Model PSK3-13/16/19/22
LEVEL SENSOR

POSITION CONTROL
MEASUREMENT ENGINEERING

Stainless steel sensor
Probe diameter Ø13/Ø16/Ø19/Ø22mm

The PSK3 series with stainless steel sensor has been especially designed for the continuous level measurement at confined space conditions.The PSK3 submersible level transmitter has been designed for level measurement in contact. With the medium in harsh operating conditions. It offers an accuracy of 0.5 %FS and with an ingress protection of IP 68, is suitable for permanent level measurements up to 300 m water column.

Features

- Measuring ranges from 5mH_2O to 300 mH_2O
- IP68, Submersible level measurement
- Built-in Pt100 temperature sensor (optional) for simultaneous level and temperature Measurement
- Calibrated and temperature compensated
- Stainless steel pressure sensor
- Output 4...20mA, DC1...5V, DC 0.5...4.5V, MODBUS RTU

Application

- Drinking water systems
- Ground water monitoring
- Domestic water tanks
- Rain spillway basin
- Well monitoring

Technical data

Measuring range

Nominal pressure [mH_2O]	5	8	10	20	25	30	40	50	60	80	100	150	200	250	280	300
Overpressure [mH_2O]	10	12	15	25	30	35	45	60	70	90	110	170	220	270	300	320

Performance

*Accuracy**	0.5 %FS@25°C	*Linearity (best straight line) + Hysteresis + Repeatability
Operating Temperature	-10 to 50°C	
Compensated Temperature Range	-10 to 50°C	
Vibration	20 g RMS(20 to 2000Hz)	
Shock	100 g(10ms)	
Cycles	$10x10^5$	
Long Term Stability	0.2 %FS	

Electrical @25°C

Output signal / Supply	2-wire 4...20mA / V_S = 9... 30VDC
	2-wire HART+4...20mA / V_S = 12... 30VDC
	3-wire 1...5VDC / V_S = 9... 30VDC
	3-wire 0.5...4.5VDC / V_S = 9... 30VDC
	3-wire 0.5...4.5VDC / V_S = 5VDC
	4-wire I2C / V_S = 3.3...5VDC
	4-wire MODBUS RTU / V_S = 9...30VDC
Insulation Resistance	100 MΩ@100VDC
EMC Test	IEC61000-6-2/IEC61000-6-3
Reverse polarity protection	No damage – no function

Physical Specifications

Housing	316 stainless steel
Diaphragm	316L stainless steel
Protection cap	Stainless steel, POM-C
Cable sheath	PUR, PE, PTFE
Oil Filling	Silicone oil
Protection	IP68
Weight	~250g (without cable)

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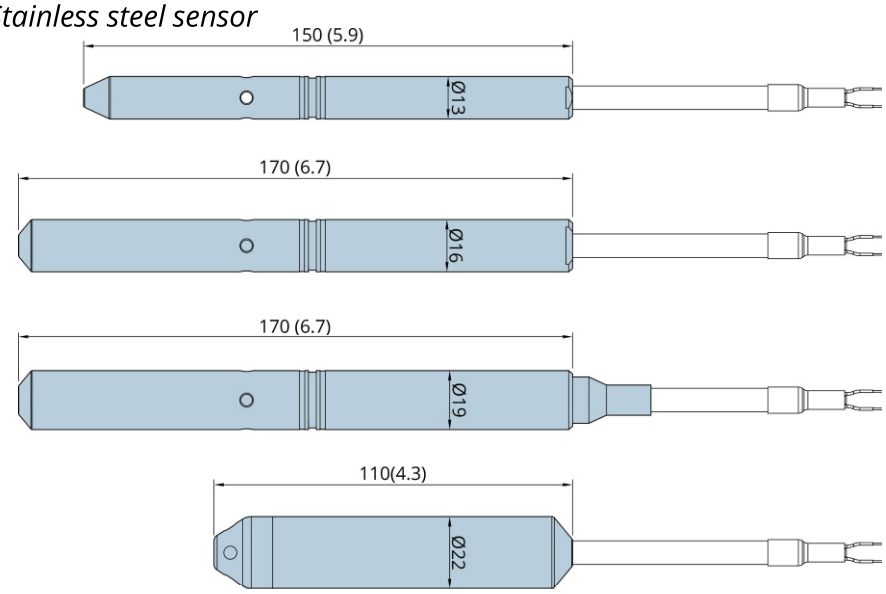
Dimensions All dimensions in mm(in)

Stainless steel sensor



Electrical connections

Cable outlet	4...20mA/HART 2-wire	1...5VDC 3-wire	0.5...4.5VDC 3-wire	MODBUS 4-wire
+Vcc	Red	Red	Red	Red
OUT/RS485A/SDA	Green	Yellow	Yellow	Yellow
GND	NA	Green	Green	Green
RS485B/SCL				Blue

Ordering code

Model	Range	Type	Output	Cable	Cable length	Accuracy
PSK3-13 Sensor dia.= 13 mm	**01** 5mH_2O	**G** Gauge	**42** 4...20mA	**C1** PUR	**XXX** Cable length in m	**01** 0.1%FS
PSK3-16 Sensor dia.= 16 mm	**02** 8mH_2O	**A** Absolute	**15** DC1...5V	**C2** PE		**02** 0.25%FS
PSK3-19 Sensor dia.= 19 mm	**03** 10mH_2O		**05** DC0.5...4.5V	**C3** PTFE		**05** 0.5%FS
PSK3- 22 Sensor dia.= 22 mm	**04** 20mH_2O		**R4** MODBUS RTU			
	05 25mH_2O		**H2** 4...20mA+HART			
	06 30mH_2O		**IC** I2C interface			
	07 40mH_2O					
	08 50mH_2O					
	09 60mH_2O					
	10 80mH_2O					
	11 100mH_2O					
	12 150mH_2O					
	13 200mH_2O					
	14 250mH_2O					
	15 280mH_2O					
	16 300mH_2O					

Accessory

Code A1: Cable strain relief clamp

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Communication format:

Ⅰ.*Read command format (03 function code) example:*

A. Send Read command format

Register Address	function code	Register High Address (H)	Register High Address (L)	Register Quantity High Byte (H)	Register Quantity Low Byte (L)	CRC16 (L)	CRC16 (H)
0X01	0X03	0X00	0X00	0X00	0X01	0X84	0X0A

B. Return Read data format:

Register Address	function code	Data Bytes	data (H)	data (L)	CRC16 (L)	CRC16 (H)
0X01	0X03	0X02	0X00	0X01	0X79	0X84

Ⅱ.*Write command format (06 function code) example*

A. Send write command format

Register Address	function code	Register High Address (H)	Register High Address (L)	Register Quantity High Byte (H)	Register Quantity High Byte (L)	CRC16 (L)	CRC16 (H)
0X01	0X06	0X00	0X00	0X00	0X02	0X08	0X0B

B. Return write data format example:

Register Address	function code	Register High Address (H)	Register High Address (L)	Register Quantity High Byte (H)	Register Quantity High Byte (L)	CRC16 (L)	CRC16 (H)
0X01	0X06	0X00	0X00	0X00	0X02	0X08	0X0B

Ⅲ. *Abnormal response return*

Register Address	function code	Abnormal code	CRC16 (L)	CRC16 (H)
0X01	0X80+ function code	0x01(illegal function) 0x02(illegal data address) 0x03(illegal data)		

Supported command, meaning of command and data

MODBUS-RTU protocol command list is as follows:

function code	Register High Address	Register Quantity High Byte	Data byte	Data scope	Command meaning
0x03 function code read data					
0x03	0x0000	1	2	1-255	Read slave address
0x03	0x0001	1	2	0-1200 1-2400 2-4800 3-9600 4-19200 5-38400 6-57600 7-115200	Read Baud rate
0x03	0x0003	1	2	0-#### 1-###.# 2-##.## 3-#.###	Decimal point stands for 0-3 digits decimal points
0x03	0x0002	1	2	0- Mpa/℃ 1- Kpa 2- Pa 3- Bar 4- Mbar 5- kg/cm^2 6- psi 7- mh^2o 8- mmh^2o	Pressure unit
0x03	0x0004	1	2	-32768-32767	Measurement output value
0x03	0x0005	1	2	-32768-32767	Zero point of transmitter range
0x03	0x0006	1	2	-32768-32767	Full point of transmitter range
0x03	0x000c	1	2	-32768-32767	Zero point offset value, generally factory sets as 0.
0x06 function codes write data					
0x06	0x0000		2	1-255	Write slave address
0x06	0x0001		2	0-1200 1-2400 2-4800 3-9600 4-19200 5-38400 6-57600 7-115200	Write Baud rate
0x06	0x000c		2	-32768-32767	Zero point offset value* pressure output value= calibration measurement value + Zero point offset value

Save and factory reset					
0x06	0x000F		2	0- save to user area	
0X06	0x0010		2	1- factory reset	