

Detector Connections

PPS-RCO Series detectors has a power input and three relay output sockets on main board:

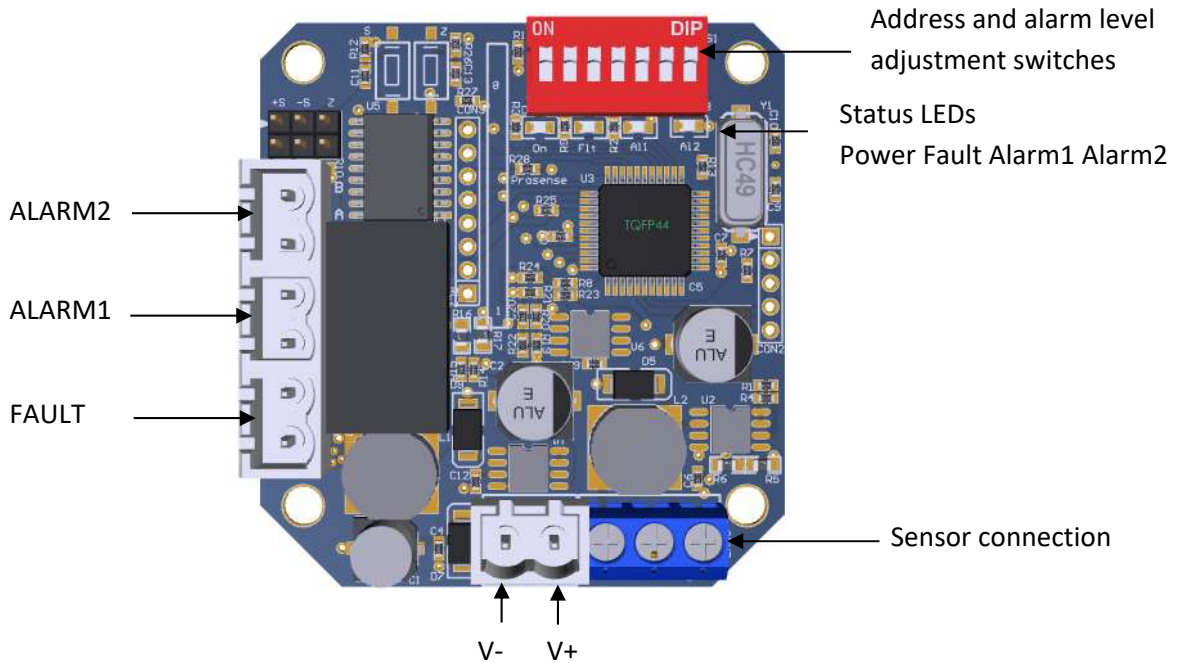


Diagram 1: PPS-RCO Series detector main board

PPS-RCO Series detectors has three integrated relays on main board which are named as Alarm1, Alarm2 and Fault. Relays are not energised and only works as NO (Normally Open) status. It is not possible to adjust relay activation method. Alarm1 relay will be activated when alarm1 threshold level exceeded. When Alarm2 threshold level reached Alarm 1 and Alarm2 relay will be activated together. Fault relay will be activated only on fault conditions. Alarm levels are adjustable to predefined levels. Switches 6 and 7 should be used to change alarm levels.

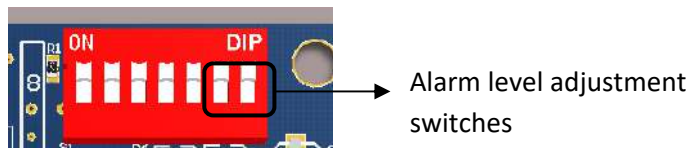


Diagram 2: PPS-RCO Series detector alarm level adjustment switches

Alarm levels and related switch positions are given in table-3:

Switch 6	Switch 7	Alarm1	Alarm2
OFF	OFF	20	75
OFF	ON	40	100
ON	OFF	100	200
ON	ON	150	250

Table 1: PPS-RCO Series detector alarm levels

System Status

Prosense PPS-RCO Series detectors has four LEDs on main board. Power LED (green) shows system power status and yellow LED shows fault status. Fault relay will be activated and Fault LED (yellow) will start flashing right after power applied. After approximately 90 sec the yellow LED will be turned off and only power LED (green) will start blinking. This status means that detector is ready to normal operation. In case of fault power LED (green) will continue blinking and fault LED (yellow) will be lit solid. The alarm LEDs (red) will be activated when detector measures gas level at alarm thresholds and also activate related alarm LEDs.

First time switch on (Commissioning)

WARNING

The following procedure requires the detector cover to be removed while carrying out supply voltage checks. Therefore the appropriate permits to work should be sought in preparation. Prior to carrying out any HOT WORK ensure local and site procedures are followed. Ensure that the associated control panel output actuation is inhibited so as to prevent false alarms.

Caution: The following procedure should be followed carefully and only performed by suitably trained personnel

1. Remove the detector cover
2. Make sure the detector's output and power input connections done correctly
3. Check that all electrical connections are terminated correctly
4. Switch On the external power supply to feed the detector. If it is connected to DP32 Panel, cables should be installed according to DP32 Panel user manual as panel can provide both power and communication connections to the detectors.
5. Using a Digital Multi Meter (DMM), check the Supply Voltage at the terminals V+ and V- this should be a minimum supply voltage of 12VDC (Maximum supply voltage is 24VDC).
6. Check LED status on detector main board. LED status should be like explained above after applying power.
7. Wait two minutes and confirm detector LED status pointing normal operation. If detectors used with DP32 Panel, panel should recognise each detector correctly at their addresses.
8. Switch Off the external power to the detector.
9. Fit the cover and make sure none of the cables cause an obstruction while fitting cover
10. Switch on external power to the detector or panel if used.

Calibration

It is recommended to periodically carry out calibration to ensure correct operation.

Calibration should be done by a person who trained and certified by local or international authorities.

Detector should be powered and stabilized for at least 30 minutes before calibration. To calibrate the detector, use an appropriate span gas cylinder, constant flow regulator and Prosense Gas Cap. The flow rate used for calibration gas is 0.5 L/Min.

Zero Calibration

It is recommended to use a compressed air cylinder (20.9%Vol oxygen) to perform the zero calibration if the area where the detector is located contains any residual amount of the target gas. If no residual gas is present then the background air can be used to perform the zero calibration. To perform Zero calibration put a jumper to Z pins on detector main board and press Zero button for 3 seconds. The zero level will be automatically adjusted.

Span Calibration

As there is only relay outputs and RS485 communication ports available on detector it is necessary to use a control panel to see gas measurement of the detector during the span calibration. If RS485 communication is not possible calibration should be done in a service center. To perform Span calibration apply gas to detector via using the Gas Cap while detector is energised and working. The signal level vary depending on the used gas for calibration and gas concentration. If the measured level is lower than the calibration gas level, put a jumper to S+ pin press to Span button till the level reaches the necessarily value. If the measurement level is higher than the necessary value, put a jumper to S- pin and press to Span button till the level reaches the necessarily value. Once the span calibration completed remove the jumper and put as a spare on to detector board.

Important: Never put jumper on both S+ and S- pins and press any button.

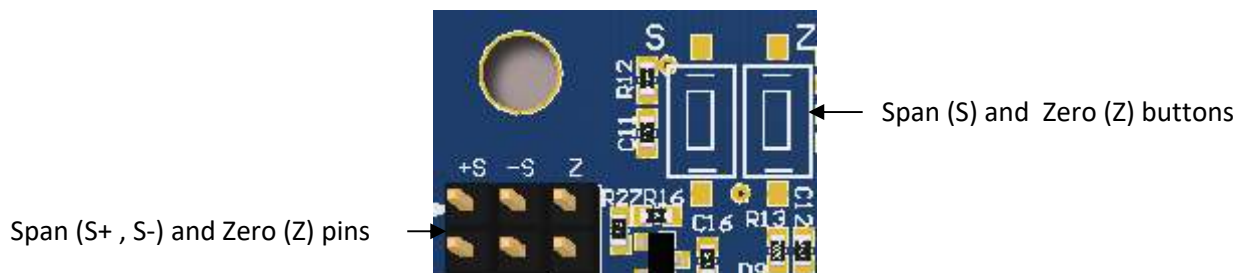


Diagram 3: Calibration buttons and pins

General Specification

PPS-RCO Series Detector Electrical Specifications:

Input Voltage Range	12 to 20VDC (16VDC nominal)
Max Power Consumption	0.96 Watts at 16VDC - normal condition 1.60 Watts at 16VDC - alarm and fault condition
Terminals	4 x 2 x screw terminals suitable for wire diameter 1.5mm ² to 2.5mm ²
Relays	3 x (1A 30VDC, 0.5A 125VAC, 0.3A 80VDC). Non-selectable: normally open and de-energized
Communication	RS485, Modbus RTU
Sensor	Electrochemical

Table 2: PPS-RCO Series detectors electrical specifications

Detector Body Specifications:

Material	Plastic (black)
Weight	Plastic boat: 230g (with Sensor Header)
Mounting	Wall mounting
Entries	PG11

Table 3: Detector body specifications

Environmental:

IP Rating	IP54 (plastic boat)
Operating Temperature	-10°C to +50°C / 14°F to +120°F
Operating Humidity	Continuous 20-90%RH (non condensing)
Operating Pressure	90-110kPa
Storage Conditions	-10°C to +50°C (14°F to +120°F)

Table 4: Environmental specifications