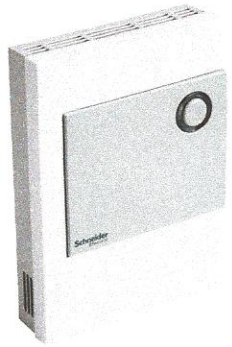
SCR Series



Schneider Electric's SCR series of wall mounted sensors measure the levels of CO_2, RH (if equipped) and temperature of air inside a room. The CO_2 sensor employs the Automatic Baseline Calibration (ABC) feature, which enables the sensor to operate within accuracy specifications for the calibration interval of 5 years. RH equipped models of the SCR feature a replaceable humidity element. HS2NX and HS2XX replaceable humidity elements are available through Schneider Electric. To maintain accurate functionality, keep all vents and free of dust, debris, etc.

SPECIFICATIONS

Input Voltage ..... 24 VAC, 20 to 36 VDC Class 2
Analog Output .....4-20mA (clipped & capped)/ 0-5VDC/0-10VDC (selectable)
Sensor Current Draw .....20-36VDC 50mA avg., 150mA max.
24VAC 120mA avg., 170mA max.
Operating Temperature Range .....
No Humidity option: 0° to 50°C (32° to 122°F)
Wlth Humidity Option: 10° to 35°C (50° to 95°F)
Operating Humidity Range .....0-95% (noncondensing)
Housing Material ..... High impact ABS plastic

CO_2 Transmitter

Sensor Type ..... Non-dispersive infrared (NDIR), diffusion sampling
Output Range .....0-2000 ppm
Accuracy ..... ±1.5% of measurement range ±2% of measured value*
Repeatability .. ±20 ppm ±1% of measured value

Response Time ..... <60 seconds for 90% step change

RH Transmitter

HS Sensor ....Digitally profiled thin-film capacitive (32-bit mathematics); U.S. Patent 5,844,138
Accuracy ..... ±2% from 10 to 80% RH @ 25°C
Hysteresis ..... 1.5% typical
Linearity..... Included in Accuracy spec.
Stability ..... ±1% @ 20°C (68°F) annually, for two years
Output Range ..... 0 to 100% RH
Temperature Coefficient ... ±0.1% RH/°C above or below 25°C (typical)

Temperature

Sensor Type ..... Thermistor (see thermistor table for temperature curves)
Accuracy ..... ±0.5°C (±1°F) typical

Relay Contacts

1 Form C ..... 1A@30VDC, resistive; 30W max.

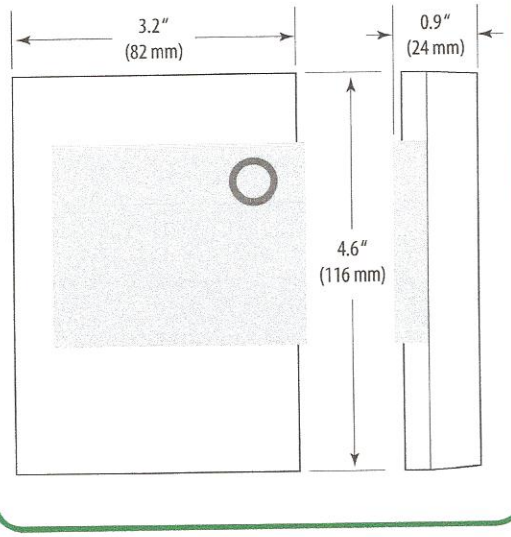
Specified accuracy with 24VDC supplied power with rising humidity. Thermistors are not compensated for internal heating of product.

EMC Conformance

..... EN 61000-6-3: 2007 Class B;
..... EN 61326-1: 2006 Class B;
.....EN 61000-6-2: 2005

* Accuracy is specified at NTP (20°C at 101.3 kPa).

DIMENSIONS



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Schneider Electric

INSTALLATION

1. Remove the outer cover by using a screwdriver to depress the two tabs on the top of the device. This unclips the top half of the housing. Repeat on the tabs on the bottom of the device to remove the cover.
2. Remove the backplate by lifting up on the bottom of the board and pivoting it upward. Remove the board assembly from pivot pins.
3. Position the backplate vertically on the wall, 4.5 feet (1.5 m) above the floor. Locate away from windows, vents, and other sources of draft. If possible, do not mount on an external wall, as this might cause inaccurate temperature readings.
4. Mount the backplate onto the wall using screws (not included).
5. Wire the device and configure output and DIP switches. See Wiring and Configuration section.
6. Set ABC jumper to On or Low position. See ABC Calibration section.
7. Re-affix board assembly onto backplate. Snap outer cover in place.

Insert screwdriver into tabs to release cover.

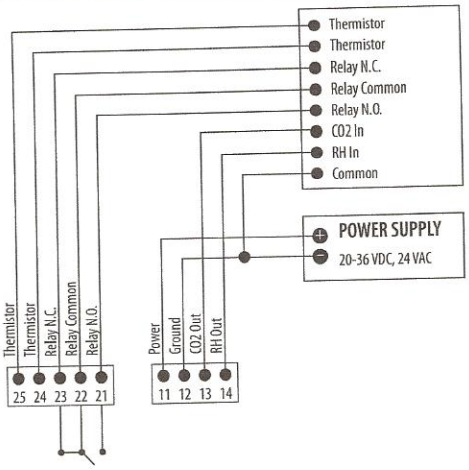
Observe handling precautions for static sensitive devices to avoid damage to the circuitry which would not be covered under the factory warranty.

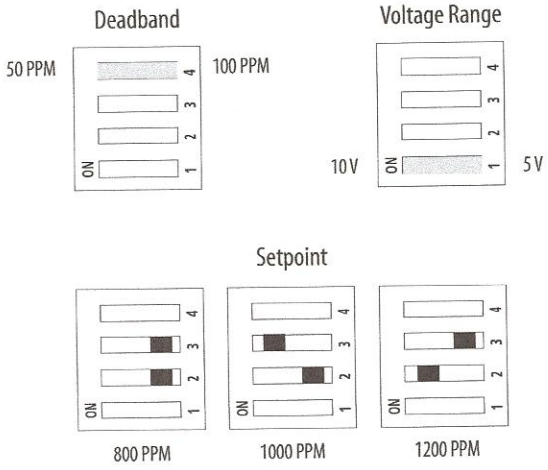
13 screwholes available; use a minimum of two for secure mounting.

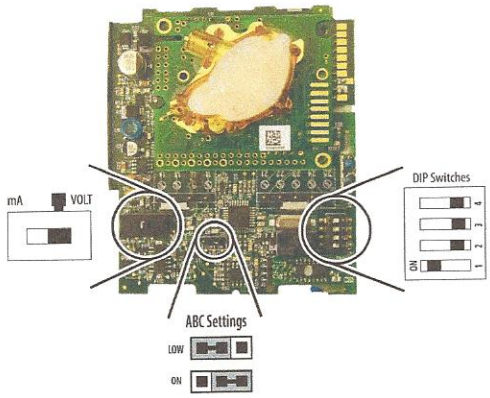
If these two holes are selected, tighten the screws so that the screw heads are fully recessed in the housing.

WIRING AND CONFIGURATION

1. Connect wires as shown.
2. Refer to specifications for power requirements and relay rating.
3. Select mA or Volt output using selector switch.
4. If Volt output is selected, select 5V (0-5VDC) or 10V (0-10VDC) using switch 1 on the 4 throw dipswitch.
5. Select a relay setpoint of 800, 1000 or 1200ppm of CO_2 using switch 2 and 3 on the 4 throw dipswitch.
6. Select deadband of 50ppm or 100ppm using switch 4 on the 4 throw dipswitch. This setting allows for additional flexibility when using the relay setpoint. The actual relay trip point is the setpoint ppm ± the deadband ppm. Example: If the relay setpoint is set for 1000ppm and the deadband is set for 50ppm, with dropping CO_2 levels the relay will trip at 950ppm (1000ppm – 50ppm), with rising CO_2 levels the relay will trip at 1050 ppm (1000ppm + 50ppm).







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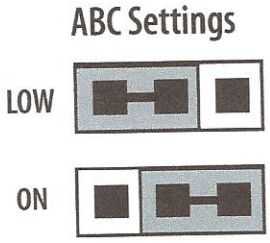
ABC CALIBRATION ALGORITHM:

ABC (Automatic Baseline Calibration) is a patented self-calibration feature that automatically adjusts the CO2 sensor to compensate for drift. The sensor records the lowest reading within every 24-hour interval and compares these values over a running 7-day or 28-day period. If a statistically significant amount of drift is detected, the ABC applies an automatic correction factor. This enables the sensor to operate within specifications for the 5-year calibration interval.



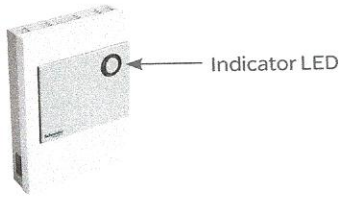
ON POSITION. Recommended Setting. Use the ON setting for applications where the building is unoccupied within a 24-hour timeframe.

LOW POSITION. Use the LOW setting for buildings occupied 24 hours a day.

NOTE: After changing the ABC settings, power cycle the unit for changes to take effect.

INDICATOR LED:

The circle on the cover of the SCR is an LED that provides easy indication of sensor function.



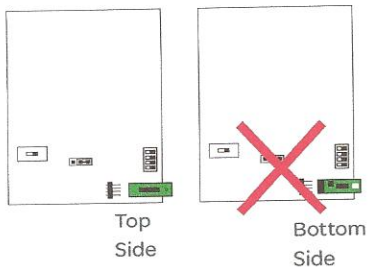
Green	Normal Operation
Yellow	CO2 levels have exceeded setpoint
Flashing Yellow	Out of range or diagnostic event detected

HUMIDITY SENSOR REPLACEMENT

SCR models with optional RH have replaceable humidity sensors.

To Replace Humidity Sensor:

1. Disconnect power to the unit.
2. Remove faceplate.
3. Remove HS element by gently pulling from pin connector.
4. Place new HS element onto pin connector. Orient as shown, or unit will not function.
5. Replace faceplate.



OUTPUT SCALING

CO2 Output scaling: 0-2000 ppm

	CO2 ppm	0-5 Volt Output	0-10 Volt Output	mA Output
Outside	300-500	0.75 to 1.25	1.5 to 2.5	6.4 to 8
Over-Ventilated	Under 600	under 1.5	Under 3	Under 8.8

RH Output scaling: 0-100%

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AVAILABLE PRODUCTS

Part Number	Model Number	Wall Mounted CO2 Sensor with		
		Temp	2% RH	System
5152400000	SCR110	x		Vista 1.8K
5152402000	SCR110-H	x	x	Vista 1.8K
5152404000	SCR210	x		I/NET 10K T2
5152406000	SCR210-H	x	x	I/NET 10K T2
5152408000	SCR510	x		Continuum 10K T3
5152410000	SCR510-H	x	x	Continuum 10K T3
5152412000	SCR610	x		Satchwell 10K T3 Resistor/Shunt
5152414000	SCR610-H	x	x	Satchwell 10K T3 Resistor/Shunt
5152416000	SCR810	x		I/A 10K T3 w/Shunt
5152418000	SCR810-H	x	x	I/A 10K T3 w/Shunt
5152339010	HS2NX	Replaceable RH Element, 2%, NIST.		
5152339000	HS2XX	Replaceable RH Element, 2%.		

THERMISTOR TABLE

°C	°F	Vista 1.8K	I/NET 10K T2	Continuum 10K T3	Satchwell 10K T3 w/Resistor & Shunt	I/A 10K T3 w/Shunt
0	32	5,096	32,773	29,575	7,480	8,018
5	41	4,077	25,456	23,504	7,024	7,493
10	50	3,287	19,931	18,809	6,541	6,941
15	59	2,671	15,725	15,146	6,039	6,372
20	68	2,185	12,497	12,271	5,530	5,800
25	77	1,800	10,000	10,000	5,025	5,238
30	86	1,492	8,055	8,195	4,534	4,696
35	95	1,245	6,528	6,752	4,066	4,184
40	104	1,044	5,323	5,592	3,627	3,707
45	113	881	4,365	4,655	3,222	3,271
50	122	747	3,599	3,893	2,854	2,875

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