ZEPWN

Zakład Elektroniki Pomiarowej Wielkości Nieelektrycznych

CL 14U

Operational force sensor CL 14U

- High accuracy
- Bipolar load measurement
- Self-aligning housing as an option
- Three year warranty and after market service

The operational force sensor CL 14U has been designed for measuring static and slow-changing forces. Together with ZEPWN instrumentation can find both labor and industrial usage, especially for converting force into electrical signal in industrial automatics and supervising systems.
The sensor CL 14U can be load two-directional.

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 CL 14 in configurations R1, R2 has the strain gauge bridge 350 Ω with sensitivity 1 mV/V or 2 mV/V. For electrical protection IP40 the sensor is equipped with connectors. For electrical protection IP68 the sensor is equipped with a stuffing on the connection cable.

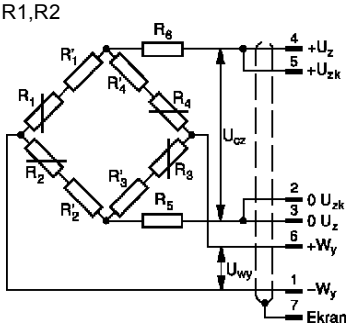
Specifications:

Range	[kN]:	0,05; 0,1; 0,2; 0,5; 1; 2; 5; 10, 20, 50, 100
Configurations		R1, R2
Output signal	[mV/V]	1 - R1, 2 - R2
Accuracy		0,05 or 0,1 - (related to the sensor's range)
Nominal supply voltage	[V]	10
Strain gage resistance	[Ω]	350
Input resistance	[Ω]	410 ± 10 (up to 10 kN) 380 ± 5 (20-100 kN)
Output resistance	[Ω]	350 ± 5
Zero point deviation	[%/30 min]	≤ 0,03
Return of output signal to zero after nominal load take away	[%]	≤ 0,03
Operating temperature	[°C]	-20 ÷ 100
Temperature effect on the sensitivity	[%/10K]	≤ 0,05
Temperature effect on the signal of unbalance	[%/10K]	≤ 0,05
Compensation temperature	[°C]	0 ÷ 90
Maximal strain	[mm]	0,5
Connectors		Z1 – LUMBERG or O1- O-ring gland
Protection degree		IP40, IP67
Dimensions		as in table below
Material		steel, aluminium
Cable length		3 m (standard) or other optional

Designations and cable outlets

1 brown	$-W_y$
2 pink	$0\ U_{zk}$
3 white	$0\ U_z$
4 yellow	$+U_z$
5 grey	$+U_{zk}$
6 green	$+W_y$
7 black	shield

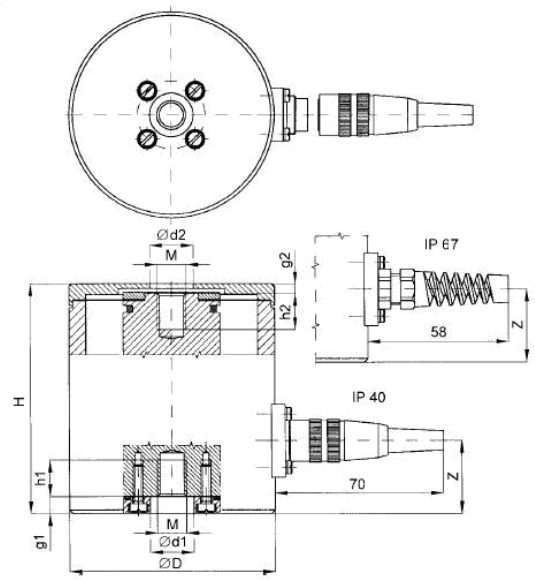
R1,R2



Operational force sensor CL 14U

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.



Range	H	D	Z	M	d 1	g 1	h1	d 2	g 2	h2
kN	mm									
0,05	75	65	22	M8	10	7	10	18	10	10
0,1	75	65	22	M8	10	7	10	18	10	10
0,2	75	65	22	M8	10	7	10	18	10	10
0,5	75	65	22	M8	10	7	10	18	10	10
1	75	65	22	M8	10	7	10	18	10	10
2	75	65	22	M8	10	7	10	18	10	10
5	93	85	30	M12	14	7	19	28	10	20
10	93	85	30	M12	14	7	19	28	10	20
20	97	88	30	M24x2	28	8	19	45	10	19
50	97	88	30	M24x2	28	8	19	45	10	19
100	158	126	50	M39x3	42	8	30	64	10	34

Options:

CL 14U	100 kN	0,1	R2	10	Z1	1

Range [kN]: 0,05; 0,1; 0,2; 0,5; 1; 2; 5; 10; 20; 50; 100;

Accuracy class: 0,05; 0,1

Configuration: R1 – bridge 350 Ω, 1 mV/V, R2 – 350 Ω, 2 mV/V

Supply voltage: 10 V

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

Cable length: standard 0,3 m or other optional

Example of options for ordering

CL 14U – 100 kN – 0,1 – R2 – 10- Z1 – 1: sensor with dimensions as in table, range 100 kN; accuracy 0,1; strain gage bridge 350 Ω, 2 mV/V; supply 10 V; connector Lumberg; cable length 1 m

Manufacturer
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