

TT016: Externally Powered 4-20mA Gas Sensor

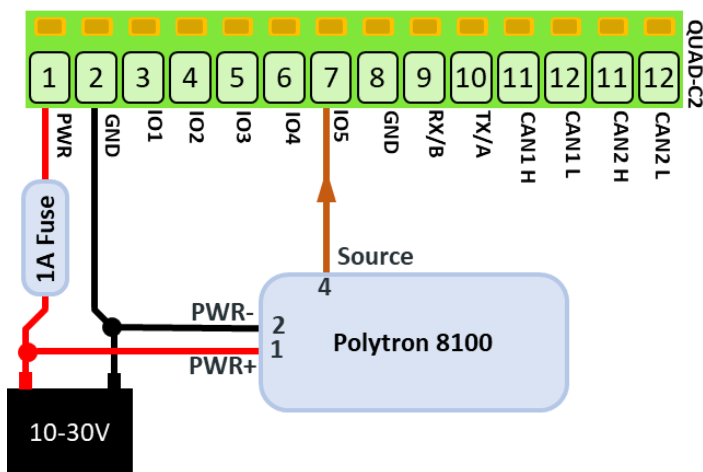
This technical tip shows how to connect an externally powered 4-20mA sensor to the QUAD-C2. The QUAD has five 4-20mA channels that can source or sink current. To sink current from an externally powered sensor, a path to GND must be provided by making the selected IO switch to GND during measurement.

Sensor Parameters

Part Number	Dräger Polytron® 8100 EC
Type	Detection of toxic gases or oxygen.
Output	4-20mA, 3-wire
Rating	Explosion proof – use with Zener barrier where appropriate
Supply Voltage	10-30V
Supplied by	Dräger



Polytron 8100 Gas Sensor



QUAD-C2

Setting (IO5)	Value	Comment
Name	H2S – Sewer A3	A meaningful name for the sensor data
Interval	1	1 means the sensor is sampled on every base interval
Default State	GND	Provide a path to ground for the current sourced by the sensor. This could also have been OFF, only being turned on for a measurement.
Measurement State	GND	Provide a path to ground for the current sourced by the sensor.
Measurement Time	2 sec	Sensor will be measured 2 sec after switching to GND to allow sensor stabilisation.
Measure Voltage	Enabled	Not necessary but may as well keep an eye on the voltage applied to the sensor.
Measure Current	Enabled	Measure current that flows to the sensor (+ve into the sensor, -ve into the QUAD)
Current – Calibrated Units	Ppm	The unit of measure for the calibration; typically, ppm or %LEL
Current - Calibration Low In	-4	Lowest current that will be sourced by the sensor (-ve as it flows into the QUAD).
Current - Calibration High In	-20	Highest current that will be sourced by the sensor (-ve as it flows into the QUAD).
Current - Calibration Low Out	0	The datasheets specifies that 4mA represents 0ppm
Current - Calibration High Out	100	The datasheets specifies that 20mA represents 100ppm
Current - Alerts	Optional	Set if required.