

FORCE TRANSDUCER



COMPRESSION



- STAINLESS STEEL
- COMBINED ERROR:
 $\leq \pm 0.07 \%FS$ (2.5 kN – 1 MN)
 $\leq \pm 0.14 \%FS$ (2 MN – 5 MN)
- IP67 PROTECTION RATING



NOMINAL LOAD (FS)

kg	kN	NET WEIGHT (kg)	COMBINED ERROR	ACCURACY CLASS AC 1	RoHS COMPLIANT	Fully Laser Welded	ISO 376 REFERENCE STANDARD	Rated Output (mV/V)
250	2.5	1.6	$\leq \pm 0.07 \%$	•	•	•	•	2.0 $\pm$ 0.1 %
500	5.0	1.6	$\leq \pm 0.07 \%$	•	•	•	•	2.0 $\pm$ 0.1 %
1 000	10	1.6	$\leq \pm 0.07 \%$	•	•	•	•	2.0 $\pm$ 0.1 %
2 500	25	1.6	$\leq \pm 0.07 \%$	•	•	•	•	2.0 $\pm$ 0.1 %
5 000 ⁽²⁾	50	1.6	$\leq \pm 0.07 \%$	•	•	•	•	2.0 $\pm$ 0.1 %
5 000	50	2.5	$\leq \pm 0.07 \%$	•	•	•	•	2.0 $\pm$ 0.1 %
10 000	100	2.5	$\leq \pm 0.07 \%$	•	•	•	•	2.0 $\pm$ 0.1 %
20 000	200	5.8	$\leq \pm 0.07 \%$	•	•	•	•	2.0 $\pm$ 0.1 %
30 000	300	5.8	$\leq \pm 0.07 \%$	•	•	•	•	2.0 $\pm$ 0.1 %
50 000	500	6.8	$\leq \pm 0.07 \%$	•	•	•	•	2.0 $\pm$ 0.1 %
75 000	750	16.5	$\leq \pm 0.07 \%$	•	•	•	•	2.0 $\pm$ 0.1 %
100 000	1 000	16.5	$\leq \pm 0.07 \%$	•	•	•	•	2.0 $\pm$ 0.1 %
200 000 ⁽¹⁾	2 000	35	$\leq \pm 0.14 \%$	•	•	•	•	2.0 $\pm$ 0.1 %
300 000 ⁽³⁾	3 000 ⁽³⁾	63	$\leq \pm 0.14 \%$	•	•	•	•	2.0 $\pm$ 0.1 %
500 000 ⁽³⁾	5 000 ⁽³⁾	63	$\leq \pm 0.14 \%$	•	•	•	•	2.0 $\pm$ 0.1 %



TECHNICAL DATA

PRECISION

Rated Output (C_n)	$2.0 \text{ mV/V}^{(4)} \leq \pm 0.1 \% \text{FS}$
Zero Balance	$< \pm 1.0 \% \text{FS}$
Combined error	$\leq \pm 0.07 \% \text{FS}$ (2.5kN – 1MN) $\leq \pm 0.14 \% \text{FS}$ (2MN – 5MN)
Non-linearity	$\leq \pm 0.05 \% \text{FS}$ (2.5kN – 1MN) $\leq \pm 0.10 \% \text{FS}$ (2MN – 5MN)
Hysteresis	$\leq \pm 0.05 \% \text{FS}$ (2.5kN – 1MN) $\leq \pm 0.10 \% \text{FS}$ (2MN – 5MN)
Creep	$\leq \pm 0.10 \% \text{FS}$ (at 30 min FS)
Temperature coefficient on zero	$\leq \pm 0.028 \% \text{FS}$
Temperature coefficient on span	$0.024 \% \text{FS}/^\circ \text{C}$
Compensated temperature range	$-10 \dots +40 \text{ }^\circ \text{C}$
Operating temperature range	$-20 \dots +70 \text{ }^\circ \text{C}$
Reference Temperature	$23 \text{ }^\circ \text{C}$

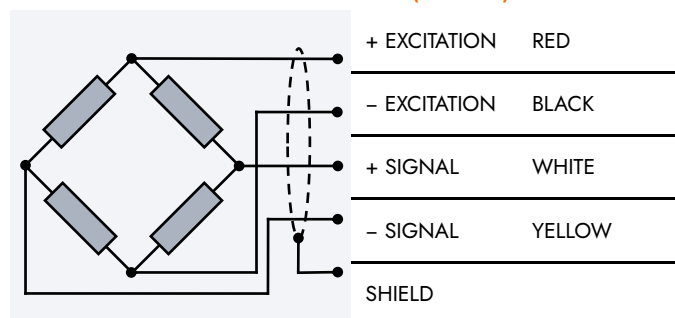
MECHANICAL PROPERTIES

Material	STAINLESS STEEL
Deflection at FN	$\sim 0.4 \text{ mm}$

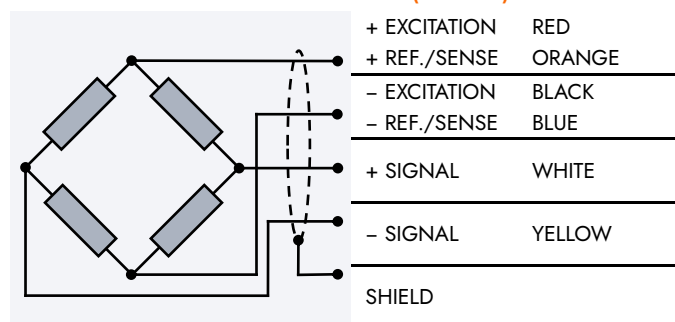
ELECTRICAL PROPERTIES

Bridge configuration	– Full Wheatstone bridge, 4-wire: 2.5 kN - 1 Mn – Full Wheatstone bridge, 6-wire: 2 MN - 5 MN
Input resistance	$800 \pm 20 \Omega$ (2.5 - 500 kN) $430 \pm 20 \Omega$ (750 - 50 000 kN)
Output resistance	$705 \pm 2 \Omega$ (2.5 - 500 kN) $352 \pm 2 \Omega$ (750 - 50 000 kN)
Insulation resistance	$\geq 5 \text{ G}\Omega$ at 100 V
Recommended excitation voltage	max. 18 V
Cable diameter	5.2 mm
Cable length	5 m (on request 10 m)

ELECTRICAL CONNECTION (4-wire)



ELECTRICAL CONNECTION (6-wire)

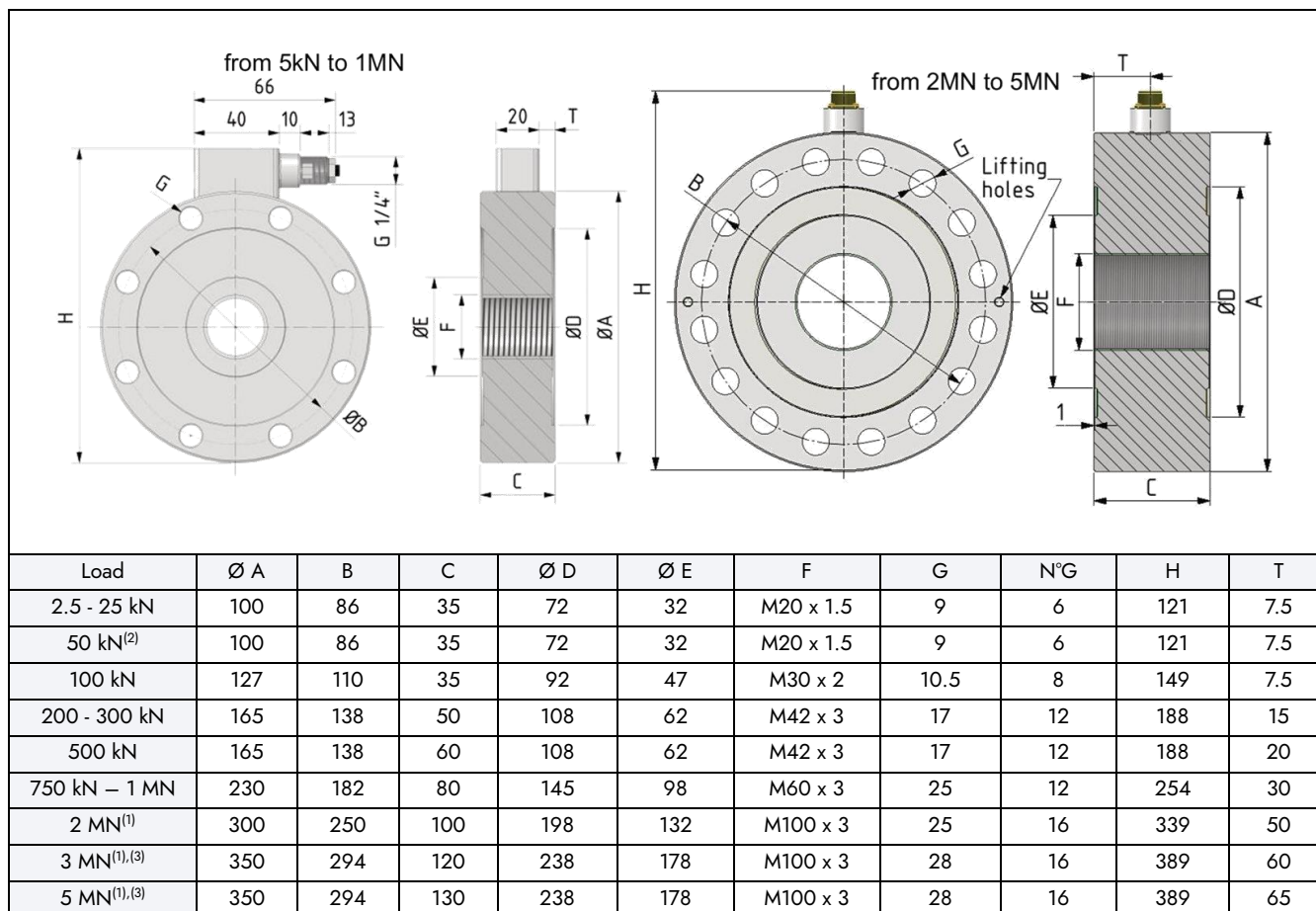


MECHANICAL LIMITS

Service load	120 %FS	Load without any permanent deformation or change in calibration.
Safe overload	150 %FS	The highest static load that may be applied once or briefly without mechanical damage.
Breaking load	$> 300 \% \text{FS}$	Load at which permanent deformation or mechanical failure (fracture) occurs.
Max. transverse load (side)	100 %FS	Maximum lateral or shear load that can be applied (e.g. due to misalignment or friction).
Max. permissible dynamic load	$75 \% \text{FS}^{(5)}$	For cyclic or oscillating loads, the amplitude should not exceed this load to prevent fatigue failure.



DIMENSIONS

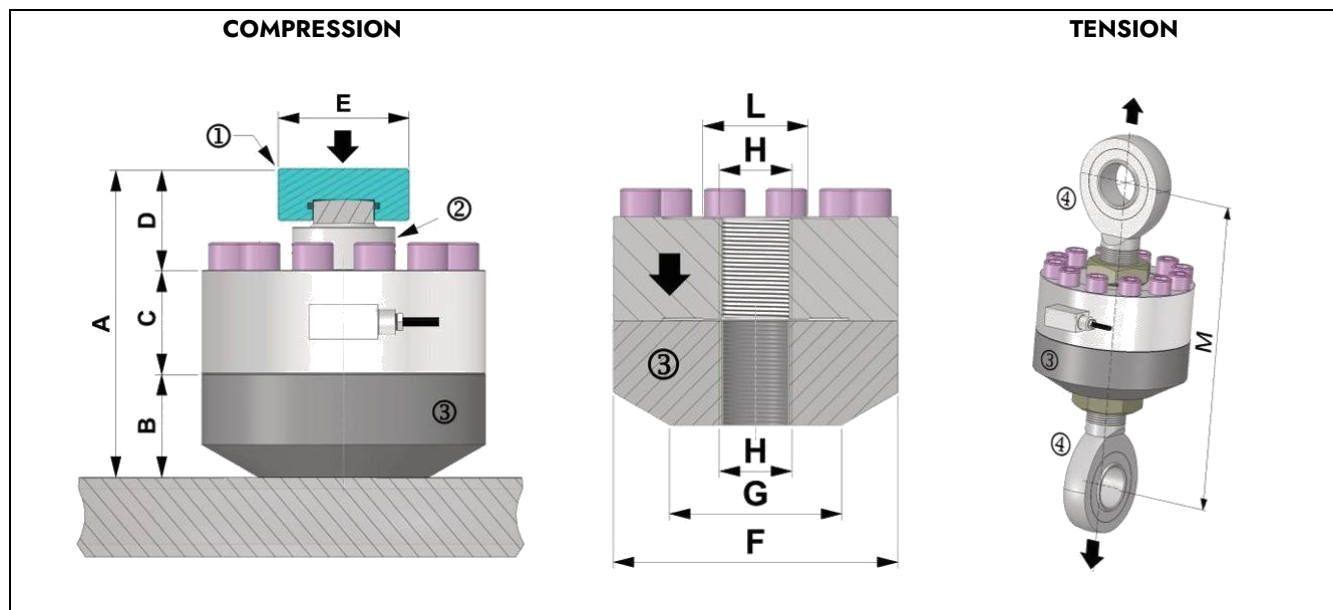


COMPLIANCE AND CERTIFICATION

Protection Rating	IP67	
Compliance	CE, RoHS, REACH	
Calibration	Factory-calibrated, ISO 17025 calibration available on request	
HS-CODE	9031.80.80	
Certifications		LAT Accredia calibration certificate ISO 376 or ASTM E74 for <u>capacities from 1000 kg to 10000 kg</u>
Certifications (on request)		Accredia traceable calibration report



APPLICATIONS



WARNING:

Check that the fixing screws and the accessories are correctly



Accessories execution material:

from 2.5 to 200 kN
from 300 kN to 5 MN

Stainless Steel

$R_m \geq 90 \text{ kg/mm}^2$
 $R_m \geq 130 \text{ kg/mm}^2$

Dimensions, mm

LLAA	A	B	C	D	E	F	G	H	L	M
2.5, 5, 10, 25, 50 kN	108	37	35	36	Ø57	Ø100	Ø70	M20 x 1.5	Ø32	~ 170
50, 100 kN	108	37	35	36	Ø76	Ø127	Ø100	M30 x 2	Ø47	~ 200
200 kN	169	60	50	59	Ø76	Ø165	Ø100	M42 x 3	Ø62	~ 224
300 kN	169	60	50	59	Ø76	Ø165	Ø100	M42 x 3	Ø62	~ 465
500 kN	179	60	60	59	Ø76	Ø165	Ø100	M42 x 3	Ø62	~ 513
750 kN, 1 MN	252	85	80	87	Ø126	Ø230	Ø180	M60 x 3	Ø98	/
2 MN	309	85	100	124	Ø129	Ø300	Ø250	M100 x 3	Ø132	/
3 MN	384	120	120	144	Ø168	Ø350	Ø330	M100 x 3	Ø178	/
5 MN	394	120	130	144	Ø168	Ø350	Ø330	M100 x 3	Ø178	/

- (1) **ACCREDIA** certification in **TENSION** can NOT be performed by LAT n° 93 Laboratory, on request it can be ordered to other accredited laboratories.
- (2) The force transducer 50 kN Ø100 is guaranteed in **TENSION** up to 25 kN.
- (3) The force transducers 3 MN and 5 MN are guaranteed in **TENSION** up to 2,5 MN
- (4) Tests and calibrations performed in **COMPRESSION** with the transducer mounted on a bearing support with correctly tightened clamping screws
- (5) The dynamic load must be applied to the transducer central thread and not to the external fixing rim.



OPTIONS (to be purchased separately)

CMIL6MF

- Direct output connector **MIL6M**



CMIL6FV5

- Female 6 poles straight **MIL6M** CONNECTOR complete PVC **CABLE**, shielded, length 5 m



CONNM12MF

- Direct output connector **M12**



CONNM12FV5

- Female 5 poles straight **M12x1** CONNECTOR complete PVC molded **CABLE**, shielded, length 3 m



CMIL7FV5

- Female 7 poles straight **MIL7M** CONNECTOR complete PVC Cable Shielded, 6 wires, length 5m.

