DATA SHEET

PW4M...OP
Single point load cell

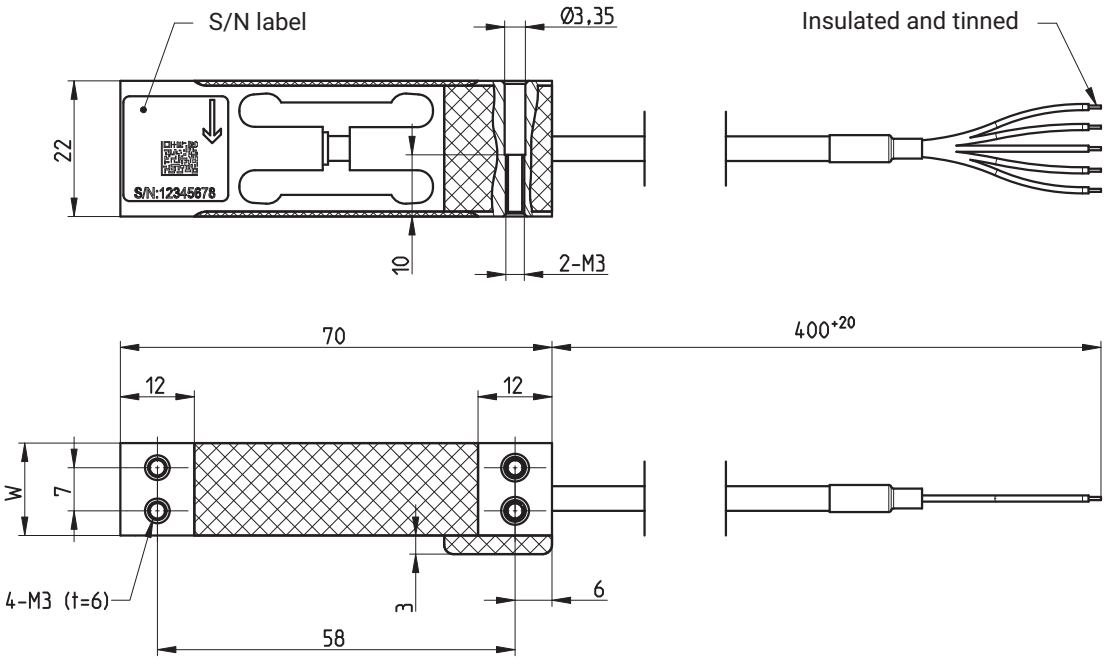
with IO-Link option

SPECIAL FEATURES

- For determining small weights (0.3 kg ... 5 kg)
- Aluminum load cell with overload protection
- Compensated off-center load error
- With standard 4 wire cable (0.4 m) or a wide choice of 6 wire cables with free ends or M12 plug
- Available as LCMC measurement chain with smart option (IO-Link), with digital option (CANopen or RS-485), with analog option (4 ... 20 mA or 0 ... 10 V)

DIMENSIONS

Dimensions in mm (1 mm = 0.03937 inches)



Maximum capacity	0.3 kg ... 1 kg	2 kg ... 5 kg
W	12	15

SPECIFICATIONS

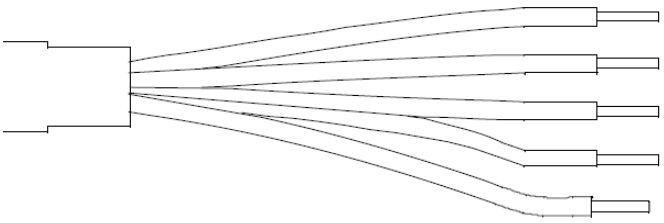
Type			PW4M...OP					
Accuracy class[1]			C3					
Number of load cell verification intervals	n_{LC}		3000					
Maximum capacity[2]	E_{max}	kg	0.300	0.500	1	2	3	5
Minimum load cell verification interval	V_{min}	g	0.05	0.1	0.2	0.2	0.5	1
Ratio of minimum verification interval Y	Y		6,000	5,000		10,000	6,000	5,000
Temperature coefficient of zero signal	TC_0	% of C_n/10K	±0.0233	±0.0280		±0.0140	±0.0233	±0.0280
Maximum platform size		mm	200 x 200					
Rated output (nominal)	C_n	mV/V	1.0 ±0.1		2.0 ±0.2			
Zero signal (without initial load)		mV/V	0 ±0.03		0 ±0.06			
Temperature coefficient of sensitivity[3] +20°C ... +40°C -10°C ... +20°C	TC_S	% of C_n/10K	±0.0175 ±0.0117					
Relative reversibility error[3]	d_{hy}	% of C_n	±0.015					
Non-linearity[3]	d_{lin}		±0.015					
Dead load output return	MDLOR		±0.0166					
Off-center load error[4]			±0.0233					
Input resistance	R_{LC}	Ω	300 ... 500					
Output resistance	R_O		300 ... 500					
Reference excitation voltage	U_{ref}	V	5					
Nominal (rated) range of the excitation voltage	B_U		1 ... 8					
Maximum excitation voltage			10					
Insulation resistance at 100 V_{DC}	R_{is}	GΩ	2					
Nominal (rated) range of the ambient temperature	B_T	°C	-10 ... +40					
Operating temperature range	B_{tu}		-10 ... +50					
Storage temperature range	B_{tl}		-25 ... +70					
Limit load at max. 20 mm eccentricity	E_L	% of E_{max}	1,000					500
Limit lateral loading, static	E_{lq}		300					
Service load at max. 50 mm eccentricity	E_U		150					
Breaking load at max. 20 mm eccentricity	E_d		1,000					500
Relative permissible oscillation stress at max. 20 mm eccentricity	F_{srel}		70					
Rated displacement at E_{max}, approx.	S_{nom}	mm	< 0.5					
Resonance frequence		Hz	180	251	250	322	404	544
Weight, approx.	m	kg	0.05					
Equipment protection level[5]			IP67					
Material Measuring body Cover Cable sheath			 Aluminum Silicone rubber PVC					

1) As per OIML R60 with P_{LC}=0.7
2) Maximum eccentric loading as per OIML R76
3) The values for non-linearity (d_{lin}), relative reversibility error (d_{hy}) and temperature coefficient of sensitivity (TC_S) are recommended values. If these values are added together, the total is within the accumulated error limit laid down by OIML R60.
4) As per OIML R76
5) As per EN 60529 (IEC 529)

CABLE ASSIGNMENT

Connection with 4-wire cable with PVC cable sheath (cable length: 0.4 m)

Schematic diagram with free ends



Shield (yellow) = cable shield connected to load cell body

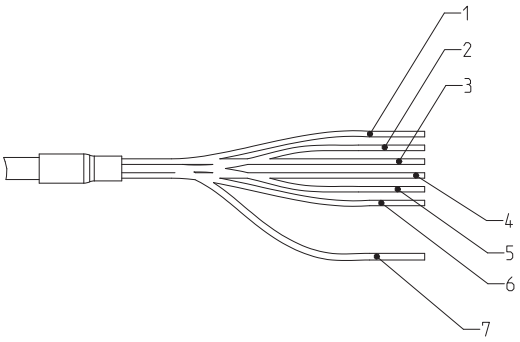
Free end 1 (blue) = excitation voltage (+)

Free end 2 (white) = measurement signal (+)

Free end 3 (red) = measurement signal (-)

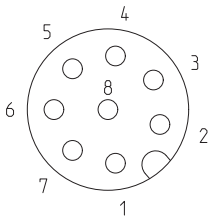
Free end 4 (black) = excitation voltage (-)

Connection with 6-wire cable with PUR cable sheath (cable length: 1.5 m to 6 m)



Contact 1 (white [WH]) = measurement signal (+)
Contact 2 (red [RD]) = measurement signal (-)
Contact 3 (black [BK]) = excitation voltage (-)
Contact 4 (blue [BU]) = excitation voltage (+)
Contact 5 (green [GN]) = sense line (+)
Contact 6 (gray [GY]) = sense line (-)
Contact 7 Shield (yellow [YE]) = Cable shield

Connection with 6-wire cable with PUR cable sheath (cable length: 1.5 m to 6 m) and M12 plug



Plug-in contact 1 = measurement signal (+)
Plug-in contact 2 = vacant
Plug-in contact 3 = sense lead (+)
Plug-in contact 4 = vacant
Plug-in contact 5 = sense lead (-)
Plug-in contact 6 = excitation voltage (-)
Plug-in contact 7 = excitation voltage (+)
Plug-in contact 8 = measurement signal (-)

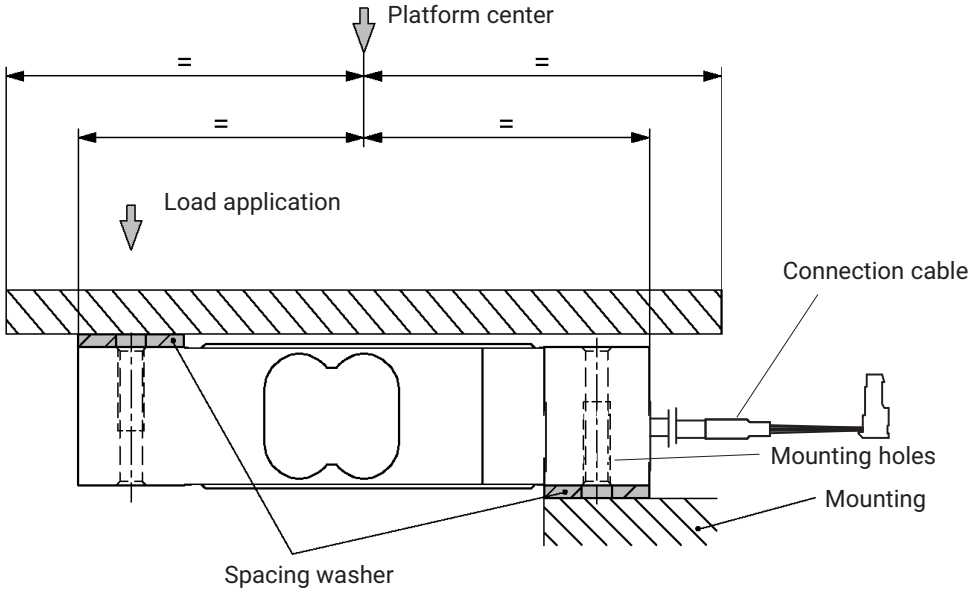
MOUNTING AND LOAD APPLICATION

The load cells are attached at the mounting holes, the load is applied at the other end. The recommended screws and tightening torques can be found in the table below:

Maximum capacities	Thread	Min. property class	Tightening torque[1)]
0.3 … 5 kg	M3	8.8	1.30 N·m

1) Recommended value for the specified property class. Please comply with the screw manufacturer's instructions with regard to screw dimensions.

Load must not be applied to the side where the cable connection is located, as this would cause a force shunt.



PRODUCT NUMBER

Type	**PW4M…OP**
Accuracy class	C3
Comment	Cable length 0.40 m (4-wire)

Maximum capacity	Ordering number
0.3 kg	1-PW4MC3/300GOP-1
0.5 kg	1-PW4MC3/500GOP-1
1 kg	1-PW4MC3/1KGOP-1
2 kg	1-PW4MC3/2KGOP-1
3 kg	1-PW4MC3/3KGOP-1
5 kg	1-PW4MC3/5KGOP-1

ORDERING CODES

K-PW4M-OP with cable and connector option

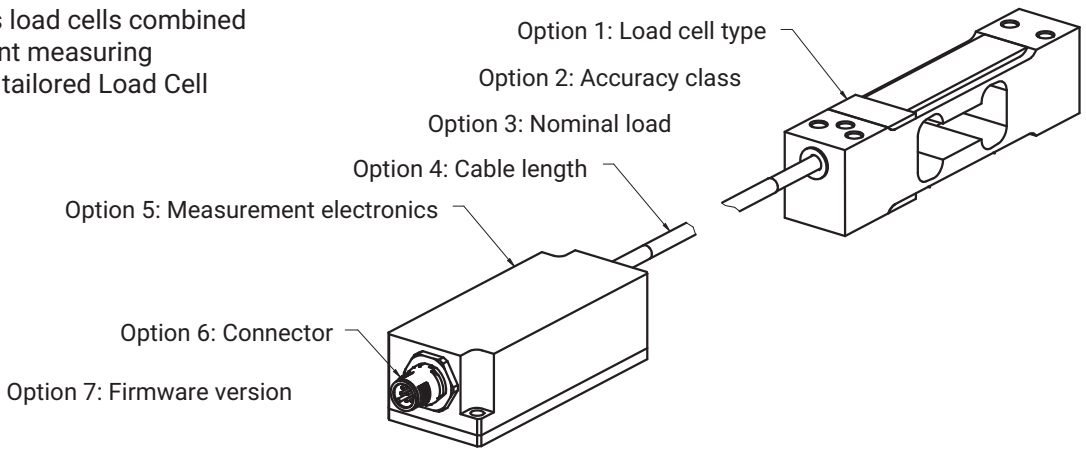
K-PW4M-OP		
1	**Code**	**Option 1: Mechanical design**
	N	-
2	**Code**	**Option 2: Accuracy class**
	C3	C3 (OIML)
3	**Code**	**Option 3: Maximum capacity**
	0.3	300 g
	2	2 kg
	5	5 kg
4	**Code**	**Option 4: Explosion protection**
	N	No explosion protection
5	**Code**	**Option 5: Cable length**
	1.5	1.5 m
	1.5P	1.5 m with M12 plug
	3	3.0 m
	3P	3.0 m with M12 plug
	6	6.0 m
	6P	6.0 m with M12 plug
6	**Code**	**Option 6: Other**
	N	No compensation

K-PW4M-OP - [N] - [C][3] - [ ][ ][ ] - [N] - [ ][ ][ ][ ] - [N]

1 2 3 4 5 6

LCMC - LOAD CELL MEASURING CHAIN

A wide range of famous load cells combined with a choice of excellent measuring electronics makes your tailored Load Cell Measuring Chain.



K-LCMC-PW4MOP ordering options

K-LCMC			
1	**Code**	**Option 1: Load cell type**	
	PW4MOP	PW4MOP	
2	**Code**	**Option 2: Accuracy class**	
	C3	C3	
3	**Code**	**Option 3: Nominal load**	
	0K30	0.3 kg	
	0K05	0.5 kg	
	1K00	1 kg	
	2K00	2 kg	
	3K00	3 kg	
	5K00	5 kg	
4	**Code**	**Option 4: Cable length**	
	0M3	0,3 m ±0,03 m	
5	**Code**	**Option 5: Measurement electronics**	
	105C	CAN (200 S/s)	
	105R	RS485 (200 S/s) 2-wire	
	112C	CAN (1,200 S/s)	
	112R	RS485 (1,200 S/s) 4-wire	
	RM42	Analog 4 … 20 mA	
	RM43	Analog 0 .. 10 V	
	RMIO	IO-link	
6	**Code**	**Option 6: Connector**	
	M12A8	M12 A-coded, male, 8-pin	[only with option 5 = 105C, 105R, 112C, 112R, RM42, RM43]
	M12A4	M12 A-coded, male, 4-pin	[only with option 5 = RMIO]
7	**Code**	**Option 7: Firmware version**	
	N	NA	[only with option 5 = 105C, 105R, 112C, 112R, RM42, RM43]
	01	WTIO 1.07	[only with option 5 = RMIO]

K-LCMC	-	P W 4 M O P	-	C 3	-		-	0 M 3	-		-		-		-		-	
		1		2		3		4		5		6		7				

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