

CLS-DPM Duct PM2.5 dust transmitter user manual

Scenarios & Description

- Adopt laser sensor, Sample detecting: 0.3~10 μ m. For room air quality (PM2.5 dust) monitoring and control
- Duct installed and patent in combined searching unit. Good sampling capability
- Stable performance of sensor, accuracy up to: $\pm 10\%$, $\pm 10\mu\text{g}/\text{m}^3$. Real time response and support consecutive sampling
- 3 years sensor life cycle in common air quality environment without maintenance (8-10 years life cycle in typical stable air quality conditions)
- Terminal strip on shell design and protect PCB board when wiring
- Digital tech adopted, overvoltage and wrong wiring protection. High reliability and anti-interference capability

Product Spec

Sensor: laser sensor, Sample detecting: 0.3~10 μ m

Life cycle of sensor: 3 years in common working conditions and 8-10 years in stable working conditions

Working theory: scattering laser theory

Output: 4~20mA&0~10V, RS485/Modbus

Range: >1000 $\mu\text{g}/\text{m}^3$

Scope of measuring (in production environment): (PM2.5) 0~500 $\mu\text{g}/\text{m}^3$, grain size: 0.3~2.5 μ m

Accuracy: $\pm 10\mu\text{g}/\text{m}^3$ @0~100 $\mu\text{g}/\text{m}^3$ @25°C&50%RH, $\pm 10\%$ in reading @100~500/ m^3 @25°C&50%RH (reading equalized actual)

Drift of accuracy: None

Resolution radio: 1 $\mu\text{g}/\text{m}^3$

Time of response: Individual response time <1s & overall response time <10s in contentious model

Power supply: 16~28VAC/16~35VDC, power dissipation: $\leq 1\text{W}$

Wiring cable: 22-14AWG

Output load: $\leq 500\Omega$ (Current type), $\geq 2\text{k}\Omega$ (Volt type)

Working environment: 0~50°C, 0~95%RH (Non-condensation environment)

Temp of shipment: -30~70°C

Materia type of shell: PC (anti-flaming)

Protection grade: Shell IP65/Probe IP30

Weight: 270g

Certification: CE/RoHS

Typical accuracy curve

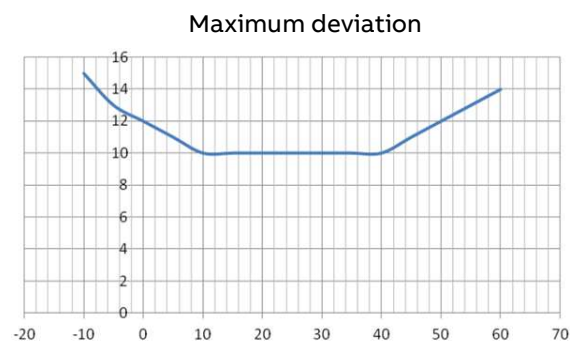


Figure 1

Selection table

Table 1

ABB series	Description
CLS-DPM-VA0	Duct PM2.5 transmitter,0~500μg/m3,4~20mA&0~10V,IP65
CLS-DPM-VAM0	Duct PM2.5 transmitter,0~500μg/m3,4~20mA&0~10V,RS485,IP65

Appearance & size

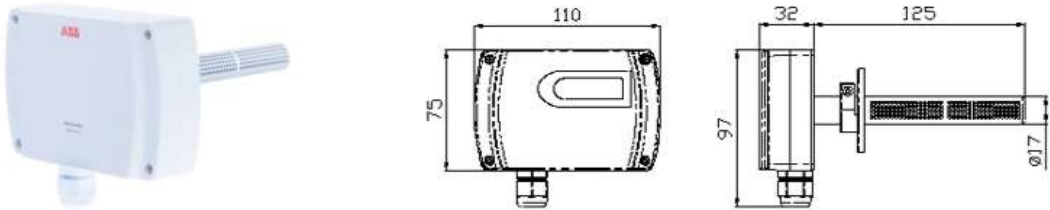


Figure 2

Wiring diagram

Different wiring and terminal strip for different series, please follow the indication of the wiring diagrams

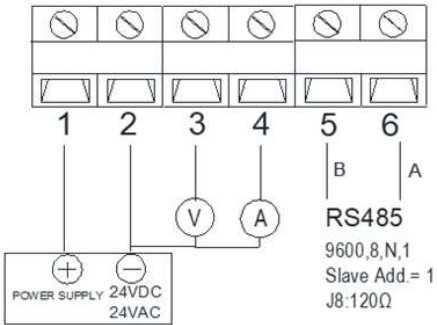


Figure 3

Jumper

Analog output: wire terminal 3 output the 0~10V signal and wire terminal 4 output the 4~20mA signal

Indication of how to operate J8 jumper for RS485 selection:

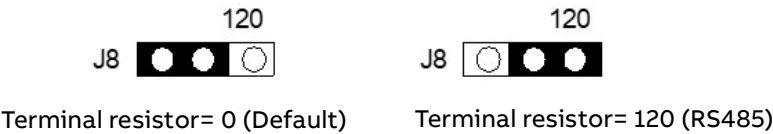


Figure 4

For details of RS485/MODBUS open protocol configure please go check the guidance: 《CLS-PM PM2.5 dust transmitter MODBUS communication manual》

Working mode: NORMAL & AUTO (working mode selection by jumper changing)

NORMAL- Default mode, sampling continuously.

AUTO- Reduce the laser sampling time automatically when air dust coming to less. That can be able to prolong life-span. (better air quality conditions)

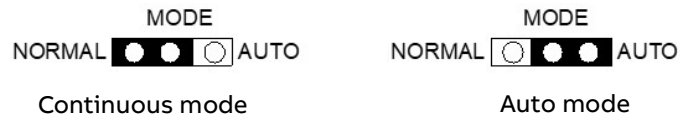


Figure 5

Installation

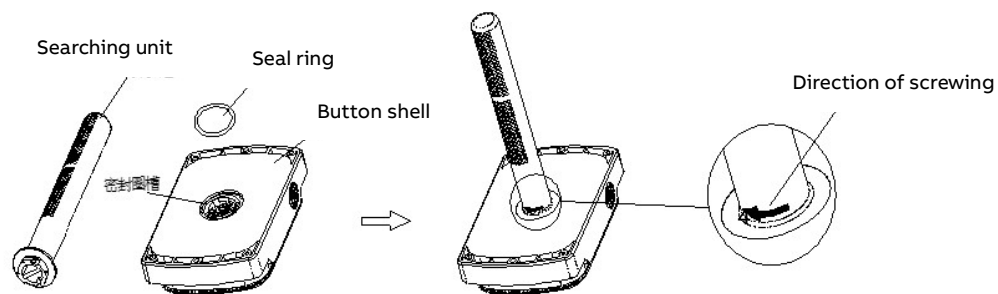


Figure 6

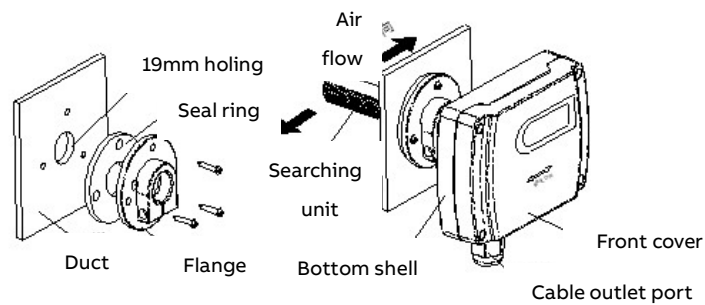


Figure 7

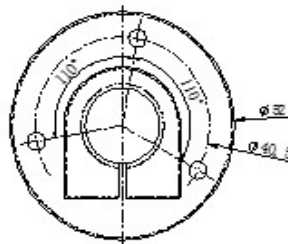


Figure 8

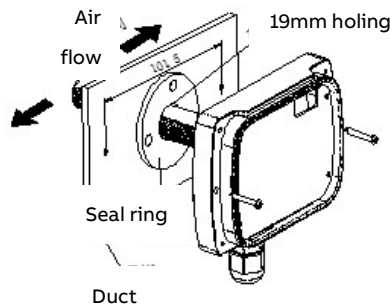


Figure 9

According as figure 6, pick up the searching unit screwing in to bottom shell and combine them into an integrated units.

Duct installation:

1. Install with the flange, according as figure 7
2. Install without the flange, according as figure 9

Electrical connection:

1. Open the front cover and wiring according as the diagrams
2. Keep the searching unit into duct completely
3. Be aware that must fix the seal ring in right position. Determine the protection grade reach to IP65

Caution

Do not teardown the sensor personally due to laser beam risk.

Sensor for common production environment only. The accuracy will get worse when working under an oversevere environments. (e.g. high moist/lampblack etc...)

Please keep unobstructed and avoid straight sunlight for air inlet por of products. And keep working in a less vibration environments.

Please install and wiring under off power condition and prepare a dedicated 24VAC power source. Ensure the cable are wire 100% accurate in case that working shared the power source with other sensors/actuators.

Maintenance

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Scan the QR code to go ABB official web page and get more product info



2TYB317001P0015



Warning! Installation by person with electrotechnical expertise only.

Warnung! Installation nur durch elektrotechnische Fachkraft.

Avvertenza! Fare installare solo da un elettricista qualificato.

Avertissement! Installation uniquement par des personnes qualifiées en électrotechnique.

¡Advertencia! La instalación deberá ser realizada únicamente por electricistas especializados.