

Load cell for weight and for force measuring Type M2428



100 to 100'000kg
4...20mA, 2-Wire Technics
24VDC Power Supply

Example: M2428-01, 0...500kg
D=40, H=197

Technical description

M2428 is a low-cost load cell (balance, scale, weighing device) to measure weights or forces in the range of 100kg (~1'000N) to 100'000kg (~1'000'000N). Mostec specializes in developing and producing customer specific cells for vessels and a variety of other, more general industrial use; as well as various standard load cells. All Mostec cells are manufactured in-house. Our way of construction allows production of small batches.

A load cell consists of a hydraulic cylinder, a ceramic strain gage sensor or a strain gage bonded to a spring element with integrated electronics to convert the force or weight to a 4...20mA signal. There is no need to use external, sensitive strain gage amplifiers or signal conditioning devices. A cell connects directly to any 2-wire sensor input of process control computers or other control equipment and displays. All cells are available in various, customer specified materials, they are waterproof and need an ordinary 3-pole, 16mm valve plug or open cable ends.

Technical Data:

Range: customer specified, 1'000N to 1'000'000N force or 100kg to 100'000kg weight
 Signal output: 4...20mA for a specified range
 Overload: min. 2.5 x range without damage or rupture

Measuring element: metallic strain gage ceramic element/hydraulic

Accuracy of zero:	<0.1% @ 25°C	<0.5% @ 25°C
Accuracy of span:	<0.5% @ 25°C	0.5% typical @ 25°C
Stability of zero:	<0.01% full scale per °C	0.01%/°C typical
Stability of span:	< 0.015% full scale per °C	0.02%/°C typical
Long time stability:	+/- 0.3% full scale per year	<0.5%/year typical
Reproducibility:	+/- 0.15% full scale	<0.3% full scale
Linearity:	+/- 0.3% full scale	<0.5% full scale
Response time:	<50ms for 99% load change	same
Linearization, curve:	programmable with external programmer	same
Max. load at 24VDC:	500 Ohm	same
Max. supply voltage:	35VDC	same
Min. supply voltage:	22VDC	same
Max. side force:	10% full scale, depending on construction	same

Wiring of plug
 Pin #1 = + Supply
 Pin #2 = output 4...20mA
 Pin #3 = shield
 or open cable ends: Positive=red, negative=blue, shield

Max. cable length: 300m
 Cable connector specification: Micro DIN43650, pin spacing 9.4mm

Further information: The mechanical construction, dimensions etc. are generally specified by the customer and the photos below are such cells, usually manufactured in larger quantities.

Shear beam load cells or other spring elements equipped with metallic strain gages are used in high accuracy and long term stability applications. Assembling strain gages to the spring element is manual work.

Hydraulic systems, basically a cylinder with piston and sensing element, are used when good stability, low price and high quantities are required. Friction on surfaces and O-rings limit the accuracy. However, it's not possible to achieve the same, good data as with spring elements and strain gages.

Examples:



M2428-04, 0...7'500kg
D=120, H=45



M2428-05, 0...7'500kg
D=120, H=45



M2428-03, 0...8'000kg
D=270, H=145



M2428-02, 0...10'000kg
D=120, H=95



M2428-08, 0...300kg
H=180, L=40



M2428-13, 0...5'000kg
H=190, A= 31, B=31

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