

Bolt Force Sensor CL20

- compression force measurement
- static and dynamic forces
- bolt diameter range from M8 up to M20
- high reliability and repeatability
- three-year warranty



Bolt Force Sensor type CL20 allows to measure compression forces exerted in bolts by the fastener testing in diameter range from M8 up to M20, adequately in force range from 25kN up to 250kN.

Measuring range adequately to bolt diameter	see table next page
Service load	50%
Nominal sensitivity	1,5 mV/V
Sensitivity deviation	10%
Nominal input voltage	10V
Input impedance	700Ω
Output impedance	700Ω
Insulation resistance	< 40GΩ
Nonlinearity in reference to nominal range*	< 1%
Operating temperature range	253K do 353K
Temperature compensation	293K do 363K
Temperature effect on zero	< 0,1%/10K
Temperature effect on sensitivity	< 0,1%/10K
Cable length – <i>customized</i>	1m as a standard
Dimensions	see table next page
Material	stainless steel

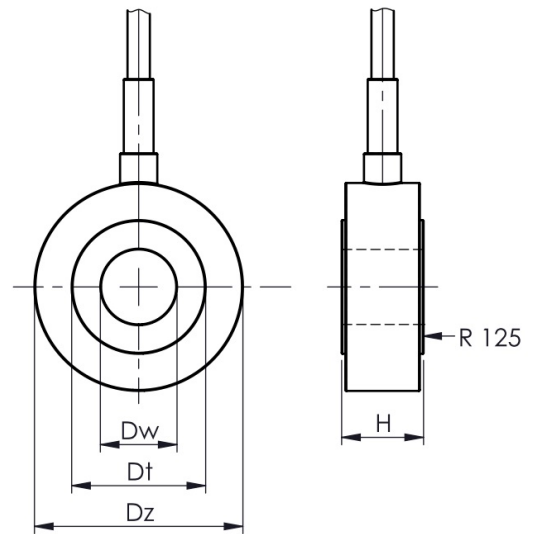
* F = 100% nominal force and at assembly adherences (drawing 2).
For inner diameter (Dw) ≤ 10 mm the nonlinearity can exceed over 2%.

Table of dimensions related to bolt inner diameter and force `nominal range

Bolt Force Sensor CL20

Typ	Zakres	Dw	Dt	Dz	H
	kN	mm	mm	mm	mm
CL20-8	25	8,1	14	26	13
CL20-10	50	10,1	19	31	14
CL20-12	75	12,1	23	35	15
CL20-14*	10	14,1	16,5	28	16
CL20-14	100	14,1	27	39	16
CL20-16	150	16,1	32	44	17
CL20-18	200	18,1	37	49	18
CL20-20	240	20,1	40,5	52,5	19

* customized to the sensitivity 1mV/V



Drawing1. Shape of sensor

Item description

CL20-10-1-R1.5-10-O1-3-P

Bolt inner diameter: 8,10,12,14,16,18,20mm

Nonlinearity: <1%

Sensitivity: R1,5

Nominal voltage:

Cable connection: strain relief

Cable length:

Thrust washer

1,5mV/V

10V

O1

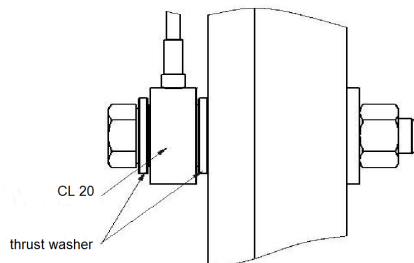
m

P

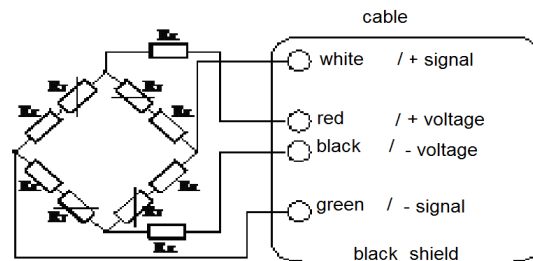
Ordering example: CL20-10-1-R1,5-10-O1-3-P

force sensor CL20 to bolt inner diameter M10, nonlinearity 1%, nominal sensitivity 1,5mV/V, nominal voltage 10Vdc, cable connection strain relief, cable length 3m, with trust washer*

* The trust washer can be made by customer himself according drawings delivered by ZEPWN or ordered optionally.



Drawing.2. Assambly



Drawing 3. Electrical connection

Manufacturer

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