

Data Sheet

ZL91 Fluoropolymer Pressure Transducer For Ultrapure & Deionized Water

FEATURES

- PTFE/PFA wetted parts
- Low metal ion elution
- Compatible with pipe diameters from 0.25 to 1.0 in. O.D.
- Capacitance sensor for excellent thermal stability
- Multiple mounting options include tube connections, press fit nuts, flared nuts, and threaded nuts
- Class 100,000 cleanroom packaged and bagged

TYPICAL USES

- Ultrapure/deionized water facilities
- Ultrapure/deionized water production equipment
- Cleaning equipment for semiconductor
- Cleaning equipment for Flat Panel Displays (FPD)
- Wet stations



ZL91
Pressure Transducer



PERFORMANCE SPECIFICATIONS

Static Accuracy:	±1.0% of span @ 73 °F (23 °C) Accuracy includes the effects of linearity, hysteresis and repeatability
Temperature Effect:	±0.05% of span/°C (Zero & Span) in operating temperature range

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature:	50 °F to 140 °F (10 °C to 60 °C)
Storage Temperature:	23 °F to 149 °F (-5 °C to 65 °C)
Humidity:	25% to 80% RH

FUNCTIONAL SPECIFICATIONS

Gauge/Compound:	Vacuum & 15 psi to vacuum & 75 psi
Pressure Ranges:	0-15 psi to 0-75 psi
Response Time:	≤ 100 mSec (10% to 90%)
Proof Pressure:	100 psi max.

ELECTRICAL SPECIFICATIONS

Output Signal:	4 to 20 mA (2 wire) or 1 to 5 Vdc (3 wire)
Supply Voltage:	21.6 to 26.4 Vdc for 2 wire, 12-24 Vdc for 3 wire
Load Resistance:	Rmax = 500Ω for 4 to 20 mA output Rmin = 10kΩ for 1 to 5 Vdc output
Insulation Resistance:	> 100MΩ at 50 Vdc
EMC/EMI:	EN61326-1: 2013, EN61326-2-3: 2013

KEY BENEFITS

- Low metal ion elution
- Designed for low and negative pressure measurement
- IP65 ingress rating

PHYSICAL SPECIFICATIONS

Ingress Rating:	IP65
Case Material:	Polypropylene
Pressure Connection Sizes:	Tube connection sizes include: ¼", ⅜", ½", ¾" and 1"
Unit Weight:	Approx. 180g

WETTED MATERIALS

Fitting:	PTFE/PFA
Diaphragm:	PTFE/PFA Laminated

APPROVALS

CE, UKCA, RoHS

Data Sheet

ZL91 Fluoropolymer Pressure Transducer For Ultrapure & Deionized Water

ORDERING CODE	Example:	ZL91	7	141	42	C06	75#	-X1N
Model								
ZL91		ZL91						
Accuracy								
7 - 1.0% of span			7					
Pressure Connection (First digit = Connection type)								
1 - In-Line type			1					
2 - Single port type								
(Second digit = Pressure connection bore diameter)								
4 - Bore diameter O.D. 1/4", I.D. 0.17"				4				
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"								
(Third digit = Pressure connecting port)								
1 - Tube connection				1				
2 - S300 nut (press fit)								
4 - 20 series nut (press fit)								
6 - Flare nut (Insert)								
A - S300 male screw (in-line type only)								
B - 60 series male screw (in line type only)								
Analog Output								
42 - 4 to 20 mA					42			
15 - 1-5 Vdc								
Cable Length								
C06 - 6 feet						C06		
Pressure Range								
V/15#								
V/30#								
V/45#								
V/75#								
15#								
30#								
45#								
75#							75#	
NP1/P1MP								
NP1/P2MP								
NP1/P3MP								
NP1/P5MP								
P1MP								
P2MP								
P3MP								
P5MP								
Options (If indicating an option must include an "X" (-X...))								X
1N - Material Test Report/ Traceability Certificate								1N

Data Sheet

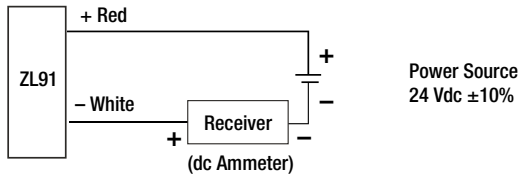
ZL91 Fluoropolymer Pressure Transducer For Ultrapure & Deionized Water

STANDARD RANGES

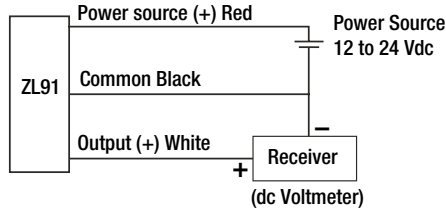
psi	mPa
V/15#	NP1/P1MP
V/30#	NP1/P2MP
V/45#	NP1/P3MP
V/75#	NP1/P5MP
15#	P1MP
30#	P2MP
45#	P3MP
75#	P5MP

WIRING DIAGRAMS

Two Wire System (Current output)



Three Wire System (Voltage output)



PRESSURE CONNECTION CONFIGURATIONS

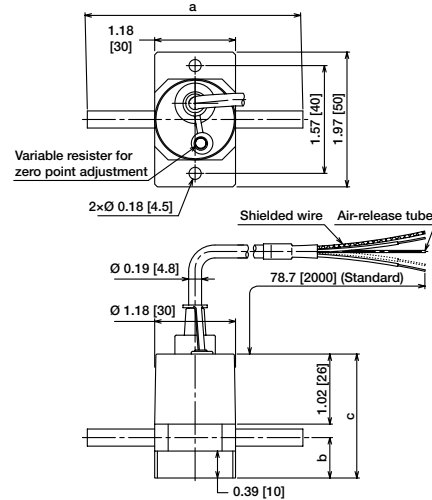
(X means available configuration)

① Connecting Type	1: In-Line Type					2: Straight Type							
	② Pressure Connection Port Diameter	4	5	6	7	8	9	4	5	6	7	8	9
③ Pressure Connection Port	1	X	X	X	X	X	X	X	X	X	X	-	-
	2	-	X	X	X	X	-	X	X	X	-	-	
	4	X	-	X	X	X	X	-	X	X	-	-	
	6	-	X	X	X	X	-	X	X	X	-	-	
	A	-	X	X	X	-	-	-	-	-	-	-	
	B	X	X	X	X	-	-	-	-	-	-	-	

Inline Pressure Connection Dimensions in drawings are inches [mm] Dimensions in tables are inches

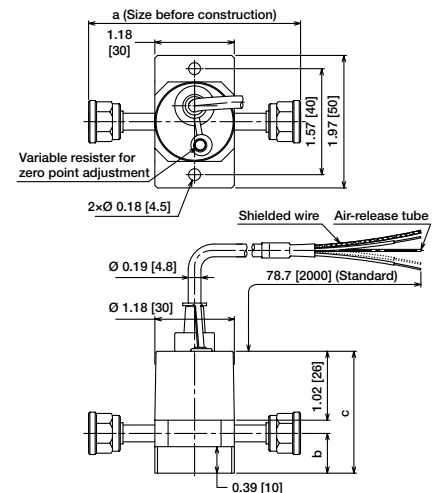
For Reference only, consult Ashcroft for specific dimension drawings

Tube Connection



MODEL NUMBER	CONNECTING PORT	a	b	C
ZL91-141	O.D. ¼", I.D. 0.17"	3.15	0.59	1.81
ZL91-151	O.D. ¼", I.D. ⅜"	3.15	0.59	1.81
ZL91-161	O.D. ⅜", I.D. ¼"	3.54	0.69	2.01
ZL91-171	O.D. ½", I.D. ⅜"	3.54	0.69	2.01
ZL91-181	O.D. ¾", I.D. ⅝"	3.94	0.89	2.40
ZL91-191	O.D. 1", I.D. ⅞"	4.33	0.98	2.60

20 Series Nut (Press Fit) From Flowell Corporation



MODEL NUMBER	CONNECTING PORT	a	b	C
ZL91-144	O.D. ¼", I.D. 0.17"	3.15	0.59	1.81
ZL91-164	O.D. ⅜", I.D. ¼"	3.54	0.69	2.01
ZL91-174	O.D. ½", I.D. ⅜"	3.54	0.69	2.01
ZL91-184	O.D. ¾", I.D. ⅝"	3.94	0.89	2.40
ZL91-194	O.D. 1", I.D. ⅞"	4.33	0.98	2.60

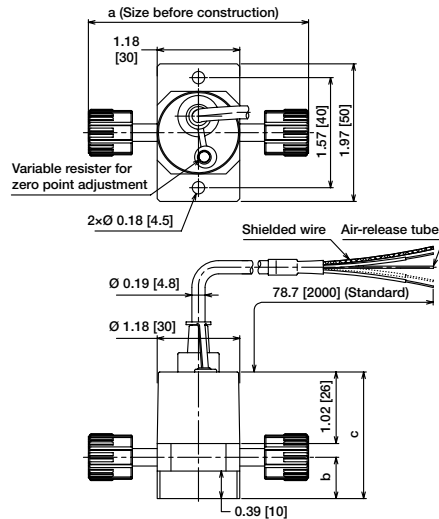
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Inline Pressure Connection Dimensions in drawings are inches [mm]
Dimensions in tables are inches

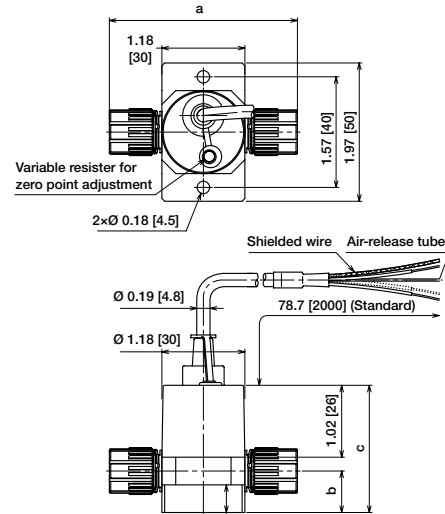
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S300 Nut (Press Fit) From Pillar Packing Co., Ltd



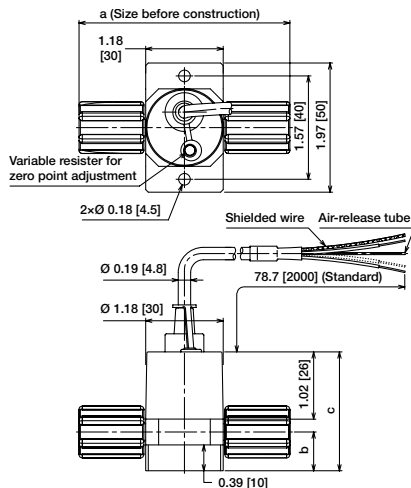
MODEL NUMBER	CONNECTING PORT	a	b	C
ZL91-152	O.D. ¼", I.D. ⅝"	3.15	0.59	1.81
ZL91-162	O.D. ⅜", I.D. ¼"	3.54	0.69	2.01
ZL91-172	O.D. ½", I.D. ⅜"	3.54	0.69	2.01
ZL91-182	O.D. ¾", I.D. ⅝"	3.94	0.89	2.40
ZL91-192	O.D. 1", I.D. ⅞"	4.33	0.98	2.60

S300 Male Screw From Pillar Packing Co., Ltd



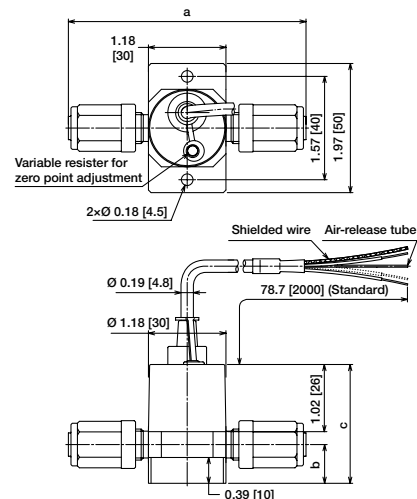
MODEL NUMBER	CONNECTING PORT	a	b	C
ZL91-15A	O.D. ¼", I.D. ⅝"	2.68	0.79	2.20
ZL91-16A	O.D. ⅜", I.D. ¼"	3.15	0.89	2.40
ZL91-17A	O.D. ½", I.D. ⅜"	3.46	0.98	2.60

Flare Nut (Insert) From Entgris, Inc



MODEL NUMBER	CONNECTING PORT	a	b	C
ZL91-156	O.D. ¼", I.D. ⅝"	3.15	0.59	1.81
ZL91-166	O.D. ⅜", I.D. ¼"	3.54	0.69	2.01
ZL91-176	O.D. ½", I.D. ⅜"	3.54	0.69	2.01
ZL91-186	O.D. ¾", I.D. ⅝"	3.94	0.89	2.40
ZL91-196	O.D. 1", I.D. ⅞"	4.33	0.98	2.60

60 Series Male Screw From Flowell Corporation



MODEL NUMBER	CONNECTING PORT	a	b	C
ZL91-14B	O.D. ¼", I.D. 0.17"	3.62	0.69	2.01
ZL91-15B	O.D. ¼", I.D. ⅝"	3.62	0.69	2.01
ZL91-16B	O.D. ⅜", I.D. ¼"	4.25	0.79	2.20
ZL91-17B	O.D. ½", I.D. ⅜"	4.25	0.89	2.40

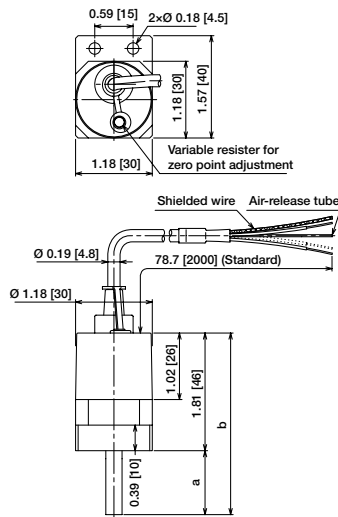
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Single Port Pressure Connection Dimensions in drawings are inches [mm]
Dimensions in tables are inches

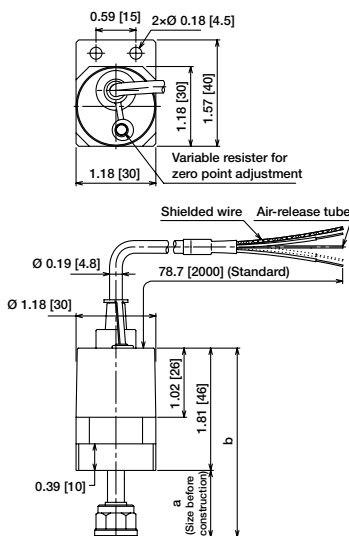
For Reference only, consult Ashcroft for specific dimension drawings

Tube Connection



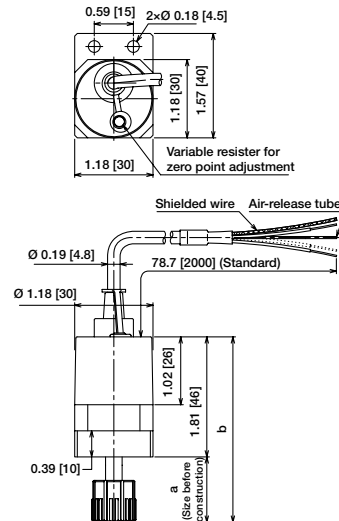
MODEL NUMBER	CONNECTING PORT	a	b
ZL91-241	O.D. ¼", I.D. 0.17"	0.98	2.80
ZL91-251	O.D. ¼", I.D. ⅝ ₃₂ "	0.98	2.80
ZL91-261	O.D. ⅝", I.D. ¼"	1.18	2.99
ZL91-271	O.D. ½", I.D. ⅝"	1.18	2.99

20 Series Nut (Press Fit) Flowell Corporation



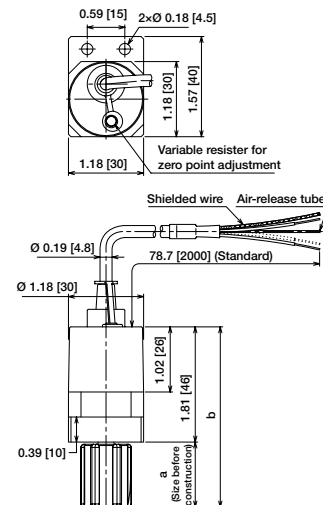
MODEL NUMBER	CONNECTING PORT	a	b
ZL91-244	O.D. ¼", I.D. 0.17"	0.98	2.80
ZL91-264	O.D. ⅝", I.D. ¼"	1.18	2.99
ZL91-274	O.D. ½", I.D. ⅝"	1.18	2.99

S300 Nut (Press Fit) From Nippon Pillar Packing Co., Ltd.



MODEL NUMBER	CONNECTING PORT	a	b
ZL91-252	O.D. ¼", I.D. ⅝ ₃₂ "	0.98	2.80
ZL91-262	O.D. ⅝", I.D. ¼"	1.18	2.99
ZL91-272	O.D. ½", I.D. ⅝"	1.18	2.99

Flare Nut (Insert) From Entgris, Inc.



MODEL NUMBER	CONNECTING PORT	a	b
ZL91-256	O.D. ¼", I.D. ⅝ ₃₂ "	0.98	2.80
ZL91-266	O.D. ⅝", I.D. ¼"	1.18	2.99
ZL91-276	O.D. ½", I.D. ⅝"	1.18	2.99