

8.4. I/O Expansion Boards






• Overview




One PAC can only plug only one XV-Board or XW-Board.





	XV-Board	XW-Board
PAC Supported	WP-50xx, LP-50xx	uPAC-5000, WP-51xx, LP-51xx
Bus Type	Serial	Parallel
Bus Speed	Slow	Fast
DIO Board	Yes	Yes
Multifunction Board (AI+AO+DIO)	Yes	Yes
RS-232/485 Board	-	Yes



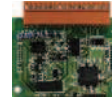


Relay output Board		
Models	XV116	
Pictures		
Relay Output		
Channel	6	
Type	Form A (SPST N.O.)	
Operating Voltage Range	250 V _{AC} or 30 V _{DC}	
Max. Load Current	Relay 0 ~ 1: 2 A Relay 2 ~ 5: 4 A	
Operating Time	Relay 0 ~ 1: 4 ms Max. Relay 2 ~ 5: 5 ms Max.	
Release Time	Relay 0 ~ 1: 6 ms Max. Relay 2 ~ 5: 1 ms Max.	
Mechanical Life	Relay 0 ~ 1: 100 x 10 ⁶ cycles Relay 2 ~ 5: 30 x 10 ⁶ cycles	
On-Resistance	-	
Off-State Leakage Current	-	
Intra-module Isolation, Field to Logic	3750 V _{DC}	
Digital Input		
Channel	5	
Contact	Wet	
Sink/Source (NPN/PNP)	Sink/Source	
Wet Contact	On Voltage Level	+10 V _{DC} ~ 50 V _{DC}
	Off Voltage Level	+4 V _{DC} Max.
Input Impedance	10 K Ω	
Overvoltage Protection	60 V _{DC}	
Intra-module Isolation, Field to Logic	3750 V _{DC}	
Power Requirements		
Consumption	1W	

DIO Board					
Models	XV107i	XV107Ai	XV110i	XV111i	XV111Ai
Pictures					
Digital Input					
Channel	8	8	16		
Contact	Wet	Wet	Dry+Wet		
Sink/Source (NPN/PNP)	Source	Sink	Sink/Source		
Wet Contact	On Voltage Level	+10 V _{DC} ~ +50 V _{DC}			
	Off Voltage Level	+4 V _{DC} Max.			
Dry Contact	On Voltage Level	-	Close to GND	-	-
	Off Voltage Level	-	Open	-	-
Input Impedance	10 K Ω				
Oversvoltage Protection	60 V _{DC}				
Intra-module Isolation, Field to Logic	3750 V _{DC}				
Digital Output					
Channel	8		-	16	
Type	Open Collector	Open Emitter	-	Open Collector	Open Emitter
Sink/Source (NPN/PNP)	Sink	Source	-	Sink	Source
Load Voltage	+10 V _{DC} ~ 40 V _{DC}		-	+10 V _{DC} ~ 40 V _{DC}	
Max. Load Current	700 mA/channel		-	600 mA/channel	
Overload Protection	1.4 A		-	1.4 A	
Intra-module Isolation, Field to Logic	3750 V _{DC}		-	3750 V _{DC}	
Power Requirements					
Consumption	0.15 W		1 W		0.5 W

DIO Board			
Models	XW107	XW107i	XW110i
Pictures			
Digital Input			
Channel	8	8	16
Contact	Dry	Wet	Dry + Wet
Sink/Source (NPN/PNP)	Source	Sink/Source (Jumper setting)	Sink/Source
Wet Contact	On Voltage Level	-	+10 V _{DC} ~ +50 V _{DC}
	Off Voltage Level	-	+4 V _{DC} Max.
Dry Contact	On Voltage Level	Close to GND	-
	Off Voltage Level	Open	-
Input Impedance	-	10 K Ω	-
Oversvoltage Protection	30 V _{DC}	60 V _{DC}	60 V _{DC} for Wet Contact
Intra-module Isolation, Field to Logic	-	3750 V _{rms}	3750 V _{rms}
Digital Output			
Channel	8		
Type	Open Collector		
Sink/Source (NPN/PNP)	Sink		
Load Voltage	+10 V _{DC} ~ 40 V _{DC}		
Max. Load Current	200 mA/channel		
Overload Protection	1.4 A		
Intra-module Isolation, Field to Logic	-	3750 V _{rms}	-
Power Requirements			
Consumption	0.1 W		

Multifunction Board					
Models	XV304i	XV308i	XV310i	XV305i	
Pictures					
Analog Input					
Channel	6	8	4	8	
Wiring	Single-Ended			Differential	
Sensor Type	+/- 1 V, +/- 2.5 V, +/- 5 V, +/- 10 V, 0 ~ 20 mA, 4 ~ 20 mA, +/-20 mA			Thermistor Precon ST-A3, Fenwell U, YSI L100, YSI L300, YSI L1000, YSI B2252, YSI B3000, YSI B5000, SI B6000, YSI B10000, YSI H10000, YSI H30000, User-defined	
Resolution	Normal Mode	14-bit		16-bit	
	Fast Mode	12-bit			
Sampling Rate	Normal Mode	10 Hz		8 Hz	
	Fast Mode	200 Hz			
Input Impedance	20 MΩ			-	
Overvoltage Protection	120 V _{DC}				
Isolation	2500 V _{DC}				
Analog Output					
Channel	1	-	2	-	
Range	0 ~ 10 V _{DC}		0 ~ 10 V _{DC}		
Resolution	12-bit		12-bit		
Output Capacity	20 mA		20 mA		
Isolation	2500 V _{DC}		2500 V _{DC}		
Digital Input					
Channel	4	-	4	-	
Contact	Wet		Wet		
Sink/Source (NPN/PNP)	Source		Source		
Wet Contact	On Voltage Level		+10 V _{DC} ~ +50 V _{DC}		+10 V _{DC} ~ +50 V _{DC}
	Off Voltage Level		+4 V _{DC} Max.		+4 V _{DC} Max.
Overload Protection	60 V _{DC}	60 V _{DC}			
Digital Output					
Channel	4	8	4	8	
Type	Open Collector				
Sink/Source (NPN/PNP)	Sink				
Load Voltage	+10 V _{DC} ~ +40 V _{DC}				
Max. Load Current	700 mA/Channel				
Overload Protection	1.4 A				
Power Requirements					
Consumption	1W				

Multifuntion Board			
Models	XW304	XW310	XW310C
Pictures			
Analog Input			
Channel	6	4	4/8
Wiring	Single-Ended	Differential	Differential/Single-Ended
Range	+/- 5 V, 0 ~ +5 V	+/- 10 V	0 ~ 20 mA
Resolution		12-bit	
Sampling Rate		4 KHz	
Input Impedance		1 MΩ	
Over voltage Protection		+/- 30 V _{DC}	
Isolation		non-isolated	
Analog Output			
Channel	1	2	2
Range	+/- 5 V	+/- 10 V	0 ~ 20 mA
Resolution		12-bit	
Output Capacity	20 mA	30 mA	20 mA
Isolation		non-isolated	
Digital Input			
Channel	4	3	3
Contact		Dry	
Dry Contact	On Voltage Level	Close to GND	
	Off Voltage Level	Open	
Overvoltage Protection		30 V _{DC}	
Digital Output			
Channel	4	3	3
Type		Open Collector	
Sink/Source (NPN/PNP)		Sink	
Load Voltage		+10 V _{DC} ~ 40 V _{DC}	
Max. Load Current		200 mA/channel at 25°C	
Overload Protection		1.4 A	
Power Requirements			
Consumption	0.2 mW Max.	4.5 mW Max.	3.5 mW Max.

Pin Assignments

XW304

Vin5	Vin4	Vin3	Vin2	Vin1	Vin0	AGND	Vout0	D13	D12	D11	D10	GND	DO.PWR	DO3	DO2	DO1	DO0
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(XW304)

XW310

Vin3-	Vin3+	Vin2-	Vin2+	Vin1-	Vin1+	Vin0-	Vin0+	Vout1	Vout0	GND	D12	D11	D10	DO.PWR	DO2	DO1	DO0
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(XW310)

XW310C

S/D	Vin7 / Vin3-	Vin3 / Vin3+	Vin6 / Vin2-	Vin2 / Vin2+	Vin5 / Vin1-	Vin1 / Vin1+	Vin4 / Vin0-	Vin0 / Vin0+	Iout1	Iout0	GND	D12	D11	D10	DO.PWR	DO2	DO1	DO0
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(XW310C)

Serial Port Board						
Models	XW506	XW509	XW507	XW508	XW511i	XW514
Pictures						
Serial Port						
Type	RS-232	RS-232	RS-422/485	RS-232	RS-485	RS-485
Port	6	2	1	8	4	8
Wire	TxD, RxD, GND	TxD, RxD, GND and TxD, RxD, CTS, RTX, GND	TxD+/D+, TxD-/D-, RxD+, RxD-, GND	TxD, RxD, GND	Data+, Data-	
Controller	16C550 compatible		16C950 compatible			
	Speed: 115200 bps Max.					
	Data bit : 7, 8					
	Stop bit : 1, 1.5, 2					
	Parity : None, Even, Odd, Mark, Space					
Intra-module Isolation, Field to Logic	-			2500 V _{rms}		-
Digital Input						
Channel	-	4	5	-		
Contact	-	Wet		-		
Sink/Source (NPN/PNP)	-	Sink/Source		-		
Wet Contact	On Voltage Level	+10 V _{DC} ~ +50 V _{DC}		-		
	Off Voltage Level	+4 V _{DC} Max.		-		
Dry Contact	On Voltage Level	-		-		
	Off Voltage Level	-		-		
Input Impedance	-	10 KΩ		-		
Overvoltage Protection	-	60 V _{DC}		-		
Intra-module Isolation, Field to Logic	-	3750 V _{rms}		-		
Digital Output						
Channel	-	4	5	-		
Type	-	Open Collector		-		
Sink/Source (NPN/PNP)	-	Sink		-		
Load Voltage	-	+10 V _{DC} ~ +40 V _{DC}		-		
Max. Load Current	-	200 mA/channel		-		
Overload Protection	-	1.4 A		-		
Intra-module Isolation, Field to Logic	-	3750 V _{rms}		-		
Power Requirements						
Consumption	0.2 W Max.	0.5 W Max.	0.4 W Max.	0.2 W Max.	0.8 W Max.	0.6 W Max.

Pin Assignments

