



OVERVIEW

The AXIA Controller is the central hub of the AXIA Control System, offering reliable processing, fast communication, and flexible control for modern automation. Its modular design and seamless connectivity make it ideal for scalable industrial, commercial, and research based controlled horticultural operations.

APPLICATIONS

The AXIA Controller is built to support a wide range of modern automation environments, combining fast performance, secure communication, and reliable control in one adaptable platform. Its robust processing architecture and flexible I/O make it well suited for both simple and advanced agricultural operations.

Whether coordinating complex networks, managing distributed sensors, or driving real time control tasks, the AXIA Controller delivers the dependable, scalable foundation needed for high efficiency automation.

FEATURES

Edge Control Architecture

Built on the TI AM62x platform, combining high performance Cortex-A53 application cores with a Cortex-M4 real time core for fast, efficient control and edge compute workloads (ECA).

Integrated AI Acceleration

Features a dedicated Neural Processing Unit (NPU) delivering up to 2.3 TOPS, enabling efficient on-device AI and machine learning inference without relying on cloud processing.

Flexible, Industrial Grade Connectivity

Supports dual Ethernet for redundant or segmented networks, along with built-in Wi-Fi and Bluetooth 5.2/BLE for wireless communication across modern industrial and IoT environments.

Reliable On-board Memory

Equipped with 1 GB DDR4 RAM, 8 GB eMMC storage, and 32 KB EEPROM for robust system performance, secure configuration retention, and long-term reliability.

Fast, Robust Communication

Uses Modbus RTU over RS-485 with baud rates up to 115200 bps for dependable, low latency data exchange.

Versatile Interface Options

Includes USB 2.0 Type-A, USB Type-C (UART), RS-485, and HDMI, offering broad compatibility with peripherals, industrial hardware, and HMI displays.

Designed for Demanding Environments

Operates reliably within a vast temperature range, ensuring dependable performance in industrial, agricultural, or remote deployments with a compact DIN rail or wall-mountable design.

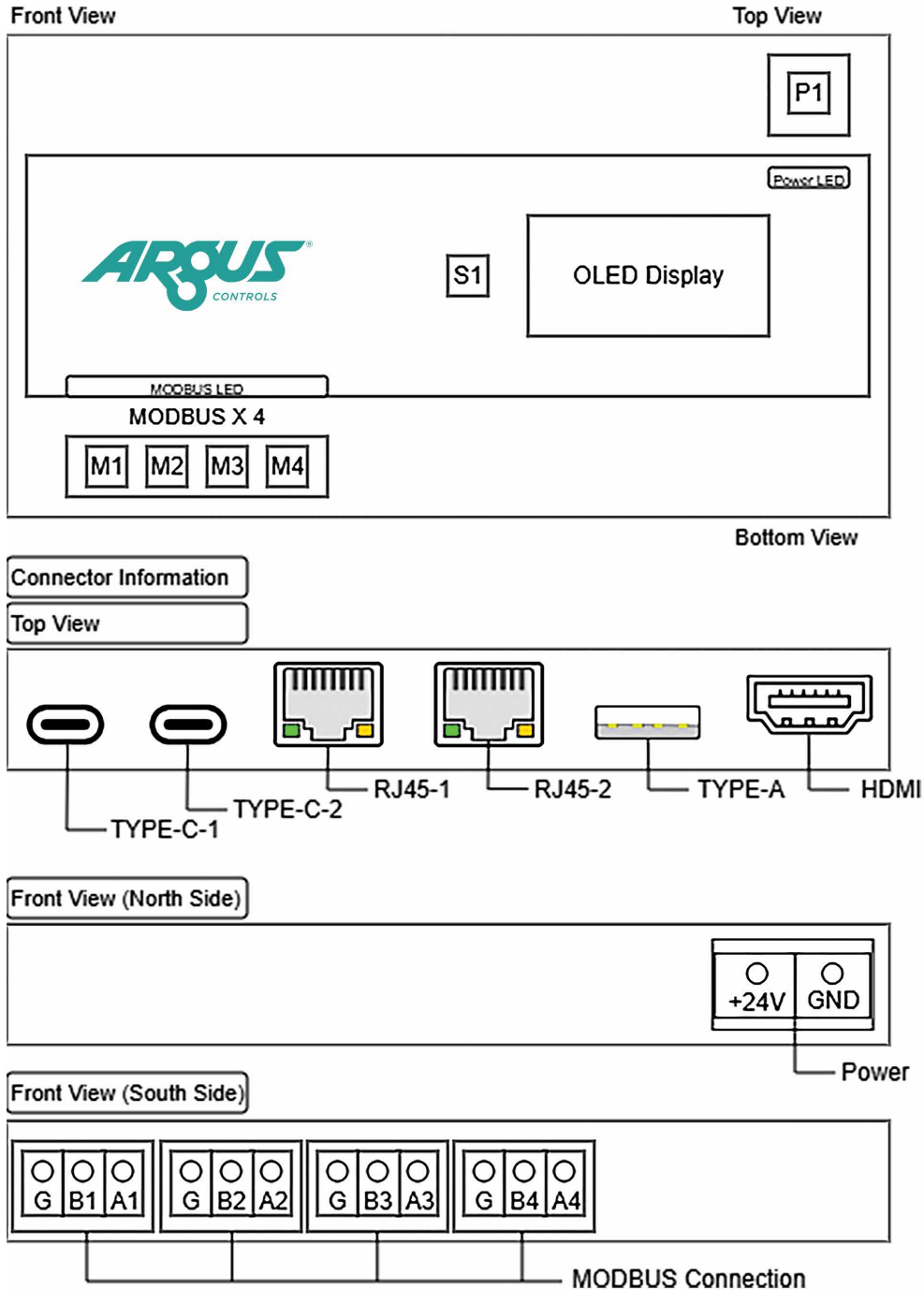
TECHNICAL SPECIFICATIONS

Dimensions	198mm x 151mm x 63.5mm
Security	MQTT with TLS encryption
Connectivity/Interfaces	Dual gigabit Ethernet (10/100/1000 MBPS) (RGMII), Wi-Fi 802.11b/g/n/ac, BT 5.2 4x Modbus RTU (RS-485), 1xHDMI, 1xUSB 2.0 (Type-A), 1xUART (Type-C), 1xUSB OTG (Type-C)
Over the Air Upgrades	BLE / WiFi
Power Supply	24VDC input; Max. power: 5W
Power Down on Board Supply	30 second onboard capacitor power storage with further back up from non-rechargeable battery
Mounting	DIN Rail - 35 x 7.5mm
Maximum Number of Controlled Zones	4 Climate Zones
Maximum Number of I/O Modules	Up to 16 nodes
Max number of 3rd party Modbus RTU devices on a single port. (Port 3 or 4)	Up to 16 nodes
LED Indicators	Power Status and Modbus RTU Activity
OLED Display	Shows controller information
Push buttons	Single button for controller information review

CONFIGURATION

Port - Type	Purpose
Ethernet 1 - RJ45(10/100/1000)	Control Network Communication
Ethernet 2 - RJ45(10/100/1000)	LAN Communication (Remote Access)
Modbus RTU 1/2/3/4 -RS-485	Communication with Input/Output modules and other off-shelf RS-485 sensors
USB - 2.0 (A), 3.0(2xC) (Service Only)	Peripherals connection
HDMI - Type A (Service Only)	External Display Output

WIRING DETAILS



Typical wiring example. For installation, refer to the supplied wiring diagrams and instructions.