AX-RH-T-CD-x

Room Relative Humidity, Temperature and Carbon Dioxide Sensors

AXIO

display option shown

Product Overview

The RH-T-CD Combined Humidity, Temperature and Carbon Dioxide Transmitter uses NDIR single beam Infra-red technology to monitor the CO_2 levels a Thermistor to monitor the Temperature and a Thermoset Polymer Based Capacitive sensor for the RH and outputs a linear signal as either 4-20 mA or 0-5/10 Vdc. Operating parameters are easily programmed by an on-board keypad to configure the transmitter to a specific application. The options include a LCD display displaying the ppm levels and the option of Modbus or Bacnet output

Features

- Wall mounting

- Fully menu driven set-up/ calibration

- Monitors CO_2 over range 0 to 2,000 ppm

- Solid State Sensing Element

- Optional Modbus or Bacnet output

- 5 year calibration interval

- Adjustable Analogue Output

Product Specifications

Power Supply:	20 to 30Vac/dc @80mA max
Consumption:	125mA @ 24V max (typical 75mA)
Ambient Temp. Range:	0 to +50'C , 0-95% RH non condensing
LCD Display: (optional)	Displays all parameters 33 x 14 mm (optional at additioanl cost)
Housing:	Flame retardant ABS
Dimensions:	119 x 71 x 32 mm (Bacnet variant in a different housing)
Conformity:	CE marked, EMC, LVD.
Country of Origin:	Canada

Carbon Dioxide

Sensor Type:	Non-dispersive Infra-red
Range:	0-2000ppm standard, programmeable from 1500 upto 20,000ppm in 500ppm steps
Calibration Interval:	5 years
Accuracy:	+/- 50ppm or 3% whichever is greater
Stability:	Self Calibrating <2% FS over life of sensor (typical 15yrs)
Altitude Correction:	Programmable from 0-5,000ft in 500 ft increments
Output:	0-5/10Vdc or 4-20mA (Modbus or Bacnet output available at additional cost)
Settling Time:	<2 minutes after power up
Response Time:	<2 minutes for 90% step change

Temperature

Sensor Type:	10K3A1 Thermistor
Temperature Range:	0-35 or 0-50'C - selectable
Temperature Accuracy:	+/- 0.2'C
Output:	0-5/10Vdc or 4-20mA (Modbus or Bacnet output available at additional cost)

Relative Humidity

Sensor Type:	Thermoset Polymer Based Capacitive
RH Range:	0-100%RH
RH Accuracy:	+/- 2% RH
Output:	0-5/10Vdc or 4-20mA (Modbus or Bacnet output available at additional cost)
RH Response Time:	15 seconds typical
RH Stability:	+/- 1%RH typical @50% RH in 5 years

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Order Codes

AX-RH-T-CD-V	Space Mounted RH, Temperature & CO2 Sensor	0-5 or 0-10Vdc o/p
AX-RH-T-CD-C	Space Mounted RH, Temperature & CO2 Sensor	4-20mA o/p
AX-RH-T-CD-V-LCD	Space Mounted RH, Temperature & CO2 Sensor	0-5 or 0-10Vdc o/p + LCD display
AX-RH-T-CD-C-LCD	Space Mounted RH, Temperature & CO2 Sensor	4-20mA o/p + LCD display
- Mod	Modbus output	
- Bac	Bacnet output	

Mounting Instructions

The Room sensor has mounting provisions to install directly on a standard electrical box and should be mounted at a height about five feet from the floor of the area to be controlled. For best operation, do not mount the sensor near doors, opening windows, supply air diffusers or other known air disturbances.

ACLP Software and 5 Year Gurantee

ACLP Software

ACLP (Automatic Calibration Logic Program utilises the computing power in the sensors onboard microprocessor to remember the lowest CO_2 concentration that takes place every 24hours. The sensor assumes this low point is at outside levels. The sensor is also smart enough to discount periodic elevated readings that might occur if for example a space was used 24 hours a day over a few days. Once the sensor has collected 14 days worth of low concentration points, it performs a statistical analysis to see if there has been any small changes in the sensor reading over background levels that could be attributable to sensor drift. If the analysis concludes there is drift, a samll correction factor is made to the sensor calibration to adjust to this change.
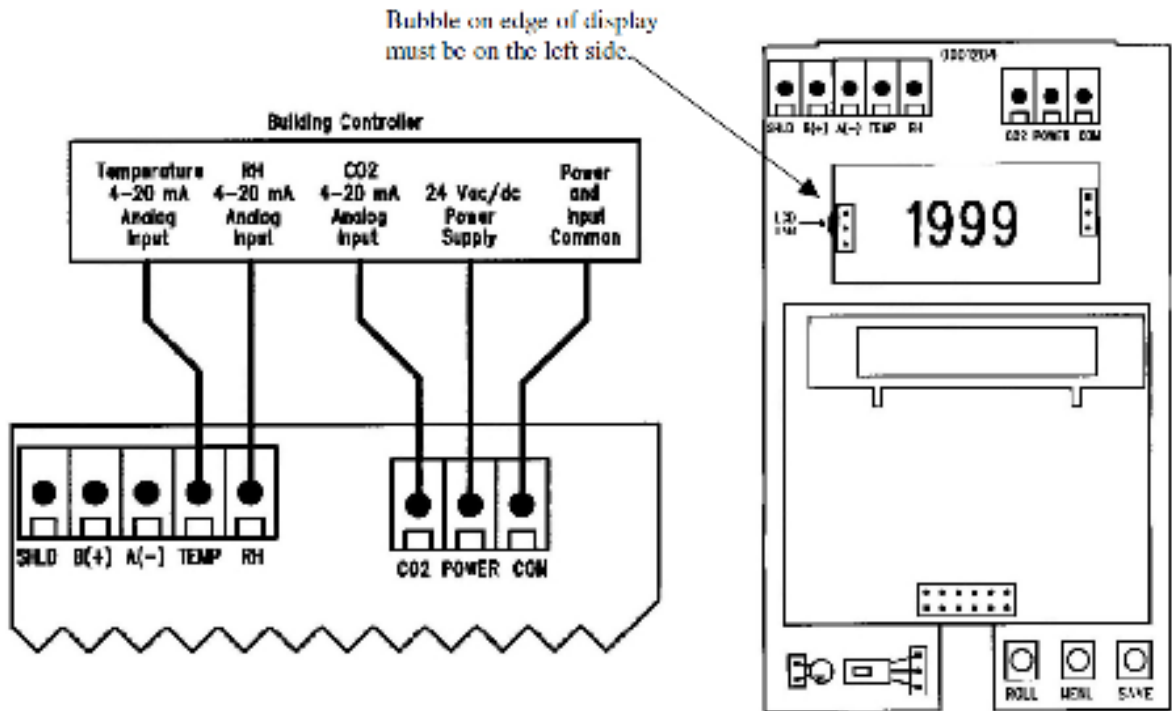
5 Year Calibration Guarantee

Based on the results of years of testing of ACLP software, Greystone now offers a 5- year calibration guarantee on all the RH-T-CD series. If the sensor is found to be out of calibration more than 150ppm as compared to a calibration Gas or recently calibrated reference, Greystone will provide a free factory calibration of the sensor if returned to Greystone. This guarantee only applies if the sensor is operated in an environment where inside levels periodically drop to outside concentrations (i.e. during evenings or weekends when there is no occupancy) as is required by the ALCP software. If a space does not experience a periodic drop to outside levels (i.e. where occupancy is 24Hrs/7days/week),ALCP software should be deactivated. With ALCP deactivated (via the menu buttons), calibration may be required every 2-3 years.
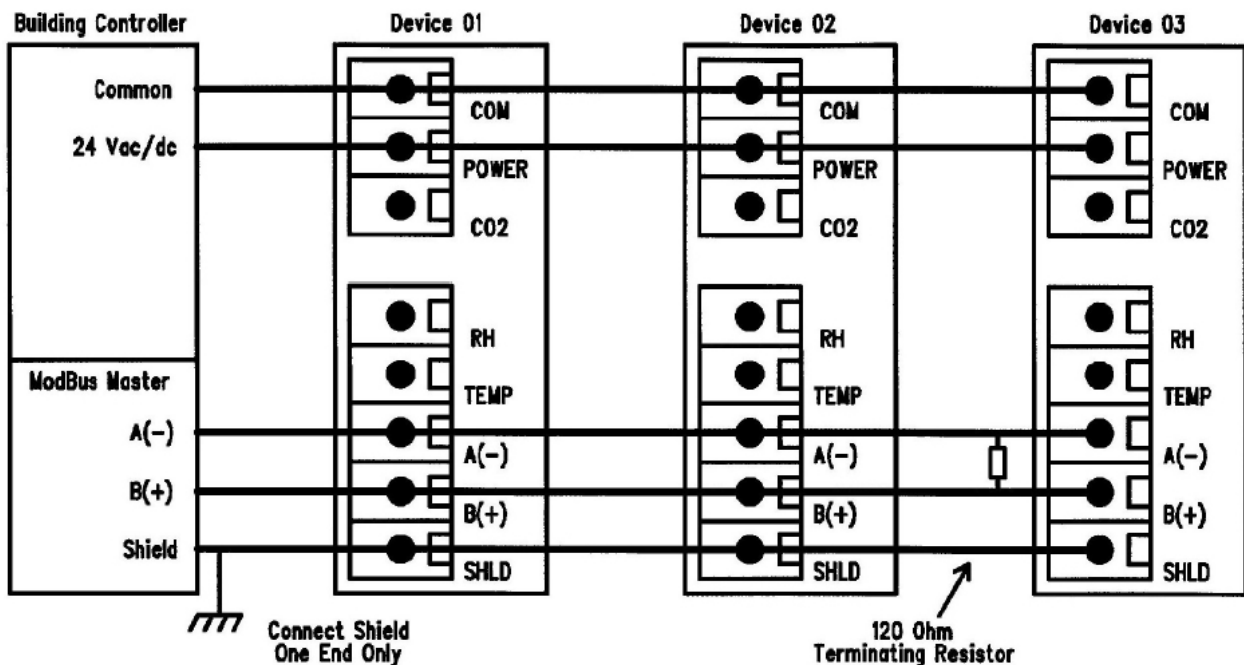
Optional MODBUS Communication

Modbus communication is an optional extra and the correct device must be ordered to have this capability. Modbus is a network protocol for industrial manufacturing environments. The detector communicates on a standard Modbus network using either of 2 transmission modes RTU (Remote Terminal Unit) or ASCII (American Standard Code for Information Interchange). The hardware interface is RS-485. Select the required mode along with the other parameters using the configuration menu. For complete protocol details, see the document titled CO2/RH/T Detector- Modbus Implentation Specification

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Wiring Diagrams

Typical RS-485 Two-wire Connections

A complete Installation and commissioning guide comes with the units