

## Force sensor CL 15

- High accuracy
- High stability and repeatability
- Tension load only
- Three year warranty and after sale service



The force sensor CL 15 has been designed for measuring static and slow-changing forces.

Together with the ZEPWN instrumentation can find both labor and industrial usage.

The conversion of measured load is realized due to a steel spring element with strain gage full bridge. The bridge is balanced and thermal compensated. The sensor can be load only with tension forces.

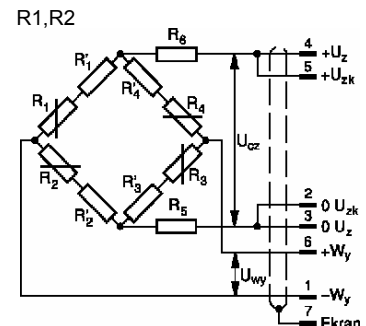
The sensor CL 18 in configurations R1, R2 has the strain gauge bridge 700 Ω with sensitivity 1 mV/V or 2 mV/V. For electrical protection IP40 the sensor is equipped with connectors. For electrical protection IP66 the sensor is equipped with stuffing on connection cable.

### Specifications:

|   |                               |                                  |
|---|-------------------------------|----------------------------------|
| Range   | [kN]                          | 5, 10, 20, 50, 100, 200          |
| Accuracy  |                               | 0,05 or 0,1                      |
| Cumulative pitch error  | [%]                           | 0,018                            |
| Signal of unbalance   | [%]                           | ± 2                              |
| Signal of unbalance from zero after nominal load take away (30 min) | [%]                           | ≤ 0,03                           |
| Zero point deviation  | [%/30 min]                    | ≤ 0,03                           |
| Temperature effect on the sensitivity                               | [%/10K]                       | ≤ 0,05                           |
| Temperature effect on the signal of unbalance                       | [%/10K]                       | ≤ 0,05                           |
| Nominal supply voltage  | [V]                           | 10                               |
| Sensitivity   | [mV/V]                        | 1 - R1, 2 - R2                   |
| Input resistance  | – up to 10 kN<br>– from 20 kN | 760 ± 25<br>730 ± 25             |
| Output resistance   | [Ω]                           | 700 ± 5                          |
| Overload capacity   | [%]                           | 150                              |
| Operating temperature   | [K]                           | 253 ÷ 373                        |
| Compensation temperature  | [K]                           | 273 ÷ 363                        |
| Maximal strain  | [mm]                          | 0,2                              |
| Connector   |                               | Z1 – LUMBERG or O1- O-ring gland |
| Protection degree   |                               | IP40, IP66                       |
| Dimensions  |                               | as in table below                |
| Material  |                               | steel, aluminium                 |
| Cable length  |                               | 0,5 (standard) or other optional |

### Designations and cable outlets

|          |                   |
|----------|-------------------|
| 1 brown  | -W <sub>y</sub>   |
| 2 pink   | 0 U <sub>zk</sub> |
| 3 white  | 0 U <sub>z</sub>  |
| 4 yellow | +U <sub>z</sub>   |
| 5 grey   | +U <sub>zk</sub>  |
| 6 green  | +W <sub>y</sub>   |
| 7 black  | shield            |

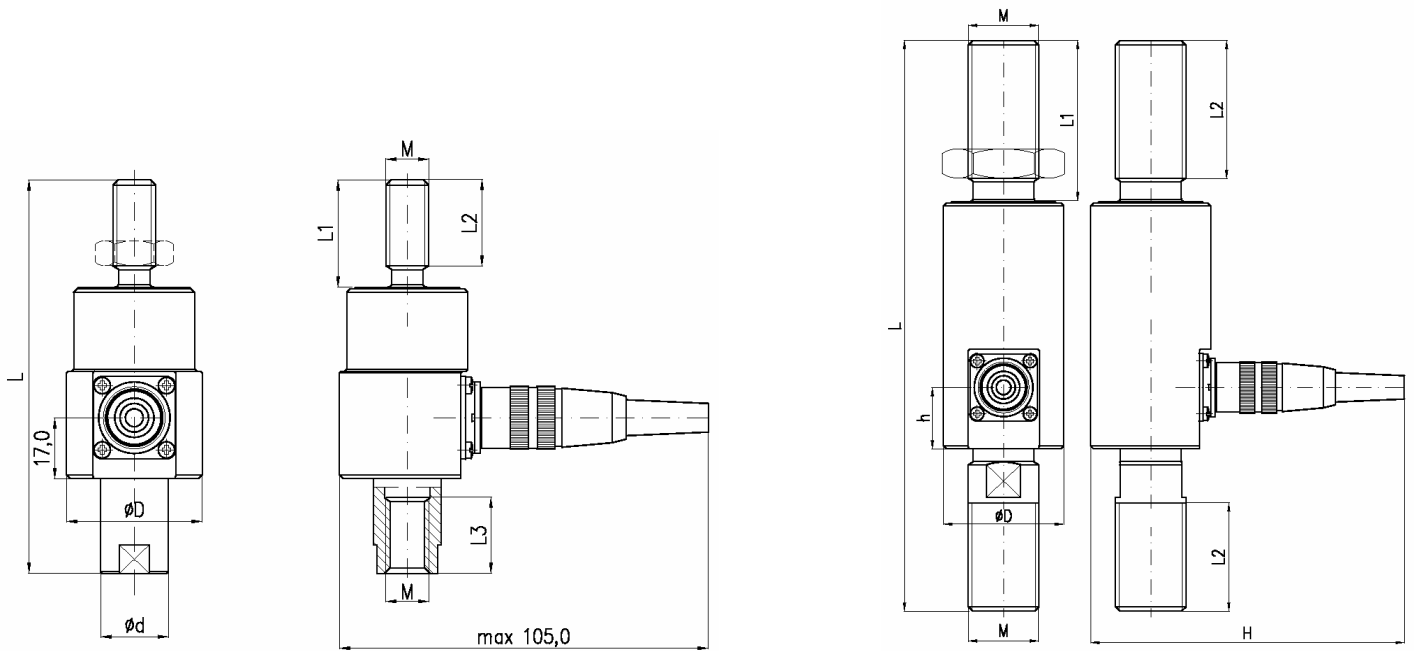


### Quality assurance

Each sensor is detailed examined after manufacturing process.

The manufacturer offers 36 month warranty for the sensor and after that time also repair and calibration services.

# Force sensor CL 15



| Range<br>kN | L   | L1  | L2 | M     | L3 | h  | D  | H    |
|-------------|-----|-----|----|-------|----|----|----|------|
|             | mm  |     |    |       |    |    |    |      |
| 5           | 110 | 30  | 24 | M12   | 22 | -  | 38 | -    |
| 10          | 120 | 35  | 29 | M12   | 25 | -  | 38 | -    |
| 20          | 140 | 43  | 37 | M24x2 | -  | 17 | 38 | ≤105 |
| 50          | 195 | 55  | 47 | M24x2 | -  | 21 | 41 | ≤107 |
| 100         | 255 | 75  | 67 | M39x3 | -  | 21 | 56 | ≤125 |
| 200         | 345 | 100 | 92 | M52x3 | -  | 21 | 69 | ≤137 |

CL 15 in range from 500 kN up to 3000 kN are manufactured on an individual order.

## Options:



Range [kN]: 5; 10; 20; 50; 100; 200

Accuracy class: 0,05; 0,1

Configuration: R1 – bridge 700Ω, 1 mV/V, R2 – 700 Ω, 2 mV/V

Supply voltage: 10 V

Connectors: Z1 – Lumberg DIN 45329; O1 – stuffing with stay wire

Cable length: standard 0,5 m or other optional

## Example of options for ordering

CL 15 – 10 kN – 0,1 – R1 – 10- O1 – 1: sensor with dimensions as in table, range 10 kN; accuracy class 0,1; strain gage bridge 700 Ω, sensitivity 1 mV/V; connector as stuffing on cable; cable length 1m.

## Manufacturer

Zakład Elektroniki Pomiarowej Wielkości Nielektrycznych, 05-270 Marki, ul. Kołłątaja 8  
tel./fax: 004822. 7812169, 7712411, e-mail: [zepwn@zepwn.com.pl](mailto:zepwn@zepwn.com.pl), <http://www.zepwn.com.pl>