

TF9 Outdoor Air Quality Detector

For atmospheric underground environment

- With 14 years experiences in IAQ products design and production, long-term export to Europe and the United States and the Gulf region, many project experiences
- Built-in commercial-grade high-precision particle sensing module for accurate measurement of parameters and high cost performance ratio.
- Up to eight parameters are available to meet almost needs for monitoring atmospheric, tunnel, underground and semi-underground environment.
- Rain & snow-proof, high temperature resistant design with IP53 protection rating.
- Suitable for air quality monitoring in harsh environments, available for data from the nearest outdoor environment
- Provide a variety of communication interface options, connect monitoring and analysis software platform for data storage, analysis and comparison
- Working with indoor air quality monitors together, as the comparison and analysis of indoor and outdoor data, and develop air quality improvement or energy saving solutions.



Features

Specially designed for atmospheric ambient air quality monitoring, multiple measurement parameters could be selected.

Unique self-property particle sensing module adopts the structural design of fully enclosed aluminum casting to ensure structural stability casting to ensure structural stability, air-tightness and shielding, and greatly improve the anti-interference ability.

Specially designed to protect against rain and snow, high and low temperature resistance, UV-resistant and solar radiation hoods. It has adaptability for wide environment.

With temperature and humidity compensation function, it reduces the influence of environmental temperature and humidity changes on various measurement coefficients.

Real-time detecting PM2.5/PM10 particles, ambient temperature and humidity, carbon monoxide, carbon dioxide, TVOC and atmospheric pressure.

Provides RS485, WIFI, RJ45(Ethernet) communication interfaces could be selected. It is equipped with an RS485 extension communication interface specially.

Support multiple data platforms, provide multiple communication protocols, realize the storage, comparison, analysis of the data from multiple observation points in local areas to determine the source of pollution, provide data support for the treatment and improvement of atmospheric air pollution sources.

Applied conjunction with MSD indoor air quality monitor and PMD in-duct air quality detector, can be used as the comparison data of indoor and outdoor air quality in the same area, and solves the large standard deviation of the comparison due to the atmospheric environment monitoring station away from the actual environment. It provides a verification basis of air quality improvement and energy saving in buildings.

Used for monitoring of atmospheric environment, tunnels, semi-basement and semi-enclosed spaces installed on a column or outdoor wall.

Applications

1. Use alone to obtain atmospheric environmental data in the installed area.
2. Used in conjunction with IAQ monitor MSD and duct air quality detector PMD. Data comparison, system improvement plan and verification of building fresh air system and air filtration purification system.

MSD series (Indoor environment)



TF9 series (outdoor series)



3. Local area supervision, multi-point real-time data collection.

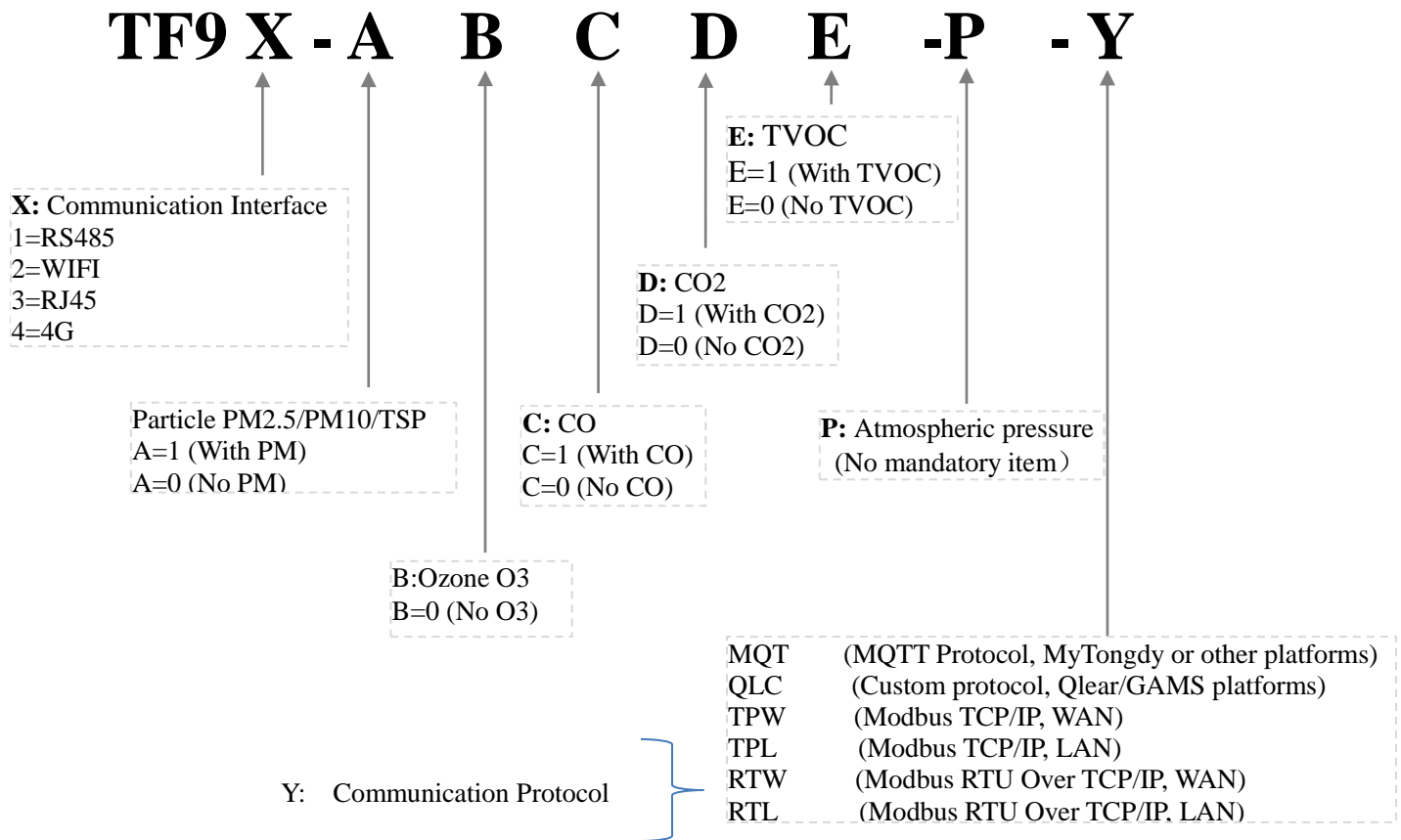
Key regulatory industry

Enterprises with pollutants

Temporary construction site



Models Guide



Models examples

Model	PM2.5 PM10	CO	CO2	TVOC	Pressure	Communication
TF93-10000-MQT	●					RJ45, MQTT Protocol
TF93-10100-QLC	●	●				RJ45, custom protocol
TF91-10110-P-RTW	●	●	●		●	RS485, Modbus RTU

Technical Parameter

General parameter	
Power supply	12-24VDC (>500mA , connect to 220~240VA power supply assorting with AC adaptor)
Communication interface	Choose one from the following

RS485	RS485/RTU, 9600bps(default), 15KV Antistatic protection
RJ45	Ethernet TCP
WiFi	WiFi@2.4 GHz 802.11b/g/n
Data upload interval cycle	Average/60 second
Output values	Moving average / 60 seconds, Moving average / 1 hour Moving average / 24 hours
Working condition	-20℃~60℃/ 0~99%RH, no condensation
Storage condition	0℃~50℃/ 10~60%RH
Overall dimension	Diameter 190mm , Height 434~482 mm (Please refer to overall size and installation drawings)
Mounting accessory size (bracket)	4.0mm Metal bracket plate; L228mm x W152mm x H160mm
Maximum dimensions (including fixed bracket)	Width: 190mm , Total Height: 362~482 mm (Please Refer to overall size and installation drawings), Total width(bracket included): 272mm
Net weight	2.35kg~2.92Kg(Please refer to overall size and installation drawings)
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 rating.
Particle (PM2.5/ PM10) Data	
Sensor	Laser particle sensor, light scattering method
Measurement range	PM2.5: 0~1000 $\mu\text{g}/\text{m}^3$; PM10: 0~2000 $\mu\text{g}/\text{m}^3$
Pollution index grade	PM2.5/ PM10: 1-6 grade
AQI Air quality sub-index output value	PM2.5/ PM10: 0-500
Output resolution	0.1 $\mu\text{g}/\text{m}^3$
Zero point stability	<2.5 $\mu\text{g}/\text{m}^3$
PM2.5 Accuracy (mean per hour)	< $\pm 5\mu\text{g}/\text{m}^3 + 10\%$ of reading(0~500 $\mu\text{g}/\text{m}^3$ @ 5~35℃ , 5~70%RH)
PM10 Accuracy (mean per hour)	< $\pm 5\mu\text{g}/\text{m}^3 + 15\%$ reading (0~500 $\mu\text{g}/\text{m}^3$ @ 5~35℃ , 5~70%RH)
Temperature and Humidity Data	
Inductive component	Band gap material temperature sensor, Capacitive humidity sensor

Temperature measuring range	-20℃~60℃
Relative humidity measuring range	0~99%RH
Accuracy	±0.5℃, 3.5%RH (5~35℃, 5%~70%RH)
Output resolution	Temperature : 0.01℃ Humidity : 0.01%RH
CO Data	
Sensor	Electrochemical CO Sensor
Measurement range	0~200mg/m3
Output resolution	0.1mg/m3
Accuracy	±1.5mg/m3+ 10% reading
CO2 Data	
Sensor	Non-Dispersive Infrared Detector (NDIR)
Measuring Range	350~2,000ppm
Pollution index output grade	1-6 level
Output resolution	1ppm
Accuracy	±50ppm + 3% of reading or ±75ppm (Whichever is bigger) (5~35℃, 5~70%RH)
TVOC Data	
Sensor	Metal oxide sensor
Measuring Range	0~3.5mg/m3
Output resolution	0.001mg/m3
Accuracy	<±0.06mg/m3+ 15% of reading
Atmospheric pressure	
Sensor	MEMS Semi-conductor sensor
Measuring range	0~103422Pa
Output resolution	6 Pa
accuracy	±100Pa

Software Support

Communication protocol support

1. Modbus RTU protocol
2. MQTT protocol (support MyTongdy platform software; other standard MQTT protocol platform for non-encrypted authentication)
3. Customized agreement (supports QLEAR platform software; supports GAMS data platform)

4. Modbus TCP/IP Server (industrial control software supporting standard Modbus TCP/IP; configuration software or self-programming integration)

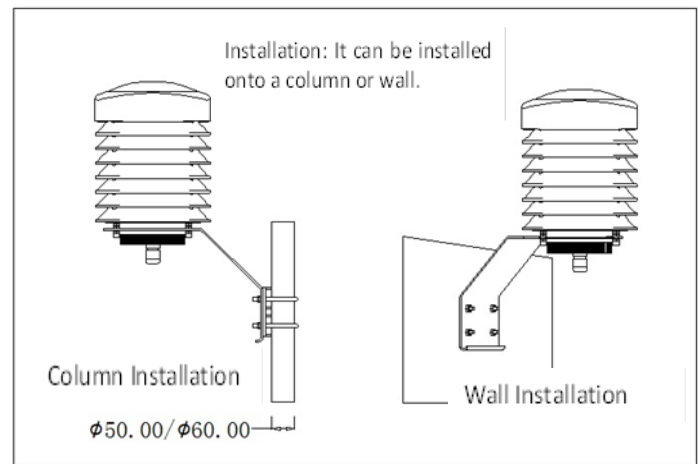
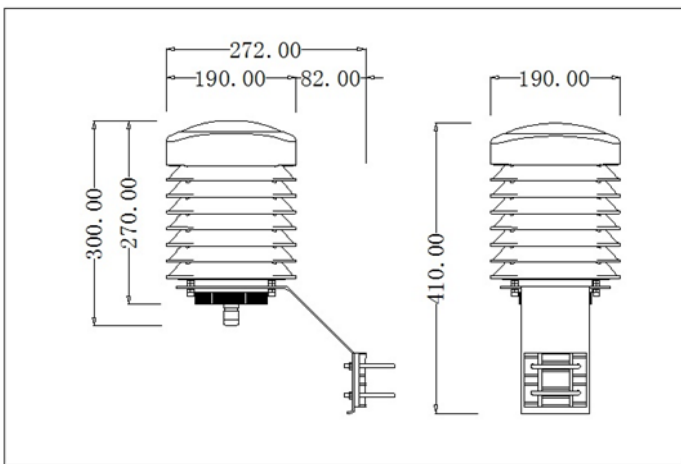
5. Modbus RTU over TCP/IP Server (industrial control software supporting standard Modbus RTU over TCP/IP; configuration software or self-programming integration)

Dimension and installation

■ **WIFI interface, RS485 interface with CO option**

Overall size: width 190.00mm, height 434.00mm

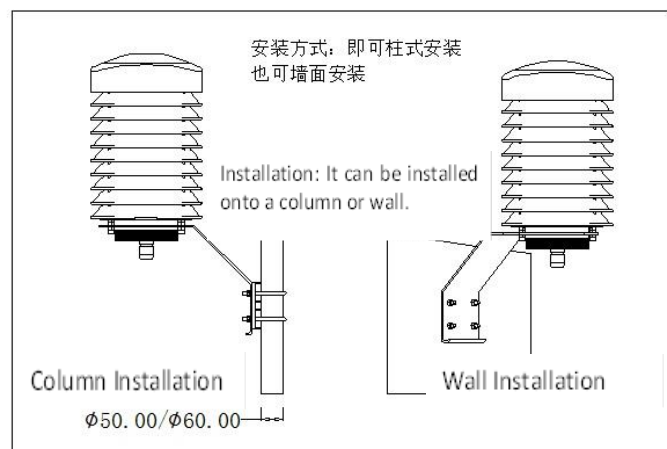
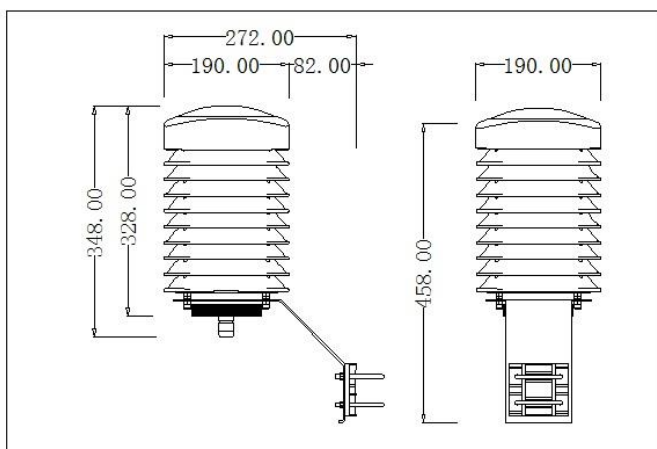
Net weight: 2.65Kg



■ **RJ45 interface**

Overall Size: width 190.00mm, height: 458.00mm

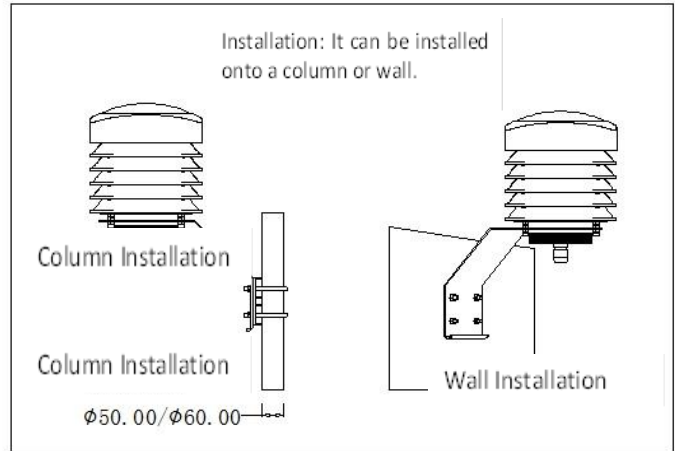
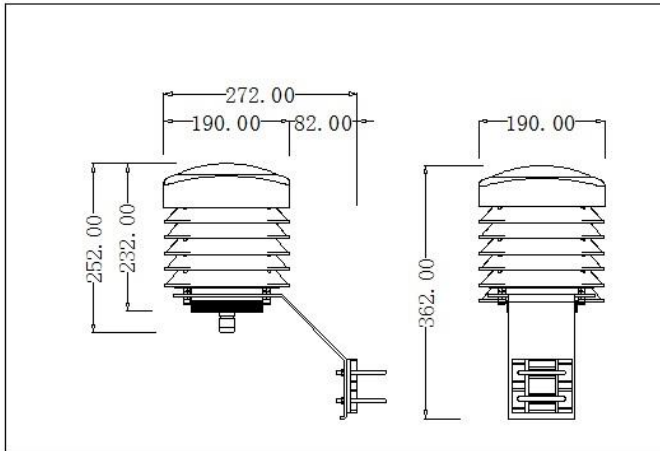
Net weight: 2.8Kg



■ RS485 interface

Overall size: width 190.00mm, height 362.00mm

Net weight: 2.35Kg

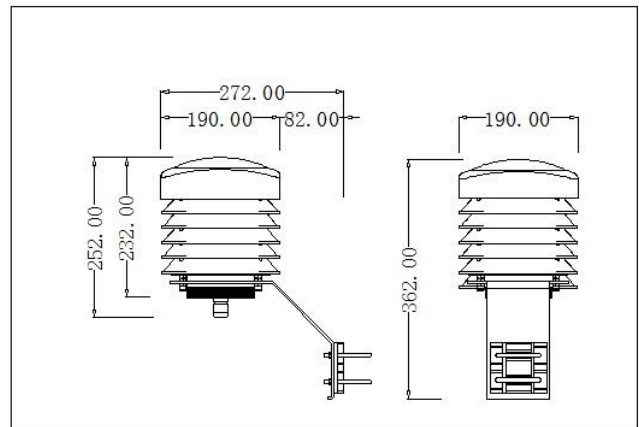


T&RH Weather Station

Model Description

- TFA9-TH-1810C
(Outdoor T&RH monitoring, RS485 interface)
- TFA9-TH-1820C
(Outdoor T&RH monitoring, WIFI interface)
- TFA9-TH-1830C
(Outdoor T&RH monitoring, RJ45 interface)
- -P (affix)
(Atmospheric pressure)

Overall Size: width 190.00mm, height: 362.00mm



Net weight: 2.3Kg

Tongdy Other Air Quality Monitors



● MSD Indoor Air Quality Monitor

- Commercial grade, RESET certification, WELL approval, CE

- Installation: Ceiling or wall mounting
- Detecting: PM2.5/PM10, CO2, TVOC, HCHO, T&RH
- Communication: RS-485, WiFi, RJ45 optional.
- Power supply: 24VAC/VDC, or 100-240VAC.



- PMD In-duct Air Quality Detector
- Commercial grade, RESET certified, CE-approval (soon)
- Installation: In-duct installation.
- Detecting: PM2.5/ PM10, CO2, TVOC, CO, T&RH
- Communication: RS-485, WiFi, RJ45 optional.
- Power supply: 24VAC/VDC, or 100-240VAC.



- TSP Indoor Air Quality Monitor
- Standard IAQ monitor
- Installation: Wall mounting
- Detecting: PM2.5/PM10、CO2、TVOC、T&RH
- Communication: RS-485、WiFi、RJ45 Optional
- Power supply: 12-24VAC/VDC

