

PRO SERIES

# STM32 INDUSTRIAL CONTROL BOARD

MODEL: F407ZGT6

Precision Control • Fully Isolated Design • Industrial Stability



Galvanic Isolation  
Dual CAN / Dual RS485



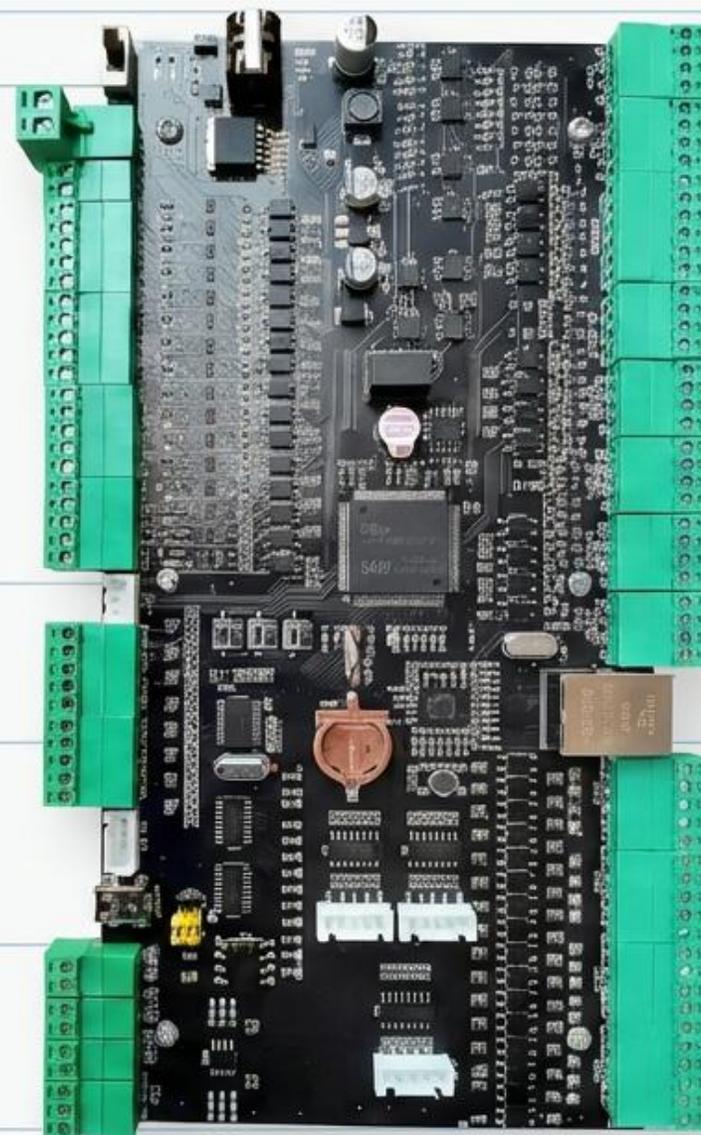
8-Channel High-Precision  
24-bit ADC



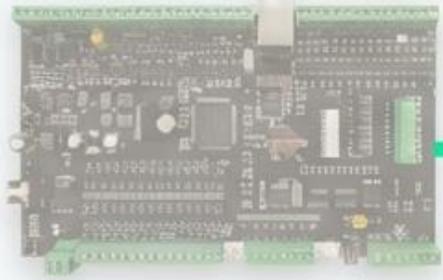
36 Isolated Outputs /  
30 Isolated Inputs



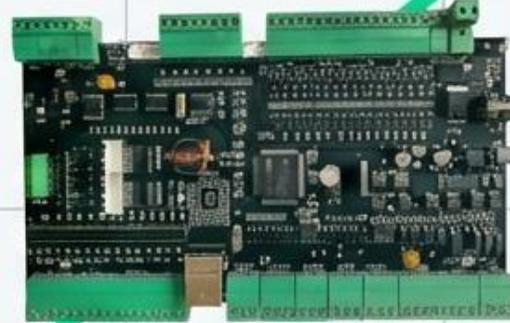
0V – +10V  
DAC Output



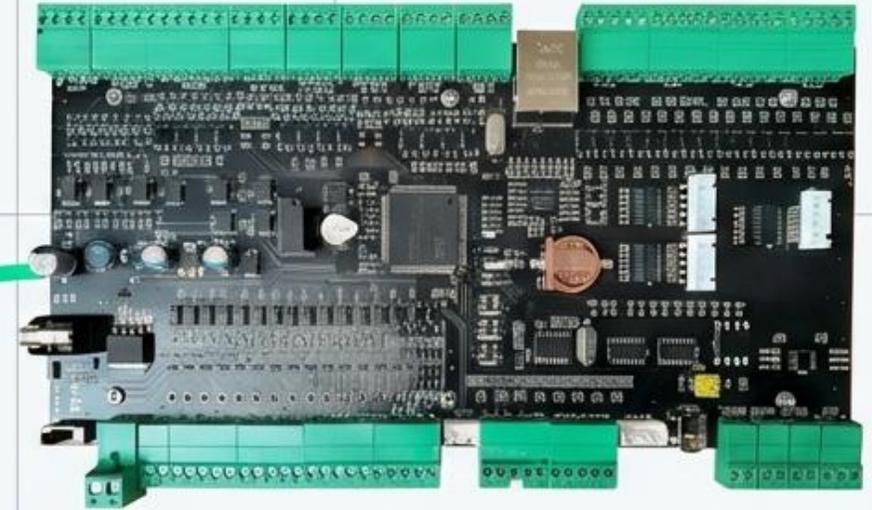
# Evolutionary History: The Pursuit of Perfection



Gen 1



Gen 2



Gen 3 (Current Model)

**Enhanced Performance,  
Unchanged Cost**

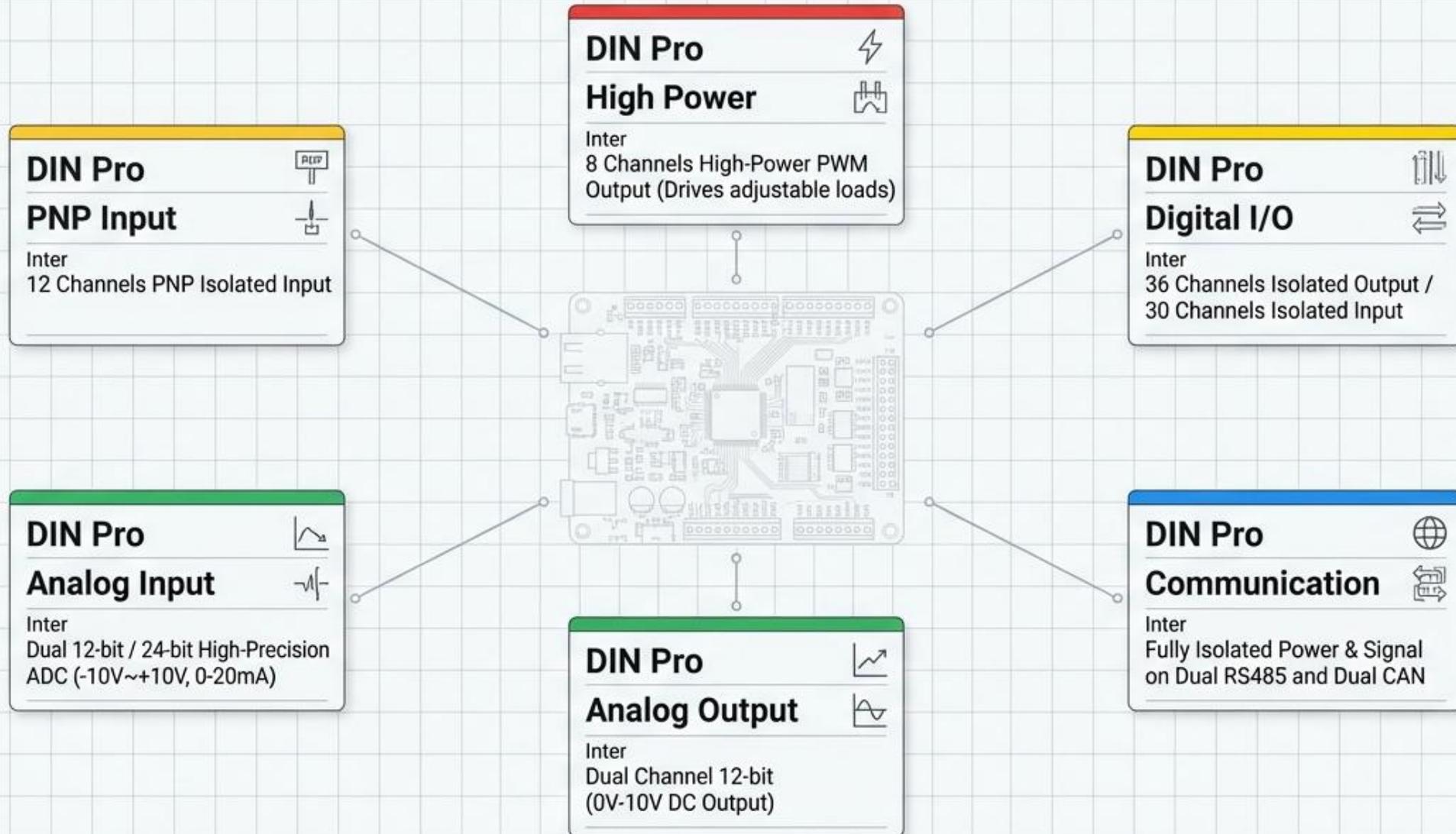
Three generations of hardware iteration resulting in superior system stability and expanded functionality.

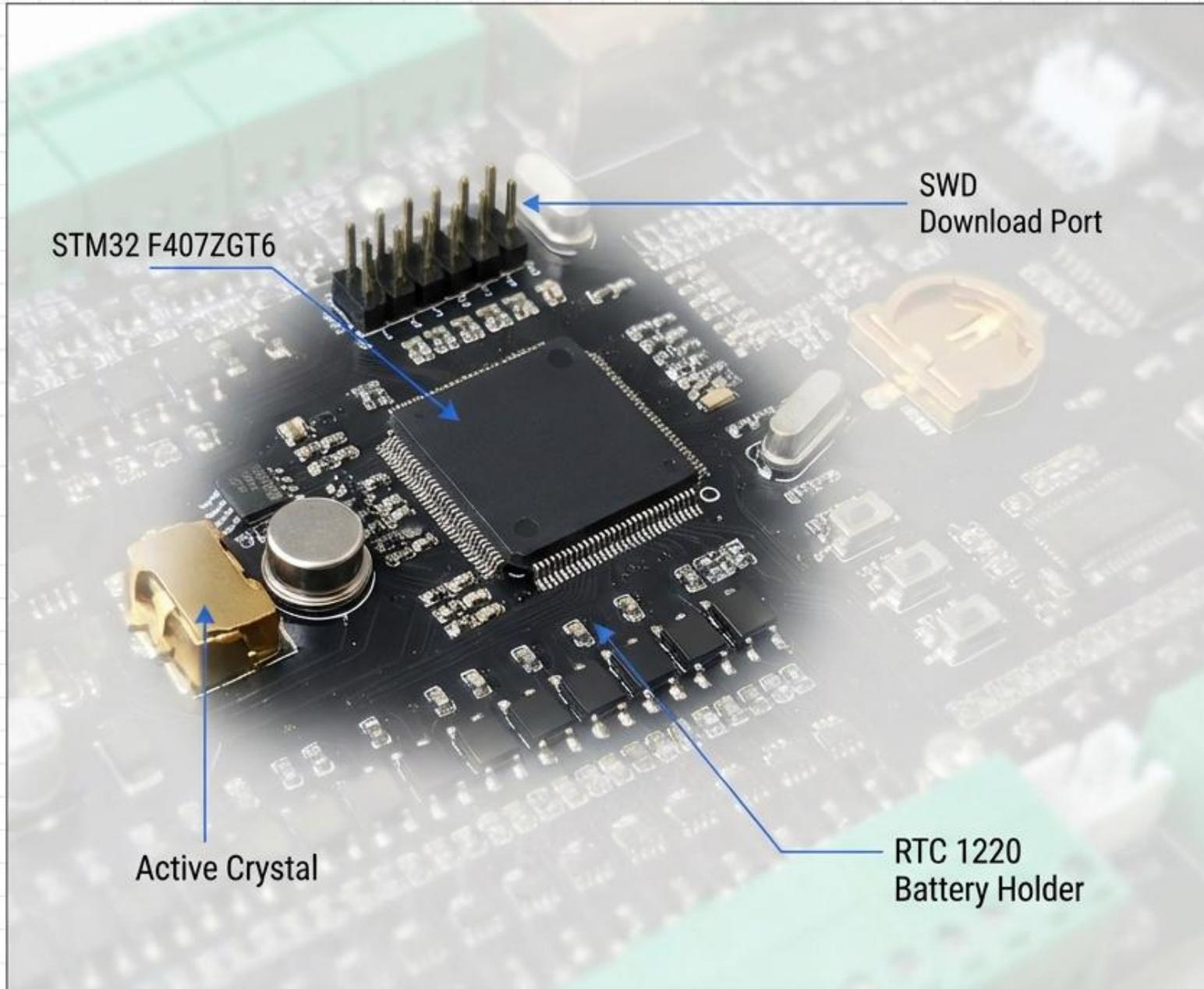


## Compatibility Check

Backward Compatibility Guaranteed: Your legacy code runs seamlessly on this upgraded hardware. No obsolescence.

# Six Core System Advantages





# Core Processing & System Architecture

## MCU

STM32 F407ZGT6 High-Performance Chip

## CLOCK SYSTEM

Active Crystal Oscillator ensuring long-term precision.

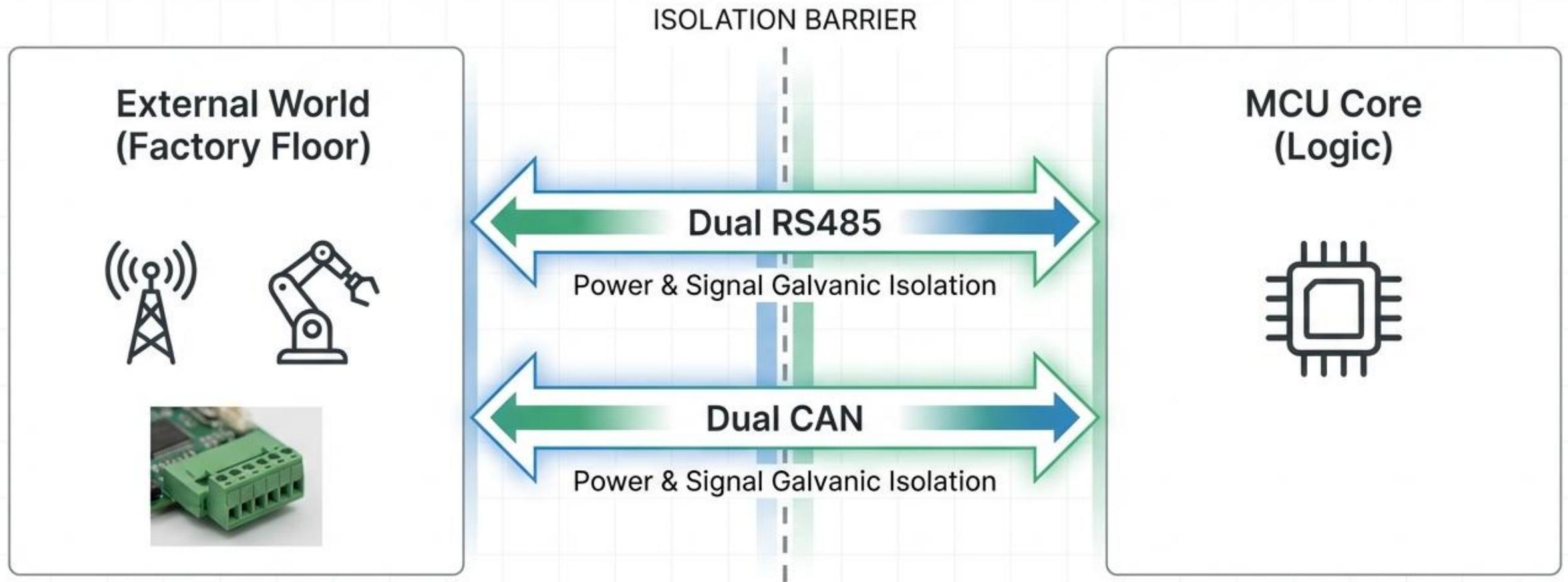
## POWER MANAGEMENT

- **Input:** 7-24V Wide Voltage.
- **Switching:** Integrated sliding power switch.

## DATA SAFETY

Onboard RTC Battery backup for data retention during power-off.

# Full-Stack Industrial Communication: Isolation & Interconnectivity



Ethernet: LAN8720 Interface

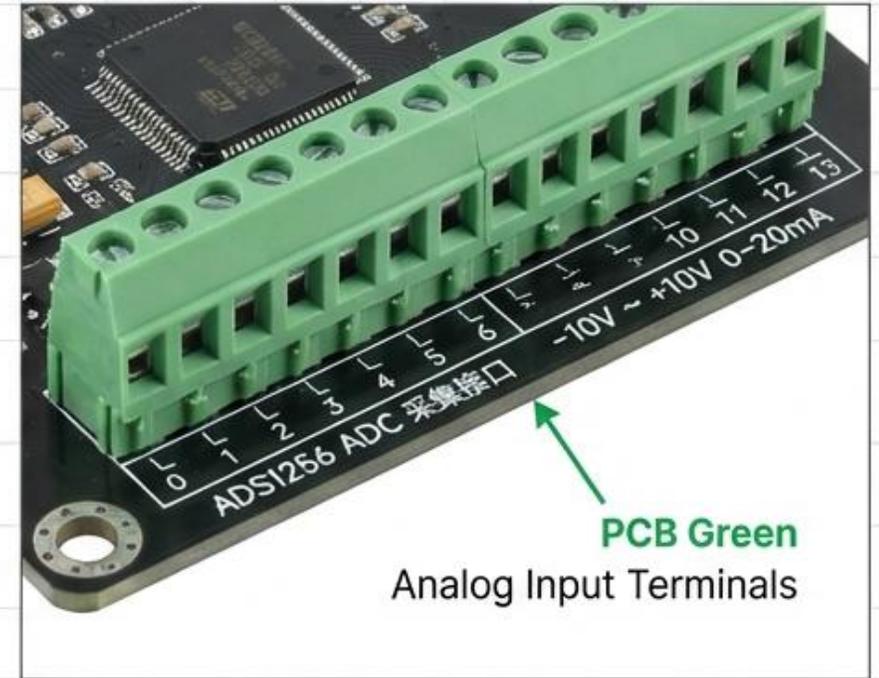
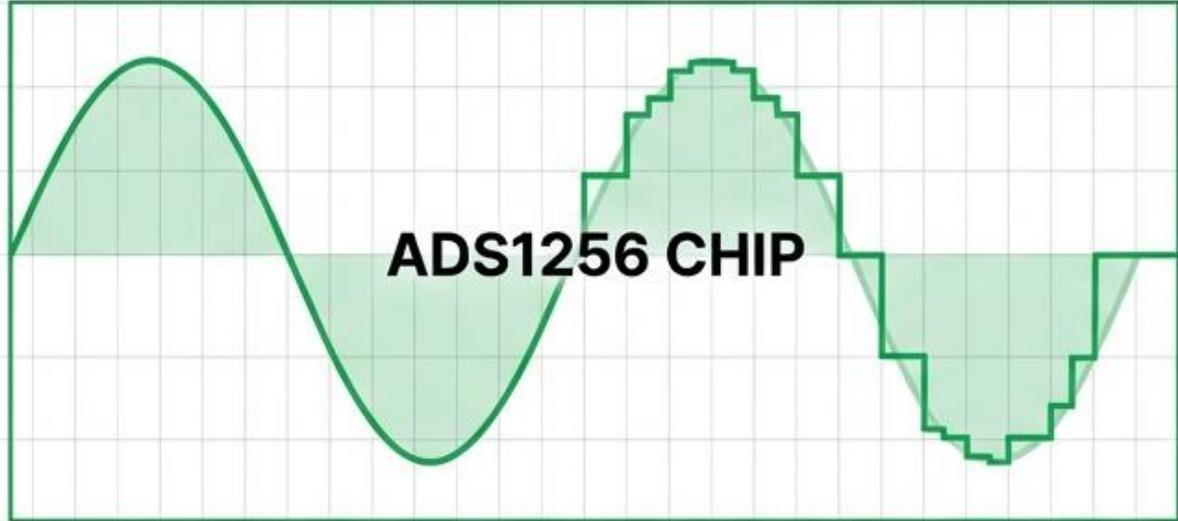


USB-to-Serial (CH340C)



Legacy TTL Serial Interface

# Precision Analog Input (Laboratory Grade)



**24-Bit**

High Resolution

**8 Channels**

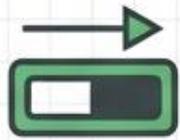
Acquisition Capacity

**$\pm 10V$  / 0-20mA**

Voltage & Current Support

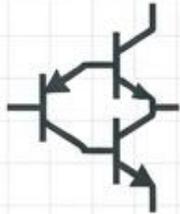
# Flexible Signal Input System

30 Channels Isolated Input



## 16 Channels NPN/PNP Adaptive

Auto-adapts to sensor types, reducing inventory complexity. Max Input: 30VDC.



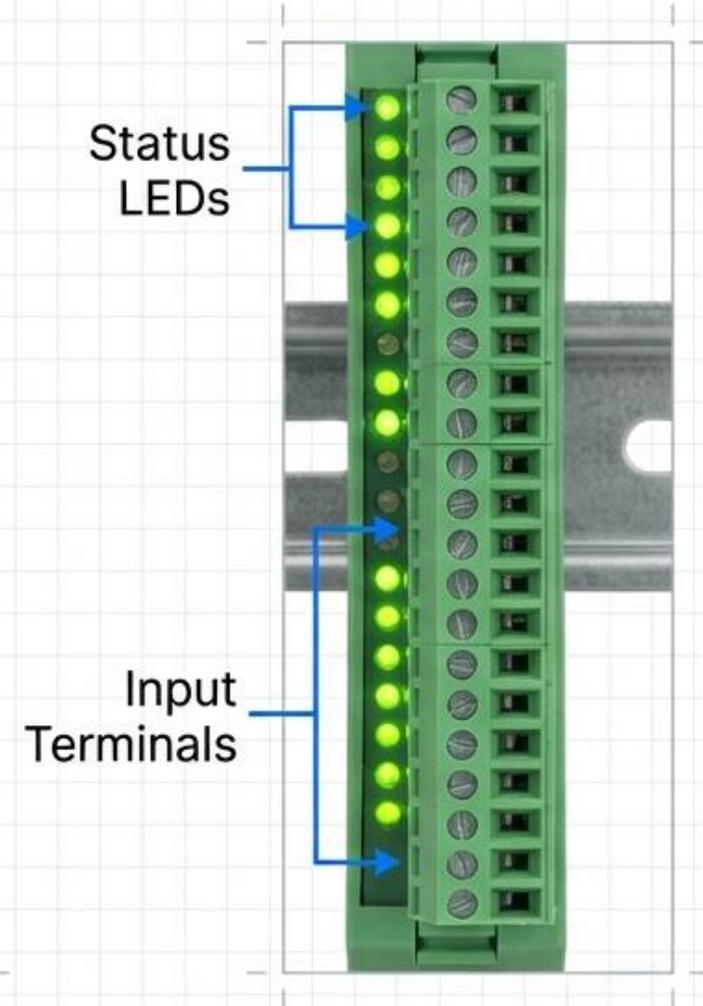
## 12 Channels PNP Isolated Input

Dedicated high-level active inputs with High-Speed Optocoupler Isolation.



## High Speed Control

1 Channel Isolated Encoder + 2 Channels High-Speed PWM Input. Supports up to 200kHz Pulse Frequency.



# Versatile Drive & Output Control

## 36 Channels Isolated Output

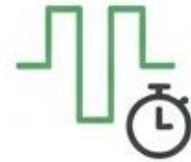


### Motion Control

Supports 4-Axis Stepper Motor Control (or use as 12 standard isolated outputs).

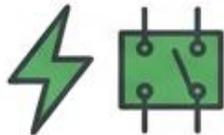


OUTPUT STATUS LEDS



### High Speed PWM

4 Channels High-Speed PWM Wave Output for precise speed and position control.



### High Power

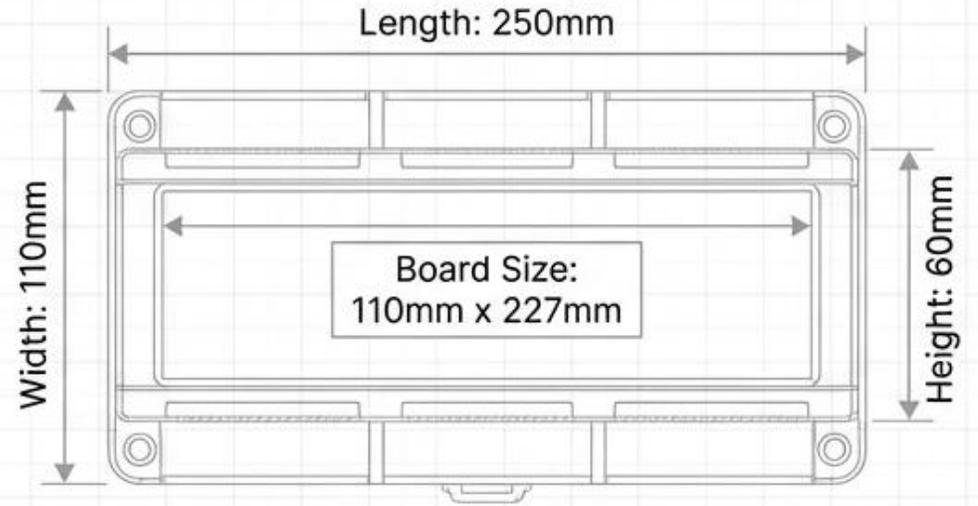
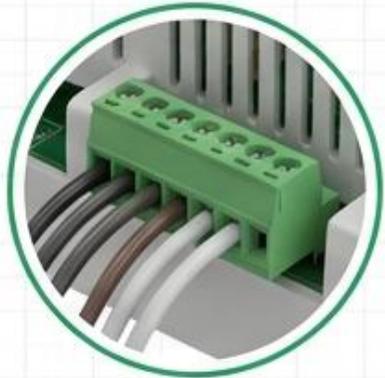
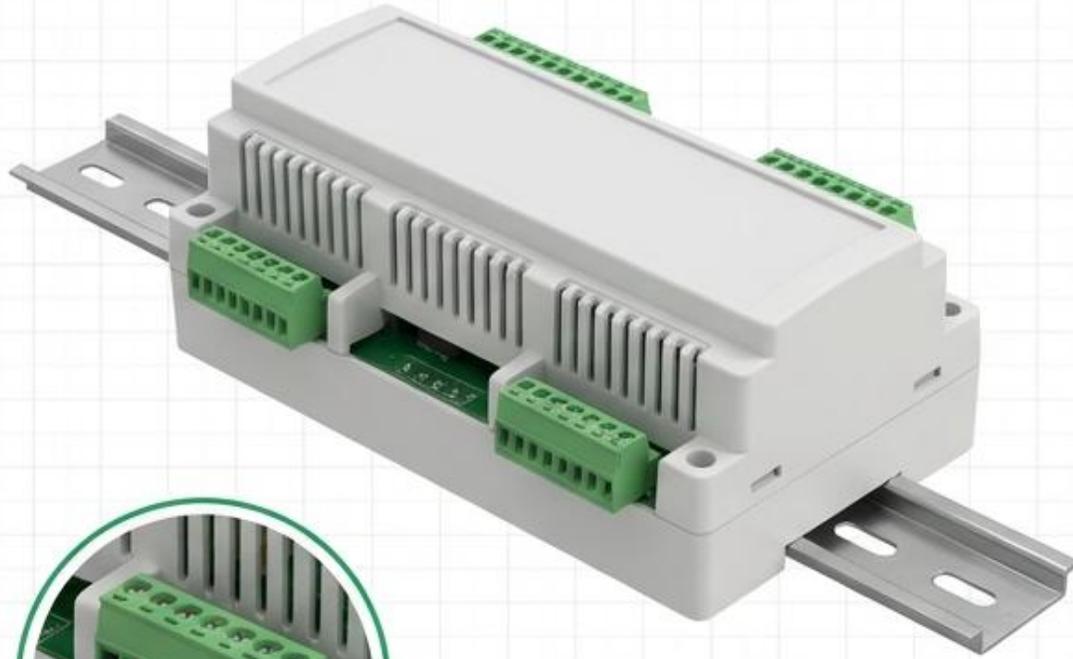
16 Channels High-Current Isolated Output (2A). Directly drives relays and solenoid valves.



### Analog Out

2 Channels 12-bit 0-10V DC Output. Designed for VFDs or Proportional Valves.

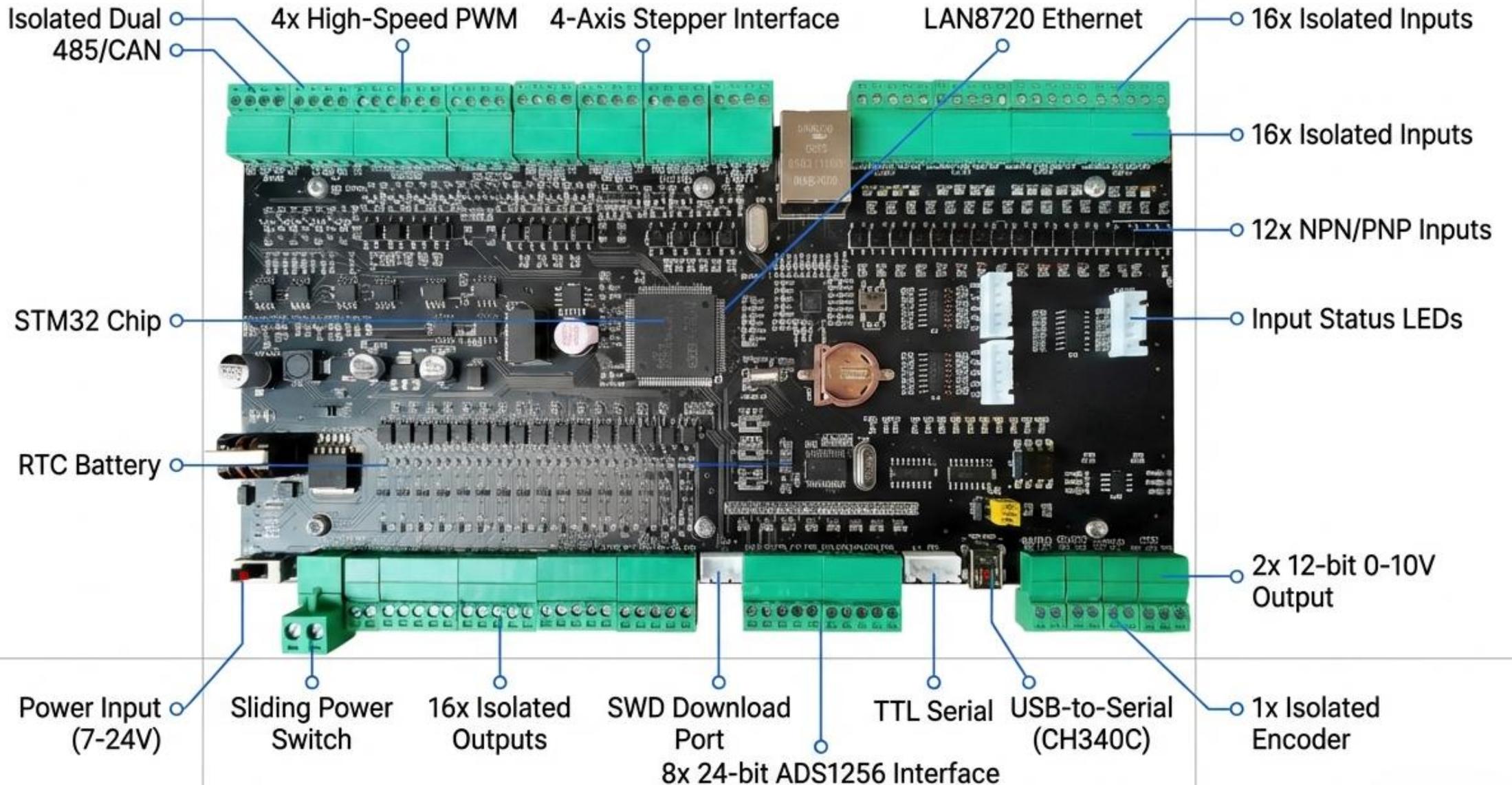
# Industrial Integration & Housing



**DIN Rail Ready**  
(Standard Industrial Mounting)

High-end applicability with standard industrial shell design.

# Hardware Interface Map



# Technical Specifications Summary

## TECHNICAL SPECIFICATIONS

Feature	Specification
MCU Core	STM32F407ZGT6
Power Input	DC 7-24V / Onboard RTC Battery
Analog Input	8 Channels 24-bit ADS1256 (-10V~10V / 0-20mA)
Analog Output	2 Channels 12-bit (0-10V)
Digital Input	30 Channels Isolated (16x NPN/PNP Adaptive, 12x PNP, 2x High-Speed)
Digital Output	36 Channels Isolated (4x Stepper/PWM, 16x High Current, 12x General Purpose)
Communication	Ethernet (LAN8720), USB-Serial, Isolated Dual CAN / Dual RS485
Dimensions	Shell: 250x110x60mm / Board: 110x227mm