

# Mini IR Sensor

datasheet

## Mini Infra Red Sensor



## Overview

The MIR sensor from Analox is a miniaturised dual channel IR sensor optimised for the measurement of CO<sub>2</sub>. The latest micro-controller technology and dual channel IR detectors make excellent performance possible in a small package with low power consumption and long operational life.

All sensors are characterised and tested across their specified temperature range before despatch.

Values and drawings in this datasheet refer to the 5% (or 50mbar) range part. 5000ppm, 1%, 10%, 20%, and 100% range parts are also available on request.

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Absolute maximum ratings

Parameter	Comments	Min	Typ	Max	Units
Supply voltage		-6.0		6.0	V
TTL terminal voltage	With respect to 0V	-0.3V		5.3V	V
RS485 terminal voltage	With respect to 0V	-9		+14	V
RS485 ESD tolerance			15		kV

Specifications

POWER REQUIREMENTS

Voltage (for TTL versions)		3.0		5.5	V
Voltage (for RS485 versions)		4.5		5.5	V
Power supply ripple				100	mV
Averaged current	Peak current = 120mA		32	40	mA

SIGNALS

RS485 transmitted signal levels			5.0		V
RS485 inputs		-9		14	V
RS485 ESD tolerance			±16		kV
TTL transmitted signal level			2.8		V
TTL receiver input		-0.3		5.3	V

ENVIRONMENTAL

Operational temperature range		-5		55	°C
Storage temperature range		-20		70	°C
Humidity	Non condensing	0		99	%RH

GAS PERFORMANCE<sup>1,2</sup>

Fixed error	Percent of full-scale			1	%FS
Proportional error	Percent of reading			2	% Reading
Temperature sensitivity	Deviation from calibration temperature			0.1	%FS/°C
Response time	To 90% of final value	30			s
Warmup time	After power on	30			s

DIMENSIONS	Excluding connections	45 x 37 x 25	mm
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Notes

1) Total sensor error = fixed error + proportional error + temperature sensitivity.  
e.g. for a 5% range sensor reading 2% (20,000ppm) CO<sub>2</sub> at 10°C after calibration at 25°C,  
maximum error = (0.01 x 5%) + (0.02 x 2%) + (0.001 x 5% x 15) = 0.165% CO<sub>2</sub>

2) All specifications assume the ambient pressure is 1000mbar. The sensor actually measures partial pressure of CO<sub>2</sub>, not concentration by volume.



Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.



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Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.