



**FieldServer**  
**FS-8700-136**  
**(Honeywell Life Safety NFS2-640)**  
**Driver Manual**  
**(Supplement to the FieldServer Instruction Manual)**

**APPLICABILITY & EFFECTIVITY**

Effective for all systems manufactured after July 2017.

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## 1 HONEYWELL NFS2-640, NFS-320 DESCRIPTION

The NFS-640 Serial driver allows the FieldServer to record data from Honeywell Series NFS-640, NFS2-640 and NFS-320 Fire Panels over RS-232. The FieldServer primarily acts as a Passive Client receiving unsolicited messages and updating the status of a Honeywell Fire Alarm Panel. This driver is intended solely for the Middle East variations of the NFS panels – for all other NFS panels, refer to FS-8700-90.

The main purpose of this driver is to record the status of Fire Alarm System detectors and modules in a bit oriented Data Array. It is limited by the information that the Honeywell Panel broadcasts in the form of text messages through its RS-232 communication port. The accuracy and timeliness of the data is therefore limited by the frequency of update messages that the Honeywell Fire Panel issues.

The types of Honeywell messages supported by this driver are summarized in [Appendix C.1](#). A detailed table showing each type of panel message the FieldServer recognizes and the effect that it has on the status of points in the data array is presented in [Appendix A.1](#). The device status to the data array mapping is also provided in [Appendix A.1](#).

It is possible to connect through the CRT Port. The disadvantage of doing this is that the use of this port restricts the use of Honeywell Networking, thus a fire panel connected to a Noti-Fire-Net will not be supported. If the NFS-640 or NFS2-640 CRT port is used, the FieldServer can actively request that the Honeywell panel send the status of all points, devices and zones on a periodic basis. This status request occurs every 10 min by default; and can be reduced to 5 min or increased to any value with no upper bounds. Note that communication through this port does not equate to Port Supervision. The panel *must* output messages in English.

| FieldServer mode | Nodes | Comments  |
|------------------|-------|---|
| Client           |       | This driver is connection oriented - only one Honeywell Panel may be connected to any single RS-232 FieldServer port. |

## 2 DRIVER SCOPE OF SUPPLY

### 2.1 Supplied by Sierra Monitor

| Part #     | Description        |
|------------|--------------------|
| FS-8917-16 | RJ45 Pigtail Cable |
| FS-8700-90 | Driver Manual      |

### 2.2 Provided by the Supplier of 3rd Party Equipment

#### 2.2.1 Hardware

| PART # | Description                                       |
|--------|---|
|        | Honeywell NFS-640, NFS2-640 or NFS-320 Fire Panel |

#### 2.2.2 Required 3rd Party Configuration

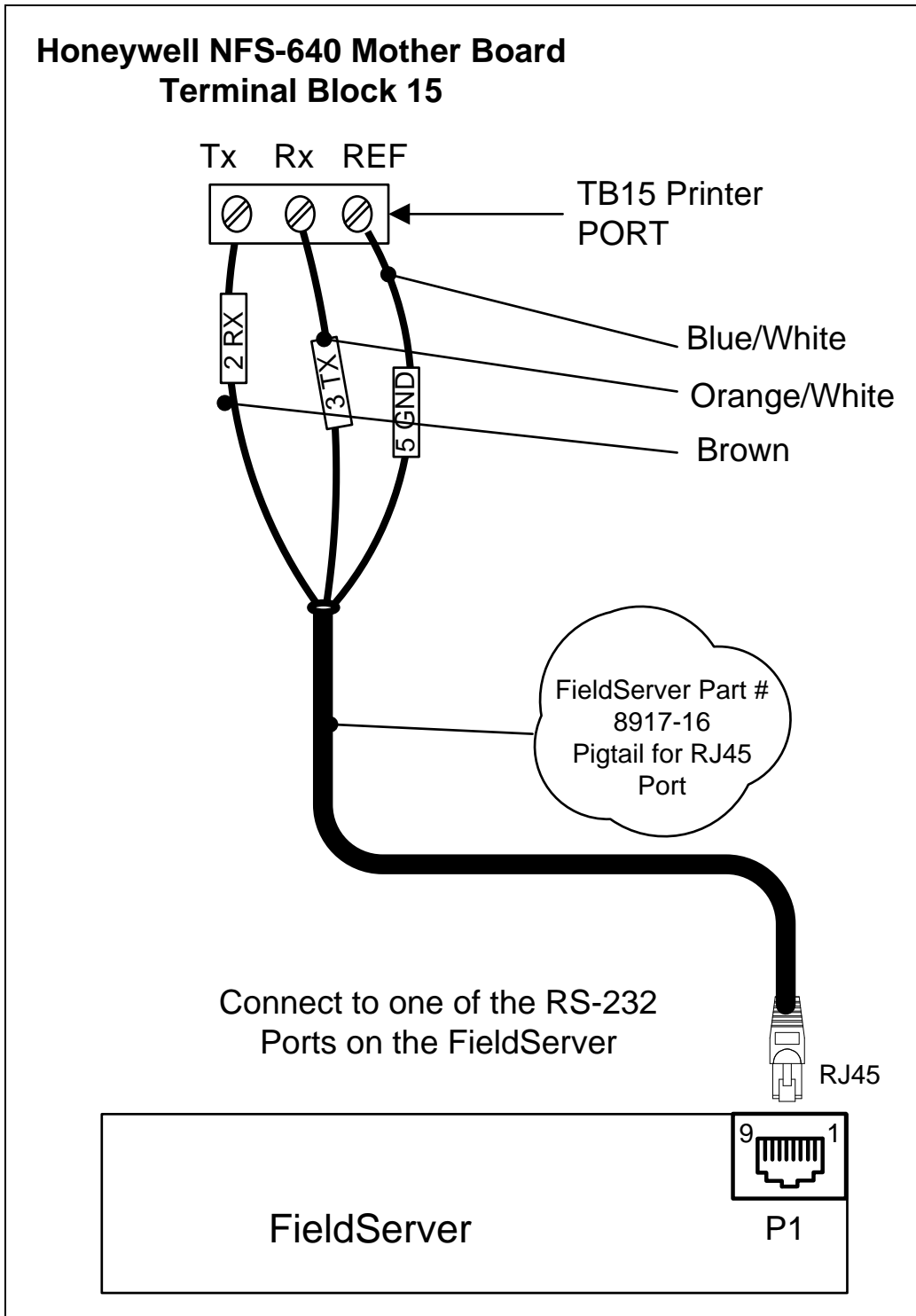
If connection through the CRT port is required, then the port needs to be enabled. Refer to [Appendix A.1](#) for more information.

### 3 HARDWARE CONNECTIONS

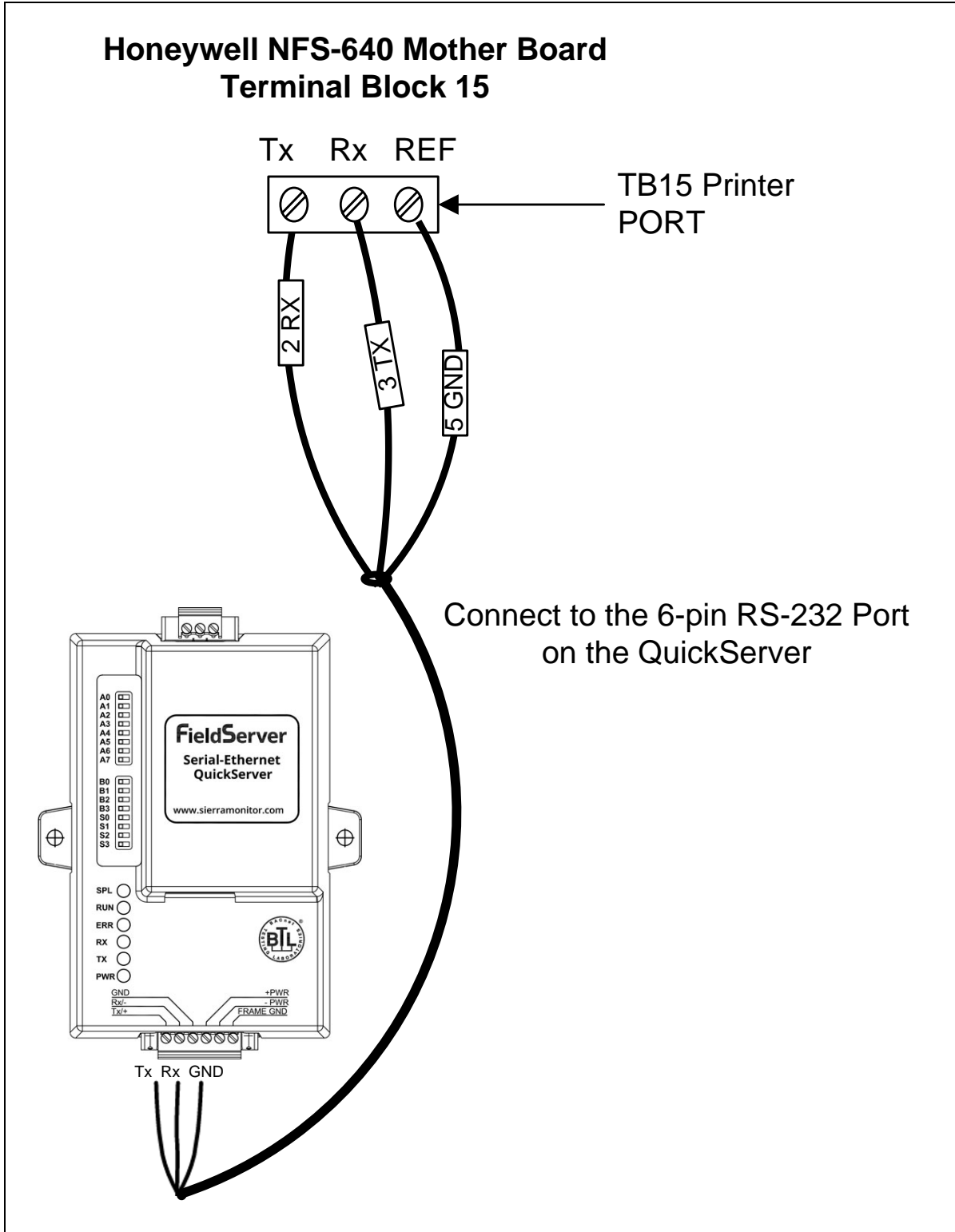
#### 3.1 Honeywell NFS-640 Panel

The FieldServer and QuickServer are connected to the Honeywell NFS-640 Panel as shown below. Configure the Honeywell NFS-640 Panel according to manufacturer's instructions. The recommended connection through the printer port is depicted in the diagram. If preferred, connection can be made through the CRT port. Refer to [Appendix A.1.2](#) for more information.

FieldServer:



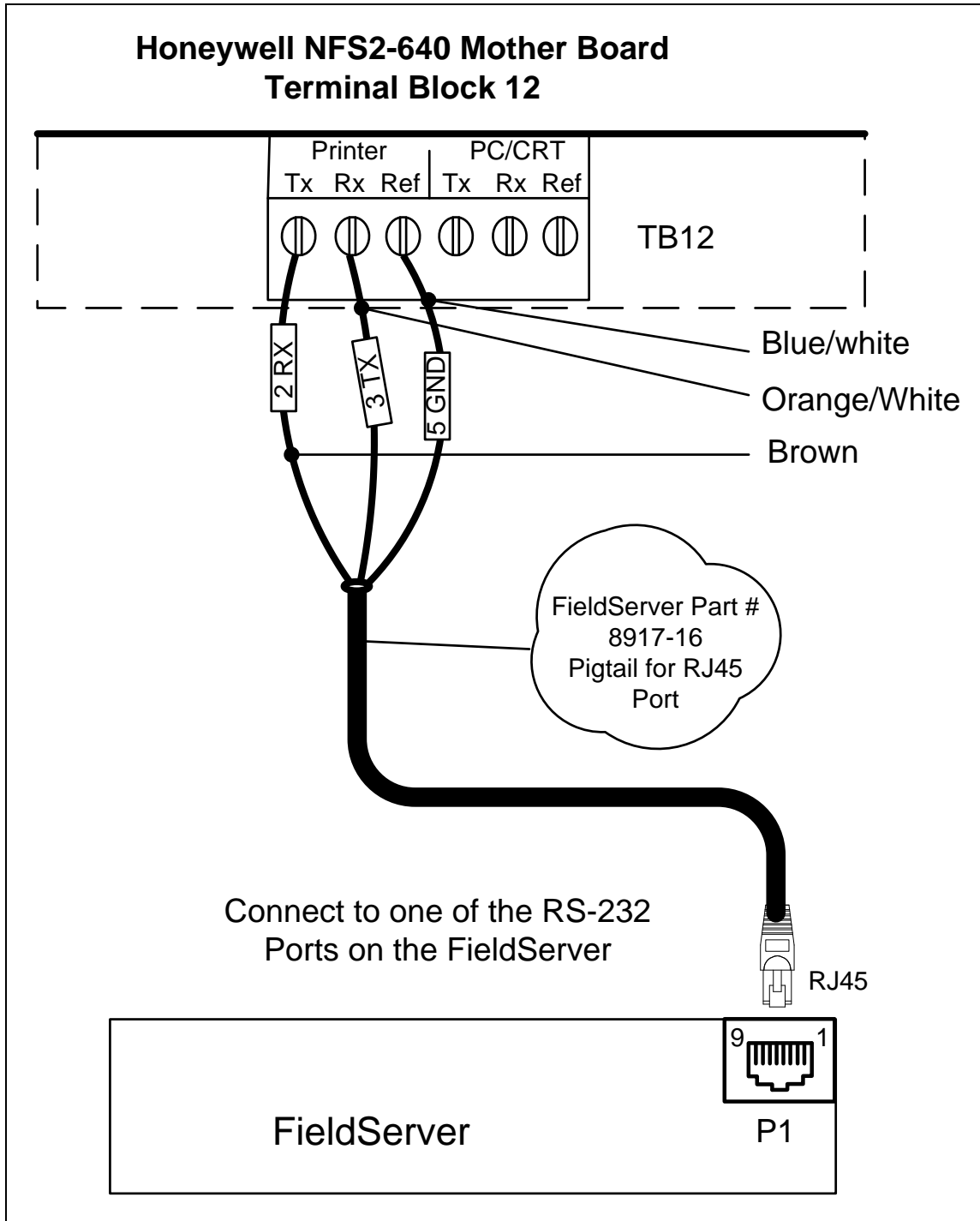
QuickServer:



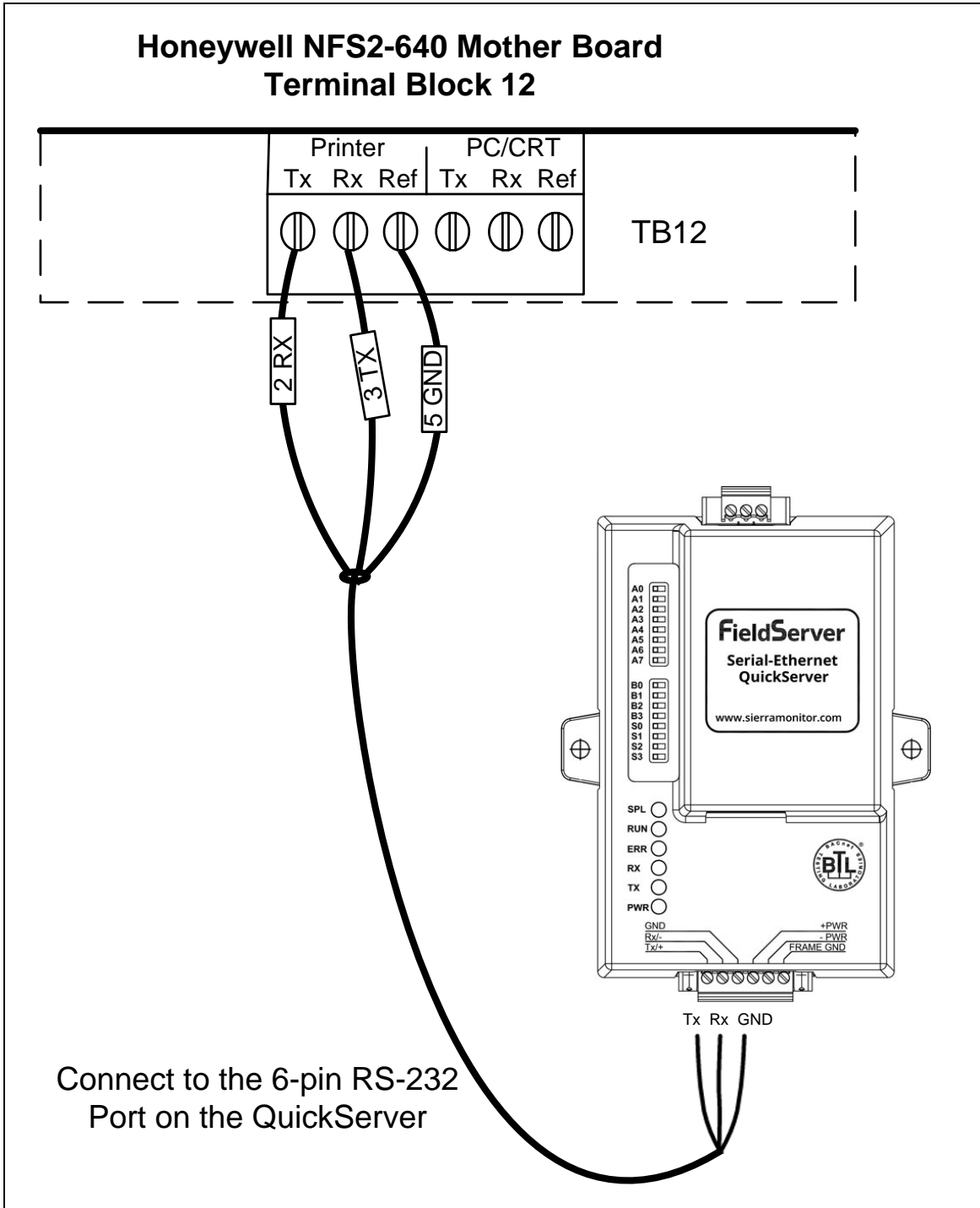
### 3.2 Honeywell NFS2-640

The FieldServer and QuickServer are connected to the Honeywell NFS2-640 Panel as shown below. Configure the Honeywell NFS2-640 Panel according to manufacturer's instructions. The recommended connection through the printer port is depicted in the diagram. If preferred, connection can be made through the CRT port. Refer to [Appendix A.1.2](#) for more information.

**FieldServer:**



QuickServer:





## 4 DATA ARRAY PARAMETERS

Data Arrays are “protocol neutral” data buffers for storage of data to be passed between protocols. It is necessary to declare the data format of each of the Data Arrays to facilitate correct storage of the relevant data.

| Section Title     |  |   |
|-------------------|--|---|
| Data_Arrays       |  |   |
| Column Title      | Function   | Legal Values  |
| Data_Array_Name   | Provide name for Data Array.   | Up to 15 alphanumeric characters  |
| Data_Array_Format | Provide data format. Each Data Array can only take on one format.  | FLOAT, BIT, UInt16, SInt16, Packed_Bit, Byte, Packed_Byte, Swapped_Byte |
| Data_Array_Length | Number of Data Objects. Must be larger than the data storage area required by the Map Descriptors for the data being placed in this array. | 1-10,000  |

### Example

```

// Data Arrays
Data_Arrays
Data_Array_Name , Data_Array_Format , Data_Array_Length
DA_AI_01 , UInt16, , 200
DA_AO_01 , UInt16 , 200
DA_DI_01 , Bit , 200
DA_DO_01 , Bit , 200

```

## 5 CONFIGURING THE FIELDSEVER AS A HONEYWELL CLIENT

For detailed information on FieldServer configuration, refer to the FieldServer Configuration Manual. The information that follows describes how to expand upon the factory defaults provided in the configuration files included with the FieldServer (see “.csv” sample files provided with the FieldServer).

This section documents and describes the parameters necessary for configuring the FieldServer to communicate with a Honeywell NFS-640, NFS-320 or NFS2-640 Server.

It is possible to connect the Honeywell panel to any RS-232 port on the FieldServer. These ports need to be configured for Protocol=" hme-nfs2-640" in the configuration files.

The configuration file tells the FieldServer about its interfaces, and the routing of data required. In order to enable the FieldServer for Honeywell NFS-640, NFS-320 or NFS2-640 communications, the driver independent FieldServer buffers need to be declared in the “Data Arrays” section, the destination device addresses need to be declared in the “Client Side Nodes” section, and the data required from the servers needs to be mapped in the “Client Side Map Descriptors” section. Details on how to do this can be found below.

**NOTE: In the tables below, \* indicates an optional parameter, with the bold legal value being the default.**

### 5.1 Client Side Connection Parameters

| Section Title |  |   |
|---------------|--|---|
| Connections   |  |   |
| Column Title  | Function   | Legal Values                              |
| Port          | Specify which port the device is connected to the FieldServer. | P1-P2 <sup>1</sup>                        |
| Protocol      | Specify protocol used.   | Hme-nfs2-640, hme                         |
| Baud*         | Specify baud rate.   | <b>9600</b> baud only (Vendor limitation) |
| Parity*       | Specify parity.  | <b>None</b> (Vendor limitation)           |
| Data_Bits*    | Specify data bits.   | <b>8</b> (Vendor limitation)              |
| Stop_Bits*    | Specify stop bits.   | <b>1</b> (Vendor limitation)              |

**Example**

```

// Client Side Connections

Connections
Port , Protocol , Baud , Parity
P1 , hme-nfs2-640 , 9600 , None
```

<sup>1</sup> Not all ports shown are necessarily supported by the hardware. Consult the appropriate Instruction manual for details of the ports available on specific hardware.

## 5.2 Client Side Node Parameters

| Section Title |  |                                  |
|---------------|--|----------------------------------|
| Nodes         |  |                                  |
| Column Title  | Function   | Legal Values                     |
| Node_Name     | Provide name for Node.   | Up to 32 alphanumeric characters |
| Node_ID       | Unique station address of physical Server Node.                | 1-255                            |
| Protocol      | Specify protocol used.   | Hme-nfs2-640, hme                |
| Connection    | Specify which port the device is connected to the FieldServer. | P1-P2 <sup>1</sup>               |

### Example

```
// Client Side Nodes

Nodes
Node_Name , Node_ID , Protocol , Connection
PLC 1 , 1 , hme-nfs2-640 , P1
```

## 5.3 Client Side Map Descriptor Parameters

### 5.3.1 FieldServer Related Map Descriptor Parameters

| Column Title        | Function  | Legal Values  |
|---------------------|---|---|
| Map_Descriptor_Name | Name of this Map Descriptor.                                      | Up to 32 alphanumeric characters                            |
| Data_Array_Name     | Name of Data Array where data is to be stored in the FieldServer. | One of the Data Array names from <b>Section 4</b>           |
| Data_Array_Offset   | Starting location in Data Array.                                  | 0 to (Data_Array_Length-1) as specified in <b>Section 4</b> |
| Function            | Function of Client Map Descriptor.                                | Passive_Client, Rdbc, Wrbx                                  |

### 5.3.2 Driver Related Map Descriptor Parameters

| Column Title            | Function  | Legal Values  |
|-------------------------|---|---|
| Node_Name               | Name of Node to store data to.  | One of the Node Names specified in <b>Section 5.2</b>                     |
| Length*                 | Length of Map Descriptor.   | Large enough to store the required data, <b>1</b>                         |
| Address                 | This parameter determines the behaviour of the Map Descriptor. It needs to be set in conjunction with the Map Descriptor Function as described under <b>Section 5.3.2</b> . Refer to Section for a table linking Map Descriptor Behavior, Address and Function. | 7777, 8888, 8880, 8912, 8913,8914, 0                                      |
| Nfs_Clear_On_Sys_Reset* | Selects memory area to be cleared on "SYSTEM RESET". It is only applicable to Map Descriptors with address 7777. Refer to <b>Appendix C.2.4</b> for the relevant settings table.  | <b>0</b> or sum of any combination of 1,2,4,8,16,32,64,128, 512 or 32768. |

5.3.3 Use of Address to Determine Map Descriptor Behavior

| Map Descriptor Behavior                             | Address | Function       |
|---|---------|----------------|
| Selects Memory Area to be cleared on "SYSTEM RESET" | 7777    | Passive_Client |
| Poll for All Statuses                               | 8888    | Rdbc           |
| Read Panel Heartbeat                                | 8880    | Rdbc           |
| Send Acknowledge code                               | 8912    | Wrbx           |
| Send Signal Silence code                            | 8913    | Wrbx           |
| Send System Reset code                              | 8914    | Wrbx           |

### 5.3.4 Map Descriptor Example 1 – Storing Data

This is a typical example of a Passive Client Map Descriptor, which only reads incoming messages. All messages will be recorded in the Data Array designated to this port. Configuration of Data Arrays is described in Section 4. The offset and length are not used by the driver, but must be set to reasonable values to pass driver validation. Nfs\_Clear\_On\_Sys\_Reset is set to 7, and thus Detector, Module and Zone Alarm memory bits will reset on receipt of a “System Reset” message that is generated when the “System Reset” button on the panel is pressed. Refer to [Appendix C.2.4](#) for the relevant settings table.

| Map_Descriptor_Name | Data_Array_Name | Data_Array_Offset | Function       | Node_Name | Address | Length | Nfs_Clear_On_Sys_Reset |
|---------------------|-----------------|-------------------|----------------|-----------|---------|--------|------------------------|
| MD1_Panel1_Data     | DA_Panel1       | 0                 | Passive_Client | Panel1    | 7777    | 4800   | 7                      |

The Data Array name where status bits for all messages received on a port will be stored.

The offset is ignored - the driver always uses an offset of zero.

Designates that this Map Descriptor waits for incoming messages and does not poll.

There can only be one node per port. This field indirectly links the FieldServer port to a data storage array. See description of Node definition above.

An address of 7777 indicates that this is a passive Map Descriptor used to store data only.

### 5.3.5 Map Descriptor Example 2 – Heart Beat

This is an example of a Client Map Descriptor, which issues a command to the Panel to send a response to FieldServer. Upon response from panel, Driver will not store any data but now knows that panel is connected and responding, so the node status concept come to the fact.

**NOTE: Connection must be via the CRT port.**

| Map_Descriptor_Name | Data_Array_Name | Data_Array_Offset | Function | Node_Name | Address | Scan_Interval | Length |
|---------------------|-----------------|-------------------|----------|-----------|---------|---------------|--------|
| MD_HeartBeat        | DA_HeartBeat    | 0                 | Rdbc     | Panel1    | 8880    | 10s           | 1      |

Dummy Data Array name. No data will be stored.

The offset is ignored - the driver always uses an offset of zero.

Designates that this Map Descriptor will issue a command to the panel after every Scan\_Interval time period.

An address of 8880 indicates that this will issue a command to the panel such that the response indicates Node status.

5.3.6 Map Descriptor Example 3 – Synch the Panel to the FieldServer

This Read Status Map Descriptor periodically sends a poll to request point information from the Honeywell NFS-640/NFS2-640. The offset and length are not used by the driver but must be set to reasonable values to pass driver validation.

**NOTE: Connection must be via the CRT port.**

| Map_Descriptor_Name | Function | Node_Name | Address | Length | Scan_Interval |
|---------------------|----------|-----------|---------|--------|---------------|
| Read_Status         | Rdbc     | Panel1    | 8888    | 1      | 6000s         |

Designates that the Map Descriptor is a Read Status Poll.

There can only be one node per port. This field indirectly links the FieldServer port to a data storage array. See description of Node definition above.

An address of 8888 indicates that this Map Descriptor is a Read Status Poll.

The data contained in the response to this poll is stored in the passive Map Descriptor described in Section 5.3.4, therefore the length of this Map Descriptor need only be 1.

Scan Interval defines the time between polls.

5.3.7 Map Descriptor Example 3 – Send Acknowledge, Signal Silence and System Reset to Panel

This is an example of a Client Map Descriptors which could be used to issue Acknowledge, Signal Silence and System Reset commands to the panel respectively.

**NOTE: Connection must be via the CRT port.**

| Map_Descriptor_Name | Data_Array_Name | Data_Array_Offset | Function | Node_Name | Address | Length |
|---------------------|-----------------|-------------------|----------|-----------|---------|--------|
| MD_Acknowledge      | DA_ACK          | 0                 | Wrbx     | Panel1    | 88912   | 1      |
| MD_Silence          | DA_SILENCE      | 0                 | Wrbx     | Panel1    | 88913   | 1      |
| MD_Reset            | DA_RESET        | 0                 | Wrbx     | Panel1    | 88914   | 1      |

The Driver will issue the corresponding commands upon update of the specified offset in the specified Data Array.

Appendix A. Useful Features

Appendix A.1. Connection to the NFS-640/NFS2-640 CRT Port

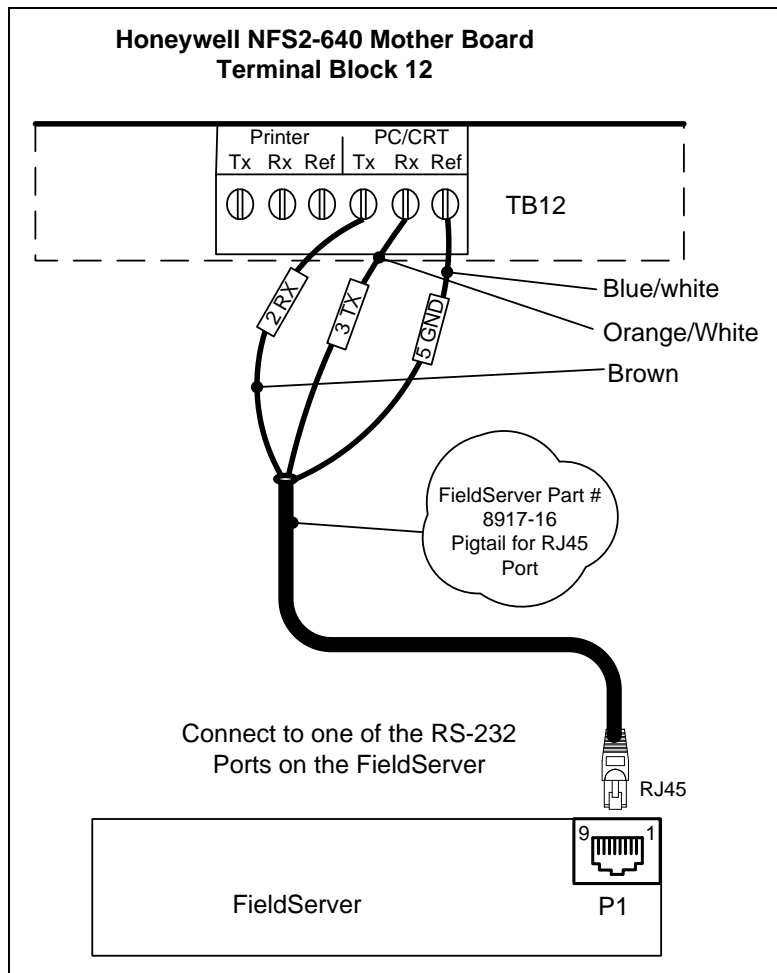
Before communication can be achieved through the CRT port, this port needs to be enabled. The port can be enabled/disabled as described below.

Appendix A.1.1. Enable/Disable Communication Through the CRT Port

| Enable   | Disable  |
|--|--|
| <ul style="list-style-type: none"> <li>• Press "Enter" on the keypad</li> <li>• Press "I"</li> <li>• Type "CRT96"</li> <li>• Press "Enter"</li> <li>• Press "Esc" Twice</li> </ul> | <ul style="list-style-type: none"> <li>• Press "Enter" on the keypad</li> <li>• Press "I"</li> <li>• Type "NOCRT"</li> <li>• Press "Enter"</li> <li>• Press "Esc" Twice</li> </ul> |

Appendix A.1.2. CRT Port Connection Diagram

The FieldServer is connected to the Honeywell NFS2-640 CRT port as shown below.



## Appendix B. Troubleshooting

- The Honeywell CRT Serial port is disabled by default. If the port is not enabled, the FieldServer receives short (8-9 byte) garbage messages and prints `lc_Timeout` errors for each of these messages. Refer to Appendix A.1 for information on enabling this port.
- If some events are not captured by FieldServer or on “SYSTEM RESET” or “SYSTEM NORMAL” some memory bits are not getting reset at the FieldServer. Check the length of the `Data_Arrays` and `Server Map_Descriptors` – they should be set to a minimum of 4800.
- If the FieldServer reboots when connected to the Panel Serial port, then it is likely that an Optical Isolator is required to balance ground potential differences. Such differences have been known to damage the FieldServer serial port, and therefore it is recommended that this action is taken as soon as the symptom is observed.

### Appendix B.1. Driver Limitations & Exclusions

- This driver depends on the stability of Honeywell's CRT and Printer Port messages. Should Honeywell modify their message protocol, problems may be experienced with this driver.
- The accuracy in recording the Honeywell panel status is dependent on synchronization with the FieldServer.
  - For **NFS-640**: Upon startup, the FieldServer polls the panel for the status of all points and is then fully synchronized. Event messages sent from the Honeywell CRT port will also update the recorded status. Some status changes, e.g. zone information do not result in an explicit message to the CRT port, therefore, the FieldServer's record may not be accurate until the next full read status request.
  - For **NFS2-640**: The system reset button on the panel can be pressed to force all existing events to be sent to the FieldServer.
- If this driver is connected via the CRT port it cannot support a fire panel connected on network, as the Network port (NUP port) cannot be used in conjunction with the CRT port.
- This driver does not support multi-dropped or networked Honeywell panels.
- Active event messages such as ALARM: include primary zone information; however, a point device such as a detector or module can be associated with a listing of zones, of which only the first is identified in the message. The status of the zone will be recorded by the driver. For NFS-640/NFS2-640 the status of other zones cannot be updated unless a read point status poll is sent to the panel. Note that this is only possible if connected through the CRT port.
- Communication through the CRT port was not designed as a supervised port. Should Honeywell wish to make this a supervised port, then this feature can be added to the FieldServer's driver at a later date.
- Logic and Evaluating equation status is not recorded by the driver.
- A percentage of detector alarms (smoke detectors for instance) is provided in detector status messages but was not implemented in this driver.
- Successful “write message send” for functions such as ack, silence or reset only indicate that the message has been sent. The driver does not acknowledge whether the message was received or acted upon.



**Appendix C. Reference**

Appendix C.1. Honeywell NFS-640 Message Types Recognized

|   | Initiating Function   | Status Banner         | Data Array   | Indication of Clear                                   | Notes   |
|---|---|-----------------------|--|---|---|
| 1 | Scheduled function of the NFS-640 panel, or after a reset                         | SYSTEM NORMAL         | N/A  | N/A   |   |
| 2 | detector or module activates  | ALARM:<br>or<br>ALARM | D(2X159)<br>M(2X159)<br>Z(99)<br>F(10)<br>R(10)        | SYSTEM NORMAL<br>And<br>SYSTEM RESET                  | Will also set zone alarm array  |
| 3 | detector or module has an electrical or mechanical fault                          | TROUBL<br>or<br>TEST  | D(2X159)<br>M(2X159)<br>Panel(9X9)<br>Bell(4)          | CLR TB<br>And<br>SYSTEM NORMAL<br>And<br>SYSTEM RESET | Clear is sent automatically by panel, then system normal is sent if criteria in 2 above are met                       |
| 4 | monitor module programmed with security code activates                            | ACTIVE                | M(2X159)   | SYSTEM NORMAL   | Will also set zone alarm array  |
| 5 | monitor module programmed with supervisory code activates                         | ACTIVE                | M(2X159)   | SYSTEM NORMAL   |   |
| 6 | detector exceeds programmed pre-alarm alert or action level                       | PREALM                | D(2X159)   | SYSTEM NORMAL<br>or<br>CLR PAL<br>And<br>SYSTEM RESET | Action pre-alarms need to be reset<br>Alert pre-alarms reset themselves and sends sys normal<br>CLEAR not implemented |
| 7 | detector, monitor module, control/relay module or panel circuit has been disabled | DISABL                | D(2X159)<br>M(2X159)<br>Panel(9X9)<br>Bell(4)<br>Z(99) | ENABLE<br>or<br>SYSTEM NORMAL<br>or<br>CLR TB         | Can also DISABL zone. Only software zones can be disabled from the panel  |
| 8 | monitor modules programmed with non-alarm codes                                   | ACTIVE                | M(2X159)   | CLR ACT<br><br>SYSTEM NORMAL                          |   |
| 9 | monitor modules programmed with equipment trouble codes                           | TROUBL                | M(2X159)   | SYSTEM NORMAL<br>And<br>SYSTEM RESET                  | when corrected panel removes trouble and sends system normal  |

|    | Initiating Function  | Status Banner          | Data Array   | Indication of Clear   | Notes  |
|----|--|------------------------|--|---|--|
| 10 | Trouble on output circuits for NAC's, panel circuits, or control/relay modules                                   | TROUBL                 | M(2X159)   | SYSTEM<br>NORMAL<br>And<br>SYSTEM<br>RESET                        | When corrected panel removes trouble and sends system normal   |
| 11 | read point status of monitor module, NAC=bell, panel, software zone 'Z', special zone 'F', or releasing zone 'R' | ON                     | M(2X159)<br>B(4)<br>P(8X8)<br>Z(99)<br>F(10)<br>R(10)  | OFF<br>or<br>NORMAL<br>or<br>SYSTEM<br>NORMAL                     |  |
| 12 | read point status of a detector  | ALARM<br>TEST          | Same array as 3 & 4 above.<br><b>ALARM</b> will set alarm point, and zone array.<br><b>TEST</b> will set trouble array for point only.<br><b>ALARM</b> will set alarm array,<br><b>TEST</b> will set trouble array | NORMAL<br>or<br>SYSTEM<br>NORMAL                                  |  |
| 13 | system has trouble see protocol spec appendix B-3  | TROUBL<br>IN<br>SYSTEM | ST(200)  | CLR TB IN<br>SYSTEM<br>SYSTEM<br>NORMAL<br>And<br>SYSTEM<br>RESET | see attached table for system trouble messages                 |
| 14 | from read point status   | NORMAL                 | Clears:<br>detector:<br>alarm<br>trouble<br>disable<br><i>prealarm</i><br>module:<br>alarm<br>trouble<br>disable<br><i>active</i><br><i>on</i>   |   |  |
| 15 | from read point status   | ON                     | ON affects:<br>module_on<br>bell_on<br>panel_on<br>z_on<br>f_on<br>r_on  | OFF<br>or<br>NORMAL<br>or<br>SYSTEM<br>NORMAL                     | ON ignores evaluation and logic equations in read point status |

|    | Initiating Function    | Status Banner | Data Array   | Indication of Clear | Notes   |
|----|------------------------|---------------|--|---------------------|---|
| 16 | from read point status | OFF           | These clear different parts of the array depending on the device or zone.<br>Module (control/relay):<br>on disable alarm active<br>Panel:<br>on disable<br>Bell:<br>on disable<br>Zone:<br>on disable (for software only!)<br>alarm<br>tbl |                     | TROUBL arrays except for zone TBL are not affected by OFF.<br>The trouble, clr trouble messages, system normal are expected to clear the TROUBL points  |
| 17 | from read point status | TBL           | sets zone trouble array or sets control/relay module array but not monitor modules.  |                     | note: TROUBL sets detector, monitor module, panel, and bell<br>TBL ignores evaluation and logic equations   |
| 18 | clear trouble          | CLR TB        | resets TROUBL array for D,M,P,B and resets DISABL array for D, M, P, B   |                     | When a zone is disabled, the corresponding points are also disabled<br>When a zone is enabled, the zone message is ENABLE, but for the points is CLR TB |
| 19 |                        | ENABLE        | resets DISABL  |                     |   |

Appendix C.2. Message to Data Array Mapping

Appendix C.2.1. Status Messages Recognized by the Driver

The primary purpose of this driver is to record the status of devices connected to the Honeywell system by interpreting the text messages sent to the RS-232 port. Only messages that directly pertain to device status are recognized. Zone status information will be recorded if incorporated with point status messages.

The following table presents the event and read status messages recognized.

| Active Events                     | Read Point Status |
|-----------------------------------|-------------------|
| SYSTEM NORMAL                     | ON/OFF            |
| ALARM                             | NORMAL            |
| TROUBL/CLR TB                     | ALARM             |
| ACTIVE/CLR ACT                    | TEST              |
| PREALM/CLR PAL                    | TBL               |
| DISABL/ENABLE                     |                   |
| TROUBL IN SYSTEM/CLR TB IN SYSTEM |                   |
| TEST                              |                   |
| SYSTEM RESET                      |                   |

TEST read point status messages will change the status of a device in the TROUBL Data Array.

Appendix C.2.2. Panel Status Data Array Mapping

A detailed mapping of message interaction is tabulated below as well as a current listing of System Trouble messages provided by Honeywell at the time this driver was written. Any changes or additions by Honeywell will not be reflected in this driver unless specifically revised.

| Parameter                   |           | Bits      |
|-----------------------------|-----------|-----------|
| Detector Alarm              | (loop 1)  | 0-199     |
|                             | (loop 2)  | 200-399   |
| Zone Alarms                 | Software  | 800-899   |
|                             | Special   | 900-909   |
|                             | Releasing | 910-919   |
| Detector Trouble            | Loop 1    | 1000-1199 |
|                             | Loop 2    | 1200-1399 |
| Bell Circuit Trouble        | Loop 1    | 1890-1899 |
| Detector Pre-Alarm          | Loop 1    | 2300-2499 |
|                             | Loop 2    | 2500-2699 |
| Module Disable              | Loop 1    | 3100-3299 |
|                             | Loop 2    | 3300-3499 |
| Panel Circuit Disable       |           | 3500-3589 |
| On/Off status Panel Circuit |           | 4000-4089 |
| On/Off status Zone          | Software  | 4100-4199 |
|                             | Special   | 4200-4209 |
|                             | Releasing | 4210-4219 |
| Trouble status Zone         | Software  | 4500-4599 |
|                             | Special   | 4600-4609 |
|                             | Releasing | 4610-4619 |
| Module Alarm                | Loop 1    | 400-599   |
|                             | Loop 2    | 600-799   |
| Panel Circuit Trouble       |           | 1800-1889 |
| Module Trouble (loop 1)     | Loop 1    | 1400-1599 |
|                             | (loop 2)  | 1600-1799 |

**Example 1:** Detector 1 on loop 1 in alarm. Detector alarms are stored in 0-399; Loop 1 detectors are stored in 0-199. Detector 1 is stored at offset 1. (2<sup>nd</sup> element in the array).

**Example 2:** Detector 2 on loop 2 in alarm. Detector alarms are stored in 0-399. Loop 2 detectors are stored in 200-399. Detector 2 is stored at offset 202. (203<sup>rd</sup> element in the array).

**Example 3:** Special Zone #3 in alarm. Zone alarms are stored in 800-919. Special zones are stored in 900-909. Special zone #3 alarm status is stored at offset 903. (904<sup>th</sup> element in the array).

**Example 4:** Detector 2 on loop 2 in pre-alarm. Detector pre-alarms are stored in 2300-2699. Loop 2 detectors are stored in 2500-2699. Detector 2 is stored at offset 2502. (2503<sup>rd</sup> element in the array).

| Parameter   |                  | Bits                   |
|---|------------------|------------------------|
| Active Monitor Modules (loop1)<br>(loop2)   | Loop 1<br>Loop 2 | 1900-2099<br>2100-2299 |
| Detector Disable (loop 1)<br>(loop 2)   | Loop 1<br>Loop 2 | 2700-2899<br>2900-3099 |
| On/Off status Module (loop 1)<br>(loop 2)   | Loop 1<br>Loop 2 | 3600-3799<br>3800-3999 |
| Bell Circuit Disable  |                  | 3590-3599              |
| On/Off status Bell Circuit  |                  | 4090-4099              |
| Listed System Troubles - refer to<br><a href="#">Appendix C.2.3</a><br>Unknown system trouble |                  | 4300-4498<br>4499      |
| Disable Zone (software)   |                  | 4700-4799              |

**Example 5:** The panel reports that the panel door is open. System alarms are stored at offsets 4300-4499. Using the table in [Appendix C.2.3](#) - door open status is stored at offset 4312 (the 4313rd element in the array).

Appendix C.2.3. System Trouble Messages

| Message               | #  | Panel Status Data Array Offset |
|-----------------------|----|--------------------------------|
| "GROUND FAULT"        | 0  | 4300                           |
| "AC FAIL"             | 1  | 4301                           |
| "BATTERY"             | 2  | 4302                           |
| "STYLE 6 POS. LOOP 1" | 3  | 4303                           |
| "STYLE 6 POS. LOOP 2" | 4  | 4304                           |
| "CORRUPT LOGIC EQUAT" | 5  | 4305                           |
| "LCD80 SUPERVISORY"   | 6  | 4306                           |
| "EPROM ERROR"         | 7  | 4307                           |
| "INTERNAL RAM ERROR"  | 8  | 4308                           |
| "EXTERNAL RAM ERROR"  | 9  | 4309                           |
| "PROGRAM CORRUPTED"   | 10 | 4310                           |
| "NO DEV. INST ON L1"  | 11 | 4311                           |
| "PANEL DOOR OPEN"     | 12 | 4312                           |
| "AUXILIARY TROUBLE"   | 13 | 4313                           |
| "TERM. SUPERVISORY"   | 14 | 4314                           |
| "ANNUN. 1 TROUBLE"    | 15 | 4315                           |
| "ANNUN. 1 NO ANSWER"  | 16 | 4316                           |
| "ANNUN. 2 TROUBLE"    | 17 | 4317                           |
| "ANNUN. 2 NO ANSWER"  | 18 | 4318                           |
| "ANNUN. 3 TROUBLE"    | 19 | 4319                           |
| "ANNUN. 3 NO ANSWER"  | 20 | 4320                           |
| "ANNUN. 4 TROUBLE"    | 21 | 4321                           |
| "ANNUN. 4 NO ANSWER"  | 22 | 4322                           |
| "ANNUN. 5 TROUBLE"    | 23 | 4323                           |
| "ANNUN. 5 NO ANSWER"  | 24 | 4324                           |
| "ANNUN. 6 TROUBLE"    | 25 | 4325                           |
| "ANNUN. 6 NO ANSWER"  | 26 | 4326                           |
| "ANNUN. 7 TROUBLE"    | 27 | 4327                           |
| "ANNUN. 7 NO ANSWER"  | 28 | 4328                           |
| "ANNUN. 8 TROUBLE"    | 29 | 4329                           |
| "ANNUN. 8 NO ANSWER"  | 30 | 4330                           |
| "ANNUN. 9 TROUBLE"    | 31 | 4331                           |
| "ANNUN. 9 NO ANSWER"  | 32 | 4332                           |

| Message              | #  | Panel Status Data Array Offset |
|----------------------|----|--------------------------------|
| "ANNUN.10 TROUBLE"   | 33 | 4333                           |
| "ANNUN.10 NO ANSWER" | 34 | 4334                           |
| "ANNUN.11 TROUBLE"   | 35 | 4335                           |
| "ANNUN.11 NO ANSWER" | 36 | 4336                           |
| "ANNUN.12 TROUBLE"   | 37 | 4337                           |
| "ANNUN.12 NO ANSWER" | 38 | 4338                           |
| "ANNUN.13 TROUBLE"   | 39 | 4339                           |
| "ANNUN.13 NO ANSWER" | 40 | 4340                           |
| "ANNUN.14 TROUBLE"   | 41 | 4341                           |
| "ANNUN.14 NO ANSWER" | 42 | 4342                           |
| "ANNUN.15 TROUBLE"   | 43 | 4343                           |
| "ANNUN.15 NO ANSWER" | 44 | 4344                           |
| "ANNUN.16 TROUBLE"   | 45 | 4345                           |
| "ANNUN.16 NO ANSWER" | 46 | 4346                           |
| "ANNUN.17 TROUBLE"   | 47 | 4347                           |
| "ANNUN.17 NO ANSWER" | 48 | 4348                           |
| "ANNUN.18 TROUBLE"   | 49 | 4349                           |
| "ANNUN.18 NO ANSWER" | 50 | 4350                           |
| "ANNUN.19 TROUBLE"   | 51 | 4351                           |
| "ANNUN.19 NO ANSWER" | 52 | 4352                           |
| "ANNUN.20 TROUBLE"   | 53 | 4353                           |
| "ANNUN.20 NO ANSWER" | 54 | 4354                           |
| "ANNUN.21 TROUBLE"   | 55 | 4355                           |
| "ANNUN.21 NO ANSWER" | 56 | 4356                           |
| "ANNUN.22 TROUBLE"   | 57 | 4357                           |
| "ANNUN.22 NO ANSWER" | 58 | 4358                           |
| "ANNUN.23 TROUBLE"   | 59 | 4359                           |
| "ANNUN.23 NO ANSWER" | 60 | 4360                           |
| "ANNUN.24 TROUBLE"   | 61 | 4361                           |
| "ANNUN.24 NO ANSWER" | 62 | 4362                           |
| "ANNUN.25 TROUBLE"   | 63 | 4363                           |
| "ANNUN.25 NO ANSWER" | 64 | 4364                           |
| "ANNUN.26 TROUBLE"   | 65 | 4365                           |

| Message                | #   | Panel Status Data Array Offset |
|------------------------|-----|--------------------------------|
| "ANNUN.26 NO ANSWER"   | 66  | 4366                           |
| "ANNUN.27 TROUBLE"     | 67  | 4367                           |
| "ANNUN.27 NO ANSWER"   | 68  | 4368                           |
| "ANNUN.28 TROUBLE"     | 69  | 4369                           |
| "ANNUN.28 NO ANSWER"   | 70  | 4370                           |
| "ANNUN.29 TROUBLE"     | 71  | 4371                           |
| "ANNUN.29 NO ANSWER"   | 72  | 4372                           |
| "ANNUN.30 TROUBLE"     | 73  | 4373                           |
| "ANNUN.30 NO ANSWER"   | 74  | 4374                           |
| "ANNUN.31 TROUBLE"     | 75  | 4375                           |
| "ANNUN.31 NO ANSWER"   | 76  | 4376                           |
| "ANNUN.32 TROUBLE"     | 77  | 4377                           |
| "ANNUN.32 NO ANSWER"   | 78  | 4378                           |
| "NETWORK FAIL PORT A"  | 79  | 4379                           |
| "NETWORK FAIL PORT B"  | 80  | 4380                           |
| "NCM COMM FAILURE"     | 81  | 4381                           |
| "ADV WALK TEST"        | 82  | 4382                           |
| "CHARGER FAIL"         | 83  | 4383                           |
| "GROUND FAULT LOOP2"   | 84  | 4384                           |
| "STYLE 6 NEG. LOOP 1"  | 85  | 4385                           |
| "STYLE 6 NEG. LOOP 2"  | 86  | 4386                           |
| "GROUND FAULT LOOP1"   | 87  | 4387                           |
| "UDACT TROUBLE"        | 88  | 4388                           |
| "UDACT NO ANSWER"      | 89  | 4389                           |
| "PROG MODE ACTIVATED"  | 90  | 4390                           |
| "LOADING..NO SERVICE"  | 91  | 4391                           |
| "BASIC WALK TEST"      | 92  | 4392                           |
| "NFPA 24Hr. REMINDER"  | 93  | 4393                           |
| "BAT. BACKUP RAM"      | 94  | 4394                           |
| "Master Box trouble"   | 95  | 4395                           |
| "Detector Initialize"  | 96  | 4396                           |
| "Pwr.Supply Comm Fail" | 97  | 4397                           |
| "Release Dev. Disable" | 98  | 4398                           |
| "DVC Ext Ram Error"    | 99  | 4399                           |
| "DVC Program Corrupt"  | 100 | 4400                           |
| "DVC Loading No Serv"  | 101 | 4401                           |
| "DVC NVRam Batt Tbl"   | 102 | 4402                           |
| "DVC Buzzer Off-Line"  | 103 | 4403                           |
| "DVC Self Test Fail"   | 104 | 4404                           |
| "DVC Soft. Mismatch"   | 105 | 4405                           |
| "DVC Aux.Trouble"      | 106 | 4406                           |
| "DVC FFT Trouble"      | 107 | 4407                           |
| "Drill activated"      | 108 | 4408                           |
| "Network Incompatible" | 109 | 4409                           |
| "DVC Rem. Mic. Tbl."   | 110 | 4410                           |
| "DVC Local Mic. Tbl."  | 111 | 4411                           |
| "DVC Local Phone Tbl"  | 112 | 4412                           |
| "DVC Analog Out.1 Tbl" | 113 | 4413                           |
| "DVC Analog Out.2 Tbl" | 114 | 4414                           |

| Message                 | #   | Panel Status Data Array Offset |
|-------------------------|-----|--------------------------------|
| "DVC Analog Out.3 Tbl"  | 115 | 4415                           |
| "DVC Analog Out.4 Tbl"  | 116 | 4416                           |
| "DVC Flash Image Err"   | 117 | 4417                           |
| "DVC Database Corrupt"  | 118 | 4418                           |
| "DVC Audio Lib.Corrupt" | 119 | 4419                           |
| "DVC Dbase Incompat"    | 120 | 4420                           |
| "DVC Audio Lib Incomp"  | 121 | 4421                           |
| "DVC DAA Downloading"   | 122 | 4422                           |
| "HS_NCM Sniffer Activ"  | 123 | 4423                           |
| "Exceeded Conn. Limit"  | 124 | 4424                           |

Appendix C.2.4. Nfs\_Clear\_On\_Sys\_Reset - Settings Table

| Setting | Zone Reset                           |
|---------|--------------------------------------|
| 0       | All Zones                            |
| 1       | Detector Alarm (0-399)               |
| 2       | Module Alarm (400-799)               |
| 4       | Zone Alarms (800-919)                |
| 8       | Detector Trouble (1000-1399)         |
| 16      | Module Trouble (1400-1799)           |
| 32      | Panel Circuit Trouble (1800-1889)    |
| 64      | Bell Circuit Trouble (1890-1899)     |
| 128     | Detector Pre-Alarm (2300-2699)       |
| 256     | System Trouble (4300-4499)           |
| 512     | Trouble status Zone (4500-4619)      |
| 32678   | Nothing will reset on "SYSTEM RESET" |

If set to the sum of any of the combinations above, all the selected areas will be reset, e.g. if set to 7 = 4+2+1 then Zone alarm(4) , module Alarm(2) and Detector Alarm (1) all will reset.

If this keyword is not defined or set to 0 all the above will be reset.

Appendix C.3. Driver Error Messages

Most error messages are associated with errors in parsing an incoming message from the NFS-640. The most likely cause is a mismatch in expected message format. The driver will flag one of the following error messages and continue.

Timeout Errors are related to a lack of response by the Honeywell panel to read poll status polls, or due to internal timing anomalies of the FieldServer. If a Timeout error message is displayed then the error is most likely external. Check connections.

Checksum Errors are recorded for messages that are incomplete. Review the message that was discarded, and call support if this event occurs repeatedly, or if the message was incorrectly ignored.

| Error Message  | Corrective Action                   |
|--|-------------------------------------|
| NFS640#2: Err. Illegal Map Descriptor length - defaulting to 1 | check configuration file settings   |
| NFS640#3: Err. Diagnostic line ignored.                        | call support, developers diagnostic |
| NFS640#4: Err. Test file <%s> not found.                       | call support, developers diagnostic |
| NFS640#5: Err. parsing NORMAL                                  | See note 1.                         |
| NFS640#6: Err. storing NORMAL                                  | See note 1.                         |
| NFS640#7: Err. parsing ALARM:                                  | See note 1.                         |
| NFS640#8: Err. parsing ALARM:                                  | See note 1.                         |
| NFS640#9: Err. storing ALARM:                                  | See note 1.                         |
| NFS640#10: Err. parsing ACTIVE                                 | See note 1.                         |
| NFS640#11: Err. storing ACTIVE                                 | See note 1.                         |
| NFS640#12: Err. parsing CLR ACT                                | See note 1.                         |
| NFS640#13: Err. storing CLR ACT                                | See note 1.                         |
| NFS640#14: Err. parsing PREALM                                 | See note 1.                         |
| NFS640#15: Err. storing PREALM                                 | See note 1.                         |
| NFS640#16: Err. parsing CLR PAL                                | See note 1.                         |
| NFS640#17: Err. storing CLR PAL                                | See note 1.                         |
| NFS640#18: Err. parsing DISABL                                 | See note 1.                         |

| Error Message  | Corrective Action   |
|--|---|
| NFS640#19: Err. storing DISABL   | See note 1.   |
| NFS640#20: Err. parsing ENABLE   | See note 1.   |
| NFS640#21: Err. storing ENABLE   | See note 1.   |
| NFS640#22: Err. parsing ON   | See note 1.   |
| NFS640#23: Err. storing ON   | See note 1.   |
| NFS640#24: Err. parsing OFF  | See note 1.   |
| NFS640#25: Err. storing OFF  | See note 1.   |
| NFS640#26: Problems parsing TROUBL IN SYSTEM, recorded as 'unknown' trouble                            | See note 1.   |
| NFS640#27: Err. storing TROUBL IN SYSTEM   | See note 1.   |
| NFS640#28: Err. parsing CLR TB IN SYSTEM   | See note 1.   |
| NFS640#29: Err. storing CLR TB IN SYSTEM   | See note 1.   |
| NFS640#30: Err. parsing TROUBL or TEST   | See note 1.   |
| NFS640#31: Err. storing TROUBL or TEST   | See note 1.   |
| NFS640#32: Err. parsing CLR TB   | See note 1.   |
| NFS640#33: Err. storing CLR TB   | See note 1.   |
| NFS640:#34 Err. Incoming data is being abandoned on port %d. MapDesc's are required to define storage. | Check that the Honeywell is connected to the correct serial port defined in the csv's   |
| NFS640#35: Err. parsing TBL  | See note 1.   |
| NFS640#36: Err. storing TBL  | See note 1.   |
| NFS640#37: Warning. Incomplete message.  | review message and call support if necessary  |
| NFS640#38: Err. No response to read point status poll  | Check connections to the Honeywell panel, call support if message persists. Note, the Honeywell panel will not respond if in programming mode, so some no response messages may occur if the FieldServer polls the Honeywell panel in this mode. This functionality is only possible if connected through the CRT port. |
| NFS640#39: FYI. Defaulting MD scan_interval to 10 min  | If required update config if with appropriate scan_interval   |
| NFS640#40: FYI. Minimum recommended scan_itnerval is %ds   | If required update config if with appropriate scan_interval   |

**NOTE:** These errors are produced when the driver is unable to parse a message correctly. This could happen if 1) the message is corrupted or 2) the message contains keywords not recognized by the driver or the message structure is different to what was expected. If the cause is the latter, then take a log and send the log together with the configuration CSV file when reporting this problem to tech support. If these errors occur rarely then the source of the error is probably a corrupted message.



Appendix C.4. FieldServer Statistics

The following table identifies statistics generated by the Honeywell NFS-640 serial driver and their meanings.

| Message           | Meaning   |
|-------------------|---|
| Read message sent | Total number of messages sent for reading the status of all Honeywell panel points. Each time an active poll is made, expect this stat to increase by 2 as the protocol requires two messages to complete this request. |
| Bytes sent        | Total number of bytes sent by all read point status polls to the Honeywell panel.   |
| Message received  | Total number messages of all types received from the Honeywell panel<br>A message is a single line reporting status.  |
| Bytes received    | Total number of bytes received by all message types from the Honeywell panel.   |
| Ignored messages  | Total number of messages ignored by the driver because an appropriate Map Descriptor could not be found or the type of message is not currently relevant.   |
| IC timeout Errors | Total number of inter-character timeouts that have occurred.  |
| Protocol Errors   | A message could not be parsed or stored correctly.  |