



FieldServer Driver - Serial FS-8700-90 Notifier ONYX NFS-640

Description

The NFS-640 Serial driver allows the FieldServer to record data from Notifier Onyx Series NFS-640 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 NFS-640 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 NFS-640 unit 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 later in this fact sheet. As well, a detailed table in the manual shows each type of NFS-640 message the FieldServer recognizes and the effect that it has on the status of points in the data array. The device status to the data array mapping is also provided in the manual.

The panel *must* output messages in English.

For Notifier 640 Onyx firmware with Spanish firmware (as sold in Mexico and other Central and South American markets) installed in the panel please read 'FST_DFS_Notifier_NFS-640 (Onyx)(Spanish)'

FieldServer Mode	Nodes	Comments
Client		Only one Notifier Panel may be connected to any single RS-232 FieldServer port.

Formal Driver Type

Serial
Client Only

Compatibility Matrix

FieldServer Model	Compatible with this driver
FS-x2010	Yes
FS-x2011	Yes
FS-x30	Yes
FS-x40	Yes

Connection Information

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

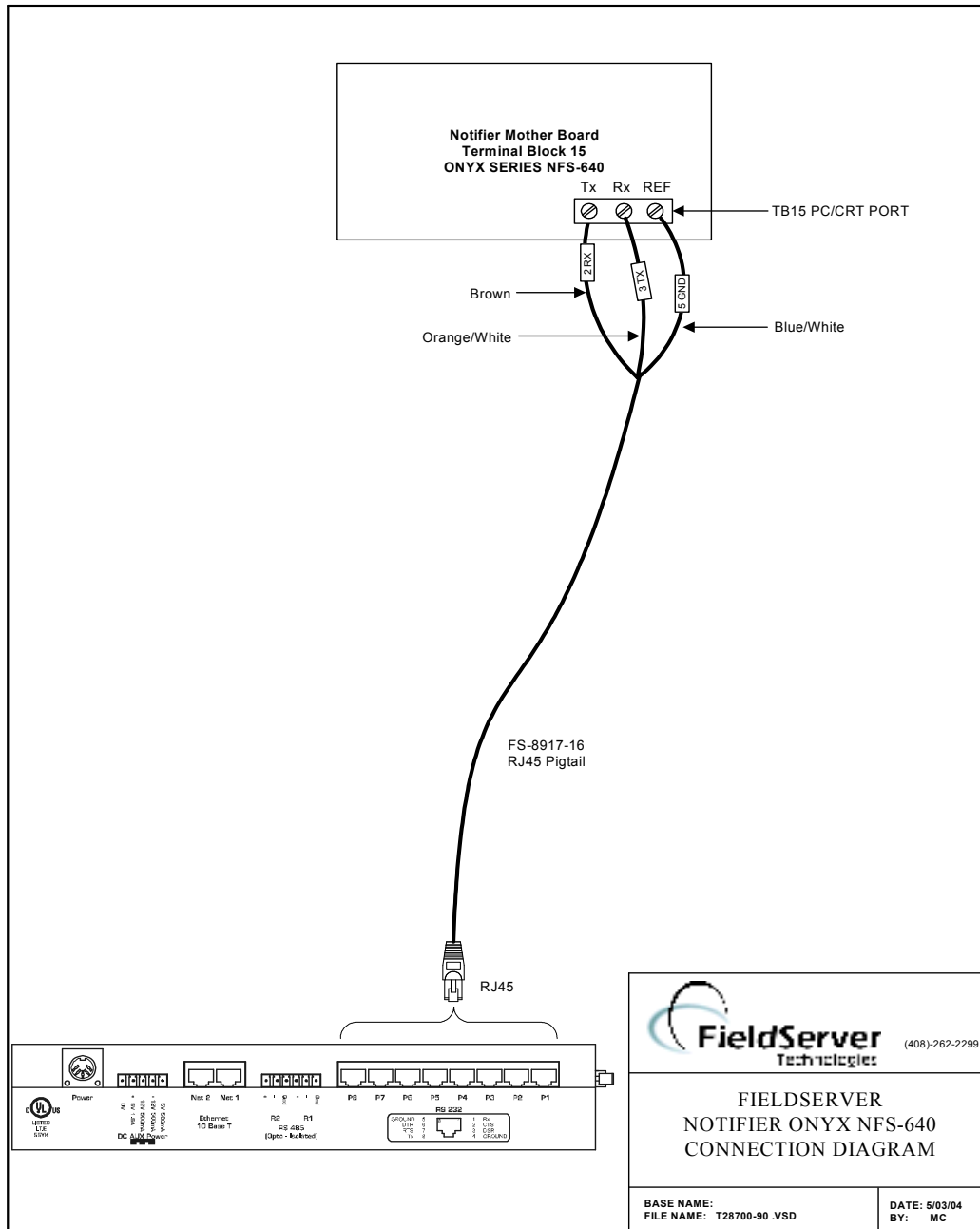
Devices tested

Device	Tested
NFS-640 Test Panel supplied by Notifier Corp	Factory



Connection configurations

The Notifier Onyx 640 protocol is node-less. This means that the messages do not identify the panel of origin. Therefore only one panel can be connected to each FieldServer serial port.





Communications functions - Supported functions at a glance:

Message Types Supported

This driver was designed to be connected to the Notifier Onyx NFS-640 CRT port, and listen for incoming messages. The default setting for the CRT port is off thus the port must be enabled before this driver can be used.

The primary purpose of this driver is to record the status of devices connected to the NFS-640 system by interpreting the text messages sent to the CRT port. Not all messages will be interpreted, as many messages do not directly pertain to device status. 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	

When a read point status is performed, some points may have their status reported as TEST. This driver regards these points as being in a TROUBLE state.

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

Zone Status:

Information about zone status will also be recorded if incorporated with point status messages. Some messages, like trouble messages, do not contain zone information. Therefore the driver cannot update the zone status when these messages are received. A device can belong to multiple zones. Messages produced by the panel that report device status, only report the first zone if the device belongs to multiple zones. This limits, severely, the accuracy of zone data based on event generated messages. However, when the status is read, the zone status will be valid.

Panel Status: Data Array Mapping

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



Driver Limitations & Exclusions

- This driver depends on the stability of Notifier's CRT messages. Should Notifier modify their message protocol, then problems can be expected with this driver.
- The accuracy in recording the Notifier NFS-640 status is dependent on synchronization with the FieldServer. Upon startup, the FieldServer polls the NFS-640 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 CRT port, therefore, the FieldServer's record may not be accurate until the next full read status request.
- This driver requires the use of the CRT port and can therefore not 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 NFS-640 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; however, it cannot update the status of other zones unless a read point status poll is sent to the NFS-640.
- Communication through the CRT port was not designed as a supervised port. Should Notifier 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 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.