



## 290 series density Transmitter

Hydrostatic principle Custom construction 2 wire 4 to 20 mA transmitter

### Features

- ◆ Basic design is readily adapted to suit each application
- ◆ Submersible or external tank mounting
- ◆ Stainless steel body and Hastelloy diaphragms permit application on many aggressive chemicals
- ◆ 2 wire 4 to 20 mA output from remote weatherproof amplifier module
- ◆ Intrinsically safe versions available
- ◆ Suitable for Densities in the range 0.5 to 3.00 and may be calibrated with offset zero
- ◆ Optional temperature compensation for applications where ambient shift is significant
- ◆ Protected against conditions of asymmetric overload



PSM 290 Series transmitters measure density as a function of differential pressure. Each unit has two pressure sensitive diaphragms, each of which are located at a known elevation in the tank. Under normal operation both diaphragms will be submerged, and since the distance between them is fixed, any variation in the pressure differential between them must be a function of the liquid density. Within the sensor construction the diaphragms are hydraulically linked, the lower diaphragm is "rated" to suit the density span whilst the upper is compliant and provides a pressure transfer, via the hydraulic fill, to the rear of the rated diaphragm. Actual displacement of the lower diaphragm is measured using the proven LVDT principle. An amplifier module receives the LVDT's output signal and conditions it to provide a 4 to 20 mA output over the required span. For convenience this amplifier may be sited up to 100 Metres away from the sensor.

PSM's unrivalled experience in the design and application of pressure sensitive diaphragms and a versatile approach to unit construction, ensures optimum performance on all applications. Examples of previous successes include duties as diverse as Beer fermentation vessels, where very small changes in density must be resolved and hygienic construction is needed, and Drilling Mud storage vessels where mechanical protection and rugged construction are essential.

Units can be manufactured to suit either external flanged, threaded, or hygienic fittings, or as a completely submersible unit suitable for pole suspension or clamping in place.

**PSM will be pleased to discuss your particular application.**

## SPECIFICATIONS

### SENSOR

Construction

Body assembly 316L stainless Steel

Mounting

Diaphragms Hastelloy C276

Range:

External flanged or threaded, or internal submersed

Density span 0.5 to 3.00

Fluid fill

with zero offset to suit application

Operating temperature:

Silicon or Mineral oil.

Temperature compensation:

-10 to +80° C

As required by application

### AMPLIFIER MODULE

Construction

Wall mount GRP enclosure

Enclosure rating:

IP65 (IP67 option) / NEMA 4X

Power supply:

12 to 30 Vdc

Signal output:

4 to 20 mA dc, 2 wire.

### PERFORMANCE

Accuracy:

+/-0.25% of set span

Temperature coefficient

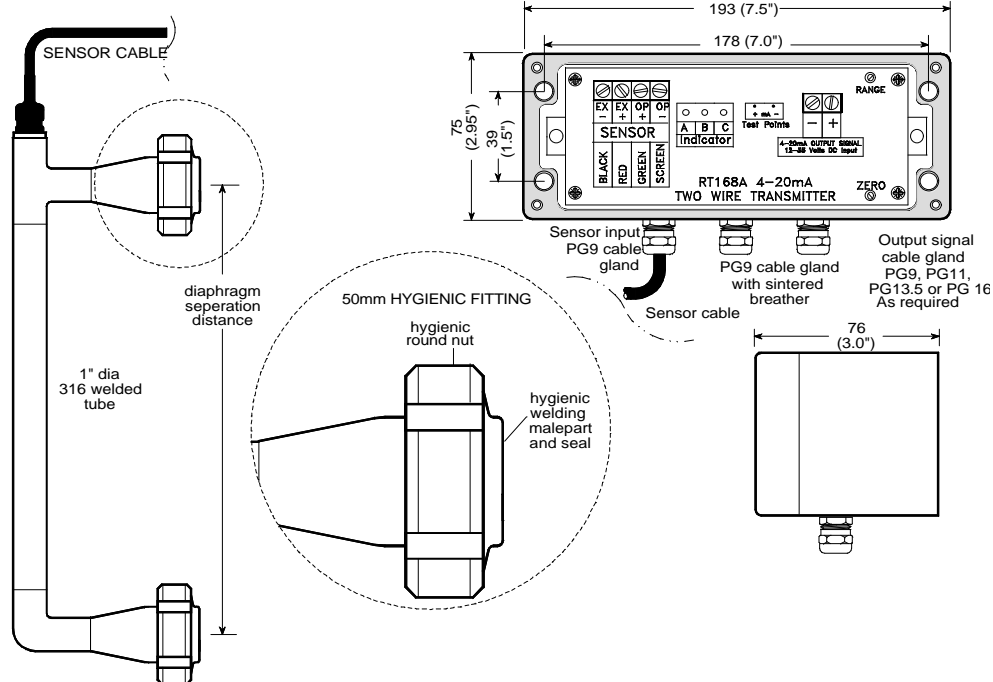
+/- 0.01% set span/°C range & zero (compensated unit)

### OPTIONS

Intrinsically safe unit available

To EEx ia IIC T6

## Typical Construction



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