

## ◆ Technical Data:

**Model:EXM-12DC-DA-R-4G**

### GENERAL SPECIFICATIONS

Timers : 512

Counters : 512

SMS Message input: 32

SMS Message output: 64

SMS Message input output: 12

Function Blocks: 512

Operation temp.: -20°C-55°C

Storage:-40°C-70°C

Protection: IP20(Non-waterproof)

RTC accuracy : MAX ±2S/day

RTC Backup at 25 °C: 20 days

Program and settings Backup :10 years

Data Power-off retentivity: 10 years

Modify parameters via keypad LCD: yes

Dimensions: 95\*90\*67 (Unit: mm)

Certificate: CE

Installation: 35-DIN rail or screw for installation

Expansion capacity: 8 modules (EXM-E-8)

Password protection : 4-digit number password protection or disable program upload function

Communication interface : 1 RS232 port /TTL. The extension port can be worked as RS485 port,  
if no IO extension used with CPU.

Communication protocol : Modbus RTU/ASCII, Modbus TCP(GPRS)



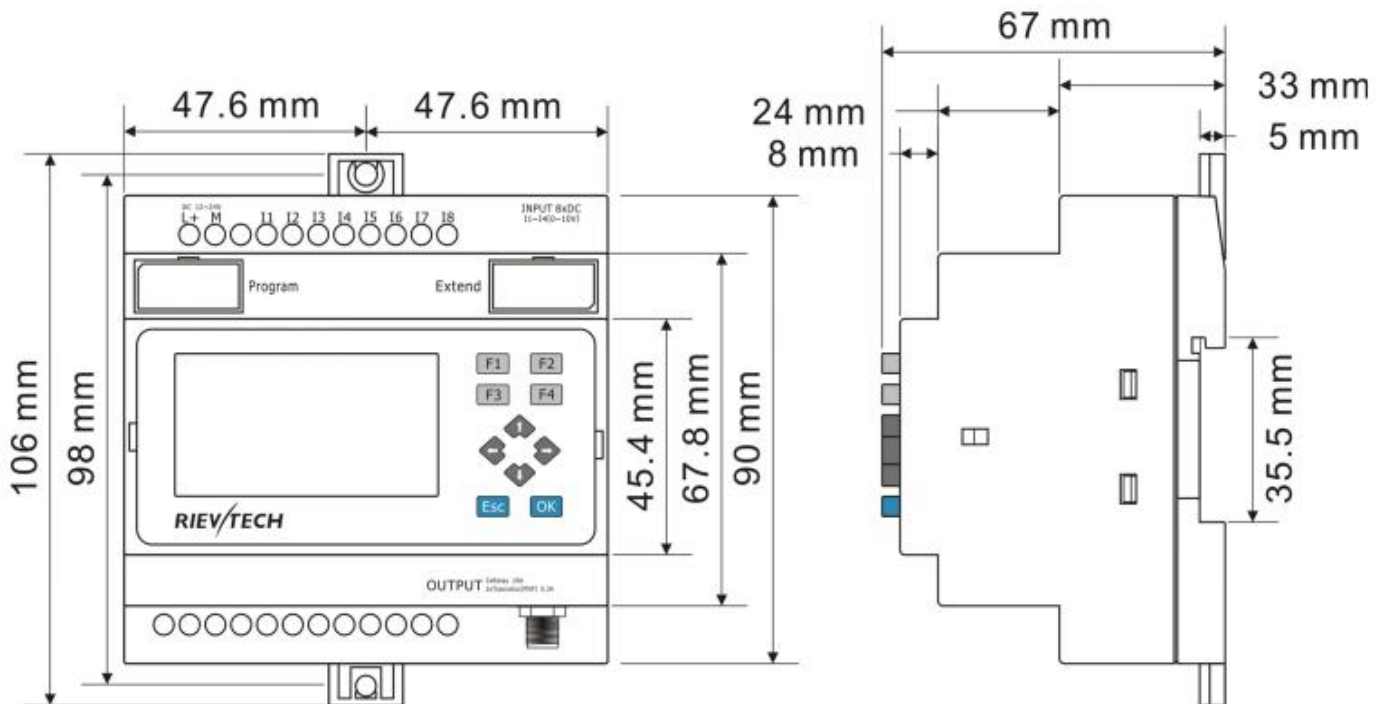
### Technical Index

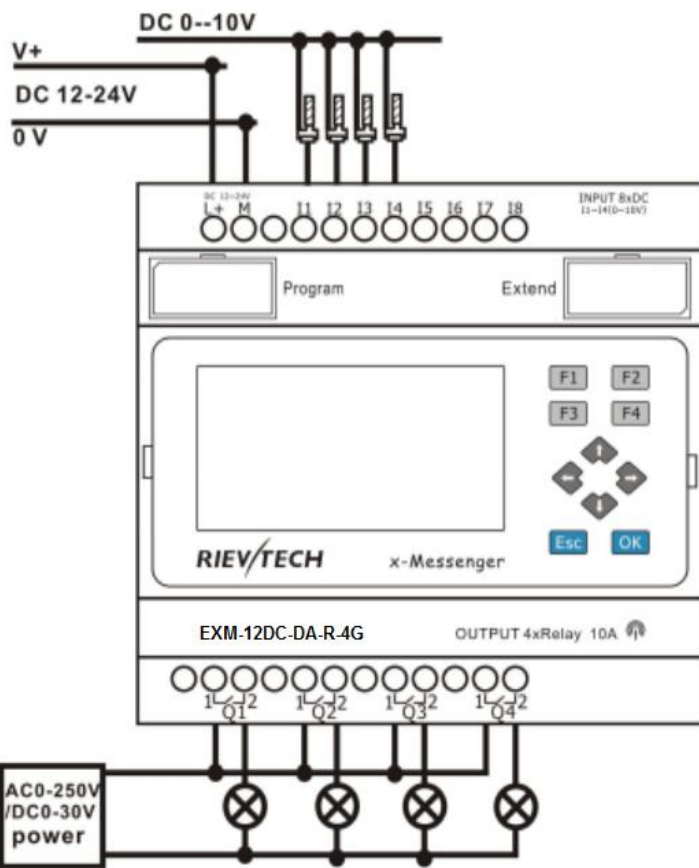
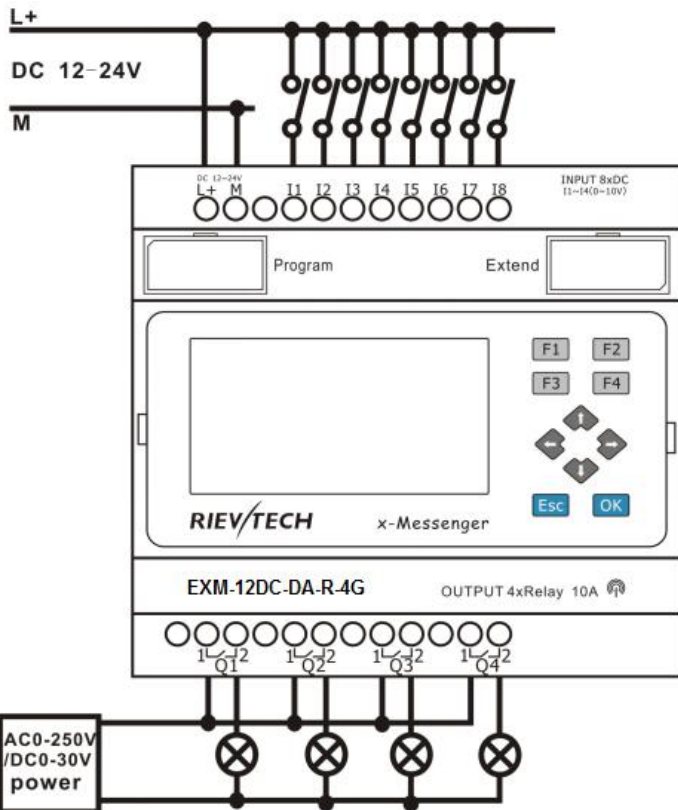
Power supply:	
Nominal voltage	DC 12-24V
Operating limits	DC 10.8-28.8V
Immunity from micro power cuts	Typ.5 ms
Max. Startup current	Max. 0.5A
Max. absorbed power	Normal: 3.3 W (10.8V dc) ; 3.7 W (28.8V dc) Transient Current: 1A (DC12V)
Protection against polarity inversions	Yes
Input parameters:	
Input No	8 ( I1-I8 )
Digital input	8 ( I1-I8 )
Analogue input	4 ( I1-I4)(0..10V DC)
Digital inputs( I5-I8 )	
Input voltage	DC0-28.8V
Input signal0	< 5V DC; <1mA
Input signal1	> 8 V DC;>1.7mA
Input current	2.3mA @ 10.8V dc

	2.6mA @ 12.0 V dc 5.2 mA @ 24 V dc 6.3 mA @ 28.8 V dc
Response time	0 to 1 : <1 ms ; 1 to 0 : <1 ms
Maximum counting frequency	60k Hz(I7--I8)
Sensor type	Contact or 3-wire PNP
Input type	Resistive
Isolation between power supply and inputs	None
Isolation between inputs	None
<b>Inputs used as digital inputs( I1-I4 )</b>	
Input voltage	DC0-28.8V
Input signal0	< 5V DC;<0.1mA
Input signal1	> 8 V DC;>0.3mA
Input current	0.4mA @ 10.8V dc 0.5mA @ 12.0 V dc 1.2mA @ 24 V dc 1.5mA @ 28.8 V dc
Response time	0 to 1 : Typ. 1.5 ms ; 1 to 0 : Typ. 1.5 ms
Maximum counting frequency	Typ.: 4 HZ
Sensor type	Contact or 3-wire PNP
Input type	Resistive
Isolation between power supply and inputs	None
Isolation between inputs	None
<b>Inputs used as analog inputs( I1-I4 )</b>	
Measurement range	DC 0---10V
Input impedance	Min, 24K $\Omega$ ; Max. 72K $\Omega$
Input voltage	28.8 V DC max
Resolution	10bit ,0.01V
Isolation between analog channel and power supply	None
Cable length	10 m max. shielded and twisted
<b>Output parameters:</b>	
Output No.	4 (Q1-Q4)
Output type	4Relay output
Continuous current	Resistive load 10A/Inductive load 2A
Max. breaking voltage	AC 250 V DC 30 V
Max. Allowable Power Force	1250VA 300W
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 mSec. Max. Release Time : 10 mSec. Max.
Built-in protections	Against overloads and short-circuits: No Against overvoltages (*): No
Galvanic isolation	None
<b>Switch frequency:</b>	
Mechanism	10Hz
Resistor/light load	2Hz
Sensitive load	0.5Hz

<b>GSM parameter</b>	
Type of mobile wireless service	SMS, GPRS
Operating frequency	for LTE transmission: B1/B3/B5/B7/B8/B20 with UMTS transmission: B1/B5/B8 for GSM transmission: 850MHz, 900MHz, 1800MHz, 1900MHz,
Type of mobile network / is supported	GSM, UMTS, LTE
for GPRS transmission / with downlink / maximum	80 kbit/s
for GPRS transmission / with uplink / maximum	40 kbit/s
<b>Other parameters:</b>	
Ethernet interface	No
Voice alarming	No
Weight	Approx. 500g

### Installation Dimensions & Wiring Diagram





SYSTEM				FUNCTION BLOCKS	
Operating System requirements		Windows /2000/XP/WIN7/WIN8			
Programming languages		Function block			
Program Memory		512			
Execution Speed		<0.1ms per function			
LCD Display		4 lines x 16 characters			
Functions		Up to 70 function blocks			
BASIC					
Timers				<ul style="list-style-type: none"> <li>a. On-delay;</li> <li>b. Off-delay etc.</li> </ul> Up to 12 kind Timers	
Maximum Number	512				
Timing Ranges	10ms--99 h59m				
Counters				<ul style="list-style-type: none"> <li>a. Up/down Counter</li> <li>b. Hours Counter</li> <li>c. Frequency Threshold Trigger</li> </ul>	
Maximum Number	512				
Highest Count	99999999				
Resolution	1				
RTC				<ul style="list-style-type: none"> <li>a. Weekly Timer</li> <li>b. Yearly Timer</li> </ul>	
Number available	512				
Resolution	1 min				
Time span available	Week/year-month-day-hour-min				
Flags				<ul style="list-style-type: none"> <li>a. Digital Flag</li> <li>b. Analog Flag</li> </ul>	
Digital flags	128				
Analog flags	256				
PI Functions				<ul style="list-style-type: none"> <li>a. PI Controller</li> </ul>	
Number available	30				
Parameter Ranges	1-32767				
Analog Math				<ul style="list-style-type: none"> <li>a. Analog Math</li> <li>b. Analog Math Error detection</li> </ul>	
Number available	512				
Function	ADD, Subtract, Multiply, Divide				
Analog Ramp Function				<ul style="list-style-type: none"> <li>a. Analog Ramp</li> </ul>	
Number available	55				
Compare Function				<ul style="list-style-type: none"> <li>a. Analog compactor</li> <li>b. Comparison of 2 values</li> </ul>	
Number available	512				
Special Functions					
HMI Screens				<ul style="list-style-type: none"> <li>a. Message texts</li> </ul>	
Number available	128				
Display/Edit	Preset Current value and Free text				
SMS Functions (sms message input; sms message output; sms message input output)					
Number available	(32; 64; 12)				
Communication Functions				<ul style="list-style-type: none"> <li>a. Modbus write</li> <li>b. Modbus read</li> </ul>	
Number available	512(Only CPU works as Master need these 2 blocks, slave does not need)				
Word/bit data Conversion	Square Boot	Sin/Cos	RS latch relay		
Data-logger Function	Analog watchdog	Analog filter	Average value		
Pumps Management	Defrost function	Multiplexer	Pulse Relay		
Cam Control	Astronomical clock	Stop watch	Boolean function		
Note: 1. Not all program functions are listed in this table i.e. AND, NAND, OR, NOT, NOR, XOR, SHIFT REGISTER, DATA LATCHING RELAY, COMPORT STATUS etc.					

