EMC8485
Ethernet to RS422/485 converter module

User's Manual (V1.2)

健昇科技股份有限公司

JS AUTOMATION CORP.

新北市汐止區中興路 100 號 6 樓

6F., No.100, Zhongxing Rd.,

Xizhi Dist., New Taipei City, Taiwan

TEL：+886-2-2647-6936

FAX：+886-2-2647-6940

http://www.automation.com.tw

http://www.automation-js.com/

E-mail：control.cards@automation.com.tw

Correction record

Version	Record
1.0	firmware version 1.0 up
1.1	Add System Reset
1.2	1. Modify 3.5.5 dimension
	2. Add 4.2 dimension Image

Contents

Notes on hardware installation

Please register as user's club member to download the "Step_by_step_installation_of_Ethernet_module" document from http://automation.com.tw

1. Forward

Thank you for your selection of Ethernet module EMC8485 ethernet to isolated RS422/485 converter module.

Thanks to the booming of network, Ethernet become a reliable and low cost solution for data communication. To utilize the Ethernet as data communication highway of industrial control devices is more attractive than ever. EMC8485 module is a converter module, which can convert the traditional RS422/485 communication protocol to Ethernet or vice versa. With the extra 8-bit I/O and counter function, you can extend the convert to some control functions. A stable, high reliability and remote addressable module give you a new approach of application.

In the same series:

EMC8432 Ethernet to RS232 converter with 8-bit I/O

Any comment is welcome,
please visit our website
http://www.automation.com.tw/
http://www.automation-js.com/ for the up to date information.

2. Features

- Over-voltage protection on digital input
- Various IO combinations : 8 bit configurable I/O’s, any bit can be input or output
- High drive capacity on digital output
- Digital I/P as counter input
- Baudrate up to 921.6K
- Wide power range
- RS422, RS485 software selectable
- IP re-assignment
- 10/100M auto detection
- Software key function
- Peer to peer response time <2ms

3. Specifications

3.1 RS422/485

3.1.1 Isolation : magnetic coupler

3.1.2 Baud rate: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 921600

3.1.3 Data bits: 5, 6, 7, 8

3.1.4 Stop bits: 1, 1.5,

3.1.5 Parity: None, Even, Odd

3.2 Digital input

3.2.1 Input points: max 8 (Configurable)

3.2.2 Logic high level: 3.15V(min)

3.2.3 Logic low level: 1.35V(max)

3.2.4 Over-voltage protection: 60Vdc(max)

3.2.5 Over-current protection: 50mA(max)

3.3 Digital output

3.3.1 Transistor output: max 8 (Configurable)

3.3.2 Transistor capacity: 50mA, 45Vdc(max)

3.4 Ethernet

3.4.1 10/100M auto switch x 2 port

3.4.2 Peer to peer response time <2ms

3.5 General

3.5.1 Power requirement: 12Vdc ~24Vdc

3.5.2 Operation Temperature: 0 ~ +70 degree C

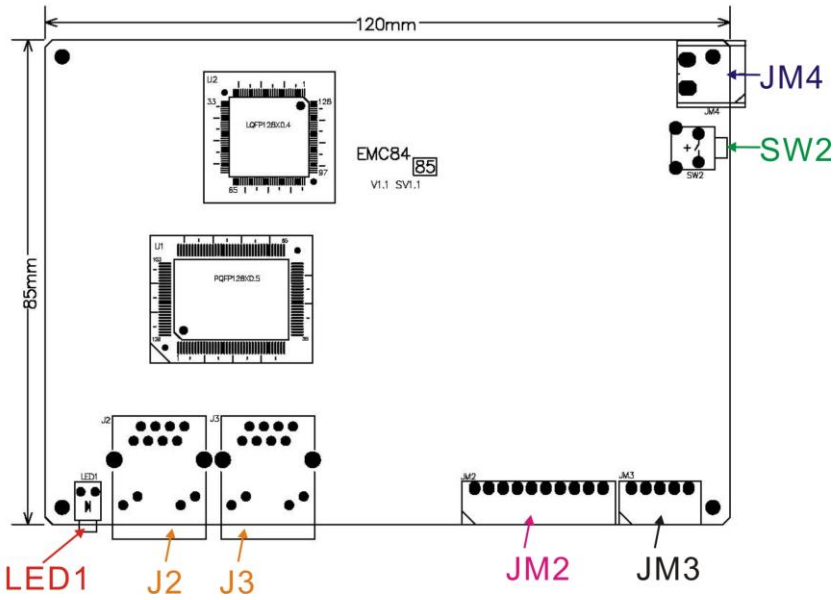
3.5.3 Storage Temperature: -20 ~ +80 degree C

3.5.4 Operation Humidity: 5~95% RH, non-condensing

3.5.5 Dimension: 115.4(D)*136(W)*34(H) mm
4.6(D)*5.4(W)*1.4(H) in

4. Layout and dimensions

4.1 EMC8485 Layout



LED1: system active LED

J2,J3: Ethernet RJ45 socket

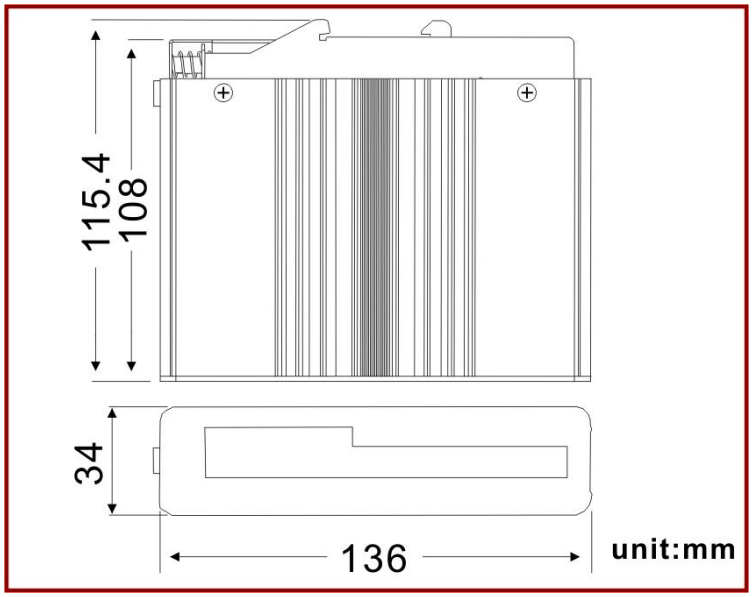
JM2: I/O connector

JM3: RS422/485 connector

JM4: external power 24V connector

SW2: system reset switch

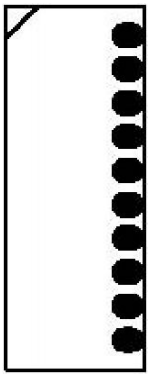
4.2 EMC8485 Dimension



5. Pin definitions

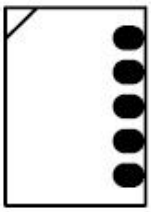
5.1 JM2 pin definitions

+Ve*	1
IO_0	2
IO_1	3
IO_2	4
IO_3	5
IO_4	6
IO_5	7
IO_6	8
IO_7	9
GND	10



5.2 JM3 pin definitions(EMC8485)

RS422			RS485	
TXD+	1		1	
TXD-	2		2	
RXD+	3		3	D+
RXD-	4		4	D-
EXTG	5		5	EXTG



Note:

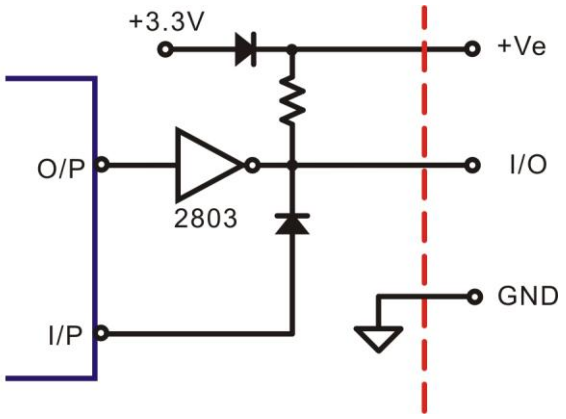
Always connect the EXTG between the communication devices for RS422 or RS485, do not let the signal floating to improve noise immunity.

* +Ve can floating or voltage input (voltage range +3.3V ~ +24V)

* +Ve can apply different voltage as you need.

6. I/O Interface diagram

6.1 I/O diagram



Note: If +Ve is externally applied +24V then the IO_0 ~ IO_7 will be also applied.

7. System Reset

The system reset switch SW2 has provide normal system reset and reset to default functions.

7.1 Normal system reset

Push the SW2 for more than 5 seconds, the power LED will flick at 3 HZ to signal the system has already reset. Once you release the switch, the LED will return to normal flick rate.

7.2 Reset to default

Push the switch while power on (We suggest to push the switch first then power on and wait for 3 seconds) for 3 seconds, the LED will:

1. stop flick
2. flicking at 3 Hz--- system now setting default data
3. flicking at normal speed --- system now already reset, you can release the switch.

item	**default value**
IP	192.168.0.100
password	12345678
socket port	6936
IO_config	ALL input (0xFF)
polarity	ALL inactive (0x0)
WDT timer	1second(0xA)
WDT output state	ALL inactive (0x0)
Standalone function	ALL clean (0x0)
Power on standalone	Disable (0x0)

8. Applications

- RS422/485 to ethernet converter
- Ethernet to RS422/485 converter
- Remote signal input
- Remote signal counter
- Remote signal output

9. Ordering information

PRODUCT	DESCRIPTIONS
EMC8485	Ethernet module to RS422/485 (8 IO) Module
JD52000	110/220Vac to 24Vdc @1.5A power supply
JD52026	110/220Vac to 24Vdc @0.75A power adapter