



## XV310

### Multifunction Expansion Board

#### Introduction

The XV310 is a multifunction expansion board that includes 4 analog input channels, 2 analog output channels, 4 digital input channels and 4 digital output channels. It provides a programmable input range on all analog input channels (+/-1 V, +/-2.5 V, +/-5 V, +/-10 V, +/-20 mA, 0 ~ 20 mA or 4 ~ 20 mA), analog output channels are 12-bit at +/-5 V, +/-10 V, 0 ~ 20 mA or 4 ~ 20 mA. Each analog input channel can be configured for an individual range and provides a high overvoltage protection of 120 VDC. Voltage and current inputs/outputs are jumper selectable.

#### 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	1.6 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, 2 AO, 4 DI, 4 DO)
- Individual Channel Configuration
- Jumper Selectable Voltage or Current Input/Output
- Open Wire Detection for Current Output
- Configurable Power-on Value Settings
- Digital Input Channels can be used as 32-bit Counters
- 120 VDC Overvoltage Protection for Analog Input
- 60 VDC Overvoltage Protection for Digital Input
- Overload Protection for Digital Output
- Short-circuit Protection for Digital Output



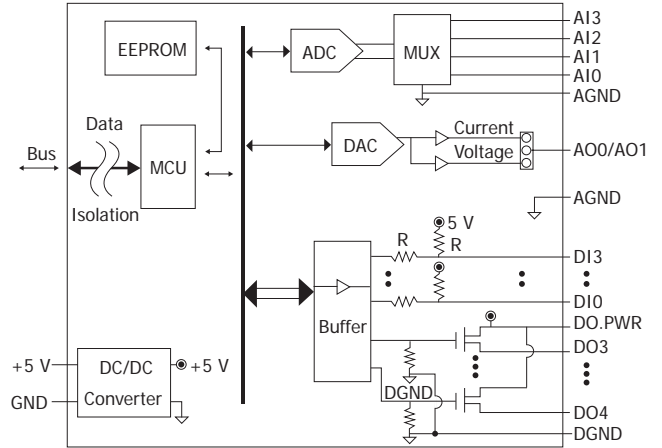
#### I/O Specifications

Analog Input		
Channels	4	
Type	±1 V, ±2.5 V, ±5 V, ±10 V, ±20 mA, 0 ~ 20 mA, 4 ~ 20 mA (Jumper Selectable)	
Resolution	16-bit	
Sampling Rate	Normal Mode	10 Hz
	Fast Mode	200 Hz
Accuracy	Normal Mode	±0.1%
	Fast Mode	±0.5%
Overvoltage Protection	120 VDC	
Analog Output		
Channels	2	
Type	0 V ~ +5 V, ±5 V, 0 V ~ +10 V, ±10 V, 0 mA ~ +20 mA, +4 mA ~ +20 mA (Jumper Selectable)	
Resolution	12-bit	
Accuracy	±0.1%	
Voltage Output Capability	10 V @ 20 mA	
Current Load Resistance	500 Ω	
Digital Input		
Channels	4	
Type	Dry Contact	Source
	Wet Contact	-
On Voltage Level	Dry Contact	Close to GND
	Wet Contact	-
Off Voltage Level	Dry Contact	Open
	Wet Contact	-
Input Impedance	-	
Counters	Max. Count	32-bit (0~4,294,967,285)
	Max. Input Frequency	50 Hz
	Min. Pulse Width	10 ms
Overvoltage Protection	60 VDC	
Digital Output		
Channels	4	
Type	Source	
Max. Load Current	650 mA/channel	
Load Voltage	+10 to +40 VDC	
Overvoltage Protection	47 VDC	
Overload Protection	Yes	
Short-circuit Protection	Yes	
Power-on Value	Yes, Programmable	

Pin Assignments

A13	A12	A11	A10	AGND	AO1	AO0	AGND	DI3	DI2	DI1	DI0	DO3	DO2	DO1	DO0	DGND	DO.PWR
XV310																	

Internal I/O Structure



Wire Connections

Voltage Input		
Current Input		
Voltage Output		
Current Output		
Digital Input/Counter	ON State Readback as 1	OFF State Readback as 0
Dry Contact (Source)		
Digital Output	ON State Readback as 1	OFF State Readback as 0
Open Drain (Source)		

Ordering Information

XV310 CR	Multifunction Expansion Board
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