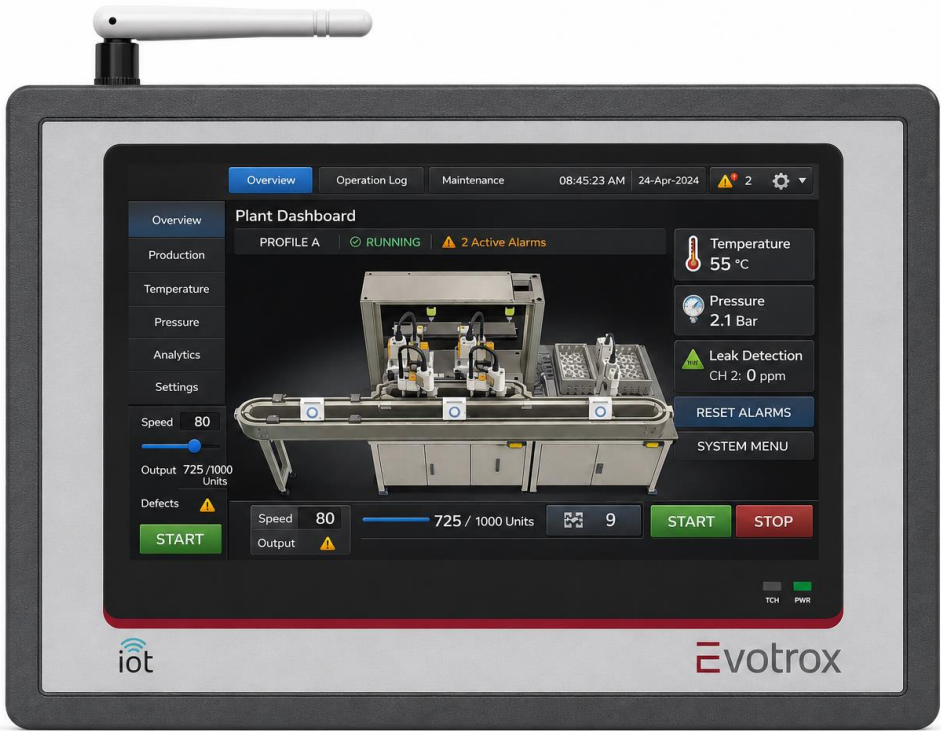


LOGIC-CT300

Industrial Control unit

User Manual



Item	Information
Name	8 Channel Leak Detection Monitor
Product Code	LOGIC CT300 - 4A1 - X1 - Y2 - E1 - F101
Base Product	Controller LOGIC-CT300
Document Type	User Manual
Document Revision	Rev. 1.0

Note: The screen content shown in product images is representative only and may vary according to the configured application profile.

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1. INTRODUCTION

The LOGIC-CT300 is a compact industrial monitoring and control controller designed for automation, process monitoring, data logging, communication, and Industrial IoT applications. It combines a graphical operator interface, configurable control functions, industrial communication capabilities, and cloud connectivity within a single platform, reducing system complexity while improving operational visibility.

Equipped with a 7 -inch TFT Touch display, the controller enables users to monitor process conditions, manage alarms, review system status, and configure operating parameters directly from the device. Built-in communication interfaces including RS485, Ethernet, USB, and wireless connectivity allow seamless integration with field devices, supervisory systems, and cloud platforms.

The controller supports local data logging, remote monitoring, alarm notifications, and firmware updates through the Linked IoT platform. Its industrial-grade design and flexible architecture make it suitable for a wide range of applications including environmental monitoring, refrigeration systems, utility management, process automation, OEM equipment, and Industrial IoT solutions.

While the hardware platform remains common, application-specific functions, control logic, wiring, parameters, and operating screens are configured according to the intended application. Application-specific details are therefore reserved for Part-2 of this manual.

2. PRODUCT OVERVIEW

The LOGIC-CT300 combines display, keypad, communication, data logging, and IoT functionality into a single panel-mounted controller platform. It is intended to simplify monitoring and control applications while providing local operation and remote visibility.

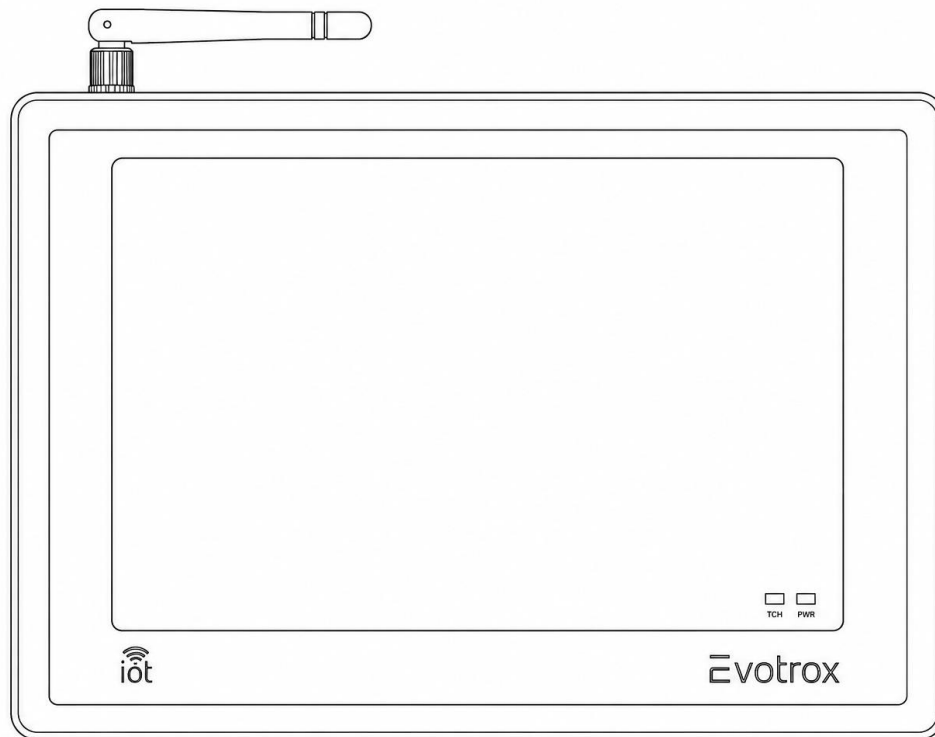


Figure 1: Front view of LOGIC-CT300 controller

Note: Display layout and application screens may change according to the configured application profile.

3. FEATURES, APPLICATIONS AND TECHNICAL SPECIFICATIONS

3.1 FEATURE HIGHLIGHTS

- 7-inch TFT graphical touch screen display
- Real-time monitoring and control
- Integrated alarm and event management
- Configurable input/output architecture
- Industrial RS485 communication with Modbus RTU support
- Ethernet connectivity through LAN/WAN ports
- Built-in Linked IoT cloud connectivity
- Local data logging and USB data export
- Firmware Over-the-Air (FOTA) updates
- Password-protected configuration access
- Industrial panel mount design
- IP65 front protection
- Designed for continuous industrial operation

3.2 APPLICATION AREAS

- Industrial automation
- Cold storage and refrigeration
- Pharmaceutical facilities
- Food processing plants
- Water and wastewater systems
- Building management systems
- Environmental monitoring
- Agriculture and greenhouses
- Utility monitoring
- Industrial IoT applications

3.3 TECHNICAL SPECIFICATIONS

Parameter	Value
Supply Voltage	24 VDC
Display	7-inch TFT LCD Touch Screen
Communication	2 x RS485, 2 x Ethernet, GSM(Optional)
USB	USB data export / configuration use
Wireless Connectivity	External antenna for supported wireless / cloud connectivity
Mounting	Panel mount
Front Protection	IP65
Dimensions (W x H x D)	230 x 150 x 30 mm
Panel Cutout	217 x 139 mm
Operating Use	Indoor industrial panel installation

4. PRODUCT IMAGES AND MECHANICAL DRAWINGS

4.1-DIMENSIONAL DRAWING

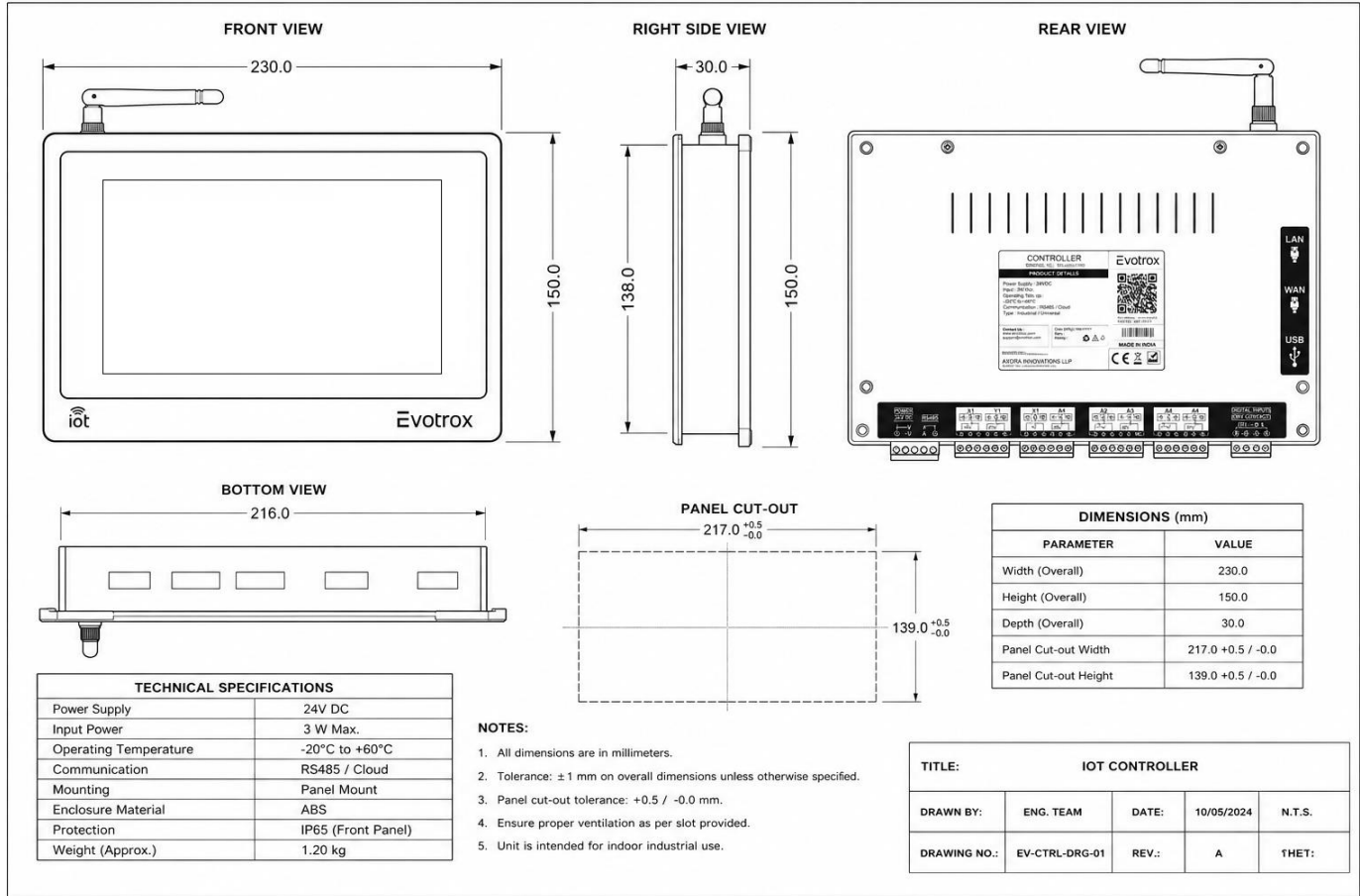


Figure 3: Dimensional drawing and panel cut-out

Parameter	Value
Width (Overall)	230.0 mm
Height (Overall)	150.0 mm
Depth (Overall)	30.0 mm
Panel Cut-out Width	217.0 mm ± 0.5 / -0.0
Panel Cut-out Height	139.0 mm ± 0.5 / -0.0

Note: All dimensions are in millimeters unless otherwise specified. Verify cut-out before panel fabrication.

4.2 EXPLODED VIEW AND PARTS DESCRIPTION

The exploded view shows the general mechanical construction of the controller, including the antenna, top cover with display, keypad/front panel assembly, main PCB assembly and bottom housing.

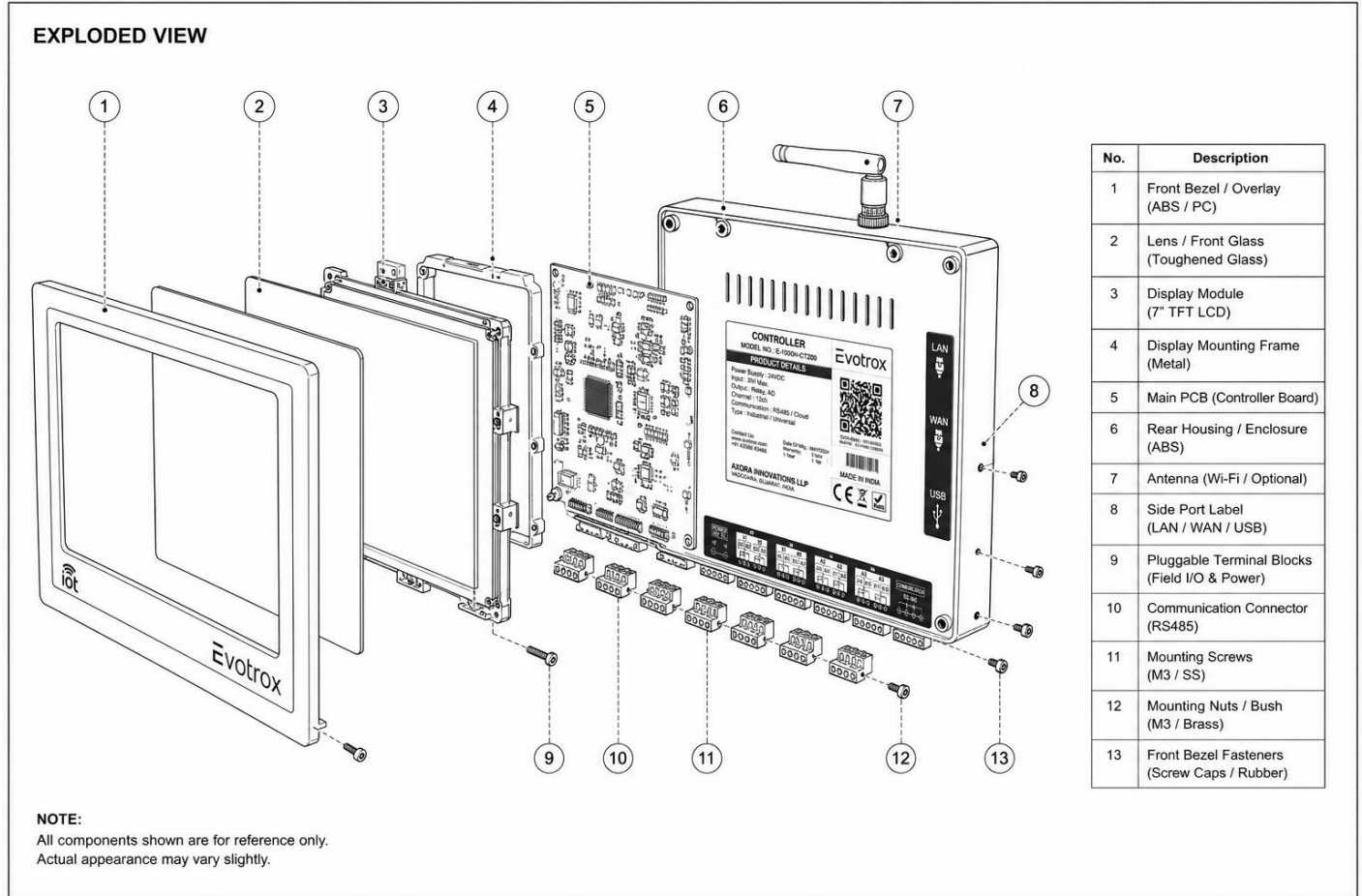


Figure 2: Exploded view and major parts of the controller

5. 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.
- Ensure proper earthing and panel wiring as per site electrical standards.
- Do not install the device where it can be exposed to direct flame, heavy water jet, corrosive liquid splash or mechanical damage unless additional protection is provided.
- Do not modify the enclosure, cable entries, fasteners, PCB assembly, or sealing arrangements.
- Follow local industrial safety regulations, electrical codes and site safety procedures.
- Do not use the controller as the only safety protection layer where local regulation requires redundant safety devices, emergency shutdown, or certified safety systems.

Note: Sensor replacement, bump testing, calibration, gas-specific safety, flameproof suitability and hazardous-area requirements are application-specific and shall be defined in Part-2 where applicable.

6. INSTALLATION GUIDELINES

Before installation, ensure that the controller model, power supply, mounting location, and wiring requirements are suitable for the intended application. Install the controller in a clean, dry and well-ventilated control panel away from excessive heat, vibration, moisture, corrosive gases, and sources of electrical interference.

6.1 PANEL MOUNTING

1. Prepare the panel cut-out as specified.
2. Insert the controller from the front side of the panel.
3. Secure the controller using the supplied mounting clips.
4. Ensure proper sealing and mechanical stability.

6.2 ELECTRICAL WIRING

- Disconnect power before wiring.
- Use a regulated 24VDC power supply.
- Verify terminal connections and polarity before powering the device.
- Use ferrules and properly sized conductors.

6.3 GROUNDING AND COMMUNICATION CABLING

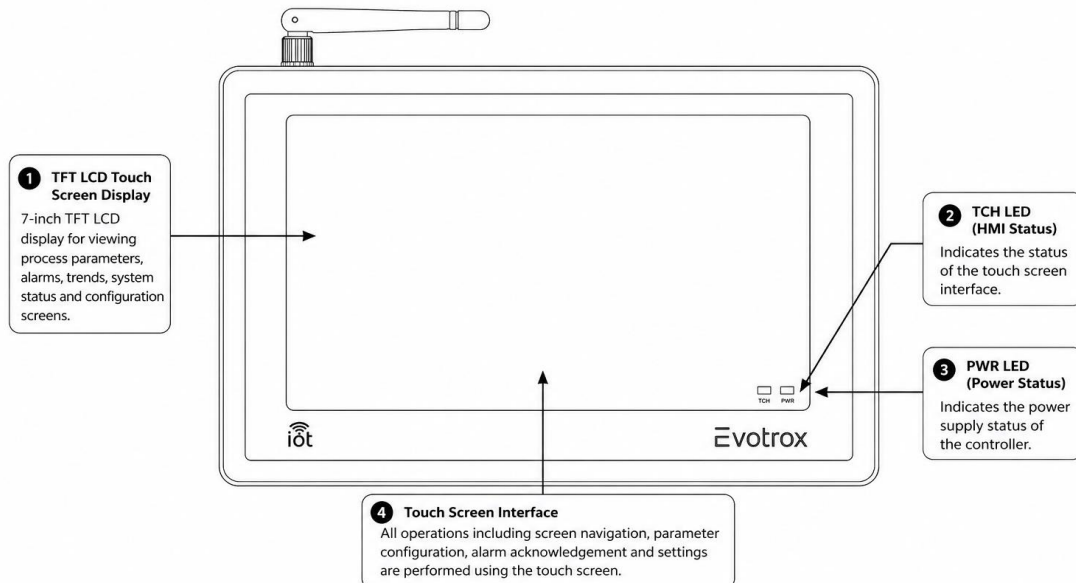
- Follow proper grounding practices.
- Use shielded cables for communication networks.
- Route communication cables separately from power cables.
- Use industrial-grade Ethernet and RS485 cabling where applicable.

6.4 POWER-UP CHECK

After installation, verify power, display operation, communication status, and connected device functionality before placing the system into service.

7. USER INTERFACE

The front interface includes a 7-inch TFT LCD Touch Screen display, and status indication LEDs. The display is used for process monitoring, alarms, parameter settings and system status information.



 **Note:** Display layout and application screens may change according to the configured application profile.

Figure 4: User interface guide

8. HARDWARE INTERFACES

The rear side of the controller provides terminal and communication interfaces for power, field devices, RS485 communication, Ethernet connectivity and USB functions. Actual field terminal assignments may vary depending on the application profile.

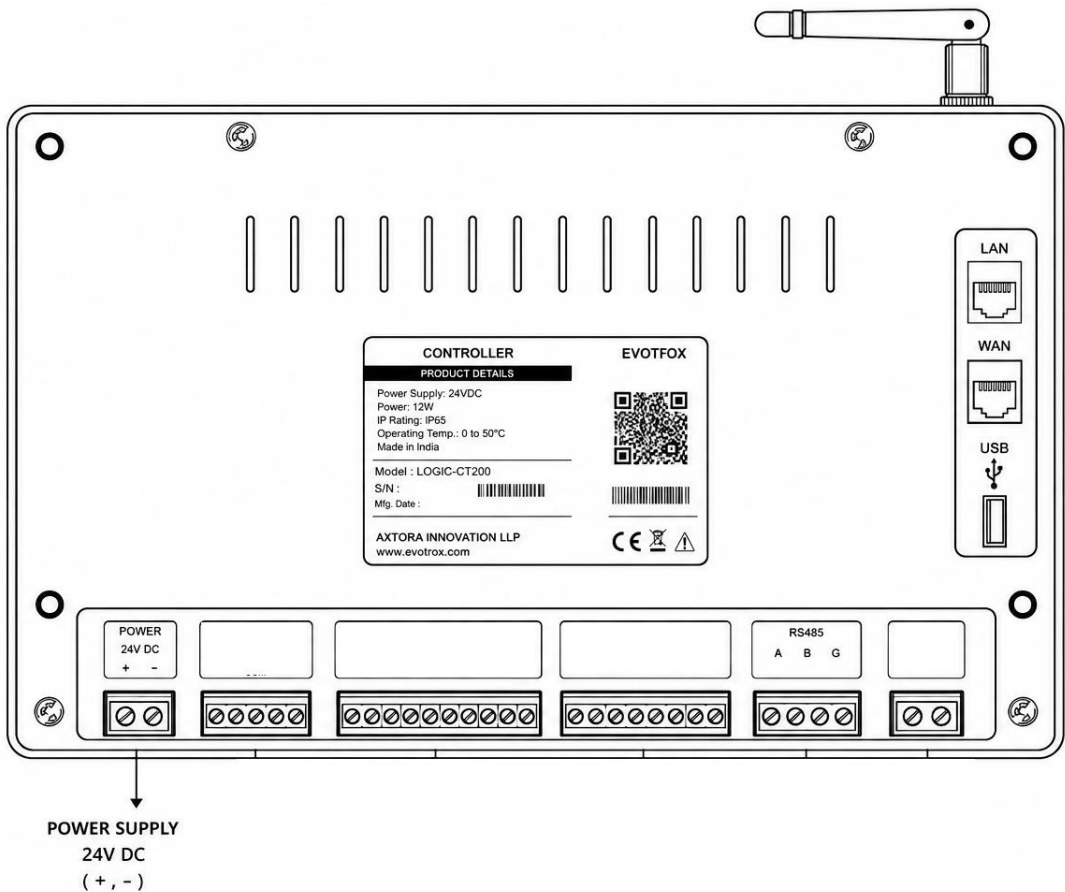


Figure 5: Rear side ports and terminal guide

Interface	Purpose
Power Supply	24VDC device power input
LAN Port	Local network / Modbus TCP/IP communication
WAN Port	Internet or network connectivity for cloud communication
USB Port	Data export, backup or configuration-related use
RS485 Port	Serial communication with field devices or external systems
Wireless Antenna	Wireless connectivity for supported IoT functions
Application Terminals	Field inputs and outputs defined according to application profile

9. CLOUD DEVICE INTERFACE / IOT CONFIGURATION

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

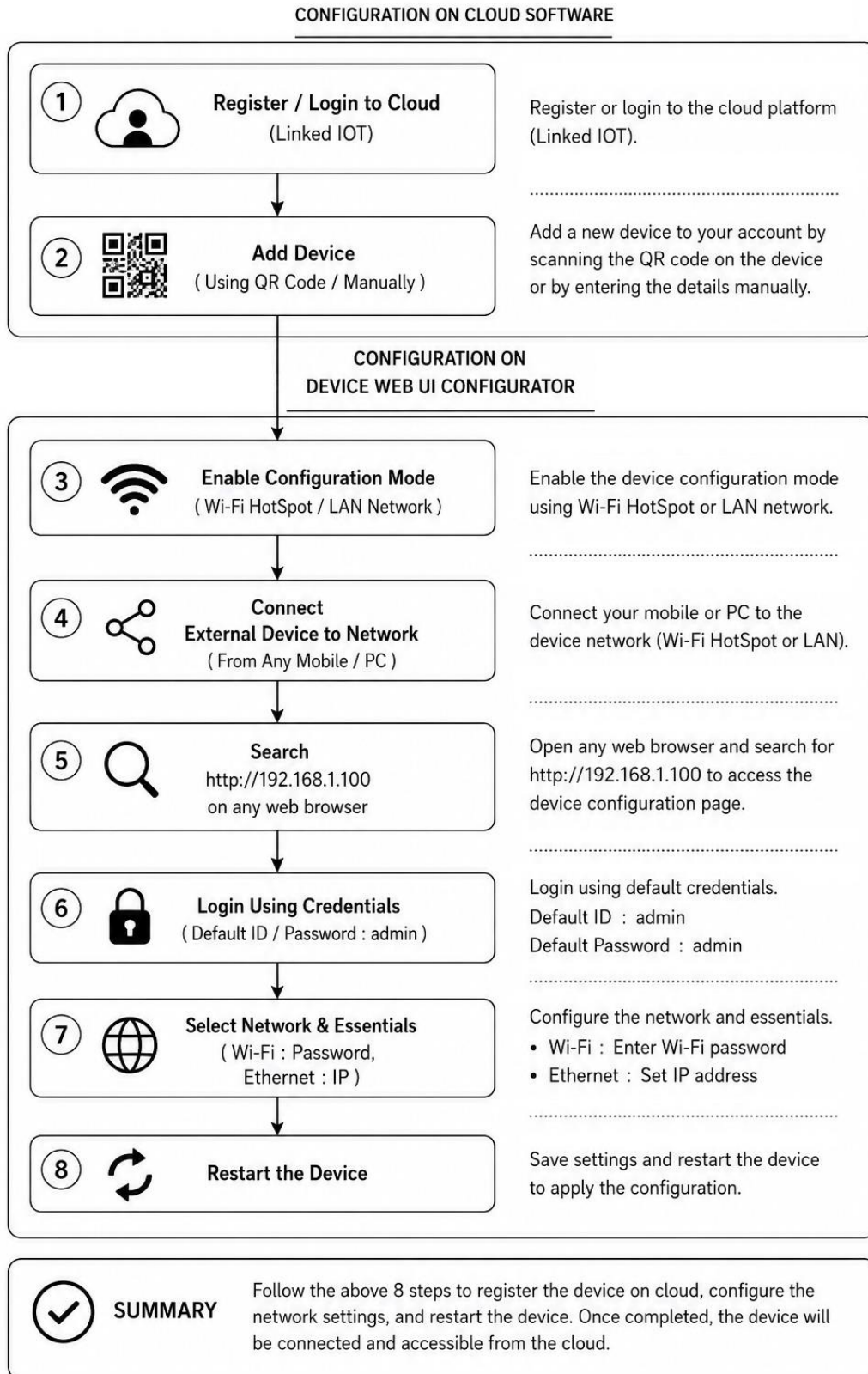


Figure 7: Cloud and Web UI configuration flow

9.1 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.

9.2 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.

9.3 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

9.4 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.

9.5 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.

9.6 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.

10. APPLICATION OVERVIEW

The LOGIC-CT300 configured as an Ammonia Leak Detection Monitor is designed to monitor ammonia concentration from connected field sensors, generate alarms based on configured set values, operate assigned digital outputs, and communicate monitored data to external systems. This application profile defines the application-specific hardware code, firmware code, I/O structure, communication behavior, wiring reference, settings, commissioning steps, and troubleshooting guidance.

Parameter	Details
Title	Ammonia Leak Detection Monitor
Description	Application profile for ammonia leak monitoring, alarm generation, output control, and data communication.
Hardware Details	LOGIC-CT300-4A1-X1-Y2-E1
Firmware Details	F101
I/O Details	2 Ch DI 2 Ch DO 8 Ch AI
Version Update	Initial application profile release

10.1 APPLICATION FEATURES

- Supports up to 8 ammonia sensing channels through analog input or serial communication, based on final configuration.
- Alarm generation based on configured set value (SV) and hysteresis.
- Alarm acknowledgement support through user interface or assigned digital input.
- Digital output control for pump, exhaust fan, hooter, valve, or external alarm device as configured.
- Data retransmission through RS485 Modbus RTU and Ethernet Modbus TCP/IP where enabled.
- Cloud monitoring support through Linked IoT when IoT card is enabled.

11. ORDERING INFORMATION

11.1 Ordering format: LOGIC CT300 - 4A1 - X1 - Y2 - E1 - F101

Code Segment	Description
LOGIC CT300	Controller platform
4A1	Four AI-IV modules / 8 analog input channels
X1	2-channel digital input card
Y2	2-channel relay output card
E1	IoT card / EdgeLink-100
F101	Ammonia leak detection firmware code

11.2 Card Variants

Code	Title	Description
X1	DI Card - 2CH	2 Ch Opto-Isolated Digital Input
Y1	DO Card - R1CH	1 Ch Relay Output
Y2	DO Card - R2CH	2 Ch Relay Output
Y3	DO Card - T2CH	2 Ch Transistor Output
A1	AI Card - IV	2 Ch Configurable Active Analog Input: 0-1 V, 0-5 V, 0-10 V, 0-20 mA, 4-20 mA
A2	AI Card - RMV	1 Ch Configurable Passive Analog Input: NTC Thermistor (10K), PT100, PT1000, CU50, T/C (J, K, R, S, T)
A3	AO Card - 2CH	2 Ch Analog Output: 0-20 mA, 4-20 mA
I1	GSM Card	GSM / 4G Module for Cellular Network
E1	IoT Card (EdgeLink-100)	IoT Card for Cloud Network Connectivity and IoT Application
L1	Lan Card	Lan card for Internal Network

12. WIRING DIAGRAM

The following wiring diagram represents the terminal arrangement for the configured LOGIC-CT300 application. Wiring shall be performed only by qualified personnel after disconnecting power.

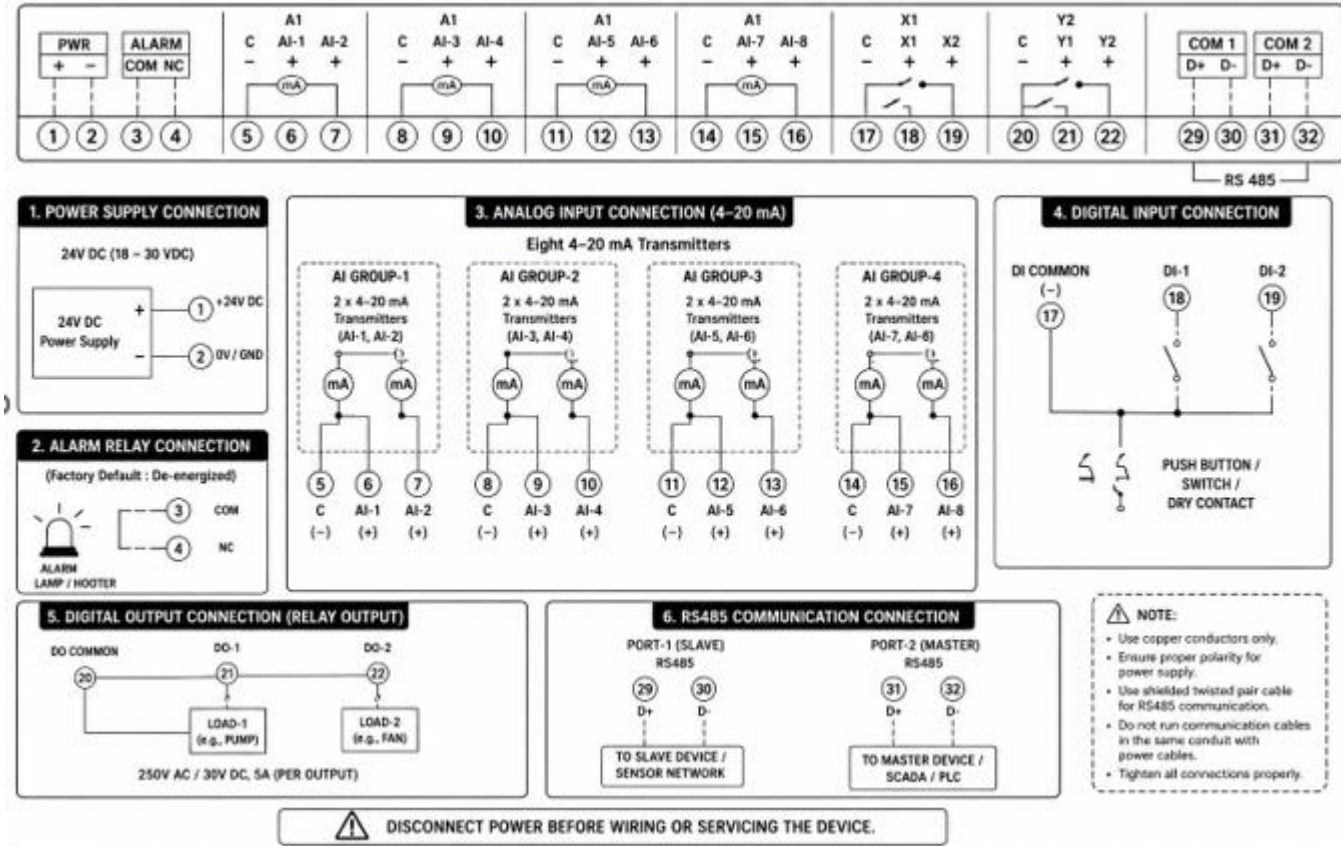


Figure 14.1: Application wiring diagram

13. WORK FUNCTION & CONTROL LOGIC

The controller continuously monitors process values from connected sensors and performs alarm monitoring, control actions, and data communication.

KEY FUNCTIONS

- Supports sensing through up to 8 analog input channels or up to 8 serial sensors connected through RS485 communication.
- Allows configuration and monitoring of connected serial sensors where supported.
- Generates alarms based on configured set values (SV) with acknowledgement functionality.
- Operates assigned digital output channels such as pumps, fans, valves, hooters, or external alarm devices based on configured control settings.
- Retransmits process data through RS485 Modbus RTU and Ethernet Modbus TCP/IP communication where enabled.

This application provides sensing, alarm management, control output operation, and communication functions for ammonia leak monitoring applications.

14. APPLICATION SETTINGS

Application settings define how input channels, control logic, alarms, and sensor calibration parameters operate for this application. Available menu items may vary depending on the configured firmware and enabled features.

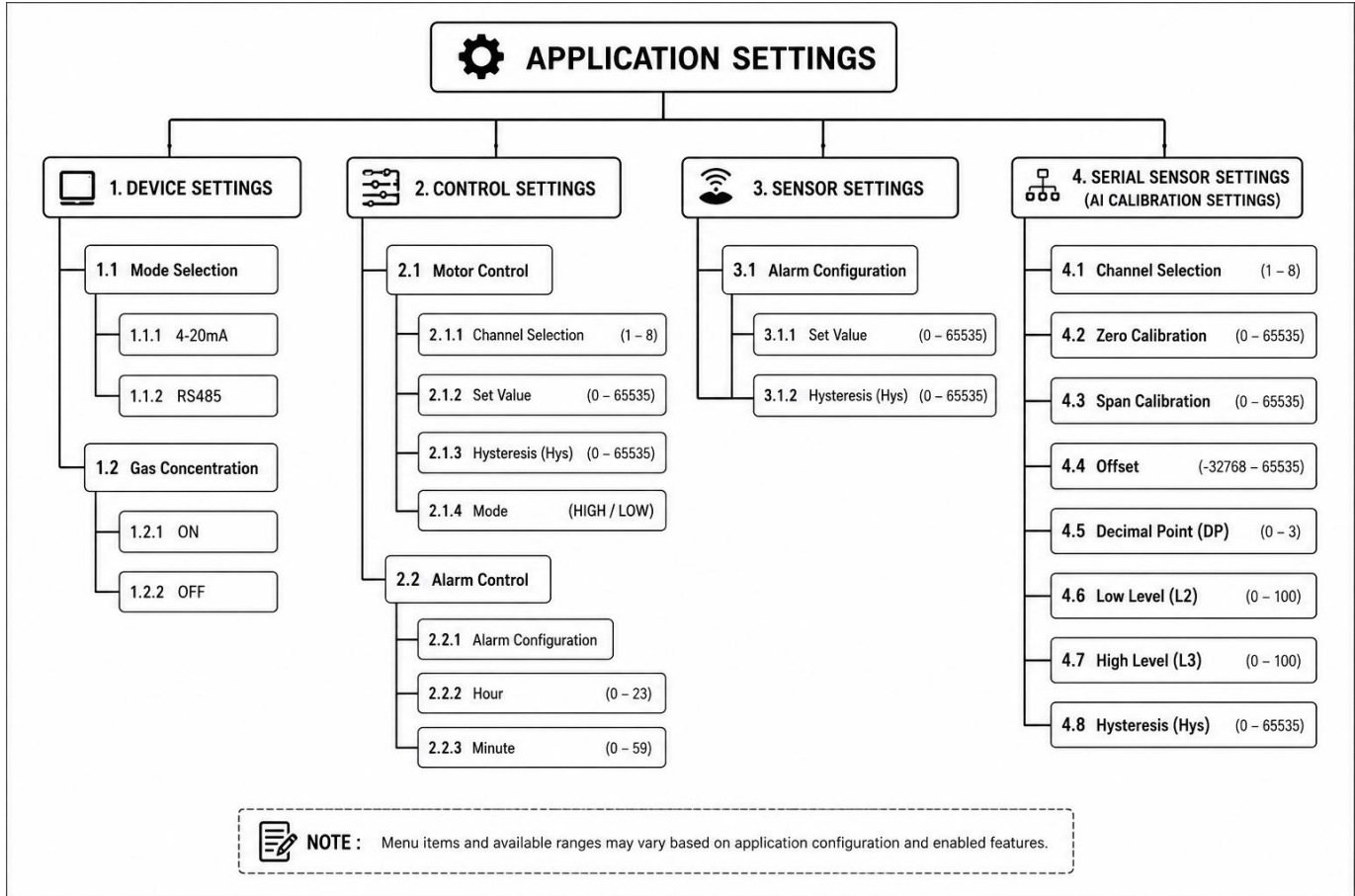


Figure 18.1: Application settings menu flow

Parameter	Description	Range / Options	Default Value
Device Setting	Sets mode selection and gas concentration display behavior.	Selected / Not Selected	-
Mode Selection	Selects data receiving method.	4-20 mA / RS485	4-20 mA
Gas Concentration	Enables or disables gas value display on main screen.	ON / OFF	OFF
Control Setting	Controls assigned digital output operation.	Motor Control / Alarm Control	-
Motor Control	Sets motor/output control parameters.	Channel: 1-8 Set Value: 0-65535 Hys: 0-65535 Mode: HIGH / LOW	Channel: 1 Set Value: 0 Hys: 0 Mode: LOW
Alarm Control	Sets alarm timing parameters.	Alarm Configuration Hour: 0-23 Minute: 0-59	Hour: 00 Minute: 00
Alarm Configuration	Sets alarm set value and hysteresis for channels.	All 8-channel parameters Set Value: 0-65535 Hys: 0-65535	Set Value: 0 Hys: 0
Serial Sensor Setting	Handles AI channel calibration and display scaling parameters.	Zero: 0-65535 Span: 0-65535 Offset: -32768 to 65535 DP: 0-3 L2: 0-100 L3: 0-100 Hys: 0-65535	Channel: 0 Zero: 0 Span: 0 Offset: 0 DP: 0 L2: 0 L3: 0 Hys: 0

15. COMMUNICATION PROTOCOL

The communication ports are used for field sensor communication, data retransmission, external monitoring, and integration with PLC/SCADA systems. Communication parameters must match the connected devices.

15.1 PORT-1 COMMUNICATION DETAILS - MODBUS RTU SLAVE / DATA RETRANSMISSION

Item	Details
Description	Port-1 is used to share controller data with an external Modbus master device such as PLC, SCADA, HMI, or data logger.
Protocol	Modbus RTU
Mode	Modbus RTU Slave
Default Parameters	Device Address: 1 Baud Rate: 9600 Data Bit: 8 Stop Bit: 1 Parity: None

Note: In multi-device RS485 networks, each device must have a unique device address between 1 and 255.

15.1.1 Modbus Address Details

Address	Access Type	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 setting parameters

15.1.2 Modbus Communication Address List

Sr. No.	Address	Parameter
1	30001	Channel 1 Data
2	30002	Channel 2 Data
3	30003	Channel 3 Data
4	30004	Channel 4 Data
5	30005	Channel 5 Data
6	30006	Channel 6 Data
7	30007	Channel 7 Data
8	30008	Channel 8 Data
9	30009	Channel 1 Gas Level
10	30010	Channel 2 Gas Level
11	30011	Channel 3 Gas Level
12	30012	Channel 4 Gas Level
13	30013	Channel 5 Gas Level
14	30014	Channel 6 Gas Level
15	30015	Channel 7 Gas Level
16	30016	Channel 8 Gas Level
17	40001	Motor channel values
18	40002	Motor set value
19	40003	Motor hysteresis
20	40004	Motor alarm mode
21	40005	Alarm hours
22	40006	Alarm minutes
23	40007	Channel-1 set value
24	40008	Channel-2 set value
25	40009	Channel-3 set value
26	40010	Channel-4 set value
27	40011	Channel-5 set value
28	40012	Channel-6 set value
29	40013	Channel-7 set value
30	40014	Channel-8 set value
31	40015	Channel-1 hysteresis
32	40016	Channel-2 hysteresis
33	40017	Channel-3 hysteresis
34	40018	Channel-4 hysteresis
35	40019	Channel-5 hysteresis
36	40020	Channel-6 hysteresis
37	40021	Channel-7 hysteresis
38	40022	Channel-8 hysteresis

15.2 PORT-2 COMMUNICATION DETAILS - MODBUS RTU MASTER / FIELD SENSOR NETWORK

Item	Details
Description	Port-2 works as a Modbus RTU Master for field RTU sensor devices. User can connect up to 8 supported devices in an RS485 loop.
Protocol	Modbus RTU
Mode	Modbus RTU Master
Default Parameters	Baud Rate: 9600 Data Bit: 8 Stop Bit: 1 Parity: None

16. COMMISSIONING PROCEDURE

Follow the steps below after installation and wiring are completed.

1. Verify controller model, firmware code, and application profile details.
2. Check power supply voltage and polarity before powering the device.
3. Verify all sensor, DI, DO, alarm relay, and communication wiring as per the wiring diagram.
4. Power ON the controller and confirm display, status LEDs, and startup sequence.
5. Configure date, time, communication parameters, and application settings.
6. Verify sensor readings for all enabled channels.
7. Set alarm set values, hysteresis, delay, and output logic as required by site conditions.
8. Test alarm acknowledgement and digital output operation safely.
9. Verify RS485 / Ethernet data communication with the connected external system.
10. Record final settings, test results, and commissioning observations.

17. APPLICATION TROUBLESHOOTING

Issue	Possible Cause	Recommended Action
No sensor reading	Sensor not powered, wrong wiring, input disabled, or communication mismatch	Check sensor wiring, power supply, channel selection, and communication settings.
Incorrect gas value	Wrong scaling, calibration mismatch, or sensor drift	Verify zero/span values, calibration settings, and sensor condition.
Alarm not generated	Set value too high, alarm disabled, or wrong mode selection	Check SV, hysteresis, alarm mode, and alarm configuration.
Alarm remains active	Actual gas condition, wrong hysteresis, sensor drift, or acknowledgement not performed	Verify gas condition, check set values, perform zero/span check, and acknowledge alarm.
Digital output not operating	Output not assigned, relay wiring issue, or control condition not met	Check output mapping, relay wiring, set value, and control mode.
RS485 communication failure	Wrong address, baud rate, polarity, or duplicate device ID	Verify device ID, baud rate, parity, stop bit, A/B polarity, and termination.
Ethernet / Modbus TCP failure	Wrong IP, gateway, port, or network issue	Check IP settings, cable, network switch, gateway, and TCP port 502.
IoT connection unavailable	Internet not available or cloud configuration incomplete	Check Wi-Fi/Ethernet settings, cloud credentials, and network availability.

17.1 APPLICATION NOTES

If the issue remains unresolved after the above checks, record the controller model, firmware code, active alarm condition, wiring details, communication settings, and observed behavior before contacting technical support.

Item	Details
Controller Model	LOGIC-CT300-4A1-X1-Y2-E1
Firmware Code	F101

18. MAINTENANCE AND PERIODIC CHECKS

The LOGIC-CT300 is designed for reliable operation with minimal maintenance. To ensure long-term performance and system reliability, follow the recommendations below:

- Periodically inspect all wiring connections and terminal tightness.
- Keep the controller and surrounding panel free from dust, moisture and contaminants.
- Clean the front surface using a soft, dry cloth. Do not use solvents or abrasive cleaning agents.
- Verify proper operation of communication interfaces and connected devices.
- Ensure adequate ventilation inside the control panel to prevent excessive heat buildup.
- Regularly back up configuration settings and logged data, if applicable.
- Update firmware only using approved procedures and authorized firmware versions.
- Immediately replace damaged cables, connectors or accessories.

Note: Sensor response verification, bump testing, calibration, analog output calibration and relay/interlock checks shall be defined in the application-specific section where applicable.

19. TROUBLESHOOTING

If the controller does not operate as expected, perform the following basic checks before contacting technical support.

Issue	Possible Cause	Recommended Action
No power indication	Power supply not available, wrong polarity or loose terminal	Verify 24VDC supply, polarity and terminal wiring.
Display not starting	Power issue, loose connector, firmware or internal fault	Check supply voltage and restart the device. Contact service if the issue continues.
RS485 communication error	Incorrect wiring, wrong baud rate, parity mismatch or duplicate device ID	Check RS485 A/B polarity, device ID, baud rate, parity, stop bit and network wiring.
Ethernet communication failure	Wrong IP settings, cable fault or network mismatch	Check IP address, subnet mask, gateway, port number and Ethernet cable.
Cloud connection not available	Internet unavailable, wrong network credentials or IoT disabled	Check IoT mode, network connection, credentials and Linked IoT configuration.
USB export not working	Unsupported USB drive, file system issue or logging disabled	Use supported USB drive and verify logging/export settings.
Alarm or output action not as expected	Application parameter, wiring or logic issue	Check application-specific set values, output wiring and control logic in Part-2.
Incorrect field reading	Sensor/instrument wiring, calibration or configuration issue	Check wiring and application-specific scaling/calibration settings.

Note: If the issue persists, record the observed fault condition, device model, serial number, application details and system settings before contacting authorized technical support.

20. WARRANTY AND SUPPORT

The LOGIC-CT300 is covered by a limited warranty against manufacturing defects in materials and workmanship for the period specified in the product warranty policy. The warranty applies under normal operating conditions and does not cover damage resulting from improper installation, misuse, unauthorized modifications, electrical surges, accidents or operation outside the specified limits.

For technical assistance, product support, firmware updates, documentation or service-related inquiries, contact Evotrox Technical Support through the official support channels. When requesting support, provide the product model, serial number, application details and a brief description of the issue.

21. COMPLIANCE INFORMATION

The controller is designed for industrial panel-mounted applications and shall be installed according to applicable electrical, safety and site regulations. Product certification and compliance markings shall be verified against the final product label, declaration and applicable certificate supplied with the product.

Compliance / Marking	Status / Note
CE	Applicable only if declared for the supplied model
RoHS	Applicable only if declared for the supplied model
IP65 Front Protection	Applicable to correctly mounted front panel condition
WEEE / Disposal	Dispose according to local electronic waste regulations
Site Safety Approval	To be verified by installer or end user as per final installation

22. 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 and site safety procedures.

This product is intended to assist in industrial monitoring, control, alarm generation and data communication. It does not replace statutory safety systems, emergency response procedures, certified safety systems or operator training where such systems are required by applicable regulation or site safety policy.

Performance depends on installation quality, wiring condition, field device condition, parameter configuration, environmental exposure and maintenance practices. Periodic functional testing and verification are essential for reliable operation.

Application-specific safety, calibration, sensor replacement, gas-specific operation, hazardous-area suitability, cable gland selection and field installation requirements must be verified against the final product label, application documentation and local regulatory requirements before use.

23. CONTACT INFORMATION

Company	Details
Brand	EVOTROX
Location	Ahmedabad, Gujarat, India
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Website	www.evotrox.com