RK300-02 Dust Concentration Sensor

Hunan Rika Electronic Tech Co.,Ltd

Add: 401, 1st Unit, 10th Bd, International Enterprise Center, No.268 Xinxing Rd, Yuhua Dist,

 Changsha, 410116 Hunan, China.

T:+86-731-85132979

E:info@rikasensor.com

W:www.rikasensor.com

RK300-02 Dust Sensor using laser scattering principle, detecting the existence of dust particle concentration in the air, the minimum can detect 1.0μm particles, has a good consistency and stability.According to different usage environment ,there are indoor type and outdoor type to select.
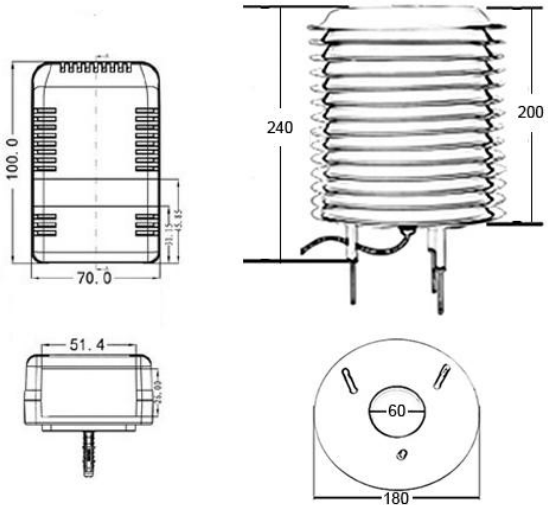
FEATURES

- High sensitivity
- Fast response
- High precision, wide measuring range
- Compact size
- Excellent stability
- Easy installation

Parts:

1. Indoor sensor(with install screws): 1
2. Outdoor sensor(with radiation shield): 1

SPECIFICATIONS

Item	Technical Specification
Sampling object	PM1.0,PM2.5,PM10
Range	0-1000μg/m³
Accuracy	±3%FS@25℃
Supply	Mark on the label
Output	4-20mA,0-5V,0-10V,RS485
Power Consumption	<50mA@24V(4-20mA)
Warm Up Time	3min
Response Time	<90s
Temperature Drift	≤0.2%FS/℃
Stability	<±2%FS
Repeatability	<±1%FS
Operating Temperature	-20℃-+50℃@15-80%RH
Storage	-40-60℃@20%-90%RH
Shell material	ABS

DIMENSION

Unit:mm

Indoor(Wall-mounted installation)

Outdoor

. ELECTRICAL CONNECTIONS

Connector（cable）	Current /Voltage	RS485
Red	V+	V+
Black	V-	V-
Yellow	PM1.0	RS485A
Green	PM2.5	RS485B
Brown	PM10	

Note: This product has been tested and complies with European CE requirements for EMC directive. 5

PARAMETER SELECTION TABLE

Remark	Series	Type	Measuring object	Indoor /Outdoor	Supply	Output	Cable Length	
RK								
	300							
		02						
			A					PM1.0
			B					PM2.5
			C					PM10
			D					PM2.5&PM10
			E①					PM1.0&PM2.5&PM10
				A				Indoor
				B				Outdoor(with radiation shield)
					A			5V
					B			12-24V
					C			Other
						A		4-20mA
						B		0-5V
						C		0-10V
						D		RS485
						E		Other
							2000	Units:mm（typ）
							3000	Units:mm
							...	Units:mm

①Measure 3 parameters is only RS485 output.

Example: RK300-02BABA2000　PM2.5, Indoor, 12-24V, Output:4-20mA, Cable Length:2.

Communication Protocol（MODBUS）

Transmission mode: MODBUS-RTU,**Baud rate:** 9600bps,**Data bits:**8,**Stop bit:**1,**Check bit:**no

Slave address:the factory default is 01H (set according to the need,00H to FFH)

● **The 03H Function Code Example: Read The Dust Concentration**

● **PM2.5 & PM10**

Host Scan Order(slave address:0x01)

01 03 00 00 00 02 C40B

Slave Response

01 03 04 00 3A 00 68 DBD0

PM2.5:(003A)H=(58)D=58ug/m3, PM10:(0068)H=(104)D=104ug/m3,

● **PM1.0, PM2.5 & PM10 three in one**

Host Scan Order(slave address:0x01)

01 03 00 00 00 03 05CB

Slave Response

01 03 06 00 30 00 3A 00 68 4092

PM1.0(0030)H=(48)D=48ug/m3, PM2.5:(003A)H=(58)D=58ug/m3, PM10:(0068)H=(104)D=104ug/m3,

● **The 06H Function Code Example: Modify the slave address**

Host Scan Order (Changed the 02H to 01H):

02 06 00 30 00 01 4836

Slave Response:

02 06 00 30 00 01 4836

If you forget the original address, you should use the broadcast address(FEH) (ensure that no other devices on the bus at this time).

Note:

1. All underlined is fixed bit;

2. The last two bytes is CRC check command.

WARRANTY

This product is warranted to be free of defects in materials and construction for a period of 12 months from date of lead time.Liability is limited to repair or replacement of defective item.