

MANUAL

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CubicMeter

Clamp-on water flow meter and leak detector.



INTRODUCTION

Easy-to-install water flow meter and leak detector. Alerts if water leaks are detected. Measures water volume & temperature to increase awareness. One design for multiple pipes. No plumber required to install, with an average of two minutes to install.

PACKAGE CONTENTS

- 1x CubicMeter LTCM02-X
- 2x small stainless steel pipe clamps
- 2x large stainless steel pipe clamps
- 2x tamper-seal covers
- 2x tamper-seal stickers
- 1x "remove to activate" sticker

⚠ A flathead screwdriver is needed to tighten the pipe clamps, this is not included in the package contents.

Below are the included pipe clamps:



Pipe ø15-20 mm



Pipe ø20-26 mm

ARTICLE NUMBERS (MODEL VERSION)

SKU	Device color	Photo
LTCM02-C	White	
LTCM02-P	Black	

COMPATIBLE PIPE SETTINGS

CubicMeter offers two models, below are specifications of compatible pipe types, their outer diameter and LCD-code for the two models.

CubicMeter White (Metal Pipes)

LCD code	Compatible pipes	Outer pipe diameter
Cu__	Copper	15, 18 and 22

Cr__	Chromed copper	15, 18
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Copper



Chromed copper

CubicMeter Black (Plastic Pipes)

LCD code	Compatible pipes	Outer pipe diameter
PAL__	Multi-layered PEX/ Aluminium/PEX	16, 20 and 25
PE__	PEX or PE-RT	16, 20 and 25
dISTPIPE	LK Distance pipe 110 (plastic spacer)	N/A



PEX/Aluminium/PEX



PEX/PE-RT



Distance Pipe

INSTALLATION GUIDE

The CubicMeter can be mounted on the property inlet pipe before it splits to different outlets like kitchens, showers, or bathrooms. It can also be installed post-split for detailed allocation measurements.

⚠ Ensure the pipe is ready before mounting and is:

- *clean*
- *undamaged*
- *free from corrosion*
- *free from paint*

If the area on the copper pipe where the CubicMeter will be mounted is corroded or painted, smooth the pipe surface before mounting by removing any roughness mechanically or using a solvent.

Pipe Distance

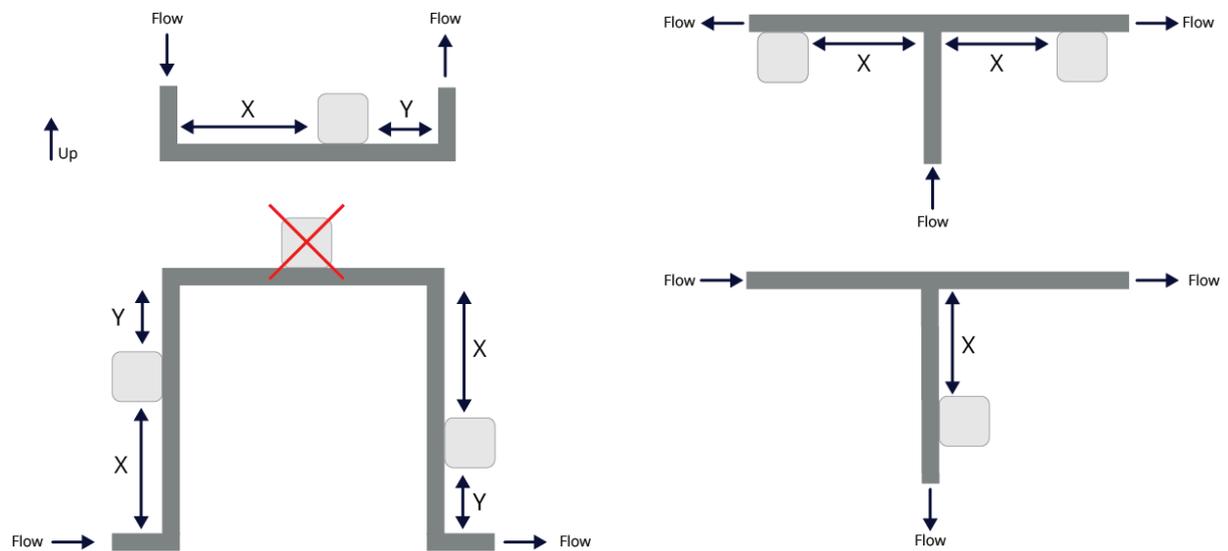
Install the CubicMeter with adequate space before and after pipe bends to prevent flow turbulence. Ensure the specified distance requirements below are met:

Upstream Distance	X > 10x outer pipe diameter
Downstream Distance	Y > 5x outer pipe diameter

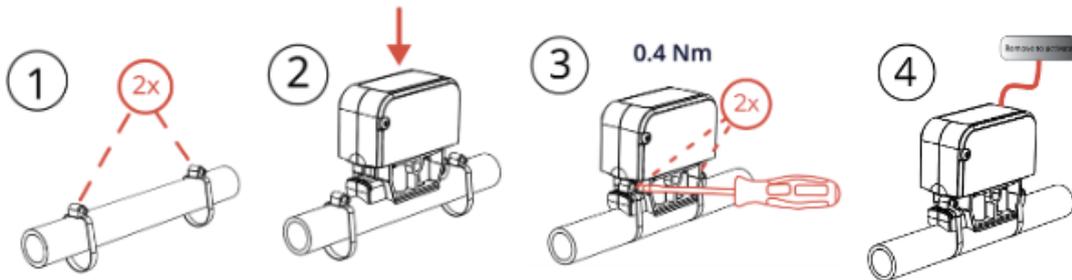
Examples

Pipe Type	Copper 15	PAL 20
Outer Diameter	15 mm	20 mm
X	Is greater than 150 mm	Is greater than 200 mm
Y	Is greater than 75 mm	Is greater than 100 mm

Optimal Placement



Mounting



⚠ Incorrect installation affects metering accuracy; do not use plastic zip-ties.

1. Loosely place the pipe clamps provided around the pipe.
2. Place the device between the clamps and align the brackets over the device.
3. Tighten the the screws using a flathead screwdriver to a torque of 0.4Nm.
4. Remove the activation sticker. Select the pipe setting by holding the sticker over the IR-eye and removing the sticker when the correct pipe appears on the display.
5. Verify on the display that the device accurately reports the flow by turning on the water flow for at least 60 seconds.

If symbol “no sensing” is shown, verify steps 1-4 or refer to the [No Sensing Errors](#) guide.

Note: The device will start saving data automatically after 1 hour in "pipe selection mode". If the activation sticker is put back on for 15s over the IR-eye within 1 hour, after it has been removed, the device will revert to its packaging state, HELLO mode.

Remounting

The ultrasonic interface of the CubicMeter will adapt to the geometry of the pipe. If the device is remounted on a different pipe diameter, the performance of the device cannot be guaranteed. This is especially critical when moving the device from a smaller to a bigger pipe diameter.

FUNCTIONAL WATER FLOW TEST

1. When the proper pipe has been selected, open any water tap to get a steady water flow.
2. Check that the LCD-display now shows a flow rate (l/h).
3. Turn off the water by closing the tap and check the flow rate on the LCD-display that it is now near 0 l/h.

If step 2 or 3 was unsuccessful, please make sure you followed the installation and pipe setup instructions correctly. You can also try to reinstall the device and move the device's position around the pipe, in case the pipe has been deformed.

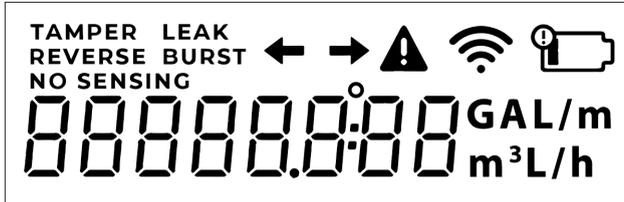
Note: If the meter has been activated for more than 1 hour, it will instead show total water usage in m³.

ANTI-TAMPERING

Attach the anti-tampering cover and stickers after installation is complete and tested to prevent unauthorized removal.



READING THE DISPLAY



LCD code	Description
TAMPER	Attempted tampering with the meter's behavior.
LEAK	Possible medium leak detected.
BURST	Possible large leak detected.
REVERSE	Water flowing the wrong way based on the meter's orientation.
NO SENSING	Unable to detect water in the pipe.
	Displays the current water flow direction.
	Indicates an issue with the device along with an error code.

	<p>Shows radio functions are active. A single dot indicates faulty radio function.</p>
	<p>Low battery, less than 180 days a battery life remaining.</p>

All units conduct an LCD check every 5 minutes.

First, all segments will disappear for 1 second followed by displaying all segments for 1 second. This is to verify the screen's functionality.

The following information is then displayed in the following order, 1 second per item:

- Firmware version number
- Firmware CRC32 checksum in hexadecimal format
- Current pipe temperature in °C
- Selected pipe setting type
- Event/change log counter
- If applicable, the last error code logged

DATASHEET

<p>Battery:</p>	<p>3.6 VDC Li/SOCI2, non-replaceable, up to 10 years</p>
<p>Storage Conditions:</p>	<p>5°C - 55°C</p>
<p>Water Temperature:</p>	<p>0.1°C - 70°C (T70)</p>

Environment:	5°C - 30°C, indoor usage (B, E1)
Sampling Frequency:	1 Hz
Water Usage Resolution:	1 Liter
Wireless M-bus Protocol:	Wireless M-Bus (868MHz, C1, format A)
Wireless LoRaWAN:	EU868MHz (SF 12 for RX2), 1.0.2-revB, OTAA
LoRaWAN Data Resolution:	1 hour*
Maximum Flow Rate:	3125 l/h
Small Leak Detection:	>1-9 l/h** over several days (Only using Quandify platform)
Medium Leak Detection (LEAK):	>10 l/h for at least 40 min
Large Leak Detection (BURST):	>1500 l/h for at least 5 min
Flow Rate Accuracy:	<p>Copper Pipes: ±5-10% typical error (Incorrect installation or setup may cause significant error)</p> <p>Plastic Pipes: ±5-10% typical error (Incorrect installation or setup may cause significant error)</p>

Flow Rate Accuracy after On-site Calibration:	Down to $\pm 2\%$ error
Ambient Temperature Accuracy:	Max $\pm 1.5^{\circ}\text{C}$ error
Water Temperature Accuracy:	Max $\pm 2^{\circ}\text{C}$ error
Weight:	280 grams (excluding packaging)
Dimensions:	Width: 40 mm, height: 79 mm, length 87 mm

**You can change the data transmission interval.*

***Depending on pipe size & material.*

MAINTENANCE AND SERVICE

- Maintenance-free for up to 10 years.
- Check the LCD-display for error codes [here](#).
- For faults, contact your **authorized distributor**. Only authorized Quandify centers handle service.
- Authorized personnel can configure settings via the meter's optical eye or LoRaWAN.
- Use original manufacturer spare parts for external replacements.
- To uninstall a meter, remove tamper-seal covers with a screwdriver and cut metal fastening clamps with pliers.

