

Hydraulic ring force transducer

Compact version to 120 kN

Model F6116

WIKA data sheet FO 52.18

EAC

Applications

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

Special features

- Measuring ranges 0 ... 320 N to 0 ... 120 kN
[0 ... 72 lbf to 0 ... 26.977 lbf]
- Relative linearity error
≤ ±1.0 % ... ≤ ±1.6 % F_{nom} with analogue pressure gauge,
±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 ring force transducer, model F6116

Description

The model F6116 compact hydraulic ring force transducer enables the simple and economical measurement and display of forces. Its measuring ranges from 320 N to 120 kN [0 ... 72 lbf to 0 ... 26.977 lbf]. Since it is independent of any power source, this type of measuring system offers ideal operating conditions for different fields of application.

Hydraulic force measurement makes use of a piston-case combination with different seals as a sensor unit. The force acting is the product of the area and the pressure. For the display of the pressure, either pressure gauges, pressure sensors or pressure measuring instruments with contact devices can be used. The scale of the display instrument can be defined in various units, e.g. in N, kN, kg, t.



Leak-tightness warranty

The warranty on leak tightness of the hydraulic force measuring unit was extended to 5 years. The prerequisite for this is of course the intended use of the force measuring unit. A force transducer that starts to leak within this period will be repaired free of charge. In this way, we are underlining the quality of our hydraulic force transducers and our confidence in our own technology.

Specifications per VDI/VDE/DKD 2638

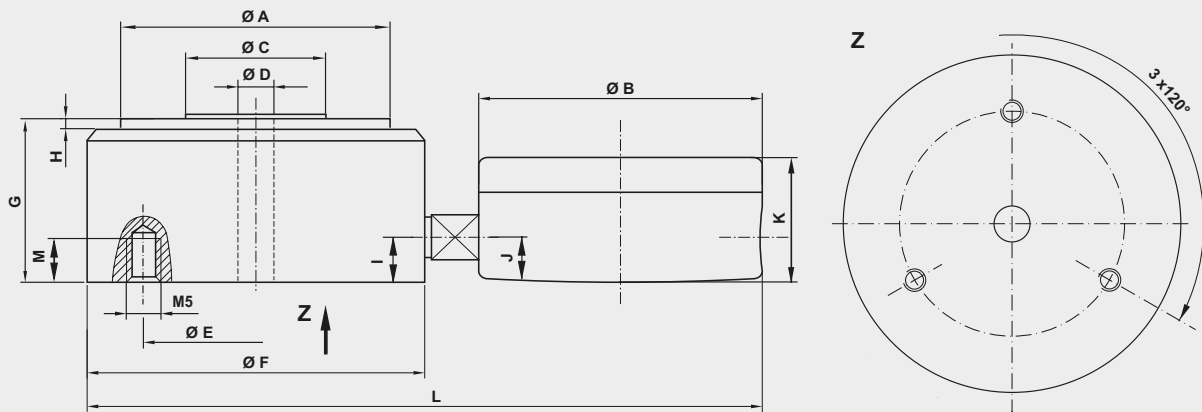
Model F6116	
Rated force F_{nom}	0 ... 320 N to 0 ... 120 kN [0 ... 72 lbf to 0 ... 26.977 lbf]
Nominal size	NS 20 ring
Display	<ul style="list-style-type: none"> ■ Pressure gauge, model 213.40 (NS 63) ■ Pressure gauge, model PGS23 ■ Digital pressure gauge, model DG-10 ■ Pressure sensor (on request)
Relative linearity error d_{lin}	
Pressure gauge	$\leq \pm 1.6 \% F_{nom}$
Pressure sensor/digital pressure gauge	$\leq \pm 0.5 \% F_{nom}$
Limit force F_L	100 % F_{nom}
Breaking force F_B	$> 130 \% F_{nom}$
Rated displacement s_{nom}	$< 0.5 \text{ mm}$ [$< 0.02 \text{ in}$]
Rated temperature range $B_{T, nom}$	$-25 \dots +50 \text{ }^\circ\text{C}$ [$-13 \dots 122 \text{ }^\circ\text{F}$]
Ingress protection (per EN/IEC 60529)	IP65
Case	Stainless steel
Piston	Stainless steel
Mounting type	<ul style="list-style-type: none"> ■ Direct mounting about adapter ■ Capillary ■ Measuring hose for "separation without any loss less connection"
Fill fluid	Glycerine 70 % / water 30 %
Assembly aid	Threaded holes on the bottom of the case
Weight	
with pressure gauge, model 213.40 (NS 63)	2.1 kg [4.63 lbs]
with digital pressure gauge, model DG-10	2.3 kg [5.1 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 Manometer 213.40



Dimensions in mm [in]

ØA	ØB	ØC	ØD	ØE	ØF	G	H	I	J	K	L	M
60 [2.36]	63 [2.48]	36 [1.48]	20 [0.79]	70 [2.76]	90 [3.54]	38 [1.5]	3 [0.19]	14 [0.55]	12.5 [0.49]	34 [1.34]	165 [6.5]	8 [0.03]

Version		Pressure gauge	Digital pressure gauge	Options		
Rated force		System pressure	Model 213.40	Model DG-10	Measuring hose DN 2 [max. L]	Capillary [max. L]
N/kN [lbf]		bar			m	m
320 [72]	N [lbf]	1.6	■ 1)	-	-	-
500 [112]		2.5	■	-	-	-
800 [180]		4	■	-	-	1.0
1.2 [270]	kN [lbf]	6	■	-	0.5	1.0
2 [450]		10	■	-	1.0	2.0
3.2 [719]		16	■	-	1.0	2.0
4 [900]		20	■	■ 2)	1.5	2.0
5 [1,124]		25	■	-	1.5	2.0
8 [1,798.5]		40	■	-	1.5	2.0
10 [2,248]		50	■	■	2.0	2.0
12 [2,698]		60	■	-	2.0	2.0
20 [4,496]		100	■	■	2.0	2.0
32 [7,194]		160	■	■	2.0	Other lengths on request
50 [11,240]		250	■	■	3.2	
60 [13,488]		315	■	-	3.2	
80 [17,984]	400	■	■	3.2		
120 [26,977]	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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The specifications given in this document represent the state of engineering at the time of publishing.

We reserve the right to make modifications to the specifications and materials.

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