XV386

4-ch AI, 4-ch DI and 4-ch Power Relay Expansion Board

Features

- Multifunction design: 4 AI, 4 DI, 4 Relays
- Individual channel configuration
- Jumper-selectable voltage or current input
- Digital input channels can function as 32-bit counters
- Open wire detection for current input
- Configurable power-on values
- 120 V_{DC} overvoltage protection for analog inputs
- 70 V_{DC} overvoltage protection for digital inputs

Introduction

The XV386 is a multifunction expansion board that includes four analog input channels, four digital input channels, and four Form A relay output channels.

Channel 0 provides a programmable input range of ±30V and ±15V (exclusive high-range interface), while the other analog input channels offer a programmable range of ±1V, ±2.5V, ±5V, ±10V, ±20 mA, 0 to +20 mA, or +4 to +20 mA. Voltage and current inputs are jumper-selectable.

The digital input channels can also function as 32-bit counters. Additionally, the XV386 provides options for configuring power-on values for the digital outputs. To enhance noise immunity in industrial environments, the board features 4 kV ESD protection and 2,000 V_{DC} intra-module isolation.
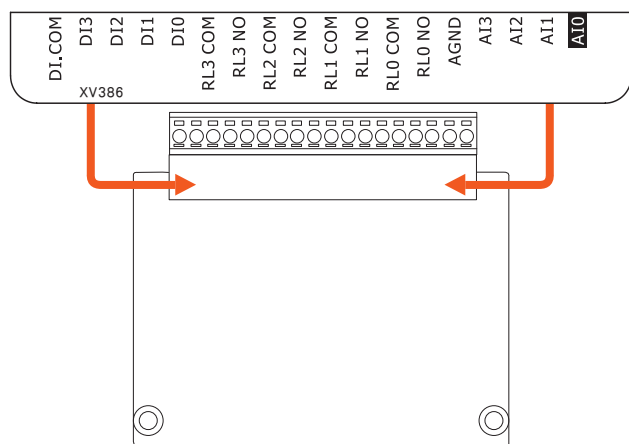
Applications

- Building automation
- Machine automation
- Remote Maintenance
- Factory Automation
- Remote Diagnosis
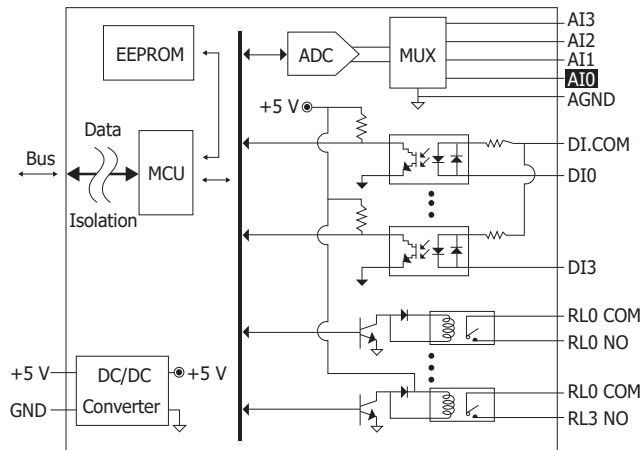- Testing equipment

Specifications

EMS Protection

ESD (IEC 61000-4-2)	±4 kV Contact For Each Terminal
	±8 kV Air For Random Terminal

Analog Input

Channels		4
Type	ch0	±15 V, ±30 V
	ch1 ~ ch3	±1 V, ±2.5 V, ±5 V, ±10 V, ±20 mA, 0 ~ 20 mA, 4 ~ 20 mA (Jumper Selectable)
Resolution		16-bit
Accuracy	Normal Mode	±0.1 %
	Fast Mode	±0.5 %
Sampling Rate	Normal Mode	10 Hz
	Fast Mode	200 Hz
Input Impedance		20 MΩ
Overvoltage Protection		120 V_{DC}
Individual Channel Configuration		Yes
Open Wire Detection	ch1 ~ ch3	Yes

Digital Input/Counter

Channels		4
Type		Wet Contact, Sink/Source
Wet Contact	ON Voltage Level	+3.5 ~ +50 V_{DC}
	OFF Voltage Level	+1 V_{DC} Max.
Max. Counts		32-bit (0 ~ 4, 294, 967, 285)
Frequency		50 Hz
Min. Pulse Width		10 ms
Input Impedance		10 KΩ, 0.5 W
Overvoltage Protection		70 V_{DC}

Isolation

Intra-module Isolation	2000 V_{DC}

Relay Output

Channels			4
Type			Power Relay (Form A)
Form A Relay	Contact Material		Silver Cadmium Alloy
	Contact Rating		6 A @ 35 V_{DC}
			6 A @ 240 VAC
	Operate Time		5 ms (typical)
	Release Time		1 ms (typical)
	Electrical Endurance		1 x 105 ops
	Mechanical Endurance		30 x 106 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	1.6 W Max.
Powered from Terminal Block	5 V_{DC}

Mechanical

Dimensions (mm)	59 mm x 82 mm x 13 mm (W x L x H)

Environmental

Operating Temperature	-25 ~ +75 °C
Storage Temperature	-30 ~ +80 °C
Humidity	10 ~ 90% RH, Non-condensing

■ Pin Assignments

■ Internal I/O Structure

■ Wire Connections

Voltage Input	
ch0	ch1-3

Current Input
ch1-3

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	+1 VDC Max.

Power Relay	Readback as 1	Readback as 0
Relay Output		

■ Ordering Information

XV386 CR	4-ch AI, 4-ch DI (Wet) and 4-ch Power Relay (6A Rating Current) Expansion Board (RoHS)