SD-040

CO_2 Temperature and RH Transmitter with colour touch display

SENSOR DATA

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SD-040 is an advanced and versatile 3-in-1 transmitter designed for installation in the airconditioned zone. It measures CO2 concentration, temperature and humidity in the ambient air accurately without need for additional compensation - true read . The data is transmitted to a BMS system or stand-alone controller using industry standard output signals and communication protocols.

SD-040combines all the necessary elements for effective climate control in commercial office buildings, hospitals, hotels, schools and other facilities.Using CO2-monitoring for demand control ventilation (DCV) allows healthy, comfortable and cost-effective environment for the occupants. It is flexible in design with temperature control and combination of humidity control optional. Though suitable for use in many different energy-efficient ventilation strategies, welcomes any discussions for specific needs.

Complies with ASHRAE standard 189.1
(±50ppm @ 1000ppm of measured CO2 value)

KEY BENEFITS

- Maintenance free
- 3 sensors in one housing
- Colour touch display with possibility of customizable GUI
- Flexibility - Temperature and/or Humidity optional
- Improved housing design for effective measurement
- Five year warranty

Standard specifications

Measured Gas	Carbon dioxide (CO2)
Operating principle	Non-dispersive infrared (NDIR)
Measurement Range	0 - 2000ppm
OUT1 CO2	0 - 10VDC, 0 - 2000ppm
OUT2 Temperature	0 - 10VDC, 0 - 50°C
OUT3 Relative Humidity	0 - 10VDC, 0 - 100%RH
Accuracy (CO2)	±30ppm ±3% of reading
Dimensions	125mm x 85mm x 22mm
Dimensions display	49mm x 37mm
Life expectancy	>15 years
Operation temperature range	0 - 50°C
Power supply	12VDC, 24VAC/DC
Communication	Modbus (MB) or BAC-net (BAC) protocol over RS485

Technical specifications

GENERAL PERFORMANCE:	
Storage Temperature Range	-30 - 70°C
Sensor Life Expectancy [1]	>15 years
Maintenance Interval [2]	Maintenance free
Self-Diagnostics	Complete function-check of the sensor module
Display (Disp)	Configurable colour LCD with CO2 (ppm), Temperature (°C) and Humidity (%RH)
Buttons	Touch display (Disp)
Complies With Standards	EMC directive 2004/108/EC, RoHS directive 2011/65/EU
Warm-up Time	1min.(@ full specs 15min)
Operating Temperature Range	0 - 50°C
Operating Humidity Range	0 - 95%RH
Operating Environment	Residential, commercial
ELECTRICAL / MECHANICAL:	
Power Input	12VDC, 24VDC or 24VAC (50 - 60Hz) ±20%
Power Consumption	<0.35W average non-display version, <0.6W display version
Peak Power Consumption	<2W
Wiring Connections	Screw terminal, max 1.5mm2, Containing: Power, GND, Out1, Out2, Out3, RS485. Option: passive temperature or relay
CO2 MEASUREMENT:	
Sensing Method	Non-dispersive infrared (NDIR) waveguide technology
Sampling Method	Diffusion
Response Time (T1/e)	<3min
Measurement Range	0 - 2000ppmvol.
Accuracy [3]	±50ppm (@1000ppm, 17 - 28°C and 30 - 60%RH) Typical full range: ±30ppm +3% of measured value [4,5]
Pressure Dependence	+1.58% reading per kPa deviation from normal pressure, 101.3kPa
Measurement Interval	15s
TEMPERATURE MEASUREMENT:	
Measurement Range (T)	0 - 50°C
Accuracy 6	±0.5°C (@ 17 - 28°C), ±1.0°C (@ 0 - 50°C)
Repeatability	±0.25°C (@ 17 - 28°C)
Response Time	<6min (Air velocity of 0.15m/s).
Measurement Interval	15s
RELATIVE HUMIDITY MEASUREMENT:	
Measurement Range	0 - 95%RH
Accuracy [6]	±5%RH (@ 20 - 80%RH)
Hysteresis	±1%RH (@ 20 - 80%RH)
Long Time Drift	<±0.5%RH
Repeatability	±0.25%RH (@ 17 - 28°C)
Measurement Interval	15s
OUTPUTS:	
Linear Analog Outputs:	
Protection	PTC-fuses (auto reset), short-circuit safe
Output Signal	Voltage output 0 - 10V, Rout <100, Load: >5k
Output Resolution	10-bits, 10mV steps, 0.1% steps of full ppm/°C/%RH range
Out1: CO2 [7]	0 - 10V, corresponds to 0 - 2000ppm, at screw terminal
Out2: Temperature (T) [7]	0 - 10V, corresponds to 0 - 50°C, at screw terminal
Out3: Relative Humidity (RH) [7]	0 - 10V, corresponds to 0 - 100%RH, at screw terminal
Digital Output:	
Relay (RL) [7]	On 1000ppm, O 900ppm, CO 2

1. SO2 enriched environments are excluded.
2. No maintenance required in normal indoor air as ABC (Automatic Baseline Correction) is used.
3. In normal IAQ applications, accuracy is defined after minimum three (3) weeks of continuous operation with ABC.
4. Accuracy is specified over operating temperature range. Specification is referenced to certified calibration mixtures. Uncertainty of calibration gas mixtures (±1% currently) is to be added to the specified accuracy for absolute measurements.
5. Repeatability is included. Uncertainty of calibration gases (±1%) is added to the specified accuracy.
6. Depending on display brightness setting.
7. Can be configured with PC software UIP (version 5 or later).

Art.no	Product	Additional features
070-8-001	Disp T R H RL MB BAC	Colour touch display
070-8-002	T RH RL MB BAC	No display
00-0-0070	Interface cable USB – 3.5mm	

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