

Hydraulic compression force transducer

Compact version up to 60 kN

Model F1106



WIKA data sheet FO 52.13

Applications

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

Special features

- Measuring ranges 0 ... 160 N to 0 ... 60 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 F1106

Description

The compact hydraulic compression force transducer is available from a rated load of 160 N up to 60 kN. Hydraulic force measurement is a simple way to capture and display the forces occurring in various applications. Applications for hydraulic force measurement can be found in equipment manufacturing, in device and special machine building and also with measuring and control systems.

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 loads below 500 N, the accuracy is $\pm 1.6 \%$ F_{nom} for all connected measuring instruments.

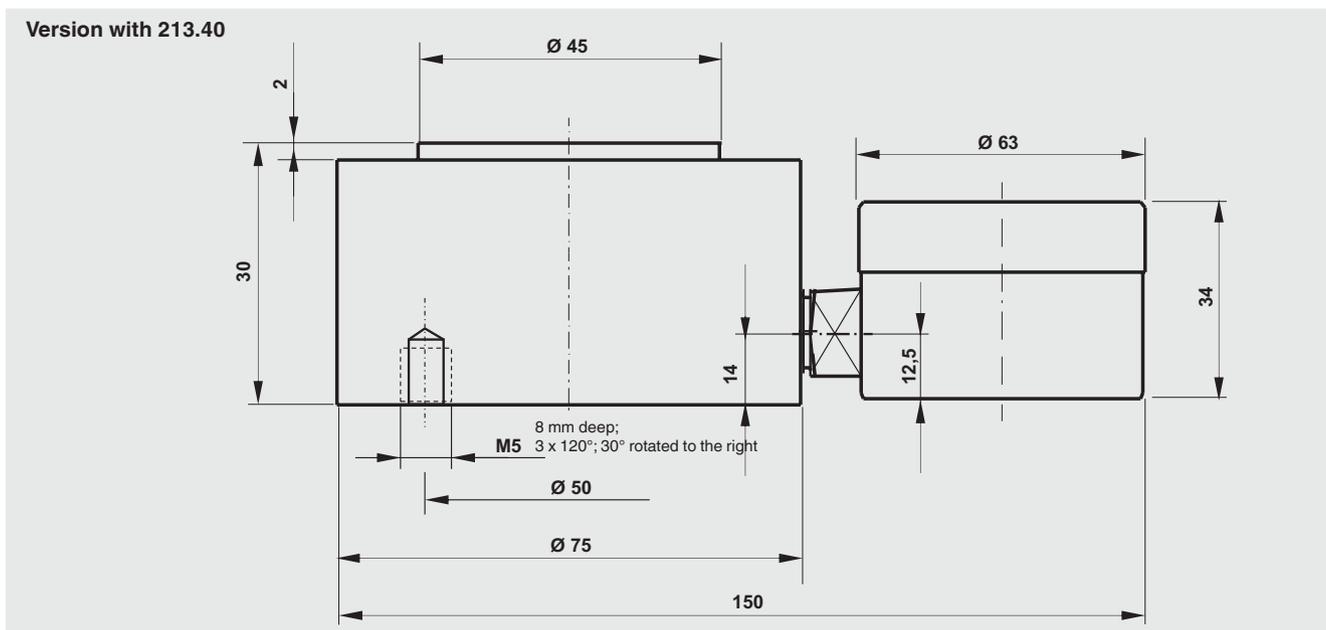
2) Use of the force measuring unit as intended is a prerequisite for the extended 5-year warranty.

Specifications per VDI/VDE/DKD 2638

| Model F1106 | |
|--|--|
| Rated force F_{nom} | 0 ... 160 N to 0 ... 60 kN |
| Nominal size | NS 10 |
| Display <ul style="list-style-type: none"> ■ Standard ■ Option | Pressure gauge 213.40 (NS 63) Digital pressure gauge DG-10 Pressure gauge with contacts PSG23.160 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 | Adapter L = 50 mm Direct, adapter Capillary Measuring hose for "separation without any losses" |
| Fill fluid | Glycerine/water 70 %/30 % |
| Assembly aid | Threaded holes on the bottom of the case |
| Options | Mounting flange Spacer disc |
| Weight in kg <ul style="list-style-type: none"> ■ with pressure gauge 213.40 (NS 63) ■ with digital pressure gauge DG-10 | 1.2 1.4 |

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 ¹⁾] | Capillary [max. L ¹⁾] |
| N/kN | | bar | | | m | |
| 160 | N | 1.6 | ■ | - | - | - |
| 250 | | 2.5 | ■ | - | - | - |
| 400 | | 4 | ■ | - | - | 1.0 |
| 600 | | 6 | ■ | - | 0.5 | 1.0 |
| 1 | kN | 10 | ■ | - | 1.0 | 2.0 |
| 1.6 | | 16 | ■ | - | 1.0 | 2.0 |
| 2 | | 20 | - | ■ ²⁾ | 1.5 | 2.0 |
| 2.5 | | 25 | ■ | - | 1.5 | 2.0 |
| 4 | | 40 | ■ | - | 1.5 | 2.0 |
| 5 | | 50 | - | ■ | 2.0 | 2.0 |
| 6 | | 60 | ■ | - | 2.0 | 2.0 |
| 10 | | 100 | ■ | ■ | 2.0 | 2.0 |
| 16 | | 160 | ■ | ■ | 2.0 | 4.0 |
| 25 | | 250 | ■ | ■ | 3.2 | 4.0 |
| 32 | | 315 | ■ | - | 3.2 | 4.0 |
| 40 | | 400 | ■ | ■ | 3.2 | 6.0 |
| 60 | | 600 | ■ | ■ | 3.2 | 6.0 |

Other rated loads and versions on request

■ = possible selection

1) For a rated force below 500 N, the relative linearity error is $\pm 1.6\% F_{nom}$ for all connected measuring instruments.

2) Relative linearity error $< \pm 1.0\% F_{nom}$

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