Data Sheet

963 Supervisor

963 Supervisor

Description

963 is a graphical, real-time, user interface for the building control system. It enables the user to monitor plant or building services, and make changes to the way the building is controlled from a graphical display. All pages and actions are accessible using a mouse. The security system ensures that the user is only presented with information and functions that are relevant to their authority or task. The 963 learns the structure of the system allowing the 963's Device Viewer facility to provide system information without the need for engineering.

It is compatible with the Trend Open Protocol Server which allows values from BACnet devices to be included in schematic pages, adjustments to be made, and alarm received.

There are several different versions of 963.

963 Lite provides all the fundamental features required of a supervisory package for control of an IQ System.

963 Server provides the same facilities as 963 Lite plus enables the 963 to act as a web server allowing access to 963's graphical displays, and alarm viewing/acknowledgement, and the display of graphs from a web browser like Internet Explorer.

963 Secure provides the same facilities as 963 Lite, or 963 Server depending on the version that has been licensed, plus it provides additional features such as strong passwords and MKT calculation which assist with the compliance to the FDA regulation 21 CFR Part 11.

963 SNMP provides the same facilities as 963 Lite, or 963 Server depending on the version that has been licensed, plus it enables alarms to be retransmitted in SNMP format.

963 SMS Direct provides the same facilities as 963 Lite, or 963 Server depending on the version that has been licensed, plus it enables alarms to be retransmitted using SMS text messaging.

Features

All versions

- Compatibility with the Trend Open Protocol Server (TOPS) which enable 963 to communicate with BACnet devices.
- 8-bit comms.
- SQL Server 2005 Express database.
- Enhanced alarm monitoring, and occupation time control.
- Complete control and monitoring of BMS from colour graphics pages on the 963 machine.
- Alarm handling with alarm retransmission and logging.
- Scheduled recording of logged data from IQ controllers.
- Recording of schematic pages.
- Indication of hand/OFF/auto status on schematic pages.
- Connection to remote sites over TCP/IP using hostnames.
- Management of multiple controller occupation times.
- Display of live, logged, or recorded data in multitrace graphs using either compact or precision logs.
- Database password protected.

963 Server

- Client-server operation.
- Access to graphic pages in a web browser.
- Access to Device Viewer in a web browser.
- Adjustment of values/occupation times in web browser.
- Display of graphs in a web browser.
- Alarm viewing facilities.

963 Secure

- Assists with compliance to FDA regulation 21 CFR Part 11.
- Calculation of MKT values.
- Password expiry times.
- Multiple failed password entry will lock user.
- Minimum password length.
- Audit trail for adjustments that effect system performance.

963 SNMP

- Alarm retransmission in SNMP format.

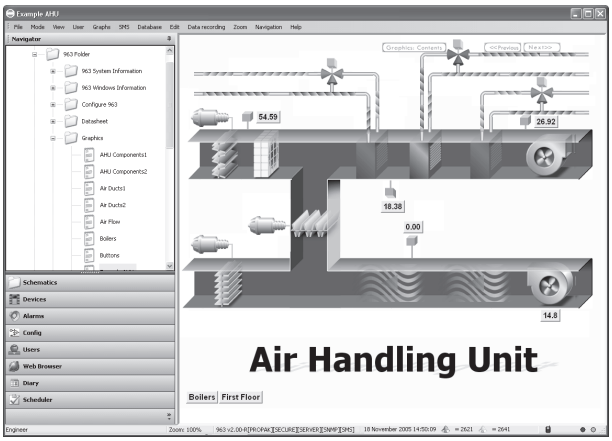
963 SMS Direct

- Alarm retransmission using SMS text messaging.

FUNCTIONALITY

963 Lite

Schematics: The 963 provides the user with colour graphics pages, which display live information from the system and enable parameters to be adjusted. The pages can be engineered to suit the individual system requirements, and can contain a 24 bit colour backdrop, multiple graphic images, seven state graphics (ON, OFF, waiting, error, alarm, overridden ON, and overridden OFF), text, active content, values from the system, and maps of Lans. The security system enables access to particular groups of pages to be restricted so that users are only presented with the necessary information.

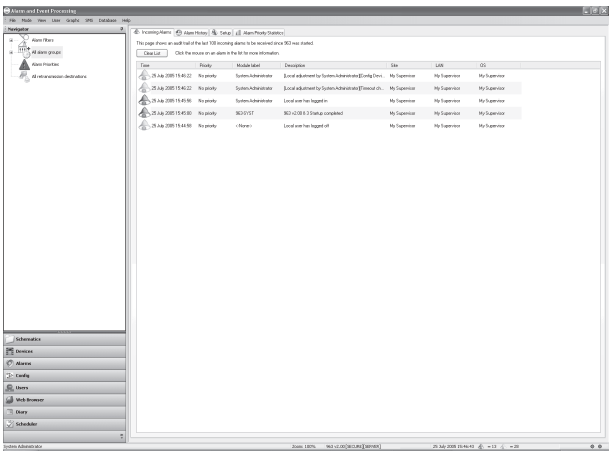


Active content allows the following file types to be integrated into the page, SWF, HTML, DOC, XLS, XML, PPT, PDF, and URL's. Buttons or graphics on the pages provide access to other pages, graphs of parameters, adjustments, and other facilities such as pages of information, 963's documentation, and the Internet. The Navigator organises pages into folders, so that they can be quickly located and displayed.

What can be displayed	Description
Active content	Active content can now be displayed directly on a page. This allows the following file types to be integrated into the page, SWF, HTML, DOC, XLS, XML, PPT, PDF, and URL's.
Backdrops	Backdrop files are standard files sized so that they exactly fill the Data Display. Any object placed on the page will overlay the backdrop.
Buttons that perform 963 actions	Buttons can be added that can perform 963 actions. When these buttons are selected by the user the specified action will be carried out.
Data from the system	Live values from the system. When these points are selected thay can be adjusted, or graphed depending on the type of value. They can also be represented by a graphic by using analogue graphic files. A map of a specified Lan, and controller status can also displayed. If required, values (for which the user specifies the controller from which the values are obtained) can be added. *Note that it is recommended that the number of values on a single schematic page be restricted to a maximum of 60 to 80. If the page is to be accessed from a client this should be reduced to between 20 and 40, and if the values come from IQLs a maximum of 30 values from a maximum of 15 different IQLs is recommended.*
Graphics	Graphics can be added to the page to make the information easier to understand. The following file formats can be used. It is possible to use BMP, GIF, JPEG, WMF, and EMF files.
Graphics that perform 963 actions	Graphics can be added to the page to make the information easier to understand that can perform 963 actions when they are selected by the user. The following file formats can be used BMP, GIF, JPEG, WMF, and EMF files.
Graphs	Graphs of values from the trend system can be displayed on a page. It is possible to display a graph definition that has been previous saved, or a graph of an individual sensor.

Alarm Handling: The alarm handling facilities of 963 ensure that the appropriate people are quickly made aware of any alarms that have occurred. When an alarm occurs, an alarm panel can be displayed to alert the user, and any actions that have been specified to occur will be carried out. If the user is accessing the 963 using a web browser, a dialogue box is displayed and any specified actions can be carried out.

All alarms that occur can be seen in the Alarm Viewer display, which enables the alarms in the database to be filtered so that only the alarms in which the user is interested are visible, and sorted so that the relevant alarm can be quickly found. If required, further information about the alarm, such as the description entered by the user who acknowledged it, can be displayed.



Alarm panels are activated when a group that has been set to display alarm panels is activated. When active the alarm panel will be displayed on the screen. The alarm panel will stay on the screen until the user has acknowledged all the alarms.

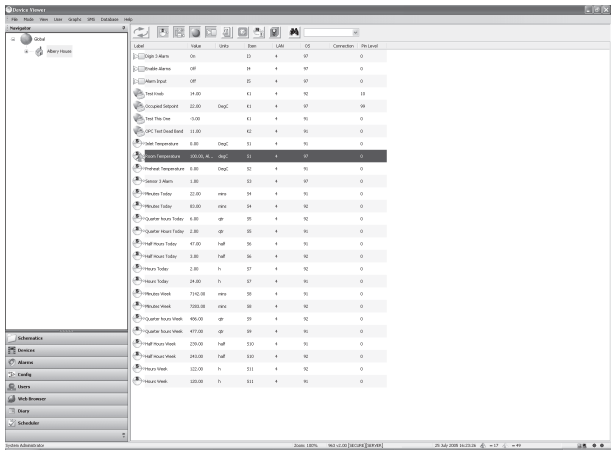
If alarm logging is enabled, each alarm will be logged to the 963's database. This is an SQL database that can be viewed in 963's alarm display, or queried using 963's VIEWQUERY action.

963 Lite (Continued)

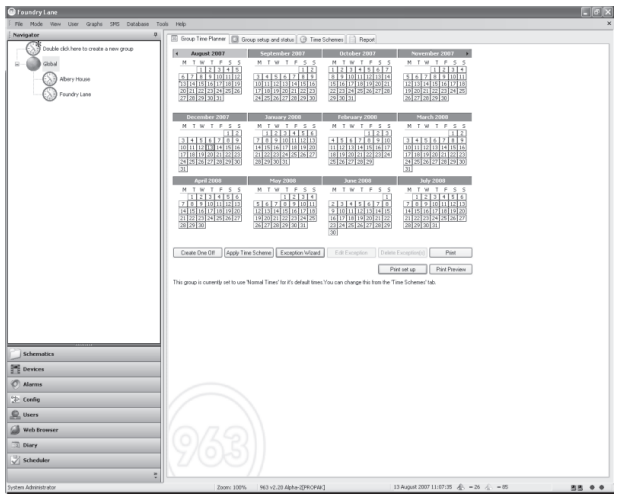
Any of the 963 actions can be specified to occur when an alarm is received. Thus alarms can be retransmitted to another supervisor (963, 962, or 945), another device (e.g. PNC), a pager, or sent using email using the RETRANSMIT action, or a particular page to be displayed using the GOTO action etc. Alarms can also be redirected to any available network printer.

The actions that occur are defined by the Alarm Groups activated by the alarm. Each group enables two different actions to be carried out. The first is only carried out on the 963, and is always performed, the second only occurs if specified users are logged on, and will occur on both the 963, and any clients, providing one of the specified users are logged on. An alarm may be associated with more than one Alarm Group, which allows more than one action to be performed when the alarm is received, and different users to be notified about the alarm in different ways.

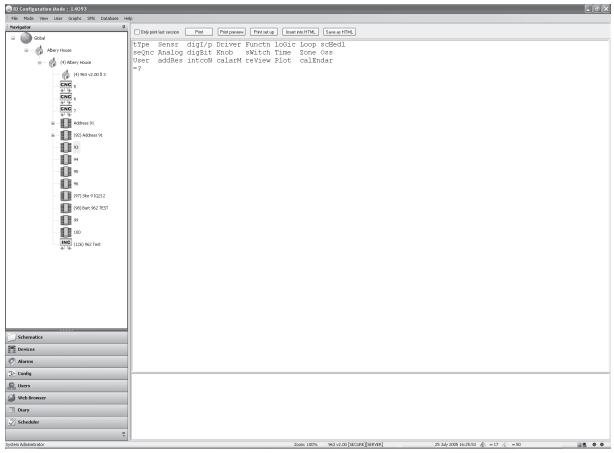
Device Viewer: Once 963 has learnt about the system to which it is connected, it can display inputs, outputs, adjustments, occupation times, and current alarms on the system in the Device Viewer without any further engineering. This information can be restricted to parameters in a particular device, Lan, or site, and can be sorted by label, units, item, Lan number, address, or PIN level. Changes can be made to any of the adjustments or occupation times if the user has the correct authority. A PIN level, which is the same as that defined for the parameter in the device itself, limits these changes. The Device Viewer also enables graphs of parameters to be displayed. The Device Viewer also indicates any value that is currently in an alarm condition, and what the alarm is.



Diary Display: The Diary Display enables the user to manage multiple controller occupation times. It groups together IQ controller time zones that share the same occupation times. The normal occupation times for a time zone in each group are defined and downloaded to the controllers. Days that are to work different times from the normal (e.g. Bank Holidays) can be set up. 963 will automatically send these times to the controller. It is also possible to view the actual times held in the controllers, and, if required, to adjust them.

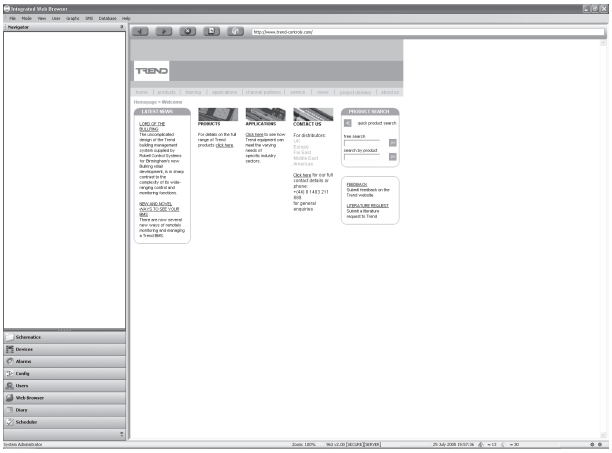


Configuration Mode Display: 963 can access the configuration mode of IQ system devices that support configuration mode using the Configuration Mode Display. The Configuration Mode Display provides a simple user interface to the device's configuration mode, and a map of the system for easy device selection.

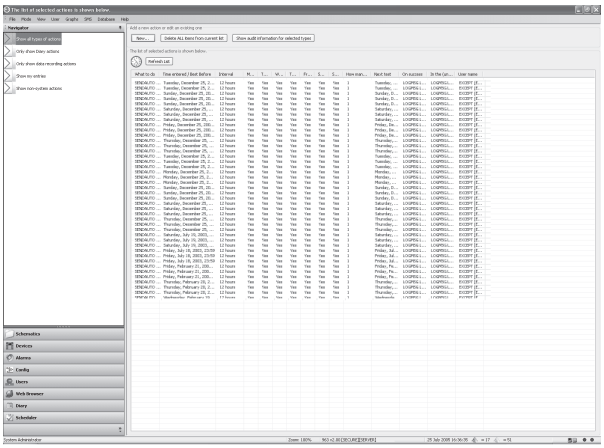


963 Lite (Continued)

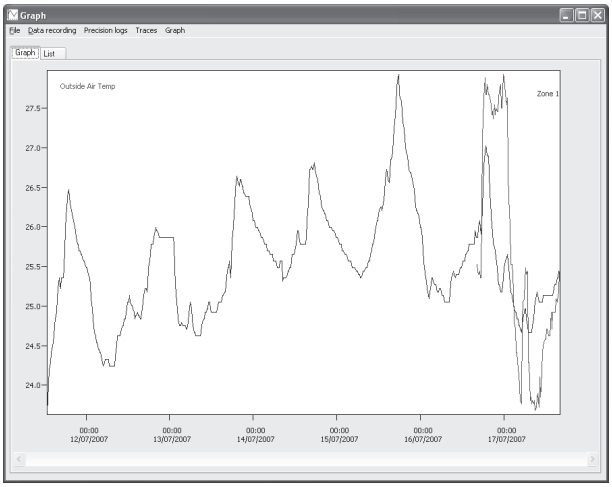
Web Browser: The 963 provides a built-in web browser to provide access to the company Intranet, or Internet. Because this information is displayed within 963, the security system enables access to the web browser to be limited, and the areas that are accessible restricted. It also enables the use of features, such as the display of video images (e.g. CCTV), which cannot be incorporated into the normal 963 displays.



Event Scheduler Display: The 963 enables events such as the recording of information, or backing up of data to be scheduled for a particular time. The Event Scheduler Display is used to organise and display all the automated actions carried out by 963, e.g. sensor-recording actions, or diary exceptions. It contains information about events that 963 is going to perform in the future, or has already performed. It displays events that 963 has been set to perform by the engineer; it also displays scheduled events created by 963's Diary functions.

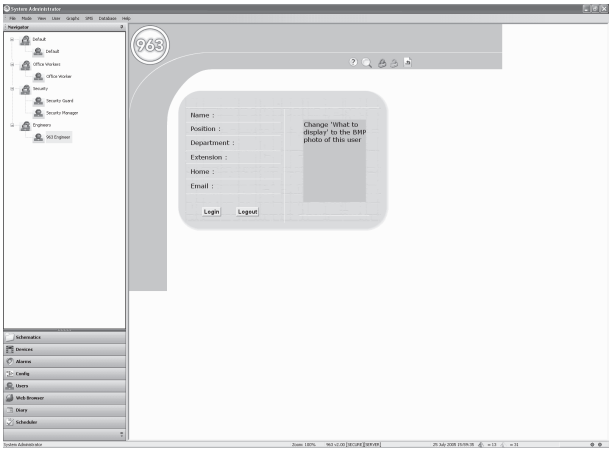


Multitrace graphs: 963 can display live, logged, or recorded information from IQ or IQL controllers in multitrace graphs. This data can be retrieved using either compact logs for faster data retrieval, or precision logs for more accurate information. These graphs can accessed from the colour graphics pages, or from a list of values on the system to which 963 is connected. Once displayed, the graph can be printed out. It is possible to zoom in on selected parts of the graph so that it can be seen in more detail. If required, the underlying data from the graph can be viewed.



Multi-level security system: The multi-level security system accessed from the User Display controls access to the 963. To view information on 963, the user must log in. 963 uses this information to decide what pages the user can display, and whether or not they have access to particular displays such as the web browser, what adjustments they can perform, and whether or not they can configure 963. This security is enforced on the server, and the clients, ensuring that only authorised users can view and change information.

Each user is a member of a workgroup, which determines their access rights. This allows easy editing of user access rights. The User display shows all the user workgroups, and the users within the selected workgroup. It enables users to log in. Logging in enables 963 to display the options that apply to the particular user's authority, and access rights. It is also possible to restrict access to particular IP addresses, thus preventing access from unauthorised computers.



Data Recording: Data being logged in IQ or IQL controllers, or displayed on a schematic page at a particular time can be recorded by 963 for later retrieval. The recording can be performed manually, but to prevent information being missed this recording can be automated and performed at convenient times.

Database: 963 uses SQL Server 2005 Express Edition, which supports databases up to 4 GB. Other versions of SQL Server 2005 that support larger databases are available from Microsoft.

Database backup: 963 provides automatic database backup.

963 Lite (Continued)

Database password protection: The 963's database can be protected by a password; this prevents the information being manipulated from outside the 963 without the password. This password not only protects the database, but ensures security should the system administrator become locked out.

Print templates: Print templates allow you to specify where the page information will appear and allow extra details like user name, time and date etc. to be added. A printing template is simply a standard schematic configured with an extra option.

Simple connection to remote or TOPS sites: All the 963 requires to connect to a remote TCP/IP site is required is the IP address or hostname of the device containing the virtual CNC, and the socket number to which it is to be connected. To connect to an autodialled site all that is required is the site's telephone number, Lan number and the type of autodialling device being used.

8-bit comms support: The 963 supports 8-bit communications. This allows the use of extended character sets across the IQ system. 8-bit comms is only supported in the following products: 963, IQ3 v1.22, 3xtend/EINC L, and IQView v1.2.

Indication of hand/OFF/auto status on schematic pages: The hand/OFF/Auto status of inputs on IQ3 controllers is indicated in schematic pages. If required, the standard indication of a flashing border can be reconfigured to provide almost any type of indication.

Simple engineering: 963 can be engineered quickly using drag and drop methods. Objects are simply dragged from a palette onto pages, and then their attributes are dropped onto them. Engineering can be carried out with or without a connection to the BMS network. Off-line engineering can be performed by manually entering data or by selecting previously learned information. Simulation mode allows off-line users to test the appearance of their schematic pages under different conditions.

Connection to Network: The 963 can be connected to the IQ network using a virtual CNC (e.g. 3xtend/EINC L) or a CNC (e.g. LNC2). If connection to the IQ network is made using Ethernet the device containing the virtual CNC to which 963 connects can be specified using a user friendly name. This allows for systems where a DHCP server is used.

Compatibility with TOPS: 963 can be used in conjunction with the Trend Open Protocol Server (TOPS) to provide the usual 963 functionality plus communications with BACnet devices. Values from BACnet devices can be included in schematic pages, adjustments made, and alarms received from the BACnet devices.

963 Server

The 963 Server provides the same facilities as 963 Lite plus the ability to act as a web server enabling a client to display information from the 963 in a web browser. When viewing a page in a web browser, the user may make adjustments, view graphs, move from page to page, enter configuration mode on a device, make changes to Diary groups, or carry out other actions in a similar way to working on the 963 itself. The 963 allows full client-server operation. This means the 963 can provide information to a number of client machines over a TCP/IP network.

When operating as a server, the 963 automatically converts the information and passes the information to the client machine for display in a web browser when requested. This means that no additional engineering is required to provide the benefits of the 963 across the business. Client machines do not require any additional software to be installed, providing they have a connection to a TCP/IP network, and a web browser installed.

963 Server operates in two modes graphic mode and text mode depending on the type of web browser accessing the server. Graphic mode requires Microsoft Internet Explorer 6 or greater, or Firefox 2, and the SUN JAVA runtime environment v1.5 or greater. Other browsers are only able to access the server in text mode. The table below lists the 963 features that are available to a client.

Feature	Notes
Schematic Pages	In graphics mode any page may be displayed, however there may be some slight differences in the appearance of the page. WMF and EMF format graphics are not supported. Both dynamic and static objects as well as the backdrop will be displayed. In text mode graphics are not displayed, the page is reproduced as 3 tables containing live data (dynamic objects), actions, and static objects. In both modes static objects, which perform unsupported actions are not displayed. Active content such as Excel files is not supported on the client.
963 Actions	Supported actions, CONFIG, DROPALLLINES1* EXECUTESMS1* GOTO, GOTO Diary,*GOTO NEXT*, GOTO PREVIOUS*, LOGINAS, LOGOUT, MESSAGE*, PLAY*, POPUP*, SEND, SENDAUTO*, SETGENERIC*, VIEWGRAPH*, VIEWPOINTS*, VIEWQUERY, WEB. *Graphic mode only. The EXECUTESMS action is only available if the SMS Direct option has been licensed.
Adjustment of values	Fully supported.
Display of graphs	Fully supported. When in text mode a table of the graph's values is displayed.
Movement between pages	Fully supported.
Access to device configuration mode	Fully supported.
Viewing/acknowledgement of alarms	Fully supported. Fully supported in graphic mode only. Only the GOTO, MESSAGE, PLAY, and WEB actions are available for use with viewing/acknowledging alarms in a web browser.
Adjustment of controller occupation times	Fully supported.
System security	Fully supported.
Device Viewer	Only allows viewing of information plus the facility to adjust values, graph values, and enter configuration mode on device that support configuration mode. It is not possible to learn the system. Graphic mode only.

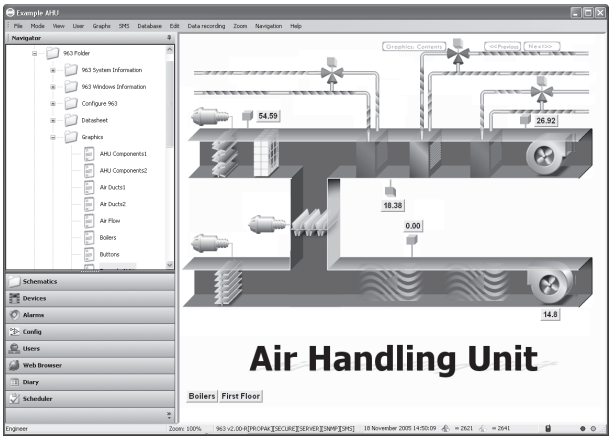
963 Server (Continued)

Printing from the client uses the features in the browser. Alarm printing is a server function only, but can be directed to a network printer convenient to the client.

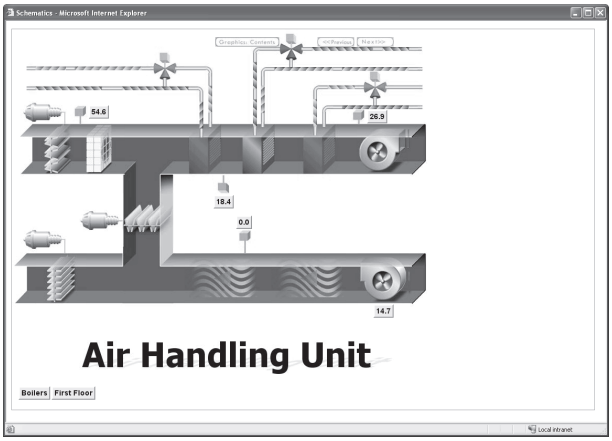
The server can be accessed from web browsers on PCs, PDA's (running Windows Mobile 2003 Second Edition or greater), Smartphones (running Window Mobile 5 or greater), and the Nokia 9210i although full client functionality is only available on PCs that meet the requirements for graphic mode. Other devices are only able to use text mode.

Note that the 963 has not been tested with all devices and Trend cannot guarantee a particular device's compatibility with 963 server.

Schematics: The schematic display enables access to any of the 963's schematic pages subject to their security. When in graphics mode they will appear virtually the same on the client as they do on the 963 Server. There is no Navigator on the client; navigation must be provided through buttons engineered directly on the pages.

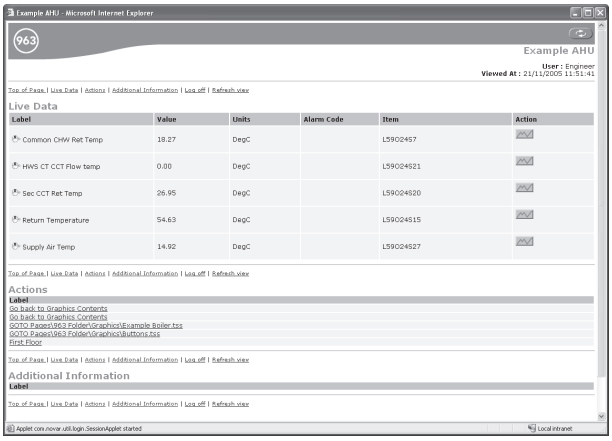


A page viewed on the 963 server machine.



The same page displayed on a client in a web browser (graphic mode only).

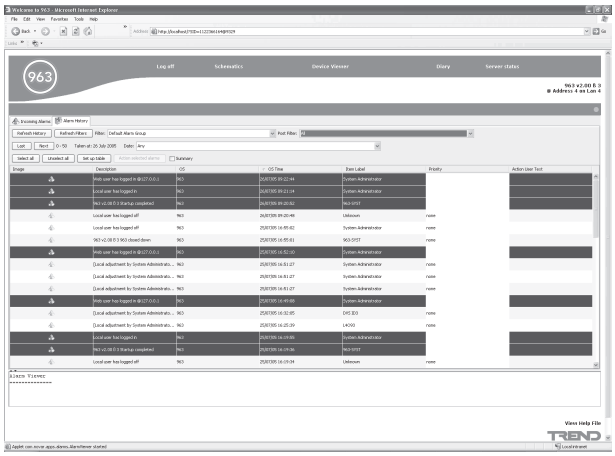
In text mode graphics are not displayed, the page is reproduced as 3 tables containing live data (dynamic objects), actions, and additional information (static objects). There are a number of different text mode layouts to allow for different device types. The appropriate layout for the client device is automatically selected. Each layout provides the same functionality, but data displayed varies to accommodate different screen sizes and aspect ratios.



The same page displayed in text mode

Alarm Viewer: The Alarm Viewer is only available in graphic mode, it displays the alarms that have been received, and providing the user has authority enables them to be acknowledged. Colours are used to indicate whether the alarm is a set alarm or a cleared alarm. A red bell indicates a set alarm, and a green bell indicates a cleared alarm. If the alarm has been actioned a bell with appear with a tick over it. Alarms can also cause an alarm panel to be displayed on the client personal computer to draw the user's attention to the alarm.

The Alarm Viewer has two tabs: Alarm History, and Incoming Alarms. The Alarm History stores the all the alarms in the database that have been processed whether or not they have been actioned by the user. The alarms can be viewed in chronological order or a summary view. The Alarm History is colour coded to indicate whether or not the alarm is current, red indicates that the alarm is current. The Incoming Alarms contains the last 100 alarms received.

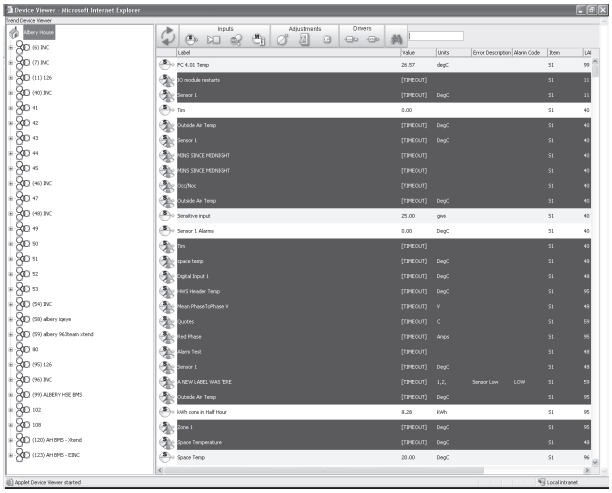


963 Server (Continued)

The Device Viewer: The Device Viewer is only available in graphic mode, it displays all inputs, outputs, adjustments, and occupation times on the system that have been learnt. This information can be restricted to parameters in a particular device, Lan, or site. Changes can be made to any of the adjustments or occupation times if the user has the correct authority. These changes are limited by a PIN level, which is the same as that defined for the parameter in the device itself. Single trace graphs of selected parameters can be displayed.

The Device Viewer also provides access to the configuration mode of IQ system devices that support that feature.

Note that it is not possible to learn the system from a client.



963 Secure

963 Secure provides the same facilities as 963 Lite or 963 Server with the addition of features that assist with compliance to the American pharmaceutical body's regulation 21 CFR Part 11.

Tighter Security System: 963 Secure provides a higher level of protection for the data it stores, and the system it is controlling. 963 Secure imposes a strong password regime, which requires the user to regularly change their password to prevent it becoming known to others.

When a user changes his password, 963 Secure will check to see that the specified password is longer than the minimum password length, and that it uses a mixture of letters and numbers.

If a user incorrectly enters his password more than the specified number of times he will be locked out of the system, and must request the system administrator to unlock them.

To ensure that user details remain secure, only users with System Administrator access rights are able to make any changes to users on the system. Details of passwords are encoded to ensure that even if someone accesses the password storage location they will be unable to understand the password information.

963 Secure maintains an audit trail of changes that are made to areas that affect system performance; it records who made the change, what the change was, and when it occurred. This auditing cannot be turned off, and the events can be configured to generate an alarm action ensuring that any attempt to breach the security does not go undetected.

Area	Event Logged
Alarm Filters	Adding, removing and editing
Alarm Groups	Adding, removing and editing.
Automatic data recording	Any automatic data recording function also raises events on success and failure.
Diary Downloads	Automatic downloads
Exceptions	Adding, removing and editing
IQ parameters	Changes through the 963 user interface.
Normal times	Adding, removing and editing
Program	Start up, and shutdown.
Retransmission	Adding, removing and editing.
Scheduled action	Adding, removing and editing
Security	Logging in, logging out. When a user is locked out an alarm is reported.
Site, LAN, Controller or Item.	Deleting and editing
Timezone Groups	Adding, removing and editing.
Users	Adding, removing and changing the password.
Workgroups	Adding, removing and editing.

963 Secure (Continued)

Mean Kinetic Temperature calculation: 963 Secure provides a facility to calculate the Mean Kinetic Temperature (MKT) for sensors that are being logged by IQ controllers. The MKT is defined as the isothermal temperature that corresponds to the kinetic effects of a time-temperature distribution. It is used to monitor the average temperature of drugs whilst being stored in the pharmaceutical industry. The calculation of MKT by 963 Secure can be performed using one of two 963 actions either on a scheduled basis, or on demand. The 963 uses the following formula for the calculation.

$$T_K = \frac{-10000}{\ln\left(\frac{e^{-\frac{10000}{T_{1_H}}} + e^{-\frac{10000}{T_{1_L}}} + \ldots + e^{-\frac{10000}{T_{n_H}}} + e^{-\frac{10000}{T_{n_L}}}}{2n}\right)}$$

TK = The Mean Kinetic Temperature in °K.
T1H = The high temperature in °K during the 1st week.
T1L = The low temperature in °K during the 1st week.
TnH = The high temperature in °K during the nth week.
TnL = The low temperature in °K during the nth week.
n = The total number of weeks.
T = The absolute temperature in °K.

In order to perform scheduled MKT calculations, the 963 scheduler must be used to run the CALCULATEMKT action at the required times. The CALCULATEMKT enables the MKT for a sensor over a specified period to be calculated, and stored in a virtual sensor. The sensor must be logged in the IQ controller, and that data must be recorded by 963. The virtual sensor used to store the result of the calculation can either be specified manually, or it can be chosen by 963.

The virtual sensor has high and low alarm limits that enable an alarm to be generated if the value is outside the range. The high and low alarm limits are tested against the new MKT value when the scheduled MKT calculation is executed. If the MKT value is found to exceed the alarm limits, an alarm is triggered. If sensor logs for the required period are not complete, e.g. only the last 4 days readings are available; the MKT will be calculated with the available logs with no alarm being raised. However, if a gap in the data is detected (e.g. the third day's sensor data is missing), the MKT is still calculated but an alarm is raised.

In order to calculate the MKT as required (on demand), the 963 Secure's CALCULATEMKTDATE action should be used either on a schematic page, or from the Device Viewer. This action calculates the MKT for the specified sensor between two dates. The calculated value is displayed in a message box. The action never writes the value to a database. If any parameters are left out of the action, 963 will ask the user for the parameters when the action is executed.

The result of an on demand MKT calculation can be displayed as part on a schematic page by using the CALCULATEMKTDATE action in the 'What to display' attribute. The calculation will be recalculated every time the schematic page is reactivated.

963 SNMP

The 963 SNMP provides the same facilities as 963 Lite, or 963 Server depending on the version that has been licensed, plus the ability to retransmit alarms in SNMP format. This enables users with Network Management Systems (NMS) to receive alarms from the IQ system into their IT system to provide warning of system faults, such as HVAC failure and supports SNMPv1, and SNMPv2 acts as an agent and only supports the 'trap' command, and therefore cannot respond to SNMP commands.

963 SMS Direct

963 SMS Direct provides the same fundamental features as 963 Lite, or 963 Server, however it additionally provides the ability to retransmit alarms to a GSM phone using SMS text messaging. To use 963 SMS Direct the personal computer running 963 must be connected to a GSM modem. This modem is supplied with 963 SMS Direct, the modem supplied is the only one supported for use with 963 SMS Direct. Modems are supplied without SIM cards therefore it is necessary to supply your own SIM card for use on the network of your choice. 963 SMS Direct has built in alarm handling. This means that if the transmission fails an alarm will be generated, or if there is a problem communicating with the phone/modem an alarm will be generated.

Note that 963 SMS Direct cannot receive SMS text messages.

TREND OPEN PROTOCOL SERVER (TOPS)

The Trend Open Protocol Server is a Windows based software application that runs on a PC to provide the communications with a BACnet network. It is required if 963 is to communicate with BACnet devices, and must be ordered, installed and licensed separately to 963. TOPS can be installed on the same PC as 963, or on a different one provided the 963 PC can access the TOPS PC over Ethernet.

The licence to run TOPS also determines the number of BACnet values that can be accessed the minimum is 50, but can be increased if required.

COMPATIBILITY

IQ System: 963 can display all devices on the IQ System connected using Lans, internetworks, autodialled links, and TCP/IP links in the Device Viewer. It provides access to all parameters in all IQ system devices that support text communications. Parameters within other 963 supervisors engineering tools and network displays are inaccessible. IQL controller parameters can be accessed using a 3xtend/EINC L, fieldbus device parameters can be accessed using an FNC. It can communicate over IQ system Lans and internetworks including remote TCP/IP sites, autodialled links (PSTN) or digital networks (PSDN). It will not operate on network running at 1k2 or 4k8 baud rates. It is only possible to obtain graphs of sensors 1 to 99 from IQ3 controllers.

Communications: It provides compatibility with 8-bit communications from IQ system devices that support 8-bit comms (IQ3 controllers, 3xtend/EINC Ls, and IQView v1.2). 8-bit comms allows the use of extended character sets across the IQ system. The extended character sets are not supported in line printing (alarm printing).

SET: It is possible for both SET and 963 to be installed and run on the same PC at the same time however only one will be able to communicate with a BACnet network see the 963 Engineering Manual (TE200637).

TOPS: The 963 is compatible with the Trend Open Protocol Server.

BACnet: When used with TOPS, 963 can display and adjust parameters from devices on the BACnet network to which TOPS is connected, and receive alarms from those devices. For details of the BACnet capabilities of 963 when used in conjunction with TOPS see the '963 and TOPS Protocol Implementation Conformance Statement' (TP201011).

INSTALLATION

A step-by-step installation program performs the installation of the 963 software. After installation the software must be licensed, and configured to operate as required, as described in the 963 Engineering Manual (TE200637).

Note that if installing 963 on a PC that has a full installation of SQL server earlier than SQL Server 2005 it is necessary to separately upgrade to SQL Server 2005, this installation is not included as part of the 963 installation.

The installation of 963 software is NOT required on client PCs requiring to access the 963 Server, however to use make use of graphic mode the SUN JAVA runtime environment v1.4 or greater is required.

If the 963 is to communicate with devices on the IQ network a connection to the IQ network is needed. This requires installation of an IQ system device containing a virtual CNC (e.g. 3xtend/EINC L), or Lancard Node Controller (LNC2), Communication Node Controller (CNC2). If the 963 is to act as a server it must be connected to a TCP/IP network that is accessible by the client.

If the 963 is to communicate with devices on a BACnet network the TOPS must be also installed. This installation can be on the same PC as 963, or on a different PC providing communication is possible between the two over Ethernet. The installation of TOPS is carried out by a step-by-step installation program. Once installed TOPS must be licensed, and configured, as described in the 963 Engineering Manual (TE200637).

Note that TOPS is not supported on Windows 2000 if 963 is to run on Windows 2000 TOPS must be run on a separate PC running a supported operating system.

For 963 Server, and 963 SNMP, or if BACnet functionality is required the PC running 963 must be connected to a TCP/IP network.

ORDER CODES

The 963 software is available on a trial basis. This trial version allows 963 to be run for 28 days with full functionality (except access to the configuration mode, Secure, SMS, SNMP, and BACnet functionality) including a licence for up to 25 clients. After this period a valid licence must be purchased.

A connection to the IQ network will also be required; this can be achieved using TCP/IP using an IQ system device that contains a virtual CNC (E.g. 3xtend/EINC L, or IQ3), which must be purchased separately. Alternatively connection can be made to the IQ network using the IQ system current loop with a Communications Node Controller or Lancard Node Controller (which can be supplied with the software). If 963 SMS Server, 963 SNMP, or communication with BACnet devices is required, an Ethernet card and access to an Ethernet network is required.

963 SMS Direct includes a GSM modem; however a SIM must be purchased separately and is not available from Trend.

963 ORDER CODES

Non USA Order Codes

963[Server]/[Secure]/[SNMP]/[SMS]/[Node]/[Users]/[Training]

[Server]	L	963 Lite
	S	963 Server
[Secure]	Blank	Normal 963
	SEC	963 Secure
[SMS]	Blank	No SMS
	SMS	SMS included. This option is supplied with a GSM modem. Note that a SIM must be obtained separately.
[SNMP]	Blank	No SNMP
	SMNP	SNMP included
[Node]	CD	Software only on CDROM
	LNC2	Software on CDROM, with LNC2, wallbox, and cables.
	NBOX/CNC2	Software on CDROM,with NBOX/CNC2, and cables.
[Users]	Blank	If ordering 963 Lite
	[x]USER	963 Server with [x] client licencse. Where [x] can be between 3 and 25.
[Training]	Blank	No Training Course
	TRAIN	2 day 963 Secure training course for 1 person at a training centre.

Ordering 963 with BACnet Functionality
If you require 963 to communicate with BACnet devices it is necessary to order 963, and the Trend Open Protocol Server. Order the required version of 963 (e.g. 963 SMS) using the order codes above, and then order the Trend Open Protocol Server for BACnet see ‘Trend Open Protocol Server (TOPS) Order Codes’.

USA Order Codes

882000840	963 Lite (Software only on CD ROM).
882000850	963 Lite (Software on CD ROM with LNC2, wall box and cables).
882000860	963 Lite plus secure feature (Software only on CD ROM).
882000870	963 Lite plus secure feature (Software on CD ROM with LNC2, wall box and cables).
882000880	963 Server plus 3 clients (Software only on CD ROM).
882000890	963 Server plus 3 clients (Software on CD ROM with LNC2, wall box and cables).
882000900	963 Server plus 3 clients and secure feature (Software only on CD ROM).
882000910	963 Server plus 3 clients and secure feature (Software on CD ROM with LNC2, wall box and cables).
882000920	963 Server plus 3 clients and SNMP feature (Software only on CD ROM).
882000930	963 Server plus 3 clients and SNMP feature (Software on CD ROM with LNC2, wall box and cables).

963 UPGRADE ORDER CODES

Note that it is not possible to upgrade to any variant of 963 Secure, from 962, or a non-secure 963, a new 963 Secure licence must be purchased.

Non USA Upgrade Order Codes

963S/[xx]/UP/[nn]/[yy]USER	Additional client licences for 963S/.....,only. Up to a maximum of 25 client licences (Licence upgrade only). [xx] = 963 variant that is being upgraded, [nn] = existing number of clients, [yy] = proposed number of clients.
[xx]/UP/[yy]	Upgrade of one variant of 963 to another. [xx] = variant that is being upgraded, [yy] = variant being upgraded to.
962[xx]/UP/963[xx]	Upgrade from 962 to 963. [xx] = 962 variant that is being upgraded. To upgrade from 962 to 963 it is necessary to upgrade you existing 962 variant to the equivalent 963 variant, and then if required upgrade to the required 963 variant.

USA Upgrade Order Codes

882000940	Upgrade form 963 Lite to 963 Server with 3 users.
882000950	Upgrade from 963 Lite to 963 Lite with secure feature.
882000960	Upgrade from 963 Server to 963 Server with secure feature.
882000970	Upgrade from 963 Lite to 963 Lite with SNMP.
882000980	Upgrade from 963 Server to 963 Server with SNMP.
882000990	Upgrade from 962 Lite to 963 Lite.

TREND OPEN PROTOCOL SERVER (TOPS) ORDER CODES

The Trend Open Protocol Server is required for 963 to communicate with BACnet devices.

Communications with BACnet requires 963 v3.0 or greater therefore if an earlier version of 963 is installed it will be necessary to upgrade 963.

Non USA Order Codes

TOPS/BAC/12DEV/250PTS	TOPS Software for communication with BACnet network, and with the ability to interact with 12 devices and 250 BACnet points.

TREND OPEN PROTOCOL SERVER (TOPS) UPGRADE ORDER CODES

If more than 12 devices and 250 points are required it is necessary to also order the appropriate upgrade using the codes below. E.g. to order TOPS for use with up to 60 devices and 1200 points it is necessary to order:

TOPS/BAC/12DEV/250PTS and
TOPS/BAC/UP/60DEV/1200PTS

Non USA Upgrade Order Codes

TOPS/BAC/UP/60DEV/1200PTS	Upgrade from TOPS/BAC/12DEV/250PTS which provides the ability to interact with 60 devices and 1200 BACnet points.
TOPS/BAC/UP/240DEV/5000PTS	Upgrade from TOPS/BAC/12DEV/250PTS which provides the ability to interact with 240 devices and 5000 BACnet points.

SPECIFICATIONS

TREND OPEN PROTOCOL SERVER

The specifications below apply to the Trend Open Protocol Server, and refer to a standard PC with mouse, keyboard, hard drive, CD drive, and monitor.

Recommended

Processor	:2 GHz.
RAM	:1 GB RAM.
Disk space	:40 GB hard disk or larger.
Graphics card	:128 MB, 1280x1024 resolution.
Network card	:Ethernet Network Card
Operating system	:Windows XP SP2 Professional with Internet Explorer version 6 SP1 or greater.

Minimum

Processor	:1 GHz
RAM	:512 MB RAM.
Disk space	:20 GB hard disk or larger.
Graphics card	:64 MB, 1280x1024 resolution.
Network card	:Ethernet Network Card.
Operating system	:Windows XP SP2 Professional with Internet Explorer version 6 SP1 or greater.

TOPS will also operate on Windows Vista Business, and Windows Server 2003. If TOPS is to run on the same PC as 963 ensure that the PC also complies with the system specifications for 963.

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Protocols used :TCP, UDP, SMTP, HTTP.
Max. database size :4 GB.

The specifications below apply to 963, and refer to a standard PC with mouse, keyboard, hard drive, CD drive, monitor, and sound capabilities (optional). 963 is a real time application; installed PCs must have enough free resources to run 963 under peak load conditions. System performance cannot be guaranteed if other 3rd party software is installed.

Recommended

Processor	:2 GHz.
RAM	:1 GB RAM.
Disk space	:40 GB hard disk with 1 GB free for installation + space for site data.
Graphics card	:128 MB, 1280x1024 resolution.
Network card	:Ethernet Network Card (required for 963 Server, communication with BACnet devices, 963 SNMP, or if 963 is to access the IT network e.g. is to connect to the IQ network using Ethernet).
COM ports	:2 (for LNC2/CNC, and GSM Modem)[1].
PCI Slots	:2 standard size (for Ethernet card and LNC2).
Parallel or USB ports	:1 (for Alarm Printer)[2].
[4]Operating system	:Windows XP SP2 (Professional or home)[3] with Internet Explorer version 6 SP1 or greater.

Minimum

Processor	:1 GHz
RAM	:512 MB RAM.
Disk space	:20 GB hard disk with 1 GB free for installation + space for site data.
Graphics card	:64 MB, 1280x1024 resolution.
Network card	:Ethernet Network Card (required for 963 Server, communication with BACnet devices, 963 SNMP, or if 963 is to access the IT network e.g. is to connect to the IQ network using Ethernet).
COM ports	:2 (for LNC2/CNC, and GSM Modem)[1].
PCI Slots	:2 standard size (for Ethernet card and LNC2).
Parallel or USB ports	:1 (for Alarm Printer)[2].
[4]Operating system	:Windows XP SP2 (Professional or home)[3] with Internet Explorer version 6 SP1 or greater.

[1]A built in COM port is required for the GSM modem supplied with 963 SMS.

[2]The use of a dot matrix printer is recommended for alarms (extended character set not supported). A separate printer for graphs and schematic pages (graphics printer) is recommended. Both the alarm printer, and graphics printer can be connected using a parallel/USB port, or over the office IT network (providing a network card is fitted). This should be taken into account when specifying the required ports for the personal computer.

[3]963 will also operate on Windows Vista Business[4], Windows 2000[4] Service Pack 4, with Internet Explorer version 6 SP1, or Windows Server 2003 SP1 with Internet Explorer version 6 SP1.

[4]963 will only operate on 32 bit operating systems.

If installing 963 on a PC that has a full installation of SQL server earlier than SQL Server 2005 it is necessary to separately upgrade to SQL Server 2005, this installation is not included as part of the 963 installation.

963 CLIENTS

PCs: 963 Clients may be any configuration providing they are running TCP/IP networking protocol, have an Ethernet card, and a web browser. For full graphics capabilities (graphic mode) Internet Explorer v6.0 or greater, or Firefox 2 (recommended Internet Explorer version 6 or greater) and the SUN JAVA runtime environment v1.5 or greater is required. The browser must have JAVA script enabled. Other browsers provide a text only display (text mode). **PDAs:** PDA's running Windows Mobile 2003 Second Edition or greater (text mode only). **Smartphones:** Nokia 9210i, and smartphones running Window Mobile 5 or greater (text mode only).

Note that the 963 has not been tested with all devices and Trend cannot guarantee a particular device's compatibility with 963 server. Popup blocking software must be disabled, or configured to allow popups from the 963 Server.

This data sheet refers to 963 v3.0, and TOPS v1.0 software

Please send any comments about this or any other Trend technical publication to techpubs@trendcontrols.com

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