Minebea intec
The true measure

Bending beam load cell LC Nito PR 77 and mounting kit PR 97

For weighing process vessels and use in belt and platform scales

Benefits

- Reliable weighing through accurate measurement results
- Welded hermetic seal
- Versatile optional weighing electronics
- Design-in support from specialists

The deflecting beam load cells of the LC Nito series have been specially designed for weighing process vessels and use in belt and platform scales. The mounting kit PR 97 ensures that movements of the vessel and/or the supporting construction have a negligible effect on the weighing result.

Verifiable load cells for a variety of industrial applications

The load cells guarantee highly accurate weighing results. **All load cells are verifiable according to OIML and NTEP.**

The hermetically sealed load cell LC Nito has a protection class of IP68, so it provides highly accurate results even under the harshest ambient conditions.

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

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Technical specifications

Bending beam load cell LC Nito

Parameters	Description	Abbr.	PR 77 C3MR	Unit
Accuracy class			0.02	% 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}	10, 20, 50, 100, 200, 250, 500	
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	12,000	
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	± 0.07	%C_n
Zero output signal	Load cell output signal under unloaded condition	S_{min}	0 ± 1	%C_n
Repeatability error	Max. change in load cell output for repeated loading	ε_R	< 0.01	%C_n
Creep	Max. change of output signal at E_{max} during 30 min.	d_{cr}	< 0.0166	%C_n
Non-linearity[1)]	Deviation from best straight line through zero	d_{Lin}	< 0.0166	%C_n
Hysteresis[1)]	Max. difference in LC output between loading and unloading	d_{hy}	< 0.0166	% C_n
Temperature effect (TK) on S_{min}	Max. change related to C_n of S_{min} per 10K in B_T	TK_{Smin}	< 0.0117	% C_n/10K
Temperature effect (TK) on parameter[1)]	Max. change related to C_n of C per 10K in B_T	TK_C	< 0.0117	% C_n/10K
Input impedance	Between supply terminals	R_{LC}	415 ± 65	Ω
Output impedance	Between measuring terminals	R_O	406 ± 0.35	Ω
Insulation impedance	Between measuring circuit and housing at U_{DC} = 100 V	R_{IS}	> 5,000 × 10^6	Ω
Nominal supply voltage range	To hold the specified performance	B_u	≤ 12	V_{DC}
Max. supply voltage	Continuous operation without damage	U_{max}	15	V_{DC}
Nominal ambient temp. range	To hold the specified performance	B_T	-10...+40	°C
Usable ambient temp. range	Continuous operation without damage	B_{Tu}	-40...+80	°C
Storage temperature range	Without electrical and mechanical stress	B_{Ti}	-40...+80	°C
Barometric pressure influence	Influence of barometric pressure on output		< 0.007	% C_n/kPa
Nominal deflection	Max. elastic deformation under maximum capacity	S_{nom}	< 0.5	mm
Material	Stainless Steel			
Cable length			3	m
IP protection class	According to EN 60529		IP66 / IP68	

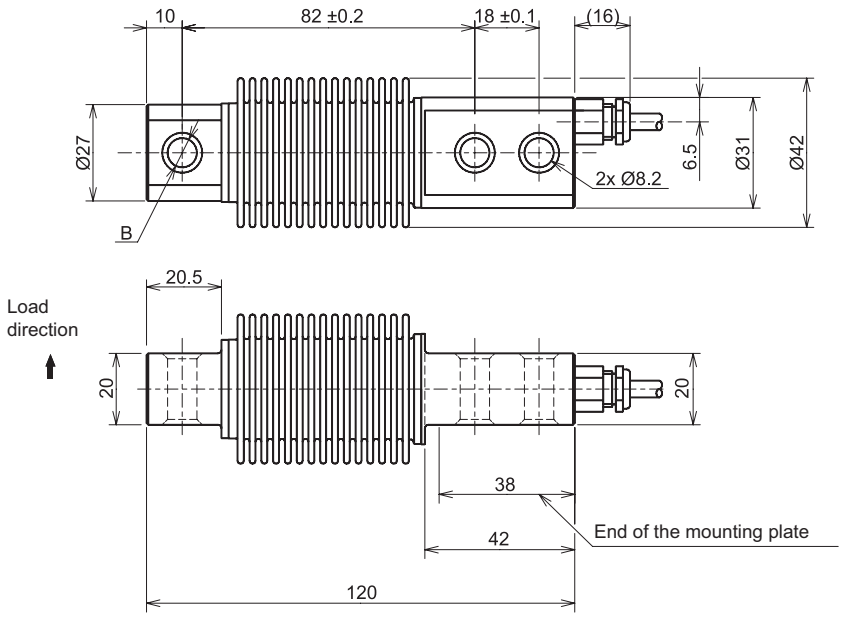
[1)] Non-linearity (d_{Lin}), hysteresis (d_{hy}) and parameter temperature effect (TK_C) are typical values. For OIML R60- and NTEP-approved load cells, the total of these values is within the permitted cumulative error limits.

Accuracy classes and minimum verification interval, v_{min}

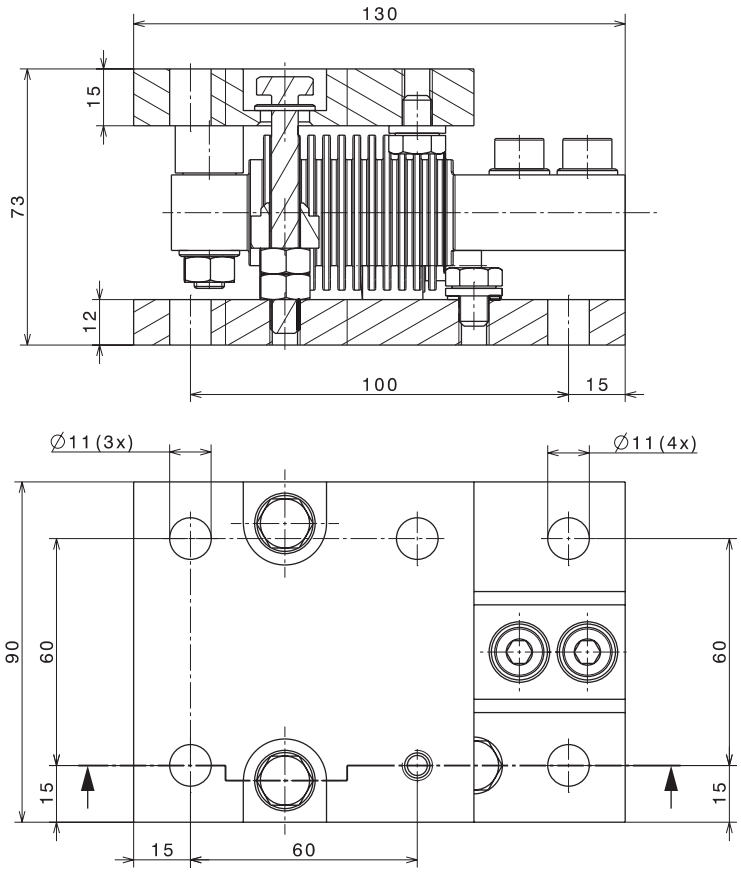
Maximum capacity	Divisions n_{max}	Minimum LC verification, v_{min}							
		10 kg	20 kg	50 kg	100 kg	200 kg	250 kg	500 kg	Unit
OIML	3,000	0.83	1.67	4.17	8.33	16.67	20.83	41.67	g
NTEP Class III Single/Multiple	5,000	0.83	1.67	4.17	8.33	16.67	20.83	41.67	g
NTEP Class III L Multiple	10,000	0.30	0.58	0.83	1.70	3.30	4.20	8.30	g

Technical diagrams

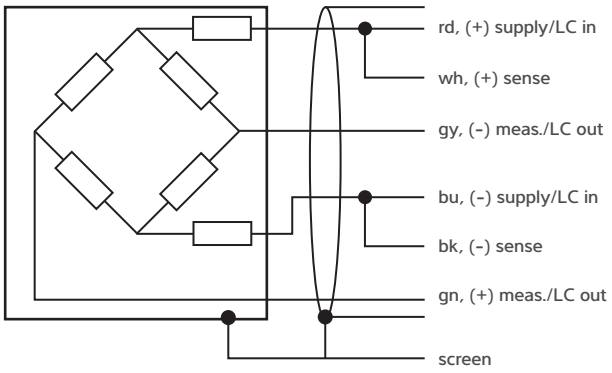
Bending beam load cell LC Nito



Mounting kit PR 97



All dimensions in mm



Circuit diagram

Ex approval

Explosion protection

Scope of validity:
Bending beam load cell LC Nito PR 77

Bending beam load cell LC Nito PR 77 certificates

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 7x/xx E
20	II 1D Ex ia IIIC T_{200} 165°C Da		
2	II 3G Ex ec IIC T6/T4 Gc		All PR 7x without E
21	II 2D Ex tb IIIC T110°C Db		

Ordering information

Bending beam load cell LC Nito (PR 77)

Typ	Order number
PR 77/10 kg C3MR	9409 277 07010
PR 77/20 kg C3MR	9409 277 07020
PR 77/50 kg C3MR	9409 277 07050
PR 77/100 kg C3MR	9409 277 07110
PR 77/200 kg C3MR	9409 277 07120
PR 77/250 kg C3MR	9409 277 07125
PR 77/500 kg C3MR	9409 277 07150
PR 77/50 kg C6	9409 277 06050
PR 77/100 kg C6	9409 277 06110
PR 77/200 kg C6	9409 277 06120
PR 77/xxx kg C3MRE	9409 677 07xxx
PR 77/xxx kg C6	9409 677 06xxx

Load cell accessories bending beam load cell LC Nito

Typ	Description	Order number
PR 97/00 N	MiniFLEX mounting kit for PR 77 up to 250 kg	9405 300 97001
PR 97/01 N	MiniFLEX mounting kit for PR 77 500 kg	9405 300 97011
PR 6007/00N	Mounting kit for PR 77 250 kg	9405 360 07001
PR 6007/00S	Mounting kit for PR 77 250 kg, stainless steel	9405 360 07002

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

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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