Compression force transducer
Up to 2,200 kN
Model F1227

Applications

- Equipment manufacturing
- Production lines
- Measuring and control systems
- Construction of jigs and fixtures and special machine building

Compression force transducer, model F1227

Special features

- Measuring ranges 0 ... 0.02 kN to 0 ... 2,200 kN (0 ... 5 lbs to 0 ... 500,000 lbs)
- Robust version
- Material: Stainless steel
- Ingress protection as of IP66
- Relative linearity error as of 0.1 % F_{nom}

Description

Compression force transducers are used for the determination of compression forces in a wide variety of applications and are suitable for static measuring requirements. Due to their robustness, high accuracy and low overall height, the force transducers are used in harsh industrial environments as well as in laboratories or test facilities.

The model F1227 electrical force transducers are manufactured from stainless steel and can be used for the measurement of high static compression forces up to 2,200 kN. The standard mounting position of the force transducer is horizontal or vertical.

Note
To avoid overloading, it is necessary to connect the force transducer electrically during assembly and to monitor the measured value.

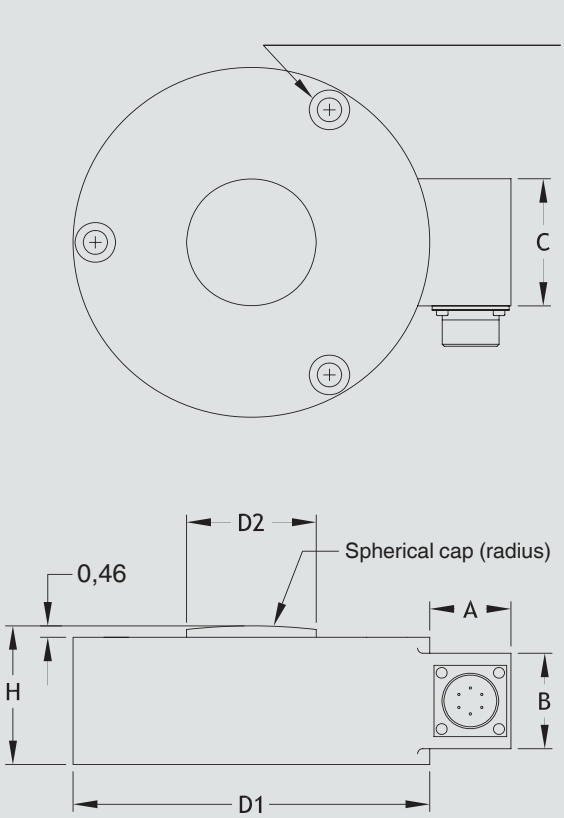
The measuring force must be introduced through the centre and free of transverse force.

Options
- Force introduction components
- Integrated amplifier
- Extended temperature ranges
- Other bridge resistance
- Redundant signal
- Cable outlet

Specifications per VDI/VDE/DKD 2638

Model F1227							
Rated force F_{nom} kN	0.02	0.11	0.22	4.45	8.9	22.2	33.4
	135	222	445	667	890	1,335	1,780
	2,220						
Rated load F_{nom} lbs	5	25	50	1,000	2,000	5,000	7,500
	30,000	50,000	100,000	150,000	200,000	300,000	400,000
	500,000						
Relative linearity error d_{lin} ■ ≤ 0.11 kN ■ ≥ 0.22 kN	±0.2 % F_{nom} ±0.1 % F_{nom}						
Relative reversibility error v ■ ≤ 0.11 kN ■ ≥ 0.22 kN	±0.1 % F_{nom} ±0.08 % F_{nom}						
Relative span in unchanged mounting situation b_{rg} ■ ≤ 0.11 kN ■ ≥ 0.22 kN	±0.1 % F_{nom} ±0.03 % F_{nom}						
Relative deviation of zero signal $d_{S, 0}$	≤ ±1 % F_{nom}						
Temperature effect on the zero signal TK_0	< ±0.05 % of FS/10 K						
Temperature effect on the characteristic value TK_C	< ±0.05 % of actual value/10 K						
Limit force F_L	150 % F_{nom}						
Breaking force F_B	> 300 % F_{nom}						
Material of the measuring body	Stainless steel						
Service temperature range $B_{T, G}$	-54 ... +121 °C						
Rated temperature range $B_{T, nom}$	15 ... 71 °C						
Output signal (rated characteristic value) C_{nom} ■ ≤ 0.11 kN ■ ≥ 0.22 kN	2 mV/V ±0.50 % F_{nom} 3 mV/V ±0.50 % F_{nom}						
Input/output resistance R_e/R_a	350 Ω						
Electrical connection	Coupler connector, 6-pin: ≤ 5,000 lbs: PTIH-10-6P, > 5,000 lbs: MS3102E-14S-6P						
Voltage supply ■ Standard ■ Option	DC 10 V (max. DC 15 V) DC 12 … 28 V integrated or cable amplifier 0(4) … 20 mA DC 0 … 10 V DC 0 … 5 V						
Ingress protection (per IEC/EN 60529)	as of IP66						
Options	■ Force introduction components ■ Integrated amplifier ■ Extended temperature ranges ■ Other bridge resistance ■ Redundant signal ■ Cable outlet						

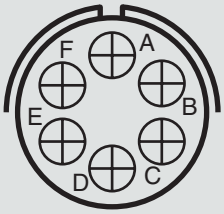
Dimensions in mm



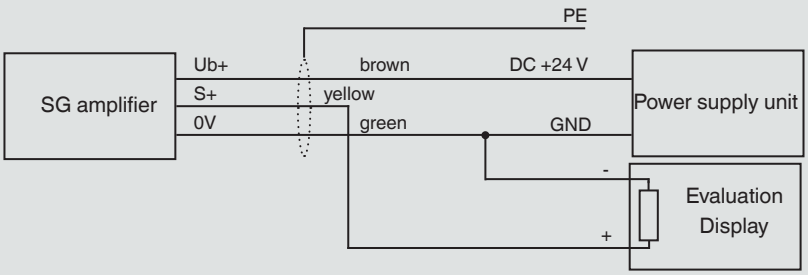
Rated force in kN [lbs]	Dimensions in mm [inches]							
	D1	D2	H	ØF	ØG	A	B	C
0.02 - 0.11 [5 - 25]	63.5 [2.50]	9.40 [0.37]	24.89 [0.98]	[1/8]	50.8 [2.000]	20.83 [0.82]	19.05 [0.75]	31.75 [1.25]
0.22 - 4.45 [50 - 1,000]	76.2 [3.00]	14.22 [0.56]	29.972 [1.18]	[1/4]	57.15 [2.250]	20.83 [0.82]	19.05 [0.75]	31.75 [1.25]
8.9 - 22.2 [2,000 - 5,000]	88.9 [3.50]	17.53 [0.69]	29.972 [1.18]	[5/16]	66.68 [2.625]	20.83 [0.82]	19.05 [0.75]	31.75 [1.25]
33.4 - 135 [7,500 - 30,000]	114.3 [4.50]	38.1 [1.50]	50.8 [2.00]	[3/8]	96.27 [3.790]	31.75 [1.25]	38.1 [1.50]	50.8 [2.00]
222 - 445 [50,000 - 100,000]	114.3 [4.50]	38.1 [1.50]	50.8 [2.00]	[3/8]	96.27 [3.790]	31.75 [1.25]	38.1 [1.50]	50.8 [2.00]
667 - 890 [150,000 - 200,000]	139.7 [5.50]	50.8 [2.00]	55.37 [2.18]	[3/8]	122.23 [4.812]	31.75 [1.25]	38.1 [1.50]	50.8 [2.00]
1,335 [300,000]	177.8 [7.0]	63.5 [2.50]	68.07 [2.68]	[3/8]	152.4 [6.000]	31.75 [1.25]	38.1 [1.50]	50.8 [2.00]
1,780 [400,000]	190.5 [7.5]	63.5 [2.50]	68.07 [2.68]	[3/8]	171.45 [6.750]	31.75 [1.25]	38.1 [1.50]	50.8 [2.00]
2,220 [500,000]	279.4 [11.0]	120.65 [4.75]	114.3 [4.50]	[3/4]	214.3 [9.500]	31.75 [1.25]	38.1 [1.50]	50.8 [2.00]

Pin assignment

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



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



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