

Hydraulic ring force transducer

Compact version up to 120 kN

Model F6116



WIKA data sheet FO 52.18

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
- Relative linearity error $\pm 1.0 \dots 1.6 \%$ with analogue pressure gauge, $\pm 0.5 \%$ with digital pressure gauge or pressure sensor¹⁾
- Piston stroke $\leq 0.5 \text{ mm}$
- Operates without supply voltage
- 5-year leak-tightness warranty²⁾



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. 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 years²⁾. A force transducer that starts to leak within this period will be repaired free of charge.

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

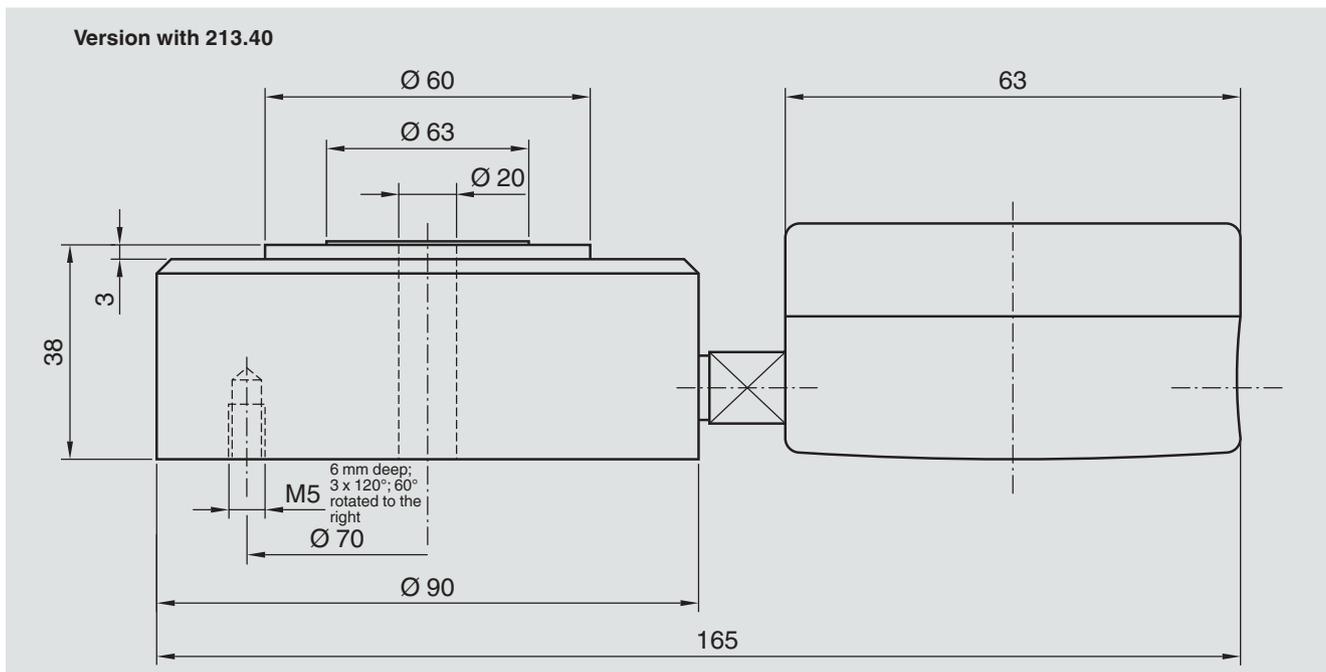
2) Use of the force measuring unit as intended is a prerequisite for the extended 5-year warranty.

Specifications per VDI/VDE/DKD 2638

Model F6116	
Rated force F_{nom}	0 ... 320 N to 0 ... 120 kN
Nominal size	NS 20 ring
Display <ul style="list-style-type: none"> ■ Standard ■ Option 	Pressure gauge 213.40 (NS 63) Digital pressure gauge DG-10 Pressure gauge PSG23.160 (NS 100), optionally with contacts Pressure sensor (on request)
Relative linearity error d_{lin} <ul style="list-style-type: none"> ■ Standard ■ Option 	$\leq \pm 1.6\% F_{nom}$ (analogue display) ¹⁾ $\leq \pm 0.5\% F_{nom}$ (pressure sensor/digital pressure gauge) ¹⁾
Limit force F_L	100 % F_{nom}
Breaking force F_B	> 130 % F_{nom}
Rated displacement s_{nom}	< 0.5 mm
Rated temperature range $B_{T, nom}$	-25 ... +50 °C
Ingress protection (per EN/IEC 60529)	IP65
Case	Stainless steel
Piston	Stainless steel
Mounting type <ul style="list-style-type: none"> ■ Standard ■ Option 	direct Adapter, capillary, measuring hose for "separation without any losses"
Fill fluid	Glycerine 70 %, water 30 %
Assembly aid	Threaded holes on the bottom of the case
Weight in kg <ul style="list-style-type: none"> ■ with pressure gauge 213.40 (NS 63) ■ with digital pressure gauge DG-10 	2.1 2.3

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

Dimensions in mm



The sealed threaded connections of the hydraulic force transducer must not be loosened!
Non-compliant handling invalidates the warranty and a measuring function is no longer assured.

Version		Display		Options		
Rated force		System pressure	213.40	DG-10	Measuring hose DN 2 (max. L)	Capillary (max. L)
N/kN		bar			m	
320	N	1.6	■	-	-	-
500		2.5	■	-	-	-
800		4	■	-	-	1.0
1.2	kN	6	■	-	0.5	1.0
2		10	■	-	1.0	2.0
3.2		16	■	-	1.0	2.0
4		20	■	■ ¹⁾	1.5	2.0
5		25	■	-	1.5	2.0
8		40	■	-	1.5	2.0
10		50	■	■	2.0	2.0
12		60	■	-	2.0	2.0
20		100	■	■	2.0	2.0
32		160	■	■	2.0	4.0
50		250	■	■	3.2	4.0
60		315	■	-	3.2	4.0
80		400	■	■	3.2	6.0
120		600	■	■	3.2	6.0

Other rated loads and versions on request

■ = possible selection

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

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