

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 IIIIL 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



DESCRIPTION

The 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 harsh environments.

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

APPLICATIONS

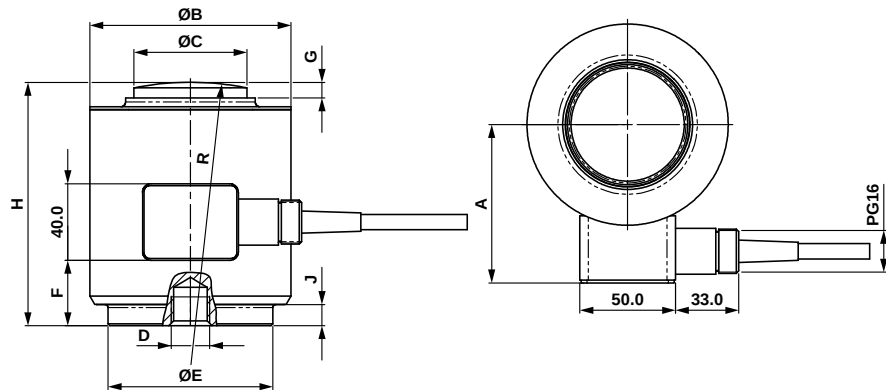
- Truck and rail weighbridges
- Silo and hopper weighing
- Process weighing

OUTLINE DIMENSIONS in millimeters

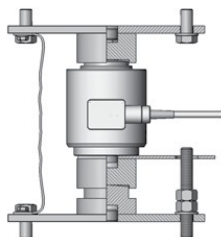
Cable specifications

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	J
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	86	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	86	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 IIIIL	NTEP IIIIL	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 IIIIL $V_{min}=E_{max}/30000$ (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.

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

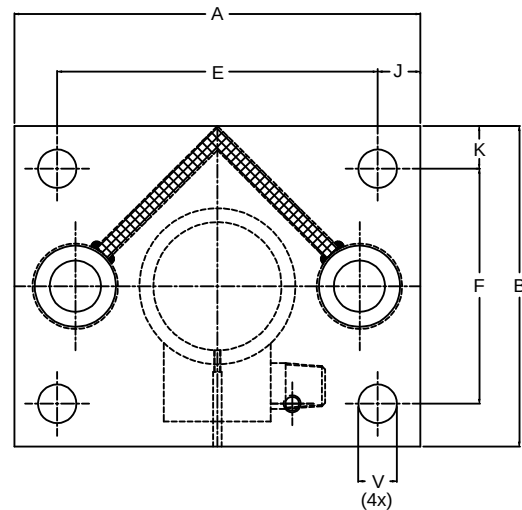
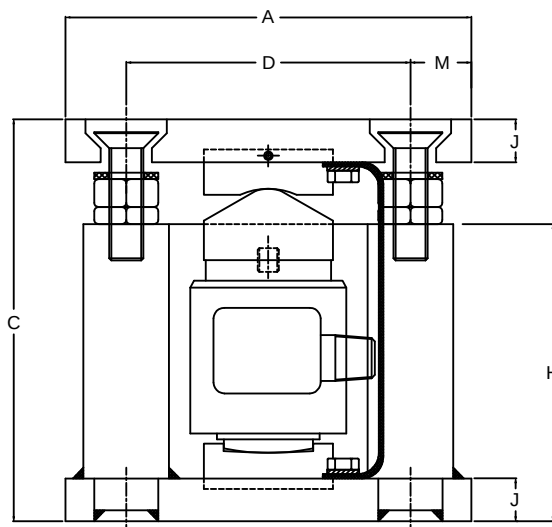
DESCRIPTION

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	188	133	150	110	139	20	20	28.5	Ø18
40/60 ton	250	200	273	182	190	150	209	30	25	35	Ø22

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