NDIR CO$_2$ Sensor Module

Process & Environmental Monitoring Solutions

technical specification

This fully integrated detection module is a NDIR dual channel sensor device for measuring carbon dioxide. Our NDIR sensors, complemented by off the shelf and customized RF remote control and transmitter solutions respectively, are used to measure indoor air quality as well as for characterizing conditions in many industrial processes.

By intense technological developments, our NDIR sensor modules are able to measure even in high humidity environments, while keeping traditional characteristics of user-friendly control interface. The high quality sensor with its accurate CO$_2$ concentration measuring capabilities allows the robust integration in application specific controller implementations based on the CO$_2$ level as one key process indicator, as for complex air-conditioning and ventilation requirements e.g. in agriculture

NDIR Sensor Module features

- compact and reliable
- high precision sensor
- fast response times
- stable performance at high and low temperatures
- long term calibration free operation
- integrated gas suction
- integrated dust and humidity filter
- wide application spectrum
  - carbon capture and storage (CCS)
  - CO$_2$ Supply systems
  - smart farming, precision farming, vertical farming
  - livestock circulation system
  - indoor air quality monitoring and control

general

description	integrated high quality CO$_2$ trace gas sensor for continues concentration monitoring
measuring type	dual wavelength Non-Dispersive-Infrared (NDIR) spectroscopy
measuring range	0 to 3000 ppm [1] [1] other ranges 5 ‰ and 10 ‰ on request
accuracy	±2 % FS, ±3 % of measured value
operating conditions	0 to 50 °C, 0 to 99 % RH (non-condensing) [2] [2] condensation resistant coating on request
response time	2 s [3] [4] [3] <30 s rise time 0 to 80 % [4] 90 s warm-up time at 25 °C
supply voltage	12 VDC to 24 VDC
current consumption	140 mA (Peak 260 mA)
interface	RS-485 and analog (4 to 20 mA) [5] [5] alternative 0 to 5 V output on request
dimensions	(W) 140 mm x (H) 201 mm x (D) 80.7 mm
weight	<1 kg

temperature sensor

measuring range	-10 °C to 50 °C
accuracy	±0.3 K
response time	5 s to 30 s

humidity sensor

measuring range	0 to 99.9 % RH
accuracy	±2 % RH
response time	8 s

scope of delivery

	integrated temperature and humidity sensors
	splash-proof housing for outside installation
	quality inspection and calibration process prior delivery
	external signal transmitter (optional)
	external controller module (optional)
	external relay output module (optional)