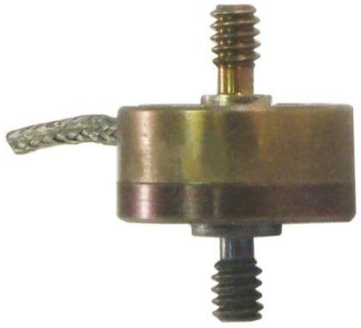
Miniature Tension/Compression Force Transducer for small measuring ranges from 1.5 N

with electrical output



Description

This force transducer is widely used where it is necessary to measure directly in the force line. It is possible, for example, to measure the actual force in ropes and rods.

The force is applied to this force transducer via threaded bolts, which are located on each side of the cylindrical body. The force application has to be centrically, torsion and bending moments are to be avoided. The measuring range starts with a nominal load of 1.5 N.

Note

To prevent overload, it is advantageous to connect up the transducer electrically during installation and to monitor the measured value. In mounting the force transducer torsion and bending moments have to be avoided.

The force must be applied at the centre and without radial stress.

Features

- Ease of assembly
- Small geomteries
- Stainless steel version

Measuring ranges

- 0…1.5 N up to 0...5000 N

Applications

- Construction and apparatus
- Production lines
- Measurement and control facilities
- Special equipment and machinery construction
- Cable force measurements
- Test devices
- Manufacturing plant

Specific Information

- High Temperature version

  up to +150°C (optional)

Model: F2220

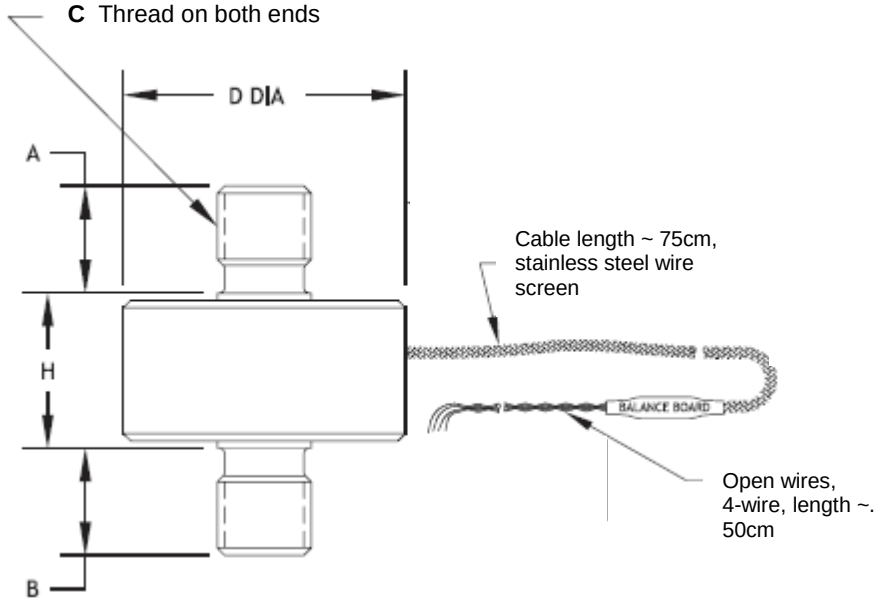
Technical data

Model	F2220	Options
Nominal load F_{nom} in **N**	**1,50; 2,50; 5; 10; 20; 50; 100; 200; 500; 1000; 2000; 5000**	
Nonlinearity tension or compression	±0,5% of F.S.	
Hysteresis	±0,5% of F.S.	
Repeatability	±0,1% of F.S.	
Limit load	150% F_{nom}	
Breaking load	>300% F_{nom}	
Max. dynamic load	±70% F_{nom} DIN 50 100	
Creep (30 min. at F_{nom})	<±0,1% of F.S.	
Nominal deflection	< 0,1 mm	
Nominal temperature range	+15 ... +70°C	+15 ... +120°C … +150°C other tempreature ranges on request
Service temperature range	-54 ... +120°C	
Reference temperature	23°C	
Temperature effect - span - zero	≤±0,1% of F.S.10K ≤±0,2% of F.S.10K	
Protection type (acc. to EN 60 529/ IEC 529)	IP 65	
Insulation resistance	>5 GΩ 50V	
Analoque output - Output signal - Bridge resistance - Option - Power requirement - Electrical connection	 2 mV/V (max. 5N 15mV/V) 350 Ω (max. 5N 500 Ω) semiconductor strain gauge 0 (4) … 20 mA, 0 … 10 V DC 2 … 5 (max. 5 V); 12 … 28 V DC for cable amplifier Cable 1,5 m, open wires, 4-wire	
Material of measuring device	Stainless steel 17-4PH	
Weight (incl. cable)	5 up to 30g (9 up to 18g) depending on nominal load	

of F.S. = full scale value

In care of order please note the requested nominal load!

Dimensions



Electrical connection	
Supply (-)	black
Supply (+)	red
Sign. (+)	white
Sign. (-)	green

Nominal load [N]	Dimensions in [mm]				
	øD	H	A	B	C
1,5 … 5	12,7	7,4	4,8	4,6	M3 x 0,5
10 … 500	12,7	7,4	4,8	4,6	M3 x 0,5
1000 … 5000	19,1	9,7	7,9	7,9	M6 x 1,0

Subject to technical changes