

Compression force transducer Standard version from 1 t Model F1848

WIKA data sheet FO 51.76

Applications

- Aerial platforms
- Measuring and control systems
- Safety applications

Special features

- Measuring range from 1 t
- Relative linearity error $\pm 0.15\% F_{nom}$
- Redundant output signal for safety applications
- Low installation height, easy to install
- Ingress protection: IP67



Compression force transducer standard, model F1848

Description

The force transducer model F1848 is used because of its redundant output signal very often for monitoring used by safety applications. The spherical calotte (spherical load application button) allows for a very simple force introduction.

Compression force transducers are used for the determination of compression forces in a wide variety of applications and are suitable for static and dynamic measuring requirements.

Data sheet for similar products:

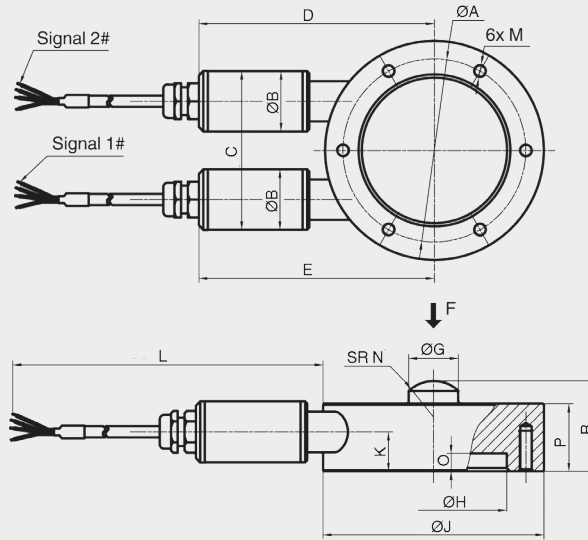
Compression force transducer, Standard version to 300 kN, model F1811, data sheet FO 51.56
 Compression force transducer, Miniature design to 1,000 N, model F1814, data sheet FO 51.57
 Compression force transducer, Miniature design to 5 kN, model F1818, data sheet FO 51.58
 Compression force transducer, Standard version to 100 kN, model F1821, data sheet FO 51.59

Specifications per VDI/VDE/DKD 2638

Model F1848	
Rated load F_{nom} t / [lbs]	from 1 / [2,205 lbs]
Relative linearity error d_{lin}	$\pm 0.15 \% F_{nom}$
Relative creep, 30 min. at F_{nom}	$\pm 0.1 \% F_{nom}$
Relative reversibility error v	$\pm 0.1 \% F_{nom}$
Relative span in unchanged mounting situation b_{rg}	$\pm 0.05 \% F_{nom}$
Temperature effect on the zero signal TK_0	$\pm 0.1 \% F_{nom}/10 K$
Temperature effect on the characteristic value TK_C	$\pm 0.1 \% F_{nom}/10 K$
Limit force F_L	
for 1 t / [2,205 lbs]	200 % F_{nom}
from 2 t / [4,409 lbs]	150 % F_{nom}
Breaking force F_B	
for 1 t / [2,205 lbs]	250 % F_{nom}
from 2 t / [4,409 lbs]	200 % F_{nom}
Material of the measuring body	Stainless steel
Rated temperature range $B_{T, nom}$	-10 ... +40 °C [-50 ... +104 F]
Service temperature range $B_{T, G}$	-20 ... +80 °C [-68 ... +176 F]
Output signal (rated characteristic value) C_{nom}	4 ... 20 mA, 3-wire 2 x 4 ... 20 mA, redundant Redundant, in opposite directions 4 ... 20 mA / 20 ... 4 mA
Electrical connection	
Standard	Cable output, free wire Round connector M12 x 1, 4- or 5-pin
Option	Customer specific connector
Voltage supply	DC 10 ... 30 V
Burden	\leq (auxiliary power – 10 V) / 0.024 A for current output
Ingress protection (per IEC/EN 60529)	IP67
Weight	1 kg [2.2 lbs]

Dimensions in mm [in]

Version in redundant form, with a simple output signal with just one electronics housing.



SR = spherical radius

Dimensions in mm [in]

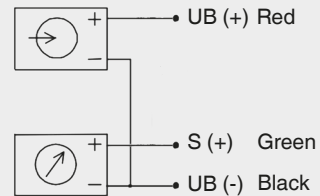
ØA	ØB	≤ C	≤ D	≤ E	ØG	ØH	ØJ	K	L	M	SR N	O	P	R
82 ±0.1 [Ø3.23 ±0.004]	27 [1.06]	71 [2.79]	105.5 [4.15]	105.5 [4.15]	22 [0.87]	65 [2.56]	98 [3.86]	17.5 [0.69]	3.000 ±100 [118 ±3.94]	M6 x 18 (EQS)	16 [0.63]	8 [0.31]	30 [1.18]	40 [1.57]

Pin assignment

Cable output

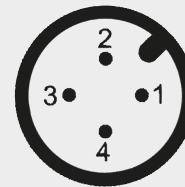
Electrical connection	
Conductor	Cable Colour
UB (+)	Red
UB (-)	Black
S (+)	Green
Shield ⊕	Yellow-green

Output signal 4 ... 20 mA, 3-wire



Pin assignment, analogue output, redundant, opposing

Electrical connection, M12 x 1, 4-pin		
Conductor	4 ... 20 mA / 20 ... 4 mA (redundant)	
	Connector 1	Connector 2
UB (+)	1	1
UB (-)	3	3
S (+): Kanal 1	4	-
S (+): Kanal 2	-	4
Shield ⊕	Case	Case



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