

## PR-12 Series Ethernet PLC Datasheet

Simple panels, easier to integrate into your equipment

Built-in Web Server

With embedded configurable sensor

The built-in RS485 interface makes communication more convenient

Support for MQTT protocol, direct data access to the IoT cloud service

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Specific characteristics		
Module	PR-12AC-R-N	PR-12DC-DA-R-N
Input	I1--I8: 8DI(AC)	I1--I4: 4DI/AI (0--10V signal) I5--I8: 4DI/HSI
Output	Q1--Q4 (RELAY 10A 250VAC /5A 30VDC)	
Supply	AC 110~240V	DC 24V
Weight	Approx. 350g	Approx. 300g
Dimensions	Without packing: 95mm*90mm*61mm With packing: 107mm*96mm*73mm	
Expansion	YES (16PCS in max)	

General characteristics	
Products certification	CE
Conformity with the low voltage directive (in accordance with BT 2006/95/EC)	IEC/EN 61131-2
Conformity with the EMC directive (in accordance with 2004/108/EC)	IEC/EN 61000-6-1 (Residential, commercial and light-industrial environments) IEC/EN 61000-6-2 (Industrial) IEC/EN 61000-6-3 (Residential, commercial and light-industrial environments) IEC/EN 61000-6-4 (Industrial)
Protection rating	In accordance with IEC/EN 60529: IP20
Overvoltage category	3 in accordance with IEC/EN 60664-1
Mechanical resistance	Immunity to vibrations IEC/EN 60068-2-6 Immunity to shock IEC/EN 60068-2-27

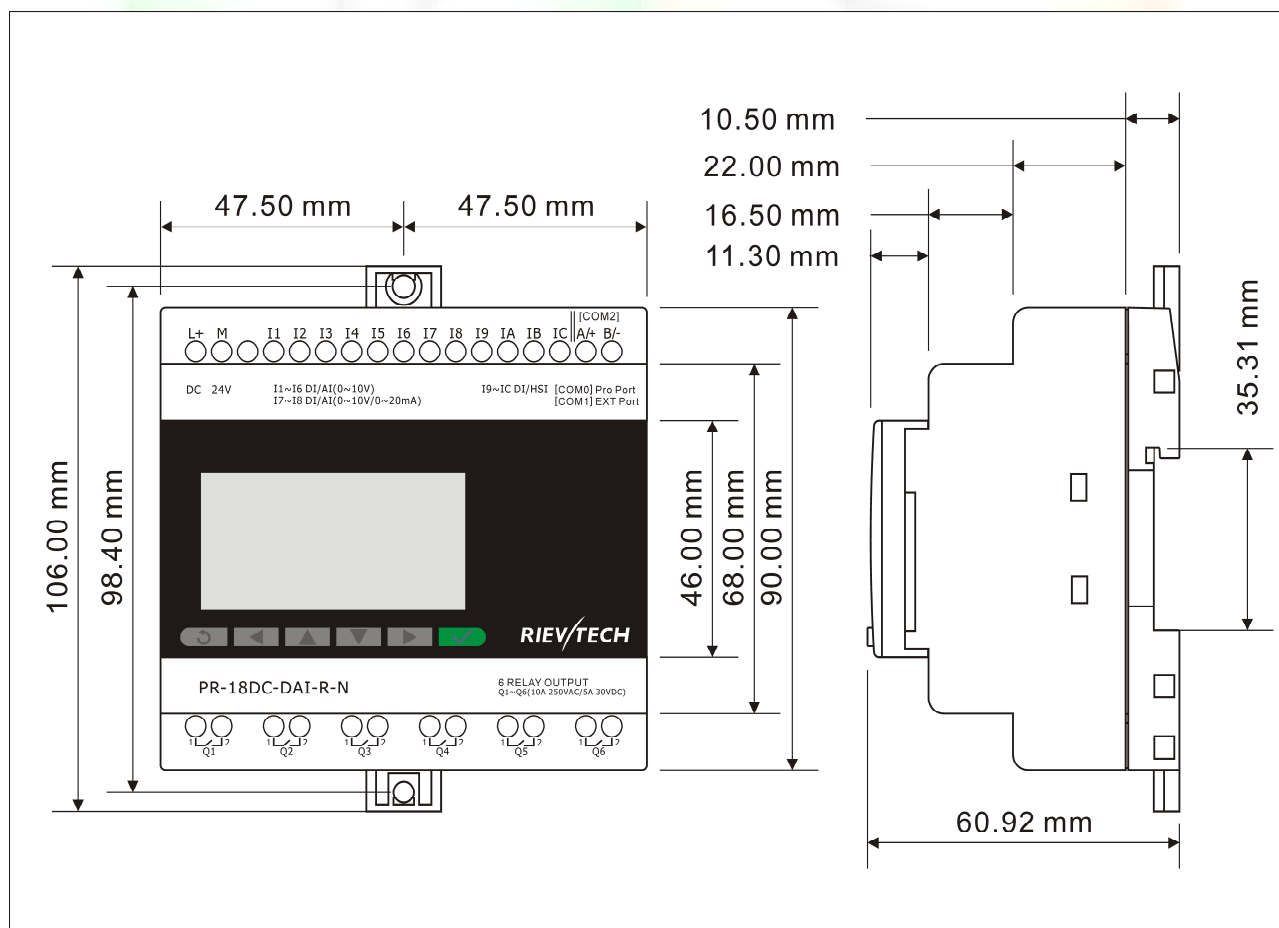
Resistance to electrostatic discharge	IEC/EN 61000-4-2 Severity 3
Resistance to HF interference	Immunity to radiated electrostatic fields IEC/EN 61000-4-3 Immunity to fast transients (burst immunity) IEC/EN 61000-4-4, level 3 Immunity to shock waves IEC/EN 61000-4-5 Severity 3 Radio frequency in common mode IEC/EN 61000-4-6, level 3 Voltage dips and breaks (AC) IEC/EN 61000-4-11 Immunity to damped oscillatory waves IEC/EN 61000-4-12
Conducted and radiated emissions	Class B in accordance with EN 55022
Operating temperature	-25 ~ +55°C in accordance with IEC/EN 60068-2-1 and IEC/EN 60068-2-2
Storage temperature	-40 ~ +70°C in accordance with IEC/EN 60068-2-1 and IEC/EN 60068-2-2
Relative humidity	10 ~ 95 %. (no condensation or dripping water) in accordance with IEC/EN 60068-2-30
Mounting	On 35 mm standard mounting rail, 4 MW, or wall-mounting
Screw terminals connection capacity	Flexible wire with ferrule 1 conductor: 0.25 to 2.5 mm <sup>2</sup> (AWG 24 ~AWG 14)

Processing characteristics		
Module	PR-12AC-R-N	PR-12DC-DA-R-N
Program size function blocks (FBD)	512 function blocks	
Memory size function blocks (FBD)	32K	
LCD display	4 lines of 16 characters and configurable backlighting	
Programming method	Function blocks	
Program memory	Flash EEPROM	
Back-up time in the event of power failure	Program and settings in the controller: 10 years Program and settings in the plug-in memory: 10 years Data memory: 10 years	
Cycle time	FBD: typ. 0.6ms ~ 8.0ms	
Response time	Input acquisition time: + 1 to 2 cycle times	
Clock data retention	25°C typ. 20 days	
Clock Drift	typ. ± 2 s/day	
Timer block accuracy	time base: s(Second) Resolution: +10 ms time base: m(Minute) Resolution: +1 s time base: h(Hour) Resolution: +1 min	
Startup time on power up	Typ. 4s	
Module	PR-12AC-R-N	PR-12DC-DA-R-N














Supply		
Nominal voltage	110 ~ 240 VAC	DC 24V
Operating limits	85 ~ 265 VAC	DC 20.4-28.8V
Supply frequency range	47 ~ 63 Hz	NO
Max. absorbed power	49 mA (85VAC); 37 mA (265VAC)	2.1W (10.8VDC) 2.8 W (28.8VDC)
Isolation voltage	1780VAC	None
Inputs		
Input voltage	110 ~ 240 VAC	DC0-28.8V
Input current	0.08 mA; 85 Vac 0.25mA; 265 VAC;	0.4mA; 10.8VDC 0.5mA; 12.0 VDC 1.2mA; 24 VDC 1.5mA; 28.8 VDC
Resolution Ratio (Analogue Input)	None	0.01V (0~10v)
Accuracy at 25 °C (Analogue Input)	None	±0.02V
Logic 1 voltage threshold	>79 VAC; >0.06mA	> 8 VDC;>0.3mA
Logic 0 voltage threshold	< 40 VAC	< 5 VDC;<0.1mA
Input Response Time	Delay time at 0 to 1: 120VAC : Typ. 50 ms 240VAC: Typ. 30 ms Delay time at 1 to 0: 120VAC : Typ. 90 ms 240VAC: Typ.100 ms	Delay time at 0 to 1: I1--I4: Typ. 2.5 ms I5--I6: Typ. 1.5 ms Delay time at 1 to 0: Typ. 1.5 ms
Maximum counting frequency	Typ.: 4 HZ	Typ.: 4 HZ; HSI: 60kHz(I5--I8)
Sensor type	Contact or 3-wire PNP	
Input type	Resistive	
Outputs		
Rated voltage	AC 250 V / DC 30 V	
Rated current	AC 250 V: 10 A DC 30 V; 5A	
Electrical durability Expectancy	10 <sup>5</sup> Operations at Rated Resistive Load	
Mechanical life	10 <sup>7</sup> Operations at No Load condition	
Response time	Operate Time: 15 mS Max. Release Time: 10 mS Max.	
Frequency (Hz)	resistive load: 2 Hz inductive load: 0.5 Hz	
Communication ports parameters:		
COM0_TTL port	COM0: optional RS232/RS485 (via accessories: RS232 CABLE/PRO-RS485) Band Rate: 4800; 9600; 19200; 38400; 57600; 115200 Communication Protocol: MODBUS RTU; MODBUS ASCII	
Ext RS485	COM1: optional RS485 (Via PR-RS485 expansion module) Band Rate: 4800; 9600; 19200	

	Communication Protocol: MODBUS RTU; MODBUS ASCII
Built-in RS485	COM2: Built-in RS485 Band Rate: <b>4800; 9600; 19200; 38400; 57600; 115200</b> Communication Protocol: MODBUS RTU; MODBUS ASCII
Ethernet port:	Built-In(10M/100M), 1.Can be used as program or communication 2.Can be used as Modbus master or slave <b>Communication Protocol: MODBUS TCP RTU ; MODBUS RTU</b>
Monitoring webserver page	Yes
xLogic<--->xLogic (by Ethernet)	1 xLogic works as TCP server can connect with a maximum of 8 different TCP clients
xLogic<--->Ethernet/Internet:	1 xLogic works as TCP client and can connect with a maximum of 8 different TCP servers

















## Dimension




















## Program(xLogicsoft) Specification

System	Operating System		
	Requirements	Windows /2000/XP/Win7/Win8	
	Programming Languages	Function Block	
	Program Memory	32K	
	Execution Speed	<0.1ms Per Function	
	LCD Display	No	
	Functions	Up To 512 Function Blocks	
Constant	Input	8	
	Cursor Key	4	
	Shift Register Bit	32	
	Status 0	512	
	Status 1	512	
	Output	4	
	Open Connector	1024	
	Flag	256	
	Panel Key	6	
	Analogue Input	8(DC Type)	
	Analogue Output	None	
	Analogue Flag	256	















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MQTT	VB	512	Byte	
	VD	512	WORD	
	VW	512	DWORD	
	String to Integer	512		
	String Comparator	512		
	Publish with MQTT	72		
	Subscribe with MQTT	72		
Basic	AND	512		
	AND(Edge)	512		
	NAND	512		
	NAND(Edge)	512		
	OR	512		
	NOR	512		
	XOR	512		
	NOT	512		
	Boolean Function	512		

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Timer	On-Delay	512	10ms--99 h59m	DWORD	Retentivity Protection	
	Off-Delay	512	10ms--99 h59m	DWORD	Retentivity Protection	
	On-/Off-Delay	512	10ms--99 h59m	DWORD	Retentivity Protection	
	Retentive On-Delay	512	10ms--99 h59m	DWORD	Retentivity Protection	
	Wiping Relay (Pulse Output)	512	10ms--99 h59m	DWORD	Retentivity Protection	
	Edge Triggered Wiping Relay	512	10ms--99 h59m	DWORD	Retentivity Protection	
	Asynchronous Pulse Generator	512	10ms--99 h59m	DWORD	Retentivity Protection	
	Random Generator	512	10ms--99 h59m	DWORD	Protection	
	Stairway Light Switch	512	10ms--99 h59m	DWORD	Retentivity Protection	
	Multiple Function Switch	512	10ms--99 h59m	DWORD	Retentivity Protection	
	Weekly Timer	512	0:00--23:59	-----	Protection	
	Yearly Timer	512	2000.1.1--2099.1.1	-----	Protection	
	Astronomical Clock	512	-----	-----	Protection	
	Stopwatch	512	-----	DWORD	Retentivity Protection	
Counter	Up/Down Counter	512	0--9999 9999	DWORD	Protection	
	Hours Counter	10	0h--9999h	DWORD	Protection	
	Threshold Trigger	512	0--99999	DWORD	Protection	

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Analogue	Analogue Comparator	512	-10000--20000	-----	Protection	
	Analogue Threshold Trigger	512	-10000--20000	DWORD	Protection	
	Analogue Amplifier	512	-10000--20000	DWORD	Protection	
	Analogue Watchdog	512	-10000--20000	DWORD	Retentivity Protection	
	Analogue Differential Trigger	512	-10000--20000	DWORD	Protection	
	Analogue MUX	512	-32768---32767	DWORD	Protection	
	PI Controller	512	-10000--20000	-----	Protection	
	Analogue Ramp	512	-10000--20000	-----	Protection	
	Analogue Math	512	-32768---32767	DWORD	Protection	
	Long Data Math	512	-2147483648---2147483647	DWORD	Protection	
	Analogue Math Error Detection	512	0--1	DWORD	Retentivity	
	Analogue Filter	4	-----	DWORD	Protection	
	Max/Min	512	-32768---32767	DWORD	Retentivity Protection	
	Average Value	512	1--365	DWORD	Retentivity Protection	

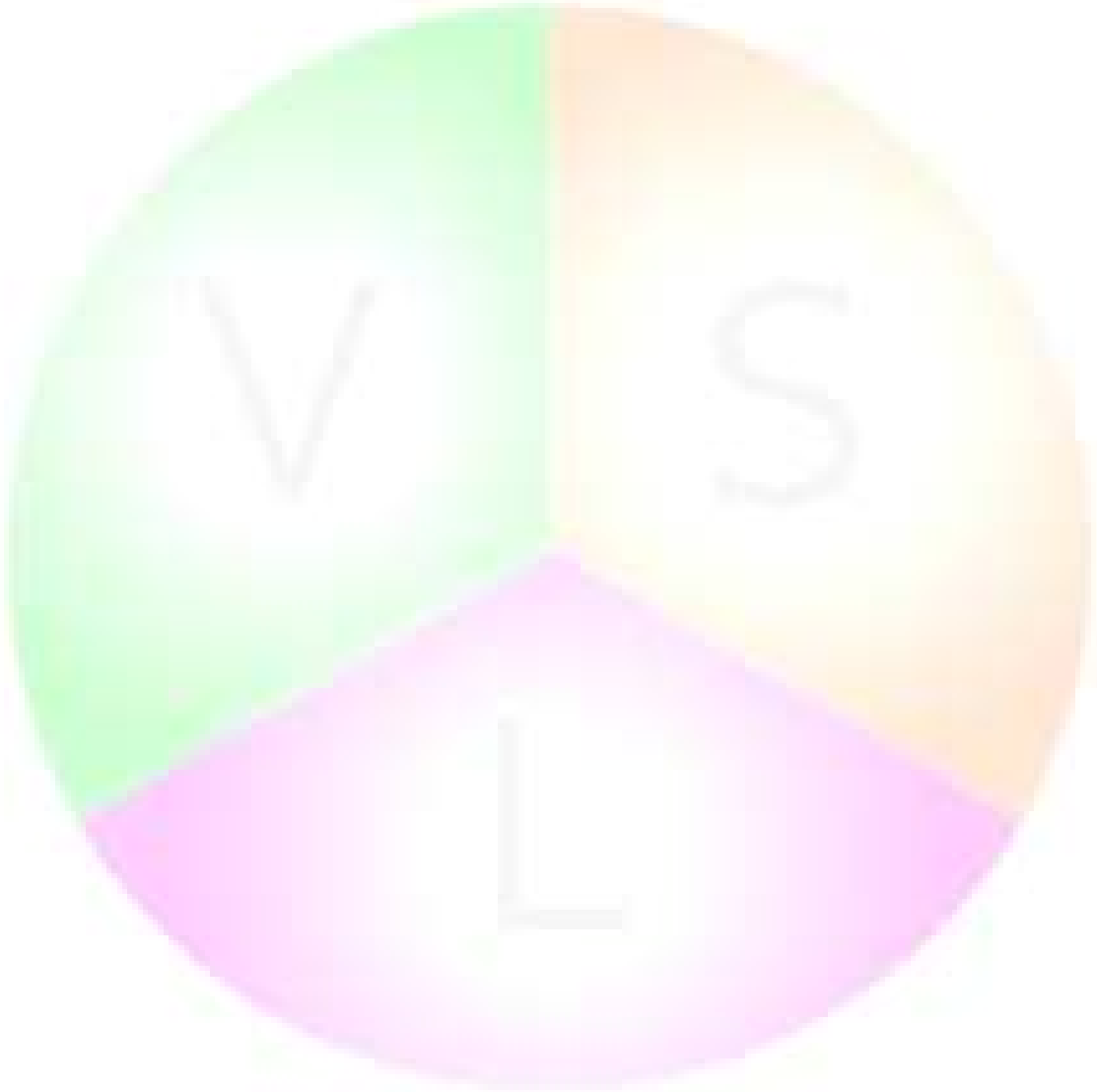
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Miscellaneous	Latching Relay	512	-----	Bit	Retentivity Protection	
	Pulse Relay	512	-----	Bit	Retentivity	
	Message Texts	64	-----	Bit	-----	
	Soft key	512	-----	Bit	Retentivity Protection	
	Shift Register	4	-----	Bit	Retentivity	
	PWM	512	0--10KHz	-----	Retentivity	
	Modbus Read	512	-----	-----	-----	
	Modbus Write	512	-----	-----	-----	
	Modbus Read Write	512	-----	-----	-----	
	Data Latching Relay	512	-32768---32767	DWORD	Retentivity Protection	
	Long Data Latching Relay	512	-32768---32767	DWORD	Retentivity Protection	
	Memory Write	512	-2147483648---2147483647	DWORD	Retentivity Protection	
	Memory Read	512	-----	-----	-----	
	Word to Bit	512	-----	Bit	Retentivity Protection	
	Bit to Word	512	-32768---32767	DWORD	Retentivity Protection	
	Device Reset	512	-----	Bit	Retentivity	
	Comport status	512	-----	-----	-----	
	RH MATH	512	0--32767	DWORD	Retentivity	
	Sound Play	None	-----	-----	-----	
	Email Send Error Detection	None	-----	-----	-----	
Wi-Fi Mode Set	None	-----	-----	-----		

APP	Cam Control	328	-----	-----	Retentivity Protection	
	Angular Cam Timer	512	-----	-----	-----	
	Pumps Management	512	-----	-----	Retentivity	
	Defrost	512	-----	-----	-----	
	Comparison of 2 values	512	-----	-----	-----	
	Multicompare	512	-----	-----	-----	
	Compare in Zone	512	-----	-----	-----	
	Conversion Word bits	512	-----	-----	-----	
	Conversion bits word	512	-----	-----	-----	
	Demultiplexer	512	-----	-----	Retentivity	
	Multiplexing	512	-----	-----	-----	
	Multiplexer	512	-----	-----	Retentivity	
	Square root	512	-----	-----	-----	
	Sin/Cos	512	-----	-----	-----	
	Absolute Humidity	512	-----	-----	Protection	
	Analogue Table	Non e	-----	-----	-----	

1. 40 FBD Retentivity can be used
2. AF1~AF64 can have a start value set and default retentivity function.



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