

## XV305

### Multifunction Expansion Board

#### 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 intra-module isolation are also provided to enhance noise immunity capabilities in industrial environments.

#### System Specifications

Communication	
Interface	RS-232/TTL
Format	N, 8, 1
Baud Rate	115200 bps
Protocol	Modbus/RTU
Isolation	
Intra-module Isolation, Field-to-Logic	2000 Vdc
EMS Protection	
ESD (IEC 61000-4-2)	±4 kV Contact For Each Terminal
	±8 kV Air For Random Terminal
Power	
Power from Terminal Block	5 VDC
Consumption	2.9 W Max.
Mechanical	
Dimensions (W x L x H)	59 mm x 82 mm x 13 mm
Environment	
Operating Temperature	-25 ~ +75°C
Storage Temperature	-30 ~ +80°C
Humidity	10 ~ 90% RH, Non-condensing

#### Features

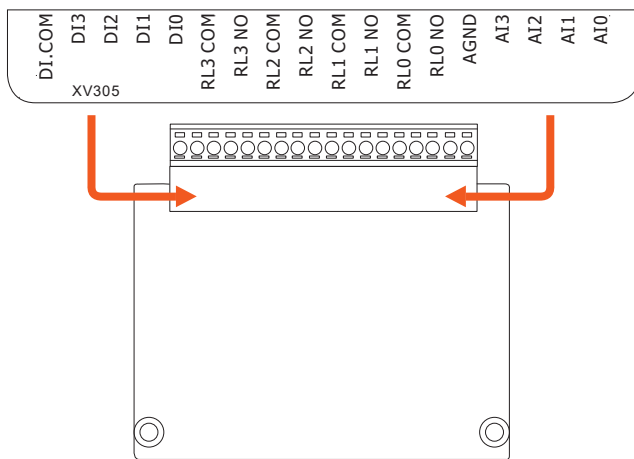
- Multifunction (4 AI, 4 DI, 4 Relay)
- Individual Channel Configuration for Analog Input
- Jumper Selectable Voltage or Current Input
- Current, Voltage or Thermocouple Input
- Open Wire Detection for Current Output
- Configurable Power-on Value Settings
- ±120 VDC Overvoltage Protection for Analog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



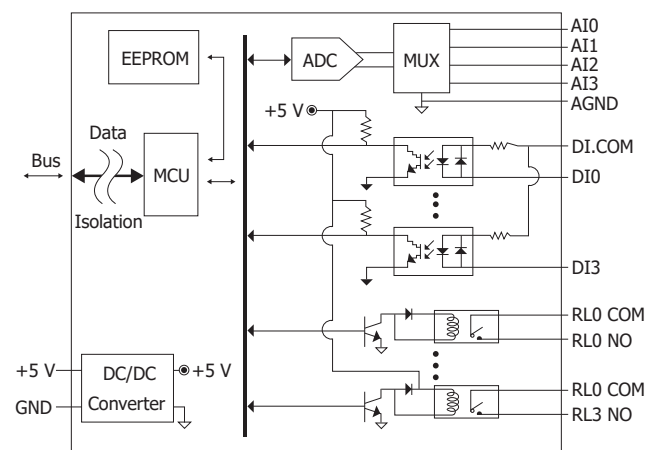
#### I/O Specifications

Analog Input		
Channels	4 Single-ended	
Sensor Types	Thermocouple	J, K, T, E, R, S, B, N, C
	Voltage	±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 V, ±2.5 V (Jumper Selectable)
	Current	±20 mA, 0 ~ +20 mA, +4 ~ +20 mA (Jumper Selectable)
Resolution	16-bit	
Accuracy	0.1% of FSR	
Sampling Rate	10 Hz (Total)	
Input Impedance	> 400 kΩ	
Common Voltage Protection	25 VDC	
Individual Channel Configuration	-	
Overvoltage Protection	±120 VDC	
Open Wire Detection (for thermocouple only)	-	
Digital Input/Counter		
Input Channels	4	
Type	Dry Contact	-
	Wet Contact	Sink/Source
On Voltage Level	Dry Contact	-
	Wet Contact	+3.5 ~ +50 VDC
OFF Voltage Level	Dry Contact	-
	Wet Contact	+1 VDC Max.
Input Impedance	10 kΩ, 0.5 W	
Counters	Channels	4
	Max. Count	32-bit (0 ~ 4, 294, 967, 285)
	Max. Input Frequency	50 Hz
	Min. Pulse Width	10 ms
Overvoltage Protection	70 VDC	
Relay Output		
Channels	4	
Type	Power Relay	
Form A Relay	Contact Rating	6 A @ 35 VDC 6 A @ 240 VAC
	Min. Contact Load	100 mA @ ≥ 12 V
	Contact Material	Silver Cadmium Alloy
	Operate Time	5 ms (typical)
	Release Time	1 ms (typical)
	Mechanical Endurance	30 x 10 <sup>6</sup> ops.
Electrical Endurance	1 x 10 <sup>5</sup> ops.	
Power-on Value	Yes	

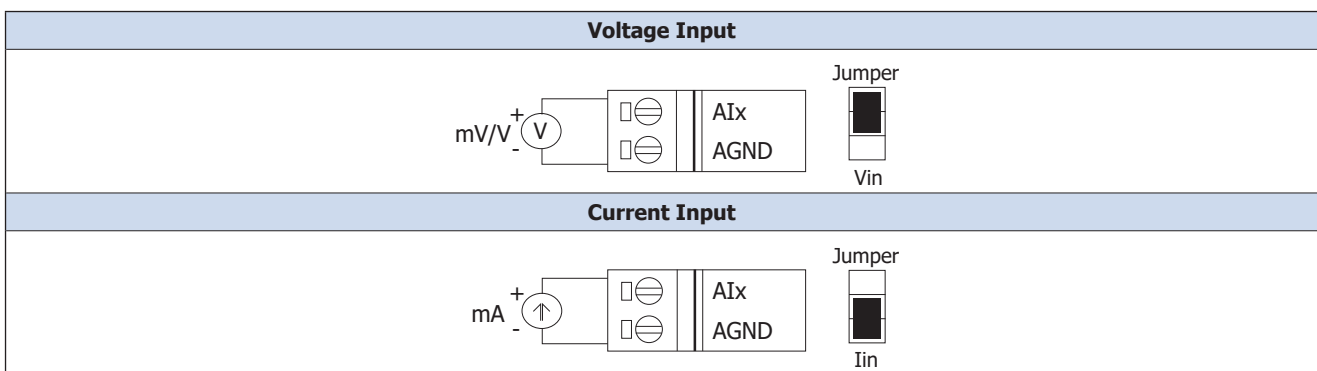
## Pin Assignments



## Internal I/O Structure



## Wire Connections



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

## Ordering Information

<b>XV305 CR</b>	Multifunction Expansion Board (RoHS)
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