



PG-141-101-AB Notifier NFS 3030 to Modbus TCP Protocol Converter

PG-141-101-AB is highly powerful, superior, completely configurable and productive Building & Industrial Automation gateway for integrators to effortlessly interface devices to networks in commercial buildings and industrial plants.

PG-141-101-AB Gateway model supports Notifier NFS 3030 and Modbus TCP protocols. It is a Bi-directional Converter that can be configured as a Client on Notifier NFS 3030 side and a Server/Client on Modbus TCP protocol interface.

When configured as a Notifier NFS 3030 client, the PG-141-101-AB can read data from your Notifier NFS 3030 fire panel and publish it as Modbus TCP data. Also, it can write commands sent from the Modbus TCP side to the Notifier NFS 3030 fire panel.

When configured as a Modbus TCP client, the PG-141-101-AB can read data from your Modbus TCP devices and publish it as Notifier NFS 3030 type data. Also, it can write commands sent from the Notifier NFS 3030 side to the Modbus TCP devices.

The PG-141-101-AB can be configured to behave as a server on Modbus TCP interfaces. This mode is useful when data exchange is required between a Notifier NFS 3030 client (for eg. SCADA) and a Modbus TCP client (for eg. a Building Management System).

The PG-141-101-AB can be configured to behave as a client on both Notifier NFS 3030 and Modbus TCP interfaces.

PG-141-101-AB gateways have benefitted system integrators worldwide with its powerful line of gateways. Additionally, PG-141-101-AB gateway runs the same protocol conversion software on a productive and cost efficient platform backed by the experience, engineering expertise and technically proven support that integrators have come to expect from PG-141-101-AB.

Features

- Ability to interface upto 1000 points
- DIN rail mount optional
- DIP switches to select baud rate or node ID on the fly
- Multi-configuration capability
- BACnet COV support for fast data communication while reducing the traffic over a BACnet network



Specifications

Environment	Operating Temperature: -40 to 75 °C (-40 to 167 °F)	
	Relative Humidity:5-90% RH non-condensing	
Power Requirements	9-30 VDC or 12-24 VAC	
	Current Draw @ 12V about 250Ma	
Physical Dimensions(HxWxD)	4.5x2.9x1.6 in. (11.5x7.4x4.1 cm)	
	0.4 lbs (0.2 Kg)	
Other	Configuration/Diagnostic utilities	
	Capacity: 1000 points	
	Table,Wall or DIN rail mount	
Communication Interfaces	RS-485	1
	RS-485 or RS-232	1
	Ethernet 10Base-T, 100BASE-T ²	1
	Mbus	-
	KNX	-
	LonWorks	-
Approvals	TUV Approved to UL 916 and CSA C22.2 standards	
	BTL and LonMark certified	
	LonMark Certified	
	RoHS Compliant	
	GOST-R Certified	
	CE and FCC	



Notifier NFS 3030 Protocol Driver Description

Formal Driver Type	Serial	
	Passive Client	
Connection Information		
Connection Type:	RS-232 (Vendor Limitation)	
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-3030 Test Panel supplied by Notifier Corp	Factory	
BOOT: 002.003.002 APP: 002.003.014	Site	
BOOT: 002.012.006 APP: 002.013.002	Site	
Connection Facts		
Mode	Nodes	Comments
Client	1	Each port can connect to only 1 NFS3030 Panel
Server	0	The NFS3030 driver cannot be used as a Server



Data Types Supported

This driver was designed to be connected to the Notifier Onyx NFS-3030 printer 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, before this driver can be used.

The primary purpose of this driver is to record the status of devices connected to the NFS-3030 system by interpreting the text messages sent to the printer 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	
ON/OFF	<i>detectors, modules, panels only</i>
ACTIVE	

A detailed mapping of message interaction System Trouble messages provided by Notifier at the time this driver was written is tabulated in the NFS 3030 Driver Manual. Any changes or additions by Notifier will not be reflected in this driver unless specifically revised.

Zone Status

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

However, zone DISABLED messages will be recorded by the driver as there is no ambiguity in their status.



Panel Status: Data Array Mapping

The status of NFS 3030 devices will be recorded into a series of data arrays within the device, and are 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 and disabled zones. 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 (float)	
<i>{per loop}</i>		
Fire Alarm	0-199 detectors	200-399 modules
Trouble <i>each point will increment/decrement the number of troubles recorded, system normal will reset the counter to zero</i>	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
On/Off	3000-3199 detectors	3200-3399 modules
Active	3500-3799 detectors	3700-3899 modules
<i>{system points only}</i>		
System Troubles	0-1000	
Disabled Zones	1000-1999 Zones	General
	2000-2099 Zones	Releasing
	2100-2199 Zones	Trouble
	Zones	
Panel	3000-3099	Fire Alarm
*note: some of these Data Arrays are not appropriate for panels	3100-3199	Trouble
	3200-3299	*
	3300-3399	Security
put arranged in this fashion for symmetry in message parsing	Alarm	
	3400-3499	*
	3500-3599	Disabled
	3600-3699	On/Off
	3700-3799	*



Port Supervision

The driver is able to process port supervision queries sent by the panel. It has several modes for achieving this.

- Mode=1 Driver responds to port supervision queries.
- Mode=2 Driver responds to port supervision queries unless it fails to process a message correctly (parsing error). In this case the driver starts a 7 second timer during which time it will not respond to port supervision queries.
- Mode=3 Driver accepts the port supervision query but does not respond. This mode is useful for panels where supervision is enabled but no response should be sent.
- Mode=4 This is an internal mode. It means the mode is in transition.
- Mode=5 Similar to Mode 1 but can be made to transition between mode=3 and mode=5 based on the value in a Data Array. This mode is useful for Hot Standby.

Driver Limitations and Exclusions

- General zone disabling will be recorded, but zone information related to corresponding alarm, trouble, pre-alarm, security alarm, supervisory, and on/off will not be recorded.
- Synchronization between the NFS 3030 Panel and the device can only occur while the panel is in SYSTEM NORMAL mode. At this time the device can be reset.
- Read point status data will not be recorded as this information is not available at the printer port
- The printer port must be enabled on the unit and set to 80 columns with NO supervision unless port supervision is enabled in the driver configuration
- All data related to non-event driven printer reports will not be recorded by the device
- This driver was written specifically for the following Notifier 3030 firmware versions. Any changes or additions by Notifier will not be reflected in this driver unless specifically revised.

Boot:	001.001.001	Dec 03 2002	App:
	001.005.001	Feb 28 2003	

- Information about zone status incorporated with point status messages will not be recorded.
- There can only be one panel connected to any given port
- Data accuracy is dependent on data presented to the printer port by the Notifier NFS3030.



- The driver cannot send any messages (including Ack, Reset and Silence) to the 3030 Panel.

Modbus TCP Protocol Driver Description

PG-141-101-AB	Client	Nodes:1 Only 1 client node allowed on Multidrop systems
	Server	Nodes:255 Actual electrical loading may reduce number of usable Server nodes
Formal Driver Type	Ethernet Client or Server	
Connection Information	Connection Type:	Ethernet
	Ethernet Speed Supported:	10Base-T, 100Base-T ¹
Data Type Supported		
Command	Description	
01	Read Discrete Output Status (0xxxx)	
02	Read Discrete Input Status (1xxxx)	
03	Read Output Registers (4xxxx)	
04	Read Input Registers (3xxxx)	
05	Force Single Coil (0xxxx)	
06	Preset Single Register (4xxxx)	
15	Force Multiple Coils (0xxxx)	
16	Preset Multiple Registers (4xxxx)	



EX	Exception Status
FF	FIFO
Data Type	Comments
ASCII	8-bit Character
Digital	Digital
Float	32-bit IEEE floating point
Long	Unsigned 32-bit integer
Signed	Signed 16-bit integer
Slong	Signed 32-bit integer
Unsigned	Unsigned 16-bit integer

Dimensions:

