

FLUX®



FLUX USM G10-G16-G25

SMART ULTRASONIC C&I
GAS METERS

Description

The Flux USM smart gas meter is based on proven quality of ultrasonic sensor technology, providing high precision measurement for the modern gas networks. The FLUX USM C&I Smart Gas Meters are designed and manufactured to measure the volume of natural gas (NG) as well as future mixture of green gases with hydrogen and biomethan and also liquefied petroleum gas (LPG). The solid state metering sensor has no moving parts, thus avoiding the accuracy drift spoiling of the mechanical meters; therefore there's no need to replace any worn out parts over time. The measurement technology, based on the latest ultrasonic sensor, integrates the temperature and pressure sensors for volume conversion and it permits to obtain high precision measurement and performance at defined gas invoicing conditions. The Flux USM C&I smart gas meter is part of the new generation devices; it manages the latest modern smart gas networks and it supports the traditional gas distributors in the transition to the new digital approach of IoT networks. The Flux USM C&I smart gas meters fulfill the requirements of European and International standard MID-OIML and is manufactured under the CE mark. Its quality is guaranteed by a design made in Italy, in accordance to the very strict requirements of the Italian smart metering regulation UNI TS 11291 – which is becoming a “de facto” international adopted standard for smart gas meters. The FLUX USM C&I meters are part of FLUX Smart Gas metering solutions, including central Head End System and Meter Data Management system - to optimize the management of modern smart gas networks.

Technical data

Gas meter model	FLUX USM G10 - G16 - G25
Operating pressure	Max 0,5 Bar
Operating temperature	- 25°C ÷ +55°C
Temperature measurement range	- 25°C ÷ +55°C
Display	Display LCD icons and chars, Cubic meters indications 8 digits
Control panel	3 button keypad
Maximum capacity Qmax (m ³ /h)	16 - 25 - 40
Minimum capacity Qmin (m ³ /h)	0,10 - 0,16 - 0,25
Class	1,5
Pulse output	Standard pulse output for final customer
Communication interface	optical interface (IEC 62056-21), modem GPRS, NB-IoT, wired MBus
Battery power supply (metrology)	Lithium battery life up to 16 years
Battery power supply (modem)	GPRS and NB-IoT, lithium battery life up to 8 years
Applied standards	<ul style="list-style-type: none"> • Compliance with European Standards EN14236:2018 and OIML R137 • Compliance with Italian Standard UNI-ITS 11291 • Installation in ATEX Zone 1 area (II 2G Ex ic IIB T3 Gb)
Class protection	IP 66
Firmware	remotely upgradeable in compliance with WELMEC 7.2
Approval and marking	under EU MID Directive 2014/32/eu with CE mark; H3 mark; "T" mark
Communication protocol	DLMS Cosem
G size	G10 - G16 - G25

Integrated smart supervision

The FLUX USM offers continuous checks through a system of safety alerts, hardware alarms, battery management alerts, network quality signal and fraud alerts. The base LCD offers corrected volume, alarms and setting. The FLUX USM logs hourly data and it can store up to 90 days at a time. The FLUX USM has a modular remote communication interface which is available with GPRS, via cable with the MBus output or with the latest communication technology NB-IoT. The meter is also equipped with a pulse output for the end customer and an external antenna, which guarantees excellent signal reception from the cellular network; in case of poor signal the antenna can also be remotized. Thanks to the adoption of the static ultrasonic sensor, the meter is exceptionally compact, lightweight and easy to handle.

Integrated shut-off valve (option)

The integrated valve with minimum pressure loss is positioned on the meter's inlet, inside the casing; it can be controlled remotely for both closing and reopening (in this case, after remote enabling and onsite activation). Valve position (open-close) can be detected remotely at any time.

Long lifetime Value

The FLUX USM C&I meters offers an extended metrological battery life up to 15 years, while transmission module battery life can reach 8 years life. Planning the maintenance and asset management costs has never been so easy and cheap! The FLUX USM C&I meters has a reduced environmental footprint enabling utilities to place it where other traditional gas meters cannot fit. Moreover its small sizes increase shipping and storage efficiency.

Basic features

- Approvals: MID, ATEX, EN 14236, OIML R137, EN 12405-01, EMC, compliant with resolution ARG/GAS 631/13 (Ex/155/08) and UNI/TS 11291 regulations
- Firmware: remotely upgradable in compliance with WELMEC 7.2
- Designed for a long life of the transmission battery (up to 8 years) and of the metrological battery for the entire life of the meter (over 15 years)
- Transmission battery freely purchasable on the market not tied to electronics;
- Hydrogen ready (mixture with Natural Gas and Hydrogen over 20% of H₂)
- Biomethan ready (mixture with Natural Gas and Biogas according to UNI/TS 11537)
- Ready for periodic verification on-field
- With built-in shut-off valve (optional)
- Various anti-tamper alarms

Security and Protection of data and the device

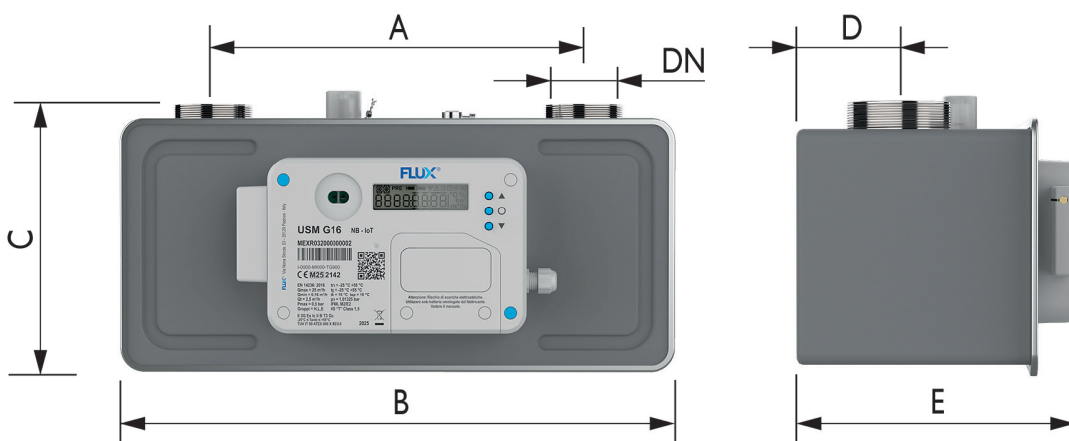
- AES128 data encryption standard
- Protection from external magnetic fields
- Electronic box cover opening alarm
- Battery door opening alarm
- Magnetic tamper alarm (optional)
- Designed with cybersecurity in mind

Field verification and calibration

The USM meter is equipped with a temperature pocket and a pressure socket for easy periodic on-field verification of the accuracy of the sensors, thus allowing to obtain reduced maintenance and asset management costs - if compared with other metering technologies.

Size and connections

Model	Connection DN	Qmin (m ³ /h)	Qmax (m ³ /h)
USM G10	1 1/4"	0,10	16
	2"	0,10	16
USM G16	2"	0,16	25
USM G25	2 1/2"	0,25	40



Dimensions

Model	Dimension (mm)				
	A	B	C	D	E
USM G10	250	398	195	71	203
	280	398	195	71	203
USM G16	280	398	195	71	203
USM G25	335	451	195	71	203

Product range



Rotary gas meters



Turbine gas meters



Gas pressure regulators



Electronic volume converter



Diaphragm gas meters



Smart meters

Your next generation of smart gas meters

FLUX[®]
Brand of **Metrix Italia**