

Press force sensor/retrofit set for hand presses

for hand-operated and pneumatically operated presses

Types 9340A..., 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.

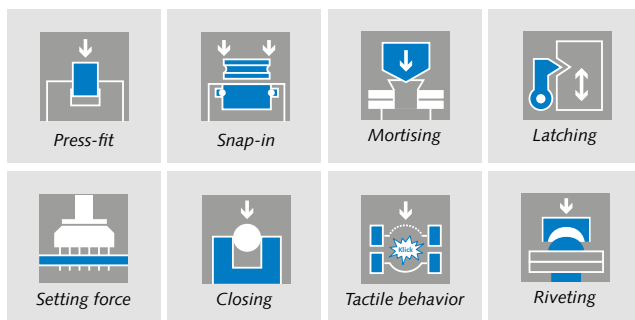
- One overall size – wider pressure force range
- Resulting in economical stock-keeping
- High overload protection, no wear
- Measuring range F_z 0 ... 60 kN
- Three calibrated measuring ranges: 100 %, 10 %, 1 %
- Overall height 48 mm
- Adapter for tool holder with $\varnothing 10/12/20/25$ mm
- No on-site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

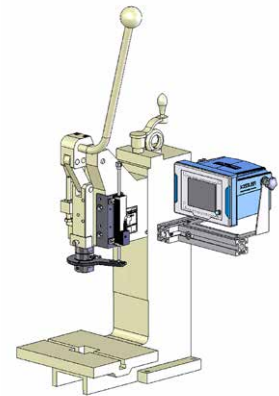
Everywhere where hand-knee lever presses or pneumatically operated presses are in use, e.g. with:



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 9340A...



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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

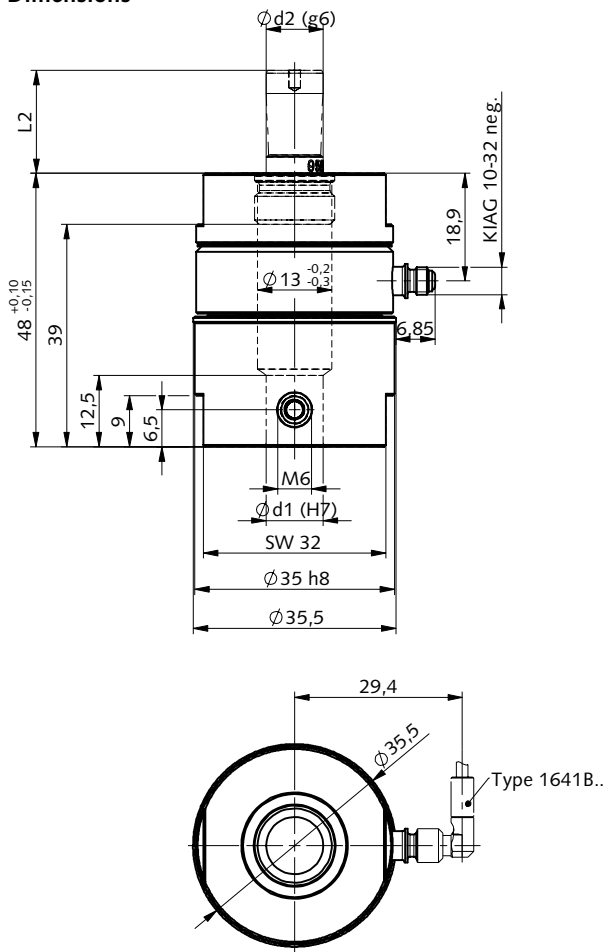


Fig. 1: Dimensions, press force sensor, Type 9340A...

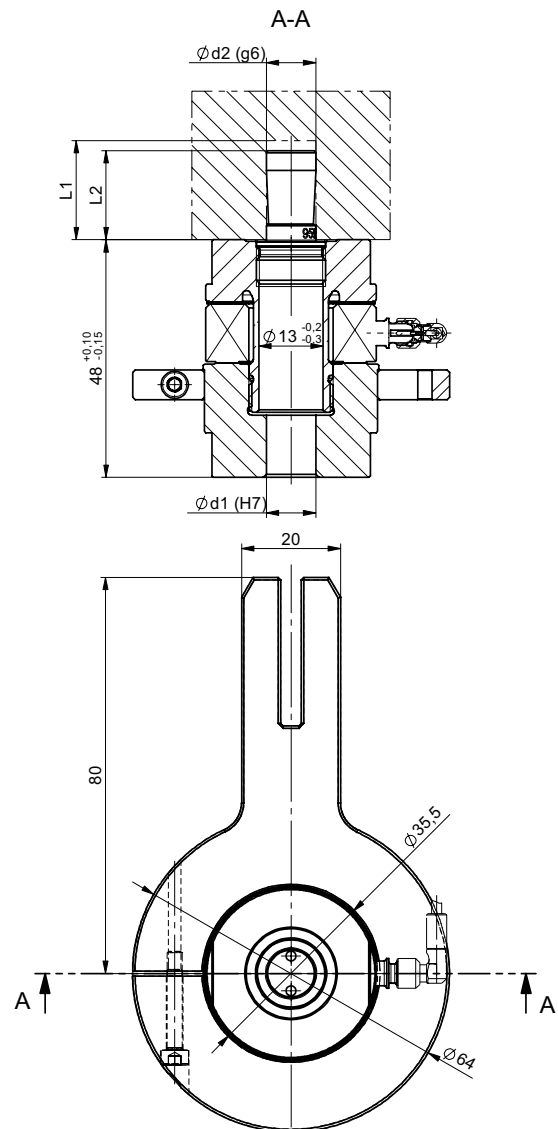


Fig. 2: Installation with adapter, drive plate, complete and connecting cable (above). Mounting pin with flat surface as tool stop (below)

Installation

| Type | Name | d1 | d2 | L1 | L2 |
|---------|--------------------|----|----|-----|----|
| 9340A1 | Press force sensor | 10 | - | - | - |
| 9340A2 | Press force sensor | 12 | - | - | - |
| 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)

Adapter accessories for presses

| | Type/Art. No. |
|---|----------------------|
| • Mounting pin, $\varnothing 10 \times 18$ mm | 9596A10 |
| • Mounting pin, $\varnothing 10 \times 28$ mm | 9596A11 |
| • Mounting pin, $\varnothing 12 \times 28$ mm | 9596A20 |
| • Mounting pin, $\varnothing 14 \times 28$ mm | 9596A30 |
| • Mounting pin, $\varnothing 15 \times 28$ mm | 9596A40 |
| • Mounting pin, $\varnothing 16 \times 23$ mm | 9596A50 |
| • Mounting pin, $\varnothing 20 \times 23$ mm | 9596A60 |
| • Mounting pin, $\varnothing 20 \times 38$ mm | 9596A61 |
| • Mounting pin, $\varnothing 25 \times 40$ mm | 9596A70 |

Cables

| | Type/Art. No. |
|--|----------------------|
| • Connecting cable, KIAG 10-32 pos. 90° – BNC pos., L = 0,5/1/2/5/sp | 1641B... |
| • Connecting cable, KIAG 10-32 pos. – BNC pos., L = 0,5/1/2/3/5/10/20/sp | 1631C... |
| • Connecting cable, KIAG 10-32 pos. int. – BNC pos., L = 1/2/3/sp | 1939A... |

Miscellaneous

| | Type/Art. No. |
|---|----------------------|
| • Drive plate for displacement sensor, complete | 9598A |
| • Face spanner $\varnothing 2$ mm for tightening the mounting pin | 1289A |

Ordering key

| Press force sensor F_z, 0 ... 60 kN | |
|---|----------|
| Tool holder $\varnothing d1 = 10$ mm | 1 |
| Tool holder $\varnothing d1 = 12$ mm | 2 |

Type 9340A

Retrofit set for hand presses

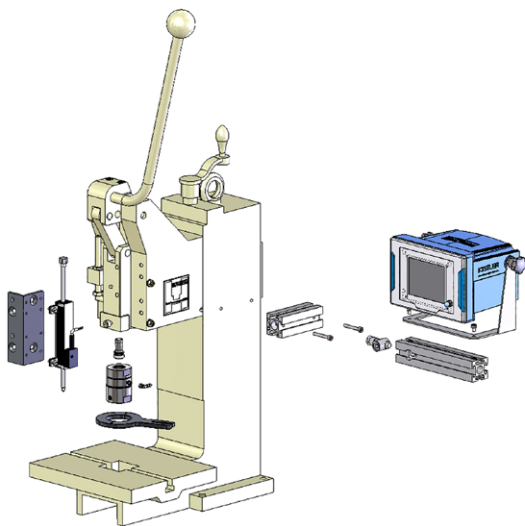


Fig. 3: Exploded view component parts retrofit set for hand presses

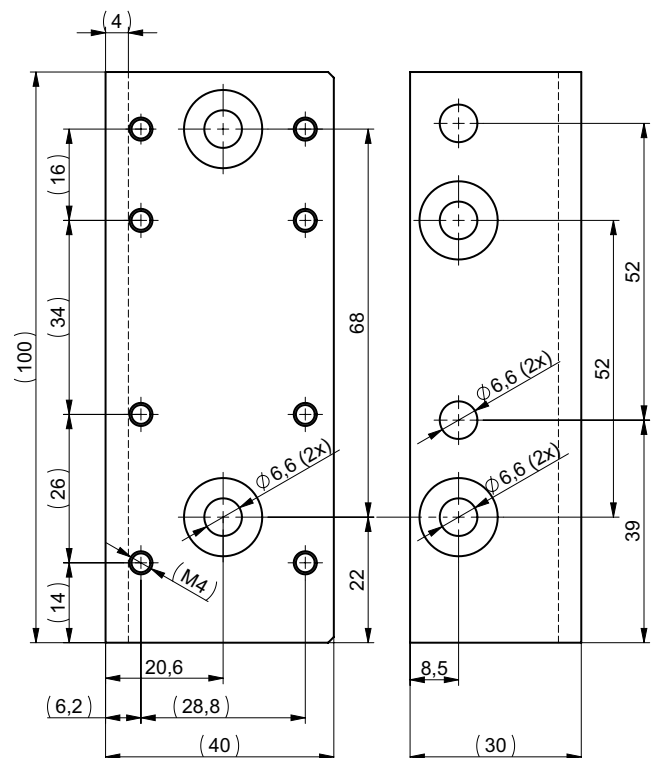


Fig. 4: Installation plate for displacement sensor, Art. No. 55123426

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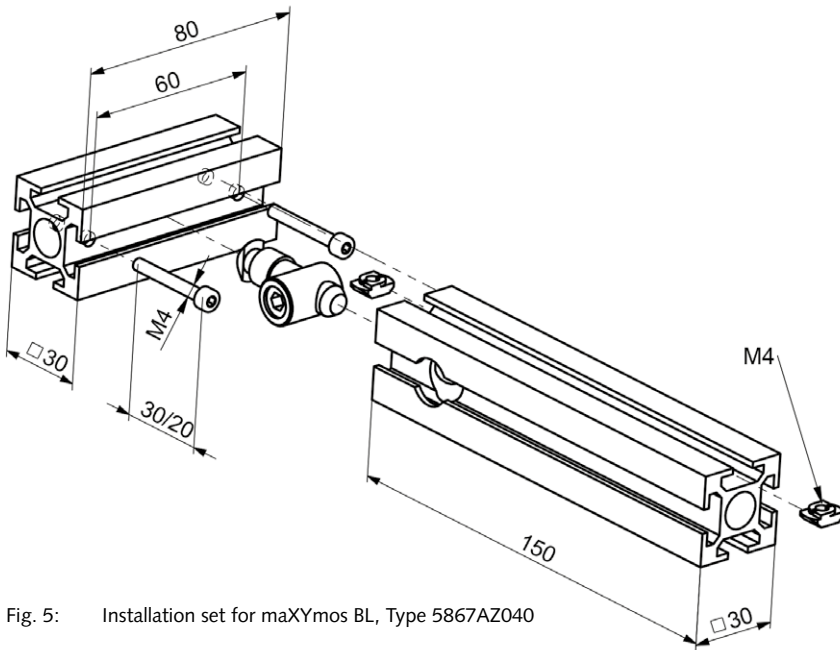


Fig. 5: Installation set for maXYmos BL, Type 5867AZ040

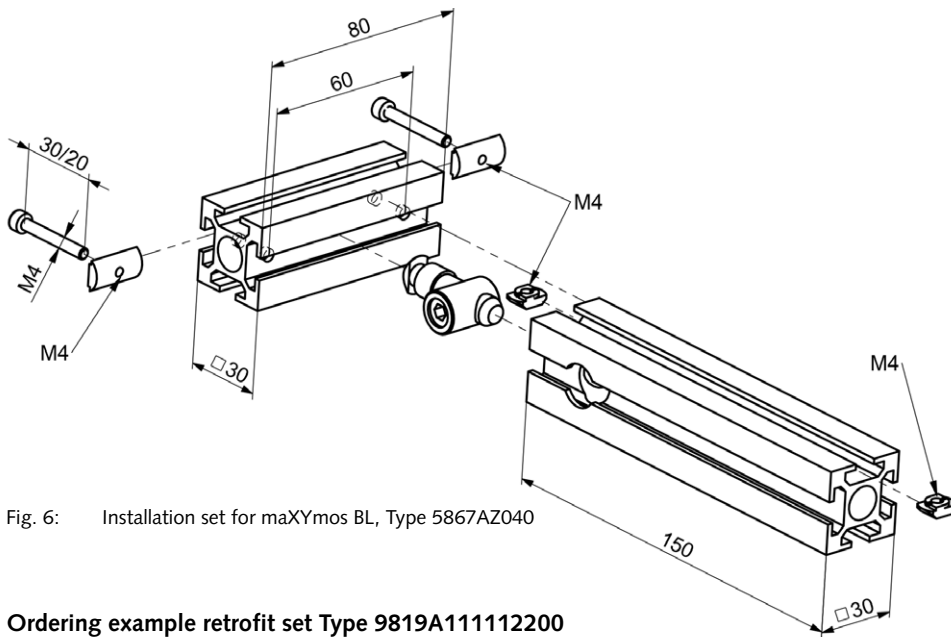

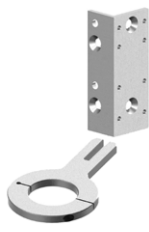





Fig. 6: Installation set for maXYmos BL, Type 5867AZ040

Ordering example retrofit set Type 9819A111112200

| | | | | |
|---|---|---|--|---|
|  |  |  |  |  |
| <p>Press force sensor Type 9340A...</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 2118A50A03 Data sheet 000-875</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 | □ |
| 9340A2 | Press force sensor F_z , 0 ... 60 kN, tool holder \varnothing 12 mm | 2 | □ |
| 9596A10 | Mounting pin \varnothing 10 mm, L = 18 mm | 1 | □ |
| 9596A11 | Mounting pin \varnothing 10 mm, L = 28 mm | 2 | □ |
| 9596A20 | Mounting pin \varnothing 12 mm, L = 28 mm | 3 | □ |
| 9596A30 | Mounting pin \varnothing 14 mm, L = 28 mm | 4 | □ |
| 9596A40 | Mounting pin \varnothing 15 mm, L = 28 mm | 5 | □ |
| 9596A50 | Mounting pin \varnothing 16 mm, L = 23 mm | 6 | □ |
| 9596A60 | Mounting pin \varnothing 20 mm, L = 23 mm | 7 | □ |
| 9596A61 | Mounting pin \varnothing 20 mm, L = 38 mm | 8 | □ |
| 9596A70 | Mounting pin \varnothing 25 mm, L = 40 mm | 9 | □ |
| – | Without drive plate for displacement sensor | 0 | □ |
| 9598A | Drive plate for displacement sensor | 1 | □ |
| – | Without installation plate for displacement sensor | 0 | □ |
| 55123426 | Installation plate for displacement sensor | 1 | □ |
| 1631C0.5 | Connecting cable KIAG 10-32 pos./BNC pos., L = 0,5 m | 1 | □ |
| 1631C1 | Connecting cable KIAG 10-32 pos./BNC pos., L = 1 m | 2 | □ |
| 1631C2 | Connecting cable KIAG 10-32 pos./BNC pos., L = 2 m | 3 | □ |
| 1641B0.5 | Connecting cable KIAG 10-32 pos. (90°)/BNC pos., L = 0,5 m | 4 | □ |
| 1641B1 | Connecting cable KIAG 10-32 pos. (90°)/BNC pos., L = 1 m | 5 | □ |
| 1641B2 | Connecting cable KIAG 10-32 pos. (90°)/BNC pos., L = 2 m | 6 | □ |
| – | Without displacement sensor | 0 | □ |
| 2118A25A03 | Displacement sensor TR with internal return spring, L = 25 mm | 1 | □ |
| 2118A50A03 | Displacement sensor TR with internal return spring, L = 50 mm | 2 | □ |
| 2118A75A03 | Displacement sensor TR with internal return spring, L = 75 mm | 3 | □ |
| 5867B0000 | XY monitor maXYmos BL, front panel mounting, Profibus | 1 | □ |
| 5867B0010 | XY monitor maXYmos BL, table-wall mounting, Profibus | 2 | □ |
| 5867B0001 | XY monitor maXYmos BL, front panel mounting, Ethernet/IP; ProfiNet; EtherCAT | 3 | □ |
| 5867B0011 | XY monitor maXYmos BL, table-wall-mounting, Ethernet/IP; ProfiNet; EtherCAT | 4 | □ |
| 5867B0002 | XY monitor maXYmos BL, front panel mounting, CC-Link | 5 | □ |
| 5867B0012 | XY monitor maXYmos BL, table-wall mounting, CC-Link | 6 | □ |
| – | Without installation set | 0 | □ |
| 5867AZ040 | Installation set for maXYmos BL | 1 | □ |
| – | Without plug-mains unit | 0 | □ |
| 5779A3 | Plug-mains unit 30 W, convertible primary adapter EURO/UK/USA Primary = 90 ... 264 VAC, 50/60 Hz – Secondary = 24 VDC/1,25 A | 1 | □ |
| – | Without face spanner | 0 | □ |
| 1289A | Face spanner | 1 | □ |
| 2832A1 | maXYmos BL sequencer mode* | 1 | □ |

* 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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The information corresponds to the current state of knowledge. Kistler reserves the right to make technical changes without advance notice. Liability for the consequential damages arising from the application of Kistler products is excluded.

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