



## | Features |

- Using patented state-of-the-art non-dispersive infrared(NDIR)wave-guide technology and offers reliable measurements
- Comply to EMC directive 2014 / 30 / EU
- CO<sub>2</sub> Measuring range : 0 ... 2,000 / 0 ... 5,000 / 0 ... 20,000 (PPM) (Max. : 50,000 PPM) ; IP rating : IP65
- Digital output(RS-485 Modbus RTU protocol), analog output(0 ... 10 V, 4 ... 20 mA)
- Maintenance-free in most HVAC ventilation applications
- High tolerance to extreme humidity environment conditions
- Non-frill design, direct DDC connection

## | Introduction |

eYc GS07 is a state-of-the-art non-dispersive infrared(NDIR)carbon dioxide(CO<sub>2</sub>)transmitter. The direct insertion design and miniature size make it easy to install in the ventilation duct.

eYc GS07 provides measurement in analog outputs(0 ... 10 V, 4 ... 20 mA)and digital output(RS-485 Modbus RTU protocol).

With CO<sub>2</sub> demand controlled ventilations, eYc GS07 helps to save money by decreasing the energy consumption while maintaining a healthier indoor climate.

## | Applications |

Greenhouses / Mushroom farming / Industrial safety / AHUs in high RH regions

## | Specification |

CO <sub>2</sub> Measuring range	0 ... 2,000 / 0 ... 5,000 / 0 ... 20,000 (PPM) (Max. : 50,000 PPM)	
Output	RS-485	Digital output with Modbus RTU protocol
	Voltage signal terminal CO <sub>2</sub> <sup>Note3</sup>	Voltage or current output : Jumper selection(Default 0 ... 10 V) Vo linear conversion range : DC 0 ... 10 V for 0 ... 2000 PPM <sub>vol.</sub> Io linear conversion range : 4 ... 20 mA for 0 ... 2000 PPM <sub>vol.</sub> D/A resolution : 10 bits(10 mV / 0.016 mA) D/A conversion accuracy : ±2% of reading±50 mV Electrical characteristics : Voltage output-R <sub>OUT</sub> < 100 Ω, R <sub>LOAD</sub> > 5 kΩ Current output-R <sub>LOAD</sub> < 500 Ω
Operating temperature range	0 ... 50°C	
Storage temperature range	-40 ... +70°C	
Operating humidity range	0 ... 100% RH(Sensor in powered-up condition)	
Operating environment	Residential, commercial and industrial spaces <sup>Note 1</sup>	
Warm-up time	≤1 min(at full specs≤15 min)	
Sensor life expectancy	> 15 years	
Duct air velocity	Direct insertion sensor, no minimum air speed requirement	
Maintenance interval	No maintenance <sup>Note 2</sup> (with ABC algorithm)	
Power input	AC / DC 24 V±20%, 50 Hz or 60Hz(Half-wave rectifier input)	
Power consumption	< 1 W average	
Connection wires	3x22 AWG cables for power input(G+, G0)& voltage / Current output(Out)	
Connection screw terminal	4x1.0 mm <sup>2</sup> for power input(G+, G0), RS-485 output(A, B)	
Sensing method	Non-dispersive infrared(NDIR)wave-guide technology with Automatic Background Calibration(ABC)and passive gas diffusion(No moving parts)	
Response time(T <sub>1/e</sub> )	< 10 sec(at 30 cc/min flow rate)/ < 3 min diffusion time	
Repeatability	±30 PPM±1% of reading	
Accuracy <sup>Note 1,2</sup>	±40 PPM±3% of reading(at 25°C)	
Annual zero drift <sup>Note 1,2</sup>	< ±10 PPM(with ABC function)	
Pressure dependence	+1.6% reading per hPa	
Installation support	Background level calibration adjustment jumper trigger(bCAL)	
Dimension	94x30 mm diameter	
Duct probe length	51 mm	
IP rating	IP65	
Compliance with EMC directive	2014 / 30 / EU	

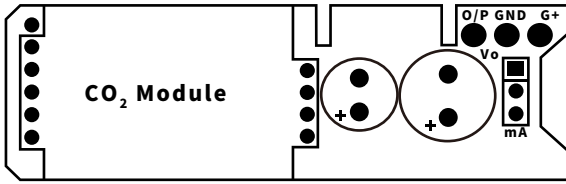
Note 1: The SO<sub>2</sub> enriched environments are excluded.

Note 2: In normal IAQ applications(at NTP). Accuracy is defined after minimum 3 weeks of continuous operation.

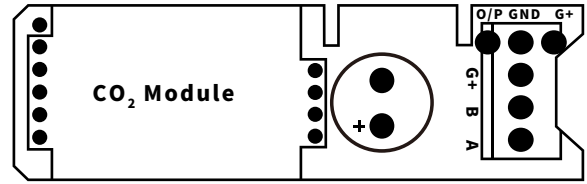
The tolerance of the span calibration gas(2% unless otherwise requested)and test gas adds to the total uncertainty.

Note 3: The specifications are valid for the output load connected to ground G0. Other outputs and measurement ranges are available per request.

## | Diagram |



1	G+	Red	AC / DC 24 V(+)
2	G0	Black	System ground(-)
3	Out	Brown / Blue	Signal output, 0 ... 10 V(by de fault) or 4 ... 20 mA(Jumper select)



1	G0	System ground(-)
2	G+	AC / DC 24 V(+)
3	B	RS-485 connections
4	A	

Power supply has to be connected to G+ and G0. G0 is considered as system ground.

If analog output is connected to a controller, the same ground reference has to be used for the GS07 unit and for the control system.

## | Ordering Guide |

GS07 — **1** — **5** — **C**

**Output**

1 : 4 ... 20 mA

6 : 0 ... 10 V

N : RS-485

(Max. : 6000 PPM)

**CO<sub>2</sub> Range**

2 : 2000 PPM

5 : 5000 PPM

8 : 10000 PPM

9 : 20000 PPM(Optional)

(Only 0 ... 10 V, 4 ... 20 mA, 2% vol.%)

N : 6000 PPM(RS-485)

W : Other

**Installation**

C : Clamp

F : Flange