VECTOR

ESP Safety's **Vector** model field control unit performs as an integrated control terminal and display for ESP Safety's gas detector product line. The **Vector** can operate as a stand-alone display for a variety of our gas detectors which can be remotely located up to 500 feet away. A sensor head can also be attached directly to the display housing to produce a unified detector/display unit.

Key Features

- Vivid 2.7" (diagonal) 128x64 pixal resolution, OLED screen simutaneously display a wide range of data including gas concentrations, alarm levels, faults and operational modes
- Analog 4-20 current loop with HART, Digital RS- 485 Modbus RTU, and 4 relays are standard data communication channels of the **Vector**
- Non-intrusive, onsite detector calibration via HART Field Communicator or Magnetic Wand
- Operating Temp Range of -58°F to +167°F (-50°C to +75°C)
- Configurable to control & monitor up to two detectors
- SIL-2 certification by independent 3rd party agency NRTL
- 316 Stainless Steel construction, Explosion-Proof Housing, Class1, Division 1

SIL2
CERT

Features and Benefits

- Tri-color status LED indicates operational mode, fault, and gas presence.
- 4 indicators: 3 warning & alarm level LEDs, and 1 calibrationLED
- 128 x 64 pixel OLED display providing continuous graphical indication of trending data for Peak Reading and Time-Weighted Average(TWA) of gas concentration
- Remote sensor option allows the user to either connect the Vector up to 500 feet away or install the unit at the site of the potentialhazard
- Robust construction and heated optics withstand harsh environments
- Plug-in, pre-calibrated (field replaceable) gas sensors
- Enhanced temperature range
- 5 year warranty

Applications

- Offshore platforms
- Shipping tankers,freighters, and other vessels
- LNG/LPG processing & storage facilities
- Oil & gas refineries
- Petrochemical plants
- Gas & electric utilities

CALIFORNIA
555 N. First Street | San Jose, CA 95112
Ph: +1-408-886-9746 | Fx: +1-408-886-9757

TEXAS
4001 W. Sam Houston Parkway N. Ste #150 | Houston, TX 77043
Ph: +1-713-999-1050 | Fx: +1-713-999-1060

ESP Safety Inc.
info@espsafetyinc.com
www.espsafetyinc.com

ELECTRICAL CHARACTERISTICS

Voltage	+24VDC Nominal (+18 to 32 VDC)
Power	4.3 W standby, <5.3 W during alarm 12.0W with heater on (temp≤30°C)
Outputs	1) Analog signal: 2x+4-20mA 2) Digital RS-485, Modbus RTU 3) HART communication port 4) Three User Programmed Alarm Relays, One Fault Relay

TECHNICAL SPECIFICATIONS

Humidity	0 to100% relative humidity, noncondensing
Operating Temperature	-58°F to +167°F (-50°C to +75°C)
Storage temperature	-76°F to +185°F (-60°C to +85°C)
Ingress Protection	IP 66
SIL Rating	SIL 2

Sensor's Type	Gas	Gas Formula	Detected Component Measuring Range	Accuracy	Response Time
Plug-in universal gas sensors optic infrared PGU-IR	Methane	CH4	(0-100) % LEL	± 2% full scale	T20<5 seconds T90<10 seconds
	Propane	C3H8			
	Ethylene	C2H8			
	Hexane	C6H14			
	Butane	C4H10			
	Isobutane	I-C4P10			
	Ethanol	C2H5OH			
	Cyclopentane	C5H10			
	Propylene	C3H6			
	Methanol	CH3OH			
	Gasoline Vapor	*			
	Diesel Vapor	*			
	JP4 Vapor	*			
	Carbon Dioxide	C02	(0-2)% vol. (0-5)% vol. (0-3000) ppm	± 2% full scale	T50 <3 seconds TOO <5 seconds
Plug-in universal gas sensors photoionized PGU-P	Isobutylene	C4H8	(0-20) ppm (0-200) ppm (0-2000) ppm	± 2% full scale	T20<5 seconds T90<25 seconds
	Benzene	C6H6	(0-100) ppm (0-1000) ppm (0-10000) ppm	± 2% full scale	T50<9 seconds T90<25 seconds
	Butadiene	C4H6	(0-20) ppm	± 2% full scale	T50<9 seconds T90<25 seconds
	Methyl mercaptan	CH3SH	(0-100) ppm Other ranges per request	± 2% full scale	T90 <25 seconds
	All gases with ionization potential <10.6 eV				
Plug-in universal gas sensors electrochemical PGU-E	Hydrogen Sulfide (MOS)	H2S	(0-100) ppm	± 2% full scale	T90 <20 seconds
	Oxygen	O2	(0-30) % vol.	± 2% full scale	T90 <11 seconds
	Carbon monoxide	CO	(0-100) ppm (0-500) ppm (0-1000) ppm	± 2% full scale	T20<10 seconds T90<25 seconds
	Hydrogen sulfide	H2S	(0-50) ppm	± 2% full scale	T20 <6 seconds T50 <10 secondsT90 <15 seconds
	Hydrogen sulfide	H2S	(0-100) ppm	± 2% full scale	T50 <3 seconds T90 <7 seconds
	Nitrogen dioxide	N02	(0-20) ppm	± 2% full scale	T50<12 seconds T90<25 seconds
	Sulfur dioxide	S02	(0-20) ppm (0-100) ppm	± 2% full scale	T50<12 seconds T90<25 seconds
	Ammonia	NH3	(0-100) ppm	± 2% full scale	T90 <60 seconds
	Chlorine	C12	(0-20) ppm	± 2% full scale	T90 <25 seconds
	Hydrogen chloride	HCl	(0-30) ppm	± 2% full scale	T50<30 seconds T90<90 seconds
	Hydrogen fluoride	HF	(0-10) ppm	± 2% full scale	T50<30 seconds T90<90 seconds
	Formaldehyde	CH2O	(0-10) ppm	± 2% full scale	T50 <20 seconds
	Methanol	CH3OH	(0-100) ppm	± 2% full scale	T90 <90 seconds
Plug-in gas universal gas sensors Catalytic PGU-C	Hydrogen	H2	(0-4)%vol. (100%LEL) (0-100) ppm (0-1)%	± 2% full scale	T50 <5 seconds T90 <8 seconds

MECHANICAL CHARACTERISTICS

Material	Aluminum and 316L Stainless Steel
Conduit Connection	2 Conduit Entries 3/4"NPT
Dimensions	10.7"x 5.9"x 4.8" **(Vector + PGU)
Weight	14 lbs (6.4 kg)
Housing Warranty	5 years

CERTIFICATIONS

FM APPROVED
Class I, Division 1
Groups B, C & D
T4 Ta = -40°F to +167°F
(-40°C to +75°C)
IP66

CSA
Class I, Division 1
Groups B, C & D
T4 Ta = -40°F to +167°F
(-40°C to +75°C)
IP66

Ex CE
Ex d IIC T4
-58°F to +167°F
(-50°C to +75°C)
IP66

SIL 2 Rated

IEC IECEx
Ex d IIC T4
-58°F to +167°F
(-50°C to +85°C)
IP66