Tension/compression force transducer For material testing up to 500,000 lbs Model F2222

Applications

- Materials testing machinery
- Apparatus construction
- Production lines
- Measuring and inspection equipment
- Special equipment and machinery construction

Tension/compression force transducer, model F2222

Special features

- Measuring ranges 5 lbs ... 5 klbs (22 N ... 2,200 kN)
- Simple installation, low installation height
- High long-term stability, dynamic fatigue strength for load alternations
- Protection class IP65
- Relative linearity error 0.1 % F_{nom}

Description

The tension/compressive force transducer is characterized by high accuracy and low installation height. It can be used in harsh industrial environments in laboratories or test field for static or dynamic measurement tasks.

The force transducer has a bore through the center with internal thread, is splash-proof and works reliably even under difficult operating conditions.

The force transducer must be mounted on a level support of at least the same size to comply with the listed technical data.

Note
In order to avoid overloading, it is advantageous to connect the force transducer electrically during installation and to monitor the measured value.

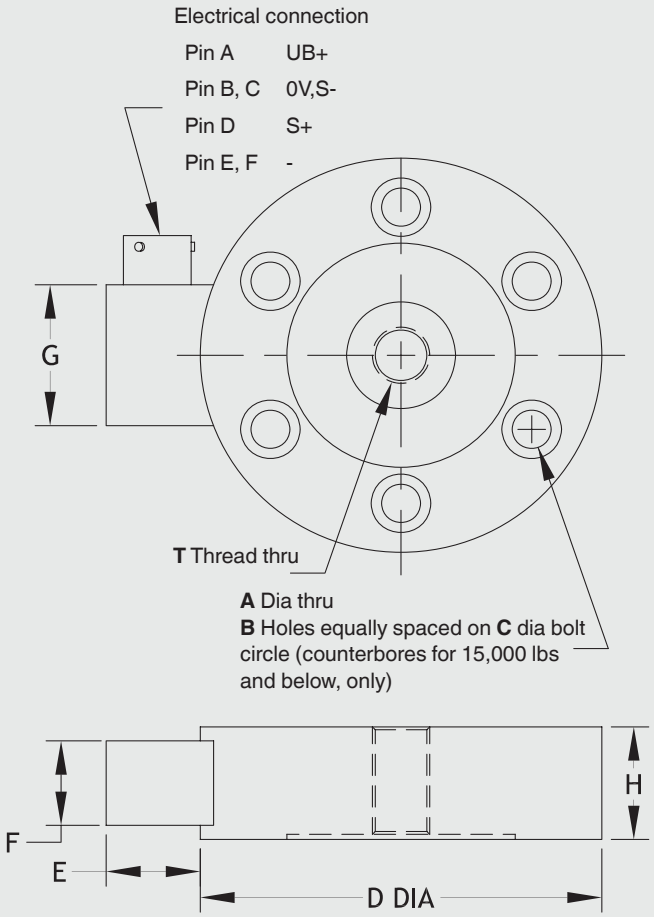
The force to be measured must be applied concentrically and free of transverse force. The force transducers are to be mounted on a level surface.

Options
- Redundant design with second measuring bridge
- Load input elements available
- Metric nominal loads: N or kN
- Extended temperature ranges
- Cable connection
- USB amplifier

Technical data in accordance with VDI/VDE/DKD 2638

Model F2222		
Nominal load F_{nom} lbs	5 / 10 / 20 / 25	50 / 100 / 200 / 500 / 1,000 / 2,000 / 3,000 / 5,000 / 7,500 / 10,000 / 15,000 / 20,000 / 30,000 / 50,000 / 75,000 / 100,000 / 150,000 / 200,000 / 300,000 / 500,000
Relative linearity error d_{lin}	≤ ±0.20 % F_{nom}	≤ ±0.10 % F_{nom}
Relative creep, 30 min.	< ±0.1 % F_{nom}	
Relative reversibility error v	≤ ±0.10 % F_{nom}	≤ ±0.08 % F_{nom}
Relative repeatability error in unchanged mounting position b_{rg}	≤ ±0.10 % F_{nom}	≤ ±0.03 % F_{nom}
Relative deviation of zero signal $d_{S, 0}$	≤ ±1 % F_{nom}	
Relative error of characteristic value d_c	≤ ±0.25 % F_{nom}	
Temperature effect on zero signal TK_0	< ±0.02% of F.S./10 K	
Temperature effect on characteristic value TK_C	< ±0.02% Reading/10 K	
Force limit F_L	150 % F_{nom}	
Breaking force F_B	> 300 % F_{nom}	
Permissible oscillation stress acc. to DIN 50100 F_{rb}	±70 % F_{nom}	
Rated displacement s_{nom}	< 0.4 mm	
Material	≤ 200 klbs Stainless steel > 200 klbs Steel	
Operating temperature range $B_{T, G}$	-54 ... +121°C	
Reference temperature T_{ref}	15 ... +71°C	
Output signal (rated output) C_{nom}	≤ 25 lbs: 2 mV/V > 50 lbs: 3 mV/V	
Input-/output resistance R_e/R_a	350 Ω	
Insulation resistance	> 2 GΩ	
Electrical connection ■ Standard ■ Option	 ■ Connector, 6-pin: ≤ 5,000 lbs: PTIH-10-6P, > 5,000 lbs: MS3102E-14S-6P ■ Cable outlet: ≤ 5,000 lbs: PVC > 5,000 lbs: PUR, high temperature design: PTFE	
Rated range of excitation voltage $B_{U, nom}$	DC 2 … 12 V (max. 15 V)	
Supply voltage ■ Standard ■ Option	 DC 12 … 28 V Integrated or cable amplifier 0 (4) … 20 mA DC 0 … 10 V	
Protection (acc. to IEC/EN 60529)	IP 65	
Option	■ Redundant design with second measuring bridge ■ Load input elements available ■ Metric rated force: N oder kN ■ Extended temperature range ■ Cable connection ■ USB amplifier	

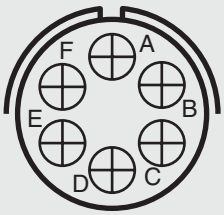
Dimension drawing



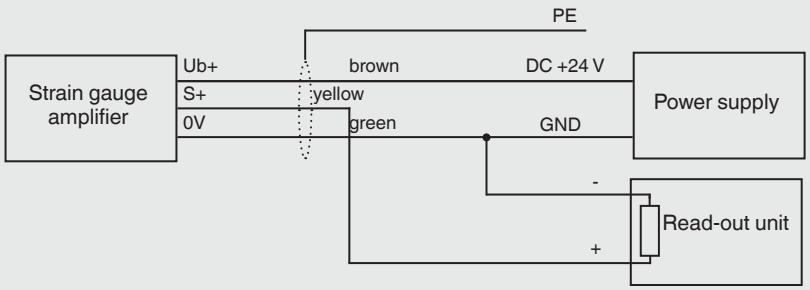
Nominal load	Dimensions in (mm / inch)								
lbs (kN)	ØD	H	A	B	Ø C bolt circle	T	E	F	G
5 / 10 / 20 / 25 (0.02 / 0.04 / 0.08 / 0.11)	2.50 (63.5)	0.80 (20.32)	0.18 (4.57)	6 (152.4)	2.00 (50.8)	1/4-28UNF	0.82 (20.83)	0.75 (19.05)	1.25 (31.75)
50 / 100 / 200 / 500 / 1,000 (0.22 / 0.44 / 0.88 / 2.22 / 4.44)	3.00 (76.2)	1.00 (25.4)	0.28 (7.11)	6 (152.4)	2.25 (57.15)	3/8-24UNF	0.82 (20.83)	0.75 (19.05)	1.25 (31.75)
2,000 / 3,000 / 5,000 (8.89 / 13.34 / 22.24)	3.50 (88.9)	1.00 (25.4)	0.34 (8.64)	6 (152.4)	2.63 (66.8)	1/2-20UNF	0.82 (20.83)	0.75 (19.05)	1.25 (31.75)
7,500 / 10,000 / 15,000 (33.36 / 44.48 / 66.72)	5.50 (139.7)	1.80 (45.72)	0.40 (10.16)	8 (203.2)	4.50 (114.3)	1-1UNS	1.25 (31.75)	1.50 (38.1)	2.00 (50.8)
20,000 / 30,000 / 50,000 (88.96 / 133.45 / 222.41)	6.00 (152.4)	1.80 (45.72)	0.53 (13.46)	8 (203.2)	4.88 (123.95)	1 1/2-12UNF	1.25 (31.75)	1.50 (38.1)	2.00 (50.8)
75,000 / 100,000 (333.62 / 444.82)	9.00 (228.6)	2.50 (63.5)	0.66 (16.76)	12 (304.8)	7.75 (196.85)	2-12UN	1.25 (31.75)	1.50 (38.1)	2.00 (50.8)
150,000 / 200,000 (667.23 / 889.64)	11.0 (279.4)	3.00 (76.2)	0.78 (19.81)	12 (304.8)	9.50 (241.3)	2 1/2-12UN	1.25 (31.75)	1.50 (38.1)	2.00 (50.8)
300,000 / 500,000 (1,334.47 / 2,224.11)	14.0 (355.6)	4.25 (107.95)	1.00 (25.4)	12 (304.8)	11.75 (298.45)	3 1/2-8UN	1.25 (31.75)	1.50 (38.1)	2.00 (50.8)

Pin assignment

Electrical connection mV/V	
Excitation voltage (+)	Pin A&B
Excitation voltage (-)	Pin C&D
Signal (+)	Pin F
Signal (-)	Pin E



Pin assignment for integrated amplifier or cable amplifier (output 4 .... 20 mA)



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