Honeywell | THE FUTURE IS WHAT WE MAKE IT

IAQ Monitor

QUICK START GUIDE

About

IAQ monitor is an advanced, configurable, connected RS485 device for commercial buildings. It monitors CO2,PM2.5/PM10,TVOC, Temp&Humidity and their configurations. This device provides RS485(Modbus RTU) interface, easily integrating with the building automation system.

Initial Setup

After successful wiring, the device will power on.

Note:First use or re-use after long time shelving, it should be continuously powered-on for more than 48 hours to ensure stable output of all measured values.

Work Indicator Light

There is a circle ring of indicator light in the center of the housing. This indicator light is used to show concentration range of measured value.

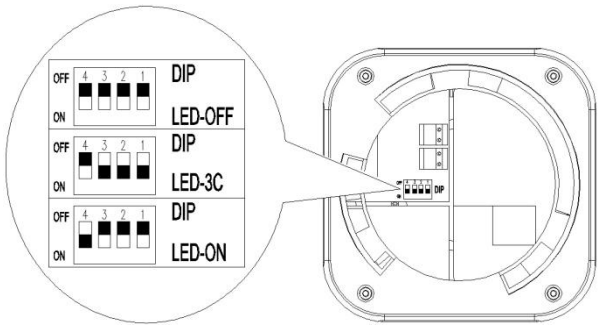
Three-color Indicator light

This indicator light can be controlled by any of measured values of among PM2.5 or CO2 or TVOC through RS485 communication command, and change the color of indicator light depending on the concentration.

Meanwhile, the measured value of the change of indicator light can be selected with one minute average value or one hour average value of 24 hours average value in the communication command.

The indicating light is controlled by one minute average value of PM2.5 as factory default.

DIP switches can control the ring of indicator light Open, which characterizing AQI concentration changes and Green light keeps ON constantly, and Turn Off the indicating light. Please see the following details.



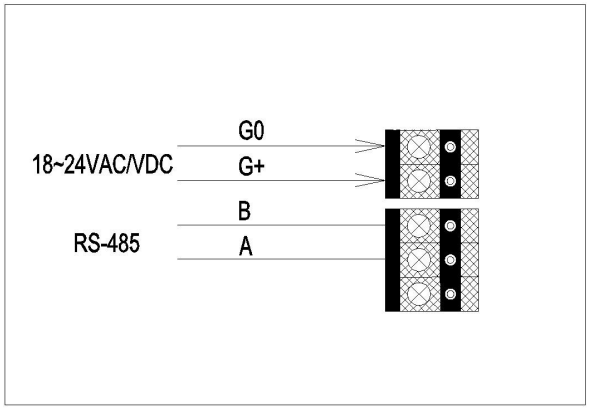
Indicating light	DIP4	DIP3	DIP2	DIP1	
Light OFF	OFF	OFF	OFF	OFF	
Three-color lights	OFF	ON	ON	ON	Default
Green Normally ON	ON	OFF	OFF	OFF	

Below is indicator color changes corresponding to the measured arrange:

PM2.5 <35ug/m³ Green, 35~75ug/ m³ Yellow,>75ug/m³ Red
CO2 <800ppm Green, 800~1,200ppm Yellow, >1,200ppm Red

Communication Settings

Wire communication (Modbus RS485) available for the device. The wiring terminal can refer to below pic and for detailed wiring and installation, please refer to Mounting Instrudction.



General Data

Table 1. General Data

Part Number	C7355A1050
Detection Parameters	PM2.5/PM10, CO2, TVOC, Temperature & RH
Operating Environment	Temperature：0~50°C Humidity：0~90%RH
Storage Conditions	-10°C~50°C/ 0~90%RH (No condensation)
Overall Dimension	130mm(L)×130mm(W)×45mm (H)
Net weight	300g
Certification Standard	CE/FCC

Modbus Register Table

Mode: RTU (MSB First)

Baud Rate: 1-4800 2-9600 3-14400 4-19200 5-38400
6-56000 7-57600 8-115200
default: 2-9600bps

Start Bits: 1

Data Bits: 8

Stop Bits: 1 / 2 default :1

Parity: None / Odd / Even default: None

Register Map

Support Function code:

3 - Read Holding Registers

4 - Read Input Registers

6 - Write Single Register

16 - Write Multiple registers

Table 2. Modbus Register Table

Starting Register Decimal	Data Description	Function	Read/Write	Quantity of Registers (2Bytes/16bit)	Format	Decimals	Data Range, Data Description	Default
0/1050	PM2.5 an hourly average measurements	4	R	2	Float-Big Endian	1	0~1000.0μg/m³	
2/1052	PM10 an hourly average measurements	4	R	2	Float-Big Endian	1	0~1000.0μg/m³	
8/1058	CO2 an hourly average measurements	4	R	2	Float-Big Endian	0	0～5,000ppm	
10/1060	TVOC an hourly average measurements	4	R	2	Float-Big Endian	3	0~4.000mg/m³	
12/1000	PM2.5 one minute average measurements	4	R	2	Float-Big Endian	1	0~1000.0μg/m³	
14/1002	PM10 one minute average measurements	4	R	2	Float-Big Endian	1	0~1000.0μg/m³	
16/1004	Temperature real-time measurements	4	R	2	Float-Big Endian	2	-20.00℃~60.00℃	
18/1006	Humidity real-time measurements	4	R	2	Float-Big Endian	2	0~100.00% RH	
20/1008	CO2 real-time measurements	4	R	2	Float-Big Endian	0	0～5,000ppm	
22/1010	TVOC real-time measurements	4	R	2	Float-Big Endian	3	0– 4.000mg/m³	
24/1100	PM2.5 24-hour moving average measurements	4	R	2	Float-Big Endian	1	0~1000.0μg/m³	
26/1102	PM10 24-hour moving average measurements	4	R	2	Float-Big Endian	1	0~1000.0μg/m³	

Table 2. Modbus Register Table

Starting Register Decimal	Data Description	Function	Read/ Write	Quantity of Registers (2Bytes/16blt)	Format	Decimals	Data Range, Data Description	Default
32/1108	CO2 24-hour moving average measurements	4	R	2	Float-Big Endian	0	0～5,000ppm	
34/1110	TVOC 8-hour moving average measurements	4	R	2	Float-Big Endian	3	0– 4.000mg/m³	
1300	Primary pollutant 24-hour average measuring value（One of PM2.5/PM10/CO2/TVOC）（Calculated based on 24-hour or 1-hour moving average measurements）	4	R	2	Float-Big Endian		1300	
1302	Primary pollutant type（One of PM2.5/PM10/CO2/TVOC）（Calculated based on 24-hour or 1-hour moving average measurements）	4	R	1	INT16		1-PM25, 2-PM10, 3-CO2; 4-TVOC	
1303	Index level of the primary pollutant（One of PM2.5/PM10/CO2/TVOC）.（Calculated based on 24-hour or 1-hour moving average measurements）	4	R	1	INT16		Level 1-Excellent Level 2-Good Level 3-Light pollution Level4-Medium pollution Level 5-Heavy pollution Level 6-Severe pollution	
1304	AQI value of the primary pollutant（One of PM2.5/PM10/CO2/TVOC）.（Calculated based on 24-hour or 1-hour moving average measurements）	4	R	1	INT16		0~500	
1320	PM2.5 AQI value（Calculated based on 24-hour moving average measurements）	4	R	1	INT16		0~500	
1321	PM10 AQI value（Calculated based on 24-hour moving average measurements）	4	R	1	INT16		0~500	
1322	CO2 AQI value（Calculated based on 24-hour moving average measurements）	4	R	1	INT16		0~500	
1323	TVOC AQI value（Calculated based on 24-hour moving average measurements）	4	R	1	INT16		0~500	
1350	PM2.5 Pollution index level（Calculated based on 24-hour moving average measurements）	4	R	1	INT16		1~6	
1351	PM10 Pollution index level（Calculated based on 24-hour moving average measurements）	4	R	1	INT16		1~6	
1352	CO2 Pollution index level（Calculated based on 24-hour moving average measurements）	4	R	1	INT16		1~6	

Table 2. Modbus Register Table

Starting Register Decimal	Data Description	Function	Read/ Write	Quantity of Registers (2Bytes/16blt)	Format	Decimals	Data Range, Data Description	Default
1353	TVOC Pollution index level （Calculated based on 24-hour moving average measurements）	4	R	1	INT16		1~6	
78	3 color LED status	4	R	1	INT16		0-OFF, 1-Green, 2-Yellow, 3-Red	
0	Modbus Address	3/6	R/W	1	UINT16		1~247	1
1	Modbus rate（bps）	3/6	R/W	1	UINT16		1-4800, 2-9600, 3-14400, 4-19200, 5-38400, 6-56000, 7-57600, 8-115200	2
2	Modbus Parity check bit	3/6	R/W	1	UINT16		1-NONE, 1STOP_BIT,2-NONE, 2STOP_BIT, 3-Odd, 1STOP_BIT,4-Even, 1STOP_BIT	1
4	Temperature correction value	3/16	R/W	2	Float-Big Endian	2	-3.0~3.0℃/-6.0~6.0F	-2.0
6	Humidity correction value	3/16	R/W	2	Float-Big Endian	2	-5.0~5.0%RH	0
14	CO2 compensation value	3/16	R/W	2	Float-Big Endian	0	-300.0~300.0ppm	0

In order to reserve the decimal part, the measuring value with decimal will be magnified 10/100/1000 times, marked as x10/x100/x1000.

Starting Register Decimal	Data Description	Function	Read/ Write	Quantity of Registers (2Bytes/16blt)	Format	Decimals	Data Range, Data Description	Default
50/1175	PM2.5 an hourly average measurements x10	4	R	1	UINT16	1	0~10000 corresponding to 0~1000.0μg/m³	
51/1176	PM10 an hourly average measurements x10	4	R	1	UINT16	1	0~10000 corresponding to 0~1000.0μg/m³	
54/1179	CO2 an hourly average measurements x1	4	R	1	UINT16	0	0~5000 corresponding to 0～5,000ppm	
55/1180	TVOC an hourly average measurements x1000	4	R	1	UINT16	3	0~3575 corresponding to ~ 4.000mg/m³	
56/1150	PM2.5 one minute average measurements x10	4	R	1	UINT16	1	0~10000 corresponding to 0~1000.0μg/m³	
57/1151	PM10 one minute average measurements x10	4	R	1	UINT16	1	0~10000 corresponding to 0~1000.0μg/m³	
58/1152	Temperature real-time measurements x100	4	R	1	INT16	2	-2000~6000 corresponding to -20.00℃~60.00℃	
59/1153	Humidity real-time measurements x100	4	R	1	UINT16	2	0~10000 corresponding to 0~100.00% RH	

Table 2. Modbus Register Table

Starting Register Decimal	Data Description	Function	Read/ Write	Quantity of Registers (2Bytes/16blt)	Format	Decimals	Data Range, Data Description	Default
60/1154	CO2 real-time measurements x1	4	R	1	UINT16	0	0~5000 corresponding to 0~5,000ppm	
61/1155	TVOC real-time measurements x1000	4	R	1	UINT16	3	0~3575 corresponding to ~ 4.000mg/m³	
62/1200	PM2.5 24-hour moving average measurements x10	4	R	1	UINT16	1	0~10000 corresponding to 0~1000.0μg/m³	
63/1201	PM10 24-hour moving average measurements x10	4	R	1	UINT16	1	0~10000 corresponding to 0~1000.0μg/m³	
66/1204	CO2 24-hour moving average measurements x1	4	R	1	UINT16	0	0~5000 corresponding to 0～5,000ppm	
67/1205	TVOC 24-hour moving average measurements x1000	4	R	1	UINT16	3	0~3575 corresponding to 0~4.000mg/m³	

Honeywell Building Solutions
Honeywell International Inc.
1985 Douglas Drive North
Golden Valley, MN 55422
customer.honeywell.com