



PSM INSTRUMENTATION LTD

## **Quick Start Instruction Manual**

### **. ICT 1000 Level Transmitter**

Note: See Man 049 for complete installation, operation & maintenance instructions for ICT 1000 and associated RFM products

PSM WEEE Producer Registration No: WEE/HC0106WW

Burrell Road Industrial Estate  
Haywards Heath, West Sussex RH16 1TW, UK  
Tel: +44 (0)1444 410040 Fax: +44 (0)1444 410121  
[www.psmmarine.com](http://www.psmmarine.com) E-mail: [sales@psmmarine.com](mailto:sales@psmmarine.com)

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## **1.1 EC Declaration of Conformity**

The products detailed within this manual meet the legal requirements of the applicable EC Directives.

All EC Declaration of Conformities are available for download from our website [www.psmmarine.com](http://www.psmmarine.com).

## **1.2 Configuration**

Each ICT 1000 is delivered with mechanical configuration (pressure cell range, mounting type and cable length) according to the customer order. Details for these can be back-referenced by contacting PSM with the unique instrument serial number engraved on each transmitter.

For transmitters intended for use in analogue mode the measuring range (4 - 20mA) is normally configured according to the customer order. However this can easily be changed using a RS 485 <> Modbus converter and the PSM supplied ISS configuration software running on a Windows device. Refer to Man 053 for details.

For transmitters intended for use in digital mode full application parameters will also have been factory set if requested. Again these may be easily changed or set up using the ISS software.

## 2.1 Mechanical installation ICT 1000

Prior to installation it is recommended that the following checks are made:

- That any specific factory calibration is in accordance with the process parameters and tank height and that the ICT 1000 nominal range is suitable for the intended duty.
- In analogue mode only, that the mA range is programmed correctly
- In digital mode, that the application parameters such as SG, tank table, duty etc. are programmed correctly. This can be done using the PSM ISS software configuration tool.
- Any instrument identification or tag number to ensure it is fitted in the correct location.

***The cable is factory fitted to the ICT ensure a pressure tight seal. and no attempt should be made to remove the cable gland.***

### Instrument handling

Before and during installation the following precautions should be taken

- Do not touch the measurement cell of the ICT 1000 level transmitter
- Do not apply mains voltage to any cable conductor
- Ensure the ICT 1000 cable is free from damage and defects

### Sensor cable

The cable that is factory fitted to the transmitter is purpose designed for the application. It contains a nylon vent tube which provides an atmospheric reference for the sensor if constructed for a "gauge" measurement application. The end of the nylon tube has a short section of silicon tube fitted, which carries a sintered filter. This filter provides a pressure path, but prevents any moisture entering the vent tube and **MUST** remain in place. If the cable is shortened this filter must be transferred to the new cable end.

Note that if the ICT 1000 is constructed as an "absolute" measuring device, then there is no requirement to vent the instrument cable to atmosphere. Precautions must still be taken however to prevent moisture ingress into the cable vent tube.

The cable construction is of sufficient strength to enable the sensor to be directly suspended in deep wells and reservoirs. The outer sheathing is a special material suitable for continuous immersion in water, and many oils and chemicals. When handling the cable take particular care not to damage the outer sheathing.

When a transmitter is suspended by its cable use a proprietary suspension cleat or wind three or four turns around a 100mm diameter pipe or drum. Where the cable is to be brought through the tank wall it is recommended that where possible this be done above the maximum fill line using a suitable compression fitting. (Available from **PSM**).

Ensure the cable is not bent to a radius less than 50mm.

### Mounting

When mounting the unit ensure that suitable gaskets or sealants are employed to provide pressure tight seals. The sensor should not be mounted where it will be subject to excessive or continuous vibration, extreme temperature fluctuation or risk of mechanical damage.

Secure the cable as required over longer runs to prevent mechanical abrasion if it moves.

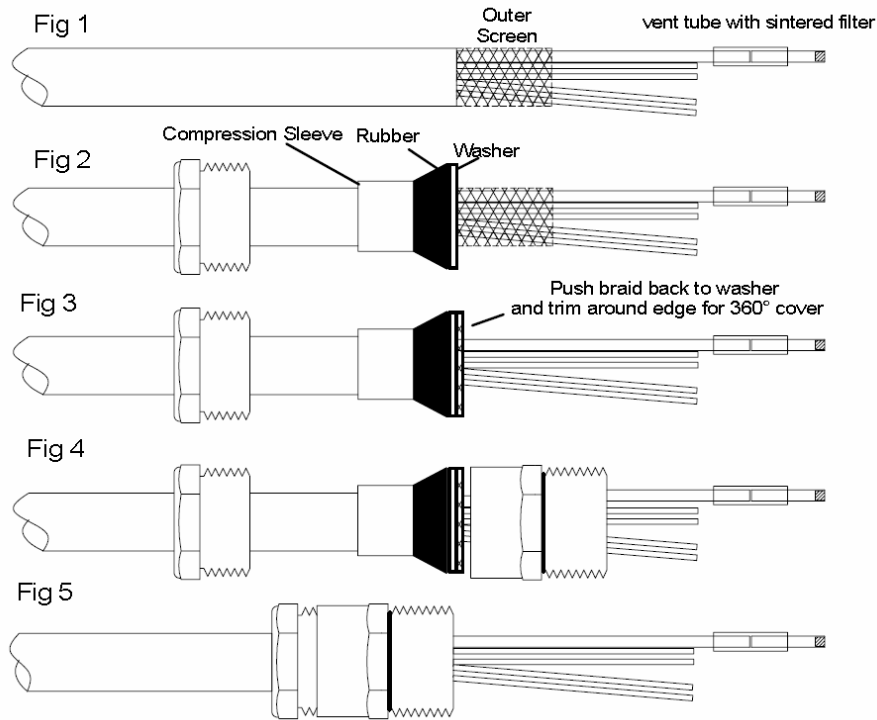
Do not secure the cable to any localised sources of high temperature heating such as steam coils used in heavy oil tanks.

## 2.2 Electrical installation ICT 1000

The ICT 1000 is a dual mode transmitter offering both a conventional 2 wire 4-20mA output and / or an RS485 serial output with communication based on the Modbus RTU protocol.

It is also available with optional ATEX or IECEx approval for installation in a hazardous environment (model code ICT 1000/I or ICT 1000/X). Refer to Man 049 for complete installation instructions for these two ICT 1000 variants and associated RFM products.

### Cable screen termination ICT 1000



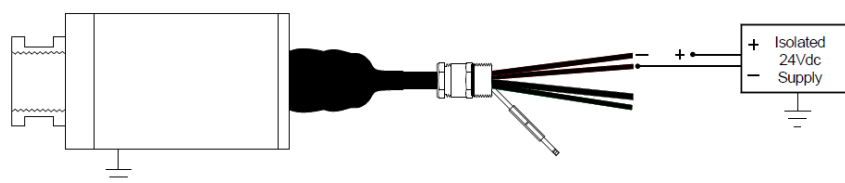
Cable is normally provided to the required length with the ends terminated as depicted above.

The overall braid **MUST** be terminated in the entry gland of the termination enclosure to ensure it is earthed. Particular care should be taken to **ensure that the 360° screen is maintained** to comply with the EMC standards of this unit.

If, exceptionally, the cable has to be shortened, the nylon vent tube should be cut to a free length of approximately 20mm within the enclosure, it must be ensured that this tube is not blocked or otherwise restricted and the silicon tube containing the sintered filter must be re-fitted to the shortened length.

The termination enclosure **MUST** be vented.

### Electrical connection ICT 1000 Analog and Digital cable identification



<b>Red</b>	+ Power	Analogue	<b>White</b>	+ Data	Digital (Modbus)
<b>Black</b>	- Power	(4-20 mA)	<b>Green</b>	- Data	