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

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
- Relative linearity error ±1.0 ... 1.6 % with analogue pressure gauge, ±0.5 % with digital pressure gauge or pressure sensor[1)]
- Piston stroke ≤ 0.8 mm
- Operates without supply voltage
- 5-year leak-tightness warranty[2)]

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. 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 dismounting 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[2)]. 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 ±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.

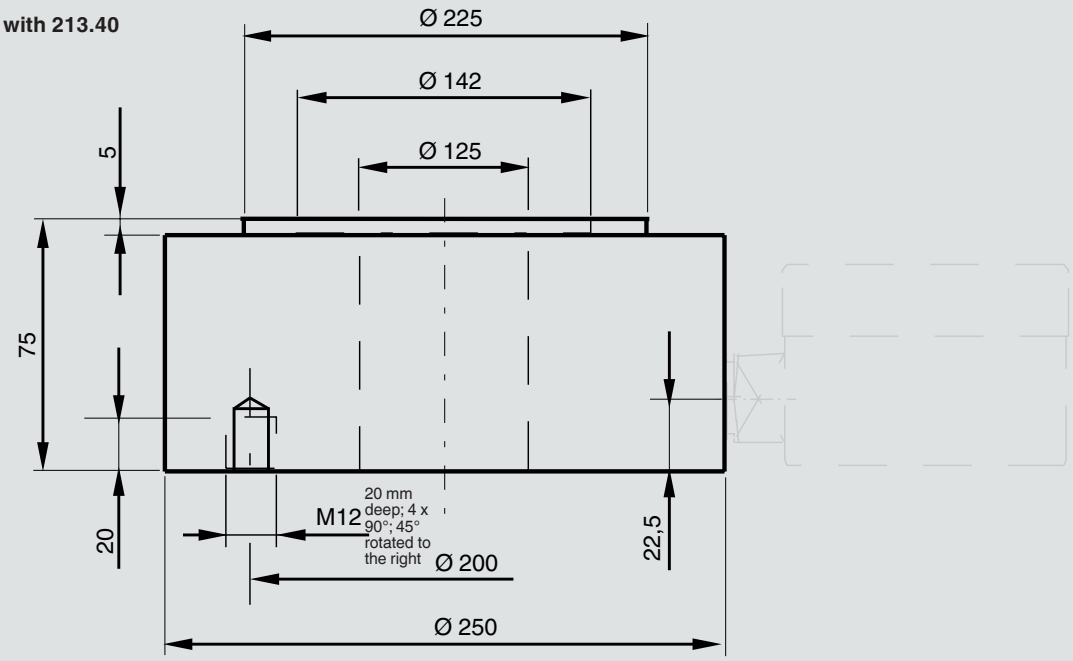
Specifications per VDI/VDE/DKD 2638

Model F6154	
Rated force F_{nom}	0 ... 25 kN to 0 ... 1,500 kN
Nominal size	NS 240
Display ■ 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} ■ Standard ■ Option	 ≤ ±1.0 % F_{nom} (analogue display)[1)] ≤ ±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}	< 0.8 mm
Rated temperature range $B_{T, nom}$	-25 … +90 °C
Ingress protection (per EN/IEC 60529)	IP65
Case	Stainless steel
Piston	Stainless steel
Diaphragm	Plastic
Mounting type ■ Standard ■ Option	 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
Weight in kg	20.5

1) For rated forces below 500 N, the relative linearity error is ±1.6 % F_{nom} for all connected measuring instruments.

Dimensions in mm

Version with 213.40



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	
25	10	■	-	1.0	2.0
40	16	■	-	1.0	2.0
50	20	-	■[1)]	1.5	2.0
60	25	■	-	1.5	2.0
100	40	■	-	1.5	2.0
120	50	-	■	2.0	2.0
150	60	■	-	2.0	2.0
250	100	■	■	2.0	2.0
400	160	■	■	2.0	4.0
600	250	■	■	3.2	4.0
1,000	400	■	■	3.2	6.0
1,500	600	■	■	3.2	6.0
Other rated loads and versions on request					

■ = possible selection

1) Relative linearity error < ±1.0 % F_{nom}

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