Carbon Dioxide Monitor and Controller

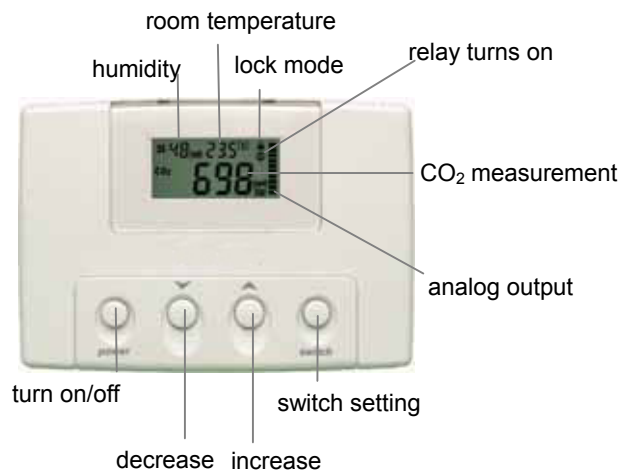Model: F2000IAQ-CO2-30XX/50XX

CE Approval   CE

□ Features

◆ Multiple functions and high performance with low prices

◆ Wall mounting type and duct type selectable

◆ LCD display detecting both CO_2 level and temperature, also relative humidity (optional)

◆ NDIR infrared CO_2 module inside with special ABC_Logic Self Calibration System. It makes the CO2 measurement more accurate and more reliable in use.

◆ 15 years lifetime of CO_2 sensor

◆ Microprocessor control, quick response, high precision

◆ Providing up to three 0~10V analog output or up to three relay dry-contact outputs

◆ The analog output with two alternatives: linearized over full range output or PID control output

◆ Different control mode for delays can be selected by user's application, for example for ventilation or for greenhouse or other applications.

◆ Locale adjustable range of CO_2: 0~20,000ppm or 0~50,000;
adjustable range of temperature: 5~45
adjustable range of humidity 5 95%RH

◆ RS-485 communication interface optional, 15KV antistatic protection, independent base address setting

◆ CE-Approval

□ Application

F2000IAQ-CO_2 monitor/controller is used to monitoring and control room CO_2 level, as well as room temperature and humidity, provid one or two or three 0~10VDC analog outputs and up to three dry contact outputs . F2000IAQ-CO_2 can be as a programmable logical controller to control CO_2 level, temperature or humidity, and also as a transmitter DDC/PLC controller or other automation systems. It provides a RS485 communication interface with an independent address to PC or other control systems.

◆ Hotel, exhibition hall, hospital, shop, restaurant, air port, train station, theater and other public places

◆ House, villa, office, meeting room, classroom and other places

◆ Greenhouse, mushroom, grown room and other agricultural applications

◆ All ventilation systems

□ Buttons and LCD

room temperature
humidity   lock mode   relay turns on
CO_2 measurement
analog output
turn on/off   switch setting
decrease increase

□ Specifications

Gas detected	Carbon Dioxide (CO_2)
Sensing element	Non-Dispersive Infrared Detector (NDIR)
Temperature sensor	NTC
Humidity sensor	HS series capacitive sensor
Temperature dependence	0.2% FS/
Temperature correction	Self compensation
Power supply	220VAC, 110VAC or 24VAC, 50/60HZ±10%, selectable with the order
Consumption	3.5 W max. ; 2.5 W avg.
Accuracy@25 (77)	±40ppm + 3% of reading
Stability	<2% of FS over life of sensor (15 yr typical)
Calibration interval	ABC Logic Self Calibration Algorithm
Non linearity	<1% of FS
Pressure dependence	0.13% of reading per mm Hg
Altitude calibration	Programmable from 0-9,900m in 100m increments
Response Time	<2 minutes for 90% step change
Signal update	Every 2 seconds
Warm up time	24 hours (first time) 5 minutes (operation)
CO_2 measuring range	0 2,000ppm (default) 0 20,000ppm, programmable selection 0 50,000ppmt
CO_2 setting & Display resolution	1ppm
Temperature measuring/ setting range	0 50 (32 122)/ 5 45 (41 113)
Humidity measuring/setting range	0 99%RH/ 5 95%RH
Analog output	0 10VDC linearized output or PID control output, selectable by end users
Output resolution	10Bit
Relay output	One or two dry contact outputs with programmable selection to control CO_2, temperature, humidity Rated switching current: 3A(220VAC/30VDC), resistance load
Communication interface	RS-485, 9600/14400/19200(default)/28800 or 38400bps (programmable selection), 15KV antistatic protection, 3 independent base address, max network node 64
Flow rates	Diffusion version 80 ~ 120 cc/min Flow through version 40~50cc/min
Operation conditions	0~50 (32~122); 0~95%RH, non condensing
Storage conditions	-40~70 (-40~158)
NDIR life	15 years
Weight	360g
Dimensions	130mm×90mm×40mm

Installment standard	65mm×65mm or 2"×4"wire box
Interface connections	Maxi. 9 terminals
Wiring standard	wire section area<1.5mm^2
Approval Standard	CE-Approval
Programming and selection	Via internal jumpers and push-buttons on the panel

□ Models Guide

Gas Type	
CO$_2$	Carbon Dioxide

Code		Model
3	0	CO$_2$ and temperature detection
5	0	CO$_2$ and temperature detection with RS-485 communication

Code	Amount of analog output
0	No analog output
1	1 X 0 – 10 VDC output
2	2 X 0 – 10 VDC outputs
3	3 X 0 – 10 VDC outputs

Code	Amount of dry contact output
0	No dry contact output
1	1 relay dry output
2	2 relay dry outputs
3	3 relay dry outputs

Code	Humidity option
RH	Humidity detection

Code	Use Type
-	Wall mount
P	Duct type

Code	Power supply
A	220/240VAC
B	100/120VAC
C	24VAC/24VDC

F2000IAQ	CO2	—	X	0	X1	X2	—	Y1	Y2	Y3

Note   X1+X2≤3

Example: F2000IAQ-CO$_2$-3011 indicates that it can detect CO$_2$ and temperature with one analog output and one relay dry contact output.
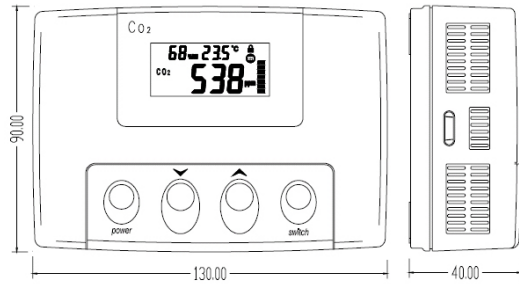
F2000AQ-CO$_2$-5002-RH indicates that it can detect CO$_2$ and temperature and humidity with two relays dry contact outputs, and RS485 communication.

◆ There is another series CO$_2$ controller just for greenhouses. If you need them, please contact us.

▢ Shipping Information

Indiv. Ctn. Dim	135mm×95mm×55mm
Master Ctn. Qty	40
Master Ctn. Dim	44cm(L)×32cm(W)×32cm(H)
Master Ctn. Wt.	15.5 KG

▢ Mounting and Wiring Diagram

duct type

F2000IAQ-CO2-3010/5010/P

1	L1(L)
2	L2(N)
3	0-10VDC
4	GND
8	—B— — RS-485
9	—A—

F2000IAQ-CO2-3020/5020/P

1	L1(L)
2	L2(N)
3	0-10VDC 2
4	0-10VDC 1
5	GND
8	—B— — RS-485
9	—A—

F2000IAQ-CO2-3030/5030/P

1	L1(L)
2	L2(N)
3	0-10VDC 3
4	0-10VDC 2
5	0-10VDC 1
6	GND
7	GND
8	—B— — RS-485
9	—A—

F2000IAQ-CO2-3002/5002/P

1	L1(L)
2	L2(N)
5	NO 2
6	NO 1
7	COM
8	—B— — RS-485
9	—A—

F2000IAQ-CO2-3011/5011/P

1	L1(L)
2	L2(N)
3	COM
4	ON 1
5	ON 2
6	ON 3
8	—B— — RS-485
9	—A—

F2000IAQ-CO2-3011/5011/P

1	L1
2	L2
4	0-10VDC
5	GND
6	NO
7	COM
8	—B— — RS-485
9	—A—

F2000IAQ-CO2-3012/5012/P

1	L1(L)
2	L2(N)
3	0-10VDC
4	GND
5	NO 2
6	NO 1
7	COM
8	—B— — RS-485
9	—A—

F2000IAQ-CO2-3021/5021/P

1	L1
2	L2
3	0-10VDC(2)
4	0-10VDC(1)
5	GND
6	NO
7	COM
8	—B— — RS-485
9	—A—