

Tension/compression force transducer

S-Type up to 50 kN

Model F2802

WIKA data sheet FO 51.48

Applications

- Tension and compression force testing
- Vessel weighing
- Load monitoring in industrial plants

Special features

- Measuring ranges 0 ... 0,5 kN to 0 ... 50 kN
[0 ... 112 lbf to 0 ... 11,241 lbf]
[0 ... 110 lbs to 0 ... 11,023 lbs]
- Corrosion-resistant stainless steel or steel design
- Ingress protection IP65 ($< 5 \text{ kN} / < 1,124 \text{ lbf} / < 1,102 \text{ lbs}$)
- Ingress protection IP67 ($\geq 5 \text{ kN} / \geq 1,124 \text{ lbf} / \geq 1,102 \text{ lbs}$)



Tension/compression force transducer, model F2802

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Description

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

Force transducers of the model F2802 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.

Specifications in accordance with VDI/VDE/DKD 2638

Model F2802								
Rated force F _{nom} kN	0.5	1	2	5	10	20	30	50
Rated force F _{nom} lbf	112	225	450	1,124	2,248	4,496	6,744	11,241
Rated load F _{nom} kg	50	100	200	500	1,000	2,000	3,000	5,000
Rated load F _{nom} lbs	110	221	441	1,102	2,205	4,409	6,614	11,023
Relative linearity error din _{lin} ¹⁾								
Steel	±0.03 % F _{nom}							
Stainless steel	±0.05 % F _{nom}							
Relative creep, 30 min.								
Steel	±0.03 % F _{nom}							
Stainless steel	±0.05 % F _{nom}							
Relative reversibility v								
Steel	±0.03 % F _{nom}							
Stainless steel	±0.05 % F _{nom}							
Relative repetability error in unchanged mounting position b _{rg}								
Steel	±0.03 % F _{nom}							
Stainless steel	±0.05 % F _{nom}							
Relative deviation of zero signal d _{S,0}	±2 % F _{nom}							
Temperature effect on zero signal TK ₀	≤ ±0.025 %/10 K							
Temperature effect on characteristic value TK _C	≤ ±0.025 %/10 K							
Force limit F _L	150 % F _{nom}							
Breaking force F _B	200 % F _{nom}							
Material of measuring body	■ Stainless steel ■ Alloy steel							
Rated temperature range B _{T, nom}	-10 ... + 40 °C [14 ... 104 °F]							
Operating temperature range B _{T, G}	-20 ...+ 80 °C [-4 ... 176 °F]							
Input resistance R _e	385 ± 30 Ω							
Output resistance R _a	350 ± 5 Ω							
Insulation resistance R _{is}	≥ 5,000 MΩ/DC 100 V							
Output signal (rated output) C _{nom}	2.0 ± 0.001 mV/V							
Electrical connection	Cable Ø 5 x 3,000 mm [Ø 0.2 x 118.11 in]							
Supply voltage UB	■ DC 5 ... 10 V ■ DC 12 ... 28 V integrated or cable amplifier ■ 0(4) ... 20 mA ■ DC 0 ... 10 V ■ DC 0 ... 5 V							
Protection (acc. to IEC/EN 60529)								
< 5 kN [$< 1,124$ lbf / $< 1,102$ lbs]	IP65							
≥ 5 kN [$\geq 1,124$ lbf / $\geq 1,102$ lbs]	IP67							
Rated force F _{nom} in / Weight in kg [lbs]								
0.5 kN (112 lbf / 110 lbs)	0,3 (0,66)							
1 kN; 2 kN; 5 kN; 10 kN (225 lbf; 450 lbf; 1.124 lbf; 2.248 lbf / 221 lbs; 441 lbs, 1.102 lbs; 2.205 lbs)	0,5 (1,1)							
20 kN; 30 kN (4.496 lbf; 6.744 lbf / 4.409 lbs; 6.614 lbs)	1,3 (2,87)							
50 kN (11.241 lbf / 11.023 lbs)	1,4 (3,09)							

1) Relative linearity error is specified in chapter 3.2.6 according to VDI/VDE/DKD 2638

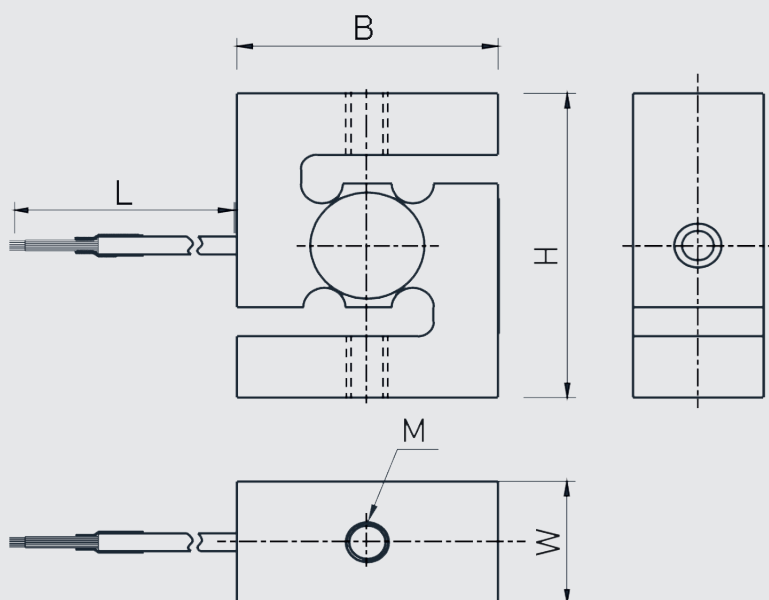
Approvals

Logo	Description	Region
	EU declaration of conformity RoHS directive	European Union

Optional approvals

Logo	Description	Region
	EAC RoHS directive	Eurasian Economic Community

Dimensions in mm

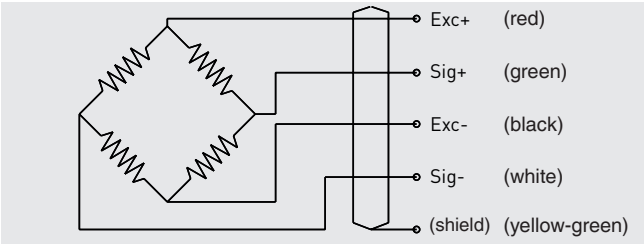


Rated force in kN	Dimensions in mm				
	B	H	W	M	L
0.5	50.8	63.5	25.4	M8	3,000
1 / 2	50.8	76.2	25.4	M12	3,000
5 / 10	57.2	87.3	31	M12	3,000
20 / 30	68.8	100	36.5	M24 x 2	3,000
50	76.2	114.3	36.5	M24 x 2	3,000

Rated force in lbf	Rated force in lbs	Dimensions in inch				
		B	H	W	M	L
112	110	2	2.5	1	M8	118.11
225 / 450	221 / 441	2	3	1	M12	118.11
1,124 / 2,248	1,102 / 2,205	2.25	3.44	1.22	M12	118.11
4,496 / 6,744	4,409 / 6,614	2.71	3.94	1.44	M24 x 2	118.11
11,241	11,023	3	4.50	1.44	M24 x 2	118.11

Pin assignment

Electrical connection		
Supply voltage +	Exc+	Red
Supply voltage -	Exc-	Black
Signal +	Sig+	Green
Signal -	Sig-	White
Shield $\oplus$	Shield	Yellow-green



Note

In order to avoid overloading, it is necessary 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.

Ordering information

Model / Rated force / Relative linearity error / Temperature range / Output signal / Electrical connection / Approvals / Optional approvals, certificates / Pin assignment / Accessories

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