

## Pietro Fiorentini\* Meters & Instruments

### Turbine Meters

#### Installation Instruction

**Environmental conditions applicable to the Meter:** Mechanical class M2 & Electromagnetic class E1

Ambient temperature range from -25°C to +55°C Meter can be placed in open air. Avoid direct sunlight on the meter.

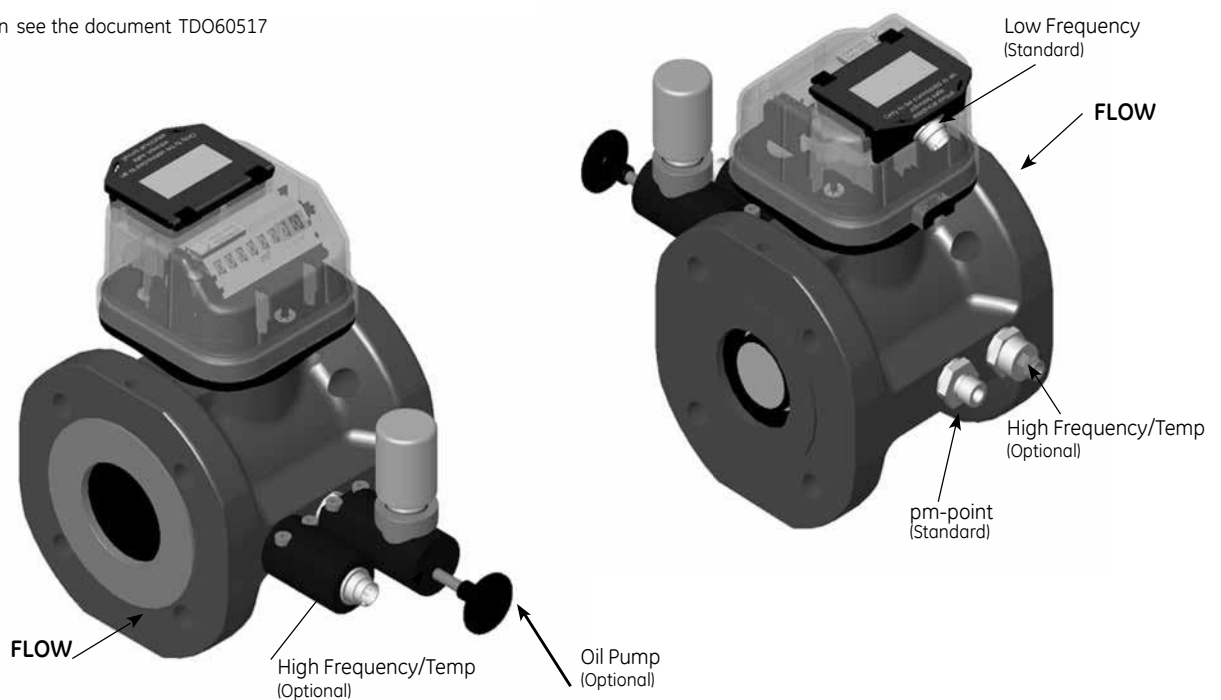
IP-classification of Index: IP65 (No condensation possible)

- 1) Check the meter for damage due to transportation and handling. The Turbine wheel should rotate freely.
- 2) Check the flow direction, as indicated on the type plate. For pm and T tapping see figure 1.
- 3) The installation must be free of dirt, welding beads and pipe scale. The piping on the inlet side of the meter must be clean.
- 4) The meter must be installed free of piping strain.
- 5) Level the meter side-to-side and front-to-back.
- 6) The maximum torque on the bolts for aluminium flanges is: M16 (5/8"UNC) 80 Nm, M20 (3/4"UNC) 180 Nm fasten the bolts crosswise.
- 7) The index can be rotated for about 350 degrees.
- 8) Pressurize the meter with care to avoid overloading. **Do not exceed 5 psig/second (35 kPa/second) maximum when pressurizing.**
- 9) Connect the electrical pulsers in accordance with the connection diagrams. The connector is in conformance with IP67 as long as the companion plug of the protection cap is connected including the seal.
- 10) Check the meter to determine there is no vibration.
- 11) Before starting up the meter, Lubricate with the amount stated on the oil bottle from the pump.

#### PRECAUTIONS:

- Never use the meter as a distance piece during welding.
- The meter should be transported and stored in a horizontal position.
- Use only devices with electrical characteristics as recommended (connection diagram).
- The maximum torque on the p-pm connection is: 30 Nm.
- To tighten the coupling. Use 2 wrenches against tuning of the p-pm connection.

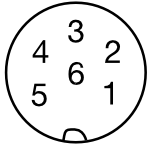
For further information see the document TDO60517





Electric connections only to be connected to an intrinsic safe electrical circuit. Only qualified staff with a knowledge of protection classes, regulations and provisions for apparatus in hazardous locations may install, connect and set up the units. Check whether the classification is suitable for the application.

### Low Frequency sensor index



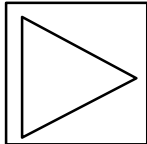
Pin configuration from the pulse box located on the index

1 - 4	1 tr. = 1 imp.
2 - 5	1 tr. = 1 imp.
3 - 6	N.C. Reed Switch

For more details ask for iTN 33101

### High frequency sensors

When powered this 2 wire high frequency sensor change its current. The switching amplifier limits voltage and current according the NAMUR protocol EN 60947-5-6 and avoids damage to the sensor that could result in the ignition of gas. For amplifiers contact Pietro Fiorentini sales.

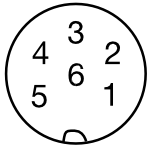


**Sensor connection:** Only to intrinsically safe certified circuits or evaluation amplifiers which do not exceed the following maximum values of the units:

$U_i = 15\text{ V}$ ,  $I_i = 50\text{ mA}$ ,  $P_i = 120\text{ mW}$

### Installation remarks/Mounting

1. Adhere to the relevant national regulations and provisions.
2. Avoid electrostatic charging from housings and cables.
3. Sockets must be protected against intensive electrostatic charging.
4. To avoid electrostatic charging steps must be taken to ensure the equalization of potential of metal parts (plug housing, fixing elements, etc.)



### High frequency sensor from shaft or wheel

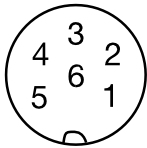
Pin configuration

3(-)    6(+)    pulse output 1

For more details ask for iTN 30203 and iTN 30204 or iTN33102.



**Should after reading this manual carefully any doubts or questions remain, contact the local Pietro Fiorentini representative before any actions taken.**



### Encoder Pin Configuration

Pin configuration

1 (+)	2 (-)	data output
3 (+)	6 (-)	pulse output 1
4 (-)	5 (+)	pulse output 2

### Cable

If a cable is supplied, the color code is:

- 1 white
- 2 brown
- 3 green
- 4 yellow
- 5 grey
- 6 pink