Quandify LTCM02-X Series Cubic Meter Instruction Manual

Contents

Quandify LTCM02-X Series Cubic Meter

Specifications

- **Product Name:** CubicMeter
- **Type:** Clamp-on water flow meter and leakage detector
- **Compatible Pipe Settings:** Copper pipes (LTCM02-C), Plastic pipes (LTCM02-P)
- **Installation Time:** Average of two minutes

Product Usage Instructions

Introduction

The CubicMeter is an easy-to-install water flow meter and leakage detector designed to alert users about water leaks, measure water volume and temperature, and increase awareness about water usage. It is suitable for use with both plastic and copper pipes.

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

Installation Guide

The CubicMeter can be mounted on the property inlet pipe before it splits to different outlets like kitchens, showers, or bathrooms.

Follow these steps for proper installation:

1. Ensure the pipe is clean, undamaged, free from corrosion, and free from paint.
2. If the pipe surface is corroded or painted, smooth it before mounting the CubicMeter.
3. For best performance, install the CubicMeter with adequate space before and after pipe bends to prevent flow turbulence.
4. Follow the specified distance requirements for upstream and downstream distances based on the pipe type and outer diameter.
5. Avoid using plastic zip-ties for installation as they can affect metering accuracy.

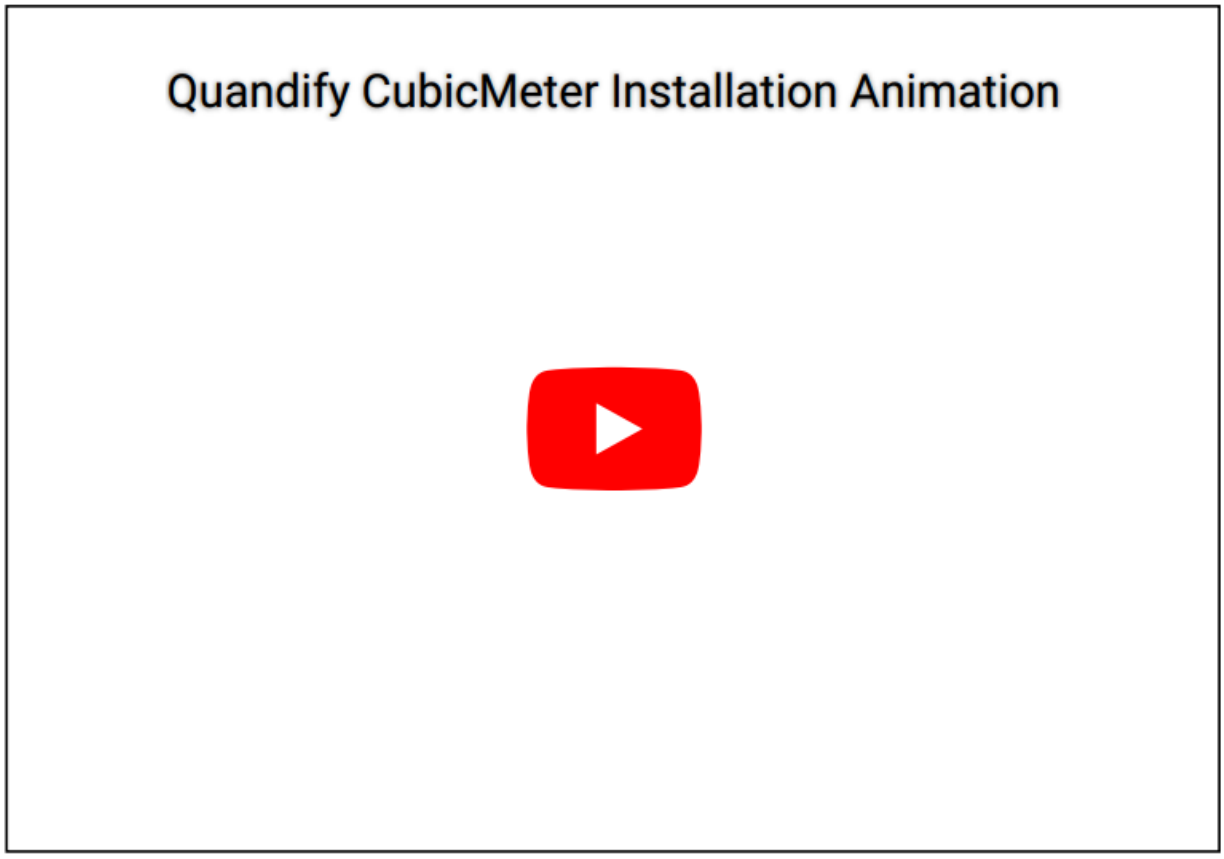
6. Tighten the screws using a screwdriver to the specified torque after placing the device between the clamps.

FAQ

- **Q: Can the CubicMeter be installed on any type of pipe?**
  - **A:** The CubicMeter offers models suitable for copper pipes (LTCM02-C) and plastic pipes (LTCM02-P). Ensure you select the appropriate model based on your pipe type.
- **Q: How long does it take to install the CubicMeter?**
  - **A:** On average, it takes about two minutes to install the CubicMeter. However, proper preparation of the pipe surface is essential for successful installation.

INTRODUCTION

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



https://www.youtube.com/watch?v=I6WwEqW7ABU

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

Below are the included pipe clamps:

Pipe ø15-20 mm Pipe ø20-26 mm

ARTICLE NUMBERS (MODEL VERSION)

CubicMeter White (copper pipes): *LTCM02-C*	
CubicMeter Black (plastic pipes): *LTCM02-P*	

COMPATIBLE PIPE SETTINGS

CubicMeter offers two models, one for copper pipes and one for plastic pipes. 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 diameters
Cu __	Copper	15, 18 and 22
Cr __	Chromed copper	15, 18

Copper

Chromed copper

CubicMeter Black (Plastic Pipes)

LCD code	Compatible pipes	Outer diameters
PAL __	Multi-layered PEX/Aluminum/PEX	16, 20 or 25
PE __	PEX or PE-RT	16, 20 or 25
d ISt P IPE	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 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

- For best performance, install the CubicMeter with adequate space before and after pipe bends to prevent flow turbulence.
- Ensure the specified distance requirements below are met.

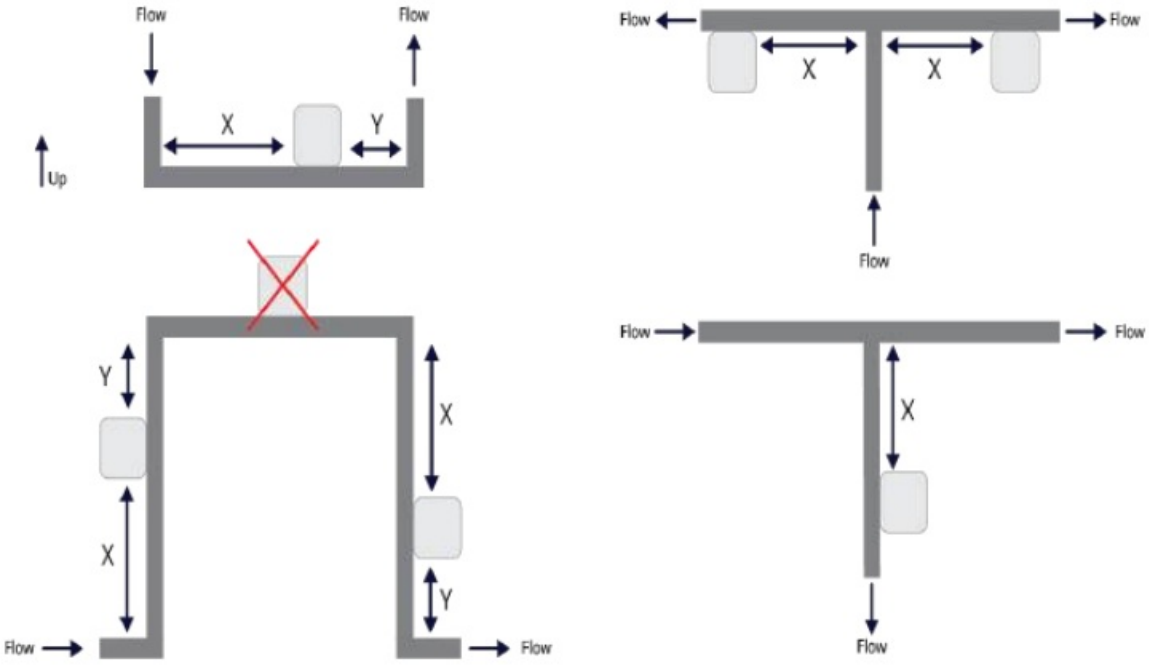
Upstream Distance	X > 10x outer pipe diameter
Downstream Distance	Y > 5x outer pipe diameter

Examples

Pipe Type	Copper 15	PAL 20
Outer Diameter	15 mm	20 mm
X	Is greater than 150 mm	Is greater t mm

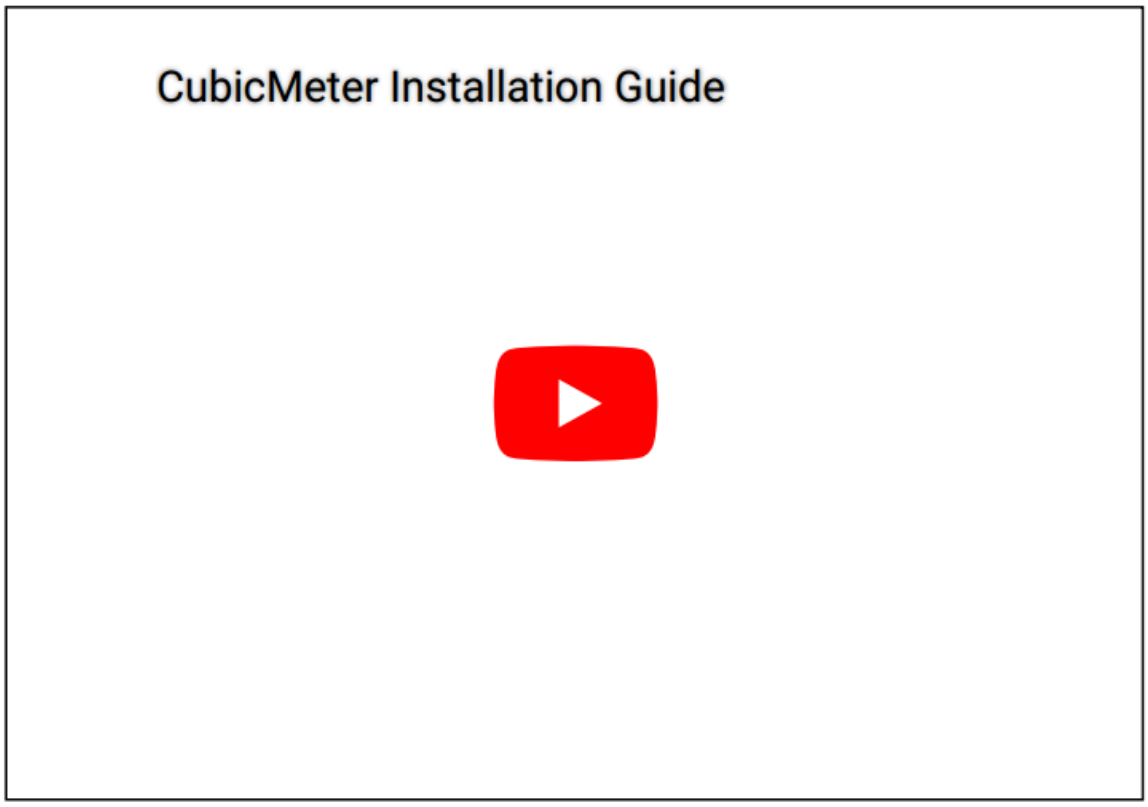
Y	Is greater than 75 mm	Is greater t mm

Optimal Placement



The device may be rotated vertically around the pipe if needed.

Video Unboxing and Pipe Installation



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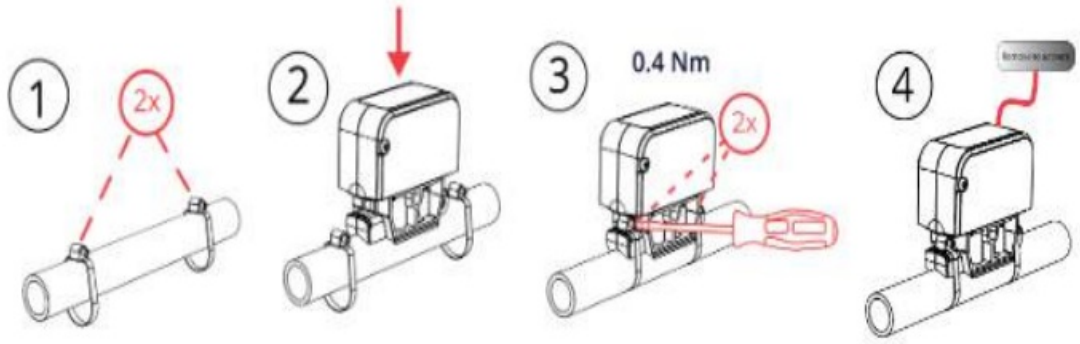
Mounting



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

1. Loosely place the hose 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 your 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 the symbol “no sensing” is shown, verify steps 1-4 or try another mounting position/rotation on the pipe.
    - **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.

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.

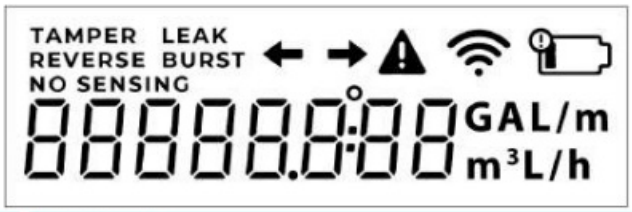
FUNCTIONAL WATER FLOW TEST

1. When the proper pipe has been selected, open any water tap to get a steady water flow.
2. Check that the LCD now shows a flow rate (l/h).
3. Turn off the water by closing the tap and check the flow rate on the LCD that it is now near 0 l/h.
    - If steps 2 or 3 were unsuccessful, please make sure you followed the installation and pipe setup instructions correctly. You can also try to rotate the device 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 fraud or tampering with the meter's behavior.
LEAK	Possible medium leakage detected.
BURST	Possible large leakage detected.
REVERSE	Water flows in the wrong direction through the meter.
NO SENSING	Unable to detect water, possibly due to unfilled pipes or loose meter installation. No flow measurement in such cases.
← →	Displays the current water flow direction (left or right).
⚠	Indicates a metering device issue or displays a warning with an error/warning code..
((•))	Shows that the radio is enabled and active. A single dot denotes a faulty radio module.
🔋	Low battery, less than 180 days remaining.

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

Battery:	3.6 VDC Li/SOCl2, non-replaceable, up to 10 years
Storage Conditions:	5°C – 55°C

Water Temperature:	0.1°C – 70°C (T70)
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:	4000 l/h
Small Leak Detection:	>1-9 l/h** over several days (Only using the Quandify p latform)
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:	Copper Pipes: max ±20% error Plastic Pipes: max ±10% error
Flow Rate Accuracy after On-site Calibration:	Down to ±2% error
Ambient Temperature Accuracy:	Max ±1.5°C error
Water Temperature Accuracy:	Max ±2°C error

Weight:	280 grams (excluding packaging)
Dimensions:	Width: 40 mm, height: 79 mm, length 87 mm

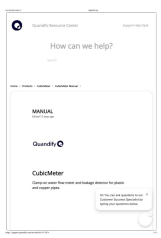
- You can increase data transmission frequency with various subscriptions, maxing out at once every 15 minutes.
- Depending on pipe size & material.

MAINTENANCE AND SERVICE

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

- https://www.linkedin.com/company/quandify/?viewAsMember=true
- https://support.quandify.com/en/articles/1871874

Documents / Resources

	Quandify LTCM02-X Series Cubic Meter [pdf] Instruction Manual LTCM02-X, LTCM02-C, LTCM02-P, LTCM02-X Series Cubic Meter, LTCM02-X Series, Cubic Meter, Meter

References

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