KL92 Pressure Transmitter for Semiconductor Production Appliances Chemical-Resistance

Outline

This product is a fluoropolymers diaphragm seal type pressure transmitter.
As the O-ring-free structure minimizes contamination risk and the elution of metal, it is suitable for pressure monitoring in the semiconductor manufacturing industry.

Features

- Wetted parts are all made of fluoropolymers (PFA, PTFE) and so structured as to minimize contamination risk.
- Improved corrosion resistance to chemicals, such as hydrofluoric acid.
- Enclosure rating is IP54 to meet the application requirement of wet station with compact resin body.

Features of sensor
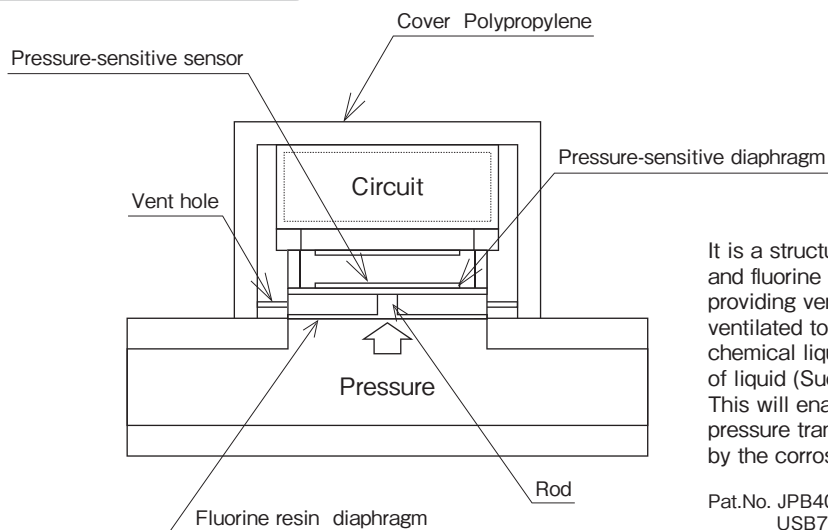
It is a structure that binds pressure-sensitive diaphragm and fluorine resin diaphragm as wetted parts by rod. By providing vent hole addition, we structure that can be ventilated to the outside of the case corrosive chemical liquid gas coming from the transmission trace of liquid (Such as hydrofluoric acid).
This will enable us to extend the life span of the pressure transmitter and sensors circuit is not affected by the corrosive gas.

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USB7,367,233
TWBI359263
KRB10-0970038
EPB1754963

Applications

- Cleaning equipment for semiconductor
- Chemical liquid supply device
- Cleaning equipment for FPD
- Wet station

NKS NAGANO KEIKI

KL92

Pressure Transmitter for Semiconductor Production Appliances Chemical-Resistance

Specifications

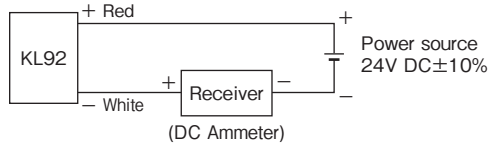| Item	Description
Fluid	Liquid (Not corrosive for PFA and PTFE)
Operating conditions	Free from combustible gas or liquid causing fire/explosion under normal condition
Pressure inlet	Tube connection, various types of nut, male screw (ϕ1/4, ϕ3/8, ϕ1/2 inch)
Wetted parts material	Diaphragm: PFA Others: PTFE (PFA)
Pressure range	0 to 0.3, 0.5 MPa
Allowable pressure	0.7 MPa
Fluid temperature	10 to 80℃
Operating temperature	10 to 60℃
Storage temperature	-10 to 65℃ (No freezing inside the sensor)
Operating humidity	25 to 80%RH (No condensation inside the sensor)
Power source	24V DC±10% (2 wire system) 12 to 24V DC (3 wire system)
Output	2 wire system: 4 to 20mA DC (Load resistance: 500Ω max. at 24V DC) 3 wire system: 1 to 5V DC (Load resistance:10kΩ min.)
Transmission system	2 wire system or 3 wire system
Accuracy	±1.0%F.S.
Temperature coefficient	±0.05%F.S./℃ (Zero) ±0.05%F.S./℃ (Span) Compensation temperature: 10 to 60℃
Setting system	External adjustment at zero point
Enclosure	Splash-proof excluding cable end (IP54)
Chassis material	Polypropylene (PP), fluorocarbon polymers (PTFE, PFA)
Weight	Approx. 180g (With cable)
CE compliance	Applicable Standards: EN61326-1:2013; EN61326-2-3:2013

Cable

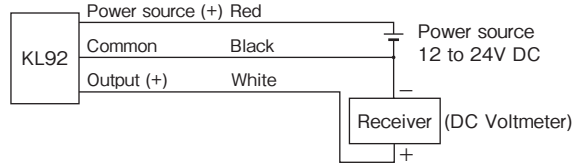|	Environmental temperature	Conductor		Cable outer diameter (mm)	Minimum bend radius (mm)
		Cross-section area (mm²)	Twisted conductors (pcs./mm)		
Shielded cable (Standard)	-60 to 90℃	0.34	17/0.16	ϕ4.8	19

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Wiring

2 wire system (Current output)

KL92
+ Red
− White

+
Receiver −
(DC Ammeter)

+
−
Power source
24V DC±10%

3 wire system (Voltage output)

KL92
Power source (+) Red
Common   Black
Output (+)   White

Power source
12 to 24V DC

Receiver (DC Voltmeter)
+

Installation position

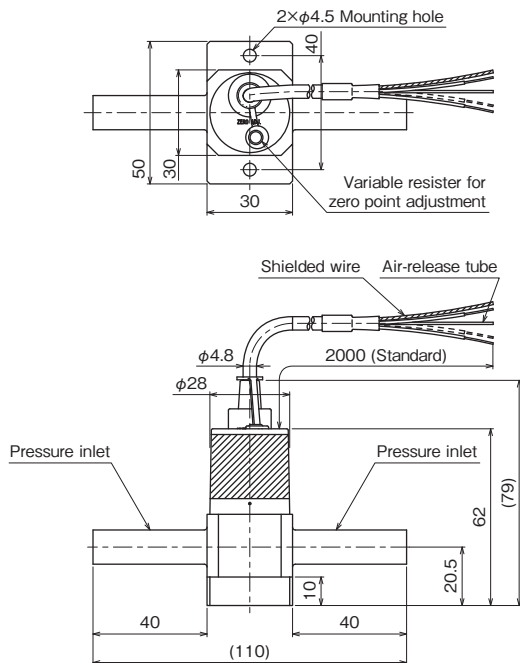Horizontal installation position is recommended since stagnant foreign matter at pressurized parts may cause errors.
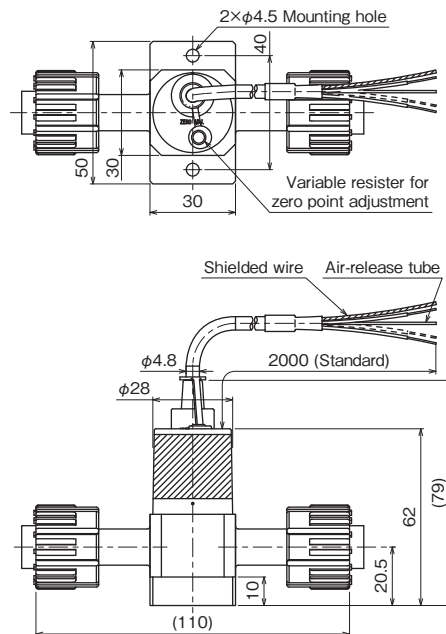
○   △
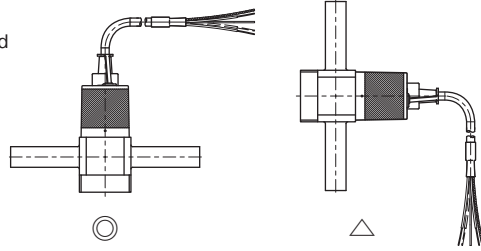
Dimensions 1

Unit: mm

Inline type

Tube connection

S300 nut (Press fit) from Nippon Pillar Packing Co., Ltd.

2×φ4.5 Mounting hole
40
50
30
30
Variable resister for zero point adjustment

2×φ4.5 Mounting hole
40
50
30
30
Variable resister for zero point adjustment

Shielded wire   Air-release tube
φ4.8
φ28
2000 (Standard)
Pressure inlet   Pressure inlet
(79)
62
20.5
10
40   40
(110)

Shielded wire   Air-release tube
φ4.8
φ28
2000 (Standard)
(79)
62
20.5
10
(110)

Model number	Conecting port
KL92-151	φ1/4 inch
KL92-161	φ3/8 inch
KL92-171	φ1/2 inch

Model number	Conecting port
KL92-152	φ1/4 inch
KL92-162	φ3/8 inch
KL92-172	φ1/2 inch

Dimensions 2

Unit: mm

Inline type
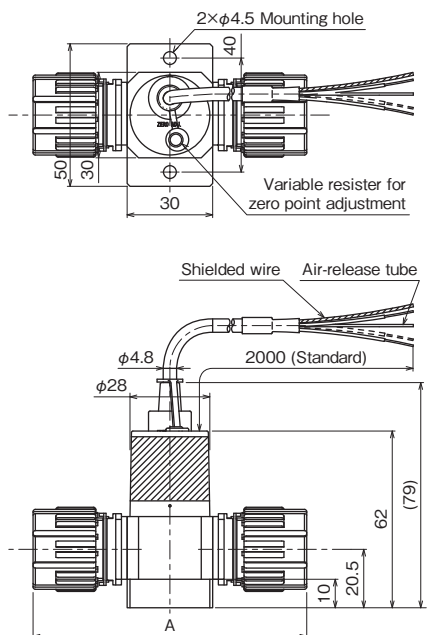
20 series nut (Press fit) from Flowell Corporation

2×φ4.5 Mounting hole
40
50
30
30
Variable resister for zero point adjustment

Shielded wire Air-release tube
φ4.8
φ28
2000 (Standard))
62
(79)
10
20.5
(110)
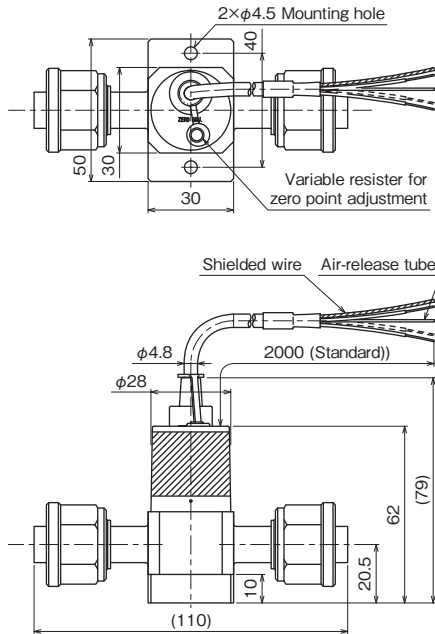
Model number	Conecting port
KL92-154	φ1/4 inch
KL92-164	φ3/8 inch
KL92-174	φ1/2 inch

Flare nut (Insert)

2×φ4.5 Mounting hole
40
50
30
30
Variable resister for zero point adjustment

Shielded wire Air-release tube
φ4.8
φ28
2000 (Standard)
62
(79)
10
20.5
(110)
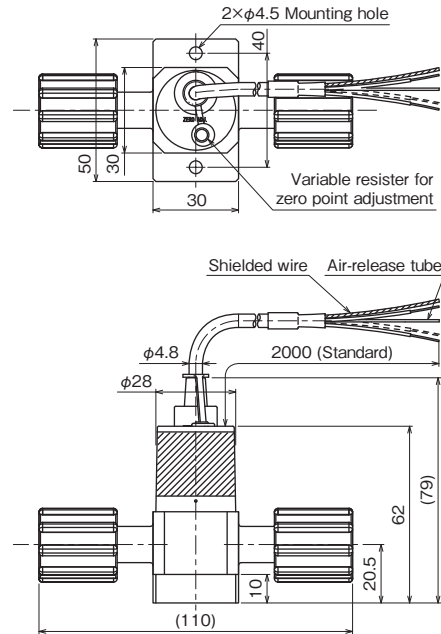
Model number	Conecting port
KL92-156	φ1/4 inch
KL92-166	φ3/8 inch
KL92-176	φ1/2 inch

S300 male screw from Nippon Pillar Packing Co., Ltd.

2×φ4.5 Mounting hole
40
50
30
30
Variable resister for zero point adjustment

Shielded wire Air-release tube
φ4.8
φ28
2000 (Standard)
62
(79)
10
20.5
A

Model number	Conecting port	A size
KL92-15A	φ1/4 inch	68
KL92-16A	φ3/8 inch	80
KL92-17A	φ1/2 inch	96

Dimensions 3

Uni: mm
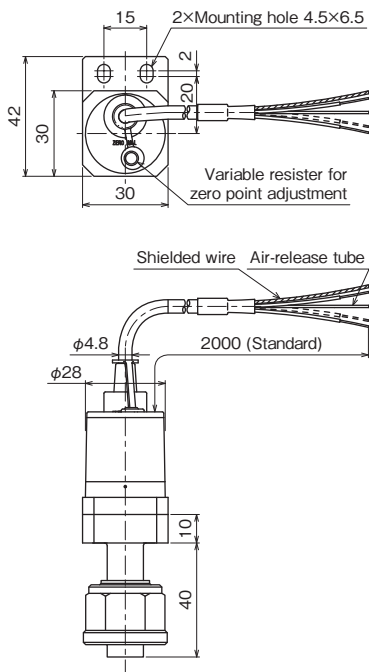
Single port type

Tube connection
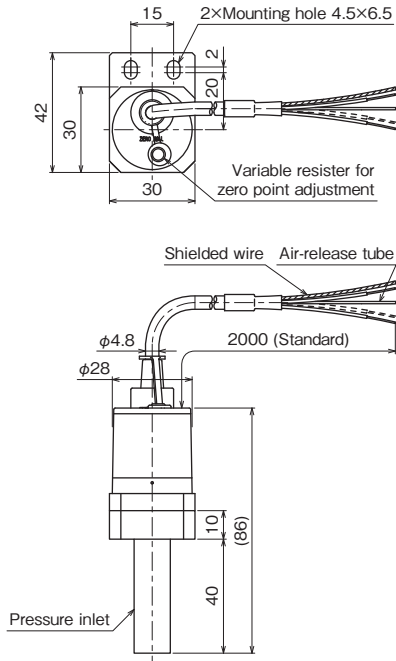
Model number	Conecting port
KL92-251	φ1/4 inch
KL92-261	φ3/8 inch
KL92-271	φ1/2 inch

S300 nut (Press fit) from Nippon Pillar Packing Co., Ltd.
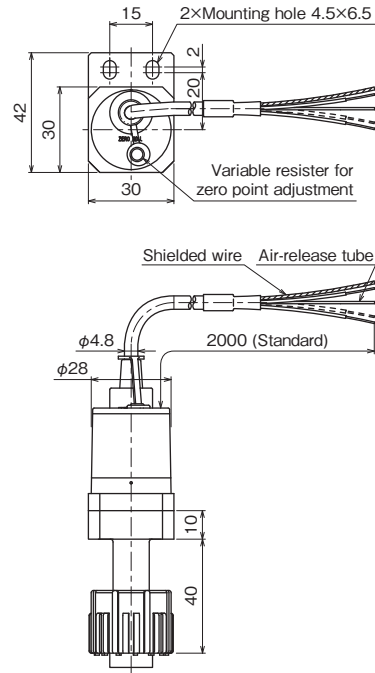
Model number	Conecting port
KL92-252	φ1/4 inch
KL92-262	φ3/8 inch
KL92-272	φ1/2 inch

20 series nut (Press fit) from Flowell Corporation

Model number	Conecting port
KL92-254	φ1/4 inch
KL92-264	φ3/8 inch
KL92-274	φ1/2 inch

Flare nut (Insert)
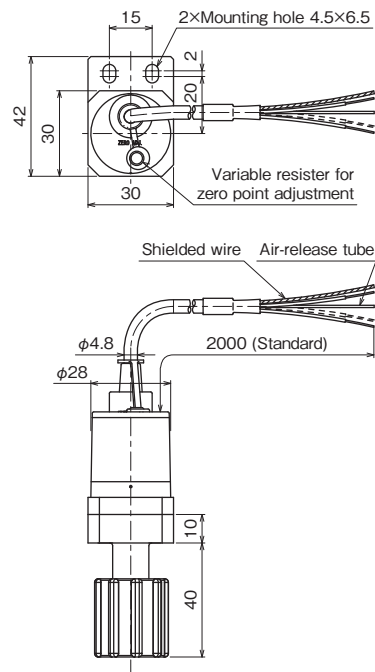
Model number	Conecting port
KL92-256	φ1/4 inch
KL92-266	φ3/8 inch
KL92-276	φ1/2 inch

KL92

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Model number configuration

Please specify the model number, each specs and the range for ordering.

Model

| K L 9 2 | — | ① | ② | ③ | — | 7 ④ | ⑤ | ⑥ | ⑦ | ⑧ × | ⑨ | ⑩ × | ⑪ × | ⑫ × | ⑬ × | ⑭ × | ⑮ |

Pressure transmitter
Chemical-resistance type

Model number				Selective spec.	Additional spec. (Option)

① Connecting type	1	In-line type	Element: PFA Sensing part (Case, Fitting): PTFE (PFA)
	2	Single port type	Element: PFA Sensing part (Case, Fitting): PTFE (PFA)

② Pressure connecting bore diameter	5	Bore diameter (O.D. 1/4", I.D. 5/32")
	6	Bore diameter (O.D. 3/8", I.D. 1/4")
	7	Bore diameter (O.D. 1/2", I.D. 3/8")

③ Pressure connecting port	1	Tube connection
	2	S300 nut (Press fit) from Nippon Pillar Packing Co., Ltd.
	4	20 series nut (Press fit) from Flowell Corporation
	6	Flare nut (Insert)
	A	S300 male screw from Nippon Pillar Packing Co., Ltd. (In-line type only)

Please specify the pressure range and units separately besides selection of range code.

④ Pressure range	3	0 to 0.3MPa
	5	0 to 0.5MPa

⑤ Accuracy	7	±1.0%F.S.

⑥ Power source / ⑦ Analog output	⑥	⑦	⑥Power source	⑦Analog output
	1	1	24V DC±10% (2 wire system)	4 to 20mA DC (2 wire system)
	N	8	12 to 24V DC±10% (3 wire system)	1 to 5V DC (3 wire system)

⑨ Cable spec.	1	Cable 2 m (Standard)
	9	Specify length of cable.

⑮ Documents	0	Nil
	1	Required (Please specify the desired documents separately.) Submission drawings, instruction manual, inspection procedure, test report (1 pc 1 copy), inspection / traceability certificate, attended inspection

∗Specify "X" if there is no applicable specification.