

# SSM-AQUO

LoRaWAN & Wireless M-BUS

## Quick guide to use and installation



SSM-AQUO is an ultrasonic water meter for residential applications.

### 1. GENERAL INFORMATION

|                          |                       |
|--------------------------|-----------------------|
| Water temperature        | from -0.1°C to + 50°C |
| Room temperature         | from -25°C to + 55°C  |
| Environmental class      | M1/E1                 |
| Maximum working pressure | 16 bar                |
| Protection rating        | IP68                  |
| Maximum radio power      | 25 mW E.R.P.          |
| Accuracy class           | 2                     |
| Battery life             | up to 13 years*       |

\* depending on radio transmission settings and environmental conditions

Tab. 1.1. Technical data

### 2. ENVIRONMENTAL CLASSIFICATION

- Class B, O according to ISO 4064:2017-A.2 Appendix A point A.2
- Class M1 according to European Directive 2014/32/EU
- Class E1 according to ISO 4064:2017 and European Directive 2014/32/EU

### 3. PACKAGE CONTENTS

- Meter
- Gasket kit (if ordered) and gaskets

### 4. SAFETY INFORMATION

- Consult this document before operating.
- Installation must only be carried out by qualified and authorised personnel.

### 5. TRANSPORT AND STORAGE

- Protect against vibrations and falls during transport;
- Storage temperature between -25°C and +55°C;
- Once the meter has been removed, do not handle it by the lid;
- Avoid blows, impacts and falls when installing and handling the meter.

### 6. INSTALLATION PRE-REQUISITES

Check the correct alignment of upstream and downstream pipes.



Fig. 1.1. correct alignment



Fig. 1.2. misalignment

Check the distance between couplings to avoid mechanical stress.  $U+D < 5 \text{ mm}$

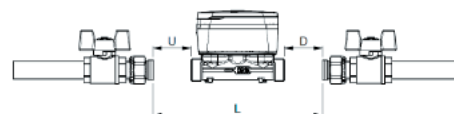


Fig. 1.3. distance between the meter and the joints

SSM-AQUO is class U0D0 (does not require a straight section of pipe before and after the meter).

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### 7. COMPONENTS REQUIRED FOR INSTALLATION

- Gaskets
- Compression fittings



**Always use new seals.**



**Gaskets and fittings are not standard equipment (see par. 3. PACKAGE CONTENTS)**

### 8. INSTALLATION GUIDE



**The SSM-AQUO meter can be installed in any position.**

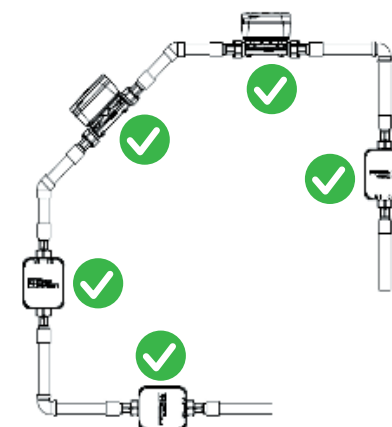


Fig. 1.4. possible installation positions

Remove any packaging or protection from the meter.

Install new gaskets in the pipe connections.

Position the meter respecting the direction of flow.

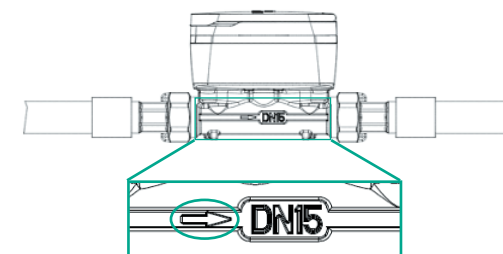


Fig. 1.5. flow limitation

Fasten the nuts according to the tightening torques indicated in the table.

Open the upstream valve to allow water to flow into the meter.

Open the downstream valve to allow air to discharge from the pipeline.

Close the downstream valve.

Check that there are no leaks from the fittings.

## 9. TIGHTENING TORQUES

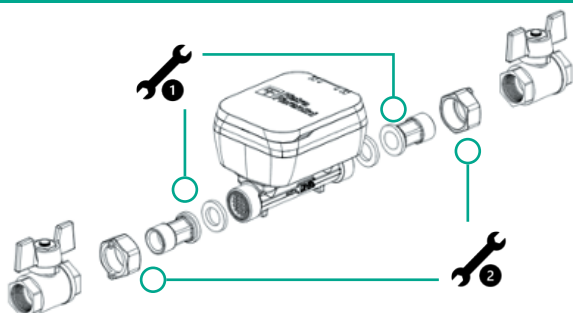


Fig. 1.6. meter joints

| DN | 1  | 2  |       |
|----|----|----|-------|
| 15 | 17 | 29 | 30 Nm |
| 20 | 23 | 36 | 35 Nm |
| 25 | 30 | 46 | 35 Nm |
| 32 | 36 | 53 | 40 Nm |
| 40 | 44 | 66 | 45 Nm |

Tab. 1.2. tightening torques

## 10. METER DISPLAY

The display cyclically shows the information described below:

| Display design A                      | Display design B                      |
|---------------------------------------|---------------------------------------|
|                                       |                                       |
| Functional display verification (1/2) | Functional display verification (1/2) |
|                                       |                                       |
| Functional display verification (2/2) | Functional display verification (2/2) |
|                                       |                                       |
| Accumulated volume (1/1)              | Accumulated volume (1/1)              |
|                                       |                                       |
| Firmware version and signature (1/4)  | Firmware version and signature (1/4)  |
|                                       |                                       |
| Firmware version and signature (2/4)  | Firmware version and signature (2/4)  |

|                                      |                                      |
|--------------------------------------|--------------------------------------|
|                                      |                                      |
| Firmware version and signature (3/4) | Firmware version and signature (3/4) |
|                                      |                                      |
| Firmware version and signature (4/4) | Firmware version and signature (4/4) |

Tab. 1.3. display information

## 11. VIEWING OPTIONS

| Display design A                                | Display design B                                |
|---|---|
|   |   |
| No water in the meter or partially empty pipe   | No water in the meter or partially empty pipe   |
|   |   |
| Leak detected, continuous flow                  | Leak detected, continuous flow                  |
|   |   |
| Pipe breakage, sudden passage at high flow rate | Pipe breakage, sudden passage at high flow rate |
|   |   |
| Meter installed in the wrong direction          | Meter installed in the wrong direction          |
|   |   |
| Reverse flow detection                          | Reverse flow detection                          |
|   |   |
| Flow detection above maximum flow rate          | Flow detection above maximum flow rate          |
|   |   |
| Attempted fraud                                 | Attempted fraud                                 |
|   |   |
| Low battery                                     | Low battery                                     |
|   |   |
| Temperature above the lower limit detected      | Temperature above the lower limit detected      |

|                                |                                |
|--------------------------------|--------------------------------|
|                                |                                |
| Measuring cards error detected | Measuring cards error detected |
|                                |                                |
| Number of active errors        | Number of active errors        |

Tab. 1.4. display errors

## 12. AUTOMATIC METER READING

The meter is pre-configured to allow consumption transmission via radio frequency. Radio transmissions are automatically activated after the 5-litre volume totaliser has been reached and according to the settings agreed upon in the order.

## 13. DISPOSAL



This product contains a lithium battery and electronic circuitry. Do not dispose of with household waste, follow your municipality's instructions for the disposal of WEEE.



**Disposal must only be carried out by qualified and authorised personnel, following the requirements of Directive 2012/19/EU for the disposal of electrical and electronic components (WEEE).**

## 14. EU DECLARATION OF CONFORMITY

Pietro Fiorentini S.p.A. declares under its sole responsibility that the SSM-AQUO series meters to which this declaration refers are IN ACCORDANCE with the European directives listed below:

Directive 2014/32/EU of the European Parliament and of the council of 26 February 2014 on the harmonisation of the laws of the Member States concerning the making available on the market of pressure equipment (recast).

Directive 2014/53/EU of the European Parliament and of the council of 16 April 2014 on the harmonisation of the laws of the Member States concerning the making available on the market of radio equipment and that supersede directive 1999/5/EC.

Type B certificate: IT-028-21-MI001-2213, first issued on 9 March 2022 by Pa.L.Mer. Soc. Cons.a.r.l., Italy, (Notified Body Number 2213).

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