PSm

ICT 1000 Smart Hydrostatic Level Transmitter for Marine Tank Gauging

Key features

- Constructed and approved specifically for marine applications

- Simple to install, accurate and stable, robust and reliable

- Process connections and fixings for side-of-tank or submersible installation

- Compatible with all common marine liquid measurement applications

- Ceramic measuring cell allows Gauge or Absolute options with a wide measuring span

- Dual-mode operation provides outputs as 4-20mA and RS485 Modbus

- Programmable for range, tank volume calculations and alarms using an RS485 serial modem

Part of the TankWatch product group

scanjet

PSM is a Scanjet Group Company

Designed and constructed for marine tank gauging

PSM has drawn upon thirty years of global marine application experience, to develop a smart dual mode Modbus and analogue liquid level transmitter that offers you the highest possible standards in terms of performance, versatility, functionality and reliability.

The ICT 1000 hydrostatic level transmitter's advanced capacitive measurement cell is manufactured in robust and durable ceramic, and our careful design of the sensor means the diaphragm is fully supported and protected against overload and shock pressure conditions.

The ICT 1000 transmitter body is manufactured from 316 stainless steel and employs a carefully engineered Kalrez seal assembly to provide a fully submersible (IP68) construction capable of withstanding the toughest operating conditions for many years.

Advanced features are not confined to mechanical design. The ICT 1000 has a powerful on-board micro-controller to precisely monitor the pressure related output of the capacitive cell. Ambient temperature is also monitored to provide a fully compensated measurement output.

The transmitter is certified according to ATEX and IECEx regulations for installation in a hazardous area and approved by many major classification societies as suitable for use in marine applications.

Digital and analogue operation

The ICT 1000 is capable, depending on option, of operating as both an analogue 4 -20 mA hydrostatic level transmitter and communicating directly to the host system using the RS485 Modbus protocol. The integral temperature measurement is also available as an output variable in digital mode.

Save money and time with digital operation in multi-tank installations

When installing for multi-tank applications ICT digital mode enables significant cost and weight savings for cable runs to individual transmitters by utilising an RS485 communications in conjunction with PSM RFM series modules.

Smart programming

The ICT 1000 is a smart liquid level transmitter capable of being remotely programmed for measurement range, functionality and diagnostics by the user via an RS485 serial modem and a PSM supplied software configuration tool. Advanced configuration options include tank level vs. volume mapping tables, level offset and density correction.
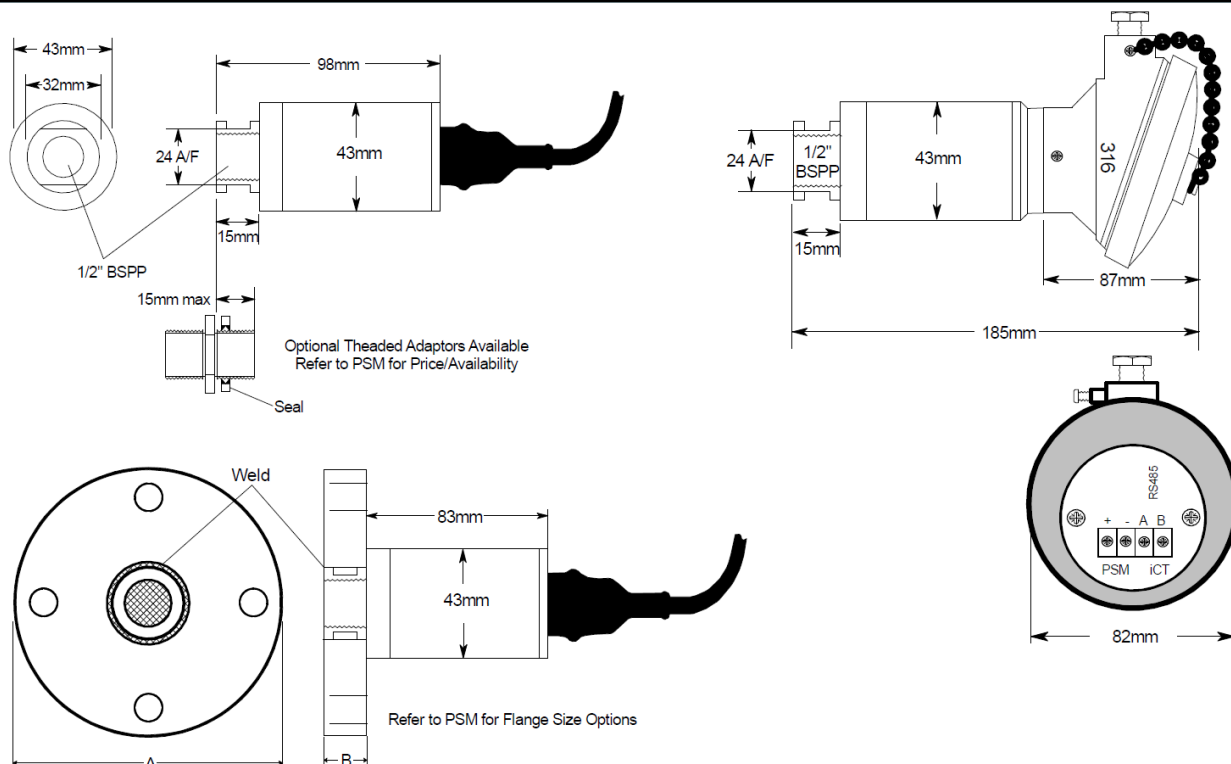
Part of the TankWatch product family

Including the RFM series of field mount connection and barrier modules and TankView software, display and control modules. These comprise a simple-to-install but scalable solution for marine level measurement and supervision systems for ballast, cargo, service and bunker fuel oil tanks.

Specifications

Power Supply Digital Only Mode	8 - 30 Vdc	Isolated external PSU required
Power Supply Including Analogue Mode	12 - 30 Vdc	
Accuracy: Level (at 20˚C and 1 bar)	± 0.1% FS (Digital mode) or ± 0.25% FS (Analogue or Dual mode)	
Long term stability	< ± 0.2% FS per year	
Accuracy: Temperature	± 1℃ (Measurement available in digital mode only)	
Temperature coefficient	± 0.025% FS per 1℃ (Over calibration range of 0—60 ℃ Other temperature ranges on request)	
Programmable measurement range	-10 mbar up to 20 bar (Gauge or Absolute reference options)	

Measuring cell pressure overload ratings	Range (Bar)	Proof Pressure (Bar)	Burst pressure (Bar)
	0.20	1.4	2.7
	0.35	1.5	3
	1	3	5
	2	6	10
	5	15	25
	10	30	50
	20	60	100

Analogue Output	4 – 20mA. 2 wire loop powered
Digital Output	RS485 MODBUS 2 wire half duplex
Sensing Element	Ceramic (96% AL_2O_3) measuring cell
Construction	316 SS with Kalrez seal and LSHF PET-E sheathed cable
Operating Temperature	-20℃ to +80℃
IP Rating	IP68 (suitable for continuous immersion)
Intrinsic Safety	Ex ia IIC T4

Dimensions

Model code 7 position construction (ex: 1050 / S / C / S1 / 6 / F / 7.5)

Position	Code	Description
1: OUTPUT	1040	Digital output only
	1050	Analogue output only
	1060	Analogue & Digital outputs
	A	Absolute measurement, otherwise leave blank
2: APPROVALS	S	Safe area installation
	I	Hazardous area installation (ATEX intrinsic safety (IS) approved)
	X	Hazardous area installation (IECEx intrinsic safety (IS) approved)
3: TRANSMITTER MAXIMUM PRESSURE	A	2m H2O (200 mbar)
	B	3.5m H2O (350 mbar)
	C	10m H2O (1 bar)
	D	20m H2O (2 bar)
	E	50m H2O (5 bar)
	F	100m H2O (10 bar)
	G	200m H2O (20 bar)
	X	Custom range on request (specify X metres H2O)
4: PROCESS CONNECTION	A1	Basic submersible sensor 1/2" BSP female with removable nosecone
	A2 X	Basic submersible sensor with drain wire adaptor (Specify length X metres)
	A3	Pole adaptor fitting threaded 1/2" BSP female
	A4	Free Standing
	A5	Free standing with Pole adaptor fitting threaded 1/2" BSP female
	A6	DN25 PN16 flange mounting
	A7	DN40 PN16 flange mounting
	A8	DN50 PN16 flange mounting
	A9	1" ANSI 150lb flange mounting to BS1560
	AA	1 1/2 ANSI 150lb flange to BS1560
	AB	2" ANSI 150lb flange to BS1560
	AE	Pole adaptor fitting 2" x 1 1/4" OD For Compression Adaptor
	AJ	JIS 25A 5K flange mounting
	AK	JIS 40A 5K flange mounting
	AL	JIS 40A 10K flange mounting
	AM	JIS 50A 5K flange mounting
	AN	JIS 50A 10K flange mounting
	S1	Tank fixing clamp
	X	Custom fixing on request
5: CABLE	3	Standard 3m cable length
	X	Custom cable length on request (specify length X metres)
	TH	316 stainless steel terminal housing (not possible with ATEX approval)
6: CONFIGURATION	N	Not configured
	F	Factory configured (specify details)
7: RANGE	X	Transmitter 4-20 mA configured range in X metres H2O