PRECIA MOLEN™

CMI

Shear beam load cell

03/2003 06-04-02-1 FT

Application

- Scales.
- Tankscales, hopperscales.

Presentation

General information

The CMI load cell consists od a stainless steel strain member and is hermetically sealed by laser welded stainless steel cups.

It has been designed for used in industrial environments with an aggressive atmosphere, such as the chemical industry. CMI load cells have been test certificate for 3 000d. Meating the IP 68 standard, CMI load cells are compact and available in four capacities: 500, 1 000, 2 000 and 5 000 kg.

Special mounting parts to adapt the load cell to its mechanical environment are available as an option.

Description

The working principle of the CMI load cell is to measure the deformation of a beam subjected to shear stress. The strain gauges are arranged to form a Wheatstone bridge, converting the mechanical force exerted on the load cell into an electrical signal.

Conformity

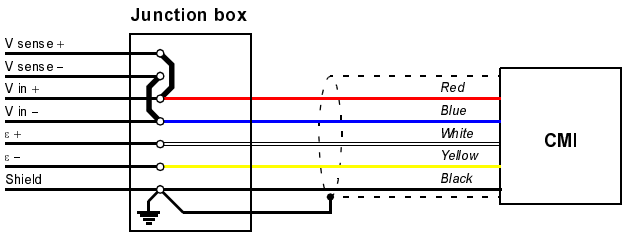
- Test certificate Nr. SDM 00.07 according to R60 of the OIML.

Option

Ex version for use in explosive and according to new directive 94/09/CE. EEx ia IIC T6.

CE type certificate Nr : LCIE 02 ATEX 6083 X

Wiring



Application

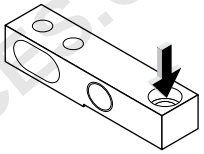
Remarks

A mechanical stop must protect the load cell against "static" overloads. The ajustment of this stop must leave a gap at least equal to the load cell's deflection under full load. The load cell must also be protected by shock absorbers against shocks, dynamic overlaods or vibrations.

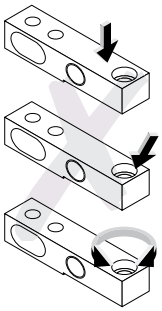
Mechanical installation

On metal foot

The force to be measured must be applied on the axis of the load point, without gap, inclination or torsion.



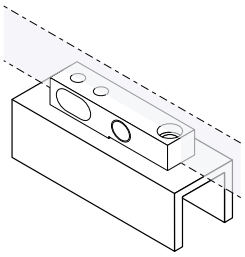
Right mounting



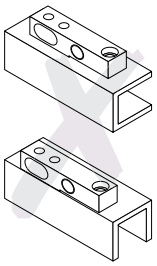
Right mounting

On a metal supporting structure

The load cell must be fitted on the axis of the structure.

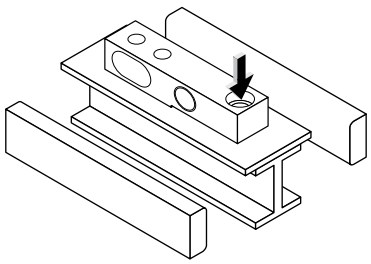


Right mounting

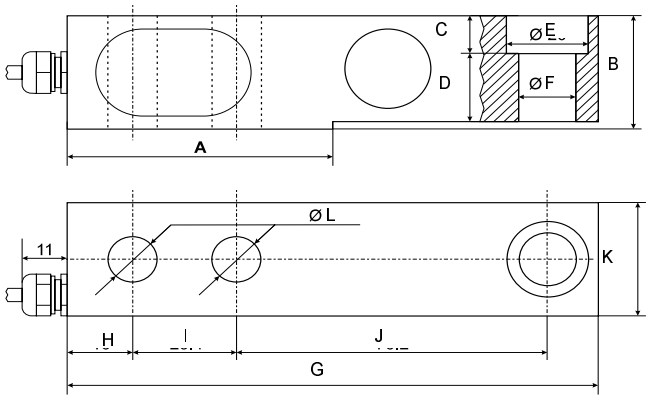


Right mounting

The supporting structure must be so stiff that it does not bend under the weight of the load. Reinforcement of the structure may in some cases be necessary.



Dimensions



CMI		500	1000	2000	5000
A	mm	59	56	53.5	104
B	mm	30	30	30	44
C	mm	10	10	10	15
D	mm	14.5	13.4	15.3	21.4
E	mm	20	20	20	32
F	mm	14	14	14	22

CMI		500	1000	2000	5000
G	mm	130	130	130	192
H	mm	17.4	17.4	16.4	38.6
I	mm	25.4	25.4	25.4	38.1
J	mm	76.2	76.2	76.2	95.3
K	mm	30	30	30	40
L	mm	12.3	12.3	12.3	20.5

Metrological data

CMI		500	1 000	2 000	5 000	
Nominal load	Emax	500	1 000	2 000	5 000	kg
Minimum load	Emin	5	5	20	40	kg
Minimum division	v min	50	100	200	500	g
Max. number of divisions	n max	3 000	3 000	3 000	3 000	

Mechanical data

CMI	500	1 000	2 000	5 000	
Maximum load	750	1 500	3 000	7 500	kg
Breaking load	1 000	2 000	4 000	10 000	kg
Deflexion under nominal load	0.3	0.6	1.2	1.1	mm
Fixation screws (not supplied)	M12x45*	M12x45*	M12x45*	M20x65**	
Tightening torque (min - max)	3.5/4	3.5/4	3.5/4	7/9	daN.m

* Minimum length = 45 mm
** Minimum length = 65 mm

Electrical characteristics

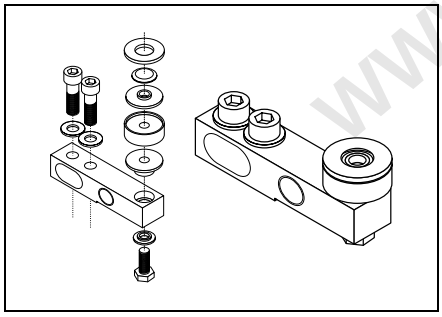
- Maximum excitation voltage ac or dc ..... 12 V
- Input impedance ..... 420 Ω ± 10%
- Output impedance ..... 351 Ω ± 2 Ω
- insulation resistance ..... > 5 000 MΩ
- Sensitivity ..... 2 mV/V ± 0.1%
- Non-repeatability ..... < 0.005%
- Temperature effect on sensitivity ..... < 0.0009 % / °C
- Temperature effect on zero balance ..... < 0.0014 % / °C
- Shielded cable, in black PVC jacket
  - O.D ..... 4.8 mm
  - Length
    CMI 500, 1000, 2000 ..... 3 m / 6 m
    CMI 5000 ..... 8 m
  - Max. bending radius ..... 20 mm

Environment

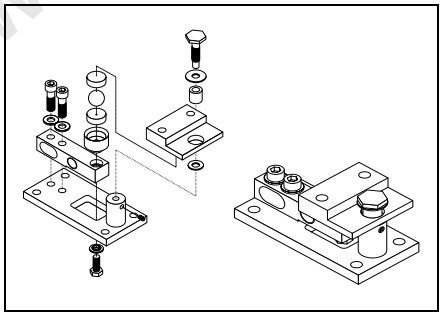
- Temperature range
  - Recommended ..... - 10 °C / + 40 °C
  - Without alteration ..... - 20 °C / + 60 °C
  - Storage ..... - 25 °C / + 80 °C
  - Protection according to EN 60-529 ..... IP 68

Options*

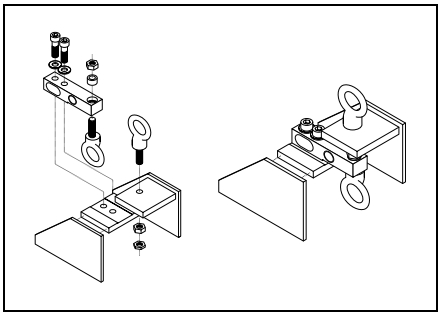
Hopper mounting - Shock absorber



Hopper mounting - Ball bearing and stop



Traction mounting with rings



Standard marking

PRECIA MOLEN
CMI A951
(modèle)
SDM N°00.07
N°XXXXXX
IP68
Fabriqué en 200X

Ex version making

CE 0081 Ex II 1 G/D
EEx ia IIC T6
LCIE 02 ATEX 6083 X T80°C
T°amb:+60°C
PRECIA MOLEN
BP106 07000 PRIVAS FRANCE

* Arrangement may vary with each model.

Your weighing specialist

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