



APT-O3A-1

for Wireless M-Bus connectivity

The APT-O3A-1 is designed for apartment block water meter reading and wireless data transmission. Data is transmitted by Wireless M-Bus radio connectivity in accordance with the PN-EN 13757 standard and the Open Metering System Volume 3 specification. The open communication protocol provides compatibility with a wide range of devices forming the remote data readout and transmission structure. The device is based on a microprocessor system, while the use of optical sensors enables, for example, data readout from water meters and detection of water flow direction, which provides complete consistency of radio-based readouts and water meter readings. The device is resistant to strong external magnetic fields, and the battery power enables continuous operation for up to 12 years.

The device uses a data encryption method based on the AES-CBC algorithm with a 128 bit encryption key, which protects against unauthorised access to the measurement data and guarantees the integrity of data sent to the system.

















APPLICATION

The device is intended for installation on apartment water meters of the following types: JS 1,6-02 Smart+, JS90 1,6-02 Smart+, JS 2,5-02 Smart+, JS90 2,5-02 Smart+, JS 2,5-G1-02 Smart+, JS90 2,5-G1-02 Smart+, JS 4,0-02 Smart+, JS90 4,0-02 Smart+, JS 1,6-02 Smart C+, JS90 1,6-02 Smart C+, JS 2,5-02 Smart C+, JS 2,5-G1-02 Smart C+, JS90 2,5-02 Smart C+, JS90 2,5-G1-02 Smart C+, JS 4,0-02 Smart C+, and JS 90 4,0-02 Smart C+, manufactured by

KEY FEATURES

- Non-integrating and easy to install on water meters
- Quick and easy setting with mobile devices
- Operates in the 868 MHz unlicensed ISM band
- Data transmission encrypted using the AES – CBC encryption algorithm with 128 bit encryption keys, compliant with the PN-EN-13757-3 standard
- Real time clock with winter/summer time and leap year features
- Water meter type selection and configurable water meter-related properties
- Five operating modes enable adjustment of the data transmission interval to the user's individual requirements
- Detection, recording and signalling of irregularities in water consumption measurements and clip-on module operation using event signalling
- Option of storing and reading the volume from 1 to 16 months
- Water consumption readout using mobile terminals in a mobile data collection system or using a telemetry network in a fixed system
- Measurement data readouts from water meters are completely resistant to all interference caused by external magnetic fields
- Compatibility with devices in the automatic meter reading and measurement data transmission infrastructure that are compatible with the Open Metering System Volume 3 specification
- Optimum range achieved using an external omnidirectional antenna with counterweighting on the antenna track (for model 1.65.H.1.07).

EVENT SIGNALLING

-  Maximum flow
-  Minimum flow
-  Backflow
-  No change in measurement
-  Leakage
-  Device disconnection
-  Magnetic field detection
-  Strong light detection
-  Low battery
-  Battery work time exceeded
-  Battery usage threshold exceeded
-  Tip error
-  Instruction completed
-  Processor reset
-  Incorrect log value in processor
-  Access error

DEVICE OPERATING MODE

- First hourly mode
- Second hourly mode
- Days of the week mode
- Days of the month mode
- Months mode

CONFIGURATION OPTIONS

- Measurement device factory number
- ID number
- UID number
- Measuring device positioning
- Volume
- Reading memorisation day
- Metering threshold unchanged
- Minimum flow threshold
- Maximum flow threshold
- Reverse flow threshold
- Leak threshold
- Auto-reset of events



TECHNICAL DATA

Model	1.65.1.1.01	2.65.1.1.12	1.65.H.1.07
Communication protocol	Wireless M-Bus	Wireless M-Bus	Wireless M-Bus
Transmission frequency	868 MHz	868 MHz	868 MHz
Consumption detection	optical	optical	optical
Power supply	lithium battery 3.6 V; 1/2 AA	lithium battery 3.6 V; AA	lithium battery 3.6 V; 1/2 AA
Ingress protection rating	IP65	IP65	IP65
Signal lead	internal antenna	internal antenna	external antenna on 2 m long antenna track
Power output	10 mW / 50 Ω	10 mW / 50 Ω	10 mW / 50 Ω
Power output level stability	+1 dB ÷ -3 dB	+1 dB ÷ -3 dB	+1 dB ÷ -3 dB
Sensitivity	-102 dBm	-102 dBm	-102 dBm
Battery life (depending on configuration)	up to 12 years*	up to 12 years*	up to 12 years*
Mounting	directly on the water meter	directly on the water meter	directly on the water meter
Dimensions	h = 26.2 mm; s = 65.5 mm	h = 34 mm; s = 65.5 mm	h = 26.2 mm; s = 65.5 mm
Weight	0.033 kg	0.065 kg	0.033 kg
Operating temperature	0°C ÷ 55°C	0°C ÷ 55°C	0°C ÷ 55°C

* for devices operating at 25°C ambient temperature