



VertoBlue

INSTALLATION AND USER INSTRUCTIONS

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CONTENTS

1. Flow sensor installation instructions	4
2. Installation instructions	5
2.1. Installing the collection unit.....	5
2.2. Installing the household unit.....	6
2.3. Connecting the flow sensors to the household unit	7
2.4. Installing and commissioning the household display	8
2.5. Connecting the household display with the household unit.....	9
2.6. Household display views.....	10
3. Verto services	12
3.1. VertoLive service	
3.2. VertoMobile service	
3.3. Alerts	
3.4. VertoVuotovahti function	
4. After installation	13
4.1. Commissioning inspection	
4.2. Verto service	
4.3. Warranty and recycling	
4.4. Recycling	
5. Technical details	14
5.1. Household unit.....	14
5.2. Household display	15
5.3. Flow sensor.....	16
5.4. Collection unit	17

Read these installation and user instructions carefully before you begin installation.

The Verto system warranty (5 years) requires a commissioning inspection.

VertoBlue AKO 08102020/3.01



FOR THE INSTALLATION TECHNICIAN



**Install the sensors only by tightening the connectors.
The torque for tightening the sensor's connectors is 10–12 Nm.**



**Note that the body may only be seized with a tool at the place marked with an 'x' (28 mm width of jaw opening).
These installation and user instructions can also be viewed by reading the QR code on the sensor.**

1. FLOW SENSOR INSTALLATION INSTRUCTIONS

These installation and user instructions can be effortlessly viewed by reading the QR code on the sensor.

- Install the flow sensors so that they can be easily serviced.
- Install the flow sensors into a horizontal or vertical pipe (flow direction: downward flow) paying attention to the flow direction indication arrow on the sensor body.
The flow sensors come factory-equipped with a laminar flow equaliser. If the laminar flow equaliser is removed, a straight section of 200 mm before the flow sensor must be observed in the installation.



- The service hatches must be sufficiently large (min. 500 x 500 mm).
- When installing the sensors, only use the 3-mm seals that come with the sensor.
- Install the sensors only by tightening the connectors. The torque for tightening the sensor's connectors is 10–12 Nm. Note that the body may only be seized with a tool at the place marked with an 'x' (28 mm width of jaw opening).
- The stop valve must be incorporated as an integral part immediately before the flow sensor.
- Hot water circulation may not be installed between the stop valve and the sensor body.

2. INSTALLATION INSTRUCTIONS

2.1. Installing the collection unit

Always install the collection unit before the household units.

The collection unit is connected into a protective earthed fixed socket-outlet with a power source that is included in the device delivery. The collection unit is fixed with screws. The electrical contractor must ensure that the cables are suitable for the building/apartment and meet the regulations for fire safety and electrical installations.

The collection unit is installed in the main electrical cabinet or other suitable location, with consideration to the coverage of the radio network and mobile network.

If the collection unit is read remotely via a broadband connection (TCP/IP), a data socket for RJ45 network cables is required.

The collection unit is available as a NB-IoT radio network (EVG-S) version or a TCP/IP Ethernet (EVG-E) version.

Connecting the impulse sensors (optional):

- Any impulse sensors located in the same building, such as the main water meter, are connected in the sequence indicated on the collection unit's connection table.
- After installation, connect a voltage to the collection unit.
- The impulse input must be connected with a shielded twisted pair cable.

Avoid installing side by side with strong current cables.

After installation, connect a voltage to the collection unit.

2.2. Installing the household unit

The household unit must absolutely be installed in the household whose number is shown on the household unit casing.

The household unit may not be installed in a position where its cable connections face upward. All other installation positions are acceptable.

The household units are installed near the flow sensors in the household in compliance with electrical and fire safety regulations and in a manner that makes it easy to access and service the devices if necessary. However, the household units can be installed behind a service hatch or similar (500 x 500 mm). The flow sensors have a one-metre connecting cable. If necessary, this can be extended using the instrumentation cable WRU0005 (M8 extension 5 m) supplied by Verto.

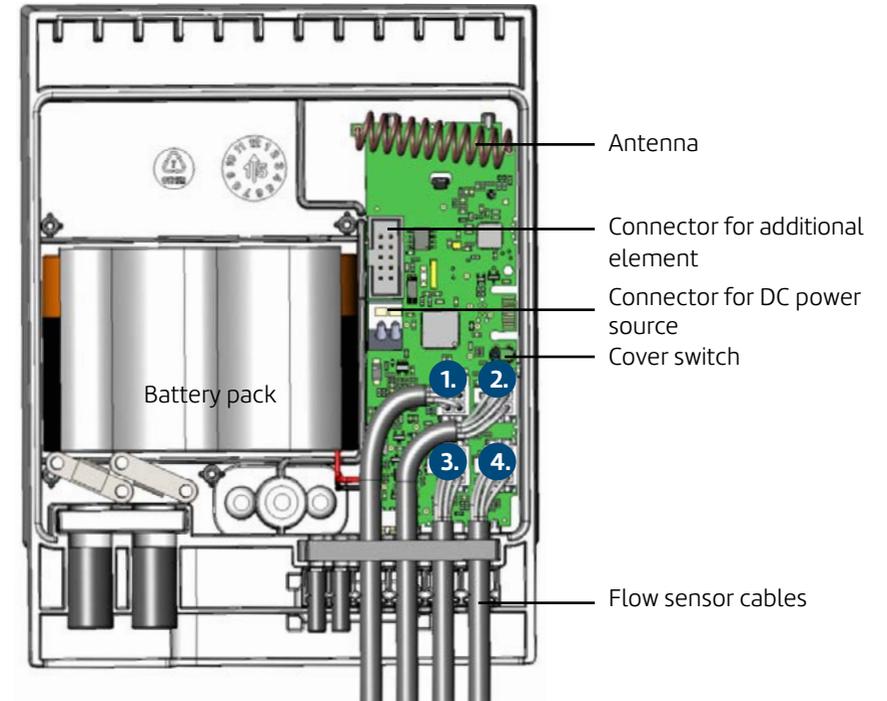
The sensors in the household (1 to 4 sensors per household) are connected to one household unit. If more than 4 flow sensors are needed in a household, a second household unit is required.



Verto cable WRU0001 (M8 1 m)

2.3. Connecting the flow sensors to the household unit

The sensors must be connected as shown in the picture, based on the information on the casing label (hot/cold water).



The flow sensors have a one-metre connecting cable. If necessary, this can be extended using the instrumentation cable (5 m) supplied by Verto. The sensors in the household (1 to 4 sensors per household) are connected to one household unit. If more than 4 flow sensors are needed in a household, such extra flow sensors must be connected to a separate household unit.

The battery pack is supplied by Verto. The equipment may not be powered with any other kind of battery pack.

NOTE!

Connect both ends of the sensor cable before powering up the household unit.

2.4. Installing and commissioning the household display

As from the beginning of 2018, a Ministry of the Environment decree regulates that household-specific water meters be installed so that they are easy to service and read (Decree of the Ministry of the Environment on Water supply and sewer systems of properties, Section 10).

Furthermore, according to the Measuring Instrument Directive of the European Union, residents shall have the opportunity to effortlessly track the water consumption of their household without requiring any auxiliary equipment to do it.

The VertoBlue system's household display enables residents to track their consumption of hot and cold domestic water separately within the home. The household display can be placed in a dry space in the apartment using the wall mount that is included in the delivery.

The household display is attached to the wall mount by a magnet. It is recommended to install the display at the height of 180 cm in the entryway or hallway of the household.

As an additional service, the household display features household temperature measuring. This should be observed when determining the installation location.

Once the household unit has been connected, the display device and the household unit are paired where necessary in accordance with separate instructions, see section 2.5.



2.5. Connecting the household display with the household unit

The household display and the household unit have already been paired at the factory, according to the listing of households on the site. If changes occur on the site in conjunction with equipment installation, the pairing can be done as follows:

1. Connect the household display with the household unit. Ensure that the household unit is firmly in place. The pairing takes just a few seconds. See section 2.
2. Wait until the display makes connection with the household unit. When connection has been formed, the text 'Paired...' is shown on the display, and the device shifts to commissioning mode.
3. Once the display is connected with the household unit, both the household display and the household unit are ready for commissioning. The household display can now be detached from the household unit and moved freely around the household.
4. The device is waiting for the commissioning inspection. See section 4. After installation p. 13.

Note:

- If the household display is outside the radio coverage, it will not receive data from the household unit (no network). If necessary, move the household display nearer the household unit.
- The household display will connect the household unit with which it was last paired.



Order a commissioning inspection for the system from Verto well in advance of site delivery by sending e-mail to verto@verto.fi. Enclose the necessary site information in your message.

The warranty (5 years) requires an approved commissioning inspection. Also see section 4. After installation p. 13.

2.6. Household display views

Commissioning mode

In configuration mode, three views are shown on the household display.

1. Waiting for commissioning.
2. Household address function icons.
3. Meter readings from four sensors.

Completion of a commissioning inspection is recorded on VertoLive.



Resident view

The number of bars at the top of the view indicate which view (one to six) is currently displayed.

View 1: Overall consumption

- Household overall water consumption, with the hot and cold water shown separately as cubic metres (m³).

View 2: Weekly consumption

- Household water consumption for the past seven days
- The bar on the far right displays the consumption of the current day
- Current day consumption is also displayed as a numerical value

Views 3 and 4: Trip

- With Trip views, you can monitor your water consumption for a given period.
- Trip is switched on and off by pressing the round button on the display.

Views 2, 3, 4: The default unit is cubic metres (m³). Litres can also be selected as the unit.

View 5: Time and household temperature

View 6: Additional information

- The view features a link to additional information
- From the view, go to settings by pressing the round button

Settings

- Language: select the desired language with the round button. Confirm the selection by pressing the arrow button.
- Activate the display by pressing the round button or arrow button.
- Unit of measurement: Select litre or m³ as the measurement unit with the round button. Confirm the selection by pressing the arrow button.

3. VERTO SERVICES

3.1. VertoLive service

VertoLive is a browser-based user interface for the remotely readable Verto system, enabling building managers to monitor water consumption in housing companies and homes.

VertoLive is accessed on a web browser with personal user IDs – no other software is required.

3.2. VertoMobile service

VertoMobile is an app that residents can download for tracking their own water consumption data. The app can be downloaded from the Google Play store or the Apple store.

3.3. Alerts

Sending alerts to mobile phone numbers and/or e-mail:

Alert recipients' contact details can be added and deleted on VertoLive.

3.4. VertoVuotovahti function

The VertoVuotovahti function tracks water consumption to discover any leaks. When consumption has continued uninterrupted for more than 90 minutes, this triggers a leakage alert.

The Verto system also works during blackouts.

4. AFTER INSTALLATION

4.1. Commissioning inspection

The warranty (5 years) requires an approved commissioning inspection.

The equipment manufacturer is responsible for the commissioning inspection of the system.

When installation is nearing completion, the plumbing contractor arranges the commissioning inspection procedure with the device manufacturer in good time (at least two weeks in advance).

Tel. +358 10 734 0700 or e-mail verto@verto.fi.

4.2. Verto service

When calling Verto service, please state the serial number of your collection unit. If possible, call the service while on site.

Maintenance: 010 7340 700

4.3. Warranty and recycling

Verto grants a five-year warranty for the system. The warranty requires an approved commissioning inspection. When the commissioning inspection takes place, a representative of the plumbing contractor that installed the Verto equipment must be present on site.

4.4. Recycling

Various parts of the system contain materials that need to be recycled as electronic waste. Our company is a member of the SELT Association and as a customer you can return your used Verto equipment free of charge to the recycling centres for electrical and electronic waste. The location of the nearest recycling centre can be found at:

www.elker.fi/fi/SER-kierratys

Do not dispose of the equipment as mixed waste.

5. TECHNICAL DETAILS

5.1. Household unit

HVAC NO. 4466914

The flow sensors' (1-4 pcs) connection configuration is presented on the casing label.

- Dimensions: 163 x 129 x 35 mm (H x W x D)
- Protection class: IP54
- Ambient temperature for operation: +5°C...55°C
- LoRa radio 433.3MHz. Transmitting power max. 10 dBm ERP. Duty cycle <10%. ETSI 300 220 compatible.
- FSK radio 433.7...434.MHz 10 dBm ETSI 300 220
- Input voltage: EVH-RB. Battery nominal voltage 3.6V. Verto Li-Th-battery pack. The battery may be replaced by Verto's authorised maintenance provider.
- Input voltage alternatively available: EVH-R230: 230V, ~50Hz



5.2. Household display

HVAC NO. 4466918

- Dimensions: 67 x 130 x 35 mm (H x W x D)
- Protection class: IP20
- Batteries: 2 x LR6 AA alkaline battery. Minimum operating voltage 2.2V. Battery life is 2-5 years, depending on usage. Residents can replace the batteries as necessary.
- Ambient temperature: +5°C...55°C
- FSK radio 433.7...434.MHz 10 dBm ETSI 300 220



5.3. Flow sensor

HVAC NO. 4466913

Type approval: 0402-MID-C600001

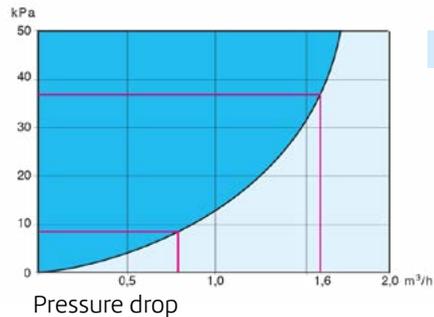
Meets the requirements for MID type approval 2014/32/EU.

V-15U 1 m ultrasound (hot and cold domestic water)

- Nominal size: DN 15 (R 1/2)
- Pressure rating: PN 10
- Temperature max: 70°C
- Flow range R40
- Flow rate Q3: 1.6 m³/h
- The body is made of a durable composite (PPS)

Non-return valve: Yes (pressure relief function, 7 bar)

For compatibility purposes, the flow sensor can be used to replace the V-15M-W914015 flow sensor.



Dimensions	W	Ø	R	L
V-15U	85	45 / 65	1/2"	196

5.4. Collection unit

HVAC NO. 4466916

- Dimensions: 163 x 129 x 35 mm (H x W x D)
- Protection class: IP54
- Ambient temperature: +5°C.....55°C
- Four I/O impulse channels
- Capacity: consumption data from 300 household units
- LoRa radio 433.3MHz. Transmitting power max. 10 dBm ERP Duty cycle <10%. ETSI 300 220 compatible.
- NB-IoT connection with SIM card or TCP/IP Ethernet connection
- Input voltage:
EVG-S 230V, ~50Hz
EVG-E 230V, ~50Hz



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