

Hydraulic ring force transducer Heavy-duty version to 1,500 kN Model F6154

WIKA data sheet FO 52.17

EAC

Applications

- Equipment manufacturing
- Geotechnology and specialist foundation engineering
- Construction of jigs and fixtures
- Special machine building
- Measuring and control systems

Special features

- Measuring ranges 0 ... 25 kN to 0 ... 1,500 kN
[5,620 lbf to 337,213 lbf]
- Relative linearity error
±1.0 ... 1.6 % F_{nom} with analogue pressure gauge,
±0.5 % F_{nom} with digital pressure gauge or pressure sensor
- Piston stroke ≤ 0.8 mm [≤ 0.03 in]
- Operates without supply voltage
- 5-year leak-tightness warranty



Hydraulic ring force transducer, model F6154

Description

The model F6154 hydraulic ring force transducer in heavy-duty design enables the measurement and display of forces in harsh environmental conditions. Its measuring ranges from 25 kN to 1,500 kN [5,620 lbf to 337,213 lbf]. Applications for hydraulic force measurement can be found in equipment manufacturing, in geotechnology and specialist foundation engineering, in device and special machine building and also with measurement and control systems.

The connection of the display instrument can, optionally, be made using a capillary or measuring hose. This enables the convenient reading of the measured value. Furthermore, the measuring hose offers the possibility of “separation without any losses”, which enables an exchange of the display instrument without the need for dismantling the force measuring unit.

Hydraulic force measurement makes use of a piston-case combination with different seals as a sensor unit. The force acting is the product of the area and the pressure. For the display of the pressure, either pressure gauges, pressure sensors or pressure measuring instruments with contact devices can be used. The scale of the display instrument can be defined in various units, e.g., in N, kN, kg, t.



Leak-tightness warranty

The warranty on leak tightness of the hydraulic force measuring unit was extended to 5 years. The prerequisite for this is of course the intended use of the force measuring unit. A force transducer that starts to leak within this period will be repaired free of charge. In this way, we are underlining the quality of our hydraulic force transducers and our confidence in our own technology.

Specifications per VDI/VDE/DKD 2638

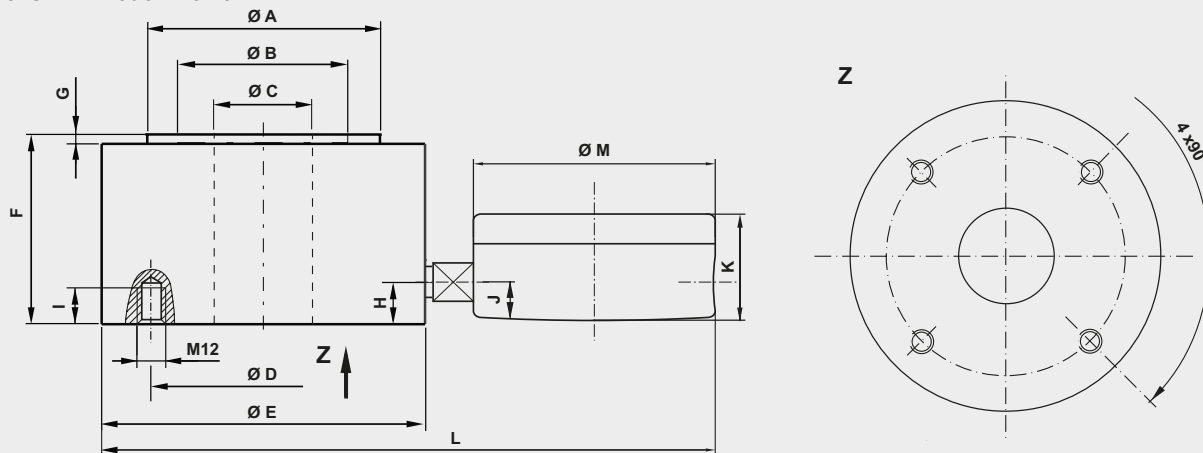
| Model F6154 | |
|--|--|
| Rated force F_{nom} | 0 ... 25 kN to 0 ... 1,500 kN [0 ... 5,620 lbf to 0 ... 337,213 lbf] |
| Nominal size | NS 240 |
| Display | <ul style="list-style-type: none"> ■ Pressure gauge, model 213.40 (NS 63) ■ Pressure gauge, model PGS23 ■ Digital pressure gauge, model DG-10 ■ Pressure sensor (on request) |
| Relative linearity error d_{lin} | |
| Pressure gauge | $\leq \pm 1.6 \% F_{nom}$ |
| Pressure sensor/digital pressure gauge | $\leq \pm 0.5 \% F_{nom}$ |
| Force limit F_L | 100 % F_{nom} |
| Breaking force F_B | $> 130 \% F_{nom}$ |
| Rated displacement s_{nom} | $< 0.8 \text{ mm}$ [$< 0.03 \text{ in}$] |
| Rated temperature range $B_{T, nom}$ | $-25 \dots +90 \text{ }^\circ\text{C}$ [$-13 \dots 194 \text{ }^\circ\text{F}$] |
| Ingress protection (per IEC/EN 60529) | |
| Pressure gauge | IP65 |
| Pressure sensor | IP67 |
| Digital pressure gauge | IP65 |
| Case | Stainless steel |
| Piston | Stainless steel |
| Diaphragm | Plastic |
| Mounting type | <ul style="list-style-type: none"> ■ Direct mounting about adapter ■ Capillary ■ Measuring hose for "separation without any loss less connection" |
| Fill fluid | Glycerine 70 % / water 30 % |
| Assembly aid | Threaded holes on the bottom of the case |
| Weight | 20.5 kg [45.19 lbs] |

Approvals

| Logo | Description | Country |
|---|-------------------------------------|-----------------------------|
|  | EU Declaration of Conformity | European Union |
| | EMC Directive | |
| | RoHS Directive | |
|  | EAC (Option) | Eurasian Economic Community |
| | EMV-Directive | |

Dimensions in mm [in]

Versions with model 213.40



Dimensions in mm [in]

| ØA | ØB | ØC | ØD | ØE | F | G | H | I | J | K | L | ØM |
|--------|-------|-------|--------|--------|--------|-------|--------|--------|--------|--------|-------------|--------|
| 225 | 142 | 125 | 200 | 250 | 75 | 5 | 22.5 | 20 | 12.5 | 34 | approx. 320 | 63 |
| [8.86] | [5.6] | [4.9] | [7.87] | [9.84] | [2.95] | [0.2] | [0.89] | [0.79] | [0.49] | [1.34] | [12.6] | [2.48] |

| Version | | Pressure gauge | | Digital pressure gauge | | Options | |
|-----------------|-----------------|----------------|-------------|---------------------------------|--------------------------|---------|--|
| Rated force | System pressure | Model 213.40 | Model DG-10 | Measuring hose DN 2 (max. L) | Capillary (max. L) | | |
| kN | bar | | | m | m | | |
| 25 [5,620] | 10 | ■ | - | 1.0 | 2.0 | | |
| 40 [8,992] | 16 | ■ | - | 1.0 | 2.0 | | |
| 50 [11,240] | 20 | - | ■ 1) | 1.5 | 2.0 | | |
| 60 [13,488] | 25 | ■ | - | 1.5 | 2.0 | | |
| 100 [22,481] | 40 | ■ | - | 1.5 | 2.0 | | |
| 120 [26,977] | 50 | - | ■ | 2.0 | 2.0 | | |
| 150 [33,721] | 60 | ■ | - | 2.0 | 2.0 | | |
| 250 [56,202] | 100 | ■ | ■ | 2.0 | 2.0 | | |
| 400 [89,924] | 160 | ■ | ■ | 2.0 | Other lengths on request | | |
| 600 [134,885] | 250 | ■ | ■ | 3.2 | | | |
| 1,000 [224,809] | 400 | ■ | ■ | 3.2 | | | |
| 1,500 [359,694] | 600 | ■ | ■ | 3.2 | | | |

Other rated loads and versions on request

2) Relative linearity error $\leq \pm 1.0\% F_{nom}$
 ■ = possible selection / - = not available

© 2019 WIKA Alexander Wiegand SE & Co. KG, all rights reserved.
 The specifications given in this document represent the state of engineering at the time of publishing.
 We reserve the right to make modifications to the specifications and materials.