



galaxy

SECURING YOUR WORLD - SOLUTIONS UNLIMITED

Ethernet Module (E080) **Installation Instructions**

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Table of Contents

INTRODUCTION.....	3
SECTION 1: INSTALLATION.....	4
PLACEMENT.....	4
Mounting the Ethernet Module.....	4
Recommendations for placing the module inside the enclosure.....	5
WIRING.....	6
Connection to the control panel.....	6
Compatibility.....	7
Connection to an Ethernet Network.....	8
SECTION 2: CONFIGURATION.....	9
Configuring the module onto the Ethernet network.....	9
SECTION 3: PROGRAMMING.....	10
Alarm Reporting.....	10
SECTION 4: TESTING.....	11
SECTION 5: OPERATION.....	12
NETWORK CONNECTION.....	12
SIGNALLING.....	12
RS485.....	12
REMOTE SERVICING (Using Galaxy Gold).....	13
SECTION 6: REGULATIONS.....	14
SECTION 7: TECHNICAL SPECIFICATION.....	15

SECTION 7: TECHNICAL SPEC

Power - 12v d.c. nominal (-25%/+20%)
155mA typical
200mA (max during flash memory upgrade)

Comms - RS485 to the Galaxy panel
10 Base-T TCP/IP to Ethernet module

Programming - via Galaxy control panel

Outputs - all Ethernet Module conditions requiring outputs are sent to the Galaxy control panel. This allows extensive options for Ethernet Module outputs.

Dimensions - height 16mm
length 121mm
width 90mm

Weight - 60gms

Temperature - 0°C to 40°C

Mounting - see installation diagram (Figure 1)

SECTION 6: REGULATIONS

The Ethernet Module is approved for connection to standard 10 Base-T Ethernet networks supporting the TCP/IP protocol.

Any other usage will invalidate the approval of the Ethernet Module if, as a result, it then ceases to comply with standards against which approval was granted.

Approval of the Ethernet Module is also invalidated if it is used with internal software or subjected to any hardware modification not authorised by Ademco Microtech.

DECLARATION OF CONFORMITY

We,
Ademco Microtech Limited
of
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East Kilbride
Glasgow
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UK



Declare under sole responsibility, that the

Galaxy Ethernet Module (E080)

is in conformity with the following standards:

72/23/EEC	Low Voltage Directive
89/336/EEC & 92/31/EEC	EMC Directive
93/68/EEC	CE Marking Directive
99/5/EC	R&TTE Directive
EN50136	Alarm transmission

INTRODUCTION

The Galaxy Ethernet Module is an optional add-on to the Galaxy Control Panel range, intended for use with the Galaxy 8, 18, 60, 128, 500, 504 and 512 (High Security) products. It is a highly intelligent and compact module, combining both communication and remote servicing facilities. The Ethernet Module connects to 10 Base T Ethernet networks using the TCP/IP protocol.

The Internet Protocol (IP) defines addressing, routing, and data block handling over the network. The Transmission Control Protocol (TCP) assures that no data is lost or duplicated, and that everything sent to the network arrives correctly at the Alarm Receiver.

Each Ethernet module contains a unique Ethernet or MAC address.

The Ethernet Module is connected to the RS485 communication line 1 (AB line) on the Galaxy control panels.

As a communicator, the Ethernet Module transmits alarm signals using either SIA or Microtech formats (the factory setting default is Microtech).

As a remote servicing facility the Ethernet Module can be used – in conjunction with Galaxy Gold software – to remotely access the Galaxy control panel, over an Ethernet network, allowing copying and overwriting of the program and on-line servicing.

The Ethernet Module is compatible with Galaxy control panel software V4.00 and later. Full programming instructions for the Ethernet module are given in Galaxy Engineering Manual (IE1-0027 Issue 1) Section 56.

SECTION 1: INSTALLATION

PLACEMENT

Mounting the Ethernet Module

The plastic mounting feet should be placed inside the mounting holes of the Ethernet Module. The plastic coating should then be removed from the feet and the Ethernet Module placed on the back of the control box beneath the control panel. See Figure 1. The Ethernet Module should be placed in accordance with recommendations stated in this document.

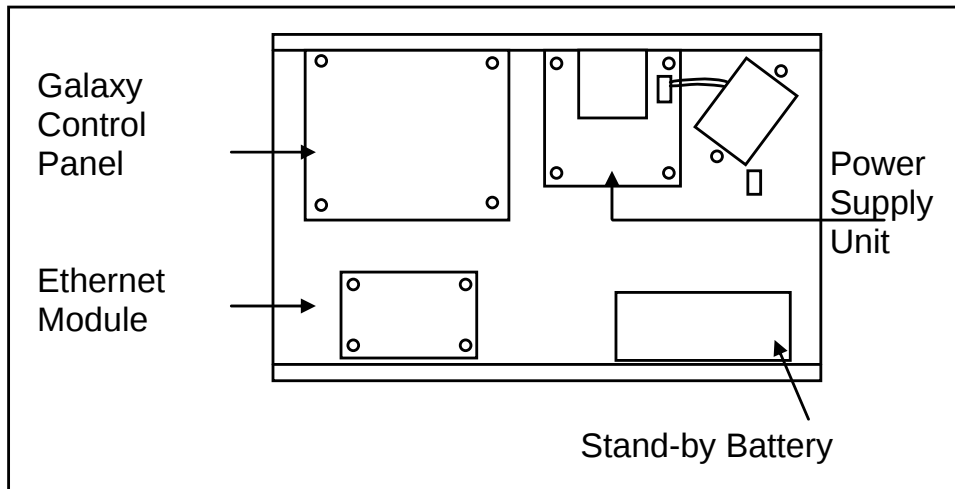


Figure 1 : Placing the Ethernet Module

Optionally, the Ethernet module can be mounted above the control panel PCB, using the specially designed mounting plate, part number A203.

The Ethernet Module must be mounted in such a way as to be inaccessible without the use of a specially designed tool.

REMOTE SERVICING (Using Galaxy Gold)

Galaxy Gold software allows the Galaxy control panel to be fully programmed from a remote PC. When complete the Galaxy programming can be copied onto the remote PC and overwritten to the Galaxy site at a later date if required.

Remote servicing is initiated by either the Galaxy Gold software or by Galaxy control panels with software versions V4.00 (or above). Refer to the Galaxy Engineers Manual (IE1-0027 Issue 1) option 47 for instructions.

The Ethernet Module automatically answers the incoming connection. Once all the security checks have been satisfied, the Ethernet Module connects the remote PC to the Galaxy control panel allowing remote servicing to begin.

For a complete description the operation and programming of Galaxy Gold, refer to the Galaxy Gold User Manual (IU1-0057 Issue 3).

SECTION 5: OPERATION

NETWORK CONNECTION

LED1 is illuminated when the Ethernet Module is connected to the network.

SIGNALLING

When a command is received from the Galaxy control panel to send a message, the Ethernet Module transmits the message onto the Ethernet network, in the appropriate format.

Once the Ethernet Module successfully connects to the central station, the transmission of the alarm information is also indicated by LED2 flashing, at a rate 100ms on and 6ms off, when information is being sent and/or received.

RS485

Under normal idle state conditions, the Ethernet Module monitors the RS485 line. The status of the Ethernet Module is indicated by the flash rate of LED3 as shown in Table 1:

FLASH RATE	MESSAGE INDICATION
LED OFF (no flash)	No d.c. supply to module
ON – 1.5s, OFF – 1.5s	Module not configured
ON – 0.2s, OFF – 0.2s	Lost communication with Galaxy control panel
ON – 0.1s, OFF – 0.9s	Normal communication
ON – 0.9s, OFF – 0.1s	Very poor communication

Table 1 : LED Flash Rate Indication

Recommendations for placing the module inside the enclosure.

When the Ethernet Module is installed, the figures given below (Table 2) for minimum Clearance and Creepage distances should be adhered to in order to provide maximum EMC protection

Clearance (mm) (X)	Creepage (mm) (Y)	Voltage used or generated by Host or Terminal equipment.
4.0	6.4 (10.0)	Up to 300 V _{r.m.s.} or V _{d.c.}

Table 2 : Clearance and Creepage Figures

Clearance is defined as the distance between the Ethernet Module and the Host equipment via a non-conductive medium (e.g. the air).

Creepage is defined as the distance between the Ethernet Module and the Host equipment via the surfaces of the environment. See Figure 2.

NOTE: The larger distance shown in brackets in the Creepage section applies where the local environment within the host is subject to conductive pollution or dry non-conductive pollution that may become conductive due to condensation.

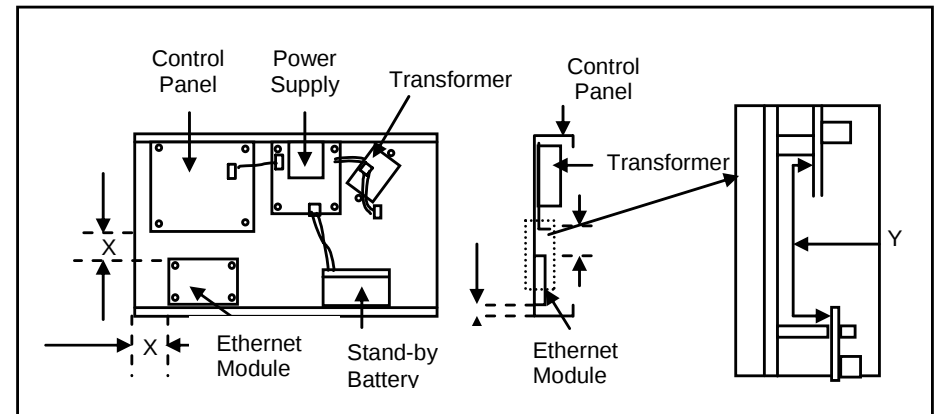


Figure 2 : Creepage and Clearance for Galaxy Ethernet Module

WIRING

Connection to the control panel

There are two basic configurations, depending upon the power supply used. These are listed below with their wiring details.

1. When used with a Smart PSU

The A and B terminals of TB1 on the Ethernet Module must be connected to the A and B terminals, respectively, on AB (RS485) line 1 of the control panel. The plus '+' and minus '-' terminals of TB1 on the Ethernet Module should be connected to either of the fused 12 volt outputs (12V1 or 12V2) on JP2 of the Galaxy 3A Smart PSU, observing the correct polarity.

2. When used with a standard 1A or 3A PSU

The A and B terminals of TB1 on the Ethernet Module must be connected to the A and B terminals, respectively, on AB (RS485) line 1 of the control panel. The plus '+' and minus '-' terminals of TB1 on the Ethernet Module should be connected to the 12 volt outputs of the PSU, observing the correct polarity. These outputs will be marked with a telephone icon, or identified as AUX depending upon the revision of the PSU.

When the Ethernet Module is connected to the Galaxy control panel, because the module is pre-set to a specific address, a keypad addressed as 11 (B on the rotary address switch) cannot also be present on this line.

On the Galaxy 128, Galaxy 500, Galaxy 504 and 512 (High Security), the module is shown as address 13 on the keypad display.

NOTE: When connecting the Ethernet Module to the host it is important that the installation engineer ensures that the power drawn by the apparatus, together with any other auxiliary apparatus, lies within the rating of the host supply. Information relating to the Ethernet module current draw can be found in the specification section of this document.

SECTION 4: TESTING

Inform the IP Address destination (e.g. Alarm Receiving Software, Monitoring Package) that an engineer test is to be carried on the Ethernet Module.

- Enter menu option 56 – COMMUNICATION
- Select 4 - Network
- Send a test transmission by selecting the engineer test option (option 5).

Verify that the test has been successfully received.

Note: If any other communication device is configured for signalling, such as the Telecom Module, ISDN module or RS232 module, then a test signal will also be sent on these devices when selected from option 56.4.5.

SECTION 3: PROGRAMMING

The Ethernet Module is programmed from the Galaxy control panel using menu option 56 – COMMUNICATIONS. For full programming details, refer to the Galaxy Engineer's Manual (IE1-0027 Issue 1).

Alarm Reporting

Enter the COMMUNICATIONS/NETWORK menu (56.4) and select 02-Alarm Report. From this option the signalling FORMAT, destination IP Address, Account Number and destination Port Number can be programmed as required. The IP address and the Galaxy site account number (ACCOUNT No.) must be entered. Table 3 gives a list of the programming options.

OPTION	SETTINGS	COMMENTS
1=FORMAT	SIA, Microtech	Default is Microtech
2=IP ADDRESS	15 digits (including *)	Note 1
3=ACCOUNT No.	4 digits (min.) 6 digits (max.)	Note 2
4=Port No.	10002 (default)	Note 3

Table 3 : Alarm Reporting Menu

NOTES:

1. Ensure that all IP numbers programmed into the Galaxy are correct. The number programmed must match the IP address of the PC to which the alarm signal is being sent. The * key can be used to end each block of three numbers.
2. Both IP Address and the account number must be entered, otherwise signalling cannot take place.
3. Every TCP connection is defined by a destination IP address and a port number. A port number is similar to an extension on a PBX system.

Compatibility

The Ethernet module is compatible with Galaxy Gold software V6.10 and later and Alarm Monitoring V3.10 and later.

The Ethernet module is compatible with all Galaxy 8, 18, 60, 128, 500, 504 and 512 (High Security) control panels with control panel software versions V4.00 and above.

Connection to an Ethernet Network

The Ethernet Module requires to be connected to an Ethernet network supporting TCP/IP protocol

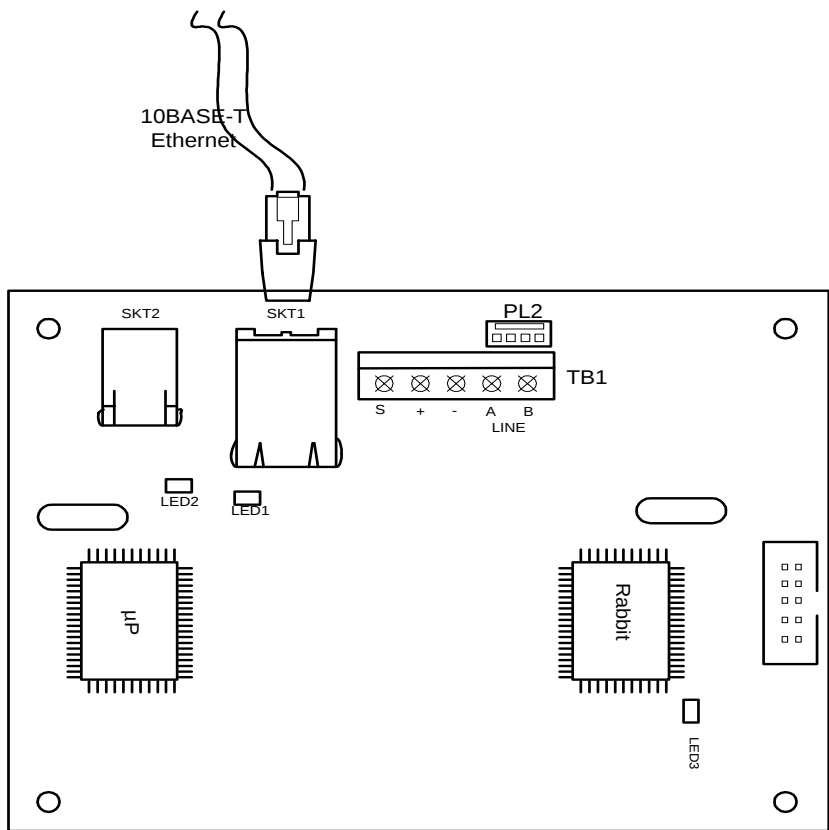


Figure 3 : Connecting the Ethernet Module to the Network

Connect the Ethernet module to the Ethernet network using a suitable 10-BaseT cable, plugged into SKT1 or SKT2 on the PC, depending upon which is fitted.

SECTION 2: CONFIGURATION

Once the Ethernet Module has been installed, it can be configured into the system by powering up the Galaxy control panel, or, if the panel is already powered up by using either; the system restart facility (Menu option 51.17), or by exiting engineering mode.

LED3 on the module flashes continuously (ON – 0.1 seconds, OFF – 0.9 seconds), indicating that the module has configured correctly and is communicating with the Galaxy control panel.

NOTE: Any other LED flash rate indicates that the module is not communicating with the control panel. Refer to Table 1 LED Flash Rate Indication for additional information.

Configuring the module onto the Ethernet network

The Ethernet module should be configured onto the Ethernet network from the Galaxy control panel. To configure the module enter the communications menu option 56 and select 4=Network. Option 01 - Module Config allows for the following options to be programmed

Option	Name	Description	Default
01	IP Address	Unique IP address used to identify the Ethernet module on the network	Default is 0.0.0.0
02	Site Name	A text descriptor to used to identify the Galaxy panel	Blank by default
03	Gateway IP	This option is required for communication to other LAN segments. This address should be the IP address of the router connected to same LAN segment as the Ethernet module.	Default is 0.0.0.0 (optional)
04	Network Mask	The Network mask defines the number of bits taken from the IP address that are assigned for host section.	Default is 255.255.255.000

Note: This information should be provided by the Ethernet network administrator.