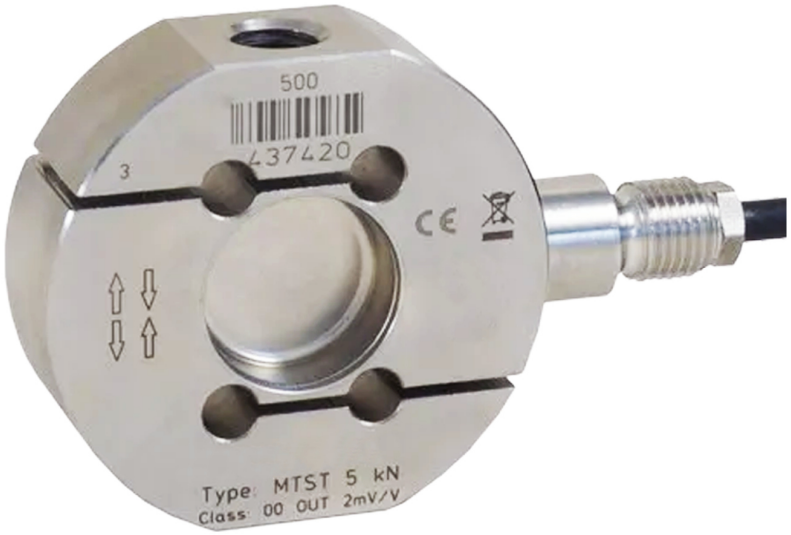
TENSION AND COMPRESSION FORCE TRANSDUCER

TENSION & COMPRESSION



- CAPACITY 0.5 ... 5 KN
- ISO 376 · CLASS 00 ... 1
- STAINLESS STEEL · IP67
- FOR TESTING MACHINES

CE · RoHS COMPLIANT · IP67 · Stainless Steel · ISO 376 REFERENCE STANDARD · ISO 17025 ACCREDITED LABORATORY · ASTM E74 FORCE CALIBRATION · mV/V

NOMINAL LOAD (FS)

Capacity	Class 00	Class 0.5	Class 1
0.5 kN	•	•	•
1 kN	•	•	•
2 kN	•	•	•
3 kN	•	•	•
5 kN	•	•	•

Accuracy classes to ISO 376. b', fc and u in % of reading, from 1/10 of the nominal load. Classification to ASTM E74 on request.

OVERVIEW

S-type force transducer for testing machines: tension and compression from 0.5 to 5 kN, accuracy classes 00, 0.5 and 1 to ISO 376.

The stainless steel transducer is protected to IP67 (0.5 kN with silicone cover: IP65) and has an M12 female thread at both ends. With loading head, spherical load head and mounting plate it measures compression, with knuckle joints tension. An accredited calibration certificate to ISO/IEC 17025 and the classification to ASTM E74 are available on request.

0.5 ... 5 kN	00 · 0.5 · 1	2 mV/V	IP67
capacities	classes ISO 376	nominal sensitivity	protection class

MEASUREMENT	DESIGN
tension and compression	stainless steel, IP67
class 00, 0.5 or 1 to ISO 376	Ø 63.5 mm, M12 female thread
linearity ± 0.02 % F.S.	5 m cable, M12 connector option
nominal sensitivity 2 mV/V	accessories for tension and compression

TECHNICAL DATA

PRECISION ISO 376 (CLASS 00 · 0.5 · 1)

Repeatability 0°/120°/240° (b′)	± 0.050 · 0.090 · 0.155 %
Interpolation (fc)	± 0.020 · 0.040 · 0.080 %
Reversibility (u)	± 0.070 · 0.100 · 0.200 %
Zero (f0), F.S.	± 0.010 · 0.025 · 0.025 %
Linearity	± 0.02 % F.S.
Hysteresis	± 0.025 % F.S.
Temperature effect on zero (10 °C)	± 0.025 % F.S.
Temperature effect on sensitivity (10 °C)	± 0.025 % F.S.

MECHANICAL PROPERTIES

Material	stainless steel
Displacement at nominal load	0.2 mm
Weight	0.60 kg
Protection class (EN 60529)	IP67 · 0.5 kN: IP65 (silicone cover)

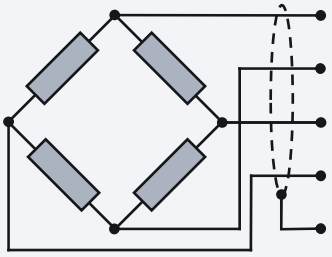
ELECTRICAL PROPERTIES

Nominal sensitivity	2 mV/V
Sensitivity tolerance	± 0.1 % F.S.
Input resistance	350 ± 2 Ω
Output resistance	352 ± 2 Ω
Insulation resistance	> 5 GΩ
Zero balance	± 1 % F.S.
Recommended supply voltage	10 V
Nominal supply voltage	1 … 15 V
Maximum supply voltage	18 V
Cable	PVC 105 °C, shielded, Ø 5.2 mm, 4 × 0.35 mm², 5 m

TEMPERATURE

Reference temperature	+23 °C
Nominal temperature range	–10 … +40 °C
Service temperature	–10 … +70 °C
Storage temperature	–20 … +80 °C

ELECTRICAL CONNECTION



+ SPEISUNG	RED
– SPEISUNG	BLACK
+ SIGNAL	WHITE
– SIGNAL	YELLOW
SHIELD	

MECHANICAL LIMITS (REFERRED TO NOMINAL LOAD)

Service load	120 %FS	Load without any permanent deformation or change in calibration.
Max. permissible load	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	50 %FS	Maximum lateral or shear load that can be applied (e.g. due to misalignment or friction).
Max. permissible dynamic load	50 %FS	For cyclic or oscillating loads, the amplitude should not exceed this load to prevent fatigue failure.

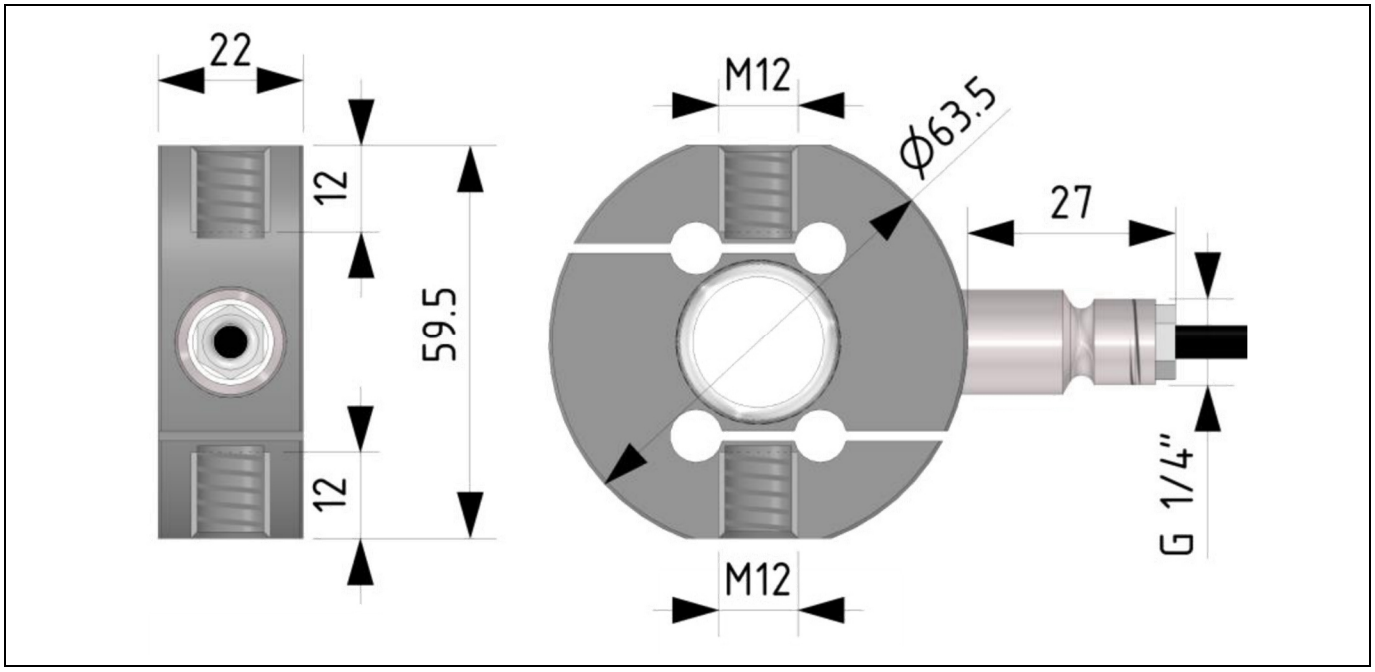
M12 CONNECTOR, 5-POLE (OPTION)

Excitation +	Pin 1
Excitation –	Pin 3
Output +	Pin 2
Output –	Pin 4
Shield	Pin 5

ACCESSORIES AND OPTIONS

Loading head	stainless steel, Ø 25 × 15 mm, bore Ø 17.3 mm
Spherical load head	stainless steel, Ø 15 mm, thread M12
Mounting plate	stainless steel, Ø 32 mm, thread M12
Knuckle joints	M12, for tension applications
M12 connector	direct output instead of cable
Connection cable	female M12 × 1, 5-pole, straight, PVC, shielded, 3 m
Calibration report	compression or tension

DIMENSIONS (mm)



Dimensions in mm. Installed height with loading head, spherical load head and mounting plate (compression) 94 mm, with knuckle joints (tension) ≈ 134 mm. The force generated during the accessories assembly must not exceed the nominal load. Cable weight can influence measurement: place the cable on the fixed side, opposite to the load.

COMPLIANCE AND CERTIFICATION

Protection Rating	IP67 · 0.5 kN: IP65	
Compliance	CE, RoHS	
Calibration	Calibration report on request (compression or tension)	
Certifications	ISO 376	Accuracy classes 00, 0.5 and 1 to ISO 376
Certifications (on request)	ISO 17025	Accredited calibration certificate to ISO/IEC 17025
	ASTM E74	Classification to ASTM E74