KW18
Load Sensor

Overview

This load sensor module is high output, high precision and small type load converter incorporating a semiconductor strain gauge. This sensor module complies with both compression and tension load. Various type regarding measuring ranges are provided, complying with measurement of the load or displacement for control. A hook according to applications can be installed by welding at the load sensing portion.

Features

- The sensing part is equipped with an evaporation type semiconductor strain gauge. Therefore, the pressure transmitter has good durability and stability.
- Small and lightweight design contribute for installing into miniaturized equipment.
- Because there are no moving portions, this load sensor performs with excellent vibration resistance and shock resistance.
- Because a metallic diaphragm is used, this load sensor performs with excellent corrosion resistance and overload resistance.

Specifications

Installation environment:

Install in location where no gases or liquids may exist that have the potential to become flammable or ignitable under normal operating condition

Type:

Pull Type (Tension load), Push Type (Compression)

Load sensing parts material:

SUS630 (17-4PH)

Load range:

Pull Type　0 to 6→0 to 500N
Push Type　0 to 20→0 to 1000N

Maximum allowable load:

200% of rated load range

Operating temperature range:

-20 to 70℃

Power source:

5V DC

Output:

60±25mV DC

Input and output impedance:

3.5kΩ (Typ.)

Zero and offset:

±6mV DC

Lead wire:

With 100mm

Accuracy:

±0.5 to ±2.0%F.S. (Varies depending on load range)
(Includes the effect of linearity, hysteresis and repeatability.)

Temperature features (Zero, span):

±0.05%F.S./℃ (Accuracy ±0.5%F.S.)
±0.1%F.S./℃　(Accuracy ±1.0, ±2.0%F.S.)

Case material:

Stainless steel

Hook material:

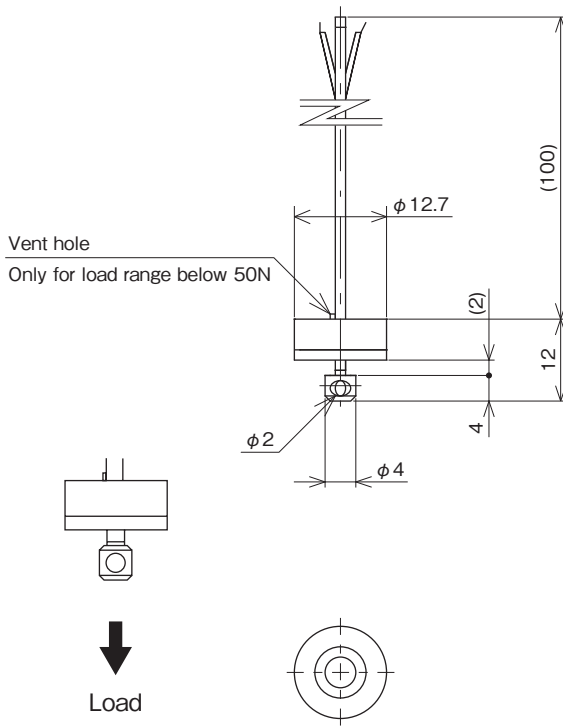SUS304 (Pull Type)

Push globe material:

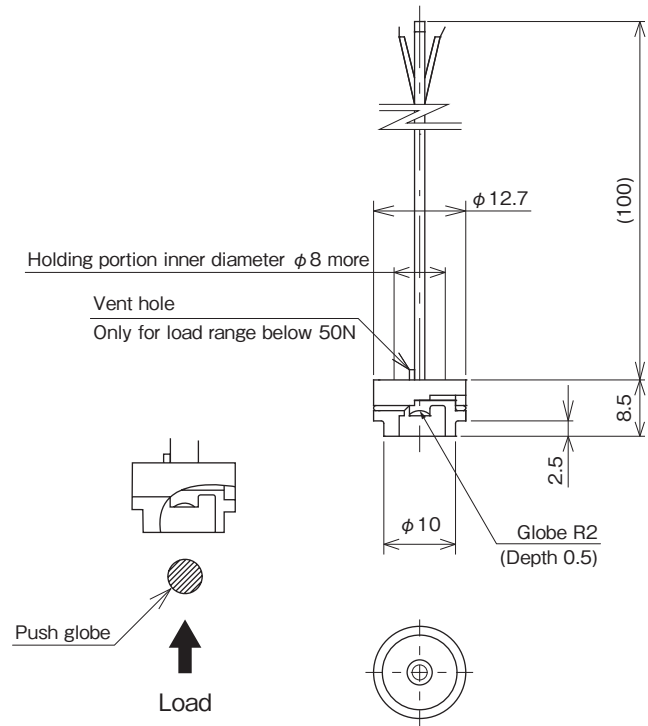SUS440C (Push Type)

Weight:

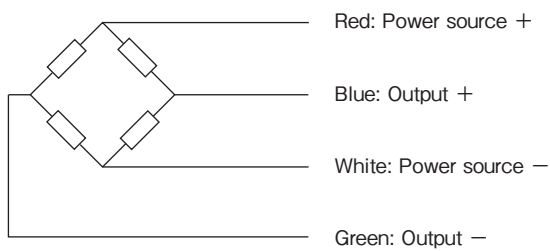Approx. 5g

Dimensions

Unit: mm

Vent hole
Only for load range below 50N

φ12.7

(100)

(2)

12

4

φ2

φ4

Load

[Pull Type]

Holding portion inner diameter φ8 more

Vent hole
Only for load range below 50N

φ12.7

(100)

8.5

2.5

φ10

Globe R2
(Depth 0.5)

Push globe

Load

[Push Type]

Wiring

Red: Power source +

Blue: Output +

White: Power source −

Green: Output −

[Pull Type]

Red: Power source +

Blue: Output −

White: Power source −

Green: Output +
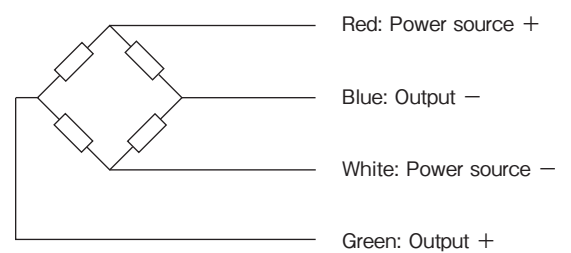
[Push Type]

Model number configuration
Please specify the model, each requiring specification and load range to order.

Model

K W 1 8	—	0	0	—			D	V	✕	✕	✕	✕	✕	✕	✕	
Load Sensor		①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮

Model number		Product specifications	Additional specifications (Optional)

①②③ Type	010	Push Type
	020	Pull Type

Please specify applicable range code as well as load range and engineering unit.

④ Load range N			Available range: ○	Pull Type	Push Type
	1	0 to 6	±1.0%F.S. Only	○	—
	2	0 to 10		○	—
	3	0 to 20		○	○
	4	0 to 50		○	○
	5	0 to 70		○	—
	6	0 to 100		○	○
	7	0 to 200		○	○
	8	0 to 350		○	—
	A	0 to 500		○	○
	B	0 to 1000	±2.0%F.S. Only	—	○

⑤ Accuracy	5	±0.5%F.S.
	7	±1.0%F.S.
	9	±2.0%F.S. (0 to 1000N)

⑥ Power source	D	5V DC

⑦ Output	V	60±25mV DC

⑮ Documents	0	Not required
	1	Required (Documents available upon request) Datasheet (Drawing / Specifications) Instruction manual Inspection procedure Mill test report Calibration test report (One-part one sheet) Inspection / Traceability certificate Calibration test report for pressure standard Strength calculation sheet Attending inspection

∗Specify code "X" to refer N/A