

# Tension/compression force transducer

## Up to 890 kN

### Model F2229



WIKA data sheet FO 51.52

#### Applications

- Apparatus construction
- Production lines
- Measuring and inspection equipment
- Special equipment and machinery construction

#### Special features

- Measuring ranges 0 ... 0.22 kN up to 0 ... 890 kN  
(0 ... 50 lbs up to 0 ... 200,000 lbs)
- Robust design
- Material stainless steel
- Protection class IP66
- Relative linearity error 0.1 %  $F_{nom}$



Tension/compression force transducer, model F2229

#### Description

Tension/compression transducers are used to determine tension and compression forces in a wide range of applications and are suitable for static and dynamic measurement tasks. Due to their robustness, high accuracy and low installation height, force transducers are used in harsh industrial environments as well as in the laboratory or test field. They have a bore through the center, with an internal thread for the force introduction.

#### Note

In order to avoid overloading, it is necessary to connect the force transducer electrically during installation and to monitor the measured value.

The force to be measured must be applied concentrically and free of transverse force.

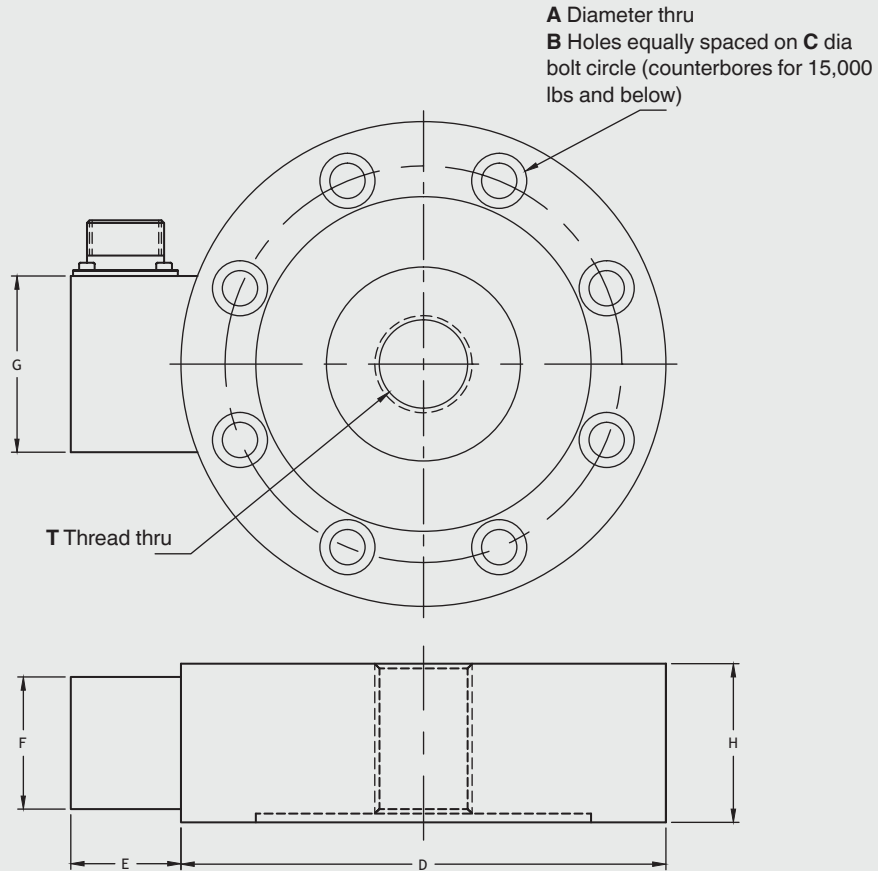
#### Options

- Load input elements
- Built-in amplifier
- Extended compensated temperature range
- Different thread sizes
- Different bridge resistance
- Connector guard

## Specifications in accordance with VDI/VDE/DKD 2638

Model F2229							
Rated force $F_{nom}$ kN	0.22	2.2	4.44	8.9	13.34	33.36	44.48
	88.96	133.45	222.41	333.62	444.82	667.23	890
Nominal load $F_{nom}$ lbs	50	500	1,000	2,000	3,000	7,500	10,000
	20,000	30,000	50,000	75,000	100,000	150,000	200,000
Relative linearity error $d_{lin}$	$\leq \pm 0.1 \% F_{nom}$						
Relative reversibility error $v$	$\leq \pm 0.1 \% F_{nom}$						
Relative repeatability error in unchanged mounting position $b_{rg}$	$\leq \pm 0.03 \% F_{nom}$						
Relative deviation of zero signal $d_{s,0}$	$\leq \pm 1 \% F_{nom}$						
Relative error of characteristic value $d_c$	$\leq \pm 0.25 \% F_{nom}$						
Temperature effect on zero signal $TK_0$	$< \pm 0.05 \% \text{ of F.S./10 K}$						
Temperature effect on characteristic value $TK_C$	$< \pm 0.05 \% \text{ Reading/10 K}$						
Force limit $F_L$	200 % $F_{nom}$						
Breaking force $F_B$	400 % $F_{nom}$						
Material	<ul style="list-style-type: none"> <li>■ <math>&lt; 125,000</math> lbs Stainless steel</li> <li>■ <math>\geq 125,000</math> lbs Carbon steel</li> </ul>						
Operating temperature range $B_{T,G}$	-54 ... +121°C						
Reference temperature $T_{ref}$	15 ... 71°C						
Output signal (rated output) $C_{nom}$	2 mV/V $\pm 0.50 \% F_{nom}$						
Input-/output resistance $R_e/R_a$	350 $\Omega$						
Electrical connection	Connector, 6-pin: $\leq 2.000$ lbs: PTIH-10-6P, $> 3.000$ lbs: MS3102E-14S-6P						
Supply voltage	<ul style="list-style-type: none"> <li>■ Standard DC 10 V (max. DC 15 V)</li> <li>■ Option DC 2 ... 28 V integrated or cable amplifier</li> </ul> 0(4) ... 20 mA DC 0 ... 10 V DC 0 ... 5 V						
Protection (acc. to IEC/EN 60529)	from IP66						
Option	<ul style="list-style-type: none"> <li>■ Load input elements</li> <li>■ Built-in amplifier</li> <li>■ Extended compensated temperature range</li> <li>■ Different thread sizes</li> <li>■ Different bridge resistance</li> <li>■ Connector guard</li> </ul>						

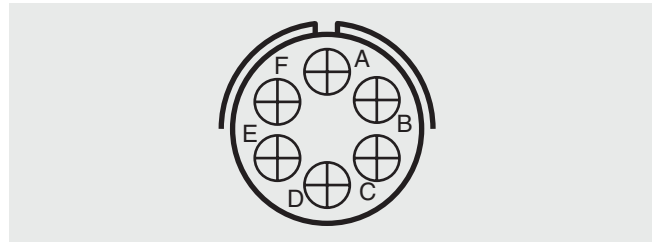
## Dimensions in mm



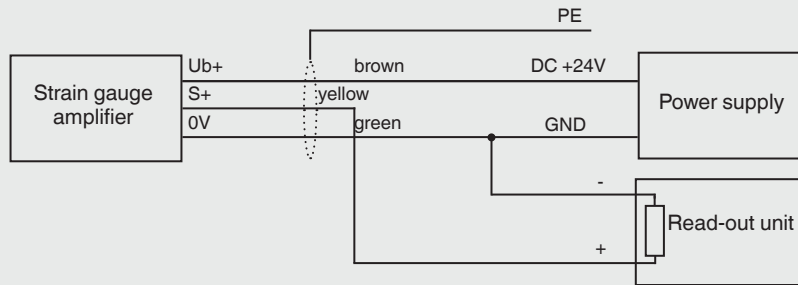
Rated force in lbs (kN)	Dimensions in inches (mm)								
	ØD	H	A	B	C	T	E	F	G
<b>50 - 500</b> (0.22 - 2.22)	<b>3</b> (76.2)	<b>1</b> (25.4)	<b>0.28</b> (7.1)	<b>6</b> (152.4)	<b>2.25</b> (57.2)	<b>3/8-24 UNF</b>	<b>0.82</b> (20.9)	<b>0.75</b> (19.1)	<b>1.25</b> (31.8)
<b>1,000 - 2,000</b> (4.44 - 8.9)	<b>3.5</b> (88.9)	<b>1</b> (25.4)	<b>0.34</b> (8.7)	<b>6</b> (152.4)	<b>2.625</b> (66.7)	<b>1/2-20 UNF</b>	<b>0.82</b> (20.9)	<b>0.75</b> (19.1)	<b>1.25</b> (31.8)
<b>3,000 - 7,500</b> (13.34 - 33.36)	<b>5.5</b> (139.7)	<b>1.8</b> (45.7)	<b>0.4</b> (10.2)	<b>8</b> (203.2)	<b>4.5</b> (114.3)	<b>1-1/4 UNS</b>	<b>1.25</b> (31.8)	<b>1.5</b> (127)	<b>2</b> (50.8)
<b>10,000 - 20,000</b> (44.48 - 88.96)	<b>6</b> (152.4)	<b>1.8</b> (45.7)	<b>0.53</b> (13.4)	<b>8</b> (203.2)	<b>4.88</b> (123.8)	<b>1 1/2-12 UN</b>	<b>1.25</b> (31.8)	<b>1.5</b> (127)	<b>2</b> (50.8)
<b>30,000 - 50,000</b> (133.45 - 222.41)	<b>7</b> (190.5)	<b>2</b> (50.8)	<b>0.78</b> (19.8)	<b>8</b> (203.2)	<b>6</b> (152.4)	<b>2-12 UN</b>	<b>1.25</b> (31.8)	<b>1.5</b> (127)	<b>2</b> (50.8)
<b>75,000 - 100,000</b> (333.62 - 444.82)	<b>9</b> (228.6)	<b>2.5</b> (63.5)	<b>0.66</b> (16.8)	<b>12</b> (304.8)	<b>7.75</b> (196.9)	<b>2 1/2-12 UN</b>	<b>1.25</b> (31.8)	<b>1.5</b> (127)	<b>2</b> (50.8)
<b>150,000 - 200,000</b> (667.23 - 889.64)	<b>14</b> (355.6)	<b>4.25</b> (108)	<b>1.03</b> (26.2)	<b>12</b> (304.8)	<b>11.75</b> (298.5)	<b>3 1/2-8 UN</b>	<b>1.5</b> (127)	<b>1.5</b> (127)	<b>2</b> (50.8)

## Pin assignment

Electrical connection mV/V	
Excitation voltage (+)	Pin A&B
Excitation voltage (-)	Pin C&D
Signal (-)	Pin E
Signal (+)	Pin F



### Pin assignment for integrated amplifier or cable amplifier (output 4 .... 20 mA)



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