



# PENKO Engineering BV

The Leading Experts In Weighing & Dosing

## 250kN-900kN RC1



### Product Description

The type RC1 is a stainless steel rocker column load cell with complete hermetic sealing. It is a perfect fit for use in harsh industrial environments.

### Application

- Weighbridges, hoppers, tanks and silos

### Key Features

- Capacities from 250 kN to 900 kN (25.5 t to 91.8 t)
- Stainless steel construction
- Environmental Protection IP68 with complete hermetic sealing
- Self restoring design
- Calibration in mV/V/Ω

### Approvals

- OIML approval to C1 (Y = 4 667) and C3 (Y = 10 000)
- NTEP approval to 10 000 intervals, Class III L
- ATEX hazardous area approval for Zone 0, 1, 2, 20, 21 and 22
- FM hazardous area approval

### Packed Weight

|               |     |     |     |     |
|---------------|-----|-----|-----|-----|
| Capacity (kN) | 250 | 400 | 600 | 900 |
| Weight (kg)   | 3.6 | 6.6 | 7.0 | 7.0 |

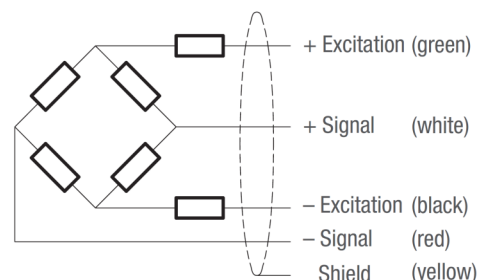
### Available Accessories

- Compatible range of application hardware
- Compatible range of electronics

### Wiring

- The load cell is provided with a shielded, 4 conductor cable (AWG 20). Cable jacket polyurethane
- Cable length:
 

|      |                        |
|------|------------------------|
| 12 m | for RC1-250 kN         |
| 16 m | for RC1-400 kN         |
| 18 m | for RC1-600 and 900 kN |
- Cable diameter: 7.8 mm
- The shield is floating  
(On request the shield can be connected to the load cell body)

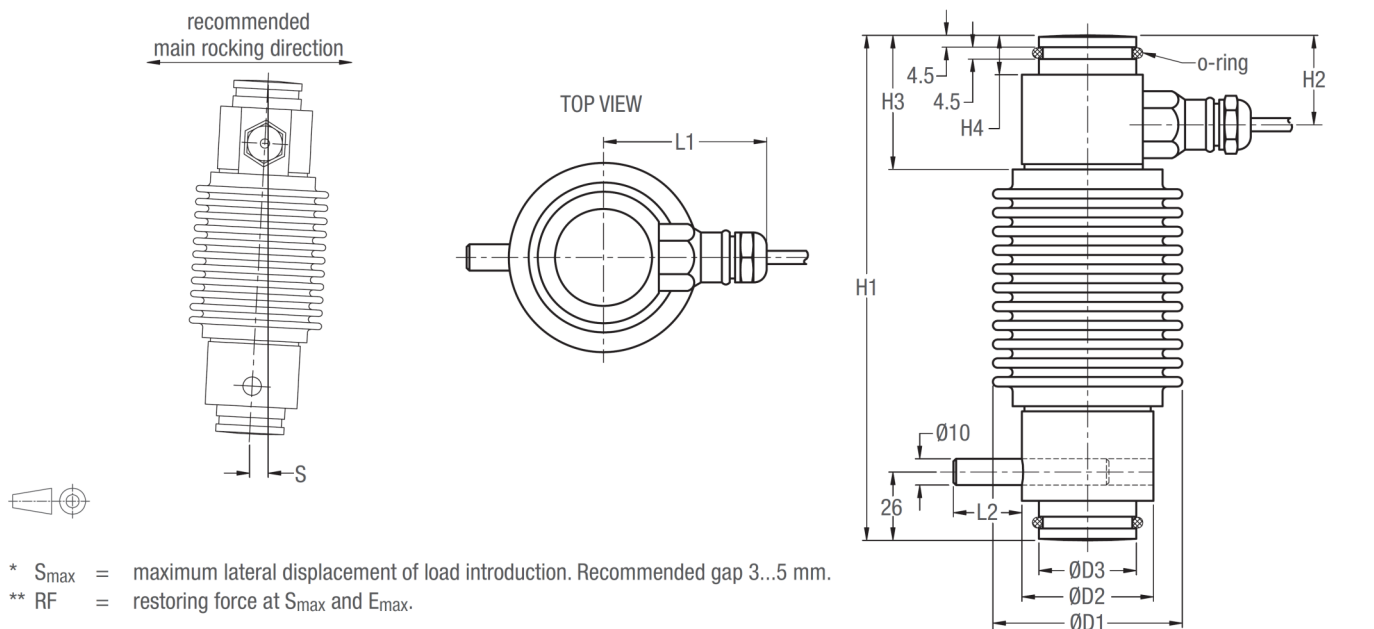


## Specifications

|  |                     |                        |  |                          |                           |
|--|---------------------|------------------------|--|--------------------------|---------------------------|
| Maximum capacity                         | (E <sub>max</sub> ) | kN                     | 250 / 400 / 600 / 900  |                          |                           |
| Metric equivalents (1 N=0.10197 kg)      |                     | t                      | 25.5 / 40.8 / 61.2 / 91.8  |                          |                           |
| Accuracy class according to OIML R60     |                     |                        | (GP)   | C1                       | C3                        |
| Maximum number of verification intervals | (n <sub>LC</sub> )  |                        | n.a.   | 1 000                    | 3 000                     |
| Minimum load cell verification interval  | (v <sub>min</sub> ) |                        | n.a.   | E <sub>max</sub> / 4 667 | E <sub>max</sub> / 10 000 |
| Temp. effect on minimum dead load output | (TC <sub>0</sub> )  | %*R <sub>0</sub> /10°C | ± 0.0400   | ± 0.0280                 | ± 0.0140                  |
| Temperature effect on sensitivity        | (TC <sub>R0</sub> ) | %*R <sub>0</sub> /10°C | ± 0.0200   | ± 0.0160                 | ± 0.0100                  |
| Combined error                           |                     | %*R <sub>0</sub>       | ± 0.0500   | ± 0.0300                 | ± 0.0200                  |
| Non-linearity                            |                     | %*R <sub>0</sub>       | ± 0.0400   | ± 0.0300                 | ± 0.0166                  |
| Hysteresis                               |                     | %*R <sub>0</sub>       | ± 0.0400   | ± 0.0300                 | ± 0.0166                  |
| Creep error (30 minutes) / DR            |                     | %*R <sub>0</sub>       | ± 0.0600   | ± 0.0490                 | ± 0.0166                  |
| Rated Output                             | (R <sub>0</sub> )   | mV/V                   | 2 ± 0.1%   |                          |                           |
| Calibration in mV/V/Ω (A...I classified) |                     | %                      | ± 0.05 (± 0.005)   |                          |                           |
| Zero balance                             |                     | %*R <sub>0</sub>       | ± 5  |                          |                           |
| Excitation voltage                       |                     | V                      | 5...15   |                          |                           |
| Input resistance                         | (R <sub>LC</sub> )  | Ω                      | 400 ± 15   |                          |                           |
| Output resistance                        | (R <sub>out</sub> ) | Ω                      | 351 ± 1  |                          |                           |
| Insulation resistance (100 V DC)         |                     | MΩ                     | ≥ 5 000  |                          |                           |
| Safe load limit                          | (E <sub>lim</sub> ) | %*E <sub>max</sub>     | 200  |                          |                           |
| Ultimate load                            |                     | %*E <sub>max</sub>     | 300  |                          |                           |
| Compensated temperature range            |                     | °C                     | -10...+40  |                          |                           |
| Operating temperature range              |                     | °C                     | -40...+80 (ATEX -40...+60)   |                          |                           |
| Load cell material                       |                     |                        | stainless steel 17-4 PH (1.4548)                                       |                          |                           |
| Sealing                                  |                     |                        | complete hermetic sealing; cable entry sealed by glass to metal header |                          |                           |
| Protection according EN 60 529           |                     |                        | IP68 (up to 2 m water depth) / IP69K                                   |                          |                           |

The limits for Non-Linearity, Hysteresis, and TC<sub>R0</sub> are typical values.  
The sum of Non-linearity, Hysteresis and TC<sub>R0</sub> meets the requirements according to OIML R60 with p<sub>LC</sub>=0.7.

## Dimensions (in mm)



\* S<sub>max</sub> = maximum lateral displacement of load introduction. Recommended gap 3...5 mm.  
\*\* RF = restoring force at S<sub>max</sub> and E<sub>max</sub>.

| Type       | L1 | L2 | H1  | H2 | H3 | H4 | D1 | D2 | D3   | S <sub>max</sub> * | RF**  |
|------------|----|----|-----|----|----|----|----|----|------|--------------------|-------|
| RC1-250 kN | 62 | 33 | 192 | 34 | 51 | 15 | 72 | 50 | 37   | 10.5               | 19 kN |
| RC1-400 kN | 69 | 26 | 225 | 36 | 57 | 16 | 85 | 64 | 37   | 11                 | 20 kN |
| RC1-600 kN | 69 | 26 | 225 | 36 | 57 | 16 | 85 | 64 | 54.4 | 12.5               | 63 kN |
| RC1-900 kN | 69 | 26 | 225 | 36 | 57 | 16 | 85 | 64 | 54.4 | 9                  | 94 kN |

