

ADAM-4571/L

ADAM-4570/L

1-port RS-232/422/485 Serial Device Server

2-port RS-232/422/485 Serial Device Server



Specifications

Ethernet Communications

- **Compatibility** IEEE 802.3, IEEE 802.3u
- **Speed** 10/100 Mbps
- **No. of Ports** 1
- **Port Connector** 8-pin RJ45
- **Protection** Built-in 1.5 KV magnetic isolation

Serial Communications

- **Port Type** ADAM-4571/4570: RS-232/422/485, software selectable
ADAM-4571L/4570L: RS-232
- **No. of Ports** ADAM-4571/4571L: 1
ADAM-4570/4570L: 2
- **Port Connector** ADAM-4571/4571L: DB9 male
ADAM-4570/4570L: 10-pin RJ48
- **Data Bits** 5, 6, 7, 8
- **Stop Bits** 1, 1.5, 2
- **Parity** None, Odd, Even, Space, Mark
- **Flow Control** XON/XOFF, RTS/CTS
- **Baud Rate** 50 bps ~ 921.6 kbps, any baud rate setting
- **Serial Signals** RS-232: TxD, RxD, CTS, RTS, DTR, DSR, DCD, RI, GND
RS-422: TxD+, TxD-, RxD+, RxD-, GND
RS-485: Data+, Data-, GND
- **Protection** 15 KV ESD protection for all signals

Software

- **OS Support** 32-bit/64-bit Windows XP/Vista/7/8, Windows Server 2003/2008/2008 R2/2012, Windows CE 5.0, and Linux
- **Utility Software** Advantech EKI Device Configuration Utility
- **Operation Modes** COM port redirection (Virtual COM)
TCP/UDP server (polling) mode
TCP/UDP client (event handling) mode
Pair Connection (peer to peer) mode
- **Configuration** Windows utility, Telnet console, Web Browser
- **Protocol** ARP, ICMP, IP, TCP, UDP, BOOTP, DHCP Client, Auto IP, Telnet, SNMP, HTTP, DNS, SMTP

Mechanics

- **Dimension (W x H x D)** 70 x 130 x 30 mm (2.76" x 5.12" x 1.18")
- **Enclosure** ABS+PC with solid mounting hardware
- **Mounting** DIN-rail, Stack, Wall
- **Weight** ADAM-4571/4571L: 135 g
ADAM-4570/4570L: 160 g

General

- **LED Indicators** System: Power, System Status
LAN: Speed, Link/Active
Serial: Tx, Rx
- **Reboot Trigger** Built-in WDT (watchdog timer)

Power Requirements

- **Power Input** 10 ~ 30 V_{DC}
- **Power Connector** Terminal block
- **Power Consumption** ADAM-4571/4571L: 2.5 W
ADAM-4570/4570L: 2.5 W

Environment

- **Operating Temperatures** -10 ~ 60°C (14 ~ 140°F)
- **Storage Temperature** -20 ~ 80°C (-4 ~ 176°F)
- **Operating Humidity** 5 to 95% RH

Regulatory Approvals

- **EMC** CE, FCC Part 15 Subpart B (Class A)

Ordering Information

- **ADAM-4571** 1-port RS-232/422/485 Serial Device Server
- **ADAM-4571L** 1-port RS-232 Serial Device Server
- **ADAM-4570** 2-port RS-232/422/485 Serial Device Server
- **ADAM-4570L** 2-port RS-232 Serial Device Server

*ADAM-4570/4570L includes 2pcs OPT1A

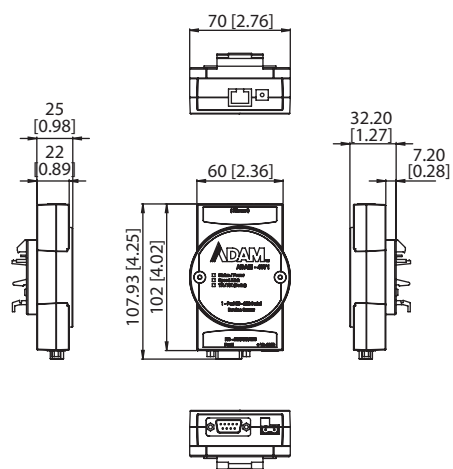
Accessories

- **OPT1A** 1 m RJ48 to DB9 Male Cable
- **OPT1D** 30 cm RJ48 to DB9 Male Cable

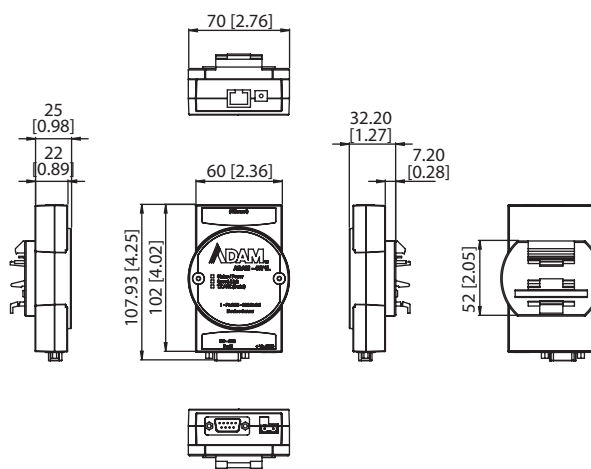
Dimensions

Unit: mm [inch]

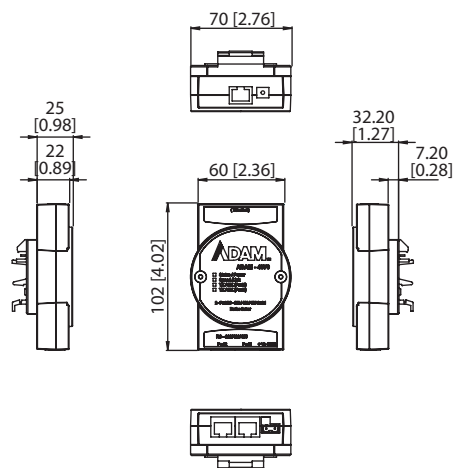
ADAM-4571



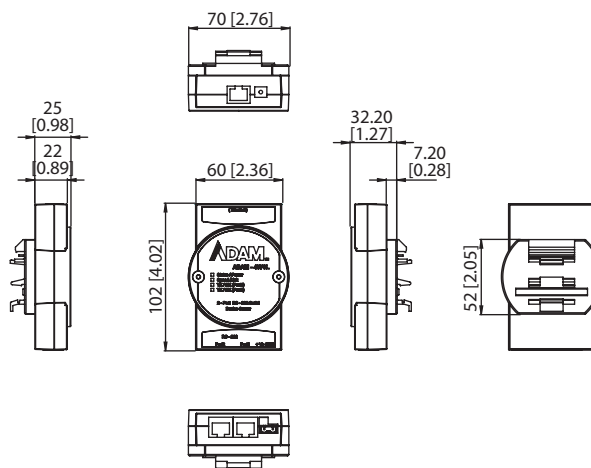
ADAM-4571L



ADAM-4570



ADAM-4570L



ADAM-4541 ADAM-4542+ ADAM-4561/4562

Multi-mode Fiber Optic to RS-232/422/485 Converter
Single-mode Fiber Optic to RS-232/422/485 Converter
1-port Isolated USB to RS-232/422/485 Converter



ADAM-4541



ADAM-4542+



ADAM-4561/4562



Specifications

General

- **Power Input** Unregulated 10 ~ 30 V_{DC}
- **Connectors** 1 x plug-in terminal block (#14 ~ 22 AWG)
(RS-232/422/485)
2 x ST fiber connector
- **Power Consumption** 0.4 W @ 24 V DC typ.
0.7 W @ 24 V DC max.
- **Operation Modes** Support Point-to-Point, and Ring (half-duplex)

Fiber Optic Communications

- **Optical Power Budget (Attenuation)** 15 dB (measured with 62.5/125 μm)
- **Transmission Distance** 2.5 km
- **Transmission Mode** Multi mode (Send and Receive)
- **Wavelength** 820 nm

Serial Communications

- **Communication Mode** Asynchronous
- **Speed Modes (bps)** 1200, 2400, 4800, 9600, 19.2 k, 38.4 k, 57.6k, 115.2 k and RS-232/422 mode (switchable)
- **Transmission Mode** Full/half duplex, bidirectional

Specifications

General

- **Power Input** Unregulated 12 ~ 24 V_{DC}
- **Connectors** 1 x plug-in terminal block (#14 ~ 22 AWG)
(RS-232/422/485)
1 x SC fiber connector
- **Power Consumption** 3 W @ 24 V_{DC}
- **Operation Modes** Support Point-to-Point, Redundant and Ring (half-duplex)

Fiber Optic Communications

- **Optical Power Budget (Attenuation)** 15 dB
- **Transmission Distance** 15 km
- **Transmission Mode** Single mode (Send and Receive)
- **Wavelength** 1310 nm

Serial Communications

- **Communication Mode** Asynchronous
- **Speed Modes (bps)*** 1200, 2400, 4800, 9600, 19.2 k, 38.4 k, 57.6 k, 115.2 k, 230.4 k, 460.8 k, 921.6 k and RS-232/422 mode (switchable)
- **Transmission Modes** Full/half duplex, bidirectional

* The highest speed for RS-232 mode is 115.2 kbps

Specifications

General

- **Connectors** Network: USB-type B connector (type A to type B cable provided)
Serial:
ADAM-4561 1 x plug-in terminal (#14 ~ 22 AWG)
(3-wire RS-232/422/485)
ADAM-4562 1 x DB-9 serial connectors (9-wire RS-232)
- **Isolation Voltage** ADAM-4561: 3,000 V_{DC}
ADAM-4562: 2,500 V_{DC}
- **Power Consumption** ADAM-4561: 1.5 W @ 5 V
ADAM-4562: 1.1 W @ 5 V
- **Driver Support** ADAM-4561/4562: Windows 2000/XP/Vista/7/8 (32&64-bit)
- **USB Specification Compliance** ADAM-4561: USB 2.0
ADAM-4562: USB 2.0

Serial Communications

- **Speed Modes (bps)** ADAM-4561: 600 bps to 115.2 kbps
ADAM-4562: 75 bps to 115.2 kbps
- **Transmission Modes** Full/half duplex, bidirectional

Common Specifications

Environment

- **Operating Humidity** 5 ~ 95% RH
- **Operating Temperature** ADAM-4541/4542+: -10 ~ 70°C (14 ~ 158°F)
ADAM-4561/4562: -10 ~ 70°C (14 ~ 158°F)
- **Storage Temperature** -25 ~ 85°C (-13 ~ 185°F)

Ordering Information

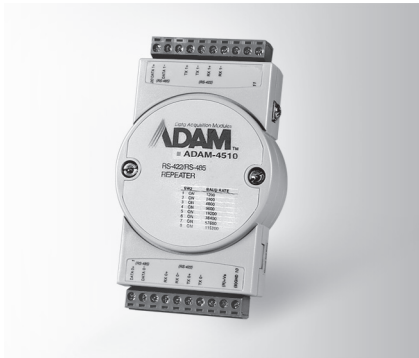
- **ADAM-4541** Multi-mode Fiber to RS-232/422/485 Converter
- **ADAM-4542+** Single-mode Fiber to RS-232/422/485 Converter
- **ADAM-4561** 1-port Isolated USB to RS-232/422/485 Converter
- **ADAM-4562** 1-port Isolated USB to RS-232 Converter

ADAM-4510/S ADAM-4520 ADAM-4521

RS-422/485 Repeater

Isolated RS-232 to RS-422/485 Converter

Addressable RS-422/485 to RS-232 Converter



ADAM-4510/4510S



ADAM-4520



ADAM-4521



Specifications

General

- **Connectors** 2 x plug-in terminal blocks (#14 ~ 22 AWG) (RS-422/485)
- **Isolation Voltage** 3,000 V_{DC} (ADAM-4510S)
- **Power Consumption** ADAM-4510
Typical: 1.1 W @ 24 V_{DC}
Max.: 1.2 W @ 24 V_{DC}
ADAM-4510S
Typical: 1.5 W @ 24 V_{DC}
Max.: 1.6 W @ 24 V_{DC}

Serial Communications

- **Input** RS-485 (2-wire) or RS-422 (4-wire)
- **Output** RS-485 (2-wire) or RS-422 (4-wire)
- **Speed Modes (bps)** 1,200, 2,400, 4,800, 9,600, 19.2 k, 38.4 k, 57.6 k, 115.2 k, RTS control and RS-422 (switchable)

Specifications

General

- **Connectors** 1 x plug-in terminal block (#14 ~ 22 AWG) (RS-422/485)
1 x DB9-F (RS-232)
- **Isolation Voltage** 3,000 V_{DC}
- **Power Consumption** Typical: 0.8 W @ 24 V_{DC}
Max.: 1 W @ 24 V_{DC}

Serial Communications

- **Input** RS-232 (DB9)
- **Output** RS-485 (2-wire) or RS-422 (4-wire)
- **Speed Modes (bps)** 1,200, 2,400, 4,800, 9,600, 19.2 k, 38.4 k, 57.6 k, 115.2 k, RTS control and RS-422 (switchable)

Specifications

General

- **Connectors** 1 x plug-in terminal block (#14 ~ 22 AWG) (RS-422/485)
1 x DB9-F (RS-232)
- **Isolation Voltage** 1,000 V_{DC}
- **Power Consumption** 1.0 W @ 24 V_{DC}
- **Built-in microprocessor and watchdog timer**

Serial Communications

- **Input** RS-485 (2-wire) or RS-422 (4-wire)
- **Output** RS-232 (DB9)
- **Speed Modes (bps)** 300, 600, 1,200, 2,400, 4,800, 9,600, 19.2 k, 38.4 k, 57.6 k, 115.2 k (software configurable)
- **RS-232 and 485 can be set to different baudrates**
- **RS-485 surge protection and automatic RS-485 data flow control**
- **Software configurable to either addressable or non-addressable mode**

Common Specifications

General

- **Power Input** Unregulated 10 ~ 30 V_{DC} w/ power reversal protection

Environment

- **Operating Humidity** 5 ~ 95% RH
- **Operating Temperature** -10 ~ 70°C (14 ~ 158°F)
- **Storage Temperature** -25 ~ 85°C (-13 ~ 185°F)

Ordering Information

- **ADAM-4510** RS-422/485 Repeater
- **ADAM-4510S** Isolated RS-422/485 Repeater
- **ADAM-4520** Isolated RS-232 to RS-422/485 Converter
- **ADAM-4521** Addressable RS-422/485 to RS-232 Converter

ADAM-4118

ADAM-4150

ADAM-4168

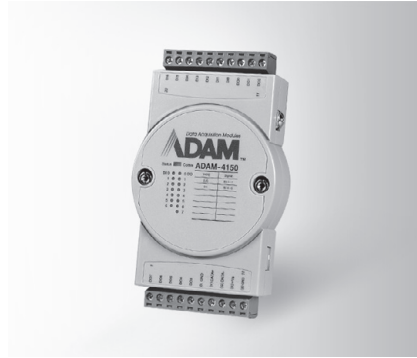
Robust 8-ch Thermocouple Input Module with Modbus

Robust 15-ch Digital I/O Module with Modbus

Robust 8-ch Relay Output Module with Modbus



ADAM-4118



ADAM-4150



ADAM-4168



Specifications

General

- **Certification** FCC, CE
- **Power Consumption** 0.5W @ 24 V_{DC}

Analog Input

- **Channels** 8 differential and independent configuration channels
- **Input Impedance** 20 M Ω
- **Input Type** T/C, mV, V, mA
- **Input Range** Thermocouple

J	0 ~ 760°C	R	500 ~ 1,750°C
K	0 ~ 1,370°C	S	500 ~ 1,750°C
T	-100 ~ 400°C	B	500 ~ 1,800°C
E	0 ~ 1,000°C	N	-200 ~ 1300°C

Voltage mode 0~15 mV, 0~50 mV, 0~100 mV, 0~500 mV, 0~1 V, 0~2.5 V, ± 15 mV, ± 50 mV, ± 100 mV, ± 500 mV, ± 1 V, ± 2.5 V

Current mode 0~20mA, ± 20 mA, 4~20 mA

- **Accuracy** Voltage mode: $\pm 0.1\%$ or better
Current mode: $\pm 0.2\%$ or better
- **Resolution** 16-bit
- **Sampling Rate** 10/100 samples/sec (selected by Utility)
- **CMR @ 50/60 Hz** 92 dB
- **Overvoltage Protection** ± 60 V_{DC}
- **High Common Mode** 200 V_{DC}
- **Span Drift** ± 25 ppm/°C (Typical)
- **Zero Drift** $\pm 6\mu$ V/°C
- **Built-in TVS/ESD Protection**
- **Burnout Detection**

Specifications

General

- **Certification** FCC, CE
- **Power Consumption** 1.6 W @ 24 V_{DC}

Digital Input

- **Channels** 7
- **Input Level** Dry contact: Logic level 0: Close to GND
Logic level 1: Open
Wet contact: Logic level 0: 3 V max
Logic level 1: 10 ~ 30 V

(Note: The Digital Input Level 0 and 1 status can be inverted)

- **Supports 3 kHz Counter Input (32-bit + 1-bit overflow)**
- **Supports 3 kHz Frequency Input**
- **Supports Invert DI Status**
- **Over Voltage Protection** 40 V_{DC}

Digital Output

- **Channels** 8, open collector to 40 V (0.1A max. per channel)
- **Power Dissipation** 1W load max
- **RON Maximum** 150 m Ω
- **Supports 1 kHz Pulse Output**
- **Supports High-to-Low Delay Output**
- **Supports Low-to-High Delay Output**

Specifications

General

- **Certification** FCC, CE
- **Power Consumption** 2.3 W @ 24 V_{DC}

Relay Output

- **Output Channels** 8 Form A
- **Contact Rating (Resistive)** 0.5 A @ 120 V_{AC}
0.25 A @ 240 V_{AC}
1 A @ 30 V_{DC}
0.3 A @ 110 V_{DC}
- **Breakdown Voltage** 750 V_{AC} (50/60 Hz)
- **Initial Insulation Resistance** 1 G Ω min. @ 500 V_{DC}
- **Relay Response Time (Typical)** On: 4ms
Off: 4ms
- **Total Switching Time (Typical)** 10 ms
- **Supports 100 Hz pulse output**
- **Maximum Operating Speed** 50 operations/min (at related load)

Common Specifications

General

- **Power Input** Unregulated 10 ~ 48 V_{DC}
- **Watchdog Timer** System (1.6 second) & Communication
- **Connector** 2 x plug-in terminal blocks (#14 ~ 22 AWG)
- **Isolation Voltage** 3,000 V_{DC}
- **Interface (B version)** RS-485, micro USB

- **Supported Protocols** ASCII Command and Modbus/RTU

Environment

- **Operating Humidity** 5 ~ 95% RH
- **Operating Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)

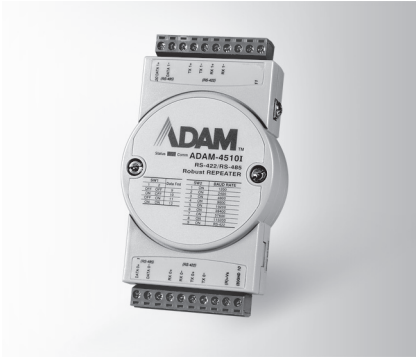
Ordering Information

- **ADAM-4118-C** Robust 8-ch Thermocouple Input Module w/ Modbus
- **ADAM-4150-C** Robust 15-ch Digital I/O Module with Modbus
- **ADAM-4168-C** Robust 8-ch Relay Output Module with Modbus

ADAM-4510I ADAM-4520I ADAM-4117

Robust RS-422/485 Repeater

Robust RS-232 to RS-422/485 Converter Robust 8-ch Analog Input Module with Modbus



ADAM-4510I



ADAM-4520I



ADAM-4117



Specifications

General

- **Connectors** 2 x plug-in terminal blocks (#14 ~ 22 AWG)
- **Power Consumption** 1.4 W @ 24 V_{DC}
- **Certification** FCC, CE, UL, UL C1D2

Communications

- **Input** RS-485 (2-wire) or RS-422 (4-wire)
- **Output** RS-485 (2-wire) or RS-422 (4-wire)
- **Speed Modes (bps)** 1,200, 2,400, 4,800, 9,600, 19.2 k, 38.4 k, 57.6 k, 115.2 k, RTS control and RS-422 (switchable)
- **Supports Auto Baud-Rate**
- **Provide RS-485 to RS-422 Convert Ability**

Specifications

General

- **Connectors** 1 x plug-in terminal block (#14 ~ 22 AWG) (RS-422/485)
1 x DB9-F (RS-232)
- **Power Consumption** 1.2 W @ 24 V_{DC}
- **Certification** FCC, CE, UL, UL C1D2

Communications

- **Input** RS-232 (DB9)
- **Output** RS-485 (2-wire) or RS-422 (4-wire)
- **Speed Modes (bps)** 1,200, 2,400, 4,800, 9,600, 19.2 k, 38.4 k, 57.6 k, 115.2 k, RTS control and RS-422 (switchable)
- **Supports Auto Baud-Rate**

Specifications

General

- **Connectors** 2 x plug-in terminal blocks (#14 ~ 22 AWG)
- **Watchdog Timer** System (1.6 second) & Communication
- **Supported Protocols** ASCII Command and Modbus/RTU
- **Power Consumption** 1.2 W @ 24 V_{DC}
- **Interface (B version)** RS-485, micro USB
- **Certification** FCC, CE

Analog Input

- **Channels** 8 differential and independent configuration channels
- **Input Impedance** 20 MΩ
- **Input Type** mV, V, mA
- **Input Range** 0 ~ 150mV, 0 ~ 500mV, 0 ~ 1V, 0 ~ 5V, 0 ~ 10V, 0 ~ 15V, ±150 mV, ±500 mV, ±1V, ±5 V, ±10 V, ±15V, ±20 mA, 0 ~ 20 mA, 4 ~ 20mA
- **Accuracy** Voltage mode : ±0.1% or better
Current mode : ±0.2% or better
- **Resolution** 16-bit
- **Sampling Rate** 10/100 samples/sec (selected by utility)
- **CMR @ 50/60 Hz** 92 dB
- **Over Voltage Protection** ±60 V_{DC}
- **High Common Mode** 200 V_{DC}
- **Span Drift** ±25 ppm/°C (Typical)
- **Zero Drift** ±6μV/°C
- **Built-in TVS/ESD Protection**

Common Specifications

General

- **Power Input** Unregulated 10 ~ 48 V_{DC} w/power reversal protection
- **Isolation Voltage** 3,000 V_{DC}

Environment

- **Operating Humidity** 5 ~ 95% RH
- **Operating Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Supports Noise Rejection**

Ordering Information

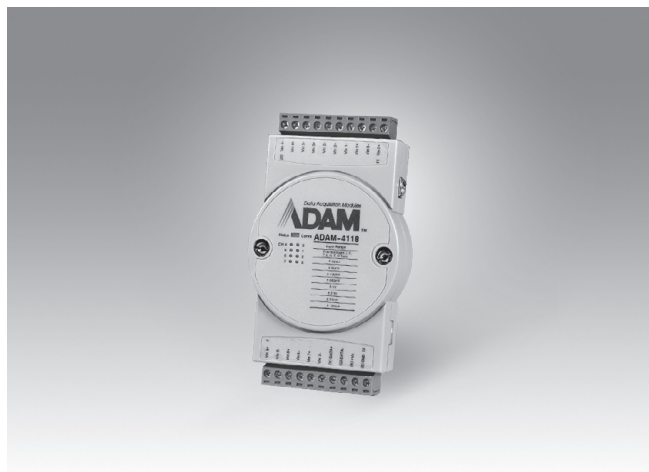
- **ADAM-4510I-AE** Robust RS-422/485 Repeater
- **ADAM-4520I-AE** Robust RS-232 to RS-422/485 Converter
- **ADAM-4117-C** Robust 8-ch Analog Input Module with Modbus

ADAM-4115

ADAM-4015

Robust 6-Ch RTD Input Module

6-ch RTD Module with Modbus



ADAM-4115



ADAM-4015



Specifications

General

- **Certification** CE, FCC, UL
- **Connectors** 2 x plug-in terminal blocks (#14 ~ 28 AWG)
- **Power Consumption** 1.2 W @ 24 V_{DC}
- **Watchdog Timer** System (1.6 s) & Communication
- **Supported Protocols** ASCII command and Modbus/RTU
- **Interface** RS-485, Micro USB
- **Burnout Detection** Yes

RTD Input

- **Channels** 6 differential
 - **Input Connections** 2, 3-wire
 - **Sampling Rate** 10/100 Hz total channels (selected by utility)
 - **Input Impedance** 10 M Ω
 - **Input Type** Pt, Balco and Ni RTD
 - **RTD Types and Temperature Ranges**
 - Pt100 -50~150°C
 - 0~100°C
 - 0~200°C
 - 0~400°C
 - 200~200°C
- Supports both IEC 60751 ITS90 (0.0385 W/W/°C) and JIS C 1604 (0.0392 W/W/°C)
- Pt1000 -40~160°C
 - Balco (500) -30~120°C
 - Ni (518) -80~100°C
 - 0~100°C
- **Accuracy** $\pm 0.1\%$ (Typical)
 - **CMR @ 50/60 Hz** 120 dB
 - **Span Drift** ± 25 ppm/°C
 - **Zero Drift** ± 6 μ V/°C

Specifications

General

- **Certification** CE, FCC
- **Connectors** 2 x plug-in terminal blocks (#14 ~ 28 AWG)
- **Power Consumption** Typical: 0.5 W @ 24 V_{DC}
Max.: 0.9 W @ 24 V_{DC}
- **Watchdog Timer** System (1.6 s) & Communication
- **Supported Protocols** ASCII command and Modbus/RTU
- **Burnout Detection** Yes

Analog Input

- **Channels** 6 differential
 - **Input Connections** 2, 3-wire
 - **Sampling Rate** 10 Hz total channels
 - **Input Impedance** 10 M Ω
 - **Input Type** Pt, Balco, Ni and BA1 RTD
 - **RTD Types and Temperature Ranges**
 - Pt100 -50~150°C
 - 0~100°C
 - 0~200°C
 - 0~400°C
 - 200~200°C
- Supports both IEC 60751 ITS90 (0.0385 W/W/°C) and JIS C 1604 (0.0392 W/W/°C)
- Pt1000 -40~160°C
 - Balco (500) -30~120°C
 - Ni (518) -80~100°C
 - 0~100°C
 - Ni (508) 0~100°C
 - 50~200°C
 - 200~600°C
- **Accuracy** $\pm 0.1\%$ (Typical)
 - **CMR @ 50/60 Hz** 120 dB
 - **Span Drift** ± 25 ppm/°C
 - **Zero Drift** ± 6 μ V/°C

Common Specifications

General

- **Power Input** 10 ~ 30 V_{DC}
ADAM-4115: 10 ~ 48 V_{DC}

Environment

- **Operating Humidity** 5 ~ 95% RH

Operating Temperature

Storage Temperature

- 10 ~ 70°C (14 ~ 158°F)
- ADAM-4115: -40 ~ 85°C (-40 ~ 185°F)
- 25 ~ 85°C (-13 ~ 185°F)
- ADAM-4115: -40 ~ 85°C (-40 ~ 185°F)

Ordering Information

- **ADAM-4115** Robust 6-Ch RTD Input Module
- **ADAM-4015** 6-ch RTD Module with Modbus

ADAM-4060

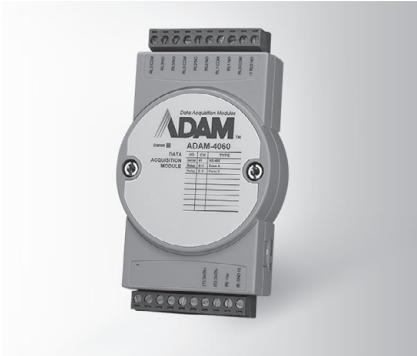
ADAM-4068

ADAM-4069

4-ch Relay Output Module with Modbus

8-ch Relay Output Module with Modbus

8-ch Power Relay Output Module with Modbus



ADAM-4060



Specifications

General

- **Certification** FCC, CE
- **Connectors** 2 x plug-in terminal blocks (#14 ~ 22 AWG)
- **Power Consumption** 0.9 W @ 24 V DC typ.
1.3 W @ 24 V DC max.
- **Watchdog Timer** System (1.6 second)
- **Supported Protocols** ASCII command and Modbus/RTU

Relay Output

- **Breakdown Voltage** 500 V_{AC} (50/60 Hz)
- **Channels** 2 x Form A
2 x Form C
- **Contact Rating (Resistive)** 0.6 A @ 125 V_{AC}
0.3 A @ 250 V_{AC}
2 A @ 30 V_{DC}
0.6 A @ 110 V_{DC}
- **Initial Insulation Resistance** 100 MΩ min. at 500 V_{DC}
- **Relay off Time (Typical)** 5 ms
- **Relay on Time (Typical)** 4 ms
- **Maximum Operating Speed** 20 operations/min (at related load)



ADAM-4068



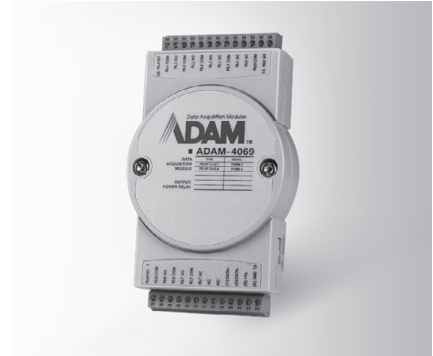
Specifications

General

- **Certification** FCC, CE
- **Connectors** 2 x plug-in terminal blocks (#14 ~ 28 AWG)
- **Power Consumption** 1 W @ 24 V DC typ.
1.7 W @ 24 V DC max.
- **Watchdog Timer** System (1.6 second) & Communication
- **Supported Protocols** ASCII command and Modbus/RTU

Relay Output

- **Breakdown Voltage** 500 V_{AC} (50/60 Hz)
- **Channels** 4 x Form A
4 x Form C
- **Contact Rating (Resistive)** 0.5 A @ 120 V_{AC}
0.25 A @ 240 V_{AC}
1 A @ 30 V_{DC}
0.3 A @ 110 V_{DC}
- **Initial Insulation Resistance** 1 GΩ min. at 500 V_{DC}
- **Relay off Time (Typical)** 4 ms
- **Relay on Time (Typical)** 3 ms
- **Maximum Operating Speed** 50 operations/min (at related load)



ADAM-4069



Specifications

General

- **Certification** FCC, CE
- **Connectors** 2 x plug-in terminal blocks (#14 ~ 28 AWG)
- **Power Consumption** 1.3 W @ 24 V DC typ.
2.3 W @ 24 V DC max.
- **Watchdog Timer** System (1.6 second) & Communication
- **Supported Protocols** ASCII command and Modbus/RTU

Relay Output

- **Breakdown Voltage** 1,000 V_{AC} (50/60 Hz)
- **Channels** 4 x Form A
4 x Form C
- **Contact Rating (Resistive)** 5 A @ 250 V_{AC}
5 A @ 30 V_{DC}
- **Initial Insulation Resistance** 1 GΩ min. at 500 V_{DC}
- **Relay off Time (Typical)** 5.6 ms
- **Relay on Time (Typical)** 5 ms
- **Maximum Operating Speed** 6 operations/min (at related load)

Common Specifications

General

- **Power Input** Unregulated 10 ~ 30 V_{DC}

Environment

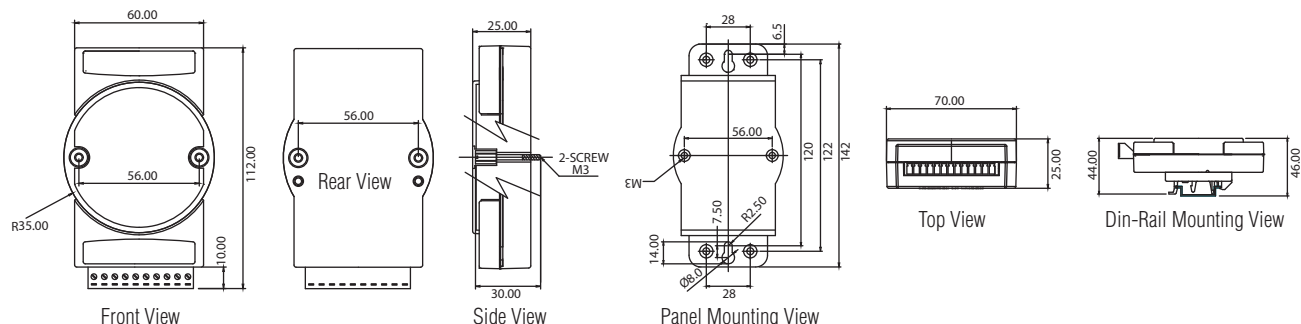
- **Operating Humidity** 5 ~ 95% RH
- **Operating Temperature** -10 ~ 70°C (14 ~ 158°F)
- **Storage Temperature** -25 ~ 85°C (-13 ~ 185°F)

Ordering Information

- **ADAM-4060-F** 4-ch Relay Output Module with Modbus
- **ADAM-4068-C** 8-ch Relay Output Module with Modbus
- **ADAM-4069-B** 8-ch Power Relay Output Module with Modbus

Dimensions

Unit: mm



ADAM-4055 ADAM-4056SO ADAM-4080

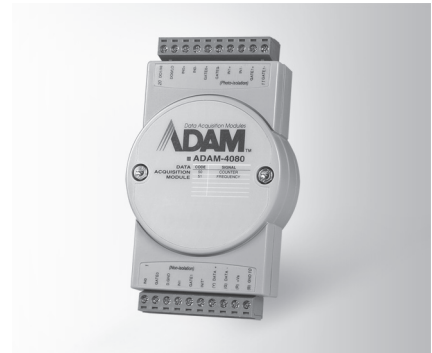
16-ch Isolated Digital I/O Module with Modbus
12-ch Source Type Isolated Digital Output Modules with Modbus
2-ch Counter/Frequency Module



ADAM-4055



ADAM-4056SO



ADAM-4080



Specifications

General

- **Certification** FCC, CE
- **Connectors** 2 x plug-in terminal blocks (#14 ~ 28 AWG)
- **Power Consumption** 1 W @ 24 V DC typ.
1.7 W @ 24 V DC max.
- **Watchdog Timer** System (1.6 second) & Communication
- **Supported Protocols** ASCII command and Modbus/RTU
- **Isolation Voltage** 2,500 V_{DC}
- **LED Indicators** Yes

Digital Input

- **Channels** 8
- **Input Level**
Dry Contact: Logic level 0: open
Logic level 1: close to GND
Wet Contact: Logic level 0: 3 V max.
Logic level 1: 10 ~ 50 V
- **Overvoltage Protection** 70 V_{DC}

Digital Output

- **Channels** 8, open collector to 40 V (200 mA max. load)
- **Power Dissipation** Channel: 1 W max.
Total: 2.2 W (8 Channels)

Common Specifications

General

- **Power Input** Unregulated 10 ~ 30 V_{DC}

Environment

- **Operating Humidity** 5 ~ 95% RH
- **Operating Temperature** -10 ~ 70°C (14 ~ 158°F)
- **Storage Temperature** -25 ~ 85°C (-13 ~ 185°F)

Specifications

General

- **Certification** FCC, CE
- **Connectors** 2 x Plug-in terminal blocks (#14 ~ 22 AWG)
- **Watchdog Timer** System (1.6 second) & Communication
- **Support Protocol** ASCII command and Modbus/RTU
- **Isolation Voltage** 5000 V_{DC}
- **LED Indicators** Yes
- **Power Consumption** 0.3 W @ 24 V DC typ.
0.5 W @ 24 V DC max.

ADAM-4056SO

- **Digital Output Channels** 12
VCC: 10 ~ 35 V_{DC}
Current: 1A (per channel)
- **Digital Output Type** Source
- **Over Current Detection and Protection**

Ordering Information

- **ADAM-4055** 16-ch Isolated Digital I/O Module with Modbus
- **ADAM-4056SO** 12-ch Source Type Isolated Digital Output Module with Modbus
- **ADAM-4080** 2-ch Counter/Frequency Modules

Specifications

General

- **Certification** FCC, CE, UL
- **Connectors** 2 x plug-in terminal blocks (#14 ~ 22 AWG)
- **Power Consumption** 2.0 W @ 24 V_{DC}
- **Watchdog Timer** System (1.6 second)
- **Supported Protocols** ASCII command modbus/RTU (E version)

Counter Input

- **Channels** 2 independent counters (32-bit + 1-bit overflow)
- **Input Frequency** 50 kHz max.
- **Input Pulse Width** >10 μs.
- **Input Mode** Isolated or non-isolated
- **Isolated Input Level** Logic level 0: 1 V max.
Logic level 1: 3.5 ~ 30 V
- **Isolation Voltage** 2,500 V_{RMS}
- **Non-isolated Input Level** Programmable threshold:
Logic level 0: 0.8 Vmax.
Logic level 1: 2.4 ~ 5.0 V
- **Maximum Count** 4,294,967,295 (32-bit)
- **Preset Type** Absolute or relative
- **Programmable Digital Noise Filter** 2 μs ~ 65 ms
- **Alarm** Alarm comparators on each counter
- **Frequency Measurement Range** 5 Hz ~ 50 kHz
- **Programmable Built-in Gate Time** 1 or 0.1 second

Digital Output

- **Channels** 2, open collector to 30 V, 30 mA max. load
- **Power Dissipation** 300 mW for each channel

ADAM-4053 ADAM-4055 ADAM-4080

16-ch Digital Input Module

16-ch Isolated Digital I/O Module with Modbus

2-ch Counter/Frequency Module



ADAM-4053



ADAM-4055



ADAM-4080



Specifications

General

- **Connectors** 2 x plug-in terminal blocks (#14 ~ 22 AWG)
- **Power Consumption** 0.4 W @ 24 V DC typ.
0.7 W @ 24 V DC max.
- **Watchdog Timer** System (1.6 second)
- **Supported Protocols** ASCII command and Modbus/RTU

Digital Input

- **Channels** 16
- **Input Level**
Dry contact: Logic level 0: close to GND
Logic level 1: open
Wet contact: Logic level 0: 2 V max.
Logic level 1: 4 ~ 30 V
- **Effective Distance** 500 m max.
(dry contact only)

Common Specifications

General

- **Power Input** Unregulated 10 ~ 30 V_{DC}

Environment

- **Humidity** 5 ~ 95% RH
- **Operating Temperature** -10 ~ 70°C
(14 ~ 158°F)
- **Storage Temperature** -25 ~ 85°C
(-13 ~ 185°F)

Specifications

General

- **Connectors** 2 x plug-in terminal blocks (#14 ~ 28 AWG)
- **Power Consumption** 1 W @ 24 V DC typ.
1.7 W @ 24 V DC max.
- **Watchdog Timer** System (1.6 second) & Communication
- **Supported Protocols** ASCII command and Modbus/RTU

- **Isolation Voltage** 2,500 V_{DC}
- **LED Indicators** Yes

Digital Input

- **Channels** 8
- **Input Level**
Dry Contact: Logic level 0: open
Logic level 1: close to GND
Logic level 0: 3 V max.
Logic level 1: 10 ~ 50 V
Wet Contact: 70 V_{DC}
- **Overvoltage Protection**

Digital Output

- **Channels** 8, open collector to 40 V
(200 mA max. load)
- **Power Dissipation** Channel: 1 W max.
Total: 2.2 W (8 Channels)

Ordering Information

- **ADAM-4053** 16-ch Digital Input Module
- **ADAM-4055** 16-ch Isolated Digital I/O Module with Modbus
- **ADAM-4080** 2-ch Counter/Frequency Modules

Specifications

General

- **Connectors** 2 x plug-in terminal blocks (#14 ~ 22 AWG)
- **Power Consumption** 2.0 W @ 24 V_{DC}
- **Watchdog Timer** System (1.6 second)
- **Supported Protocols** ASCII command
- **LED Indicators** 5-digit readout, Ch 0 or Ch 1 (programmable)

Counter Input

- **Channels** 2 independent counters (32-bit + 1-bit overflow)
- **Input Frequency** 50 kHz max.
- **Input Pulse Width** >10 μs.
- **Input Mode** Isolated or non-isolated
- **Isolated Input Level** Logic level 0: 1 V max.
Logic level 1: 3.5~30 V
- **Isolation Voltage** 2,500 V_{RMS}
- **Non-isolated Input Level** Programmable threshold:
Logic level 0: 0.8 V_{max}.
Logic level 1: 2.4 ~ 5.0 V
- **Maximum Count** 4,294,967,295 (32 bits)
- **Preset Type** Absolute or relative
- **Programmable Digital Noise Filter** 2 μs ~ 65 ms
- **Alarm** Alarm comparators on each counter
- **Frequency Measurement Range** 5 Hz ~ 50 kHz
- **Programmable Built-in Gate Time** 1 or 0.1 second

Digital Output

- **Channels** 2, open collector to 30 V, 30 mA max. load
- **Power Dissipation** 300 mW for each channel

ADAM-4050

ADAM-4051

ADAM-4052

16-ch Digital I/O Module with Modbus
16-ch Isolated Digital Input Module with Modbus

8-ch Isolated Digital Input Module



ADAM-4050



ADAM-4051



ADAM-4052



Specifications

General

- **Certification** FCC, CE
- **Connectors** 2 x plug-in terminal blocks (#14 ~ 22 AWG)
- **Power Consumption** 0.2 W @ 24 V DC typ.
0.4 W @ 24 V DC max.
- **Watchdog Timer** System (1.6 second)
- **Supported Protocols** ASCII command and Modbus/RTU

Digital Input

- **Channels** 8
- **Input Level**
Dry contact: Logic level 0: close to GND
Logic level 1: open
Wet contact: Logic level 0: 1 V max
Logic level 1: +3.5 ~ 30 V
Pull up current: 0.5 mA,
10 kΩ resistor to 5 V

Digital Output

- **Channels** 8
open collector to 30 V,
30 mA max. load
- **Power Dissipation** 300 mW

Specifications

General

- **Certification** FCC, CE
- **Connectors** 2 x plug-in terminal blocks (#14 ~ 28 AWG)
- **Power Consumption** 0.7 W @ 24 V DC typ.
1.25 W @ 24 V DC max.
- **Watchdog Timer** System (1.6 second)
- **Supported Protocols** ASCII command and Modbus/RTU
- **LED Indicators** Yes

Digital Input

- **Channels** 16
- **Input Voltage** 50 V max
- **Input Level**
Dry contact: Logic level 0: open
Logic level 1: close to GND
Wet contact: Logic level 0: 3 V max
Logic level 1: 10 ~ 50 V
(Note: Digital Input levels 0 and 1 can be inverted)
- **Isolation Voltage** 2,500 V_{DC}
- **Input Resistance** 5.2 kΩ
- **Overvoltage Protection** 70 V_{DC}

Specifications

General

- **Certification** FCC, CE, UL
- **Connectors** 2 x plug-in terminal blocks (#14 ~ 22 AWG)
- **Power Consumption** 0.4 W @ 24 V_{DC}
- **Watchdog Timer** System (1.6 second)
- **Supported Protocols** ASCII command

Digital Input

- **Channels** 8
(6 fully independent isolated channels, 2 isolated channels with common ground)
- **Input Level** Logic level 0: 1 V max.
Logic level 1: 3 ~ 30 V
- **Isolation Voltage** 5,000 V_{RMS}
- **Input Resistance** 3 kΩ

Common Specifications

General

- **Power Input** Unregulated 10 ~ 30 V_{DC}

Environment

- **Operating Humidity** 5 ~ 95% RH
- **Operating Temperature** -10 ~ 70°C (14 ~ 158°F)
- **Storage Temperature** -25 ~ 85°C
(-13 ~ 185°F)

Ordering Information

- **ADAM-4050-F** 16-ch Digital I/O Module with Modbus
- **ADAM-4051-C** 16-ch Isolated Digital Input Module with Modbus
- **ADAM-4052-BE** 8-ch Isolated Digital Input Module

ADAM-4021

ADAM-4024

1-ch Analog Output Module with Modbus

4-ch Analog Output Module with Modbus



ADAM-4021



Specifications

General

- Connectors 1 x plug-in terminal blocks (#14 ~ 22 AWG)
- Power Consumption 1.4 W @ 24 V_{DC}
- Watchdog Timer System (1.6 second)
- Supported Protocols ASCII command and Modbus/RTU

Analog Output

- Channels 1
- Output Impedance 0.5 Ω
- Output Range 0 ~ 20 mA, 4 ~ 20 mA, 0 ~ 10 V
- Output Type mA, V
- Accuracy $\pm 0.2\%$ of FSR for current output
 $\pm 0.1\%$ of FSR for voltage output
- Current Load Resistor 0 to 500 Ω (source)
- Resolution 12-bit
- Isolation Voltage 3,000 V_{DC}
- Programmable Output Slope 0.125 ~ 128 mA/sec.
0.0625 ~ 64.0 V/sec.
- Readback Accuracy $\pm 1\%$ of FSR
- Span Temperature Coefficient ± 25 ppm/ $^{\circ}\text{C}$
- Zero Drift
Voltage output: ± 30 $\mu\text{V}/^{\circ}\text{C}$
Current output: ± 0.2 $\mu\text{A}/^{\circ}\text{C}$



ADAM-4024



Specifications

General

- Connectors 2 x plug-in terminal blocks (#14 ~ 28 AWG)
- Power Consumption 3 W @ 24 V_{DC}
- Watchdog Timer System (1.6 second) & Communication
- Supported Protocols ASCII command and Modbus/RTU

Analog Output

- Channels 4
- Output Impedance 0.5 Ω
- Output Range 0 ~ 20 mA, 4 ~ 20mA, ± 10 V
- Output Type mA, V (Differential)
- Accuracy $\pm 0.1\%$ of FSR for current output
 $\pm 0.1\%$ of FSR for voltage output
- Current Load Resistor Max. 500 Ω (source)
- Voltage Load Resistor Min. 1K Ω
- Resolution 12-bit
- Isolation Voltage 3,000 V_{DC}
- Programmable Output Slope 0.125 ~ 128 mA/sec.
0.0625 ~ 64.0 V/sec.
- Span Temperature Coefficient ± 25 ppm/ $^{\circ}\text{C}$
- Zero Drift
Voltage output: ± 30 $\mu\text{V}/^{\circ}\text{C}$
Current output: ± 0.2 $\mu\text{A}/^{\circ}\text{C}$

Digital Input

- Channels 4
- Input Level Logic level 0: 1 V max.
Logic level 1: 10 ~ 30 V_{DC}
- Isolation Voltage 3,000 V_{DC}

Common Specifications

General

- Power Input Unregulated 10 ~ 30 V_{DC}

Environment

- Operating Humidity 5 ~ 95% RH
- Operating Temperature -10 ~ 70 $^{\circ}\text{C}$
(14 ~ 185 $^{\circ}\text{F}$)
- Storage Temperature -25 ~ 85 $^{\circ}\text{C}$
(-13 ~ 185 $^{\circ}\text{F}$)

Ordering Information

- ADAM-4021-F 1-ch Analog Output Module with Modbus
- ADAM-4024-B1E 4-ch Analog Output Module with Modbus

ADAM-4017

8-ch Analog Input Module



CE FCC RoHS

Features

- 8-ch Analog Input (voltage or current)
- Protocols: ASCII
- Watchdog timer to recover the system

Specifications

General

- **Power Consumption** 1.2 W @ 24 V_{DC}
- **Watchdog Timer** System (1.6 second)
- **Supported Protocols** ASCII command
- **Power Input** Unregulated 10 ~ 30 V_{DC}
- **Connectors** 2 x plug-in terminal block (#14 ~ 22 AWG)

Analog Input

- **Channels** 8 differential
- **Input Type** mV, V, mA
- **Input Range** ±150 mV, ±500 mV, ±1 V, ±5 V, ±10 V, ±20 mA

Analog Input

- **Accuracy** Voltage mode: ±0.1% or better
Current mode: ±0.2% or better
- **Resolution** 16-bit
- **Sampling Rate** 10 sample/second (total)
- **Isolation Voltage** 3,000 V_{DC}
- **CMR @ 50/60 Hz** 120 dB
- **NMR @ 50/60 Hz** 100 dB
- **Span Drift** ±25 ppm/°C
- **Zero Drift** ±6 µV/°C

Environment

- **Humidity** 5 ~ 95% RH
- **Operating Temp.** -10 ~ 70°C (14 ~ 158°F)
- **Storage Temp.** -25 ~ 85°C (-13 ~ 185°F)

Ordering Information

- **ADAM-4017-E** 8-ch Analog Input Module

ADAM-4017+ ADAM-4018+ ADAM-4019+

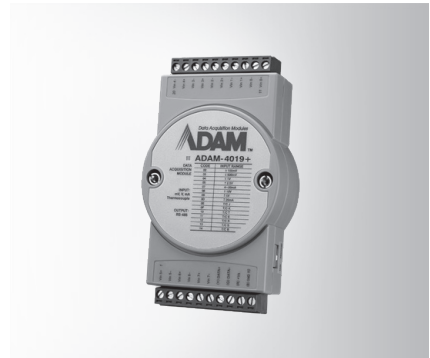
8-ch Analog Input Module with Modbus
8-ch Thermocouple Input Module with Modbus
8-ch Universal Analog Input Module with Modbus



ADAM-4017+



ADAM-4018+



ADAM-4019+



Specifications

General

- **Power Consumption** 1.2 W @ 24 V_{DC}
- **Watchdog Timer** System (1.6 second) & Communication
- **Supported Protocols** ASCII command and Modbus/RTU

Analog Input

- **Channels** 8 differential
- **Channel Independent Configuration** Yes
- **Input Impedance** Voltage: 20 M Ω
Current: 120 Ω
- **Input Type** mV, V, mA
- **Input Range** 0 ~ 150 mV, 0 ~ 500 mV,
0 ~ 1 V, 0 ~ 5 V, 0 ~ 10 V,
 ± 150 mV, ± 500 mV, ± 1 V,
 ± 5 V, ± 10 V, ± 20 mA,
0 ~ 20 mA, 4 ~ 20 mA

Specifications

General

- **Power Consumption** 0.8 W @ 24 V_{DC}
- **Watchdog Timer** System (1.6 second) & Communication
- **Supported Protocols** ASCII command and Modbus/RTU

Analog Input

- **Channels** 8 differential
- **Channel Independent Configuration** Yes
- **Input Impedance** Voltage: 20 M Ω
Current: 120 Ω
- **Input Type** Thermocouple, mA
- **Input Range** ± 20 mA, 4 ~ 20 mA
- **T/C Types and Temperature Ranges**

J	0 ~ 760°C	R	500 ~ 1,750°C
K	0 ~ 1,370°C	S	500 ~ 1,750°C
T	-100 ~ 400°C	B	500 ~ 1,800°C
E	0 ~ 1,000°C		

- **Burnout Detection** All T/C

Specifications

General

- **Power Consumption** 1.0 W @ 24 V_{DC}
- **Watchdog Timer** System (1.6 second) & Communication
- **Supported Protocols** ASCII command and Modbus/RTU

Analog Input

- **Channels** 8 differential channels for individual input type
- **Channel Independent Configuration** Yes
- **Input Impedance** Voltage: 20 M Ω
Current: 120 Ω
- **Input Type** T/C, mV, V, mA
- **Input Range** 0 ~ 100 mV, 0 ~ 500 mV,
0 ~ 1 V, 0 ~ 2.5 V, 0 ~ 5 V,
0 ~ 10 V, ± 100 mV,
 ± 500 mV, ± 1 V, ± 2.5 V,
 ± 5 V, ± 10 V, ± 20 mA,
0 ~ 20 mA, 4 ~ 20 mA,

- **T/C Types and Temperature Ranges**

J	0 ~ 760°C	R	500 ~ 1,750°C
K	0 ~ 1,370°C	S	500 ~ 1,750°C
T	-100 ~ 400°C	B	500 ~ 1,800°C
E	0 ~ 1,000°C	N	-200 ~ 1,300°C

- **Burnout Detection** 4 ~ 20 mA & all T/C

Common Specifications

General

- **Power Input** Unregulated 10 ~ 30 V_{DC}
- **Connectors** 2 x plug-in terminal block (#14 ~ 22 AWG)

Analog Input

- **Accuracy** Voltage mode: $\pm 0.1\%$ or better
Current mode: $\pm 0.2\%$ or better
- **Resolution** 16-bit
- **Sampling Rate** 10 sample/second (total)

- **Isolation Voltage** 3,000 V_{DC}
- **Overvoltage Protection** ± 35 V_{DC}
- **CMR @ 50/60 Hz** 120 dB
- **NMR @ 50/60 Hz** 100 dB
- **Span Drift** ± 25 ppm/°C (Typical)
- **Zero Drift** ± 6 μ V/°C
- **Built-in TVS/ESD Protection**

Environment

- **Operating Humidity** 5 ~ 95% RH
- **Operating Temperature** -10 ~ 70°C (14 ~ 158°F)
- **Storage Temperature** -25 ~ 85°C (-13 ~ 185°F)

Ordering Information

- **ADAM-4017+-F** 8-ch Analog Input Module with Modbus
- **ADAM-4018+-F** 8-ch Thermocouple Input Module w/Modbus
- **ADAM-4019+-F** 8-ch Universal Analog Input Module w/Modbus