VECTOR Frequently Asked Questions

How many sensors can be connected to the VECTOR Field Control Unit?
The Vector can be configured to detect either 1 or to 2 sensors.

Which sensors can be connected to the VECOTR FCU?
All of ESP Safety gas detectors can be connected, SGOES, TGAES and PGU. The PGU must be connected to the VECTOR FCU. The SGOES and TGAES can operate independently without the VECTOR FCU.

How can the VECTOR configuration be changed to detect either 1 or 2 sensors?
The VECTOR configuration of number of sensors to detect can only be changed using ESP Commander programming software via RS485 and using a laptop.

Can the gas sensor be remotely installed away from the VECTOR FCU?
Yes, the gas sensors can be remotely installed up to 500 feet away from the VECTOR FCU.
The PGU will need a junction box where the PGU can terminate and from there run 4 leads to the Vector. The 4 leads are for 2 for power and 2 for RS485 communication. The PGU is powered from the Vector.

How can the calibration be performed using the VECTOR FCU?
Using the magnetic wand to access the menu on the VECTOR display, the calibration menu can be access without the need of additional electronics.

Does the VECTOR have a dedicated port for HART Communication?
Yes, the VECTOR has a dedicated pin connector in which an ESP Safety HART port cable can be connected between the VECTOR and HART Communicator.

Can the VECTOR be used a standalone gas detector with the addition of strobe or audible alarms?
The VECTOR has 3 programmable alarm relays and 1 Fault Relay. The relays can be used to connect peripheral devices such as strobe lights or horns to alarm when the alarm threshold levels are reached.

How can the alarm relays be reset if a high-high alarm is latched after reaching the threshold level during normal conditions or by performing a bump test?
Using the magnetic wand and accessing the settings on the VECTOR display, the latched alarms can be cleared by accessing the, Alarm Reset setting.

How to fix a "No Signal" error on the VECTOR display?
The No Signal occurs when there is a communication error between the VECTOR and the sensor connected to the field control unit. Verify the connection of the PGU leads or the leads of the sensor connected to the VECTOR. Verify the wiring is correct and that the power supply and RS485A and RS485B match the correct wires from the sensor in the VECTOR Terminal board.

What is an Under-Range error in the VECTOR and how to fix it?
The under-range error will occur when there was a misstep in the calibration and the calibration process was not performed correctly or the wrong gas concentration was applied at the incorrect calibration step. To fix the error, the gas detector will need to be re-calibrated again. Repeat the calibration up to 3 times, if the issue continues, contact the factory.

How to fix unstable concentration readings displayed on the VECTOR?
The VECTOR is the Field Control Unit and transmitting information received from the sensor connected to the VECTOR. The unstable readings are originating from the senor, either a PGU, SGOES, or TGAES, whichever is connected to the VECTOR.
For PGU verify that plug in cell sensor is properly connected inside the housing of the PGU, then recalibrate the sensor.
For SGOES verify that the mirror inside the gas detection chamber is free of dirt or particles that may be obstructing the infrared path. Clean the detection chamber and mirror, then perform a calibration.
For TGAES verify that the signal levels are within the acceptable range 40-80% and realign the TGAES.

How to change the alarm threshold levels?
The alarm threshold levels can be changed using the magnetic wand on the VECTOR Display. Access the menu and then change the desired Alarm Settings for Alarm 1, Alarm2, and Alarm 3.

How long does the VECTOR remains in calibration mode before timing out?
The Calibration mode will time out after 5 minutes of inactivity.

How many gases are required for a calibration?
The minimum calibration gas concentrations are two: Zero nitrogen gas and 50% of concentration of the sensor range.

Can other concentration gases be used for calibration?
It is recommended to use calibration gases that are ±20% of the mid span and full range of sensor range.

How can the displayed engineering units of the gas concentration be changed?
The engineering units of the gas concentration can only be changed using ESP Commander software via RS485 communication and a laptop that has ESP Commander software installed.