

TR9277-EO
CO₂, Temperature, & RH Transmitter
Powered by Ambient Indoor Light

Key Features

- “Zero Energy” Transmitter that harvests power from ambient light.
- Integrated CO₂ self-calibration feature eliminates maintenance.
- Built-in absolute pressure sensor corrects CO₂ reading for altitude.
- Utilizes the open, EnOcean® wireless protocol that is designed for integration with other products and systems (ISO/IEC 14543-3-10).
- Provides feedback on local light strength, and radio signal during installation to facilitate optimum placement.
- Can be easily calibrated in ambient air to support a seamless commissioning process.
- Optional battery can be installed to provide extended backup in low light conditions. Five year operation on battery alone.
- Smart power management logic manages sampling and message transmission based on real time ambient light levels.
- Current CO₂ level can be read at any time by pressing button and counting LED flashes.



Product Overview

The TR9277-EO is a versatile, wireless CO₂, temperature and humidity transmitter that operates based on energy harvested from indoor ambient light. The sensor has no wires and no maintenance and can be installed and integrated into an EnOcean® wireless network in less than a minute. It is specifically designed for smart home and building systems where indoor environmental quality and potential savings from utilizing CO₂ based demand controlled ventilation is desired. This sensor platform is ideal for EnOcean® networks installed in new or existing buildings.

About AirTest Technologies

AirTest is a technology company that focuses on providing the most advanced and reliable sensor technology for buildings. Airtest supports a variety of communication protocols that allow easy integration of sensor technologies into homes and buildings including: EnOcean®, ZigBee®, WiFi, BACnet®, LonWorks® and traditional analog (0-10V, 4-20mA). We are strong in application support and control integration and strive to ensure our customers utilize the most appropriate product for their application.

Specifications

Sensors

Carbon Dioxide

Technology: Ultra Low Power, LED based NDIR

Measurement Range: 0-2000 ppm

Accuracy: ± 50ppm

Altitude/Pressure Compensation: Built-in correction

Self-Calibration: Automatic Background Calibration

Resolution: 1 data byte (0-200 decimal), 10 ppm

Temperature

Range: 0°C to 51°C (32°F to 124°F)

Accuracy: ± 0.3°C (± 0.5°F)

Resolution: 1 data byte (0-255 decimal), 0.2°C (0.36°F)

Relative Humidity

Range: 0% to 100% RH

Accuracy: ±3% RH...10-90%, ±7%... 0-10%, 90-100%

Resolution: 1 data byte (0-200 decimal), 0.5%

Power Supply

Type: Integrated Solar Panel

Operational Light Levels: 50 lux

Minimum Charge Time before Operation: 10 min @ 200 lux

Charging Light Level: 200 lux

Maintain Operating Life Level: 200 lux for 6 hours

Maximum Charge Time: 16 hours @ 200 lux

Operating Life From Full Charge: 75 hrs @ 0.0 lux

Battery: for backup, start assist & test mode. Use high quality CR2032 coin cell (not included). Typically will provide 5 year operating life in zero light conditions.

Interface

Link Button: To select and join networks. Inside back cover.

Test Button: Used to evaluate light levels, radio strength, activate/deactivate CO2 self-calibration, ambient CO₂ calibration. Located on side of unit.

LED Feedback Indication: Green, Amber and Red LEDs. (see dimensions for location). For CO₂ flash every 15 seconds: Green=< 800 ppm, Yellow= 800-1,400 ppm, Red= >1,400 ppm.

Communication

Hardware: Based on EnOcean Profile (EEP) A5-09-04

Radio Frequency: 902 MHz (-A), 868 MHz (-B), 928 MHz (-C), 315 MHz (-D). **Antenna:** Integrated Whip

Transmission Range: 24m (80 ft), typical office space

Sample & Transmission Rates:

Ambient Light	Temp/ RH/ Dew Point Sampling Rate	CO ₂ Sampling Rate	Heartbeat Rate
> 200 lux (18.5 FC)	16 sec	300 sec (5 min)	300 sec (5 min)
< 200 lux (18.5 FC)	32 sec	600 sec (10 min)	600 sec (10 min)
< 50 lux for 16 hours	64 sec	1200 sec (20 min)	1200 sec (20 min)

- If the temperature change between last transmitted value and the current sample is > 0.6°C (1.1°F), the sensor will transmit immediately.
- If the RH value change between last transmitted value and the current sample is > 3%, the sensor will transmit immediately.
- If the CO₂ value change between samples is > 200 ppm, the sample and heartbeat rate shall increase to 300 sec (5 min) for 1 sample period
- The CO₂ sample rate value is derived from three consecutive readings from the COZIR sensor averaged with the previous transmitted value, level 1 and 2 only. For level 3, only the 3 readings taken during the current sample are averaged.

General

Weight: 115 g, (4 oz)

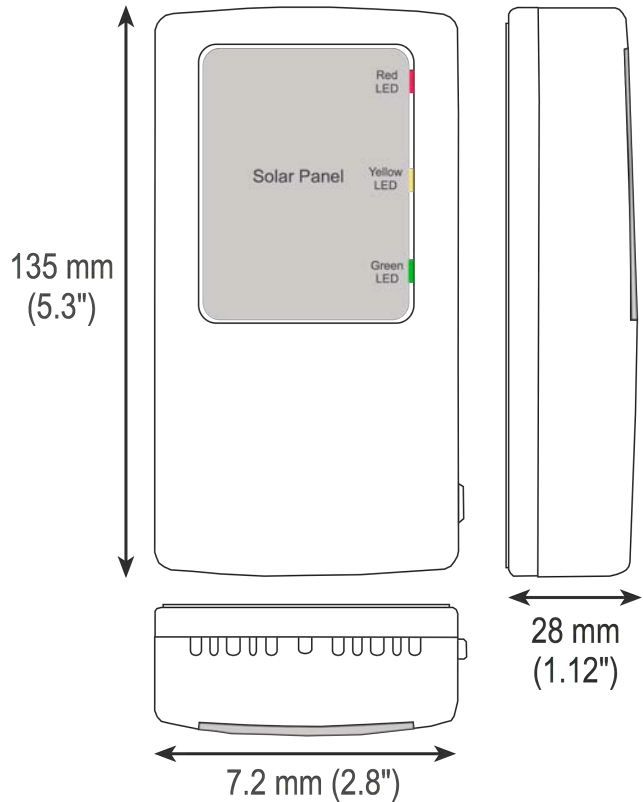
Mounting: screws or double sided tape (not included)

Listing: FCC Part15.231- Remote control transmitter, Industry Canada RSS-210, RoHS compliant.

Warranty: 5 year warranty, repair or replace



Dimensions



About EnOcean® Wireless

The radio communication protocol used in the TR9277-EO is designed specifically to work with low power, energy harvesting sensor and interface devices for lighting and building control applications. This sensor is designed to be easily integrated into any wireless system utilizing the (ISO/IEC 14543-3-10) communication protocol championed and maintained by the EnOcean® Alliance.

www.enocean.com



AirTest Wireless Products

For more information on all AirTest wireless products that have simplified and reduced the cost of smart sensors used in retrofit projects to save energy and reduce operating costs visit: www.AirTest.com/wifi.

AirTest™ Technologies Inc. specializes in the application of cost effective, state-of-the-art air monitoring technology to ensure the comfort, security, health and energy efficiency of buildings.



6/02/16