

Type RC3 Load Cell



Product Description

The type RC3 is a stainless steel self centering rocker column load cell with complete hermetic sealing. It is a perfect fit for use in harsh industrial environments.

Application

- Weighbridges, hoppers, tanks and silos

Key Features

- Wide range of capacities from 7.5 t to 300 t
- Stainless steel construction
- Environmental Protection IP68 with complete hermetic sealing
- Self restoring design
- High input resistance
- Calibration in mV/V/Ω

Options

- Integrated surge protectors
- Y = 10 000 for C3 (for 30 t and 40 t)

Approvals

- OIML approval to C1 (Y = 5 000), C3, C3 M18 and C4 (Y = 15 000)
- NTEP approval to 10 000 intervals, Class III L (for 7.5 to 100 t)
- ATEX hazardous area approval for Zone 0, 1, 2, 20, 21 and 22
- FM hazardous area approval

Packed Weight

■ Capacity (t)	7.5	15	22.5	30	40
Weight (kg)	1.3	1.4	1.5	3.3	3.6
■ Capacity (t)	50	100	150	300	
Weight (kg)	4.5	4.7	8.5	26.5	

Available Accessories

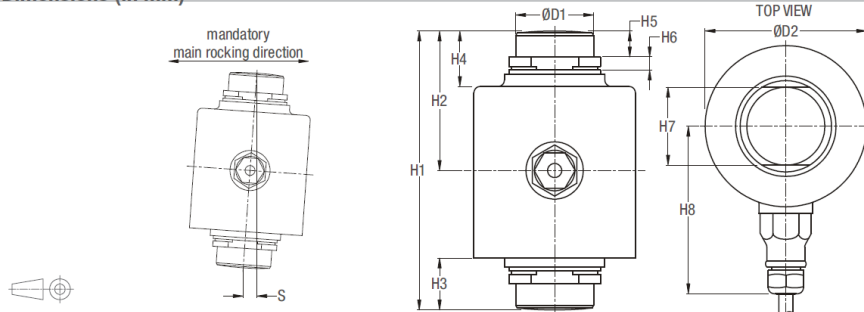
- Compatible range of application hardware
- Compatible range of electronics

Specifications

Maximum capacity	(E _{max})	t	7.5 / 15 / 22.5 / 30 / 40 / 50 / 100 / 150 / 300	7.5 / 15 / 22.5 / 30 / 40 / 50			
Minimum dead load	(E _{min})			2%*E _{max}			
Accuracy class according to OIML R60			(GP)	C1	C3	C3 MI 8	C4
Maximum number of verification intervals	(n _{LC})		n.a.	1 000	3 000		4 000
Minimum load cell verification interval	(v _{min})		n.a.	E _{max} / 5 000	E _{max} / 15 000		
Temp. effect on minimum dead load output	(TC ₀)	%*RO/10°C	± 0.0400	± 0.0280	± 0.0093		
Temperature effect on sensitivity	(TC _{RO})	%*RO/10°C	± 0.0200	± 0.0160	± 0.0100		± 0.0080
Combined error		%*RO	± 0.0500	± 0.0300	± 0.0200	± 0.0180	± 0.0180
Non-linearity		%*RO	± 0.0400	± 0.0300	± 0.0166	± 0.0166	± 0.0125
Hysteresis		%*RO	± 0.0400	± 0.0300	± 0.0166	± 0.0062	± 0.0125
Creep error (30 minutes) / DR		%*RO	± 0.0600	± 0.0490	± 0.0166	± 0.0062	± 0.0125
Option	Min. load cell verification interval	(v _{min opt})	n.a.	n.a.	E _{max} / 10 000	n.a.	n.a.
	Temp. effect on min. dead load output	(TC _{0 opt})	%*RO/10°C	n.a.	± 0.0140	n.a.	n.a.
Rated Output	(RO)	mV/V		2 ± 0.1%			
Calibration in mV/V/Ω (A...I classified)		%		± 0.05 (± 0.005)			
Zero balance		%*RO		± 5			
Excitation voltage		V		5...15			
Input resistance	(R _{LC})	Ω		1 150 ± 50			
Output resistance	(R _{out})	Ω		1 000 ± 2			
Insulation resistance (100 V DC)		MΩ		≥ 5 000			
Safe load limit	(E _{lim})	%*E _{max}		200			
Ultimate load		%*E _{max}		300			
Compensated temperature range		°C		-10...+40			
Operating temperature range		°C		-40...+80 (ATEX -40...+60)			
Load cell material				stainless steel 17-4 PH (1.4548)			
Sealing				complete hermetic sealing; cable entry sealed by glass to metal header			
Protection according EN 60 529				IP68 (up to 2 m water depth) / IP69K			

The limits for Non-Linearity, Hysteresis, and TC_{RO} are typical values.
The sum of Non-linearity, Hysteresis and TC_{RO} meets the requirements according to OIML R60 with p_{LC}=0.7.

Dimensions (in mm)



Type	H1	H2	H3	H4	H5	H6	H7	H8	D1	D2	S _{max} *	RF**
RC3-7.5 t	89	44	17	23	11	6	28	75	28	65	4.5	11 kN
20 kN												
30 kN												
RC3-30 t	140	70	26	28	13	6.5	39	84	39	81	10.5	34 kN
RC3-40 t	150	75	31	33		11.7						37 kN
RC3-50 t	178	89	32	34	17	8.5	44	94	44	99	11.5	51 kN
RC3-100 t			38.5	38.5		12			62	62		141.3
RC3-150 t	210	105	42.7	42.7	20.6	12.8	76.2	121.5	76.2	165	14.5	240 kN
RC3-300 t	280	140	55.9	55.9	25	21.5	100		100	165	15	468 kN

* S_{max} = maximum lateral displacement of load introduction. Recommended gap 2...3 mm for 7.5...22.5 t, 3...5 mm for 30...300 t.
** RF = restoring force at S_{max} and E_{max}.

Wiring

- The load cell is provided with a shielded, 4 conductor cable (7.5 to 22.5 t: AWG 24; 30 t + 40 t: AWG20 or AWG24; 50 t or higher: AWG 20). Cable jacket polyurethane
- Cable length: various lengths available (see product label)
- Cable diameter: 5 mm for 7.5 to 22.5 t (30 t and 40 t as an option) 7.8 mm for 30 to 300 t
- The shield is floating (On request the shield can be connected to the load cell body)

