640C, 640MC

Volumetric Meter - Composite Body with Electronic Register

Main characteristics

- DN 15 to 20 and Coax, MAP 16, T50 (temperature range 0.1 to 50 °C)
- Light and robust
- Easy to handle
- Meets current and anticipated regulations for potable water
- 33% lower carbon footprint than equivalent brass meters
- High resistance to impurities and aggressive water
- Quiet operation
- Ready for wireless communication with integrated radio functionality (available in different frequencies)
- Long battery life expectation inclusive of metrology and radio function
- The register includes two lithium batteries

APPLICATIONS

The 640C/640MC is a high precision meter.

Due to its unique piston and measuring chamber design, the smallest drops of water are measured.

With the 640C/640MC you are assured of lasting metrology.

The 640C meter range includes an electronic register with integrated radio functionality which enables easy and fast communication.

Due to our broad range of system solutions you can adapt the 640C/640MC to all your AMR, AMI requirements.

The protection class of the electronic register of the 640C family is IP 68.

With a tamper proof design and its long life span you can be confident when selecting the 640C/640MC.

Accuracy and Reliability

Thanks to the advanced design of its measuring chamber the meter has a low starting flow.

It can be supplied with metrological seal according the MID regulation 2014/32/EU with a ratio up to R400.

Foreign matter present in the water is filtered out by either the tubular strainer on the inlet or the seat strainer. All electronic components of the register are hermetically sealed and assembled in a glass copper casing which allow the protection class IP68.

The 640C/640MC water meter retains its metrological accuracy for many years of operation, even in difficult working conditions.

Certificate of compliance for potable drinking water

- KTW/DVGW (D)
- ACS (F)
- WRAS (UK)
- Hydrocheck (B)
- KIWA ATA (NL)

Approvals

EU type-examination certificate in conformity with

- 2014/32/EU (MID)
- OIML R49:2013
- EN 14154-4:2014
- ISO 4064:2017

Q_3 2.5 DE-07-MI001-PTB002

Q_3 4 DE-09-MI001-PTB004

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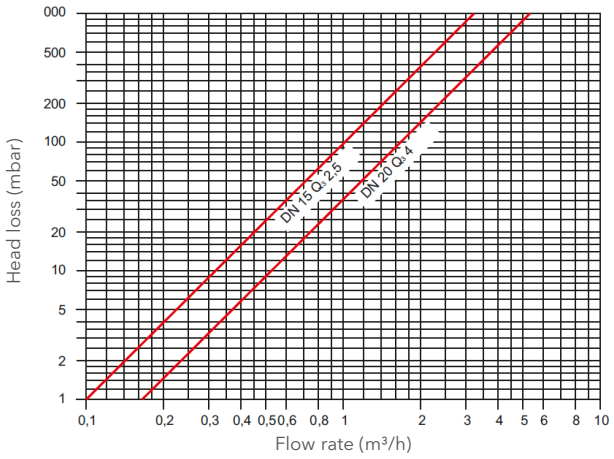
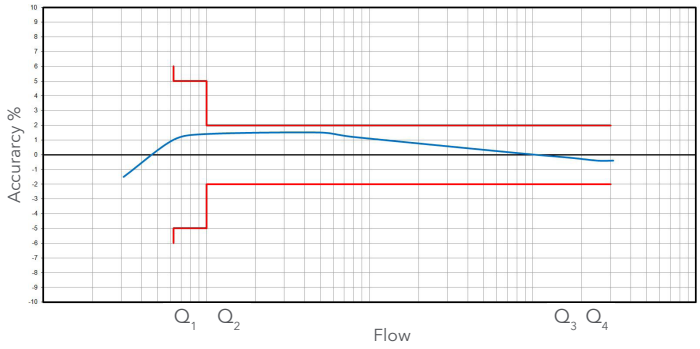
Typical Headloss Curve



Typical Error Curve

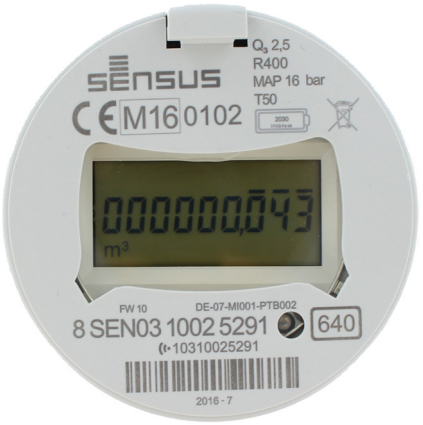


METROLOGICAL CHARACTERISTICS IN ACCORDANCE WITH MEASURING INSTRUMENTS DIRECTIVE

Nominal Size	DN	mm	Coaxial Manifold	15	20
Permanent flowrate	Q_3	m³/h	2.5	2.5	4
Ratio "R"	Q_3/Q_1	R	400*		
Maximum flowrate	Q_4	m³/h	3.125	3.125	5.0
Minimum flowrate (tolerance ±5%)	Q_1	l/h	6.25	6.25	10.0
Transitional flowrate (tolerance ±2%)	Q_2	l/h	10.0	10.0	16.0
Accuracy class			± 2 % ($Q_2 \leq Q \leq Q_4$) for water temperatures ≤ 30 °C		
			± 3 % ($Q_2 \leq Q \leq Q_4$) for water temperatures > 30 °C		
			± 5 % ($Q_1 \leq Q \leq Q_2$)		
Temperature range			0.1 °C ... 50 °C		
Pressure range (MAP)			0.3 bar (0.03 MPa) - 16 bar (1.6 MPa)		
Pressure loss class ΔP			0.63 bar (0.063 MPa)		
Environmental class			I		
Mechanical Environmental Conditions			M2		
Climatic Environmental Conditions			5 °C ... 70 °C		
Electromagnetic Conditions			E2		

* further available ratios Q3 / Q1: 315, 250, 200, 160, 125, 100, 80, 63, 50, 40

Typical Marking



Markings may vary depending on particular markets or metrological specifications.

STARTING FLOW

Coaxial Manifold	1l/h
DN 15	1l/h
DN 20	2l/h

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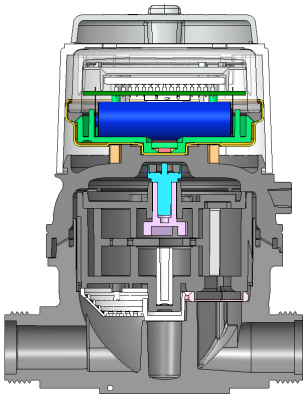
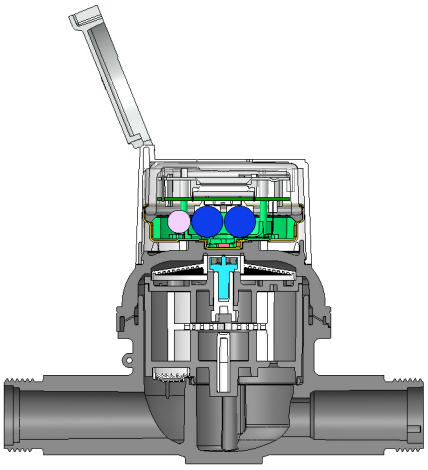
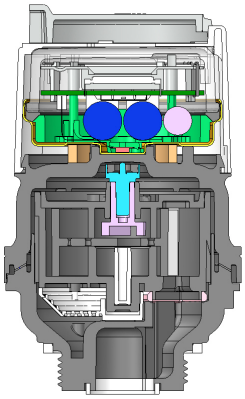
Cross Section



640C 110 mm



640C 190 mm



640MC

Legibility

The display with 9 digits (6 for m^3, 3 for litres) ensures exceptional readability. The highest resolution in testing mode is 0.05 litres.

Icons are also displayed on the LCD to indicate important information have been registered:

- Alarm is triggered
- Low battery level is reached
- Radio is activated
- System is set up in hydraulic testing mode
- ⊕⊖ Indicates positive or negative flow
- m^3 Indicates the unit programmed in use

BATTERY LIFETIME

Radio interval profile 640C / 640MC with 15 years battery lifetime (1)	
wM-Bus T1	SensusRF
≥ 3600 sec	BUP 15 sec / LAT 60 sec

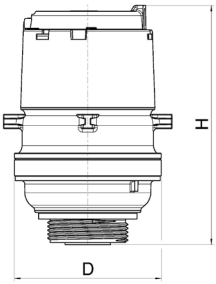
(1) calculated lifetime with typical power consumption of electronics under allowed ambient condition

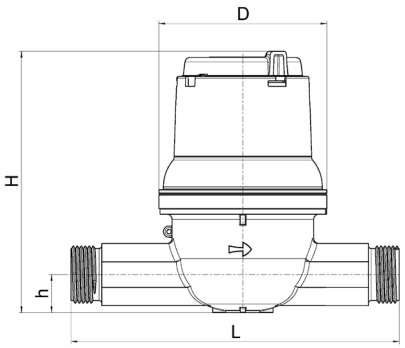
DIMENSIONS AND WEIGHTS

Nominal Size	DN	mm	Coaxial Manifold	15	20
Length	L	mm		170 (1)	190 (3)
Width	D	mm	87	87	97.2
Total height	H	mm	140.3	142.6	149
Height to pipe axis	h	mm		18.95	21.5
Tail	Diameter	inch	G 1½" B	G ¾" B (2)	G 1" B
Piece		mm	47.8	26.44	33.25
Thread	Pitch		2.31	1.81	2.31
Weight		kg	0.5	0.6	0.68

(1) Also available in length 110, 115, 134 and 165 mm
(2) Also available in length 165 and 190 mm with 1" threads
(3) Also available in length 105, 165 and 220 mm

Dimensional Diagram





For the installation guidelines please refer to the manual "Volumetric Meter Manual" on our website.

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640C / 640MC Infrastructure

The 640C product range has SensusRF integrated technology providing the advantages of both uni- and bidirectional system architecture as described below. SensusRF is the optimized license free radio system for battery driven endpoints and repeaters. Scalable for mobile and remote reading without exchange of components, it is available in 433 MHz and 868 MHz. OMS® compatible.

SensusRF offers two communication modes

1. Fixed Radio Network

- Auto configuration wizard (gateway sniffing for endpoints and repeaters)
- Integrating repeaters (up to 7 hops in a chain)
- Self-healing network (using alternative routes)
- Meter reading transparent and local
- Fast track alarms
- DMA snap shot (snap shot of a water network for evaluation)
- TCP/IP technology for the WAN communication
- High level of data security (end-to-end encryption)
- Enables cloud technologies, FTP and other remote database applications

2. Mobile read - Walk-by / Drive-by

- Unidirectional telegrams
- Bidirectional communication
- Spontaneous reception possible without route
- Configuration of the endpoint

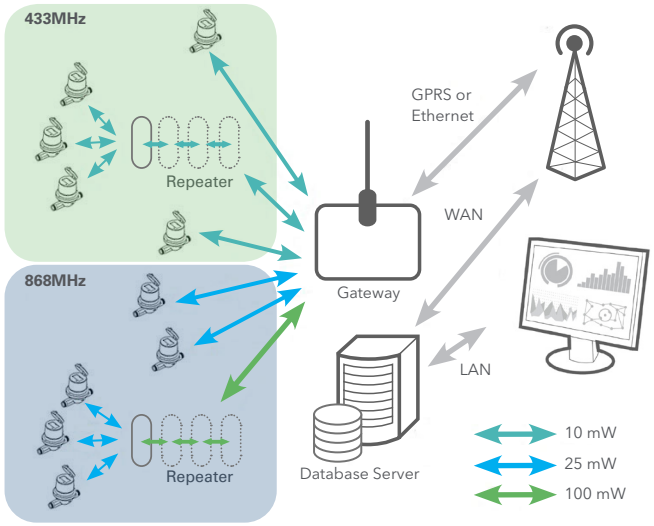
SIRT (Sensus Interface Radio Tool)

SIRT is a radio modem for SensusRF radio, connected to a handheld via Bluetooth and using DIAVASO Mobile Reading software with the following features:

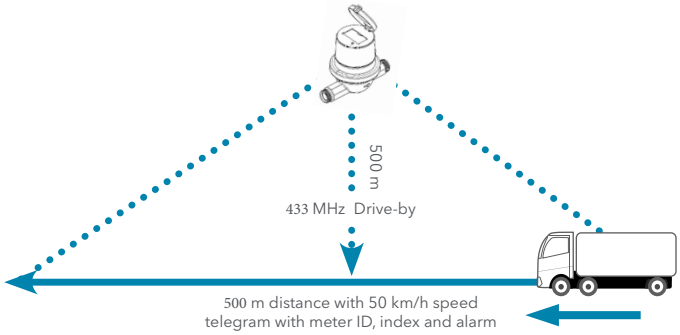
- Installation and readout of devices
- Reception of frequently transmitted radio messages from Sensus RF radio endpoints
- Request additional information from the radio endpoints
- Change configuration of radio endpoints (alarm, level settings...)

For further information please refer to the SensusRF brochure.

640C / 640MC Fixed radio network - Remote Access & Monitoring



Unidirectional/Bidirectional communication



xylem

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