

# **Galaxy Ethernet Module**

## **Installation Instructions**

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## 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 alarm signalling, remote servicing facilities and integrated facilities over Ethernet LAN and/or WAN. The Ethernet Module connects to 10 Base T Ethernet networks both supporting the UDP/IP and TCP/IP protocols.

Each Ethernet module contains a unique Ethernet or MAC address.

As a signalling device, the Ethernet Module transmits alarm signals using either SIA or Microtech formats (the factory setting default is Microtech). Support is included for 128 bit high level encryption of all alarm signals. Additionally, all alarm transmission paths can be monitored for continuity to ensure availability for critical alarm signalling.

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 LAN and/or WAN, allowing copying and overwriting of the program and on-line servicing. The Ethernet module and Galaxy gold support 128 bit encryption to ensure security of data transfers.

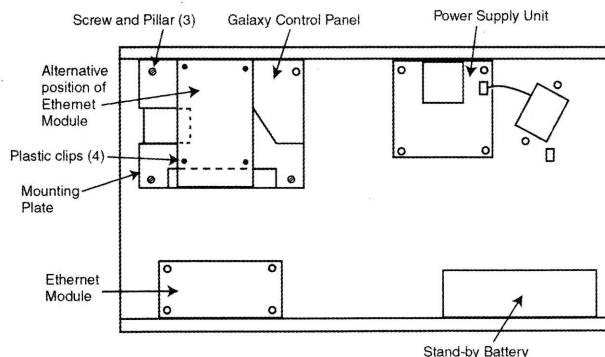
The Ethernet Module is compatible with Galaxy control panel software V4.00 and later. Full programming instructions for the Ethernet module are given in the **Galaxy Programming Manual (IP1-0030) Section 56**.

## SECTION 1: INSTALLATION

### Placement

#### Mounting the Ethernet Module (Method 1)

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**

#### Mounting the Ethernet Module (Method 2)

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

- (1) Put the mounting plate on top of the pillars.
- (2) Attach the mounting plate to the pillars with 3 screws.
- (3) Secure the Ethernet module to the 4 plastic clips.

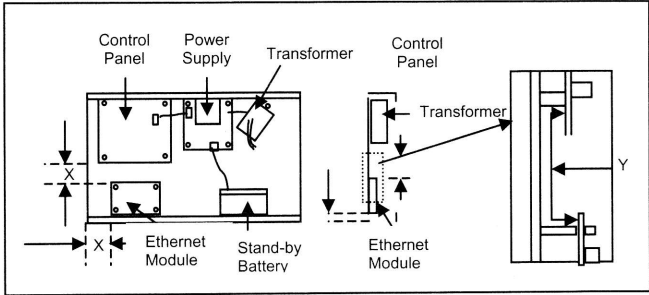
**Recommendations for placing the module inside the enclosure.**

When the Ethernet Module is installed, the figures given below (Table 1) for minimum Clearance and Creepage distances should be adhered to in order to provide maximum EMC protection.

Clearance (mm) (X)	Creepage (mm) (Y)
4.0	10.0

**Table 1: 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.

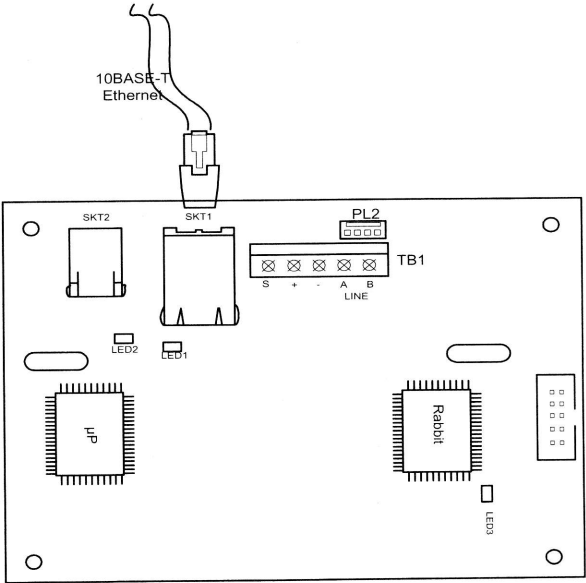


**Figure 2: Creepage and Clearance for Galaxy Ethernet Module**

**Connections**

**Connection to an Ethernet Network**

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



**Figure 3: Connecting Ethernet Module to the Ethernet 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.

## Connection to the control panel

There are two basic configurations, depending upon the position of the Ethernet module.

If the Ethernet module is located inside the control box then use the 4-way flying lead. One end is connected to PL2 (RS485 line 1). The other end is connected to the engineer socket (S1 or S2) on the control panel.

If the Ethernet module is located outside of the control box then use the longer 4-way engineering cable. Connections are the same.

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.

## Compatibility

The Ethernet module can be used with Galaxy Gold software V6.10 and later and Alarm Monitoring V3.10 and later.

**Table 2** indicates the features supported between versions.

Ethernet Module	Galaxy Panel 8/18/60/128/500/504/512	Compatibility
V1.xx	<V4.00	Not supported
	V4.00 to V4.39	TCP/IP remote servicing and signalling
	V4.50	TCP/IP remote servicing and signalling
V2.xx	<V4.00	Not supported
	V4.00 to V4.39	TCP/IP remote servicing and signalling
	V4.50	Data encryption TCP/IP and UDP/IP signalling TCP/IP remote servicing Alarm Transmission path supervision Multiple alarm transmission paths

**Table 2: Ethernet Module/Galaxy Panel Compatibility**

## 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 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.

### 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=Ethernet. 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 used to identify the Galaxy panel	Blank by default (not used)
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 the 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 0.0.0.0

**NOTE:** The information in the above table should be provided by the I.T. administrator.

The Ethernet module will now be visible on the Ethernet network.

## SECTION 3: PROGRAMMING

The Ethernet Module is programmed from the Galaxy control panel using menu option **56.4 – COMMUNICATIONS**. For full programming details, refer to the **Galaxy Programming Manual (IP1-0030)**. The following is a brief description of each of the main subheadings of the Ethernet programming instructions.

### 01 - Module Configuration

Each Ethernet module is pre-programmed with a unique MAC address, which identifies the module on the network. However in order for the module to communicate with other applications an IP address, provided by the IT administrator, should be assigned to the Ethernet Module.

### 02 - Alarm Reporting

This option allows selection of the alarm signalling format used to transmit the events. This option also controls the types of events, which are sent and the destination/identification for each independent group.

From this option the signalling Format, Primary IP Address, Secondary IP Address, Account Number, Receiver, Alarm Monitoring, Heartbeat and Protocol can be programmed as required. The IP address and the Galaxy Site Account Number must be entered.

### 03 - Remote Access

The Ethernet module supports remote servicing of the Galaxy alarm panel. The programming options in this section control when remote access can be granted and whether access is initiated from the panel or the Galaxy Gold PC.

### 04 - Autotest

An engineer test can be automatically transmitted to the receiving station at programmed intervals.

## 05 - Engineer Test

An engineer test can be sent on each of the transmission paths once the appropriate IP address/port number and account numbers have been programmed into the system.

## 06 - Fail to Communicate

This option determines the number of unsuccessful communication attempts before the **COMM FAIL** message is recorded in the event log.

When an event is to be transmitted to the monitoring station, the Ethernet module attempts to initiate a session with the destination receiver for each programmed transmission path. If the programmed number of attempts is reached a Fail to Comm message will be logged. The logged event will include which path has failed.

**NOTE:** If the receiver option is programmed as Dual then a successful transmission must be made to both primary and secondary to be considered a successful transmission.

## 07 - Line Fail

The line fail option controls which Ethernet connections are monitored. The Ethernet module can be programmed to monitor both the network availability and the programmed transmission paths between the Ethernet module and receiver applications.

Line fail events (whether network or transmission path) must be present for 30 minutes before the event is activated. If a line fail is present and an attempt is made to set the system within the 30 minute delay period, the line fail will immediately be logged and indicated.

## 08 - SIA Control

When using the SIA control command protocol for integration purposes the IP address of the computer sending the SIA control commands should be entered in this field to ensure that only commands from a computer with the programmed IP address will be recognised by the Ethernet module.

## 09 - Encrypt

The Ethernet module supports a high level 128bit encryption algorithm for all communication options. This option allows encryption to be enabled/disabled for each of the communication options.

## SECTION 4: TESTING

Ensure all relevant Alarm Reporting has been carried out as per the instructions in the **Galaxy Programming Manual IP1-0030**.

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

- Enter menu option 56 – COMMUNICATION
- Select 4 - Ethernet
- 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 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 3**.

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 comms with Galaxy control panel
ON – 0.1s, OFF – 0.9s	Normal communication
ON – 0.9s, OFF – 0.1s	Very poor communication

**Table 3 : LED Flash Rate Indication**



## Remote Servicing (Using Galaxy Gold)

Galaxy Gold software allows the Galaxy control panel to be fully programmed from a remote PC via the Ethernet module.

Remote servicing is initiated by either the Galaxy Gold software or by Galaxy control panels with software versions V4.00 (or above), depending upon the configuration selection in the programming option 56.4.03 – Remote Access. By default the panel can be accessed from the PC. Refer to the **Galaxy Programming Manual (IP1-0030)** 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 of the operation and programming of Galaxy Gold, refer to the **Galaxy Gold User Manual (IU1-0057)**.

## Data Encryption

The Ethernet module (V2 and above) supports data encryption when used with Galaxy panels (V4.5 and above). Refer to the **Galaxy Programming Manual** , **IP1-0030**, option 56.4.9.

## SECTION 6: REGULATIONS

The Ethernet Module is approved for connection to standard 10 Base-T Ethernet networks .

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 Honeywell Security.

# DECLARATION OF CONFORMITY

We,  
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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
EN50131	Intruder systems

The Ethernet module is suitable for use in systems complying to these standards.

# 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 and UDP/IP) to Ethernet Network
Programming -	via Galaxy control panel
Dimensions -	height 16mm length 121mm width 90mm
Weight -	60gms
Temperature -	-10°C to +55°C
Mounting -	see installation diagram (Figure 1)