NextGen - N-Button

Push Notification Quick Start Guide

SERIAL PORT TOOL

Chapter

1

Introduction

Real-Time Status & Control

Wi-Fi Push Notification Board that allows you to connect a contact closure to the board and send an email or text message when the circuit is closed. The board will communicate the contact closure information to your computer through a W-Fi network. N-Button Software will then send a text or email from the computer to your selected recipients.

All the Features You Need…

- Send SMS or Email Message
- Compatible with ANY Contact Closure Sensor
- Onboard Wi-Fi Interface Module
    - Communicate over your network
- N-Button Software
    - Point & Click Interface
    - Use to Configure Messages

Step-By-Step Instructions

This Manual will give you step-by-step instructions for connecting your Wi-Fi Push Notification Board and setting up N-Button Software to send text and/or emails.

Chapter

2

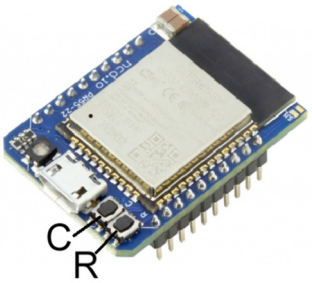
Connect Board to Network

Configuring the NextGen Module

The Wi-Fi Module must be configured to your network and so that it can be accessed through N-Button.
To configure a new NexGen module make sure it is installed in the Push Notification Board and it's LED is flashing Blue. A Blue flashing LED indicates it is in configuration mode. In this mode the module will appear as a WiFi Access point and should show up as an available WiFi network on your computer called NCD_WiFi. Connect to the NCD_WiFi network and enter NCDBeast as the password.

Your computer or phone may now automatically pop up a browser window where you can configure the module. If not, simply open your web browser and enter 172.217.28.1

You should now see the Configuration Web Interface.



Buttons on the NextGen Module

Getting Your Module into Configuration Mode

If the module isn't flashing blue or didn't flash blue meaning that it is in configuration mode, here's how to get the module into configuration mode:

1. Power cycle the board then connect board to power **DO NOT** connect the USB cable.

2. Using a thumb nail press down the "C" button next to the USB port. Hold down till the LED flashes Green at least three times then goes into a rainbow of colors.

3. **WHILE HOLDING DOWN THE "C" Button** press the "R" button. The LED will turn Red and Blue, release the "R" button and continue to hold the "C" button.

4. Release the "C" button

5. The LED Should now be flashing blue. Once it flashes blue, it is in config mode. If it goes back to flashing Green repeat steps 1 through 4.

6. Disconnect your laptop or phone from any network connections, wired **OR** wireless, and then select the NCD_WiFi SSID in your WiFi options.

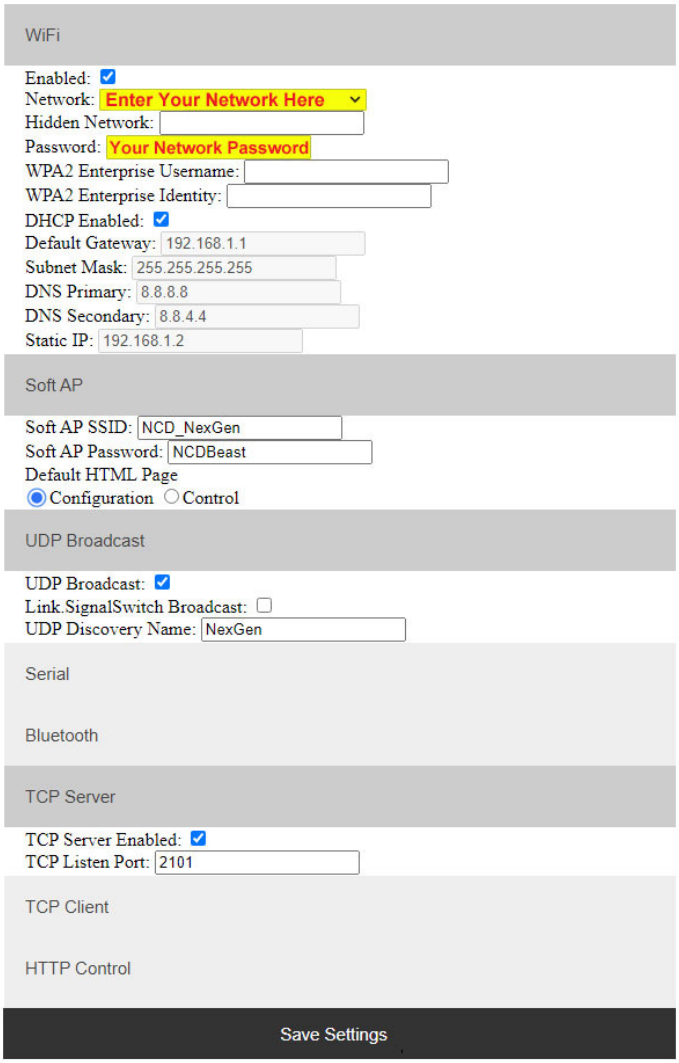
7. The laptop should now open a browser window. If you are still connected to a wired connection at this time it will pull up a Google Home page. Disconnect all other connections and try going to 172.217.28.1 in a browser.

NOTE: *Once in Config mode the card will only stay there for a short period of time. You will lose connection and the LED will flash green again once it is out of config mode.*

If the module won't go into configuration mode power cycle the board and try again. It may take a few times for the board to enter configuration mode.

WiFi

We will cover what needs to be checked for the Push Notification board to be setup. For an overview on all the Options download the full NextGenQuick Start Guide at: relaypros.com/start.htm.



Enabled –> This box must be checked so the module will attempt to associate with a WiFi Network.

Network –> Enter the network you want the board to connect to here. Computer w/N-Button will be on the same network.

Password –> Ether your network password here, the board cannot connect to your network without a password.

DHCP Enabled –> Check this box of you want to use the module in DHCP Mode and uncheck if you are assigning a static IP address. Use settings below for setting Static IP Address

Subnet Mask –> This setting indicates the subnet mask which should be utilized on the network. This setting is only applicable if DHCP is not checked.

DNS Primary –> This setting indicates the default DNS server to utilize for internet connection to host URLs. This setting is only applicable if DHCP is not checked.

DNS Secondary –> This setting indicates the backup DNS server to utilize for internet connection to host URLs. This setting is only applicable if DHCP is not checked.

Static IP –> This setting indicates the Static IP address the NexGen module should utilize once connected to the host network. This setting is only applicable if DHCP is not checked.

Soft AP

In configuration mode the NexGen module is broadcasts and SSID which devices can connect to. This Soft AP is configurable. It is possible to change the broadcast SSID network name, the password for authenticating, and the default web interface which should be displayed to the user upon initial connection. The only connection that needs to be selected here is the Default HTML Page.

Default HTML Page –> This setting determines the web interface to display to the user. There are no control options with the Push Notification board so choose Configuration. This will show you the configuration page when you log into the board with the IP address.

UDP Broadcast

The NexGen module broadcasts a UDP packet on ports 55555 and 13000 for network discovery purposes. N-Button will use this and discover the board on the network.

UDP Broadcast –> Select this checkbox so the board can be discovered

TCP Server

The NexGen module implements the functionality of a TCP Server. Using this the module opens a socket which N-Button can connect too

TCP/Server Enables –> Check this box

TCP Listen Port –> 2101

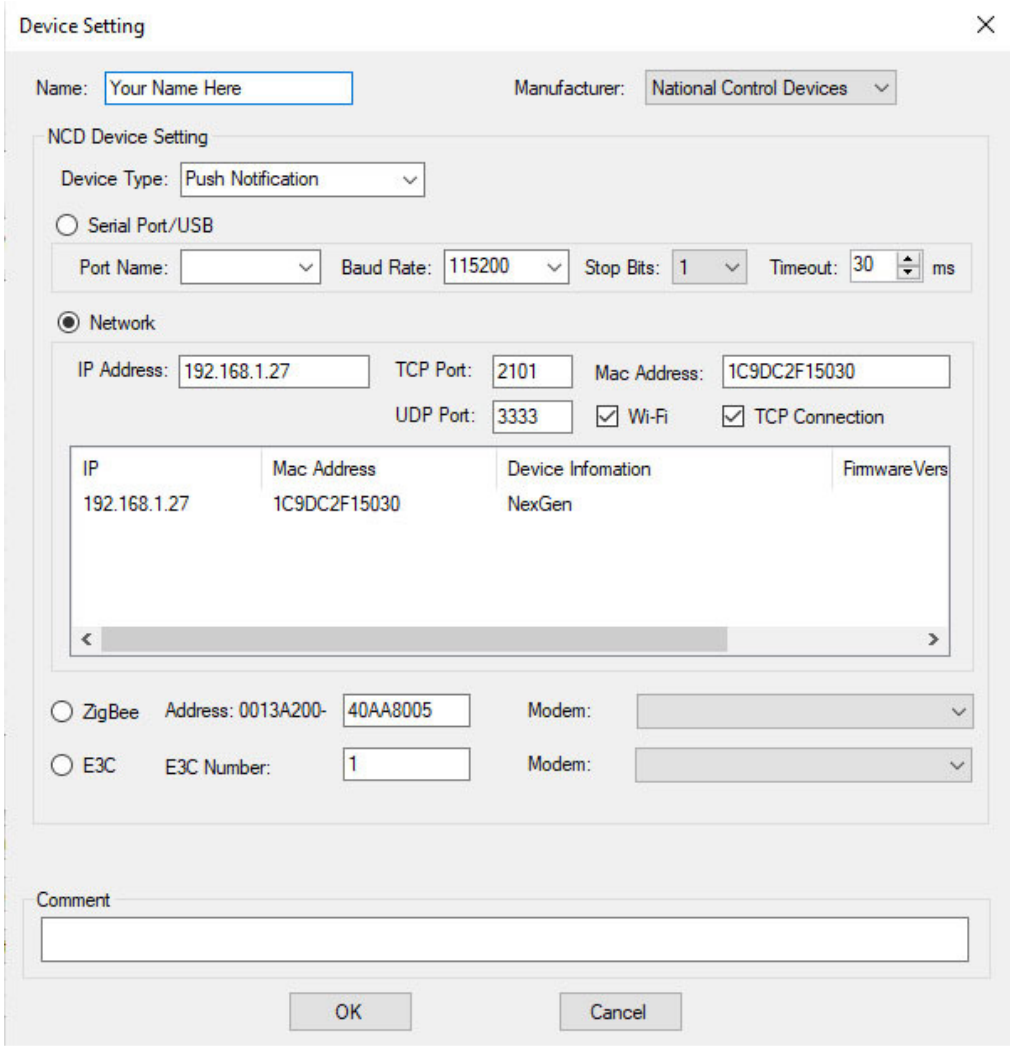
Save Settings
Once settings are entered click the Save Settings Button.

N-Button Communication and Scan Channel Setup

Communicating to the Board

Download and install the version of N-Button Pro or N-Button Lite that you purchased with the board.

Open N-Button Then Click Device Manager –> You must add the board to the device list. You will use this device for each input on the board.



Name –> You can assign a name to the board. This will be important if you have more than one board on the network.

Manufacturer –> National Control Devices

Board Type –> Push Notification

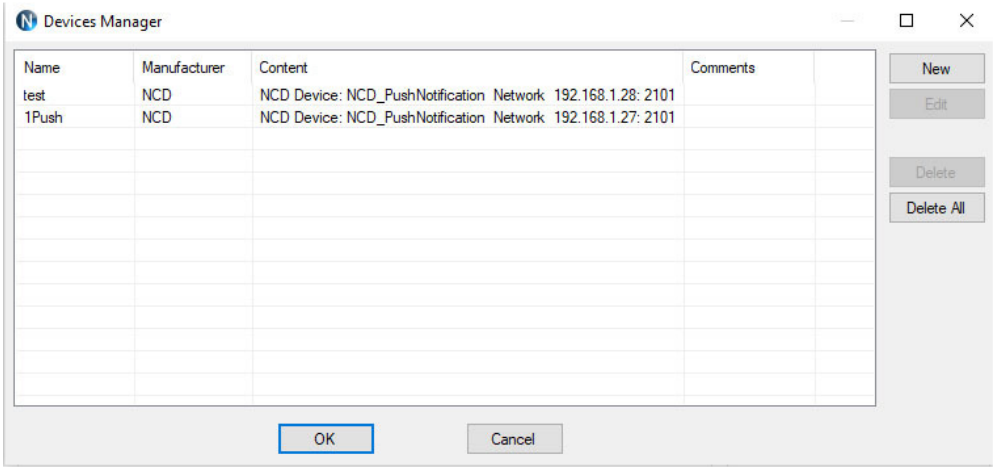
IP Address/Mac Address –> The device should be listed in the Discovered Devices area. Once it is, double click the IP Address and the IP Address, and Mac Address will populate the Network area above.

TCP/UDP Port –> Keep default setting for TCP Port (2101) and UDP Port (3333).

Wi-Fi –> Check the Wi-Fi check box.

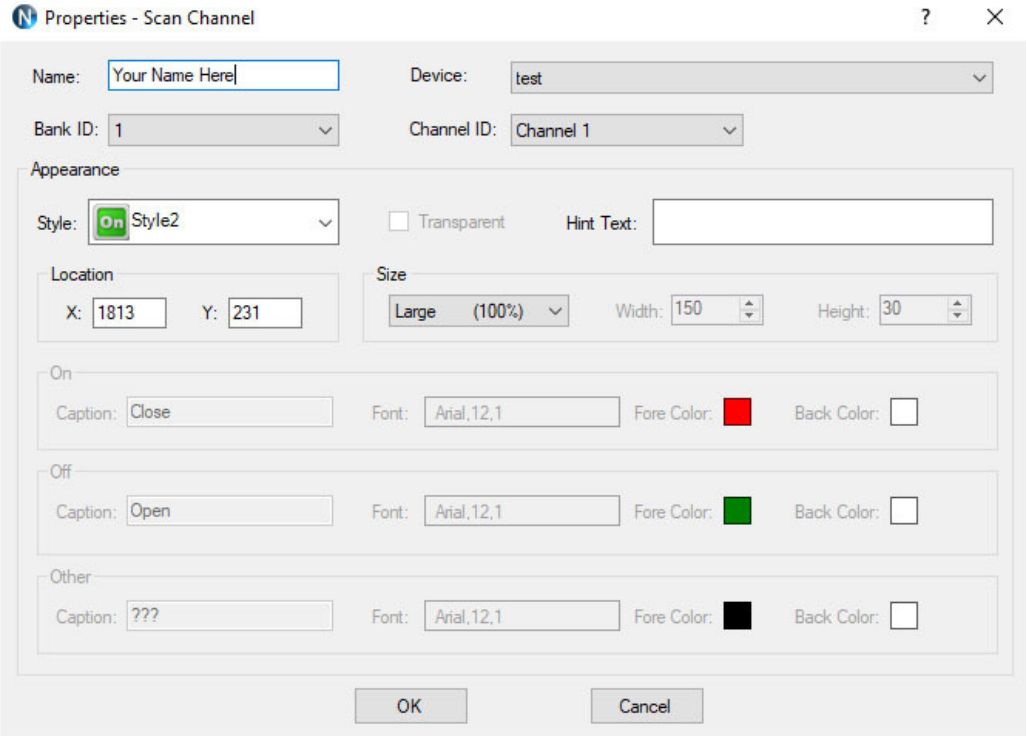
TCP Connection –> Check the TCP Connection check box.

Click OK to save the device –> The board will now be in the device manager. Double clicking this device in Device Manager will allow you to edit and make changes. The screen shot below has two devices installed, you can have more than one device on the network with N-Button. Purchase a relay board and have a light come on with the dry contact closure!



Scan Channel Setup

Scan Channel is what will read the input of the board and determine if the dry contact circuit is open or closed. You will create a scan channel widget for each input on the board.



1. Click the Scan Channel Button to open Properties.
   Name –> Create a name
   Device –> The one you created
   Bank ID, –> It will be 1
   Channel ID –> The input you are reading with this widget
   Style –> Select a style from the drop-down menu
   Size –> Select a size for your desktop widget
   Click OK –> To save the Scan Channel

You will now see the Scan Channel widget you created out on your desktop in **Red**. Look on your desktop, usually on the upper left-hand corner for the new widget!

Scan Channel is Gray
If the Scan Channel is not red there is a setup issue, most likely with the Ethernet module setup. If the Scan Channel is gray, it's not communicating with the board, and you will need to check your settings in the Module Setup at the beginning of this manual. Check the Socket Type is set to TCP Server.

Scan Channel Is Green
The scan channel that displays in the N-Button Manager is always green. Look for the widget you just created out on your desktop, usually on the upper left-hand corner for the new widget!

Scan Channel Is Red
If the Scan Channel is red it is communicating to the board, and you can test the inputs. The inputs will make the widget change from red to green when the dry contact circuit is closed.

Using a dry contact (no voltage) input close the contacts of the input you have set, you will see the Scan Channel widget on your desktop turn to Green. Release the closure, the widget turns to red again.

The Ethernet push notification board is now working with N-Button software. The widget you created is now showing the status of the input. You can setup as many scan channels as you have inputs on the board you purchased. Each one will have its own notification.

Text/Email Setup

N-Button Manager

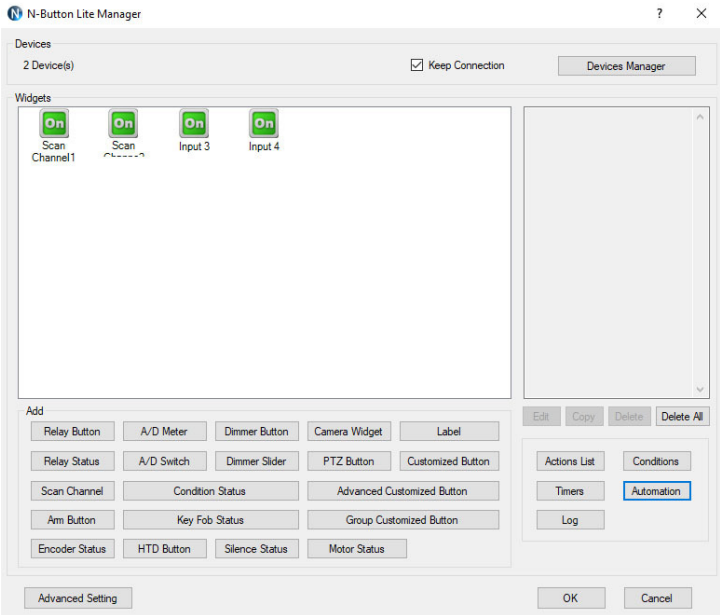
Setting up Your First Text/Email

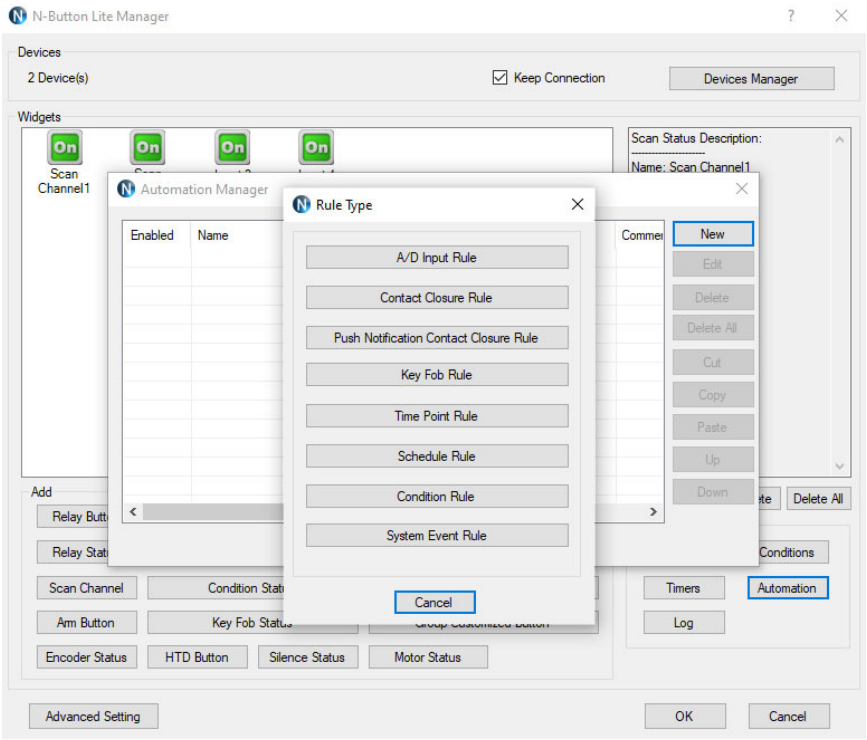
Right click on the widget you just created and select N-Button Manager to open N-Button Manager.

–> Click Automation in the lower right-hand corner of the window to open the Automation Manager Window.

–> Click New in the Automation Manager Window to open the Rule Type Window.

–> Click Push Notification Contact Closure Rule

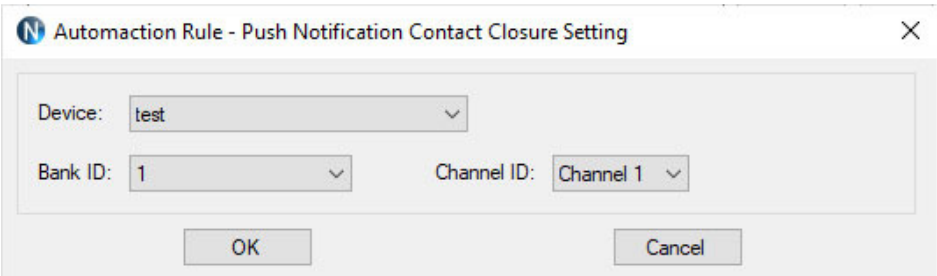


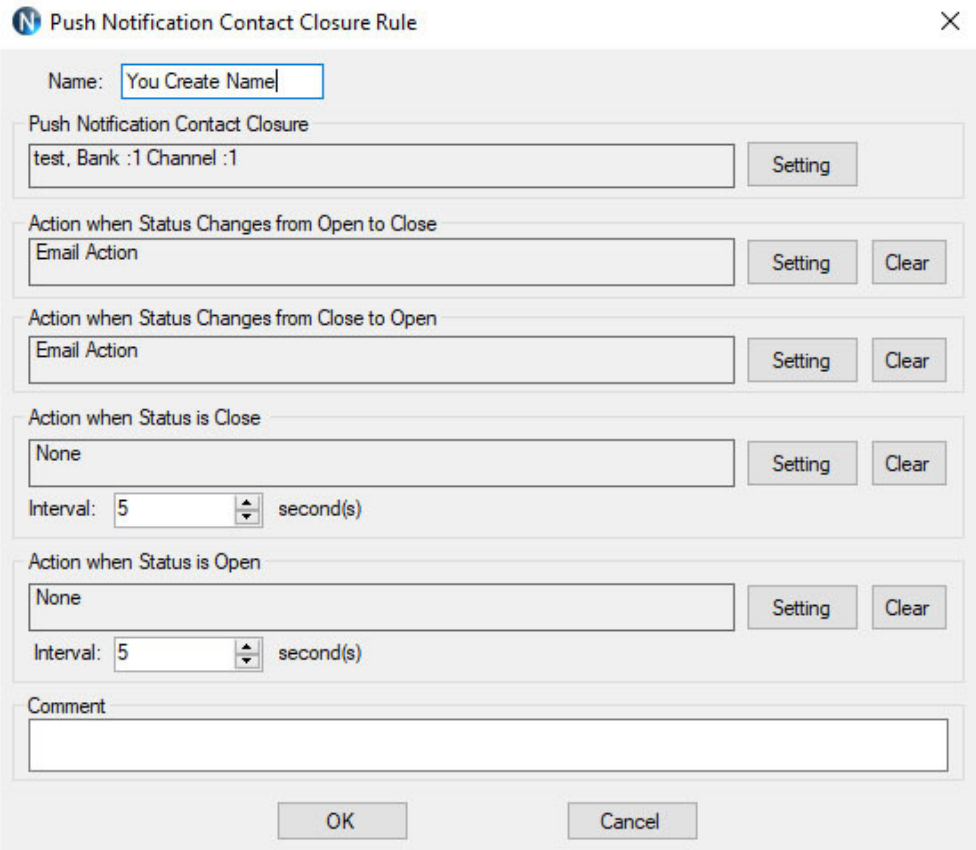


1. **Select Your Device**

Select Settings under Push Notification Contact Closure to select the device you created and the channel you want to use.

Bank ID –> It will be 1
Channel ID –> The input you are reading with this widget. If you have more than one scan channel you will setup each one separately so they each have their own message.

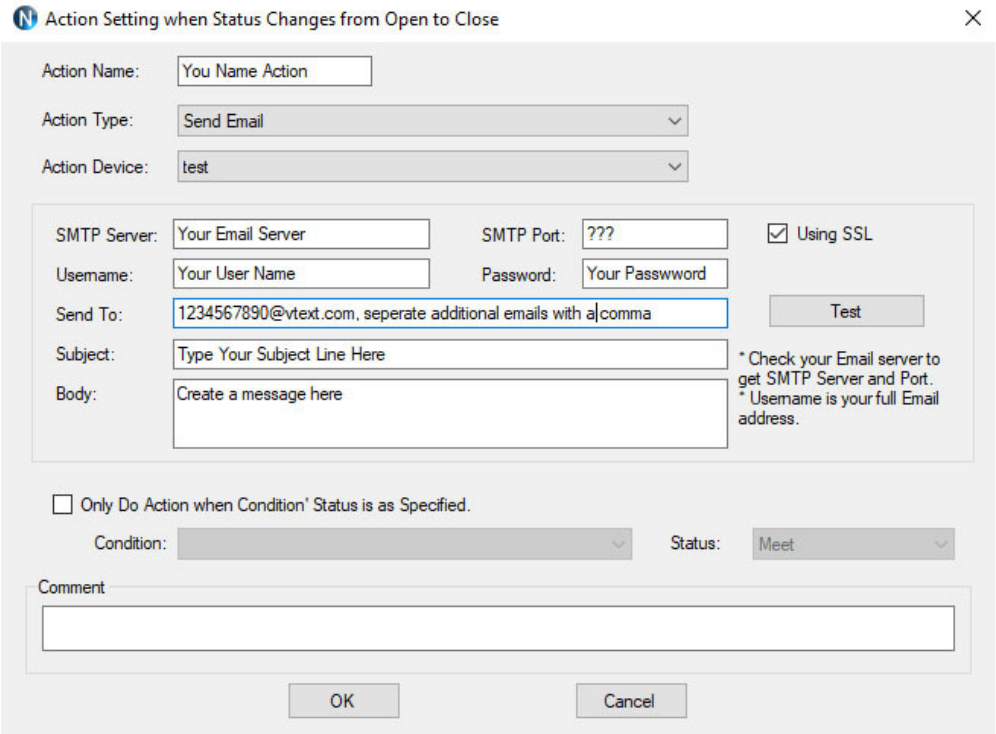




2. **Determine When the Message is Sent**
Action When Status Changes from Open to Close. Under Action Type select Send Email.

You can also set a message for other actions such as when the contact closure opens to send a message when the circuit opens. This will notify you wen the closure has opened

You can set the interval of messages under Action When Status is Closed or When Status in Open. If the message is being sent more than once this is where you look to change that setting.



3. **Setup Your Email**

–> SMTP Server: Enter the SMTP account information you will be using to send the email. *Due to Google security upgrades Gmail cannot be used. Hotmail or any SMTP mail can be used.*

–> Enter the address where you want the email sent, for more than one recipient separate the addresses with a comma.

–> Add your Subject and message.

–> <u>Click OK in all open windows and return to the desktop</u>.

After finishing all previous page settings, all recipients will receive an email once the contact closure input on the board changes state. To test, close the contact input on the push notification board and check your email and/or text for your message.

The computer must remain powered up and connected to the network to read the input on the board. To send the message the computer will always need access to the internet.

Direct Query Command Set

If writing your own program, the only command required for this board is to query the status of the inputs. This may also need to be done after a server reboot to get the current status of inputs on the controller. This will be done via a TCP socket connection to the controller's IP address on the port number. While these are technically A/D inputs we are simply using them as contact closure inputs. All inputs are pulled low on the controller so if the input is not tripped its value will be 0. When the input is tripped it will be pulled high and its status will be 255. It is recommended that you assume any input above 200 is tripped with a contact.

Reads the 8-Bit Analog Input of Channels

Send Bytes:	**Byte 1:**	**Byte 2:**
Function:	Command	Parameter (Channel 1-8)
Decimal Values:	254	150-157
Hex Values:	0xFE	0x96 - 0x9D
Receive Byte:	Decimal:	0-255
	Hex:	0x00-0xFF

Multi-Channel 8-Bit

Send Bytes:	**Byte 1:**	**Byte 2:**
Function:	Command	Returns AD1 - AD8
Decimal Values:	254	166
Hex Values:	0xFE	0xA6
Receive Byte:	Decimal:	0-255 (AD1-AD8)
	Hex:	0x00-0xFF

Troubleshooting

Board Does Not Respond
If the board does not respond through N-Button you should try connecting to it using Base Station (Note: Base Station only communicates over port 2101). If the module can be discovered on the network and base station can connect to it, but there is still no response contact us for support as there may be some defect in the module or the board itself.

1. Wrong IP (because it may change) use this as a

   reason to set a static IP Address

2. Board has incorrect power

3. Network has changed

4. Network Password has changed

5. Somethings wrong with the board

NCD Forum

National Control Devices has a forum where you can search and post questions on the operation of the boards. The NCD Community is where you will get the fastest support for all NCD products right from the developers! Visit the community here: community.ncd.io/

Contact Relay Pros

support@relaypros.com
www.relaypros.com

Contact Serial Port Tool

suport@serialporttool.com
www.serialporttool.com

RELAY PROS, LLC
780 2ND STREET
OSCEOLA, MO 64776