ALTUSEN™
Enterprise KVM Solutions by ATEN

Guardian Over the Net™

GN0116

User Manual

www.ALTUSEN.com

2005-10-21

Regulatory Information

1. This is an FCC Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

   This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

2. All contents of this package, including products, packing materials and documentation comply with ROHS.

User Notice

All information, documentation, and specifications contained in this manual are subject to change without prior notification by the manufacturer. The manufacturer makes no representations or warranties, either expressed or implied, with respect to the contents hereof and specifically disclaims any warranties as to merchantability or fitness for any particular purpose. Any of the manufacturer's software described in this manual is sold or licensed 'as is'. Should the programs prove defective following their purchase, the buyer (and not the manufacturer, its distributor, or its dealer), assumes the entire cost of all necessary servicing, repair and any incidental or consequential damages resulting from any defect in the software.

The manufacturer of this system is not responsible for any radio and/or TV interference caused by unauthorized modifications to this device. It is the responsibility of the user to correct such interference.

The manufacturer is not responsible for any damage incurred in the operation of this system if the correct operational voltage setting was not selected prior to operation. PLEASE VERIFY THAT THE VOLTAGE SETTING IS CORRECT BEFORE USE.

Safety Instructions

General

- Read all of these instructions. Save them for future reference.
- Follow all warnings and instructions marked on the device.
- Do not place the device on any unstable surface (cart, stand, table, etc.). If the device falls, serious damage will result.
- Do not use the device near water.
- Do not place the device near, or over, radiators or heat registers.
- The device cabinet is provided with slots and openings to allow for adequate ventilation. To ensure reliable operation, and to protect against overheating, these openings must never be blocked or covered.
- The device should never be placed on a soft surface (bed, sofa, rug, etc.) as this will block its ventilation openings. Likewise, the device should not be placed in a built in enclosure unless adequate ventilation has been provided.
- Never spill liquid of any kind on the device.
- Unplug the device from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
- The device should be operated from the type of power source indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- The device is equipped with a 3-wire grounding type plug. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not attempt to defeat the purpose of the grounding-type plug. Always follow your local/national wiring codes.
- Do not allow anything to rest on the power cord or cables. Route the power cord and cables so that they cannot be stepped on or tripped over.
- If an extension cord is used with this device make sure that the total of the ampere ratings of all products used on this cord does not exceed the extension cord ampere rating. Make sure that the total of all products plugged into the wall outlet does not exceed 15 amperes.

- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppresser, line conditioner, or un-interruptible power supply (UPS).
- Position system cables and power cables carefully; Be sure that nothing rests on any cables.
- When connecting or disconnecting power to hot-pluggable power supplies, observe the following guidelines:
  - Install the power supply before connecting the power cable to the power supply.
  - Unplug the power cable before removing the power supply.
  - If the system has multiple sources of power, disconnect power from the system by unplugging all power cables from the power supplies.
- Never push objects of any kind into or through cabinet slots. They may touch dangerous voltage points or short out parts resulting in a risk of fire or electrical shock.
- Do not attempt to service the device yourself. Refer all servicing to qualified service personnel.
- If the following conditions occur, unplug the device from the wall outlet and bring it to qualified service personnel for repair.
  - The power cord or plug has become damaged or frayed.
  - Liquid has been spilled into the device.
  - The device has been exposed to rain or water.
  - The device has been dropped, or the cabinet has been damaged.
  - The device exhibits a distinct change in performance, indicating a need for service.
  - The device does not operate normally when the operating instructions are followed.
- Only adjust those controls that are covered in the operating instructions. Improper adjustment of other controls may result in damage that will require extensive work by a qualified technician to repair.

Rack Mounting

- Before working on the rack, make sure that the stabilizers are secured to the rack, extended to the floor, and that the full weight of the rack rests on the floor. Install front and side stabilizers on a single rack or front stabilizers for joined multiple racks before working on the rack.
- Always load the rack from the bottom up, and load the heaviest item in the rack first.
- Make sure that the rack is level and stable before extending a device from the rack.
- Use caution when pressing the device rail release latches and sliding a device into or out of a rack; the slide rails can pinch your fingers.
- After a device is inserted into the rack, carefully extend the rail into a locking position, and then slide the device into the rack.
- Do not overload the AC supply branch circuit that provides power to the rack. The total rack load should not exceed 80 percent of the branch circuit rating.
- Ensure that proper airflow is provided to devices in the rack.
- Do not step on or stand on any device when servicing other devices in a rack.

Package Contents

The complete GN0116 package consists of:

- 1 GN0116 Station
- 1 AC Source Power Cord
- 8 Power Outlet Power Cords[1]
- 1 RS-232 to RJ-45 Cable
- 1 RJ-45 Cable
- 2 Temperature Sensor Sets
- 1 User Manual[2]
- 1 Quick start guide
- 1 Mounting Kit :
  - Rack mounting brackets and hardware
  - 4 foot pads
- 1 Software CD
- 1 Warranty registration card

Check to make sure that all of the components are present and in good order. If anything is missing, or was damaged in shipping, contact your dealer.

Read this manual thoroughly and follow the installation and operation procedures carefully to prevent any damage to the switch or to any other devices on the GN0116 installation.

1. For countries that use a 220 - 250V power source. Outlet Version: 220-250V IEC320-C13 
2. Features may have been added to the GN0116 since this manual was written. Please visit our website to download the latest version of this manual.

Contents

About This Manual

This User Manual is provided to help you get the most from your GN0116 system. It covers all aspects of installation, configuration and operation. An overview of the information found in the manual is provided below.

Overview

Chapter 1, Introduction, introduces you to the GN0116 System. Its purpose, features and benefits are explained, and its front and rear components are described.

Chapter 2, Installation, provides step-by-step instructions for hardware and software installation.

Chapter 3, Browser Operation, details the concepts and procedures involved in the "Over the NET" browser operation of your GN0116 installation.

Chapter 4, ssConsole Operation, explains how to operate the GN0116 via a serial connection with the ssConsole program.

Chapter 5 Command Reference, lists the commands most frequently used with the GN0116 and provides examples of how to use them.

Chapter 6, Firmware Upgrade, describes how to perform both a MAXI and System Unit upgrade to keep your GN0116 up to date with the latest features and fixes to its firmware.

An Appendix at the end of the manual provides a complete command summary, as well as technical and other important information regarding the GN0116.

Conventions

This manual uses the following conventions:

`Courier`	Indicates text that you should key in.
[ ]	Indicates keys you should press. For example, [Enter] means to press the **Enter** key. If keys need to be *chorded*, they appear together in the same bracket with a plus sign between them: [Ctrl+Alt].
1.	Numbered lists represent procedures with sequential steps.
◆	Bullet lists provide information
>	Indicates selecting an option on a menu. For example, Start > Run means to open the *Start* menu, and then select *Run*.
⚠	Indicates critical information.

Getting Help

For additional help, advice, and information, ALTUSEN provides several support options. If you need to contact ALTUSEN technical support with a problem, please have the following information ready beforehand:

- Product model number, serial number, and date of purchase.
- Your computer configuration, including operating system, revision level, expansion cards, and software.
- Any error messages displayed at the time the error occurred.
- The sequence of operations that led up to the error.
- Any other information you feel may be of help.

ALTUSEN Information

Technical Support

North America Technical Phone Support	Registered ALTUSEN product owners are entitled to telephone technical support. Call the ALTUSEN Technical Support Center: 949-453-8885.
International Technical Phone Support	1. Contact your local dealer. 2. Call the ALTUSEN Technical Support Center: (886-2) 8692-6959.
Email Support	Email your questions and concerns to: support@altusen.com
Online Support ◆Troubleshooting ◆Documentation ◆Software Updates	Online *troubleshooting* that describes the most commonly encountered problems and offers possible solutions to them; online *documentation* (including electronically available manuals); and the latest *drivers and firmware* for your product are available at the ALTUSEN website: http://www.altusen.com

Product Information

For information about all of ALTUSEN's products and how they can help you connect without limits, visit ALTUSEN on the web.

ALTUSEN Authorized Resellers

ALTUSEN provides the following ways to find an authorized reseller in your area:

- In the United States of America, call: 866-ALTUSEN (258-8736)
- In Canada and South America, call: 949-453-8885
- In all other locations, call: 886-2-8692-6789
- Visit ALTUSEN on the web at http://www.altusen.com for a list of locations and telephone numbers

Chapter 1.
Introduction

Overview

The GN0116 Guardian Over the NET™ is a control unit that offers remote environment monitoring and management of your critical computer systems over TCP/IP. Users can control the environment of their systems from any computer connected to the internet - whether down the hall, down the block, or half way around the world.

Up to 255 additional GN0116 units can be daisy chained down from the original unit, providing remote environment management to large enterprise centers. Installation is fast and easy: plugging cables into their appropriate ports and a simple setup is all that is entailed.

Since the GN0116's firmware is upgradeable, you can stay current with the latest functionality improvements simply by downloading firmware updates from our website as they become available.

With its advanced features and ease of operation, the GN0116 is the most convenient, efficient, reliable, and cost effective way for administrators to monitor and manage their server environment.

Features

- Remote environment control for outlets via TCP/IP.
- Daisy chain up to 255 additional stations.
- Individual control of each port - users can set the environment settings (Temperature, humidity, voltage and current) to allow equipment to be monitored for irregularity.
- Provides two configuration/management methods: Browser; or ssConsole*
- Easy setup and operation via a browser GUI interface
- Remote users can monitor the current status via the GUI on their browsers
- LEDs for easy status monitoring
- Multi-user access (1 Administrator; 4 Users)
- Two level (Administrator and User) security
- Firmware upgradeable

* ssConsole (Serial Server Console) is an application program provided with the GN0116

Requirements

Browsers

- Browsers must support SSL 128 bit encryption.
- Browser access requires either Internet Explorer 5.5 and above, or Netscape 8.0 and above.

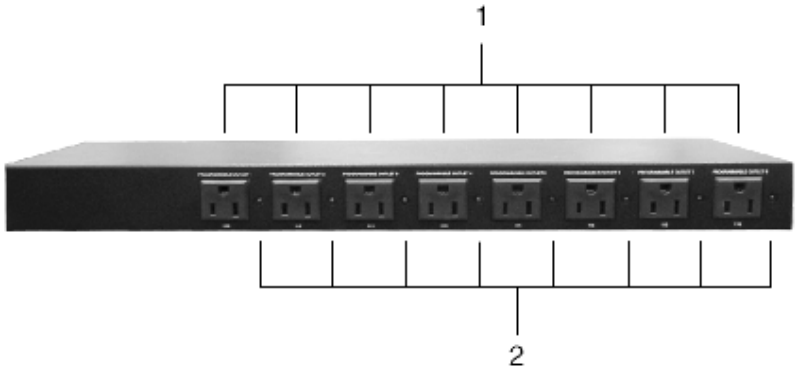
Note: 1. Internet Explorer below version 5.5 can be used if your computer has Microsoft Windows Script 5.6 installed.

2. To use Netscape, enable the *Display Page Like Internet Explorer* feature (View > Rendering Engine > Display Page Like Internet Explorer).

Computers

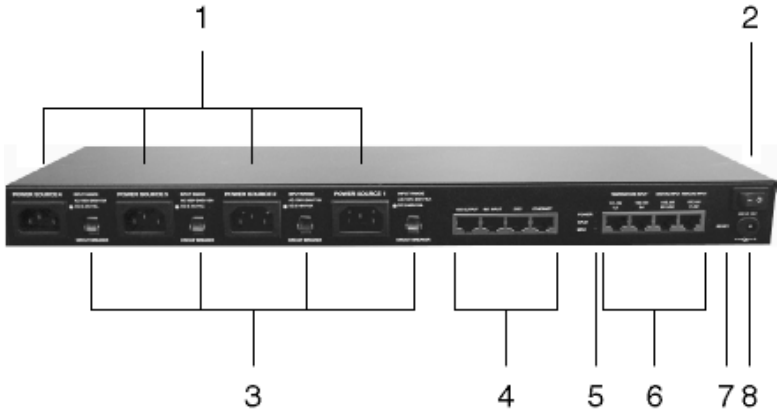
- Pentium or higher CPU
- Ability to support Windows XP or above
- 20 MB Hard drive
- An RJ-45 or RS-232 port
- CD-Rom (Optional): For installation of software only

GN0116 Front View



No.	Component	Description
1	Programmable AC Power Outlets	The power cables that connect to the computers plug in here. The output range of each port is: ◆ 125V AC; 15A; 50~60Hz (max); or ◆ 220~250V AC; 10A; 50~60Hz (max) **Outlet Version:** 100-125V NEMA5-15R  **Outlet Version:** 220-250V IEC320-C13  The output voltage of each port varies according to the input voltage from the AC Power Source inlets (located on the switch's rear panel). Each Power Source Inlet provides voltage to two Programmable Power Outlets as follows: ◆ Power Source 1 - Outlets 1 and 2 (109 and 110) ◆ Power Source 2 - Outlets 3 and 4 (111 and 112) ◆ Power Source 3 - Outlets 5 and 6 (113 and 114) ◆ Power Source 4 - Outlets 7 and 8 (115 and 116) The default power status of each port is ON.
2	Port LEDs	The Port LEDs provide status information about their corresponding AC Power Outlets. ◆ The LED is OFF when the Outlet power is OFF ◆ A LED lights GREEN to indicate the outlet power is ON

GN0116 Rear View



No.	Component	Description
1	AC Power Source Inlets	The power cords from the power source needed to supply power to the Programmable AC Power Outlets plug in here.
2	Power Switch	This standard rocker switch powers the unit On and Off.
3	Circuit Breaker Switches	If an overcurrent situation occurs, the circuit breaker automatically shuts off the circuit. After insuring that the current is below the maximum limit, press the breaker switch to restore the current flow The circuit breaker rating is 250V; 15A.
4	Communication Ports	◆ 485 Output: In a daisy chained installation this is the “chain out” port of the parent station. ◆ 485 Input: In a daisy chained installation this is the “chain in” port of the child station. ◆ 232C: Used for a serial connection (either from a modem or a direct terminal connection from a local console) for monitoring, software updating, etc. ◆ Ethernet: Used for browser connections to the GN0116 from remote systems.

No.	Component	Description
5	Status LEDs	◆ Power: Lights RED to indicate the unit is On. ◆ CPLD: Provides information regarding the CPLD status. Flashes GREEN during normal operations. Remains steady GREEN during bootloader mode. ◆ MCU: Provides information about the MCU status. Flashes YELLOW during normal operations. Remains steady YELLOW during bootloader mode.
6	Analog and Digital I/O Ports	◆ Ports101,102; 103,104; 105,106; and 107,108 are **digital output** ports. The output voltage is 12VDC; 50mA. They can operate buzzers, warning lights and other similar devices. They can also be connected to an extension unit and used as programmable power outlets. ◆ Ports 1,2 and 3,4 are **resistance type analog input ports**. The input resistance ranges from 2~205KΩ. The ports have 1024 levels of resolution. With appropriate drivers, they can be connected to thermistor or other resistance-output sensors (such as CDS sensors). ◆ Ports 201,202 are **digital input ports** (dry contact). They can be connected to On/Off-type output sensors (such as intrusion, access control, smoke, and leakage sensors). ◆ Ports 31,32 are **voltage type analog input ports**. The input voltage ranges from 0~5VDC. The ports have 1024 levels of resolution. With appropriate drivers, they can be connected to sensors with 0~5 VDC output voltage, such as AC/DC voltage sensors, current sensors and humidity sensors. **Note:** Voltage sensors can only be plugged in Ports 31,32. If they are plugged into any other ports, those ports may malfunction.
7	Reset Switch	This switch is recessed and must be pushed with a thin object, such as the end of a paper clip. Pressing this switch in for more than five seconds causes the GN0116 to go into bootloader mode. Do not use unless it is necessary to reset the unit.
8	Power Input	The power adapter cable plugs in here.

Chapter 2.
Installation

Before you Begin

1. Important safety information regarding the placement of this device is provided on p. iv. Please review it before proceeding.
2. Make sure that power to all the devices you will be connecting up have been turned off.
3. Make sure that the power supply voltage settings of all the devices you will be connecting up match the voltage of the source that the GN0116 is plugged into.

Software Installation

To install the GN0116 software on a computer that will access the unit, do the following:

1. Insert the installation CD that came with your package into the computer's CD drive.
2. Execute the self extracting setup program (Altusen GN0116 V1.6.exe).
3. When the Installation Wizard dialog box comes up, click **Next**.
4. Accept the Licensing Agreement and follow the wizard's instructions to complete the installation.

Connecting Up

Either an Ethernet or RS232 port connection can be used to connect an external computer to the GN0116 for monitoring and control operations. Details are provided in the sections that follow.

Ethernet Connection

1. Plug one end of the ethernet cable provided with this package into the **Ethernet Port** located on the rear panel of the GN0116.
2. Plug the other end of the ethernet cable into your LAN connection.

   Note: Both the computer and the GN0116 must be connected to the LAN or they will not be able to communicate with each other.
3. Plug the DC power adapter provided with this package into an AC power source; then plug the adapter cable into the GN0116's DC power jack.

   Note: We strongly advise that you do not plug the GN0116 into a multi socket extension cord, since it may not receive enough amperage to operate correctly.
4. Once you are cabled up, you can turn on the GN0116 and the connected devices.

RS232 Connection

1. Plug the RJ45 end of the RS232/RJ45 cable provided with this package into the *232C Port* on the GN0116's rear panel.
2. Plug the other end of the cable into the computer's serial port (9 PIN D-Type).
3. Once you are cabled up, you can turn on the GN0116 and the connected devices.

Note: If there is no RS232 port on the computer, you can use an RS232 / USB adapter (not included - requires separate purchase).

Configuring the IP Address

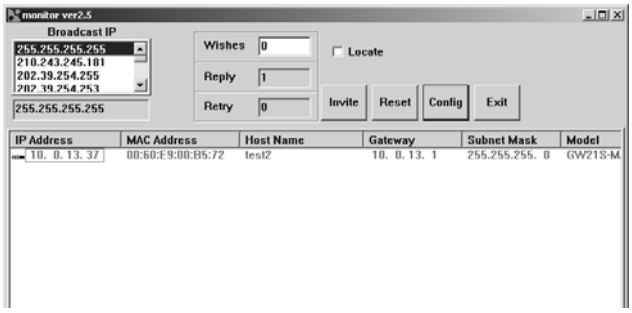
In order to access the GN0116 via its Ethernet port, it must be assigned a valid IP address on the LAN, as follows:

1. With the GN0116 powered On, plug a network cable into its Ethernet port
2. Use the CD that came with this package to install the GN0116 software on the computer (see p. 7).

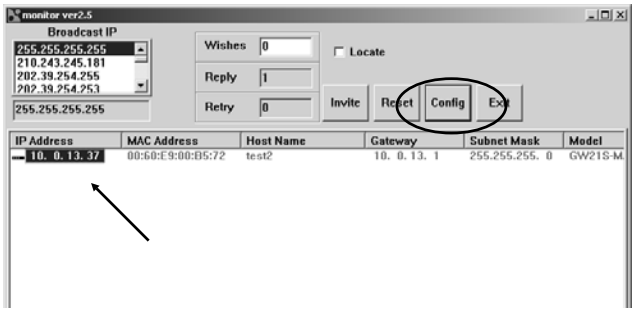
   Note: The computer must be on the same network segment as the GN0116.

3. Navigate to the *C:\Altusen\GN0116V1.6\Firmwares\Monitor* folder and execute the Monitor program:

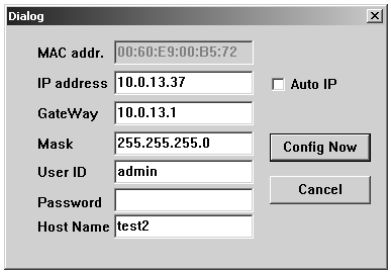
4. The program automatically searches for the IP addresses of all units on the LAN and lists them as shown in the figure below:



5. Select the unit you want to configure, then click **Config**.



The following screen appears:



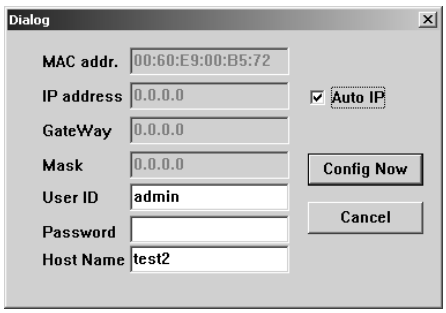
6. Fill in the IP address, Gateway, and Mask fields with the appropriate information for your network.

   Note: 1. You can provide a Host Name, if you wish.

   2. You cannot change the User ID or Password on this page. Unless the correct User Name and Password appears, the program will not let you set the IP.

   3. The default User Name is admin; the default password is blank.

   To specify a DHCP address, fill the IP address, Gateway, and Mask fields with 0.0.0.0, then select Auto IP.



7. Click **Config Now**. The following screen appears to inform you that the operation completed successfully. Click **OK** to complete the operation.

Note: 1. The GN0116's default IP is 10.0.50.100

2. You only need to configure the IP address the first time. If you want to change the address in the future, follow the directions listed above.

Daisy Chaining

To manage even more devices, up to 255 additional GN0116s can be daisy chained down from the top level unit. To set up a daisy chained installation do the following:

1. Using either Internet Explorer or ssConsole, configure the Station ID (0 ~ 255) of the units you wish to include in the chain. See p. 22 for information on setting the Station ID with IE; see p. 31 for information on setting the Station ID with ssConsole.

   Note: 1. The default Station ID of each unit is 0

   2. You must set the Station IDs before chaining the units together.

   3. Write down the Station ID of each unit (we suggest taping it to the housing) since you will need to know the Station ID of a unit when you configure and operate it. If you forget a unit's Station ID, you will have perform a system upgrade (see p. 44), in order to regain use of the unit.

2. Use Cat5 cable to connect the 485 OUTPUT port of the parent GN0116 to the 485 INPUT port of the child GN0116.

3. Power on all the GN0116 stations.

Note: Only one GN0116 needs to be connected to the LAN for the entire chain to be accessible with the internet browser. Each unit in the chain can be accessed by selecting its Station ID (see p. 17).

Notes:

Chapter 3.
Browser Operation

Overview

The GN0116 can be configured, controlled and monitored over the internet with the Internet Explorer browser. This chapter describes the procedures involved.

Logging In

1. In the browser's URL location bar, specify the IP address of the GN0116 that you want to access.

   Note: 1. If the IP address hasn't been configured, see p. 10 for IP configuration details.

   2. The browser must support 128 bit SSL encryption.

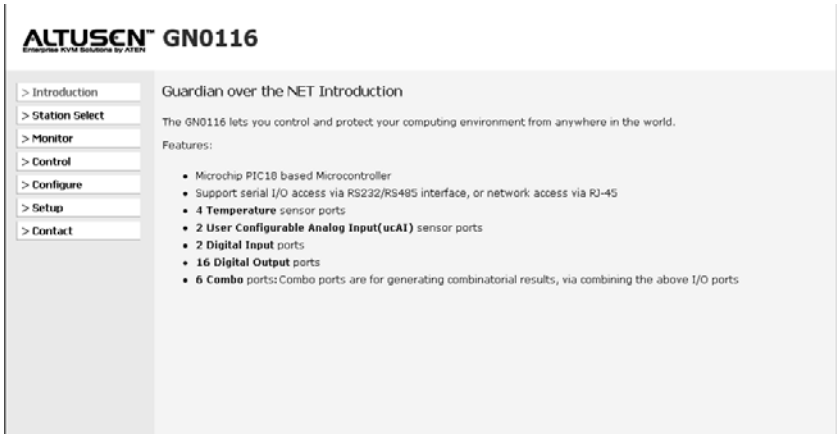
   The GN0116 login page appears:

2. Provide a valid Username and Password, then Click **Login** to continue.

   Note: If you are logging in for the first time, use the default user name: **admin**; leave the password field blank. For reasons of security, we strongly recommend you immediately change the username and password to something unique.

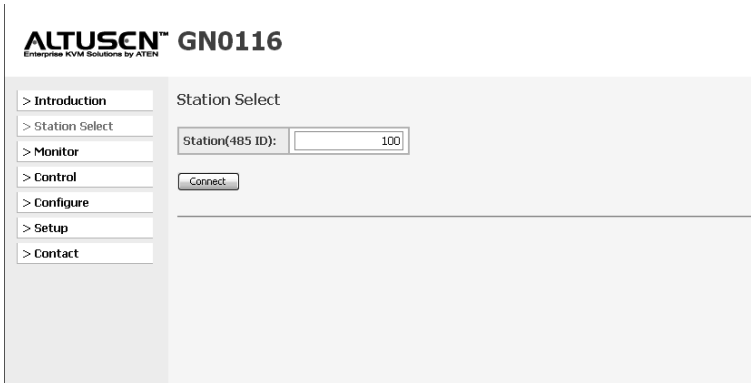
The GN0116 Main Screen

After you have successfully logged in, the GN0116 Main Screen appears:



- The panel on the left is comprised of buttons that are used to configure the environment management options of the currently selected Station.
- The large central panel provides a brief introduction to the GN0116 and lists its main features.

Station Select

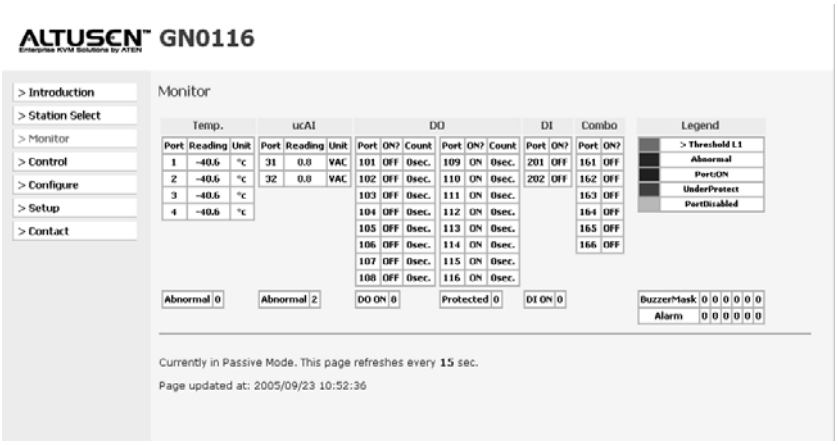


Since up to 256 GN0116 Stations can be daisy chained, this screen selects which station you wish to access.

1. Input the *Station ID* of the Station you want to access in the *Station(485ID):* input box. Valid choices range from 0 ~ 255.
2. Click **Connect** (below the text box).

Note: 1. The default Station ID is 0.
2. Station IDs are assigned on the *Configure* page (see p. 21).

Monitor



The Monitor screen is divided into 6 headings (associated with the columns below them). At the bottom of the columns is a summary box. At the lower right a table shows the BuzzerMask status.

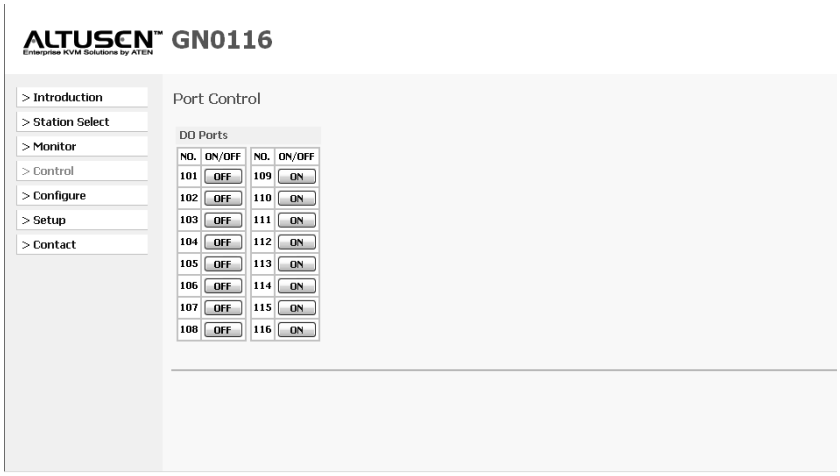
The bottom of the page shows what the GN0116's current operating mode is, and when the page was last updated.

This page is automatically refreshed. The default refresh rate is 5 seconds. The refresh rate can be changed - see *Setup*, p. 23).

The meanings of the field elements are given in the table, below:

Element	Meaning
Temp	This heading stands for Temperature. This column contains information relating to the input readings and units taken for the temperature devices plugged into a particular port (Resistance Analog Input port 1-4). **Note:** When no device is plugged into a port, the default temperature reading will fluctuate between -40.4 to -40.6.
ucAI	This heading stands for User Configurable Analog Input. This column contains information of a port (Port 31-32) concerning the input readings and the units taken for the devices plugged into that particular port.
DO	This heading stands for Digital Output. This column contains information for a port (Port 101-116) concerning the output readings and the units taken for the devices plugged into that particular port. Ports 101-108 are used for Digital devices. Ports 109-116 are used for AC Programmable Power Outlets.
DI	This heading stands for Digital Input. This column contains information for a port (Port 201-202) concerning the input readings taken for the devices plugged into that particular port.
Combo	This heading stands for Combination. This column contains information pertaining to Ports 161-166. It refers to virtual ports created by combining. the actual ports using BOOLEAN logic operators (AND, OR, NOT). Combo Ports show whether events generated by different logic of output/input ports exist or not. Combo Port allows you to configure advanced auto-control logic, and set up user-configured warning events.
Summary Box	The summary box located at the bottom of each column lists the number of ports that are currently experiencing abnormal conditions.
Legend	This column explains the color of the readings in all columns.
BuzzerMask	This BuzzerMask refers to the Combo ports (161~166). Each column refers to one of the ports, and shows whether or not BuzzerMask has been activated for that port (Off= 0 ; On = 1). The Alarm below each corresponding BuzzerMask that is set to *On* (1) will be activated when abnormal conditions occur and **1** will appear in the *Alarm* box.

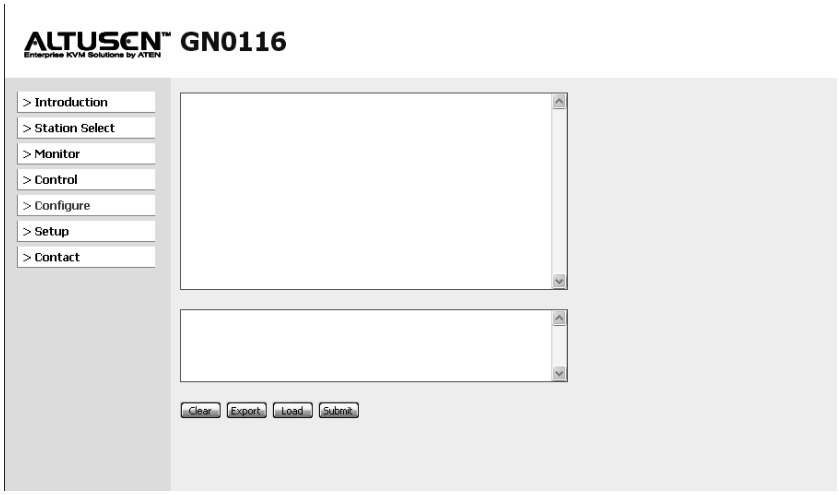
Control



The Control Screen is used to control the 16 DO ports. Eight Digital Output ports that various electrical devices (fans, etc.) can plug into; and 8 AC Programmable Power Outlets (located at the front of the GN0116).

- To turn the power on, select the port number associated with the port you wish to configure and select ON.
- To turn the power off, select the port number associated with the port you wish to configure and select OFF.

Configure



The Configure Screen is composed of 2 panels, and 4 buttons.

- The upper panel is used to input commands that configure various functions and real time operations: firmware upgrades, safety thresholds, relations of output/input ports and combo port configurations. Refer to the Command Reference Chapter and the Appendix for the commands and their use.
- The lower panel displays system responses to the function commands.
- The buttons perform the following functions

Button	Function
Clear	Clears the upper panel.
Export	Saves the entered configuration commands as text files.
Load	Loads all operational logic configuration stored in the connected system unit.
Submit	Executes the commands entered in the upper panel.

Note: The GN0116's Station ID is set here. To set the Station ID to 6, for example, do the following:

1. Key in the following command in the upper panel:

   ```
   @0 ic 6
   ```

2. Click **Submit**.

If the operation completes successfully, a **6** appears in the lower panel.

Note that the figure that follows the @ symbol represents the GN0116's current Station ID. To set the Station ID back to 0:

1. Key in the following command in the upper panel:

   ```
   @6 ic 0
   ```

2. Click **Submit**.

Setup

The Setup screen is divided into the following categories: *Controller Setting*; *SNMP Setting*; *Security*; and *Add Accounts*. You can set up the operation mode, buzzer mask, watchdog timer, and refresh interval of the Monitor page.

Controller Setting

The meanings of the Controller Setting fields are described in the table, below:

Element	Meaning
Configure Mode	Under Configure Mode, users can configure operating rules (on the Configure page - see p. 21) that are saved but not implemented until the unit is set to Active Mode. These rules would be executed immediately under Active Mode. However, in order not to cause unexpected consequences from operating errors, certain commands - such as Rule Restore (rr) and Bootloader Mode (mb) - can used only be given when the unit is in Configure Mode.
Active Mode	Under Active Mode, the GN0116 immediately runs the operating rules pre-configured under Configure Mode without external commands. However, external commands are still allowed for non-configured control ports.
Passive Mode	Under Passive Mode, the GN0116 can only be run by passively receiving external commands.
Buzzer Mask Setting	Sets the Combo Port buzzer mask On or Off.
Watchdog Timer	After this timer is set up, when the system unit is in Passive Mode, if the external program does not issue commands to communicate with the unit within the set time span, the unit automatically switches to Active Mode.
Monitoring Refresh Frequency	Sets the refresh interval for the Monitor page. The range is 1-300 seconds.

SNMP Setting

Sets the system unit information that is recognizable in the network management system. Once the information is entered, click **Save Configuration** to save your settings.

Security

Use these fields to change your password. Once the information is entered, click **Save Configuration** to save your settings.

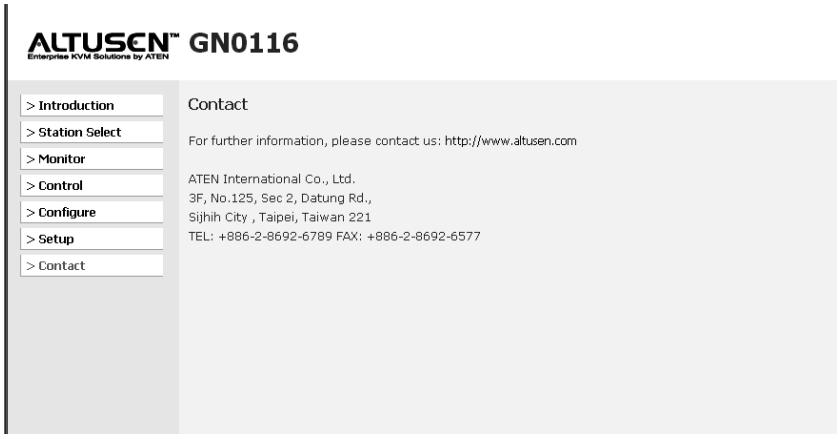
Add Accounts

The GN0116 features support for one Administrator and four users.

Use these fields to add new users and set limitations to their accounts. You can also delete users here. Once the information is entered, click **Add** to save your settings. After you have added/deleted an account, the new information appears in the Total User Accounts list just below.

Contact:

This page provides our contact information.



Chapter 4.
ssConsole Operation

Overview

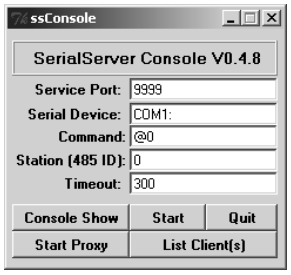
The GN0116 can be configured, controlled and monitored via a serial connection to its 232C port using the ssConsole software program. This chapter describes the procedures involved.

Starting Up

The ssConsole works over both an ethernet connection and a serial connection. After setting up the hardware connection between the computer and the GN0116 (see p. 8) and installing the GN0116 software on the computer (see p. 7), to start the ssConsole, do the following:

1. Select Start → All Programs → Altusen GN0116 Vx.x (where x.x stands for the version number).
2. Click **ssConsole**

The ssConsole screen appears:



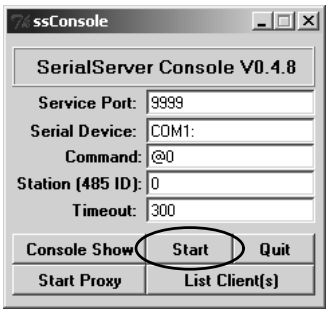
You configure and control the GN0116 with the ssConsole by issuing software commands. To begin, fill in the fields shown in the upper part of the dialog box. The field headings and their explanations are shown in the table, below:

Heading	Explanation
Service Port:	The default entry is 9999. Leave it as is.
Serial Device:	◆ If you are connecting via the GN0116's 232C port, key in the COM port number that you are connecting from. ◆ If you are connecting via the GN0116's Ethernet port, key in the GN0116's IP address. **Note:** You have to include the port that the GN0116 listens on with the IP address or else you will not establish a connection. The default is 4660. Therefore, as an example, you would key in something similar to this: `10.0.50.100:4660`
Command:	The default entry is @0. This combination precedes all commands. The zero stands for the GNO116's Station ID. If the Station ID were 6, for example, the command combination would be @6.
485 Id:	The figure here represents the GN0116's Station ID. Key in the figure (0~255) that represents the Station ID of the GN0116 you are configuring.
Timeout	The default is 300ms. Unless you have a specific reason to change it, leave it as is.

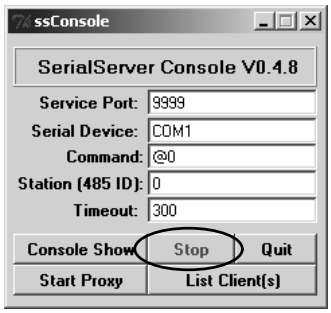
Operation

To begin operation:

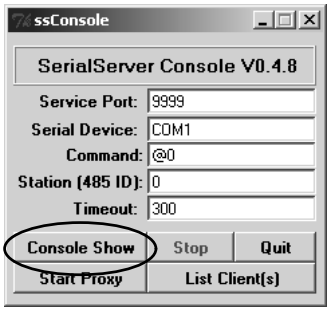
1. Click **Start**.



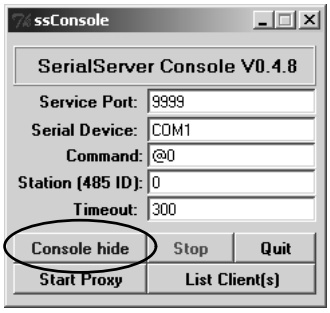
The Start Button Changes to **Stop** (in red) indicating that you have established a successful connection.

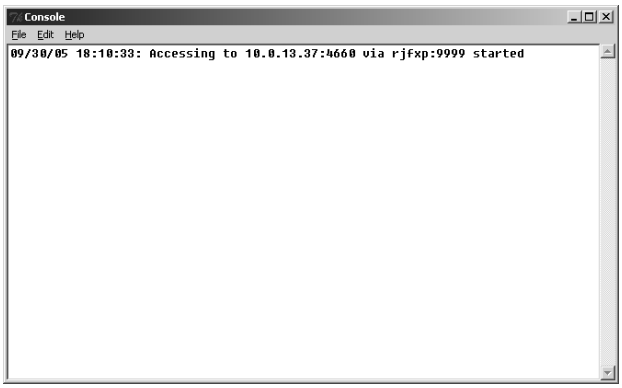


2. Click **Console Show**.

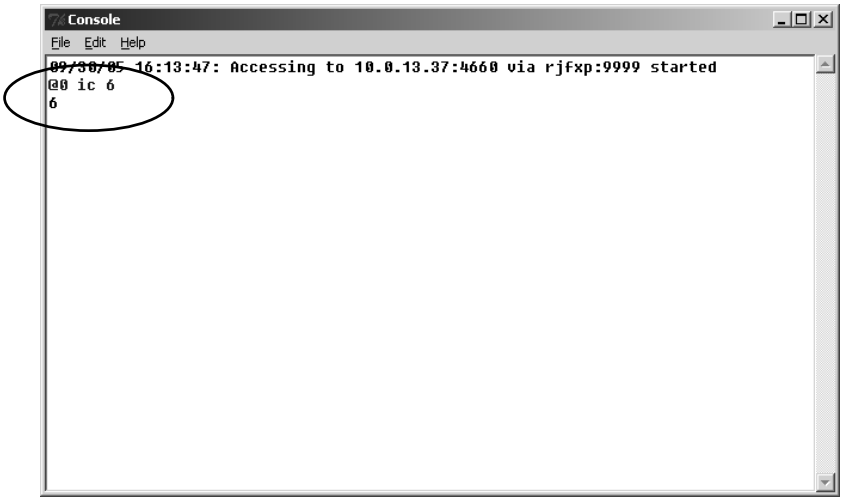


The button changes to Console Hide (in blue), and the Console screen appears:





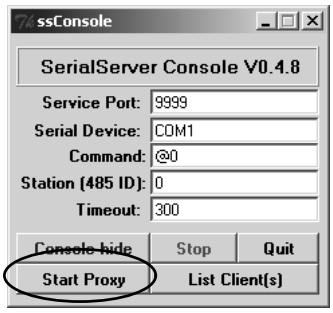
You can enter programming commands in the ssConsole window. For example, to change the Station ID to 6, you would enter **@0 ic 6**, as shown in the figure, below:



The console returns the figure **6** to indicate that the operation completed successfully.

Proxy

Proxy refers to a data cache buffer created by ssConsole in the computer that it is running on. This allows for faster, more efficient, monitoring and execution of commands for the attached devices. Click **Start Proxy** to begin the caching procedure.

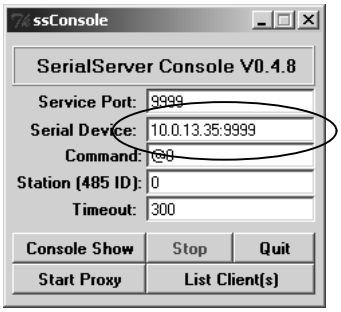


The Console screen shows *Proxy started*; and the button changes to **Stop Proxy** (in blue). Click the button to end Proxy caching. When caching ends, the Console screen shows *Proxy stopped*; and the button returns to **Start Proxy** (in black).

List Clients

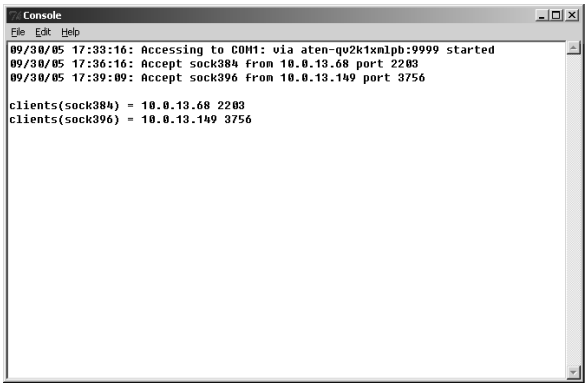
When the GN0116 isn't connected to the LAN directly (or if it is connected, but the connection has been broken), it can still be accessed via TCP/IP. This is done by connecting a Local computer to it (from the computer's COM port to the GN0116's 232C port) and running the ssConsole program on the computer.

Remote computers, then connect to the Local computer by specifying its IP address in the *Serial Device:* field, along with the service port setting of the Local computer's ssConsole program, shown in the figure, below:



Where 10.0.13.35 represents the Local computer's IP address, and 9999 represents the service port set on the ssConsole of the Local computer.

The administrator operating the Local computer can see all the remote users accessing the GN0116 via the ssConsole by clicking **List Clients**. The client list appears on the Console screen:



Notes:

Chapter 5.
Command Reference

Commands are used to configure and control the GN0116. Commands are entered on the *Configure* page if you use IE to access the unit (see p. 21); or in the *Command:* field of of the ssConsole program (see p. 27). The most frequently used commands are given in the table, below. Refer to the Appendix for a complete command list.

Command	Description
ag (Association Get)	Get the port number which is currently associated with the designated DO port.
as (Association Set)	Associate a DO port A with any port B, so that the port A can be automatically turned ON/OFF by the associated port B.
ba (Buzzer Assign)	Assign the designated DO port as alarming buzzer port.
bp (Buzzer Port)	Get the port number of the currently assigned alarming buzzer port.
bu (Buzzer Unassign)	Unassign the alarming buzzer port setting, a reading of 255 signifies unassigned.
dg (Delta Get)	Get the current delta setting. Delta is sort of a safe-protection mechanism to keep the controlled DO from being turned on and off too often as a result of controlling sensor fluctuating around L1 threshold
ds (Delta Set)	Set new delta value to be used along with L1 threshold.
gg (Guarding Protection Get)	Get the current guarding protection setting.
gs (Guarding Protection Set)	Set the guarding protection duration in minute for sensitive devices connected on DO ports.
ic (ID Change)	Set new Station ID.
kd (Combo Port Disjoin)	Disjoin a member port from the designated combo port/channel.
kg (Combo Port Get)	Get current setup for the designated combo channel, which includes the combo logic specified in (1). AND & (2). NOT flag

Command	Description
kj (Combo Port Join	Join a single port at a time into a designated combo channel, with an optional “NOT” operation applied before the result of the member port is being used.
kl (Combo Port Logic)	Get or set current combo logic setting which is used for joining member ports on the designated combo channel.
kr (Combo Port Reset)	Reset the designated combo channel into an OR logic channel with all member ports removed.
mb (Mode Bootload)	Switch the GN0116 operation into Bootload mode.
pc (Port Config)	Configure the ucAI (User Configurable AI) port.
pd (Port Disable)	Disable the designated port(s).
pe (Port Enable)	Enable the designated port(s).
pg (Port Get)	Get the current reading of the designated port.
ps (Port Get)	Sets the designated DO port on or off.
rb (Configuration Rule Backup)	Backup the current configuration rule to EEPROM.
re (Configuration Rule erase)	Erase the configuration rule in EEPROM.
rs (Configuration Rule Setup)	Restore to the factory default configuration rule.
tg (Threshold Get)	Get the current AI threshold settings.
ts (Threshold Set)	Set L1 & L2 threshold settings for AI ports.

Command Examples

1. In this example we will program the GN0116 to handle the following conditions:

- Temperature sensor on port 1,2
- Siren alert on port 103
- Fan on port 116
- Fan starts when the temperature exceeds 28^{O} C
- Siren alert starts when the temperature exceeds 35^{O} C

Use the browser Configure page (p. 21) or the ssConsole Console screen (p. 27)to issue the following commands:

@0 ts 1 28 35

Where ts represents *threshold set*; 1 is the target port; 28 is the first temperature threshold; 35 is the second temperature threshold

@0 as 1 116

Where as represents *association set*; it relates the temperature port (1) with the fan (116)

Note: This represents a complete action. Under Active Mode, if the temperature exceeds 28^{O}C, the fan will start.

Continuing the example:

@0 ba 103

Where ba represents *buzzer assign*; assigns the siren alert signal to port 103.

@0 kj 161 1

Where kj represents *combo port join* - where two independent ports (161 and 1) are joined together into a combo port (161)

@0 bs 1 0 0 0 0 0

Where bs represents *buzzer masks set*; assigns a buzzer mask to port 161 (see p. 19 for details about buzzer mask).

This completes the example. When Active Mode is set, if the temperature exceeds 28^{o} C, the fan starts; if the temperature exceeds 35^{o} C, the siren sounds.

Note: If the temperature drops below 25^{o} C, the fan stops. This is because L1 (threshold temperature 1) has a default (delta setting) of 3^{o} C. To change the delta setting you would use the *ds* command: @0 ds *n* (where n represents the delta value you desire)

2. In this example we program the GN0116 Fire Control System with the following conditions:

- The GN0116 's Station ID is 100
- Temperature sensor on port 3,4
- Smoke detector on port 201
- Fire alert siren on port 107
- Automatic sprinkler on port 108

The effect of the commands we will issue is that if either of the two sensors on port 3,4 exceeds 50^{o} C, the smoke detector is activated; the fire alert siren is triggered; and the automatic sprinkler turns on.

On the browser *Configure* page (p.21), or the ssConsole *Console* screen (p. 27), issue the following commands:

@100 ts 3 40 50
@100 ts 4 40 50

Where ts represents *threshold set*; 3 and 4 are the target ports; 40 is the first temperature threshold; 50 is the second temperature threshold

@100 kj 162 3
@100 kj 162 4

Where kj represents *combo port join*. Two independent ports (162 and 3 / 162 and 4) are joined together into a combo port (162)

@100 kl 162 0

Where kl represents *combo port logic*. 0 represents the Boolean operator **OR**. When the temperature on port 3 or port 4 exceeds 50^{O} C, combo port 162 is activated.

@100 kj 163 162
@100 kj 163 201

Where kj represents *combo port join*. Two independent ports (163 and 162 / 163 and 201) are joined together into a combo port (163)

@100 kl 163 1

Where kl represents *combo port logic*. 1 represents the Boolean operator **AND**. When combo port 162 is activated and the smoke detector on port 201 is activated, combo port 163 becomes activated.

@100 ba 107

Where ba represents *buzzer assign*. This command assigns the fire alert signal to port 107.

@100 bs 0 0 1 0 0 0

Where bs represents *buzzer masks set*. It assigns a buzzer mask to port 163 (see p. 19 for details about buzzer mask).

@100 as 108 163

Where as represents *association set*; it relates the automatic sprinkler (108) with combo port 163.

This completes the example. When Active Mode is set, if the temperature on port 3 or 4 exceeds 50^{o} C, the smoke detector is activated; the fire alert siren sounds; and the sprinkler turns on.

Chapter 6.
Firmware Upgrade

Overview

This section shows you how to upgrade both the MAXI firmware and the System Unit firmware. Before upgrading, please make sure that you want to use the new functions that the upgrade provides.

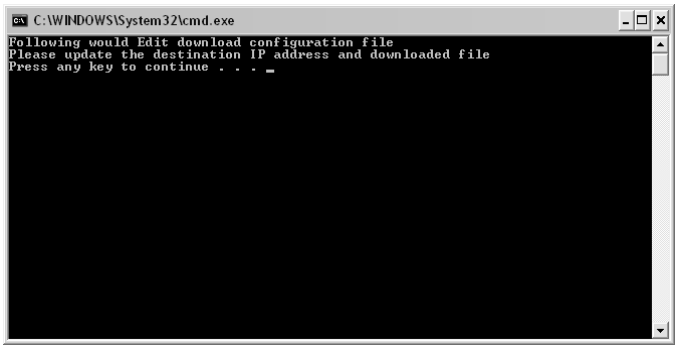
Note: 1. There are two separate firmware upgrades involved. You can upgrade either one, or both - it is not necessary to upgrade both at the same time.

2. The MAXI Firmware Upgrade must be performed over the LAN (via the LAN port); the System Unit upgrade must be performed via the 232C port.

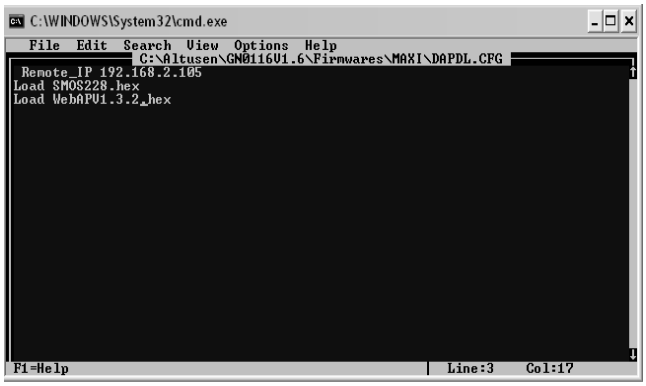
MAXI Firmware Upgrade

To perform a MAXI firmware upgrade, do the following:

1. Download the firmware upgrade files from our website.
2. Copy the MAXI firmware upgrade files into the *C:\Altusen\GN0116V1.6\Firmwares\MAXI* folder:
3. Open the MAXI folder
4. Run this file: DOWNLOAD_PROTECT.BAT. The following screen appears:



5. Press any key to open the next screen.

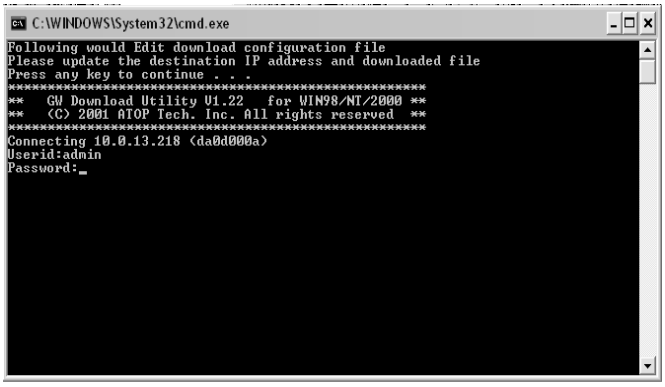


6. On the first line, alter the IP address to that of your GN0116's IP address.
7. On the second line, alter the name of the HEX file to match the OS firmware upgrade file (e.g. SMOS228.hex).
8. On the third line, alter the name of the HEX file to match the AP firmware upgrade file (e.g. WebAPV1.3.2.hex).

   Note: Upgrades may include only the OS firmware, only the AP firmware or both.

9. To exit the program, select *File* > *Exit*. The following screen appears:

10. Select *Yes* to save the file. The following screen appears:



11. Enter your Userid and Password to begin the firmware upgrade procedure.

    Note: If you fail to enter your Userid and Password within 5 seconds, the screen will automatically close and you will have to start the procedure all over again.

Once the firmware upgrade is complete, either the screen closes, or it displays the following message: GW will reboot after completion flash writing, Please wait..

System Unit Firmware Upgrade

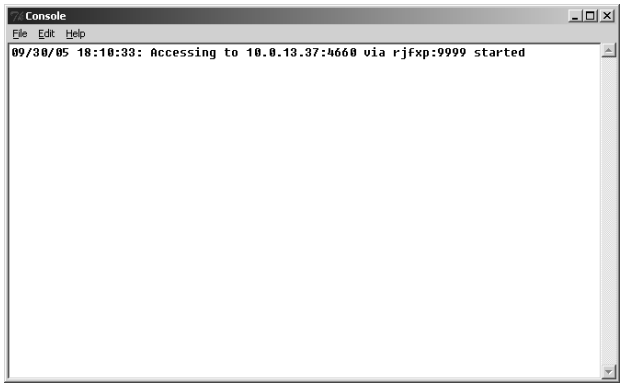
To perform a MAXI firmware upgrade, do the following:

1. Use the RS-232/RJ-45 cable provided with this package to connect the COM port on your computer to the GN0116's 232C port.
2. Set the GN0116 to *Bootload Mode*.
3. Download the System Unit firmware upgrade files from our website.
4. Copy the System Unit firmware upgrade files into the following folder: *C:\Altusen\GN0116V1.6\Firmwares\Controller*.
5. Open the *Controller* folder.
6. Run the ssConsole Program: Start → All Programs → Altusen GN0116 Vx.x → ssConsole

   Note: 1. Where *x.x* refers to the current version number (1.6, for example).

   2. For ssConsole settings, refer to p. 28.

7. Click **Start**.
8. Click **Console Show**. A Console screen appears:



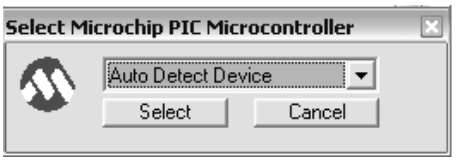
9. Enter the following command: **@0 mb**.

   This puts the system in Bootloader Mode. The screen responds with ?99. The GN0116's Power LED (Red), CPLD LED (Green), and MCU LED (Yellow) change from flashing to steady.

10. On the ssConsole dialog box, click **Console hide**;click **Stop**; click **Quit**

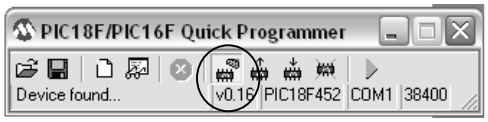
The System Unit is now in Bootloader Mode and you can begin the firmware upgrade procedure:

1. Go to the C:\Altusen\GN0116V1.6\Firmwares\picQuickProgrammer folder and double click the **P1618QP** icon. The following screen appears:

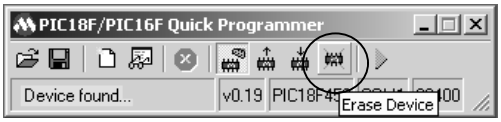


2. Click **Select**. In the screen that comes up, right click over the *9600* entry and in the menu that appears select *38400*. The screen looks similar to the one below:

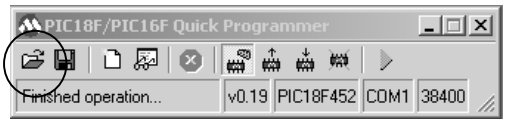
3. Click **Connect to Device**.



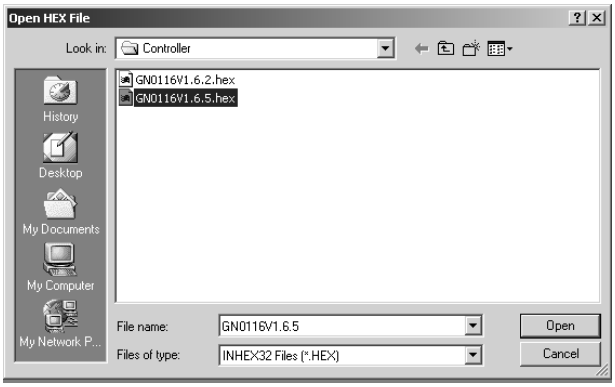
4. Erase the original firmware in the MCU by clicking **Erase Device**.



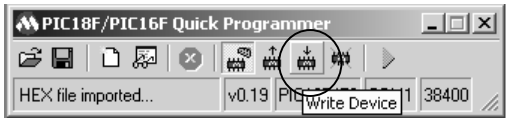
5. Click **Open HEX File**.



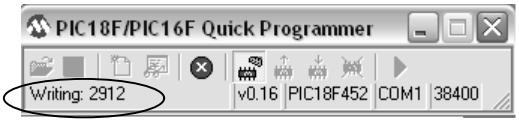
6. In the *C:\Altusen\GN0116V1.6\Firmwares\Controller* folder, choose the GN0116's System unit firmware upgrade file (eg.GN0116V1.6.5.hex).



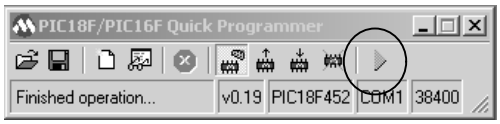
7. Click **Write Device** to begin downloading the firmware.



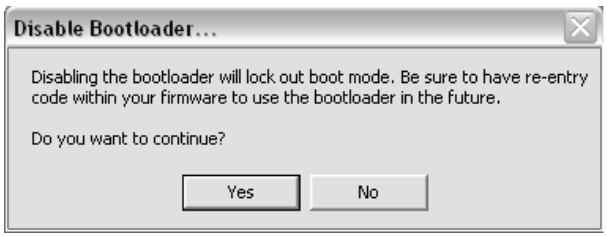
The procedure may take 45 seconds to 1 minute to complete. During that time, the dialog box indicates that the file is being written:



8. Click **Normal Execution Mode** (the green arrow) to finish the upgrade.



When upgrading completes the following dialog box appears:



9. Click **Yes** to end Bootloader Mode.

After finishing the upgrade procedure, the MCU LED (Yellow) and CPLD LED (Green) flash. If the LEDs do not flash, it means the operation wasn't successful. Start from the beginning of the System Unit upgrade instructions to upgrade the firmware.

Notes:

Appendix

Command Summary

The following table provides a summary of the GN0116's commands and their descriptions:

Command	Description
ag (Association Get)	Get the port number which is currently associated with the designated DO port.
ar (Association Reset)	Reset all the associations to startup default setting.
as (Association Set)	Associate a DO port A with any port B, so that the port A can be automatically turned ON/OFF by the associated port B.
au (Association Unset)	Un-associate the designated DO port from any controlling port.
ba (Buzzer Assign)	Assign the designated DO port as alarming buzzer port.
bg (Buzzer Mask Get)	Get the current buzzer mask setting.
bp (Buzzer Port)	Get the port number of the currently assigned alarming buzzer port.
bs (Buzzer Mask Set)	Set buzzer mask for filtering alarm flags.
bu (Buzzer Unassign)	Unassign the alarming buzzer port setting, a reading of 255 signifies unassigned.
cg (Real Time Clock Get	Get the real time clock reading.
cs (Real Time Clock Set)	Set up the real time clock on board.
dg (Delta Get)	Get the current delta setting. Delta is sort of a safe-protection mechanism to keep the controlled DO from being turned on and off too often as a result of controlling sensor fluctuating around L1 threshold.

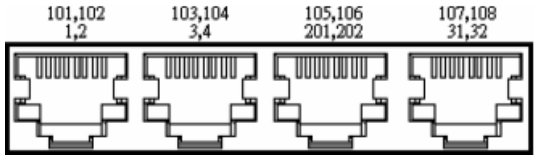
Command	Description
ds (Delta Set)	Set new delta value to be used along with L1 threshold.
eg (Echo Get)	Get the current setting of the command echo mode. Echoing back whatever command received by the controller, along with the result, is mainly used for debugging purpose.
es (Echo Set)	Sets the command echo mode on or off.
gg (Guarding Protection Get)	Get the current guarding protection setting.
gs (Guarding Protection Set)	Set the guarding protection duration in minute for sensitive devices connected on DO ports.
hg (Hardware Scan Cycle Get)	Get the current setting on the hardware scan cycle for active mode. When in active mode, the GN0116 is periodically evaluating the rules, monitoring & controlling all the configured ports.
hs (Hardware Scan Cycle Set)	Setting the hardware scan cycle for active mode logic.
ic (ID Change)	Set new Station ID.
kd (Combo Port Disjoin)	Disjoin a member port from the designated combo port/channel.
kg (Combo Port Get)	Get current setup for the designated combo channel, which includes the combo logic specified in (1). AND & (2). NOT flag
kj (Combo Port Join	Join a single port at a time into a designated combo channel, with an optional “NOT” operation applied before the result of the member port is being used.
kl (Combo Port Logic)	Get or set current combo logic setting which is used for joining member ports on the designated combo channel.
kr (Combo Port Reset)	Reset the designated combo channel into an OR logic channel with all member ports removed.
lg (Logic Reversed Get)	Get current logic-reversed setting on the designated port.
ls (Logic Reversed Set)	Reverse the logic on the designated port.

Command	Description
ma (Mode Active)	Switch the GN0116 operation into Active mode.
mb (Mode Bootload)	Switch the GN0116 operation into Bootload mode.
mc (Mode Config)	Switch the GN0116 operation into Config mode.
mg (Mode Get)	Get the current GN0116 operation mode.
mp (Mode Passive)	Switch the GN0116 operation into Passive mode.
mr (Mode Reset)	Reset the GN0116 to the initial startup default state.
pc (Port Config)	Configure the ucAI (User Configurable AI) port.
pd (Port Disable)	Disable the designated port(s).
pe (Port Enable)	Enable the designated port(s).
pg (Port Get)	Get the current reading of the designated port.
ps (Port Get)	Set designated DO port on or off.
rb (Configuration Rule Backup)	Backup the current configuration rule to EEPROM.
re (Configuration Rule erase)	Erase the configuration rule in EEPROM.
rr (Configuration Rule Restore)	Restore the configuration rule saved in EEPROM.
rs (Configuration Rule Setup)	Restore to the factory default configuration rule.
sa (Solicit Alarm Status)	Solicit the current pending alarm status.
sb (Solicit Bio)	Invite the controller to report the current port assignment map of this controller.

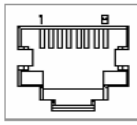
Command	Description
sc (Solicit Counter Status	Solicits the current internal counter values.
sg (Solicit Group)	Solicit the GN0116 data in bulk groups (16 of them currently).
sk (Solicit Combo Port)	Solicits the current setup on the designated combo port.
sp (Solicit Port Status)	Solicit the current status of specified port.
tg (Threshold Get)	Get the current AI threshold settings.
ts (Threshold Set)	Set L1 & L2 threshold settings for AI ports.
vb (Version of Bootloader)	Get the current version of the Bootloader.
vc (Version of Controller)	Get the current version of the GN0116 firmware.
wg (Watchdog Get)	Get the current passive mode Watchdog timer setting.
ws (Watchdog Set)	Set the Watchdog timer for passive mode.
xg (Transmission Timeout Get)	Get the current timeout setting of the inter-character delay on incoming command, and the delay before sending back the result.
xs (Transmission Timeout Set)	Setting timeout for the inter-character delay on incoming command, and the delay before sending back the result.
zg (Terminator Get)	Get the current status of the 485 terminators.
zs (Terminator Set)	Set the designated 485 terminator on or off.

Pin Assignments

I/O Port Assignments

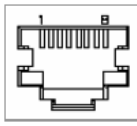


Port Number :
101, 102
1, 2



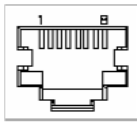
PIN	Discrip	Port	PIN	Discrip	Port
1	+12V		5	RT1+	1
2	102T	102	6	RT2+	2
3	GND		7	RT1-	
4	101T	101	8	RT2-	

Port Number :
103, 104
3, 4



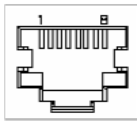
PIN	Discrip	Port	PIN	Discrip	Port
1	+12V		5	RT3+	3
2	104T	104	6	RT4+	4
3	GND		7	RT3-	
4	103T	103	8	RT4-	

Port Number :
105, 106
201, 202



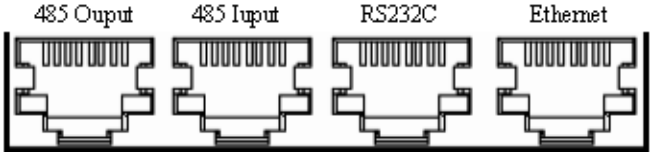
PIN	Discrip	Port	PIN	Discrip	Port
1	+12V		5	DI1	201
2	106T	106	6	DI2	202
3	GND		7	GND	
4	105T	105	8	GND	

Port Number :
107, 108
31, 32

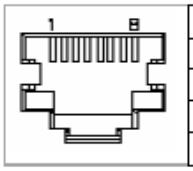


PIN	Discrip	Port	PIN	Discrip	Port
1	+12V		5	VD1+	31
2	108T	108	6	VD2+	32
3	GND		7	VD1-	
4	107T	107	8	VD2-	

Communication Port Assignments

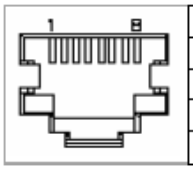


485 Ouput Port



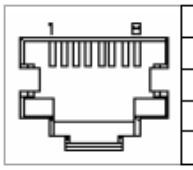
PIN	Discrip	Port	PIN	Discrip	Port
1	Lan485+		5		
2	Lan485-		6	GND	
3	GND		7	485+	
4			8	485-	

485 Iuput Port



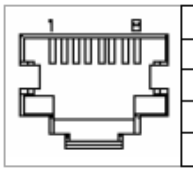
PIN	Discrip	Port	PIN	Discrip	Port
1	Lan485+		5		
2	Lan485-		6	GND	
3	GND		7	485+	
4			8	485-	

RS232C Port



PIN	Discrip	Port	PIN	Discrip	Port
1			5	232Rx	
2			6	GND	
3	GND		7		
4	232Tx		8		

Ethernet Port



PIN	Discrip	Port	PIN	Discrip	Port
1	LANTx+		5	LAN5	
2	LANtX-		6	LAN6	
3	LANRx+		7	LAN7	
4	LANRx-		8	LAN8	

Specifications

Function		Specification
Connectors	AC Power Inlets	4 x IEC 60320/C14 (M)
	AC Power Outlets (Ports 1~8/109~116)	8 x NEMA 5-15R (F); or 8 x IEC 60320/C13 (F)
	Power	1 x DC Jack; 12V, 2.5A
	LAN	1 x RJ-45
	232C	1 x RS-232 Jack (F)
	485 Output	1 x RS-485 Chain out Jack (F)
	485 Input	1 x RS-485 Chain out Jack (F)
	Resistance Analog Input/Digital Output (Ports 1&2/101&102)	1 x Sensor Jack (F)
	Resistance Analog Input/Digital Output (Ports 3&4/103&104)	1 x Sensor Jack (F)
	Digital Input/Digital Output (Ports 201&202/105&106)	1 x Sensor Jack (F)
	Voltage Analog Input/Digital Output (Ports 31&32/107&108)	1 x Sensor Jack (F)
LEDs	Power	1 (red)
	CPLD	1 (green)
	MCU	1 (yellow)
	AC Power Outlets (Ports 1~8/109~116)	8 (green)
I/P Rating	Power	DC 12V, 2.5A
	Per AC Power Inlet	125V AC; 50/60Hz; 15A (max); or 220 ~ 250 V AC; 50/60Hz; 10A (max)
O/P Rating	Total AC Power Outlets (Ports 1&2/109&110)	125V AC; 50/60Hz; 15A (max); or 220 ~ 250 V AC; 50/60Hz; 10A (max)
	Total AC Power Outlets (Ports 3&4/111&112)	125V AC; 50/60Hz; 15A (max); or 220 ~ 250 V AC; 50/60Hz; 10A (max)
	Total AC Power Outlets (Ports 5&6/113&114)	125V AC; 50/60Hz; 15A (max); or 220 ~ 250 V AC; 50/60Hz; 10A (max)
	Total AC Power Outlets (Ports 7&8/115&116)	125V AC; 50/60Hz; 15A (max); or 220 ~ 250 V AC; 50/60Hz; 10A (max)

Function		Specification
Switches	Power	1 x Rocker
	Reset	1 x Semi hidden
	Circuit Breakers	8 x Push switch
Power Consumption		DC 12V; 30W
Environment		Operating Temperature: 0 ~ 50°C
		Storage Temperature: -20 ~ 60°C
		Humidity: 0 ~ 90% RH Noncondensing
Housing		Metal
Weight		2.3 kg
Dimensions (L x W x H)		44 x 15.4 x 4.45 cm

Battery Replacement

This equipment is provided with a replaceable lithium battery: CR2032 3V. Replacement by an incorrect type may result in an explosion.

CAUTION!

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.

DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

Limited Warranty

ALTUSEN warrants this product against defects in material or workmanship for a period of one (1) year from the date of purchase. If this product proves to be defective, contact ALTUSEN's support department for repair or replacement of your unit. ALTUSEN will not issue a refund. Return requests can not be processed without the original proof of purchase.

When returning the product, you must ship the product in its original packaging or packaging that gives an equal degree of protection. Include your proof of purchase in the packaging and the RMA number clearly marked on the outside of the package.

This warranty becomes invalid if the factory-supplied serial number has been removed or altered on the product.

This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence or modification of any part of the product. This warranty does not cover damage due to improper operation or maintenance, connection to improper equipment, or attempted repair by anyone other than ALTUSEN. This warranty does not cover products sold AS IS or WITH FAULTS.

IN NO EVENT SHALL ALTUSEN'S LIABILITY EXCEED THE PRICE PAID FOR THE PRODUCT. FURTHER, ALTUSEN SHALL NOT BE RESPONSIBLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE PRODUCT, ITS ACCOMPANYING SOFTWARE, OR ITS DOCUMENTATION. ALTUSEN SHALL NOT IN ANY WAY BE RESPONSIBLE FOR, WITHOUT LIMITATION, LOSS OF DATA, LOSS OF PROFITS, DOWNTIME, GOODWILL, DAMAGE OR REPLACEMENT OF EQUIPMENT OR PROPERTY, AND ANY EXPENSES FROM RECOVERY, PROGRAMMING, AND REPRODUCTION OF ANY PROGRAM OR DATA.

ALTUSEN makes no warranty or representation, expressed, implied, or statutory with respect to its products, contents or use of this documentation and all accompanying software, and specifically disclaims its quality, performance, merchantability, or fitness for any particular purpose.

ALTUSEN reserves the right to revise or update its product, software or documentation without obligation to notify any individual or entity of such revisions, or update.

Note: Sensors are not covered under the warranty.

For details about extended warranties, please contact one of our dedicated value added resellers.

GN0116, Guardian over the NET

Einführung in die Hardware

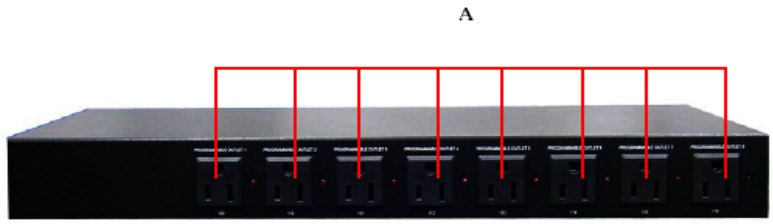


Abbildung 3.1-1 Vorderseite des GN0116

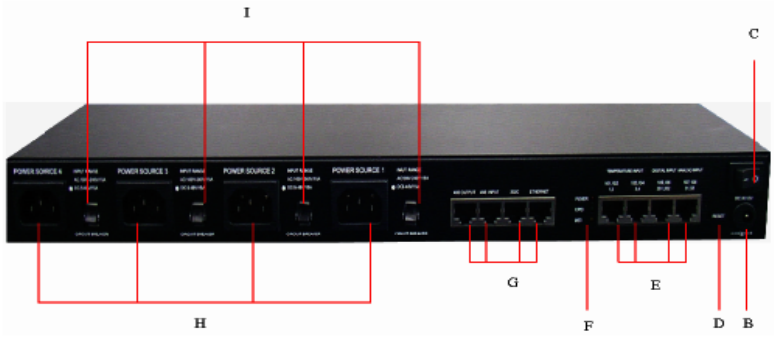


Abbildung 3.1-2 Rückseite des GN0116

A: Programmierbarer Steckdosenausgang

Es gibt 8 Steckdosenausgänge. Die Anschlusswerte und maximale Belastung der einzelnen Ausgänge sind Folgende:

》 Maximalwerte bei Wechselspannung: 125 V / 15 A, 50-60 Hz

220 V – 250 V / 10 A, 50-60 Hz

Die Ausgangsspannung der einzelnen Steckdosen hängt von der Eingangsspannung ab (für Details, siehe H). Die Stromeingangsbuchse und die jeweiligen programmierbaren ausgangsseitigen Steckdosen sind in der folgenden Tabelle aufgeführt:

Stromeingangsbuchse	Programmierbarer Steckdosenausgang	Maximale Belastung
Steckdose 1	109~110	Wechselspannung: 125 V / 15 A 220 V – 250 V / 10 A
Steckdose 2	111~112	Wechselspannung: 125 V / 15 A 220 V – 250 V / 10 A
Steckdose 3	113~114	Wechselspannung: 125 V / 15 A 220 V – 250 V / 10 A
Steckdose 4	115~116	Wechselspannung: 125 V / 15 A 220 V – 250 V / 10 A

Jede Steckdose besitzt eine eigene LED-Anzeige, die leuchtet, wenn diese eingeschaltet ist.

Hinweis

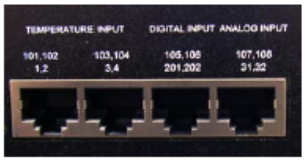
Bei dieser Version der programmierbaren Steckdosenausgänge liegt standardmäßig Spannung an den Ausgängen an.

B: Stromeingangsbuchse: 12 V=, 2,5 A.

C: Netzschalter

D: Reset. Verwenden Sie diese Taste nur, wenn Sie das Gerät wirklich zurücksetzen müssen.

E: Analoge und digitale E/A-Ports.



- Port 1-4: 4 analoge Eingänge **mit Widerständen**.

  Der Eingangswiderstand liegt zwischen 2 und 205 KΩ in 1024 Stufen. Sie können mit verschiedenen Treibern mit Thermistoren oder anderen widerstandsbehafteten Ausgangssensoren (z.B. CDS-Sensoren) verbunden werden.

- Port 31-32: 2 analoge spannungsempfindliche Eingänge.

  Die Eingangsspannung liegt zwischen 0 und 5 V= in 1024 Stufen. Sie können über verschiedene Treiber mit Sensoren verbunden werden, die eine Ausgangsspannung zwischen 0 und 5 V= liefern (z.B. Wechsel- oder Gleichspannungssensoren, Stromwandler und Feuchtigkeitssensoren).

- Port 201-202: 2 digitale Eingangsports

  Diese können mit Ein/Aus-Sensoren wie z.B. Alarmanlagen, Zugangskontrolle, Rauchmelder, Wassermelder verbunden werden.

》 Port 101-108: 8 digitale Eingangsports.

Die Ausgangsspannung beträgt 12 V= und maximal 50 mA. Diese Ports können mit Summern, Hinweislichtern und ähnlichen Geräten verbunden oder einfach als Erweiterungsgerät und zur Programmierung der ausgangsseitigen Steckdosen benutzt werden.

Hinweis

Spannungssensoren können nur an Port 31-32 angeschlossen werden. Wenn Sie sie an andere Ports anschließen, können diese beschädigt werden.

F: LED-Anzeigen. Die Funktionen der drei Anzeigen sind Folgende:

》 POWER: Betriebsanzeige.

Diese Anzeige leuchtet, wenn die Stromzufuhr normal ist.

》 MCU: MCU-Statusanzeige.

Im normalen Betrieb blinkt diese Anzeige. Während des Startvorgangs leuchtet diese Anzeige dauerhaft.

》 CPLD: CPLD-Statusanzeige.

Im normalen Betrieb blinkt diese Anzeige. Während des Startvorgangs leuchtet diese Anzeige dauerhaft.

G: Kommunikationsports, dazu gehören:

》 Ethernet-Port:

Ermöglicht den Fernzugriff, um das System zu überwachen. Die Übertragungsgeschwindigkeit beträgt 10/100Mbps.

》 RS232C-Port:

Kann entweder direkt oder über ein Modem mit externen Computern verbunden werden, um das System lokal oder fern zu verwalten, die Software zu aktualisieren oder andere Aufgaben auszuführen.

》 RS485 Ein-/Ausgang:

Wird für die Reihenschaltung benötigt. Die maximale Anzahl anzuschließender Geräte unter demselben IP-Bus beträgt 256.

H: Stromeingangsbuchse.

Es gibt 4 Ports. Die Anschlusswerte und maximale Belastung der einzelnen Ports sind Folgende:

》 Maximalwerte bei Wechselspannung: 125 V / 15 A, 50-60 Hz

220 V – 250 V / 10 A, 50-60 Hz

Sobald sie angeschlossen sind, versorgt jede Stromeingangsbuchse zwei programmierbare Ausgänge mit Strom. Die Stromeingangsbuchse und die jeweiligen programmierbaren ausgangsseitigen Steckdosen sind in der folgenden

Tabelle aufgeführt:

Stromeingangsbuchse	Programmierbarer Steckdosenausgang	Maximale Belastung
Steckdose 1	**109~110**	Wechselspannung: 125 V / 15 A 220 V – 250 V / 10 A
Steckdose 2	**111~112**	Wechselspannung: 125 V / 15 A 220 V – 250 V / 10 A
Steckdose 3	**113~114**	Wechselspannung: 125 V / 15 A 220 V – 250 V / 10 A
Steckdose 4	**115~116**	Wechselspannung: 125 V / 15 A220 V – 250 V / 10 A

I: Sicherung.

Schützt die Stromeingangsbuchsen vor Überlastung. Wird der maximal zulässige Stromwert am Eingang überschritten (für Details, siehe H), trennt die Sicherung den Stromkreis automatisch, um weitere Schäden zu verhindern. In diesem Fall können Sie eine neue Sicherung gleichen Typs einsetzen, sobald Sie sichergestellt haben, dass die maximal zulässige Stromaufnahme nicht überschritten wird.

Daten der Sicherung: **250 V / 15 A**

Systemspezifikationen

Standard-Hardware

Element	Technische Spezifikationen
Abmessungen (Länge x Breite x Höhe)	440 mm x 145 mm x 44,5 mm
Stromversorgung	12 V=, 2,5 A
Lagertemperatur	-25°C - +65°C
Betriebstemperatur	0°C - +40°C
Programmierbarer Steckdosenausgang	8 Ports (bis zu 16 können mit dem Erweiterungsgerät hinzugefügt werden). Die Ausgangsspannung hängt von der am Eingang anliegenden Spannung ab. Zulässige Spannungs- und Stromwerte am Eingang: Maximalwerte bei Wechselspannung: 125 V / 15 A, 50-60 Hz 220 V – 250 V / 10 A, 50-60 Hz
Stromeingangsbuchse	4 Ports Zulässige Spannungs- und Stromwerte am Eingang: Maximalwerte bei Wechselspannung: 125 V / 15 A, 50-60 Hz 220 V – 250 V / 10 A, 50-60 Hz

Digitaler Ausgang	8 Ports (Ausgangsspannung und -Strom: 12 V=, 50 mA). Das Erweiterungsgerät stellt weitere Funktionen zur Verfügung.
Analoger Eingang (Widerstandsabhängig)	4 Ports (2-205 KΩ). 1024 Stufen. Kann über verschiedene Treiber mit Thermistoren oder analogen CDS-Sensoren verbunden werden.
Analoger Eingang (Spannungsabhängig)	2 Ports (0 bis 5 1024 Stufen. Sie müssen mit einem Erweiterungsgerät verbunden werden, um weitere Funktionen zur Verfügung zu stellen. Sie können über verschiedene Treiber mit Spannungs-, Strom-, Feuchtigkeits-, Durchfluss und andere Sensoren mit analogem Ausgang angeschlossen werden.
Digitaler Eingang	2 Ports (Ein/Aus). Diese können mit Sensoren wie z.B. Alarmanlagen, Zugangskontrolle, Rauchmelder, Wassermelder und anderen Ein-/Aus-Sensoren verbunden werden.
Kommunikationsport	RS232C: 1 Port RS485: 1 Port (maximale Anzahl in Reihe zu schaltender Geräte mit demselben IP-Bus: 256 Geräte) 10/100 Mbps Ethernet: 1 Port

ACHTUNG

EXPLOSIONSGEFAHR, WENN DIE BATTERIE DURCH FALSCHEN TYP ERSETZT WIRD.

ENTSORGEN SIE GEBRAUCHTE BATTERIEN GEMÄSS DER GELTENDEN BESTIMMUNGEN.

Hinweis:

1. Das Produkt muss von einer qualifizierten Person betrieben werden.
2. Die ausgangsseitigen Steckdosen müssen sich in der Nähe der anzuschließenden Geräte befinden und leicht zugänglich sein.
3. Um das Gerät vollständig vom Stromnetz zu trennen, müssen Sie das Netzkabel aus der Steckdose ziehen.

Notes:

Index

R

S

T