

## Envent Model M90 (%)

### Carbon Dioxide Monitor

The Model M90 is a compact CO<sub>2</sub> monitor with a dual-beam infrared technology. Dual-beam technology provides a second infrared detection channel to automatically correct for any drift in the measurement system, eliminating the need for frequent calibration. The M90 can be included as an additional measurement with other Envent analyzers, or can be offered as a stand-alone analyzer with an integrated sample conditioning system.

#### Features

- Dual-beam NDIR Technology
- Long-term stability
- Low power consumption (2 watts)
- Dual alarm outputs
- 4 – 20 mA output
- RS-232 and RS-485 Modbus communications
- Two adjustable set point control relays

#### Applications

- CO<sub>2</sub> is measured routinely in natural gas for product quality and process control purposes. Common ranges are from 0 – 5% for sales gas and up to 0 – 30% for inlet CO<sub>2</sub> concentration.
- Gas Plant Inlet
- Certain H<sub>2</sub>S removal chemical processes can be fine-tuned by CO<sub>2</sub> slipstreaming
- Quantify CO<sub>2</sub> as a combustion by-product
- Biogas

#### Benefits

- Quick delivery
- Class I, Division 1, Groups B, C & D
- Full service & training
- Source life: 10 years minimum

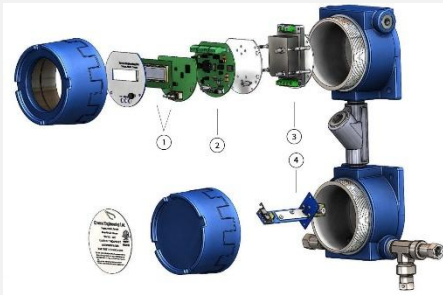


Envent M90 (%) with Sample System

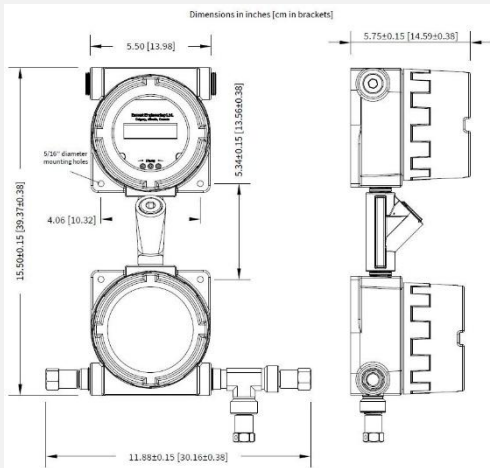


M90 (%) Sensor

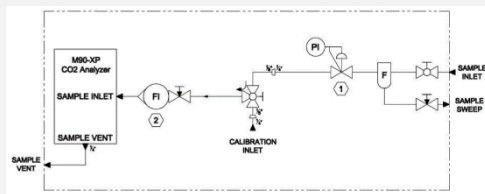




Envent M90 (%) Component



M90 (%) Mounting Dimensions



M90 (%) PI&D

## Specifications

### Enclosure

Class I, Division 1, Groups C & D

### Operating Principle

Dual beam, non-dispersive infrared (NDIR)

### Detector

Sapphire window with glass frit seal

### Sensing Cell Proof Pressure

2 psi (13.8 kPa) gauge pressure

### Measurement Range

0 – 20 % CO<sub>2</sub>, 0 – 100% CO<sub>2</sub>

### Repeatability

± 0.1% CO<sub>2</sub>

### Drift

Less than 2.5% of reading / year

### Accuracy

± 3% of reading or 0.1% CO<sub>2</sub> at cal temperature  
± 5% of reading or 0.1% CO<sub>2</sub> over full operating temperature range

### Warm Up Time

Less than 5 minutes

### Operating Temperature

10°C - 50°C (50°F - 122°F)

### Operating Humidity

Sensing Cell: 0 – 100% RH (non-condensing)  
Electronics: 0 – 90% RH (non-condensing)

### Storage Temperature

-20°C to 60°C (-4°F to 140°F)

### Storage Humidity

0 – 90% RH (non-condensing)

### Analog Output

Isolated 4 – 20 mA

### Digital Interface

RS-485 & RS-232

### Operating Power

7.5 – 15 VDC @ 170 mA max (125 mA AVG.)  
Approx. 1.0W with 12 V input

### Source Life

10 years minimum

### Alarm Outputs

2 solid state drivers 2 Amp, 30 VDC maximum

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