A division of the WIKA Group

Tension/compression force transducer
For material testing, 0...0.5 kN up to 0...2,000 kN
Model F2210

Applications

- Material test facilities
- Plant engineering
- Production lines
- Measurement, test and monitoring facilities
- Special equipment and machinery construction

Special features

- Measurement ranges 0...0.5 kN up to 0...2,000 kN
- Simple installation
- Low installation height
- Protection class IP60
- Relative linearity error 0.2% F_{nom} (0.05% F_{nom} optional)

Description

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

Due to their robustness, high accuracy and low installation height, force transducers of the F2210 series are used in harsh industrial environments as well as in the laboratory or test field. They have a bore through the center, with an internal thread for the force introduction and are splash-proof.

Note
In order to avoid overloading, it is advantageous to connect the force transducer electrically during installation and to monitor the measured value.

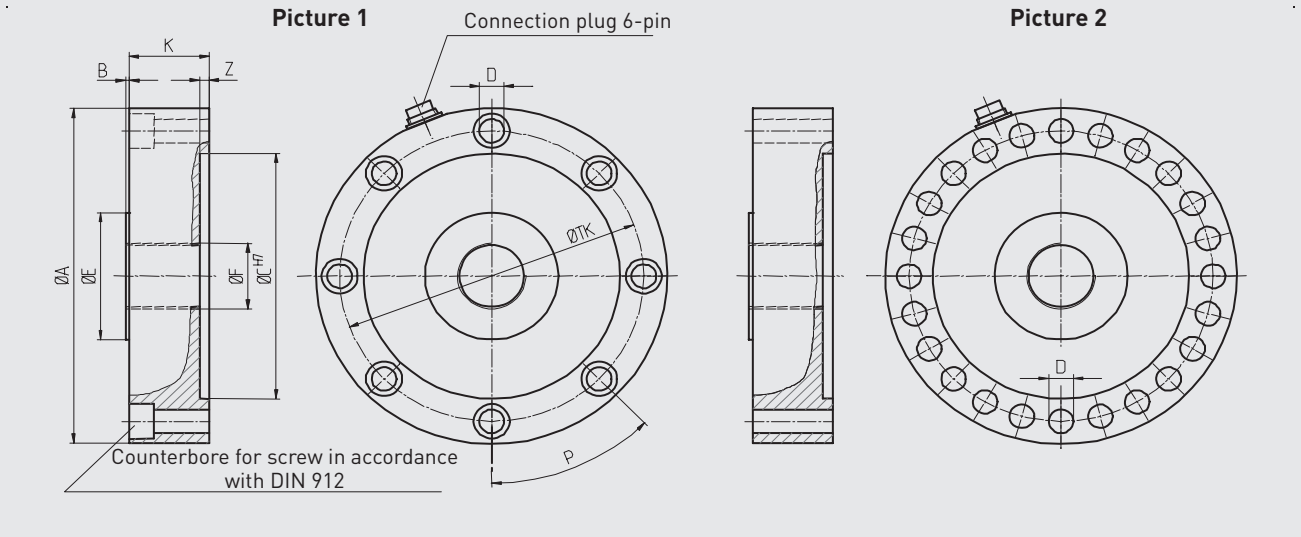
The force to be measured must be applied concentrically and free of transverse force. The force transducers are to be mounted on a level surface.

Option
- Calibration control 100 % signal
- Load input elements available

Specifications in accordance with VDI/VDE/DKD 2638

Model series	Symbol	Unit	F2210					
Measurement range								
Rated force	F_{nom}	**kN**	0.5	1	2	5	10	20
			50	100	200	500	1,000	2,000
Accuracy and stability								
Relative linearity error Tension force Tension and compression force	d_{lin}	**x%F_{nom}**	⩽ ±0.2 (optional ± 0.05) ⩽ ±0.4 (optional ± 0.10)					
Relative repeatability error in unchanged mounting position	b_{rg}	**%**	0.08 (optional 0.03)					
Relative creep, 30 min.		**x%F_{nom}**	⩽ ±0.08 (optional ±0.03)					
Temperature effect on zero signal	TK_0	**%/10 K**	⩽ ±0.05 (optional ±0.03)					
Temperature effect on characteristic value	TK_C	**%/10 K**	⩽ ±0.07 (optional ±0.05)					
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}**	±80					
Rated displacement	s_{nom}	**mm**	< 0.12					
Material			Stainless steel					
Temperature ranges								
Rated temperature range	$B_{T, nom}$	**°C**	0...60					
Operating temperature range	$B_{T, G}$	**°C**	-10...70					
Storage temperature	$B_{T, S}$	**°C**	-30...95					
Reference temperature	T_{ref}	**°C**	23					
Electrical characteristics								
Output signal (rated output)	C_{nom}	**mV/V**	2					
Input-/output resistance	R_e/R_a	Ω	350					
Insulation resistance	R_{is}	**GΩ**	>2					
Option		**mA** **V**	Integrated or cable amplifier 0(4)...20 DC 0...10					
Relative error of characteristic value	d_C	**x%F_{nom}**	⩽ ±0.1					
Rated range of excitation voltage	$B_{U, nom}$	**V**	DC 2...12 (max. 15) for mV/V					
Supply voltage		**V**	DC 12...28 (for optional integrated or cable amplifier mA/V)					
Electrical connection			Plug 6-pin (DIN 45322)					
General data								
Protection (acc. to EN/IEC 60529)			IP60					
Calibration control			Optional 100 % signal					
Mounting equipment			Optional					
Weight (incl. cable)		**kg**	1 (0.5 up to 2 kN) 1.1 (5 up to 10 kN) 3.4 (20 up to 50 kN) 5.5 (100 kN) 6 (200 kN) 15 (500 kN) 34.2 (1,000 kN) 70 (2,000 kN)					

Dimensions in mm

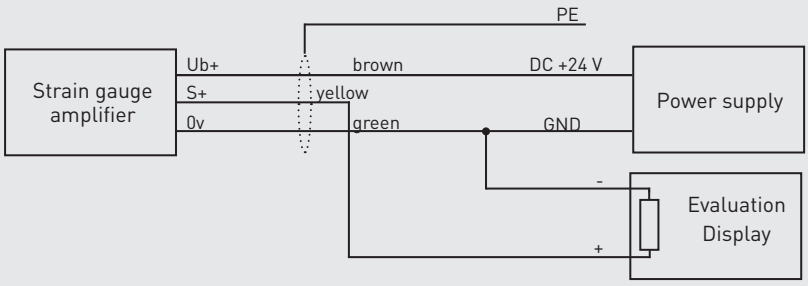


Rated force kN	Dimensions in mm												Screw torque in Nm
	ØA	B	ØC	ØD	ØE	ØF	K	ØTK	P	S	Z	Picture	
0.5/1/2/5/10	90	2	60	6.6	25	M12	32	75	4 x 90°	for M6	2	1	14
20/50	150	2	105	11	55	M24 x 2	38	130	8 x 45°	for M10	2	1	71
100/200	185	2	135	13	70	M36 x 3	42	160	8 x 45°	for M12	3	1	123
500	240	2	160	17	90	M45 x 3	60	200	12 x 30°	for M6	3	1	302
1.000	295	5	200	21	130	M80 x 4	95	250	12 x 30°	for M20	4	2	592
2.000	390	3	270	26	190	M120 x 4	117	330	24 x 15°	for M24	4	2	1,017

Pin assignment

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

Pin assignment for integrated or cable amplifier



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