

## FORCE TRANSDUCER

 TENSION &  
COMPRESSION


- EXCELLENT METROLOGICAL FEATURES
- OFF-CENTER LOADS  
COMPENSATION 0.005 %FS
- COMBINED ERROR:  $\pm 0.028$  %FS
- LOW SENSITIVITY TO SUPPORTING SURFACES 0.002 %FS
- FOR TENSION AND COMPRESSION
- WEIGHT ~ 1.4 kg
- ISO 376 CLASS 00, 0.5 AND 1



## NOMINAL LOAD (FS)

| kg  | N     | Thread | ACCURACY<br>CLASS 00 | ACCURACY<br>CLASS 0.5 | ACCURACY<br>CLASS 1 | Rated Output (mV/V) |
|-----|-------|--------|----------------------|-----------------------|---------------------|---------------------|
| 5   | 50    | M8     | •                    | •                     | •                   | 2.0 $\pm$ 0.1 %FS   |
| 10  | 100   | M8     | •                    | •                     | •                   | 2.0 $\pm$ 0.1 %FS   |
| 25  | 250   | M8     | •                    | •                     | •                   | 2.0 $\pm$ 0.1 %FS   |
| 50  | 500   | M8     | •                    | •                     | •                   | 2.0 $\pm$ 0.1 %FS   |
| 100 | 1 000 | M8     | •                    | •                     | •                   | 2.0 $\pm$ 0.1 %FS   |
| 200 | 2 000 | M12    | •                    | •                     | •                   | 2.0 $\pm$ 0.1 %FS   |
| 300 | 3 000 | M12    | •                    | •                     | •                   | 2.0 $\pm$ 0.1 %FS   |
| 500 | 5 000 | M12    | •                    | •                     | •                   | 2.0 $\pm$ 0.1 %FS   |



## TECHNICAL DATA

### PRECISION

|                                    |                                         |
|------------------------------------|-----------------------------------------|
| Accuracy class (ISO 376)           | 00 · 0.5 · 1                            |
| Rated Output (Cn)                  | 2 mV/V ± 0.1 %FS                        |
| Zero Balance                       | ± 0.5 %FS                               |
| Combined Error                     | ± 0.028 %FS                             |
| Non-linearity                      | ± 0.02 %FS                              |
| Hysteresis                         | ± 0.02 %FS                              |
| Repeatability 0°–120°–240° (b)     | ± 0.020 % · ± 0.045 % · ± 0.080 %       |
| Interpolation (fc)                 | ± 0.020 % · ± 0.040 % · ± 0.050 %       |
| Reversibility (u)                  | ± 0.030 % · ± 0.050 % · ± 0.090 %       |
| Zero (fo)                          | ± 0.005 %FS · ± 0.010 %FS · ± 0.010 %FS |
| Off-center loads compensation      | 0.005 %FS                               |
| Sensitivity to supporting surfaces | 0.002 %FS                               |
| Temperature coefficient on zero    | ± 0.015 %FS / 10 °C                     |
| Temperature coefficient on span    | ± 0.010 %FS / 10 °C                     |
| Compensated temperature range      | -10...+40 °C                            |
| Operating temperature range        | -10...+70 °C                            |
| Storage temperature range          | -20...+80 °C                            |
| Reference Temperature              | +23 °C                                  |

### MECHANICAL PROPERTIES

|                  |                       |
|------------------|-----------------------|
| Material         | STAINLESS STEEL, case |
| Deflection at FN | ~ 0.2 mm              |
| Weight           | ~ 1.4 kg              |

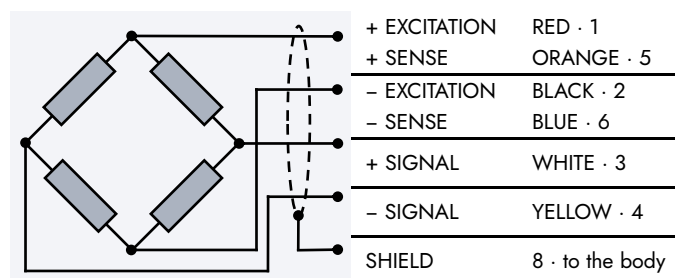
### MECHANICAL LIMITS

|                               |           |                                                                                                        |
|-------------------------------|-----------|--------------------------------------------------------------------------------------------------------|
| 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 %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 %FS    | For cyclic or oscillating loads, the amplitude should not exceed this load to prevent fatigue failure. |

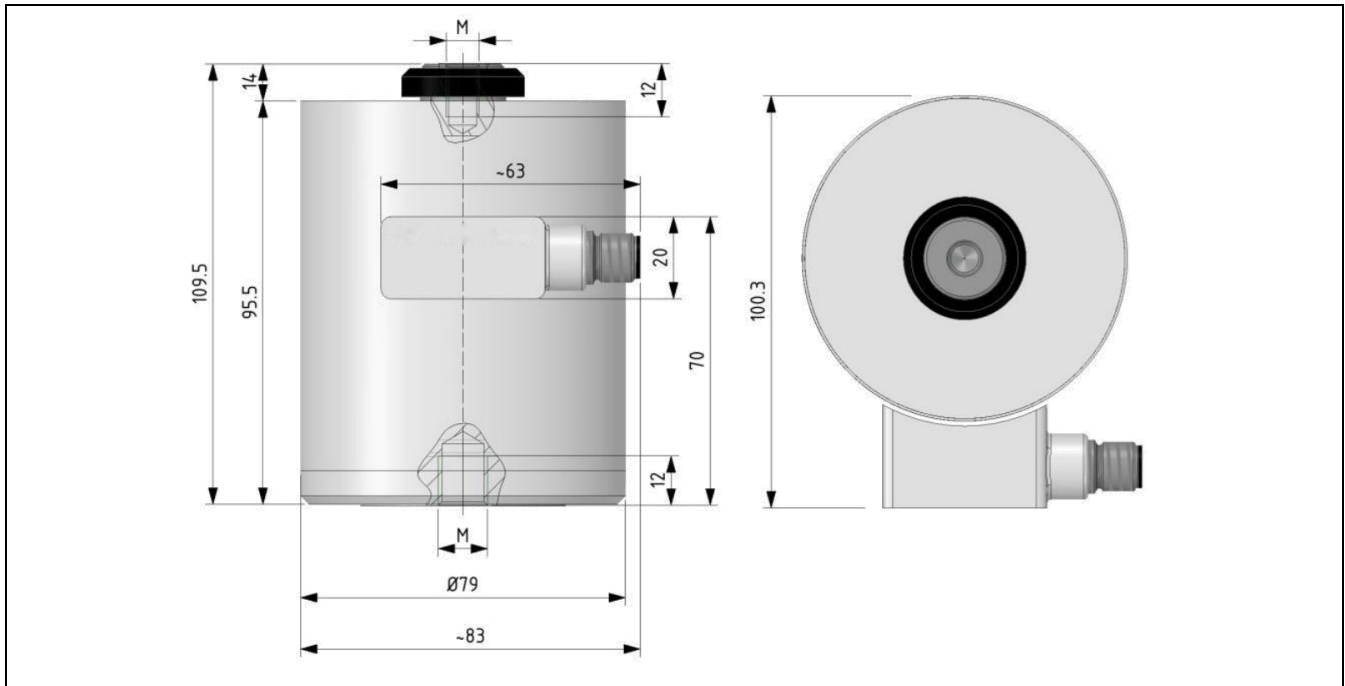
### ELECTRICAL PROPERTIES

|                                |                                |
|--------------------------------|--------------------------------|
| Bridge configuration           | Full Wheatstone bridge, 6-wire |
| Input resistance               | 350 ± 2 Ω                      |
| Output resistance              | 352 ± 2 Ω                      |
| Insulation resistance          | > 5 GΩ                         |
| Recommended excitation voltage | 10 V · 1 – 15 V · max. 18 V    |
| Cable                          | PVC 80 °C, shielded            |
| Cable diameter                 | 5.2 mm                         |
| Cable cores                    | 6 × Ø 0.25 mm², tinned         |
| Cable length                   | 5 m                            |
| Connector                      | M12 × 1, 8 poles               |

### ELECTRICAL CONNECTION



## DIMENSIONS (mm)

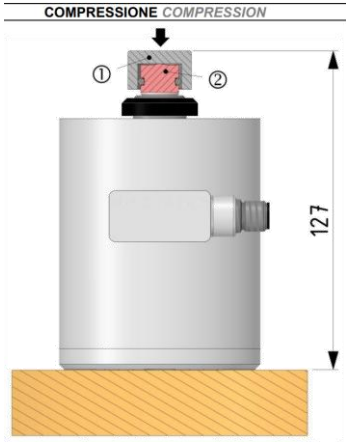


## COMPLIANCE AND CERTIFICATION

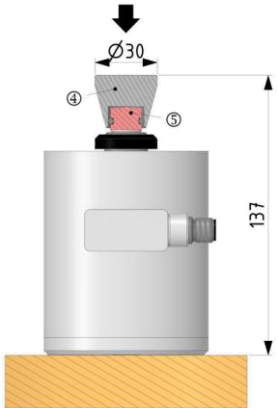
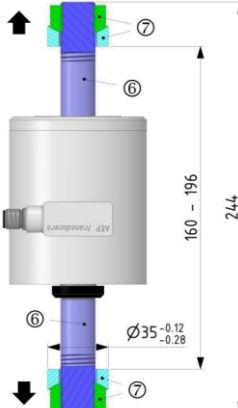
|                    |                                                                                                                          |
|--------------------|--------------------------------------------------------------------------------------------------------------------------|
| Protection Rating  | IP40 (EN 60529)                                                                                                          |
| Compliance         | CE, RoHS, EAC                                                                                                            |
| Reference standard | ISO 376 — classes 00, 0.5 and 1 · ASTM E74 classification on request                                                     |
| Calibration        | Factory-calibrated in COMPRESSION · ACCREDIA (ISO 17025) calibration certificate on request · kg calibrations on request |
| HS-CODE            | 9031.80.80 (octagon)                                                                                                     |



## APPLICATIONS

| COMPRESSION                                                                                                            | TENSION                                                                            |
|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|                                       |  |
| <p><b>WARNING:</b></p> <p>Check that accessories are correctly tightened.</p> <p>For low load do not use wrenches.</p> |                                                                                    |

## APPLICATIONS ACCORDING TO UNI EN ISO 376

| COMPRESSION                                                                                                            | TENSION                                                                              |
|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                     |  |
| <p><b>WARNING:</b></p> <p>Check that accessories are correctly tightened.</p> <p>For low load do not use wrenches.</p> |                                                                                      |

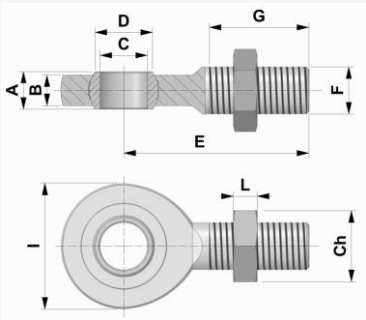


ACCESSORIES (TO BE PURCHASED SEPARATELY)



| LOAD                       | ACCESSORIES (optional) |
|----------------------------|------------------------|
| 50, 100, 250, 500 N · 1 kN | Loading head           |
| 50, 100, 250, 500 N · 1 kN | Spherical loading head |
| 50, 100, 250, 500 N · 1 kN | Knuckle joint          |
| 2, 3, 5 kN                 | Loading head           |
| 2, 3, 5 kN                 | Spherical loading head |
| 2, 3, 5 kN                 | Knuckle joint          |

KNUCKLE JOINTS — dimensions (mm)



| LOAD                       | A  | B | C  | D    | E  | F   | G  | I  | L | Ch |
|----------------------------|----|---|----|------|----|-----|----|----|---|----|
| 50, 100, 250, 500 N · 1 kN | 8  | 6 | 8  | 10.2 | 42 | M8  | 22 | 24 | 6 | 13 |
| 2, 3, 5 kN                 | 10 | 8 | 12 | 14.9 | 54 | M12 | 28 | 34 | 7 | 19 |

Knuckle joints for force transducers working in tension. Material: steel · coupling: steel/steel · dimensions according to ISO 12240-4 series E.

- (1) Relative errors are referred to the reading, min. 1/10 of the nominal load.
- (2) Calibration performed in COMPRESSION.
- (3) kg calibrations on request.
- (4) Classifications according to ASTM E74 on request.

