ABS submersible pressure sensor HSC2Ex

Description
HSC2Ex is a microprocessor based 2-wire loop powered submersible hydrostatic level sensor used for level measuring in fluids. The HSC2Ex gives a 4-20 mA signal, which is proportional to the level of the fluid.

The output signal is connected to the mA input of for ex. set point relays chart recorders, indicating instruments, PLC, pump controllers etc. The level sensor has a ceramic pressure sensor which can withstand very high overpressures.

Ex-approvals
HSC2Ex has double Ex-approvals. This allows the sensor to be installed in Ex-zones 1 and 2 by only connecting the supplied fuses. An external zener barrier is only required when the sensor is installed in zone 0.

Measuring principle
The front side of the membrane senses the pressure of the liquid column, which is proportional to the level of the liquid and the atmospheric pressure, which is variable.

The change in atmospheric pressure affects the measurement and gives a measuring error. To eliminate this error the atmospheric pressure is passed to the backside of the membrane through an air hose in the sensor cable.

HSC2Ex can be adjusted and calibrated from a personal computer with the calibration system CB2 (accessory), which consists of a calibration box and a Windows program. The calibration box has an interface to enable communication between the personal computer and the sensor, and a precision instrument to measure the sensors mA-output signal.

Features:
- High overpressure
- Very robust, all stainless steel
- Programmable sensor with ceramic membrane
- High accuracy
- Integrated overvoltage protector
- Measuring ranges 1-40 mH_2O
- Non clogging, due to open membrane design

Measuring range	Max. overpressure
0-1 mH_2O	-0.3/4 bar
0-2 mH_2O	6 bar
0-4 mH_2O	6 bar
0-10 mH_2O	10 bar
0-20 mH_2O	18 bar
0-40 mH_2O	25 bar

Technical specifications

Description	
Output signal	2-wire, 4-20 mA proportional to the media level
Supply	9-30 VDC in Ex-zone 1 and 2 9-28 VDC in Ex-zone 0
Inaccuracy	**or = ±0,15 % F.S.** (Sum of nonlinearity, hysteresis & repeatability)
Temp. shift Zero point	**or = ±0,01 % F.S./°C**
Temp. shift Span	**or = ±0,01 % F.S./°C**
Long term stability	**or = ±0,15 % F.S./year** (F:S:=the range of the pressure cell)
Ambient temperature	-20 to +54 °C in Ex-zone 1 and 2 -20 to +60 °C in Ex-zone 0 -20 to +80 °C non Ex
Material	Acid proof steel SS2343/1.4404/316L, Al2O3 (Aluminium oxide) and FPM (Viton)
Cable	PVC, 5 x 0,5 mm2 with shield and integrated air hose.
Encapsulation	IP 68
Weight	0,8 kg + 0,1 kg/m cable

Mounting

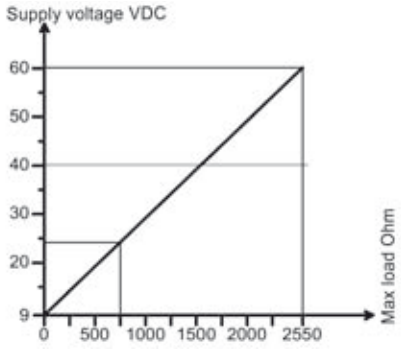
Aeration
The air hose in the cable of the sensor must be in connection with the atmospheric pressure. This means that if the sensor cable is connected inside an airtight box, this box must be airated.

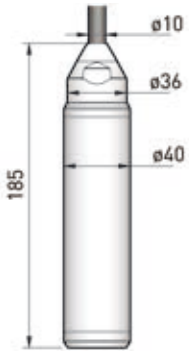
Mounting in fluid without turbulence
Normally the HSC2Ex can be mounted hanging freely in the delivered cable hanger and not touch the bottom. See fig 1.

Mounting in liquid with turbulence
If there is a strong turbulence, we recommend that the weight is mounted. See fig 2. Alternatively the sensor is protected inside a pipe, with an inside diameter of at least 50 mm, which is mounted vertical alongside the tank or pit wall to above 10 cm from the bottom. See fig 3.

The HSC2Ex is lowered through the tube until its lower end is free of the tube, but still free from the bottom. Slots in the tube prevent floating sludge to collect in the tube which can make lifting of the sensor less easy.

Accessories





Calibration systeme CB2
- Calibration box
- Net adapter
- Connecting cable for PC
- 3 connectors

Weight
Weight in bluepainted cast iron, weight 2 kg

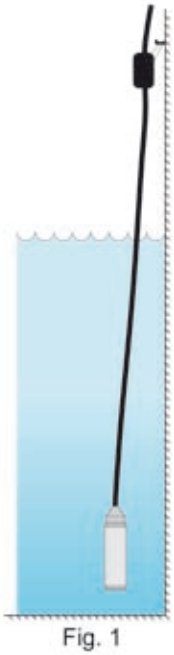


Fig. 1


Fig. 2

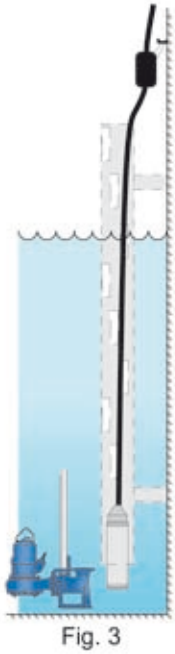


Fig. 3

abs
We know how water works