

# 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, UL
- **Power Consumption** 0.5W @ 24 V<sub>DC</sub>

### Analog Input

- **Channels** 8 differential and independent configuration channels
- **Input Impedance** Voltage: 20 M $\Omega$   
Current: 120  $\Omega$
- **Input Type** T/C, mV, V, mA
- **Input Range** Thermocouple

<b>J</b>	0 ~ 760°C	<b>R</b>	500 ~ 1,750°C
<b>K</b>	0 ~ 1,370°C	<b>S</b>	500 ~ 1,750°C
<b>T</b>	-100 ~ 400°C	<b>B</b>	500 ~ 1,800°C
<b>E</b>	0 ~ 1,000°C	<b>N</b>	-270 ~ 1300°C

- **Voltage mode**  $\pm 15$  mV,  $\pm 50$  mV,  $\pm 100$  mV,  $\pm 500$  mV,  $\pm 1$  V,  $\pm 2.5$  V
- **Current mode**  $\pm 20$  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
- **NMR @ 50/60 Hz** 60 dB
- **Overvoltage Protection**  $\pm 60$  V<sub>DC</sub>
- **High Common Mode** 200 V<sub>DC</sub>
- **Span Drift**  $\pm 25$  ppm/ $^{\circ}$ C (Typical)
- **Zero Drift**  $\pm 6\mu$ V/ $^{\circ}$ C
- **Built-in TVS/ESD Protection**
- **Burnout Detection**

## Specifications

### General

- **Certification** FCC, CE, UL
- **Power Consumption** 0.7 W @ 24 V<sub>DC</sub>

### 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<sub>DC</sub>

### Digital Output

- **Channels** 8, open collector to 40 V (0.8A max. load)
- **Power Dissipation** 1W load max
- **RON Maximum** 150 m $\Omega$
- **Supports 1 kHz Pulse Output**
- **Supports High-to-Low Delay Output**
- **Supports Low-to-High Delay Output**

## Specifications

### General

- **Certification** FCC, CE, UL
- **Power Consumption** 1.8 W @ 24 V<sub>DC</sub>

### Relay Output

- **Output Channels** 8 Form A
- **Contact Rating (Resistive)** 0.5 A @ 120 V<sub>AC</sub>  
0.25 A @ 240 V<sub>AC</sub>  
1 A @ 30 V<sub>DC</sub>  
0.3 A @ 110 V<sub>DC</sub>
- **Breakdown Voltage** 750 V<sub>AC</sub> (50/60 Hz)
- **Initial Insulation Resistance** 1 G  $\Omega$  min. @ 500 V<sub>DC</sub>
- **Relay Response Time (Typical)** On: 3ms  
Off: 1ms
- **Total Switching Time** 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<sub>DC</sub>
- **Watchdog Timer** System (1.6 second) & Communication
- **Connector** 2 x plug-in terminal blocks (#14 ~ 22 AWG)
- **Isolation Voltage** 3,000 V<sub>DC</sub>
- **Interface (B version)** RS-485, micro USB
- **Supported Protocols** ASCII Command and Modbus/RTU

### Environment

- **Operating Humidity** 5 ~ 95% RH
- **Operating Temperature** -40 ~ 85 $^{\circ}$ C (-40 ~ 185 $^{\circ}$ F)
- **Storage Temperature** -40 ~ 85 $^{\circ}$ C (-40 ~ 185 $^{\circ}$ F)

## Ordering Information

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