

KL91 Pressure Transmitter for Ultrapure Water of Semiconductor Production Appliances

Outline

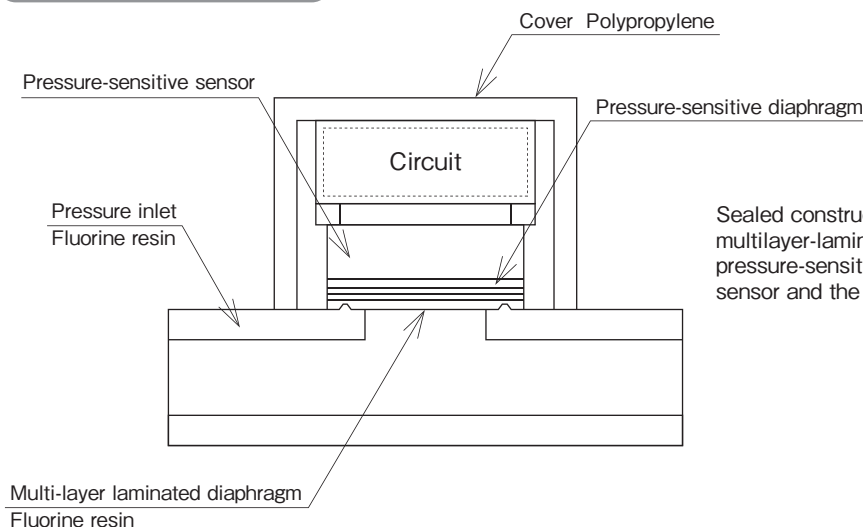
This instrument is a pressure transmitter for the use of ultrapure water which uses all-fluorine resin for the wetted parts, and has small metal ion elution amount. It is designed for low and negative pressure measurement, as well as minimizing pocket that may cause contamination. Features include IP65 enclosure and CE compliance (EMC Directive Compliance) Applicable directive: 89/336/EEC

Features

- The all-fluorine resin wetted parts consist of a fluorine resin film multilayer laminated onto a ceramic diaphragm, and suppress the amount of metal ion elution and the generation of contamination.
- Compatible with pipe diameters with size up to 1" (In-line type).
- Incorporates capacitance sensor that has excellent temperature characteristics.



Features of sensor



Sealed construction with a fluorine resin type diaphragm multilayer-laminated at the wetted parts of the pressure-sensitive diaphragm of the pressure-sensitive sensor and the periphery is clamped by the convex part of

Applications

- Cleaning equipment for semiconductor
- Cleaning equipment for FPD
- Wet station
- Ultrapure water facility
- Ultrapure water production equipment
- Function water production equipment

* Model: KL92 conforms to the use for hydrofluoric acid or other highly corrosive permeation fluid.

KL91

Pressure Transmitter for Ultrapure Water of Semiconductor Production Appliances

Specifications

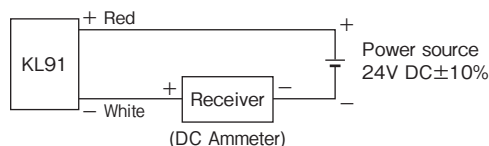
Item	Description
Fluid	Pure water *Model: KL92 conforms to the use for hydrofluoric acid or other highly corrosive permeation fluid is generated.
Operating conditions	Free from combustible gas or liquid causing fire / Explosion under normal condition
Pressure inlet	Tube connection ($\phi 1/4"$, $\phi 3/8"$, $\phi 1/2"$, In line only: $\phi 3/4"$, $\phi 1"$) Set in nut (S300: From Nippon Pillar Packing Co., Ltd., 20 series: From Flowell Corporation, Flare nut) Male screw (S300: From Nippon Pillar Packing Co., Ltd., 60 series: From Flowell Corporation: In line only)
Wetted parts material	Element: Fluorine resin (Alumina + PTFE / PFA laminated) Fitting: Fluorine resin (PTFE-PFA)
Pressure range	0 to 0.1, 0.2, 0.3, 0.5 MPa -0.1 to 0.1, 0.2, 0.3, 0.5 MPa
Allowable pressure	-0.1 to 0.7 MPa (Pressure range 0 to 0.1 MPa and -0.1 to 0.1 MPa is -0.1 to 0.5 MPa)
Operating temperature	10 to 60°C
Storage temperature	-5 to 65°C (No freezing inside the sensor)
Operating humidity	25 to 80%RH (No condensation inside the sensor)
Transmission system	2 wire system or 3 wire system
Power source	24V DC $\pm 10\%$ (2 wire system) 12 to 24V DC (3 wire system)
Output	2 wire system: 4 to 20mA DC (Resistance load: 500 Ω max.) 3 wire system: 1 to 5V DC (Resistance load: 10k Ω min.)
Accuracy	$\pm 1.0\%$ F.S.
Temperature coefficient	$\pm 0.05\%$ F.S./°C (Zero) $\pm 0.05\%$ F.S./°C (Span) Compensation temperature: 10 to 60°C
Setting system	External adjustment of zero point
Enclosure	Jet-proof excluding cable end (IP65)
Case material	Polypropylene (PP)
Weight	Approx. 180g (With cable)
CE compliance	Applicable Standards: EN61326-1: 2013; EN61326-2-3: 2013

Cable

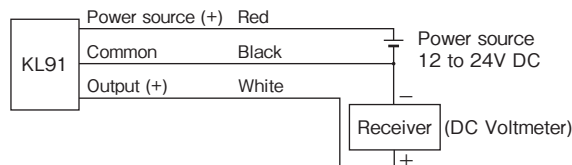
	Environmental temperature	Conductor		Cable outer diameter (mm)	Minimum bend radius (mm)
		Cross-section area (mm ²)	Twisted conductors (pcs./mm)		
Shielded cable (Standard)	-60 to 90°C	0.34	17/0.16	$\phi 4.8$	19

Wiring

2 wire system (Current output)



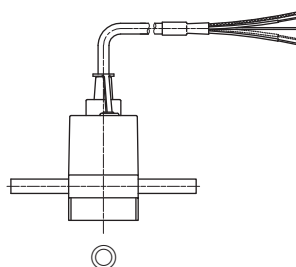
3 wire system (Voltage output)



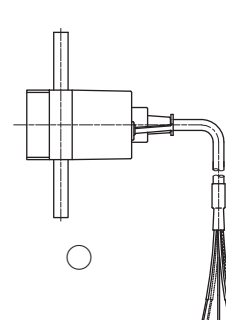
Installation position

When measuring viscous fluids, etc., collection at the pressure receiver may cause an error. In such cases, horizontal direct mounting is recommended.

Horizontal



Vertical



KL91

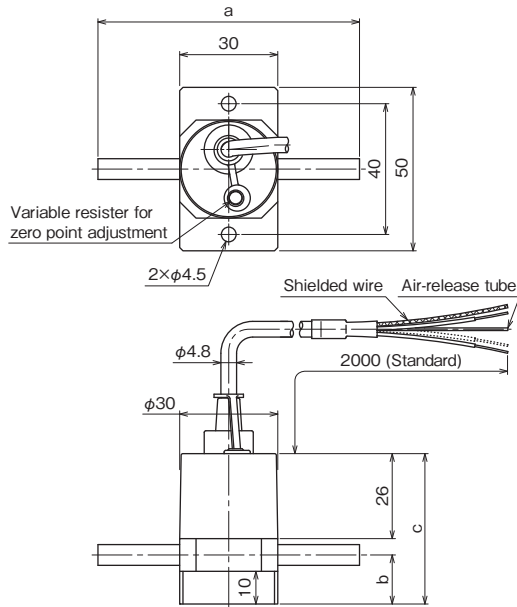
Pressure Transmitter for Ultrapure Water of Semiconductor Production Appliances

Dimensions 1

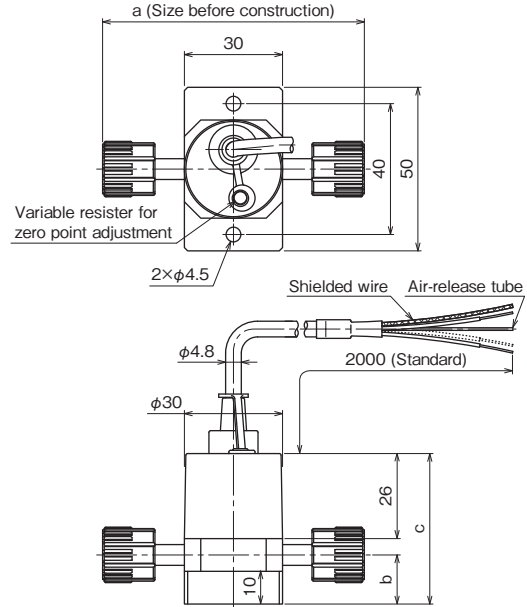
Unit: mm

Inline type

Tube connection



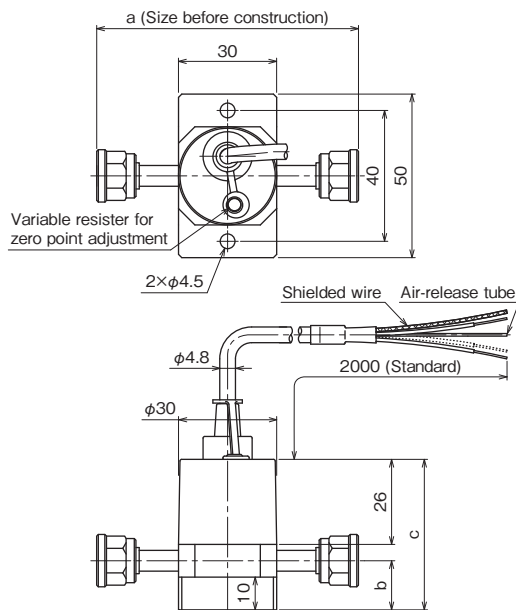
S300 nut (Press fit) from Nippon Pillar Packing Co., Ltd.



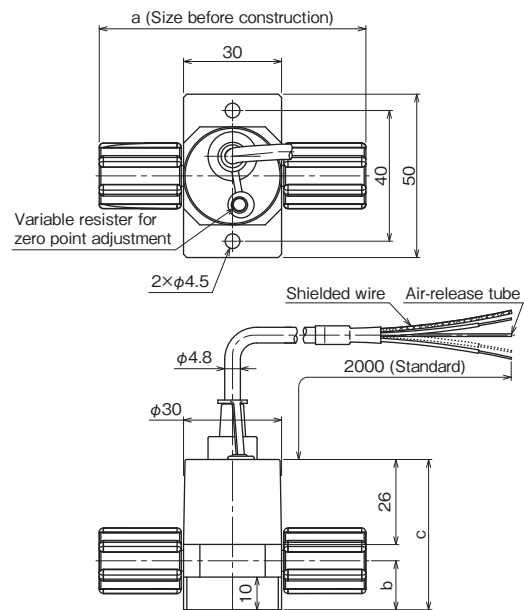
Model number	Conecting port	a	b	c
KL91-141	O.D. 1/4", I.D. 4.3mm	80	15	46
KL91-151	O.D. 1/4", I.D. 5/32"	80	15	46
KL91-161	O.D. 3/8", I.D. 1/4"	90	17.5	51
KL91-171	O.D. 1/2", I.D. 3/8"	90	17.5	51
KL91-181	O.D. 3/4", I.D. 5/8"	100	22.5	61
KL91-191	O.D. 1", I.D. 7/8"	110	25	66

Model number	Conecting port	a	b	c
KL91-152	O.D. 1/4", I.D. 5/32"	80	15	46
KL91-162	O.D. 3/8", I.D. 1/4"	90	17.5	51
KL91-172	O.D. 1/2", I.D. 3/8"	90	17.5	51
KL91-182	O.D. 3/4", I.D. 5/8"	100	22.5	61
KL91-192	O.D. 1", I.D. 7/8"	110	25	66

20 series nut (Press fit) from Flowell Corporation



Flare nut (Insert)



Model number	Conecting port	a	b	c
KL91-144	O.D. 1/4", I.D. 4.3mm	80	15	46
KL91-154	O.D. 1/4", I.D. 5/32"	80	15	46
KL91-164	O.D. 3/8", I.D. 1/4"	90	17.5	51
KL91-174	O.D. 1/2", I.D. 3/8"	90	17.5	51
KL91-184	O.D. 3/4", I.D. 5/8"	100	22.5	61
KL91-194	O.D. 1", I.D. 7/8"	110	25	66

Model number	Conecting port	a	b	c
KL91-156	O.D. 1/4", I.D. 5/32"	80	15	46
KL91-166	O.D. 3/8", I.D. 1/4"	90	17.5	51
KL91-176	O.D. 1/2", I.D. 3/8"	90	17.5	51
KL91-186	O.D. 3/4", I.D. 5/8"	100	22.5	61
KL91-196	O.D. 1", I.D. 7/8"	110	25	66

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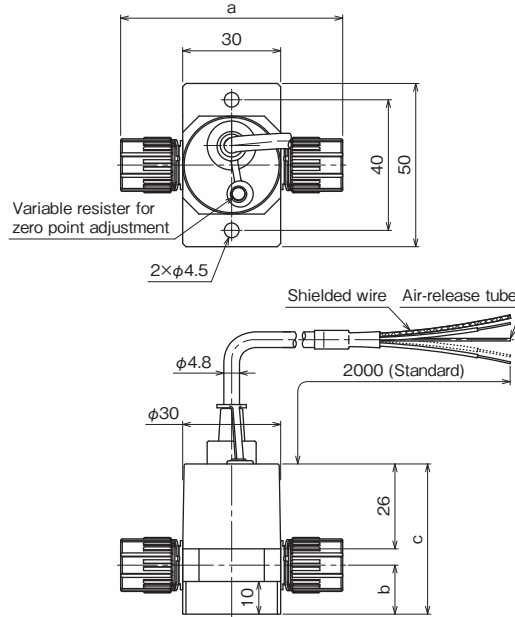
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Dimensions 2

Unit: mm

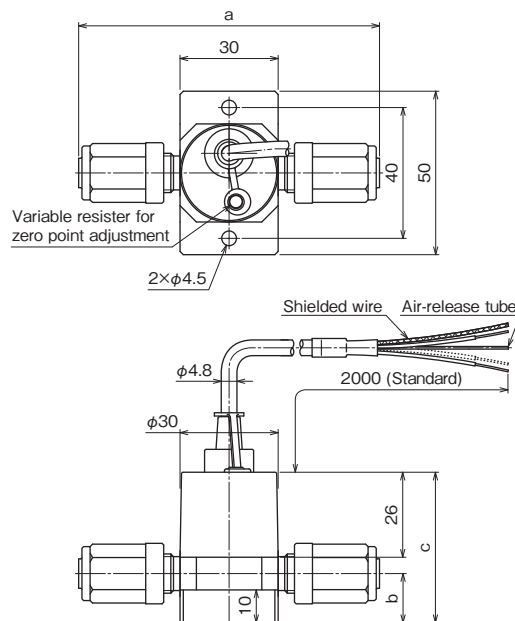
Inline type

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



Model number	Conecting port	a	b	c
KL91-15A	O.D. 1/4", I.D. 5/32"	68	20	56
KL91-16A	O.D. 3/8", I.D. 1/4"	80	22.5	61
KL91-17A	O.D. 1/2", I.D. 3/8"	88	25	66

60 series male screw from Flowell Corporation



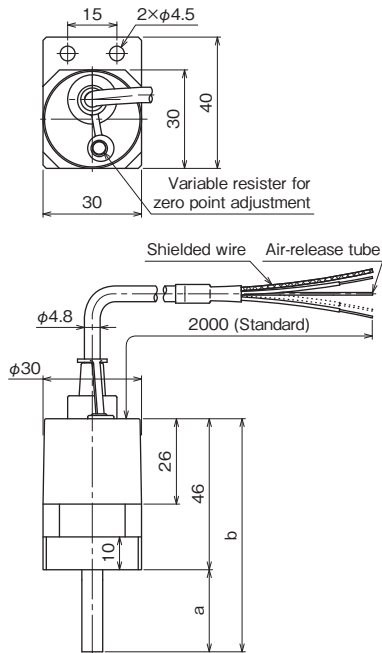
Model number	Conecting port	a	b	c
KL91-14B	O.D. 1/4", I.D. 4.3mm	92	17.5	51
KL91-15B	O.D. 1/4", I.D. 5/32"	92	17.5	51
KL91-16B	O.D. 3/8", I.D. 1/4"	108	20	56
KL91-17B	O.D. 1/2", I.D. 3/8"	108	22.5	61

Dimensions 3

Unit: mm

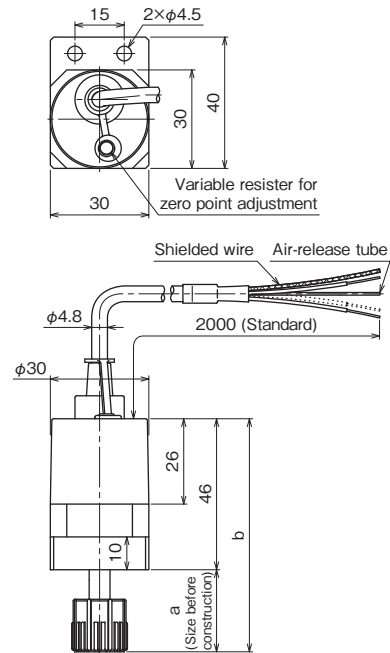
Straight type

Tube connection



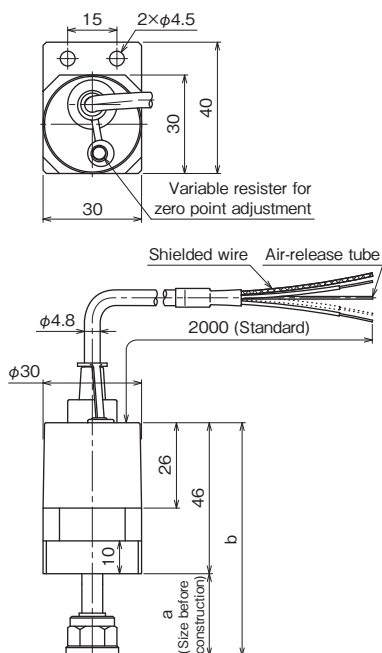
Model number	Conecting port	a	b
KL91-241	O.D. 1/4", I.D. 4.3mm	25	71
KL91-251	O.D. 1/4", I.D. 5/32"	25	71
KL91-261	O.D. 3/8", I.D. 1/4"	30	76
KL91-271	O.D. 1/2", I.D. 3/8"	30	76

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



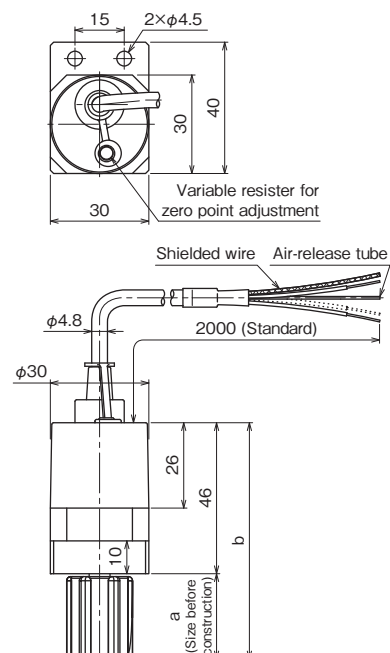
Model number	Conecting port	a	b
KL91-252	O.D. 1/4", I.D. 5/32"	25	71
KL91-262	O.D. 3/8", I.D. 1/4"	30	76
KL91-272	O.D. 1/2", I.D. 3/8"	30	76

20 series nut (Press fit) from Flowell Corporation



Model number	Conecting port	a	b
KL91-244	O.D. 1/4", I.D. 4.3mm	25	71
KL91-254	O.D. 1/4", I.D. 5/32"	25	71
KL91-264	O.D. 3/8", I.D. 1/4"	30	76
KL91-274	O.D. 1/2", I.D. 3/8"	30	76

Flare nut (Insert)



Model number	Conecting port	a	b
KL91-256	O.D. 1/4", I.D. 5/32"	25	71
KL91-266	O.D. 3/8", I.D. 1/4"	30	76
KL91-276	O.D. 1/2", I.D. 3/8"	30	76

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Model number configuration

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



Model number		Selective spec.	Additional spec. (Option)	
① Connecting type	1	In-line type	Element: PTFE Sensing part (Case, Fitting): PTFE (PFA)	
	2	Straight type	Element: PTFE Sensing part (Case, Fitting): PTFE (PFA)	
② Pressure connecting bore diameter	4	Bore diameter (O.D. 1/4", I.D. 4.3mm)		
	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")		
	8	Bore diameter (O.D. 3/4", I.D. 5/8")		
	9	Bore diameter (O.D. 1", I.D. 7/8", Orifice I.D. 5/8")		
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)		
	B	60 series male screw from Flowell Corporation (In-line type only)		
④ Pressure range (MPa)	A	0 to 0.1	1	-0.1 to 0.1
	B	0 to 0.2	2	-0.1 to 0.2
	C	0 to 0.3	3	-0.1 to 0.3
	E	0 to 0.5	5	-0.1 to 0.5
	7	±1.0%F.S.		
⑥ Power source	⑥	⑦	⑥ Power source	⑦ Analog output
	1	1	24V DC±10%	4 to 20mA DC (2 wire system)
⑦ Analog output	N	8	12 to 24V DC±10%	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, inspection / traceability certificate, test report, attended inspection		

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

Production KL91-①②③

① Connecting type	1: In-line type					2: Straight type						
② Pressure connecting port diameter	4	5	6	7	8	9	4	5	6	7	8	9
③ Pressure connecting port												
1	○	○	○	○	○	○	○	○	○	○	○	○
2	—	○	○	○	○	○	—	○	○	○	○	○
4	○	—	○	○	○	○	○	—	○	○	○	○
6	—	○	○	○	○	○	—	○	○	○	○	○
A	—	○	○	○	—	—	—	○	○	○	—	—
B	○	○	○	○	—	—	○	○	○	○	—	—

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