Optical communication module

NAXOM

INSTALLATION AND OPERATING MANUAL

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Content

1 Installation of the water meter clip-on module

1.1 Compatibility with water meters:

- NAXOM-1a (OP-04-1a)* - only for selected radio profile and selected JS/JS90 1.6÷2.5 Smart+; JS 1.6÷2.5 Smart C+; JS/JS90 1.6÷2.5 Smart D+ water meters
- NAXOM-1b (OP-04-1b) – for all available radio profiles and JS/JS90 1.6÷4 Smart+; JS 1.6÷4 Smart C+; JS/JS90 1.6÷4 Smart D+ water meters
- NAXOM-2 (OP-04-2) – for all available radio profiles and SV-RTK 2.5÷4, SV-RTK 16 series water meters

*Does not apply to the water main profile.

1.2 Installation of the NAXOM-1 module, OP-04-1a

The first step in installing the OP-04-1a module is to locate the centring protrusion on the housing. It has been indicated in the drawing below.

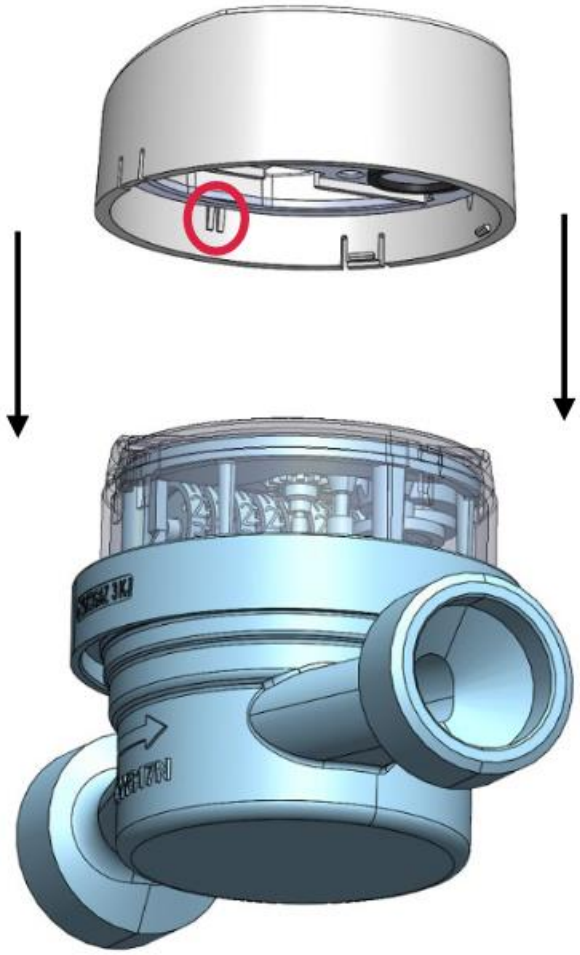

Figure 1: View of the OP-04-1a module, before mounting on the water meter

The centring protrusion should be positioned so that when placing the module on the water meter glass, it is inside the recess located on the water meter glass at number 1.

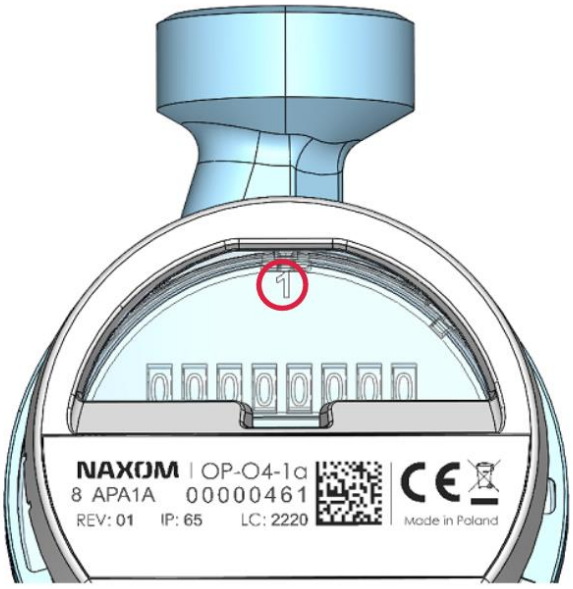

Figure 2: View of digit "1" placed on the counter glass

After correctly applying the module on the water meter glass, gently press it against the meter glass so that the module latches snap into place on the meter glass.

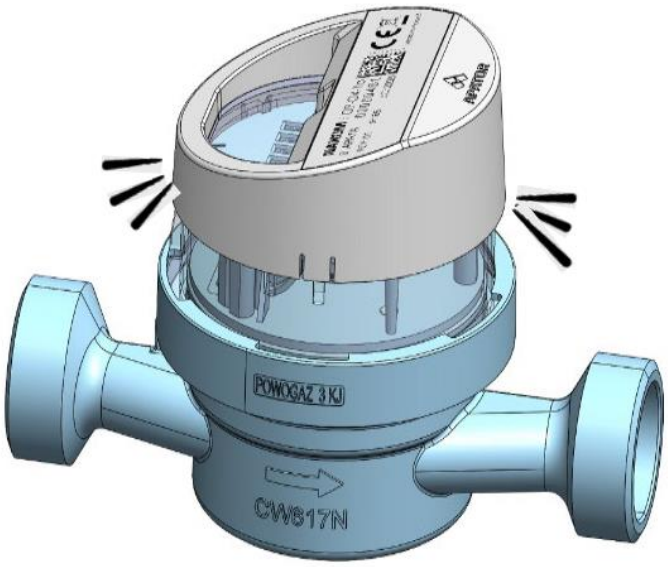

Figure 3: View of the assembled JS Smart+ water meter with the OP-04-1a module

1.3 Installation of the NAXOM-1b module, OP-04-1b

The first step in installing the OP-04-1b module is to locate the centring protrusion on the housing. It has been indicated in the drawing below.

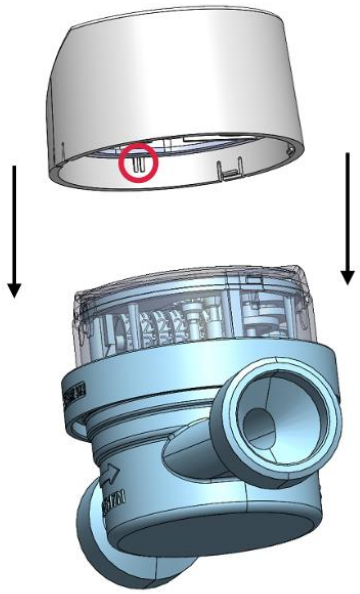

Figure 4: View of the OP-04-1b module, before mounting on the JS Smart+ water meter

The centring protrusion should be positioned so that when placing the module on the water meter glass, it is inside the recess located on the water meter glass at number 1.

Figure 5: View of digit "1" on the counter glass

After correctly applying the module on the water meter glass, gently press it against the meter glass so that the module latches snap into place on the meter glass.

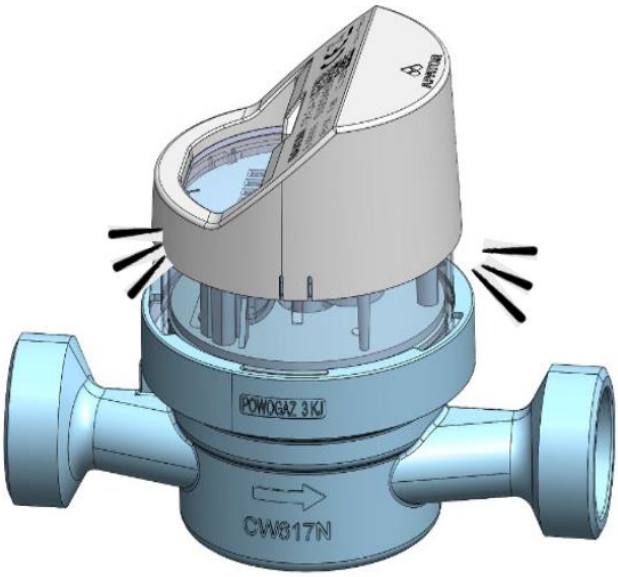

Figure 6: View of the assembled JS Smart+ water meter with the OP-04-1b module

1.4 Installation of the NAXOM-2 module, OP-04-2

The first step in installing the OP-04-2 module is to locate the centring protrusion on the housing. It has been indicated in the drawing below.

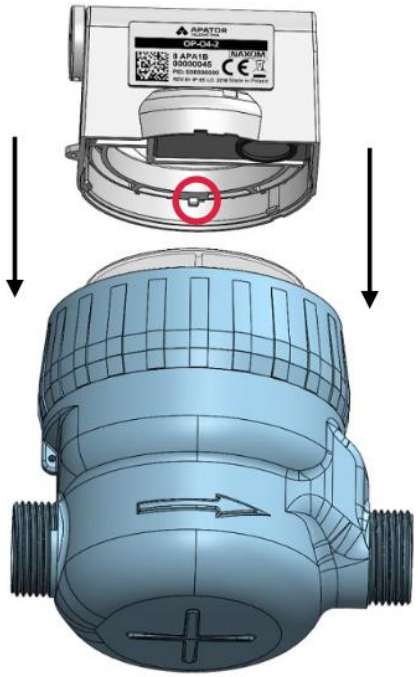

Figure 7: View of the OP-04-2 module, before mounting on the SV-RTK water meter

The centring protrusion should be positioned so that when placing the module on the water meter glass, it is inside the recess located on the water meter glass.

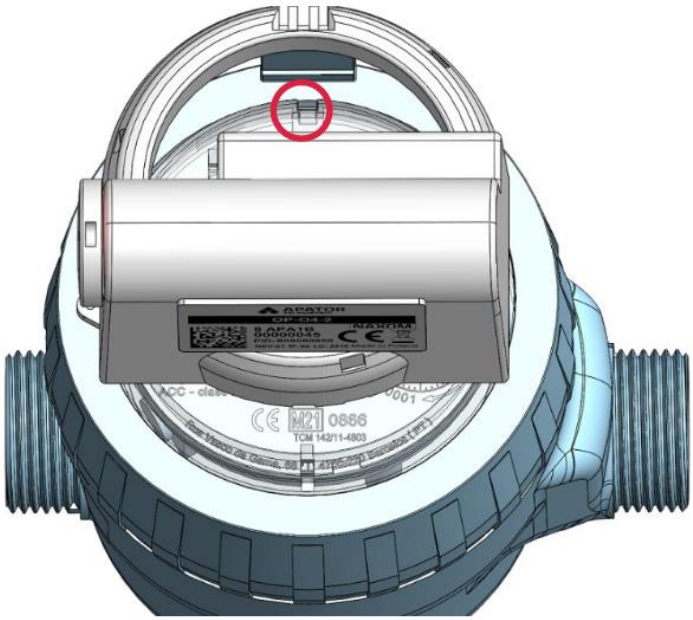

Figure 8: View of the water meter glass

After correctly applying the module on the water meter glass, gently press it against the meter glass so that the module latches snap into place on the meter glass.

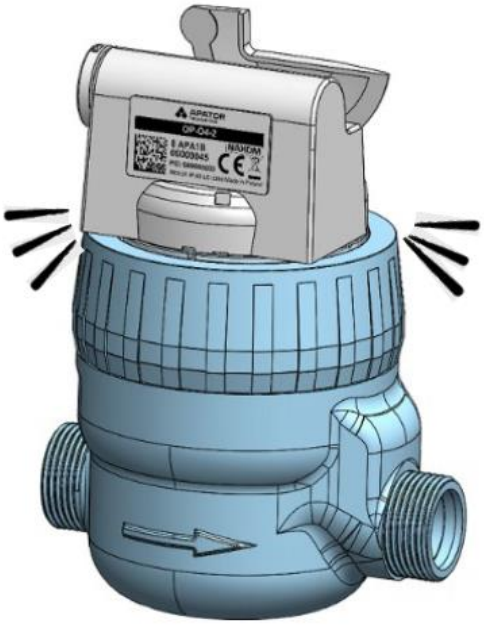

Figure 9: View of the assembled SV-RTK water meter with the OP-O4-2 module

2 Configuration of the module in the SPIDAP Mobile application using the Installation and Service panel – "Wmbus – installment"

The radio module procedure by Apator Powogaz S.A. can be delivered to the customer in two ways:

- The module arrives at the customer's location installed on the water meter, fully configured and with appropriate profile uploaded, depending on the type of water meter it is installed on. Such a module is ready for operation but remains in sleep mode. The customer must wake it up using a magnet. The factory configuration is confirmed by a warranty sticker placed at the connection between the radio module and the water meters.
- Only the module itself is delivered to the customer. The module must undergo the installation and configuration process on the operational water meter at the customer's location.

2.1 Waking up the module using a magnet

To wake up the sleeping module, a neodymium magnet with a diameter of 10 mm and a thickness of 3 mm or ferrite magnet with a diameter of 20 mm and a thickness of 5 mm should be placed for at least 10 seconds. The magnet should be placed on the module housing above the optical system at the location indicated in the photo below.

Figure 10: Waking up the module using the example of OP-04-1a

2.2 Installation and configuration of the module on the operational water meter

Before starting to use the mobile application, Bluetooth must be enabled on the phone to connect to the APT-VERTI-1 converter located nearby. Then log into the SPIDAP Mobile application (Fig. 11). After logging in, select settings in the upper left corner (Fig. 12) and go to Bluetooth devices (Fig. 13)- Once the converter is turned on, select it from the device list (it can be recognized by the device's serial number, which is located on label at the back of the converter), as shown in Fig. 14.

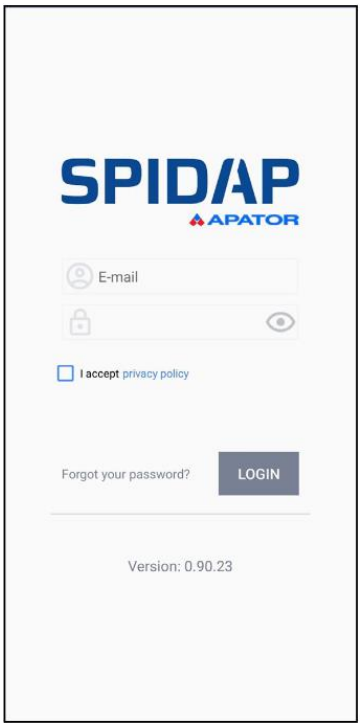

Figure 11: Logging in to the application

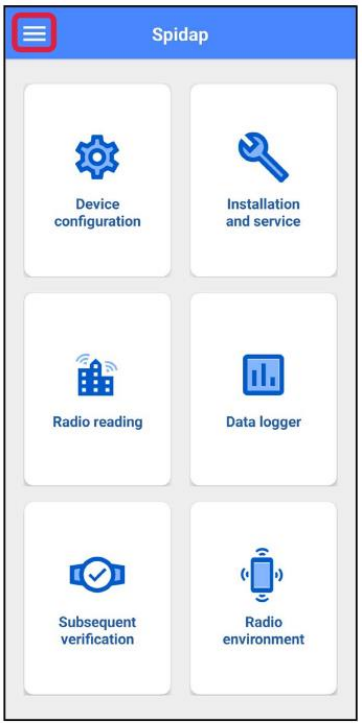

Figure 12: Launching settings

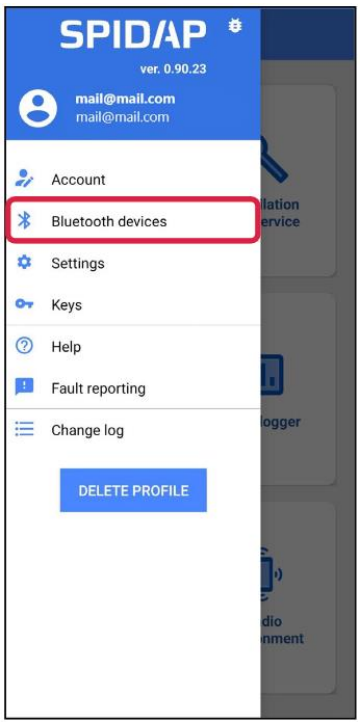

Figure 13: Selecting "Bluetooth devices"

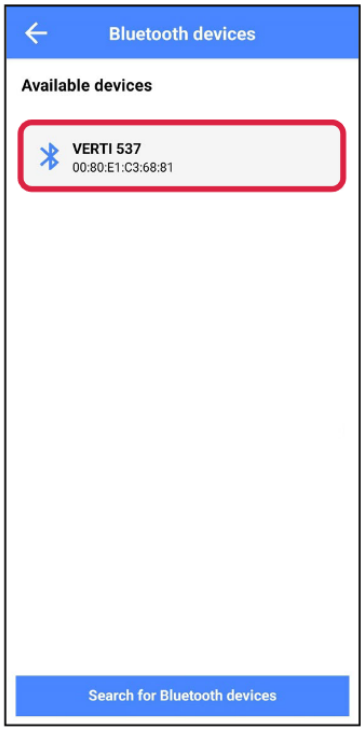

Figure 14: Selecting APT-VERTI-1

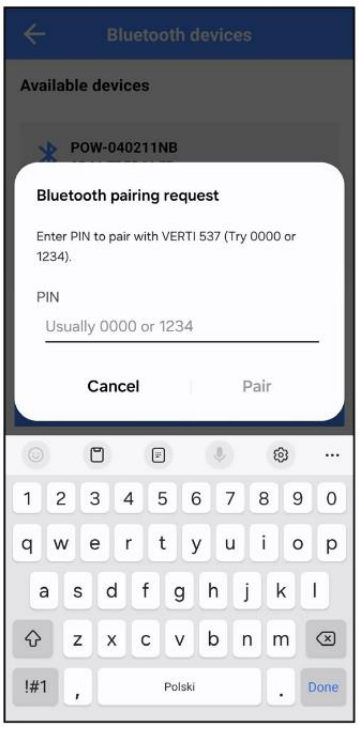

Figure 15: Entering the PIN code to pair the converter with the application

After selecting the VERTI converter, the “Bluetooth pairing request” window will appear (Fig. 15). The password for the converter is: 0000. After confirmation, the device will be paired.

Next, go to the “Installation and service” tab with the APT-VERTI-1 converter enabled and select the “Wmbus – installment” field.

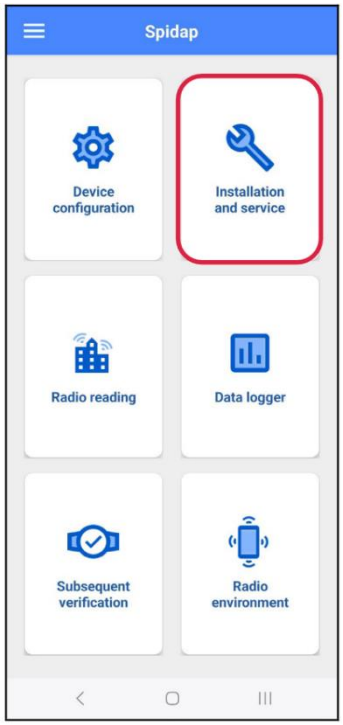

Figure 16: SPIDAP Mobile application dashboard

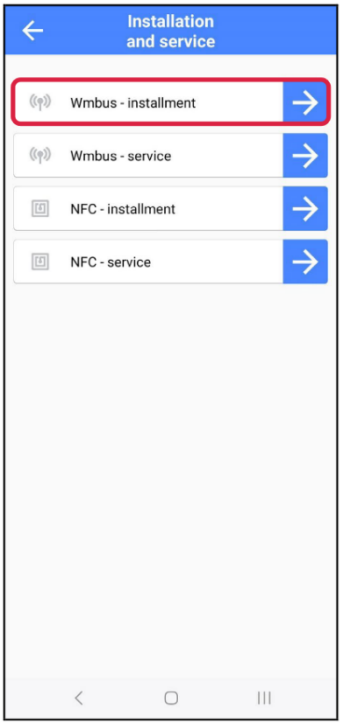

Figure 17: "Installation and Service" module

Figure 18: VERTI converter

After selecting the “Wmbus – installment” tab, a window for module configuration will appear. Select the appropriate device type to be installed on the water meter, choose the profile corresponding to the module and the size of the water meter, and then fill in: the radio number of the module, the serial number of the water meter, and the water meter reading. Then enter the access code, which is the AES key (description of where to find the key is in point 2.3.). Leave the “Action” field unchanged – it is by default selected ad “Record”. After completing all the data, confirm the installation of the module by selecting the “Execute” option.

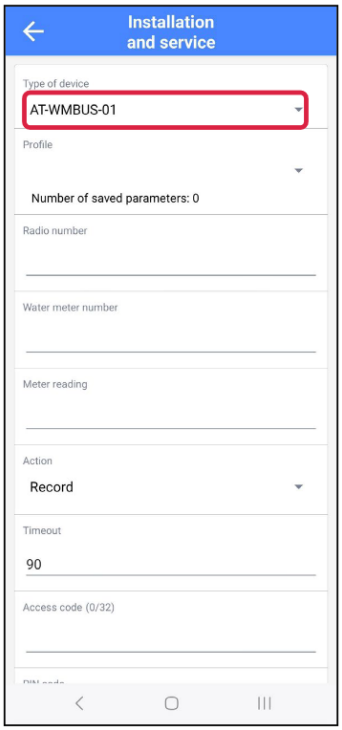

Figure 19: View of the configuration window

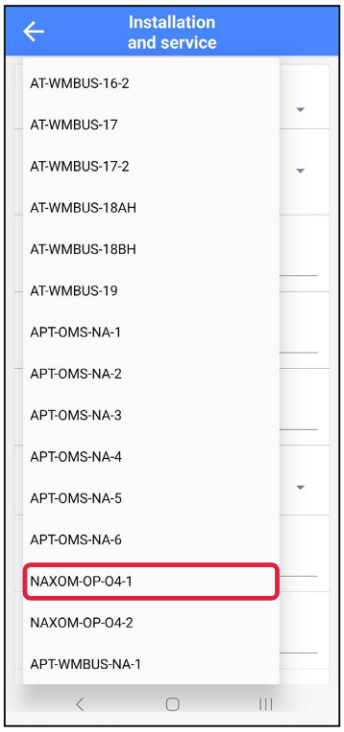

Figure 20: Selection of device type

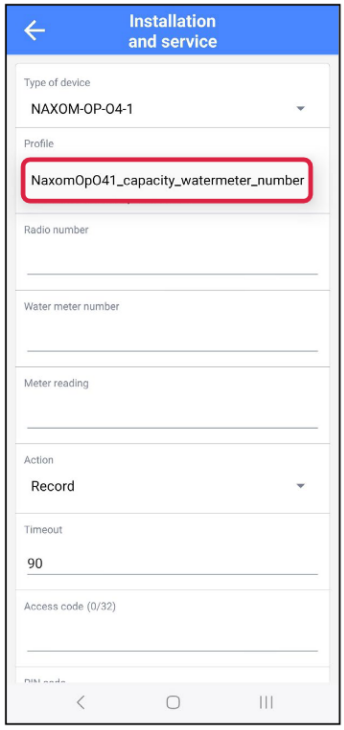

Figure 21: Selection of module profile

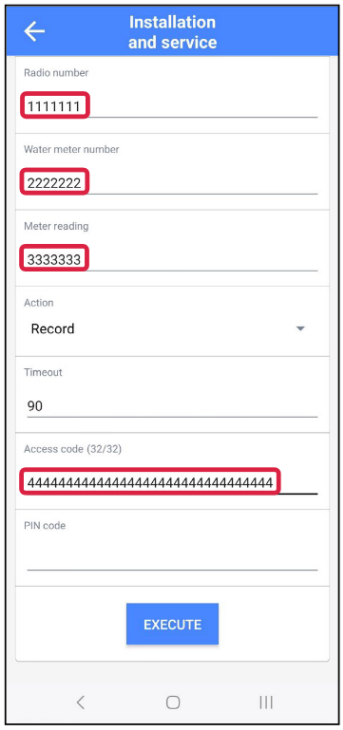

Figure 22: Entries to be filled in during module configuration in the SPIDAP Mobile program

Required fields to fill in:

- Radio number
- Water meter number
- Meter reading
- Access code (AES key)

During programming, the VERTI converter must remain powered on at all times!

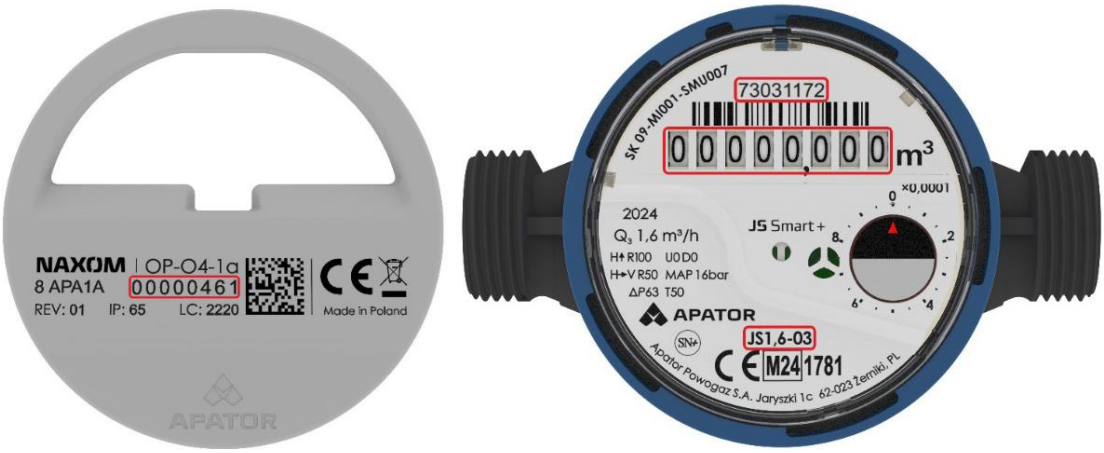

Figure 23: The image shows the OP-04-1a module with the radio number highlighted, along with the information required for configuring the module in SPIDAP Mobile using the example of the JS1.6-03 water meter. Similar information layout applies to SV-RTK2.5÷4 and SV-RTK 16 water meters

2.3 AES keys (access codes)

Data sent by the modules OP-04-1a, and OP-04-1b, and OP-04-2 are originally secured with individual access codes, known as AES keys. After purchasing the modules, their serial numbers and AES keys are automatically assigned to the customer's account in SPIDAP Engine, allowing the customer to securely retrieve them form their account. This is the safest way to distribute sensitive data.

3 Other information

3.1 Information contained on the module housing

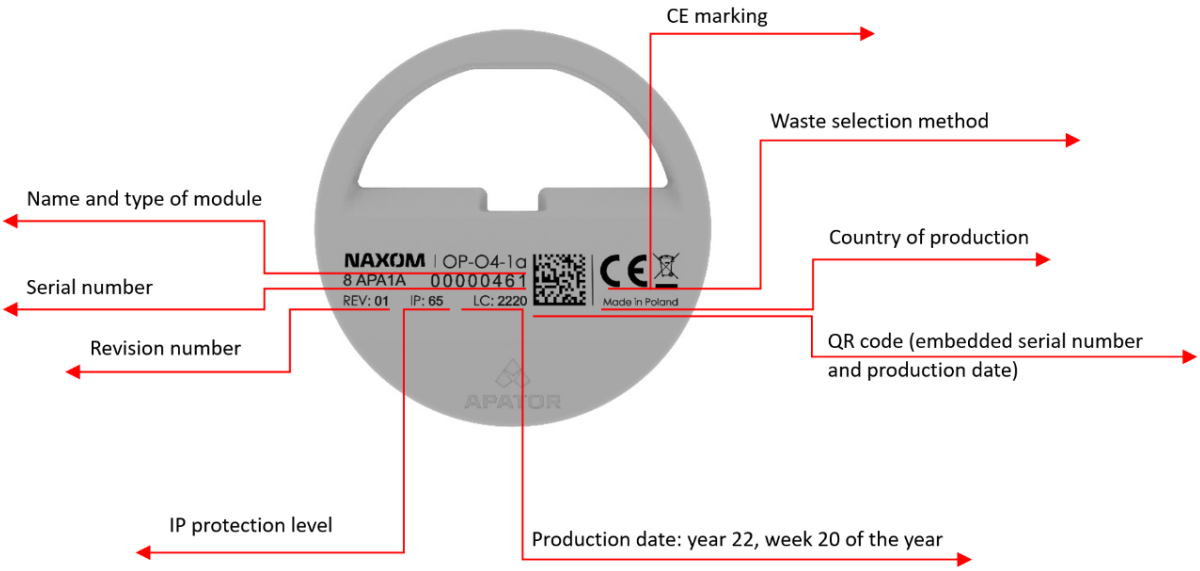

Figure 24: Information contained on the OP-04-1a module housing

3.2 Information transmitted in the radio frame

- Volume
- Water meter number
- Clock, date
- Event flags
- Event details
- Volume history
- Current flow

3.3 Module profiles

Table 1: Profiles for NAXOM modules

Water meter + profile*	Transmission frequency [s]	Transmission hours	Transmission days	Logged readings	Module model	Battery life**
JS 1,6 ST, SM	70	6-18	Mon-Fri	12	OP-04-1a	12 years max.
JS 1,6 WOD	30	6-18	Mon-Fri	12	OP-04-1b	12 years max.
JS 2,5 ST, SM	85	6-18	Mon-Fri	12	OP-04-1a	12 years max.
JS 2,5 WOD	30	6-17	Mon-Fri	4	OP-04-1b	12 years max.
JS 4 ST, SM	440	6-18	Mon-Fri	12	OP-04-1b	12 years max.
JS 4 WOD	30	6-17	Mon-Fri	4	OP-04-1b	12 years max.
SV RTK 2,5 ST, SM	40	6-18	Mon-Fri	12	OP-04-2	12 years max.
SV RTK 2,5 WOD	30	6-17	Mon-Fri	4	OP-04-2	12 years max.
SV RTK 4,0 ST, SM	40	6-18	Mon-Fri	12	OP-04-2	12 years max.
SV RTK 4,0 WOD	30	6-17	Mon-Fri	4	OP-04-2	12 years max.
SV RTK 16 ST SM	40	6-18	Mon-Fri	12	OP-04-2	12 years max.
SV RTK 16 WOD	30	6-17	Mon-Fri	4	OP-04-2	12 years max.

*Symbols:
ST – Stationary system
SM – Housing Co-operative
WOD – Water main
**Temperature dependent:
Module operation in the following temperature ranges: 80% of operating time at 30°C maximum; 10% of operating time at 30-40°C; 10% of operating time at 55°C maximum. The applied temperature profile matches the average temperature profile for the housing sector.