

# Single Point load cells PR 53 and PR 54

Precise measuring results for scale construction and a wide range of industrial applications.



## ! Benefits

- Reliable weighing through accurate measurement results
- Easy integration for a wide range of applications
- Versatile optional weighing electronics
- Design-in support from specialists

*With the LC series Single Point load cells, you can rely on the tried-and-tested quality of a leading manufacturer of industrial weighing technology. The stainless steel Single Point load cells PR 53 and PR 54 are available for loads ranging from 7.5 kg to 200 kg and a platform size of up to 500 mm x 400 mm.*

## Verifiable load cells for a variety of industrial applications

- ! These load cells, developed in Germany, guarantee the most accurate weighing results. **All load cells are verifiable according to OIML R60 and NTEP.**
- ! The PR 53 and PR 54 cover a load spectrum **from 7.5 kg/10 kg to 200 kg**. Stainless steel ensures a long product lifetime.
- ! 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.

# Technical specifications

Single Point load cells PR 53 and PR 54					
Parameter	Description	Abbr.	PR 53 C3MR	PR 54 C3MR	Unit
Accuracy class			0.02		% E <sub>max</sub>
Minimum dead load	Lowest limit of specified measuring range	E <sub>min</sub>	0		% E <sub>max</sub>
Maximum capacity	Highest limit of specified measuring range	E <sub>max</sub>	10, 15, 20, 30, 50, 100	7.5, 10, 15, 20, 30, 50, 100, 200	kg
Maximum usable load	Upper limit for measurements	E <sub>lim</sub>	150		% E <sub>max</sub>
Destructive load	Danger of mechanical destruction	E <sub>d</sub>	300		% E <sub>max</sub>
Minimum LC verification	Minimum load cell scale interval, v <sub>min</sub> = E <sub>max</sub> /Y	Y	15000		
Deadload output return	Factor for deadload output return after load (DR = 1/2 * E <sub>max</sub> /Z)	Z	3000		
Rated output	Relative output at maximum capacity	C <sub>n</sub>	2		mV/V
Tolerance on rated output	Permissible deviation from rated output	d <sub>c</sub>	< 10		%C <sub>n</sub>
Zero output signal	Load cell output signal under unloaded condition	S <sub>min</sub>	0 ± 5		%C <sub>n</sub>
Repeatability error	Max. change in load cell output for repeated loading	e <sub>R</sub>	< 0.01		%C <sub>n</sub>
Creep	Max. change of output signal at E <sub>max</sub> during 30 min.	d <sub>cr</sub>	< 0.0166		%C <sub>n</sub>
Non-linearity <sup>1)</sup>	Deviation from best straight line through zero	d <sub>lin</sub>	< 0.0166 (200 kg: < 0.0233)	< 0.0166	%C <sub>n</sub>
Hysteresis <sup>1)</sup>	Max. difference in LC output between loading and unloading	d <sub>hy</sub>	< 0.0166		%C <sub>n</sub>
Temperature effect (TK) on S <sub>min</sub>	Max. change related to C <sub>n</sub> of S <sub>min</sub> per 10 K in B <sub>T</sub>	TK <sub>Smin</sub>	< 0.0093		%C <sub>n</sub> /10 K
TK of the parameter C <sup>1)</sup>	Max. change related to C <sub>n</sub> of C per 10K in B <sub>T</sub>	TK <sub>C</sub>	< 0.0117		%C <sub>n</sub> /10 K
Off-centre load error			0.0233		%C <sub>n</sub>
Input impedance	Between supply terminals	R <sub>LC</sub>	380 ± 38		Ω
Output impedance	Between measuring terminals	R <sub>O</sub>	350 ± 25		Ω
Insulation impedance	Between measuring circuit and housing at 100 V <sub>DC</sub>	R <sub>IS</sub>	> 5,000 × 10 <sup>6</sup>		Ω
Nominal supply voltage range	To hold the specified performance	B <sub>u</sub>	≤ 12		V <sub>DC</sub>
Max. supply voltage	Continuous operation without damage	U <sub>max</sub>	15		V <sub>DC</sub>
Nominal ambient temp. range	To hold the specified performance	B <sub>T</sub>	-10 to +40		°C
Usable ambient temp. range	Continuous operation without damage	B <sub>Tu</sub>	-30 to +70	-20 to +65	°C
Storage temperature range	Without electrical and mechanical stress	B <sub>Ti</sub>	-50 to +80	-25 to +70	°C
Barometric pressure influence	Influence of barometric pressure on output		< 0.00667		%C <sub>n</sub>
Nominal deflection	Max. elastic deformation under maximum capacity	S <sub>nom</sub>	< 0.3	< 0.5	mm
Cable length			3.5	3	m
Material			Stainless steel 1.4545 (DIN EN 10088-3)		
Max. platform size	In compliance with the technical data according to OIML R76		500 × 400		mm × mm
IP protection class	According to EN 60529		IP66/IP68/IP69	IP66/IP67	

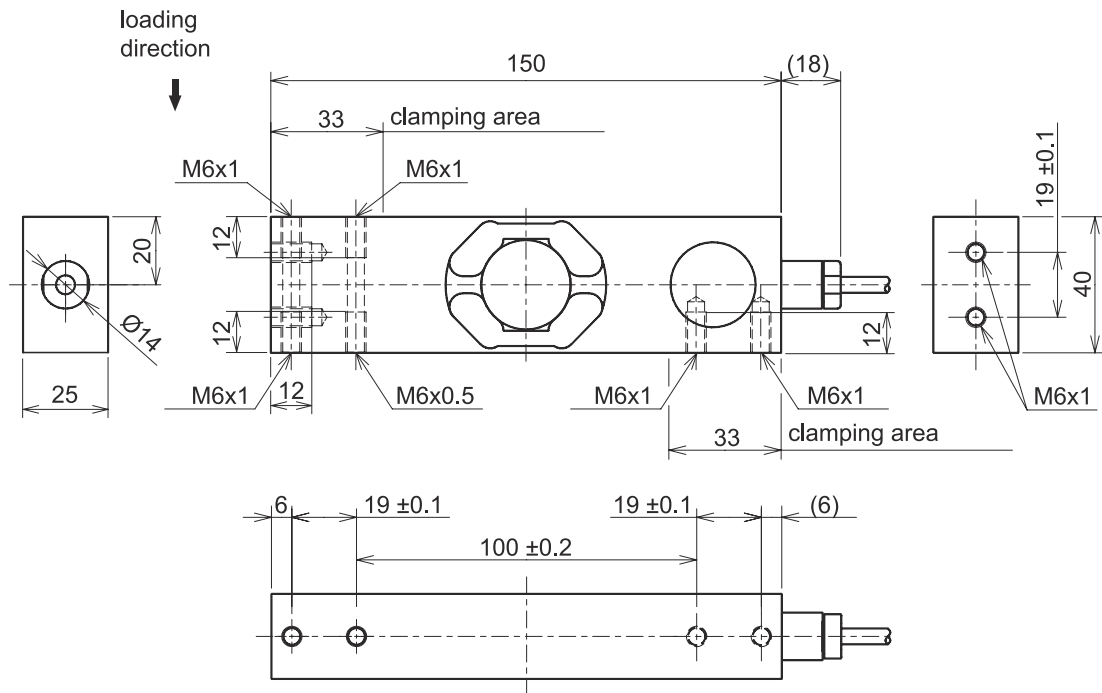
<sup>1)</sup>Non-linearity (d<sub>lin</sub>), hysteresis (d<sub>hy</sub>) and parameter temperature effect (TK<sub>C</sub>) are typical values. For OIML R60- and NTEP-approved load cells, the total of these values is within the permitted cumulative error limits.

## Accuracy classes and minimum scale interval, v<sub>min</sub>

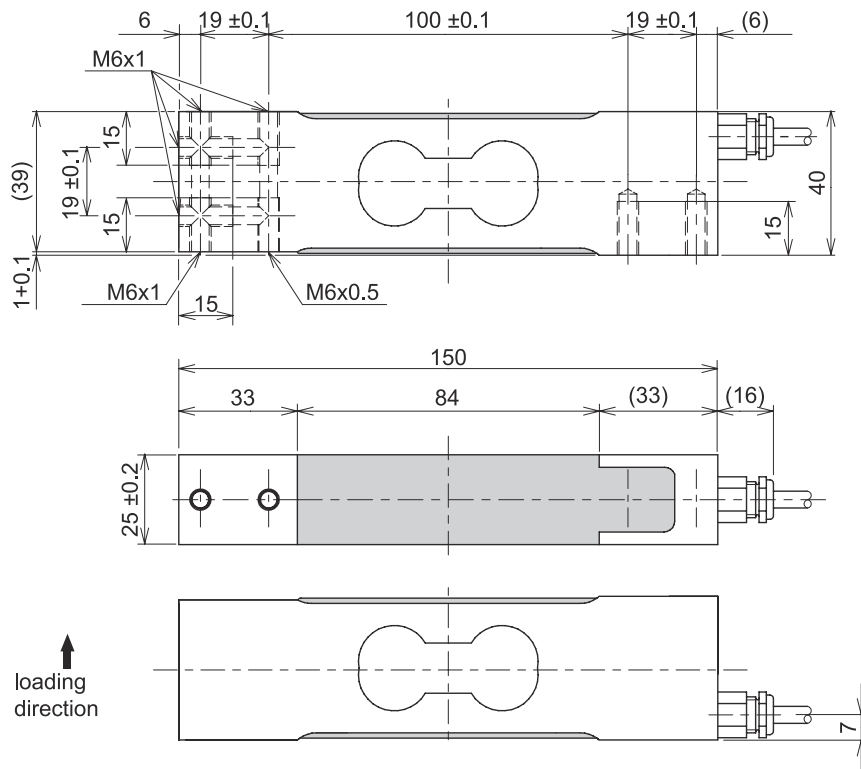
	Maximum number of scale intervals, n <sub>max</sub>	7.5 kg	10 kg	15 kg	20 kg	30 kg	50 kg	100 kg	200 kg	Unit
OIML R60 C3MR	3000	0.5	0.67	1.00	1.34	2.00	3.34	6.67	13.34	g
NTEP Class III Single	5000	0.5	0.67	1.00	1.34	2.00	3.34	6.67	13.34	g

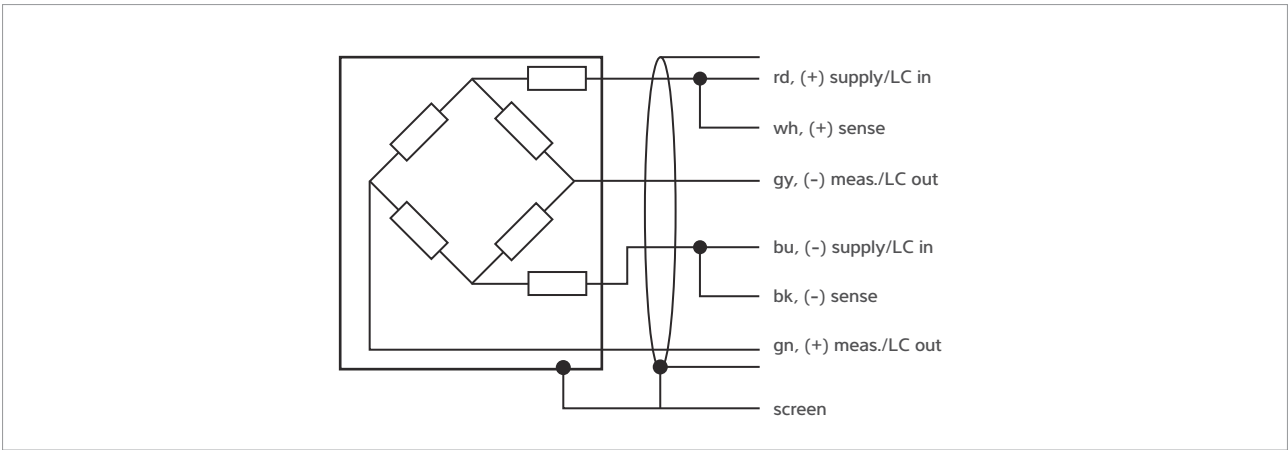
# Technical diagrams

## Single Point load cells PR 53



## Single Point load cells PR 54





Circuit diagram

## Ex approval

### Scope of validity:

Single Point load cell LC stainless steel



Explosion protection

### Certificates for Single Point load cell LC stainless steel

Zone	Marking	Certificate number	For
0 and 1	II 1G Ex ia IIC T6/T4 Ga	BVS 21 ATEX E 023 X IECEX BVS 21.0024X	Only PR 5x/xx E
20	II 1D Ex ia IIIC T <sub>200</sub> 165°C Da		
2	II 3G Ex ec IIC T6/T4 Gc		All PR 5x without E
21	II 2D Ex tb IIIC T110°C Db		

## Ordering information

### Single Point load cells PR 53

Model	Order number
PR 53/10 kg C3MR	9409 253 07010
PR 53/15 kg C3MR	9409 253 07015
PR 53/20 kg C3MR	9409 253 07020
PR 53/30 kg C3MR	9409 253 07030
PR 53/50 kg C3MR	9409 253 07050
PR 53/100 kg C3MR	9409 253 07110

### Single Point load cells NTEP and EX PR 53

Model	Order number
PR 53/xx kg III 5000 S	9409 253 0Cxx
PR 53/xx kg C3MRE	9409 653 07xxx

### Single Point load cells PR 54

Model	Order number
PR 54/7.5 kg C3MR	9409 254 07007
PR 54/10 kg C3MR	9409 254 07010
PR 54/15 kg C3MR	9409 254 07015
PR 54/20 kg C3MR	9409 254 07020
PR 54/30 kg C3MR	9409 254 07030
PR 54/50 kg C3MR	9409 254 07050
PR 54/100 kg C3MR	9409 254 07110
PR 54/200 kg C3MR	9409 254 07120

### Single Point load cells NTEP and EX PR 54

Model	Order number
PR 54/xx kg III 5000 S	9409 254 0Cxxx
PR 54/xx kg C3MRE	9409 654 07xxx

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



Food and beverages



Chemistry



Agribusiness



Building materials



Machinery (OEM)

The technical data given serves as a product description only and should not be understood as guaranteed properties in the legal sense.

Specifications subject to change without notice.  
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