

FieldServer Driver - Serial FS-8700-98 Notifier NCA

Description

The NCA Serial driver allows the FieldServer to record data from Notifier NCA (Network Control Annunciator) over RS-232.

The FieldServer acts as a Passive Client receiving messages and recording the status of a Notifier NCA Panel. There is no active polling by this driver; the communications are one-way through the panel's printer port. The FieldServer is, however, able to generate some system commands like Ack, Reset, Silence and Drill if it is connected to the NCA through its CRT port.

This driver is not capable of emulating a Notifier NCA panel and the very limited server functionality has only been implemented to facilitate FieldServer's Quality Assurance program. This functionality could be extended at a customer's request.

NCA controls all the devices (e.g. NFS-3030, NFS-640) connected in NOTI*FIRE*NET architecture. NCA actually interacts with other Fire Alarm Panels and records the status of all panels and sends the events to the printer and CRT ports. The FieldServer further captures these events in text form, parses and stores them in data arrays. These data arrays can be controlled by third party tools.

Each Fire Alarm Panel connected in NOTI*FIRE*NET architecture is considered as node. 240 nodes can exist in one network. For more detail about NOTI*FIRE*NET architecture contact Notifier. The main purpose of this driver is to record the status of Fire Alarm System detectors and Modules at every node in data arrays - one data array per loop per node. It is limited by the information that the Notifier NCA unit sends in the form of text messages through its RS-232 printer/CRT port. The accuracy and timeliness of the data is therefore limited to the frequency of update messages that the Notifier Fire Panel issues. The types of Notifier messages supported by this driver are summarized later in this fact sheet. In addition, a detailed table in the manual shows each type of NCA 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.

Fieldserver Mode	Nodes	Comments
Client	1	Each FieldServer port can connect to only 1 NCA panel
Server	0	The NCA driver cannot be used as a Server.

Formal Driver Type

Serial
Passive Client

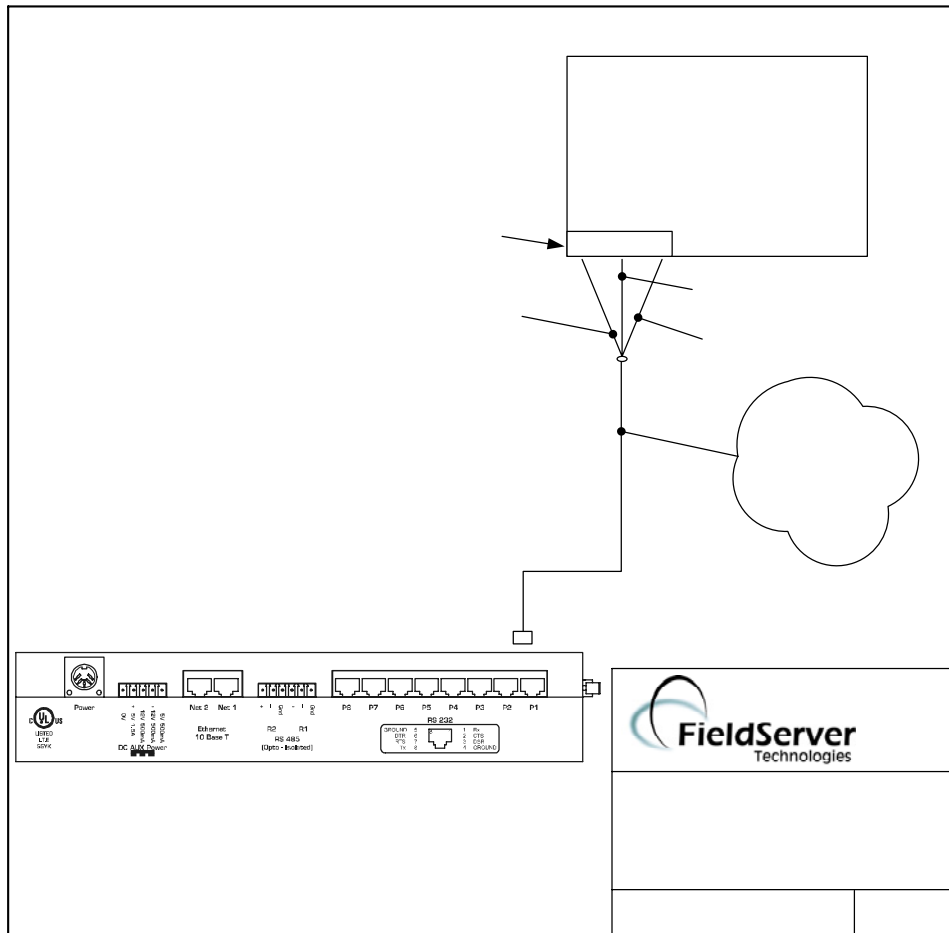
Connection Information

Connection type: RS-232
Baud Rates: 9600 (Device limitation, driver supports most standard baud rates)
Data Bits: 8 (Device limitation, driver supports 7,8)
Stop Bits: 1 (Device limitation, driver supports 1,2)
Parity: None (Device limitation, driver supports None, Even, Odd)
Multidrop Capability: No

Devices tested:

Device	Tested (FACTORY, SITE)
NCA NFS-3030 NFS-640	Factory

Connection configurations



Connection Notes

The Notifier NCA printer port must be enabled to 80-columns (non-supervised) before communication is possible. (TB9)

The CRT port should be enabled if being used. (TB8)

Communications functions - Supported functions at a glance:

Message Types Supported

This driver was designed to be connected to the Notifier NCA printer or CRT port, and listen for incoming messages. The panel's default setting for the printer port is off. To utilize this driver, the printer port must be enabled to 80-columns, unsupervised.

The driver is capable of generating system commands (Ack, Reset, Silence and Drill) along with listening messages if the FieldServer connected to the CRT port of the NCA Panel.

The primary purpose of this driver is to record the status of devices connected to the NCA system by interpreting the text messages sent to the printer or CRT port and to generate some system commands on the CRT port. Not all messages will be interpreted, as many messages do not directly pertain to device status, or are currently supported. The following subset of event messages is recognized:

Active Events:
FIRE ALARM
TROUBLE
PREALARM
SECURITY ALARM
SUPERVISORY
DISABLED
ACTIVE

A detailed mapping of message interaction System Trouble messages provided by Notifier at the time this driver was written is tabulated in the NCA Driver Manual. Any changes or additions by Notifier will not be reflected in this driver unless specifically revised.

Zone Status:

This driver will not record information about zone status that is incorporated with point status messages. A device can belong to multiple zones, however, only the primary zone is listed in the printer output. This severely limits the accuracy of zone data based on event generated messages, and therefore will not be recorded.

Panel Status: Data Array Mapping:

The status of NCA devices will be recorded into a series of data arrays within the FieldServer, and is available for reading by any other connected device. The data from each loop will be recorded into a separate data array, and a single system array will record system troubles. The structure of the data arrays is provided below.

Most of these arrays will only contain binary information to represent an active or inactive state. However, there could be multiple troubles associated with a single device. For each trouble message, the data array register corresponding to a particular device will be incremented as a counter and decremented when a trouble is cleared.

Parameter	Registers (UINT32)	
<i>{per loop}</i>		
Fire Alarm	0-199	detectors

	200-399	modules
Trouble ¹	500-799	detectors
	700-899	modules
PreAlarm	1000-1199	detectors
	1200-1399	modules
Security Alarm	1500-1799	detectors
	1700-1899	modules
Supervisory	2000-2199	detectors
	2200-2399	modules
Disabled	2500-2799	detectors
	2700-2899	modules
Active	3000-3199	detectors
	3200-3399	modules
<i>{system points only}</i>		
System Troubles	0-100	
Panel ²	101-196	Fire Alarm
	201-296	Trouble
	301-396	²
	401-496	Security Alarm
	501-596	²
	601-696	Disabled
Bell ³	701-796	Active
	197-200	Fire Alarm
	297-300	Trouble
	397-400	³
	497-500	Security Alarm
	597-600	³
	697-700	Disabled
	797-800	Active

¹ Each point will increment/decrement the number of troubles recorded, system normal will reset the counter to zero

² Some of these data arrays are not appropriate for panels but arranged in this fashion for symmetry in message parsing.

³ Some of these data arrays are not appropriate for bell ckts but arranged in this fashion for symmetry in message parsing.

Driver Limitations & Exclusions

- Zone information will not be recorded.
- Synchronization between the NCA panel and the FieldServer can only occur while the panel is in SYSTEM NORMAL mode. At this time the FieldServer can be reset.
- The NCA menu function called "Read Status" will not be recorded as this information is not available at the printer/CRT port
- The printer port must be enabled on the unit and set to 80 columns with NO supervision
- All data related to non-event driven reports will not be recorded by the FieldServer
- This driver was written specifically for the following NCA firmware versions. Any changes or additions by Notifier will not be reflected in this driver unless specifically revised.
A002.002.005/B002.002.005
- This driver will not record information about zone status that is incorporated with point status messages.
- This driver is not designed for multi-dropped panels. There can only be one panel connected to any given FieldServer port.
- This driver records data as presented to the printer/CRT port by the Notifier NCA, and can only be as accurate as this data.
- The driver can send Ack, Reset, Silence and Drill messages to the NCA Panel if the FieldServer is connected to NCA Panel at the CRT port.
- Successful write message send for functions such as ack, silence, reset or drill only mean that the message has been sent. The driver does not record whether the message was received or acted upon.