

# Installation Guide

## Captis Metrum & Elster V100

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## INTRODUCTION

The Captis cellular data logger has been developed to fill measurement requirements across a broad range of applications and remote locations.

The Captis Metrum has the following features:

- The device measures 90 x 75 x 50 mm and weighs less than 500g.
- Is designed to interface with existing mechanical water meter via a pulse pick up unit.
- It is battery operated and does not require an external power supply.
- It operates on LTE-M or NB-IoT cellular networks.
- The enclosure is IP68 rated.

## CAPTIS TECHNICAL INFORMATION

### CAPTIS METRUM DIMENSIONS

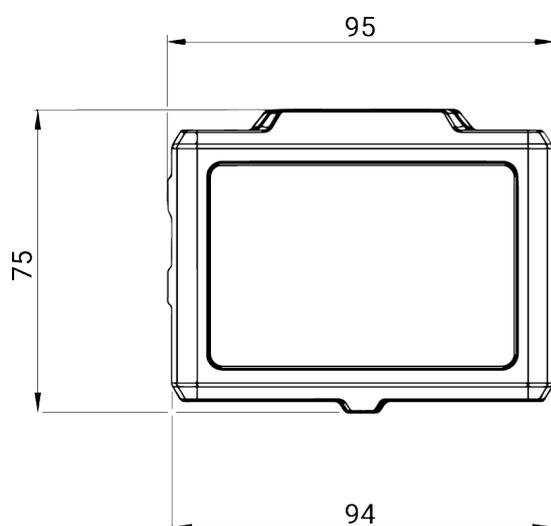


Figure 1 Captis dimensions front view

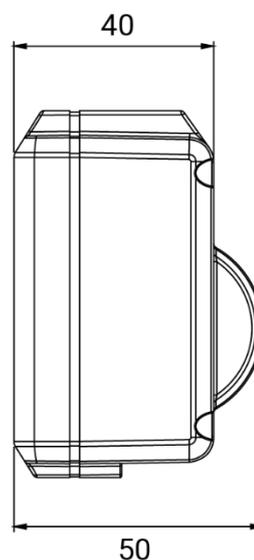


Figure 2 Captis dimensions side view

### CAPTIS METRUM SPECIFICATIONS

1x Pulse Input	-0.3V to 3.5V Passive Suitable for Reed SW + Open Collector + Dry Contact
Maximum Pulse Frequency	10Hz
Sensor Minimum Open Resistance	1.25MΩ
Sensor Maximum Closed Resistance	60kΩ
Physical Size	90mm x 75mm x 50mm
Weight	Less than 500g
IP Rating	IP68

## INSTALLATION

### BEFORE YOU BEGIN

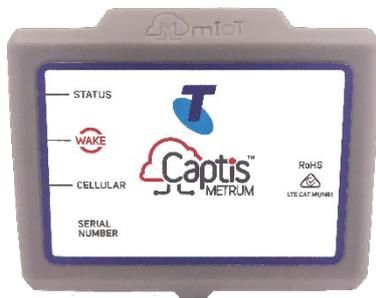
Before starting this installation, you will need the following items:

- The contents of the Captis box.
- The water meter that will be connected to the Captis
- A 3mm Allen key and small flat blade screwdriver
- An internet-connected device, such as a phone or tablet.

### WHAT IS IN THE CAPTIS BOX?

In the Captis box you will find:

- Captis data logger
- Attachment Band and screw



- Cable Cover and screw



- Activation Magnet  
Used to wake up and reset the device.



Figure 3 Captis showing magnet being used to wake device

## INSTALLING THE CAPTIS

To successfully install the Captis you must perform the following steps. Each step is described in more detail in the following sections.

1. Mount the Captis Metrum to the Elster V100 water meter
2. Test the wiring, sensor and cellular connection.
3. Complete the physical installation after testing.

## TERMINATING THE DEVICE

The Elster V100 T Probe Sensor comes prewired to the Captis Metrum Device. The T Probe is connected using the below terminations.

Colour	Description
Metrum Pulse – (Black)	Elster Pulse Detection
Metrum Pulse + (White)	Elster Pulse Detection
Metrum Switch + (Red)	Cable Cut Detection
Metrum Switch - (Blue)	Cable Cut Detection

## MOUNTING THE CAPTIS

The Captis Metrum is designed to seamlessly integrate with Elster's V100 water meter, and can be installed following these steps:

1. Pass the supplied mounting band around the V100 and secure with the supplied screw and a 3mm Allen Key.



2. Carefully remove the black pick up protection cap from the shown location



Pick up protection cap location

3. Insert the V100 pickup- attached to the Captis Metrum Device- into the pickup location.

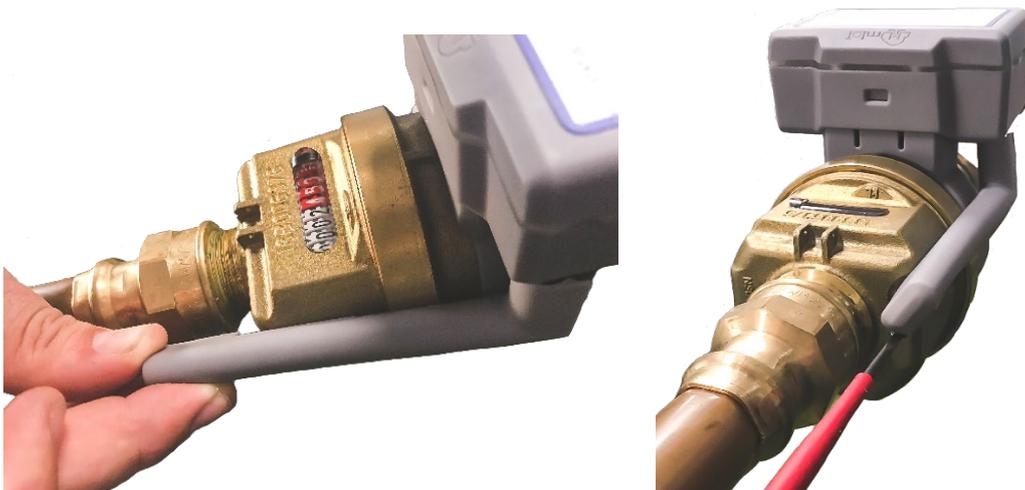


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4. Clip the Metrum housing onto the Band.



5. Place the supplied Cable cover over the pickup and Metrum cable entry and secure the cover with the provided screw and a small flat blade screwdriver.



6. Wake the device using the included activation magnet.



## CHECKING SENSOR & CELLULAR CONNECTIONS

Before leaving the installation site, you must check that the connection between the device and the sensor is functional and that there is adequate cellular signal for the Captis to work as required.

1. Activate your sensor to create some measurements. How you do this will depend on the sensor.
2. Wake up the Captis using the magnet. If the device has been installed correctly and is able to connect to a cellular signal, then it will then transmit the recorded data to the cloud platform.
3. Check that the data has successfully transmitted to the cloud platform in the correct format, and that no alarms have been recorded.

If the data has been submitted correctly, the registration and installation are a success. If the data does not appear, see Next Step: 'Troubleshooting'.

### CHECKING THE CELLULAR CONNECTION OF AN ENCLOSED DEVICE

If you are installing your Captis device in an enclosed space (i.e. a pit or cabinet) then you must check the connectivity of the device in the environment in which it will ordinarily operation.

For example, if you are installing a Captis device inside a metal cabinet, then you must test that the device is able to connect to the cellular network when the cabinet is closed.

**Note:** It is insufficient to test connectivity with the cabinet open.

Follow the below steps to check that the Captis device can connect to the cellular network in its final, enclosed installation location.

1. Wake the Captis device and ensure that it is installed in its final, enclosed environment.
2. You will have 10 seconds to encase the device before it attempts to connect to the network.
3. Wait 5 minutes and then check that the device has connected to the cloud platform.
4. If the device appears in the platform, then the device can achieve enough connectivity and has successfully connected in its final installation location.

## TROUBLESHOOTING

Symptom	Meaning	What to do
Status LED flashing 20 times	Device is on/ awake	Device is working as it should, leave device to collect data
Cellular LED solid	Device connected to LTE network	Device is working as it should, leave device to collect data
Status LED won't turn on after using the magnet	The device battery may be depleted, or a device fault may have occurred	Use a different device and contact the supplier
Status LED flashing in sequence: 2 long 1 short	No cellular registration (connection to the network) is being achieved.	Check with the Telstra coverage map to ensure the site is covered by the LTE-M or NBIoT cellular network. If the area is covered, and the device cannot connect, contact the supplier.
Status LED flashing in sequence: 2 long 8 short	Captis device cellular module failed to boot	Return the device to the supplier if the issue persists.
Sensor connection not working (not flashing the LED after LED flash turned on in Captis Configuration Toolset)	Connection wired incorrectly	Confirm that the sensor is properly attached. Contact support if issue persists
Sensor readings not uploading to/ appearing in Cumulocity	Sensor not triggering	Ensure the sensor can be triggered by checking that the sensor is securely installed. Contact support if issue persists
	No cellular signal	Check Status and Cellular LED. If flashing, complete troubleshooting for a flashing Cellular LED. Contact support if issue persists

## MAINTENANCE & SAFETY

### MAINTENANCE

The Captis device does not require any maintenance once installed. The Captis uses a non-rechargeable Lithium ION battery, and there are no user serviceable parts inside the device.

If you encounter any issues with the device during its standard operation, contact your support team.

### ELECTROMAGNETIC RADIATION – HUMAN EXPOSURE



***Warning: This device has a Maximum Permissible Exposure (MPE) radius of 20cm.***

It is the installer's and end customer's responsibility to ensure that no person has any body parts within 20cm of the device or antenna while device is transmitting. Device is transmitting when the 'Cellular' LED is lit.

### BATTERY HANDLING & DISPOSAL

This Captis devices uses a Lithium ION Battery.

The Captis device should not be tampered with, drilled directly into for mounting purposes, otherwise opened, or crushed. If necessary, the Captis device should only be disposed or destroyed of in a safe and environmentally compliant manner.

Visit the Australian Battery Recycling Initiative (ABRI): <https://batteryrecycling.org.au/recycle-batteries/why/find-a-recycler/> for more information on lithium battery disposal in your state and across Australia.

**Note: There are no user serviceable parts inside the Captis device.**

Opening the Captis device will void the device warranty, and could cause significant damage to the device.