MacIQ WM

IoT billing module

MacIQ WM is a compact telemetry module which is an element of stationary water meter reading system.

This simple plug-and-play solution does not require construction of an infrastructure. The product utilises cutting-edge technology aligned with the Internet of Things (IoT) trend, with an enhanced radio signal propagation and a particular focus on coverage. The device operates in licensed telecommunication networks in the NB-IoT or LTE Cat.M1 standard.

Device is also equipped with an NFC interface for local configuration and reading of the device's recorded data using the ConfIT! data loggers mobile application.
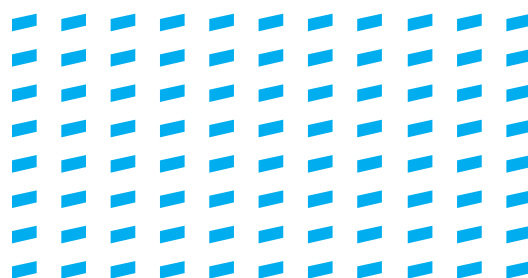
key benefits

- easy solution to enable remote readouts from the mechanical water meters
- readouts efficiency independent from environmental factors like constantly flooded water meter chamber
- readouts always in time guaranteed by the remote transmission
- eliminating risk of human mistake when manually reading the meter or illegible water meter totalizer
- immediate alarm action when consumption profile suddenly changes - leaks monitoring

technical data

dimensions	MacIQ WM: 109.2 x 40 x 44.7 mm; MacIQ WM S: 76.8 x 71.7 x 48.1 mm
housing material	polycarbonate
protection level	IP68 in accordance with the requirements of EN 60529
operating temperature	storage from -25 °C to +50 °C; operation from -5 °C to +50 °C
display	optical display server communication indicator
communication with water meter	inductive sensor allows for direct installation on water meters
supply	• lithium battery with nominal voltage of 3.6 V, size C according to IEC 60086-1 with 8 Ah capacity • service life: more than 10 years depending on frequency of synchronization of data to the server
data transmission	• local data readout via mobile device with NFC • NB-IoT or NB-IoT + LTE Cat. M1 modem • support for transmission protocols depending on the technology: TCP, UDP, LwM2M* • built-in internal antenna or external antenna without connectors
radio frequency	• MacIQ WM H7.X LTE NB2 LTE-FDD: B1/B2/B3/B4/B5/B8/B12/B13/B17/B18/B19/B20/B25/B28/B66/B70/B85 • MacIQ WM H4.X Cat M1 LTE-FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B27/B28/B66 Cat NB2 LTE-FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B28/B66/B71
data registration period	• data recorded at a 60-minute interval • unique identifier for each record • registered data is stored in internal memory (6060 records)
configurable alarms	• minimum and maximum flow alarm thresholds • minimum and maximum flow warning thresholds • leakage threshold • backflow • integration of magnetic and electromagnetic fields • mechanical dismantling of the water meter • discharged battery
reporting period	can be configured to send reports at a specific hour or hours, on a specific day of the week or weeks, on a specific day or days of the month, and special functions on the last day of the month, smart mechanism predicting remaining battery capacity and automatically adjusting reporting frequency to last even more than 10 years
time synchronization	NTP server or telecommunications service delivery network
accessories	eWebtel - measurement data acquisition system ConfIT! MacIQ WM- telemetry module configuration application ConfIT! data loggers - application for advanced module management via NFC

* in the process of implementation

compatibility

Diehl water meters

Itron water meters
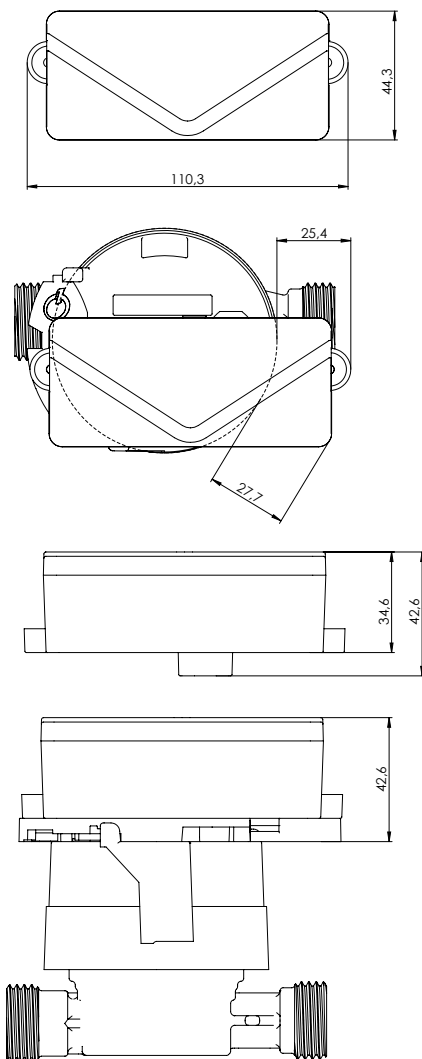
Apator water meters in the MacIQ WM+ version

Sensus HRI water meters (120, 420, 620, 820) in the MacIQ WM S version
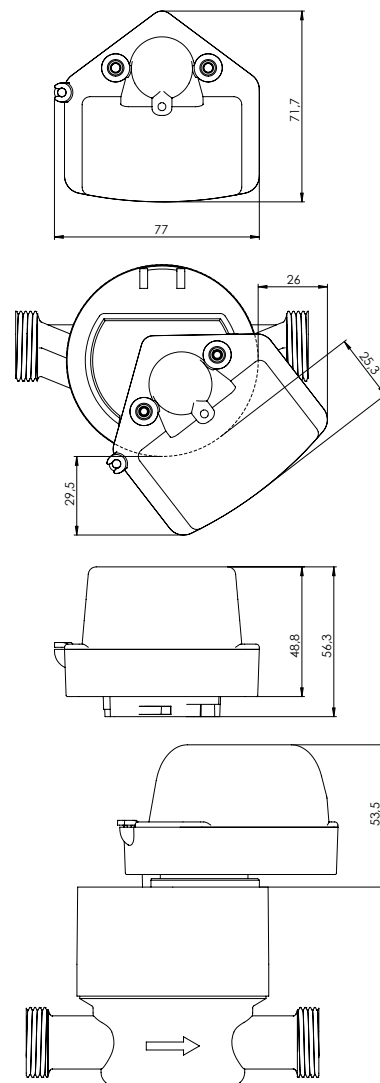
dimensions

MacIQ WM

MacIQ WM S

antennas

internal antenna

- designed for installation in dry locations above ground level
- protection class IP 65

external antenna

- designed for installation in water meter wells and locations with poor coverage
- fully submersible - reports until antenna is submerged
- dedicated IP68 sealed antenna
- version with SMA connector available on request

diagram
of the equipment

NB-IoT LTE Cat.M

MacIQ

IoT

observation of parameters and information about alarms

SCADA integration