

Miniature compression force transducer

For medium measurement ranges, 0...1 kN up to 0...500 kN

Model F1224

Applications

- Construction of plant and apparatus
- Control of press-in and punching forces
- Measurement and inspection equipment
- Test benches

Special features

- Measurement ranges 0...1 kN up to 0...500 kN
- For compression force measurements
- Simple force introduction
- Compact small dimensions
- Protection class IP65
- Relative linearity error 1 % F_{nom}



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.

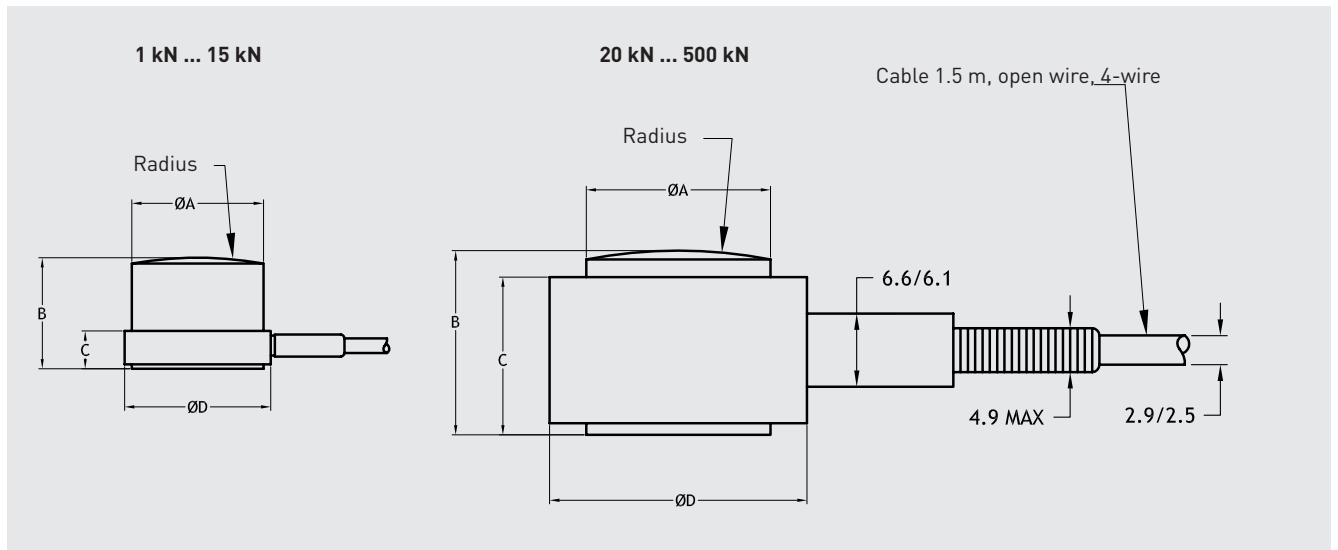
Options

- High temperature version with extended nominal temperature range
- Cable amplifier with output 4...20 mA or 0...10 V
- Other cable lengths

Specifications in accordance with VDI/VDE/DKD 2638

Model series	Symbol	Unit	F1224
Measurement range			
Rated force	F_{nom}	kN	1 2 5 10 15 20
			30 50 100 200 500
Accuracy and stability			
Relative linearity error	d_{lin}	$x\%F_{nom}$	± 1
Temperature effect on zero signal	TK_0	$\%/10\text{ K}$	$\leq \pm 0.1$
Temperature effect on characteristic value	TK_C	$\%/10\text{ K}$	$\leq \pm 0.1$
Mechanical characteristics			
Force limit	F_L	$x\%F_{nom}$	150
Breaking force	F_B	$x\%F_{nom}$	> 300
Permissible oscillation stress acc. to DIN 50100	F_{rb}	$x\%F_{nom}$	± 70
Rated displacement	s_{nom}	mm	< 0.05
Material			Stainless steel 17-4 PH
Temperature ranges			
Rated temperature range	$B_{T, nom}$	$^{\circ}\text{C}$	15...70
Operating temperature range	$B_{T, G}$	$^{\circ}\text{C}$	-54...120
Reference temperature	T_{ref}	$^{\circ}\text{C}$	23
Electrical characteristics			
Output signal (rated output)	C_{nom}	mV/V	1.5 mV/V
Input-/output resistance	R_e/R_a	Ω	350
Option		mA V	Cable amplifier 0(4)...20 DC 0...10
Rated range of excitation voltage	$B_{U, nom}$	V	5 (max. 5)
Supply voltage		V	DC 12...28 (optional for cable amplifier mA/V)
Electrical connection			Cable 1.5 m, open wires, 4-wire, shielded
Insulation resistance	R_{is}	G Ω	> 5 (50 V)
General data			
Protection (acc. to EN/IEC 60529)			IP65
Weight		g	4 ... 400 depending on rated force incl. cable

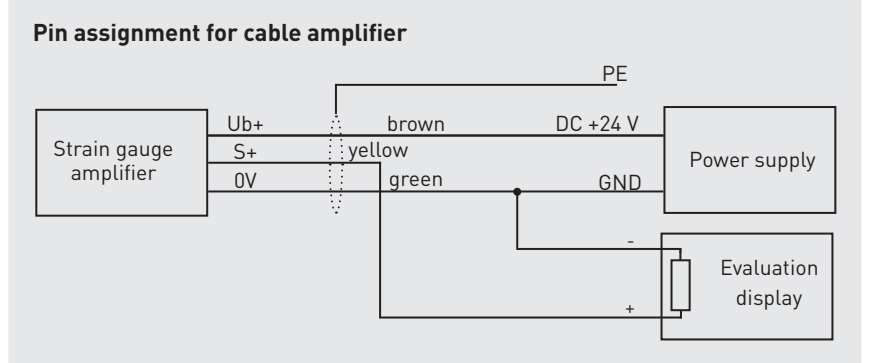
Dimensions in mm



Rated force kN	Dimensions in mm			
	ØD	ØA	B	C
1	12.7	6.9	9.65	3.3
2	12.7	7.1	9.65	3.3
5	12.7	7.9	9.65	3.3
10	12.7	10.4	9.65	3.3
15	16.0	12.4	15.24	5.8
20	16.0	13.5	15.24	5.8
50	22.35	19.3	16.0	13.7
100	44.45	31.75	35.1	31.75
200	44.45	31.75	35.1	31.75
500	50.8	38.1	41.4	38.1

Pin assignment

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



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We reserve the right to make modifications to the specifications and materials.