RSCO2TH Range

CARBON DIOXIDE, TEMPERATURE & HUMIDITY SENSORS

BLANK VERSION LED VERSION DISPLAY SCREEN

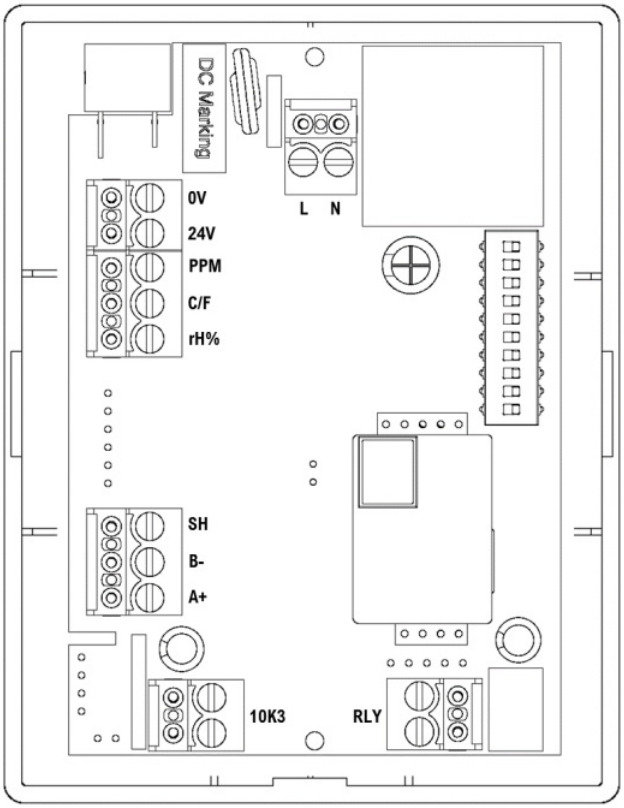
Product Overview:

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	LABEL	TERMINATION
120V AC IN	POWER LIVE IN	L (Line) N (Neutral)
24V AC/DC INPUT	24V IN	+24V 0V (Common GND)
ANALOG OUT/P	+10V OUT	PPM (CO2 Sensor O/P) °C/F (Temperature O/P) %RH (Humidity O/P)
DIGITAL OUT/P	RS-485	A+ B- SH (Shield)
THERMISTOR	10K3	(No Polarity)
CO2 VFC RELAY	RLY 70mA	(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	Fully Calibrated	Fully Calibrated
NDIR Indication Range: 400 – 5000ppm	Normal Indication Range: 32-122°F	Indication Range: 0-100% RH
Response: t90 <120s	Response: t63% @ 77°F ~20s	Quick Response: t63% @ 77°F ~8s
Calibration: ABC Logic Self Calibration	Typical Excellent long term stability	Excellent long term stability
Warm Up Time: ~1 Minute	Strong anti-interference	Strong anti-interference
Accuracy: 5% FS @ 77°F	Warm Up Time: 1 minute	Warm Up Time: 1 minute
Lifespan: > 10 Years	Accuracy: ±0.5° @ 50-113°F	Accuracy: ±2% @ 59-86°F (20-90%RH)
Resolution: 1ppm	Resolution: 0.1°	Resolution: 0.1%