

Miniature tension/compression force transducer

Up to 2,000 N

Model F2808

WIKA data sheet FO 51.68

Applications

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

Special features

- Measuring ranges 0 ... 5 N to 0 ... 2,000 N
[0 ... 1 lbf up to 0 ... 450 lbf]
- Overload protection
- Ultracompact version
- Material, stainless steel



Miniature tension/compression force transducer,
model F2808

Description

The miniature tension/compression force transducers are suitable for static and dynamic measuring requirements in the direct force flow. They serve for determining tension and compression forces in diverse application areas.

These force transducers are used in testing technology and also in numerous industrial applications where simple installation and an inexpensive price play a key role.

Specifications per VDI/VDE/DKD 2638

Model F2808	
Rated force F_{nom} N	5 / 10 / 20 / 50 / 100 / 200 / 250 / 300 / 500 / 1,000 / 2,000
Rated force F_{nom} lbf	1 / 2 / 4.5 / 11 / 22.48 / 45 / 56 / 67 / 112 / 225 / 450
Relative linearity error $d_{lin}^{1)}$	$\pm 0.15 \% F_{nom}$
Relative creep, 30 min.	$\pm 0.1 \% F_{nom}$
Relative reversibility error v	$\pm 0.1 \% F_{nom}$
Relative repeatability error in unchanged mounting position b_{rg}	$\pm 0.1 \% F_{nom}$
Relative deviation of zero signal $d_{s,0}$	$\pm 2 \% F_{nom}$
Force limit F_L	150 % F_{nom}
Breaking force F_B	300 % F_{nom}
Material of the measuring body	Stainless 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	380 \pm 30 Ω
Output resistance R_a	380 \pm 30 Ω
Insulation resistance R_{is}	$\geq 5,000 \text{ M}\Omega/\text{DC } 100 \text{ V}$
Output signal (rated characteristic value) C_{nom}	
5 N [1 lbf]	1.5 \pm 0.15 mV/V
$\geq 10 \text{ N } [\geq 2 \text{ lbf}]$	2.0 \pm 0.2 mV/V
Electrical connection	
M3, M4	Cable $\varnothing 2 \times 3,000 \text{ mm } [\varnothing 0,08 \times 118,11 \text{ in}]$
M8	Cable $\varnothing 3 \times 3,000 \text{ mm } [\varnothing 0,12 \times 118,11 \text{ in}]$
Supply voltage U_B	DC 5 V (max. 7 V)
Ingress protection (per IEC/EN 60529)	IP66
Weight in kg [lbs]	0.1 [0.22]

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

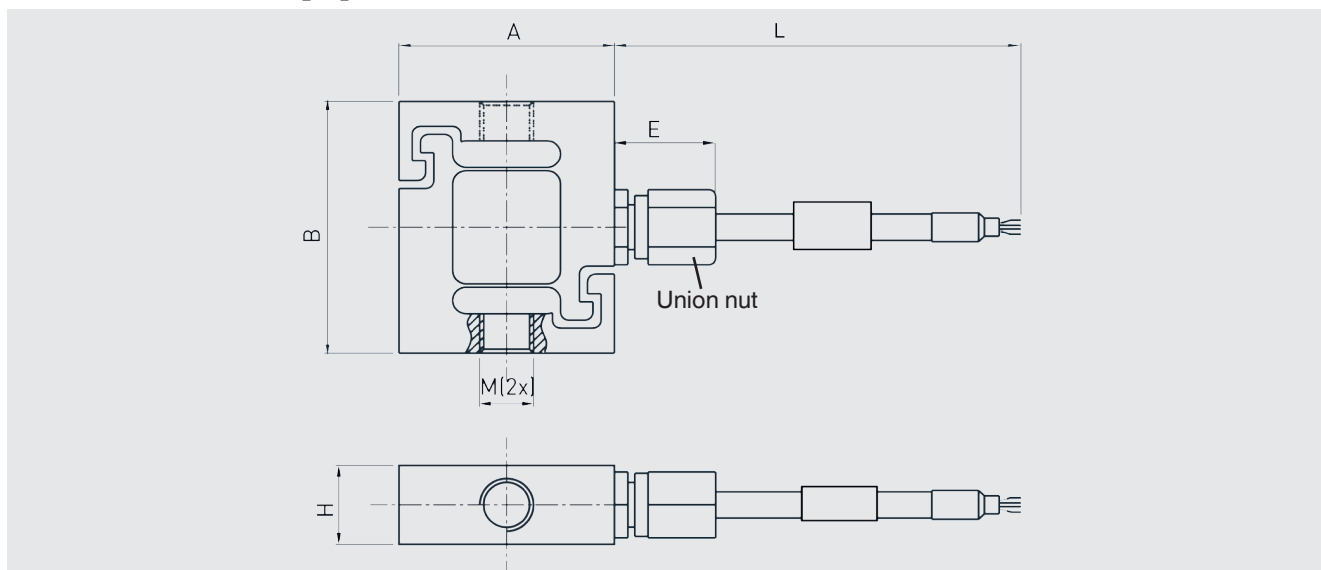
Approvals

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 [in]

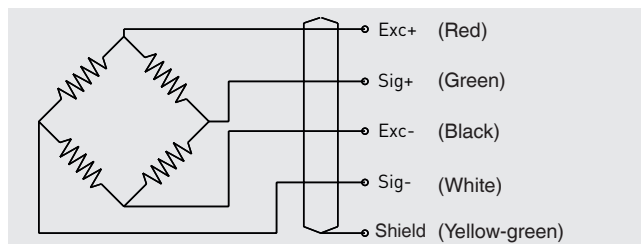


Rated force in N	Dimensions in mm							
	A	B	E	H	L	M	Ø cable	Union nut
5 / 10 / 20 / 50	16	19.1	7.5	6	3,000	M3	2	M4
100 / 200 / 250 / 300 / 500	16	19.1	13	6	3,000	M4	2	M4
250 / 300 / 500 / 1,000 / 2,000	26	40	13	14	3,000	M8	3	M6

Rated force in lbf	Dimensions in inch							
	A	B	E	H	L	M	Ø cable	Union nut
1 / 2 / 4.5 / 11	0.63	0.75	0.3	0.24	118.11	M3	0.08	M4
22.48 / 45 / 56 / 67 / 112	0.63	0.75	0.51	0.24	118.11	M4	0.08	M4
56 / 67 / 112 / 225 / 450	1.02	1.57	0.51	0.55	118.11	M8	0.12	M6

Pin assignment

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



Note

To avoid overloading, it is necessary to connect the force transducer electrically during assembly and to monitor the measured value. The measuring force must be introduced through the centre and free of transverse force. For the installation of the force transducer the support surface must be flat.

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