

## XV305

4-ch Thermocouple Input, 4-ch DI and 4-ch Power Relay Expansion Board

### Features

- Multifunction (4 AI, 4 DI, 4 Relay)
- Individual Channel Configuration for Analog Input
- Jumper Selectable Voltage or Current Input
- Current, Voltage or Thermocouple Input
- Open Wire Detection for Current Output
- Configurable Power-on Value Settings
- $\pm 120$  VDC Overvoltage Protection for Analog Input
- 70 VDC Overvoltage Protection for Digital Input



### Introduction

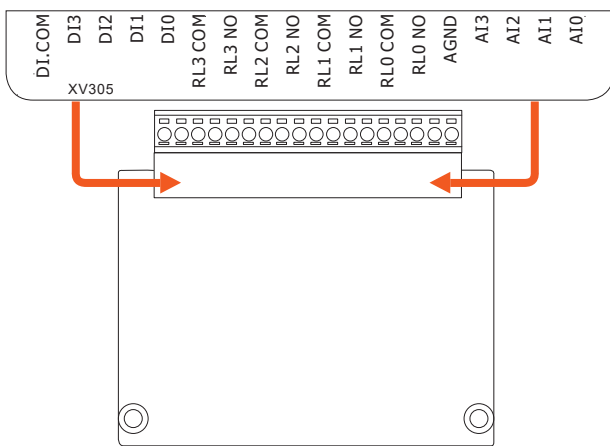
The XV305 is a multifunction expansion board that includes 4 Analog Input channels, 4 Digital Input channels and 4 Form A Relay Output channels. The Analog Input channels are current and voltage input, as well as thermocouple input, voltage and current inputs are jumper selectable. The XV305 also provides options for configuring power-on values for the Relay Output. 4 kV ESD protection and 2000 VDC intramodule isolation are also provided to enhance noise immunity capabilities in industrial environments.

### Specifications

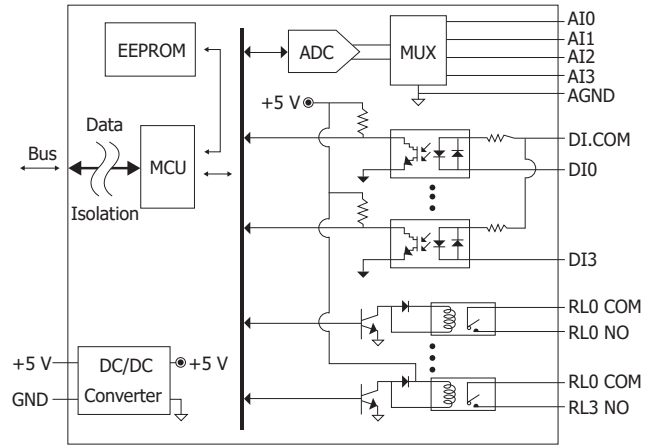
Isolation		
Intra-module Isolation	2000 VDC	
EMS Protection		
ESD (IEC 61000-4-2)	$\pm 4$ kV Contact For Each Terminal	
	$\pm 8$ kV Air For Random Terminal	
Analog Input		
Channels	4 Single-ended	
Type	$\pm 1$ V, $\pm 2.5$ V, $\pm 5$ V, $\pm 10$ V, $\pm 20$ mA, $0 \sim 20$ mA, $4 \sim 20$ mA (Jumper Selectable)	
Sensor Type	Thermocouple	J, K, T, E, R, S, B, N, C
	Voltage	$\pm 15$ mV, $\pm 50$ mV, $\pm 100$ mV, $\pm 500$ mV, $\pm 1$ V, $\pm 2.5$ V (Jumper Selectable)
	Current	$\pm 20$ mA, $0 \sim +20$ mA, $+4 \sim +20$ mA (Jumper Selectable)
Resolution	16-bit	
Accuracy	0.1% of FSR	
Sampling Rate	10 Hz (Total)	
Input Impedance	$> 400$ k $\Omega$	
Common Voltage Protection	25 VDC	
Overvoltage Protection	$\pm 120$ VDC	
Digital Input/Counter		
Channels	4	
Type	Wet Contact, Sink/Source	
Wet Contact	ON Voltage Level	$+3.5 \sim +50$ VDC
	OFF Voltage Level	$+1$ VDC Max.
Max. Counts	32-bit ( $0 \sim 4, 294, 967, 285$ )	
Frequency	50 Hz	
Min. Pulse Width	10 ms	
Input Impedance	10 K $\Omega$ , 0.5 W	
Overvoltage Protection	70 VDC	

Relay Output		
Channels	4	
Type	Power Relay (Form A)	
Form A Relay	Contact Material	Silver Cadmium Alloy
	Contact Rating	6 A @ 35 VDC
		6 A @ 240 VAC
	Operate Time	5 ms (typical)
	Release Time	1 ms (typical)
Electrical Endurance	$1 \times 10^5$ ops.	
Mechanical Endurance	$30 \times 10^6$ ops.	
Power-on Value	Yes	
COM Ports		
Ports	1 x RS-232	
Baud Rate	115200 bps	
Data Format	N, 8, 1	
Protocol	Modbus/RTU	
Power		
Consumption	2.9 W Max.	
Powered from Terminal Block	5 VDC	
Mechanical		
Dimensions (mm)	59 mm x 82 mm x 13 mm (W x L x H)	
Environmental		
Operating Temperature	$-25 \sim +75$ °C	
Storage Temperature	$-30 \sim +80$ °C	
Humidity	10 ~ 90% RH, Non-condensing	

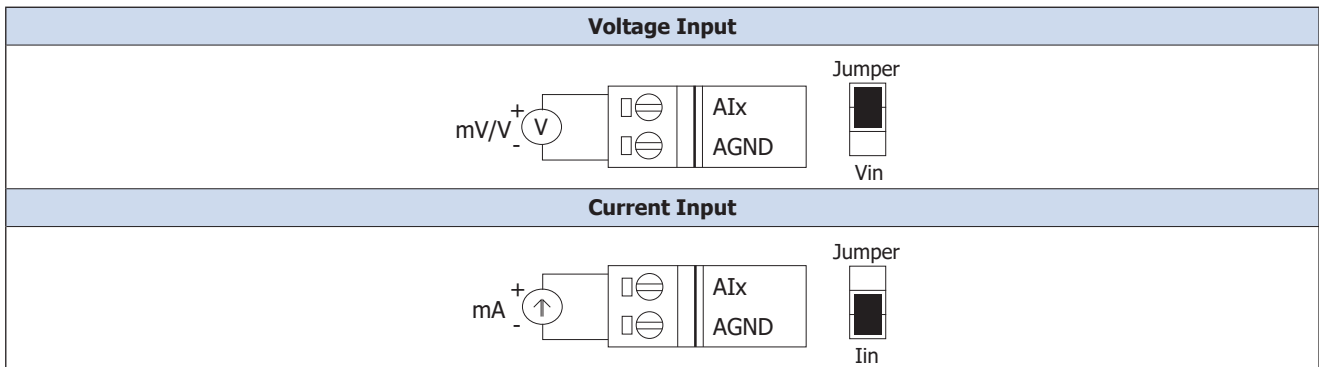
## Pin Assignments



## Internal I/O Structure



## Wire Connections



Digital Input/Counter	Readback as 1	Readback as 0
Wet Contact (Sink)	+3.5 ~ +50 VDC 	+1 VDC Max. 
	Wet Contact (Source)	+3.5 ~ +50 VDC 
Power Relay		Readback as 1
	Relay Output	

## Ordering Information

<b>XV305 CR</b>	4-ch Thermocouple Input, 4-ch DI (Wet) and 4-ch Power Relay (6A Rating Current) Expansion Board (RoHS)
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