Hydraulic compression force transducer
Clamping force version up to 500 kN
Model F1119, F1136

Applications

- Force measurement in parallel clamps
- Apparatus engineering
- Construction of jigs and fixtures
- Special mechanical engineering
- Test and measurement equipment

Special features

- Measuring ranges 0 ... 320 N up to 0 ... 500 kN
- Flattened housing for stable measuring
- Accuracy ±1.0 ... 1.6 % with analogue pressure gauge, accuracy ±0.5 % with digital pressure gauge or pressure sensor [1)]
- Operates without power supply
- 5 years leak-proofness guarantee [2)]

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Description

Hydraulic force measurement is an easy way to measure and display force in various applications. The flattened housing of this compression force transducer enables a stable measuring in parallel clamps.

The force measurement utilizes the hydraulic principle: The force applied to a piston generates a hydraulic pressure, which is displayed with an indicating device. The scale of the display device can show various units e. g. N, kN, kg, t.

Leak-proofness guarantee
The leak-proofness guarantee is prolonged to five years[2)]. In the unlikely event of a leakage the load cells will be repaired free of charge.

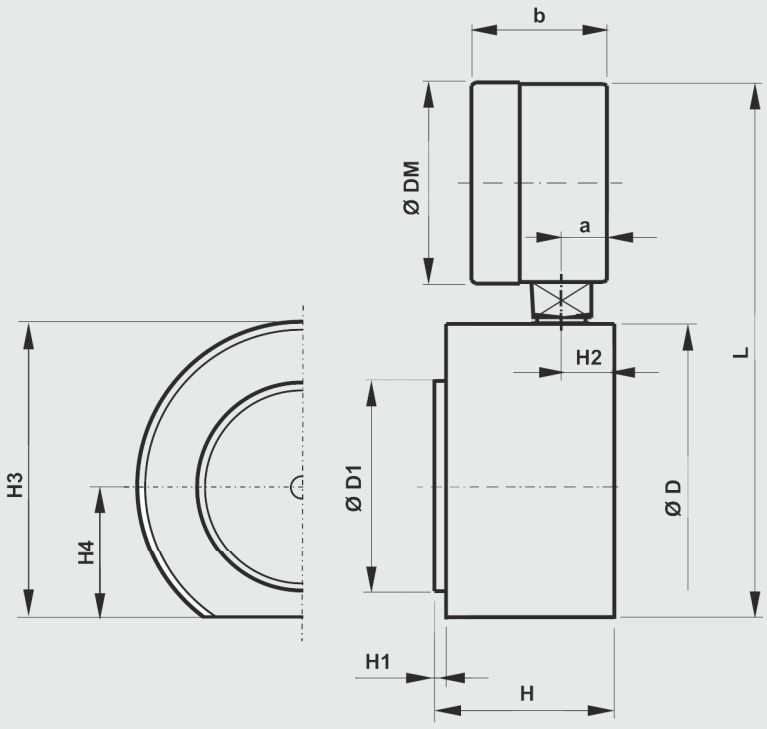
1) For nominal loads below 500 N the accuracy class is ± 1,6 % of F.S. for all pressure gauges.
2) Precondition for the prolonged guarantee to five years is that the hydraulic force transducer is only used within the intended using conditions.

Technical data in accordance with VDI/VDE/DKD 2638

Model F1119, F1136		
Model	**F1119**	**F1136**
Rated force F_{nom}	0 ... 320 N up to 0 ... 500 kN	
Nominal diameter	NG 20	NG 80
Version	Analog display Digital display	
Display ■ Standard ■ Option	Pressure gauge P1515 (NG63) Digital pressure gauge P3962 Drag pointer, Pressure gauge P2032 (NS63) Pressure gauge P2324 (NS100, optional with contacts) Pressure sensor P3276	
Relative linearity error d_{lin}	≤ ±1,6 % F_{nom} with +21 °C	≤ ±0,5 % F_{nom} with +21 °C [1]
Force limit load F_L	100 % F_{nom} (dependent on measuring range)	
Breaking force F_B	> 130 % F_{nom} (dependent on measuring range)	
Rated displacement s_{nom}	< 0.5 mm	
Rated temperature range $B_{T, nom}$	-10 … +50 °C	
Protection type	IP65 in accordance with EN/IEC 60529	
Housing	Stainless steel	
Piston		
Connection type ■ Standard ■ Option	Direct Adapter, capillary tube, measuring tube for “leak free separation“	
Filling liquid	Glycerin/water 70 %	

1) For rated force below 500 N the Relative linearity error is ± 1.6% for all pressure gauges.

Dimensions in mm



Couplings of the hydraulic force transducer must not be disconnected!
In case of violation there will be no guarantee and no measuring function.

Version						Display		Options		Dimensions												
Model	NS	Rated force		Resolu-tion	bar	P1515	P3962	Meas. tube DN2 [max. L 1)]	Capillary tube [max. L 1)]	Ø D	Ø D1	H	H1	H2	H3	H4	DM	a	b	ca. L	Weight
	[cm²]							[m]		[mm]											[ca. kg]
F1119	20	320	N	10 N	1.6	■	-	---	---	90	50	38	3	14	75	30	63 (P1515)	12.5 (P1515)	34 (P1515)	150 (P1515)	1.8 (P1515)
		500		10 N	2.5	■	-	---	---												
		800		20 N	4	■	-	---	1.0												
		1.2	kN	50 N	6	■	-	0.5	1.0								83.5 (P3962)	15.8 (P3962)	43.1 (P3962)	160 (P3962)	2.0 (P3962)
		2		100 N	10	■	-	1.0	2.0												
		3.2		100 N	16	■	-	1.0	2.0												
		4		-	20	-	■*	1.5	2.0												
		5		100 N	25	■	-	1.5	2.0												
		8		200 N	40	■	-	1.5	2.0												
		10		-	50	-	■	2.0	2.0												
		12		400 N	60	■	-	2.0	2.0												
		20		1 kN	100	■	■	2.0	2.0												
		32		1 kN	160	■	■	2.0	4.0												
		50		2 kN	250	■	■	3.2	4.0												
		60		2 kN	315	■	-	3.2	4.0												
		80		2 kN	400	■	■	3.2	6.0												
		120		5 kN	600	■	■	3.2	6.0												
F1136	80	1.2		50 N	1.6	■	-	---	---	138	100	41	3	22.5	124	55	63 (P1515)	12.5 (P1515)	34 (P1515)	200 (P1515)	4.3 (P1515)
		2		100 N	2. 5	■	-	---	---												
		3.2		100 N	4	■	-	---	1.0												
		5		100 N	6	■	-	0.5	1.0								83.5 (P3962)	15.8 (P3962)	43.1 (P3962)	210 (P3962)	4.5 (P3962)
		8		200 N	10	■	-	1.0	2.0												
		12		400 N	16	■	-	1.0	2.0												
		16		-	20	-	■*	1.5	2.0												
		20		1 kN	25	■	-	1.5	2.0												
		32		1 kN	40	■	-	1.5	2.0												
		40		-	50	-	■	2.0	2.0												
		50		2 kN	60	■	-	2.0	2.0												
		80		2 kN	100	■	■	2.0	2.0												
		120		5 kN	160	■	■	2.0	4.0												
		200		10 kN	250	■	■	3.2	4.0												
		250		10 kN	315	■	-	3.2	4.0												
		320		10 kN	400	■	■	3.2	6.0												
		500		20 kN	600	■	■	3.2	6.0												

* Relative linearity error < ±1.0 % F_{nom}

1) For rated force below 500 N the relative linearity error is ±1.6% for all display devices.

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