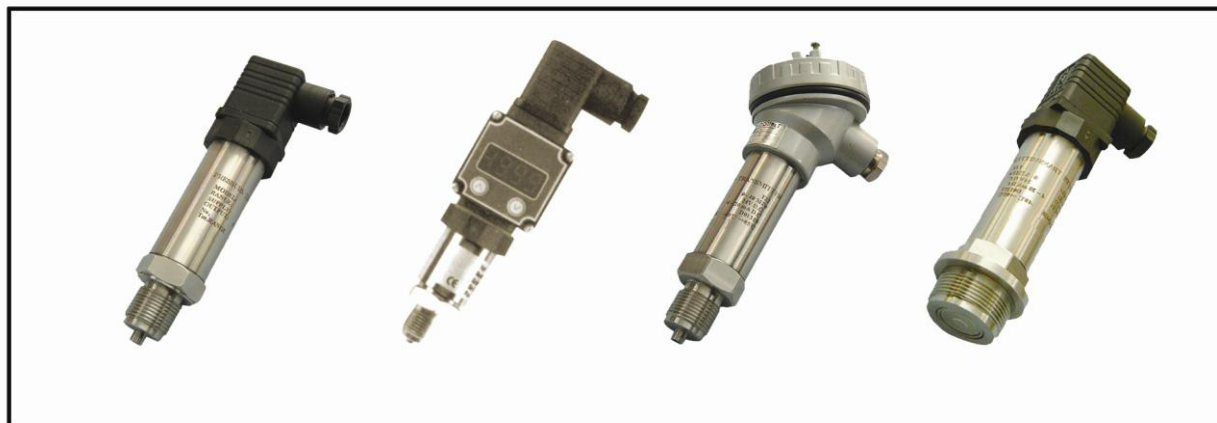




## Series S500 Pressure Transducer

### Specifications - Installation and Operating Instructions



The **Series S500 Pressure Transducer** is a perfect solution to any application where a very accurate **Pressure** transducer is necessary. Using variable capacitance technology, the series S500 is designed to measure pressures as low as 10" w.c. up to 400" w.c., very low ranges for a single pressure transducer. The S500 also features a 0.25% F.S. accuracy. Use the Series S500 in liquid level, flood warning, waste water, clean room, and open channel flow applications.

#### GENERAL WARNINGS

- Transducer should not be subjected to greater than the maximum allowable pressure or temperature as defined in the specifications.
- Transducer should not be subjected to mechanical impact.
- In the event of fire the end user must ensure that the system pressure is vented to a safe area.
- The effects of decomposition of unstable fluids should be considered when placing this device in service.
- The pressure transducer has no means of draining or venting, this must be performed by another component in the end user's system.
- The pressure range of the transducer must be compatible with the maximum pressure being measured.
- Pressure media must be compatible with the transducer wetted parts which are: UNS 31803 Stainless Steel, Ceramic, and Fluoroelastomer (FKM).
- Exposed end of cable must be kept free from moisture.
- Liquid must not be allowed to freeze in the pressure port.
- Avoid mounting the transducer near a heat source that is likely to create a temperature gradient across the instrument. If this is unavoidable, use a heat shield to deflect uneven radiated heat or wrap the transducer in insulation so that even temperature is assured throughout.
- The transducer should not be removed while the measured system is at pressure.
- Care must be taken not to touch the pressure sensitive diaphragm while cleaning the pressure port. This may cause irreparable damage.

#### SPECIFICATIONS

**Service:** Compatible liquids and gases.

**Wetted Materials:** 318 Duplex SS, Ceramic, Fluoroelastomer (FKM).

**Housing Material:** 318 Stainless Steel.

**Accuracy:**  $\pm 0.25\%$  F.S. (RSS). \*Includes non-linearity, hysteresis, and non-repeatability.

**Stability:** 0.25% F.S./1 year.

**Temperature Limits:** -40 to 212°F (-40 to 100°C).

**Pressure Limits:** 29 PSI (2 bar) for up to 85" w.c. (0.2 bar) ranges; 58 PSI (4 bar) for 85" to 140" w.c. (0.2 to 0.35 bar); 73 PSI (5 bar) for 141" to 400" w.c. (0.35 to 1 bar).

**Compensated Temperature Limits:** -5 to 140°F (-20 to 60°C).

#### Thermal Effects:

Zero: 1.0%F.S./100°F (2.0%F.S./100°C).

Span: 1.0%F.S./100°F (2.0%F.S./100°C).

#### Power Requirements:

4-20 mA: 9-35 VDC

0-5 VDC: 7.5-35 VDC

**Output Signal:** 4-20 mA (2-wire) or 0-5 VDC (3-wire).

**Zero & Span Adjustment:**  $\pm 10\%$  F.S. each (by Potentiometer).

**Response Time:** 5 ms.

**Max Loop Resistance:** 1.325 k $\Omega$ .

**Electrical Connections:** Large DIN 43650 connector with mating plug.

**Enclosure Rating:** NEMA 4X (IP65).

**Process Connection:** 1/4"-18 NPT male.

**Weight:** 11.6 oz (330 g).

**Agency Approval:** CE.

CE STANDARDS TESTED TO:

ELECTRO MAGNETIC COMPATIBILITY

Standards Applied

EN50081-1:1992

EN61000-6-2:1999

TEST METHODS/PROCEDURES

EN50081-1:1992

EN61000-6-2:1999

EN61000-4-2:1995 + A1:1998

EN61000-4-3:1996

EN61000-4-4:1995

EN61000-4-6:1996

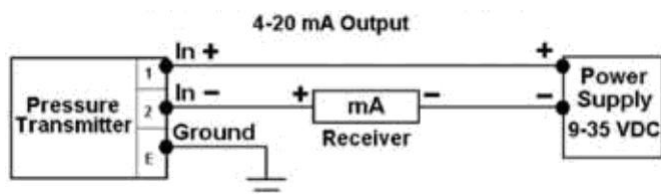
## MOUNTING

The pressure transducer is designed to be attached by the coupling thread, and can be mounted in any plane or direction. To tighten the fit, use a 5/8 UNF AF (M16) wrench on the hexagon provided and apply a maximum torque of 20 lb-ft (27 N-m). The customer must assure that the pressure seal is suitable for the application.

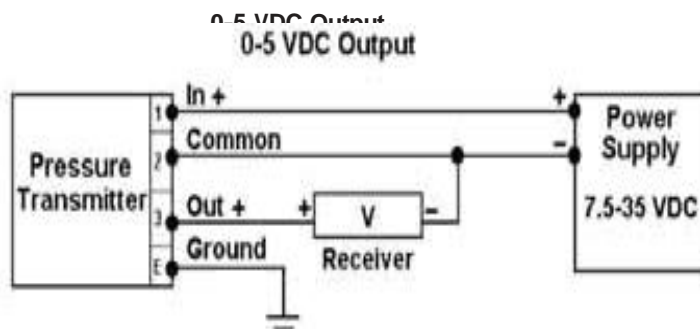
## ELECTRICAL

### Electrical Connections:

Electrical connections are made by way of a DIN 43650 connector with mating plug.



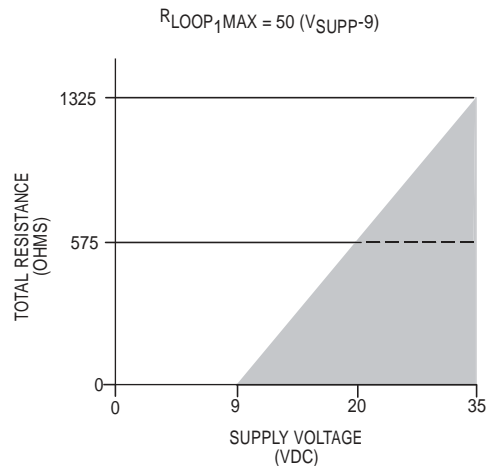
4-20 mA Output		
In+	In-	Ground
1	2	E



0-5 VDC Output			
In+	Com	Out+	Ground
1	2	3	E

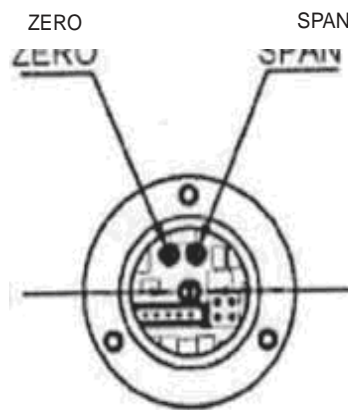
### Load Resistance (4-20 mA Transducer)

The total permissible resistive load in the loop (to include all cable resistance) can be from zero to  $(50 \times \text{supply voltage} - 9)$  ohms, e.g. with a 12 VDC supply, the permissible load is from zero up to 150 ohms.



### ZERO/SPAN ADJUSTMENT

Zero and span controls are precisely set during manufacturing and should only need adjustment if there is a change in the required pressure measurement. Inquire with Dwyer Instruments, Inc. before adjustment.



### MAINTENANCE

Routine inspection is not required except for periodic inspection of the cable and molding to ensure that these are neither damaged nor softened by incompatible liquid. A periodic check of the zero and span settings is also recommended. Otherwise these transmitters are not field serviceable and should be returned to the factory if repair is needed. Be sure to include a brief description of the problem plus any pertinent application information available.