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Micro Thermo Technologies ™
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Office phone 450-668-3033

023-0388 Wall mount CO2 Leak Detector specification & installation guide

Precision carbon dioxide control/sensing

FEATURES:

- 2 Available Ranges
- Automatic Calibration Logic Program
- Easy field adjustment
- LCD Display and analog out
- On-board Relay and menu driven set-up
- Solid-state reliability
- Small compact size
- Solid, reliable mounting method

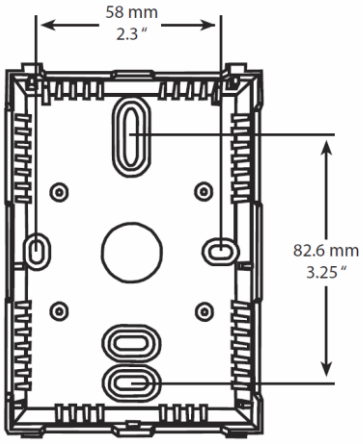
DESCRIPTION:

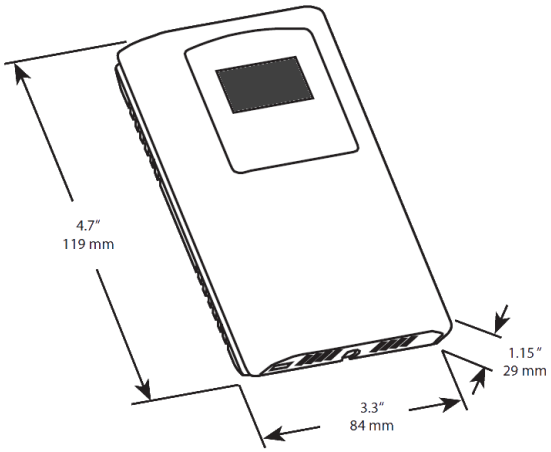
The CO2 monitor uses a highly accurate and reliable Non-dispersive Infrared (NDIR) sensor with state-of-the-art digital linearization and temperature compensated circuitry in an attractive, low profile enclosure for room applications to detect CO2 levels and provides a linear analog signal output of 4-20 mA, 0-5 or 0-10 Vdc signals. An onboard relay can provide a control signal based on a high limit setting. Parameters are set up via momentary pushbutton (keypad) and the LCD display which is also used to display current reading.

SPECIFICATIONS:

Gas Type Detected	Carbon Dioxide (CO_2)
Measurement Ranges	0 – 2000, 0 – 6000 ppm
Measurement Type	Dual channel non-dispersive infrared (NDIR)
Sensor Coverage Area	100 m² (1000 ft²) typical
Sensor Accuracy	± 30ppm + 3% of reading value
Relay Trip Point (High or Low)	Programmable 500 – 9000 ppm by step of 100 via keypad
Relay Hysteresis	Programmable 25-500 ppm via keypad
Contact Ratings	Form A contact (N.O.), 2 Amps @ 140 Vac, 2 Amps @ 30 Vdc
Reading Resolution	1 ppm CO_2
Backlight	Auto, Enable or disable via keypad
Power Supply	24 Vdc ±20% or 24 Vac ±10% (non-isolated half-wave rectified)
Consumption	75 mA @ 24 Vdc max, 150 mA @ 24 Vac max,
Output Signals	4-20 mA active (sourcing), 0-5 Vdc or 0-10 Vdc (field selectable)
Output Drive Capability	Current: 550 ohms max Voltage: 10k Ohm min
Output Accuracy	±0.25% of span (including linearity, hysteresis and repeatability)
Response Time	20 seconds (T63)
Operating Temperature	0°- 50°C (32°-122°F)
Storage Temperature	-40 to 70°C (-40 to 158°F)
Operating and Storage Humidity	5 to 90 %RH, non-condensing
Sensor Life Expectancy	>15 years in normal room condition
Altitude Correction	Programmable from 0-2550 m via keypad
Screw Terminal Block	14 to 22 AWG
Enclosure Ratings	ABS White, IP30 (NEMA 1)
External Dimensions	84mm W x 119mm H x 29mm D (3.3” x 4.7” x 1.15”)
Mounting Holes	Multiple possibilities

Mechanical Information





ORDERING INFO:

Order P/N 023-0388
By fax to 1-844-867-4795
Or email to
MTorder@Parker.com

RoHS COMPLIANT MADE IN CANADA

CO2 Sensors 023-0388 Installation

For leak detection install the CO2 sensor on the rack at 12" (30cm) from floor.
One 24VAC transformer can be used for many CO2 sensors only if the common side is on the same side of the transformer (Calculate 3VA per CO2 sensor).

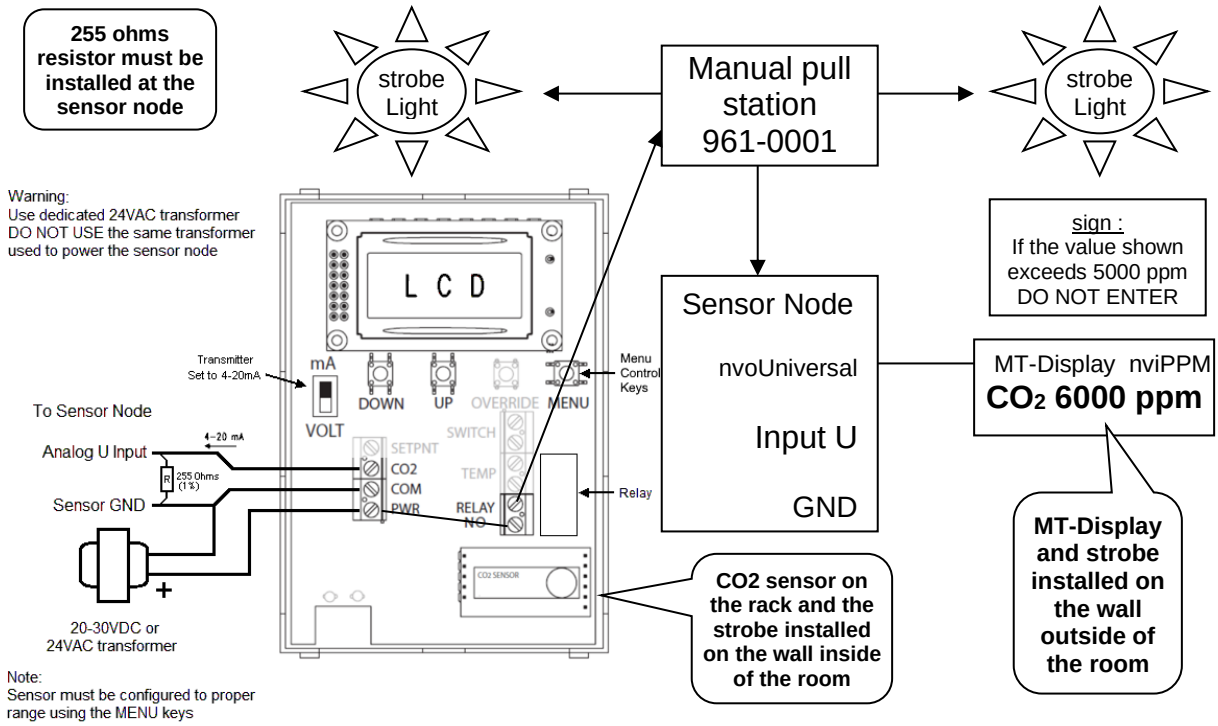
The CO2 sensor 023-0388 reading range should be factory set to 0-6000ppm, output set to 4-20mA. When powering the sensor, the setting must be checked. To check press the Menu button. If these are not the settings make the changes as follow:
Set Transmitter switch to **mA** (4-20mA).
Press on MENU repeatedly to choose option, press on UP or DOWN to change value. Value is saved when MENU is pressed again.

CO2 Span = 6000 PPM (Range)
Self-Cal = On
Relay CO2 = High
Relay SP = 4000 PPM (Relay On ↑)
Relay Hy = 200 (Hysteresys to have Relay Off ↓ @ 3800 PPM)
Relay Dly = 0min

To exit press MENU until you see current CO2 ppm reading.
Connect the signal on 4-20mA mode with 470-0300 255 ohms resistor at the Sensor Node input to reduce the reading variation of PPM caused by the wire length.
Option: Use a MT-Display 961-462C to display the PPM remotely. Power it on any 24V transformer (see installation documentation for Case Display PUID 72-MTA-1003.

Install sign 905-0012 "If the value shown exceeds 5000 ppm DO NO ENTER" above the MT-Display.
Make the connections by following wiring instruction of a manual pull station 961-0001.

Make bindings between nvoUniversalX of the Sensor Node and nviPPM of the MT-Display.
Create model on Alliance see section Adding a CO2 sensor model or PUID 72-MTA-1010.
Set the High limit to 2500ppm and Low limit to 50ppm with a delay of 0 and a low priority.



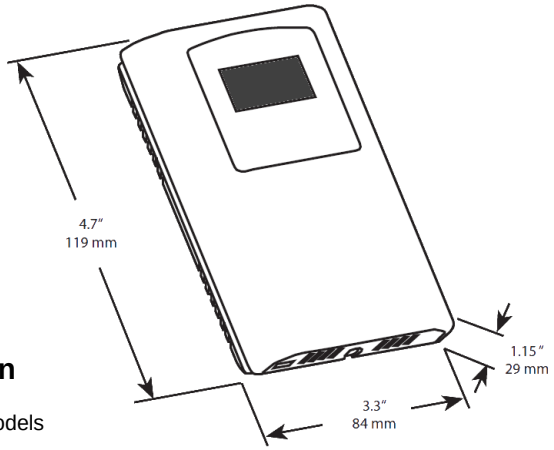
Addition of CO2 sensor model for MTA V5.X version

Already added in version 7.0 (updated in 8.6)
Create sensor in the menu “Configure-Sensor Model” for the following models
Model on key 341: 023-0388 CO2 6000 ppm (4-20mA)

The range and level of the relay must be changed specifically for the 023-0388 model
Copy “CD2RMC Wall Sensor Transmitter 20mA.bmp” in the “C:\Alliance\Images\SensorModels”
If “CDDn Wall Sensor Transmitter 20mA.bmp” is in the folder \Images\Sensor Models it could be used but is not exactly the same.

Addition of CO2 sensor model for MTA V5.X version (suite)

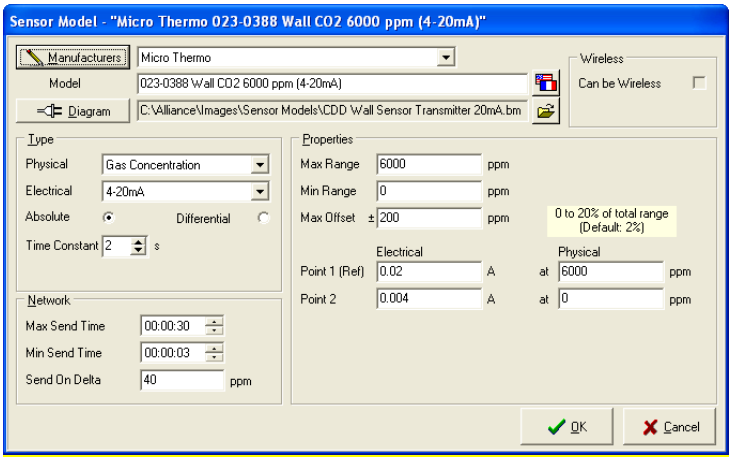
Manufacturer: **Micro Thermo**
Diagram: **CD2RMC Wall Sensor Transmitter 20mA.bmp**
Physical type: **Gas Concentration**
Electrical type: **4-20mA**
Choose Absolute
Time Constant: **2** s
Max Range: **6000** ppm
Min Range: **0** ppm
Max Offset: **±200** ppm
Point 1: **0.02**A at **6000** ppm
Point 2: **0.004**A at **0** ppm
Max send time: **30 s**
Min send time: **3** s
Send on delta: **40** ppm



Addition of CO2 sensor model for MTA V6.X version

Create sensor in the menu « Configure-Sensor Model » for the following models
Model on key 341 :023-0388 CO2 6000 ppm (4-20mA)
If « CDD4 Wall Sensor Transmitter 20mA.bmp » is in the folder « Images-Sensor Models » it could be used but is not exactly the same.

Example in MTA V6.0



Configuration of alarm limits