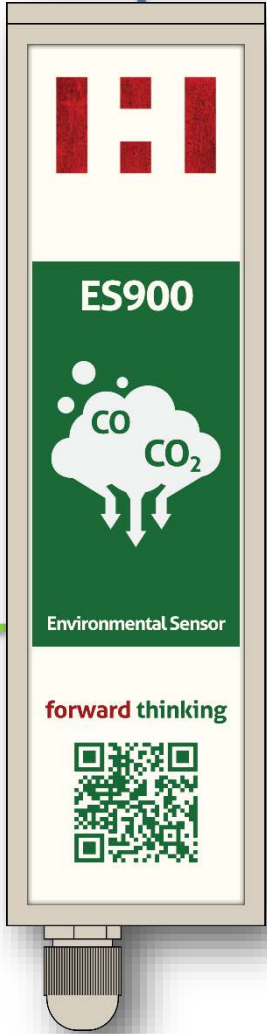
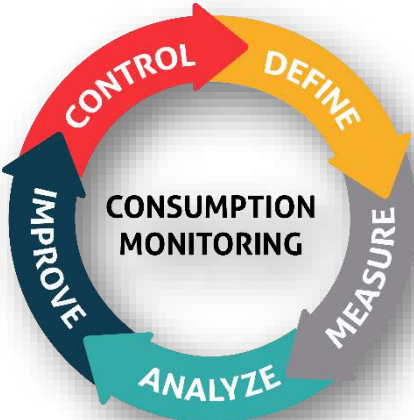


Environmental Sensor

# ES900



## brief features

The ES900 is a system ensures accurate and reliable emission data, enabling industries to maintain compliance with regulatory standards efficiently.

In the process, ES900 Environmental Sensor, precise measurements are achieved through advanced sensors such as the MQ-7 and MQ-135 sensor. These sensors monitor CO and CO<sub>2</sub> with high accuracy, and provide comprehensive environmental monitoring capabilities. This system ensures reliable data collection for CO and CO<sub>2</sub>, supporting efficient regulatory compliance and environmental management.

One of the key advantages of the ES900 Environmental Sensor is its capability to maintain consistent performance in diverse environmental conditions. This system excels in accuracy and reliability. Its versatility makes it ideal for a wide range of applications across industries including automotive, marine, and industrial sectors, ensuring dependable monitoring and compliance with emission regulations.

The intelligent ES900 use advanced dual core MCU. Web enabled intuitive and easy-to-use menu for monitoring, configuration and diagnostics. Modbus RS485 option can be used to connect with any PLC or SCADA.

## applications customers

### APPLICATIONS

For application in industrial and commercial temperature monitoring

- Cold Storage Facility
- Server Rooms and Data Centers
- Pharmaceutical Storage
- Warehouses and Logistics
- Industrial Processes

### CUSTOMERS

Industrial and commercial sectors, such as:

- Agriculture
- Textiles
- Pharmaceuticals
- Dairy Cooperatives
- Quality Control Labs
- Research Institutions
- Chemical processing
- Power plants
- Bulk customers (housing societies)
- Hotels

# technical specifications

## FEATURES

The ES900 telemetry system with latest CPU with forward-thinking algorithms and web server function modules makes it more user friendly.

### Informative

- Smart phone/Laptop any using web browser.
- Remote server

### Carbon Dioxide

- Measuring range: 10~1000 ppm
- Accuracy:  $\pm 2$ ppm

### Carbon Monoxide

- Measuring range: 10~1000 ppm
- Accuracy:  $\pm 2$ ppm

### Environmentally Tough

- UPVC housing
- Wiring harness IP65 with water proof glands

### Easy To Use

Operation can be done within minutes. Connect the field instrument with pre made wiring harness. Keep it online and configure it by using local App and get the data on online remote server.

### Housing:

- Housing: UPVC IP 65 water proof
- Mounting: Wall mounting
- Size: 140mm X 38mm X 35mm

### Communications:

3 types of communications available

- Modbus RS485 (Master)
- Wi-Fi for Web Server
- GSM/GPRS 2G/3G (Optional)

### Setup

- Calibration, Configuration & OTA: From any web browser through smart phone or laptop Wi-Fi

## SPECIFICATIONS

**Power Supply:** 9~24 V DC, 5 W

**Password:** 4 Level of passwords restriction

- Admin Account
- Configuration
- SSID
- OTA

### EEPROM:

Data retention 20,000 records (100 B/Record)

### CPU:

- Dual core up to 240 MHZ
- Flash RAM: 4 MB
- SRAM: 520 KB SRAM

### Backup power:

5~7 Hours with Li-ion battery (Optional)

**Transmission:** User programmable

- Interval: 1~60 Minutes
- Method: Using Mosquito broker via MQTT
- Protocol: MQTT

### Configuration:

- Local: SPIFFS web browser
- Remote: Cloud server using MQTT protocol

**Database:** Mongo DB API development

### Environmental:

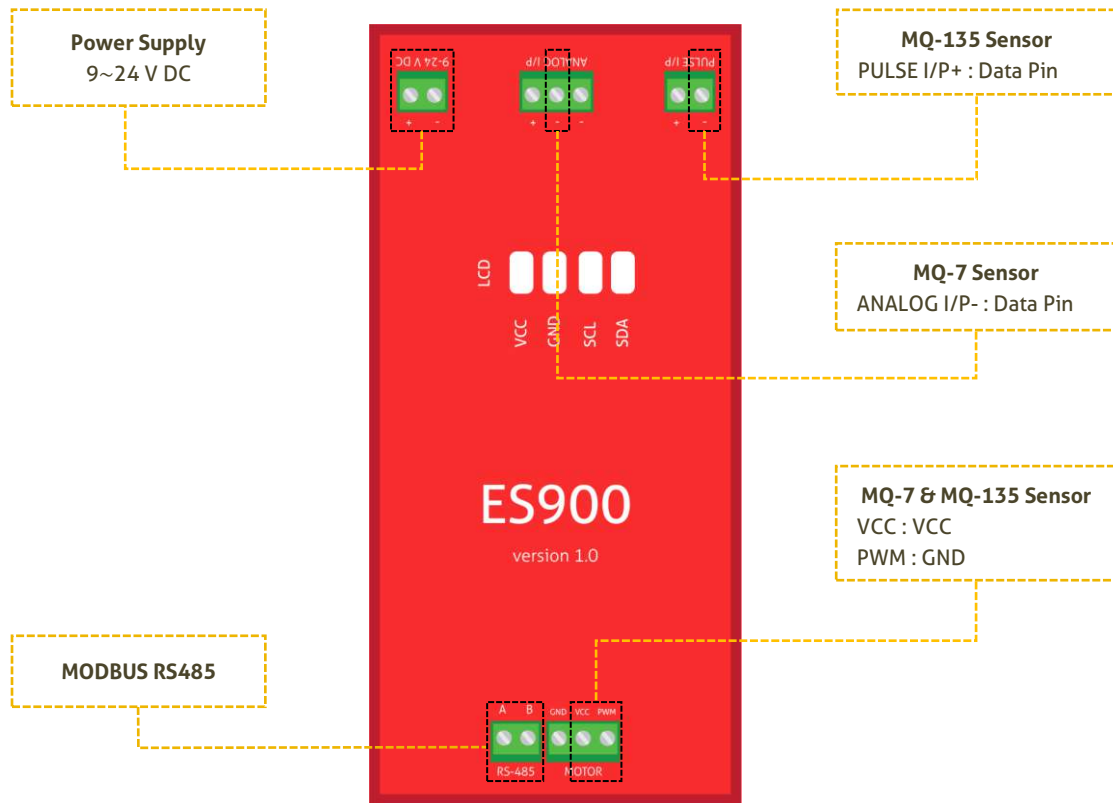
- Operating Temperature: -10~65 °C
- Storage: -40~85 °C
- Relative humidity: 10~90%

### Connections:

- PCB: Removable screw terminal blocks
- Terminal block: Wire size: 0.5~0.7 mm
- Field connections: Wiring harness 3 meters

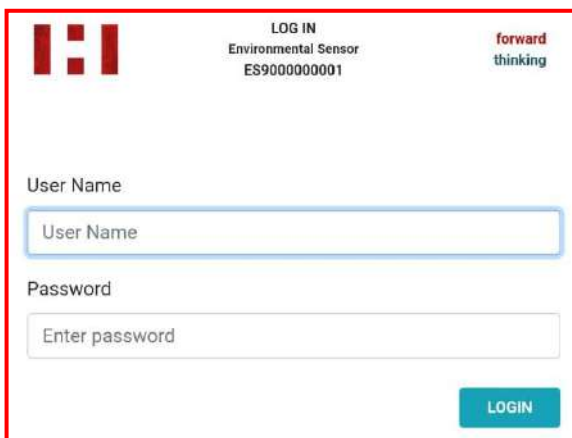
**Warranty:** 1 year after delivery

# wiring connections



## setup configuration

A user-friendly interactive web enabled browser interface for flow meter parameters configuration. Every screen is self-explanatory.



1ST Page  
For Login Page  
IP: 192.168.9.54  
SSID: RDT900000xxxx  
Password: hunchxxxxxxxxxxxx  
User Name: hunch  
Password: 77xx

**PROCESSING**  
Environmental Sensor  
ES9000000001

forward thinking

PARAMETER	PV	UNIT
mV	137.00	mV
CO	0.01	CO
mV	137.00	mV
CO2	228.38	CO2

SETTINGS CLOSE

Parameter display page

**SETTINGS**  
Environmental Sensor  
ES9000000001

forward thinking

PARAMETER	LAST VALUE	SET VALUE
Modbus ID	2	
Baud Rate	9600	Select Option
Parity	none	Select Option
Stop Bits	1	Select Option
Modbus Delay ms	1	
MQTT IP	amazonusa.link	
MQTT Port	1883	
SSID	Strom Fiber	
Password	78900789	
Log Interval Minutes	62	

RESTART UPDATE CLOSE

Settings Page Configuration Calibration

**OTA SETUP**  
Environmental Sensor  
ES9000000001

forward thinking

Select file for updated version...

UPDATE CLOSE

OTA Over The Air firmware upload

# communication Modbus tags

## CONFIGURATION

ES900 has built-in Wi-Fi module with complete SPIF web enabled stack. Therefore, there is no need of any special data communication hardware or software, an end user can easily configure it by using any browser through HTTP. In configuration mode ES900 will act as a Master.

## DATA LOGGING

Furthermore, ES900 has comprehensive feature of data transferring of its tags to local or cloud server by using its built-in Wi-Fi module in Salve mode through HTTP/MQTT. By using feature end user can log the data to its local or remote server for online monitoring and reporting purpose.

## MODBUS RS485

ES900 has built-in Modbus RS485 module, therefore, end user can get the data to PLC, DCS, SCADA, OPC server or any data communication module/software.

Standard Modbus tags detail is as under for communication.

DEFINE NAME	TYPE	ADDRESS	
Carbon Monoxide	Swapped long	0X02	Function code: 03 or 04
Carbon Dioxide	Swapped long	0X04	Register type: Holding register

# mounting instructions

For proper reliable environmental data, Environmental Sensor should be installed properly.



**forward** thinking

**HUNCH AUTOMATION PRIVATE LIMITED**

4/17 M Block, Gulberg III, Lahore, Pakistan

Email: [info@hunch.com.pk](mailto:info@hunch.com.pk)

Website: [www.hunch.com.pk](http://www.hunch.com.pk)