

Compression force transducer up to 1,000 kN Model F1211



WIKA data sheet FO 51.10

Applications

- Plant engineering and production lines
- Measuring and inspection equipment
- Special equipment and machinery construction
- Press in forces and axial joining forces monitoring

Special features

- Measuring ranges 0 ... 1 kN up to 0 ... 1,000 kN
- For compression force measurements
- Simple force introduction, easy installation
- Protection class IP67
- Relative linearity error 0.3 % F_{nom} (0.1 % F_{nom} optional)



Compression force transducer, model F1211

Description

Compression transducers are used to determine compression forces in a wide range of applications and are suitable for static and dynamic measurement tasks.

Due to their compact design, the force transducers F1211 are used in industrial applications and in the laboratory and test field. The spherical calotte (spherical load application button) allows for a very simple force introduction. Standard mounting of the force transducer is horizontal or vertical.

They are splash-proof and work with very great reliability under extreme conditions.

Note

In order to avoid overloading, it is advantageous to connect the compression 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 transducer has to be mounted on a level surface.

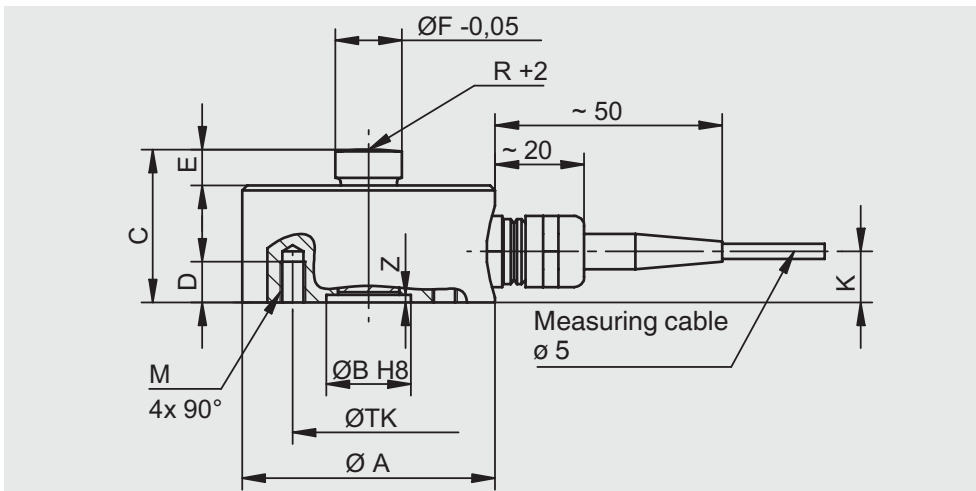
Specific information

- Calibration control 100 % signal
- Drag chain suitable
- Suitable load plates, see accessories
- 6-wire connection
- Relative linearity error 0.1% F_{nom}

Technical data in accordance with VDI/VDE/DKD 2638

Model F1211	
Rated force F_{nom} kN	1, 2, 5, 10, 20, 50, 100, 200, 500, 1,000
Relative linearity error d_{lin}	$\pm 0.3 \% F_{nom}$ (optional $< \pm 0.1 \% F_{nom}$)
Relative creep, 30 min.	$< \pm 0.08 \% F_{nom}$ (optional $< \pm 0.06 \% F_{nom}$)
Temperature effect on zero signal TK_0	$< \pm 0.06 \%/10 \text{ K}$ (optional $< \pm 0.05 \%/10 \text{ K}$)
Temperature effect on characteristic value TK_C	$< \pm 0.07 \%/10 \text{ K}$ (optional $< \pm 0.05 \%/10 \text{ K}$)
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}	$< 0.15 \text{ mm}$
Material	Stainless steel
Rated temperature range $B_{T, nom}$	$-10 \dots +70 \text{ }^\circ\text{C}$
Operating temperature range $B_{T, G}$	$-30 \dots +80 \text{ }^\circ\text{C}$
Storage temperature range $B_{T, S}$	$-50 \dots +95 \text{ }^\circ\text{C}$
Reference temperature T_{ref}	$23 \text{ }^\circ\text{C}$
Output signal (rated output) C_{nom}	2.0 mV/V
Relative error of characteristic value d_C	$< \pm 0.3 \% F_{nom}$ (optional $< \pm 0.1 \% F_{nom}$)
Input-/output resistance R_e/R_a	$350 \text{ } \Omega$
Insulation resistance	$> 2 \text{ G}\Omega$
Electrical connection	
■ Standard	Cable 3 m, 4-wire
■ Option	6-wire, drag chain suitable
Rated range of excitation voltage $B_{U, nom}$	DC 2 ... 12 V (max. 15 V) for mV/V
Supply voltage	
■ Standard	DC 12 ... 28 V
■ Option	For optional integrated or cable amplifier mA/V
Option	Integrated or cable amplifier 0(4) ... 20 mA DC 0 ... 10 V Integrated amplifier for 20 kN up to 1,000 kN possible
Protection (acc. to IEC/EN 60529)	IP67
Calibration control (Option)	100 % signal (detuning of the measuring bridge possible via integrated, switchable shunt resistor)
Weight in kg	
■ 1, 2, 5, 10 kN	0.4
■ 20, 50 kN	1.5
■ 100 kN	3.0
■ 200 kN	3.2
■ 500 kN	7.0
■ 1,000 kN	8.3

Dimensions in mm



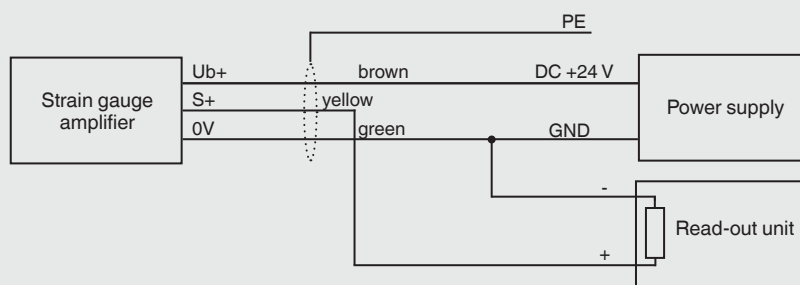
Rated force in kN	Dimensions in mm										
	øA	øB	C	D	E	øF	M	øTK	R	Z	K
1, 2, 5, 10	49.5	34	30	8	7	13	M 5	42	60	1.3	10
20, 50	89.5	55	48	14	12.5	25	M 10	70	100	2.5	17.5
100, 200	115	68	60	16	12.5	32	M 12	90	180	1.8	23
500, 1,000	150	97	80	20	15	44	M 16	125	270	4.5	32

Pin assignment

Electrical connection	
Excitation voltage (+) ¹⁾	Brown
Excitation voltage (-) ¹⁾	Green
Signal (+) ¹⁾	Yellow
Signal (-)	White
Control	Grey
Screen ⊕	Screen

1) Also for force transducers with integrated amplifiers 0(4) ... 20 mA, 0 ... 10 V, 3-wire system

Pin assignment for integrated amplifier or cable amplifier



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