



Input/Output Controller Configuration Guide

NQ-E7010

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Configuring the Nyquist Input/Output Controller

The NQ-E7010 Input/Output (I/O) Controller allows Nyquist to recognize third-party switch contact closures and to provide external circuits. Configuration rules can be set for each input and output port on this appliance. For example, you can set a rule that if a contact is opened, then an alarm will sound.

Contact closures can be set for specific dates and times using the **Configure Schedule** button on the I/O Controller's Edit Station page. For example, suppose you want to schedule an output that unlocks a door at 7:30 each weekday morning. You can set up an output contact closure schedule for 7:30 a.m. Monday through Friday. When the Activity Time occurs, the contact is closed, which in turn triggers a third-party contact switch that closes the door.

The Nyquist server can automatically discover and configure the I/O Controller, but you can also manage the device, and manually configure some settings, through the I/O Controller's web-based user interface (web UI).

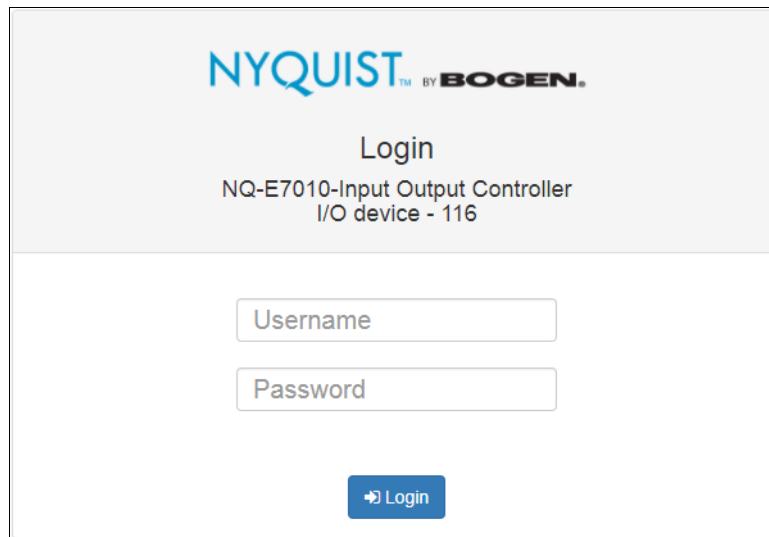
A short press of the appliance's **Reset** button reboots the device. If you press the **Reset** button for 10 seconds, the appliance returns to the factory default configuration settings. Returning to the default configuration settings does not change the appliance's firmware.

The following sections describe settings and configurations that can be applied to this device which are not controlled by the Nyquist server. For information about using Nyquist's automatic configuration process, refer to the *Nyquist System Administrator Guide*.

To access the appliance's UI:

Note: Do not use third-party Chrome browser extensions with the Nyquist user interface.

- 1 Access the appliance's web UI by doing one of the following:
 - a) On your web browser, enter the IP address for the appliance as the URL.
 - b) From the Nyquist web UI navigation bar, select **Stations**, select **Stations Status**, navigate to the device that you want to configure, and then select the **Link** icon.



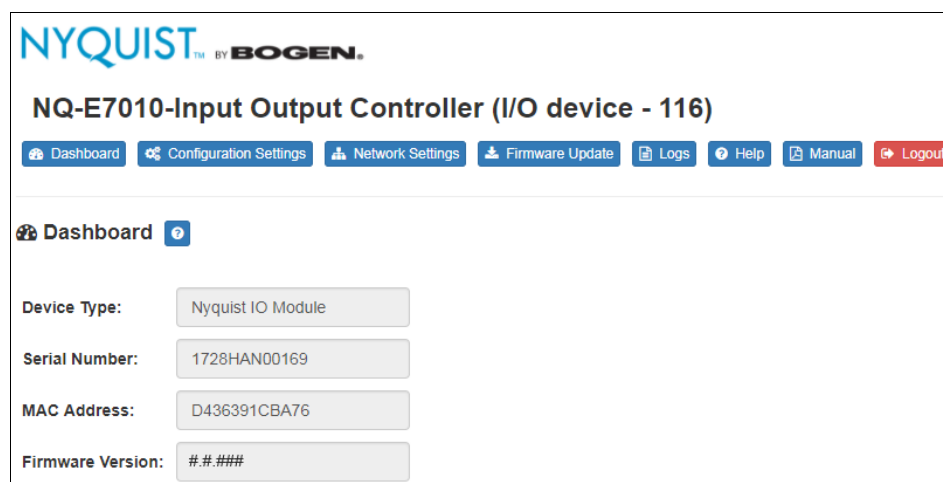
The login page features the 'NYQUIST BY BOGEN' logo at the top. Below the logo, the text 'Login' is centered, followed by 'NQ-E7010-Input Output Controller' and 'I/O device - 116'. The page contains two input fields: 'Username' and 'Password'. A blue 'Login' button with a right-pointing arrow is positioned below the password field.

Figure 1. Nyquist Appliance Login

- 2 At the Nyquist Appliance Login page, enter username and password, and then select **Login**.

The default username is **admin**; the default password is **bogen**.

The dashboard for the selected appliance appears.



The dashboard displays the 'NYQUIST BY BOGEN' logo and the title 'NQ-E7010-Input Output Controller (I/O device - 116)'. A navigation bar includes links for Dashboard, Configuration Settings, Network Settings, Firmware Update, Logs, Help, Manual, and Logout. The main content area, titled 'Dashboard', shows the following information:

Device Type:	Nyquist IO Module
Serial Number:	1728HAN00169
MAC Address:	D436391CBA76
Firmware Version:	##.###

Figure 2. I/O Controller Dashboard

Using the Dashboard

The dashboard displays the following fields:

Table 1. Appliance Dashboard Fields

Device Type	Identifies the model of this device.
Serial Number	Identifies the serial number for the device.
MAC Address	Specifies the Media Access Control (MAC) address, which is a unique identifier assigned to network interfaces for communications on the physical network segment.
Firmware Version	Provides the firmware version installed on the station.

The following buttons are available at the top of all pages in the application.

Table 2. Appliance Dashboard Buttons

Dashboard	Displays the dashboard.
Configuration Settings	Accesses the Configuration Settings page where you can view various options or select to receive configuration settings from a Nyquist server.
Network Settings	Accesses the Network Settings page where you can view and set network settings, such as the static IP address.
Firmware Update	Accesses the Firmware Update page where you can view the current Nyquist version, update firmware to a new version, restore the configuration to factory defaults, and reboot the appliance.
Logs	Accesses log files, which record either events or messages that occur when software runs and are used when troubleshooting the appliance.
Help	Accesses the appliance's online help.
Manual	Displays the appliance's configuration manual.
Logout	Logs out of the appliance's dashboard.

Updating Firmware

When you select **Firmware Update** from the appliance's web UI, the Firmware Update page appears. From this page you can determine which Nyquist firmware version the appliance is using and if an update is available. You can also load a firmware release, install the loaded firmware, restore the configuration to factory defaults, and reboot the appliance.

Note: A Nyquist appliance connected to the Nyquist network receives a configuration file from the Nyquist server that includes the latest firmware available from the server. If the firmware is different from the one installed on the appliance, an automatic firmware update occurs unless the **Firmware** parameter for the station is left blank. Refer to the *Nyquist System Administrator Guide* for more information.



Figure 3. Firmware Update Page

To use the Firmware Update page:

- 1 On the appliance web UI's main page, select **Firmware Update** to view or update the firmware version.
- 2 If you already have a firmware file you would like to install to the appliance, select **Upload Firmware** to upload the firmware file from your computer to the appliance. A popup screen appears that allows you to select the file that you want to upload. You can navigate to the file's location. After you select the file, select **Upload**.
- 3 The page displays the uploaded firmware version ("New Nyquist Version") and an **Update Firmware** button appears. Select this button if you want to update the appliance's firmware to the uploaded version.

- 4 If you want to return your appliance to its original factory configuration, select **Restore Factory Settings**.
- 5 Select **Reboot Appliance** to restart your appliance.

Table 3. Firmware Update settings



Current Nyquist Version	Shows the version of the appliance's currently installed firmware.
New Nyquist Version	Shows the version of the firmware that has been loaded, though not installed, onto the appliance.
Update Firmware	<p>Available only when a new firmware version has been loaded onto the appliance (as specified in New Nyquist Version).</p> <p>Installs the loaded firmware. A reboot may be required after installation.</p>
Upload Firmware	<p>Prompts the user to specify a firmware file, which will then be loaded (though not installed) onto the appliance.</p> <p><i>Note:</i> To obtain the firmware file for a specific version, please contact Bogen Customer Service.</p>
Restore Factory Settings	<p>Returns the appliance to its original factory configuration.</p> <p><i>Note:</i> This does not install the original appliance firmware. The firmware will not be changed.</p>
Reboot Appliance	Restarts the appliance.

Network Settings Tab Parameters

Network settings can be configured dynamically by the Nyquist server or manually by using the appliance's web UI.

To manually configure network settings:

- 1 On the appliance web UI's main page, select **Network Settings**.
- 2 Select your desired network settings.
- 3 Select **Save**.


Network Settings


IP Address:

172.31.19.220

Netmask:

255.255.255.0

Gateway:

172.31.19.254

VLAN ID:

9

VLAN Priority:

0 - Best Effort ▾

NTP Server:

172.31.19.203

TFTP Server:

172.31.19.203

TFTP Server from DHCP

No ▾

DHCP Enabled:

Yes ▾

Reboot Appliance:

No ▾


 Save

Figure 4. Network Settings

Network settings are described in the following table:

Table 4. Network Settings

IP Address	Identifies the IP address assigned to the appliance.
Netmask	Identifies the subnetwork subdivision of an IP network.
Gateway	Identifies the address, or route, for the default gateway.
VLAN ID	Identifies the Virtual Local Area Network (VLAN) for this appliance. Values range from 0 to 4094.
VLAN Priority	Identifies the priority of the network traffic on the VLAN. Priority can range from 0 through 7.
NTP Server	Identifies the IP address or the domain name of the Network Time Protocol (NTP) Server.

Table 4. Network Settings (Continued)

TFTP Server	<p>Identifies the host name or IP address of the Trivial File Transfer Protocol (TFTP) server.</p> <p>The specified TFTP server can be used to automatically set this device's Configuration settings via the Get Configuration from Server button.</p> <p>If TFTP Server from DHCP (see below) is set to "Yes", this value will be auto-configured via DHCP option 66, assuming the DHCP server has been configured to provide option 66. For details, see the documentation for your DHCP server.</p> <p><i>Note:</i> A TFTP server runs on the Nyquist server on port 69 (the standard TFTP port) and the optional Nyquist DHCP service automatically provides this TFTP address via option 66.</p> <p>If this value is unspecified, the TFTP Server from DHCP will automatically be set to "Yes", this field will become read-only, and DHCP will be used to configure this setting. To change this value, the TFTP Server from DHCP setting must be set to No, which makes the field editable.</p>
TFTP Server from DHCP	<p>"Yes" means the device will use the DHCP option 66 value to retrieve an address for the TFTP Server from DHCP.</p> <p>"No" means the device will ignore the DHCP option 66 value and use the manually configured value of the TFTP Server (see above).</p>
DHCP Enabled	<p>Indicates if the device is enabled to use DHCP to retrieve its IP configuration.</p>
Reboot Appliance	<p>Indicates that this appliance should reboot when the Save button is clicked.</p>

Configuration Settings Tab Parameters

The way to configure Nyquist appliances is to obtain configuration settings from the Nyquist server by selecting **Get Configuration From Server**.

To view the Nyquist appliance configuration:

- 1 On the appliance Web UI's main page, select **Configuration Settings**.
- 2 View the configuration settings.

Configuration Settings

Get Configuration From Server

Web Username:

Device Stations

Port Number	Port Type	Account Id	Local Port	Username
<input type="text" value="1"/>	<input type="text" value="I/O Controller"/>	<input type="text" value="sip:0104@192.168.1.199"/>	<input type="text" value="5060"/>	<input type="text" value="0104"/>

Figure 5. Appliance Configuration Settings

The following table describes the **Configuration Settings** tab settings:

Table 5. Configuration Settings

Get Configuration from Server	Retrieves configuration settings (i.e., web username, server, and local port) from the TFTP server specified in the Network Settings (see Table 1 on page 1).
Web Username	Displays the username of the current user.

The **Configuration Settings** tab also displays the following information for each **Device Station** attached to the controller:

Port Number	Shows the port number of the appliance.
Port Type	Shows the device type to which the port connects.
Account ID	Shows the SIP account (IP address) associated with the device preceded by the extension of the device associated with this port.
Local Port	Shows the port used for SIP.
Username	Shows the username or extension for the station associated with the port.

Accessing Log Files

A log file records events and messages that occur when software runs, to be used when troubleshooting the appliance. From the appliance's web-based UI, log files can be viewed directly or exported via download to your PC, Mac, or Android device, where they can be copied to removable media or attached to an email for technical support.

To view a log file:

- 1 On the appliance Web UI's main page, select **Logs**.
- 2 From the drop-down menu, select the log that you want to view.
Multiple versions of the same log, and zipped copies of the log, may be available.
- 3 To export the file, select **Export**.
A link to a .txt file appears in the browser's lower left corner.



Figure 6. Logs

Available logs are described in the following table. If a log file is empty, however, it will not appear in the drop-down list of available logs.

Table 6. Logs

Log	Description
ampws.log	Contains information about protection status and logs protection events with temperature information at the time of event.
auth.log	Contains system authorization information, including user logins and authentication methods that were used.
btmpt	Contains information about failed login attempts.
daemon.log	Contains information logged by the various background daemons that run on the system.
debug	Contains errors and debug information.
dpkg.log	Contains information that is logged when a package is installed or removed using dpkg command.
faillog	Contains user failed login attempts.
kern.log	Contains information logged by the kernel and recent login information for all users.
lastlog	Contains information on the last login of each user.
messages	Contains messages generated by Nyquist.
php5-fpm.log	Contains errors generated by the PHP script.
syslog	Contains list of errors that occur when the server is running and server start and stop records
user.log	Contains information about all user level logs.
wtmp	Contains historical record of users logins at which terminals, logouts, system events, and current status of the system, and system boot time.