Tension/compression force transducer for material testing

with electrical output

Fig. with optional adapter flange

Description

The force transducer is distinguished by its high level of fatigue strength for load alternations of 10^8, its high precision and its low height. It can be used in harsh industrial environments, laboratories or test bays for static or (highly) dynamic measuring tasks. The force transducer is splashproof and even functions reliably under difficult operating conditions.

The force transducer features a through-hole that leads through the centre, with an inside thread for force transmission. In order to ensure the technical data on page 2 are achieved, the force transducer must be mounted on a flat underlay that has at least the same size. An adapter flange can be obtained as an optional extra.

Note

In order to avoid overloading, it is advantageous to connect the load cell electrically during installation and to monitor the measured value.

The measuring force must be applied concentrically and free of transverse force. The load cells should be mounted on a level surface.

Features

- For tension and compression force measurements
- High long-term stability
- Dynamic fatigue strength for load alternations of up to 10^8
- Dimple installation
- Low installation height
- Protection type IP 67
- Nonlinearity and hysteresis <0.5% of F.S.

Measuring ranges

- 0…1 KN up to 0…250 kN

Applications

- Material testing machines
- Apparatus construction
- Assembly line
- Measuring and control equipment
- Special machine manufacturing
- Testing devices

Option

- Redundant version with double measurement bridge
- Adjustable bridge resistance
- Integrated amplifier
- Force application components (e.g. adapter flange) available on request

Model: F2228

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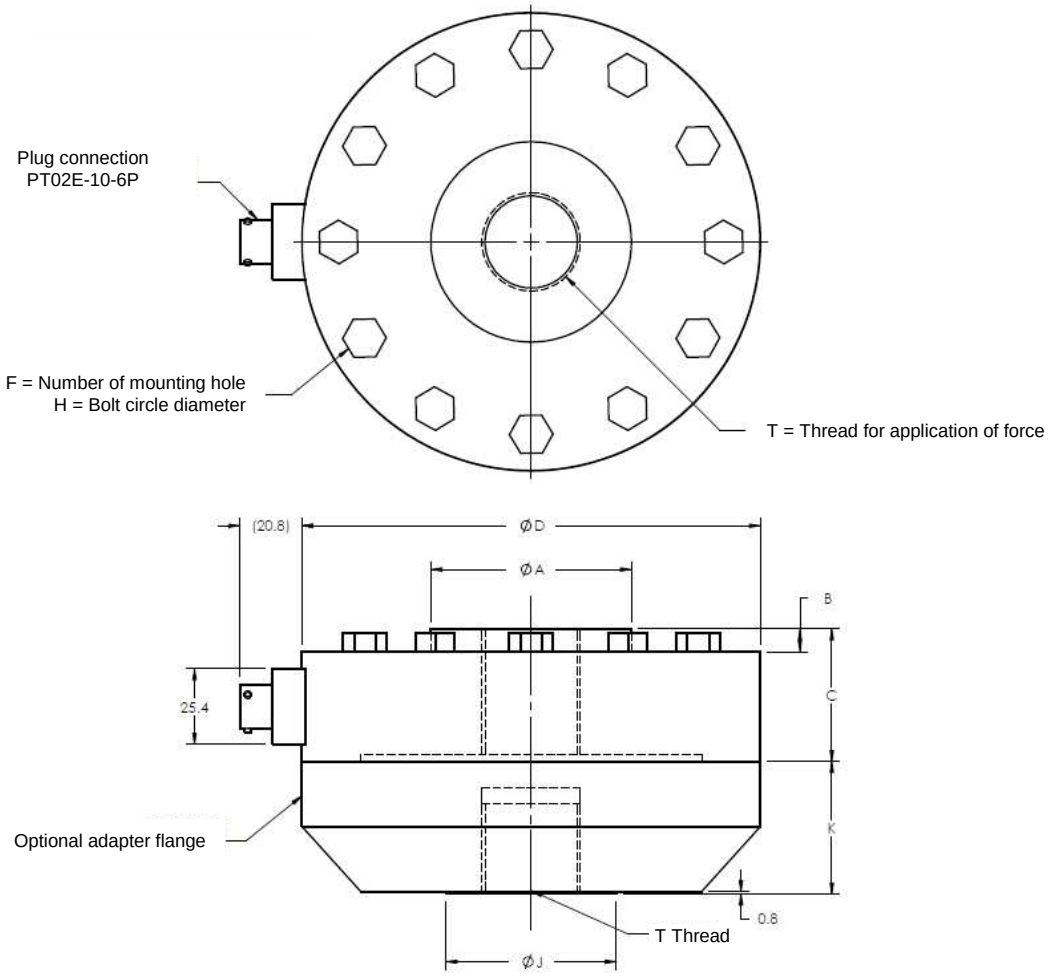
Technical data

Model	**F2228**	**Options**
Nominal load F_{nom} in **kN**	**1, 5 , 10 , 25, 50, 100, 125, 225, 250**	higher measuring ranges and nominal loads in lbs
Limit load	300% F_{nom}	
Breaking load	>300% F_{nom}	
Nonlineraity	≤±0.05% of F.S.	
Hysteresis	≤±0.05% of F.S.	
Repeatability	≤±0.02% of F.S.	
Max. dynamic load	±100% F_{nom} acc. to DIN 50 100	
Creep, 30 min. at F_{nom}	≤±0.1% of F.S.	
Nominal deflection	<0.4 mm	
Nominal temperature range	-1 … +54°C	additional temperature ranges
Service temperature range	-54 … +93°C	
Temperature influence - span - zero	< ±0.015% reading/10K < ±0.015% of F.S./10K	
Protection type (acc. to EN 60 529 / IEC 529)	IP 67	
Isulation resistance	> 2 GΩ	
Analogue output - Output signal - Bridge resistance - Option - Tolerance of span - Zero tolerance - Power requirement - Electrical connection	 2 mV/V nominal 350 Ω integrated or cable amplifier with output 0 (4) … 20 mA, 0 … 10 V DC ≤ ±0.25 of F.S. ≤ ±1% of F.S. 2 … 10 V (max. 20 V) 12 … 28 V DC for integrated or cable amplifier connector plug, 6 pin, PT02E-10-6P	 1 kΩ or 5 kΩ cable connection
Material of measuring device	stainless steel	

Of F.S.. = of Full Scale

Dimensions



Nominal load	Dimensions in [mm]								
[kN]	A	B	C	D	F	H	J	K	T
1 / 5 / 10 / 25	34.0	5.1	34.9	104.8	8	88.9	31.8	28.6	M16 x 2
50 / 100 / 125	67.3	7.6	44.5	153.9	12	130.3	57.2	44.5	M33 x 2
225 / 250	95.5	10.2	63.5	203.2	16	165.1	76.2	50.8	M42 x 2

Electrical connection	
Supply (-)	Pin D
Supply (+)	Pin A
Sign. (+)	Pin B
Sign. (-)	Pin C
not assigned	Pin E and F