

SMART SERIES HYDRO-STATIC PRESSURE TRANSMITTER

ISP-SMART The sensors ISP-SMART are piezoresistive pressure sensors . These Pressure Sensors posses a flush diaphragm facing the p[ressure media Able to measure the pressures of viscous liquids. The diaphragm forms a chamber in which oil is filled to isolate sensing element from transfer pressure. The isolation helps measure the pressures of corrosive fluids and electro-conductive fluids.



Main features

- Good reliability, High precision
- Temperature influence slightly
- Stability $\pm 0.1\%$ FS / year
- Control parameter is locked by cipher code ensure the safety
- Intellectualization, miniaturization
- measuring range may remove
- Display for LCD digital range or percentage
- Software compensation
- When the range is changed, it may not introduce pressure
- Self-diagnosis in the failure, remote setting communication, remote control
- Waterproof, dust-proof, shake-proof, explosion-proof, corrosion-proof
- Field bus HART protocol communication

Technical parameters

working voltage 12~45 V DC

measuring range 0~100 m (max)

Communication output

communication distance: 2 Km when use CEV cable

load capacitance: below 0.22 μ F

load inductance: below 3.3 mH

interial with power line: above 15 cm connects to input impedance of the

receiving instrument on the receiving resistance: above 10 K Ω when frequency is 2.4 KHz

Accuracy

Accuracy grade 0.1 grade, 0.2 grade, 0.5 grade

Temperature influence: $\pm 0.15\%$ FS / 10 $^{\circ}$ C

Stability exceed 0.1% FS/year

Position influence: installation position not effect on zero

Permission temperature normal working temperature: -20 $^{\circ}$ C~70 $^{\circ}$ C

Membrane: -20 $^{\circ}$ C~80 $^{\circ}$ C (short-time may reached 130 $^{\circ}$ C)

Storage temperature: -20 $^{\circ}$ C~80 $^{\circ}$ C

Relative humidity 0~100% RH

Protection grade IP67

Material contacted with measured medium

Shell: 1Gr18Ni9Ti stainless steel

Seal: fluorine rubber/ PTEE/full sealing weld

Membrane 316L stainless steel

Ceramic capacitance

Working principle

Some point static pressure in the liquid is directly related to the distance from this point to liquid surface, that is:

$$P = \rho g h$$

Here $P \sim$ pressure (stress) of measured point

$\rho \sim$ medium density

$g \sim$ gravity acceleration

$h \sim$ height from measured point to liquid surface

For has determined measured medium and the place, ρ, g is constant, so variation of position change from measured point to liquid surface is only associated with measured pressure. ISP-SMART-HP series static liquid level transmitter is that the position in liquid surface is determined by measuring static pressure of measured point.

Load characteristics

