

Hydraulic compression force transducer Compact version up to 850 kN Model F1145

WIKA data sheet FO 52.19

Applications

- Equipment manufacturing
- Construction of jigs and fixtures
- Special machine building
- Measuring and control systems

Special features

- Measuring ranges 0 ... 6 kN to 0 ... 850 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 compression force transducer, model F1145

Description

The hydraulic compression force transducer model F1145 is available with a nominal size NS 141. Measurement of rated forces from 6 up to 850 kN is possible. The robust mechanical design enables use in harsh operating conditions. Applications for this hydraulic force measurement can be found in equipment manufacturing, in device and special machine building and also with measuring and control systems.

Hydraulic force transducers operate on the principle that the force acting on the piston is converted into a hydraulic pressure - in proportion to the piston surface area. Via the connected measuring instrument, which can be either analogue or digital, the measured value is output. The scale of the connected pressure gauge can be defined in various units, e.g., in N, kN, kg, or even 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 $\pm 1.6 \% F_{nom}$ for all connected measuring instruments.

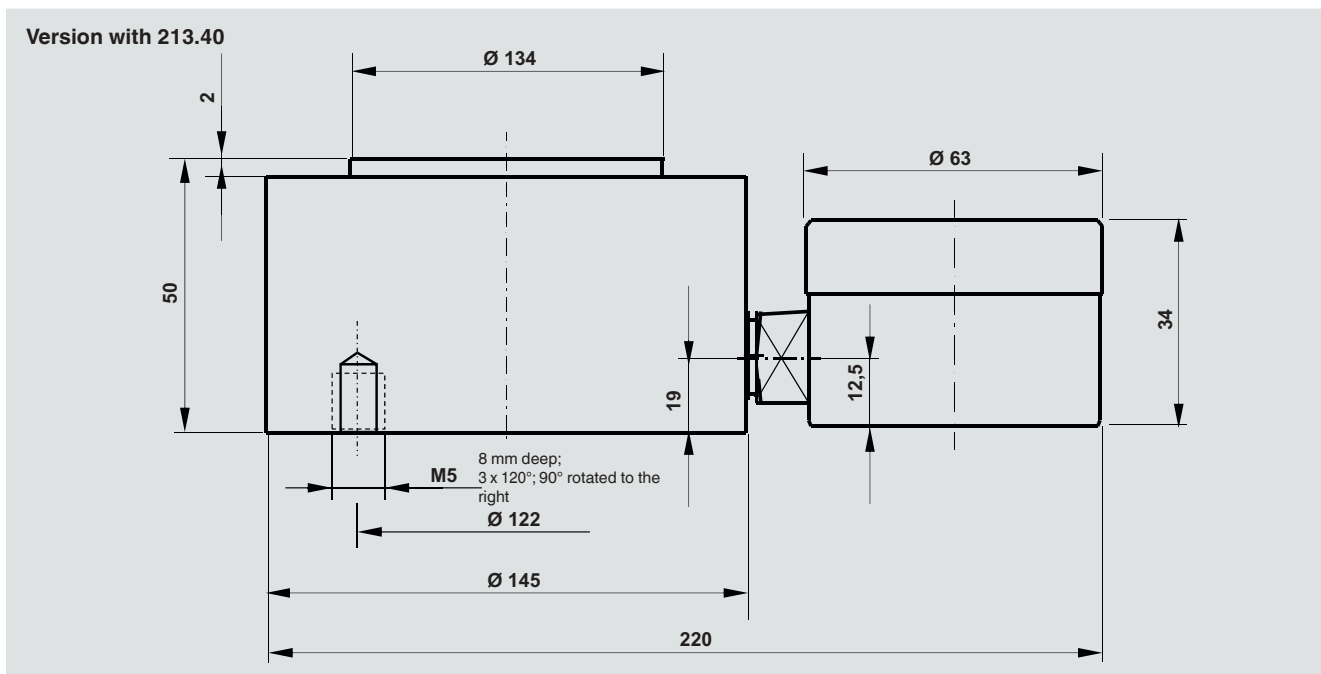
2) Use of the force measuring unit as intended is a prerequisite for the extended 5-year warranty.

Specifications per VDI/VDE/DKD 2638

| Model F1145 | |
|--|--|
| Rated force F_{nom} | 0 ... 6 kN to 0 ... 850 kN |
| Nominal size | NS 141 |
| 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 |
| Options | Spacer disc |
| Weight in kg <ul style="list-style-type: none"> ■ with pressure gauge 213.40 (NS 63) ■ with digital pressure gauge DG-10 | 5.6 5.8 |

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) |
| kN | bar | | | m | |
| 6 | 4 | ■ | - | - | 1.0 |
| 8 | 6 | ■ | - | 0.5 | 1.0 |
| 14 | 10 | ■ | - | 1.0 | 2.0 |
| 22 | 16 | ■ | - | 1.0 | 2.0 |
| 28 | 20 | - | ■ ¹⁾ | 1.5 | 2.0 |
| 34 | 25 | ■ | - | 1.5 | 2.0 |
| 60 | 40 | ■ | - | 1.5 | 2.0 |
| 70 | 50 | - | ■ | 2.0 | 2.0 |
| 80 | 60 | ■ | - | 2.0 | 2.0 |
| 140 | 100 | ■ | ■ | 2.0 | 2.0 |
| 220 | 160 | ■ | ■ | 2.0 | 4.0 |
| 350 | 250 | ■ | ■ | 3.2 | 4.0 |
| 450 | 315 | ■ | - | 3.2 | 4.0 |
| 560 | 400 | ■ | ■ | 3.2 | 6.0 |
| 850 | 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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ICS Schneider Messtechnik GmbH
Briesestrasse 59
D-16562 Hohen Neuendorf / OT Bergfelde
Tel.: +49 3303 5040-66
Fax: +49 3303 5040-68
E-Mail: info@ics-schneider.de



WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg/Germany
Tel. +49 9372 132-0
Fax +49 9372 132-406
info@wika.com
www.wika.com