

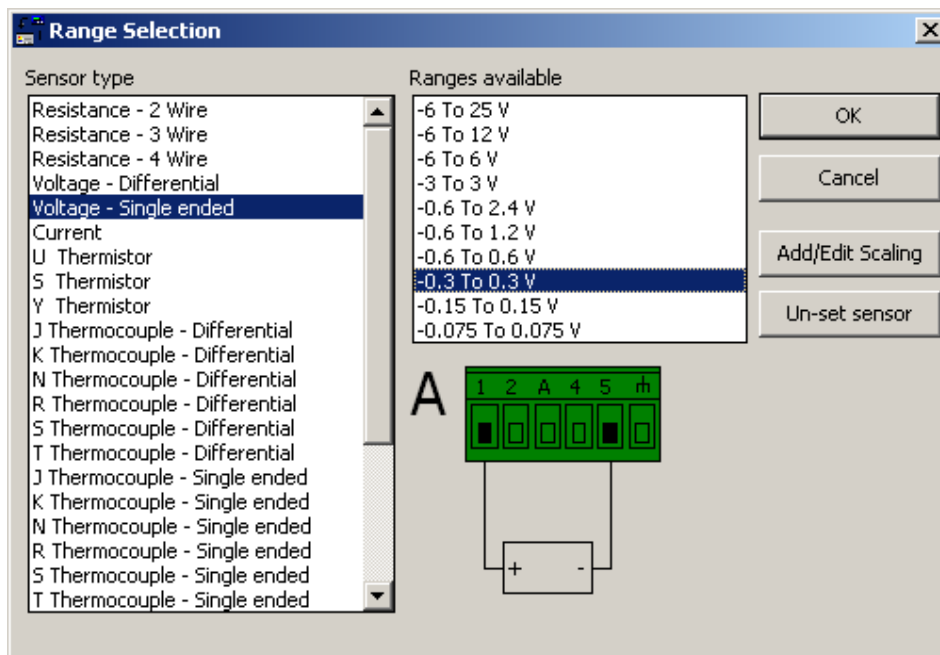
## Single ended current inputs for the OM-SQ2020/2040

Please note that we normally recommend that current ranges use differential inputs for safety. It is possible to create single ended current range inputs but we recommend the following:

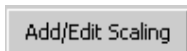
1. The current sense resistors have their common pin (pin 5 on the connector) joined to the 4-20mA supply negative.
2. The 4-20mA supply negative pin is held at or near the logger's negative supply voltage.

Other inputs on the same connector are not used to measure other voltages (although measuring the 4-20mA supply voltage is still allowed).

To set up single ended current you have to use a voltage input range



To scale a 4 to 20 mA output range into engineering units  
Click



The combination of the selected voltage range and the required 10 ohm resistor shunts results as

0.3 is equal to 30 mA and -0.3 = -30 mA

This means that

$$0.2 = 20\text{mA}$$

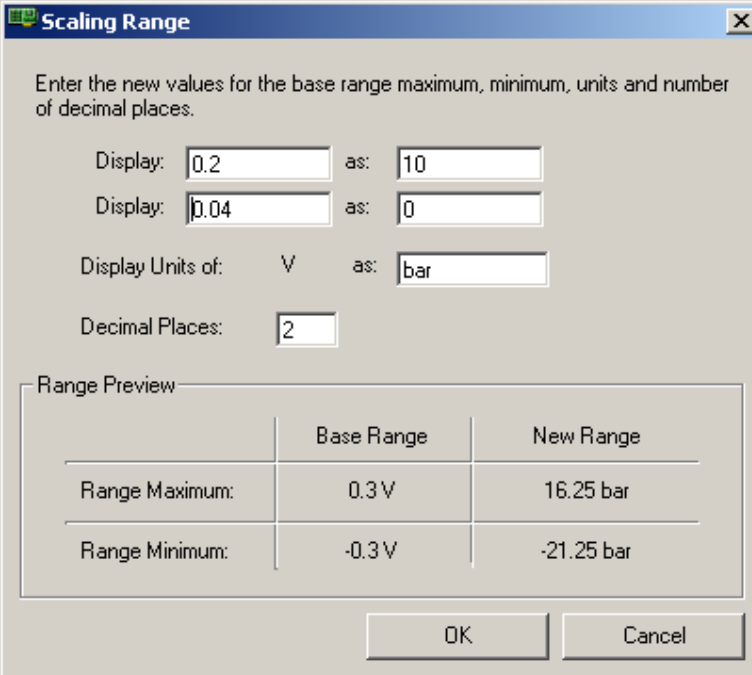
$$0.04 = 4\text{mA}$$

So for example a pressure sensor with output range

$$20\text{mA} = 10 \text{ bar}$$

$$4\text{mA} = 0$$

You need to scale as.



The image shows a 'Scaling Range' dialog box with a title bar and a close button. The main text says 'Enter the new values for the base range maximum, minimum, units and number of decimal places.' There are four input fields: 'Display' (0.2), 'as' (10), 'Display' (0.04), and 'as' (0). Below these are 'Display Units of:' (V) and 'as:' (bar). There is also a 'Decimal Places:' field with the value 2. At the bottom, there is a 'Range Preview' section containing a table with two columns: 'Base Range' and 'New Range'. The table has two rows: 'Range Maximum:' and 'Range Minimum:'. The 'Base Range' column shows '0.3 V' and '-0.3 V' respectively. The 'New Range' column shows '16.25 bar' and '-21.25 bar' respectively. At the bottom right of the dialog are 'OK' and 'Cancel' buttons.

	Base Range	New Range
Range Maximum:	0.3 V	16.25 bar
Range Minimum:	-0.3 V	-21.25 bar

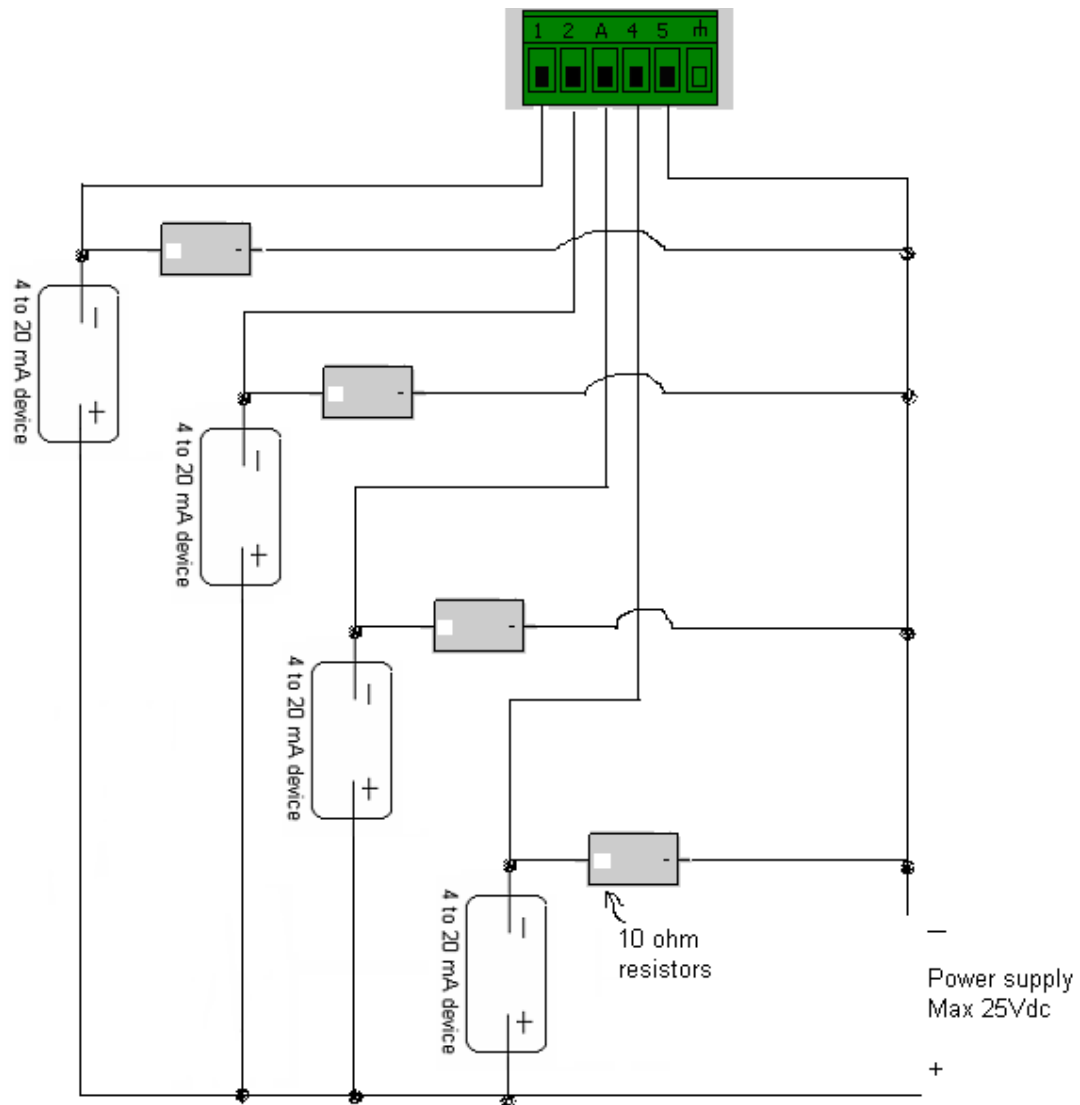
i.e.

0.2 is always = to full-scale output value.

0.04 is always = to minimum output value.

Repeat the procedure for the next three channels of the input block.

Connect 4 to 20 mA inputs with 10 ohm resistors as below



Power could be taken from sensor power of the OM-SQ logger but the max current permitted from output terminal E is 100mA.