

# ZL91 FLUOROPOLYMER PRESSURE TRANSDUCER INSTALLATION AND MAINTENANCE SHEET



## ⚠️ WARNING! READ ⚠️ BEFORE INSTALLATION

### 1. GENERAL:

A failure resulting in **injury** or **damage** may be caused by excessive overpressure, excessive vibration or pressure pulsation, excessive instrument temperature, corrosion of the pressure containing parts, or other misuse. Consult Ashcroft Inc., Stratford, Connecticut, USA before installing if there are any questions or concerns.

### 2. OVERPRESSURE:

Pressure spikes in excess of the rated overpressure capability of the transducer may cause **irreversible electrical and/or mechanical damage** to the pressure measuring and containing elements.

**Fluid hammer** and surges can destroy any pressure transducer and must always be avoided. A pressure snubber should be installed to eliminate the damaging hammer effects. Fluid hammer occurs when a liquid flow is suddenly stopped, as with quick closing solenoid valves. Surges occur when flow suddenly begins, as when a pump is turned on at full power or a valve is quickly opened.

**Liquid surges** are particularly damaging to pressure transducers if the pipe is originally empty. To avoid damaging surges, fluid lines should remain full (if possible), pumps should be brought up to power slowly, and valves opened slowly. To avoid damage from both fluid hammer and surges, a surge chamber should be installed.

Symptoms of fluid hammer and surge's damaging effects:

- Pressure transducer exhibits an output at zero pressure (large zero offset).
- Pressure transducer output remains constant regardless of pressure
- In severe cases, there will be no output.

### FREEZING:

Prohibit freezing of media in pressure port. Unit should be drained (mount in vertical position with electrical termination upward) to prevent possible overpressure damage from frozen media.

### 3. STATIC ELECTRICAL CHARGES:

Any electrical device may be susceptible to damage when exposed to static electrical charges. To avoid damage to the transducer observe the following:

- Ground the body of the transducer **BEFORE** making any electrical connections.
- When disconnecting, remove the ground **LAST!**

Note: The shield and drain wire in the cable (if supplied) is not connected to the transducer body, and is not a suitable ground.

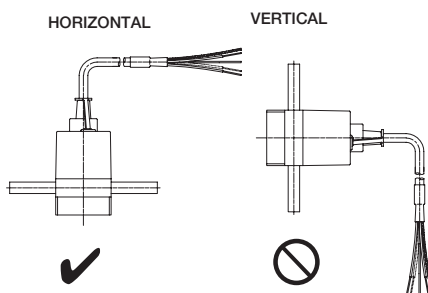
### Introduction

The ZL91 is a fluoropolymer pressure transducer designed for ultrapure and de-ionized water applications. It is constructed with PFA/PTFE wetted parts that prevent metal ion elution and maintain the purity of your process fluid.

### Mounting

When installing the ZL91, follow the manufacturers recommended installation instruction for the specific compression fitting ordered.

When using the ZL91 with viscous fluids, Ashcroft recommends that flow through style transducers should be mounted in the horizontal position to reduce output errors.



Although the unit can withstand normal vibration without damage or significant output effects, it is always good practice to mount the transducer where there is minimum vibration.

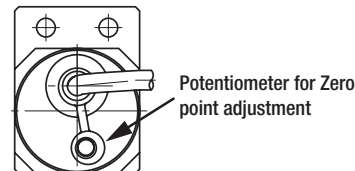
### Noise

For minimum noise susceptibility, avoid running the transducer's cable in a conduit that contains high current AC power cables. Where possible avoid running the cable near inductive equipment.

### Shield Wiring - (Cable Termination Only)

Connect the braided shield to the guard terminal on the reading instrument (meter, etc.) if available or to ground or to the power supply negative terminal.

### Calibration - Zero Output Adjustment



ZL91 offers a zero point adjustment potentiometer. To access the zero potentiometer remove the black cap from the top of the ZL91. Turn the potentiometer using a standard screwdriver.

Instructions for calibration:

1. Power Unit
2. With no pressure applied to the sensor, verify output.
3. If output has shifted from its ideal value, (4mA for current output and 1.0 V for voltage output) turn potentiometer until the output has reached its ideal value.

### Storage

The ZL91 should be stored in a dry, cool and dust free environment.

### Maintenance

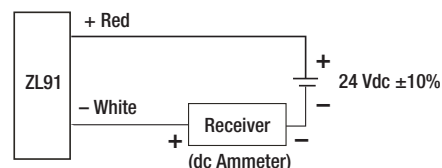
In general, a periodic inspection of the ZL91 should be performed at least twice a year or as needed. This inspection should include

- A. Visual inspection
- B. Check of the pressure inlets for corrosion, clogging or leaking
- C. Verify the output using calibrated gauges

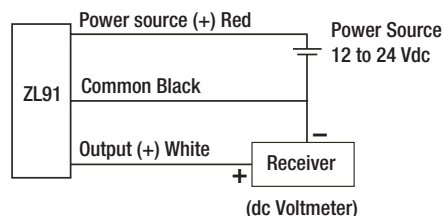
The ZL91 is not field repairable and should be returned to Ashcroft for evaluation.

### Wiring Diagrams

#### 2 Wire System (Current Output)



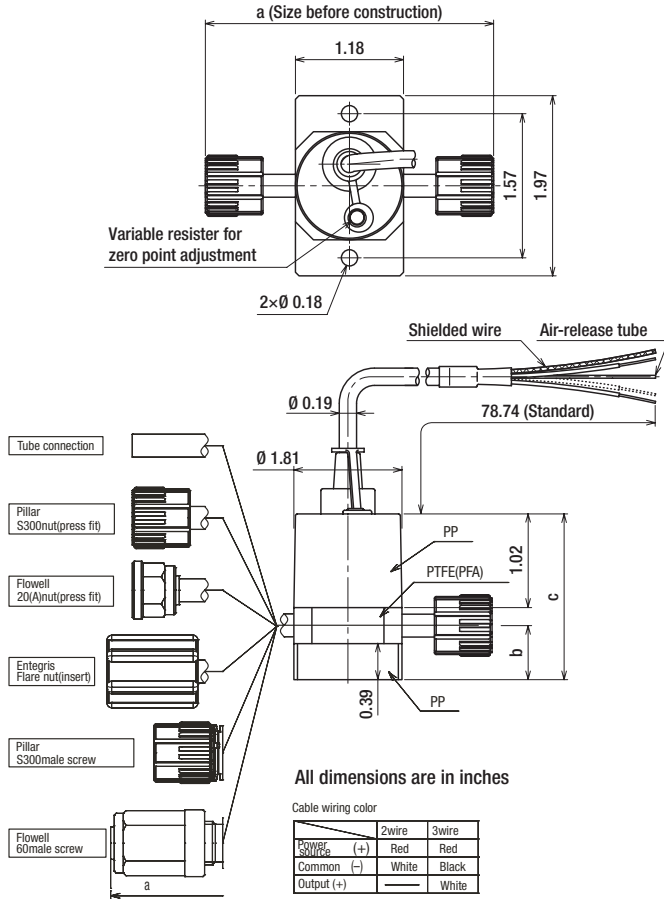
#### 3 Wire System (Voltage Output)



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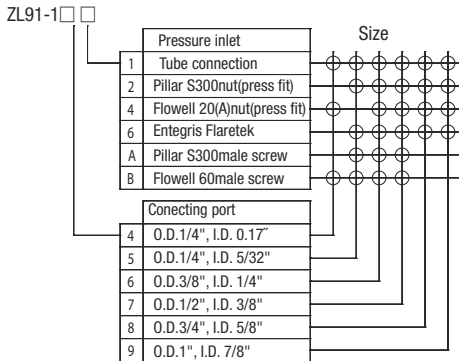


## ZL91 S300 Nut Connection



All dimensions are in inches

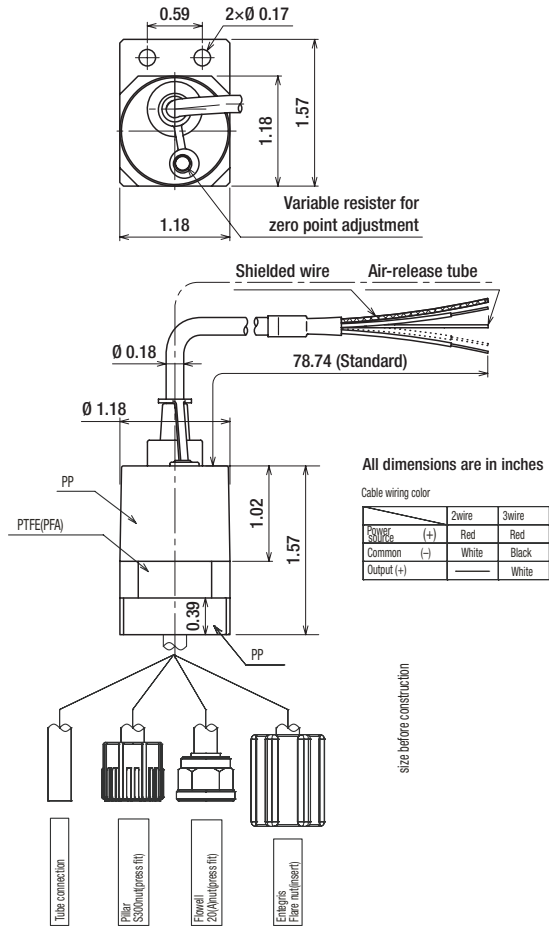
Power Source	2wire (+)	3wire
Power Source (+)	Red	Red
Common (-)	White	Black
Output (+)	White	White



### Dimensions

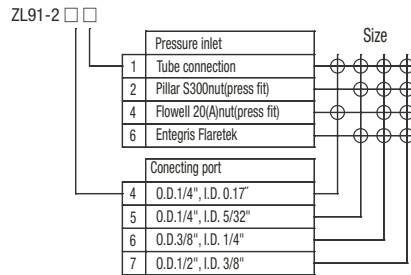
Model	a	b	c
ZL91-141,144	3.15	0.59	1.81
ZL91-151,152,156	3.15	0.59	1.81
ZL91-161,162,164,166	3.54	0.69	2.01
ZL91-171,172,174,176	3.54	0.69	2.01
ZL91-181,182,184,186	3.94	0.89	2.40
ZL91-191,192,194,196	4.33	0.98	2.60
ZL91-15A	2.68	0.79	2.20
ZL91-16A	3.15	0.89	2.40
ZL91-17A	3.46	0.98	2.60
ZL91-14B,15B	3.62	0.69	2.01
ZL91-16B	4.25	0.79	2.20
ZL91-17B	4.25	0.89	2.40

## ZL91 Tube Connection



All dimensions are in inches

Power Source	2wire (+)	3wire
Power Source (+)	Red	Red
Common (-)	White	Black
Output (+)	White	White



### Dimensions

Model	a	b
ZL91-241,244	0.98	2.80
ZL91-251,252,256	0.98	2.80
ZL91-261,262,264,266	1.18	2.99
ZL91-271,272,274,276	1.18	2.99