

ADAM-250PN

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



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)
16 (Configurable DI or DO)
- I/O Channels: Max. 16 (Configurable), Sink(NPN) Type

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)
0.05ms/ 0.1ms/ 0.4ms/ 0.8ms/ 1.6ms/
3.2ms/ 12.8ms/ 20ms (configurable per each channel)
- Filter (Input Delay)

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
48 ~ 4K ohm @U_S
12 ~ 4K ohm @U_A
- Load Impedance
- Support short-circuit protection for each channel
- Support configurable reactions to CPU STOP (Safety Mode): Shutdown, keep last value and output substitute value 1

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

Common Specifications

General

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

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

- Mounting: 750 V_{DC} between U_S & U_A,
1,500 V_{DC} (Ethernet)
- Mechanical tests: Wall, Machine
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

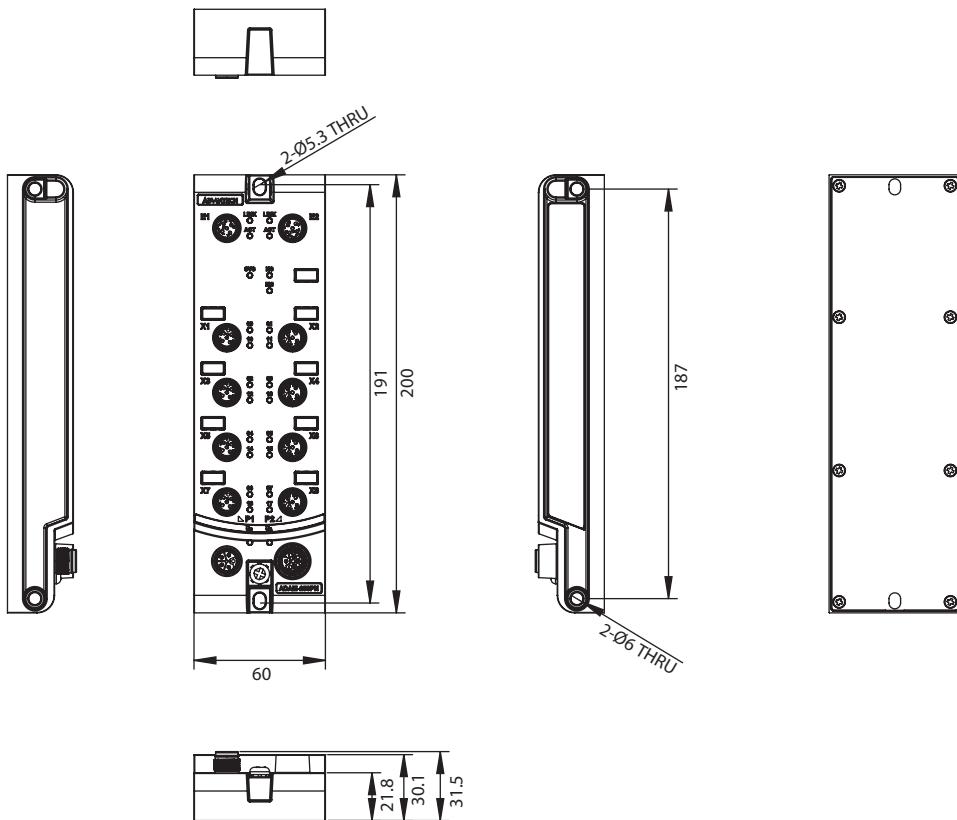
- Protocols: LLDP, MRP client, DCP, I&M data, FSU, SNMP
- Conformal Class: B (RT), 1ms
- I&M Data: I&M0 - I&M4
- Fast Start Up (FSU): <500ms

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)

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