

 weightechUSA

# SP4

**SINGLE POINT LOAD CELL**



**Wide nominal range, with great value for money, accuracy class C3MR and explosion-proof versions**

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# SP4

## LOAD CELL

The HBM SP4M single point load cell allows easy adaptation to different weighing systems, because it has a large nominal load range weighs particularly precisely up to Accuracy Class C6 Multirange and an enormous maximum factor (Y value) of up to 20,000.

The SP4M is the first choice when a legal-for-trade single point load cell is required. With has versions explosion-proof versions for potentially explosive atmospheres, and additional configurations options such as different connection cable lengths and balanced output for parallel connection.



### FEATURES

- Maximum capacities: 1kg ~ 200kg
- Accuracy class C3MR and C6MR with OIML-R60 test report
- Made from aluminum
- IP67 degree of protection
- Off-center load compensation (OIML R 76)
- Shielded connection cable.

### OPCIONAL

- Explosion proof versions
- Different cable lengths
- Aligned output, suitable for connection in parallel.

### APPLICATIONS

- Food, packaging and chemical industries
- Trade and agriculture
- Belt, floor, table and loading scales
- Filling and production systems.

# SPECIFICATIONS

TYPE			SP4M...												
Accuracy class <sup>(1)</sup>			C3 Multi Range (MR)												
Number of load cell verification intervals (n <sub>LC</sub> )			3000												
Maximum capacity (E <sub>max</sub> ) <sup>(2)</sup>	-	kg	1	3	5	7	10	15	20	30	50	75	100	150	200
Maximum load cell verification internal (V <sub>min</sub> )	-	g	0.1	0.2	0.5	0.5	1	1	2	2	5	5	10	10	20
Temperature coefficient of zero Signal	TC <sub>0</sub>	% of C <sub>n</sub> /10K	±0.0140	±0.0093	±0.0140	±0.0100	±0.0140	±0.0093	±0.0140	±0.0093	±0.0140	±0.0093	±0.0140	±0.0093	±0.0140
Ratio of minimum verification internal Y	Y	-	10,000	15,000	10,000	14,000	10,000	15,000	10,000	15,000	10,000	15,000	10,000	15,000	10,000
Maximum platform size	-	mm	300x300					450x450			600x600				
Nominal sensitivity Maximum capacity 1kg Maximum capacity 3kg~200kg	C <sub>n</sub>	mV/V	1.8 +0.27 -0.18 (Option 6: A1 = 1.8 mV/V±0.1 %) 2.0±0.2 (Option 6: A = 2mV/V±0.1 %)												
Zero signal	-	-	0 ± 0.1												
Temperature coefficient of sensitivity <sup>(3)</sup> Temperature range +20°C~+40°C -10°C~+20 °C	TC <sub>S</sub>	% of C <sub>n</sub> /10 K	±0.0170 ±0.0110												
Non-linearity <sup>(3)</sup>	d <sub>lin</sub>	% of C <sub>n</sub>	±0.0166												
Relative reversibility error <sup>(3)</sup>	d <sub>hy</sub>		±0.0166												
Minimum dead load output return (MDLOR)	-		±0.0166												
Off-center load error <sup>(4)</sup> , as per OIML R76	-	-	±0.0233												
Input resistance	R <sub>LC</sub>	Ω	300~500												
Output resistance	R <sub>0</sub>		300~500 (Option 6: A = 410Ω ± 0.2Ω)												
Reference voltage	U <sub>ref</sub>	-	5												
Nominal (rated) range of the excitation voltage	B <sub>U</sub>	V	1~12												
Max. excitation voltage	-	-	15												
Insulation resistance at 100V <sub>DC</sub>	R <sub>is</sub>	GΩ	>2												
Nominal (rated) range of the ambient temperature	B <sub>T</sub>	°C	-10~+40												
Operating temperature range	B <sub>tu</sub>		-10~+50												
Storage temperature range	B <sub>tl</sub>		-25~+70												
Limit load	E <sub>L</sub>		150												
Limit lateral loading, static	E <sub>lq</sub>	% of E <sub>max</sub>	300												
Breaking load	E <sub>d</sub>		300												
Rated displacement at E <sub>max</sub> , approx.	S <sub>nom</sub>	mm	< 0.5	< 0.3					< 0.25						
Weight, approx.	m	kg	0.45												
Degree of protection <sup>(5)</sup>	-	-	IP67												
Material: Measuring body Application protection Cable sheath	-	-	Aluminum Silicone rubber PVC												

1) As per OIML R60, with PLC = 0.7

2) Max. eccentric loading as per OIML R76.

3) If the values for non-linearity (d<sub>lin</sub>), relative reversibility error (d<sub>hy</sub>) and temperature coefficient of sensitivity (TCS) are added together, they are within the cumulated error limit specified in OIML R60.

4) As per OIML R76

5) As per EN 60 529 (IEC 529)

# SPECIFICATIONS (continued)

TYPE			SP4M...											
Accuracy class <sup>(1)</sup>			C3 Multi Range (MR)											
Number of load cell verification intervals (n <sub>LC</sub> )			6000											
Maximum capacity <sup>(2)</sup>	(E <sub>max</sub> )	kg	7	10	15	18	20	30	36	50	75	100	150	200
Maximum load cell verification internal	(V <sub>min</sub> )	g	0.5	0.5	1	1	1	2	2	2	5	5	10	10
Temperature coefficient of zero Signal	TC <sub>0</sub>	% of C <sub>n</sub> /10K	±0.0100	±0.0070	±0.0093	±0.0070	±0.0070	±0.0093	±0.0070	±0.0056	±0.0093	±0.0070	±0.0093	±0.0070
Ratio of minimum verification internal Y	Y	-	14,000	20,000	15,000	18,000	20,000	15,000	18,000	25,000	15,000	20,000	15,000	20,000
Maximum platform size	-	mm	450x450						600x600					
Nominal sensitivity	C <sub>n</sub>	mV/V	2.0 ±0.2			1.8 ±0.18	2.0 ±0.2		2.4 ±0.2	2.0 ±0.2				
Zero signal	-	-	0 ± 0.10											
Temperature coefficient of sensitivity <sup>(3)</sup> Temperature range +20°C~+40°C -10°C~+20 °C	TC <sub>S</sub>	% of C <sub>n</sub> /10 K	±0.0087 ±0.0058											
Non-linearity <sup>(3)</sup>	d <sub>lin</sub>	% of C <sub>n</sub>	±0.0083											
Relative reversibility error <sup>(3)</sup>	d <sub>hy</sub>		±0.0083											
Minimum dead load output return (MDLOR)	-		±0.0083											
Off-center load error <sup>(4)</sup>	-		±0.0116											

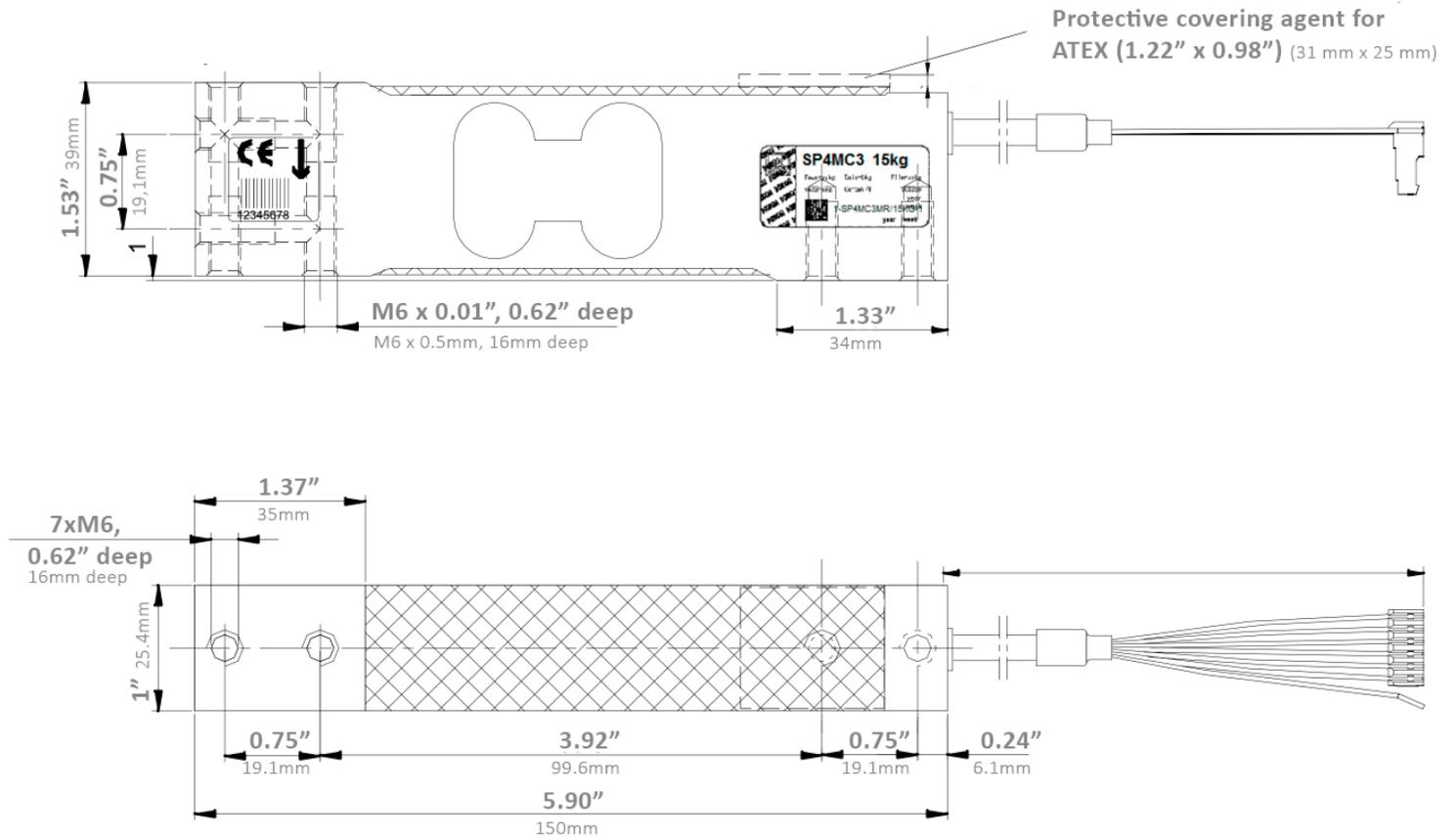
1) As per OIML R60, with PLC = 0.7

2) Max. eccentric loading as per OIML R76.

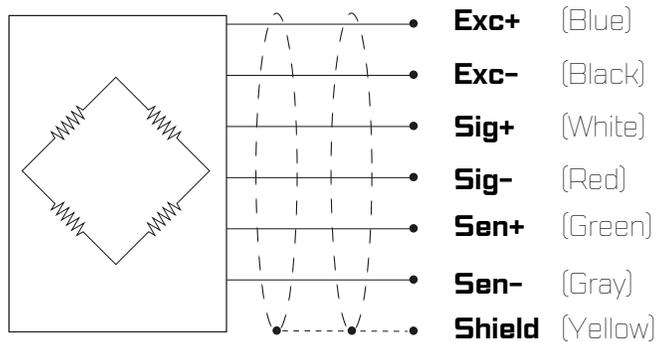
3) The values for non-linearity (d<sub>lin</sub>), relative reversibility error (d<sub>hy</sub>) and temperature coefficient of sensitivity (TCS) are recommended values. If these values are added together, they are within the cumulated error limit specified in OIML R60.

4) As per OIML R76

# DIMENSIONS



# CABLE DIAGRAM



Available cable lengths: 1.5 m; 3 m; 6 m; 12 m

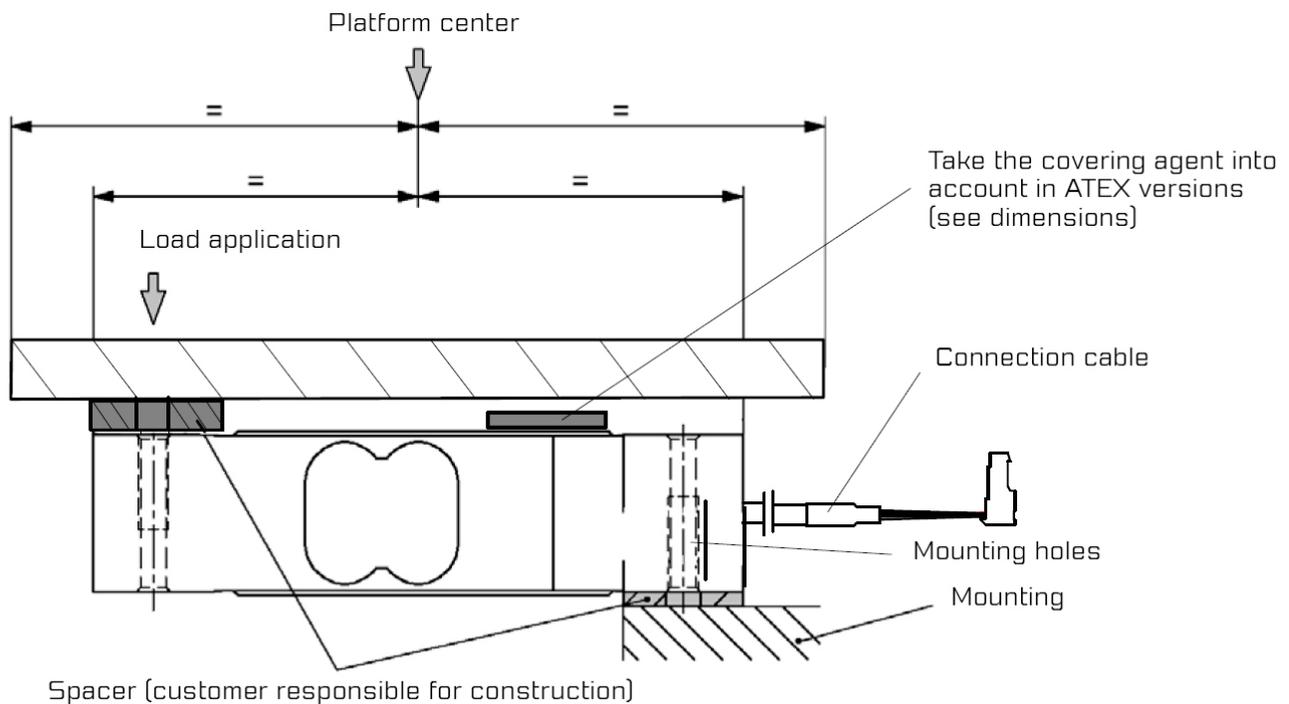
# MOUNTING AND LOAD APPLICATION

The load cells are firmly clamped 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:

Max. capacity	Thread	Min. property class	Tightening torque*
1~30kg	M6	8.8	6 N.m
50~200kg	M6	10.9	14 N.m

**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.



## PART NUMBER

Products	Capacities	Codes
HBM Load Cell SP4	1kg	10421
HBM Load Cell SP4	3kg	10422
HBM Load Cell SP4	5kg	10423
HBM Load Cell SP4	10kg	10425
HBM Load Cell SP4	15kg	10426
HBM Load Cell SP4	20kg	10427
HBM Load Cell SP4	30kg	10428
HBM Load Cell SP4	50kg	10429
HBM Load Cell SP4	75kg	10430
HBM Load Cell SP4	100kg	10431
HBM Load Cell SP4	150kg	10432
HBM Load Cell SP4	200kg	10433

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### MORE INFO



PRODUCT PAGE