Verge Infrared/ambient Temperature transmitter Quick Start Guide

Thank you for purchasing the Ready to use Captis Logger compatible Vibration/Attitude transmitter. Packaged, enhanced, and assembled in Australia.

Please read the whole manual before attempting to mount of use this sensor.

Please note all precautions need to be observed around machinery and environments, and all prevailing local laws and legal requirements need to be observed in the installation and operation of any system or devices from Verge. The systems must only be used as Verge intends.

Components list and key features.

1. Transmitter

2. Cable

3. Cable Connector

Captis required is Multi/Power Plus/ or Solar. (Note the Captis and considerations for its mounting and successful connection, can be obtained here   MIOT341_Captis_Multi.pdf
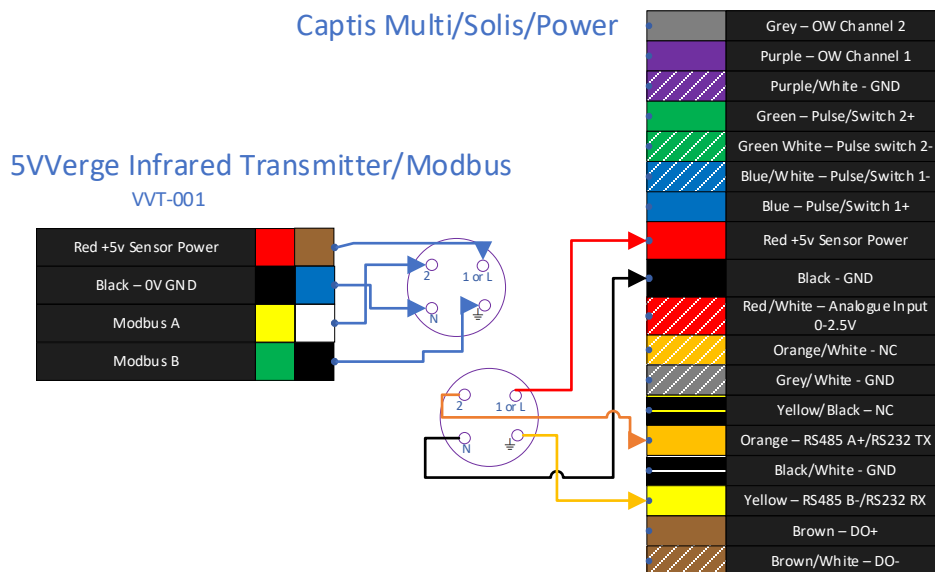
Tools and other components required:

1. A 20mm saddle clamp, or hose clamp or Verge radiation Shield

The VIRT-001 has a round 21mm body on which to mount sensor, or mounting can be done between either gland tightening knob.

2. The sensor is affected by direct and radiant heat as these values are used in the calculation of infrared temperature.

Wiring connection:

Captis Multi/Solis/Power

5VVerge Infrared Transmitter/Modbus
VVT-001

5VVerge VVT-001	Captis Multi/Solis/Power
Red +5v Sensor Power	Grey – OW Channel 2
Black – 0V GND	Purple – OW Channel 1
Modbus A	Purple/White - GND
Modbus B	Green – Pulse/Switch 2+
	Green White – Pulse switch 2-
	Blue/White – Pulse/Switch 1-
	Blue – Pulse/Switch 1+
	Red +5v Sensor Power
	Black - GND
	Red/White – Analogue Input 0-2.5V
	Orange/White - NC
	Grey/White - GND
	Yellow/Black – NC
	Orange – RS485 A+/RS232 TX
	Black/White - GND
	Yellow – RS485 B-/RS232 RX
	Brown – DO+
	Brown/White – DO-

Installation
1. Locate or create a mounting point.
   a. Secure the cable where possible between the sensor and Captis unit ensuring installation is safe.
   b. The distance to spot size is 10:1 which means if tor object is 10cm diameter, the sensor can be mounted up to 100cm away. The sensors have their best accuracy around 1m, but this distance ratio can be adhered to. It must be noted that at long distances that the ambient humidity can begin to absorb IR and affect the reading.
   c. ***Note surface temperature is the actual temperature of the first micron of surface***. Its possible to get naturally occurring temperatures of over 100degC.

Environmental limits:
2. Temperature: -15 to 50 DegC Ambient (Please note, direct sunlight on the case can cause vastly elevated temperatures, and the IR sensor needs an accurate ambient temperature because its used as a reference.
3. Humidity: 0-95 %RH, Non-Condensing
4. Case: IP68 (Please note the IP ratings are values at constant temperature, so if temperatures fluctuate (because of sunlight, then seals can be subject to failure.

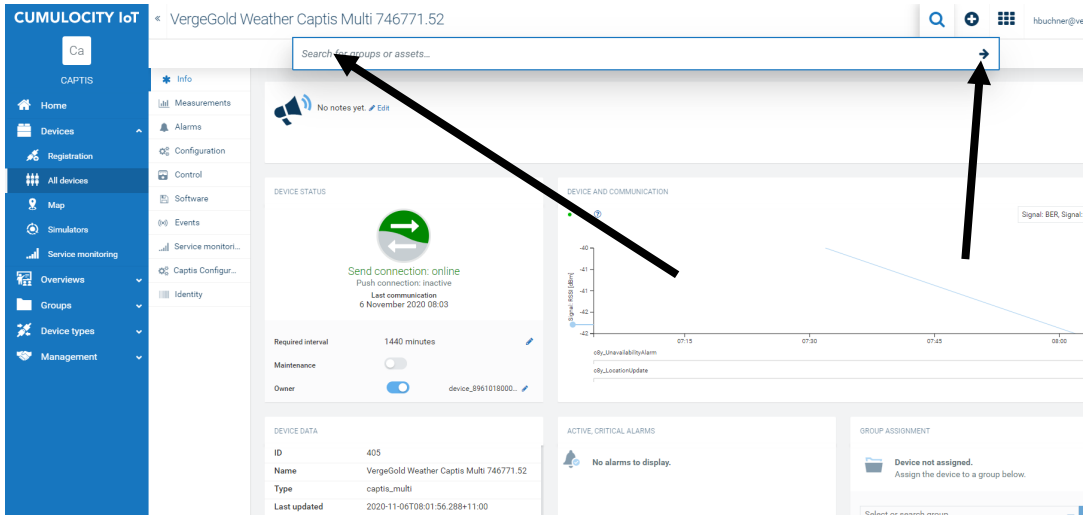## Infrared Cumulocity Settings

Step 1

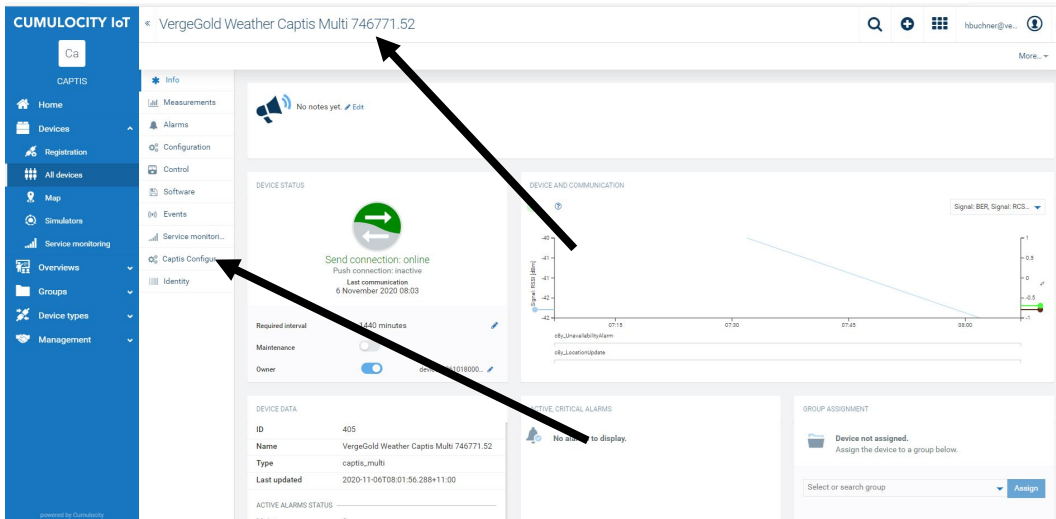*Figure 1 Type in your Captis ID and hit the right arrow to find it*

Figure 2 Your logger will appear at the top then hit the Captis Configuration Tab
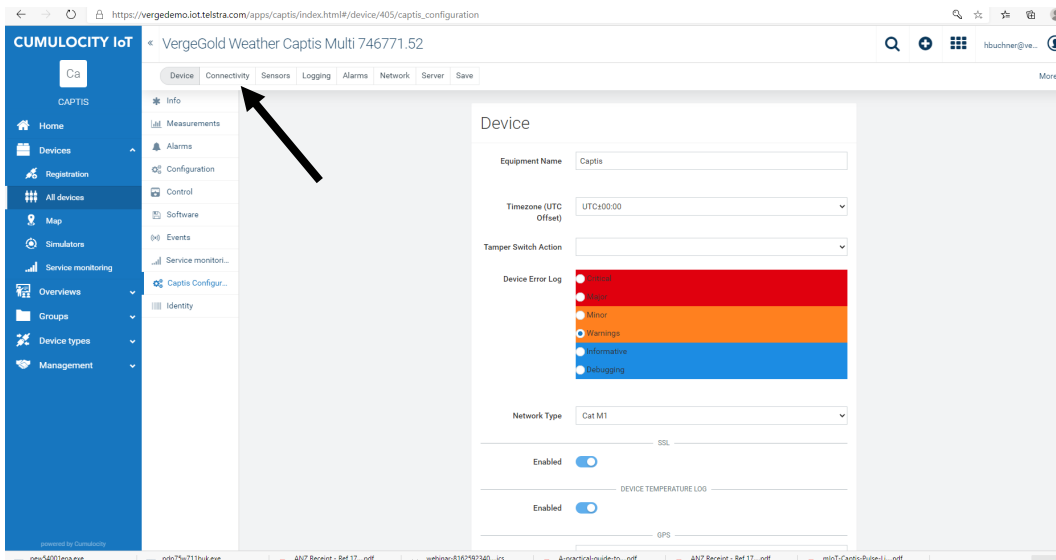
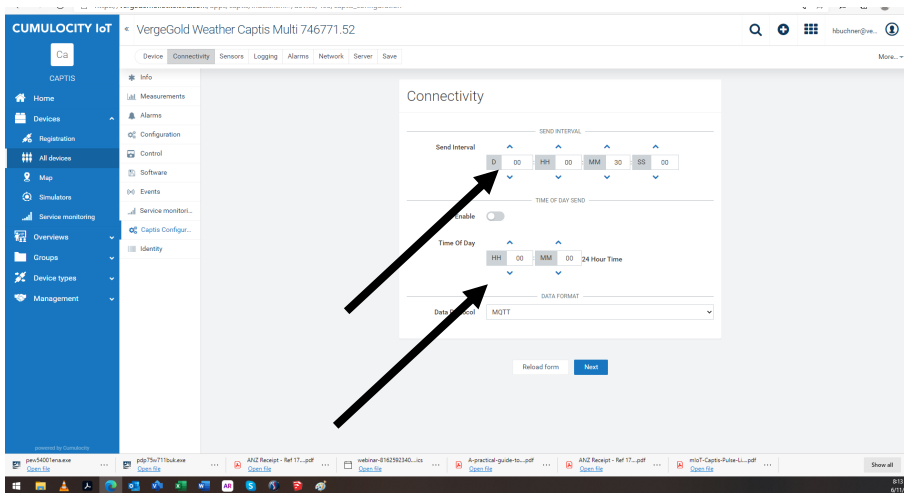*Figure 3 Tap on Connectivity, this will provide the time interval between logger sending logged data*

Figure 4 Set the data send interval, typically once per day for a battery logger ensures multiyear battery life, you can also determine the time of day you want these send intervals aligned to.
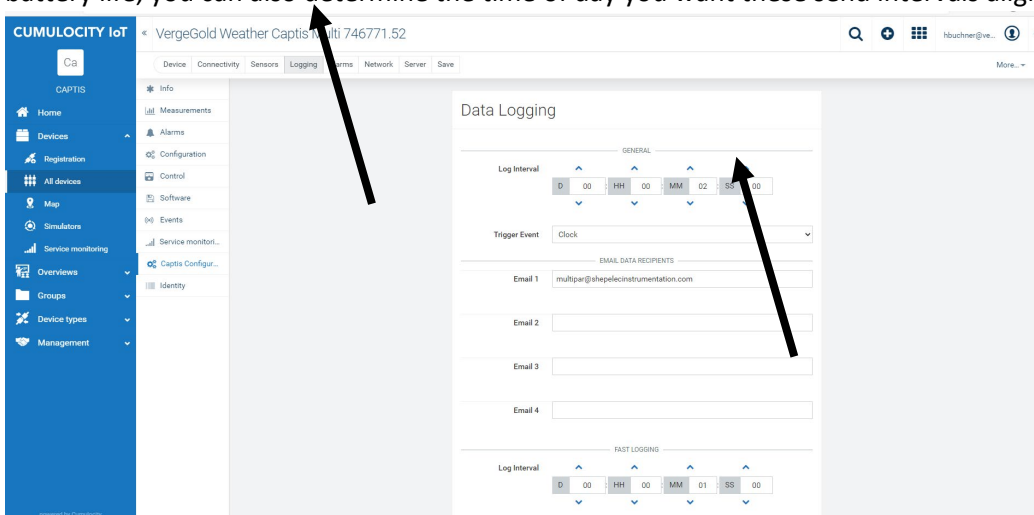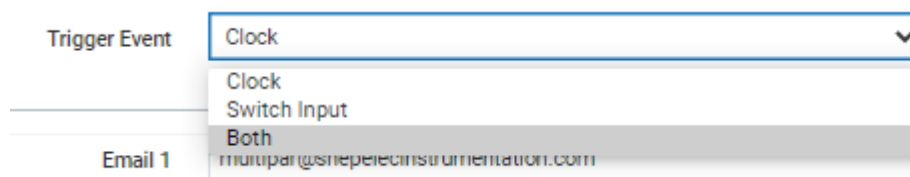

Figure 5 Go to Data logging tab and set to desired log interval that best suits your need. We suggest between 5 and 15 minutes, for a float switch application set the "Trigger event" to both for the most information or just switch for the best battery saving
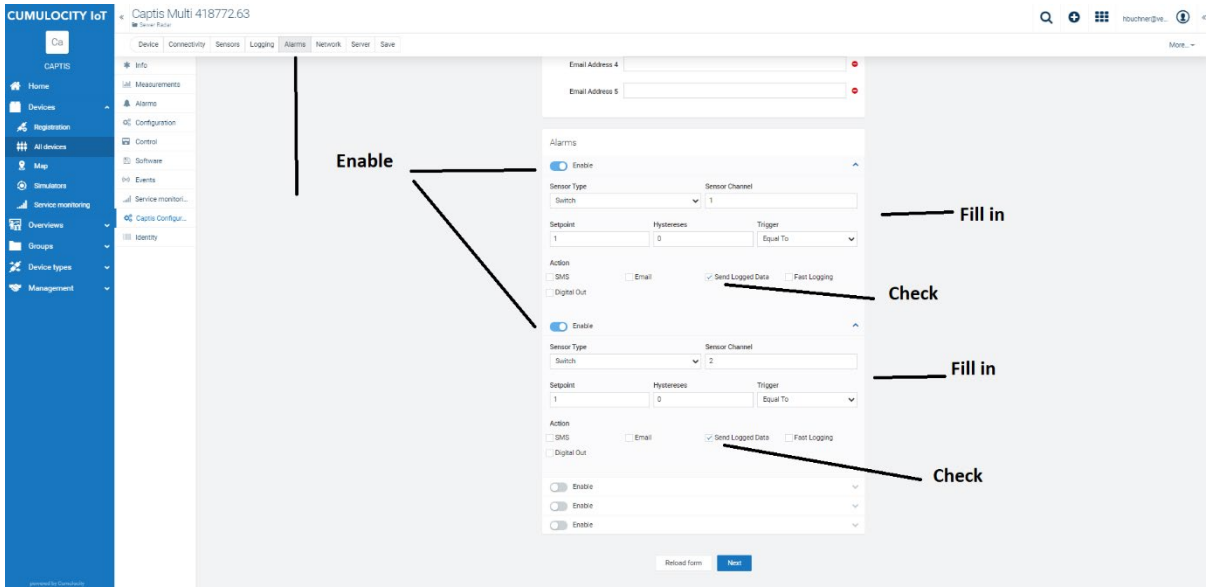
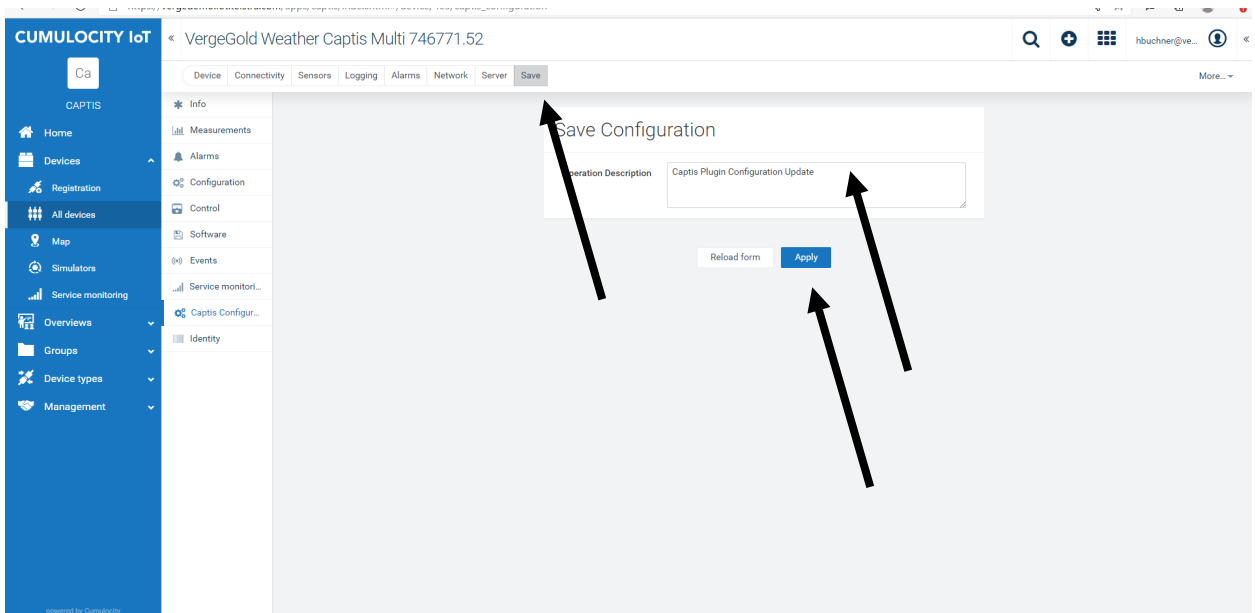*Figure 7 Set the Alarm parameters so that you are notified straightaway*

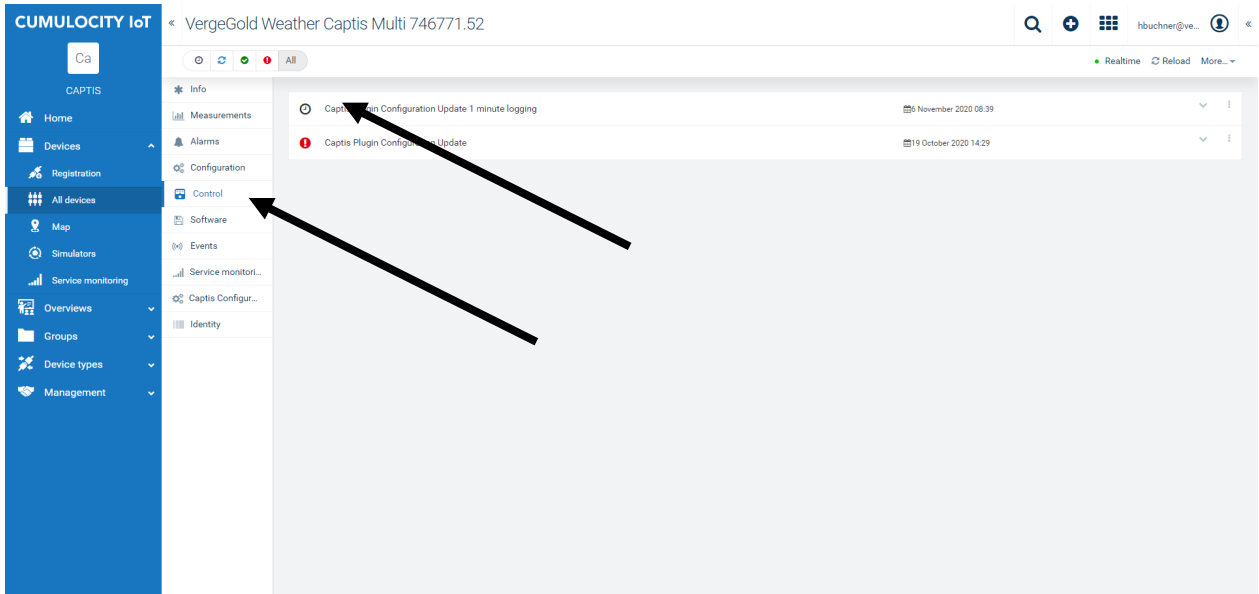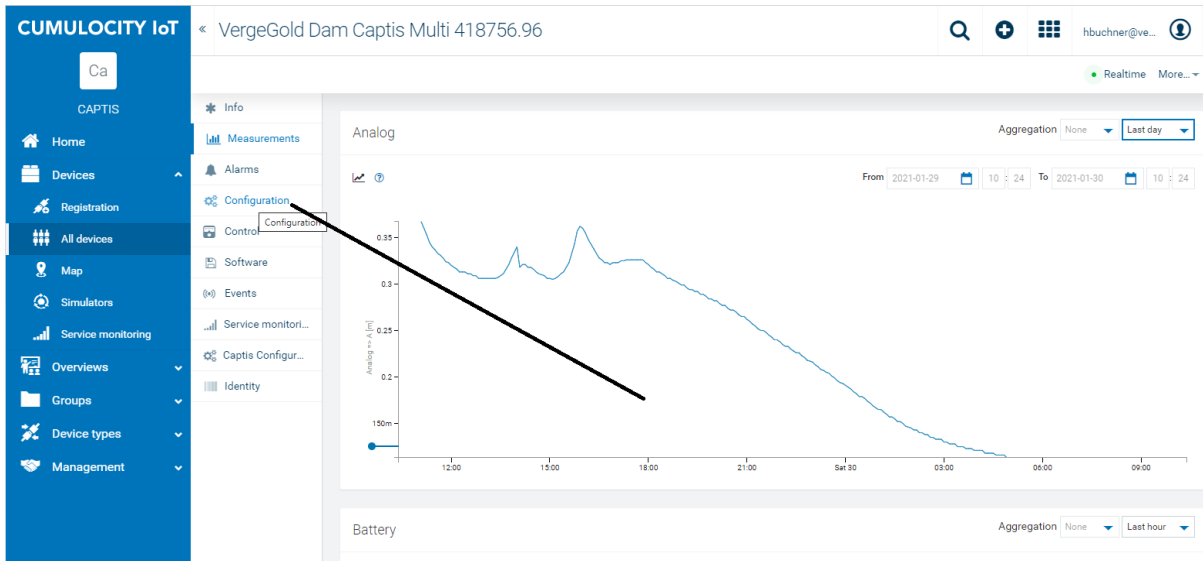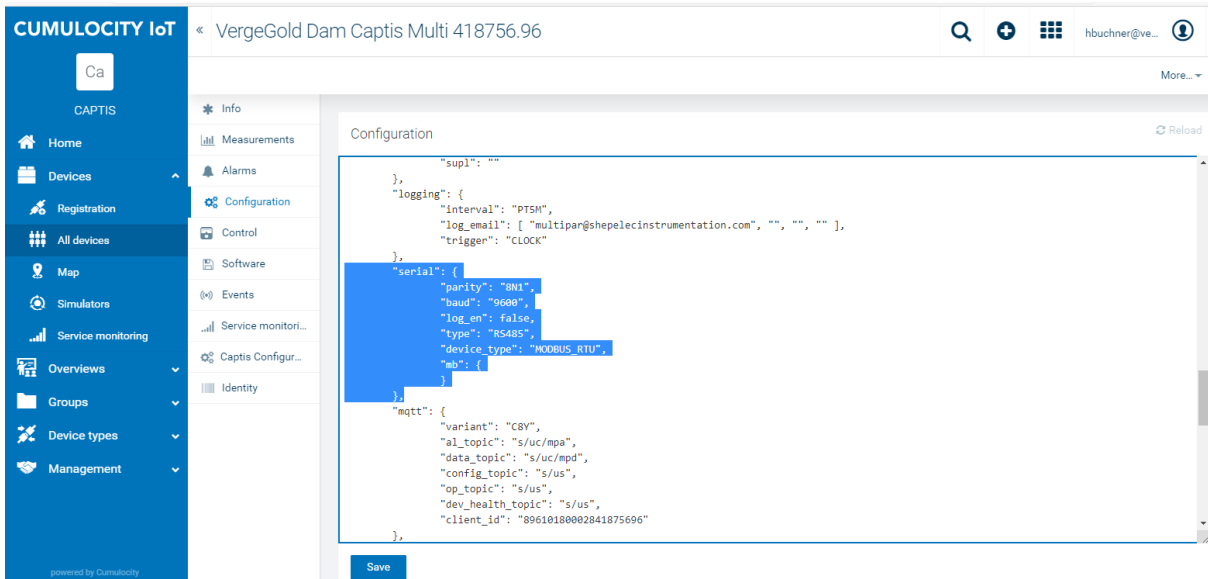*Figure 8 Select save button then describe your changes, then hit apply*

Figure 6 Then go to the Control tab, and your new configuration will be waiting to be accepted

The Captis then needs to be woken up to take these command and when the commands are accepted then the icon will change to green, and you are ready to go.

Step 2

Highlight the Serial section, and carefully paste in the below text over the top of it and hit "save"
**********be extremely careful to select the exact area as pasting**********

Note the below is for address 1, for other addresses, you will need to change the "addr": to your other value

```
"serial": {
        "parity": "8N1",
        "baud": "9600",
        "log_en": true,
        "type": "RS485",
        "device_type": "MODBUS_RTU",
        "mb": {
                "r1": {
                        "addr": 1,
                        "byte_order": "ABCD",
                        "data_type": "UINT16",
                        "funct": "HOLDING_REG",
                        "name": "IRtemp",
                        "offset": 0.000,
                        "reg": 0,
                        "scaling": 0.009,
                        "units": "DegC"
                },
                "r2": {
                        "addr": 1,
                        "byte_order": "ABCD",
                        "data_type": "UINT16",
                        "funct": "HOLDING_REG",
                        "name": "AirTemp",
                        "offset": 0.000,
                        "reg": 1,
                        "scaling": 0.010,
                        "units": "DegC"
                }
        }
},
```

Wake the device and wait for connection check the "Control" tab again to see if the new settings have been taken.

After the device has been connected, a wake again should force the logger to take a reading from the registers and you will notice the new parameters and values begin to appear. It may be necessary to do a reset on the logger to make Modbus work, and lastly if the wiring is correct and settings are in and there are no new parameters in the measurement tab, check the Log tab to see if there is a backlog causing, old data to be clearing, meaning new data (along with your new parameters) is not coming.

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Case: IP68 (Please note the IP ratings are values at constant temperature, so if temperatures fluctuate (because of sunlight, then seals can be subject to failure.