

RIC

PROGRAMMABLE INTELLIGENT CONTROLLER



Section F

RIC intelligent controller is a new type of programmable controller. It is programmed by the use of a Function Block Diagram. The programming of RIC is easier to learn than the programming of a conventional PLC, that uses ladder diagrams and associated instructions. The design concept, for the RIC series of products, includes a removable LCD panel. The program can be written directly into the RIC using this LCD panel. After programming the LCD panel can be retained or removed and replaced with a cover. The cost to the user can be reduced by multiple use of the LCD panel. The use of a computer is recommended for more complex control schemes.

Products within the RIC series are very compact and light in weight. RIC intelligent controllers can be used for both local and remote control, communication, networking and monitoring. RIC series can realize telephone-control, voice alarm and information, automatic dialing using the associated RIC-MUL unit. RIC is widely used in many fields of industries, commerce, mining, home automation etc.

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ORDERING CODE

TYPE	6 INPUT	RELAY OUTPUT	POWER SUPPLY
RIC	10	MR	A

SEE PAGE 110 FOR ORDERING OPTIONS

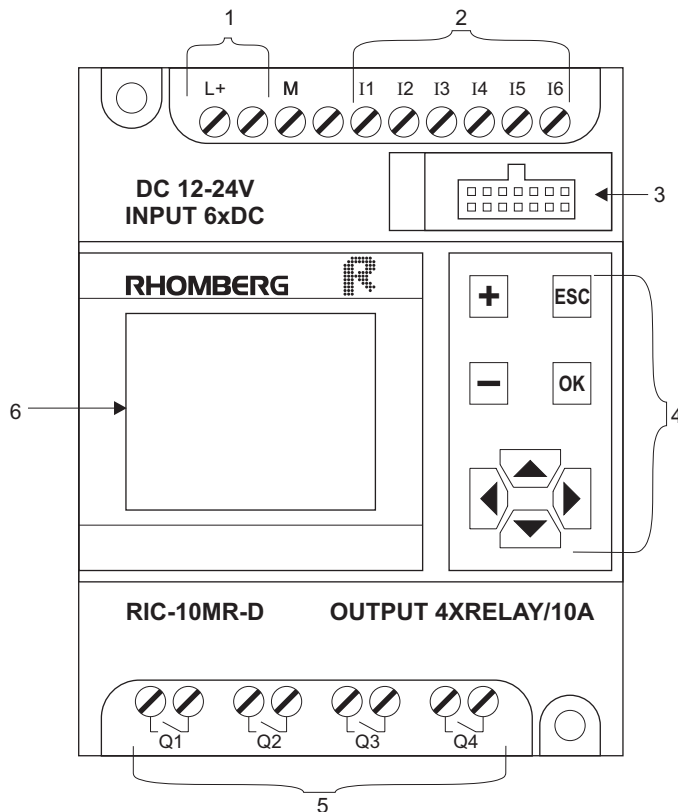
Applications and Benefits

- Programmable directly from front panel
- Programmable from computer
- Computer programming by "Drag & Drop" icons
- Real time clocks
- Analogue or Digital inputs
- Relay outputs Max 10 Amp resistive, 2Amp inductive
- Compact housing 90 x 71 x 58mm
- Communication via Telephone line, Modem, Cellular Phone.
- Networking and Monitoring functions.
- Voice recongition
- 127 programming blocks
- 64k program memory
- LCD display (4 lines)
- 127 x Counters, and timers

Features

- Automatic door control
- Lighting Automation
- Irrigation control
- Intelligent residential control
- Industrial Automation
- Factory / School bell automation control
- Machinery automation
- Anti-Burglar security system

Description of Controls



1: Terminal for AC or DC power as required by the selected RIC.

2: Input terminal.

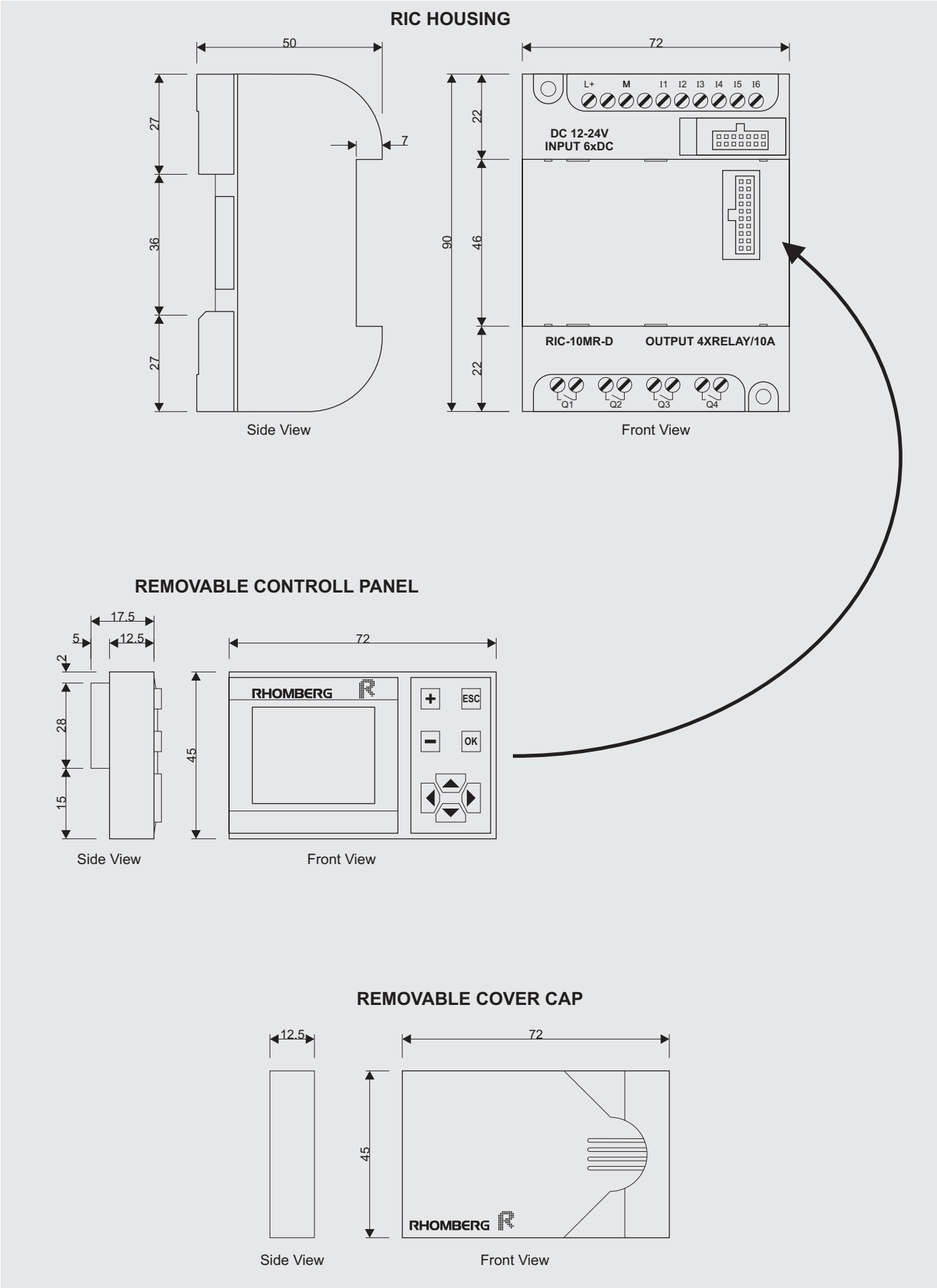
3: Communication interface.

4: Operating keys.

5: Output terminal (Relay or transistor).

6: LCD display panel.

■ Dimensional Diagrams



Specification and Models

MODELS			
Type No.	Power	Input	Output
RIC-10MR-A	AC 100-240V	6 point AC digital input.	4 point relay output
RIC-10MR-E	AC/DC 12-24V	6 point AC/DC digital input.	4 point relay output
RIC-10MT-E	DC 12-24V	6 point AC/DC digital input.	4 point relay output
RIC-10MR-D	DC 12-24V	6 point DC analog input.	4 point relay output
RIC-10MT-D	DC 12-24V	12 point DC analog input.	4 point transistor output
RIC-20MR-A	AC 100-240V	12 point AC/DC digital input.	8 point relay output
RIC-20MR-E	AC/DC 12-24V	12 point AC/DC digital input.	8 point relay output
RIC-20MT-E	DC 12/24V	12 point AC/DC digital input.	8 point transistor output
RIC-20MR-D	DC 12-24V	12 point DC analog input.	8 point transistor output
RIC-20MT-D	AC/DC 12-24V	12 point DC analog input.	8 point transistor output

ACCESSORIES	
RIC-LCD	RIC removable LCD panel.
RIC-C232	Interface between RIC-M232 and RIC
RIC-C485	Interface between RIC and RS485 bus.
RIC-P485	Interface between computer and RS485 bus.
RIC-M232	Adapter between MODEM and RIC-MUL or RIC-C232.
RIC-MUL-D	Voice alarm, telephone control and dial automation.
RIC-QUICK II	RIC programming software.
RIC-Scada	SCADA software.

Technical Specifications

RIC-10MR-D RIC-20MR-D (DC)			
Power Supply		Power Supply	
Input Voltage Rating Allowable Range	24V DC 20.4 ~ 28.8V DC	Group Continuous Current Ith	1 Max. 10A
Power Consumption of RIC-10MR-D/ RIC-20MR-D at 24V DC	Typical 1.5W	Incandescent Lamp Load (25.00 switch cycles)	1000W
Data Capacity Input		Fluorescent Light Tube with Electrical Controller (25.000 Switch Cycles)	10 x 58W
Input Voltage (24V DC) Rating Signal 0 Signal 1	24V DC 24V DC <5.0V DC >15.0V DC	Fluorescent Light Tube with Regular Compensation (25.000 Switch Cycles)	10 x 58W
Input Current for Signal 1	Typical 3mA	Fluorescent Light Tube without Compensation (25.000 Switch Cycles)	10 x 58W
Delay Time Changed from 1 to 0 Changed for 0 to 1	Typical 50ms Typical 50ms	Short Circuit Protection cos 1	Power Supply Protection B16, 600A
Length of Power Line (without shield)	100m	Short Circuit Protection cos 0.5 ~ 0.7	Power Supply Protection B16, 900A
Data Capacity Output	Digital Value Output	Parallel Connected Output for Increased Power	Not Allowed
Output Type	Relay Output	Output Relay Protection	Max. 20A, Feature B16
Electrical Isolation	Yes	Switch Frequency	
		Machanical	10Hz
		Resistor Load / Lamp Load	2Hz
		Induced Load	0.5Hz

Technical Specifications Continue

GENERAL SPECIFICATIONS		
Item	Basis	Condition
Climate Environment		
Ambient Temperature	Cold: IEC68-2-1 Hot: IEC68-2-2	
Relative Humidity	IEC68-2-30	5% ~ 95%, without condensation
Atmospheric Pressure		795 ~ 1080kpa
Pollutants	IEC68-2-42 IEC68-2-43	H2S1cm3/m3, 4 days SO210cm3/m3, 4 days
Mechanical Environment		
Protection Type		IP20
Vibration 2	IEC68-2	10 ~ 57Hz (Constant amplitude 0.15mm) 57 ~ 150Hz (Constant amplitude 2g)
Impact	IEC68-2-27	18 impacts (semi sine 15g/11ms)
Fall	IEC68-2-31	Falling height 50mm
Freely Falling Body (with package)	IEC68-2-32	1m
Electromagnetic Compatibility (EMC)		
Static Discharge	Severe Grade 3	8kv air discharge 6kv contact discharge
Electromagnetic Field	IEC801-3	Field strength 10V/m
Interference Suppression	EN55011	Limitation grade B, group 1
Shock Pulse	IEC801-4, severe grade 3	2.2kV for power line 2.2kV for signal line
IEC/VDE Safety Information		
Insulation Intensity	IEC1131	Meeting the requirement

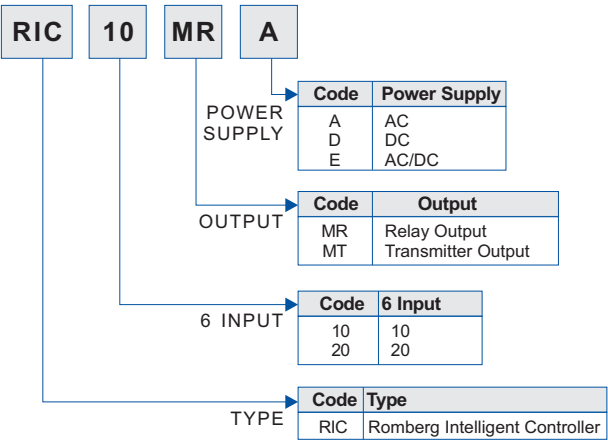
RIC-10MT-D RIC-20MT-D (DC)	
Power Supply	
Input Voltage Rating Allowable Range	24V DC 20.4 ~ 28.8V DC
24V DC Power Consumption (Output Full Load)	Typical 1.23A
Digital Value Input	Typical 0.6W
Data Capacity Input	
Input Voltage (24V DC) Rating Signal 0 Signal 1	24V DC 24V DC <5.0V DC >15.0V DC
Input Current for Signal 1	Typical 3mA
Delay Time Changed from 1 to 0 Changed for 0 to 1	Typical 50ms Typical 50ms
Length of Power Line (without shield)	100m
Data Capacity	
Output Type	Crystal Tube Current Source
Output Voltage	<=80V DC
Output Current	Max. 0.3A
Short Circuit Protection & Overload Protection	Yes
Short Circuit Current Limit	Approximately 1A
Rating Reduction	Rating in Not Reduced in the Whole Temperature Ranges

RIC-10MR-A RIC-20MR-A (AC)			
Power Supply		Power Supply	
Allowable range of 8 input voltage rating VDE0631: EC1131: Allowable main frequency	110.240V AC 85V ~ 250V AC 85V ~ 256V AC 47 ~ 63Hz	Group Continuous Current Ith	1 Max. 10A
250° Clock Buffer Memory	100hours	Incandescent Lamp Load (25.00 switch cycles)	1000W (230/240V AC) 500W (115/120V AC)
Real Time Clock Accuracy	Typical ± 1s/ day	Fluorescent Light Tube with Electrical Controller (25.000 Switch Cycles)	10 x 58W (230/240V AC)
Power Consumption	RIC-10MR-A (3W) RIC-20MR-A (5W)	Fluorescent Light Tube with Regular Compensation (25.000 Switch Cycles)	10 x 58W (230/240V AC)
Data Capacity Input		Fluorescent Light Tube without Compensation (25.000 Switch Cycles)	10 x 58W (230/240V AC)
Input Voltage L1 Signal 0 Signal 1	0V ~ 40V AC 80V ~ 250V AC	Short Circuit Protection cos 1	Power Supply Protection B16, 600A
Input Current Signal 1	Typical 0.24mA at 230V AC	Short Circuit Protection cos 0.5 ~ 0.7	Power Supply Protection B16, 900A
Delay Time Changed from 1 to 0 Changed from 0 to 1	Typical 50ms Typical 50ms	Output Relay Protection	Max. 20A, Feature B16
Length of Power Line (without shield)	100m	Switch Frequency	
Data Capacity Output	Yes	Machanical	10Hz
Output Type	Relay Output	Resistor Load / Lamp Load	2Hz
Electrical Isolation	Yes	Induced Load	0.5Hz

HOW TO ORDER

RHOMBERG INTELLIGENT CONTROLLER

RIC Ordering Code



RIC Accessories Ordering Code

- | | | | |
|-----|----------|---|-----------------------|
| RIC | LCD | RIC removable LCD panel. | |
| RIC | C232 | Interface between RIC-M232 and RIC. | |
| RIC | C485 | Interface between RIC and RS485 bus. | |
| RIC | P485 | Interface between computer and RS485 bus. | |
| RIC | M232 | Adapter between MODEM and RIC-MUL or RIC-C232. | |
| RIC | MUL | Voice alarm, telephone control and dial automation. | |
| RIC | MUL | D | DC type voice module. |
| RIC | QUICK II | RIC programming software. | |
| RIC | SCADA | SCADA software. | |