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Shackle load cell
With thin-film technology 0...7 t up to 0...15 t
Model F5302

Applications

- Lifting and weighing

Special features

- Measurement ranges 0...7,5 t, 0...10 t, 0...15 t
- Measurement of dynamic or static tension ropes
- Suitable for retrofitting, easy to install
- Integrated amplifier
- High shock and vibration resistance
- Protection class IP67

Description

Shackle load cells are designed for lifting and weighing in rugged or harsh environments. They provide a simple and reliable method of measuring a wide range of weights and loads. They consist of a shackle and a load pin.

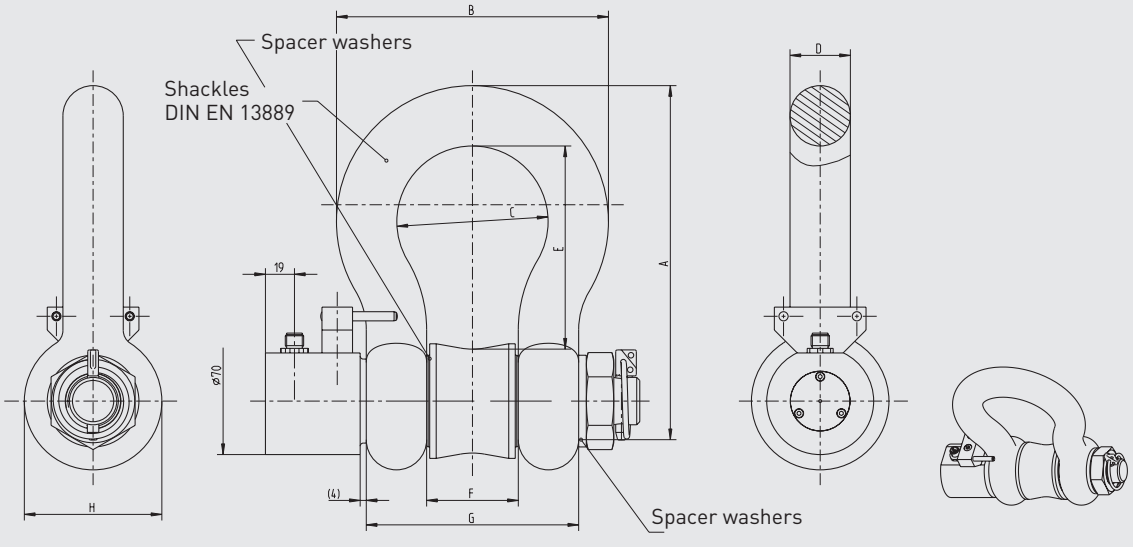
They are easy to install because use don't differ from standard shakles. The dimensions of the shackle load cells correspond to the standard shackle sizes.

The load cells F5302 are made of high-strength, corrosion-resistant stainless steel 1.4542, which is particularly suitable for their application areas. The standard active current and voltage outputs are available as output signals (4...20 mA / 0...10 V).

Specifications in accordance with VDI/VDE/DKD 2638

Model series	Symbol	Unit	F5302		
Measurement range					
Nominal load	F_{nom}	**t**	7.5	10	15
Accuracy and stability					
Relative linearity error	d_{lin}	**x%F_{nom}**	⩽±1		
Relative reversibility	**v**	**x%F_{nom}**	⩽±0.2		
Relative repeatability error in unchanged mounting position	b_{rg}	**x%F_{nom}**	0.05		
Permissible oscillation stress acc. to DIN 50100	F_{rb}	**x%F_{nom}**	± 80		
Relative creep, 30 at min.		**x%F_{nom}**	⩽±0.1		
Temperature effect on zero signal	TK_0	**%/10 K**	⩽ ±0.2		
Temperature effect on characteristic value	TK_C	**%/10 K**	⩽ ±0.2		
Mechanical characteristics					
Force limit	F_L	**x%F_{nom}**	150		
Breaking force	F_B	**x%F_{nom}**	> 300		
Material			Stainless steel 1.4542		
Temperature ranges					
Rated temperature range	$B_{T, nom}$	**°C**	-20...80		
Operating temperature range	$B_{T, G}$	**°C**	-40...80		
Storage temperature range	$B_{T, S}$	**°C**	-40...85		
Electrical characteristics					
Output signal (rated output)	C_{nom}	**mA** **V**	4...20 - 2-wire DC 0...10 - 3-wire		
Current consumption		**mA**	Current output 4...20: signal current, voltage output: approx. 8		
Supply voltage		**V**	DC 10...30 for current output, DC 14...30 for voltage output		
Burden		**Ohm**	⩽ (UB–6 V)/0.024 A for current output, > 10 kΩ for voltage output		
Response time		**ms**	⩽ 1 (within 10...90 % F_{nom})		
Electrical connection			Circular connector M12 x 1, 4-pin		
General data					
Protection (acc. to EN/IEC 60529)			IP67		
Noise emission			In accordance with DIN EN 61326		
Noise immunity			In accordance with DIN EN 61326		

Dimensions in mm

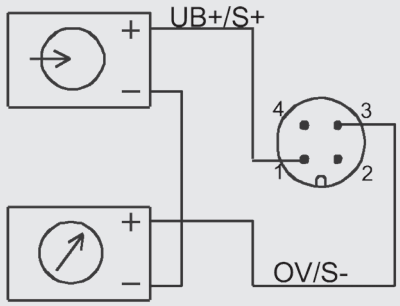


Nominal load in t	Dimensions in mm								
	Shakle carrying capacity (t)	A	B-max	C	D-max	E	F	G-max	H-max
7.5	13.5	240	170	92 ± 5	36.5	120 ± 5	57 ± 4	134	80
10	17	262	183	99 ± 5	39.5	134 ± 5	60 ± 4	143	89
15	25	314	226	126 ± 5	47.0	170 ± 5	74 ± 4	172	104

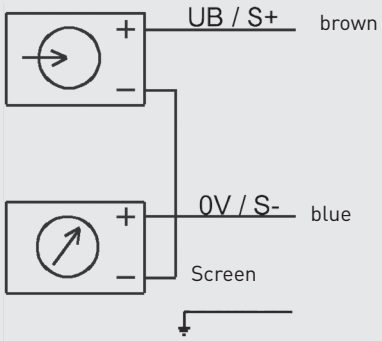
Pin assigment

Output signal 4...20 mA, 2-wire

Circular connector M12 x 1, 4-pin

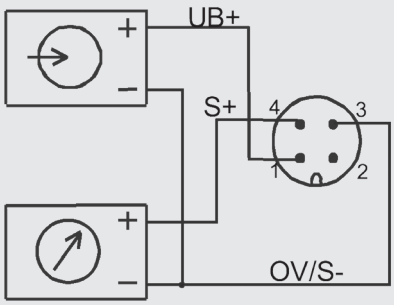


Cable outlet

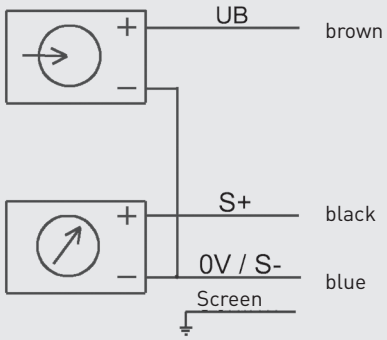


Output signal DC 0...10 V, 3-wire

Circular connector M12 x 1, 4-pin



Cable outlet



Pin configuration of connector M12 x 1, 4-pin/Open cable outlet of the standard connection cable (STL 288, black)

Analogue output	4 ... 20 mA 2-wire		0 ... 10 V 3-wire	
Electrial connection	**Pin**	**Cable outlet**	**Pin**	**Cable outlet**
Supply: UB+	1	Brown	1	Brown
Supply: 0V	3	Blue	3	Blue
Signal: S+	1	Brown	4	Black
Signal: S-	3	Blue	3	Blue
Shield ⏚	Thread M 12x1	Screen	Thread M 12x1	Screen

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