

Press force sensor/retrofit set for hand presses

for hand-operated and pneumatically operated presses

Types 9340A1, 9819A...

This press force sensor is specially designed for use in hand-knee lever presses or pneumatically operated presses of different installation sizes. The focus was on the overall height and a simple, flexible adaptation.

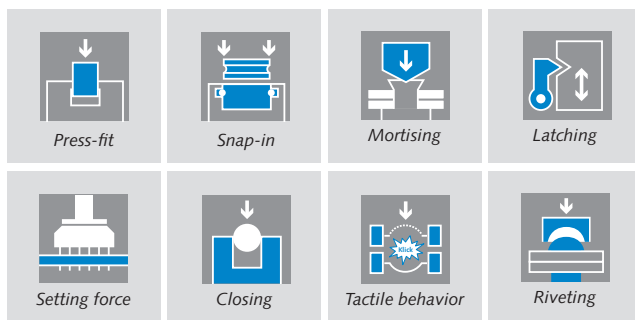
- One overall size – wider pressure force range
- Resulting in economical stock-keeping
- High overload protection, no wear
- Measuring range F_z 0 ... 60 kN
- Three calibrated measuring ranges: 100 %, 10 %, 1 %
- Overall height 48 mm
- Adapter for tool holder with $\varnothing 10/12/20/25$ mm
- No on-site calibration required
- Suitable for retrofitting of presses with force/displacement monitoring

Description

The press force sensors are based on the piezoelectric measurement principle. The force acting on the quartz generates a proportional load at the signal output. The measuring amplifier or control monitor (e.g. maXYmos BL) converts this into a process signal that can be evaluated. Together with a displacement sensor, this results in a force/displacement monitoring system with wide-ranging evaluation functionality. This forms the basis for zero-error production at continuously high, unchanging quality.

Application

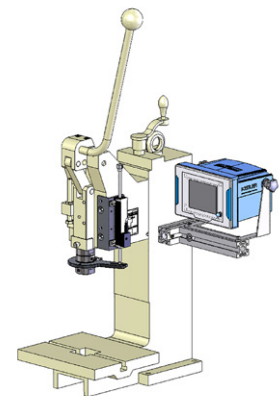
Everywhere where hand-knee lever presses or pneumatically operated presses are in use, e.g. with:



the piezoelectric press force sensor can be utilized. Its high rigidity permits use in rapid processes the same as in quasi-static applications. The sensor is installed between the moving parts



Type 9340A1



Type 9819A...

of the presses and the tool. The different mounting pins enable simple installation on the presses of different manufacturers. The sensor is currently available with two different bore holes ($\varnothing 10/12$ mm) for the tool holder. A drive plate for the displacement sensor is available as accessory.

Technical data

Measuring range F_z	kN	-10 ... 60
Measuring range F_z , calibrated ¹⁾		
100 %	kN	0 ... 60
10 %	kN	0 ... 6
1 %	kN	0 ... 0.6
Overload $F_{z, max}$, tensile/compressive	kN	-14/84
Threshold	N	0.02
Sensitivity	pC/N	-4
Linearity including hysteresis ²⁾	%FSO	$\leq \pm 0,5$
Shear force $F_{x,y}$ max. (at $F_z = 0$) ³⁾	kN	1,6
Temperature coefficient of sensitivity	%/°C	-0,02
Operating temperature range	°C	0 ... 70
Connection		KIAG 10-32 neg.
Degree of protection EN60529 (with attached cable)		IP65
Weight (without cable)	g	280

¹⁾ Calibrated only in the direction of the pressure. Tensile force measurable as specified under overload, but not calibrated

²⁾ In reference to the FSO of the respectively calibrated (!) measuring range

³⁾ Corresponds to transverse force at the separation plane for the tool holder

Dimensions

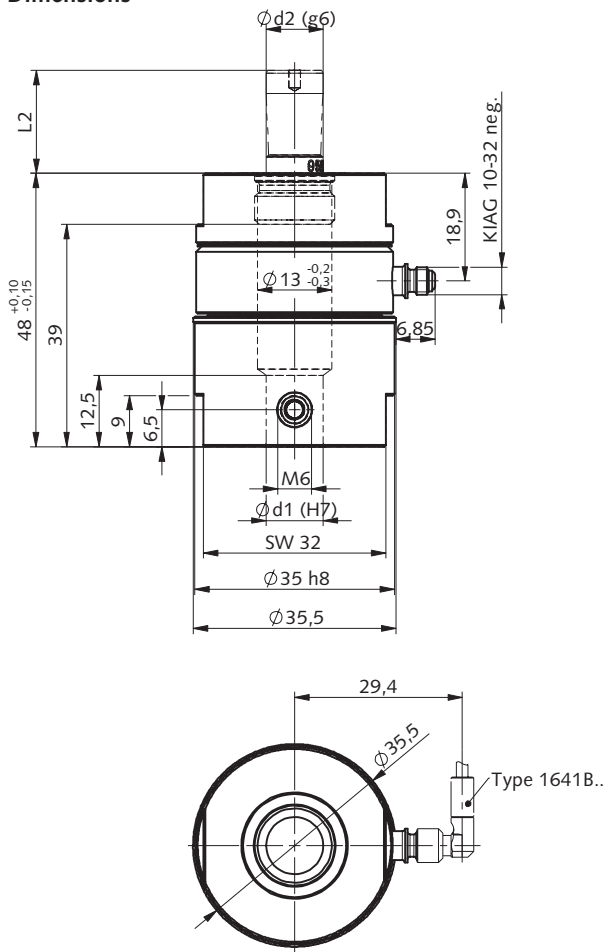


Fig. 1: Dimensions, press force sensor, Type 9340A1

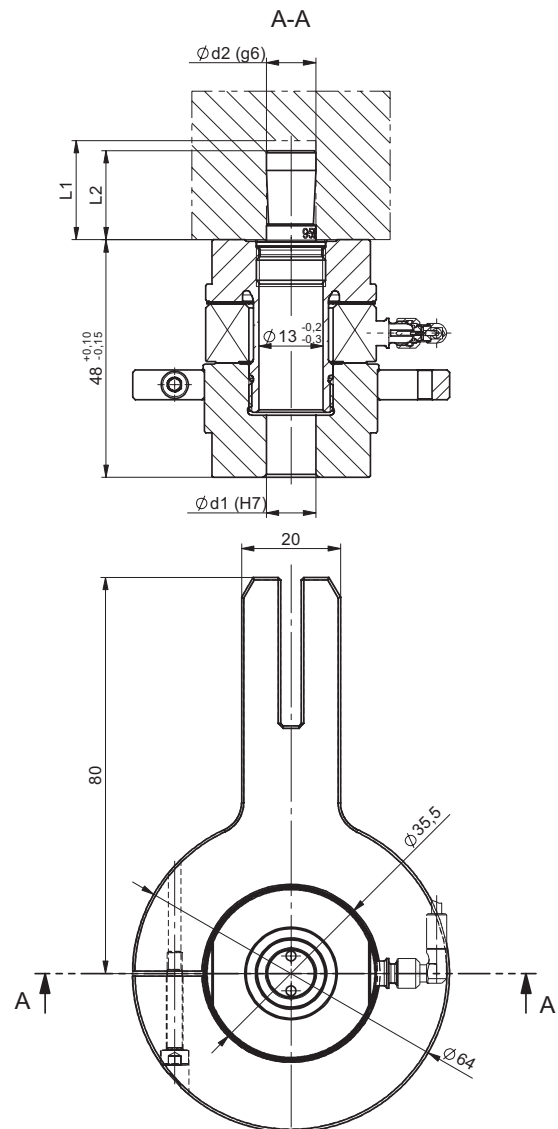


Fig. 2: Installation with adapter, drive plate, complete and connecting cable (above). Mounting pin with flat surface as tool stop (below)

Installation

Type	Name	d1	d2	L1	L2
9340A1	Press force sensor	10	–	–	–
9596A10	Mounting pin	–	10	≥20	18
9596A11	Mounting pin	–	10	≥30	28
9596A20	Mounting pin	–	12	≥30	28
9596A30	Mounting pin	–	14	≥30	28
9596A40	Mounting pin	–	15	≥30	28
9596A50	Mounting pin	–	16	≥25	23
9596A60	Mounting pin	–	20	≥25	23
9596A61	Mounting pin	–	20	≥40	38
9596A70	Mounting pin	–	25	≥45	40
9598A	Drive plate	–	–	–	–

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Accessories (optional)

Plug-mains

- 90 - 264 VAC/24 VDC, ready for connection, max. 90 W (3.75A), configurable country cable

Typ/ Art. No.

5781B5

Adapter accessories for presses

- Mounting pin, $\varnothing 10 \times 18$ mm
- Mounting pin, $\varnothing 10 \times 28$ mm
- Mounting pin, $\varnothing 12 \times 28$ mm
- Mounting pin, $\varnothing 14 \times 28$ mm
- Mounting pin, $\varnothing 15 \times 28$ mm
- Mounting pin, $\varnothing 16 \times 23$ mm
- Mounting pin, $\varnothing 20 \times 23$ mm
- Mounting pin, $\varnothing 20 \times 38$ mm
- Mounting pin, $\varnothing 25 \times 40$ mm

Typ/Art. No.

9596A10
9596A11
9596A20
9596A30
9596A40
9596A50
9596A60
9596A61
9596A70

Cables

- Connecting cable, KIAG 10-32 pos. 90° – BNC pos., L = 0,5/1/2/5/sp
- Connecting cable, KIAG 10-32 pos. – BNC pos., L = 0,5/1/2/3/5/10/20/sp
- Connecting cable, KIAG 10-32 pos. int. – BNC pos., L = 1/2/3/sp

Typ/Art. No.

1641B...
1631C...
1939A...

Miscellaneous

- Drive plate for displacement sensor, complete
- Face spanner $\varnothing 2$ mm for tightening the mounting pin

Typ/Art. No.

9598A
1289A

Retrofit set for hand presses

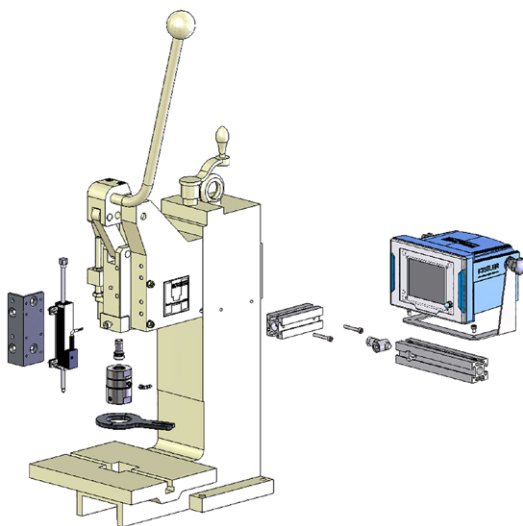


Fig. 3: Exploded view component parts retrofit set for hand presses

Ordering key

Press force sensor F_z , 0 ... 60 kN

Tool holder $\varnothing d1 = 10$ mm

1

Type 9340A

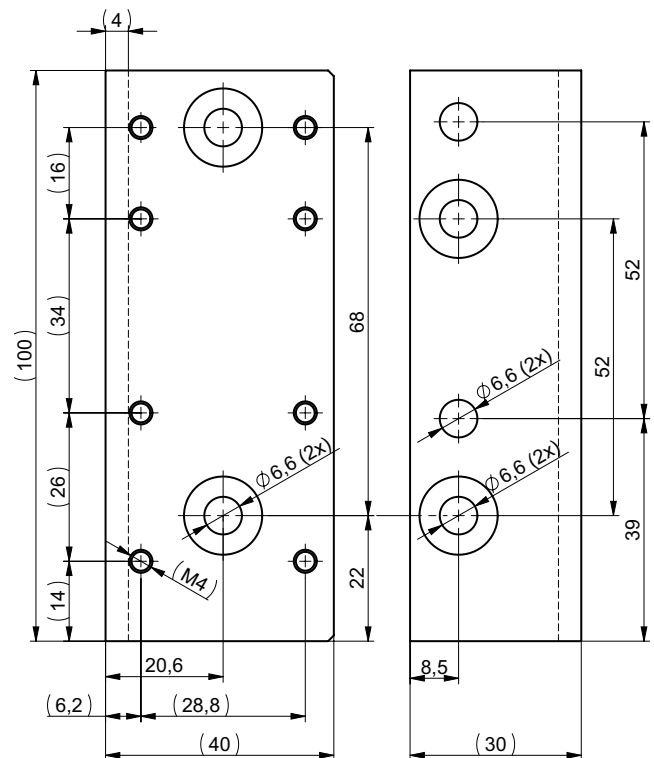


Fig. 4: Installation plate for displacement sensor, Art. No. 55123426

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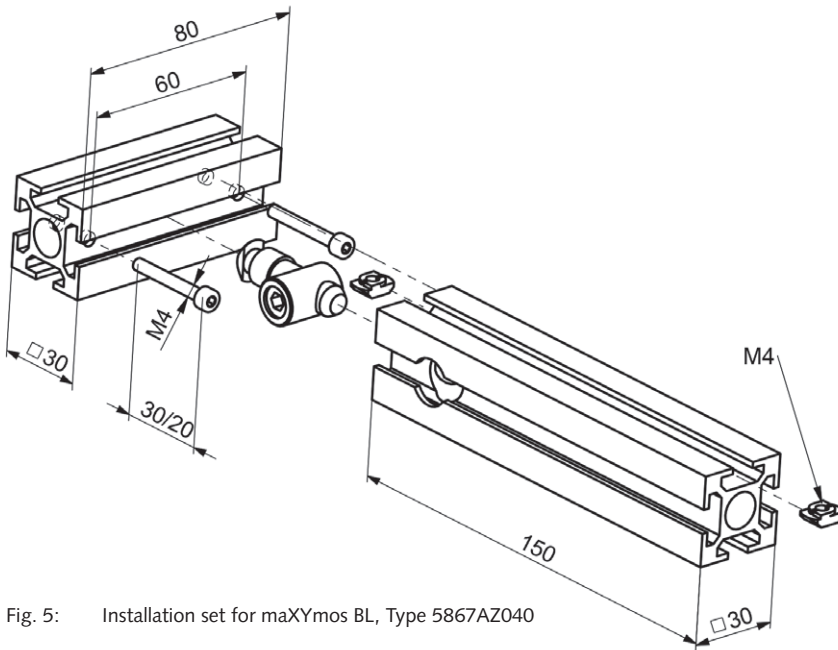


Fig. 5: Installation set for maXYmos BL, Type 5867AZ040

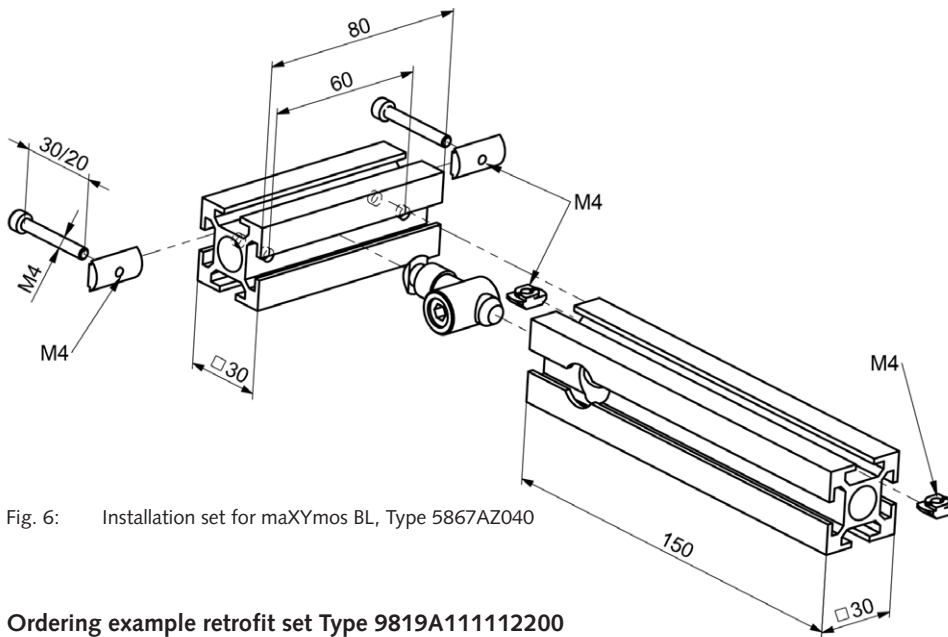

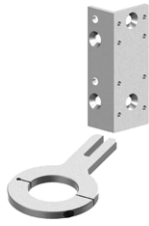





Fig. 6: Installation set for maXYmos BL, Type 5867AZ040

Ordering example retrofit set Type 9819A111112200

				
<p>Press force sensor Type 9340A1</p>	<p>Drive plate and installation plate Type 9598A/55123426</p>	<p>Cable, high-insulation, Type 1631C... Data sheet 000-346</p>	<p>Displacement sensor Type 2124A50 incl. connecting cable 2m Datasheet 003-544</p>	<p>maXYmos BL Type 5867B... incl. Type 2832A1 Data sheet 003-054</p>

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Ordering key

Type	Designation		Type 9819A
9340A1	Press force sensor F_z , 0 ... 60 kN, tool holder \varnothing 10 mm	1	<input type="checkbox"/>
9596A10	Mounting pin \varnothing 10 mm, L = 18 mm	1	<input type="checkbox"/>
9596A11	Mounting pin \varnothing 10 mm, L = 28 mm	2	<input type="checkbox"/>
9596A20	Mounting pin \varnothing 12 mm, L = 28 mm	3	<input type="checkbox"/>
9596A30	Mounting pin \varnothing 14 mm, L = 28 mm	4	<input type="checkbox"/>
9596A40	Mounting pin \varnothing 15 mm, L = 28 mm	5	<input type="checkbox"/>
9596A50	Mounting pin \varnothing 16 mm, L = 23 mm	6	<input type="checkbox"/>
9596A60	Mounting pin \varnothing 20 mm, L = 23 mm	7	<input type="checkbox"/>
9596A61	Mounting pin \varnothing 20 mm, L = 38 mm	8	<input type="checkbox"/>
9596A70	Mounting pin \varnothing 25 mm, L = 40 mm	9	<input type="checkbox"/>
–	Without drive plate for displacement sensor	0	<input type="checkbox"/>
9598A	Drive plate for displacement sensor	1	<input type="checkbox"/>
–	Without installation plate for displacement sensor	0	<input type="checkbox"/>
55123426	Installation plate for displacement sensor	1	<input type="checkbox"/>
1631C0.5	Connecting cable KIAG 10-32 pos./BNC pos., L = 0,5 m	1	<input type="checkbox"/>
1631C1	Connecting cable KIAG 10-32 pos./BNC pos., L = 1 m	2	<input type="checkbox"/>
1631C2	Connecting cable KIAG 10-32 pos./BNC pos., L = 2 m	3	<input type="checkbox"/>
1641B0.5	Connecting cable KIAG 10-32 pos. (90°)/BNC pos., L = 0,5 m	4	<input type="checkbox"/>
1641B1	Connecting cable KIAG 10-32 pos. (90°)/BNC pos., L = 1 m	5	<input type="checkbox"/>
1641B2	Connecting cable KIAG 10-32 pos. (90°)/BNC pos., L = 2 m	6	<input type="checkbox"/>
–	Without displacement sensor	0	<input type="checkbox"/>
2124A25	Displacement sensor with internal return spring, 25 mm, incl. cable 2 m	1	<input type="checkbox"/>
2124A50	Displacement sensor with internal return spring, 50 mm, incl. cable 2 m	2	<input type="checkbox"/>
2124A75	Displacement sensor with internal return spring, 75 mm, incl. cable 2 m	3	<input type="checkbox"/>
5867B0000	XY monitor maXYmos BL, front panel mounting, Profibus	1	<input type="checkbox"/>
5867B0010	XY monitor maXYmos BL, table-wall mounting, Profibus	2	<input type="checkbox"/>
5867B0001	XY monitor maXYmos BL, front panel mounting, Ethernet/IP; ProfiNet; EtherCAT	3	<input type="checkbox"/>
5867B0011	XY monitor maXYmos BL, table-wall-mounting, Ethernet/IP; ProfiNet; EtherCAT	4	<input type="checkbox"/>
–	Without installation set	0	<input type="checkbox"/>
5867AZ040	Installation set for maXYmos BL	1	<input type="checkbox"/>
–	Without plug-mains unit (can be ordered separately, see optional accessories)	0	<input type="checkbox"/>
–	Without face spanner	0	<input type="checkbox"/>
1289A	Face spanner	1	<input type="checkbox"/>
2832A1	maXYmos BL sequencer mode*	1	<input type="checkbox"/>

* By enabling of the sequencer mode, the usage of the fieldbus as well as the digital inputs and outputs is no longer possible in the standard modus.

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