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Tension/compression force transducer
S-type with internal thread, 0...0,02 kN up to 0...50 kN
Model F2211

Applications

- Plant engineering
- Production lines
- Measurement and monitoring facilities
- Special equipment and machinery construction
- Test benches and production lines

Special features

- Measurement ranges 0...0.02 kN up to 0...50 kN
- Simple force introduction
- Robust design
- Simple installation
- Protection class IP60 (aluminum), IP67 (aluminum)
- Relative linearity error 0.1 % F_{nom}

Description

Tension/compression force transducers are designed for static and dynamic measurement tasks in the direct flux of force. They determine the tension and compression forces in a wide scope of applications.

Force transducers of this series are used in weighing technology as well as in countless industrial applications, where high accuracy, simple installation with force introduction via the two internal threads and a favorable price plays a decisive role.

These tension/compression force transducers are splash water protected and function reliably even under difficult service conditions.

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

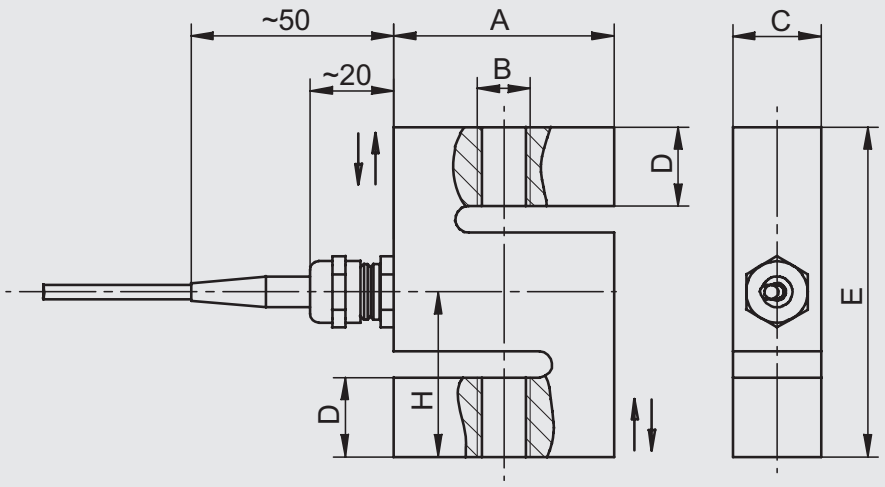
The force to be measured must be applied concentrically and free of transverse force. The force transducers are to be mounted on a level surface.

Option
- Calibration control 100 % signal
- Load input elements available
- Drag chain suitable
- Cable amplifier with output 4...20mA or 0...10 V

Specifications in accordance with VDI/VDE/DKD 2638

Model series	Symbol	Unit	F2211										
Measurement range													
Rated force	F_{nom}	**kN**	0.02	0.05	0.1	0.2	0.5	1	2	5	10	20	50
		kg	2	5	10	20	50	100	200	500	1,000	2,000	5,000
Accuracy and stability													
Relative linearity error Tension force Tension and compression force	d_{lin}	**x%F_{nom}**	 0.1 0.2										
Relative creep, 30 min.		**x%F_{nom}**	⩽ ±0.06										
Temperature effect on zero signal	TK_0	**%/10 K**	⩽ ±0.12										
Temperature effect on characteristic value	TK_C	**%/10 K**	⩽ ±0.04										
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**	< 0.25										
Material			Stainless steel, up to 1 kN aluminium										
Temperature ranges													
Rated temperature range	$B_{T, nom}$	**°C**	0...60 (up to1 kN) -10...70 (from 2 kN)										
Operating temperature range	$B_{T, G}$	**°C**	-10...70 (up to 1 kN) -30...80 (from 2 kN)										
Storage temperature	$B_{T, S}$	**°C**	-30...95 (up to 1 kN) -50...95 (from 2 kN)										
Reference temperature	T_{ref}	**°C**	23										
Electrical characteristics													
Output signal (rated output)	C_{nom}	**mV/V**	2 (1 mV/V with 0.02 kN)										
Relative error of characteristic value	d_C	**%**	0.08										
Input-/output resistance	R_e/R_a	Ω	350										
Insulation resistance	R_{is}	**GΩ**	> 2										
Option		**mA** **V**	Cable amplifier 0(4)...20 DC 0...10										
Rated range of excitation voltage	$B_{U, nom}$	**V**	DC 2...12 (max. 15) for mV/V										
Supply voltage		**V**	DC 12...28 (optional for cable amplifier mA/V)										
Electrical connection			Cable 3 m, 4-wire										
General data													
Protection (acc. to EN/IEC 60529)			IP60 (up to 1 kN aluminium) IP67 (from 2 kN stainless steel)										
Calibration control			Optional 100 % signal										
Mounting equipment			Optional for tension or compression forces										
Weight (incl. cable)		**kg**	0.25 (0.02 up to 0.05 kN) 0.03 (0.1 up to 1 kN) 0.57 (2 up to 5 kN) 0.65 (10 kN) 1.45 (20 kN) 1.5 (50 kN)										

Dimensions in mm

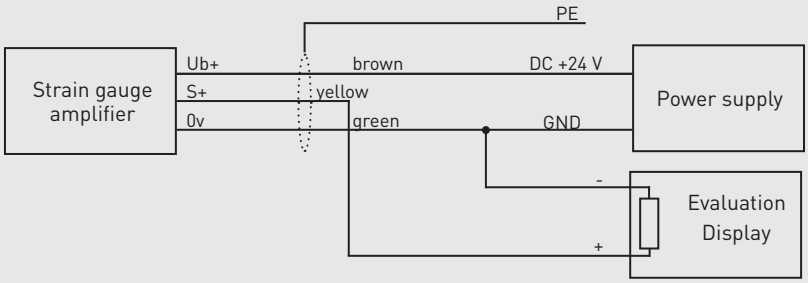


Rated force kN	Dimensions in mm					
	A	B	C	D	E	H
0.02/0.05/0.1/0.2/0.5/1/2/5/10	50	M12	20	18	75	37.5
20/50	65	M24x2	39.5	22	85	42.5

Pin assignment

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

Pin assignment for cable amplifier



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