

## Connecting analog sensors to the CAL-EDGE-0 devices using a converter

### Introduction

This document provides information on how to electrically connect the CAL-EDGE-0 to the sensor Sonic Nozzle and how to configure it on CALMS, to get data.

The Sonic Nozzle sensor consists of two analog sensors, one for temperature and one for pressure. These two sensors are then connected to the CAL-EDGE-0 device via a converter. Each sensor then measures their appropriate quantities and sends the data to the CALMS web application.

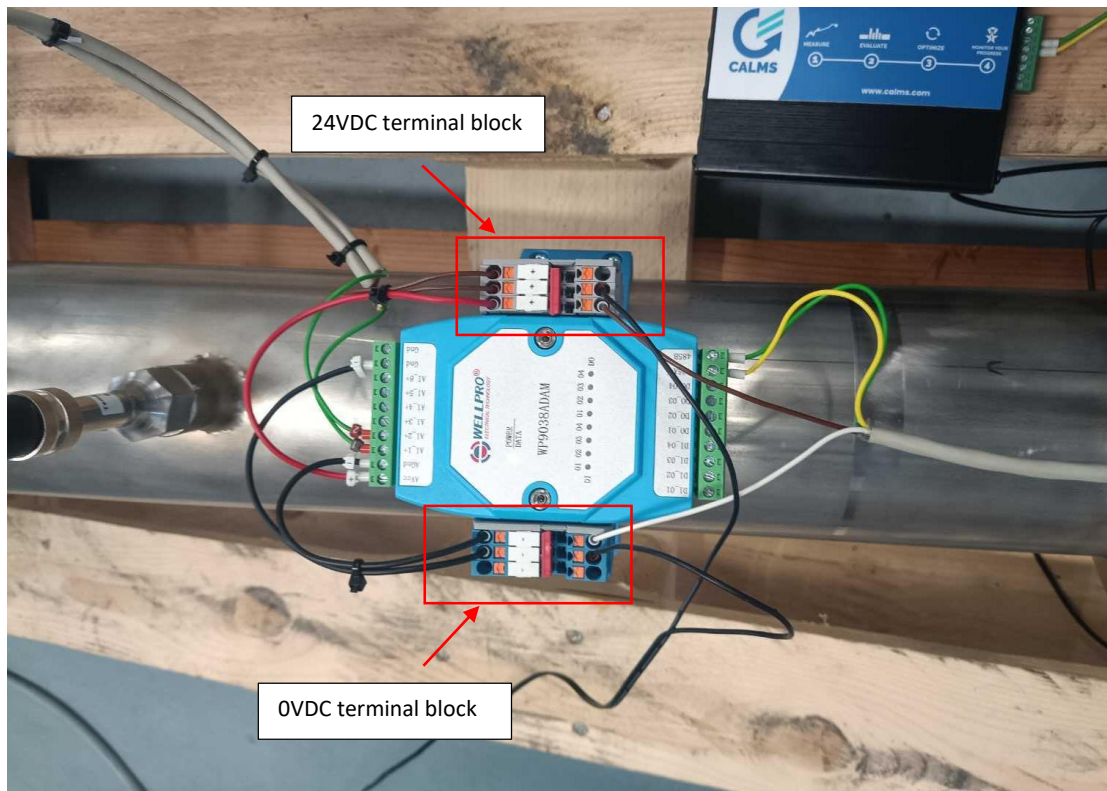
From these measurements then flow can be calculated.

The sensor is already prepared so the customer can just connect the CAL-EDGE-0 device and power supply for the devices.

### Electrical connection

It is extremely important to connect each device correctly otherwise data won't be sent and damage to the devices might occur.

For powering on the sensors and the devices 24VDC is used. The sensor is already equipped with 2 terminal blocks intended for power supply. One block for 24VDC, one for 0VDC.

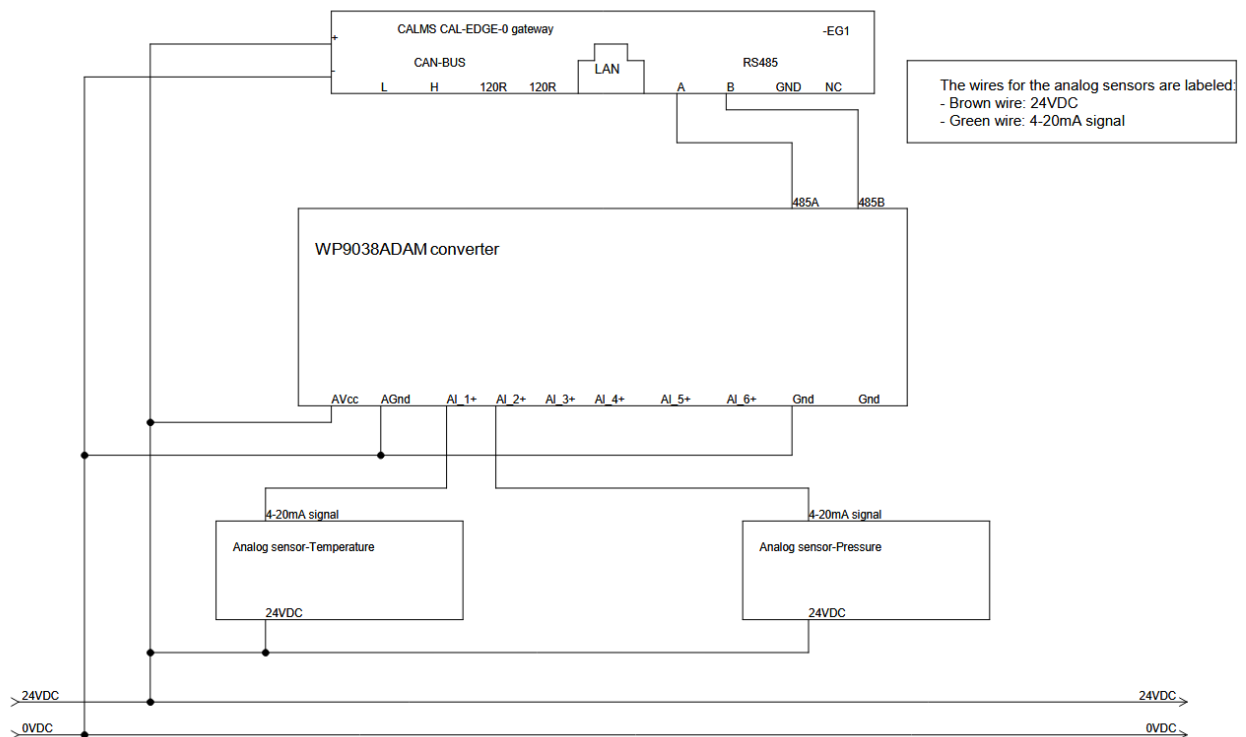


The two sensors have already assigned analog inputs, so it is strongly suggested to not change or rewire the inputs for the sensors.

The analog inputs for each sensor are:

- Analog input 1 : Temperature
- Analog input 2 : Pressure

How the sensors are connected to the converter is shown on the schematic below:



The CAL-EDGE-0 device is incorporated into this setup by:

- Powering on the device, **+ terminal on the CAL-EDGE-0 to the + terminal on the terminal block, 0V terminal on the CAL-EDGE-0 to the – terminal on the terminal block.**
- Connecting a wire from the terminal labeled **A on the CAL-EDGE-0 device** to the converter's terminal labeled **485A**, a wire from the terminal **B on the CAL-EDGE-0 device** to the converter's terminal labeled **485B**.

## Configuration on CALMS

After successfully wiring the devices, a proper configuration on CALMS must be done.

NOTE: Always notify the CALMS support team on which CAL-EDGE-0 device you are connecting to the Sonic Nozzle by providing the serial number of the device, located on the back side of the device.

To use that device (if not already), it must be added to your system. First, you open your system and navigate to the **Setup** page. There you click on **»Add device«** and choose your device.

Devices			
Device	Serial number	Status	Add device

On the **Equipment page** add a sensor on your scheme. To »connect« the sensor to your device you have to again choose your device (serial number) and choose the proper connection type like shown in the photo below – **Modbus RTU > IO to MODBUS RTU converter (WELLPRO WP9038ADAM)**.

Select connection type

Modbus RTU

Modbus RTU > IO to MODBUS RTU converter (WELLPRO WP9038ADAM)

Next is the sensor model. The sensor is named **Sonic Nozzle flow sensor**.

After adding the sensor the configuration window opens on the right bottom corner of the screen.

Connection configuration (Sonic Nozzle flow sensor)

Edge device

Test - ED 42

AI 1-Temperature

AI\_1+ (default)

AI 2-Pressure

AI\_2+ (default)

[Show advanced...](#)

FI.08 Input-Pressure

||

Use as

None

Custom label

Unit

[Custom](#)

bar

Output min

0

bar

Output max

1

bar

[Show advanced...](#)

FI.08 Input-Temperature

||

Use as

None

Custom label

Unit

[Custom](#)

°C

Output min

0

°C

Output max

1

°C

[Show advanced...](#)

To ensure getting the values from the sensors on CALMS, the user must fill in the following fields correctly:

- Range for the temperature sensor
- Range for the pressure sensor

Save the changes.

If the device is powered on and the sensor is already connected to it and configured on CALMS, the device immediately establishes connection by flashing the **RS485 LED red rapidly**. Also, the device already starts sending data to the web application. The customer has the option to view the live values from the sensors as they are changing by navigating to the **Device dashboard page** and **clicking the Live button**, to enable the live monitoring of the data.



## Contact and support

If you experience any issues that cannot be resolved using this manual, please contact the CALMS support team [support@calms.com](mailto:support@calms.com).

For technical assistance, please, provide the following information when reaching out:

- Serial number (located on the device label)
- Description of the issue
- Steps already taken to resolve the issue



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