

## Description

The NFS-640 Serial driver allows the FieldServer to record data from Notifier Onyx 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 Notifier Fire Alarm Panel. The FieldServer can actively request that the Notifier panel send the status of all points, devices and zones on a periodic basis.

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 Notifier 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 Notifier Fire Panel issues, as well as the frequency of the read status requests that the FieldServer makes. The request for status of all points and zones occurs every 10 min by default; this period can be reduced to 5 min or increased to any value with no upper bounds.

The types of Notifier messages supported by this driver are summarized in this fact sheet. 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 also presented. Finally, the device status to the data array mapping is also provided.

It is possible to connect through the CRT Port. However, using this port restricts the use of Notifier Networking. Meaning 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 Notifier 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: Communication through this port does not equate to Port Supervision.**

The panel must output messages in English. For Notifier 640 Onyx with Spanish firmware (as sold in Mexico and other Central/ South American markets) see the Notifier Onyx NFS 640 (Spanish) protocol driver sheet.

## Connection Facts

| FieldServer Mode | Nodes | Comments   |
|------------------|-------|--|
| Client           | 1     | Only one Notifier panel may be connected to any single RS-232 FieldServer Port |

## Formal Driver Type

Serial, Client only

## Compatibility

| FieldServer Model | Compatible |
|-------------------|------------|
| ProtoCessor       | No         |
| ProtoCarrier      | No         |
| ProtoNode         | No         |
| ProtoAir          | No         |
| FS-B35 Series     | Yes        |

| FieldServer Model      | Compatible |
|------------------------|------------|
| QuickServer FS-QS-10xx | No         |
| QuickServer FS-QS-12xx | Yes        |
| QuickServer FS-QS-20xx | Yes        |
| QuickServer FS-QS-22xx | Yes        |

## Connection Information

### NFS-640 TB14 Printer Port; NFS2-640/NFS-320 TB12 Printer Port

**Connection Type:** RS-232 or RS-485 (with converter)

**Baud Rates:** 2400, 4800 (N/A for NFS-640), 9600 (Vendor Limitation)

**Data Bits:** 7 (Vendor Limitation)

**Stop Bits:** 1 (Vendor Limitation)

**Parity:** Even (Vendor Limitation)

**Multidrop Capability:** No

### NFS-640 TB15 CRT Port; NFS2-640/NFS-320 TB12 CRT Port

**Connection Type:** RS-232 or RS-485 (with converter)

**Baud Rates:** 9600 (Vendor Limitation)

**Data Bits:** 8 (Vendor Limitation)

**Stop Bits:** 1 (Vendor Limitation)

**Parity:** None (Vendor Limitation)

**Multidrop Capability:** No

## Devices Tested

| Device   | Tested (Factory, Site) |
|----------|------------------------|
| NFS-640  | Factory                |
| NFS2-640 | Factory                |

## Communication Functions

### Messages Type Supported

The purpose of this driver is to record the status of devices connected to the Notifier Panel by interpreting text messages sent to the printer or CRT port. Messages that do not directly pertain to device status are not reported. When a read point status is performed, points that have their status reported as TEST are regarded as being in a TROUBLE state. The following subset of event and read status messages is 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                              |                   |

### Zone Status

Information about zone status will be recorded if incorporated with point status messages. Some messages (e.g. Trouble messages) do not contain zone status information.

If the device belongs to multiple zones, only the zone status of the first zone is reported. This limits the accuracy of zone data based on event generated messages, however, when the status is read, the zone status will be valid.

## MSA Safety

1991 Tarob Court, Milpitas, California 95035 USA

O. +1 408 262-6611 TF. +1 800 727-4377 E. SMC-insidesales@msasafety.com

www.MSAsafety.com

**Panel Status: Data Array Mapping**

| Parameter   | Bits                                |
|---|-------------------------------------|
| Detector Alarm (e.g. 2D001 -> 201)<br>(loop 1)<br>(loop 2)                                      | 0-199<br>200-399                    |
| Zone Alarms (e.g. Z01 -> 801, F07 -> 907, R00 -> 910)<br>(software)<br>(special)<br>(releasing) | 800-899<br>900-909<br>910-919       |
| Detector Trouble (loop 1)<br>(loop 2)   | 1000-1199<br>1200-1399              |
| Bell Circuit Trouble (e.g. B01 -> 1891, B04 -> 1894)  | 1890-1899                           |
| Detector Pre-Alarm (loop 1)<br>(loop 2)   | 2300-2499<br>2500-2699              |
| Module Disable (loop 1)<br>(loop 2)   | 3100-3299<br>3300-3499              |
| Panel Circuit Disable   | 3500-3589                           |
| On/Off status Panel Circuit   | 4000-4089                           |
| On/Off status Zone (software)<br>(special)<br>(releasing)                                       | 4100-4199<br>4200-4209<br>4210-4219 |
| Trouble status Zone (software)<br>(special)<br>(releasing)                                      | 4500-4599<br>4600-4609<br>4610-4619 |
| Parameter   | Bits                                |
| Module Alarm (loop1)<br>(loop2)   | 400-599<br>600-799                  |
| Panel Circuit Trouble (e.g. P1.1 -> 1811, P8.8 -> 1888)   | 1800-1889                           |
| Module Trouble (loop 1)<br>(loop 2)   | 1400-1599<br>1600-1799              |
| Active Monitor Modules (loop 1)<br>(loop 2)   | 1900-2099<br>2100-2299              |
| Detector Disable (loop 1)<br>(loop 2)   | 2700-2899<br>2900-3099              |
| On/Off status Module (loop 1)<br>(loop 2)   | 3600-3799<br>3800-3999              |
| Bell Circuit Disable  | 3590-3599                           |
| On/Off status Bell Circuit  | 4090-4099                           |
| SystemTrouble<br>4499 = unknown system trouble<br>4300+ = listed system troubles                | 4300-4499                           |
| Disable Zone (software)   | 4700-4799                           |

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### Driver Limitations & Exclusions

- This driver depends on the stability of the messages received by the printer/CRT ports. Should Notifier modify their message protocol, problems can be expected with this driver.
- The accuracy in recording the Notifier Panel status is dependent on synchronization with the FieldServer. Upon startup, the FieldServer polls the panel for the status of all points and is then fully synchronized. Event messages sent from the Notifier CRT port will also update the recorded status. Some status changes, e.g. zone information do not result in an explicit message to the port, therefore, the FieldServer's record may not be accurate until the next full read status request.
- When connected via the CRT port, the driver cannot support a fire panel connected to a Noti-Fire-Net, as the Network port (NUP port) cannot be used in conjunction with the CRT port.
- This driver does not support multi-dropped or networked Notifier 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 this zone will be recorded by the driver. To update the status of other zones, a read point status poll needs to be sent to the panel.
- Communication through the CRT port was not designed as a supervised port. Should Notifier wish to make this a supervised port, then this feature will need to be added to the FieldServer.
- Logic and evaluating equation status was not recorded by FieldServer's driver. These could be added at a later date.
- Percentage of detector alarms (smoke detectors for instance) is provided in detector status messages but was not implemented in this driver. If requested, this information can be provided as an addition at a later date.

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