

SENSE-AM200

Air Quality Monitor

User Manual



Item	Information
Measured Parameters	Temperature + Relative Humidity + Differential Pressure + PM2.5 + PM5 + PM10 + CO ₂
Sensor / Measurement Code	TRH + DP + PM + CO ₂
Product Platform	SENSE-AM200
Mounting Type	Panel Mount
Document Type	User Manual
Document Revision	Rev. 1.0

Important: Read this complete manual before installation, commissioning, operation, calibration or servicing of the clean room monitor.

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1. INTRODUCTION

The SENSE-AM200 is an advanced panel-mount clean room monitor designed for continuous monitoring of temperature, relative humidity, differential pressure, airborne particulate matter and CO₂ concentration in clean rooms and controlled environments. The device combines T+RH sensing, differential pressure measurement from -500 Pa to +500 Pa, particulate monitoring for PM2.5, PM5 and PM10, CO₂ measurement up to 10,000 ppm, local display, alarm annunciation, relay output, RS485 Modbus communication, Ethernet connectivity and cloud-ready IoT integration in one compact platform.

The SENSE-AM200 is intended for panel-mounted installation in clean rooms and controlled indoor environments. It monitors temperature, relative humidity, differential pressure, particulate matter (PM2.5 / PM5 / PM10) and CO₂ concentration through integrated sensing modules. It is not a flameproof, explosion-proof or intrinsically safe device and shall be installed only where the site classification permits this product type.

Application note: This manual copy is prepared specifically for the SENSE-AM200 clean room monitor measuring temperature, relative humidity, differential pressure, particulate matter (PM2.5 / PM5 / PM10) and CO₂ concentration up to 10,000 ppm. Measurement accuracy, response time, calibration interval and environmental limits shall always be verified against the final approved product datasheet and factory calibration certificate.

2. PRODUCT OVERVIEW

The SENSE-AM200 combines temperature, relative humidity, differential pressure, particulate matter and CO₂ monitoring with communication and cloud-ready architecture in a single panel-mount platform suitable for clean room environmental monitoring, pressure cascade supervision, indoor air quality monitoring and alarm indication.

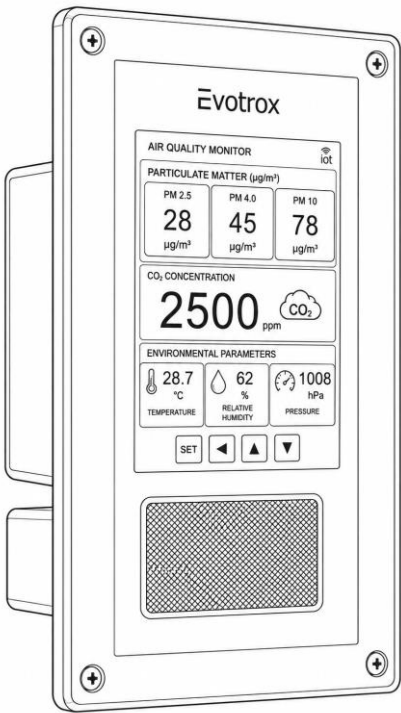


Figure 1: SENSE-AM200 Clean Room Monitor - Product Image

Product Area	Description
Temperature + RH + Differential Pressure	Supports combined temperature, relative humidity and differential-pressure monitoring.
Air Quality Sensing	Measures PM2.5, PM5, PM10 and CO ₂ concentration up to 10,000 ppm.
Display	TFT LCD color display with keypad interface.
Communication	RS485 Modbus RTU and Ethernet Modbus TCP/IP support.
LAN Interface	Ethernet interface; PoE support depending on model variant.
IoT	MQTT(S), HTTP(S), Linked IoT SCADA integration.
Mounting	Panel-mount construction for clean room and controlled-environment applications.
Enclosure	Panel-mount industrial construction for clean room and controlled-environment applications.
Differential Pressure	Measures differential pressure from -500 Pa to +500 Pa for room pressure monitoring.

3. FEATURES

- Panel-mount construction for clean room and controlled-environment monitoring panels.
- Integrated monitoring of temperature, relative humidity, differential pressure, particulate matter (PM2.5 / PM5 / PM10) and CO₂ concentration.
- Reverse polarity and incorrect wiring protection.
- Differential pressure measurement range: -500 Pa to +500 Pa.
- Integrated particulate matter monitoring for PM2.5, PM5 and PM10.
- Integrated CO₂ concentration measurement up to 10,000 ppm.
- Designed for clean rooms, laboratories, pharmaceutical areas and other controlled environments requiring environmental, particulate and CO₂ monitoring.
- 4.3" TFT LCD color display with keypad interface.
- RS485 Modbus RTU communication for PLC, DCS, BMS, SCADA and data logger integration.
- Modbus TCP/IP communication support through Ethernet interface.
- PoE (Power on Ethernet) support.
- Ethernet and Wi-Fi internet connectivity depending on model variant.
- Cloud protocol support: MQTT(S), HTTP(S).
- Default compatibility with Linked IoT SCADA platform.
- Relay output for external alarm or interlock. No 4-20 mA analog output is provided.
- Local buzzer and top alarm indicator/lens for alarm annunciation.
- Continuous 24x7 monitoring operation.
- Compact construction suitable for panel mounting.

4. APPLICATIONS

- Pharmaceutical clean rooms and controlled production areas requiring environmental and particle monitoring
- Hospital clean rooms, operation theatres, isolation areas and sterile environments
- Laboratories, testing rooms and research facilities requiring temperature, RH, pressure, particle and CO₂ monitoring
- Clean room pressure cascade, room-to-room differential pressure and airborne particulate monitoring
- HVAC and air-handling systems serving controlled environments, including indoor air quality verification
- Pharmaceutical warehouses and environmental monitoring systems
- Electronics, semiconductor and precision manufacturing clean areas
- Food, biotechnology and controlled process rooms
- Building management and environmental monitoring panels with CO₂ and air-quality supervision
- SCADA, BMS, PLC and IoT-based clean room monitoring systems

5. TECHNICAL SPECIFICATIONS

5.1 ELECTRICAL AND FUNCTIONAL SPECIFICATIONS

Parameter	Specification
Sensor Technology	Capacitive T+RH sensing + differential pressure sensing + particulate-matter sensing + CO ₂ sensing
Measured Parameters	Temperature + Relative Humidity + Differential Pressure + PM2.5 + PM5 + PM10 + CO ₂
Temperature Range	-20 – 80 °C
Humidity Range	0 – 100 % RH
Temperature Accuracy	±0.3°C Typical
Humidity Accuracy	±2% RH Typical
Differential Pressure Range	-500 Pa to +500 Pa
Display	4.3" TFT LCD color display
User Interface	Keypad for device configuration
Typical Power Supply	24 VDC
Power Supply Range	12 – 30 VDC
PoE	PoE support through Ethernet interface, depending on ordered variant
Additional Outputs	Relay Output
Communication	RS485 Modbus RTU, Ethernet Modbus TCP/IP
Cloud Protocols	MQTT(S), HTTP(S)
Internet Connectivity	Ethernet / Wi-Fi depending on model variant
Storage Temperature	As per final approved product / sensor datasheet
Particulate Matter	PM2.5 / PM5 / PM10

Parameter	Specification
Particulate Range / Accuracy	As per final approved particulate sensor datasheet
CO ₂ Measurement Range	0 – 10,000 ppm
CO ₂ Accuracy / Response	As per final approved CO ₂ sensor datasheet

5.2 ENCLOSURE AND MECHANICAL SPECIFICATIONS

Parameter	Specification
Enclosure	Panel-mount industrial enclosure
Installation	Indoor panel-mounted installation
Material of Construction	As per final approved mechanical drawing / product construction
Connections	Electrical terminals, communication interfaces, differential-pressure ports and front air inlet / SS protective mesh as per product configuration
Pressure Ports	High (+) and Low (-) differential-pressure connections
Overall Dimensions	As shown in final dimensional drawing
Mounting	Panel mounting using specified cut-out and mounting arrangement
Finish	Front fascia with display window
Tolerance	All dimensions in millimeters; drawing tolerance to be verified from final mechanical drawing

Specification notes: Exact measurement range, accuracy, response time, calibration interval and environmental limits depend on the selected temperature/RH, differential-pressure, particulate-matter and CO₂ sensing modules and final factory configuration. CO₂ measurement range for this model is up to 10,000 ppm; particulate-matter range and accuracy shall be verified against the final approved sensor datasheet.

6. PRODUCT IMAGES AND MECHANICAL DRAWINGS

6.1 EXPLODED VIEW AND PARTS DESCRIPTION

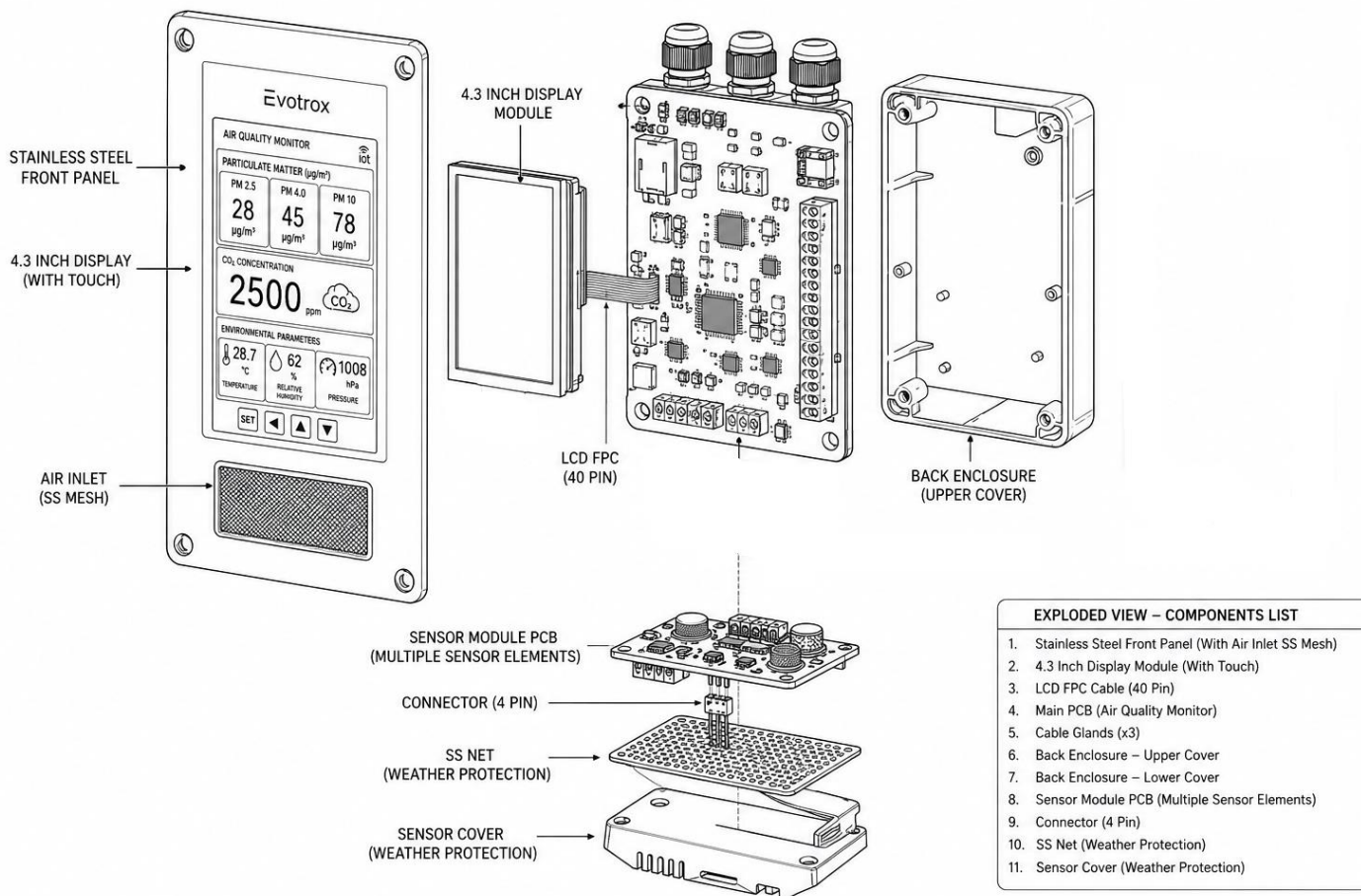


Figure 3: Exploded View and Parts Description

Item No.	Part Name	Description	Material	Qty.
1	Front Bezel / Fascia	Front panel with display and user interface	As per product	1
2	Panel Seal / Gasket	Sealing element between front assembly and mounting panel	As per product	1
3	TFT Display Module	Color TFT LCD display with connector	-	1
4	Front PCB (Display & Interface)	Main PCB for display and user interface	FR-4	1
5	Board Connectors	Internal board-to-board connectors	-	As required
6	Rear PCB (Power & I/O)	PCB for power, communication and I/O connections	FR-4	1
7	Rear Housing / Mounting Body	Rear assembly for panel-mounted installation	As per product	1
8	Differential Pressure Ports	High (+) and Low (-) pressure connections	-	2
9	Alarm / Status Indicator	Visual indication as per product configuration	-	1
10	Mounting Hardware	Hardware for panel mounting and enclosure assembly	-	As required
11	Sensor Module PCB	Integrated module carrying particulate / CO ₂ and associated environmental sensing elements	FR-4	1
12	SS Protective Mesh / Air Inlet	Front air inlet protection for the sensor module	SS	1

6.2-DIMENSIONAL DRAWING

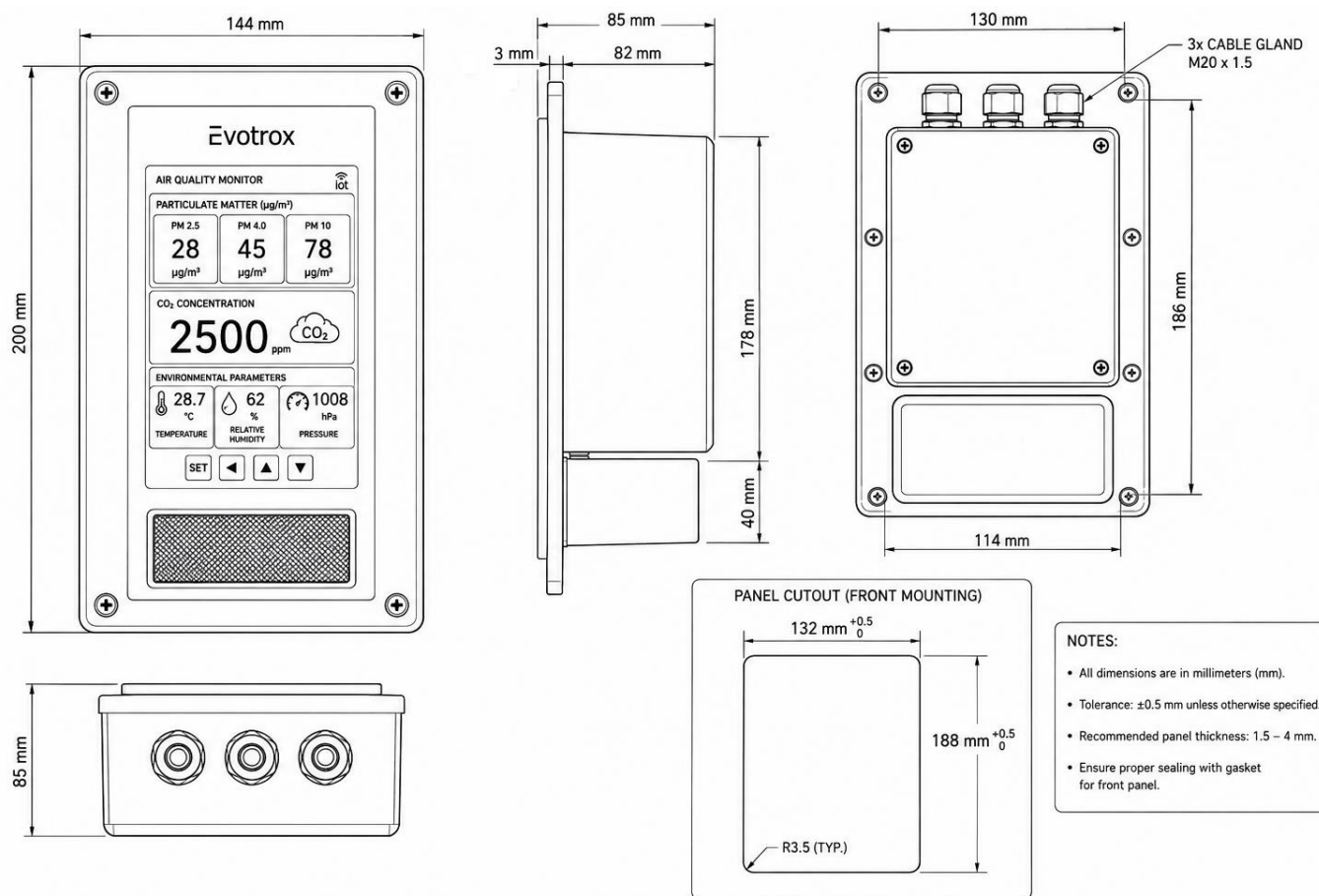


Figure 2: Dimensional Drawing with Front, Side and Bottom Views

7. SAFETY PRECAUTIONS

- Installation, wiring, commissioning and servicing shall be performed by qualified personnel only.
- Disconnect power before opening the enclosure or touching internal wiring.
- Do not open the enclosure in a wet, dusty or chemically exposed environment unless the device is isolated and properly protected.
- Do not replace the sensor while the device is powered.
- Ensure proper earthing and panel wiring as per site electrical standards.
- Do not install the monitor where it can be exposed to direct flame, heavy water jet, corrosive liquid splash or mechanical damage unless additional protection is provided.
- Maintain calibration records periodically for safety and compliance traceability.
- Dispose expired or replaced sensors according to applicable environmental regulations.
- Do not use the monitor as the only safety protection layer where local regulation requires redundant detection, emergency shutdown or certified safety system.
- Do not modify enclosure, cable entries, fasteners, PCB assembly, sensor module or sealing arrangements.
- Follow local industrial safety regulations, electrical codes and site safety procedures.

Important limitation: SENSE-AM200 is a panel-mount clean room monitor. It is not a flameproof, explosion-proof or intrinsically safe product. Do not use it in hazardous classified areas unless the specific site classification and regulatory approval permit this product type.

8. INSTALLATION GUIDELINES

- Install the monitor in the designated panel location where representative room temperature, humidity, particulate matter and CO₂ conditions can be sampled and differential-pressure connections can be obtained.
- For temperature, RH, particulate matter and CO₂ monitoring, the front air-sampling area shall be exposed to representative room air. Differential-pressure tubing shall be connected between the required high-pressure and low-pressure reference points according to the room pressure-monitoring objective.
- Avoid locations with stagnant air, blocked air inlet, excessive dust deposition or local CO₂ sources that may not represent the actual room condition.
- Avoid direct sunlight, heat sources, strong vibration and locations that can mechanically stress the differential-pressure tubing or obstruct the particle/CO₂ air inlet.
- Avoid direct air discharge from fans, diffusers, heaters or humidifiers unless that point is specifically intended for monitoring; excessive direct airflow may affect representative particulate and CO₂ readings.
- Maintain service clearance behind and around the panel cut-out for wiring, tubing access and calibration.
- Route electrical wiring and differential-pressure tubing neatly and protect them from sharp bends, kinks and mechanical damage. Keep the front air inlet and SS protective mesh unobstructed.
- Ensure the high-pressure (+) and low-pressure (-) pressure ports are connected correctly to avoid reversed differential-pressure indication.
- Mount the monitor firmly in the designated panel cut-out using the product mounting arrangement shown in the dimensional drawing.
- Ensure the front assembly, panel mounting arrangement, wiring and pressure tubing are secure before energizing.

8.1 RECOMMENDED INSTALLATION CHECKS

- Confirm model, measured parameters, sensor modules and calibration details on the product label.
- Confirm power supply rating before applying power.
- Verify terminal wiring as per wiring diagram.
- Check relay logic and external alarm/interlock wiring, where used.
- Verify RS485 polarity and device ID in multi-device network.
- Verify Ethernet IP address and PoE compatibility when LAN/PoE is used.
- Allow adequate sensor stabilization time after first power-up, maintenance or sensor-module replacement before validating readings.
- Perform functional verification or functional test before handing over the system.
- Confirm panel mounting, wiring protection, differential-pressure tubing connections and unobstructed air inlet/SS mesh before commissioning.

8.2 TEMPERATURE, RH, DIFFERENTIAL PRESSURE, PARTICULATE MATTER AND CO₂ INSTALLATION GUIDELINES

Installation Consideration	Recommended Detector Placement
Representative room condition	Install at a location that represents actual process/room condition and is not isolated from normal airflow.
Avoid direct influence	Avoid direct sunlight, water spray, condensation drops, heaters, evaporator outlet air and humidifier discharge unless specifically required.
Differential Pressure	Connect High (+) and Low (-) pressure reference points according to the clean-room pressure cascade. Keep tubing short, leak-free and free from kinks/blockage.
Particulate Matter / CO ₂	Keep the front air inlet and SS mesh exposed to representative room air. Avoid blockage, direct contamination sources, local CO ₂ sources and excessive direct airflow that does not represent the monitored space.

Installation note: Final sensor location and differential-pressure reference points should be validated by the clean-room/HVAC design team, plant engineering team or authorized engineer. The selected location shall also provide representative room-air sampling for particulate matter and CO₂ measurement.

9. WIRING AND ELECTRICAL CONNECTIONS

The device supports relay output, RS485 communication and Ethernet/cloud connectivity depending on configuration. It does not provide 4-20 mA analog outputs. All wiring must be carried out with power OFF and as per approved wiring diagram.

9.1 MAIN TERMINAL DETAILS

Terminal No.	Terminal Name	Description	Typical Use
1	24 VDC (+)	Power supply positive (+24 VDC)	24 VDC panel power supply positive
2	GND (-)	Power supply negative / 0 V / GND	Power supply negative / signal common
3	Reserved / NC	No 4-20 mA analog output	Do not connect unless specified in final wiring diagram
4	Reserved / NC	No 4-20 mA analog output	Do not connect unless specified in final wiring diagram
5	Relay NO	Relay normally open contact	External alarm, hooter, exhaust or interlock
6	Relay C	Relay common contact	Relay common for external circuit
7	RS485 A	RS485 communication A (+)	Modbus RTU network
8	RS485 B	RS485 communication B (-)	Modbus RTU network

9.2 WIRING DIAGRAM, PRESSURE TUBING AND TYPICAL SYSTEM CONNECTION

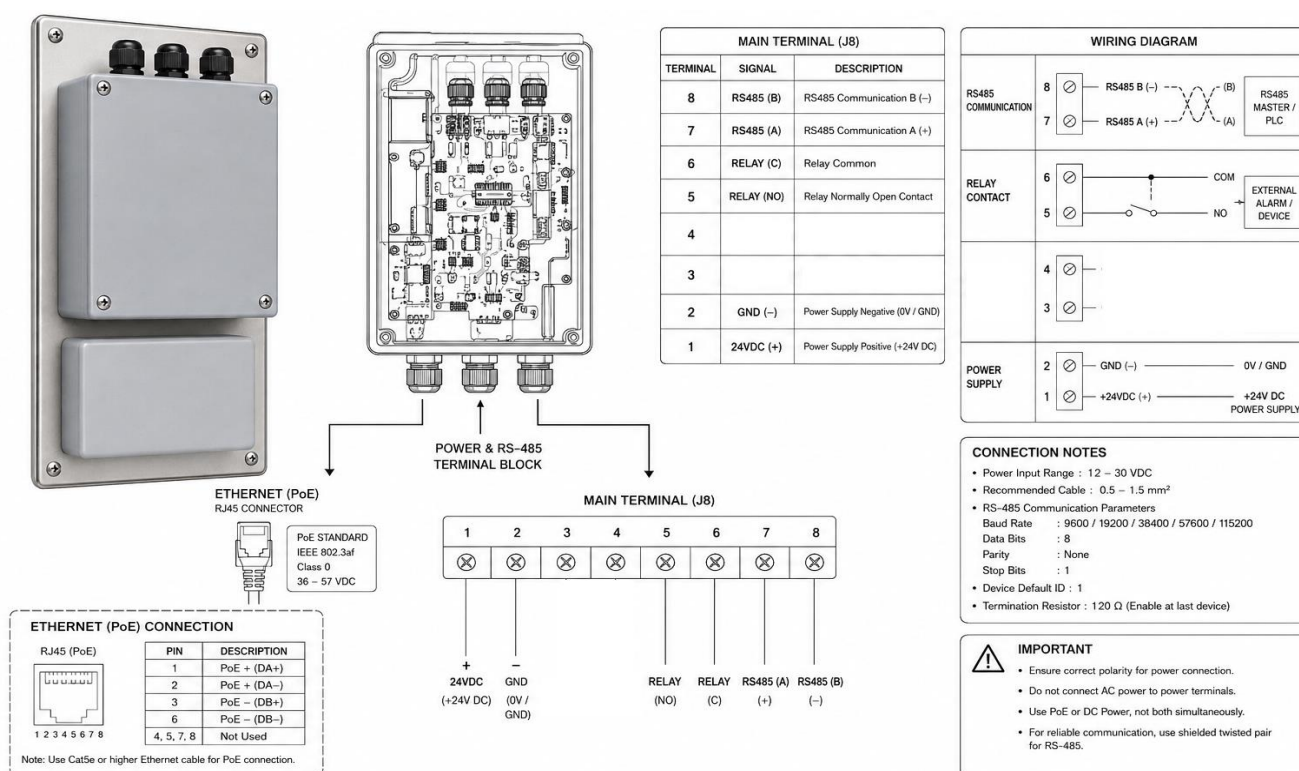


Figure 4: Main Terminal, Wiring Diagram and Typical System Connection

9.3 WIRING NOTES

- Terminal naming shall be verified with the final product label and approved wiring diagram before installation.
- Use shielded twisted pair cable for RS485 communication in industrial environments.
- Maintain correct polarity for power supply.
- Do not exceed rated supply voltage.
- Relay contact rating shall be verified from final product datasheet before connecting external load.
- For long RS485 networks, use proper cable routing, shielded twisted pair, common reference where required, end-of-line termination and unique device ID for each monitor.
- For Ethernet/PoE installation, verify network switch/PoE injector rating, Ethernet cable quality and IP configuration. Verify differential-pressure tubing polarity (+/-) and ensure tubing is free from blockage or leakage.

10. OPERATING PRINCIPLE AND ALARM OPERATION

The temperature/RH, differential-pressure, particulate-matter and CO₂ sensing modules continuously measure the configured environmental parameters. The controller processes these values, compares them with configured alarm limits, operates visual indication, buzzer and relay output, displays warning/alarm conditions on the LCD and transmits data over RS485, Ethernet and IoT communication interfaces as per configuration.

10.1 ALARM LEVEL OPERATION

Level	Threshold	Display / LED	Buzzer / Relay
Normal	Below Level 1 set value	Normal / safe indication	OFF as configured
Warning	Above Level set value	Warning indication on display	Buzzer ON periodically / relay as configured
Display indication: Inside display, configured Temperature, RH, Differential Pressure, PM2.5, PM5, PM10 and CO₂ values, warnings and alarm levels will be shown as per device configuration.			

10.2 ALARM ACKNOWLEDGEMENT

The built-in buzzer can be acknowledged as per configured acknowledgement logic. Alarm acknowledgement silences or controls buzzer behavior only as configured; it shall not be treated as correction of an abnormal temperature, humidity, differential-pressure, particulate-matter or CO₂ condition. Process conditions and alarm indications must be monitored until values return within acceptable limits.

11. LED AND BUZZER INDICATIONS

LED / Indicator	Condition	Description
Power	Red	Power ON
Status	Flashing	RS485 communication OK
Status	Steady	RS485 error
Top Indicator / Alarm Lens	ON / Flashing	Alarm or warning indication as per configuration
Buzzer	ON / Periodic	Temperature / RH / differential-pressure / particulate-matter / CO ₂ alarm, warning or fault as per configuration

12. CALIBRATION PROCEDURE

Calibration and verification shall be performed using suitable traceable reference instruments or approved reference methods for the applicable parameter. Temperature/RH and differential-pressure channels should be checked at representative points across the operating range, while particulate-matter and CO₂ channels should be verified according to the sensing-module manufacturer recommendations and site quality procedure.

Before calibration, allow the monitor to stabilize, ensure the front air inlet and SS mesh are clean and unobstructed, verify differential-pressure tubing integrity and confirm that reference equipment is within calibration. Record as-found and as-left values where required. Sensor replacement or factory/service calibration shall be carried out when acceptable tolerance cannot be achieved.

13. COMMUNICATION PORTS

13.1 SERIAL PORT - RS485

The device can be connected to an RS485 port either in single-device mode or multi-device mode. In multi-device mode, each connected monitor must have a unique device ID. User can change device ID from the configuration page.

Parameter	Default Value
Protocol	Modbus RTU
Slave ID	1
Baud Rate	9600
Bit	8
Stop Bit	1
Parity	None

13.2 ETHERNET (LAN / POE)

The monitor may be equipped with an Ethernet interface supporting Modbus TCP/IP communication. The device operates as a Modbus TCP slave and can be connected to SCADA systems, PLCs, BMS, IoT gateways and industrial Ethernet networks.

- Modbus TCP/IP communication
- Power over Ethernet (PoE) support depending on model variant
- Single cable for power and data when PoE is used
- Suitable for LAN-based monitoring systems
- Supports integration with SCADA, PLC, BMS and IoT platforms
- Multiple devices can operate on the same Ethernet network using unique IP addresses

PoE note: Ensure the connected network switch or PoE injector supports the required PoE standard before powering the device through Ethernet.

14. MODBUS RTU / TCP-IP ADDRESS LIST

14.1 PROTOCOL TYPE

Serial protocol: Modbus RTU slave over RS485. Ethernet protocol: Modbus TCP/IP slave over LAN interface.

Address	Access Type	Function Code	Description	Use
30001	READ	04	Read input register	To read all channel sensor data
40001	READ + WRITE	03 + 06	Read/write holding registers	To read or write all setting parameters

14.2 PARAMETER ADDRESS DETAILS

Sr. No.	Address	Parameter	Low	High
1	40001	Alarm set value	0	65535
2	40002	Alarm mode	0	1
3	40003	Alarm hysteresis	0	65535
4	40004	Level 2 set value	0	65535
5	40005	Level 3 set value	0	65535
6	40006	Level hysteresis	0	65535
7	40007	Timer hour	0	255
8	40008	Timer minute	0	59
9	40009	Buzzer mode	0	1
10	40010	Offset	0	65535
11	40011	Zero	0	65535
12	40012	Span	0	65535
13	40013	Reserved / Not applicable	-	-
14	40014	Reserved / Not applicable	-	-
15	40015	Reserved / Not applicable	-	-
16	40016	Acknowledgement	0	1

Communication note: For long RS485 networks, use proper cable routing, shielded twisted pair, common reference where required, end-of-line termination and unique device ID for each monitor.

15. CLOUD-DEVICE INTERFACE / IOT CONFIGURATION

The device supports cloud connectivity through the Linked IoT platform, enabling remote monitoring, alarm notifications, data logging, analytics and device management from anywhere.

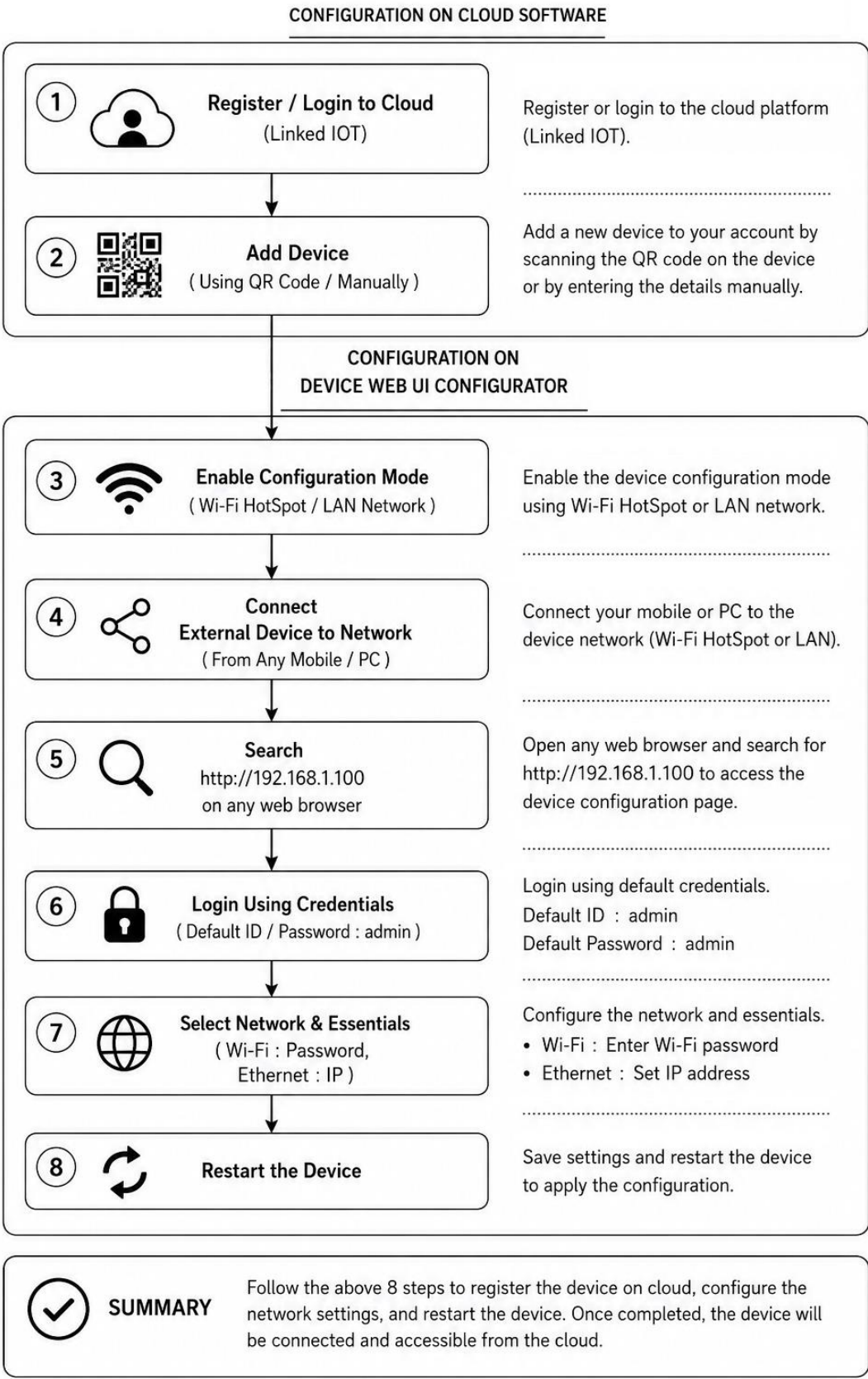


Figure 5: Cloud and Web UI Configuration Flow

15.1 STEPS TO CONNECT DEVICE

Cloud APP / Software

Step-1 Register or login to Linked IoT cloud platform.

Step-2 Add a new device using QR code or manual details.

Field Device

Step-3 Enable device configuration mode from settings.

Step-4 Connect mobile or PC to the device network using Wi-Fi Hotspot or LAN.

Step-5 Open browser and search <http://192.168.1.100> to access device configuration page.

Step-6 Login using default credentials. Default ID: admin. Default Password: admin.

Step-7 Select network and essential settings: Wi-Fi password or Ethernet IP settings.

Step-8 Save settings and restart the device to apply configuration.

15.2 PREREQUISITES

- The device variant must support IoT functionality.
- A stable Internet connection is available.
- A valid Linked IoT user account is available.
- The device is installed and powered correctly.

15.3 CLOUD CREDENTIALS

Access Type	Link
Web Portal	www.linkediot.com/login
Android Application	https://play.google.com/store/apps/details?id=com.linkediot
iOS Application	https://apps.apple.com/us/app/linkediot

15.4 NETWORK CONFIGURATION OPTIONS

Mode	Configuration Details
Wi-Fi Mode	Select available Wi-Fi network; enter Wi-Fi password; configure network priority.
Ethernet Mode	DHCP or static IP configuration; IP address; subnet mask; gateway; DNS server.
Cellular Mode (GSM)	APN settings; SIM configuration; network priority selection, depending on model variant.

15.5 NETWORK PRIORITY MANAGEMENT

When multiple communication interfaces are available, the device can automatically select the preferred network according to the configured priority sequence. This feature supports reliable cloud communication by switching to an available network when the primary connection becomes unavailable.

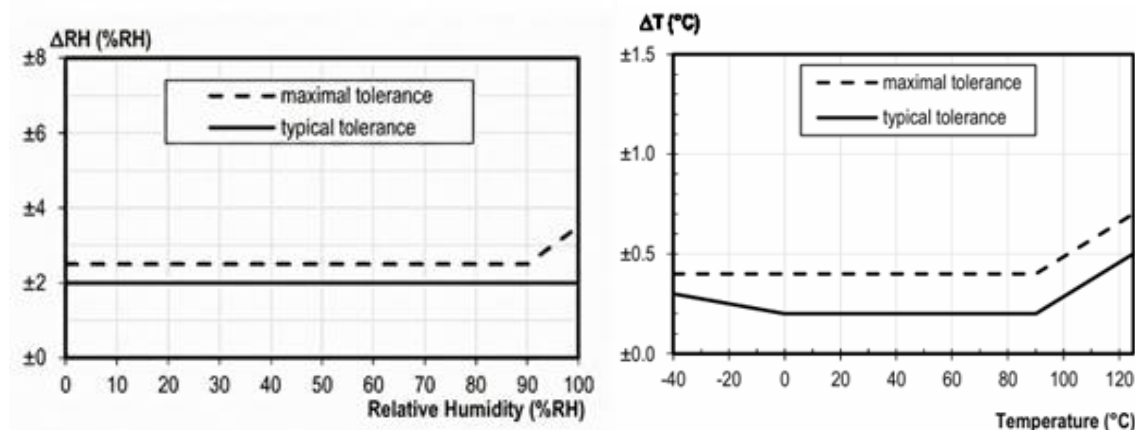
15.6 IMPORTANT NOTES

- Use a dedicated configuration network when accessing the Web UI Configurator.
- Ensure Internet connectivity is available on the selected communication interface.
- Change the default administrator password after commissioning for improved security.
- Network configuration parameters can be modified at any time through the Web UI Configurator.
- Successful cloud connection status can be verified from the device display and Linked IoT platform dashboard.

16. SENSING INFORMATION - TEMPERATURE, RH, DIFFERENTIAL PRESSURE, PARTICULATE MATTER & CO₂

Item	Information
Measured Parameters	Temperature + Relative Humidity + Differential Pressure + PM2.5 + PM5 + PM10 + CO ₂
Sensor / Measurement Code	TRH + DP + PM + CO ₂
Sensor Type	Combined temperature + relative humidity, differential-pressure, particulate-matter and CO ₂ sensing modules
Application	Clean room environmental, pressure-cascade, particulate and indoor-air-quality monitoring

The sensing system combines environmental, pressure and air-quality measurements in one panel-mount monitor. Temperature and RH characteristics shall be evaluated across their specified operating ranges, while differential-pressure, particulate-matter and CO₂ performance shall be verified against the respective approved sensor specifications and calibration/verification procedure.



The humidity tolerance graph illustrates expected sensor deviation across the Relative Humidity operating range, while the temperature tolerance graph represents typical and maximum deviation across the specified temperature range. Differential pressure is measured across the High (+) and Low (-) pressure ports. The particulate module monitors PM2.5, PM5 and PM10, and the CO₂ module measures concentration up to 10,000 ppm. Sensor stability and accuracy depend on installation, airflow, contamination level, calibration condition and environmental limits.

- The SENSE-AM200 combines temperature/RH sensing, differential-pressure sensing, particulate-matter monitoring and CO₂ measurement for clean room and controlled-environment applications.
- Digital measurement of temperature, relative humidity, differential pressure, PM2.5, PM5, PM10 and CO₂ concentration.
- Combined monitoring of all environmental and air-quality parameters in one clean room monitor.
- Suitable for continuous clean room environmental monitoring, pressure-cascade supervision, particle monitoring and indoor air-quality assessment.
- Response time depends on the individual sensing module and airflow conditions; refer to the final approved sensor datasheet for parameter-specific values.
- Recommended periodic verification and calibration using suitable reference instruments for high-accuracy and compliance-oriented applications.

17. ORDERING INFORMATION

17.1 Ordering format: SENSE - AM200 - I1

Code Segment	Meaning
SENSE	Product Family
AM200	Product Model
I1 / L1	Network / Expansion Variant
—	No filter option required for standard panel-mount model

17.2 PRODUCT CONFIGURATION

Parameter	Standard Configuration	Range / Type	Remarks
Temperature	Included	-20 – 80 °C	As per final approved sensor datasheet
Relative Humidity	Included	0 – 100 % RH	As per final approved sensor datasheet

Differential Pressure	Included	-500 Pa to +500 Pa	High (+) and Low (-) pressure ports
Analog Output	Not provided	Not applicable	No 4-20 mA output
Particulate Matter	Included	PM2.5 / PM5 / PM10	Range and accuracy as per final approved particulate sensor datasheet
CO ₂ Concentration	Included	0 – 10,000 ppm	Accuracy and response as per final approved CO ₂ sensor datasheet

Note: Final product configuration shall be selected according to the required communication/network variant.

17.3 NETWORK VARIANTS

Code	Module Type	Description
I1	WAN Card for Internet	Used to connect device to internet for Remote Applications
L1	LAN Card for Local Network	Used to connect device to local network for PLC / Scada Applications

Note: Final product configuration shall be selected according to the required communication/network variant.

18. MAINTENANCE AND PERIODIC CHECKS

- Clean enclosure using soft dry cloth only.
- Inspect cable glands periodically.
- Inspect and clean the SS protective mesh / air inlet periodically without damaging or contaminating the sensor module.
- Verify temperature, RH, differential-pressure, particulate-matter and CO₂ response periodically.
- Perform periodic verification using approved temperature/RH, differential-pressure, particle-count/particulate and CO₂ reference instruments or approved comparison methods.
- Check relay operation and external alarm/interlock operation periodically.
- Verify RS485 communication, Ethernet communication and data logging where applicable.
- Maintain calibration, functional verification and sensor replacement records.
- Inspect panel mounting, pressure tubing, display window, front air inlet, SS protective mesh, indicator and physical condition periodically. Keep the air inlet/mesh clean and unobstructed.

19. TROUBLESHOOTING

Issue	Possible Cause	Recommended Action
No power indication	Power supply not available, wrong polarity or loose terminal	Verify 24 VDC supply, polarity and wiring.
Status LED steady / RS485 error	Incorrect RS485 wiring, wrong baud setting or duplicate device ID	Check RS485 A/B polarity, device ID, network wiring and master settings.
Ethernet / PoE not working	PoE injector/switch issue, IP conflict or cable/network fault	Verify PoE source, Ethernet cable, IP settings, network switch and configuration.
Cloud connection not established	Internet not available, wrong network settings or device not added to cloud	Verify network configuration, Internet access, Linked IoT account and device registration.
Differential pressure reading incorrect	Pressure tubing reversed, leaking, blocked, kinked or zero/reference mismatch	Check High (+) / Low (-) connections, tubing integrity and perform pressure zero/reference verification.
Frequent alarm without actual environmental abnormality	Wrong set value, sensor drift, condensation, direct airflow, pressure tubing issue, blocked/dirty air inlet, local particle source or local CO ₂ source	Check set values, verify sensors against reference instruments, inspect sensor location, air inlet/SS mesh and differential-pressure tubing.
No response / abnormal sensor reading	Sensor issue, blocked air inlet, contamination, pressure tubing fault, reversed pressure ports or incorrect reference method	Inspect sensing path and SS mesh, verify +/- pressure-port connection, compare against suitable reference instrument and calibrate/service if required.
Relay not operating	Alarm threshold not reached, relay wiring issue or wrong relay logic	Check level set values, relay contacts and external circuit.
Differential-pressure reading reversed or unstable	High/low pressure tubing reversed, loose, leaking, kinked or exposed to unstable pressure source	Check + and - port tubing, remove leaks/kinks/blockages and verify pressure reference points.
Particulate reading unusually high / low	Blocked or contaminated SS mesh, direct local dust source, unsuitable airflow or sensor contamination	Inspect and clean the air inlet/SS mesh, relocate if required, verify against a suitable reference particle instrument and service the sensor module if necessary.
CO ₂ reading unusually high / low	Local CO ₂ source, poor airflow, sensor stabilization issue, drift or contamination	Allow stabilization, check installation location and airflow, compare against a suitable CO ₂ reference instrument and calibrate/service if required.

20. LEGAL NOTICE AND DISCLAIMER

Specifications are subject to change without prior notice. The user is responsible for ensuring proper installation, commissioning, operation and maintenance according to local industrial safety regulations, electrical codes, clean-room practices and site safety procedures.

This product is intended to assist in temperature, relative humidity, differential-pressure, particulate-matter and CO₂ monitoring and alarm generation. It does not replace statutory process safety systems, validated environmental monitoring procedures, certified particle-counting procedures where specifically required, emergency response procedures or operator training where such systems are required by applicable regulation or site policy.

Measurement performance depends on sensor location, airflow, differential-pressure tubing arrangement, air-inlet condition, particulate loading, CO₂ exposure, calibration condition, condensation exposure and maintenance practices. Periodic functional testing, cleaning, verification and calibration are essential for reliable operation.

SENSE-AM200 is a panel-mount clean room monitor. It is not a flameproof, explosion-proof or intrinsically safe product. Any hazardous-area or safety-critical usage shall be verified against site classification, product certification and applicable local regulations before installation.

21. CONTACT INFORMATION

Company	Details
Brand	EVOTROX
Location	Ahmedabad, Gujarat, India
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