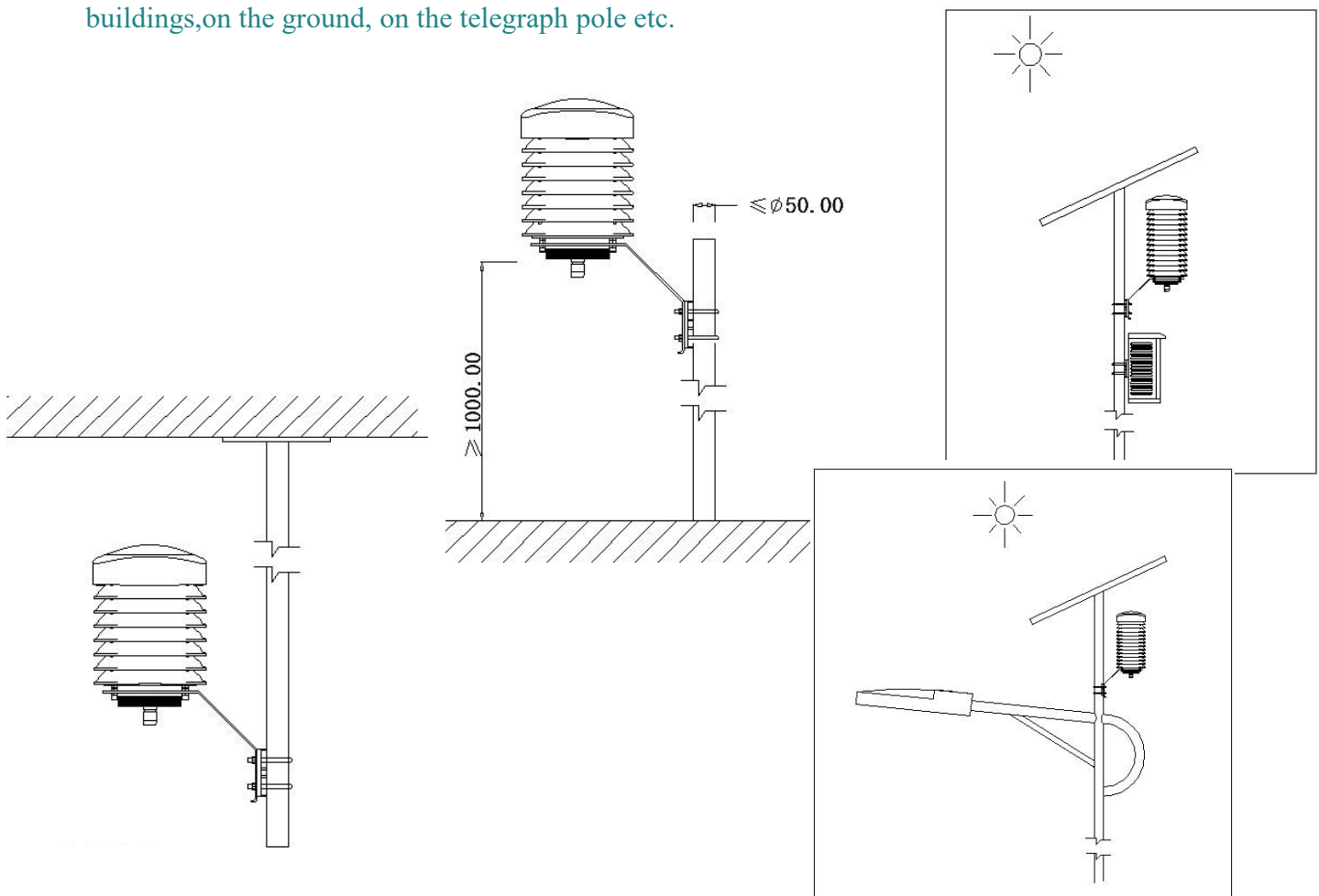


Outdoor Air Quality Monitor

- Design for real time monitoring outdoor air quality
- Rain & snow-proof, high temperature resistant design with IP53 protection class
- Up to eight parameters available for monitoring air quality in outdoor space, tunnel, underground and semi-underground
- Built-in high-precision sensing module in commercial-level for accurate measurement with high cost performance ratio.
- Optional communication interface: RS485, WiFi +extra RS485 , Ethernet + extra RS485, WiFi/Ethernet + extra RS485, or customized 4G.
- 12~24VDC powered with a 100~240VAC/ 1A power adaptor;
- Optional Solar powered with Lithium-Polymer rechargeable batter, support the monitor working at least 72 hours on a cloudy day without sunlight.
- It can be installed on the outside wall of buildings, roof of the buildings, on the ground, on the telegraph pole etc.



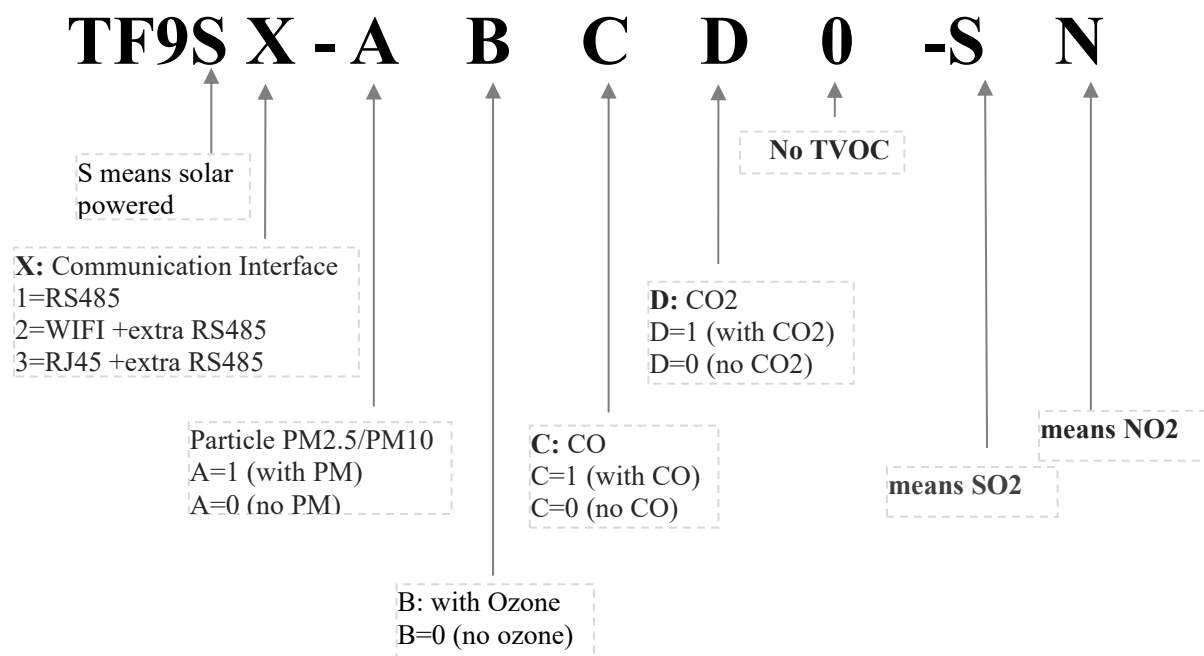
Specifications

General Parameters	
Power supply	12-24VDC (with a 100~240VAC/ 1A power adaptor)
Solar powered option (solar panel)	Monocrystalline silicon energy solar panel (with 3.2mm fully tempered glass) 120W solar panel, 18V and 6.6A
Solar powered option (Lithium battery)	18pcs Panasonic lithium battery 18650 Each typical normal capacity is 3450mAh Overcharging and discharging protection, all steel enclosure, explosion design.
Communication interface options	A. RS485, Modbus RTU/BACnet MS/TP; B. WiFi@2.4 GHz 802.11b/g/n C. RJ45 Ethernet D. 4G in area coverage: B3 (1800 MHz); B7 (2600 MHz); B20 (800 MHz);
Extra RS485 for models of WiFi/RJ45/4G	9600bps(default), 15KV Antistatic protection
Data upload interval cycle	1 minute~24 hours presetting Default: 1 minute
Output data	Moving average / 1 minutes Moving average / 1 hour Moving average / 24 hours
Working condition	-20°C~70°C/ 0~99%RH
Storage condition	0°C~50°C/ 10~60%RH
Maximum dimensions of the monitor (including fixed bracket)	Width: 190mm, Total width with bracket: 272mm Height: 252~441mm, Total height with bracket: 362~574 mm Depending on the monitored sensing parameters and communication interfaces
Net weight	2.35kg~3.05Kg Depending on the monitored sensing parameters and communication interfaces
Packing size/Weight	53cm X 34cm X 25cm, 3.9Kg
Shell Material	PC material
Protection grade	It is equipped with sensor inlet air filter, rain and snow-proof, temperature resistance, UV resistance aging, anti-solar radiation cover shell. IP53 protection class.
Particle (PM2.5/ PM10) Data	
Sensor	Laser particle sensor, light scattering method
Measurement range	0-1000ug/m3
Output resolution	0.1ug/m3

PM2.5 Accuracy	±5ug/m3+10% of reading (0-500ug/m3, 0%-70%RH, @ 0-40°C)
PM10 Accuracy	±10ug/m3+15% of reading (0-500ug/m3, 0%-70%RH, @ 0-40°C)
Temperature and Humidity Data	
Inductive component	Band gap material temperature sensor, Capacitive humidity sensor
Temperature measuring range	-20°C-80°C
Relative humidity measuring range	0-99%RH
Accuracy	±0.3°C(-20~70°C), ±3%RH (0%-70%RH)
Output resolution	Temperature: 0.01 °C Humidity: 0.01%RH
CO Data	
Sensor	Electrochemical CO Sensor
Measurement range	0-200mg/m3
Output resolution	0.001mg/m3
Accuracy	±1mg/m3+5% of reading (0%-70%RH, @ 0-40°C)
Ozone Data	
Sensor	Electrochemical Ozone sensor
Measuring Range	0-2000ug/m3
Output Resolution	1ug/m3
Accuracy	±15ug/m3+15% of reading (0-70%RH, @ 0-40°C)
NO2 Data	
Sensor	Electrochemical Ozone sensor
Measuring Range	0-4000ug/m3
Output Resolution	1ug/m3
Accuracy	±15ug/m3+15% of reading (0-70%RH, @ 0-40°C)
SO2 Data	
Sensor	Electrochemical Ozone sensor
Measuring Range	0-4000ug/m3
Output Resolution	1ug/m3
Accuracy	±15ug/m3+15% of reading (0-70%RH, @ 0-40°C)
TVOC Data	
Sensor	Metal oxide sensor
Measuring Range	0.01-4.00mg/m3
Output resolution	0.001mg/m3
Accuracy	±0.05mg/m3+10% of reading (0-2mg/m3, 10%-80%RH,@0-40°C)

Atmospheric Pressure	
Sensor	MEMS Semi-conductor sensor
Measuring range	0~103425Pa
Output resolution	8 Pa
accuracy	<±48Pa

Models Guide



Models examples

Model	PM2.5 PM10	Ozone	CO	CO2	NO2	SO2	Communication
TF91-10110-MB TF91-10110-BN	•		•	•			RS485, Modbus RTU or RS485, BACnet MS/TP
TF93-11000	•	•					RJ45, MQTT Protocol
TF94-11100-SN	•	•	•		•	•	4G, MQTT Protocol

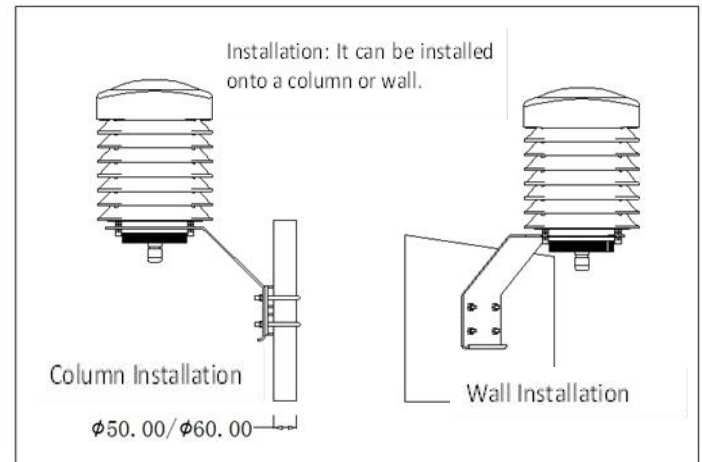
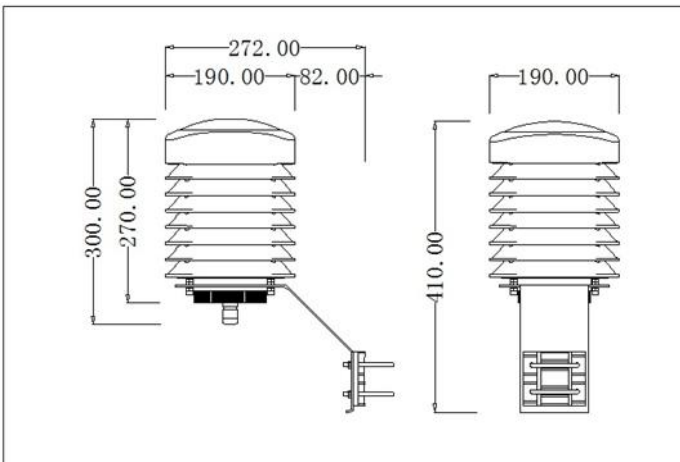
Protocol Support

Communication protocol support

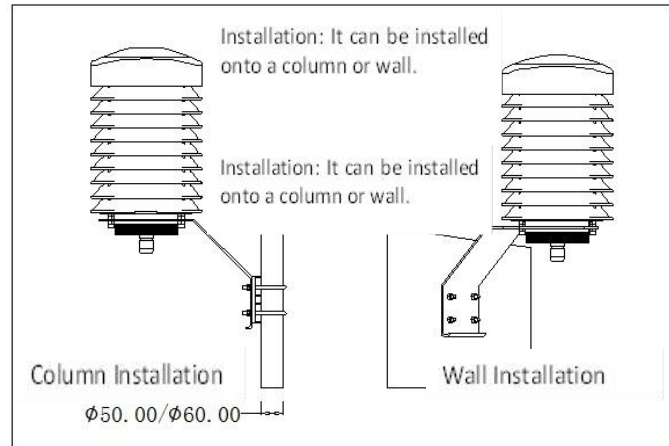
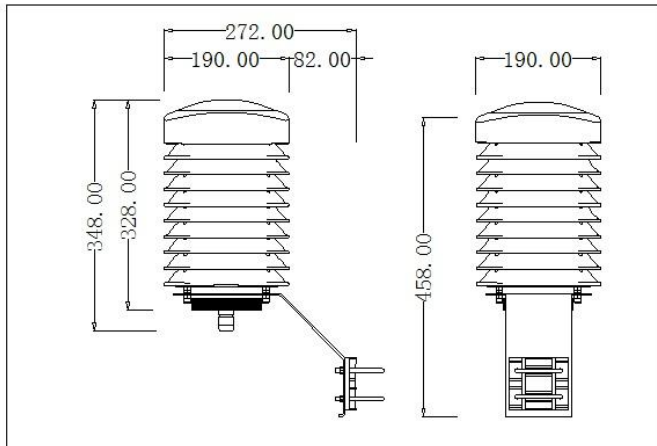
1. Modbus RTU protocol for RS485
2. BACnet MS/TP for RS485
3. MQTT protocol for WiFi, Ethernet and 4G
4. API for clients servers

Examples of Dimension of the Monitor

- WIFI interface, RS485 interface for monitoring PM2.5/PM10, TVOC, CO, T&RH
Overall size: width 190.00mm, height 434.00mm Net weight: 2.65Kg

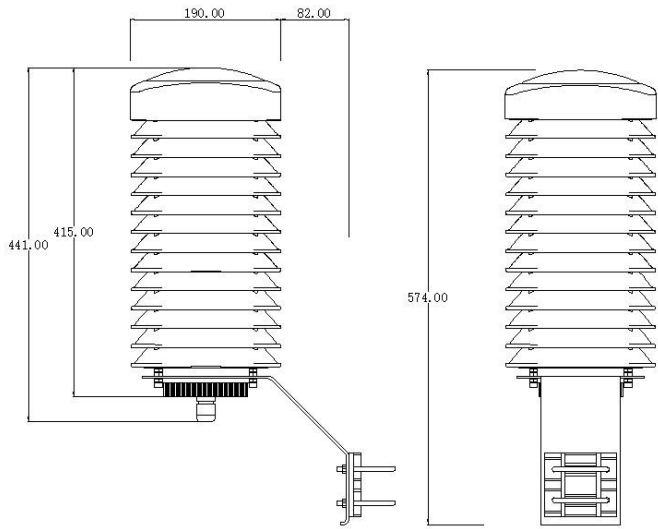


- RJ45 interface PM2.5/PM10, TVOC, CO, T&RH
Overall Size: width 190.00mm, height: 458.00mm Net weight: 2.8Kg



- 4G interface for monitoring CO, NO2, SO2, Ozone, T&RH

Overall size: width 190.00mm, height 574.00mm Net weight: 3.05Kg



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