

## 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.

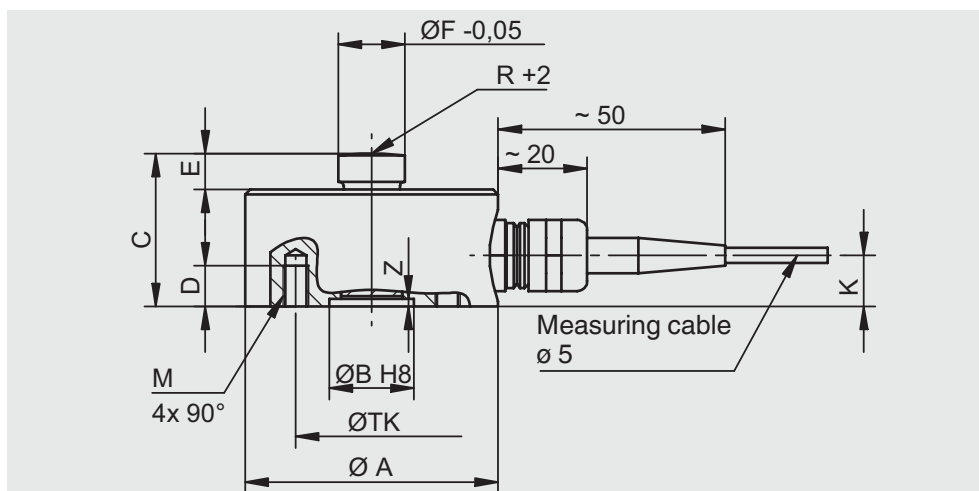
#### Specific information

- 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) $C_{nom}$	$2.0\text{ mV/V}$
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 <ul style="list-style-type: none"> <li>Standard</li> <li>Option</li> </ul>	Cable 3 m, 4-wire 6-wire, drag chain suitable
Rated range of excitation voltage $B_{U, nom}$	$\text{DC } 2 \dots 12\text{ V}$ (max. $15\text{ V}$ ) for $\text{mV/V}$
Supply voltage <ul style="list-style-type: none"> <li>Standard</li> <li>Option</li> </ul>	$\text{DC } 12 \dots 28\text{ V}$ For optional integrated or cable amplifier $\text{mA/V}$
Option	Integrated or cable amplifier $0(4) \dots 20\text{ mA}$ $\text{DC } 0 \dots 10\text{ V}$ Integrated amplifier for $20\text{ kN}$ up to $1,000\text{ kN}$ possible
Protection (acc. to IEC/EN 60529)	IP67
Calibration control (Option)	$100\text{ \% signal}$ (detuning of the measuring bridge possible via integrated, switchable shunt resistor)
Weight in kg <ul style="list-style-type: none"> <li>1, 2, 5, 10 kN</li> <li>20, 50 kN</li> <li>100 kN</li> <li>200 kN</li> <li>500 kN</li> <li>1,000 kN</li> </ul>	0.4 1.5 3.0 3.2 7.0 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

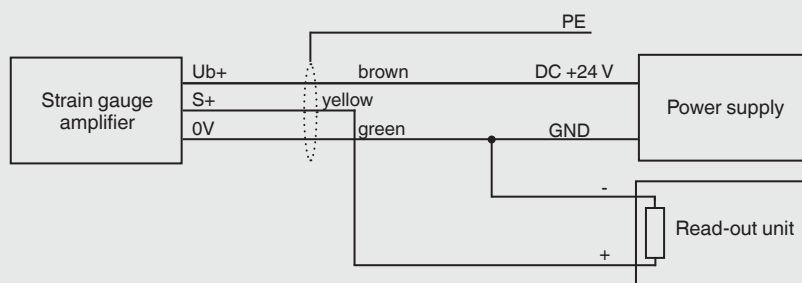
## Pin assignment

### Electrical connection

Excitation voltage (+) <sup>1)</sup>	Brown
Excitation voltage (-) <sup>1)</sup>	Green
Signal (+) <sup>1)</sup>	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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