

640C

640MC

Volumetric Meter - Composite Body with Electric 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
- Environmentally friendly
- Unrivalled accuracy and measuring range
- High resistance to impurities and aggressive water
- Quiet operation
- Ready for wireless communication with integrated radio functionality (available in different frequencies).
- Long-lasting battery life expectations include metrology and radio function.
- The register includes a lithium battery.

Applications

- DN 15 to 20 and Coax, MAP 16, T50 (temperature range 0,1 to 50 °C)
- 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 and AMI requirements.
- The protection class of the electronic register of the 640C family is IP 68.
- With a tamper-proof design and a long lifespan, you can be confident when selecting the 640C/640MC.

Accuracy and Reliability

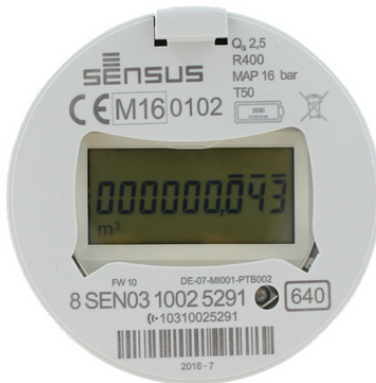
Thanks to the advanced design of its measuring chamber, the meter has a low starting flow.

It can be supplied with a metrological seal according to the MID regulation 2004/22/EC with a ratio up to R400.

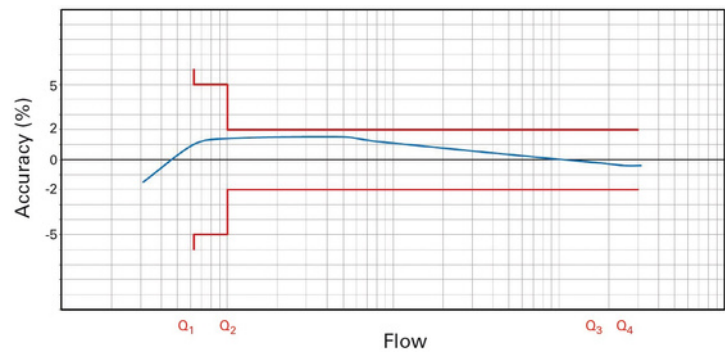
Foreign matter present in the water is filtered out by either the tubular strainer on the inlet or the seat strainer. All electronic components of the register are hermetically sealed and assembled in a glass copper casing which allows the protection class IP68.

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

Typical Marking



Typical Accuracy Curve



Approvals

EC type-examination certificate in conformity with:

- 2004/22/EC (MID)
- EN 14154:2007
- OIML R49:2006
- ISO 4064:2005

Q3 2,5 DE-07-MI001-PTB002

Q3 4 DE-09-MI001-PTB004

Certificate of compliance for potable drinking water.

KTW/DVGW (D)

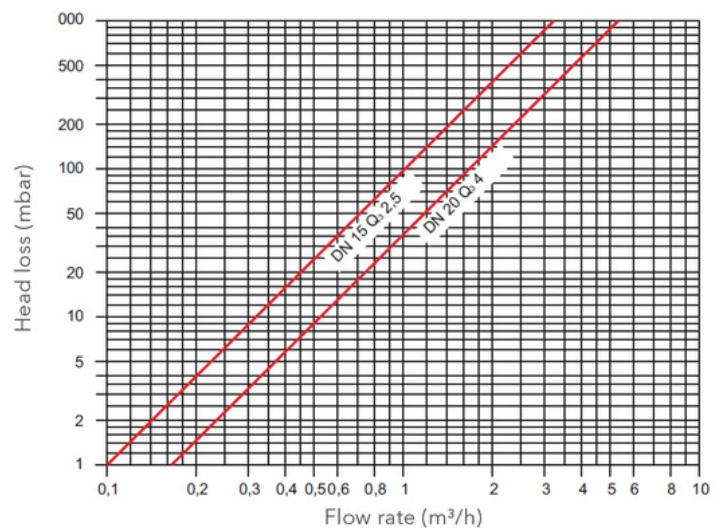
ACS (F)

WRAS (UK)

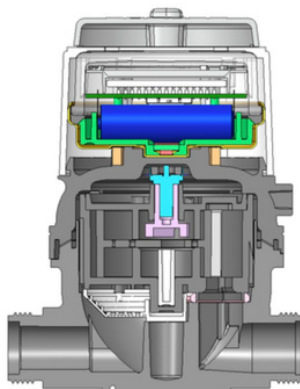
Hydrocheck (B)

KIWA ATA (NL)

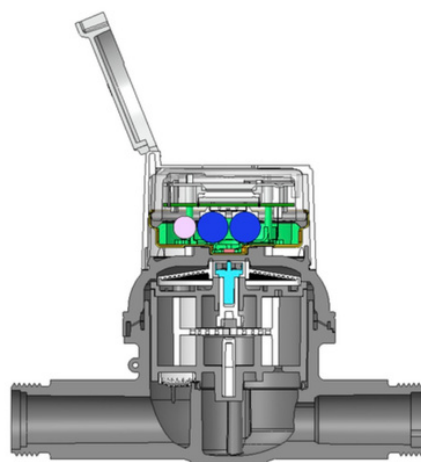
Typical Head Loss Curve



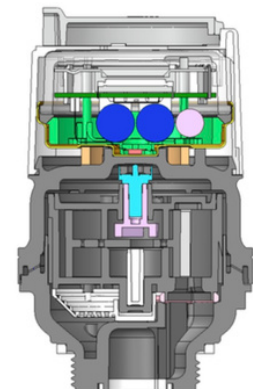
Cross Section



640C 110 mm



640C 190 mm



640MC

Performance Data

Metrological Characteristics. Directive 2004/22EC (MID) & EN 14154:2007

Nominal Size	DN	mm	Coaxial Manifold	15	20
Permanent Flow Rate	Q3	m ³ /h	2.5	2.5	4
Ratio "R"	Q3/Q1	R	400*		
Maximum Flow Rate	Q4	m ³ /h	3.125	3.125	5.0
Minimum Flow Rate (Tolerance ± 5%)	Q1	l/h	6.25	6.25	10.0
Transitional Flow Rate (Tolerance ± 2%)	Q2	l/h	10.0	10.0	16.0
Accuracy Class	± 2% (Q2 ≤ Q ≤ Q4) for water temperatures ≤ 30°C ± 3% (Q2 ≤ Q ≤ Q4) for water temperatures > 30°C ± 5% (Q1 ≤ Q ≤ Q2)				
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 (0.063MPa)				
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

Legibility

The display with 9 digits (6 for m³, 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:

	Flow Direction	LC Display
	Forward Flow	+ with flashing circle
	Reverse Flow	- with flashing circle
	No Flow	Neither +, nor - circle
	Transmission icon Flashing mode by activated radio (1 sec on/ 1 sec off)	
	Low Battery Types	Description
	Low Battery	Low battery alarm will be triggered 15 months before the calculated end of life. (steady display – not blinking)
	Very Low Battery	Low battery alarm will be triggered 6 months before the calculated end of life (flashing display)
	The "Bell" icon is flashing when the register is in a testing mode	
	When an alarm is triggered the alarm icon will be visible on the LCD	
	Unit	
m ³	Cubic Meters	
l	Litre	

 LCD Segments test (1 sec every minute)	 Firmware Version	 Testing Mode
 Forward Flow	 Reverse Flow	 Alarm Set

Starting Flow

Coaxial manifold	1l/h
DN15	1l/h
DN20	2l/h

Battery Lifetime

Radio interval profile 640C / 640MC with 15 years battery lifetime ¹	
wM-Bus T1	Sensus RF
>3600 sec	BUP 15 sec / LAT 60 sec

(1) calculated lifetime with the typical power consumption of electronics under allowed ambient conditions.

Sensus RF Infrastructure

The Sensus product range with SensusRF integrated technology provides 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 is OMS compatible.

SensusRF offers two communication modes.

1. Fixed Radio Network

- Autoconfiguration wizard (gateway sniffing for endpoints and repeaters).
- Integrating repeaters (up to 7 hops in a chain)
- Self-healing network (using alternative routes)
- Meter reading is transparent, and local Fast track alarms.
- DMA snapshot (snapshot 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.

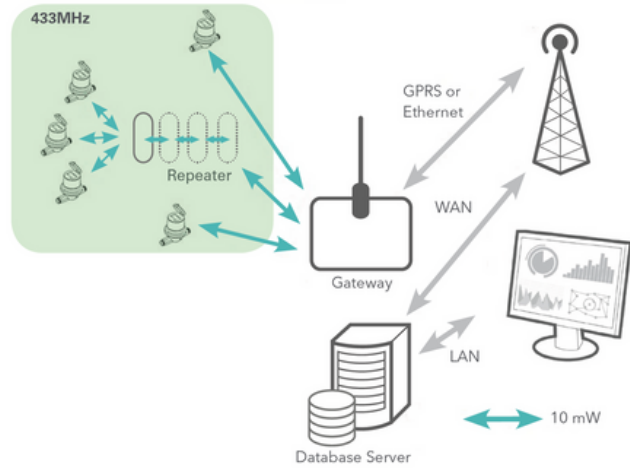
2. Mobile read - Walk-by / Drive-by

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

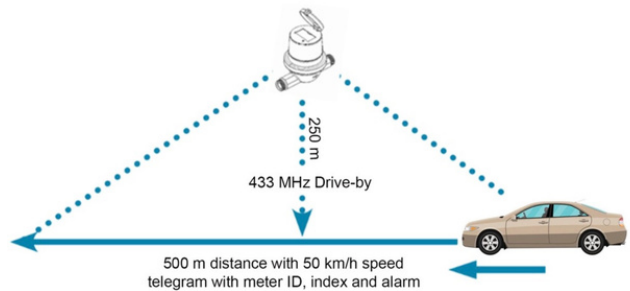
SIRT (Sensus Interface Radio Tool)

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 on radio endpoints (alarm, level settings, etc.).



Unidirectional/Bidirectional Communication



Dimensions and Weights

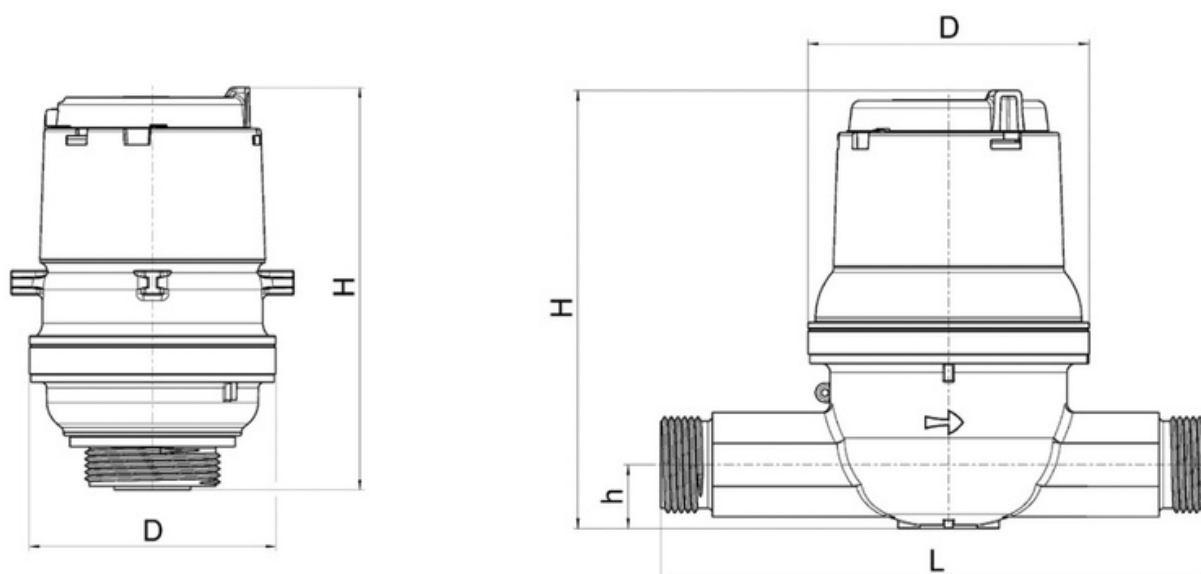
Nominal Size	DN	mm	Coaxial Manifold	15	20
Length	L	mm	-	170 (1)	190 (3)
Width	D	mm	87	87	97.2
Total Height	H	mm	140.3	142.6	149
Height to pipe axis	h	mm	-	18.95	21.5
Tail	Diameter	inch	G 1 1/2" B	G 3/4" B	G 1" B
Piece	-	mm	47.8	26.44	33.25
Thread	Pitch	-	2.31	1.81	2.31
Weight	-	kg	0.5	0.6	0.68

(1) Also available in length 110, 115, 134 and 165mm

(2) Also available in length 165 and 190mm with 1" threads

(3) Also available in length 105, 165 and 220mm

Dimensional Diagram



For the installation guidelines please refer to the IOM manual on our website.