

◆ **Technical Data:**

**Model:EXM-12DC-DA-RT-WIFI**



**GENERAL SPECIFICATIONS**

Timers : 512

Counters : 512

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



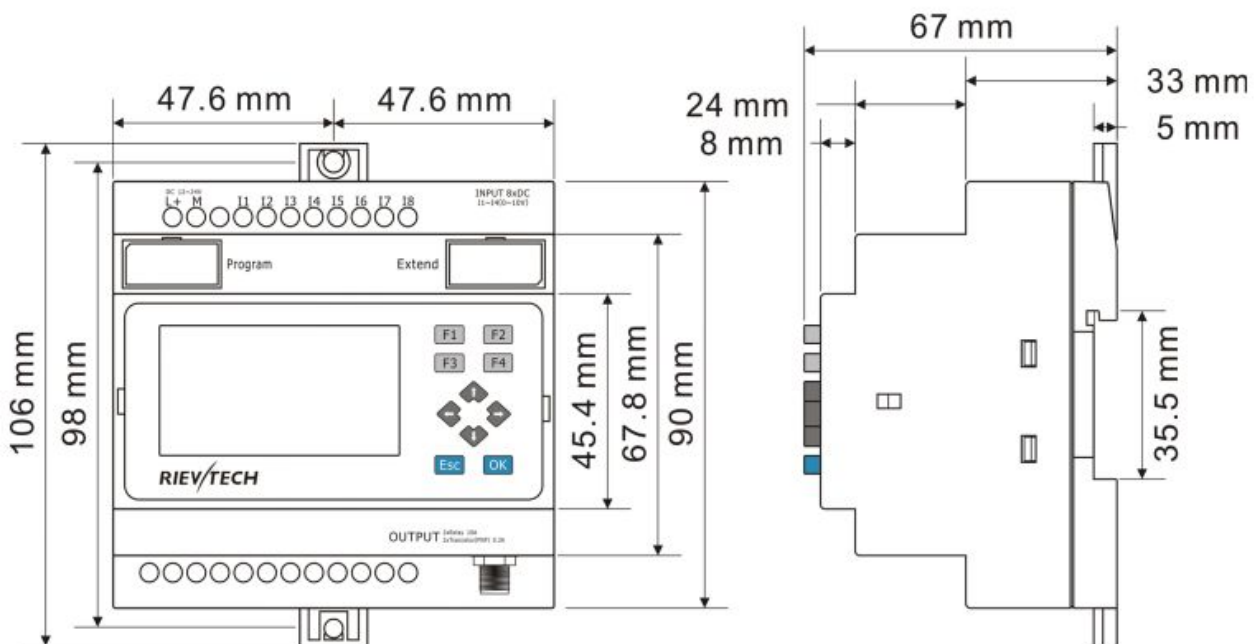
**Technical Index**

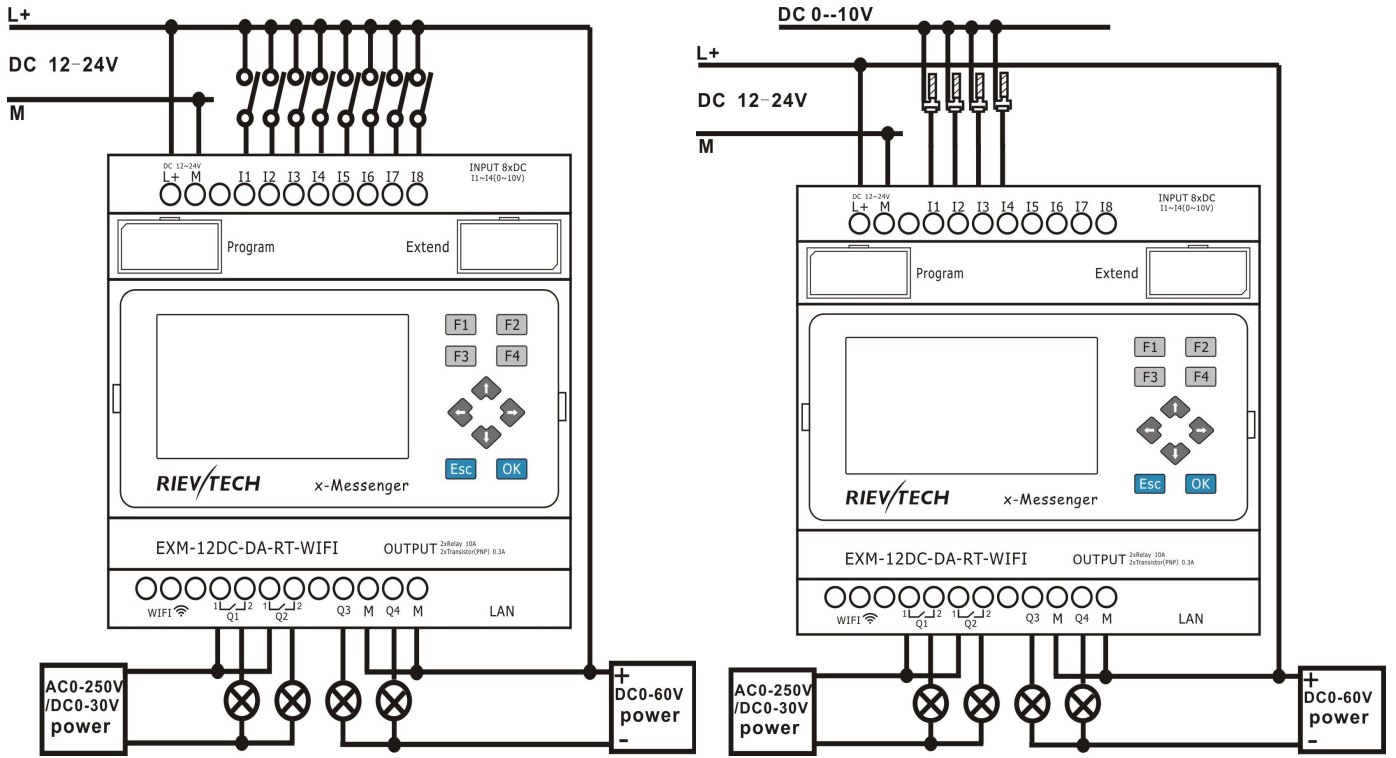
| <b>Power supply:</b>                   |   |
|--|---|
| Nominal voltage                        | DC 12-24V   |
| Operating limits                       | DC 10.8-28.8V   |
| Immunity from micro power cuts         | Typ.5 ms  |
| Max. Startup current                   | Max. 0.25A  |
| Max. absorbed power                    | 3.5 W (10.8V dc) ; 4 W (28.8V dc)   |
| Protection against polarity inversions | Yes   |
| <b>Input parameters:</b>               |   |
| Input No                               | 8 ( I1-I8 )   |
| Digital input                          | 8 ( I1-I8 )   |
| Analogue input                         | 4 ( I1-I4)(0..10V DC)   |
| <b>Digital inputs( I5-I8 )</b>         |   |
| Input voltage                          | DC0-28.8V   |
| Input signal0                          | < 5V DC; <1mA   |
| Input signal1                          | > 8 V DC;>1.7mA   |
| Input current                          | 2.3mA @ 10.8V dc<br>2.6mA @ 12.0 V dc<br>5.2 mA @ 24 V dc<br>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<br>0.5mA @ 12.0 V dc<br>1.2mA @ 24 V dc<br>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  |
| Accuracy at 25 °C                                 | $\pm$ (Max.0.02)V   |
| Accuracy at 55 °C                                 | $\pm$ (Max.0.04)V   |
| 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                                       | 2Relay output +2 Transistor(PNP) output                                       |
| Continuous current                                | (Q1-Q2)Resistive load 10A/Inductive load 2A<br>(Q3-Q4) Max. 0.3 A per channel |
| Max. breaking voltage                             | (Q1-Q2) AC 250 V DC 30 V<br>(Q3-Q4) $\leq$ Supply voltage                     |
| Max. Allowable Power Force                        | (Q1-Q2)1250VA 300W<br>(Q3-Q4) 9 W   |
| 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.<br>Release Time : 10 mSec. Max.                  |
| Built-in protections                              | Against overloads and short-circuits: No<br>Against overvoltages (*): No      |
| Galvanic isolation                                | None  |
| PWM frequency(Q3-Q4)                              | 1K HZ   |
| PWM cyclic ratio(Q3-Q4)                           | 0 to 100 %  |
| PWM accuracy at 120Hz(Q3-Q4)                      | < 0.5 % (20 % $\rightarrow$ 80 %) load at 10 mA                               |

|  |   |
|--|---|
| Max. Breaking current PWM(Q3-Q4)   | 50 mA   |
| <b>Switch frequency:</b>   |   |
| Mechanism  | 10Hz  |
| Resistor/light load  | 2Hz   |
| Sensitive load   | 0.5Hz   |
| <b>Built-in wireless parameters:</b>   |   |
| Support 802.11b/g/n wireless standards                                       |   |
| Support TCP/IP/UDP network protocols   |   |
| Support work as STA/AP mode  |   |
| Support Router/Bridge mode networking  |   |
| Support Transparent/Agreement Transmission Mode(Transparent used by EXM CPU) |   |
| Support Friendly Web Configuration Page or configuration by eSmsconfig       |   |
| Outdoor 100m with 3dBi antenna and indoor 40m                                |   |
| FCC /CE Certificated   |   |
| <b>Other parameters:</b>   |   |
| Ethernet port:   | Built-In(10M/100M)                                      |
| Xlogic<--->Xlogic(by Wifi)   | 1 xlogic works as server can connect 32 client xlogics. |
| Xlogic<--->Etherne/Internet:   | xlogic works as TCP server or TCP client                |
| Weight   | Approx.300g   |

### Installation Dimensions & Wiring Diagram





| SYSTEM  |  |                              |                  |  |  |
|---|--|------------------------------|------------------|--|--|
| 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  |  |                              |                  |  | a.On-delay;<br>b.Off-delay etc.<br>Up to 12 kind Timers                  |
| Maximum Number  | 512  |                              |                  |  |  |
| Timing Ranges   | 10ms--99 h59m  |                              |                  |  |  |
| Counters  |  |                              |                  |  | a.Up/down Counter<br>b.Hours Counter<br>c.Frequency Threshold<br>Trigger |
| Maximum Number  | 512  |                              |                  |  |  |
| Highest Count   | 99999999   |                              |                  |  |  |
| Resolution  | 1  |                              |                  |  |  |
| RTC   |  |                              |                  |  | a.Weekly Timer<br>b.Yearly Timer   |
| Number available  | 512  |                              |                  |  |  |
| Resolution  | 1 min  |                              |                  |  |  |
| Time span available   |  | Week/year-month-day-hour-min |                  |  |  |
| Flags   |  |                              |                  |  | a.Digital Flag<br>b.Analog Flag  |
| Digital flags   | 128  |                              |                  |  |  |
| Analog flags  | 256  |                              |                  |  |  |
| PI Functions  |  |                              |                  |  | a.PI Controller  |
| Number available  | 30   |                              |                  |  |  |
| Parameter Ranges  | 1-32767  |                              |                  |  |  |
| Analog Math   |  |                              |                  |  | a.Analog Math<br>b.Analog Math<br>Error detection                        |
| Number available  | 512  |                              |                  |  |  |
| Function  | ADD, Subtract,Multiply, Divide   |                              |                  |  |  |
| Analog Ramp Function  |  |                              |                  |  | a. Analog Ramp   |
| Number available  | 55   |                              |                  |  |  |
| Compare Function  |  |                              |                  |  | a.Analog compactor<br>b.Comparison of 2 values                           |
| Number available  | 512  |                              |                  |  |  |
| Special Functions   |  |                              |                  |  |  |
| HMI Screens   |  |                              |                  |  | a.Message texts  |
| Number available  | 128  |                              |                  |  |  |
| Display/Edit  | Preset Current value and Free text                                     |                              |                  |  |  |
| Communication Functions   |  |                              |                  |  | a.Modbus write<br>b.Modbus read  |
| 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. |  |                              |                  |  |  |