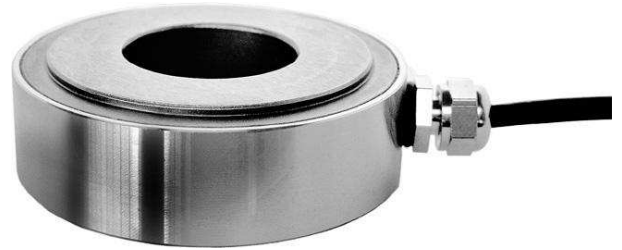
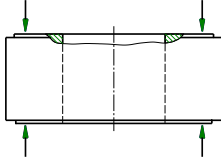


Ring force transducer for bold forces



Description

Designed with small external dimensions these load cells can be used in a wide range of industrial and laboratory applications. They are constructed to measure preload forces with an accuracy of $\pm 3\%$ with a linearity range of $\pm 1\%$ to $\pm 3\%$.

Because of the small design with a low constructional depth it is needed to pay attention to the sensitivity of the force transducer to changes of the mounting position and the load transmission. Changes in those can lead to a deviation of more than 30% of the output signal while the linearity does not change. To avoid this it is needed to adjust the electronics after the mounting the force transducer.

For the use in variable mounting positions it might be more suitable to make use of a larger force transducer or a force transducer with a different geometry, for example the F6213 models or a force transducer with ball scraper like the F1210 series.

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 load cells are to be mounted on a plain surface.

Features

- for compression and prestress
- force measurements
- 2 adapter disks included
- compact and small dimensions
- simple installation
- very low installation height
- protection class IP 65
- accuracy 1% or 3% of full scale value

Measuring ranges

- 15 kN ... 500 kN

Applications

- Measuring of pretensioning forces
- Plant engineering
- Screw and pin assembly
- Cutting tools
- Measurement and inspection equipment
- Test setups

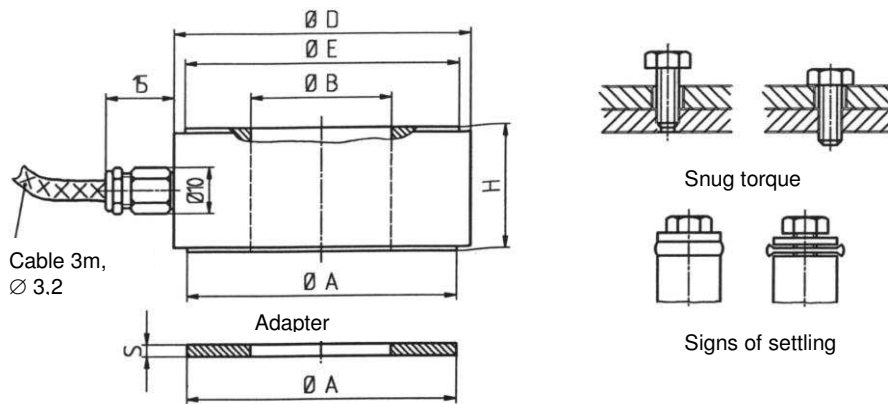
Model: F6210

Technical data

Model	F6210
Nominal load F_{nom} in kN	15, 30, 60, 80, 120, 160, 350, 500
Diameter of thread	M6, M8, M10, M12, M16, M20, M24, M30
Accuracy class with compression force measurement	1% of F.S.
Accuracy class with pretensioning force measuring	3% of F.S.
Limit load	150% F_{nom}
Ultimate load	> 300% F_{nom}
Combined error	$\pm 0.1\%$ of F.S. with compression force measurement in pretensioning force measuring 3%
Max. dynamic load	$\pm 70\%$ F_{nom} acc. to DIN 50100
Creep, 30 min. at F_{nom}	$\leq \pm 0.1\%$ of F.S.
Nominal deflection	<0.1 mm
Nominal temperature range	5 ... +55°C
Service temperature range	-20 ... +70°C
Storage temperature range	-30 ... +80°C
Reference temperature	23°C
Temperature influence -span -zero	$\leq \pm 0.3\%$ of F.S. / 10K $\leq \pm 0.3\%$ of F.S. / 10K
Protection type (acc. to EN 60529/IEC 529)	IP 65
Analogue output - Output signal - Bridge resistance - Option - Excitation voltage - Electrical connection	0.8 ... 1.2 mV/V 350 Ω Cable integrated amplifier 0 (4) ... 20 mA, 0 ... 10 V DC 2 ... 8 V (max. 8 V) 12 ... 28 V DC for cable integrated amplifier Cable 3 m
Material of measuring device	Stainless steel
Weight (kN) - 15 - 30 - 60 - 80 - 120 - 160 - 350 - 500	0,05 kg 0,06 kg 0,07 kg 0,08 kg 0,1 kg 0,12 kg 0,5 kg

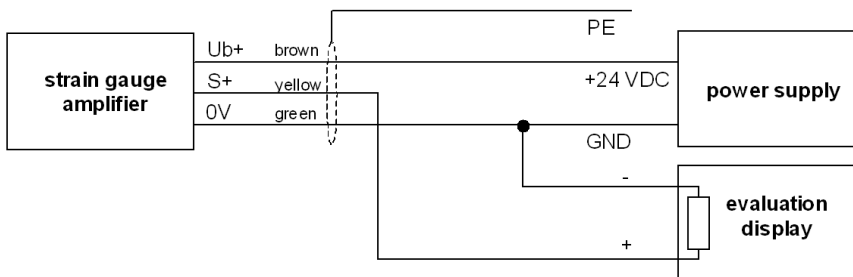
of F.S. = full scale value

Dimensions



Nominal load [kN]	Dimensions in [mm]						
	for screws	ØA	ØB	ØD	ØE	H	S
15	M 6	10.5	6.3	18	11	12	2
30	M 8	15	8.3	22	16	12	2
60	M 10	17	10.3	24	17.8	12	2
80	M 12	22.5	12.3	28	22.5	15	2.5
120	M 16	27.6	16.3	32	28	15	2.5
160	M 20	37.5	20.3	46	38	15	3
350	M 24	47	24.5	54	48	22	3
500	M 30	59	30.8	65	60	27	3

Electr. connection	
Supply. (-)	green
Supply (+)	brown
Sign. (+)	yellow
Sign. (-)	white
Control	grey
Screen	Screen



Pin assignment for cable integrated amplifier