aquastream®

Modular system
for mechanical water meters

Technical Datasheet

APPLICATION

Modular system with inductive sensor for retrofitting aquabasic® PMK cold-water meters and TOPAS PMW-basic hot water meters. The modular system technology provides a single, easy access to smart meters and protects the investment made on an already installed meter park.

CHARACTERISTICS

- Available in Radio (AQS-W8), M-Bus (AQS-MB), M-Bus/Pulses (AQS-MBOC) or LoRaWAN (AQS-L8) version
- In combination with aquabasic® PMK cold-water meters and TOPAS PMW-basic hot water meters.
- Protection class IP68
- Local programming with NFC interface
- Battery-powered for up to 16 years of operation

1. Product variants

aquastream® Radio W8 (AQS-W8)	Module with wireless wM-Bus radio communication interface
aquastream® M-Bus (AQS-MB)	Module with 2-wire M-Bus protocol output.
aquastream® M-Bus/Pulses (AQS-MBOC)	Module with simultaneous 2-wire M-Bus protocol output and a configurable 2 or 3-wire pulse output.
aquastream® Radio L8 (AQS-L8)	Module with wireless radio LoRaWAN communication

2. Technical data

Resolution	1 liter
Power Supply	Integrated lithium 3,6V battery
Battery lifetime	Up to 16 years

3. Environmental conditions

Fluid	Water
Protection class	IP68
Operating temperature	0° C to +55° C
Storage temperature	-20° C to +70° C
Humidity	Up to 98% relative humidity, with condensation

4. Communication Interface – AQS-W8 | Radio Wireless M-Bus

Protocol	WM-Bus conformed EN 13757-4 , OMS 4.0
Frequency	868 MHz (T1 Mode)
Emission Interval	Every 16 seconds
Meter index	00000,000 m3 Configurable value during installation
Information wM-Bus	Current main index

Long frame	Return water volume Historical volume (end of month) Date volume History (end of month) Date/Time Status info Battery life Long telegram when the module is installed on the meter
Information WM-Bus *Short frame*	Status info Battery life Reduced telegram when the module is not installed on the meter
Addresses	OMS compliant address Manufacturer: IMT Version: 0x05 / 0x01 Serial number: 8-digit
DataLogger	16 yearly values (end of year) – 48 monthly values (end of month) – 460 daily values (end of day) – 24 hourly values (last 24 hours)

5. Communication Interface – AQS-MB | M-Bus

Protocol	M-Bus conformed EN 13757-2/3
Baud rate	300, 2400, 9600
Cable	Integrated with gel connector, 2 non-polarized wires, length 25cm
M-Bus load	1,5 mA
Meter Index	00000,000 m3 Configurable value during installation
Information M-Bus Frame (REQ_UD2)	Current main index Return water volume Current flow rate Maximum flow rate Date/Time Module manufacturing number Factory number of the water meter Firmware Version Hardware Version Status Info Battery life
Addresses	Primary Address 0-250 Secondary Address 8-digits Extended Secondary Address with serial number
DataLogger	12 monthly values (end of month)

6. Communication Interface – AQS-MBOC | M-Bus/Pulses

Pulses output	Open Collector, 2 or 3 wires configurable
Modes	Different modes configurable 2 wires with compensation, 3 wires with direction (PULSE / DIR / GND) 3 wires (PULSE+ / PULSE- / GND) 3 wires for duplicate signal (PULSE1 / PULSE2 / GND)
Cable	3 wires configurable, 1,5m length
Backflow detection	Yes
Pulse Weight	Configurable (1, 2.5, 10, 100, 1000 litres...)
Pulse Duration	Configurable (30ms, 50ms, 100ms, 500ms, 1s...)
M-Bus Output	M-Bus conformed EN 13757-2/3
Baud-rate	300, 2400, 9600
Cable	2 non-polarized wires, length 1.5m
M-Bus Load	1,5 mA
Meter Index	00000,000 m3

	Configurable value during installation
Information M-Bus Frame (REQ_UD2)	Current main index Return water volume Current flow rate Maximum flow rate Date/Time Module manufacturing number Factory number of the water meter Firmware Version Hardware Version Status info Battery life
Addresses	Primary Address 0-250 Secondary Address 8-digits Extended Secondary Address with serial number
DataLogger	16 yearly values (end of year) – 48 monthly values (end of month) – 460 daily values (end of day) – 24 hourly values (last 24 hours)

7. Communication Interface – AQS-L8 | Radio LoRaWAN

Protocol	LoRaWAN according to LoRaWAN 1.0.3
Frequency	868 MHz
Emitted Power	25 mW (14 dBm)
Radio Range	Up to 15 km (depending on the environment conditions)
Connection mode	Over-The-Air Activation OTAA Activation by Personalization ABP
Transmission interval	Default Twice a day (6.00 and 18.00 UTC) Configurable up to 15min interval Value below possible with impact on battery life-time
Readout interval	Permanent
Meter index	00000,000 m3 Configurable value during installation
Telegram content by default	Current meter reading Returned water volume Meter number Date/Time Status info Battery life
Addresses	LoRaWAN compliant address (16 digits)
DataLogger	16 yearly values (end of year) – 48 monthly values (end of month) – 460 daily values (end of day) – 24 hourly values (last 24 hours)

8. Programming

Interface	NFC - 13,56 MHz
Alarms	Manipulation/wrong installation, Overload, Leakage, Low Battery, Backflow, Burst
Programming Software	ParamApp, compatible with Android > 6.1 – Available on Google Play

7. Dimensions

Dimensions	A = 108 mm B = 89 mm C = 46 mm