



# GE NX587e Interface Module Application Guide

## Description

This module allows for a GE NX587e serial interface to control a compatible GE security system (currently NX-4, NX-6, NX-8, NX-8V2, and NX-8E) equipped with a NX-587E Virtual Keypad Module. This module provides full emulation of an NX-148E keypad, including keypad text display, LED and buzzer status. When used in conjunction with the included zone and partition status modules, this module also facilitates providing partition and zone status (including zone names). See the help files for the Zone and Partition Status modules for additional information on that functionality.

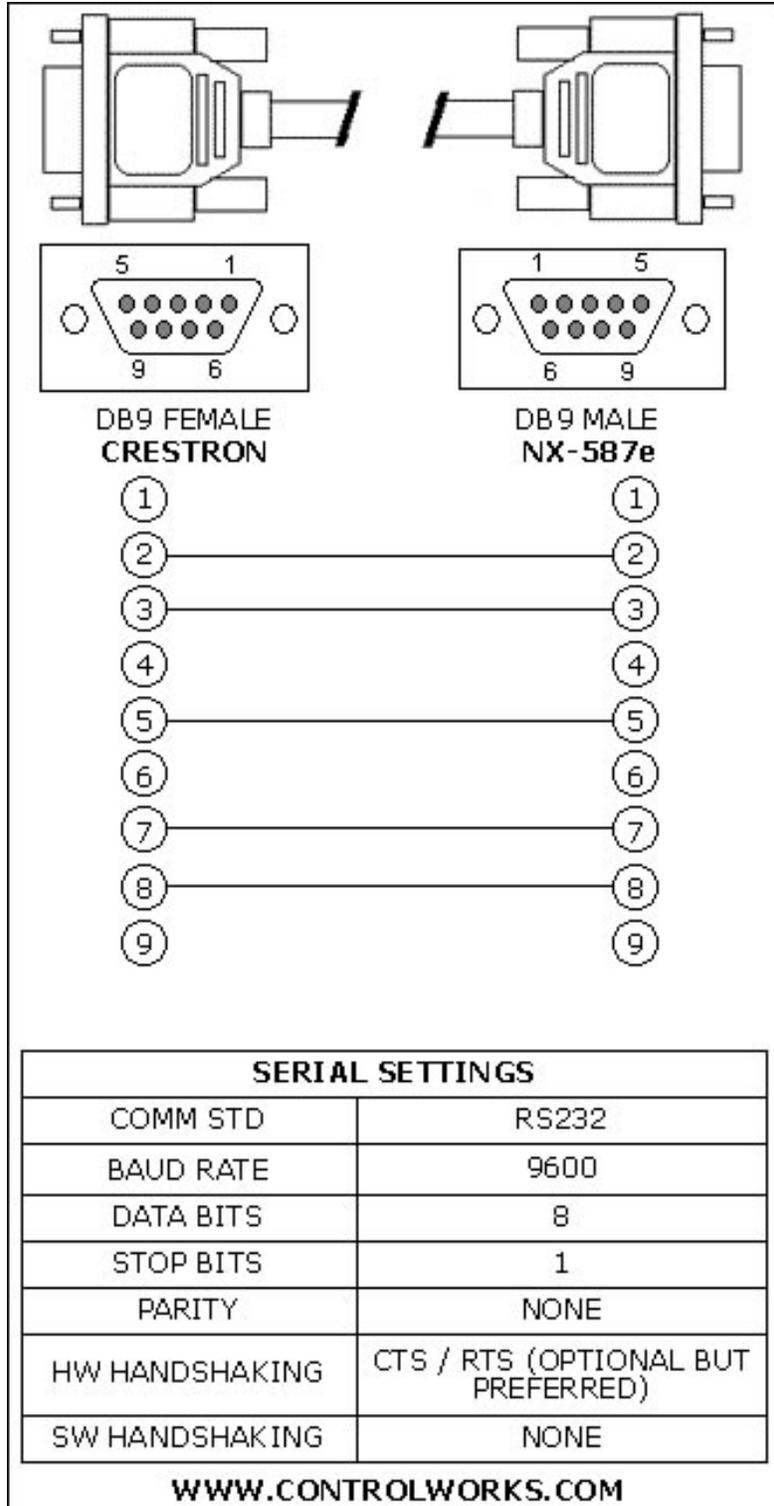
## Supported Processors

This module is supported on any 2-series and 3 series processor with a bidirectional RS-232 port. This module is not supported on systems utilizing one-way serial.

Compatibility			Processor Requirements	
 2-Series Compatible	 NOT CNMSX Compatible	 NOT System Builder Compatible	 Ethernet NOT NEEDED	 Compact Flash NOT NEEDED

## Serial Cable Pinout

You may plug the NX-587E directly into a processor RS-232 port. If remote installation is desired, use a straight-through RS-232 cable. ControlWorks recommends wiring RTS and CTS to facilitate automatic synchronization if the NX-587e is rebooted, but this is not required for proper operation of the module. Please see the Demo Program for an example of a way to implement the automatic synchronization.



## Module Application

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### Zone or Partition Status

When zone and/or partition status is desired, connect the corresponding [partitionX\_status\$] or [zoneX\_status\$] serial output to the included Partition or Zone status modules. Please refer to the help files included with those modules for additional application information.

### Module Synchronization

The NX-587E reports selected events in an unsolicited manner, that is polling is not required during normal use. When the program reboots or if the NX-587E or alarm system is disconnected or loses power, it is necessary to poll the NX-587E to obtain the current system status.

If the NX-587E is connected directly to the processor or if the cable connecting the NX-587E to the processor, connecting the "CTS" digital signal from the serial port to the [enable\_module\_(reboot\_finished)] digital input on the module will automatically resynchronize the module to the current state of the NX-587E if it were to become disconnected or if power was cycled.

### Fire, Holdup, Medical Panic

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The Fire, Holdup, and Medical Panic buttons work only if enabled and properly configured by the security system installer. If the security system installer has not enabled and/or configured these features, these inputs to the module will not have any function.

### Partitions

The NX-587E is normally assigned to and controls Partition 1, however, the status for all zones and partitions is reported. If it is necessary to control a partition other than Partition 1, consult with the security installer for the proper key sequence to change partitions on the installed system (This feature may require the security installer to perform additional configuration)

# Signal and Parameter Descriptions

Bracketed signals such as “[signal\_name]” are optional signals

## **DIGITAL INPUTS**

[enable_module_(reboot_finished)]	When high enables functions of the module; on the rising edge polls security system for the status of enabled attributes
[blinker]	Connect to an oscillator or other “blinking” logic to control the speed at which “blinking” LEDs flash. See module demo program.
[enable_lcd_status]	Enables reporting of the text displayed on the keypad.
[key1...9, *, #]	Performs the same action as if you pressed the corresponding key on a NX-148E keypad.
[stay]	Arms the security system in “stay” mode, if enabled.
[chime]	Toggles chime mode.
[exit]	Arms the security system in “away” mode, if enabled; also if quick re-exit is enabled on the security system restarts the exit delay.
[bypass]	Allows the user to bypass or unbypass zones by following prompts generated by the security system.
[cancel]	Performs the same action as if the “Cancel” key was pressed on an NX-148E keypad.
[fire], [medical], [holdup]	<b>SEE DISCLAIMER AND WARNING ON PREVIOUS PAGES.</b> Performs the same action as if the corresponding key was pressed on an NX-148E keypad, if enabled by the security system installer.
[arrow_up], [arrow_down]	Scrolls information displayed on the LCD.
[enable_led_status]	Enables reporting of the keypad LEDs (e.g. armed, ready, power, fire, etc.)
[enable_buzzer_status]	Enables reporting of the keypad buzzer status, may be used to play WAV files.
[enable_partition_status]	Enables reporting of the status of system partitions.
[poll_partition_status]	Pulse to manually poll for the status of all configured partitions. In most cases you should not define this signal.
[enable_zone_status]	Enables reporting the status of system zones.
[poll_zone_status]	Pules to manually poll for the status of all configured partions. In most cases you should not define this signal.

## **ANALOG INPUTS**

This module does not utilize any analog inputs.

## **SERIAL INPUTS**

nx_587e_rx\$	Connect to RX\$ of processor serial port; data received from the NX-587E.
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## **DIGITAL OUTPUTS**

[led_X_fb] .....	High when the corresponding keypad LED is illuminated; pulses (as controlled by the [blinker] input) when the corresponding keypad LED is blinking.
[buzzer_on_fb].....	High when the keypad buzzer is sounding a constant tone
[buzzer_alarm_fb] .....	High when the keypad buzzer is sounding an alarm tone
[buzzer_slow_exit_fb] .....	High when the keypad buzzer is sounding the slow exit tone
[buzzer_fast_exit_fb] .....	High when the keypad buzzer is sounding the fast exit tone, indicating that the exit delay has nearly expired.
[buzzer_chime_fb] .....	High when the keypad buzzer is sounding a "chime" (e.g. the chime mode is active and a door with chime enabled has been opened)
[buzzer_error_fb] .....	High when the keypad buzzer is indicating an error (e.g. an attempt to arm the system when not all zones are ready)

## **ANALOG OUTPUTS**

This module does not utilize any analog outputs.

## **SERIAL OUTPUTS**

nx_587e_tx\$.....	Connect to TX\$ of processor serial port; data transmitted to the NX-587E
lcd_line1...2\$.....	Text displayed on the keypad LCD, each line will be exactly 16 characters and is best displayed with a fixed-width font (e.g. Courier, LCD)
partition1...8_status\$.....	Connect to Partition Status module to obtain status about the corresponding zone. May be left unconnected if status is not desired for that partition.
zone1...192_status\$ .....	Connect to Zone Status module to obtain status about the corresponding zone. May be left unconnected if status is not desired for that partition.

## **PARAMETERS**

Max Partitions .....	Defines the number of the highest partition number used when polling status (that is, when the poll_partition_status input is asserted partitions will be polled sequentially from 1 through the number specified here. Maximum value is 8d
Maz Zones .....	Defines the number of the highest-used zone number used when polling zone status (that is, when the poll_zone_status input is asserted zones will be polled sequentially from 1 through the number specified here. Maximum value is 192d but depends on the specific alarm system and installed expansion options.
Substitute For [...].	Defines the character used to replace the specified character in lcd_line1\$ and lcd_line2\$. In most cases the defaults should not need to be changed.

## Support

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This module is supported by ControlWorks Consulting, LLC. Should you need support for this module please email [support@controlworks.com](mailto:support@controlworks.com) or call us at 440-449-1100. ControlWorks normal office hours are 9 AM to 5 PM Eastern, Monday through Friday, excluding holidays.

Before calling for support, please ensure that you have loaded and tested operation using the included demonstration program and touchpanel(s) to ensure that you understand the correct operation of the module. It may be difficult for ControlWorks to provide support until the demonstration program is loaded.

Updates, when available, are automatically distributed via Email notification to the address entered when the module was purchased. In addition, updates may be obtained using your username and password at <http://www.controlworks.com/customerlogin.aspx> .

## Distribution Package Contents

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The distribution package for this module should include:

GE_NX587E_Interface_v2.umc .....	Crestron User Module for keypad control. Also distributes data to the partition module and zone module.
GE_NX587E_Partition_Status_v2.umc .....	Crestron User Module partition status
GE_NX587E_Zone_Status_v2.umc .....	Crestron User Module zone status
GE_nx587_demo_xpanel_v2.vtp .....	Demo X PANEL
GE_nx587_demo_program_v2.smw .....	Demo program for PRO2 processor
GE_NX587e_Interface_Module_Help_v2.pdf .....	Help file for interface module
GE_NX587e_Partition_Status_Module_Help_v2.pdf .....	Help file for partition status module
GE_NX587e_Zone_Status_Module_Help_v2.pdf .....	Help file for zone status module

## Revision History

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V1 [lincoln@controlworks.com](mailto:lincoln@controlworks.com) 2010.09.27

-Initial release

V2 [caleb@controlworks.com](mailto:caleb@controlworks.com) 2011.12.13

Added stepper to configure the returned data to be in the correct format when the module is enabled. It seemed like many NX-587E's were being shipped in the incorrect mode.

## Development Environment

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This module version was developed on the following hardware and software. Different versions of hardware or software may or may not operate properly. If you have questions, please contact us.

<b>GE Hardware</b>	<b>Hardware Version</b>
NX-587E	Unknown
<b>Crestron Hardware</b>	<b>Firmware Version</b>
Crestron MC3 Processor	1.002.0000
Crestron PRO2 Processor	4.003.0010
<b>Software</b>	<b>Software Version</b>
Crestron SIMPL Windows	3.02.14
Crestron Vision Tools Pro-e	4.4.28
Crestron Database	28.05.017.00
Device Database	17.05.009.00
Crestron Device Library	760

# ControlWorks Consulting, LLC Module License Agreement

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## Definitions:

*ControlWorks*, *We*, and *Us* refer to ControlWorks Consulting, LLC, with headquarters located at 701 Beta Drive, Suite 22 Mayfield Village, Ohio 44143-2330. *You* and *Dealer* refer to the entity purchasing the module. *Client* and *End User* refer to the person or entity for whom the Crestron hardware is being installed and/or will utilize the installed system. *System* refers to all components described herein as well as other components, services, or utilities required to achieve the functionality described herein. *Module* refers to files required to implement the functionality provided by the module and may include source files with extensions such as UMC, USP, SMW and VTP. *Demo Program* refers to a group of files used to demonstrate the capabilities of the Module, for example a SIMPL Windows program and VisionTools Touchpanel file(s) illustrating the use of the Module but not including the Module. *Software* refers to the Module and the Demo Program.

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## Provision of Support

We provide limited levels of technical support only for the most recent version of the Module as determined by Us. We do not provide support for previous version of the module, modifications to the module not made by Us, to persons who have not purchased the module from Us. In addition, we may decline to provide support if the Demo Program has not been utilized. We may withdraw a module from sale and discontinue providing support at any time and for any reason, including, for example, if the equipment for which the Module is written is discontinued or substantially modified. The remainder of your rights and obligations pursuant to this license will not be affected should ControlWorks discontinue support for a module.

## Modification of Software

You may not decrypt (if encrypted), reverse engineer, modify, translate, disassemble, or de-compile the Module in whole or part. You may modify the Demo Program. In no event will ControlWorks Consulting, LLC be liable for direct, indirect, incidental or consequential damages resulting from You modifying the Software in any manner.

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