Miniature compression force transducer from 10 N
Model F1222

WIKA data sheet FO 51.11

EAC

Applications

■ Construction of plant and apparatus
■ Measurement and control plant
■ Test benches
■ Press in forces and joining forces monitoring

Special features

■ Measuring ranges 0 ... 10 N up to 0 ... 5,000 N
■ Ease of force input, easy installation
■ Compact and small dimensions, low installation height
■ Protection class IP65
■ Relative linearity error 1 % F_{nom}

Miniature compression force transducer, model F1222

Description

The miniature compression force transducers are specially designed for small installation spaces. They are used to determine the compression forces in a wide range of applications and are suitable for static and dynamic measurement tasks eg. in laboratories and test field.

The spherical calotte (spherical load application button) allows a very simple force introduction. The usual mounting position of the force transducer is horizontal or vertical. The force transducer is splash-proof and works reliably even under harsh operating conditions.

Note
In order to avoid overloading, it is advantageous to connect the force transducers electrically during installation and to monitor the measured value. The force transducers are to be mounted on a level, grinded and sufficiently hard surface. The force is applied vertically to the force transducer axis at the spherical calotte.

Options
■ Integrated overload protection
■ High temperature version with extended nominal temperature range
■ Cable amplifier with ouput 4 ... 20 mA or DC 0 ... 10 V
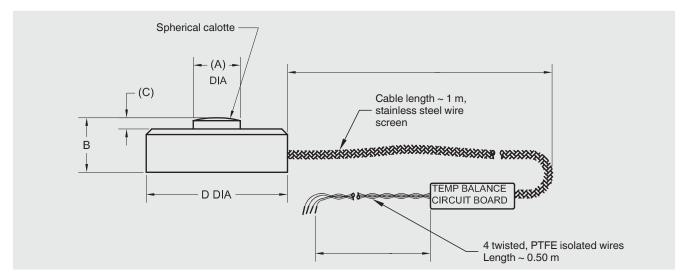■ Other cable lenghts

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Technical data in accordance with VDI/VDE/DKD 2638

Model F1222	
Rated force F_{nom} N	10 / 20 / 50 / 100 / 200 / 500 / 1,000 / 2,000 / 5,000
Relative linearity error d_{lin}	±1 % F_{nom}
Relative reversibility error v	±0.25 % F_{nom}
Relative repeatability error in unchanged mounting position b_{rg}	±0.1 % F_{nom}
Temperature effect on zero signal TK_0	< ±0.2 %/10 K
Temperature effect on characteristic value TK_C	< ±0.4 %/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}
Material	Stainless steel
Rated temperature range $B_{T, nom}$	15 … 70 °C
Operating temperature range $B_{T, G}$	-54 … +120 °C
Reference temperature T_{ref}	23 °C
Output signal (rated output) C_{nom}	1.0 mV/V (10 N) 2.0 mV/V (20 N up to 5 kN)
Relative deviation of zero signal $d_{S, 0}$	±2 % F_{nom}
Input-/output resistance R_e/R_a	350 Ω
Insulation resistance	> 2 GΩ
Electrical connection	Cable (PTFE) 1.5 m, open wires, 4-wire, shielded
Supply voltage	
without amplifier	DC 5 V for mV/V output
with cable amplifier	DC 12 … 28 V for output 0(4) … 20 mA, DC 0 … 10 V
Protection (acc. to IEC/EN 60529)	IP65
Weight	1 g upt to 10 g (9 g up to 18 g incl. cable) depending on rated force

Approvals

Logo	Description	Country
CE	**EU declaration of conformity** ■ EMC directive ■ RoHS directive	European Union
EAC	**EAC (Option)** ■ EMC directive	Eurasian Economic Community

Dimensions in mm

Rated force in N	Dimensions in mm			
	øD	øA	B	C
10 / 20 / 50 / 100 / 200	9.7	2.3	3.3	0.5
500 / 1,000	12.7	3.0	3.8	
2,000 / 5,000	19.1	6.4	6.4	

Pin assignment

Electrical connection	
Excitation voltage (+)	Red
Excitation voltage (-)	Black
Signal (+)	White
Signal (-)	Green

Ordering information

Model / Rated force / Relative linearity error / Temperature range / Output signal / Electrical connection / Options

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