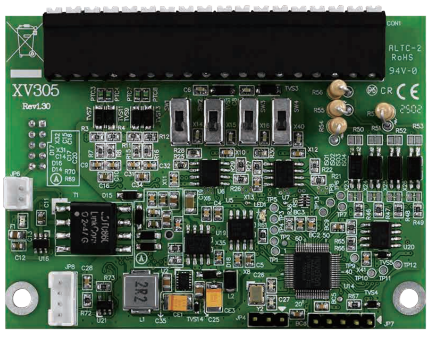


XV305

4-ch Thermocouple Input, 4-ch AO and 4-ch DI Expansion Board

Features

- Multifunction (4Thermocouple, 4AO, 4DI)
- 4-channel Thermocouple Input
- Switch Selectable Voltage or Current Output
- Open Wire Detection for Current Output
- 4-channel Digital Input channels

Introduction

The XV305 is a 4-channels thermocouple input, 4-channels analog output, 4-channels digital input modules. The module supports a variety of thermocouple input types, including Type J, K, T, E, R, S, B, N, C, L, M, and $L_{DIN43710}$, and features an automatic cold-junction compensation function for all channels.

It provides a programmable output range on all analog output channels (0 ~ 10 V_{DC}, 0 ~ 20 mA or 4 ~ 20 mA).

It provides 4 channels for digital input, each of which features photocoupler isolation. Either sink- or source-type inputs can be selected via wire connections, and all channels can be used as 32-bit counters.

It is fully RoHS-compliant and features 4 kV ESD protection as well as 2000 V_{DC} intra-module isolation are also provided to enhance noise immunity capabilities in industrial environments.

Specifications

Isolation		
Intra-module Isolation		2000 V_{DC}
EMS Protection		
ESD (IEC 61000-4-2)		±4 kV Contact For Each Terminal
		±8 kV Air For Random Terminal
Analog Input		
Channels		4
Sensor Type		Thermocouple (J, K, T, E, R, S, B, N, C, L, M, $L_{DIN43710}$)
Resolution		16-bit
Accuracy		±0.1% FSR (25°C)
Sampling Rate	Normal Mode	1.5 Hz (per channel)
	Fast Mode	100 Hz (per channel)
Overvoltage Protection		30 V_{DC}
Individual Channel Configuration		Yes
Open Wire Detection		Yes
Analog Output		
Channels		4
Type		0 ~ +10 VDC, 0 ~ +20 mA, +4 ~ +20 mA
Resolution		12-bit
Accuracy		±0.1%
Voltage Output Capability		10 V @ 10 mA
Current Load Resistance		500 Ω
Power-on Value		Yes, Programmable
Safe Value		Yes, Programmable

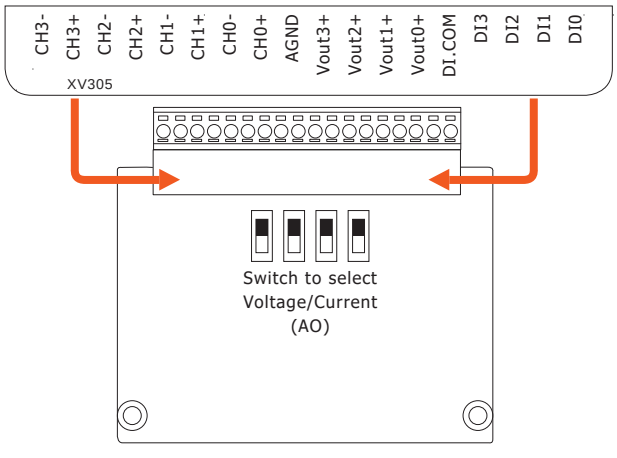
Digital Input/Counter	
Channels	4
Type	Wet Contact
Sink/Source (NPN/PNP)	Sink/Source (NPN/PNP)
ON Voltage Level	+3.5 ~ +30 V_{DC}
OFF Voltage Level	+1 V_{DC} Max.
Max. Counts	32-bit (0 ~ 4,294,967,285)
Frequency	3 KHz
Input Impedance	3 kΩ, 1.0W
COM Ports	
Ports	1 x RS-232
Baud Rate	115200 bps
Data Format	N, 8, 1
Protocol	Modbus/RTU
Power	
Consumption	1.9 W Max.
Powered from Terminal Block	5 V_{DC}
Mechanical	
Dimensions (mm)	60.2 mm x 80 mm x 20 mm (W x L x H)
Environmental	
Operating Temperature	-25 ~ +75 °C
Storage Temperature	-30 ~ +80 °C
Humidity	10 ~ 90% RH, Non-condensing

Ordering Information

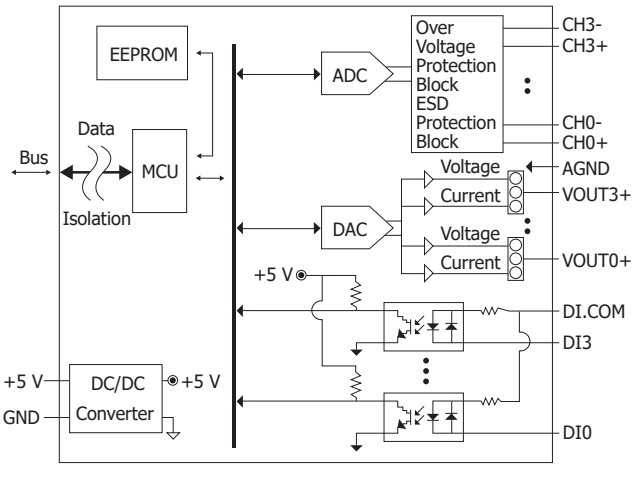
XV305 CR	4-ch Thermocouple Input, 4-ch AO and 4-ch DI (Wet) Expansion Board (RoHS)

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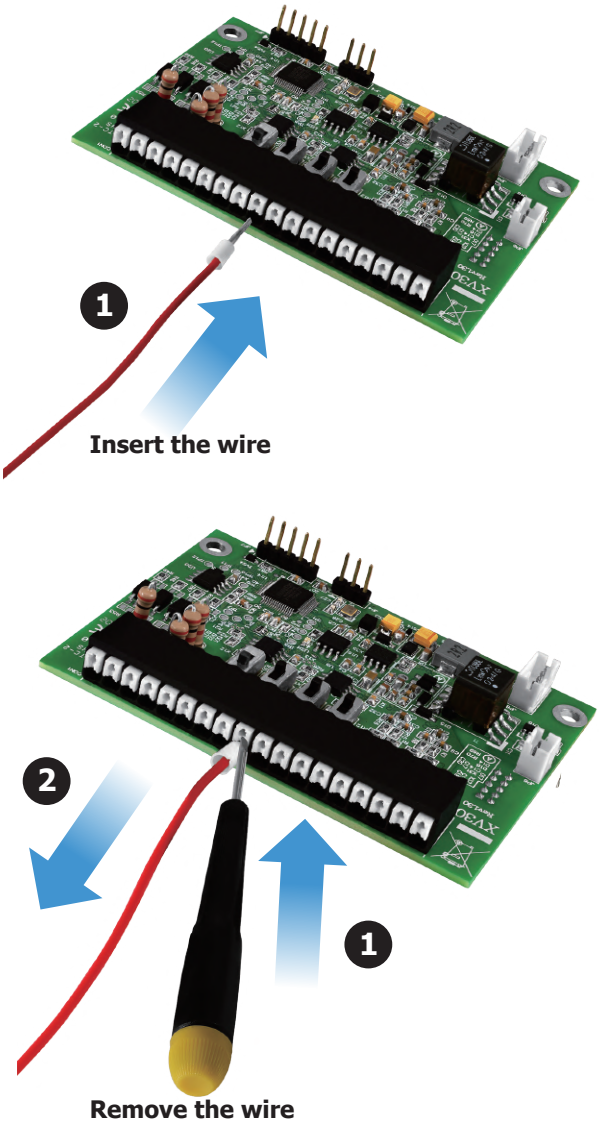
Pin Assignments



Internal I/O Structure



Push-to-connect fitting

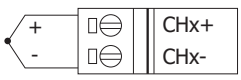


Thermocouple Type

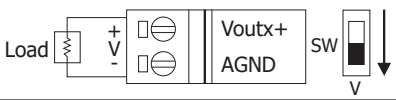
Type Code	Temperature Range
J	-210 ~ +760°C
K	-270 ~ +1372°C
T	-270 ~ +400°C
E	-270 ~ +1000°C
R	0 ~ +1768°C
S	0 ~ +1768°C
B	0 ~ +1820°C
N	-270 ~ +1300°C
C	0 ~ +2320°C
L	-200 ~ +800°C
M	-200 ~ +100°C
$L_{DIN43710}$	-200 ~ +900°C

Wire Connections

Thermocouple Input

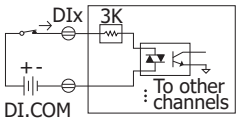
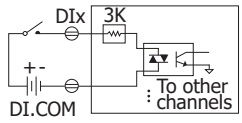
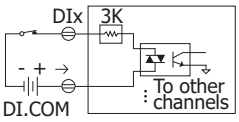
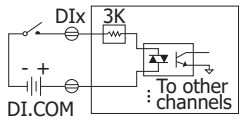


Voltage Output



Current Output



Digital Input	Readback as 1	Readback as 0
Wet Contact (Sink)	+3.5 ~ +30 V_{DC}	+1 V_{DC} Max.
		
Wet Contact (Source)	+3.5 ~ +30 V_{DC}	+1 V_{DC} Max.
		

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