

Issued by Notified Body No. 0402 according to Directive 2014/32/EU MID annex II Module B, regarding:

Water meter VERTO 3.0, V-15U, VertoBlue

Issued to

VertoNordic Oy

Hopunkatu 11, FI-38200, Sastamala, Finland

In respect of (type of instrument)

Verto V3.0, V-15U, VertoBlue ultrasonic water meter is intended for cold and heated water (class T70 according to OIML R49).

Certificate

The water meter specified in this certificate fulfills the requirements of directive 2014/32/EU on measuring instruments (MID), implemented in Swedish law by SWEDAC Regulation STAFS 2016:1 and STAFS 2016:2 Swedish Regulations and Guidelines concerning Water Meters. The conformity assessment is performed according to annex II, Module B of Directive 2014/32/EU. RISE Certification Rule SPCR 302 has been applied.

Applicable essential requirements of directive 2014/32/EU

- Annex I, Essential requirements
- Annex III, Water meters (MI-001)

Harmonised standards and normative documents used

- OIML R49-1, and -2, edition 2013.

The evaluation was accomplished according to applicable parts of OIML R49-1 & R49-2:2013, which are equal to the normative documents referred to in the Official Journal of the European Union C 269 Nov 4, 2006 (but updated from 2006/2004 to 2013).

Further applied documents

- WELMEC 7.2, 2018 Software Guide
- WELMEC CT-001, 2019 (October) Corresponding Table

Rated operating conditions

| | | | |
|-----------------------------|--|------------------------------------|--|
| Measurand: | Volume of water | Working positions: | H and V (↓) |
| Flow range: | Q ₃ = 1,6m ³ /h, R40 | Water temperature: | 0,1-70 °C (class T70 according to OIML R49) |
| Size: | DN15 (½") | Mechanical environment class: | M1 |
| Climatic environment class: | +5 to +55 °C | Electromagnetic environment class: | E1 |

Originally issued: 2020-10-16

Expiry date: 2030-10-16

This certificate replaces earlier issues.



Martin Tillander

Certificate 0402-MID-C600001 | issue 3 | 2022-05-16

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Specification of the instrument

1. Design of the instrument

1.1 Construction

Ultrasonic flow sensor V-15U (including ancillary fittings and a ball valve or shorter couplings), apartment unit types EVH-RB, EVH-R230, and EVH-R230M and display unit EVN-R. The meter is intended to measure the water consumption in an apartment.

V-15U is intended for cold and heated water (T70 according to OIML R49).

The data from the sensor is interpreted as a cold water signal or a hot water signal by apartment unit channels 1-4 according to programming.

Manufacturer: VertoNordic Oy, Sastamala, Finland.



Flow sensor V-15U



Flow sensor V-15U



Apartment unit EVH-RB, EVH-R230, or EVH-R230M



Display EVN-R

1.2 Measurand sensor

The flow sensor V-15 U is installed with 2 variant of accompanying fittings, short couplings or ball valve and back flow valve (downstream). The ultrasonic flow sensor transmits data to the apartment unit.

1.3 Measurand processing

The wall mounted apartment unit EVH-RB, EVH-R230 and EVH-R230M receives data from the flow sensors. It can handle 1-4 sensors. Sensors for cold and/or hot water are connected to channels 1-4 according to programming. The apartment processes the data from the sensors for cold and hot water.

1.4 Indication of the measurement result in Display

The indication is presented on a separate display that can be mounted separately or on the apartment unit (if wall mounted the data is sent to the display using a 434 MHz radio link).

Display unit EVN-R has two flow measurement lines;
XXXXXX.XXX m³ (hot water)
XXXXXX.XXX m³ (cold water)

The volume information is updated typically once a second.

The display may be replaced without losing volume information.



1.5 Optional equipment and functions subject to MID requirements

Not applicable.

1.6 Technical documentation

For market surveillance, the construction and included components are described in this certificate and the following technical documentation:

Manual: Instruction for installation and use (in Finnish and Swedish), available at www.verto.fi

The metrological software is identified according to chapter 5.3.

1.7 Integrated equipment and functions not subject to MID

Not applicable

2. Technical data

2.1 Rated operating conditions

Measurand

Volume of water expressed in m³, separate registers for hot and cold water.

Measurement range etc.

| | |
|-------------------------|--|
| Pressure | PN 10 |
| Working position | Horizontal and vertical (only ↓) |
| Power supply | 230 VAC or 230 via external adapter (EVH-230), or internal battery (EVH-RB) |
| Meter connection | G1/2" |
| Overall meter length | 196 mm (including fittings and ball valve) or 110 mm (including short couplings) |
| Width of flow sensor | 36 mm |
| Reverse flow | Not possible (equipped with pressure relief valve) |
| <hr/> | |
| Meter flow range, R40 | Q ₄ 2000 l/h Q ₃ 1600 l/h Q ₂ 64 l/h Q ₁ 40 l/h |
| Water temperature range | 0,1-70 °C, (T70 according to OIML R49) |

Environments classes / influence quantities

| | |
|----------------------------|--|
| Mechanic | Class M1 |
| Electromagnetic | Class E1 |
| Ambient temperature limits | +5°C to +55°C |
| Humidity | Condensing |
| Location | Closed |
| Water temperature range | 0,1-70 °C, (T70 according to OIML R49) |

Software specification according to Welmec Guide 7.2:

| | |
|---------------|---------|
| Software type | P |
| Risk class | C |
| Extension | T, D, I |

3. Interfaces and compatibility conditions

Data is transferred wirelessly from the apartment units to a central unit EVG-S or EVG-E (not included in the certificate) using 434 MHz radio. Configuration data is delivered from the central unit to the apartment unit, and further to the display.

4. Requirements on production, putting into use and utilization

4.1 Requirements on production

No special requirements identified.

4.2 Requirements on putting into use

- The flow sensors must be mounted in accordance with the installation instruction listed in 1.6.

- Meters with couplings, total length 196 mm: Either straight pipe length 200 mm (upstream) is required for the flow sensor or flow straightener is used. If straightener is used, straight pipe length 200 mm is not needed.
- Meters with couplings, total length 110 mm: No need for straight pipe length or flow straightener
- Horizontal and vertical (only ↓) working position.

4.3 Requirements for consistent utilizations

No special requirements identified.

By manufacturer estimated durability period is 15 years/1000 m3 at maximum temperature of 70°C.

Model EVH-RB has replaceable battery pack.

5. Control of the measuring tasks of the instrument in use

5.1 Documentation of the procedure

No special requirements identified.

5.2 Special equipment or software, if applicable

No special requirements identified.

5.3 Identification of hardware and software

-Hardware description

See 1.1 through 1.4.

- Software description

| Part | Model | SW version | Comment, identification of SW (Software) |
|----------------|------------------------------|---|--|
| Apartment unit | EVH-R230, EVH-230M or EVH-RB | V.1.3 (Checksum: FABFC3A) or V.1.4 (Checksum: B68F6B71) | SW version is readable from the display units service view |
| Display unit | EVN-R | V.1.3 (Checksum: F5EAA01C) or V.1.4 (Checksum: 527C8CA2) | SW version is readable from the service view |
| Flow sensor | V-15U | 1.96 or 1.97 | SW version is readable from the display units service view |

5.4 Calibration/adjustment procedure

The water meter is not adjustable.

6. Security measures

6.1 Sealing

Type plate is a non-transferable label or laser engraved on sensor.

The metering system is controlled with alarms, and this replaces sealing of parts. The central unit (not included in the certificate) receives and monitors the following information of the apartment units:

- Sensor disconnection/communication error
- Sensor exchange
- Sensor reported error bits
- Leakage (prolonged uninterrupted flow)

- External supply disconnection
- Apartment unit enclosure opened

6.2 Data logger

The official cumulative water volume is stored in and maintained by the apartment unit. The values are stored and handled in one millilitre resolution. The display values are updated once a second.

7. Labelling and inscriptions

7.1 Information to be borne by and to accompany the instrument (MID, Annex I, chapter 9)

The type plates/labels mounted on the instrument shall contain at least the following information:

- EU-type examination certificate number, 0402-MID-C600001
- Manufacturer's name, registered trade name or registered trade mark
- Manufacturer's postal address (according to MID 2014, chapter 2, article 8, clause 6)
- Type identification
- Year of manufacture
- Serial number
- Permanent flow rate Q3
- Flow rate range Q3/Q1 (R)
- Limits of temperature or temperature class
- Identification of the direction of flow
- Maximum permissible working pressure (PN-class)
- Information on required straight pipe length or flow straightener

7.2 Conformity marking in accordance to MID article 21

The instrument shall be marked in accordance with MID article 21 which e.g. describes the CE-marking together with M, year of marking and the number of the notified body responsible for module D or F.

8. Testing and examination

Testing and examination have been carried out in accordance with Evaluation Report 9P07507-01 in accordance with Directive 2014/32/EU Annex II, module B, paragraph 5. The principal characteristics, approval conditions are set out in this certificate. The plans, schematic diagrams and documentations are recorded under reference RISE files 9P07507 and IFS P113577.

9. Revision history

| Issue | Dated | Description |
|-------|------------|---|
| 1 | 2020-10-15 | Certificate issued to: Vercon Oy. Ultrasonic water meter Verto 3.0, V-15U, VertoBlue. |
| 2 | 2022-02-24 | Update with reduction of pulses from flow sensor and new SW version (minor change). Vercon has changed name to VertoNordic. |
| 3 | 2022-05-16 | Update for the use of two versions of couplings, new total length 110 mm and old 196 mm |