



Driver Manual
(Supplement to the FieldServer Instruction Manual)

FS-8700-130 Notifier NCA2-NFS2-3030

APPLICABILITY & EFFECTIVITY

Effective for all systems manufactured after January 2009

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1 NOTIFIER NCA2/NFS2-3030 DESCRIPTION

The NCA2/NFS2-3030 Serial driver allows the FieldServer to record data from Notifier NCA2 or NFS2-3030 panels over RS-232 as per *NFS2-3030/NCA-2 EIA-232 Protocol & Data Formats 53219 Rev A 1/3/2008*. There is no active polling by this driver; the communications are one-way through the panel's printer or CRT port. The FieldServer acts as a Client; receives messages and records the status of a Panel. The panel MUST output messages in 160 characters ASCII format in English.

This driver is not capable of emulating a Notifier NCA2 or NFS2-3030 panel.

The NCA2 controls all the devices (e.g. 3030, 640 panels) connected on the Notifier network. Each Fire Alarm Panel on Network is considered as a Node. 240 Nodes can exist on one network. NFS2-3030 can exist on a network or be self-standing.

NCA2 interacts with other Fire Alarm Panels, records the status of the panels and sends the events to printer and CRT ports. FieldServer captures these events in text form, parses and stores them in Data Arrays. These Data Arrays can be monitored by third party tools. Since the FieldServer does not actively poll for data, the accuracy and timeliness of the stored data is limited to the frequency of update messages that the Notifier Fire Panel issues.

If a networked panel does not send the 'CLEARED' message for latched points via the NCA2 it is not possible to detect cleared points unless a system reset is done. It is possible to configure the FieldServer to clear on reset message from NCA2. See Appendix A.4 for more detail.

Please note that the FieldServer can be configured with a large number of points. The point limits purchased with the FieldServer prevent the entire database from being accessed in any one application. It is therefore strongly advisable to ensure that only the point addresses of interest are configured, and that the FieldServer is purchased with the correct point count.

The types of Notifier messages supported by this driver are summarized in Section 4.1. A detailed table presented in Appendix A.1 shows each type of NCA2/NFS2-3030 message the FieldServer recognizes and the effect that it has on the status of the points in the Data Array.

Max Nodes Supported

FieldServer Mode	Nodes	Comments
Client	0	This Driver cannot be used as a Client.
Server	1	Each FieldServer port can connect to only 1 Notifier panel port

2 DRIVER SCOPE OF SUPPLY

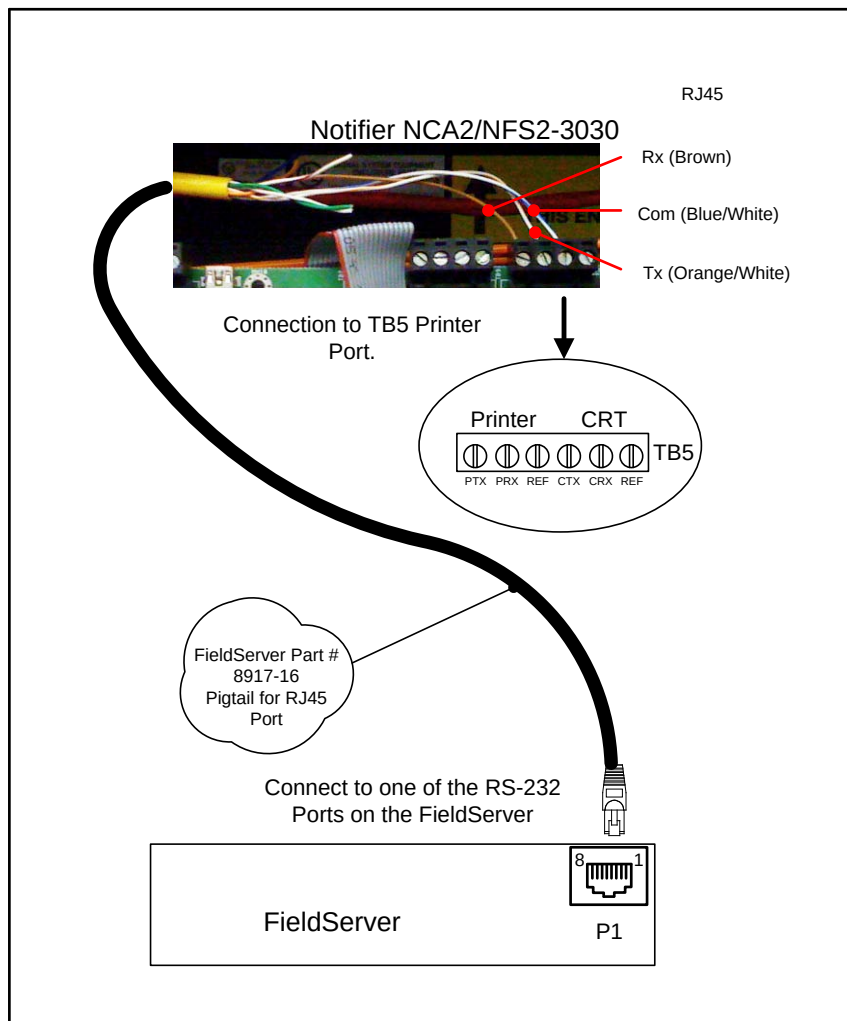
2.1 Supplied by FieldServer Technologies for this driver

FieldServer Technologies PART #	Description
FS-8917-16	Pigtail cable for RJ45 Port
FS-8700-130	Driver Manual.

3 HARDWARE CONNECTIONS

The FieldServer is connected to the Notifier NCA2/NFS2-3030 Fire Panel as shown in the following connection drawing.

Configure the Notifier Panel according to manufacturer's instructions.



Connector Pinouts

TB5 CRT	Function	Receive	Reference	Transmit
	Pin	CRX	REF	CTX
TB5 Printer	Function	Receive	Reference	Transmit
	Pin	PRX	REF	PTX
RJ-45	Function	Transmit	Com	Receive
	Pin	8	4	1
Wire Color		Orange/white	Blue/white	Brown

3.1 Hardware Connection Tips / Hints

- The FieldServer should preferably be connected to the TB5 Printer port. It is theoretically possible to connect to the TB5 CRT port, but this has not been fully tested.
- The Panel's port must be enabled and set to 80 Columns Not Supervised.

4 CONFIGURING THE FIELDSEVER AS A NOTIFIER NCA2/NFS2-3030 CLIENT

For a detailed discussion on FieldServer configuration, please 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 receive information from a Notifier Panel.

4.1 Panel Status - Memory Mapping

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

Active Events:
FIRE ALARM
SECURITY ALARM (LIFE)
LIFE CRITICAL ALARM
MEDICAL EMERGENCY
SECURITY ALARM
CRITICAL PROCESS
SUPERVISORY
TROUBLE/ FAULT
DISABLED
PREALARM
ACTIVE
ON/ OFF

This Driver divides the memory into various types. Each location in each memory type is assigned an address. It is therefore possible to map an address to a particular offset in a Data Array and make it accessible for reading by other connected devices. The address structure is provided in Table 1.

Most of these addresses will only contain binary information to represent an active or inactive state.

Where multiple troubles are associated with a single device the addressed register corresponding to that device will be incremented as a counter for each trouble message and decremented when a trouble is cleared. These addresses should preferably be stored in SINT16 format in the Data Array.

Parameter	Addresses
For each SLC loop per Node	
<i>Memory Type : Detector ; Module</i>	
Fire Alarm	1 – 159
Security Life	160 – 318
Life Critical	319 – 477
Medical Emergency	478 – 636
Security Alarm	637 – 795
Critical Process	796 – 954
Supervisory	955 - 1113
Disabled	1114 – 1272
Prealarm	1273 – 1431
Active	1432 – 1590
ON/OFF	1591 – 1749
<i>Memory Type : Detector_Trouble; Module_Trouble</i>	
Troubles/Faults	1 – 159
Parameter	Addresses
For each Node	
<i>Memory Type : Node_Trouble</i>	
Troubles/Faults	1 – 508
<i>Memory Type : Panel</i>	
Panel (Maximum 12 Boards and 8 Panel circuits per Board)	
Hardware address	memory address
Board 1 panel 1	1
Board 1 panel 2	2
Board 2 panel 1	9

Board 12 panel 8	96
)	
Fire Alarm	1 – 96
Security Life	97 - 192
Life Critical	193 - 288
Medical Emergency	289 - 384
Security Alarm	385 - 480
Critical Process	481 - 576
Supervisory	577 - 672
Disabled	673 - 768
Prealarm	769 - 864
Active	865 - 960
ON/OFF	961 - 1056
<i>Memory Type : Panel_Trouble</i>	
Troubles/Faults	1–96
<i>Memory Type : Bell_Trouble</i>	
Troubles/Faults	1-4

Table 1 – Memory Mapping Address Structure.

4.2 Data Arrays/Descriptors

The configuration file tells the FieldServer about its interfaces, and the routing of data required. In order to enable the FieldServer for Notifier NCA2/NFS2-3030 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 required data from Notifier Panels needs to be mapped in the “Client Side Map Descriptors” section. Details on how to do this can be found below.

Note that in the tables, * indicates an optional parameter, with the bold legal value being the default.

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.	Bit, Sint16, Float1
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 1

```
// Data Arrays
Data_Arrays
Data_Array_Name ,Data_Format ,Data_Array_Length
DA_SYS_N2      ,SINT16      ,508
DA_N2L01D      ,BIT        ,1749
DA_N2L01D_T     ,SINT16      ,159
DA_N2L01M      ,BIT        ,1749
DA_N2L01M_T     ,SINT16      ,159
DA_N2_PANEL     ,BIT        ,1056
DA_N2_PANEL_T   ,SINT16      ,96
DA_N2_BELL_T    ,SINT16      ,4
```

¹ Sint16 is recommended over Float, as Float is memory expensive format

4.3 Client Side Connection Descriptions

Section Title		
Connections		
Column Title	Function	Legal Values
Port	Specify which port the device is connected to the FieldServer	P1-P8 ²
Protocol	Specify protocol used	nfs2-nca; nca2; nfs2-3030
Baud*	Specify baud rate	<u>CRT Port</u> 4800; 9600 ; 19200; 38400; 57600; (Vendor limitation) <u>Printer Port</u> 9600 (Vendor limitation)
Parity*	Specify parity	None (Vendor limitation)
Data_Bits*	Specify data bits	8 (Vendor limitation)
Stop_Bits*	Specify stop bits	1 (Vendor limitation)

Example

// Client Side Connections				
Connections				
Port	,Protocol	,Baud	,Stop_Bits	,Parity
P8	,nfs2-nca	,9600	,1	,None

4.4 Client Side Node Descriptors

Section Title		
Nodes		
Column Title	Function	Legal Values
Node_Name	Provide name for Node	Up to 32 alphanumeric characters
Node_ID	Station address of any physical Node on network	1-240. Set unique Id for standalone Notifer-3030 Panel
Protocol	Specify protocol used	nfs2-nca or nca2 ; nfs2-3030
Port	Specify which port the device is connected to the FieldServer	P1-P8

Example

// Client Side Nodes			
Nodes			
Node_Name	,Node_ID	,Protocol	,Port
Panel_1	,2	,nfs2-nca	,P8

² Not all ports shown are necessarily supported by the hardware. Consult the appropriate Instruction manual for details of the ports available on specific hardware.

4.5 Client Side Map Descriptors

4.5.1 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 "Data Array" section above
Data_Array_Offset	Starting location in Data Array	Any integer value 0 - one less than Data Array length
Function	Function of Map Descriptor	Passive

4.5.2 Driver Related Map Descriptor Parameters

Column Title	Function	Legal Values
Node_Name	Name of Node to fetch data from	One of the Node names specified in "Client Node Descriptor" above
Data_Type	Specify memory area type	Detector Module Detector_Trouble Module_Trouble Panel Panel_Trouble Bell_Trouble Node_Trouble
Address	Starting address of block	As per Data_type Detector Module 1-1749 Detector_Trouble Module_Trouble 1-159 for point troubles Panel 1-1056 for Panel circuits Panel_Trouble 1-96 for Panel troubles Bell_Trouble 1-4 for Bell circuits Node_Trouble 1-509 for Node troubles
Length	Length of Map Descriptor	Same as address value
Clear_on_Reset*	Specify whether driver should clear Node(s) memory area upon receipt of "SYSTEM RESET" message from Panel.	No , Yes
Clear_on_Normal*	Specify whether driver should clear Node(s) memory area upon receipt of "SYSTEM NORMAL" message from Panel.	Yes ,No

4.5.3 Map Descriptor Example: Standard example

This shows the standard Map Descriptor setup for one Node with 1 loop and all 159 modules and 159 detectors installed. This Node also has all boards, panel and bell circuits

```
//
// Client Side Map Descriptor
// Define Map Descriptors to capture just required data
//
// Node 2
//
Map_Descriptors
Map_Descriptor_Name ,Data_Array_Name ,Data_Array_Offset ,Function ,Node_Name ,Loop ,Data_Type ,Address ,Length
//
// Capture Node Events
SMD_N2_Troubles ,DA_SYS_N2 ,0 ,Passive ,NODE2 ,- ,Node_Trouble ,1 ,508
SMD_N2_PANEL ,DA_N2_PANEL ,0 ,Passive ,NODE2 ,- ,Panel ,1 ,1056
SMD_N2_PANEL_T ,DA_N2_PANEL_T ,0 ,Passive ,NODE2 ,- ,Panel_Trouble ,1 ,96
SMD_N2_BELL_T ,DA_N2_BELL_T ,0 ,Passive ,NODE2 ,- ,Bell_Trouble ,1 ,4

// Capture Loop 1 events
SMD_N2L01D ,DA_N2L01D ,0 ,Passive ,NODE2 ,1 ,Detector ,1 ,1749
SMD_N2L01D_T ,DA_N2L01D_T ,0 ,Passive ,NODE2 ,1 ,Detector_Trouble ,1 ,159
SMD_N2L01M ,DA_N2L01M ,0 ,Passive ,NODE2 ,1 ,Module ,1 ,1749
SMD_N2L01M_T ,DA_N2L01M_T ,0 ,Passive ,NODE2 ,1 ,Module_Trouble ,1 ,159
```

Select the array
for data storage

All Map Descriptors are
Passive; waiting for a message
from the Notifier panel.

Identify the Loop id for
which this Map Descriptor
will store data

Specify Data
Type

Specify range,
starting address
and length

5 CONFIGURING THE FIELDSERVER AS A NOTIFIER NCA2/NFS2-3030 SERVER

This driver cannot be configured as a Server.

Appendix A. Advanced Topics

Appendix A.1. Notifier NCA2/NFS2-3030 Message Types Recognized

Event Keyword	Clearing Event	Notes
FIRE ALARM	CLEARED FIRE ALARM	states: {1,0}
SECURITY ALARM (LIFE)	CLEARED SECURITY ALARM (LIFE)	states: {1,0}
LIFE CRITICAL ALARM	CLEARED LIFE CRITICAL ALARM	states: {1,0}
MEDICAL EMERGENCY	CLEARED MEDICAL EMERGENCY	states: {1,0}
SECURITY ALARM	CLEARED SECURITY ALARM	states: {1,0}
CRITICAL PROCESS	CRITICAL PROCESS	states: {1,0}
SUPERVISORY	CLEARED SUPERVISORY	states: {1,0}
TROUBLE/ FAULT	CLEARED TROUBLE/ FAULT	States: [counter]
DISABLED	CLEARED DISABLED	states: {1,0}
PREALARM	CLEARED PREALARM	states: {1,0}
ACTIVE	CLEARED ACTIVE	states: {1,0}
ON/ OFF	OFF	states: {1,0}
SYSTEM NORMAL		Resets all addresses in all memory areas but only if data is previously set by driver and is not yet cleared by "Cleared" message and is configured to Clear_on_Normal. By default Clear_on_Normal is "yes".
SYSTEM RESET		Resets all addresses in all memory areas for a given Node but only if data is previously set by driver and is not yet cleared by "Cleared" message and is configured to Clear_on_Reset. By default Clear_on_Reset is 'no'.

Appendix A.2. System Trouble Messages

The following table lists the system troubles theoretically recognized by this driver – only a selection have been tested.

System Trouble	Address	System Trouble	Address
GROUND FAULT LOOP 1	1	STYLE 4 SHORT A L6	255
GROUND FAULT LOOP 2	2	STYLE 4 SHORT B L6	256
GROUND FAULT LOOP 3	3	STYLE 4 SHORT A L7	257
GROUND FAULT LOOP 4	4	STYLE 4 SHORT B L7	258
GROUND FAULT LOOP 5	5	STYLE 4 SHORT A L8	259
GROUND FAULT LOOP 6	6	STYLE 4 SHORT B L8	260
GROUND FAULT LOOP 7	7	STYLE 4 SHORT A L9	261
GROUND FAULT LOOP 8	8	STYLE 4 SHORT B L9	262
GROUND FAULT LOOP 9	9	STYLE 4 SHORT A L10	263
GROUND FAULT LOOP 10	10	STYLE 4 SHORT B L10	264
GROUND FAULT PORT A	11	GENERAL PS FAULT	265
GROUND FAULT PORT B	12	INSTALLATION ERROR OR CPU/AVPS-24 FAULT	266
GROUND FAULT	13	INSTALLATION ERROR OR CPU/AVPS-24 FAULT	267
STYLE 6 NEG LOOP 1	14	INSTALLATION ERROR OR CPU/AVPS-24 FAULT	268
STYLE 6 NEG LOOP 2	15	EARTH FAULT DETECTED IN WIRING OR SYSTE	269
STYLE 6 NEG LOOP 3	16	EARTH FAULT DETECTED IN WIRING OR SYSTE	270
STYLE 6 NEG LOOP 4	17	EARTH FAULT DETECTED IN WIRING OR SYSTE	271
STYLE 6 NEG LOOP 5	18	COMM FAULT LOOP INTERFACE BOARD 1	272
STYLE 6 NEG LOOP 6	19	COMM FAULT LOOP INTERFACE BOARD 2	273
STYLE 6 NEG LOOP 7	20	COMM FAULT LOOP INTERFACE BOARD 3	274
STYLE 6 NEG LOOP 8	21	COMM FAULT LOOP INTERFACE BOARD 4	275
STYLE 6 NEG LOOP 9	22	COMM FAULT LOOP INTERFACE BOARD 5	276
STYLE 6 NEG LOOP 10	23	COMM FAULT LOOP INTERFACE BOARD 6	277
STYLE 6 POS LOOP 1	24	COMM FAULT LOOP INTERFACE BOARD 7	278
STYLE 6 POS LOOP 2	25	COMM FAULT LOOP INTERFACE BOARD 8	279
STYLE 6 POS LOOP 3	26	COMM FAULT LOOP INTERFACE BOARD 9	280
STYLE 6 POS LOOP 4	27	COMM FAULT LOOP INTERFACE BOARD 10	281
STYLE 6 POS LOOP 5	28	CATASTROPHIC ISIB COMMUNICATIONS FAULT	282
STYLE 6 POS LOOP 6	29	MEMORY PATTERN FAULT. SERVICE REQUIRED	283
STYLE 6 POS LOOP 7	30	CATASTROPHIC CPU BOARD COMM FAULT	284
STYLE 6 POS LOOP 8	31	UPLOAD/DOWNLOAD COMMUNICATIONS FAULT	285
STYLE 6 POS LOOP 9	32	STYLE \6\" WIRING OR LOOP #1 ABNORMAL"	286
STYLE 6 POS LOOP 10	33	STYLE \4\" WIRING OR LOOP #1 ABNORMAL"	287
STYLE 6 SHORT L1	34	STYLE \6\" WIRING OR LOOP #2 ABNORMAL"	288
STYLE 6 SHORT L2	35	STYLE \4\" WIRING OR LOOP #2 ABNORMAL"	289
STYLE 6 SHORT L3	36	STYLE \6\" WIRING OR LOOP #3 ABNORMAL"	290
STYLE 6 SHORT L4	37	STYLE \4\" WIRING OR LOOP #3 ABNORMAL"	291
STYLE 6 SHORT L5	38	STYLE \6\" WIRING OR LOOP #4 ABNORMAL"	292
STYLE 6 SHORT L6	39	STYLE \4\" WIRING OR LOOP #4 ABNORMAL"	293
STYLE 6 SHORT L7	40	STYLE \6\" WIRING OR LOOP #5 ABNORMAL"	294
STYLE 6 SHORT L8	41	STYLE \4\" WIRING OR LOOP #5 ABNORMAL"	295
STYLE 6 SHORT L9	42	STYLE \6\" WIRING OR LOOP #6 ABNORMAL"	296
STYLE 6 SHORT L10	43	STYLE \4\" WIRING OR LOOP #6 ABNORMAL"	297
STYLE 6 RING 1	44	STYLE \6\" WIRING OR LOOP #7 ABNORMAL"	298
STYLE 6 ON LOOP 1	45	STYLE \4\" WIRING OR LOOP #7 ABNORMAL"	299
STYLE 6 ON LOOP 2	46	STYLE \6\" WIRING OR LOOP #8 ABNORMAL"	300
STYLE 6 ON LOOP 3	47	STYLE \4\" WIRING OR LOOP #8 ABNORMAL"	301
STYLE 6	48	STYLE \6\" WIRING OR LOOP #9 ABNORMAL"	302
ANNUN 1 TROUBLE	49	STYLE \4\" WIRING OR LOOP #9 ABNORMAL"	303
ANNUN 2 TROUBLE	50	STYLE \6\" WIRING OR LOOP #10 ABNORMAL"	304
ANNUN 3 TROUBLE	51	STYLE \4\" WIRING OR LOOP #10 ABNORMAL"	305
ANNUN 4 TROUBLE	52	UNPROGRAMMED DEVICE ON LOOP 1	306
ANNUN 5 TROUBLE	53	UNPROGRAMMED DEVICE ON LOOP 2	307

System Trouble	Address	System Trouble	Address
ANNUN 6 TROUBLE	54	UNPROGRAMMED DEVICE ON LOOP 3	308
ANNUN 7 TROUBLE	55	UNPROGRAMMED DEVICE ON LOOP 4	309
ANNUN 8 TROUBLE	56	UNPROGRAMMED DEVICE ON LOOP 5	310
ANNUN 9 TROUBLE	57	UNPROGRAMMED DEVICE ON LOOP 6	311
ANNUN 10 TROUBLE	58	UNPROGRAMMED DEVICE ON LOOP 7	312
ANNUN 11 TROUBLE	59	UNPROGRAMMED DEVICE ON LOOP 8	313
ANNUN 12 TROUBLE	60	UNPROGRAMMED DEVICE ON LOOP 9	314
ANNUN 13 TROUBLE	61	UNPROGRAMMED DEVICE ON LOOP 10	315
ANNUN 14 TROUBLE	62	IR ENABLED ON LOOP 1	316
ANNUN 15 TROUBLE	63	IR ENABLED ON LOOP 2	317
ANNUN 16 TROUBLE	64	IR ENABLED ON LOOP 3	318
ANNUN 17 TROUBLE	65	IR ENABLED ON LOOP 4	319
ANNUN 18 TROUBLE	66	IR ENABLED ON LOOP 5	320
ANNUN 19 TROUBLE	67	IR ENABLED ON LOOP 6	321
ANNUN 20 TROUBLE	68	IR ENABLED ON LOOP 7	322
ANNUN 21 TROUBLE	69	IR ENABLED ON LOOP 8	323
ANNUN 22 TROUBLE	70	IR ENABLED ON LOOP 9	324
ANNUN 23 TROUBLE	71	IR ENABLED ON LOOP 10	325
ANNUN 24 TROUBLE	72	TX/RX ERROR ABOVE LIMIT ON LOOP 1	326
ANNUN 25 TROUBLE	73	TX/RX ERROR ABOVE LIMIT ON LOOP 2	327
ANNUN 26 TROUBLE	74	TX/RX ERROR ABOVE LIMIT ON LOOP 3	328
ANNUN 27 TROUBLE	75	TX/RX ERROR ABOVE LIMIT ON LOOP 4	329
ANNUN 28 TROUBLE	76	TX/RX ERROR ABOVE LIMIT ON LOOP 5	330
ANNUN 29 TROUBLE	77	TX/RX ERROR ABOVE LIMIT ON LOOP 6	331
ANNUN 30 TROUBLE	78	TX/RX ERROR ABOVE LIMIT ON LOOP 7	332
ANNUN 31 TROUBLE	79	TX/RX ERROR ABOVE LIMIT ON LOOP 8	333
ANNUN 32 TROUBLE	80	TX/RX ERROR ABOVE LIMIT ON LOOP 9	334
REMOTE DISPLAY 1 TROUBLE	81	TX/RX ERROR ABOVE LIMIT ON LOOP 10	335
REMOTE DISPLAY 2 TROUBLE	82	TOO MANY DEVICES ON LOOP 1	336
REMOTE DISPLAY 3 TROUBLE	83	TOO MANY DEVICES ON LOOP 2	337
REMOTE DISPLAY 4 TROUBLE	84	TOO MANY DEVICES ON LOOP 3	338
REMOTE DISPLAY 5 TROUBLE	85	TOO MANY DEVICES ON LOOP 4	339
REMOTE DISPLAY 6 TROUBLE	86	TOO MANY DEVICES ON LOOP 5	340
REMOTE DISPLAY 7 TROUBLE	87	TOO MANY DEVICES ON LOOP 6	341
REMOTE DISPLAY 8 TROUBLE	88	TOO MANY DEVICES ON LOOP 7	342
REMOTE DISPLAY 9 TROUBLE	89	TOO MANY DEVICES ON LOOP 8	343
REMOTE DISPLAY 10 TROUBLE	90	TOO MANY DEVICES ON LOOP 9	344
REMOTE DISPLAY 11 TROUBLE	91	TOO MANY DEVICES ON LOOP 10	345
REMOTE DISPLAY 12 TROUBLE	92	MISMATCHED LOOP TYPE ON LOOP 1	346
REMOTE DISPLAY 13 TROUBLE	93	MISMATCHED LOOP TYPE ON LOOP 2	347
REMOTE DISPLAY 14 TROUBLE	94	MISMATCHED LOOP TYPE ON LOOP 3	348
REMOTE DISPLAY 15 TROUBLE	95	MISMATCHED LOOP TYPE ON LOOP 4	349
REMOTE DISPLAY 16 TROUBLE	96	MISMATCHED LOOP TYPE ON LOOP 5	350
REMOTE DISPLAY 17 TROUBLE	97	MISMATCHED LOOP TYPE ON LOOP 6	351
REMOTE DISPLAY 18 TROUBLE	98	MISMATCHED LOOP TYPE ON LOOP 7	352
REMOTE DISPLAY 19 TROUBLE	99	MISMATCHED LOOP TYPE ON LOOP 8	353
REMOTE DISPLAY 20 TROUBLE	100	MISMATCHED LOOP TYPE ON LOOP 9	354
REMOTE DISPLAY 21 TROUBLE	101	MISMATCHED LOOP TYPE ON LOOP 10	355
REMOTE DISPLAY 22 TROUBLE	102	MAPPING IN PROGRESS LOOP 1	356
REMOTE DISPLAY 23 TROUBLE	103	MAPPING IN PROGRESS LOOP 2	357
REMOTE DISPLAY 24 TROUBLE	104	MAPPING IN PROGRESS LOOP 3	358
REMOTE DISPLAY 25 TROUBLE	105	MAPPING IN PROGRESS LOOP 4	359
REMOTE DISPLAY 26 TROUBLE	106	MAPPING IN PROGRESS LOOP 5	360
REMOTE DISPLAY 27 TROUBLE	107	MAPPING IN PROGRESS LOOP 6	361
REMOTE DISPLAY 28 TROUBLE	108	MAPPING IN PROGRESS LOOP 7	362
REMOTE DISPLAY 29 TROUBLE	109	MAPPING IN PROGRESS LOOP 8	363
REMOTE DISPLAY 30 TROUBLE	110	MAPPING IN PROGRESS LOOP 9	364
REMOTE DISPLAY 31 TROUBLE	111	MAPPING IN PROGRESS LOOP 10	365
REMOTE DISPLAY 32 TROUBLE	112	LIB #1 SCB RECEIVE ERROR	366

System Trouble	Address	System Trouble	Address
ANALOG OUTPUT 1 TROUBLE	113	LIB #2 SCB RECEIVE ERROR	367
ANALOG OUTPUT 2 TROUBLE	114	LIB #3 SCB RECEIVE ERROR	368
ANALOG OUTPUT 3 TROUBLE	115	LIB #4 SCB RECEIVE ERROR	369
ANALOG OUTPUT 4 TROUBLE	116	LIB #5 SCB RECEIVE ERROR	370
AUXILIARY TROUBLE	117	LIB #6 SCB RECEIVE ERROR	371
UDACT TROUBLE	118	LIB #7 SCB RECEIVE ERROR	372
AVPS. TROUBLE	119	LIB #8 SCB RECEIVE ERROR	373
MASTER BOX TROUBLE	120	LIB #9 SCB RECEIVE ERROR	374
AUXIN TROUBLE	121	LIB #10 SCB RECEIVE ERROR	375
DIGIN TROUBLE	122	LIB #1 SCB ACKNOWLEDGE ERROR	376
FFT TROUBLE	123	LIB #2 SCB ACKNOWLEDGE ERROR	377
REMOTE MIC TROUBLE	124	LIB #4 SCB ACKNOWLEDGE ERROR	378
LOCAL MIC TROUBLE	125	LIB #5 SCB ACKNOWLEDGE ERROR	379
LOCAL PHONE TROUBLE	126	LIB #6 SCB ACKNOWLEDGE ERROR	380
POWER SUPPLY TROUBLE	127	LIB #7 ACKNOWLEDGE ERROR	381
FIM TROUBLE - FIELD INTERFACE MODULE	128	LIB #8 SCB ACKNOWLEDGE ERROR	382
LIM TROUBLE - LOOP INTERFACE MODULE	129	LIB #9 SCB ACKNOWLEDGE ERROR	383
NIM TROUBLE - NETWORK INTERFACE MODULE	130	LIB #10 SCB ACKNOWLEDGE ERROR	384
SYSTEM TROUBLE DEFAULT MESSAGE	131	LIB #1 NIB COMMUNICATION ERROR	385
TROUBLE	132	LIB #2 NIB COMMUNICATION ERROR	386
ANNUN 1 NO ANSWER	133	LIB #3 NIB COMMUNICATION ERROR	387
ANNUN 2 NO ANSWER	134	LIB #4 NIB COMMUNICATION ERROR	388
ANNUN 3 NO ANSWER	135	LIB #5 NIB COMMUNICATION ERROR	389
ANNUN 4 NO ANSWER	136	LIB #6 NIB COMMUNICATION ERROR	390
ANNUN 5 NO ANSWER	137	LIB #7 NIB COMMUNICATION ERROR	391
ANNUN 6 NO ANSWER	138	LIB #8 NIB COMMUNICATION ERROR	392
ANNUN 7 NO ANSWER	139	LIB #9 COMMUNICATION ERROR	393
ANNUN 8 NO ANSWER	140	LIB #10 NIB COMMUNICATION ERROR	394
ANNUN 9 NO ANSWER	141	LIB #1 NIB M/S PROGRAMMING ERROR	395
ANNUN 10 NO ANSWER	142	LIB #2 NIB M/S PROGRAMMING ERROR	396
ANNUN 11 NO ANSWER	143	LIB #3 NIB M/S PROGRAMMING ERROR	397
ANNUN 12 NO ANSWER	144	LIB #4 NIB M/S PROGRAMMING ERROR	398
ANNUN 13 NO ANSWER	145	LIB #5 NIB M/S PROGRAMMING ERROR	399
ANNUN 14 NO ANSWER	146	LIB #6 NIB M/S PROGRAMMING ERROR	400
ANNUN 15 NO ANSWER	147	LIB #7 NIB M/S PROGRAMMING ERROR	401
ANNUN 16 NO ANSWER	148	LIB #8 NIB M/S PROGRAMMING ERROR	402
ANNUN 17 NO ANSWER	149	LIB #9 NIB M/S PROGRAMMING ERROR	403
ANNUN 18 NO ANSWER	150	LIB #10 NIB M/S PROGRAMMING ERROR	404
ANNUN 19 NO ANSWER	151	INTERNAL RAM ERROR	405
ANNUN 20 NO ANSWER	152	EXTERNAL RAM ERROR	406
ANNUN 21 NO ANSWER	153	CPU EXTERNAL RAM TEST ERROR	407
ANNUN 22 NO ANSWER	154	CATASTROPHIC CUP NONVOLATILE RAM	408
ANNUN 23 NO ANSWER	155	DIB EXTERNAL RAM TEST ERROR	409
ANNUN 24 NO ANSWER	156	CATASTROPHIC DIA NONVOLATILE RAM	410
ANNUN 25 NO ANSWER	157	EPROM ERROR	411
ANNUN 26 NO ANSWER	158	PRINTER SUPERVISORY PATH IS INTERRUPTED	412
ANNUN 27 NO ANSWER	159	PRINTER SUPERVISORY	413
ANNUN 28 NO ANSWER	160	PRINTER COVER OPEN	414
ANNUN 29 NO ANSWER	161	PRINTER PAPER OUT	415
ANNUN 30 NO ANSWER	162	PRINTER BUFFER FULL OR OUT OF PAPER	416
ANNUN 31 NO ANSWER	163	AUX PRINTER BUFFER FULL OR OUT OF PAPER	417
ANNUN 32 NO ANSWER	164	PRINTER OFF LINE	418
REMOTE DISPLAY 1 NO ANSWER	165	PRINT QUEUE FULL	419
REMOTE DISPLAY 2 NO ANSWER	166	FACP PRINT BUFFER FULL	420
REMOTE DISPLAY 3 NO ANSWER	167	CORRUPT LOGIC EQUAT	421
REMOTE DISPLAY 4 NO ANSWER	168	PROGRAM CORRUPTED	422
REMOTE DISPLAY 5 NO ANSWER	169	DATABASE CORRUPTED	423
REMOTE DISPLAY 6 NO ANSWER	170	AUDIO LIBRARY CORRUPTED	424
REMOTE DISPLAY 7 NO ANSWER	171	LCD80 SUPERVISORY	425

System Trouble	Address	System Trouble	Address
REMOTE DISPLAY 8 NO ANSWER	172	TERM SUPERVISORY	426
REMOTE DISPLAY 9 NO ANSWER	173	CRT SUPERVISORY	427
REMOTE DISPLAY 10 NO ANSWER	174	TERMINAL SUPERVISORY PATH IS INTERRUPTED	428
REMOTE DISPLAY 11 NO ANSWER	175	NVRAM BATTERY TROUBLE	429
REMOTE DISPLAY 12 NO ANSWER	176	NCM PIEZO BATTERY FAILURE	430
REMOTE DISPLAY 13 NO ANSWER	177	BATTERY(S) NOT CONNECTED OR DEFECTIVE	431
REMOTE DISPLAY 14 NO ANSWER	178	BATTERY CHARGER DETACHED	432
REMOTE DISPLAY 15 NO ANSWER	179	BATTERY	433
REMOTE DISPLAY 16 NO ANSWER	180	TM4 DISABLED	434
REMOTE DISPLAY 17 NO ANSWER	181	UP/DOWN LOAD IN PROGRESS _ ACS DISABLED	435
REMOTE DISPLAY 18 NO ANSWER	182	NO DEV INST ON L1	436
REMOTE DISPLAY 19 NO ANSWER	183	ADV WALK TEST	437
REMOTE DISPLAY 20 NO ANSWER	184	PROG MODE ACTIVATED	438
REMOTE DISPLAY 21 NO ANSWER	185	LOADING..NO SERVICE	439
REMOTE DISPLAY 22 NO ANSWER	186	BASIC WALK TEST	440
REMOTE DISPLAY 23 NO ANSWER	187	NFPA 24HR REMINDER	441
REMOTE DISPLAY 24 NO ANSWER	188	OPTION MODULE	442
REMOTE DISPLAY 25 NO ANSWER	189	DRILL ACTIVATED	443
REMOTE DISPLAY 26 NO ANSWER	190	MAN EVAC RECEIVED	444
REMOTE DISPLAY 27 NO ANSWER	191	MANUAL MODE ENTERED	445
REMOTE DISPLAY 28 NO ANSWER	192	POWER SUPPLY CABLE NOT CONNECTED	446
REMOTE DISPLAY 29 NO ANSWER	193	NETWORK INCOMPATIBLE	447
REMOTE DISPLAY 30 NO ANSWER	194	SYSTEM INITIALIZATION	448
REMOTE DISPLAY 31 NO ANSWER	195	LINK PROTECTOR PRIMARY STATUS	449
REMOTE DISPLAY 32 NO ANSWER	196	LINK PROTECTOR SECONDARY STATUS	450
UDACT NO ANSWER	197	LINK PROTECTOR PRIMARY NOT PRESENT	451
MASTER BOX NO ANSWER	198	EVENT BUFFER 80% FULL	452
DAA NO ANSWER	199	EBI STATUS	453
NO ANSWER	200	SOFTWARE MISMATCH	454
NETWORK FAILURE	201	NO POWER SUPPLY INST	455
WORKSTATION FAN FAILURE	202	TEST PROGRAM UPDATE	456
UPS FAILURE	203	HISTORY 80% FULL	457
NCM COMM FAILURE	204	FLASH IMAGE ERROR	458
NODE COMMUNICATIONS FAILURE	205	AMPLIFIER LIMIT	459
POWER SUPPLY COMM FAILURE	206	AMPLIFIER SUPERVISION	460
LOOP 1-2 COMM FAILURE	207	DAA ADDRESS CONFLICT	461
LOOP 3-4 COMM FAILURE	208	DEVICE SERVICING REQUIRED	462
LOOP 5-6 COMM FAILURE	209	DATABASE INCOMPATIBLE	463
LOOP 7-8 COMM FAILURE	210	AUDIO LIBRARY INCOMPATIBLE	464
LOOP 9-10 COMM FAILURE	211	DAA DOWNLOAD IN PROGRESS	465
DAP PORT A FAILURE	212	PHONE CHANNEL LIMIT EXCEEDED	466
DAP PORT B FAILURE	213	CPU EXECUTIVE ROUTINE RE-ENTERED	467
FIM COMM FAILURE	214	CPU RECEIVE QUE OVERFLOW	468
LIM COMM FAILURE	215	CPU DATA MESSAGE RECEIVED ERROR	469
NIM COMM FAILURE	216	CPU LEVEL QUE FULL	470
CATASTROPHIC LCD FAILURE ON DIA	217	CPU CODE MEMORY CHECKSUM ERROR	471
CATASTROPHIC DUART FAILURE ON DIA	218	CPU MESSAGE TRANSMITTED ERROR	472
ISIB SCB RECEIVE FAILURE	219	AVPS-24 PROBLEM	473
COMMUNICATION LINK FAILURE IN PORT A	220	DATABASE INCOMPLETE PLEASE REDOWNLOAD	474
COMMUNICATION LINK FAILURE IN PORT B	221	MPS-24 MONITOR CABLE DISCONNECTED	475
LAN COMMUNICATIONS FAILURE	222	TYPE ID CHANGED. SERVICE REQUIRED	476
FAILURE	223	TYPE ID CHANGED. SERVICE REQUIRED	477
NETWORK FAIL PORT A	224	PROG. CHANGE DET. SERVICE REQUIRED	478
NETWORK FAIL PORT B	225	LIVE TEST - SIGNAL P	479
CHARGER FAIL	226	DIB EXECUTIVE ROUTINE RE-ENTERED	480
SELF TEST FAILED	227	DIB RECEIVE QUE OVERFLOW	481
WORKSTATION COMM FAIL	228	DIB DATA MESSAGE RECEIVED ERROR	482
LOOP CONTINUITY TEST FAIL LOOP 1	229	DIB CODE MEMORY CHECKSUM ERROR	483
LOOP CONTINUITY TEST FAIL LOOP 2	230	INCOMPATIBLE SOFTWARE OR INVALID CBE	484

System Trouble	Address	System Trouble	Address
LOOP CONTINUITY TEST FAIL LOOP 3	231	WALK TEST - FIRE PROTECTION IS LIMITED	485
LOOP CONTINUITY TEST FAIL LOOP 4	232	REMOTE PROG MODE ACCESSED	486
LOOP CONTINUITY TEST FAIL LOOP 5	233	DIA PROG. CHANGE DET. SERVICE REQUIRED	487
LOOP CONTINUITY TEST FAIL LOOP 6	234	ISIB DATA MESSAGE RECEIVED ERROR	488
LOOP CONTINUITY TEST FAIL LOOP 7	235	ISIB EXECUTIVE ROUTINE RE-ENTERED	489
LOOP CONTINUITY TEST FAIL LOOP 8	236	DIB TO SIB CABLE BAD OR MISSING	490
LOOP CONTINUITY TEST FAIL LOOP 9	237	UPLOAD/DOWNLOAD MESSAGE RECEIVED	491
LOOP CONTINUITY TEST FAIL LOOP 10	238	GLOBAL DATABASE MISMATCH	492
AMP FAIL	239	SIB PROG. CHANGE DET. SERVICE REQUIRED	493
AC FAIL	240	HS-NCM SNIFFER MODE ACTIVE	494
SCB ASSEM. COM. VERIFIED FAILED	241	EXCEEDED CONNECTION LIMIT	495
8255 PORT CHIP CONTROL WORD CHECK FAILE	242	NAM CCBE. PROG LOST	496
NETWORK COMMUNICATION LINK FAIL PORT A	243	MEMORY LOSS	497
NETWORK COMMUNICATION LINK FAIL PORT B	244	DVC COMM LOSS	498
STYLE 4 SHORT A L1	245	A.C. POWER LOSS. BACK UP ACTIVATED	499
STYLE 4 SHORT B L1	246	BUZZER OFF-LINE	500
STYLE 4 SHORT A L2	247	PANEL DOOR OPEN	501
STYLE 4 SHORT B L2	248	OFF NETWORK	502
STYLE 4 SHORT A L3	249	INSTALL. ERROR	503
STYLE 4 SHORT B L3	250	OR AUDIO/TELEPHON	504
STYLE 4 SHORT A L4	251	EXPANDER MODULES	505
STYLE 4 SHORT B L4	252	MANUAL CONTROL	506
STYLE 4 SHORT A L5	253	CAT. COMM. FAULT	507
STYLE 4 SHORT B L5	254	UNKNOWN	508

Appendix A.3. Node Status

- Data for any particular Node is valid while that Node is online and the system is synchronized. Integrity of data for any Node will be lost if the Node goes offline or if synchronism between the FieldServer and the NCA2 Panel is lost.
- Node status offline/online (1/0) is stored in the 502nd address. It is important to read the Node status before reading any information about the Node.
- Node status data integrity itself depends upon system synchronization.

Appendix A.4. FieldServer Synchronization

There is currently no method of auto-synchronizing the FieldServer's Data Arrays with the Notifier NCA2/NFS2-3030 panel because there is no method for polling the panel through the printer or CRT port. Synchronization of the two devices can be achieved manually pressing the "System Reset" button on the panel while the FieldServer is connected and running. All current events will be re-sent to the FieldServer..

Appendix A.5. Driver Limitations and Exclusions

- Zone information will not be recorded.
- To synchronize the FieldServer with the panel, connect the running FieldServer and press the “System Reset” button on the panel. All current events will be re-sent to the FieldServer.
- The 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 as a subset of *NFS2-3030/NCA-2 EIA-232 Protocol & Data Formats* 53219 Rev A 1/3/2008. Any changes or additions by Notifier will not be reflected in this driver unless specifically revised.
- This driver will not record information about zone status that is incorporated with point status messages.
- 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 panel, and can only be as accurate as this data.
- The driver cannot send messages to the Notifier panel.
- Driver will clear any data on “System Normal” only if this data is previously set by driver and is not yet cleared by “Cleared” message and is configured to Clear_on_Normal. By default Clear_on_Normal is “yes”.
- Driver will clear any Node data on “System RESET” only if this data is previously set by driver and is not yet cleared by “Cleared” message and is configured to Clear_on_Reset. By default Clear_on_Reset is “no”.

Appendix B. Troubleshooting tips

Appendix B.1. Connection Tips & Hints

- Communication errors will be experienced if the port is disabled at the panel. Please check the Notifier Manuals on how to enable the panel port connected to the FieldServer and ensure that it is set to 80 columns NO supervision.
- If connecting the Panel to one of the FieldServer RS-232 ports causes the FieldServer to reboot, then an Optical Isolator is required to balance ground potential problems.

Appendix B.2. Networking Tips

- By default FieldServer does not take any action on receiving a "SYSTEM RESET". Normally when a Node initiates "SYSTEM RESET" by pressing the "RESET" button on the Panel, the panel sends an individual "CLEAR" message for every point, it clears in its memory area. The FieldServer therefore waits for the "CLEAR" message to clear a specific bit in its memory for a particular Node or for the "SYSTEM NORMAL" message to clear all bits in its memory for every Node. Use Clear_on_Reset parameter if required.
- It may be advisable to configure the Notifier panel to suppress less important "Supervisory" or "Trouble" messages which could prevent the generation of "SYSTEM NORMAL" messages. Consult Notifier for this configuration or recommendation.
- Ensure that every Node is working with a printer or HyperTerminal, before calling FieldServer for Support.

Appendix C. Error Messages

Most error messages are associated with errors in parsing an incoming message from the Notifier panel. The most likely cause is a mismatch in expected message format. The driver will flag one of the following error messages and continue. In most cases the message currently being processed by the driver will also be printed so that any problems can be easily diagnosed.

Two screens 'System Errors' and 'Driver Messages' exist for displaying errors.

The System Error Screen displays the error number and the Driver messages screen displays the error number, description and the message received from the NCA/NCA2 Panel.

In debug mode the System Error screen will also include Driver messages.

The following Error Messages appear upon the 'System Errors' Screen

- %d means numeric number
- %s means string

Messages number 1, 3, 4 and 5 will be displayed just once if generated after rebooting or power cycling the FieldServer.

Error	Description	Action
#1 FYI. Incoming data is being abandoned on Port<%d> Node<%u> Loop<%d> Data_Type<%s> Address<%d>	The FieldServer got a recognized message on this particular port, Node, loop, Address_Type and Address but did not find a defined Map Descriptor.	To capture this data, add a new Map Descriptor with the required parameters.
#2 Err. Reset/Normal queue<%d> full on MD<%s>	This driver keeps track of all non-zero memory locations per Map Descriptor. When the track queue is full, the oldest offset is overwritten with the latest one. This could be a problem on System_Reset and System_Normal where memory locations get cleared as per this queue.	If the error occurs during installation or testing, it can be ignored. If the error occurs during field operation, configure the Map Descriptor with required address ranges only and keep the Map Descriptor length smaller than the queue length.
#3 FYI. Event<%s> not Supported.	The FieldServer received an unrecognized event or corrupted message.	If the error occurs continuously, check that connection parameters match with panel port settings.
#4 Err. Unknown Node Trouble <%s>	The FieldServer received a Node Trouble event not listed under Appendix A.2 or a corrupted message.	If this error occurs continuously and you need this new trouble status, contact FieldServer.
#5 Err. Unknown OFF NETWORK Node <%s>	The FieldServer received a message that a Node either connected or disconnected from the network, but no Node number was received - it is likely that the message was corrupted	Call Tech support.

Error	Description	Action
#6 Err. Unsupported Point Address Format<%s>	A message was received from an unsupported device or the address of the device is not in the correct format/location.	Call Tech support.
#7 FYI. Attempt to decrement below zero offset<%d> DA<%s>	The driver attempted to decrement the trouble counting number to a number less than 0.	This occurs due to poor synchronization between the FieldServer and the Notifier panel or because a problem existed before connection. ³ . It will rectify itself upon "System Normal" message. Check the configuration file to identify the address and memory area type mapped to this offset and the Data Array which is causing the error.

³ All Data Arrays on the FieldServer are initialized to zero on rebooting or starting up. A zero value in the Data Array assumes no problems with the devices, but if a problem existed before the startup and the device comes out of problem, the FieldServer will attempt to decrease the number of problems by 1 and this generates the error. Data from the FieldServer should not be considered reliable until the "System Normal" message has been returned.