

Hydraulic compression force transducer

Clamping force test instrument up to 120 kN

Model F1119

WIKA data sheet FO 52.10

Applications

- Force measurement in vices and clamping systems
- 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
- Flattened case for stable measurement
- Relative linearity error $\pm 1.0 \dots 1.6 \% F_{\text{nom}}$ with analogue pressure gauge, $\pm 0.5 \% F_{\text{nom}}$ with digital pressure gauge or pressure sensor¹⁾
- Operates without supply voltage
- 5-year leak-tightness warranty²⁾



Hydraulic compression force transducer, model F1119

Description

The model F1119 (NS 20) hydraulic force transducer enables the simple and economical measurement in vices and display of forces of measuring ranges from 320 N to 120 kN. The flattened case of this compression force transducer enables a stable force measurement.

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.

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.

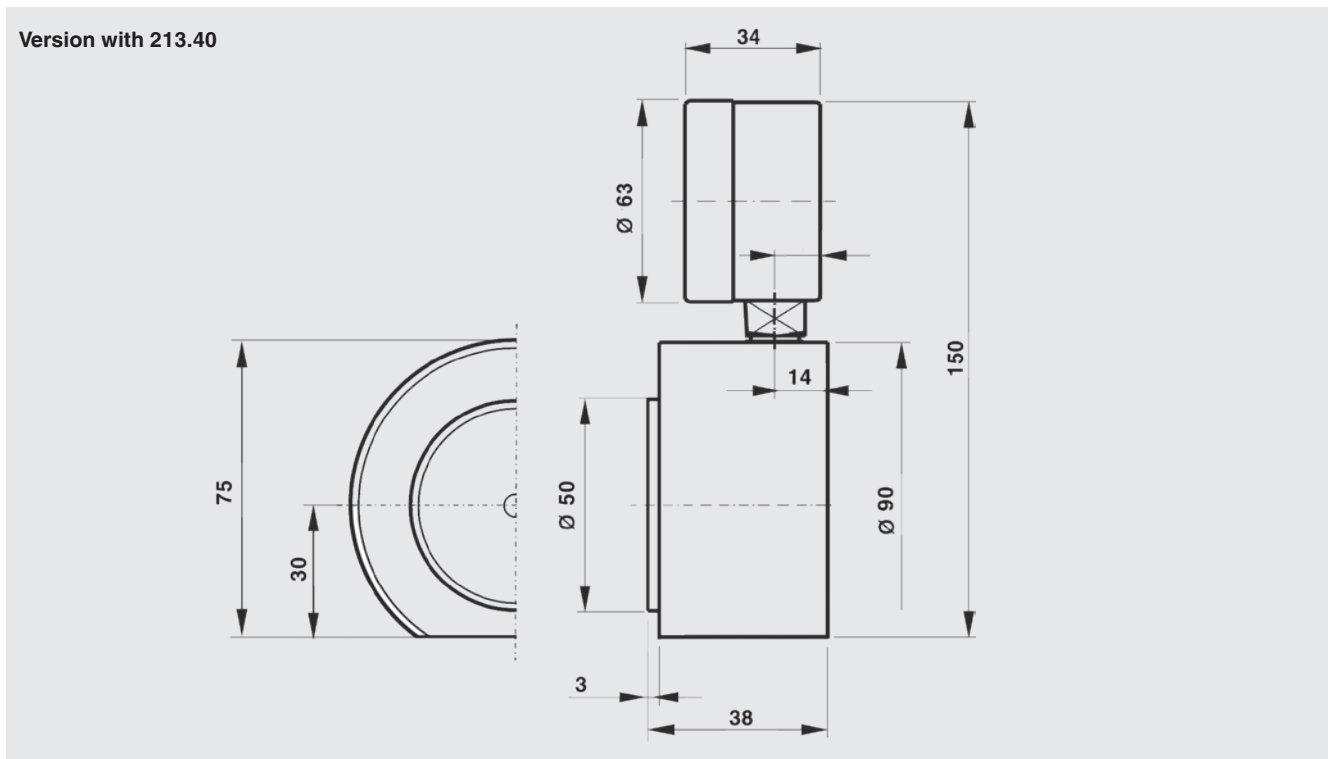
2) Use of the force measuring unit as intended is a prerequisite for the extended 5-year warranty.

Specifications per VDI/VDE/DKD 2638

Model F1119	
Rated force F_{nom}	0 ... 320 N to 0 ... 120 kN
Nominal size	NS 20
Display <ul style="list-style-type: none"> ■ Standard ■ Option 	Pressure gauge 213.40 (NS 63) Digital pressure gauge DG-10 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	IP65 per EN/IEC 60529
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 %
Weight in kg <ul style="list-style-type: none"> ■ with pressure gauge 213.40 (NS 63) ■ with digital pressure gauge DG-10 	1.8 2

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 < ±1.0 % F_{nom}

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