDP output, master-slave protocols, continuous output, remote printer

Serial Output #3

RS-232PRN, programmable

Baud Rate

2400 -115200 baud

Applications

Printer output

ENCLOSURES

Stainless Steel Enclosure

Dimensions
252 x 152 x 62 mm L x H x D
[10 x 6 x 2.5 in. L x H x D]

Mounting
Wall and tilt mount

Protection
IP65

Wiring Connections
Cable glands

Aluminum Enclosure

Dimensions
194 x 100 x 107 mm L x H x D
[7.64 x 3.94 x 4.21 in. L x H x D]

Mounting
Desktop

Protection
IP40

Wiring Connections
D-sub connectors

APPROVALS (ACCURACY CLASS III)

OIML R-76
10000d single or dual interval
EU-type approval no. 0200-NAWI-03996

VPG Transducers is continually seeking to improve product quality and performance.
Specifications may change accordingly.

Weighbridge Indicator for Digital and Analog Load Cells

FEATURES

- Supports digital and analog load cells
- Easy calibration when used with digital load cells
- Easy digital corner compensation
- Elaborated diagnostics of digital weighbridge load cells
- Easy service and maintenance
- Large, 16-character LCD display
- 27-key keyboard featuring alphanumeric and function keys
- Up to three serial ports with printing and networking
- Analog output for PLC interface (optional)
- Two opto-isolated weight setpoints
- Alibi (Flash) memory for transaction records
- Real-time clock
- Stainless steel enclosure (IP65), aluminum enclosure (IP40)
- Weighing and counting operating modes
- OIML R-76 approved to 10,000d
- Dual scale operation (one digital, one analog)
- 4 programmable ticket formats
- **Optional**
  - Analog output for PLC interface
  - Second RS232 print port (for aluminum version only)
  - PS2 keyboard interface (for aluminum version only)

APPLICATIONS

- Weighbridges
- Inventory control
- Industrial weighing systems
- Bench, floor, and counting scales



DESCRIPTION

The Model VT300D is a powerful alphanumeric terminal, designed for digital and analog weighbridges, inventory control, and other demanding weighing applications.

The extended keyboard includes alphanumeric and function keys for easy data entry and setup.

A 16-character dot-matrix LCD display supports the required user interface in complex industrial applications.

Using a weighing system that includes the Model VT 300D together with VPG Transducers digital load cells (DSC, SCC, SBC and MDBD) enables very easy installation, calibration, corner compensation, maintenance and diagnostics of the system.

The Model VT 300D's software manages various transactions allowing choices of customer, material type, or truck identification. Records of all activities are maintained in the indicator's memory and made available for computer reporting. Printable tickets and reports are easily formatted and edited.

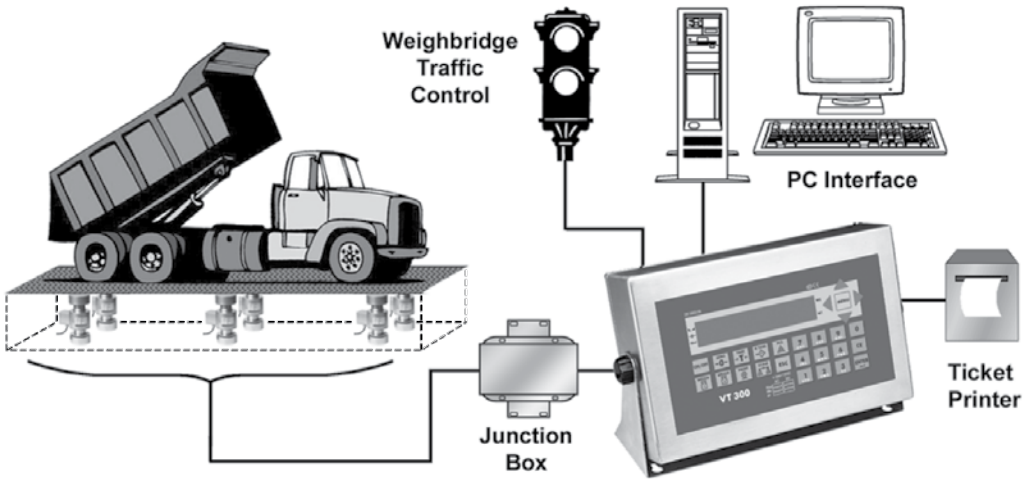
The Model VT 300D can support one digital load cells weighbridge and one analog load cell weighbridge at same time.

Enclosure selections include tilted, wall-mount, and desktop.

See next page for further data.

Weighbridge Indicator for Digital and Analog Load Cells

CONFIGURATION



SPECIFICATIONS

PERFORMANCE

Analog Load Cell Interface Performance

Resolution
Selectable up to 990,000 dd

Conversion Speed
3–228 samples per second (selectable)

Sensitivity
0.4 µV/Vsi for approved scales,
0.1 µV/Vsi for non-approved scales

Full Scale Range
–0.25 to 1.75 mV/V or –0.25 to 3.75 mV/V

Linearity
0.002% of full scale

Long-Term Stability
0.005% of full scale per year

Excitation
+5V alternating polarity or +5 VDC (selectable), with sense (6 wires)

Number of cells
Up to 10; 350Ω load cells

Filter
FIR automatically adjusted to conversion speed, rolling average.

Offset Drift
≤2 ppm/°C

Span Drift
≤2 ppm/°C

A/D Converter Type
Sigma-Delta, ratiometric, 550,000 internal counts

Digital Load Cell Interface Performance

Resolution
Selectable up to 990,000 dd

Update Rate
25 updates per second

Supply to Load Cell
14–18 VDC; 1.5A (Standard 15V)

Number of Cells
Up to 12

Compatible Load Cells
DSC, SCC, SBC, MDBD

General Performance

Count By
x1, x2, x5, x10, x50, x100, x200

Decimal Point
Between any digits of the weight display

Calibration Methods
Dead load and span, or data sheets calibration, via the mV/V output values of the load cell. Digital corner correction. Digital default calibration.

Weighing Functions
Automatic zero tracking, no motion detection, auto-zero on power-up, zero tare, preset tare, net mode, multiple test functions.

Memory Allocation
Calibration data EEPROM, flash tally-roll (Alibi) memory capable of 10,000 weight registrations, 250 records database (trucks). Stores the digital load cell performance and calibration data.

Piece Counting Mode
Real-Time Clock

Model VT 300D

Revere

VPG Transducers

Celtron • Revere • Sensortronics • Tedea-Huntleigh

Weighbridge Indicator for Digital and Analog Load Cells

ENVIRONMENTAL

Operating Temperature
–10°C to +40°C [14°F to 104°F]

Storage Temperature
–10°C to +70°C [–4°F to 158°F]

Relative Humidity
40–90% RH, non-condensing

DISPLAY AND KEYBOARD

Display
16-character, LCD, backlit

Digital Height
14.5 mm

Status Enunciators
No motion, zero, tare in use, net, scale in operation (#1 or #2 or sum # 1+2, if second scale connected), piece counting mode

Weight Digits
4, 5 or 6 (setup selectable)

Keyboard
Pseudo-alphanumeric, 27 keys, with tactile feedback

ELECTRICAL

Voltage
85–265 VAC

Current
500 mA

ISOLATED ANALOG OUTPUT (OPTIONAL)

Resolution
16 bit DAC

Voltage Output
0.02–10V

Current
0–20 mA or 4–20 mA

Linearity
0.01% of full scale

Thermal Stability
50 ppm /°C typical

INPUTS AND OUTPUTS

(x1) Logic Input
9–24 VDC, negative common, opto-isolated to 2.5 kV

(x2) Logic Output
24 VDC ±10%, positive common, max current 100 mA, opto-isolated to 2.5 kV.

SERIAL COMMUNICATION

Serial Output #1
RS232 Full duplex, programmable

Baud Rate
1200-9600 baud, full duplex

Applications
Printer output, weight output

Serial Output #2
RS-485 setup programmable

Baud Rate
2400-115200 baud, half duplex

Applications
EDP output, master-slave protocols, continuous output, remote printer and digital load cell communication.

Serial Output #3
RS232PRN' programmable

Baud Rate
2400-115200

Applications
Printer output

ENCLOSURE

Stainless Steel Enclosure

Dimensions
252 x 152 x 62 mm L x H x D

Mounting
Wall and tilt mount

Protection
IP65

Wiring Connections
Cable glands

Aluminum Enclosure

Dimensions
194 x 100 x 107 mm L x H x D

Mounting
Desktop

Protection
IP40

Wiring Connections
D-sub connectors

APPROVALS (ACCURACY CLASS III)

OIML R-76
10,000d single or dual interval
EU-type approval no. 0200-NAWI-03996

VPG Transducers is continually seeking to improve product quality and performance.
Specifications may change accordingly.

Weight Controller/Indicator

FEATURES

- Inventory and batching control terminal
- High sample rate, up to 228 samples per second
- Two serial ports with printing and networking (one standard)
- Two opto-isolated weight setpoints
- Large 6 digit LED display
- Alibi (Flash) memory for last 10,000 transactions
- OIML R-76 approved to 10000d
- Panel mount IP40 enclosure
- Input power 24 VDC
- **Optional Features**
  - Analog output
  - IP54 front panel cover
  - RS-485 port
  - Second RS-232 port
  - USB slave port

APPLICATIONS

- Process weighing
- Inventory control



OIML

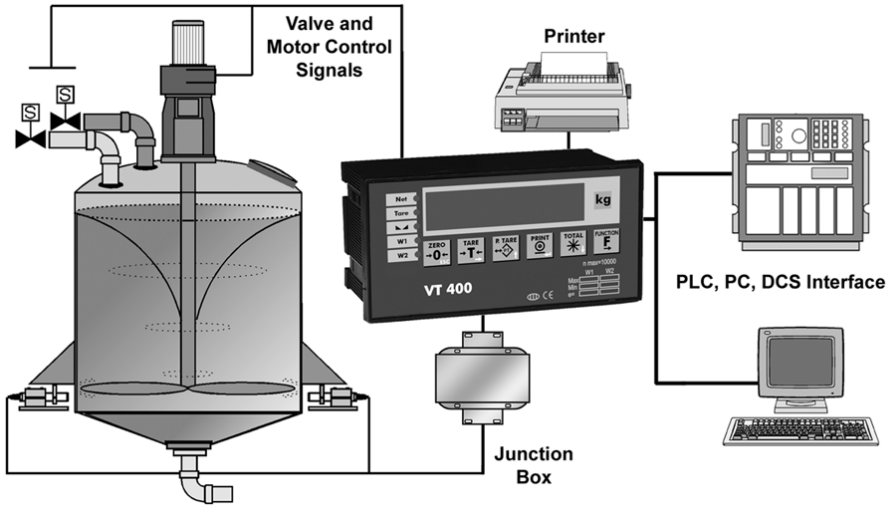
DESCRIPTION

The Model VT 400 Weight Controller provides weighing and control functions for industrial process systems.

Two opto-isolated control outputs, a choice of up to two serial interfaces (RS-232 and RS-485) and an analog output (optional) allow full communication with higher level PCs or PLCs. Up to 30 units can be interconnected through the RS-485 network.

The standard Model VT 400 panel mount enclosure is rated IP40.However, it can be upgraded with an optional IP54 front panel cover.

CONFIGURATION



Weight Controller/Indicator

SPECIFICATIONS

PERFORMANCE

Resolution
Selectable up to 990,000 dd

Conversion Speed
3–228 samples per second (selectable)

Sensitivity
0.4 µV/Vsi for approved scales
0.1 µV/Vsi for non-approved scales

Full Scale Range
–0.25 to 1.75 mV/V [–1.25 mV to 8.75 mV] or
–0.25 to 3.75 mV/V [–1.25 mV to 18.75 mV]

Linearity
0.002% of full scale

Long-Term Stability
0.005% of full scale per year

Excitation
+5V alternating polarity or +5 VDC (selectable), with sense (6 wires)

Number of Cells
Up to 10, 350Ω load cells

Filter
FIR automatically adjusted to conversion speed, rolling average

Offset Drift
< 2 ppm/°C

Span Drift
< 2 ppm/°C

A/D Converter Type
Sigma-Delta, ratiometric

Count By
x1, x2, x5, x10, x50, x100, x200

Decimal Point
Between any digits of the weight display

Calibration Methods
Dead load and span, or data sheets calibration, via the mV/V output values of the load cell

Weighing Functions
Automatic zero tracking, motion detection, auto-zero on power-up, zero tare, multiple test functions

Memory Allocation
Calibration data EEPROM (32 kb), Flash tally-roll (Alibi) memory capable of 10,000 weight registrations (64 kb)

ENVIRONMENTAL

Operating Temperature
–10°C to +40°C (14°F to 104°F)

Storage Temperature
–10°C to +70°C (–4°F to 158°F)

Relative Humidity
40-90% RH, non-condensing

DISPLAY AND KEYBOARD

Display
6 digit, 7 segment, LED

Digital Height
14 mm [0.55 in.]

Status Enunciators
No motion, zero, tare in use, net, setpoint in operation

Weight Digits
4, 5 or 6 (setup selectable)

Keyboard
6 membrane keys, with tactile feedback

ELECTRICAL

Voltage
24 VDC

Current
500 mA

ISOLATED ANALOG OUTPUT (OPTIONAL)

Resolution
16 bit DAC

Voltage Output
0.02–10V

Current
0–20 mA or 4–20 mA

Linearity
0.01% (or better) of full scale

Thermal Stability
50 ppm/°C typical

INPUTS AND OUTPUTS

(x1) Logic Input
9-24 VDC, negative common, opto-isolated to 2.5 kV

(x2) Logic Output
24 VDC ±10%, positive common, max current 100 mA, opto-isolated to 2.5 kV, programmable as weight setpoints

Weight Controller/Indicator

SERIAL COMMUNICATION

Serial Output #1
RS-232C Full duplex, programmable

Baud Rate
1200-9600 baud, full duplex

Applications
Continuous, print (on demand), alibi print

Serial Output #2
RS-232, RS-485 or slave USB setup programmable

Modbus ASCII

Baud Rate
2400-115200 baud, half duplex

Applications
EDP and master-slave protocols, continuous output, remote printer, weight output

ENCLOSURE—HEAVY DUTY PLASTIC

Dimensions
144 x 72 x 132 mm L x H x D
[5.7 x 2.8 x 5 in. L x H x D]

Mounting
Panel mount

Protection
IP40 standard, optional front panel cover—IP54

Wiring Connections
Mini D-type connectors

APPROVALS (ACCURACY CLASS III/IIIL)

OIML R-76
10000d single or dual interval
EU-type approval no. 0200-NAWI-03996

VPG Transducers is continually seeking to improve product quality and performance. Specifications may change accordingly.

Remote Weight Display

FEATURES

- Large 6 digit red LED display
- Digit height—57 mm (2-1/4″)
- Digit-for-digit replication from the transmitting VPG Transducers indicator
- Communication interface—RS-232, RS-485, or 20 mA
- Baud rate and data format—DIP switch selectable
- Compatible with VT200/220/300/400 only
- Environmental protection to IP65
- **Optional**
  - UL/TUV/UK/China/Japan plug



CE

APPLICATIONS

- Truck scales/weighbridges
- Warehouse scales
- Loading bays
- All outdoor weighing applications

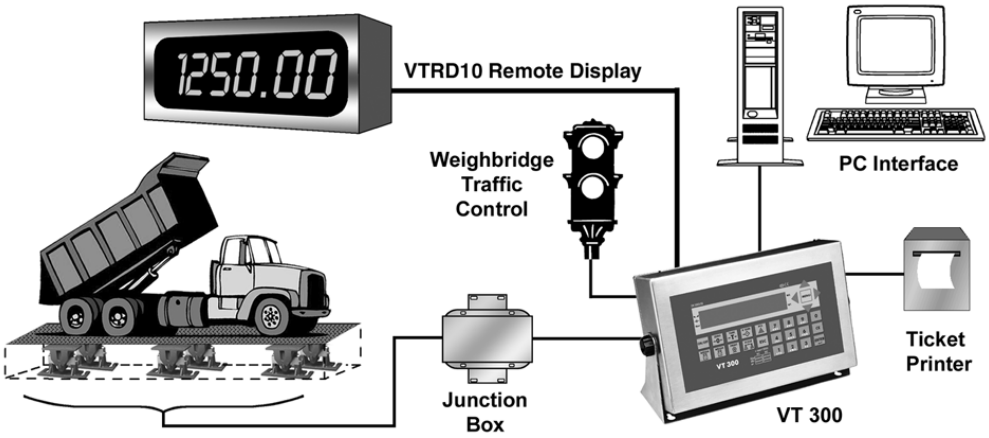
DESCRIPTION

The Model VTRD10 is a compact, digit-for-digit, high visibility remote display.

The large LED display (57mm digits) and wide viewing angle contribute to ease of reading at long distances. The Model VTRD10 is environmentally protected to IP65 and is suitable for outdoor use.

A standard serial interface (RS-232 or RS-485 or 20mA current loop) allows easy connection between the local indicator and the Model VTRD10 at distances up to 600 meters (RS-485). The Model VTRD10 is fully compatible with our Weight Indicator Models 200, 220, 300, and 400.

CONFIGURATION



Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
Document No.: 11645
Revision: 25-Mar-2018

Remote Weight Display

SPECIFICATIONS

DISPLAY AND SERIAL INTERFACE

Display
6 digits, LED, high visibility (57 mm, red)

Serial Interface
RS-232 or RS-485 or 20 mA current loop, terminated with screw type terminals

Baud Rate
DIP switch selectable 1200, 2400, 9600, 19200 baud

Character Format
DIP switch selectable
a) 7 data bits, even parity, 1 stop bit
b) 8 data bits, no parity, 1 stop bit
c) 8 data bits, even parity, 1 stop bit

Distance
RS-232 and 20 mA current loop = 50 meters
RS-485 = 600 meters

ENVIRONMENTAL

Operating Temperature
–10°C to +40°C (14°F to 104°F)

Storage Temperature
–20°C to +55°C (4°F to 158°F)

Relative Humidity
90% RH max., non-condensing

ELECTRICAL

Voltage
115/230 VAC +10%, 50–60Hz

Power
7W max.

ENCLOSURE—STAINLESS STEEL

Dimensions
328.3 x 72 x 40 mm L x H x D

Protection
IP65

Wiring Connections
Cable glands

CE APPROVAL

VPG Transducers is continually seeking to improve product quality and performance. Specifications may change accordingly.

VPG Transducers
Celtron • Revere • Sensortronics • Tedea-Huntleigh

Weight Indicator

FEATURES

- High performance and long-term reliability
- Assembly “snap-on” DIN rail (certified to EN50022 standards)
- Able to interface with intrinsically safe barriers for use in hazardous areas



OPTIONS

- Analog option available
- RS485 full duplex output available

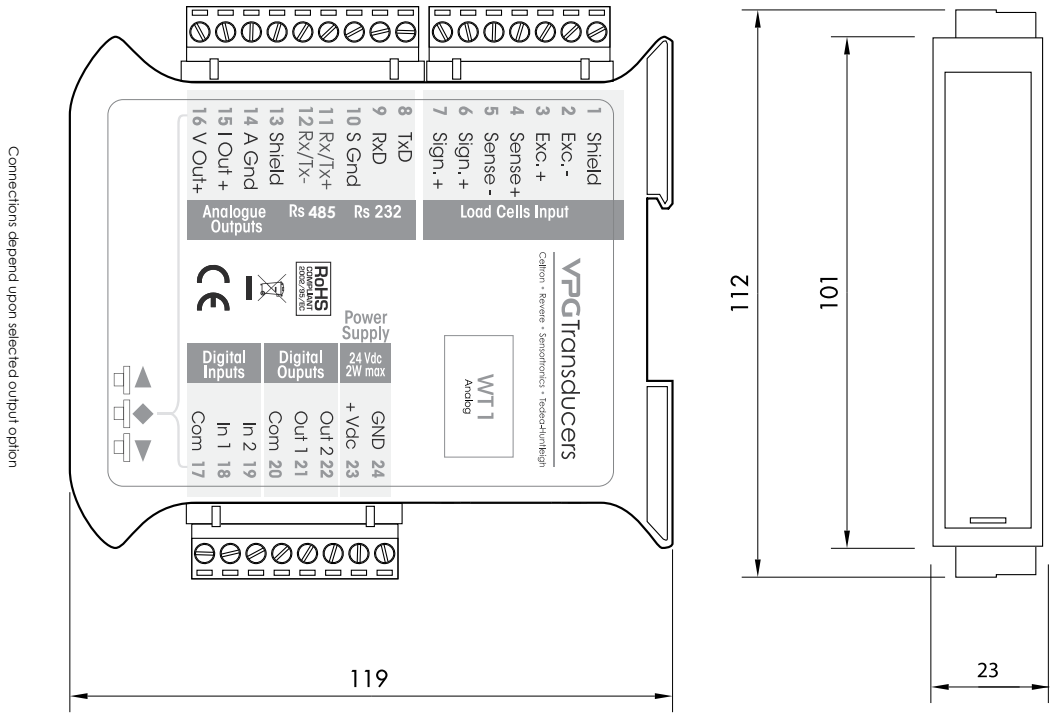
APPLICATIONS

- Various industrial systems

DESCRIPTION

The WT1 provides accurate readings at an excellent price. When connected to a system of 1–4 load cells, the WT1 will convert output signals into stable, accurate weight values. This model comes with two logic outputs and two logic inputs as standard. The WT1 can be fitted with either an RS232C half-duplex or RS485 full duplex serial door; both serial doors can be loaded with ASCII or Modbus RTU protocols to enable communication with a PC or PLC.

OUTLINE DIMENSIONS

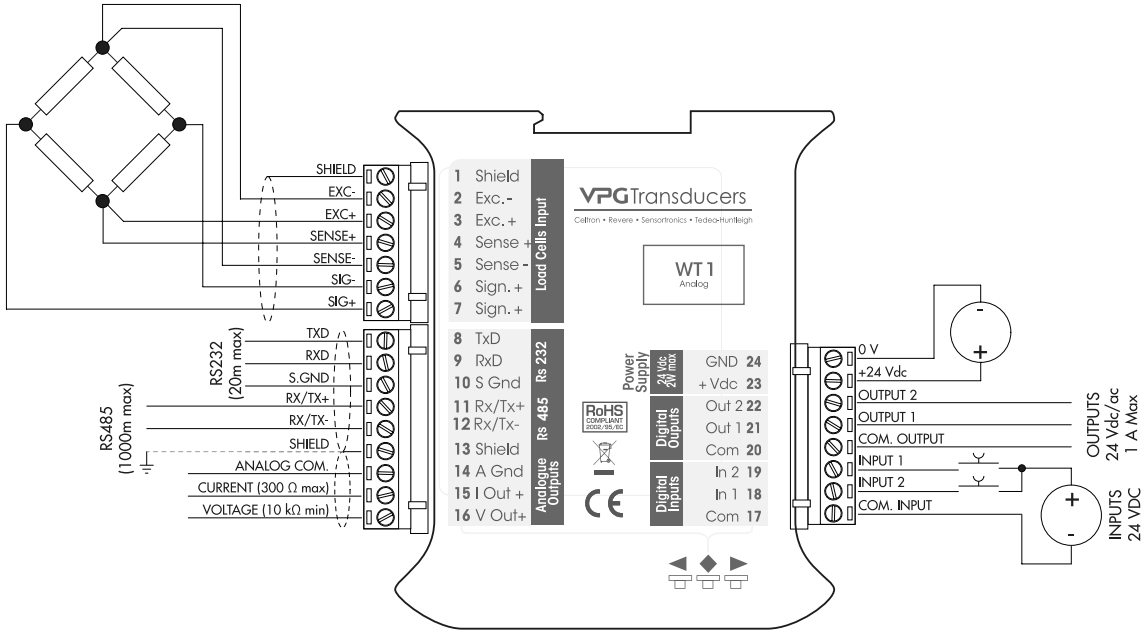


Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com

Document No.: 85991
Revision: 03-Mar-2019

Weight Indicator

WIRING DIAGRAM



Connections depend upon selected output options

SPECIFICATIONS

PERFORMANCE

Power Output
4 V

Measuring Range
–4 to +4 mV/V

Input Sensitivity
0.02 µV/division

Linearity
<0.01% of full scale

Gain Drift
<0.001% of full scale ˚C

D/A Convertor
24 bit

Maximum Load Cells
4 at 350 Ω

Internal Resolution
16,000,000 counts

Visible Resolution
60,000 counts (visible on net weight)

Divisions Value (Adjustable)
0.001 to 50

Filter (Adjustable)
0.2 to 25 Hz

ENVIRONMENTAL

Operating Temperature
–10 to +50 ˚C

Storage Temperature
–20 to +60 ˚C

DISPLAY AND KEYBOARD

Display
5 digit, 7 segment, LED

Digit Height
7 mm

Keyboard
3 key mechanical keyboard

ELECTRICAL

Voltage
24 ±10% VDC

Wattage
2 W

INPUT AND LOGICS

Logic Input
24 VCC (external voltage), 2 opto-isolated, PNP

Logic Output
2 solid state relays
(maximum load 24 VDC/100 mA each)

Weight Indicator

ANALOG OUTPUT (OPTIONAL)

Output
16 bit, opto-isolated

Tension
0 to 5/10 V, (R Min 10 kΩ)

Current
0/4 to 20 mA (R max 300 Ω)

Linearity
<0.03% of full scale

Temperature Drift
<0.002% full scale ˚C

SERIAL COMMUNICATION

Serial Output #1
RS485 full duplex with ASCII or
Modbus RTU protocol

Baud Rate
2400 to 115200 (adjustable)

Serial Output #2 (with Analog Output option)
RS232C half duplex with ASCII or
Modbus RTU protocol

Baud Rate
2400 to 115200 (adjustable)

ENCLOSURES

Dimensions
119 x 112 x 23 mm, L x H x D

Mounting
DIN rail

Electrical Connections
5.08 mm terminal screw pass

APPROVALS

EN
EN61000-6-2, EN61000-6-3 for EMC;
EN61010-1 for electrical safety

ORDERING INFORMATION FOR WT1

M O D - O

MODEL
WT1

OUTPUT OPTION (O)*
NA = No analog option, but RS485 full duplex output
ANA = Analog option, with RS232C half-duplex output

Example Completed Part Numbers:
WT1-ANA is the part number for a WT1 with the analog and RS232C outputs.
WT1-NA is the part number for a WT1 with the RS485 output only.
***This is mandatory: customers must select an output option.**

All specifications subject to change without notice. For inquiries within Italy please contact the VPG Transducers Marketing Department directly using the email address vpgt.marketing@vpgsensors.com.

Weight Indicator

FEATURES

- High performance and long-term reliability
- Assembly “snap-on” DIN rail (certified to EN50022 standards)
- Able to interface with intrinsically safe barriers for use in hazardous areas



OPTIONS

- Ethernet version available
- RS485 full duplex output available
- PROFINET version available

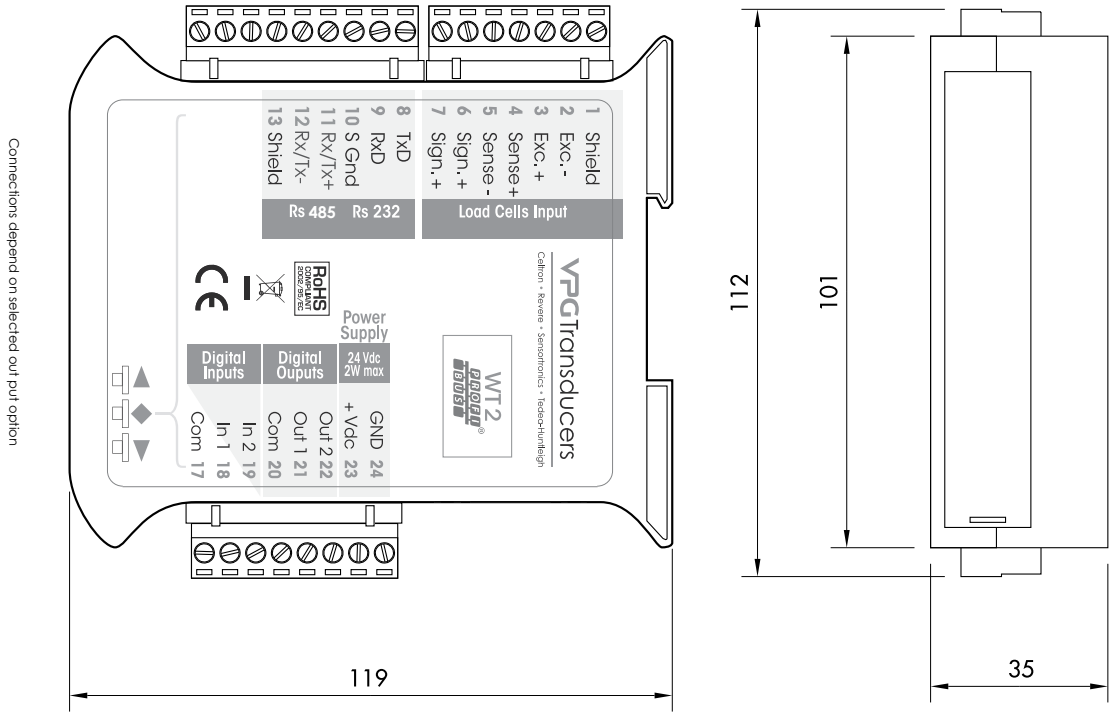
APPLICATIONS

- Various industrial systems

DESCRIPTION

The WT2 is a modified version of the WT1 with improved interfacing abilities. It uses the same 24-bit D/A converter and, when connected to a system of 1–4 load cells, the WT2 converts output signals in the same manner as the WT1. The WT2’s strength is in its connectivity. It uses PROFIBUS as its default protocol, which is faster than the MODBUS protocol and able to control more complex systems. The WT2 also features an optional Ethernet connection, which comes with a 128-byte in/out buffer for high-speed PC connections. The Ethernet cable can be augmented with the PROFINET protocol, which enables full integration into systems with that protocol.

OUTLINE DIMENSIONS

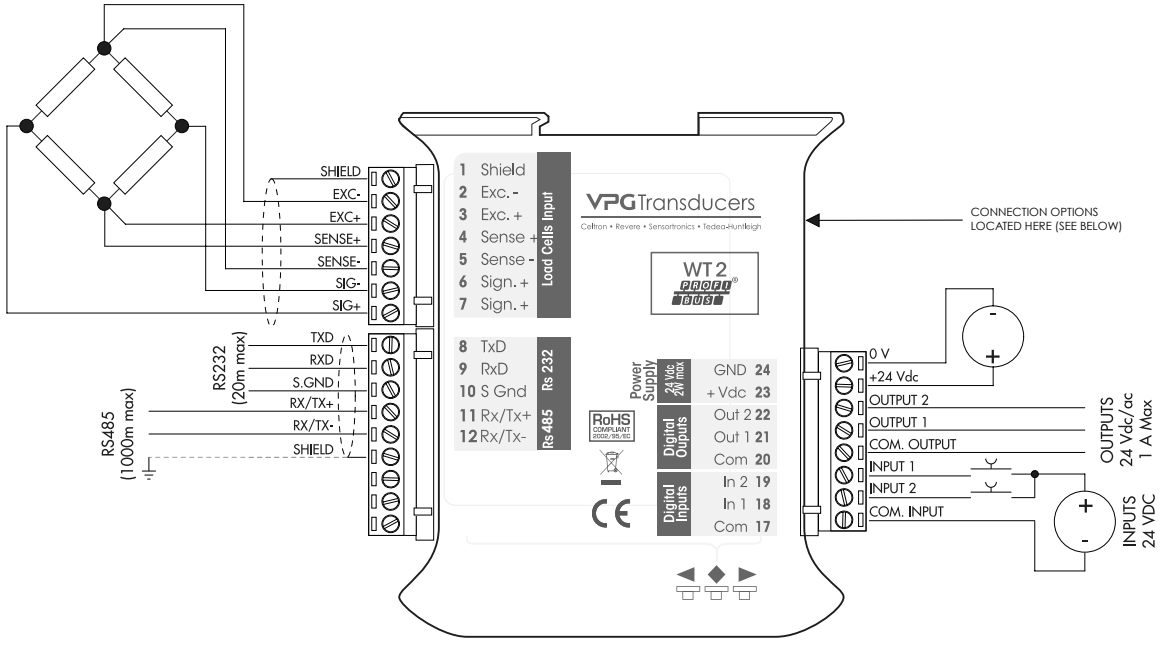


Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com

Document No.: 85990
Revision: 03-Mar-2019

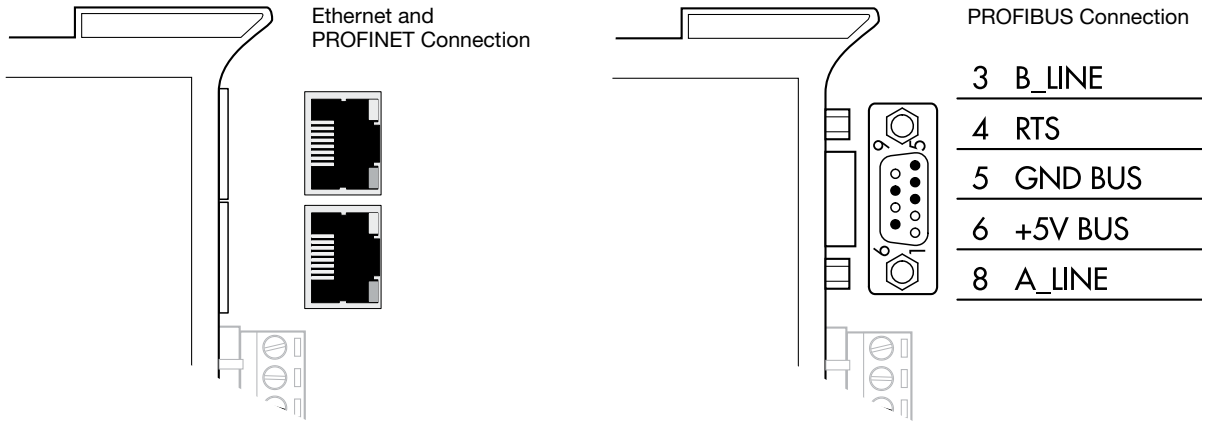
Weight Indicator

WIRING DIAGRAM



Connections depend upon selected output options

CONNECTION OPTIONS



Weight Indicator

SPECIFICATIONS

PERFORMANCE

Power Output
4 V

Measuring Range
–4 to +4 mV/V

Input Sensitivity
0.02 µV/division

Linearity
<0.01% of full scale

Gain Drift
<0.001% full scale ˚C

D/A Convertor
24 bit

Internal Resolution
16,000,000 counts

Visible Resolution
60,000 counts (visible on net weight)

Divisions Value (Adjustable)
0.001 to 50

Filter (Adjustable)
0.2 to 25 Hz

ENVIRONMENTAL

Operating Temperature
–10 to +50 ˚C

Storage Temperature
–20 to +60 ˚C

DISPLAY AND KEYBOARD

Display
5 digit, 7 segment, LED

Digit Height
7 mm

Keyboard
3 key mechanical keyboard

ELECTRICAL

Voltage
24±10% VDC

Wattage
2 W

SERIAL COMMUNICATION

Serial Output #1
RS232C half duplex with ASCII protocol,

Baud Rate
2400 to 115200 (adjustable)

Serial Output #2 (optional)
PROFIBUS DP-V1

Baud Rate
9.6 K/sec to 12 Mbit/sec

Serial Output #3 (optional)
PROFINET

Baud Rate
According to PROFINET standards

Serial Output #4 (optional)
Ethernet

Buffer Dimensions
128 bytes in, 128 bytes out

ENCLOSURES

Dimensions
119 x 112 x 23 mm, L x H x D

Mounting
DIN rail

Electrical Connections
5.08 mm terminal screw pass,
D-Sub 9 poles female connector (Profibus version),
RJ45 connector (Ethernet and Profinet connections)

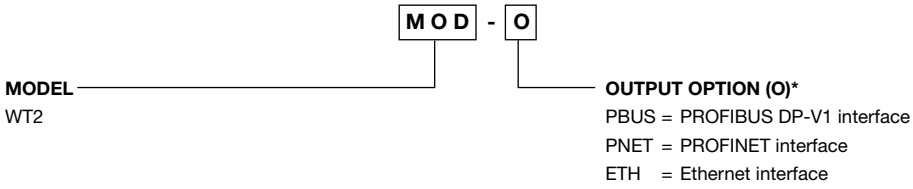
APPROVALS

EN
EN61000-6-2, EN61000-6-3 for EMC;
EN61010-1 for electrical security

Ordering information is on next page.

Weight Indicator

ORDERING INFORMATION FOR WT2



Example Completed Part Numbers:
WT2-ETH is the part number for a WT2 with an Ethernet interface.
***This is mandatory: customers must select an output option.**

All specifications subject to change without notice. For inquiries within Italy please contact the VPG Transducers Marketing Department directly using the email address vpgt.marketing@vpgsensors.com.

VPG Transducers

Celtron • Revere • Sensortronics • Tedea-Huntleigh

Electronic Overload Guard

FEATURES

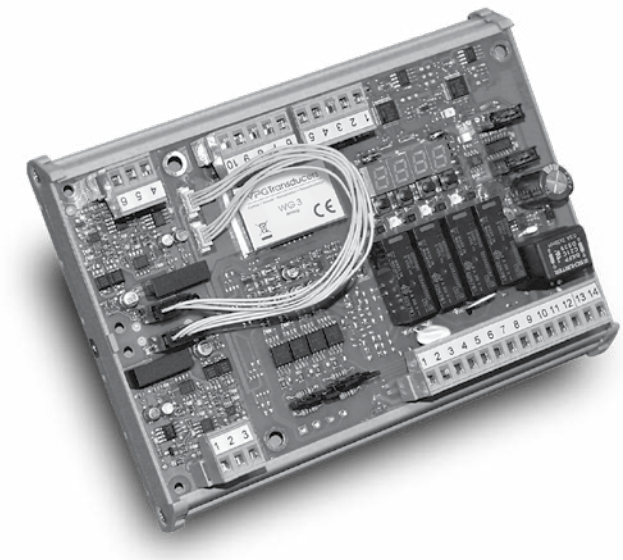
- Redundant safeguarding system with two independent inputs for load cells
- Meets category 3 EN 13849-1:2008, PL d standard
- Load limiter featuring double security design
- Integrated alarm for load cell malfunction or power failure
- Mountable on DIN rail

OPTIONS

- Analog option

APPLICATIONS

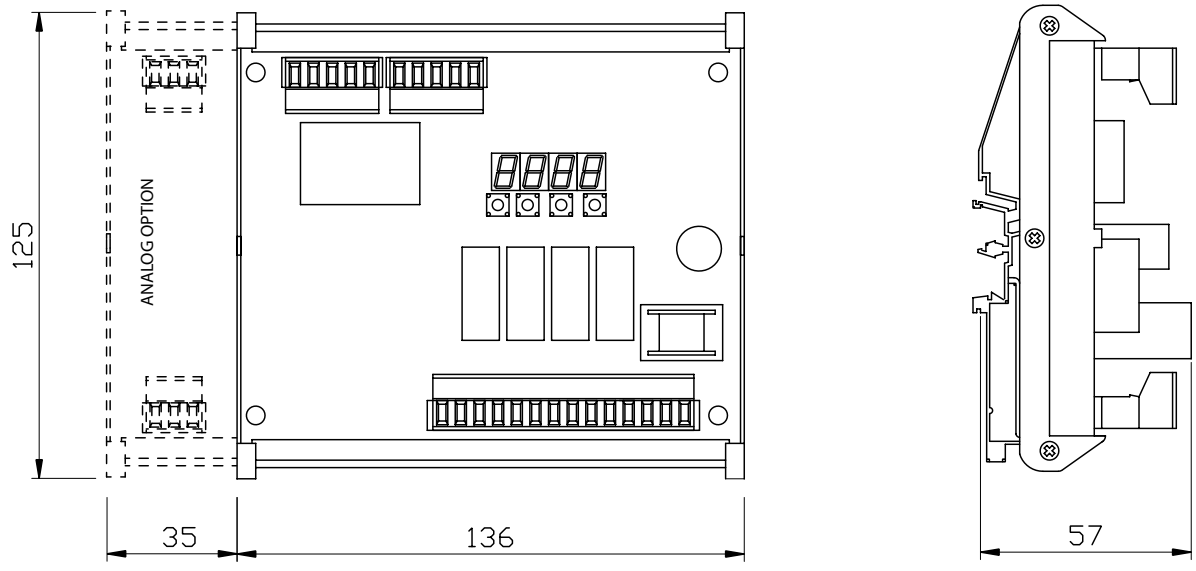
- Off-highway vehicles
- Agricultural equipment
- Construction equipment
- Lifting machines
- Telescopic loaders



DESCRIPTION

The WG3 is specifically designed to prevent a weight bearing machine from exceeding its capacity. It can monitor and convert the outputs of up to four 350 Ω load cells and prevent their combined output from surpassing the limit set. It boasts a redundant safeguarding system that allows the load cells to be connected as independent pairs. The WG3 also features an integrated alarm for detecting load cell malfunctions or power failure, and a 60˚C operating temperature range

OUTLINE DIMENSIONS

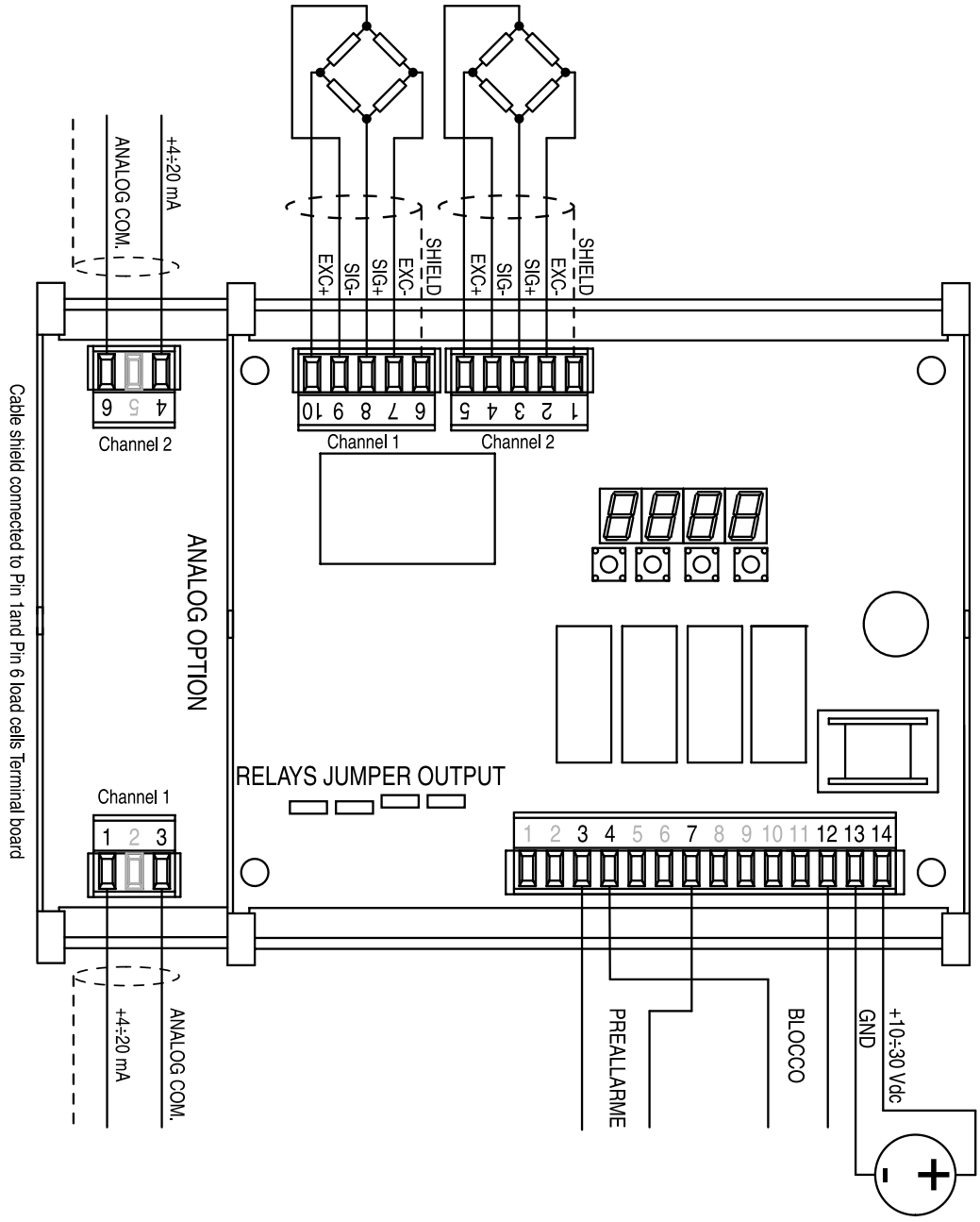


Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com

Document No.: 85992
Revision: 21-Jun-2018

Electronic Overload Guard

WIRING DIAGRAM



Electronic Overload Guard

SPECIFICATIONS

PERFORMANCE

Power Output
10 to 30 VDC

Insulation
Class III

Measuring Range
–3.9 to +3.9 mV/V

Input Sensitivity
0.02 µV/division

Internal Resolution
24 bit

Calibration Type
Digital, from the keyboard

Frequency Signal Updates
12 to 1000 Hz

Filter (Adjustable)
0.25 to 3 Hz

ENVIRONMENTS

Operating Temperature
–10 to +50˚C (max humidity before condensation 85%)

Storage Temperature
-20 to 60˚C

ELECTRICAL

Maximum Power Consumption
6 W

DISPLAY AND KEYBOARD

Display
4 digit, 7 segment LED

Digit Height
7 mm

Keyboard
4 key mechanical keyboard

Functions Executable From Keyboard
Calibration of Zero and Full Scale values

INPUT AND OUTPUTS

Load Cell Inputs
4 at 350 Ω for both measuring channels

Logic Outputs Alarm
4 relay outputs

Interruption Control for Load Cell Cable
Indication on the display and via relay

Optional Analogue Output
4 to 20 mA (1 output per channel)

Resolution
16 bit

Linearity
<0.03% of full scale

Impedance
300 Ω

ENCLOSURES

Dimensions
136 x 125 x 57 mm L x H x D;
171 x 125 x 57 mm L x H x D with analog option

Mounting
DIN rail mount

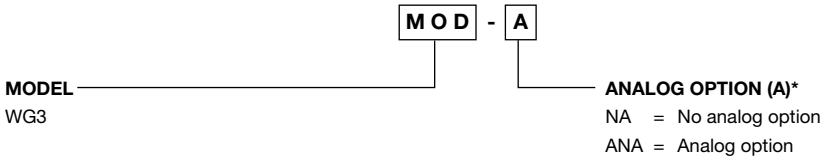
Electrical Connections
5.08 mm terminal screw blocks

APPROVALS

EN
EN 61000-6-2; EN 61000-6-3 EMC to EN 61010-1 for electrical safety;
EN 13849-1 parts of control systems related to safety

Electronic Overload Guard

ORDERING INFORMATION FOR WG3



Example Completed Part Numbers:

WG3-ANA is the part number for a WG3 with an analog output.

WG3-NA is the part number for a WG3 with no analog output.

***This is mandatory: customers must select an output option.**

All specifications subject to change without notice. For inquiries within Italy please contact the VPG Transducers Marketing Department directly using the email address vpgt.marketing@vpgsensors.com.

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Weighing Instrument

FEATURES

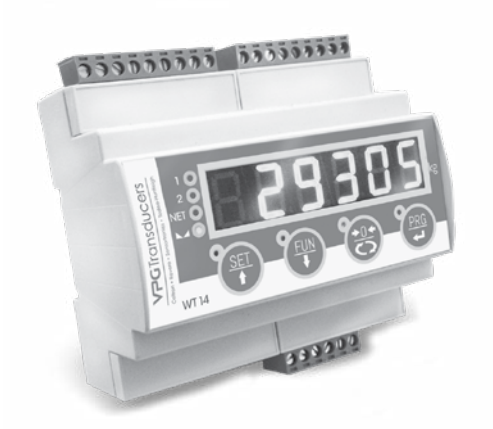
- Frequency acquisition AC/DC signal up to 1000 Hz
- Able to interface with intrinsically safe barriers for use in hazardous areas
- Capacitive keyboard
- Joint fieldbus and analogue output protocol installation
- Removable terminal blocks

OPTIONS

- Analogue output
- Expanded data storage capacity
- Multiple field bus options available

APPLICATIONS

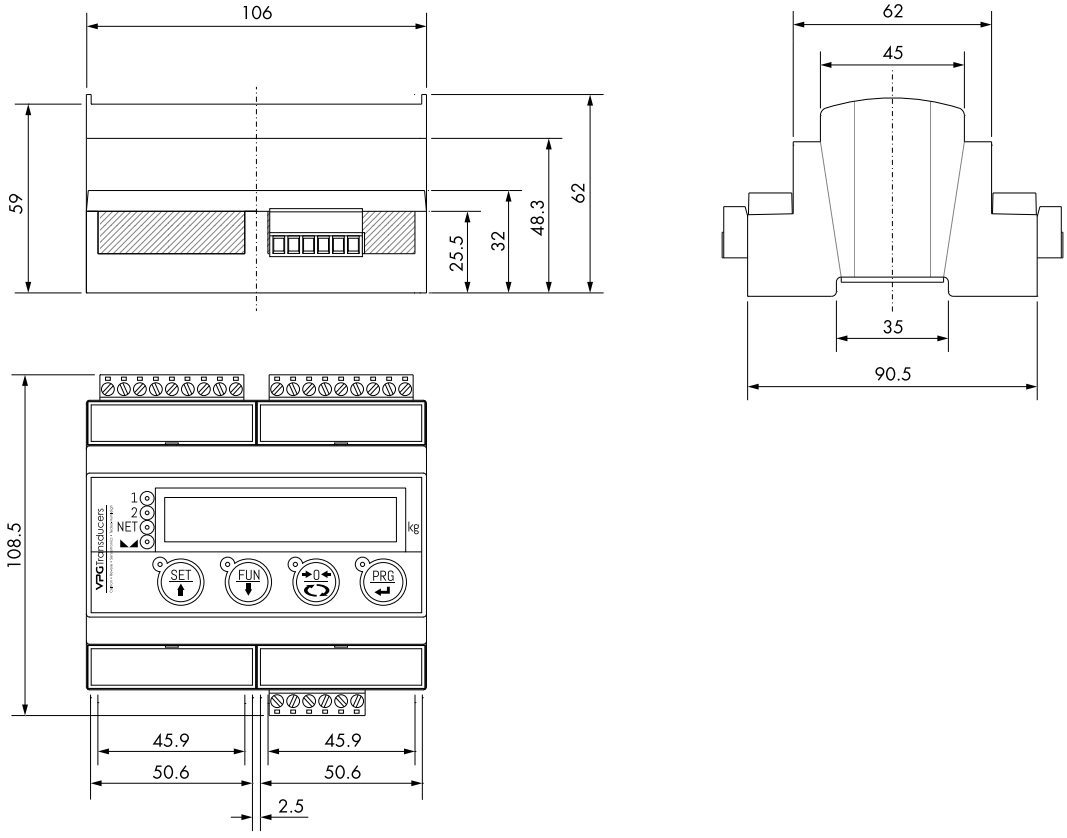
- Various industrial systems



DESCRIPTION

The Model WT14 is a high quality weighing indicator suitable for almost any application. The WT14's four-button capacitive keyboard allows easy access to the configuration and calibration functions. The model comes with RS232 and RS485 serial ports and a USB device port as standard. Additionally, the instrument can be equipped with the most widely used fieldbuses and it can interface with the vast majority of supervision devices currently offered on the market.

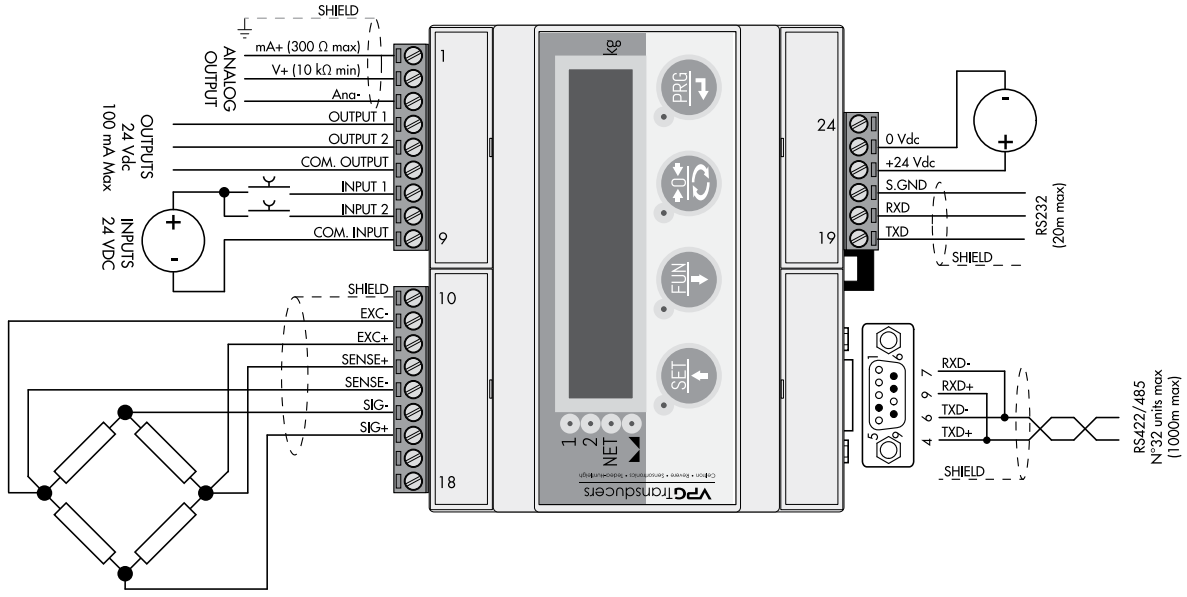
OUTLINE DIMENSIONS



Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
Document No.: 85989
Revision: 21-Jun-2018

Weighing Instrument

WIRING DIAGRAM



SPECIFICATIONS

PERFORMANCE

Power Output
5 V

Measuring Range
–3.9 to +3.9 mV/V

Input Sensitivity
0.02 µV/division

Linearity
<0.01% of full scale

Temperature Drift
<0.001% of full scale °C

D/A Convertor
24 bit

Maximum Load Cells
8 at 350 Ω

Frequency Signal Acquisition
12 to 1000 Hz

Internal Resolution
>16,000,000 counts

Visible Resolution
999,999 counts (visible on net weight)

Divisions Value (Adjustable)
x 1, x 2, x 5, x 10, x 20, x 50

Decimals Setting
0.0, 0.00, 0.000, 0.0000

Filter (Adjustable)
0.5 to 1000 Hz

Microcontroller
ARM Cortex M0 with 32-bit 256 KB Flash, reprogrammable on-board from USB

Data Storage
64 KB to 1024 KB

ENVIRONMENTAL

Operating Temperature
–10 to +50 ˚C

Storage Temperature
–20 to +70 ˚C

Maximum Humidity Before Condensation
85%

DISPLAY AND KEYBOARD

Display
6 digit, 7 segment, LED

Digit Height
14 mm

Keyboard
4 key capacitive keyboard

Weighing Instrument

ELECTRICAL

Voltage
12 to 24 ±15% VDC

Wattage
5 W

INPUT AND LOGICS

Logic Input
24 VDC (external voltage), 2 opto-isolated, PNP

Logic Output
2 solid state relays
(maximum load 24 VDC/100 mA each)

ANALOG OUTPUT (OPTIONAL)

Output
16 bit, opto-isolated

Tension
0 to 5/10 V, (R min 10 kΩ)

Current
0/4 to 20 mA (R max 300 Ω)

Linearity
<0.02% of full scale

Temperature Drift
<0.001% of full scale ˚C

SERIAL COMMUNICATION

Serial Output #1
1 RS232C

Baud Rate
2400 to 115200 (adjustable)

Serial Output #2
1 RS485

Baud Rate
2400 to 115200 (adjustable)

Serial Output #3
USB device interface

Serial Output #4 (Optional)
PROFINET interface

Serial Port #5 (Optional)
EtherCAT interface

Serial Port #6 (Optional)
DeviceNet interface

Serial Port #7 (Optional)
Ethernet interface

Connection Speed
10 to 100 mbps

ENCLOSURES

Dimensions
106 x 108 x 62 mm, L x H x D

Mounting
DIN Rail

Electrical Connections
5 mm removal terminal blocks

APPROVALS

EN
EN61000-6-2, EN61000-6-3 for EMC; EN61010-1 for electrical safety

ORDERING INFORMATION FOR WT14

MOD - A - O

MODEL
WT14

ANALOG OPTION (A)
NA = No analog output
ANA = Analog output

OUTPUT OPTION (O)*
NOP = No output option
PNET = PROFINET interface
DNET = DeviceNet interface
ETH = Ethernet 10 to 100 Mbps interface
ETHC = EtherCAT interface
ETHI = Ethernet IP Interface

Example Completed Part Numbers:

WT14-NA-ETH is the part number for a WT14 with no analog output but comes with an Ethernet 10 to 100 mbps interface.

WT14-ANA-DNET is the part number for a WT14 with an analog output and a DeviceNet interface.

***This is mandatory: customers must select an output option.**

All specifications subject to change without notice. For inquiries within Italy please contact the VPG Transducers Marketing Department directly using the email address vpgt.marketing@vpgsensors.com.

VPG Transducers
Celtron • Revere • Sensortronics • Tedea-Huntleigh

Weight Indicator

FEATURES

- LCD screen with capacitive touch controls
- Appropriate for desk, wall or panel mounting
- Multi-lingual menu
- 6 opto-isolated input and output ports (for a total of twelve), voltage rating: 24 VDC/100 mA
- Powerful 32-bit ARM microprocessor



OPTIONS

- Multiple serial bus output options
- Analog option available

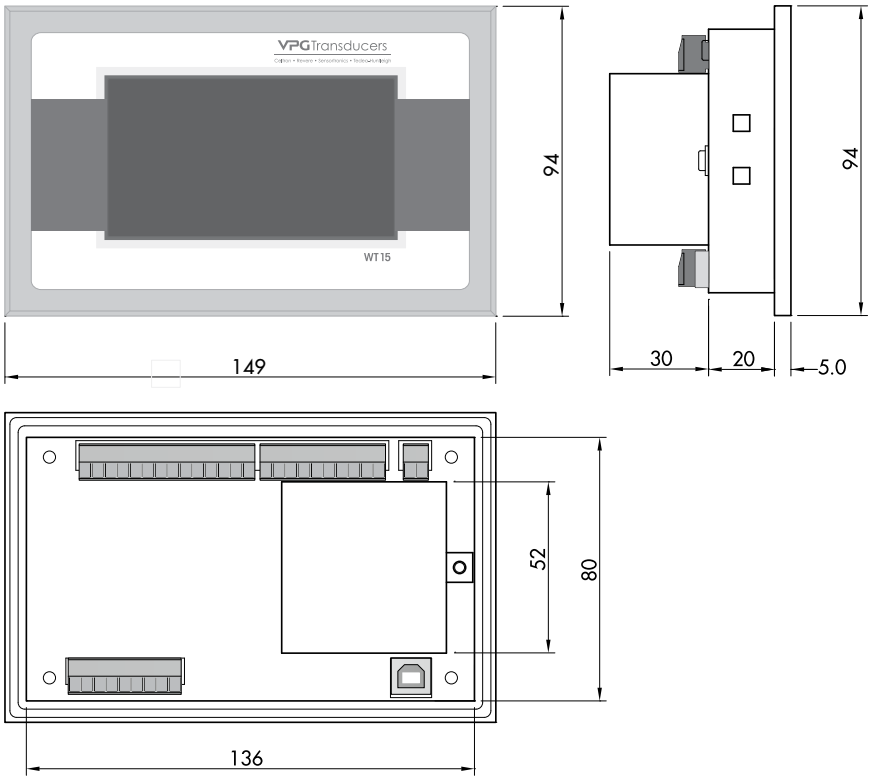
APPLICATIONS

- Various industrial systems

DESCRIPTION

The high-quality WT15 weight indicator is appropriate for a wide range of industrial and commercial applications. Its intuitive touch screen is easy to use, and the WT15 features six input and six output ports – the most logic ports of any VPG Transducers indicator. The central component of the Model WT15 is its ARM Cortex-M0 microcontroller, which offers a 32-bit code density – impressive computing power for its small size – and is the key to the indicator's flexibility.

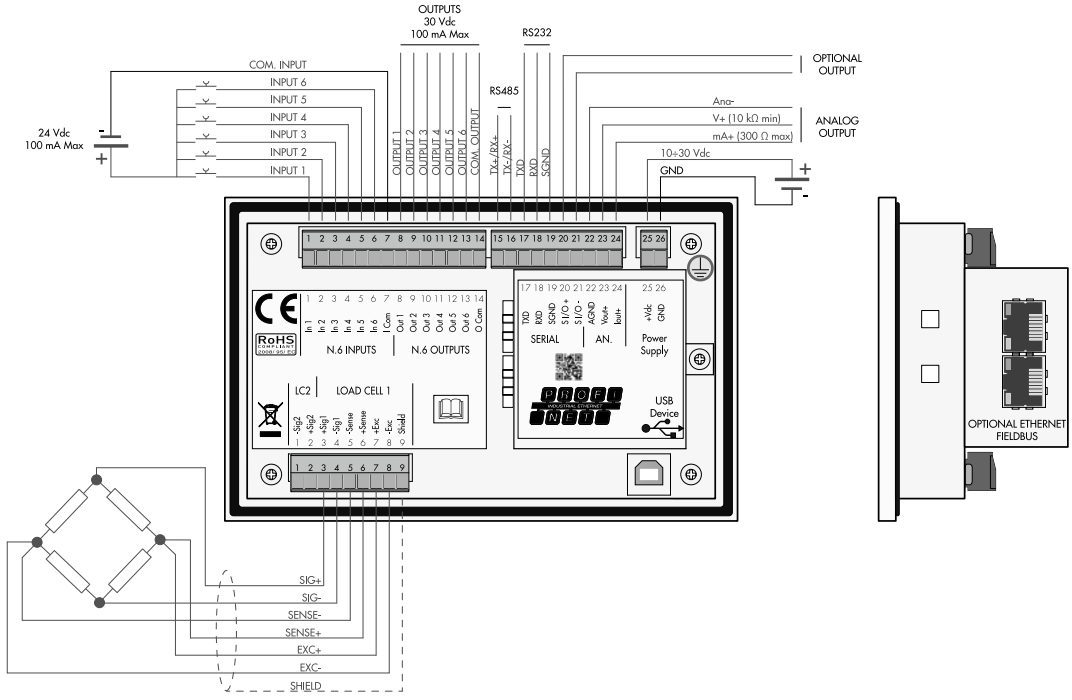
OUTLINE DIMENSIONS



Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
Document No.: 85988
Revision: 03-Mar-2019

Weight Indicator

WIRING DIAGRAM



SPECIFICATIONS

PERFORMANCE

Power Output
5 VDC

Measuring Range
–3.9 to +3.9 mV/V

Input Sensitivity
0.02 µV/division

Linearity
<0.01% of full scale

Temperature Drift
<0.001% full scale ˚C

D/A Convertor
24 bit

Maximum Load Cells
8 at 350 Ω

Frequency Signal Acquisition
12 to 1000 Hz

Internal Resolution
16,000,000 counts

Visible Resolution
999,999 counts (visible on net weight)

Divisions Value (Adjustable)
x 1, x 2, x 5, x 10, x 20, x 50

Decimals Setting
0.0, 0.00, 0.000, 0.0000

Filter (Adjustable)
0.1 to 250 Hz

Microcontroller
ARM Cortex M0 with 32-bit 256 KB Flash, reprogrammable on-board from USB

Data Storage
64 KB to 1024 KB

ENVIRONMENTAL

Operating Temperature
–10 to +50 ˚C

Storage Temperature
–20 to +70 ˚C

Maximum Humidity Before Condensation
85%

Weight Indicator

DISPLAY AND KEYBOARD

Display
Graphic LCD

Display Height
240 x 128 pixels

Keyboard
Keyboard operations taken provided by four wire resistive touch screen

ELECTRICAL

Voltage
10 to 30 VDC

Wattage
5 W

INPUT AND LOGICS

Logic Input
6 opto-isolated, PNP, 24 VDC (external voltage)

Logic Output
6 opto-isolated
(maximum load 24 VDC/100 mA each)

Additional I/O
Up to 4 external modules with 4 inputs and 8 outputs each (16 in/32 out in total) with independent RS485 fieldbus

ANALOG OUTPUT (OPTIONAL)

Output
16 bit, opto-isolated

Voltage
0 to 5/10 V, (R min 10 kΩ)

Current
0/4 to 20 mA (R max 300 Ω)

Linearity
<0.02% of full scale

Temperature Drift
<0.001% of full scale ˚C

SERIAL COMMUNICATION

Serial Output #1
1 RS232C

Baud Rate
2400 to 115200 (adjustable)

Serial Output #2
1 RS485

Baud Rate
2400 to 115200 (adjustable)

Serial Output #3
USB device interface

Serial Output #4 (Optional)
PROFINET interface

Serial Port #5 (Optional)
EtherCAT interface

Serial Port #6 (Optional)
Ethernet interface

Connection Speed
10 to 100 mbps

ENCLOSURES

Dimensions
149 x 94 x 55 mm, L x H x D

Mounting
Panel Mounting

Electrical Connections
3.81 mm removal terminal blocks

APPROVALS

EN
EN61000-6-2, EN61000-6-3 for EMC;
EN61010-1 for Electrical Safety,
EN45501 for metrology

Ordering information is on next page.

Weight Indicator

ORDERING INFORMATION FOR WT15

M O D - A - O

MODEL
WT15

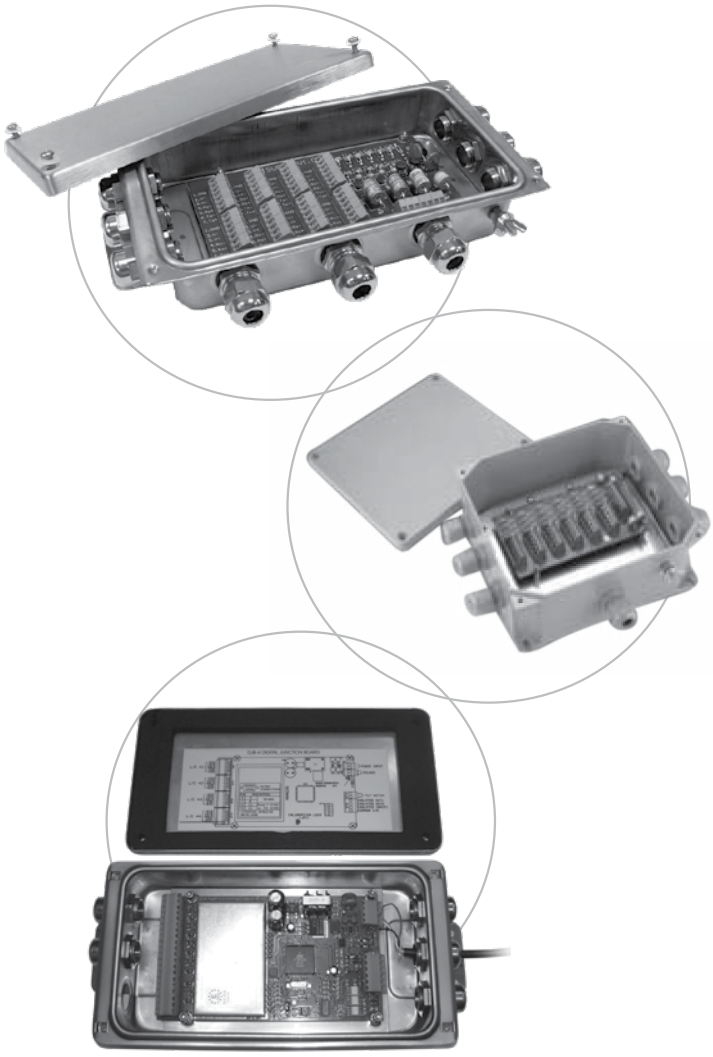
ANALOG OPTION (A)
NA = No analog output
ANA = Analog output

OUTPUT OPTION (O)*
NOP = No output option
PNET = PROFINET interface
ETHC = EtherCAT interface
ETH = Ethernet 10 to 100 Mbps interface
ETHI = Ethernet IP Interface

Example Completed Part Numbers:
WT15-NA-PNET is the part number for a WT15 with no analog option but does have a PROFINET interface.
WT15-ANA-NOP is the part number for a WT15 with an analog option and no additional outputs.
***This is mandatory: customers must select an output option.**

All specifications subject to change without notice. For inquiries within Italy please contact the VPG Transducers Marketing Department directly using the email address vpgt.marketing@vpgsensors.com.

Instruments—
Junction Boxes



CONTENTS

Model VTAJB-4/6/8/10 334
Model VTSJB-4/8 336

Analog Junction Box

FEATURES

- Connection of 4 to 10 load cells
- Robust enclosure with cable glands sealed to IP67
- Easy trimming via resistors or potentiometers
- Integrated surge protection devices
- Strain relief cable fittings
- EMC compatibility



APPLICATIONS

- Truck scales/weighbridges
- Floor scales
- Tanks and silos

DESCRIPTION

The VTAJB family of analog junction boxes supplement the VT indicators family line. They offer easy connection of 4 to 10 load cells in a platform, with output trimming, surge protection and meeting EMC compatibility requirements.

SPECIFICATIONS	
GENERAL	
Electromagnetic compatibility	Compliant with EN45501
Connectors	Screw terminals
Trimming	Signal trim by resistors or potentiometer (max. 20Ω), both available in every box
Surge protection	90V clamp. Withstands up to 20 kV and up to 10 kA
Temperature range	–10 to +60°C
AJB-4	
Enclosure	Stainless steel
External dimensions (mm)	199 x 106 x 43.7 (L x W x H)
Protection class	IP67
Cable fittings	Stainless steel cable glands PG9 (cable diameter 3–9 mm)
AJB-6	
Enclosure	Stainless steel or Aluminum
External dimensions (mm)	Stainless steel: 199 x 106 x 43.7 (L x W x H); Aluminum: 240 x 200 x 80 (L x W x H)
Protection class	Stainless steel enclosure: IP67; Aluminum enclosure: IP65
Cable fittings (Stainless steel)	Stainless steel cable glands PG9 (cable diameter 3–9 mm)
Cable fittings (Aluminum)	Plastic cable glands PG11 (cable diameter 6–12 mm)
AJB-8	
Enclosure	Aluminum or Polyester
External dimensions (mm)	Aluminum: 240 x 200 x 80 (L x W x H); Polyester : 120 x 318 x 80 (L x W x H)
Protection class	IP65
Cable fittings	Plastic cable glands PG11 (cable diameter 6–12 mm)
AJB-10	
Enclosure	Polyester
External dimensions (mm)	120 x 318 x 80 (L x W x H))
Protection class	IP65
Cable fittings	Plastic cable glands PG11 (cable diameter 6–12 mm)

All specifications subject to change without notice.

Junction Box for Digital Load Cells (DLC)

FEATURES

- Available for a maximum of 4 and 8 load cells
- Stainless steel construction
- IEC529 enclosure Class IP66
- Integrated surge protection board
- Protects against voltages of up to 20 kV
- Protects against currents of up to 10 kA



APPLICATIONS

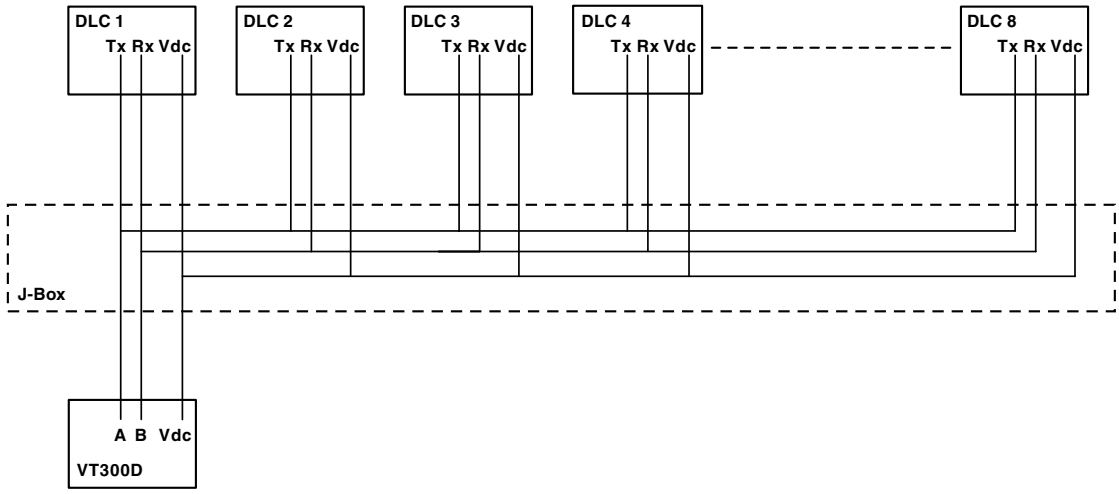
- Digital weighbridge
- Digital platform scales
- Any systems that use digital load cells

DESCRIPTION

These junction boxes have been designed to ease connection of digital load cell (DLC) systems. There are two variants, one supporting up to 4 digital load cells (SJB4), the other up to 8 digital load cells (SJB8).

The integrated surge protection protects digital load cells against damage from transient over-voltages or high impulse currents on field cabling. Surges such as these can be caused by nearby lightning strikes, power supply faults and heavy electrical load switching.

CONFIGURATIONS



Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
Document No.: 11888
Revision: 19-Dec-2014

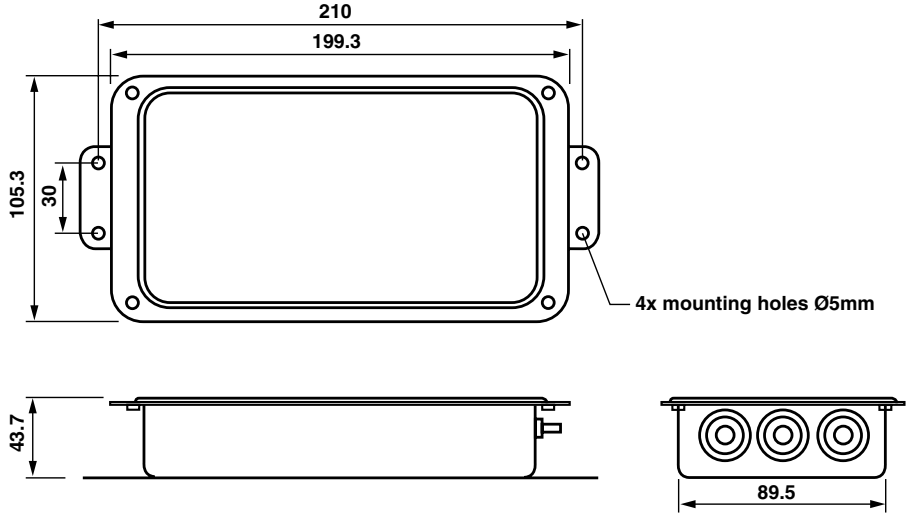
Junction Box for Digital Load Cells (DLC)

SPECIFICATIONS

PARAMETER		VALUE	UNIT
Max. number of load cells	SJB-4	4	
	SJB-8	8	
Types of DLC cables		2 or 3 times twisted pair	
Terminating resistors		2 x 120	Ω
Operating temperature range		–40 to +70	°C
Storage temperature range		–40 to +80	°C
Humidity		0–85% non-condensing	
Data transmission type		RS485 / RS422	
Surge protection against voltages up to		20	kV
Surge protection against currents up to		10	kA
Sealing (to IEC 529 / EN 60.529)		IP66	
Material		Stainless steel	
Weight		1.3	kg
Cable glands: acceptable cable diameter		5–10	mm
Line to line protection		Yes	
Line to ground protection		Yes	
Line to ground let-through		<200	V
Screen to ground let-through		<400	V
Maximum current		600	mA
Inductance per line		110	µH
DC resistance per line		<2.1	Ω

All specifications subject to change without notice.

OUTLINE DIMENSIONS in millimeters



Instruments—Calibrator

CONTENTS

Model LC-II.....340



Model LC-II

Revere

VPG Transducers

Celtron • Revere • Sensortronics • Tedea-Huntleigh

Load Cell Calibrator

FEATURES

- Versatile load cell calibrator with multiple functions
- Display, test, simulate, source—all in one unit
- Rechargeable Lithium-ion battery
- SD card for data logging
- USB computer connection
- On-screen user manual



DESCRIPTION

The VPG Transducers Model LC-II is a portable, multi-function, precision instrument for strain gage load cell system testing and calibration. This model now includes the powerful ARM processor, a display function (ideal for portable scales or field readings), an SD Card for data logging, a USB port for connection to a computer for certificates or spreadsheets, and a long lasting Lithium-ion battery pack. Supplied complete with carrying case, charger, and leads.

FUNCTIONS

Load cell Display Function: Show mass, force, strain, or torque from load cells; set mV/V, range, decimal point, and units; zero and span trim; select tare, peak hold.

Test Load Cell Function: Connect the load cell leads to spring terminals and get a readout of 4- or 6-wire, zero balance, input and output resistance, bridge balance, etc.

Test Insulation Function: Connect the leads to screen, housing, and gage to get a 50V insulation test between each in megohms.

Measurement Function: Show mV output, excitation voltage, mA outputs for systems, etc.

Source Function: High accuracy mV injection and mA output for workshop or field calibration of amplifiers and indicators.

Convert Function: Change between different mass units; grams, Newtons, ton, kilograms, etc.

SPECIFICATIONS				
MEASURE	**RANGE**	**IMPEDANCE**	**ACCURACY**	**RESOLUTION**
LC Display	–5 to +35 mV/V	min 3000Ω	0.01% FS	5 digit
Bridge Balance	–5 to +10 mV/V	≥1 MΩ	0.02 mV/V	0.001 mV/V
Resistance	0 to 2000Ω	—	0.03% FS	0.1Ω
Millivolt	–4.5 to 35 mV	≥1 MΩ	0.01% FS	0.001 mV/V
Voltage	0 to 20V	≥110 kΩ	0.01% FS	0.001V
Current	0 to 24 mA	±17Ω	0.02% FS	0.001 mA
Insulation (50V)	0 to 1000 MΩ	—	5% FS	1 MΩ
SOURCE	**RANGE**	**MAX LOAD**	**ACCURACY**	**RESOLUTION**
Millivolts	–5 to +50 mV	min 500Ω	0.01% FS	0.001 mV
Milliamps	0 to 24 mA	max 600Ω	0.01% FS	0.001 mA

All specifications subject to change without notice.

Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
Document No.: 11889
Revision: 19-Dec-2014

Instruments—
Surge Protectors

CONTENTS

Model LC30 344



Weighing System Surge Protector

FEATURES

- Protects measuring equipment and load cells from damage caused by lightning, heavy electrical load switching, etc.
- Suitable for AC or DC excitation voltages
- No influence on system accuracy; **EC certified to EN45.501, "8.1**
- Automatic reset function
- Housed in a fully sealed waterproof enclosure
- Can be used in EEx(i) systems without further certification



APPLICATIONS

- Weighbridges

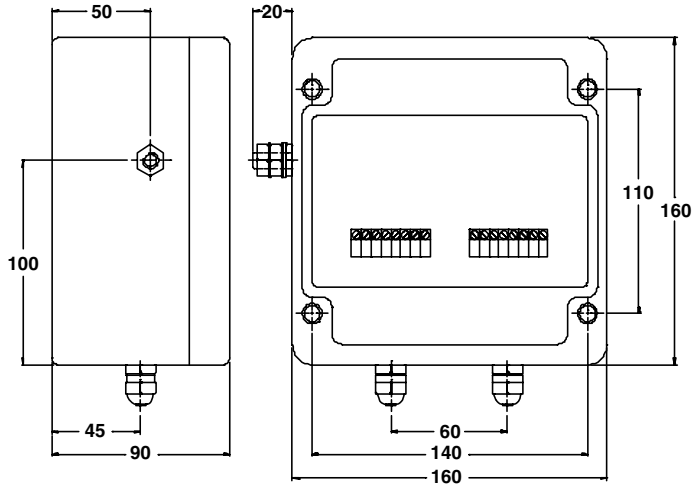
DESCRIPTION

The LC30 Surge Protection Device protects weighing systems and load cell installations from possible mal-function and damage caused by severe over-voltages or high impulse currents on signal cabling.

Potentially destructive surges can be generated from a variety of sources, including lightning, power cable faults and heavy electrical load switching.

The advanced triple stage protection concept used in the LC30 removes the need for additional earthing systems, therefore simplifying installation and reducing cost.

OUTLINE DIMENSIONS in millimeters



Mounting; internal 7mm diameter, through-holes.

Weighing System Surge Protector

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Nominal excitation voltage	10–15	VAC/VDC
Maximum excitation voltage[1]	22	VAC
Maximum excitation voltage[1]	32	VDC
Series resistance	≤1	Ω
Minimum impedance[2]	55	Ω
Minimum signal level[2]	1	µV/d
Leakage current at 32 VDC	≤10	µA
Peak impulse current (8/20 µs)	10	kA
Let-through voltage (after 6 kV/3 kA IEC801.5 comb. wave test)	80	V
Compensated temperature range	–10 to +40	°C
Operating temperature range	–20 to +60	°C
Storage temperature range	–30 to +70	°C
Humidity	5–95 (Non-condensing)	%RH
Sealing (to IEC 529 / DIN 40.050)	IP65	
Connections	Input/Output/Sense + Earth	
Max. terminal conductor size	1.5	mm^2
Main earth connection	M8 external stud	
Weight	1.5	kg

(1) Symmetrical to ground

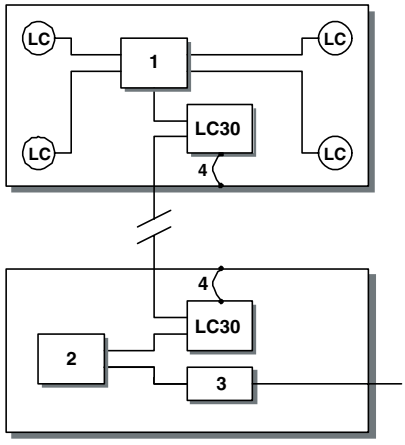
(2) For approved systems only

All specifications subject to change without notice.

The LC30 protects the system at the point of installation only. A system should have at least one LC30 installed at the load cell network and a secondary LC30 in the weighing control room.

Additional protection should also be provided for the main power supply and any other system interconnected with the weighing package, e.g., remote computer links, data-communications via telephone lines, etc.

Typical weighbridge system connections:

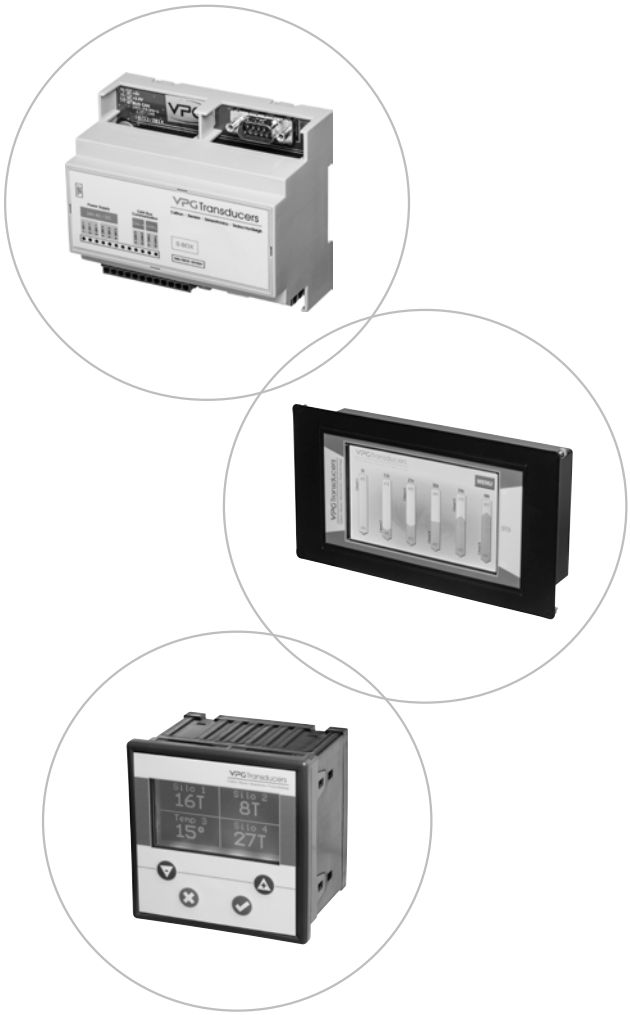


1: Junction box
2: Measuring device or indicator
3: Additional power supply protection
4: Local structural bond

Instruments — Silo Weighing System Package

CONTENTS

Model ST1 348
Model ST3 354
S-Box 360



ST1 Silo Weighing System

FEATURES

- Appropriate for panel mounting
- LCD screen
- Language Interface available in English and French
- Voltage rating: 24 VDC/160 mA
- Up to 4 measurements per screen
- Up to 8 silo weight measurements and 16 temperature measurements
- Up to 8 deported casings and deported temperature casings
- Recommended load cell for weighing measurements: 178 extensometer



OPTIONAL

- Modbus TCP & Ethernet IP connections available
- Up to 4 relay interface casings (16 relay outputs per casing)
- Up to 16 temperature control sensors (PT100)

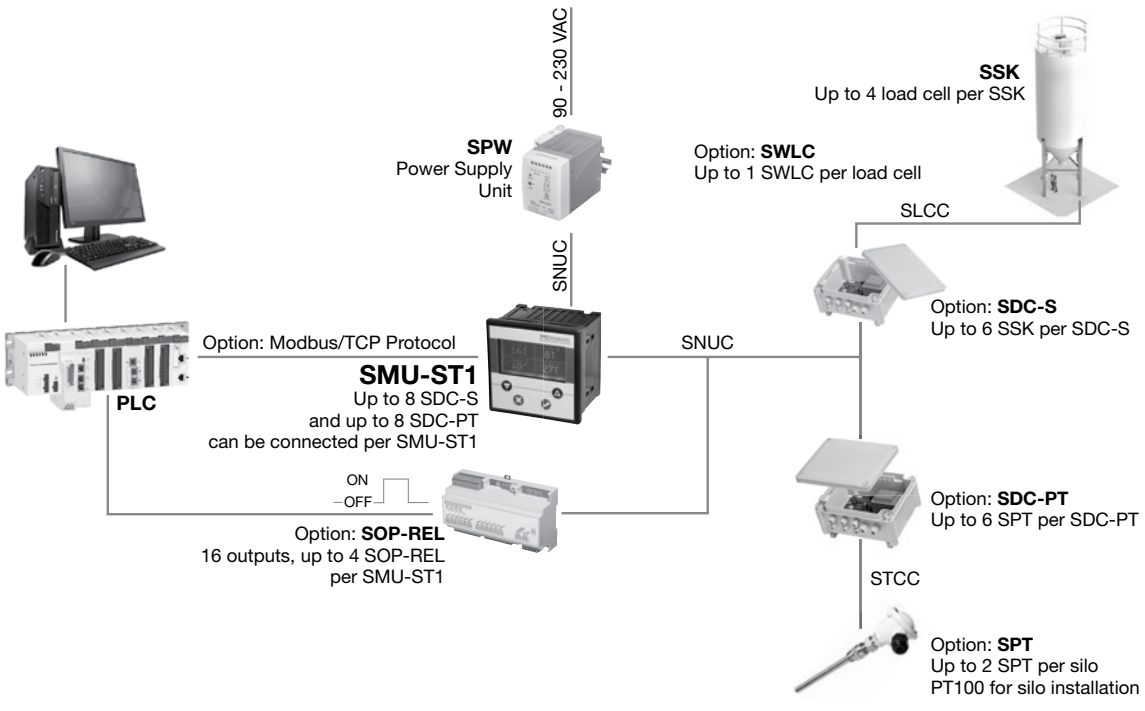
APPLICATIONS

- Cement plant – aggregates storage tank
- Water treatment plant – storage/ batching tank
- Agriculture (weighing measurements only) – grain vessel
- F&B industry (weighing measurements only) – dairy storage plant, brewery, filling machine

DESCRIPTION

Our modern and intuitive system can provide low uncertainty and highly repeatable weighing and temperature measurements. For our ST1 system, it can display both weight and temperature measurements of connected silos. Up to 8 silos can be supported with an option of up to a total of 16 PT100 Temperature Sensors, up to 4 relay interface casings and a Modbus TCP/ Ethernet IP connection.

CONFIGURATION



Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com
Document No.: 82013
Revision: 16-May-2019

ST1 Silo Weighing System

SPECIFICATIONS

ST1 CONTROLLER (SMU-ST1)

Performance

Silo Weight Measurement Up to 8
Temperature Measurement Up to 16
Microcontroller Microchip PIC16
Data Storage 266KB

Environmental

Operating Temperature 0 to +50°C (32 to 122°F)
Storage Temperature -20 to +70°C (-4 to 158°F)
Maximum Humidity Before Condensation 90%

Display and Keyboard

Display Graphic LCD
Display Dimensions 128 x 64 pixels
Keyboard 4 button on the front of the device
Available Languages English and French

Electrical

Voltage 24VDC
Current Rating 160 mA
Wattage 2.5 W

Enclosures

Dimensions 96 x 96 x 72 mm L x H x D (3.78 x 3.78 x 2.83")
Mounting Panel Mounting
Electrical Connections 3.81 mm (0.15") removal terminal blocks

POWER SUPPLY UNIT (SPW)

Input Voltage 90/230VAC
Output Voltage 24VDC
Power Output 100 W
Dimensions 100 x 55 x 90 mm L x H x D (3.94 x 2.17 x 3.54")
Mounting DIN Rail

DEPORTED CASING – SILO (SDC-S)

Input Voltage 24 VDC
Output Voltage 5 VDC
Wattage 17 W
Measuring Range -2.4 to +2.4 mV/V
Input Sensitivity 0.002 mV
Microcontroller Microchip PIC32
Data Storage 2 MB
Dimensions 190 x 170 x 100 mm L x H x D (7.48 x 6.69 x 3.94")
Operating Temperature -10 to +50°C (14 to 122°F)
Storage Temperature -20 to +70°C (-4 to 158°F)
CAN Bus Up to 8 Deported Casing can be connected on the same bus

SILO KIT (SSK)

Junction Box Dimensions 80 x 80 x 52 mm L x H x D (3.15 x 3.15 x 2.05")
Junction Box Material Polystyrene
Studs Dimensions 25 x 25 x 12 mm L x H x D (0.98 x 0.98 x 0.47")
Studs Thread 3/8 inches
Studs Material Steel
Template Dimensions 178 x 25 x 15 mm L x H x D (7.01 x 0.98 x 0.59")
Template Material Steel

PT100 TEMPERATURE SENSOR (SPT)

Material Stainless steel
Connection ½" male cylindrical gas
Probe Length 200 mm (7.87")
Dimensions 300 x 100 x 70 mm L x H x D (11.81 x 3.94 x 2.76")
Probe 3-wire PT100 ceramic IEC 60751 class A
Operating Temperature -50 to +450°C (-58 to 842°F)
Storage Temperature -50 to +450°C (-58 to 842°F)

DEPORTED TEMPERATURE CASING (SDC-PT)

Output Voltage 24 VDC
Wattage 6.5 W
Measuring Range -50 to +150 °C (-58 to 302°F)
Microcontroller Microchip PIC32
Data Storage 2 MB
Dimensions 190 x 170 x 100 mm L x H x D (7.48 x 6.69 x 3.94")
Operating Temperature -10 to +50°C (14 to 122°F)
Storage Temperature -20 to +70°C (-4 to 158°F)

WEATHER SHIELD – 178 LOAD CELL (SWLC)

Dimensions 600 x 150 x 242 mm L x H x D (23.62 x 5.91 x 9.53")
Material Aluminum
Material Width 1 mm (0.04")
Mounting Collar clamping

ST1 Silo Weighing System

RELAY INTERFACE CASING (SOP-REL)

Max Relay Outputs Per Casing 16
Max Relay Output Voltage 24 VDC
Relay Current Rating 1 Amps
Max Switching Power 30 W
Life Expectancy 100,000 ops
Operating Temperature -10 to +50°C (14 to 122°F)
Storage Temperature -20 to +70°C (-4 to 158°F)
Input Voltage 24 VDC
Wattage 6 W
Microcontroller Microchip PIC32
Dimensions 160 x 90 x 58 mm L x H x D (6.30 x 3.54 x 2.28")
CAN Bus Up to 4 Interface Casing can be connected on the same bus

MODBUS TCP – INSERTED IN ST1 (SCOM-MOD)

Dimensions 82 x 60 x 15 mm L x H x D (3.23 x 2.36 x 0.59")
Microcontroller Microchip PIC16
Operating Temperature -10 to +50°C (14 to 122°F)
Storage Temperature -20 to +70°C (-4 to 158°F)
Output Voltage 5 VDC
Wattage 1.5 W
Max Simultaneous Connection 1
Max Number of Request 10 per seconds
Electrical Connection RJ-45
Connection Speed 10 to 100 mbps

RECOMMENDED LOAD CELLS

Model 178 Load Cell

Note: Please refer to model's datasheet for further information. Refer to Document no: 63999.

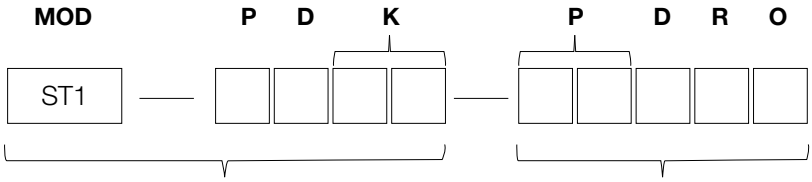
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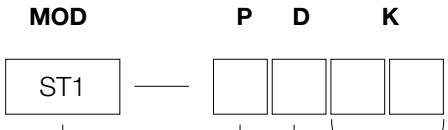
ST1 Silo Weighing System

ORDERING INFORMATION FOR ST1

Complete item number



Mandatory section of item number



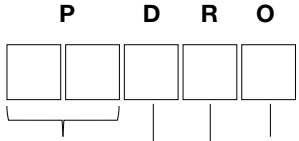
MODEL (MOD)
ST1

POWER (P)
1 = 90/230VAC to 24VDC
100W power supply

SILO KIT (K)
Enter a number between 01 and 08 to select the desired number of Silo Kits

DEPORTED CASING (D)
(up to a max of 6 silo kits per casing)
Enter a number between 1 and 8 to select the desired number of deported casings

Optional section of item number



PT100 TEMPERATURE SENSOR (P)
Enter a number between 00 and 16 to select desired number of sensors

DEPORTED TEMPERATURE CASING (D)
(up to six PT100 sensors per casing)
Enter a number between 0 and 8 to select desired number of casings

COMMUNICATION OUTPUT (O)
M = Modbus/TCP connection
N = No Modbus/TCP connection

RELAY INTERFACE CASINGS (R)
(up to 16 relay outputs per casing)
Enter a number between 0 and 4 to select desired number of relay interface casings

Example Complete Item Selection Number:

ST1– 1104 – 0821M with 90/230 VAC to 24 VDC 100 W power supply, 1 deported casing, 4 silo kits, 8 temperature sensors, 2 deported temperature casings, 1 relay interface casings, and an Modbus TCP connection.

ST1 Silo Weighing System

COMPONENTS FOR INDIVIDUAL PURCHASE

RTSP	XXXX

RTSPST1	= MAIN CONTROL UNIT	RTSPSPT	= PT100 TEMP SENSOR
RTSPSPW	= POWER SUPPLY UNIT	RTSPSDCPT	= DEPORTED TEMP CASING FOR 6 PT100s
RTSPSDCS	= DEPORTED CASING FOR 6 SILO KITS	RTSPSOPREL	= OUTPUT - RELAY INTERFACE CASING
RTSPSSK	= SILO KIT	RTSPSCOMMOD	= COMMUNICATION – MODBUS/TCP
RTSPSLCC	= LOAD CELL AND SILO KITS CABLE	RTSPSNUC	= COMMUNICATION CABLE (CAN BUS)
RTSPSTCC	= TEMP SENSOR CABLE	RTSPSWLC	= LOAD CELL WEATHER SHIELD

ST3 Silo Weighing System

FEATURES

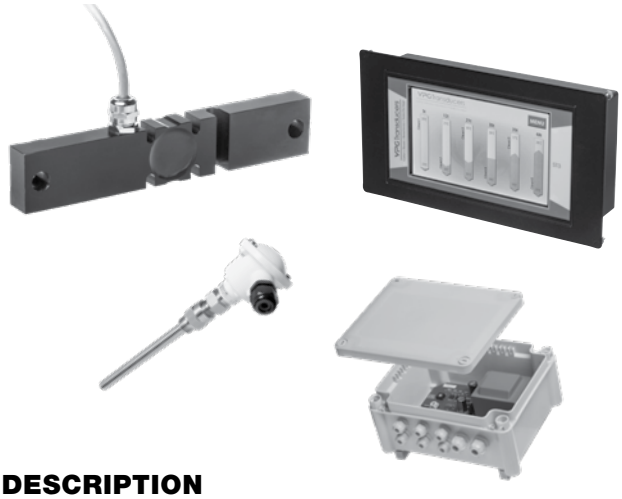
- Appropriate for panel mounting
- RGB Screen with resistive touch controls
- Language Interface available in English, French and Spanish
- Voltage rating: 24 VDC/340 mA
- Powerful 32-bit x86 microprocessor
- Modbus TCP Connection as standard
- Up to 24 (8 weight and 16 temperature) measurements per screen
- Up to 24 silo weight measurements and 48 temperature measurements
- Up to 8 deported casings and deported temperature casings
- Recommended load cell for weighing measurements: 178 extensometer

OPTIONAL

- Ethernet IP connection available
- Up to 4 relay interface casings (16 relay outputs per casing)
- Up to 48 temperature control sensors (PT100)

APPLICATIONS

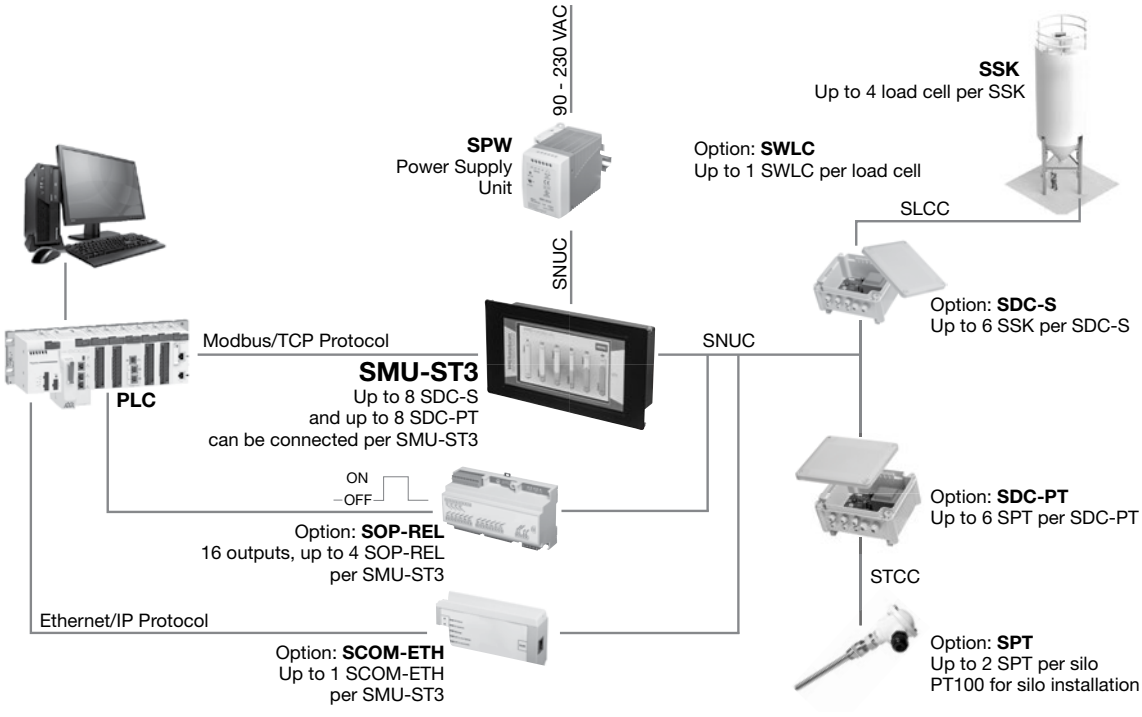
- Cement plant – aggregates storage tank
- Water treatment plant – storage/ batching tank
- Agriculture (weighing measurements only) – grain vessel
- F&B industry (weighing measurements only) – dairy storage plant, brewery, filling machine



DESCRIPTION

Our modern and intuitive system can provide low uncertainty and highly repeatable weighing and temperature measurements. For our ST3 system, it can display both weight and temperature measurements of connected silos. Up to 24 silos can be supported with an option of up to a total of 48 PT100 Temperature Sensors, up to 4 relay interface casings and an Ethernet IP connection.

CONFIGURATION



ST3 Silo Weighing System

SPECIFICATIONS

ST3 CONTROLLER (SMU-ST3)

Performance

Silo Weight Measurement Up to 24
Temperature Measurement Up to 48
Microcontroller Vortex86DX with 32-bit, reprogrammable on-board from USB
Data Storage 8GB

Environmental

Operating Temperature 0 to +50°C (32 to 122ºF)
Storage Temperature -20 to +70°C (-4 to 158ºF)
Maximum Humidity Before Condensation 90%

Display and Keyboard

Display Tactile RGB Screen
Display Dimensions 800 x 480 pixels
Keyboard Touch Screen
Available Languages English, French and Spanish

Electrical

Voltage 24 VDC
Current Rating 340 mA
Wattage 10 W

Enclosures

Dimensions without Front Plate 240 x 120 x 60 mm L x H x D (9.45 x 4.72 x 2.36")
Mounting Panel Mounting
Electrical Connections 5.08 mm (0.2") removal terminal blocks

POWER SUPPLY UNIT (SPW)

Input Voltage 90/230 VAC
Output Voltage 24 VDC
Power Output 100 W
Dimensions 100 x 55 x 90 mm L x H x D (3.94 x 2.17 x 3.54")
Mounting DIN Rail

DEPORTED CASING - SILO (SDC-S)

Input Voltage 24 VDC
Output Voltage 5 VDC
Wattage 17 W
Measuring Range -2.4 to +2.4 mV/V
Input Sensitivity 0.002 mV
Microcontroller Microchip PIC32
Data Storage 2 MB
Dimensions 190 x 170 x 100 mm L x H x D
Operating Temperature -10 to +50°C (14 to 122ºF)
Storage Temperature -20 to +70°C (-4 to 158ºF)
CAN Bus Up to 8 Deported Casing can be connected on the same bus

SILO KIT (SSK)

Junction Box Dimensions 80 x 80 x 52 mm L x H x D (3.15 x 3.15 x 2.05")
Junction Box Material Polystyrene
Studs Dimensions 25 x 25 x 12 mm L x H x D (0.98 x 0.98 x 0.47")
Studs Thread 3/8 inches
Studs Material Steel
Template Dimensions 178 x 25 x 15 mm L x H x D (7.01 x 0.98 x 0.59")
Template Material Steel

PT100 TEMPERATURE SENSOR (SPT)

Material Stainless steel
Connection ½" male cylindrical gas
Probe Length 200 mm (7.87")
Dimensions 300 x 100 x 70 mm L x H x D (11.81 x 3.94 x 2.76")
Probe 3-wire PT100 ceramic IEC 60751 class A
Operating Temperature -50 to +450°C (-58 to 842°F)
Storage Temperature -50 to +450°C (-58 to 842°F)

DEPORTED TEMPERATURE CASING (SDC-S)

Output Voltage 24 VDC
Wattage 6.5 W
Measuring Range -50 to +150 °C (-58 to 302°F)
Microcontroller Microchip PIC32
Data Storage 2 MB
Dimensions 190 x 170 x 100 mm L x H x D (7.48 x 6.69 x 3.94")
Operating Temperature -10 to +50°C (14 to 122ºF)
Storage Temperature -20 to +70°C (-4 to 158°F)

WEATHER SHIELD – 178 LOAD CELL (SWLC)

Dimensions 600 x 150 x 242 mm L x H x D (23.62 x 5.91 x 9.53")
Material Aluminum
Material Width 1 mm (0.04")
Mounting Collar clamping

ST3 Silo Weighing System

RELAY INTERFACE CASING (SOP-REL)

Max Relay Outputs Per Casing 16
Max Relay Output Voltage 24 VDC
Relay Current Rating 1 Amps
Max Switching Power 30 W
Life Expectancy 100,000 ops
Operating Temperature -10 to +50°C (14 to 122°F)
Storage Temperature -20 to +70°C (-4 to 158°F)
Input Voltage 24 VDC
Wattage 6 W
Microcontroller Microchip PIC32
Dimensions 160 x 90 x 58 mm L x H x D (6.30 x 3.54 x 2.28")
CAN Bus Up to 4 Interface Casing can be connected on the same bus

ETHERNET IP (SCOM-ETH)

Microcontroller Atmel CC01
Operating Temperature -10 to +50°C (14 to 122°F)
Storage Temperature -20 to +70°C (-4 to 158°F)
Output Voltage 24 VDC
Wattage 2.5 W
Max Simultaneous Connection 5
Max Number of Request 10 per seconds
Electrical Connection RJ-45
Connection Speed 10 to 100 mbps
Dimensions 125 x 70 x 30 mm L x H x D (4.92 x 2.76 x 1.18")

RECOMMENDED LOAD CELLS

Model 178 Load Cell

Note: Please refer to model's datasheet for further information. Refer to Document no: 63999.

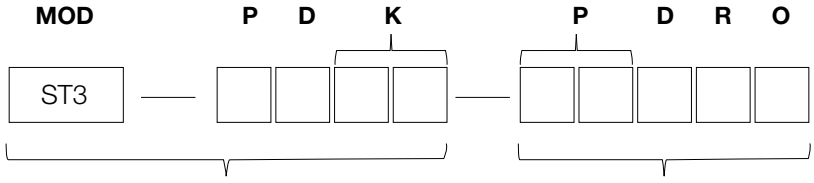
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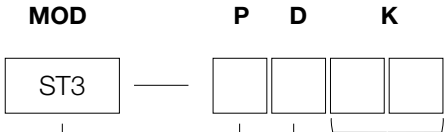
ST3 Silo Weighing System

ORDERING INFORMATION FOR ST3

Complete item number



Mandatory section of item number



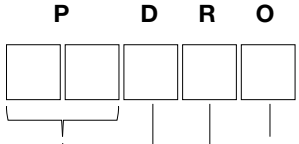
MODEL (MOD)
ST3

POWER (P)
1 = 90/230VAC to 24VDC
100W power supply

SILO KIT (K)
Enter a number between 01 and 24 to select the desired number of Silo Kits

DEPORTED CASING (D)
(up to a max of 6 silo kits per casing)
Enter a number between 1 and 8 to select the desired number of deported casings

Optional section of item number



PT100 TEMPERATURE SENSOR (P)
Enter a number between 00 and 48 to select desired number of sensors

DEPORTED TEMPERATURE CASING (D)
(up to six PT100 sensors per casing)
Enter a number between 0 and 8 to select desired number of casings

COMMUNICATION OUTPUT (O)
E = Ethernet/IP connection
N = No Ethernet/IP connection

RELAY INTERFACE CASINGS (R)
(up to 16 relay outputs per casing)
Enter a number between 0 and 4 to select desired number of relay interface casings

Example Complete Item Selection Number:

ST3– 1209 – 1831E with 90/230 VAC to 24 VDC 100 W power supply, 2 deported casings, 9 silo kits, 18 temperature sensors, 3 deported temperature casings, 1 relay interface casing, and an Ethernet/IP connection.

ST3 Silo Weighing System

COMPONENTS FOR INDIVIDUAL PURCHASE

RTSP	XXXX

RTSPST3	=	MAIN CONTROL UNIT	RTSPSPT	=	PT100 TEMP SENSOR
RTSPSPW	=	POWER SUPPLY UNIT	RTSPSDCPT	=	DEPORTED TEMP CASING FOR 6 PT100s
RTSPSDCS	=	DEPORTED CASING FOR 6 SILO KITS	RTSPSOPREL	=	OUTPUT – RELAY INTERFACE CASING
RTSPSSK	=	SILO KIT	RTSPSCOMETH	=	COMMUNICATION – ETHERNET/IP
RTSPSLCC	=	LOAD CELL AND SILO KITS CABLE	RTSPSNUC	=	COMMUNICATION CABLE (CAN BUS)
RTSPSTCC	=	TEMP SENSOR CABLE	RTSPSWLC	=	LOAD CELL WEATHER SHIELD

S-Box Silo Weighing System

FEATURES

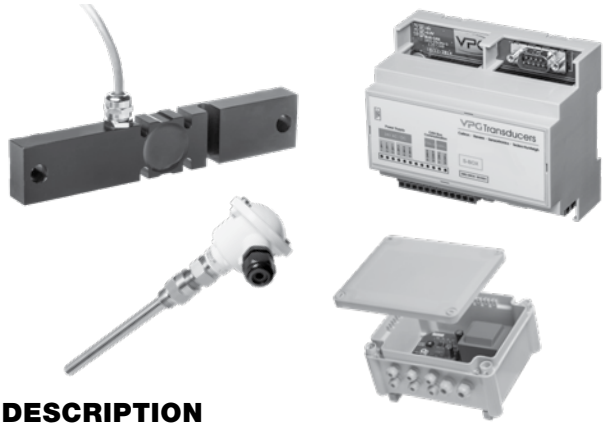
- Appropriate for DIN rail mounting
- Embedded web server
- Powerful 32-bit x 86 microprocessor
- Language Interface available in English, French, German and Spanish
- Voltage rating: 24 VDC/125 mA
- Modbus TCP connection as standard
- Measurements are displayed on a website interface with any computer connected to the same network
- Up to 24 silo weight measurements and 48 temperature measurements
- Up to 8 deported casings and deported temperature casings
- Recommended load cell for weighing measurements: 178 extensometer

OPTIONAL

- Ethernet IP connections available
- Up to 4 relay interface casings (16 relay outputs per casing)
- Up to 48 temperature control sensors (PT100)

APPLICATIONS

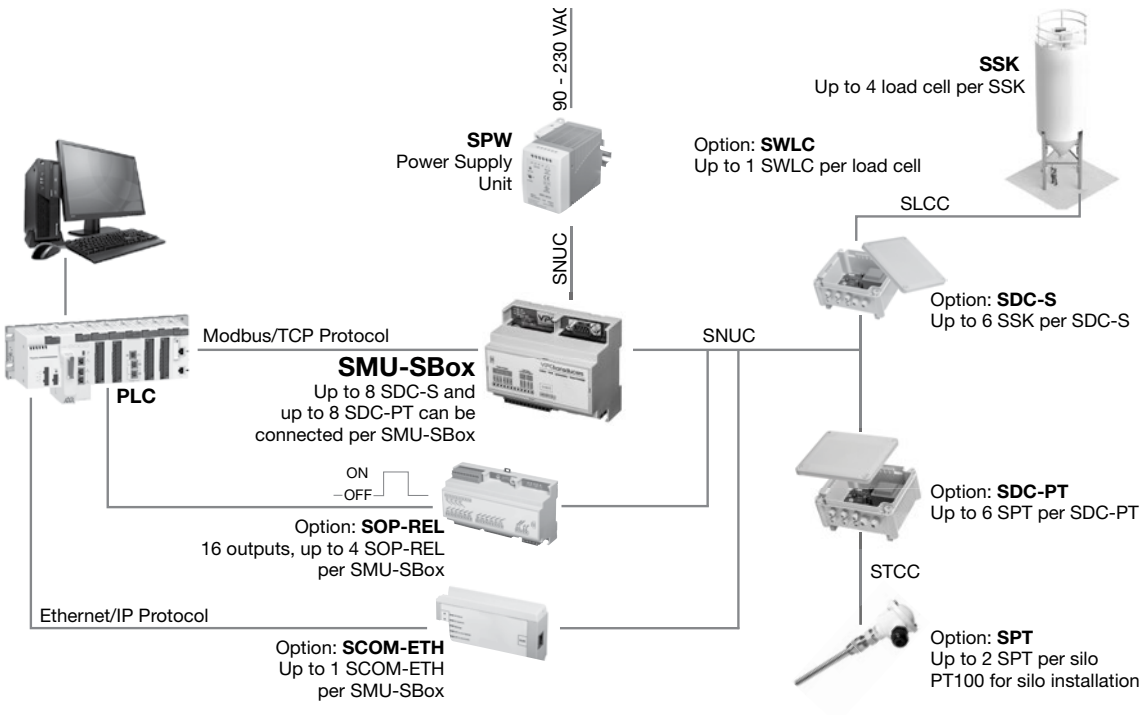
- Cement plant – aggregates storage tank
- Water treatment plant – storage/ batching tank
- Agriculture (weighing measurements only) – grain vessel
- F&B industry (weighing measurements only) – dairy storage plant, brewery, filling machine



DESCRIPTION

Our modern and intuitive system can provide low uncertainty and highly repeatable weighing and temperature measurements. Our S-Box device will allow many different measurements to be displayed on one interface. Its user friendly website is easy to use and will allow the user to consult its measurements from any computer connected on the same network. Up to 24 silos can be supported with an option of up to a total of 48 PT100 Temperature Sensors, up to 4 relay interface casings and an Ethernet IP connection.

CONFIGURATION



S-Box Silo Weighing System

SPECIFICATIONS

S-BOX CONTROLLER (SMU-SBOX)

Performance

Silo Weight Measurement Up to 24

Temperature Measurement Up to 48

Microcontroller Vortex86DX with 32-bit, reprogrammable on-board from USB

Data Storage 8GB

Environmental

Operating Temperature 0 to +50°C (32 to 122°F)

Storage Temperature -20 to +70°C (-4 to 158°F)

Maximum Humidity Before Condensation 90%

Display and Keyboard

Display Web Interface

Available Languages English, French, German and Spanish

Electrical

Voltage 24VDC

Current Rating 125 mA

Wattage 10 W

Enclosures

Dimensions 105 x 90 x 60 mm L X H X D (4.13 x 3.54 x 2.36")

Mounting DIN Rail

Electrical Connections 3.81 mm (0.15") removal terminal blocks

POWER SUPPLY UNIT (SPW)

Input Voltage 90/230 VAC

Output Voltage 24 VDC

Power Output 100 W

Dimensions 100 X 55 X 90 mm L X H X D (3.94 x 2.17 x 3.54")

Mounting DIN Rail

DEPORTED CASING - SILO (SDC-S)

Input Voltage 24 VDC

Output Voltage 5 VDC

Wattage 17 W

Measuring Range -2.4 to +2.4 mV/V

Input Sensitivity 0.002 mV

Microcontroller Microchip PIC32

Data Storage 2 MB

Dimensions 190 x 170 x 100 mm L X H X D (7.48 x 6.69 x 3.94")

Operating Temperature -10 to +50°C (14 to 122°F)

Storage Temperature -20 to +70°C (-4 to 158°F)

CAN Bus Up to 8 Deported Casing can be connected on the same bus

SILO KIT (SSK)

Junction Box Dimensions 80 X 80 X 52 mm L X H X D (3.15 x 3.15 x 2.05")

Junction Box Material Polystyrene

Studs Dimensions 25 X 25 X 12 mm L X H X D (0.98 x 0.98 x 0.47")

Studs Thread 3/8 inches

Studs Material Steel

Template Dimensions 178 X 25 X 15 mm L X H X D (7.01 x 0.98 x 0.59")

Template Material Steel

PT100 TEMPERATURE SENSOR (SPT)

Material Stainless steel

Connection ½" male cylindrical gas

Probe Length 200 mm (7.87")

Dimensions 300 x 100 x 70 mm L X H X D (11.81 x 3.94 x 2.76")

Probe 3-wire PT100 ceramic IEC 60751 class A

Operating Temperature -50 to +450°C (-58 to 842°F)

Storage Temperature -50 to +450°C (-58 to 842°F)

DEPORTED TEMPERATURE CASING (SDC-PT)

Output Voltage 24 VDC

Wattage 6.5 W

Measuring Range -50 to +150°C (-58 to 302°F)

Microcontroller Microchip PIC32

Data Storage 2 MB

Dimensions 190 x 170 x 100 mm L X H X D (7.48 x 6.69 x 3.94")

Operating Temperature -10 to +50°C (14 to 122°F)

Storage Temperature -20 to +70°C (-4 to 158°F)

WEATHER SHIELD – 178 LOAD CELL (SWLC)

Dimensions 600 x 150 x 242 mm L X H X D (23.62 x 5.91 x 9.53")

Material Aluminum

Material Width 1 mm (0.04")

Mounting Collar clamping

S-Box Silo Weighing System

RELAY INTERFACE CASING (SOP-REL)

Max Relay Outputs Per Casing 16
Max Relay Output Voltage 24 VDC
Relay Current Rating 1 Amps
Max Switching Power 30 W
Life Expectancy 100,000 ops
Operating Temperature -10 to +50°C (14 to 122°F)
Storage Temperature -20 to +70°C (-4 to 158°F)
Input Voltage 24 VDC
Wattage 6 W
Microcontroller Microchip PIC32
Dimensions 160 x 90 x 58 mm L X H X D (6.30 x 3.54 x 2.28")
CAN Bus Up to 4 Interface Casing can be connected on the same bus

ETHERNET IP (SCOM-ETH)

Microcontroller Atmel CC01
Operating Temperature -10 to +50°C (14 to 122°F)
Storage Temperature -20 to +70°C (-4 to 158°F)
Output Voltage 24 VDC
Wattage 2.5 W
Max Simultaneous Connection 5
Max Number of Request 10 per seconds
Electrical Connection RJ-45
Connection Speed 10 to 100 mbps
Dimensions 125 x 70 x 30 mm L X H X D (4.92 x 2.76 x 1.18”)

RECOMMENDED LOAD CELLS

Model 178 Load Cell

Note: Please refer to model’s datasheet for further information. Refer to Document no: 63999.

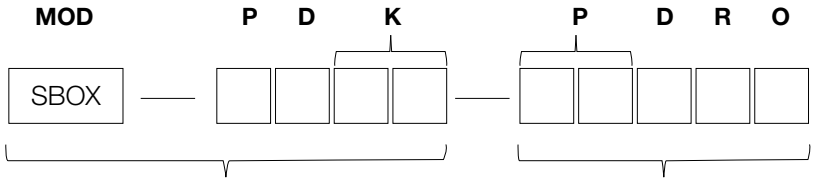
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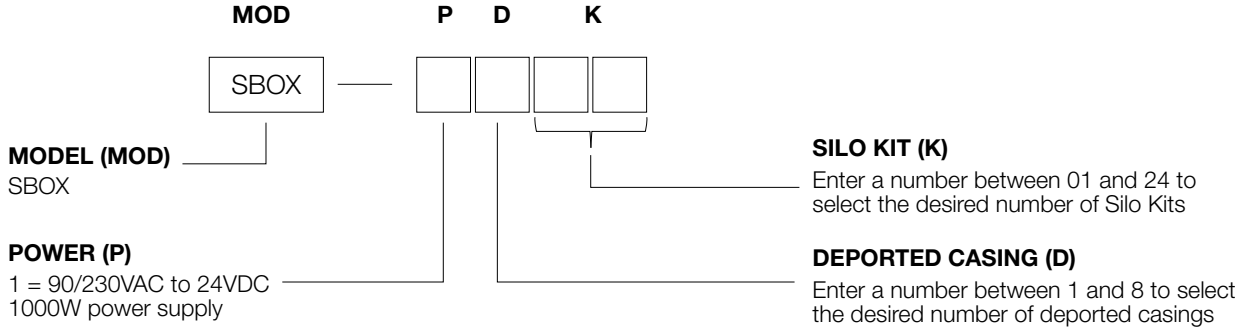
S-Box Silo Weighing System

ORDERING INFORMATION FOR S-BOX

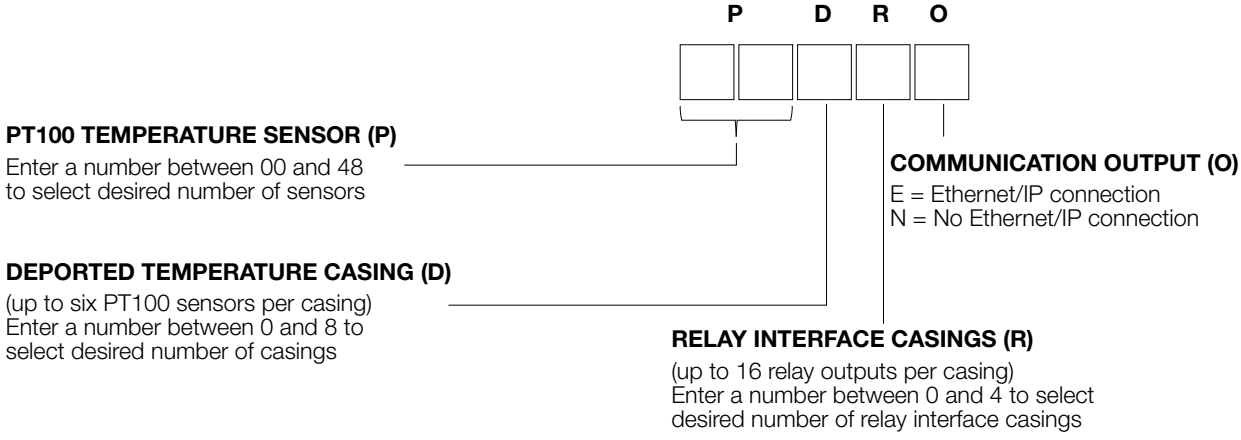
Complete item number



Mandatory section of item number



Optional section of item number



Example Complete Item Selection Number:

SBOX – 1515 – 3062E. SBOX with 90/230 VAC to 24 VDC 100 W power supply,
5 deported casings, 15 silo kits, 30 temperature sensors, 6 deported temperature casings,
2 relay interface casings, and an Ethernet/IP connection.

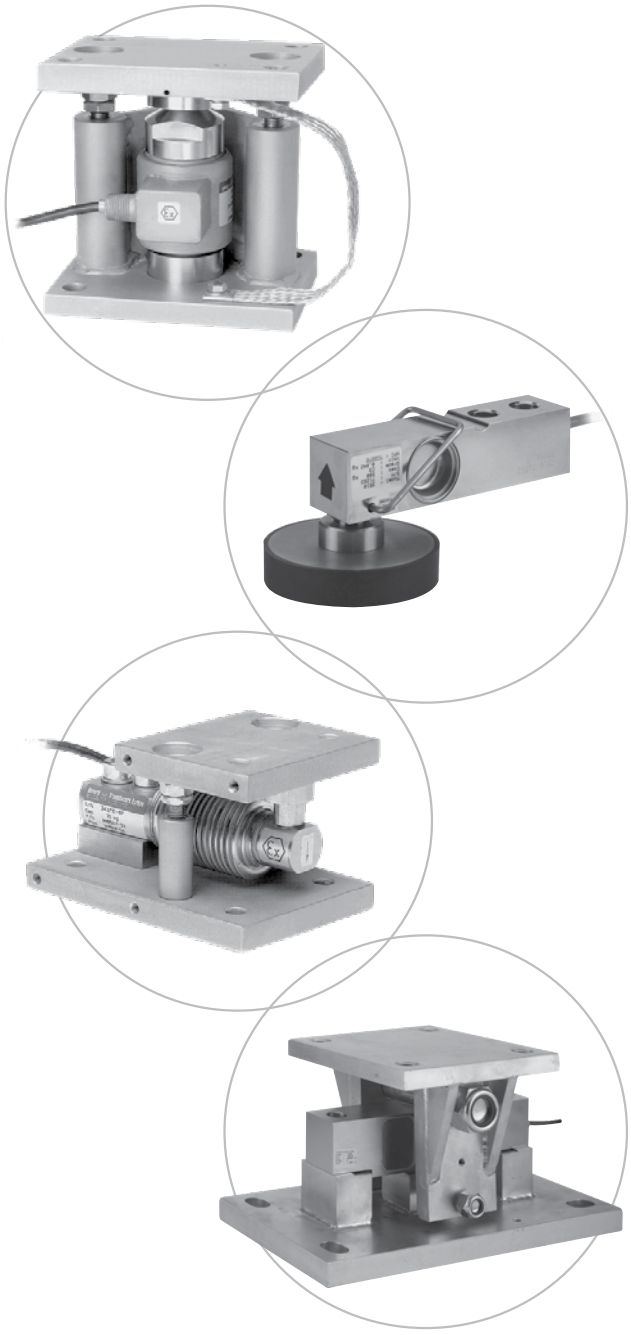
S-Box Silo Weighing System

COMPONENTS FOR INDIVIDUAL PURCHASE

RTSP	XXXX

RTSPSBOX	=	MAIN CONTROL UNIT	RTSPSPT	=	PT100 TEMPERATURE
RTSPSPW	=	POWER SUPPLY UNIT	RTSPSDCPT	=	DEPORTED TEMP CASING FOR 6 PT100s
RTSPSDCS	=	DEPORTED CASING FOR 6 SILO KITS	RTSPSOPREL	=	OUTPUT - RELAY INTERFACE CASING
RTSPSSK	=	SILO KIT	RTSPSCOMETH	=	COMMUNICATION – ETHERNET/IP
RTSPSLCC	=	LOAD CELL AND SILO KITS CABLE	RTSPSNUC	=	COMMUNICATION CABLE (CAN BUS)
RTSPSTCC	=	TEMP SENSOR CABLE	RTSPSWLC	=	LOAD CELL WEATHER SHIELD

Accessories—
Mounts and Feet



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Load Cell Mounting Feet

FEATURES

- Adjustable height or fixed height version
- Designed to work with T-end version shear beams
- Low profile
- Stainless steel
- Anti-vibration
- Easy installation

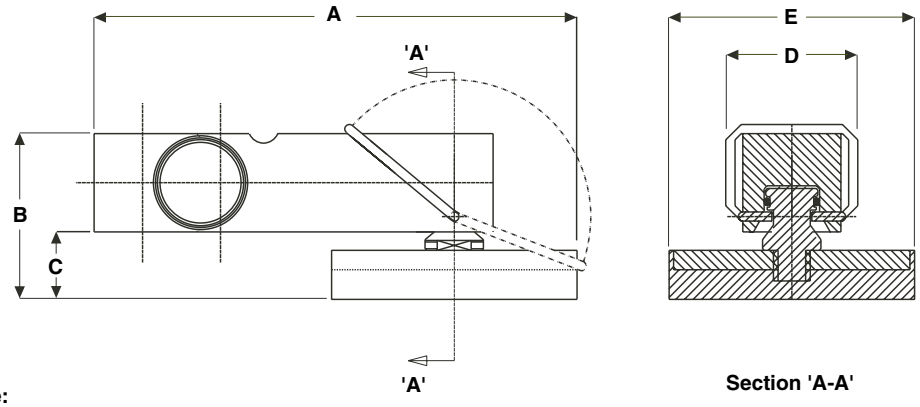


DESCRIPTION

T-End mounting feet are ideal for platforms in which a number of load cells are used together. The stainless steel construction with the inert rubber foot makes the assembly impervious to most industrial chemicals and ideal for demanding environments. A food grade rubber option is also available.

They must be used with the appropriate load cells, which are current matched and specially machined to accept T-End accessories. It is recommended to order load cells and T-End mounting feet together.

OUTLINE DIMENSIONS in millimeters



Section 'A-A'

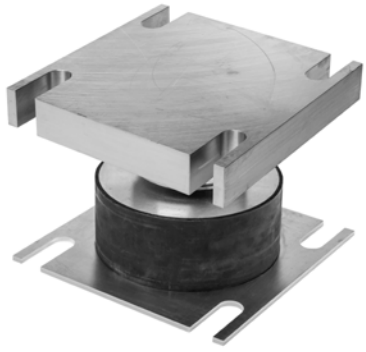
Note:
1. All dimensions in mm
2. A mounting foot adapter is available which increases the heights 'B' & 'C' by 7mm (for standard shear beams)

Load Cell Type			3410			3510	
Capacity			250–4000 lbs	500–1000 kg	2000 kg	300–2000 kg	5000 kg
Both T-foot versions	A	mm	157.4	157.4	157.4	157.4	202.4
	D		43	43	43	43	57
	ØE		80	80	80	80	100
Fixed height foot	B		52	52	58	54	77.5
	C		22	22	22	22	29.5
Adjustable height foot	B low		58	58	64	60	-
	B high		70	70	76	72	-
	C low		28	28	28	28	-
	C high		40	40	40	40	-

10 Ton Weighbridge Mount

FEATURES

- For use on steel or concrete weighbridges
- Above ground or pit mounted
- Composite rubber and plated steel construction
- Low profile
- Simple installation
- Shock resistance



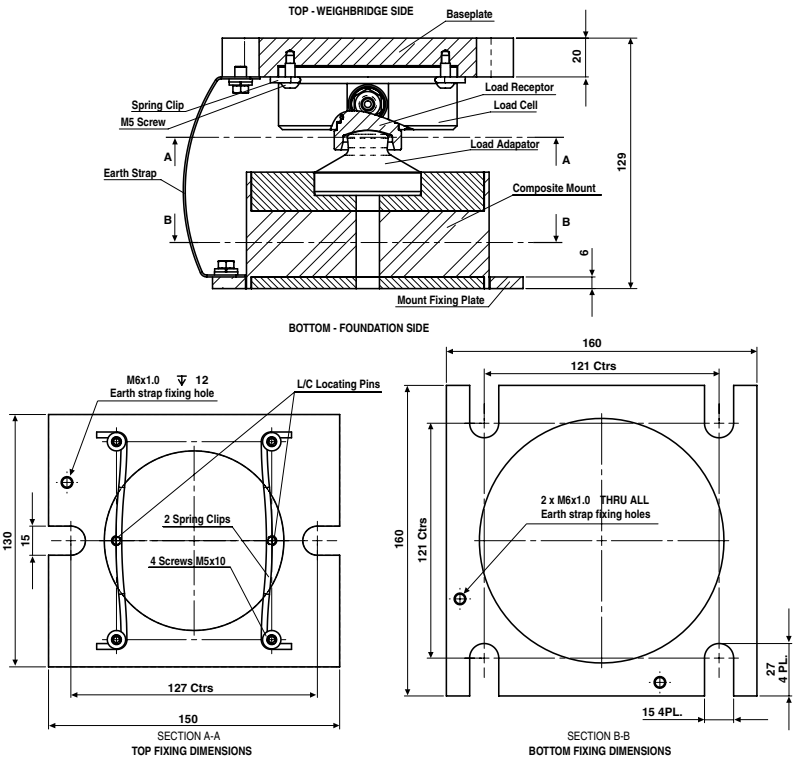
DESCRIPTION

The Model 220 is ideally suited for use in steel or concrete weighbridge applications. When used in conjunction with the composite mount, it forms a compact assembly which is rugged and tolerant of heavy treatment.

The mount assembly allows free motion in any direction in the horizontal plane at the same time as supplying restoring moment (return to center motion) and retaining low vertical deflection. It supplies the required rigidity while retaining shock absorption capability. It exhibits low effects to changes of temperature and allows for thermal expansion of the bridge structure.

The complicated arrangements that often accompany conventional installations of load cell mountings are avoided. This system for truck scales can be installed in a matter of a few hours instead of more than one day.

OUTLINE DIMENSIONS in millimeters



MTS-COMP-10T
Comprising composite mount, load adaptor, mount fixing plate, earth strap, nut, and washers. Packed weight: 5 kg

MTS-BKIT-10T-CS
Comprising baseplate, location pins x 2, spring clips x 2, M5 screws x 4, screw and washers for earth strap. Packed weight: 5 kg

1. To ensure safe use of the weighbridge mount; restraints should be fitted between the weighbridge deck and foundation.
2. VPG Transducers cannot accept responsibility for the improper installation of the weighbridge mount.
3. Because of the weight of the base plate and consequent freight costs, customers might wish to machine it locally.Manufacturing details of this simple plate are available free of charge on request.

VPG Transduceres provides installation details separately, please refer to Technical Support Document, TSD.0007

Model 220-5T Weighbridge Mount

Tedea-Huntleigh

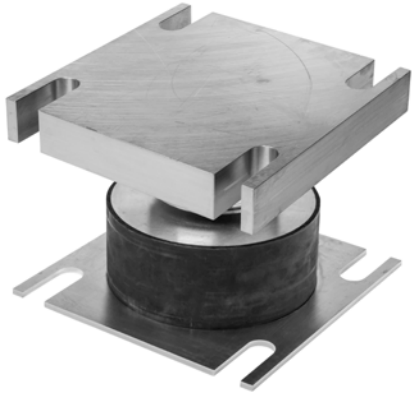
VPG Transducers

Celtron • Revere • Sensortronics • Tedea-Huntleigh

5 Ton Weighbridge Mount

FEATURES

- For use on steel or concrete weighbridges
- Above ground or pit mounted
- Composite rubber and plated steel construction
- Low profile
- Simple installation



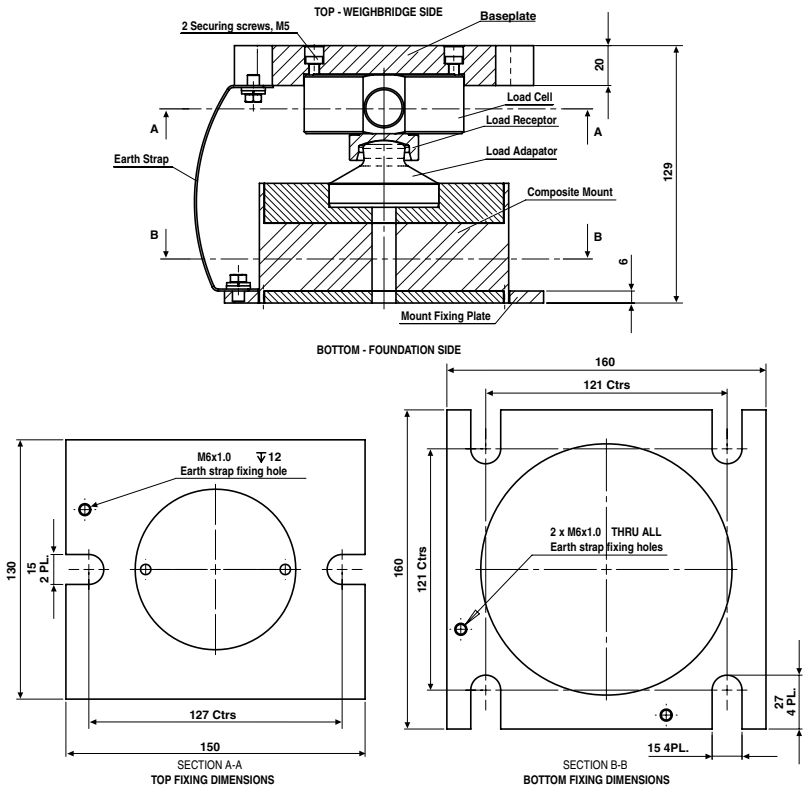
DESCRIPTION

The Model 220 is ideally suited for use in steel or concrete weighbridge applications. When used in conjunction with the composite mount it forms a compact assembly which is rugged and tolerant of heavy treatment.

The mount assembly allows free motion in any direction in the horizontal plane at the same time as supplying restoring moment (return to center motion) and retaining low vertical deflection. It supplies the required rigidity while retaining shock absorption capability. It exhibits low effects to changes of temperature and allows for thermal expansion of the bridge structure.

The complicated arrangements that often accompany conventional installations of load cell mountings are avoided. This system for truck scales can be installed in a matter of a few hours instead of more than one day.

OUTLINE DIMENSIONS in millimeters



MTS-COMP-5T
Comprising composite mount, load adaptor, mount fixing plate, earth strap, nut, and washers.
Packed weight: 5 kg

MTS-BKIT-5T-CS
Comprising baseplate, location pins x 2, spring clips x 2, M5 screws x 4, screw, and washers for earth strap.
Packed weight: 5 kg

1. To ensure safe use of the weighbridge mount, restraints should be fitted between the weighbridge deck and foundation.
2. VPG Transducers cannot accept responsibility for the improper installation of the weighbridge mount.
3. Because of the weight of the base plate and consequent freight costs, customers might wish to machine it locally. Manufacturing details of this simple plate are available free of charge on request.

VPG Transducers provides installation details separately, please refer to Technical Support Document, TSD.0007

Rocker Pin for Weighbridge Truck Scale

FEATURES

- For use on steel or concrete weighbridges
- Above ground or pit mounted
- Stainless steel pin
- Plated steel base
- Simple installation
- Low profile



DESCRIPTION

The 220 Rocker Pin Mount is ideal for use in steel or concrete weighbridge/truckscale applications when used in conjunction with the Model 220 load cell.

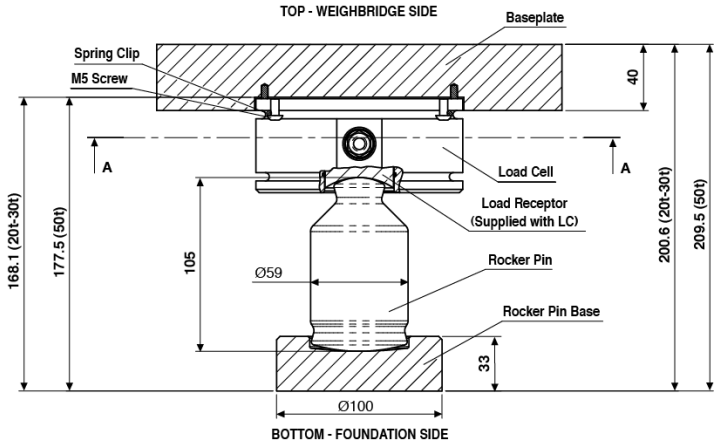
It forms a compact assembly which is rugged and tolerant of heavy treatment.

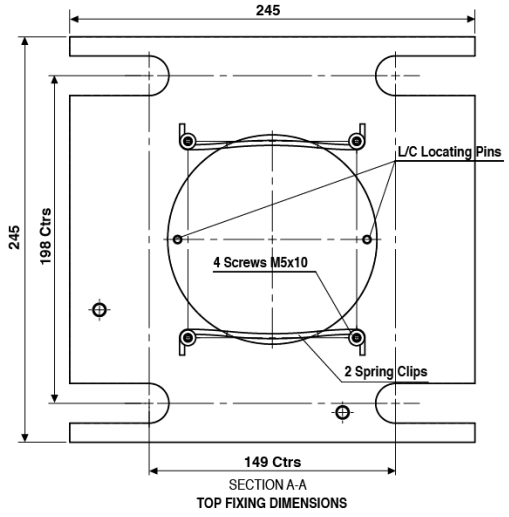
The Rocker Pin Mount assembly allows free motion in any direction in the horizontal plane up to ±6°.

The self-centering design is tolerant of misalignment and can therefore be used in silo weighing applications.

Complicated arrangements that often accompany conventional installation of load cell mountings are avoided.

OUTLINE DIMENSIONS in millimeters





The mounting kit is designated:

MTS-ROCKER-30T
Comprising rocker pin, rocker pin base. Packed weight: 3.5 kg

The baseplate kit is designated:

MTS-BASEKIT-30T
Comprising baseplate, location pins x 2, spring clips x 2, M5 screws x 4. Packed weight: 18 kg

1. To ensure safe use of the rocker pin mount; restraints must be fitted between the weighbridge deck and foundation.
2. VPG Transducers cannot accept responsibility for the improper installation of the rocker pin mount.
3. Because of the weight of the base plate and consequent freight costs, customers might wish to machine it locally. Manufacturing details of this simple plate are available free of charge on request.
4. A separate kit of spring clips, location pins, and screws is available (MTS-CLIPKIT-30T).

VPG Transducers provides installation details separately, please refer to Technical Support Document, TSD.0007

Model 220 Silo Mount

Tedea-Huntleigh

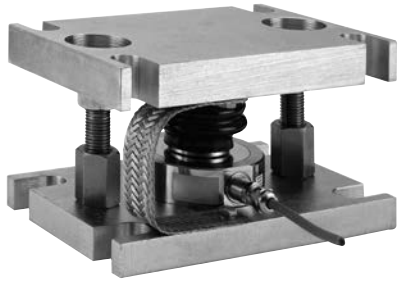
VPG Transducers

Celtron • Revere • Sensortronics • Tedea-Huntleigh

Heavy Duty Silo Mount for the 220 Load Cell

FEATURES

- 5, 10, 20 and 30T capacity
- Low profile
- Tolerant of angular misalignment
- Stainless steel mounting option
- Jacking support system
- Lift-off protection
- Allowance for thermal expansion



APPLICATIONS

- Silo mount
- Tank weighing
- Hopper weighing

DESCRIPTION

The 220 Silo Mount is specifically designed for the support of tanks, silos, and hoppers, making it ideal for indoor or outdoor process control applications when high accuracy weighing is demanded.

The Silo Mount is designed to support a uniformly distributed load and is capable of tilting through a maximum of ±3° from vertical.

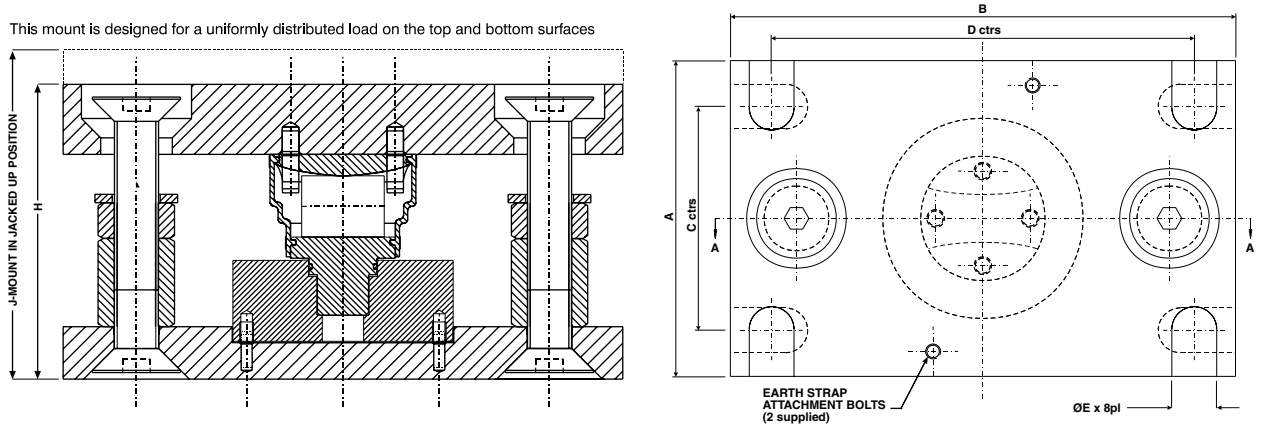
The Silo Mount forms a compact assembly offering simple installation which is rugged and tolerant of heavy industrial environments. Heavy gauge steel construction provides a rigid, robust load cell mount for high accuracy and prolonged life. An earth strap with fixing bolts is provided.

The Silo mount provides a unique jacking support system which allows the mounts to be installed in the raised position without the load cells, this aids the installation, and preventing accidental damage of the load cells.

Lift-off protection and an allowance for thermal expansion of the weighing vessel is also incorporated into the mount design.

For specifications refer to Model 220.

OUTLINE DIMENSIONS in millimeters



CAPACITY	A	B	C	D	ØE	H	J
5 and 10T	127	203	90	170	18	107	118
20 and 30T	152	245	115	208	24	148	156

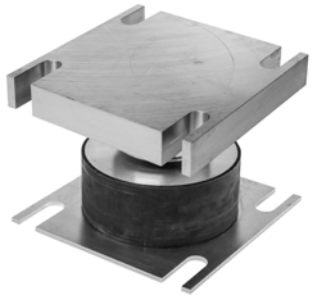
Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com

Document No.: 12028
Revision: 20-Jan-2015

Mount for Weighbridge Mount/Truck Scales

FEATURES

- For use on steel or concrete weighbridges
- Above ground or pit mounted
- Composite rubber and plated steel construction
- Low profile
- Simple installation
- Shock resistance



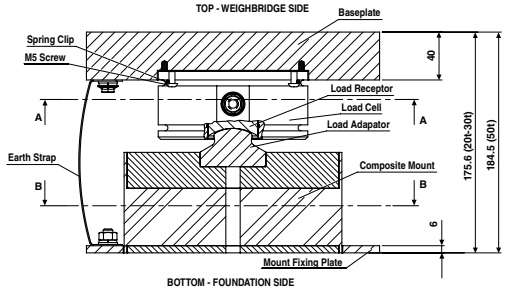
DESCRIPTION

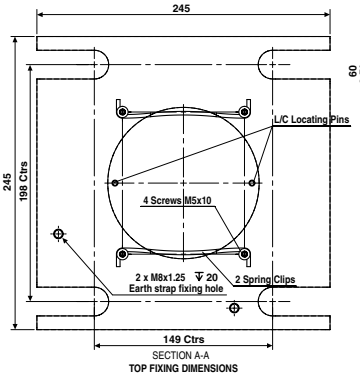
The Model 220 is ideally suited for use in steel or concrete weighbridge applications. When used in conjunction with the composite mount it forms a compact assembly which is rugged and tolerant of heavy treatment.

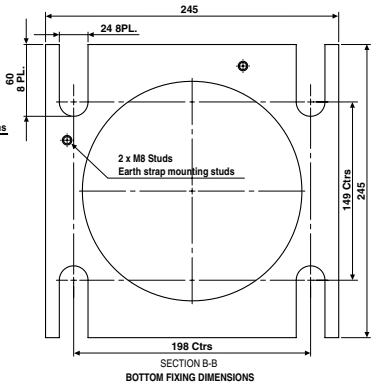
The mount assembly allows free motion in any direction in the horizontal plane at the same time as supplying restoring moment (return to centre motion) and retaining low vertical deflection. It supplies the required rigidity while retaining shock absorption capability. It exhibits low effects to changes of temperature and allows for thermal expansion of the bridge structure.

The complicated arrangements that often accompany conventional installations of load cell mountings are avoided. This system for truck scales can be installed in a matter of a few hours instead of more than one day.

OUTLINE DIMENSIONS in millimeters







The two mounting kits are:
MTS-COMP-30T
MTS-COMP-50T
Comprising composite mount, load adaptor, mount fixing plate, earth strap, nut, and washers.
Packed weight: 12.5 kg

MTS-BASEKIT-50T-CS
MTS-BASEKIT-30T
Comprising baseplate, location pins x 2, spring clips x 2, M5 screws x 4, screw and washers for earth strap. Packed weight: 18 kg

1. To ensure safe use of the weighbridge mount, restraints should be fitted between the weighbridge deck and foundation.
2. VPG Transducers cannot accept responsibility for the improper installation of the weighbridge mount.
3. Because of the weight of the base plate and consequent freight costs, customers might wish to machine it locally. Manufacturing details of this simple plate are available free of charge on request.
4. A separate kit of spring clips, location pins, and screw is available (MTS-CLIPKIT-50T).
5. An alternative weighbridge mount is available for use with the 220 load cell. Details of the Rocker Pin (MTS-ROCKER-50T) are available upon request.

VPG Transducers provides installation details separately, please refer to Technical Support Document, TSD.0007

Model 4158 Silo Mount

Tedea-Huntleigh

VPG Transducers

Celtron • Revere • Sensortronics • Tedea-Huntleigh

Heavy Duty Silo Mount for Use with 4158 Load Cell

FEATURES

- Capacities up to 75k lbs
- Use on tanks or silos
- All steel construction
- Low profile
- Simple installation



DESCRIPTION

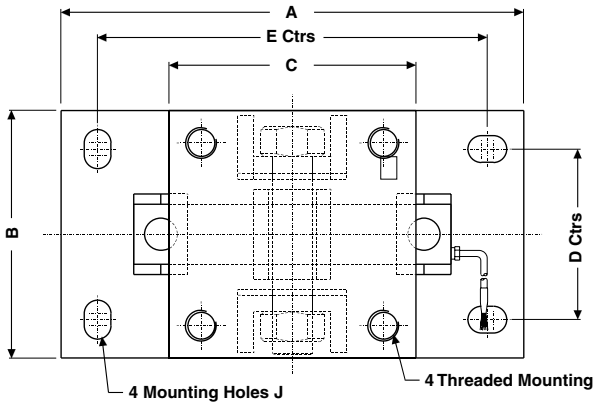
The 4158 silo mount is suitable for the support of tanks and silos, making it ideal for indoor or outdoor process control applications.

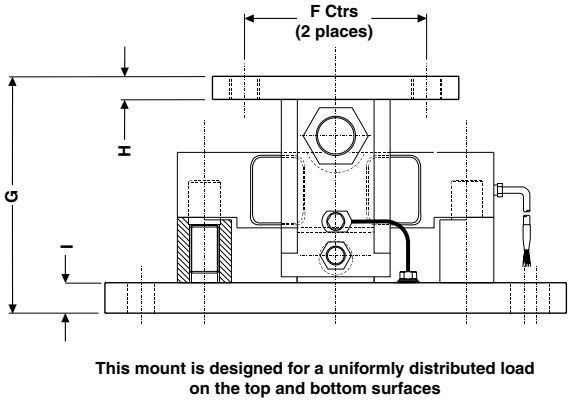
It is designed to support a uniformly distributed load and will allow tilt in any direction up to a maximum of ±3°.

It forms a compact assembly which is rugged and tolerant of heavy industrial environments. Heavy gauge steel plate provides a rigid, robust load cell mount for high accuracy and prolonged life.

It incorporates lift-off protection and allows for thermal expansion of the weighing vessel.

OUTLINE DIMENSIONS in millimeters





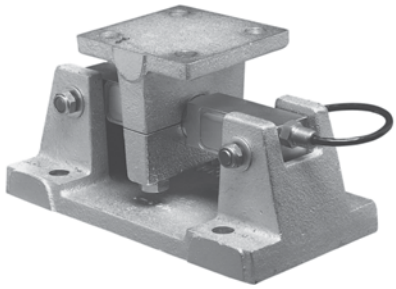
Each comprises base plate assembly, top plate assembly, loading pin and support, bottom pin, mounting posts, retaining clips, earth strap with bolts and washers.

CAPACITY	A	B	C	D	E	F	G	H	I	J	K
10k–25k lbs	240	180	180	130	190	130	142	12.7	19	Ø18x28	M20
40k lbs	380	203	203	140	320	150	195	19	25	Ø22x32	M24
50k–75k lbs	380	203	203	140	320	150	210	19	25	Ø22x32	M24

Tank Weighing Assembly

FEATURES

- Capacity ranges of 1000 to 75,000 pounds
- Mounts directly to the floor for structural support
- Self-checking with provisions for thermal expansion and contraction
- Insensitive to side loads and bending moments
- High output—well suited to high deadload/low liveload applications
- Load cells have matched outputs for multi-cell systems
- Excellent combined error and repeatability
- Accuracies exceed 0.1% with agitated loads
- Integral conduit adaptor
- *Sensorgage*™ sealed to IP67 standards
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G. Also, non-incendive ratings (No barriers!)
- **Optional**
  - Stainless steel, welded seal assemblies available





65016



65016-0104W

FM C US APPROVED

APPLICATIONS

- Tank, bin and hopper weighing
- Silo weighing
- Batching, blending, mixing, level and inventory monitoring

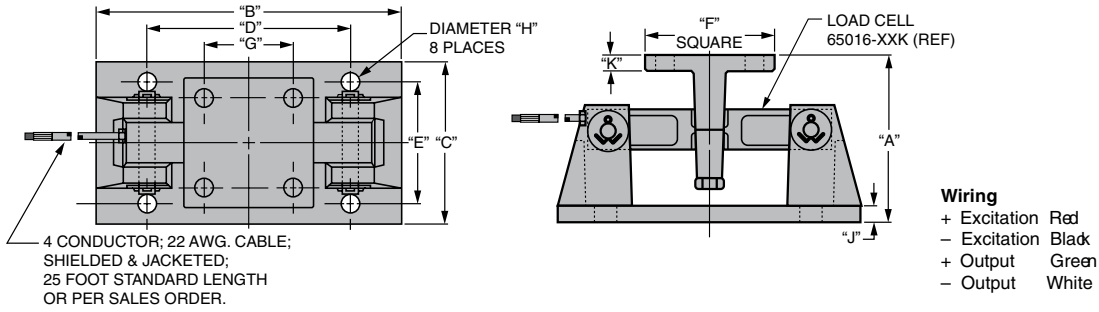
DESCRIPTION

The 65016-TWA is a mid to high capacity nickel-plated alloy steel weighing assembly.

It has high side load rejection, and is able to withstand loads in all directions, up to and exceeding its rated capacity, without permanent damage or the threat of structural failure. This weighing assembly is also designed to move in the direction of thermal expansion, guaranteeing accurate measurements regardless of conditions. Nickel plating and IP67 rated sealing make this load cell suitable for use in outdoor applications as well as applications that are subject to high pressure wash down. For a higher degree of corrosion and water resistance please see 65016-0104W, the stainless steel and welded seal version of 65016.

This load cell is rated intrinsically safe by the Factory Mutual System (FM); making it suitable for use in potentially explosive environments.

OUTLINE DIMENSIONS in inches



CAPACITY	A	B	C	D	E	F	G	H	J	K	WEIGHT
1k–5k	5.10	9.35	5.00	6.25	3.75	4.00	2.75	0.56	0.90	0.51	22.0
10k–35k	7.90	12.00	8.00	7.50	6.00	8.00	6.00	0.78	0.75	0.75	73.0
50k–75k	9.30	16.25	12.00	11.50	9.50	9.00	6.50	0.78	1.00	1.00	172.0

Capacities are in pounds.

Tank Weighing Assembly

SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Rated capacity—R.C. (E_{max})	1k, 1.5k, 2.5k, 5k, 10k, 15k, 25k, 35k, 50k, 75k	lbs
NTEP/OIML accuracy class	Standard	
Maximum no. of intervals (n)	—	
Rated output—R.O.	3.0	mV/V
Rated output tolerance	0.25	±% mV/V
Zero balance	1.0	±% FSO
Combined error	0.03	±% FSO
Non-repeatability	0.01	±% FSO
Creep error (20 minutes)	0.03	±% FSO
Temperature effect on zero	0.0015	±% FSO/°F
Temperature effect on output	0.0008	±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)	°F (°C)
Operating temperature range	0 to 150 (–18 to 65)	°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)	°F (°C)
Sideload rejection ratio	500:1	
Safe sideload	100	% of R.C.
Maximum safe central overload	150	% of R.C.
Ultimate central overload	300	% of R.C.
Excitation, recommended	15	VDC or VAC RMS
Excitation, maximum	25	VDC or VAC RMS
Input impedance	686–714	Ω
Output impedance	699–707	Ω
Insulation resistance at 50 VDC	>1000	MΩ
Material load cell	Nickel-plated alloy tool steel or stainless steel	
Material assembly	Zinc-plated cast steel	
Environmental protection	IP67	

FSO—Full Scale Output

All specifications subject to change without notice.

Truck Scale Assembly

FEATURES

- Rated capacities of 10,000 to 75,000 pounds
- High quality cast components
- *Unilink*™ "floating" suspension system allows controlled floating of the scale deck
- Incorporates model 65058 double-ended shear beam load cells
- *Sensorgage*™ sealed to IP67 standards
- Trade certified load cells for NTEP Class IIIL: 10000 divisions; Class III: 5000 divisions available
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G. Also, non-incendive ratings (No barriers!)
- **Optional**
  - Optional load equalizer pads available
  - Stainless steel version available





65058



65058S

APPLICATIONS

- Truck scales
- Railroad track scales
- "Legal-for-Trade" tank, bin, and hopper weighing

DESCRIPTION

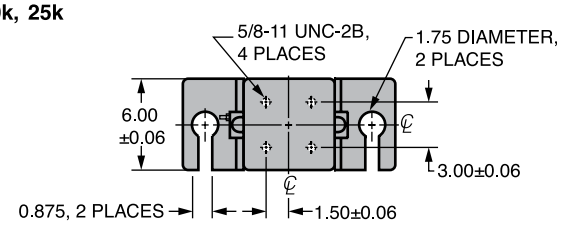
The 65058-TSA is a high capacity truck scale weighing assembly.

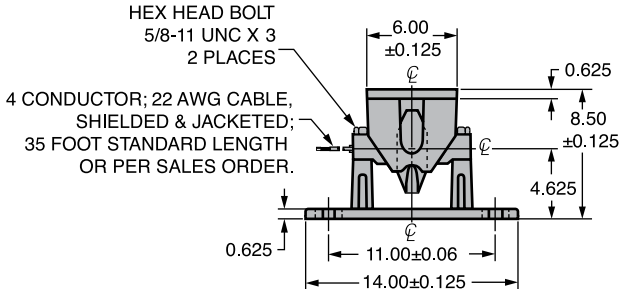
This product is designed to simplify the installation of the 65058 load cell into a certified Legal-for-Trade high capacity weigh bridge. Unilink™ floating suspension allows controlled floating of the scale deck, providing a reliable and accurate weighing system. The load cell is nickel plated or stainless steel and sealed to IP67 standards, assuring reliability. The mount assembly is provided with a primer coat finish to simplify the manufacture of the scale.

This weighing assembly is rated intrinsically safe by the Factory Mutual System (FM); making it suitable for use in potentially explosive environments. This weighing assembly is certified for Legal-for-Trade applications by both American NTEP and International OIML standards.

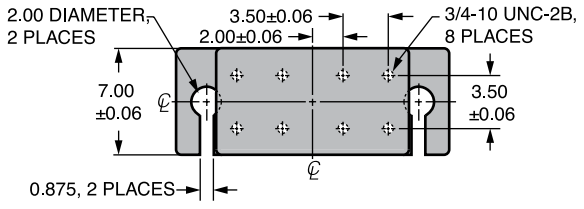
OUTLINE DIMENSIONS in inches

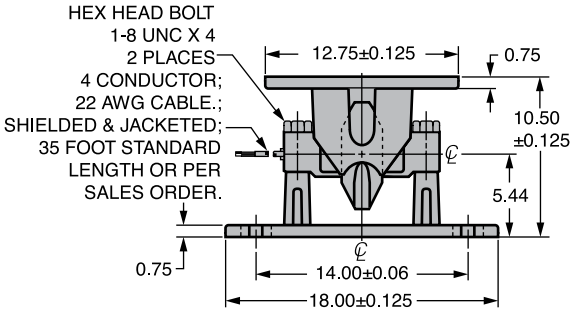
10k, 20k, 25k





50k, 60k, 75k





Wiring

+ Excitation Red + Output Green
– Excitation Black – Output White

Truck Scale Assembly

SPECIFICATIONS					
PARAMETER	**VALUE**				**UNIT**
Rated capacity—R.C. (E_{max})	10k, 25k, 40k, 50k, 60k, 75k				lbs
NTEP/OIML accuracy class	NTEP III	NTEP IIIL	Standard	OIML R60	
Maximum no. of intervals (n)	5000 multiple	10000 multiple		3000	
Y = E_{max}/V_{min}	See NTEP cert. 86-046A3			6667	Maximum available
Rated output—R.O.	3.0				mV/V
Rated output tolerance	0.25				±% mV/V
Zero balance	1.0				±% FSO
Combined error	0.02	0.02	0.03	0.02	±% FSO
Non-repeatability	0.01	0.01	0.015	0.01	±% FSO
Creep error (30 minutes)	0.025	0.030	0.03	0.017	±% FSO
Temperature effect on zero	0.0010	0.0010	0.0015	0.0010	±% FSO/°F
Temperature effect on output	0.0008	0.0008	0.0008	0.0007	±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)				°F (°C)
Operating temperature range	0 to 150 (–18 to 65)				°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)				°F (°C)
Sideload rejection ratio	500:1				
Safe sideload	100				% of R.C.
Maximum safe central overload	150				% of R.C.
Ultimate central overload	300				% of R.C.
Excitation, recommended	10				VDC or VAC RMS
Excitation, maximum	25				VDC or VAC RMS
Input impedance	686–714				Ω
Output impedance	699–707				Ω
Insulation resistance at 50 VDC	>1000				MΩ
Material	Nickel-plated alloy tool steel*				
Environmental protection	IP67				

* Stainless steel available

FSO—Full Scale Output

All specifications subject to change without notice.

Tank Weighing Assembly

FEATURES

- Rated capacities of 50 to 2500 pounds
- Steel or stainless steel construction
- Low profile design
- Trade certified for NTEP Class IIIL: 10000 divisions and Class III: 5000 divisions available in 1000 to 2500 pounds
- Mounts directly to floor or structural support
- Unique neoprene isolation mount accommodates shock/vibration, thermal expansion and load misalignment
- *Sensorgage*™ sealed to IP65/67 standards
- Factory Mutual System Approved for Classes I, II, III; Divisions 1 and 2; Groups A through G. Also, non-incendive ratings (No barriers!)



APPLICATIONS

- Tank, bin, and hopper weighing
- Batching, blending, and mixing
- Low capacity weighing

DESCRIPTION

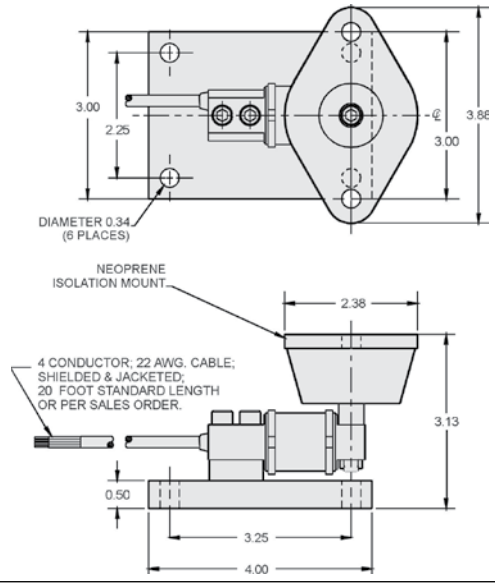
The 65059-TWA is low to mid capacity alloy steel weighing assembly.

This product simply and easily converts any industrial tank, table, or platform into a high accuracy scale. The 65059 weighing assembly is shipped pre-assembled and ready to bolt between the support legs of a platform, tank, or container and the concrete floor. The top pad of this assembly is constructed from a special stiff neoprene rubber. This pad further simplifies installation by creating a self-leveling system that eliminates the shimming process of the installation. This neoprene pad further benefits the user by creating a vibration dampening effect that helps protect and isolate the load cell. The load cell is available in both nickel-plated and stainless steel construction and sealed to IP67 standards, assuring reliability in industrial and wash down applications. The assembly is available only with zinc plating for corrosion resistance.

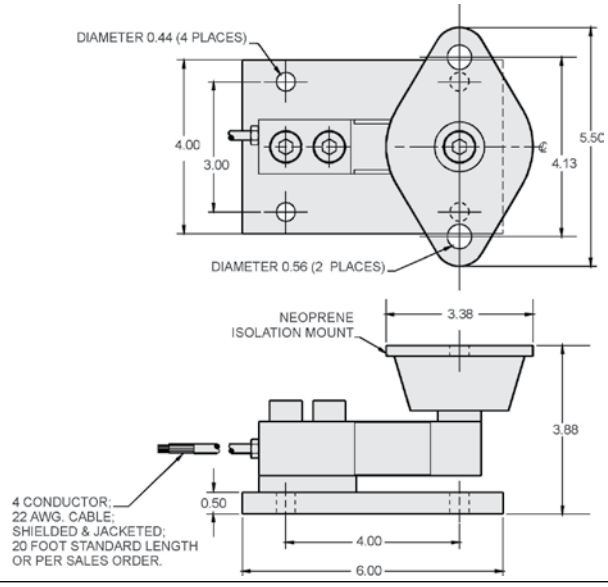
This weighing assembly is rated intrinsically safe by the Factory Mutual System (FM); making it suitable for use in potentially explosive environments. This weighing assembly is certified for Legal-for-Trade applications by both American NTEP and International OIML standards.

OUTLINE DIMENSIONS in inches

50–250 lbs



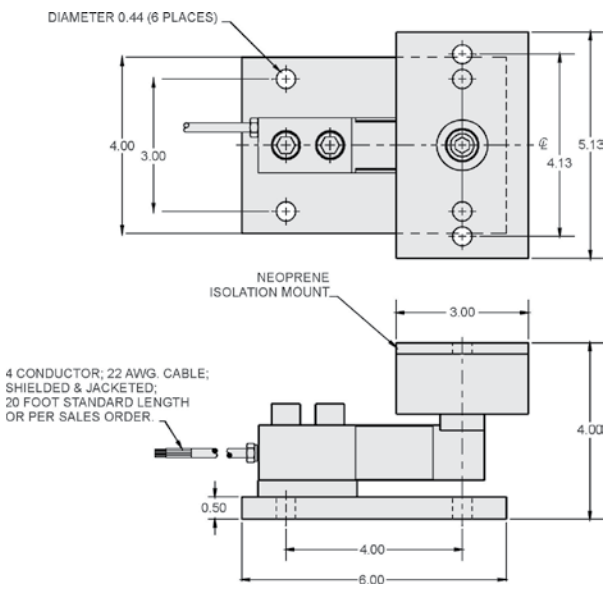
500 lbs



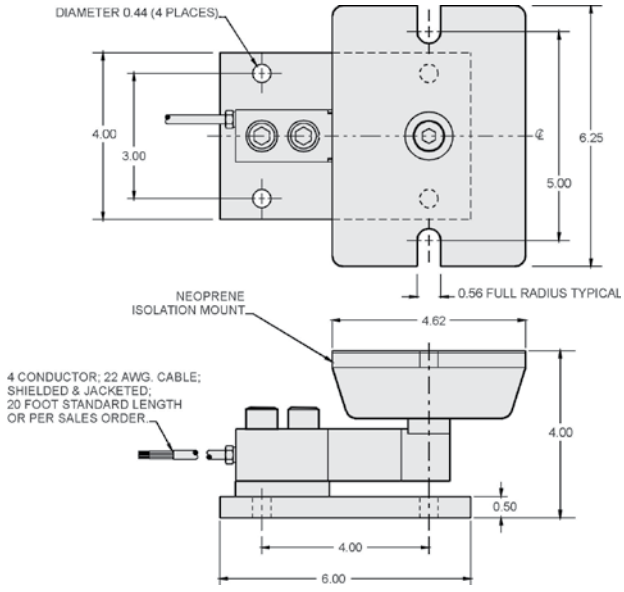
Tank Weighing Assembly

OUTLINE DIMENSIONS in inches

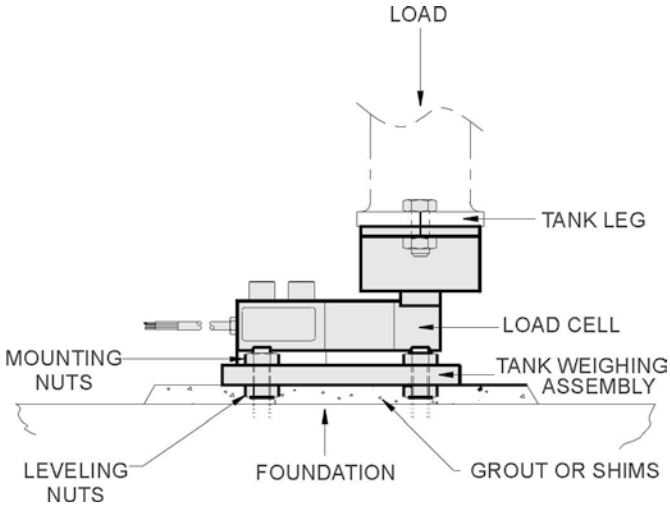
1k lbs

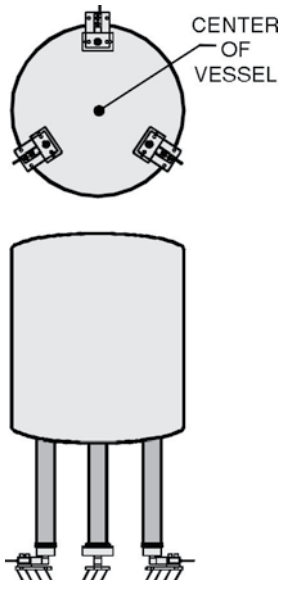


1.5k, 2k, 2.5k



TYPICAL INSTALLATION





Vessel with
Three Supports

Tank Weighing Assembly

SPECIFICATIONS				
PARAMETER	**VALUE**			**UNIT**
Rated capacity—R.C. (E_{max})	50, 75, 100, 150, 250, 500, 1k, 1.5k, 2.5k			lbs
NTEP/OIML accuracy class	NTEP IIIL	Standard	OIML R60	
Maximum no. of intervals (n)	10000		3000*	
Y = E_{max}/V_{min}	NTEP cert. 86-044A2		6250	Maximum available
Rated output—R.O.	3.0			mV/V
Rated output tolerance	0.25			±% mV/V
Zero balance	1.0			±% FSO
Combined error	0.02	0.03	0.02	±% FSO
Non-repeatability	0.01	0.01	0.01	±% FSO
Creep error (30 minutes)	0.03	0.03	0.017	±% FSO
Temperature effect on zero	0.0010	0.0015	0.0010	±% of load/°F
Temperature effect on output	0.0008	0.0008	0.0007	±% of load/°F
Compensated temperature range	14 to 104 (–10 to 40)			°F (°C)
Operating temperature range	0 to 150 (–18 to 65)			°F (°C)
Storage temperature range	–60 to 185 (–50 to 85)			°F (°C)
Maximum safe central overload	150			% of R.C.
Ultimate central overload	300			% of R.C.
Excitation, recommended	10			VDC or VAC RMS
Excitation, maximum	15			VDC or VAC RMS
Input impedance	Capacities 50–250 lbs: 380-450 Cap. 500–2500 lbs: 343-357			Ω
Output impedance	Capacities 50–250 lbs: 349-355 Cap. 500–2500 lbs: 349-355			Ω
Insulation resistance at 50 VDC	>1000			MΩ
Material load cell	Nickel-plated alloy tool steel**			
Material assembly	Zinc-plated steel			
Environmental protection	IP67			
Recommended torque	All capacities up to 2500 lbs: 136			N*m

* OIML approval 1k–2.5k lbs only

** Stainless steel available

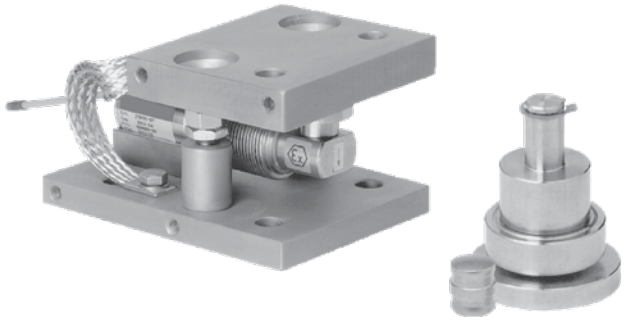
FSO—Full Scale Output

All specifications subject to change without notice.

9102 Self-Aligning Mounts

FEATURES

- Capacities: 50–2500 lbs
- Hardened components at all bearing surfaces
- Rocker pin load introduction
- Built-in horizontal movement control and lift-off protection
- Load cell (re)placement after installation of the mount
- **Optional**
  - Stainless steel or nickel-plated steel versions available
  - Stay rod assembly



APPLICATIONS

- Process control
- Batch weighing
- Silo/hopper weighing
- Belt scale weighing

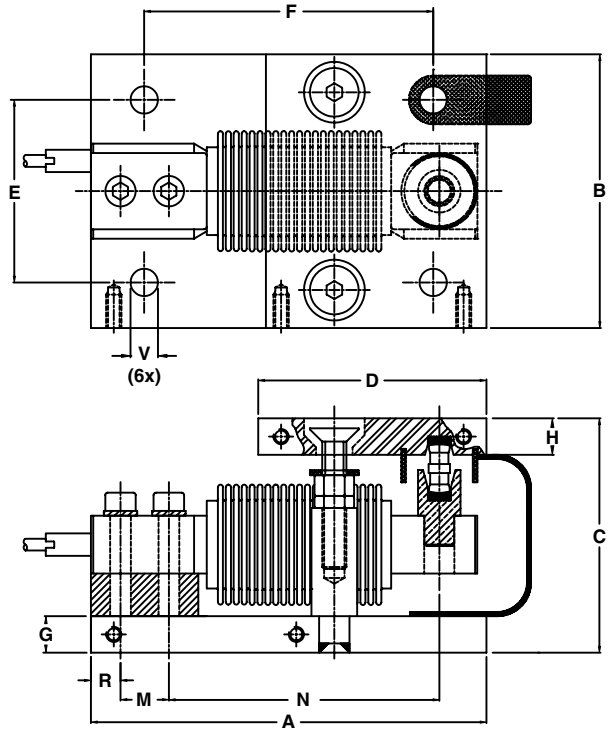
DESCRIPTION

The 9102 self-aligning silo mount, combined with the 9102 load cell family, provides high accuracy weighing assemblies suitable for process control, batch weighing, silo/hopper, and belt scale applications.

The 9102 foot assembly is an ideal solution for medium capacity belt, pallet, and platform scales.

The 9102 mount and foot are based on a rocker pin design, combining excellent load introduction to the transducer with an overall low profile. Hardened components are used at all load bearing surfaces. The stainless steel construction guarantees long-term reliability, even in the harshest environments.

OUTLINE DIMENSIONS in millimeters



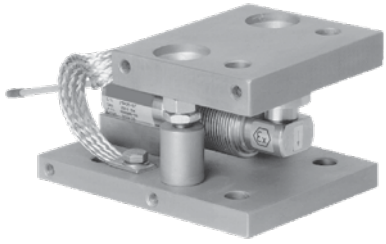
CAPACITY	50–200 lbs	500–2500 lbs
A	130	160
B	90	120
C	77	90
D	75	100
E	60	80
F	95	100
G	12	15
H	12	20
R	9.7	25.8
M	15.9	25.4
N	88.9	82.6
V	∅9	∅14

9102 Self-Aligning Mounts

ACCESSORIES

Self-Aligning Mount

The 9102 self-aligning mount permits controlled horizontal movement in all directions. The design allows the load cell to be (re)placed after installation of the mount. The critical load introduction area is mechanically protected.



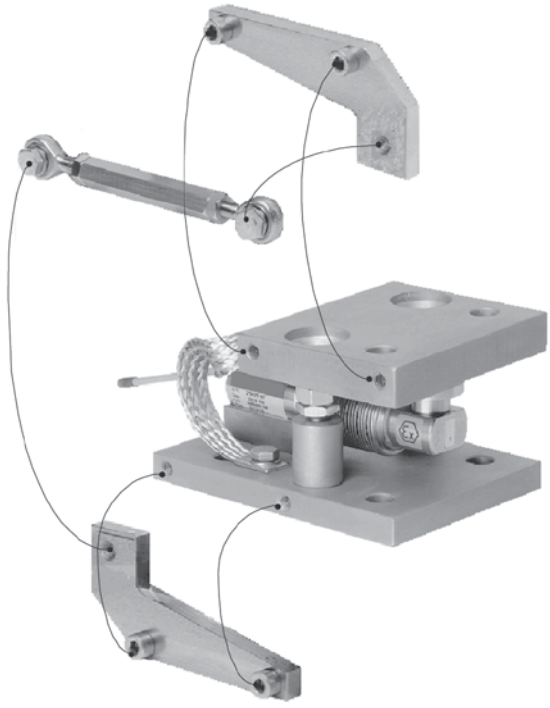
Height Adjustable Foot

The stainless steel foot, which has 5 mm of height adjustment, provides excellent load introduction to the load cell. The foot allows flexibility in platform design without compromising overall system performance.



Stay Rod Assembly

If major load movement is anticipated, stay rods should be used to restrain a platform or vessel. The 9102 stay rod assembly can be bolted to the mount prior to, or after its installation.

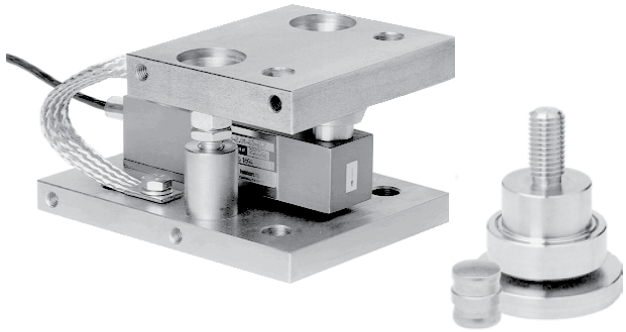


ADDITIONAL INFORMATION			
MOUNT/FOOT	**50/200 lbs**	**500–1000 lbs**	**2500 lbs**
Self-aligning mount			
Height, LC + assembly (mm)	77	90	90
Outline drawing—stainless steel	499049-10	499052-10	499053-10
Outline drawing—nickel-plated	499049-00	499052-00	499053-00
Assembly guidelines	AG 10/06-106/02	AG 10/06-107/02	
Height adjustable foot			
Height, LC + assembly (mm)	64+5	74+5	74+5
Outline drawing—stainless steel	499071	499072	499073
Stay rod assembly			
Outline drawing—stainless steel	499061-10	499068-10	499068-10
Outline drawing—nickel-plated	499061-00	499068-00	499068-00
Assembly guidelines	AG 09/06-202/02	AG 10/06-200/02	

9123/5123 Self-Aligning Accessories

FEATURES

- Capacities: 0.5–5T
- Hardened components at all load bearing surfaces
- Rocker pin load introduction
- Built-in horizontal movement control and lift-off protection
- Load cell (re)placement after installation of the mount
- **Optional**
  - Stainless steel or nickel-plated steel versions available
  - Stay rod assembly



APPLICATIONS

- Process control
- Batch weighing
- Silo/hopper weighing

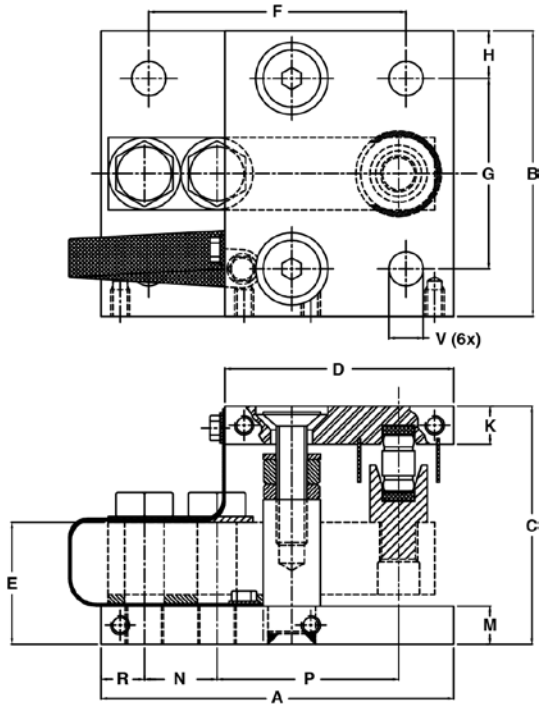
DESCRIPTION

The 9123/5123 self-aligning silo mount, combined with the 9123/5123 load cell family, provides weighing assemblies suitable for process control, batch weighing, silo/hopper, and belt scale applications.

The 9123/5123 foot assembly is an ideal solution for medium and high capacity platform scales.

The 9123/5123 mount and foot are based on a rocker pin design, combining excellent load introduction to the transducer with an overall low profile. Hardened components are used at all load bearing surfaces. The stainless steel construction guarantees long-term reliability, even in the harshest environments.

OUTLINE DIMENSIONS in millimeters



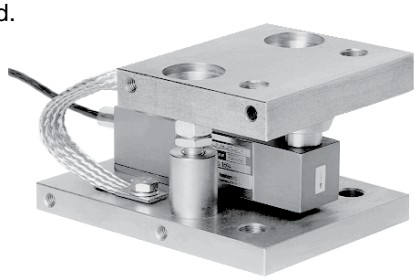
CAPACITY	0.5–2T	5T
A	160	185
B	120	150
C	90	125
D	100	120
E	50.8	62
F	100	135
G	80	100
H	20	25
K	20	20
M	15	20
N	25.4	38.1
P	76.2	95.3
R	32.2	22.7
V	∅14	∅18

9123/5123 Self-Aligning Accessories

ACCESSORIES

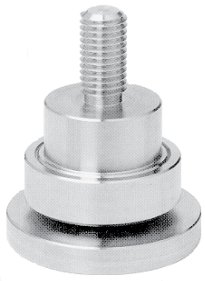
Self-Aligning Mount

The 9123/5123 self-aligning mount permits controlled horizontal movement in all directions. The design allows the load cell to be (re)placed after installation of the mount. The critical load introduction area is mechanically protected.



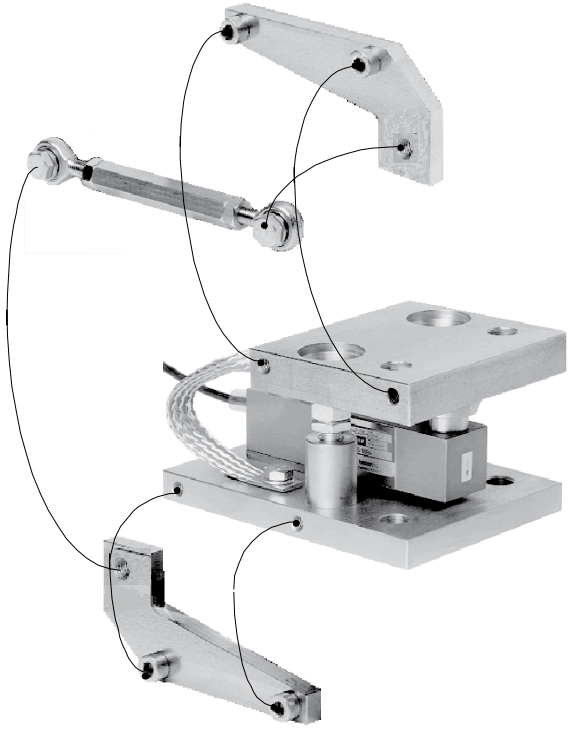
Height Adjustable Foot

The stainless steel foot, which has approximately 10 mm height adjustment, provides excellent load introduction to the load cell. The foot allows flexibility in platform design without compromising overall system performance.



Stay Rod Assembly

If major load movement is anticipated stay rods should be used to restrain a vessel or platform. The 9123/5123 stay rod assembly can be bolted to the mount prior to or after its installation.



ADDITIONAL INFORMATION		
MOUNT/FOOT	**0.5–2T**	**5T**
Self-aligning mount		
Height, assembly + 9123/5123 (mm)	90	125
Assembly guidelines	AG 10/06-103/02	
Outline drawing—stainless steel	499057-10	499058-10
Outline drawing—nickel-plated	499057-00	499058-00
Height adjustable foot		
Height, assembly + 9123/5123 (mm)	71+10	101+10
Outline drawing—stainless steel	499081	499082
Stay rod assembly		
Assembly guidelines	AG 09/06-200/02	
Outline drawing—stainless steel	499068-10	499069-10
Outline drawing—nickel-plated	499068-00	499069-00

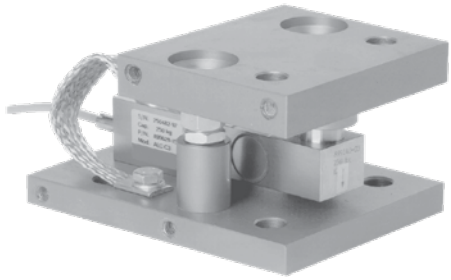
ACB Self-Aligning Mount

FEATURES

- Capacities: 250–2000 kg
- Hardened components at all bearing surfaces
- Rocker pin load introduction
- Mechanical protection of the critical load introduction area
- Built-in horizontal movement control and lift-off protection
- Load cell (re)placement after installation of the mount
- **Optional**
  - Stainless steel or nickel-plated steel versions available
  - Stay rod assembly
  - Can be used also for ACB 0.5–2 ton

APPLICATIONS

- Process control
- Batch weighing
- Silo/hopper weighing
- Belt scale weighing

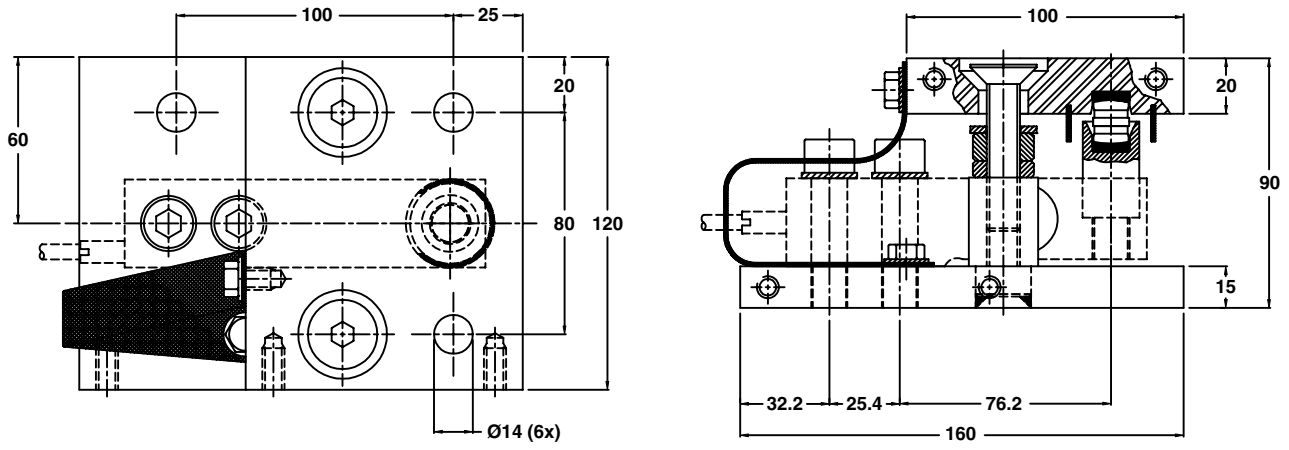


DESCRIPTION

The ACB self-aligning silo mount, combined with the ACB load cell family, provides an ideal solution for process control, batch weighing, silo/hoppers, and belt scale applications.

The ACB mount permits controlled movement in all directions. The design allows the cell to be fitted after installation of the mount.

OUTLINE DIMENSIONS in millimeters



Technical contact: vpgt.americas@vpgsensors.com,
vpgt.asia@vpgsensors.com, and vpgt.emea@vpgsensors.com

ACB Self-Aligning Mount

ACCESSORIES

ACB Foot Assemblies

- Capacities: 250–2000 kg
- Hardened components at all bearing surfaces
- Self-aligning, rocker pin load introduction
- Stainless steel construction, suitable for demanding environments

The ACB foot assemblies, together with the ACB load cell family, are an ideal solution for medium capacity belt, pallet and platform scales.

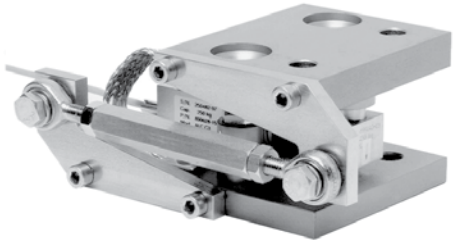
The stainless steel height adjustable and non-adjustable foot assemblies provide excellent load introduction to the load cell while maintaining an overall low profile. The rocker pin based design allows flexibility in platform design without compromising overall system performance.

The rubber foot assembly provides a high performance, shock absorbing, load introduction. The foot is made of yellow passivated ST37 and uses hardened components at all bearing surfaces.



Stay Rod Assemblies

Unless major load movement is anticipated, the ACB mount eliminates the need for stay rods. An optional stay rod assembly, which can be bolted to the mount when required, is available.



ADDITIONAL INFORMATION	
MOUNT/FOOT	**250–2000 kg**
Height Adjustable Foot	
Height, ACB + assembly (mm)	63+3/67+3 (2T)
Outline drawing—stainless steel	499134
Rubber Foot	
Height, ACB + assembly (mm)	60/64 (2T)
Outline drawing—nickel-plated	499133-00
Self-Aligning Mount	
Height, ACB + assembly (mm)	90
Outline drawing—stainless steel	499085-10
Outline drawing—nickel-plated	499085-00
Assembly guidelines	AG 10/06-109/02
Stay Rod Assembly	
Height, ACB + assembly (mm)	90
Outline drawing—stainless steel	499068-10
Outline drawing—nickel-plated	499068-00
Assembly guidelines	AG 10/06-200/02

ASC/DSC Self-Aligning Accessories

FEATURES

- Capacities: 30–50T
- Hardened components at all bearing surfaces
- Self-aligning construction
- Stainless steel



APPLICATIONS

- Truck and rail scale applications
- Silo and weighbridge applications

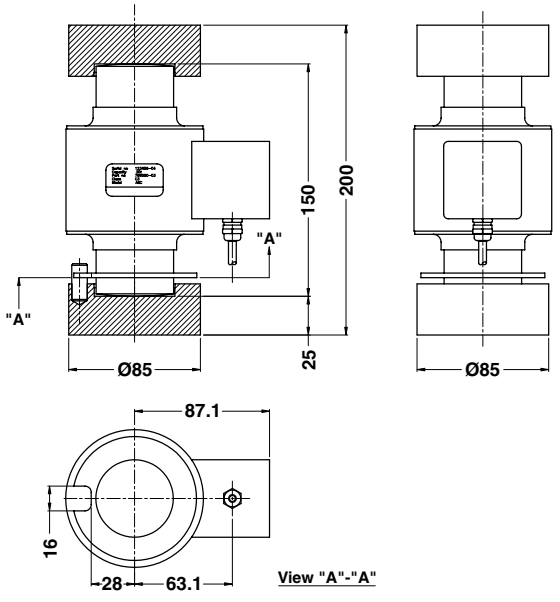
DESCRIPTION

The ASC and DSC self-aligning set provides weighing assemblies suitable for truck scale, rail scale and process weighing applications.

The self-aligning set is specially designed to be used in weighbridges without stay or check rods. Eccentric washers are used to ensure that the load cell is placed in a vertical position, and perpendicular to its mounting surfaces.

Long-term reliability is assured through the use of hardened corrosion resistive steel on all mount parts.

OUTLINE DIMENSIONS in millimeters



MOUNT	ASSEMBLY GUIDELINES	P/N
Self-aligning set	02/03-110/01	799863-00
Set of 3 eccentric washers		499125-00

ASC2/DSC2 Self-Aligning Mount

FEATURES

- Capacities: 20 to 50T
- Anti-rotation design
- Self-aligning construction
- Hardened stainless steel
- Allows ±5° alignment



APPLICATIONS

- Weighbridges
- Process weighing

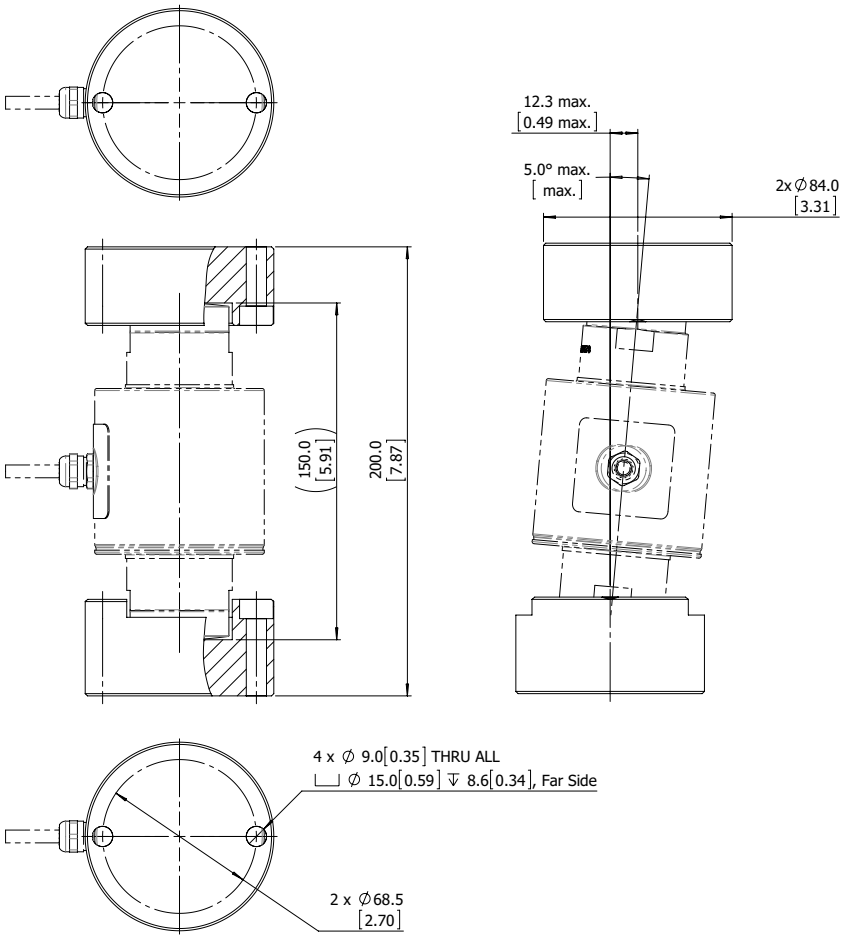
DESCRIPTION

The ASC2/DSC2 self-aligning set provides a simple but effective weighing assembly suitable for truck scales, rail scales, and process weighing applications.

It is specially designed to be used in weighbridges without stay or check rods. Eccentric washers can be supplied to ensure that the load cell is placed in a vertical position, perpendicular to its mounting surfaces.

Long-term stability is assured through the use of hardened corrosion resistant stainless steel throughout.

OUTLINE DIMENSIONS in millimeters [inches]



Load Cell Mounting Assembly for Models 355, 3410, 3420 and 3510

FEATURES

- Simplifies load cell installation on tanks, silos, and other weighing vessels
- 3 models suitable for load cell Models 3510, 3410, 3420, and 355
- Accepts load cells ranging in capacity from 5 to 5,000 kg
- Permanent protection against load cell damage
- Grounding strap provides low resistance path to minimize electrical potentials
- Provision for thermal expansion, contraction and lift-off due to winds or collision
- Cable gland protector prevents cable damage
- Stainless steel construction
- Internal jack for load cell easy installation and replacing
- Ball and cup version also available



A perfect solution to vessel weighing in dairies, chemical, bottling, and food processing plants, stainless steel CellMate™ mounts can be used on tanks, silos, and many other weighing vessels and applications.

The CellMate™ family of mountings also provides an unparalleled degree of protection for load cells and maintains a permanent load cell safety system, reducing load cell damage and plant down-time.

CellMate™ assemblies are available in three models with weighing capacities from 5 to 5000 kg in stainless steel. Standard dimensions and hole sizes provide for fast and easy placement of load cells. Ideal for use with the Tedea-Huntleigh line of hermetically sealed shear and bending beam load cells. CellMate™ includes an internal jack which enables users to install the fittings on silos or tanks with or without load cells.

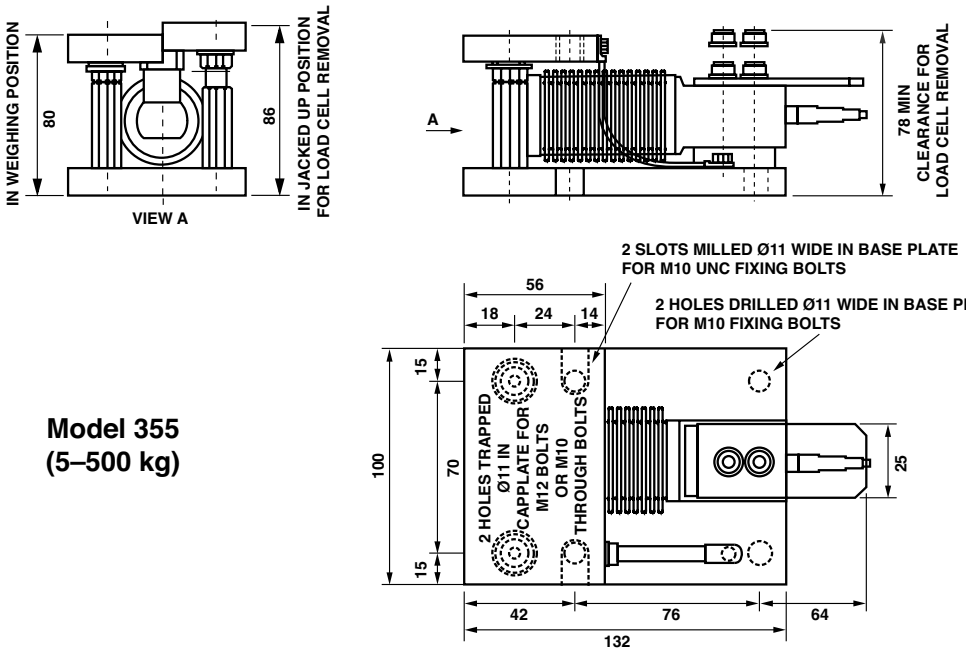
APPLICATIONS

- Hostile environments applications
- Process control
- Batch weighing
- Silo/hopper weighing
- Belt scale weighing

DESCRIPTION

The CellMate™ is a superior load cell mounting assembly that dramatically simplifies load cell installation.

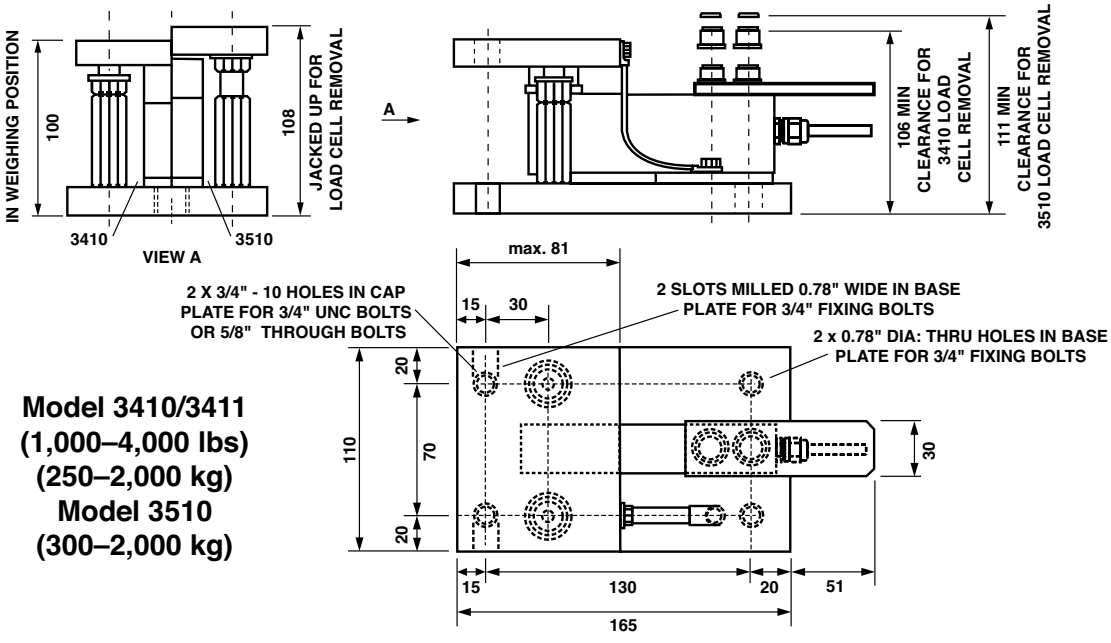
OUTLINE DIMENSIONS in millimeters



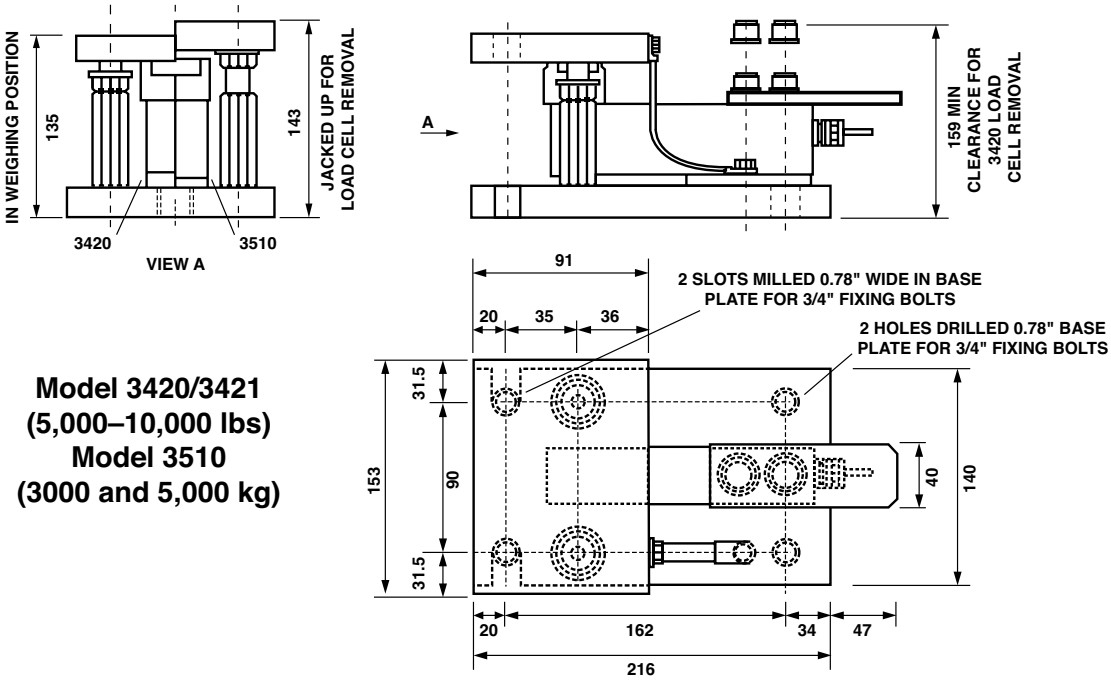
Model 355
(5–500 kg)

Load Cell Mounting Assembly for Models 355, 3410, 3420 and 3510

OUTLINE DIMENSIONS in millimeters



Model 3410/3411
(1,000–4,000 lbs)
(250–2,000 kg)
Model 3510
(300–2,000 kg)

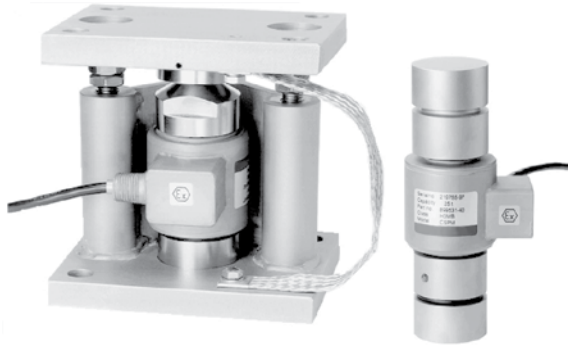


Model 3420/3421
(5,000–10,000 lbs)
Model 3510
(3000 and 5,000 kg)

CSP-M Self-Aligning Accessories

FEATURES

- Capacities: 10–60T
- Hardened components at all bearing surfaces
- Self-aligning construction
- Built-in horizontal movement control and lift-off protection
- Load cell (re)placement after installation of the mount
- **Optional**
  - Stainless steel or nickel-plated steel versions available
  - Versions with stay rod assemblies available
  - Suitable also for SCC load cells



APPLICATIONS

- Process control
- Silo and weighbridge applications
- Truck and rail scale applications

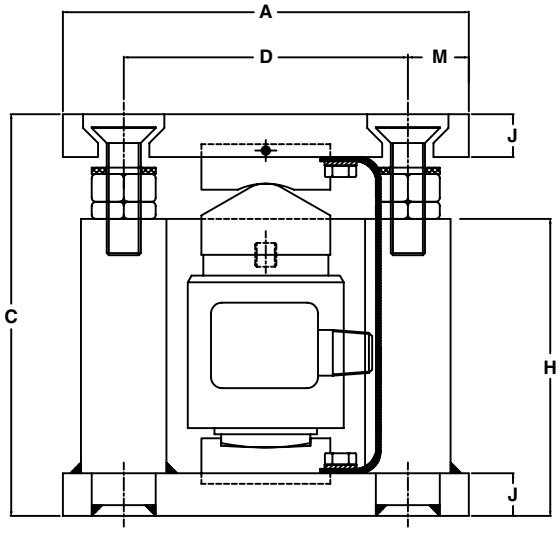
DESCRIPTION

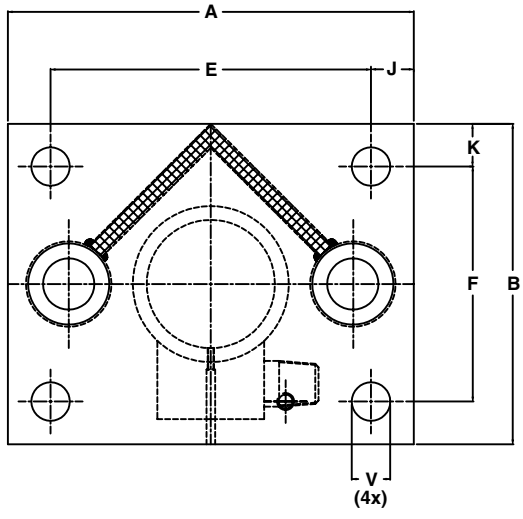
The CSP-M self-aligning mounts, combined with the CSP-M load cell family, provides weighing assemblies suitable for process control, silo, and weighbridge applications.

The CSP-M weighbridge mount is designed to be used in truck scale and rail scale applications. The mount ensures excellent signal stability and optimum performance. It can be used without stay or check rods.

The self-aligning silo mount provides excellent load introduction to the transducer while maintaining an overall low profile. Hardened components are used at all load bearing surfaces.

OUTLINE DIMENSIONS in mm





CAPACITY	A	B	C	D	E	F	H	J	K	M	V
10/25 ton	190	150	189.5	133	150	110	139	20	20	28.5	∅18
40/60 ton	250	200	273	182	190	150	209	30	25	35	∅22

CSP-M Self-Aligning Accessories

ACCESSORIES

Self-Aligning Weighbridge Mount

The CSP-M SA weighbridge mount allows a safe horizontal movement of 8 mm, while ultimate movement of up to 16 mm is accepted. Special care has been given to load safety margins and ease of installation.

Combined with the CSP-M load cell family, the assembly provides excellent signal stability and measurement performance under off-center loading conditions. The mount is made of corrosion resistive steel (DIN 1.2083) to guarantee long-term reliability.

Self-Aligning Silo Mount

The CSP-M self-aligning silo mount is suitable for batch weighing, process control, and silo/hopper applications. The mount tolerates controlled movement in all directions. The top plate is held captive eliminating, in most cases, the need for additional stay or check rods. Where major load movement is anticipated, a version with a built-in stay rod is available. The silo mount allows the load cell to be fitted or removed after installation of the mount. All load bearing surfaces are made of hardened corrosion resistive steel (DIN 1.2083).





ADDITIONAL INFORMATION		
MOUNT	**10/25T**	**40/60T**
Weighbridge mount		
Assembly + CSP-M	216 mm	260 mm
Assembly guidelines	AG 09/06-101/02	
Outline drawing—stainless steel*	899953-41	899953-40
Outline drawing—nickel-plated	–	–
Silo mount		
Assembly + CSP-M	188	273
Assembly guidelines	AG 12/06-102/02	
Outline drawing—stainless steel*	499050-10	499051-10
Outline drawing—nickel-plated	499050-00	499051-00
Silo mount with stay rod		
Assembly + CSP-M	190 mm	274 mm
Outline drawing—stainless steel*	499059-10	499060-10
Outline drawing—nickel-plated	499059-00	499060-00

* Load bearings are made of hardened steel, material DIN number: 1.2083

T-End Foot, Ball-In-Cup, and Rod End Bearings

FEATURES

- **T-END FOOT**
  - Self-leveling
  - Low profile
  - Stainless steel
  - Anti-vibration
  - Easy installation
  - Threaded foot suitable for food industry
- **BALL-IN-CUP**
  - Hopper weighing
  - Self-aligning
  - Reduces side load effects
  - Complements load cell
  - Stainless steel option
- **ROD END BEARINGS**
  - Self-aligning
  - High grade steel
  - Brass or bronze insert
  - Stainless steel option
  - Metric and imperial sizes

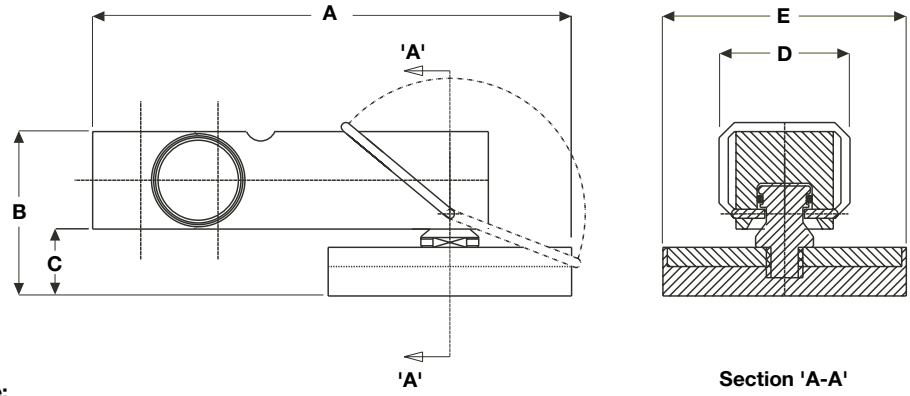


T-END MOUNTING FEET

Tedea-Huntleigh T-End Mounting Feet are ideal for platform use where a number of load cells are used together. The stainless steel construction with the inert rubber foot makes the assembly impervious to most industrial chemicals and ideal for demanding environments. A food grade rubber option is also available.

They must be used with the appropriate load cells, which are current matched and specially machined to accept T-End accessories. It is recommended to order load cells and T-End Mounting Feet together.

DIMENSIONS in millimeters



Section 'A-A'

Note:
1. All dimensions in mm
2. A mounting foot adapter is available which increases the heights 'B' & 'C' by 7 mm (for standard shear beams

Load Cell Type			3410			3510	
Capacity			250–4000 lbs	500–1000 kg	2000 kg	300–2000 kg	5000 kg
Both T-foot versions	A	mm	157.4	157.4	157.4	157.4	202.4
	D		43	43	43	43	57
	ØE		80	80	80	80	100
Fixed height foot	B		52	52	58	54	77.5
	C		22	22	22	22	29.5
Adjustable height foot	B low		58	58	64	60	-
	B high		70	70	76	72	-
	C low		28	28	28	28	-
	C high		40	40	40	40	-

T-End Foot, Ball-In-Cup, and Rod End Bearings

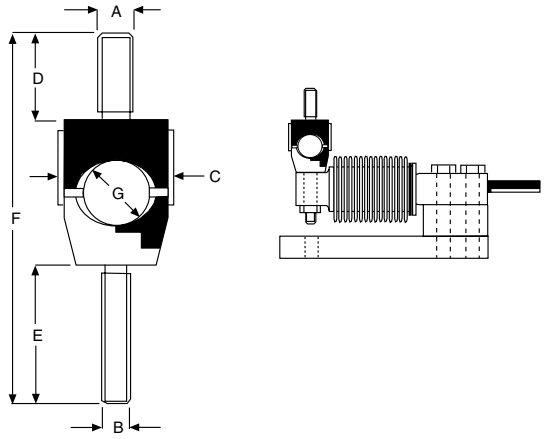
BALL-IN-CUP

The Tedea-Huntleigh Ball-in-Cup arrangement is a useful addition to the Model 355 load cell. It provides a flexible joint to permit limited movement of a silo due to external factors, such as temperature fluctuations.

Base plate, mounting plate, and bolts are optional extras.

This is a low cost accessory which could easily be adapted to form a pivot point to work in conjunction with the 355 CellMate™, for less demanding applications.

DIMENSIONS in millimeters



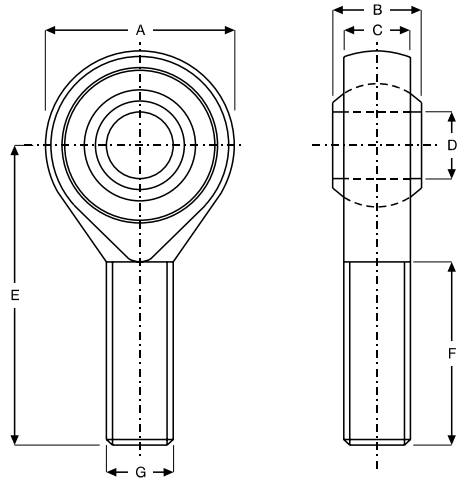
LOAD CELL TYPE	355
MAX. CAPACITY (kg)	500
A Thread	M10–1.5
B Thread	M8–1.25
C Diameter	33
D Length	25
E Length	40
F Overall Length	106
G Ball Diameter	19.0

ROD END BEARINGS

Tedea-Huntleigh offers a selection of rod end bearings to complement the Model 601, 616, and 620 load cells. These fittings permit the suspension of tension load cells for numerous applications. Offered in both metric and imperial sizes, many are available ex-stock.

When safety is paramount, Tedea-Huntleigh strongly recommends that an additional suspension line is provided in parallel to the load cell.

DIMENSIONS in millimeters



	THREAD TYPE (G)			
	M12–1.75	M16–2	M24–2	1/2"–20 UNF
A Width	34	42	60	29
B Thickness	16	21	31	12.7
C Thickness	12	15	22	10.3
D Diameter	12	16	25	9.6
E Length	52	66	94	49
F Length	32	39	55	32

RLC Self-Aligning Accessories

FEATURES

- Capacities: 0.25–10T
- Hardened components at all load bearing surfaces
- Rocker pin load introduction
- Stainless steel construction
- Built-in horizontal movement control and lift-off protection
- Load cell (re)placement after installation of the mount

APPLICATIONS

- Process control
- Batch weighing
- Silo/hopper weighing
- Belt scale weighing

DESCRIPTION

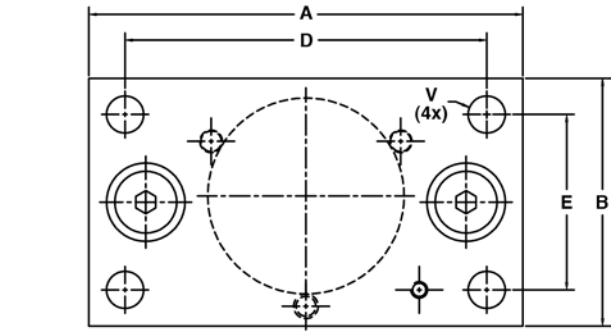
The RLC self-aligning silo mount, combined with the RLC load cell family, provides weighing assemblies suitable for process control, batch weighing, silo/hoppers, and belt scale applications.

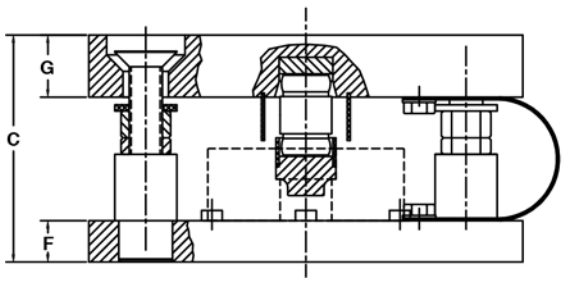


The RLC self-aligning foot assembly is an ideal solution for medium capacity platform scales and belt scale applications.

The RLC mount and foot are based on a rocker pin design, combining excellent load introduction to the transducer with an overall low profile. Hardened stainless steel components are used at all bearing surfaces. The fully stainless steel construction guarantees long term reliability, even in the harshest environments.

OUTLINE DIMENSIONS in millimeters





CAPACITY	0.5T, 1T	2T, 3.5T, 5T	10T
A	150	160	210
B	100	110	120
C	75	100	110
D	120	120	175
E	70	70	85
F	15	20	25
G	20	20	25
V	∅14	∅16	∅18

RLC Self-Aligning Accessories

ACCESSORIES

Self-Aligning Mount

The stainless steel RLC mount tolerates controlled movement in all directions. The silo or hopper is held captive, eliminating the need, unless major load movement is anticipated, for additional check rods. The unique design allows the load cell to be placed or replaced after installation of the mount.



Height-Adjustable Foot

This stainless steel foot, which has 5 mm of height adjustment, provides excellent load introduction to the load cell. The foot allows flexibility in platform design without compromising overall system performance.



Non-Adjustable Foot

The non-adjustable, stainless steel foot carries the same specifications as the height adjustable version, while providing an even lower profile.



Rocker Pin Set

This stainless steel rocker pin design combines excellent load introduction to the transducer with a low profile.

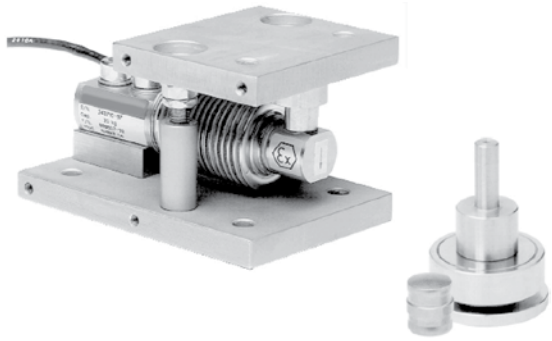


ADDITIONAL INFORMATION			
MOUNT/FOOT	**0.25–1T**	**2–5T**	**10T**
Self-aligning mount			
Height, mount assembly + RLC (mm)	75	100	110
Outline drawing	899043-00	899045-00	499094-10
Mount assembly guideline	AG 05/7-100/01	AG 05/7-100/01	-
Non-adjustable foot			
Height of non-adjustable foot + RLC (mm)	50	85.2	-
Outline drawing non-adjustable foot	899041-00	899042-00	-
Height-adjustable foot			
Height of adjustable foot + RLC (mm)	60+5	92.6+5	120.2+5
Outline drawing adjustable foot	499083-00	499084-00	499093-00
Rocker pin set			
Outline drawing	899962-08	899962-09	899962-10

SHBxR Self-Aligning Accessories

FEATURES

- Capacities: 5–500 kg
- Hardened components at all load bearing surfaces
- Rocker pin load introduction
- Built-in horizontal movement control and lift-off protection
- Load cell (re)placement after installation of the mount
- **Optional**
  - Stainless steel or nickel-plated steel versions are available
  - Stay rod assembly



APPLICATIONS

- Process control
- Batch weighing
- Silo/hopper weighing
- Belt scale weighing

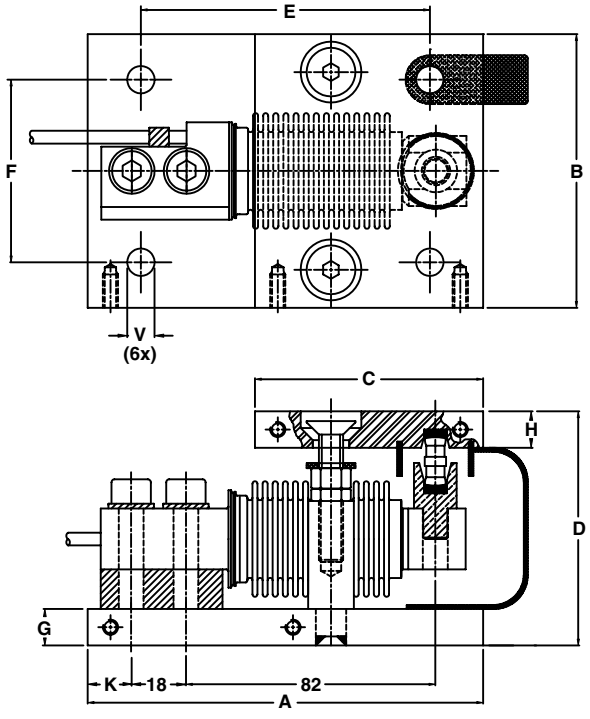
DESCRIPTION

The SHBxR self-aligning silo mount, combined with the SHBxR load cell family, provides weighing assemblies suitable for process control, batch weighing, silo/hopper, and belt scale applications.

The SHBxR foot assembly is an ideal solution for low and medium capacity platform scales. The SHBxR mount and foot are based on a rocker pin design, combining excellent load introduction to the transducer with an overall low profile.

Hardened components are used at all load bearing surfaces. The stainless steel construction guarantees long-term reliability, even in the harshest environments.

OUTLINE DIMENSIONS in millimeters



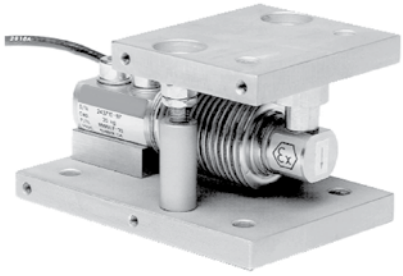
CAPACITY	5–200 kg	350–500 kg
A	130	160
B	90	120
C	75	100
D	77	90
E	95	100
F	60	80
G	12	15
K	14.5	33.8
H	12	20
V	∅9	∅14

SHBxR Self-Aligning Accessories

ACCESSORIES

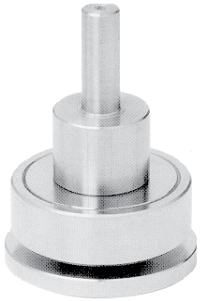
Self-Aligning Mount

The SHBxR mount permits controlled horizontal movement in all directions. The design allows the load cell to be (re)placed after installation of the mount. The critical load introduction area is mechanically protected.



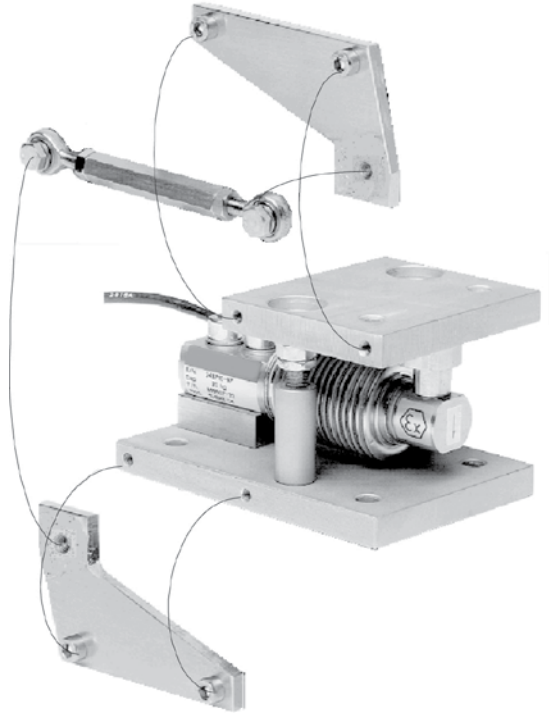
Height Adjustable Foot

The stainless steel foot, which has 5 mm of adjustment, provides excellent load introduction to the transducer. The foot allows flexibility in platform design without compromising overall system performance.



Stay Rod Assembly

If major load movement is anticipated stay rods should be used to restrain a vessel or platform. The SHBxR stay rod assembly can be bolted to the mount prior to or after its installation.



ADDITIONAL INFORMATION		
MOUNT	**5/200 kg**	**350/500 kg**
Self-aligning mount		
Height, assembly + SHBxR (mm)	77	90
Outline drawing—stainless steel	499048-10	499095-10
Outline drawing—nickel-plated	499048-00	499095-00
Assembly guideline	AG 10/06-104/02	
Height adjustable foot		
Height, assembly + SHBxR (mm)	65+5	
Outline drawing—stainless steel	499070	
Stay rod assembly		
Outline drawing—stainless steel	499061-10	499068-10
Outline drawing—nickel-plated	499061-00	499068-00
Assembly guidelines	AG 09/06-202/02 and AG 01/07-200/03	

SSB Self-Aligning Accessories

FEATURES

- Capacities: 500–5000 kg
- Hardened components at all bearing surfaces
- Rocker pin load introduction
- Stainless steel or nickel plated steel versions are available
- Built-in horizontal movement control and lift-off protection
- Load cell (re)placement after installation of the mount
- **Optional**
  - Stay rod assembly
  - Suitable also for SBC load cells

APPLICATIONS

- Process control
- Batch weighing
- Silo/hopper weighing
- Belt scale weighing



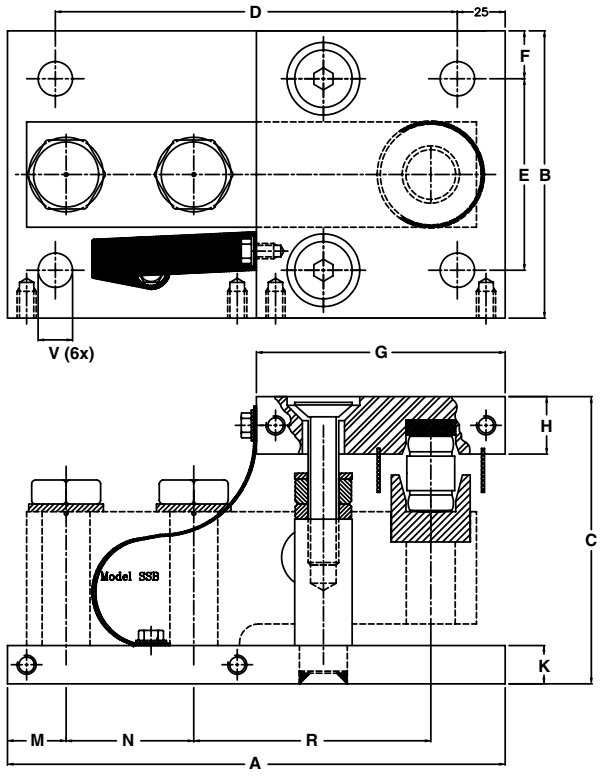
DESCRIPTION

The SSB self aligning silo mount, combined with the SSB load cell family, provides weighing assemblies suitable for process control, batch weighing, silo/hopper, and belt scale applications.

The SSB foot assembly is an ideal solution for medium capacity belt, pallet and platform scales.

The SSB mount and foot are based on a rocker pin design, combining excellent load introduction to the transducer with an overall low profile. Hardened components are used at all load bearing surfaces. The stainless steel construction guarantees long-term reliability, even in the harshest environments.

OUTLINE DIMENSIONS in mm



CAPACITY	0.5–2T	5T
A	210	250
B	120	150
C	95	135
D	160	200
E	80	100
F	20	25
G	100	120
H	20	20
K	15	20
M	21.9	30.6
N	63.5	66.7
R	98.4	123.8
V	∅14	∅18

SSB Self-Aligning Accessories

ACCESSORIES

Self-Aligning Mount

The SSB mount permits controlled horizontal movement in all directions. The design allows the load cell to be (re)placed after installation of the mount. The critical load introduction area is mechanically protected.



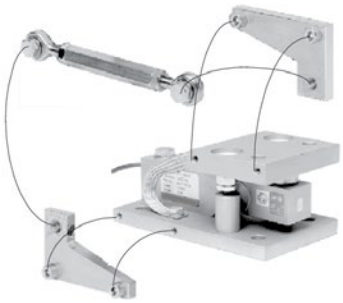
Non-Adjustable Foot

The non-adjustable foot carries the same specification and features as the height adjustable version, while providing an even lower overall profile.



Stay Rod Assembly

If major load movement is anticipated stay rods should be used to restrain a platform or vessel. The SSB stay rod assembly can be bolted to the mount prior to, or after its installation.



Height Adjustable Foot

The stainless steel foot, which has 5 mm of height adjustment, provides excellent load introduction to the load cell. The foot allows flexibility in platform design without compromising overall system performance.



ADDITIONAL INFORMATION		
MOUNT	**0.5/2T**	**5T**
Self-aligning mount		
Assembly + SSB (mm)	95	135
Assembly guideline	AG 10/06-108/2	
Outline drawing—stainless steel	499046-10	499047-10
Outline drawing—nickel-plated	499046-00	499047-00
Stay rod assembly		
Outline drawing—stainless steel	499063-10	499064-10
Outline drawing—nickel-plated	499063-00	499064-00
Assembly guideline	AG 09/06-201/02	
Height Adjustable Foot		
Assembly + CSP-M	80+5	141+7
Assembly guideline	AG 12/06-102/02	
Outline drawing—stainless steel	499079	499080
Non-Adjustable Foot		
Assembly + CSP-M	75	117
Outline drawing—stainless steel	499077	499078

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