

RSCO2TH Range

CARBON DIOXIDE, TEMPERATURE
& HUMIDITY SENSORS



BLANK VERSION

LED VERSION

DISPLAY SCREEN

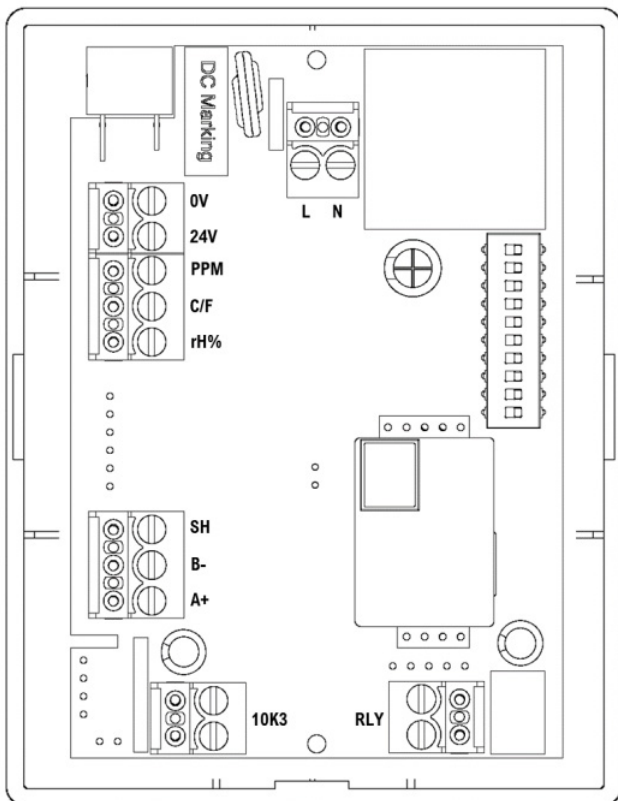
Product Overview:

The RSCO2TH Range: Featuring Carbon Dioxide Sensors, Temperature Sensors & Humidity Sensors, designed to monitor and measure vital indoor air quality environmental parameters with precision and reliability. Engineered to be used across residential, public, commercial, and light industrial settings, these sensors offer digital & analog outputs and exceptional performance features.

Key Features:

- Digital RS-485: Modbus RTU or BACnet MS/TP communication protocols
- Analog: 3x Linear 0-10V/2-10V CO₂, Temperature & Humidity.
- VFC Relay (CO₂): 1x SPST 70mA Max

Circuit Board Diagram:



CONNECTION

120V AC IN

24V AC/DC INPUT

ANALOG OUT/P

DIGITAL OUT/P

THERMISTOR

CO₂ VFC RELAY

LABEL

POWER LIVE IN

24V IN

+10V OUT

RS-485

10K3

RLY 70mA

TERMINATION

L (Line)
N (Neutral)

+24V
0V (Common GND)

PPM (CO₂ Sensor O/P)
°C/F (Temperature O/P)
%RH (Humidity O/P)

A+
B-
SH (Shield)

(No Polarity)

(Open/Close Circuit)

Technical Specifications

Mechanical

Mounting	Wall Mounted
Entry	1/2" DIA Rear Entry
Size (W x H x D)	Display Screen - 3.38" x 4.48" x 1.3" / Blank & LED - 3.38" x 4.48" x 0.98"
Weight	0.35lb
Enclosure	ABS UL Flame retardant - IP40

Electrical

24V AC/DC Power Rating	12-24VDC (11-32 VDC) / 24VAC, (20-27 VAC) 50-60Hz
110VAC Power Rating	Nominal 110VAC, (90-250V AC), 50-60H
Internal Fuse	Resettable PPTC 110VAC, 400mA
Communication	127 Units Max
Power Consumption	5W Max

Environmental

Operating Temperature	14°F to 122°F / -10°C to 50°C
Storage	32-86°F / 0°C to 30°C
Room Humidity	0 to 95% RH (continuous) Non-Condensing
Atmospheric Pressure	80 to 110Pa
Altitude	<6562ft
Installation Cat (110V Voltage)	II (Class 2) Pollution Degree 2
Installation Cat (24V Voltage)	III (Class 3) Pollution Degree 2

Inputs / Outputs

Analog Outputs	3x Linear 0-10V/2-10V CO2, Temperature & Humidity. Thermistor (10K3).
Digital Networks	BACnet MS/TP or MODBUS RTU (Parity: None Data bit: 8bit Stop bit: 1)
Relay Outputs	1 x SPST 70mA

Cable Spec

Power	22 - 24 AWG
Analog Output	22 - 24 AWG
Relay	22 - 24 AWG
Digital Output	22 - 24 AWG twisted pair + ground, shielded cable with 120 Ω characteristic impedance.

User Interface

Lanugage	English
Optional Display	2.8" TFT
Indication	Green: Power (OK) / Yellow: Warning (Pre-Alarm) / Red: Danger (Alarm)

Safety & EMC

Safety	IEC 61010-1
Electromagnetic Compatibility	FCC
Compliance	CE, EMC, RoHS, REACH and WEEE Compliant

CO2 Sensor (PPM)

Temperature (°F or °C)

Humidity (%RH)

Sampling: Diffusion Type
 NDIR Indication Range: 400 - 5000ppm
 Response: t90 <120s
 Calibration: ABC Logic Self Calibration
 Warm Up Time: ~1 Minute
 Accuracy: 5% FS @ 77°F
 Lifespan: > 10 Years
 Resolution: 1ppm

Fully Calibrated
 Normal Indication Range: 32-122°F
 Response: t63% @ 77°F ~20s
 Typical Excellent long term stability
 Strong anti-interference
 Warm Up Time: 1 minute
 Accuracy: $\pm 0.5^\circ$ @ 50-113°F
 Resolution: 0.1°

Fully Calibrated
 Indication Range: 0-100% RH
 Quick Response: t63% @ 77°F ~8s
 Excellent long term stability
 Strong anti-interference
 Warm Up Time: 1 minute
 Accuracy: $\pm 2\%$ @ 59-86°F (20-90%RH)
 Resolution: 0.1%