

CD-P00-U Series Duct Carbon Dioxide Transmitter Product Bulletin

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Introduction

The CD-P00-U Series Duct CO_2 Transmitter uses a highly accurate and reliable nondispersive infrared (NDIR) sensor in a low profile enclosure with a gasketed, hinged cover for duct applications to monitor CO_2 levels. The sensor uses dual channel optics and long-term adjustment signal processing technology to deliver industry leading long-term accuracy and reliability. These features ensure optimum measurement stability for continual monitoring of either supply or return-air measurement.

Optional feature:

• Resistive temperature sensor output with LCD temperature display in °C or °F

Figure 1. CD-P00-U Series Duct Carbon Dioxide Transmitter



Dimensions

Figure 1. Dimensions of the CD-P00-U Series Duct Carbon Dioxide Transmitter



Installation

The duct type sensor installs on the outside of a return air duct with the sampling tube inserted into the duct. Use the included foam plug to prevent air from entering the enclosure through the conduit, which may cause an incorrect reading.

Mount the sensor in an easily accessible location in a straight section of duct at least 5 ft (1.52 m) from corners or other items that may cause disturbances in the air flow. Avoid areas that expose the detector to vibrations or rapid temperature changes. The enclosure includes mounting tabs for easy installation. For complete installation and

wiring details, refer to CD-P00-U Series Duct Carbon Dioxide Transmitter Installation Guide (Part No. A16381UW1V)





Note: This CO_2 sensor incorporates a self-calibration feature to correct CO_2 sensor drift. Use the self-calibration feature for applications where the CO_2 is close to normal (400 ppm) at least 1 h each day. If the monitored space has 24 h occupancy or consistently maintains higher or lower levels of CO_2 , turn off the self-calibration feature and perform a yearly calibration.

Ordering information

Table 1. Selection chart	Table	1. S	elect	tion	chart
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Product code	Description
CD-P1000-00-00U	Duct CO ₂ sensor, 0 V to 10 V temperature output
CD-P2016-00-00U	Duct CO ₂ sensor, 1k platinum
CD-P2017-00-00U	Duct CO ₂ sensor, 10k NTC

Technical specifications

Table 1. CD-P00-U Series Room Carbon Dioxide Transmitter technicalspecifications

Specification	Description
Purpose of control	Operating control

Specification	Description		
Action	Туре 1		
Pollution degree	2		
Impulse voltage	330 V		
Gas type detected	CO ₂		
Sensor type	Dual channel NDIR		
Sensor accuracy	±30 ppm + 3% of measured value		
Measurement range	0 ppm to 2000 ppm (default), adjustable 1000 ppm to 10,000 ppm		
Pressure dependency	±2.5 ppm/°C		
Response time	20 s (T63)		
Warm-up time	1 min		
Sensor lifespan	> 15 years		
Transmitter accuracy	±0.25% of span including linearity, hysteresis, and repeatability		
Power supply	24 VDC \pm 20% or 24 VAC \pm 10%, non-isolated half-wave rectified		
Protection circuitry	Reverse voltage-protected and transient-protected		
Input voltage effect	Negligible ove	r specified operating range	
Output signal type	4 mA to 20 mA (3-wire), 0 VDC to 5 VDC, 0 VDC to 10 VDC, field-selectable		
Current consumption	Current	75 mA @ 24 VDC max, 150 mA @ 24 VAC max	
	Voltage	50 mA @ 24 VDC max, 100 mA @ 24 VAC max	
Output drive @ 24 VDC	Current	550 ohm maximum	
	Voltage	10k ohm minimum	
Ambient operating range	32°F to 122°F (0°C to 50°C), 0% RH to 90% RH, noncondensing		
Storage conditions	-40°F to 158°F (-40°C to 70°C), 0% RH to 95% RH, noncondensing		
LCD display units	ppm for CO ₂ , °C/°F		
Display range	0 ppm to 10,000 ppm, 32°F to 122°F (0°C to 50°C)		
Display size, H x W	0.6 in. x 1.4 in. (15 mm x 35 mm)		

Specification		Description		
Digit height		2-line x 8 characters		
Optional	Sensor type	10k ohm Type 2, NTC thermistor		
temperature sensor		1k ohm platinum, IEC 751, 385 Alpha, thin film		
	Sensor accuracy	Thermistor	±0.36°F (±0.2°C) @ 77°F (25°C)	
		Platinum RTD	±0.54°F (±0.3°C) @ 32°F (0°C)	
	Output	2-wire resistive		
Enclosure material		Polycarbonate		
Enclosure rating		IP65 (NEMA 4) with security screw installed		
Dimensions Enclosure, H x W x D		4.4 in. x 5.3 in. x 2.1 in. (112.4 mm x 135.7 mm x 54.3 mm)		
	Probe, L x D	6 in. x 0.9 in. (152 mm x 22.5 mm)		
Wiring		Screw terminal block, 14 AWG to 22 AWG		
Country of origin		Canada		
Compliance		CE Mark - Johnson Controls declares that this product is in Compliance with the essential requirements and other relevant provisions of the EMC Directive and RohHS Directive.		

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls shall not be liable for damages resulting from misapplication or misuse of its products.