

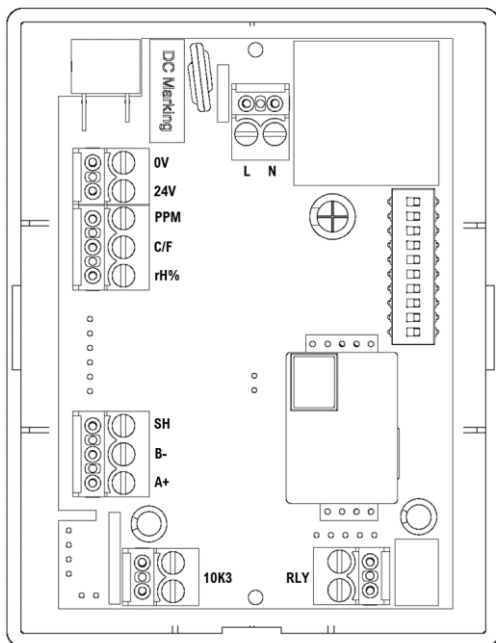
Merlin RS Series

CARBON DIOXIDE, TEMPERATURE & HUMIDITY ROOM SENSORS

Monitor and measure carbon dioxide (CO₂), temperature and relative humidity. Designed for all areas being directly connected to low or mains voltage supply, e.g., residential, public, commercial, and light industrial environments, which support the following outputs:

- ✓ Analog: 3x 0-10V signals for CO₂ (PPM), Temperature (°C) and Humidity (% Relative).
- ✓ Digital RS-485: Modbus RTU or BACnet MS/TP communication protocols.
- ✓ VFC Relay (CO₂): 1x SPST 70mA Max.
- ✓ Thermistor output for 3rd party temperature monitoring.

Excellent stability and strong anti-interference, long-life sensors. Fully calibrated. IGEM/UP/11. BS 50543. Harmonised BS 61010-1 & BS 50270. 3 year warranty. Designed, manufactured and fully tested in the UK.



NOTE: Connections depend on Model.

CONNECTION	LABEL	TERMINATION
230V AC IN	POWER LINE IN	L (Live)
		N (Neutral)
24V AC/DC INPUT	24V IN	+24V
		0V (Common GND)
		PPM (CO ₂ Sensor O/P)
ANALOG OUT/P	+10V OUT	°C/F (Temperature O/P)
		%RH (Humidity O/P)
		A+
DIGITAL OUT/P	RS-485	B-
		SH (Shield)
THERMISTOR	10K3	(No Polarity)
CO ₂ VFC RELAY	RLY 70mA	(Open/Close Circuit)

Technical Specification

Mechanical	Mounting	Wall Mounted
	Entry	½" 12.5mm DIA Rear Entry
	Size (W x H x D)	86 x 114 x 35mm (Low Profile RS 86 x 114 x 25mm)
	Weight	0.164kg Max
Electrical	Enclosure	ABS UL Flame retardant – IP40
	24V AC/DC Power Rating	12-24VDC (11-32 VDC) / 24VAC, (20-27 VAC) 50-60Hz
	230VAC Power Rating	Nominal 230VAC, (90-250V AC), 50-60Hz
	Internal Fuse	Resettable PPTC 240VAC, 400mA
	Communication	127 units max
Environmental	Power Consumption	5W Max
	Operating Temperature	-10 to 50°C
	Storage	10-30°C
	Room Humidity	0 to 95% RH (continuous) non-condensing.
	Atmospheric Pressure	80 to 110Pa
	Altitude	<2000m
I/Os	Installation Cat (230V Voltage)	II (Class 2) Pollution Degree 2
	Installation Cat (24V Voltage)	III (Class 3) Pollution Degree 2
	Analog Outputs	3x Linear 0-10V/2-10V CO2, Temperature & Humidity. Thermistor (10K3)
Cable Spec	Digital Networks	RS-485 - BACnet MS/TP / MODBUS RTU
	Relay Outputs	1x SPST 70mA
	Power	0.2 - 1.5mm ² (30-16AWG) Stripping Length: 5-6mm
	Analog Output	0.2 – 1.5 mm ² (30-16AWG) twisted pair + ground, shielded cable with 120Ω characteristic impedance. Stripping Length: 5-6mm
User Interface	Digital Output	0.2 - 1.5mm ² (30-16AWG) Stripping Length: 5-6mm
	Relays	0.2 - 1.5mm ² (30-16AWG) Stripping Length: 5-6mm
	Language	English
Conformance	Optional Display	2.8" TFT
	Optional LED/TFT Indication	Green: Power (OK) Yellow: Warning (Low CO2) Red: Warning (High CO2)
Sensing	Safety	BS 61010-1
	Electromagnetic Compatibility	BS 50270
	Other (Applied or Considered)	IGEM/UP/11 BS 50543
Sensing		
CO₂ (ppm)	Temperature (°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 @ 25°C Lifespan: > 5 Years Resolution: 1ppm	Fully Calibrated Normal Indication Range: 0-50°C Response: t63% @ 25°C ~20s Typical Excellent long term stability Strong anti-interference Warm Up Time: 1 minute Accuracy: ±0.5° @ 10-45°C Resolution: 0.1°	Fully Calibrated Indication Range: 0-100% RH Quick Response: t63% @ 25°C ~8s Excellent long term stability Strong anti-interference Warm Up Time: 1 minute Accuracy: ±2% @ 15-30°C (20-90%RH) Resolution: 0.1%



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