

JOJO MONITOR Water Meter



Device Limitations/ Implementation Restraint Description

The purpose of this document is to describe the design and implementation restraints of the JoJo Water Meter device.

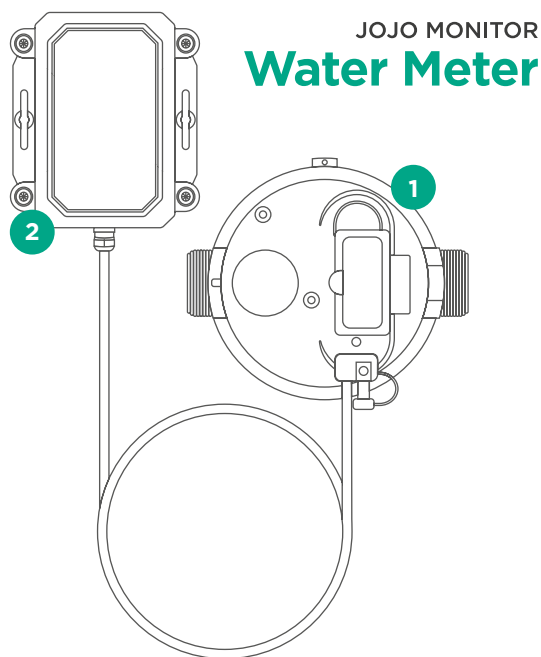
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The product scope

The JoJo Water Meter device is a low power battery operated monitor device equipped with a water flow meter attached via an umbilical cord. The primary use of the device is to measure the volume and flow rate of water that passes through the meter. The device is intended for long term operation with minimal maintenance.

Important

Please refer to the *Usage and Installation guidelines* available on our website or on the inside of the packaging for detailed information on best practises, technical guidelines, and recommendations based on your application. This document will not cover any of the above mentioned, and will specifically focus on implementation restraints.



1 Water Meter

Measurable liquid and flow rate

This device is suited for clean water use only, i.e. water containing no debris or sediment. The measurable range of the water meter is between a flow rate of 0.1 lt/min to 52.08 lt/min.

The measurement accuracy of the water meter varies depending on the flow rate:

Flow Rate

0.1 to 0.26 lt/min
0.26 to 0.42 lt/min
0.42 to 52.08 lt/min

Error Rate

±10 to 5%
±5 to 2%
±2%

If the flow rate exceeds 41.67 lt/min, a pressure loss of up to 0.6 to 1 bar may occur.

Installation

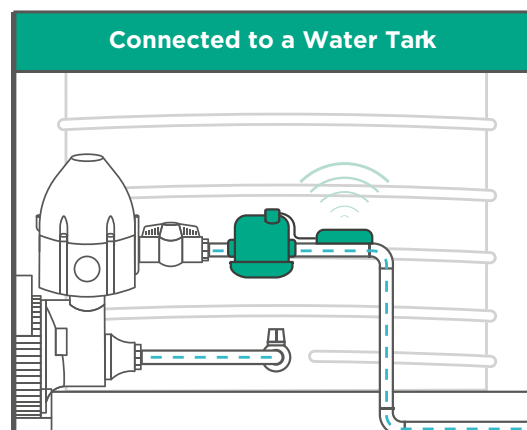
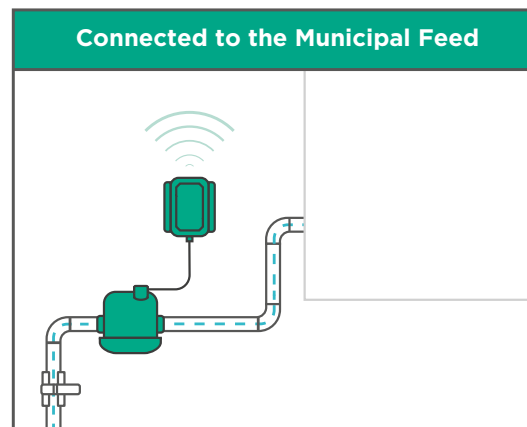
Orientation

The water meter can be installed horizontally, vertically or at an angle without loss of accuracy.

It is very important to note that water can only be measured accurately in the correct flow direction. Reverse flow will result in a mismatch between the reading of the meter and the value reported by the monitoring device. Installation guidelines are available on our website.

Location

The water meter can either be connected to your incoming municipal feed or your pump outlet on your water tank.



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2 Monitor Device

Battery life

Bluetooth and Sigfox communication requires power from the battery.

Increasing the rate at which the device performs range measurements or Sigfox transmissions, as well as heavy use of Bluetooth, will impact the device's battery life.

Communication/coverage

Long distance communication from the monitor device via a Low Power Network (LPWAN) is dependent on the coverage provided by Sigfox.

Though a significant portion of South Africa is covered, there are areas in the country which do not have Sigfox coverage.

An area that has coverage could still have poor signal, typically due to a hill or high rise buildings blocking the signal between the base station and the device. This can result in the occasional message from the device not reaching the Sigfox network.

Signal coverage is hampered when placed indoors or underground. When placed underground or within a basement of a building, it is very likely that communication between the device and network will not occur. In such instances, custom-engineered solutions are required.

Mounting

The radio and antenna are located within the main monitor device enclosure. Communication to and from the monitor device via Bluetooth and Sigfox will be negatively affected when placed within a metal panel or enclosure.

Placement for optimal signal

Remote monitoring signal coverage is hampered when installed indoors, underground, or within a basement of a building and, as a result, limits communication between the device and network.

Never place the device inside metal or concrete containers, enclosures or confined spaces.

Do not fully enclose or submerge the device as this will have an impact on its performance and accuracy. Prolonged exposure to water may cause damage and lead to device failure.

Note: Submerging the device will void the warranty.

Bluetooth

Only a single entity can be connected to a monitor device via Bluetooth at a time. The monitor device will not be visible via Bluetooth while it is connected to another device.

The Bluetooth range of the device is limited to 20m line of sight and the signal can be blocked by walls and/or other dense obstructions.

When the device is out of range or the signal is blocked, the device will either not be visible on the connecting device or there will be a delay in communication.

Temperature

The operational temperature range of the device is between -20° C to 65° C. In high temperature areas, it is advised to mount the device in a shaded location.