ET-8C800
Remote Processing Unit (RPU)
Installation Guide

(Ver.2.1)

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Chapter 1 Introduction

The ET-8C500 alarm processing unit is housed into a water prove metal enclosure, ready with dual RS422 communication which can connect to numbers of unit in series to provide mega alarm detection system as well as patrol tour system.

The distributed design enhanced convenient wiring, cost effective and easier repairing.

ET-8C500 alarm processing unit passed the British BS4737 standard and China GB16796-1997 security equipment standard.

This manual provides the procedure and testing method for ET-8C500 installation.

※ Alarm input protection, open/short circuit	※ The max. distance between control unit is 1.2 Km
※ LED communication indication	※ Replaceable plug-in communication IC
※ Selectable output voltage (5V/12V)	※ Provide DC12Vpower source for alarm detector
※ Back-up battery low detection	※ Handle up to 64 output zones
※ Handle 16input zones	※

The Layout of ET-8C800 is as follow, included terminal connection for dual communication channels, Input Zones 1 to 64, Output Zones 1 to 64, Back-up battery, AC power input, four set of DC12V power source for external alarm detector.

Zone 1-16

GND

Zone 17- 32

Comm.
Board

Zone 33-48

GND

Zone 49-64

Output 1-32

Output 33-64
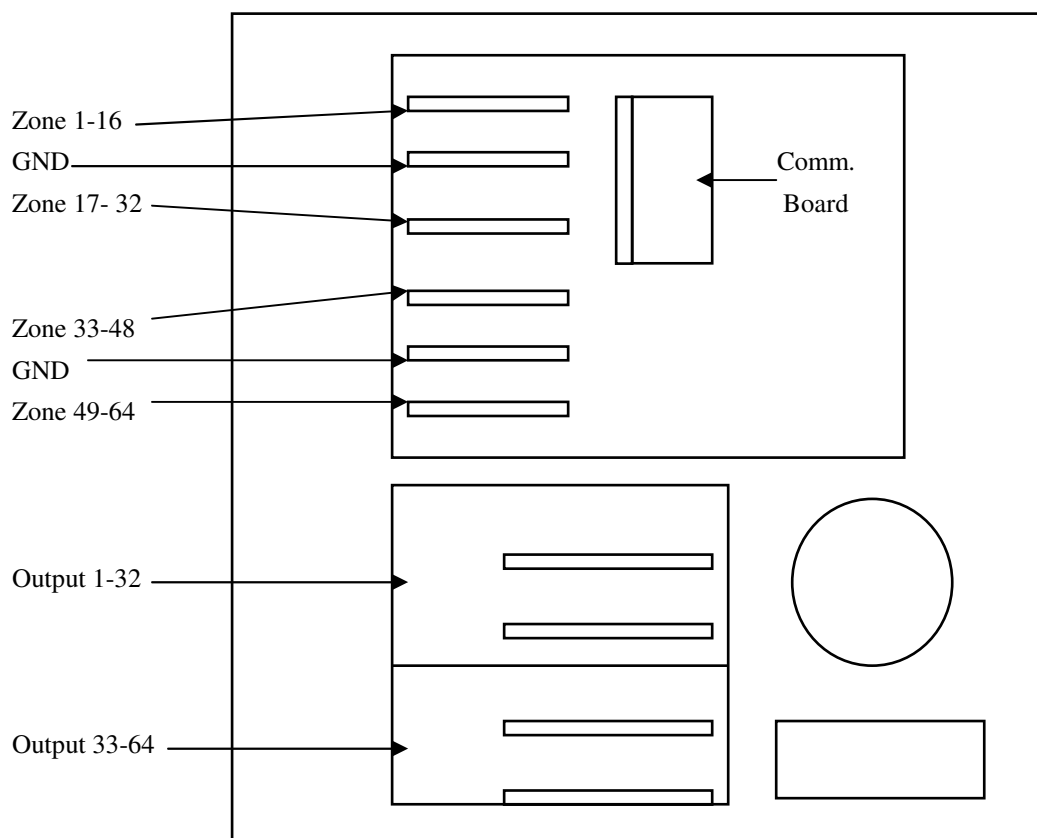
Note : ET-8C800 has to connect power source externally AC110V or AC220V +/-10%

Chapter 2 Installation

I. Unpack   Input Zones

1. Unpack and remove ET-8C800 from box.
2. Inspect and report damage.
3. Thirty-two resistors of 3K9 and 24K are included.
4. Mount the case on wall.

2.1 Communication S-422Connection

Connect communication ET-8C800 to MEGAsys communication port as single loop. If highest security standard is needed, MEGAsys system can provide dual loop communication wiring. Two separate wires should connect from central computer to two separate channels of ET8C800. The grounding should connect either side only to avoid ground loop.

PC side(COM3)		Color		ET-8C800 RPU Side (Channel #1)
9Pin DBplug	PIN		Signals	Input Terminal
Tx+	1	Green	1	Rx +
Tx -	2	White	2	Rx -
Rx +	3	Red	3	Tx+
Rx -	4	Black	4	TX -
GND	5	Shield	5	Shield(GND)

Connect to other ET8C800

Connect the second ET8C800 from the first ET8C800. The grounding should connect either side only to avoid ground loop.

ET-8C800		Color		ET-8C800
CHx Out	No.		No.	CHx In
Tx+	3	Green	1	Rx+
Tx -	4	White	2	Rx -
Rx+	1	Red	3	Tx+
Rx -	2	Black	4	Tx -
GND	5	Shield	5	GND

2.2. Connect to AC Power Source (Table5)

AC POWER TERMINALS							
1	2	3	4	5	6	7	8
B+	B -	7.5VAC	GND	7.5VAC	15VAC	GND	15VAC

In order to minimize EMI interference, user should connect EARTH to the FUSED terminal. Please notice the label beside the fused terminal and connect the correct power source AC24V, AC110 or AC220 to it.
Connectors for battery B+ and B- is DC13V5.

2.3. Address Setup

For system more than 16 zones, more than one ET-8C500 will connect together, every ET-8C500 should have their unique address. Please set the address accordingly. All DIP- switch moved to ON position will set the unit to address 1. All DIP-switch moved to OFF position will set the unit to address 256.

Address	1	2	4	8	16	32	64	128
OFF (1)								
ON (0)								
DIP switch	A0	A1	A2	A3	A4	A5	A6	A7

Table 6.

For example: Set the ET-8C500to address 39, set switch A1, A2, and A5 to OFF position. So A0 represent decimal value 1, A1 is 2, A2 is 4...etc. The total decimal value is 38 i.e. Address 39.

Address	1	2	4	8	16	32	64	128
OFF (1)		※	※			※		
ON (0)	※			※	※		※	※
DIP switch	A0	A1	A2	A3	A4	A5	A6	A7

✹**Note: Camera Number of MEGAsys Video Matrix is start form 01, and the ACU address is start form 00, for camera editing, if camera input to matrix is 40, the ACU hardware address must set to 39, address 40 number also for control sub keyboard use. If mixing with alarm ACU panel such as ET8C500/800, use address beyond 39.**

2.4 **Connecting (Input) Alarm Sensor Device**

There is sixteen alarm input zone for ET-8C500, every zone can be programmed to either Normal Close (NC) or Normal Open (NO) according to the device connect.   The factory default for all zones is Normal Close (NC).

Four set of 12V DC 100mA voltage is provided on board for sensor connect. Sixteen zones of alarm output LED are indicate the status of that particular zone, when the zone is activated the LED is ON otherwise is OFF.

Thirty-two resistors are provided for alarm input termination, so that, Open or Short circuit of the input zone can be detected. Please connect as below,

➢ Connect a four core wire from the sensor to the input zone of ET8C50, two core provide the power (mostly DC12V) to the sensor, the other two core connected to zone input as Table 8。

Note	**Connect a 3.9K-ohm resistor serially and 24K-ohm resistor across the sensor contact output as Table 8**

Channel #1		**Channel #2**	
in	**out**	**in**	**out**
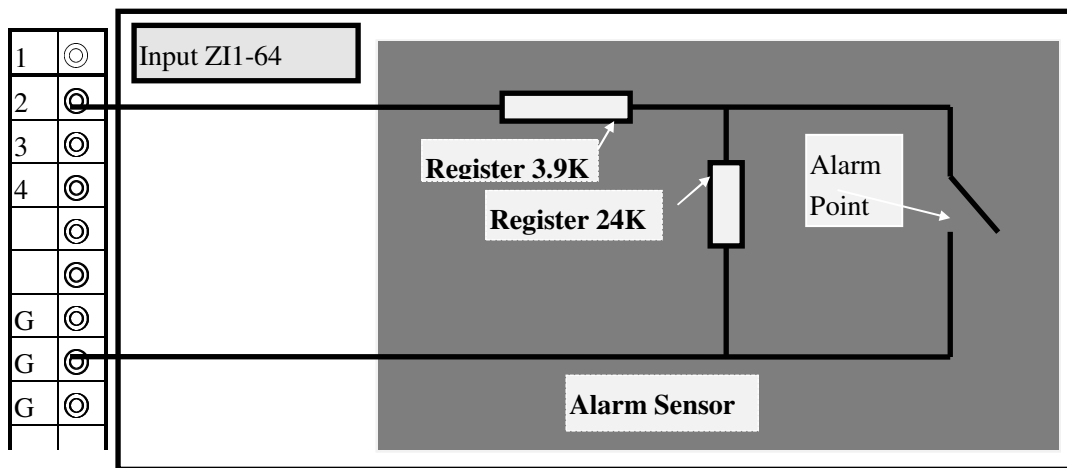
Note:	To prevent false alarm and fault also connect 3.9K-ohm resistor To GROUND for unused zones.

➢   Checking ET-8C800 for any problems, please use building self diagnostic

Self Diagnostics:

1.   Unplug LK1 jumper from the socket.
2.   Press and Release RESET button.
3.   Diagnostic begin testing output zone by turning ON and OFF each zone for short circuit. Then all input zones are test again Short and Open circuit. The flashing rate of the output LED indicate the status of the corresponding input zone, as follow;

Status of Output LED	
Situation	Indication
Normal	LED OFF
Alarm	LED stay ON
Open Circuit	LED flash fourth times a second (0.5Hz)
Short Circuit	LED flash twice a second (1Hz)

5.   Reconnect LK1 jumper.
6.   Press and Release RESET button to enter normal operation.

❖   *If all 64 input points are normal, all 64 LED will go off*

❖   *When alarm input activate, the speed of the LED flashing this will show you the input point current status.*

❖   *Any one of alarm input activate, relate output LED zone will turn on, Ex: if some of the input zone going trouble open circuit , relate LED zone will light up and blinking in low speed, about once in 2 second. If once of the zone going to short circuit trouble, relate LED zone will light up and blinking in speed, about one in a second.*

❖   *LED going off when all fault alarm resume back to normal.*

2.5 Control Output

ET-8C500 Provides sixteen open Collector output zone with Contact Rating 50V 500mA. Each zone can be programmed by the system to provide output automatically or manually.
User can control other high voltage device by using a relay to provide contact for the input of that device, as diagram 9. When alarm active, a DC12V voltage is output; then trigger the rolling gate control to open or shut the gate.


Diagram 9
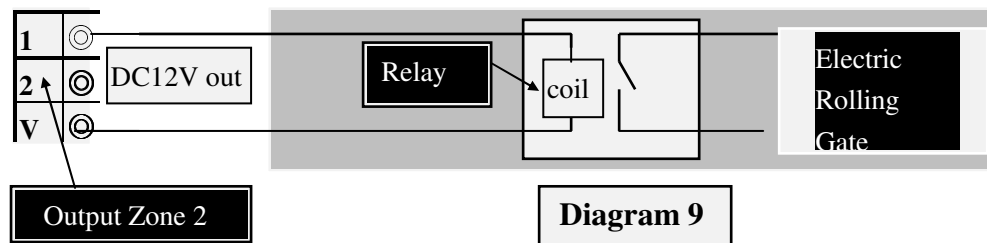
Chapter 3 Communication

Observing the communication LED can understand the situation of the system communicating with many front-end devices. On the ET-8C500 there are 10 pieces of LED on top right hand corner of the board shows the status.

| Comm. LED |
| Rx LED |
| Next Device Rx LED |
| Tx LED |
| Next Device Fault LED |
| Power LED +5V |

Receive (Rx) LED
If the remote processing unit is functioning normally, the most left hand side LED will flashes at a constant rate. If this not the case or the LED is OFF, then the voltage form the previous unit should measure (Rx+ and Rx-) by an analogue multi-meter, the result should around 2.5 to 4VDC. If the voltage is incorrect, the IC U19 (3486) should be replaced.
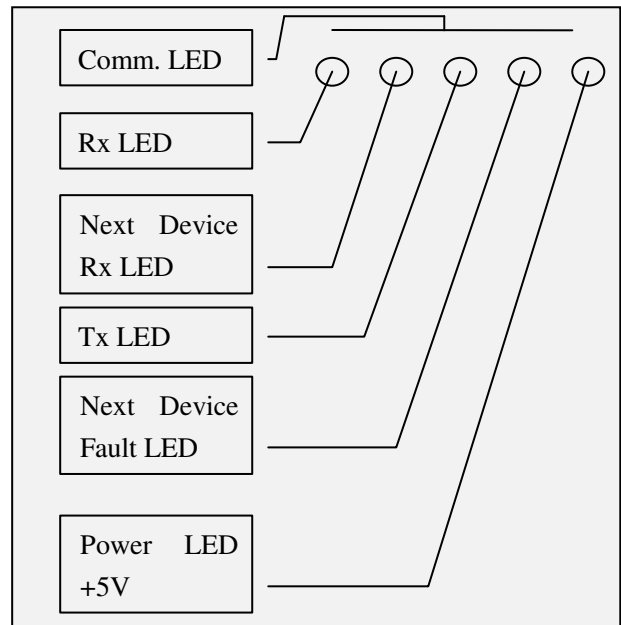
Transmit (Tx) LED
If the remote processing unit is functioning normally, the third LED from left hand side will flash at a constant rate. If this is not the case or LED is OFF or stay ON, then the voltage on (Tx+ and Tx-) should be measure by a analogue multi-meter, the result should around 2.5 to 4VDC. If the voltage is incorrect, the IC U20 (3487) should be replaced.

Next (NXT) LED
If two or more remote processing units are connected together, the second LED from left hand side will flash at a constant rate indicate the next remote processing unit is communicating normally. If this is not the case either LED is OFF or stays ON, the fault is occurring from the next or afterward RPU. Remove the jumper JP3 (for channel 2 JP4 has to be removed), the NXT LED will stay ON, i.e. disable the communication from the next or afterward RPU. If the LED is OFF then there is problem from the next RPU.

3.1**. Diagnostic Input and Output through self-test.**

4.   Unplug LK1 jumper from the socket.
5.   Press and Release RESET button.
6.   Diagnostic begin testing output zone by turning ON and OFF each zone for short circuit. Then all input zones are test again Short and Open circuit. The flashing rate of the output LED indicate the status of the corresponding input zone, as follow;

Status of Output LED	
<u>Situation</u>	<u>Indication</u>
Normal	LED OFF
Alarm	LED stay ON
Open Circuit	LED flash fourth times a second (0.5Hz)
Short Circuit	LED flash twice a second (1Hz)

7.   Reconnect LK1 jumper.
8.   Press and Release RESET button to enter normal operation.

3.2. Confirm Address Setting

1.   Unplug LK2 jumper from the socket.
2.   Press and Release RESET button.
3.   The LED for zone 1 to 8 will display the address of the RPU set by the DIP-switch. The LED for zone 9 to 16 will display the address retrieve from EEPROM, this also test and confirm the address being memorized. The upper and lower LED should agree with each other.
4.   Replace LK2 Press and Release RESET button to go to normal operation.

For example
If the RPU address is set, then ZO01, ZO02, ZO03, ZO09, ZO10 and ZO10 be turn ON for 2 second then OFF.

Chapter 4 Warranty

Evertech Electronics Ltd. warranties each product to be free from defects in material and workmanship for the period of one year from the date of delivery. Free replacement will be provided to all equipments made and developed by Evertech Electronics Ltd. within one year from the date of purchased.

This warranty shall not apply to any products or parts which have been misused, modified, damaged by lighting, electrical transients, mis-wiring or abnormal operations. This warranty

does not cover transportation costs.

Chapter 5 Transportation

《 》 Please contact Evertech Electronics Ltd. before delivery.
《 》 Specific fault encounter.
《 》 State the date of purchased and expiry date.