EP01-x

Propane Gas Detector Manual

Version 1.0

Important note

The information contained in this manual is for EP01-x.

1. Features

- Long life MOS sensor
- Propane gas detection
- 5-85% LEL detection
- 5 seconds start-up time
- 24 hours pre-heat time (immediate used is allowed)
- LED power supply/alarm indicator
- 2.5W Maximum power consumption
- NC dry relay
- Optional factory calibrated humidity ranges (0-30%, 31-70%, 71-95%)
- Field-adjustable calibration via trimpot
- 12-28V d.c. wide input voltage supply

2. Description

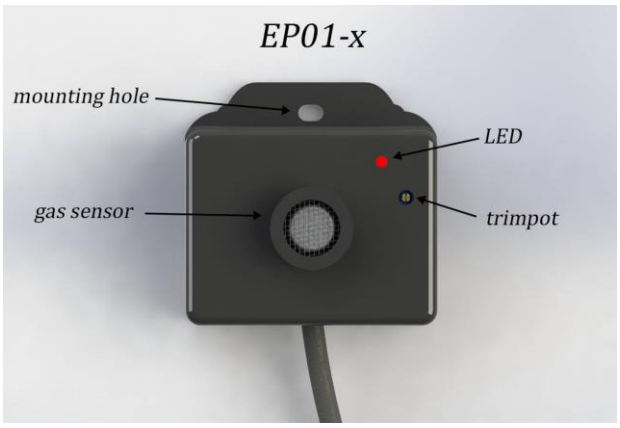


Fig. 1 Gas Detector EP01-x

EP01-x is a dc-powered Propane (C3H8) gas detector utilized in the refrigeration industry for LEL monitoring within the range of 5-85% LEL. A dry relay is provided to shut down valve as it is Normally Closed (NC) in the powered state. The sensor is fail safe for loss of power. This sensor is intended for gas detection and not display. A red LED is used to indicate power supply and alarm trigger. The gas detector is suitable for temperatures ranging from 0 to 50 $°C$. This device is factory calibrated for alarm accuracy under ambient conditions (25 $°C$) and for three ranges of humidity: 0 to 30% (L), 31-70% (M) and 71-95%(H). The device support a wide input voltages ranging from 12V to 28V d.c and has a maximum power consumption of 2.5W.

3. Specifications

Specifications	
Models(x)	Low(L), Medium(M), High(H) Moisture
Range	5-85% LEL
Input Voltage	12-28V d.c.
Maximum Power Consumption	2.5W
Operating Temperature Range	0-50 °C
Operating Humidity Range	0-30%(L), 31-70%(M), 71-95%(H)
Pre-Heat Time	24 Hours (Immediate used is allowed)
Relay Rated Load	10A, 250V a.c. /24V d.c.
Dimension	67 x 70 x 36mm
Cable Input & Output	(7 x 0.5mm) 4 Cores-2 In 2 Out

4. Operation steps

1. **For single sensor detection, setup the sensor according to Fig. 2[a].**
    a. Red wire is connected to the power supply.
    b. Black wire to the ground.
    c. Blue wire is connected to power supply.
    d. White wire is connected to the valve power end[b].
    e. Valve ground end[b] is connected to the ground.

2. **For multi sensors detection, setup the sensor according to Fig. 3.**
    a. Red wires are connected to power supply.
    b. Black wires are connected to the ground.
    c. Blue and white wires are connected between sensors to link the relays of the sensors in series.

3. **Supply 12-28V d.c. to the gas detector and wait for a 5 seconds initialization.**
    a. During the initialization, the valve is NC.
    b. LED blinks at approximately 1 sec interval.

4. **After initialization, the detector enters detection mode.**
    a. A preheat phase of 24 hours is needed for better accuracy (immediate use is allowed)
    b. LED light without blinking

5. **When a gas leakage exceeded the factory calibrated threshold, the detector enters alarm mode.**
    a. Relay contact is opened.
    b. LED blinks at approximately 250ms interval.

c. The gas sensor remains in alarm mode for 5mins and before returning to detection mode.

6. **User can adjust field calibration trimpot to adjust the gas detection threshold to suit specific environment for gas detection[c].**

a - Fig. 1 sample connection is for 24V d.c. power supply and 24V d.c. rated valve.
b - Valve power and ground ends can vary according to difference valve models, colors of the valve ends are not specified here, user is advised to refer to the manual of the implemented valves for connection confirmation.
c – User should seek for advice from professional in Section 8 (Contact Information) before adjusting the field calibration trimpot.

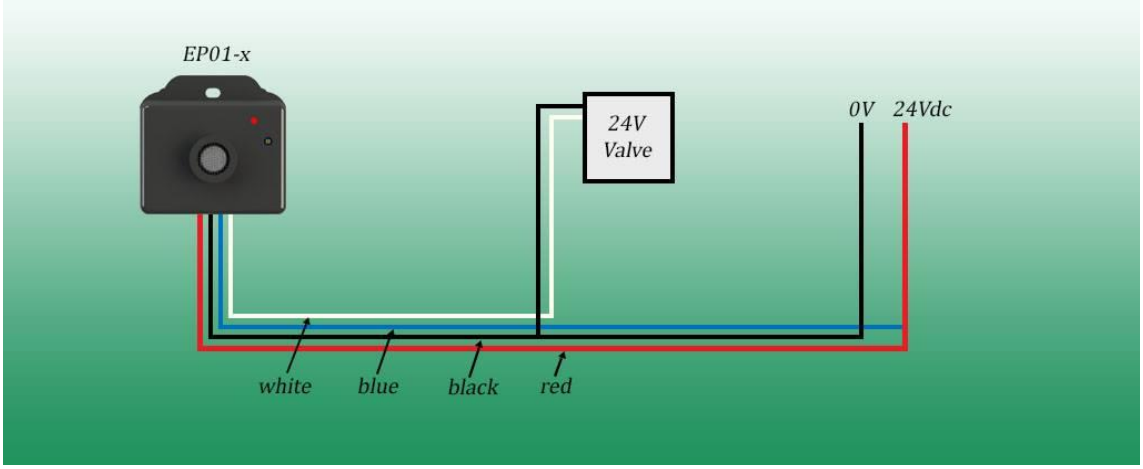


Fig. 2 Single sensor detection setup for valve cut-off on alarm

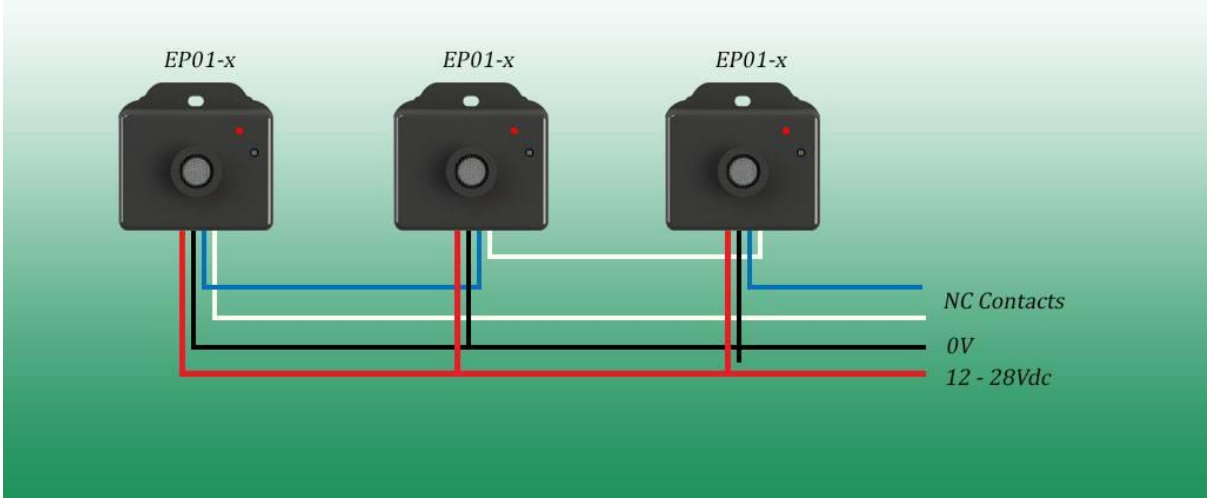


Fig. 3 Multi sensors detection setup with NC Contacts that open on alarm.

5. Dimension

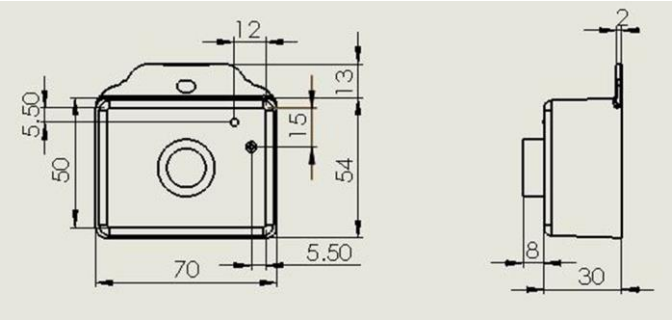
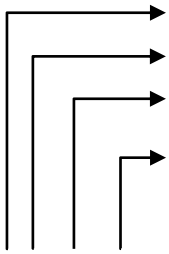


Fig. 4 EP01-x dimension (mm)

6. Prohibited Conditions

1. Exposed to organic silicon fumes.
    a. Silicon steam can cause sensor detection inaccuracy.
2. Exposed to high corrosive gas.
    a. Corrosive gas such as H2Sz, SOX，Cl2，HCl will result in sensor structure corrosion and sensitivity attenuation.
3. Exposed to alkali, alkali metals salt, halogen pollution
    a. Contact with alkali metals salt such as brine and halogen such as fluorin can reduce the sensor performance.
4. Water immersion
    a. The sensor is spray proof; however immersing the sensor into water will caused permanent damage to the device.
5. Inappropriate supply voltage
    a. Supply voltage more than 28V d.c. or lower than 12V d.c. will result in sensor malfunction.
6. Used in high gas concentration
    a. Sensor characteristic will be affected if exposed to high gas concentration in a long period when the sensor is either turned on or off.
7. Long time storage
    a. Storing the sensor without power supply results in reversible drift, where the drift is related to the storage conditions. Sensors should be stored in airproof without silicon materials with clean air. The use of sensor after long period of storage requires a longer pre-heat time to gain back the sensor stability and performance.
8. Application of continual vibration
    a. Continual vibration will rupture the structure of the sensors. Screw drilling during sensor installation can lead to this vibration.
9. Application of concussion
    a. When the sensor meets strong concussion, it may lead to sensor internal lead wire disconnected.

7. Part Numbering



Series	Series
Refrigerant type	P – For Propane gas detection
Version	01
Humidity level (%RH)	L – 0 – 30
	M – 31 – 70
	H – 71 – 95

E P 01 - x

8. Contact Information

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