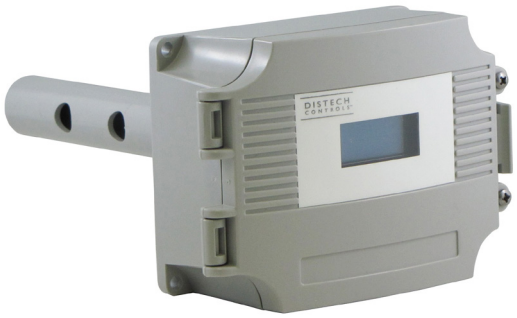
GS-CDHTD Series

Duct Temperature, Relative Humidity & CO_2 Sensors



Overview

The GS-CDHTD Series are duct temperature, relative humidity and CO_2 detectors. They use a highly accurate and reliable non-dispersive infrared (NDIR) sensor to monitor CO_2, a precision thermistor to monitor temperature and a thermoset polymer based capacitance sensor to measure humidity level. This is combined with state-of-the-art digital linearization and temperature compensated circuitry and provides 3 analog outputs.

Applications

- Efficient environmental monitoring and control system
- Monitor temperature, humidity and CO_2 levels

Features & Benefits

- Optional adjustable relay output
- Models with variable ranges
- Proven long term stability and performance
- Voltage and current output signals
- Menu driven set up

Accessories

GS-CDCAL	CO_2 calibration kit - no gas
GS-CDFCAL	Factory calibration certificate
GS-CDHTNIST	NIST calibration certificate

Note: Calibration certificates must be purchased at the time of purchasing the relative sensors.

Model Selection

		GS-	CDHT	D	02K	C04	X	X
Sensor	CDHT = Carbon dioxide/humidity/temperature							
Mounting Style	D = Duct							
Sensing Range	02K = 0-2000ppm 20K = 0-20000ppm							
Control Signal Output	C04 = Current, 4-20mA VFS = Voltage, field selectable 0-5VDC or 0-10VDC							
Display Option	D = Display							
Relay Option	R = Relay output							

Product Specifications

Environmental

Operating Temperature — 0°C to 50°C; 32°F to 122°F
Storage Temperature — 0°C to 50°C; 32°F to 122°F
Relative Humidity — 0 to 95% Non-condensing

CO_2 Signal

Measurement Type
- GS-CDHTD02KCO4 & GS-CDHTD02KVFS — NDIR, diffusion sampling
- GS-CDHTD20KCO4 & GS-CDHTD20KVFS — Dual channel NDIR, diffusion sampling

Measurement Range
- GS-CDHTD02KCO4 & GS-CDHTD02KVFS — 0 - 2000 ppm
- GS-CDHTD20KCO4 & GS-CDHTD20KVFS — 0 - 20,000 ppm standard, programmable span from 2000 to 20,000 ppm

Standard Accuracy
- GS-CDHTD02KCO4 & GS-CDHTD02KVFS — ±30 PPM + 3% of reading with Auto-Cal on
- GS-CDHTD20KCO4 & GS-CDHTD20KVFS — ±75 PPM or 10% of reading (whichever is greater)

Stability
- GS-CDHTD02KCO4 & GS-CDHTD02KVFS — < 2 % FS over life of sensor (15 years typical)
- GS-CDHTD20KCO4 & GS-CDHTD20KVFS — < 5 % FS over life of sensor (15 years typical)

Temperature Dependence — 0.2% FS per °C
Pressure Dependance — 0.13% of reading per mm Hg
Altitude Correction — Programmable from 0-5000 ft via keypad
Response Time — <2 minutes for 90% step change typical
Warm-up Time — <2 minutes

Temperature Signal

Sensing Element — 10K thermistor, ±0.2˚C (±0.2 °C)
Range — 0˚ to 35˚C (32˚ to 95˚F) or 0˚ to 50˚C (32˚ to 122˚F) selectable via keypad

RH Signal

Sensing Element	Thermoset polymer based capacitive
Accuracy	± 2% RH
Range	0 - 100% RH, non-condensing
Hysteresis	± 3% RH
Response Time	15 seconds typical
Stability	± 1.2% RH typical @ 50% RH in 5 years

Enclosure

Material	Grey ABS, UL94-5VB, IP65 (NEMA 4X)
External Dimensions	145 mm W x 100 mm H x 63 mm D (5.7” x 3.95” x 2.5”)
Probe Dimensions	177 mm (7”) long x 25.4 mm (1”) diameter

Optional Relay Output

Contact Ratings	Form A contact (N.O.), 2 Amps @ 140 Vac, 2 Amps @ 30 Vdc

Relay Trip Point

□ GS-CDHTD02KCO4 & GS-CDHTD02KVFS	Programmable 500-2000 ppm via keypad
□ GS-CDHTD20KCO4 & GS-CDHTD20KVFS	Programmable 500-15,000 ppm via keypad

Relay Hysteresis

□ GS-CDHTD02KCO4 & GS-CDHTD02KVFS	Programmable 25-200 ppm via keypad
□ GS-CDHTD20KCO4 & GS-CDHTD20KVFS	Programmable 25-500 ppm via keypad

Electrical

Output Resolution	10 bit PWM
Protection Circuitry	Reverse voltage protected and output limited
Override Switch	Front panel push-button available as two-wire dry-contact output
Power Supply	20-28 Vac/dc

Consumption

□ Current	145 mA max @ 24Vdc, 260 mA max @24 Vac (with all options)
□ Voltage	85 mA max @ 24 Vdc, 150 mA max @ 24 Vac (with all options)

Output Signals	Current 4-20mA (Model CDD5A & C) Voltage 0-5 Vdc or 0-10 Vdc (Model CDD5B & D)
Output Drive Capability	Current: 550Ω Max Voltage: 10 kΩ Min
Sensor Coverage Area	100 m² (1000 ft²) typical

Temperature Signal

Type	10kΩ NTC thermistor, Type 2
Accuracy	±0.2°C; ±0.36°F
Range	0° to 35°C (32° to 95°F) or 0° to 50°C (32° to 122°F) selectable via keypad

Agency Approvals:

Material[1]	UL94-VB

1. All materials and manufacturing processes comply with the RoHS directive

Dimensions