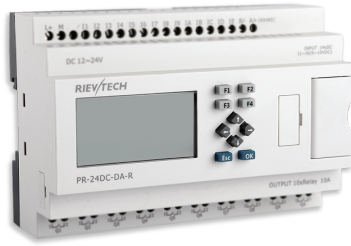


24
I/O
Expandable



PR-24

Model: PR-24AC-R **AC**

Model: PR-24DC-DA-R **DC**

Model: PR-24DC-DAI-RTA **DC**

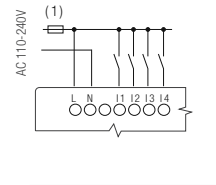
Specifications

Item	PR-24AC-R	PR-24DC-DA-R	PR-24DC-DAI-RTA
Nominal voltage	AC 110V-240V	DC 12-24V	
Operating limits	AC 85 - 265V	DC 10.8-28.8V	
The main frequency range	47-63Hz	-	
Immunity from micro power	-	Typ 5 ms	
Max startup current	-	Max 0.25A	
Isolation voltage	1780V AC	-	
Max absorbed power	49 mA (85V AC) 37 mA (265V AC)	3.5 W (10.8V DC) 4W (28.8V DC)	
Protection against polarity inversions	Yes		
Input No	14 (I1-IE)		
Digital input	14 (I1-IE)		12 (I1-I4)(I7-IE)
Analogue input	-	6 (I1-I6) (0..10V DC)	4 (I1-I4) (0..10V DC) 2 (I5-I6) (0..20mA)
Input voltage	AC 110-240V	DC 0-28.8V	
Input signal 0	AC 0-40V <0.03mA	(I1-I4) <0.1mA / (I7-IE) <1mA @ < 5V DC	
Input signal 1	AC 79-240V >0.06mA	(I1-I4) >0.3mA / (I7-IE) >1.7mA @ > 8V DC	
Input current	-	(I1-I4) 0.4mA / (I7-IE) 2.3mA @ 10.8V DC (I1-I4) 0.5mA / (I7-IE) 2.6mA @ 12.0 V DC (I1-I4) 1.2mA / (I7-IE) 5.2mA @ 24 V DC (I1-I4) 1.5mA / (I7-IE) 6.3mA @ 28.8 V DC	
Response time	0 to 1: 120V AC : Typ. 50 ms 240V AC : Typ. 30 ms 1 to 0: 120V AC : Typ. 90 ms 240V AC : Typ. 100 ms	(I1-I6): 0 to 1: Typ. 1.5 ms 1 to 0: Typ. 1.5 ms (I7-IE): 0 to 1: Typ. <1 ms 1 to 0: Typ. <1 ms	
Maximum counting frequency	Typ: 4 Hz	I1-I4, I7-I8, I0-IE: 4 Hz I9-IC: 60 kHz	
Sensor type	Contact or 3-wire PNP		
Input type	-	Resistive	
Isolation between power supply and inputs	-		
Isolation between inputs	-		
Protection against polarity inversions	Yes	-	
Measurement range	-	DC 0-10V	
Input impedance	-	Min 24KΩ Max 72KΩ	
Input voltage	-	28.8 V DC max	
Resolution	-	10bit 0.01V	
Accuracy at 25 °C	-	± (Max 0.02)V	
Accuracy at 55 °C	-	± (Max 0.04)V	
Isolation between analog inputs and power supply	-		
Cable length	-	10 m max shielded & twisted	
Current input No	-	2 (I5-I6)	
Analogue signal	-	0/4...20mA current	
Resolution	-	0.02mA	
Accuracy at 25 °C	-	0.05mA	
Cycle time for analog value generation	-	Typ. 50 ms	

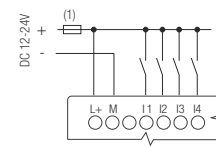
Item	PR-24
Memory	1024 Functional Blocks / 13K Steps
Data Retentivity	10 years
Program Backup	10 years
RTC	Backup at 25 °C: 20 days, RTC accuracy : MAX ±2S/day
Cycle time	0.6ms - 8.0ms
Expansion	16 modules (PR-E-16)
Communication	1 RS232 port & 2 RS485 port (1 Built-in) Modbus RTU/ASCII Master or Slave
Certificate	
Operation Temp	-20 °C .. +55 °C
Storage Temp	-40 °C .. +70 °C
Protection	IP20
Dimensions	133*90*55 (Unit, mm) 10DIN
Installation	35mm-DIN rail or screw for installation
Weight	Approx. 500g

Circuit diagrams

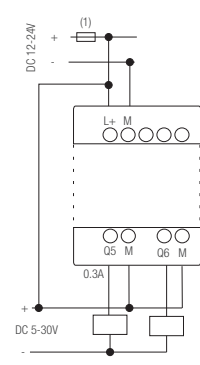
[Digital Input - Power AC]



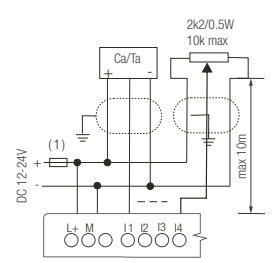
[Digital Input - Power DC]



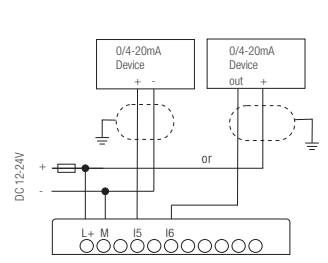
[Transistor Outputs PNP]



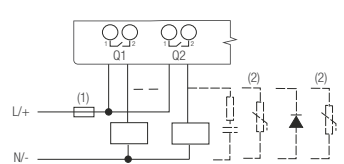
[DC analog inputs 0-10V - Power DC]



[DC analog inputs 0-20mA - Power DC]



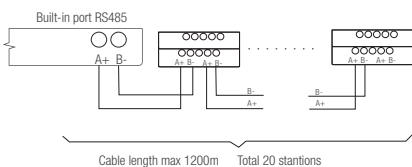
[Relay Outputs]



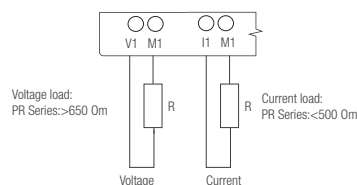
(1) - Fuse, circuit-breaker or circuit protector
(2) - Inductive load;

Circuit diagrams

[RS485 Connection]



[DC Analog Outputs - 0-10V / 0-20mA]



Specifications

Item	PR-24AC-R	PR-24DC-DA-R	PR-24DC-DAI-RTA	
			Relay	Transistor
Output No	10 (Q1-QA)		9 (Q1-Q8, AQ9)	
Output type	Relay output		6 (Q1-Q6) Relay output 2 (Q7-Q8) Transistor PNP output 1 (AQ9) Analog output (0-10/0-20mA)	
Continuous current	Resistive load 10A/Inductive load 2A		Max. 0.3 A per channel	
Max breaking voltage	AC 250 V DC 110 V		DC 5-30V	
Max breaking current	10A		0.65A	
Voltage drop	-		< 2 V for I = 0.3 A (at state 1)	
Galvanic isolation	Yes		-	
Max allowable power force	1250VA 300W		-	
Electrical durability expectancy	105 Operations at Rated Resistive Load		-	
Mechanical life	107 Operations at No Load condition		-	
Built-in protections	Against short-circuits: None Against overvoltages and overloads: None			
Response time	Operate Time : 15 ms max Release Time : 10 ms max		Make ≤ 1 ms Release ≤ 1 ms	
Mechanism	10Hz		-	
Resistor/light load	2Hz		10Hz	
Sensitive load	0.5Hz			
PWM frequency	-		10kHz Q7, Q8 must have same frequency when PWM works	
PWM accuracy at 120Hz	-		< 0.5 % (20 % - 80 %) load at 10 mA	
PWM accuracy at 500Hz	-		< 0.5% (20 % - 80 %) load at 10 mA	
Max. Breaking current PWM	-		50mA	
Max. cable length PWM	-		20m	
PWM cyclic ratio	-		0 to 100 %	
Output signal	-		DC 0...10V	
Internal value and signal relationship	-		AQ9 (0..1000) = V1(0...10V)	
Resolution	-		0.01V	
Accuracy at 25 °C	-		0.02V	
Output signal	-		0..20mA	
Internal value and signal relationship	-		AQ9 (0..1000) = I1(0...20mA)	
Resolution	-		0.02mA	
Accuracy at 25 °C	-		0.05mA	

