Service Software for
Dew Point Sensors & Flow Meters

Laptop / Computer Version

Table of Contents

About the CAA Service Software

The **CAA Service Software** is used to update:

- Modbus settings

- 4-20mA settings

- Gas Type

- Measurement Parameters

- Firmware

for Compressed Air Alliance's (CAA's) Dew Point Sensors and Flow Meters. You can also use the software to recalibrate the sensor or offset dew point readings.

The CAA Service Software does **not** work for other Compressed Air Alliance products.

If your **sensor has a display**, you can update the following settings via the sensor's in-built display.
- Modbus Settings
- 4-20mA settings
- Gas Type and
- Measurement settings.

You will need to use the CAA Service Software to update the sensor's firmware.

Installing CAA Service Software

The CAA Service Software is available for your computer.

If you require a copy of the CAA Service Software, please contact Compressed Air Allian ce by email: sales@compressedairalliance.com or phone (Australia): +61 1300 558 526.

To install the software on your computer or laptop, open the msi file "*CompressedAirAllianceSetup_V1.0.105.msi*" and follow the prompts to install the Service Software.

Tools and Equipment needed

- CAA Service Kit Box* (see picture)

- CAA Service Software

- Computer / Laptop

- Optional – extra M8/M12 data cables and tee pieces to connect multiple sensors to the CAA Service Kit

* If you don't have the CAA Service Kit Box, you could use a USB to RS485 Convertor, a 24vDC Power Supply and M8/M12 data cables. Make sure to wire (i) the power supply, (ii) USB to RS485 Convertor and (iii) data cables correctly. Incorrect wiring can damage the sensor. Refer to Dew Point Sensor and Flow Meter wiring diagrams for wiring diagrams.

Using the CAA Service Software

Notices and Warnings

- If your are wiring the M12 connectors, make sure to match:
    o "Data –" and "Data +" cables on the sensor and USB/RS485 Converter.
    o Postive Power Wire (+24v DC) and Negative Power Wire (0 vDC) on the Sensor and power adapter.
- Refer to the Sensor's User Manual for wiring diagrams.

Warning: Make sure you connect the sensor to **24vDC** otherwise permanent damage can be done.

Steps

Step 1 – Connect CAA Service Kit to (i) power, (ii) dew point sensors and /or flow meters and (iii) your computer

Step 2 – Open the CAA Software and connect it to the sensors

Step 3 – Update and save settings

Step 4 – Close CAA Service Software. Disconnect sensor.

Step 1 – Connect CAA Service Kit

- Connect the CAA Service Kit to the power (use the 24vDC power adapter)

- Connect the CAA Service Kit to the sensor.

  o For 'Dew Point sensors with a Display', connect the CAA Service Kit to Port A (top connector)

  o For Flow Meters, connect the CAA Service Kit to Port A

- Connect the CAA Service Kit to your computer / laptop.
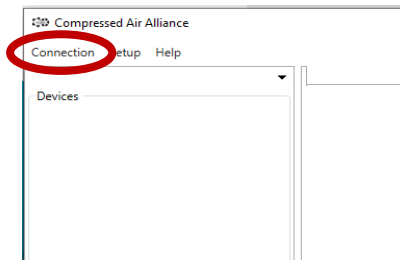
Dew Point Sensor connection

Dew Point Sensor - **No** Display

OR

Dew Point Sensor - **With** Display

Connect via Port A

Flow Meter Connection

Connect via Port A

Step 2 – Open CAA Service Software

- On your computer, open "CAA Service Software"

In the CAA Service Software:

- Click "**Connection**" (top left of the screen)
- Select "**Serial Port**" from the drop down list

1. Choose the correct **COM Port**
2. Click **Search**. The sensor will be auto-detected and shown in the dialogue box
3. **Tick** the sensor you want to update
4. Click **OK**
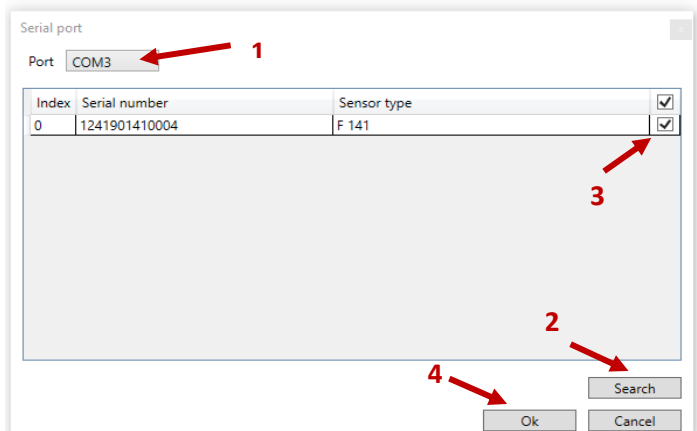
Step 3 – Update and save settings

Update the relevant settings (see instructions on the following pages).

Note: If you update multple settings (eg Modbus and Gas Type), you need to click 'Set' for Modbus and 'Set' for Gas Type.

Main Screen

Modbus Settings

Refer to the Sensor's User Manual for Modbus Communication Protocols and default Modbus settings.

The Modbus RTU / RS485 section allows you to change the Modbus settings – Baud Rate, Data Bits, Parity, Stop Bits, Response Delay and Device Address.

Change the Modbus settings

1. Change the relevant **Modbus setting(s)**
2. Click **Set**
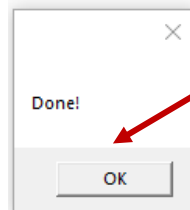3. Once the changes are made, a pop up will say "Done!". Click **OK**

Analogue (4-20mA) Settings

The Analog Output (4-20mA) section allows you to select which channel uses 4-20mA and what the scaling will be.

Change the 4-20mA settings

1. Select the **Output Channel** that will use the 4-20mA signal
2. Adjust the 4-20mA **Scaling**, if needed
3. Click **Set**
4. Once the changes are made, a pop up will say "Done!". Click **OK**
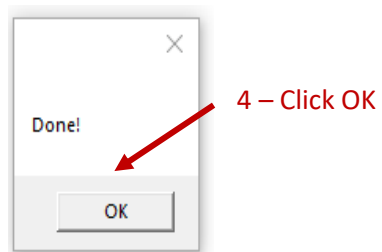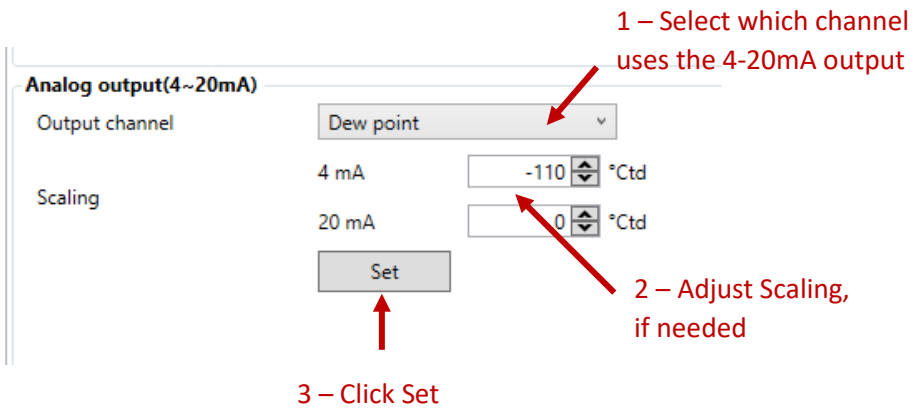
Measurement Units and Gas Type

The Measurement Parameters section allows you change the temperature and pressure units of measure, change the Dew Point filter grade, adjust the pressure and change the gas type.

Note: The flow meter and dew point sensor are calibrated in air. If you change the gas type, the sensor will automatically adjust its readings to match the gas selected.

Change measurement units or the gas type

1. Update the relevant setting(s)
2. Click **Set**
3. Once the changes are made, a pop up will say "Done!". Click **OK**

Flow Meters - Natural Gas and Bio Gas

You need to specify the composition of natural gas and bio gases.

To change gas type to Natural Gas or Bio Gas

- Click on **Set Up** (top left of the screen)
- Select **User Flow Natural Gas** or **User Flow Bio Gas**
- Adjust the **ratio of gases**
- Click **Set**
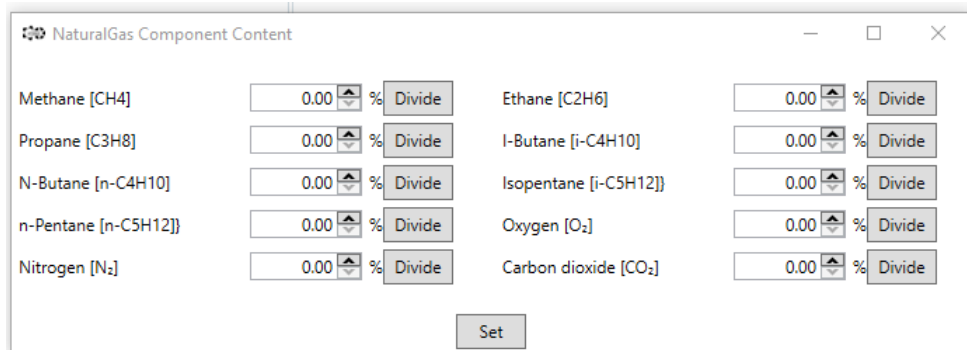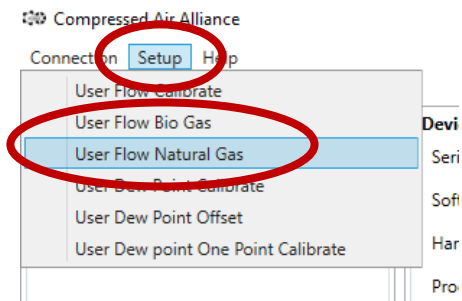
Firmware Update

The Device Information section will show you the serial number, software and hardware versions and the production date.
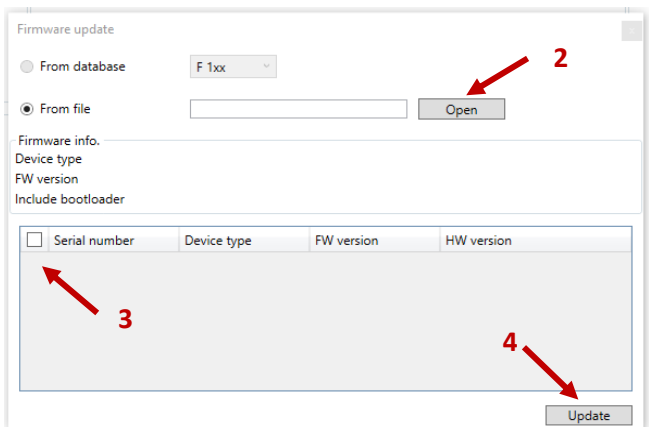

Dew Point Sensors - Updating Firmware

If the Firmware is updated, Compressed Air Alliance will email you the new Firmware File.
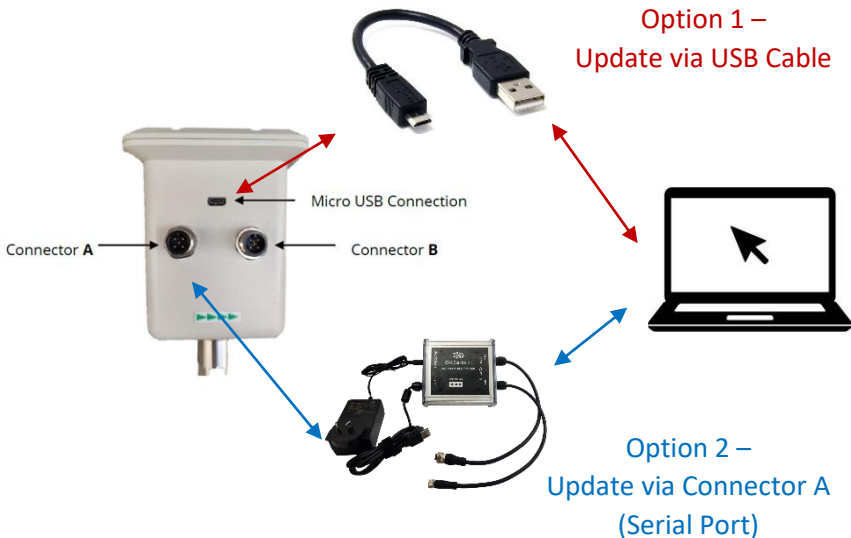
1. Click **Firmware Update**

2. **Open** the Firmware file on your computer

3. **Tick** the sensor you want to update

4. Click **Update**

5. Disconnect then reconnect the sensor

Flow Meters - Updating Firmware

You can update the Firmware for flow meters via the Micro USB Connection (Option 1) or the Connector A (Option 2).

- If you are only updating the firmware, Option 1 (via USB cable) may be the easier option.

- If you are setting up Natural Gas or Bio Gas or recalibrating the flow meter, as well as updating the Firmware, you should Option 2 (via Serial Port)

    o Note: All other flow meter parameters – Modbus settings, 4-20mA scaling, measurement units, standard gas types and data logging can be changed via the flow meter's in-built display. However, you can also update these settings using the CAA Service Software and connecting via Serial Port (Connector A).
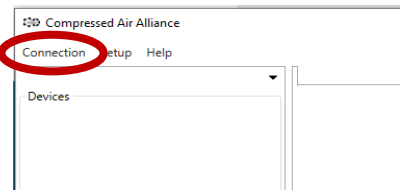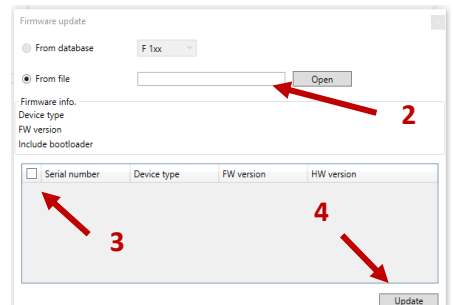
Option 1 – Update Firmware via USB Cable

- Connect the Flow Meter to your computer using a USB cable

- Open the CAA Service Software
- Click "**Connection**" (top left of the screen)
- Select "**USB**" from the drop down list

1. Click **Firmware Update**

2. Open the Firmware file on your computer

3. **Tick** the sensor you want to update

4. Click **Update**

5. Disconnect then reconnect the sensor

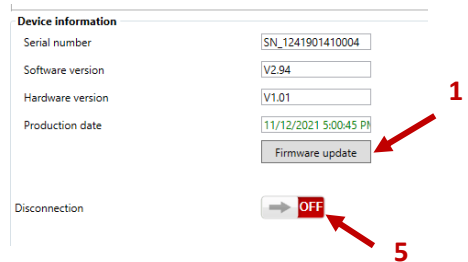## Option 2 – Update Firmware via Serial Port (Connector A)

- Connect the Flow Meter to your computer using a USB cable

- Open the CAA Service Software

- Click "**Connection**" (top left of the screen)

- Select "**Serial Port**" from the drop down list

1. Choose the correct **COM Port**

2. Click **Search**. The sensor will be auto-detected and shown in the dialogue box

3. **Tick** the sensor you want to update
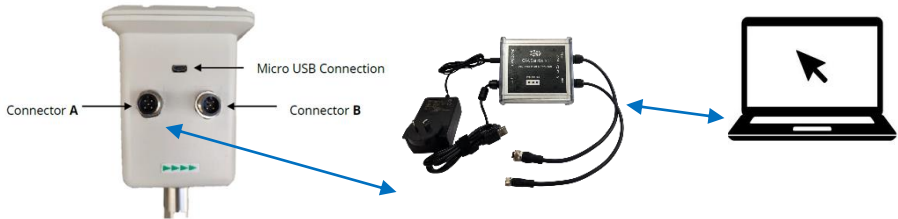
4. Click **OK**

1. Click **Firmware Update**

2. Open the Firmware file on your computer

3. **Tick** the sensor you want to update

4. Click **Update**

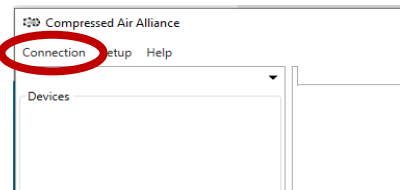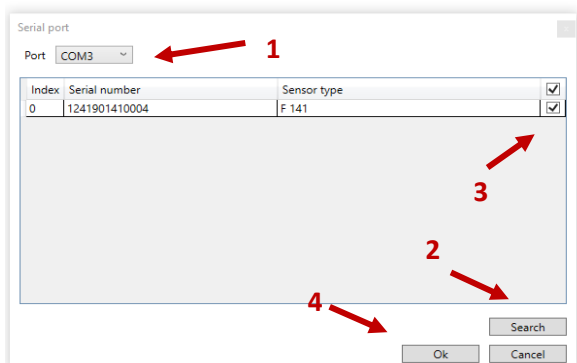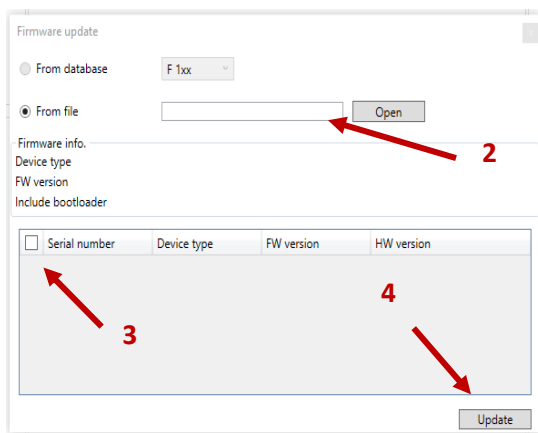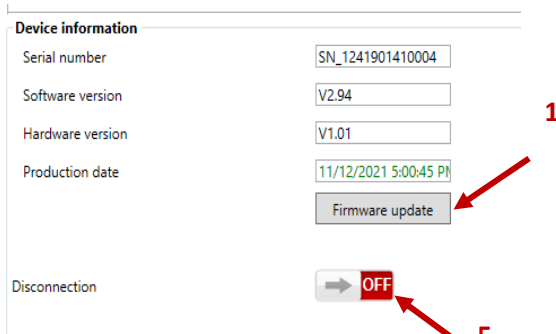5. Disconnect then reconnect the sensor

Advanced Settings

Calibration

Compressed Air Alliance does not recommend you recalibrate the sensor unless you are certain your reference conditions are accurate.

You can re-calibrate the flow meter or dew point sensor for your reference conditions.

Calibrate Sensor

- Click on **Set Up** (top left of the screen)
- Select**:**
  - o **User Flow Calibrate** to recalibrate Flow Meters
  - o **User Dew Point Calibrate** for multi-point calibration of dew point sensors
    - This method calibrates for dew point value (Ctd), not for relative humidity (%rH)
  - o **User Dew Point One Point Calibrate** for one point calibration of dew point sensors
    - This method allows you to calibrate points separately. Eg you can calibrate temperature only, or calibrate temperature, dew point, pressure and/ or gauge pressure.

Select which sensor to calibrate and which method to use
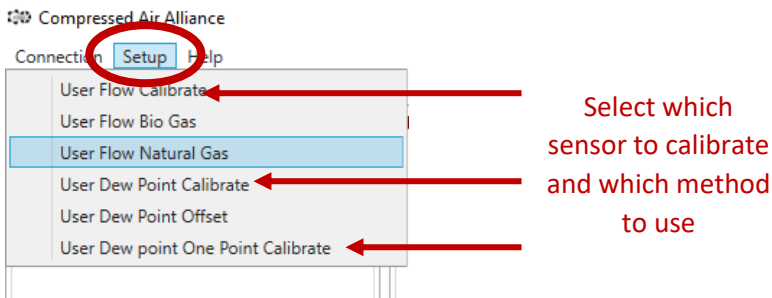
- Follow the prompts to add the relevant information and recalibrate the sensor.
  - o The *User Dew Point Calibrate* screen is shown below.
- **Record** your calibration data.

If this box is **ticked**, the Actual Flow will be the sensor's current reading (measurement). Otherwise enter a value.

After entering actual and reference data, click "Add" to enter it to the calibration table.

Replace one of the calibration points

The recalibration points will be entered here. The order of calibration points doesn't matter as the system will automatically sort it out.

Remove one or more calibration points
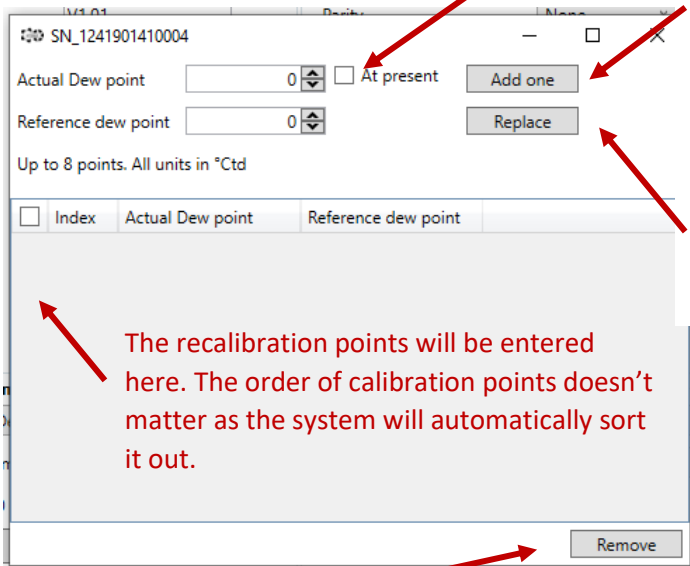
Sample calibration record

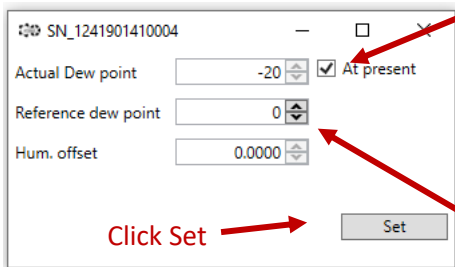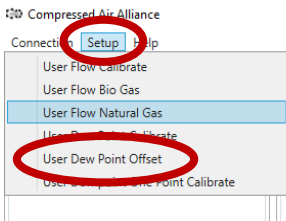| Index	Actual Dew Point (Ctd)	Reference Dew Point (Ctd)
Fixed Point	21	21
1	-30	-20
2		
3		
Fix Point	-101	-101

Dew Point Offset

Compressed Air Alliance does not recommend you offset the sensor unless you are certain your reference conditions are accurate.

You can offset the dew point readings to compensate for drift. **Note**: the offset method uses relative humidity %rH, not the dewpoint value Ctd to offset the whole measurement range.

Change Offset

- Click on **Set Up** (top left of the screen)
- Select **User Dew Point Offset**
- Add the relevant information
- Click **Set**. The Hum. Offset will be calculated after you hit Set
- If the offset value needs to be **reset to 0,** enter the same value for both "Actual Dew point" and "Reference dew point", then press **Set** button

If this box is **ticked**, the Actual Dew Point will be the sensor's current reading (measurement). Otherwise enter a value.

Enter the Reference Dew Point

Click Set

Contact Details and FAQ

Contact Details

If you need help using CAA Service Software or the CAA Service Kit, contact Compressed Air Alliance:

- Email: sales@compressedairalliance.com
- Phone (Australia): +61 1300 558 526
- Phone (International): +61 431 441 357

Frequently Asked Questions

How can I get access to the CAA Service Software

Please contact Compressed Air Alliance. They will send you're the software file which you will need to install on your computer.

How do I know if I have the latest Software and Hardware version for my sensor?

Please contact Compressed Air Alliance. They will confirm the latest firmware information.

How do I connect the sensor to my laptop?

You need the CAA Service Kit Box to connect the sensor to your laptop / computer. These can be purchased from Compressed Air Alliance or you can purchase your own one.

How do I update the settings on the Dew Point Monitor?

Please contact Compressed Air Alliance. They will provide more information on updating the Dew Point Monitor.

Compressed Air Alliance Pty Ltd

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