

Hydraulic compression force transducer

Up to 60 kN [13,488 lbf]

Model F1106

WIKA data sheet FO 52.13

EAC

Applications

- Equipment manufacturing
- Construction of jigs and fixtures
- Special machine building
- Measuring and control systems

Special features

- Measuring ranges 0 ... 160 N [0 ... 36 lbf] to 0 ... 60 kN [0 ... 13,488 lbf]
- Relative linearity error $\leq \pm 1.0\%$... $\leq \pm 1.6\%$ F_{nom} with analogue pressure gauge, $\leq \pm 0.5\%$ F_{nom} with digital pressure gauge or pressure sensor
- Piston stroke ≤ 0.5 mm [0.02 in]
- Operates without supply voltage
- 5-year leak-tightness warranty



Hydraulic compression force transducer, model F1106

Standard articles



Description



The compact hydraulic compression force transducer is available from a rated load of 160 N to 60 kN. Hydraulic force measurement is a simple way to capture and display the forces occurring in various applications. Applications for hydraulic force measurement can be found in equipment manufacturing, in device and special machine building and also with measuring and control systems.

The force is measured using the principle of hydraulics: The force acting on a piston leads to a pressure increase that can be visualised on a connected display instrument. The scale of the display instrument can be defined in various units, e.g. N, kN, kg, t.

Specifications per VDI/VDE/DKD 2638

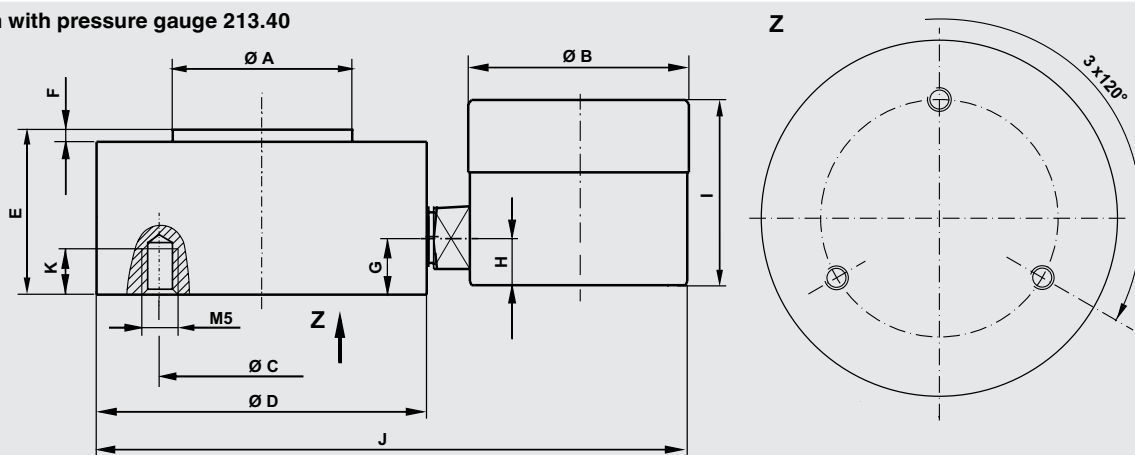
Model F1106	
Rated force F_{nom}	0 ... 160 N to 0 ... 60 kN [0 ... 36 lbf to 0 ... 13,489 lbf]
Nominal size	NS 10
Display	
Standard	Pressure gauge 213.40 (NS 63)
Option	Pressure gauge with contacts PSG23
	Digital pressure gauge DG-10
	Pressure sensor (on request)
Relative linearity error d_{lin}	
Standard	$\leq \pm 1.6 \% F_{nom}$ (analogue display)
Option	$\leq \pm 0.5 \% F_{nom}$ (pressure sensor/digital pressure gauge)
Limit force F_L	100 % F_{nom}
Breaking force F_B	> 130 % F_{nom}
Rated displacement s_{nom}	< 0.5 mm [< 0.02 in]
Rated temperature range $B_{T, nom}$	-25 ... +50 °C [-13 ... 122 °F]
Ingress protection (per EN/IEC 60529)	IP65
Case	Stainless steel
Piston	Stainless steel
Mounting type	
Standard	Adapter L = 50 mm [1.96 in]
Option	Direct mounting
	Capillary
	Measuring hose for "separation without any losses"
Fill fluid	Glycerine 70% / water 30 %
Assembly aid	Threaded holes on the bottom of the case
Options	Mounting flange
	Spacer disc
Weight	
with pressure gauge 213.40 (NS 63)	1.2 kg [2.65 lbs]
with digital pressure gauge DG-10	1.4 kg [3.1 lbs]

Approvals

Logo	Description	Region
	EU declaration of conformity	European Union
	EMV-directive	
	RoHS-directive	
	EAC (option)	Eurasian Economic Community
	EMV-directive	

Dimensions in mm [in]

Version with pressure gauge 213.40



Dimensions in mm [in]

ØA	ØB	ØC	ØD	E	F	G	H	I	J	K
45 [1.77]	63 [2.68]	50 [1.96]	75 [2.95]	30 [1.18]	2 [0.08]	14 [0.55]	12.5 [0.49]	34 [1.34]	150 [5.9]	8 [0.03]

Version		Pressure gauge		Digital pressure gauge		Options	
Rated force		System pressure	213.40	DG-10	Measuring hose DN 2 [max. L ¹]	Capillary [max. L ¹]	
N/kN [lbf]		bar			m	m	
160 [36]	N	1.6	■ ¹⁾	-	-	-	
250 [56]	[lbf]	2.5	■ ¹⁾	-	-	-	
400 [90]		4	■ ¹⁾	-	-	-	1.0
600 [135]		6	■	-	-	0.5	1.0
1 [225]	kN	10	■	-	-	1.0	2.0
1.6 [359,7]	[lbf]	16	■	-	-	1.0	2.0
2 [450]		20	-	■ ²⁾	-	1.5	2.0
2.5 [562]		25	■	-	-	1.5	2.0
4 [900]		40	■	-	-	1.5	2.0
5 [1,124]		50	-	■	-	2.0	2.0
6 [1,348.85]		60	■	-	-	2.0	2.0
10 [2,248]		100	■	■	-	2.0	2.0
16 [3,597]		160	■	■	-	2.0	Other lengths on request
25 [5,620]		250	■	■	-	3.2	
32 [7,194]		315	■	-	-	3.2	
40 [8,992]		400	■	■	-	3.2	
60 [13,488]		600	■	■	-	3.2	

Other rated loads and versions on request

■ = possible selection

¹⁾ For a rated force below 500 N, the relative linearity error is $\leq \pm 1.6\%$ F_{nom} for all connected measuring instruments.

²⁾ Relative linearity error $\leq \pm 1.0\%$ F_{nom}

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