Minebea intec
The true measure

S-type load cell LC Tigo
Robust high-precision tension load cell

ⓘ Benefits

- Reliable weighing thanks to high resolution and accuracy class
- Specially designed for suspended vessel scales
- Versatile optional weighing electronics
- Design-in support from specialists

> *Tension load cells from the LC Tigo series have been specially designed for weighing process vessels. Suspended mounting can better compensate for vessel movements.*

Verifiable tension load cells for a variety of industrial applications

ⓘ The load cells developed in Germany guarantee the most accurate weighing results.
All load cells are verifiable according to OIML.

ⓘ **For weighing processes and batching applications** which require tension weighing.

ⓘ A comprehensive optional portfolio of **transmitters, indicators and controllers** ensures reliable continuous processing of the measurement signals as desired.

ⓘ Comprehensive expertise in scale production ensures **high-quality advice** for individual projects.

The right solution for all of these applications:

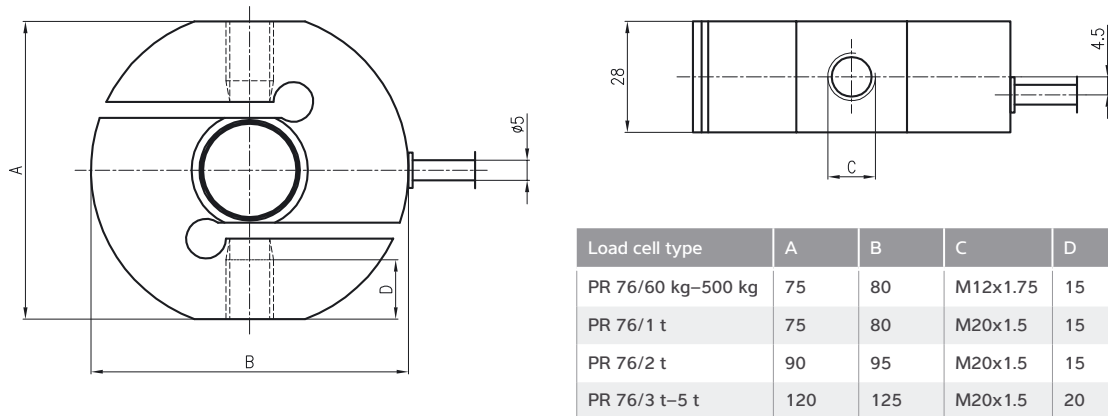Weighing   Filling and dosing   Fill quantity control

Technical specifications

S-type load cell LC Tigo

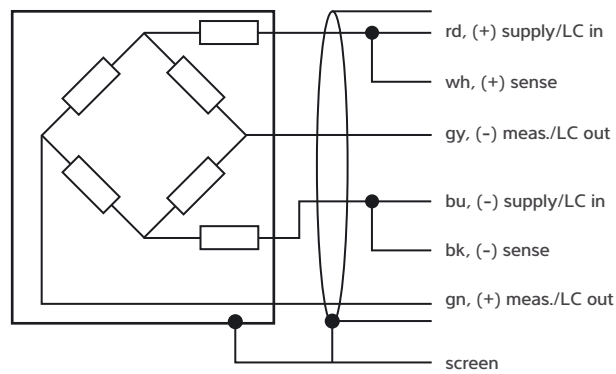| Parameters	Description	Abbr.	PR 76 N	PR 76 C3	Unit
Accuracy class			0.03	0.025	% E_{max}
Minimum dead load	Lowest limit of specified measuring range	E_{min}	0		% E_{max}
Maximum capacity	Highest limit of specified measuring range	E_{max}	60, 125, 250, 500, 1,000, 2,000, 3,000, 5,000		kg
Maximum usable load	Upper limit for measurements	E_{lim}	150		% E_{max}
Destructive load	Danger of mechanical destruction	E_d	300		% E_{max}
Minimum LC verification	Minimum load cell verification interval, $v_{min} = E_{max}/Y$	Y	/	8,333	
Deadload output return	Factor for deadload output return after load ($DR = 1/2*E_{max}/Z$)	Z	/	3,000	
Rated output	Relative output at maximum capacity	C_n	2		mV/V
Tolerance on rated output	Permissible deviation from rated output	d_c	< 0.25		$\%C_n$
Zero output signal	Load cell output signal under unloaded condition	S_{min}	0 ± 2		$\%C_n$
Repeatability error	Max. change in load cell output for repeated loading	ε_R	< 0.012		$\%C_n$
Creep	Max. change of output signal at E_{max} during 30 min.	d_{cr}	< 0.030	< 0.017	$\%C_n$
Non-linearity	Deviation from best straight line through zero	d_{Lin}	< 0.030	< 0.017	$\%C_n$
Hysteresis	Max. difference in LC output between loading and un-loading	d_{hy}	< 0.030	< 0.017	$\%C_n$
Temperature effect (TK) on S_{min}	Max. change related to C_n of S_{min} per 10K in B_T	TK_{Smin}	< 0.028	< 0.017	$\%C_n/10K$
Temperature effect (TK) on parameter	Max. change related to C_n of C per 10K in B_T	TK_C	< 0.025	< 0.011	$\%C_n/10K$
Input impedance	Between supply terminals	R_{LC}	400 ± 50		Ω
Output impedance	Between measuring terminals	R_O	352 ± 3		Ω
Insulation impedance	Between measuring circuit and housing at 100 U_{DC}	R_{IS}	$>5,000 \times 10^6$		Ω
Nominal supply voltage range	To hold the specified performance	B_u	≤ 10		V
Max. supply voltage	Continuous operation without damage	U_{max}	15		V
Nominal ambient temp. range	To hold the specified performance	B_T	–10 to +40		°C
Usable ambient temp. range	Continuous operation without damage	B_{TU}	–30 to +70		°C
Storage temperature range	Without electrical and mechanical stress	B_{Ti}	–30 to +70		°C
Barometric pressure influence	Influence of barometric pressure on output		≤ 0.004		$\%C_n/kPa$
Nominal deflection	Max. elastic deformation under maximum capacity	S_{nom}	0.2 (E_{max} = 60 kg … 500 kg); 0.3 (E_{max} = 1 t … 5 t)		mm
Sensor material	Stainless steel				
Cable length			5		m
IP protection class	According to EN 60529		IP66 + IP67		

Accuracy classes and minimum verification interval, v_{min}

Maximum capacity	Maximum number of verification intervals, n_{max}	60 kg	125 kg	250 kg	500 kg	1,000 kg	2,000 kg	3,000 kg	5,000 kg	Unit
OIML	3,000	0.007	0.015	0.030	0.060	0.120	0.240	0.360	0.600	kg
NTEP Class III Multiple	5,000	0.007	0.015	0.030	0.060	0.120	0.240	0.360	0.600	kg
NTEP Class III L Multiple	10,000	0.003	0.007	0.013	0.025	0.050	0.100	0.150	0.250	kg

Technical diagrams

S-type load cell LC Tigo PR 76

Load cell type	A	B	C	D
PR 76/60 kg–500 kg	75	80	M12x1.75	15
PR 76/1 t	75	80	M20x1.5	15
PR 76/2 t	90	95	M20x1.5	15
PR 76/3 t–5 t	120	125	M20x1.5	20

rd, (+) supply/LC in

wh, (+) sense

gy, (–) meas./LC out

bu, (–) supply/LC in

bk, (–) sense

gn, (+) meas./LC out

screen

Circuit diagram

Load cell accessory – rod end PR 96

Load cell type	A	B	C	D
PR 76/60 kg–500 kg	155 ± 1	32	12	7
PR 76/1 t	203 ± 1	50	20	18
PR 76/2 t	218 ± 1	50	20	18
PR 76/3 t–5 t	238 ± 1	50	20	18

Load cell type	E	F	G	H
PR 76/60 kg–500 kg	10	54	A/F19	M12x1.75
PR 76/1 t	25	78	A/F30	M20x1.5
PR 76/2 t	25	78	A/F30	M20x1.5
PR 76/3 t–5 t	25	78	A/F30	M20x1.5
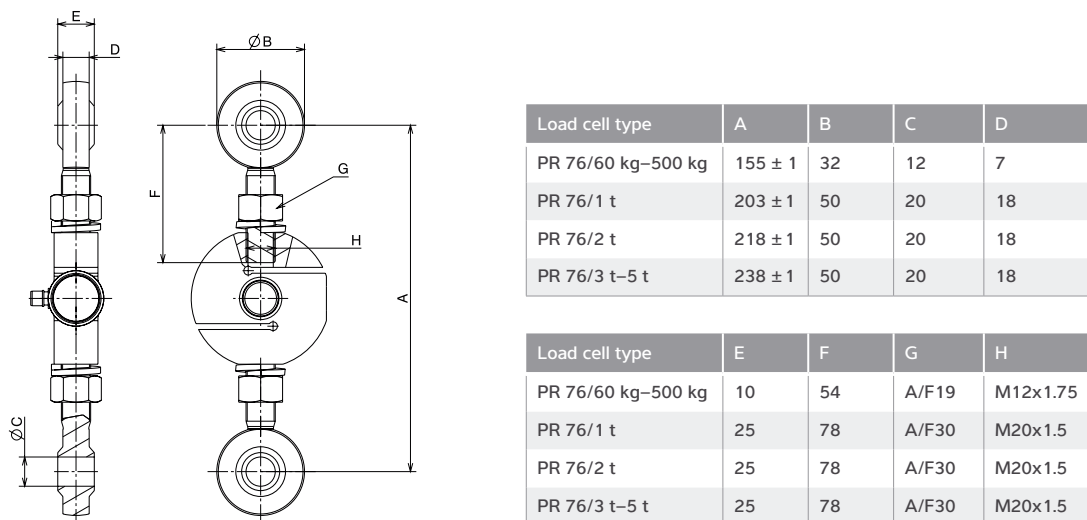
The stated values apply only for static and quasistatic applications

All dimensions in mm

Ordering information

S-type load cell LC Tigo, C3

Type	Order number
PR 76/60 kg C3	9409 276 03060
PR 76/125 kg C3	9409 276 03112
PR 76/250 kg C3	9409 276 03125
PR 76/500 kg C3	9409 276 03150
PR 76/1,000 kg C3	9409 276 03210
PR 76/2,000 kg C3	9409 276 03220
PR 76/3,000 kg C3	9409 276 03230
PR 76/5,000 kg C3	9409 276 03250

S-type load cell LC Tigo, N

Type	Order number
PR 76/60 kg N	9409 276 01060
PR 76/125 kg N	9409 276 01112
PR 76/250 kg N	9409 276 01125
PR 76/500 kg N	9409 276 01150
PR 76/1,000 kg N	9409 276 01210
PR 76/2,000 kg N	9409 276 01220
PR 76/3,000 kg N	9409 276 01230
PR 76/5,000 kg N	9409 276 01250

Load cell accessory S-type load cell LC Tigo

Type	Description	Order number
PR 96/00N	Ball head for PR 76 up to 500 kg	9405 300 96001
PR 96/01N	Ball head for PR 76 1 t–5 t	9405 300 96011
PR 6143/80	Constrainer for transverse forces of <2 kN	9405 361 43801

The products and solutions presented in this data sheet make major contributions in the following sectors:

Food and beverages

Agribusiness

Building materials

Machinery (OEM)