Pietro Fiorentini

H2-SSM-iCON

The **H2-SSM-iCON** smart meter by Pietro Fiorentini incorporates the latest ultrasonic measurement technology to measure both 0 to 20% hydrogen blended natural gases and **100% hydrogen**, switching between gases without any additional interaction. Built with a valve inside the meter can be used to enhance customers and network safety. This device can be used Hydrogen Pilot projects / Proof of concept (POC) for residential applications on low pressure gas distribution networks.

Residential users

Features	Values
Measurement Range (Qmin - Qmax)	Natural gas: from 0.040 to 6 m3/h | Hydrogen: from 0.130 to 20 m^3/h Natural gas: from 1.4 to 212 cfh | Hydrogen: from 4.6 to 706 cfh
Minimum Flow rate (Qstart)	Natural gas: 0.01 m^3/h | Hydrogen: 0.033 m^3/h Natural gas: 0.35 cfh | Hydrogen: 1.16 cfh
Maximum Operating Pressure*	up to 12.5 kPa up to 125 mbar
Ambient temperature*	from -25 °C to 55 °C from -13 °F to 131 °F
Gas temperature range*	from -25 °C to 55 °C from -13 °F to 131 °F
Accuracy	Class 1.5
Ingress protection	Compliant to IP66
Power supplies and operating lifetime	Lithium batteries 15 years for metrological battery (non-replaceable) Up to 20 years for communication battery (replaceable)
Remote communication interface	NB-IoT
ATEX classification	II 3G Ex ic IIC T3 Gc
Gas volume compensation	Temperature compensated (TC)
Nominal dimensions	Connection distance – 6" (152,4mm), others with adapters Width 242 mm; Height 264 mm; Depth 175 mm
Connections	1" BS 746. Other connections on request

(*) REMARK: Different functional features and/or extended temperature ranges available on request. Stated temperature ranges are the maximum for which the equipment's full performance, including accuracy, are fulfilled. Standard product may have a narrower range.

Table 1 Features

Materials and Approvals

Part	Material
Body	Metal
Electronic enclosure	Plastic polycarbonate
REMARK: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.	

Table 2 Materials

Why it is a concept meter for Pilot projects and POC:

• Lack of international standard and harmonization for dual fuel (hydrogen blended natural gas and pure hydrogen).
• Lack of long-term industry's experience.
• Lack of mass production for components and in general components maturity.
• Lack of global massive deployment.
• Only few labs for third party testing laboratories for 100% Hydrogen (more to be ready by 2023).
• Commissioning and decommissioning of H2 meters are still an open discussion points within technical community.

The **H2-SSM-iCON** is designed to meet OIML R137, EN 14236
The product is certified according to 2014/34/EU (ATEX) and 2014/53/EU (RED)

OIML R137   RED*   ATEX*

*no certification

H2-SSM-iCON competitive advantages

H2 | CH4   Natural gas and 100% Hydrogen compatibility

Switching between gases without any additional interaction

Temperature monitoring sensor

Integrated shut off valve

Advanced diagnostic

Open communication protocol

15 years metrological battery

XL   Extended life metrological battery option (20 years)

NB-IoT