ADAM-250PN

16 DI/O Rugged IP67 M12 PROFINET/ Modbus/SNMP Remote I/O Module



Features

- Offers 16-ch configurable DIO and 2-port power/ethernet daisy chain
- IEC 61131-2 type 3 sink DI and fast response source DO
- Support I/O and power diagnostic and DO safety value protection functions
- Complete LED indicator monitoring system/network/diagnostic/power status
- Enables cabinet-free front and side wall & machine mounting
- Compatible with M12 Screw lock and Push-pull fast-locking
- Rugged and IP67 design withstands strong EMI, vibration, dust, oil, and humidity atmospheres—ideal for outdoor and hazardous applications
- Built in Sensor/Actuator/Encoder Power Supply from each I/O port
- Convenient printable marking label installation
- Supports PROFINET and Modbus/TCP, with extensible design for MQTT integration

Specifications

General

- **Certification**: FCC, CE, CB/UL 62368-1
- **Power Consumption**: 6W @ 24 V_{DC}
- **Input Current**: Max. 12 A ±20% (X1~X4, U_S) and 12 A ±20% (X5~X8, U_A)
- **Sensor/Actuator/Encoder Power Supply (24V)**: 0.5 A (Max. 1A) per each A-code M12 Support short-circuit protection for each A-code M12
- **Support Power and Ethernet 2-port Daisy Chain Connection**
- **Support Power Reverse Polarity Protection**
- **Diagnostics Function**: DO (by channel): Over current, Short to ground/power
  DI (by channel): Wire-break
  Encoder Supply: Over current
  Power Input: Over voltage (30V), under voltage (18V), over current 12A (U_S or U_A)
- **I/O Channels**: 16 (Configurable DI or DO)

Digital Input

- **Channels**: Max. 16 (Configurable), Sink(NPN) Type
- **IEC 61131-2**: Support Type 3
  Input Voltage Logic level 0: 0-5 V_{DC}
  Input Voltage Logic level 1: 11-30V_{DC}
  Input Current Logic level 1: 2.4 mA (typical)
- **Filter (Input Delay)**: 0.05ms/ 0.1ms/ 0.4ms/ 0.8ms/ 1.6ms/ 3.2ms/ 12.8ms/ 20ms (configurable per each channel)

Digital Output

- **Channels**: Max. 16 (Configurable), Source Type
- **Output Current**: U_S: 0.5 A/channel (Max. 1A)
  U_A: 2 A/channel (Max. 2.6A)
- **Switching Frequency**: U_S: 0.5A 100 Hz at rated load 48 ohm
  U_A: 2A 40 Hz at rated load 12 ohm
- **Output delay**: 0 to 1:
  U_S: 0.5A 100 us at rated load 48ohm
  U_A: 2A 150 us at rated load 12 ohm
  1 to 0:
  U_S: 0.5A 150 us at rated load 48 ohm
  U_A: 2A 2.5 ms at rated load 12 ohm
- **Load Impedance**: 48 ~ 4K ohm @U_S
  12 ~ 4K ohm @U_A
- **Support short-circuit protection for each channel**
- **Support configurable reactions to CPU STOP (Safety Mode): Shutdown, keep last value and output substitute value 1**

Common Specifications

General

- **Power Input**: Unregulated 24 V_{DC} ±20%
- **Ethernet**: 2-port 100Base-T(X)
  (with Daisy Chain and integrated switch)
- **Protocols**: PROFINET, Modbus/TCP, TCP/IP
- **Watchdog Timer**: System (600 ms) & Communication
- **Degree of Protection**: IP67
- **Connector**: M12, Push-pull fast connection according to IEC 61076-2-010 or screw connection according to IEC 61076-2-101

Area	Connector	M12 Cable Type
Ethernet	E1~E2	D-code Female 4-pin
I/O	X1~X4 (U_S) X5~X8 (U_A)	A-code Female 5-pin
Power Input	P1	L-code Male 5-pin
Power Output	P2	L-code Female 5-pin

- **Isolation Voltage**: 750 V_{DC} between U_S & U_A,
  1,500 V_{DC} (Ethernet)
- **Mounting**: Wall, Machine
- **Mechanical tests**: Vibration resistance in accordance with 20g (EN/IEC 60068-2-6)
  Shock in accordance with 30g
  Continuous shock in accordance with 25g (EN/IEC 60068-2-27)
  Compliant EN 50155
  (IEC 61373 body mount class B)

PROFINET

- **Protocols**: LLDP, MRP client, DCP, I&M data, FSU, SNMP
- **Conformal Class**: B (RT), 1ms
- **I&M Data**: I&M0 - I&M4
- **Fast Start Up (FSU)**: <500ms

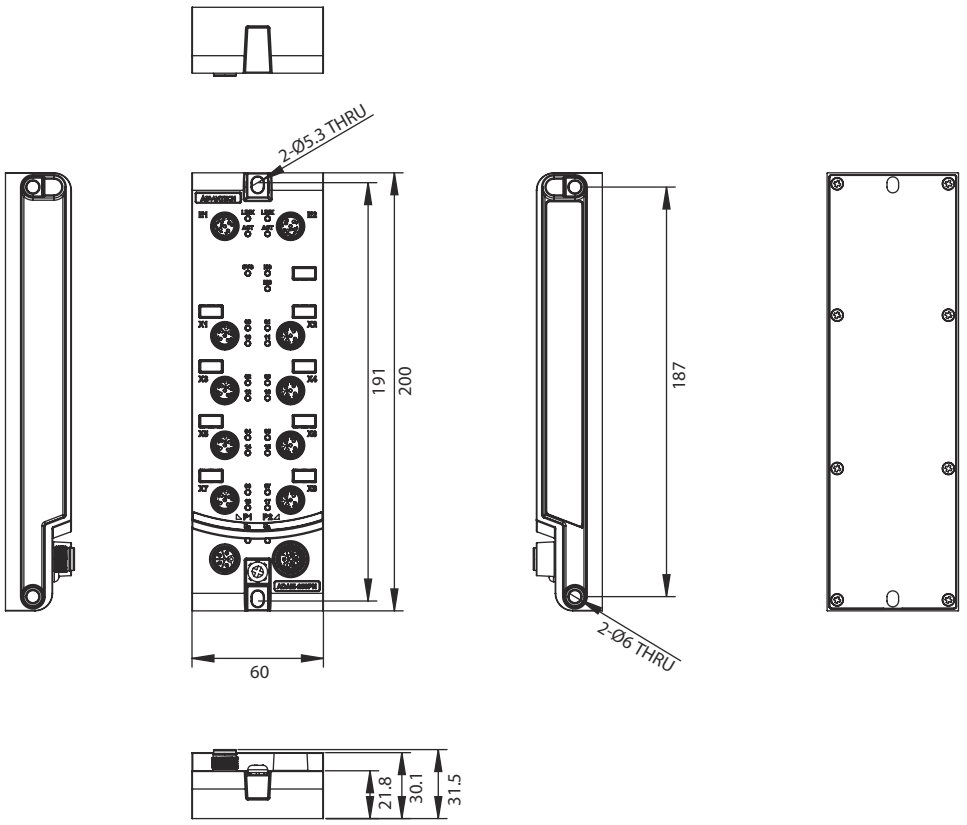
Environment

- **Operating Humidity**: 5 ~ 95% RH (Non-condensing)
- **Operating Temperature**: -40 ~ 60 °C (-40 ~ 140 °F)
- **Altitude**: 2000 m
- **EMC protection**: ESD ±8 kV (Contact), ±15 kV (air); EFT ±2 kV; Surge ±1 kV
  Compliant EN 50155 (EN 50121-3-2 & EN 50121-4)

All product specifications are subject to change without notice.
Last updated: 22-Dec-2025

ADAM-200PN Series

Unit: mm



Ordering Information

Please contact Advantech or check on website if there's more cable or accessory requirement

- **ADAM-250PN-A** 16-Ch DIO M12 I/O Module
- **1930006316-01** Front wall mounting screw
- **1930009197** Side wall mounting screw
- **1990041839S000** Printable marking label (10pcs per set)



- **1655006291-01** Female M12 waterproof cover

M12 Cables

Part Number	Use on Port	M12 Cable Connector Type	Screw Locking	Length (m)
OPT1-M12C-4MDR-200	Ethernet	D-code Male 4-pin	M12(male) to RJ45	2
OPT1-M12C-4MDM-200	Ethernet	D-code Male 4-pin	M12(male) to M12(male)	2
OPT1-M12C-5MA-200	I/O	A-code Male 5-pin	M12(male) to free-end	2
OPT1-M12C-5FL-200	Power	L-code Female 5-pin	M12(female) to free-end	2
OPT1-M12C-5MLF-200	Power	L-code Male 5-pin	M12(female) to M12(male)	2