

Network Integration Engine Product Bulletin

MS-NIE55xx-x MS-NIE8500-x

Code No. LIT-1201537

Software Release 7.0.7

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The *Metasys*® Network Integration Engine (NIE) fulfills a critical role in upgrading existing Network Communication Modules (NCMs) by integrating older *Metasys* N1 Building Automation System (BAS) technology into the current generation of BAS technology using the latest standards in IT and enterprise-level communication.

The *Metasys* NIE is a web-enabled network controller that uses the latest capabilities of information technology to ensure the *Metasys* system easily integrates and connects to the expanding world of web browsers and remote operations centers.

The NIE transfers point data from one or more NCM devices in a *Metasys* N1 network, providing alarm and event management, trending, energy management, scheduling, and data sharing capabilities in a manner consistent with the new technology of the *Metasys* system. Using a *Metasys* NIE to integrate existing NCMs lets you update older facilities with fewer installation steps and less overall labor time than it would take to completely replace the existing Building Management System (BMS) equipment.

Figure 1: NIE55 Network Integration Engine



The network may include Network Automation Engines (NAEs), Network Control Engines (NCEs), and other NIE units communicating with single or multiple web browser-based UIs using the latest security protection technology.

For information on NIEx9 models, refer to *Network Integration Engine (NIEx9) for Third-Party Integrations Product Bulletin (LIT-12011923)*.

Features and Benefits

- **Communication with N1 Networks Using Commonly Accepted IT Standards at the Automation and Enterprise Levels**—Allows you to install a system on your existing IT infrastructure within a building or enterprise and integrate it with the existing N1 network using standard IT communication services over the company intranet, wide area network, or public Internet with firewall protection.
- **Web-Based User Interface**—Allows you to access system data in the NIE from any supported web browser device connected to the network, including remote users connected by dial-up telephone or an Ethernet connection.
- **User Interface and Online System Configuration Software Embedded in NIE**—Lets you enable, configure, commission, archive data, monitor, command, and perform system diagnosis from any device by using a web browser, without the need for separate workstation software.
- **Site Director Function in One NIE or One NAE, or in an Application and Data Server (ADS) for Large Installations**—Allows you to access all data on one site through one device. The Site Director coordinates the display of data from multiple NIE and NAE devices for easy navigation through the entire site.
- **Site Management Portal System Configuration Software Embedded in NIE**—Gives you password-protected access to system configuration, monitoring, commanding, and diagnosis from any device with web browser software without the need for separate workstation software.
- **Scalable System Integration Solution for Integrating and Migrating Metasys N1 Networks**—Integrates N1 devices in one building, a network of small buildings, or multiple N1 networks in a large building complex, providing new technology while protecting existing investment using the scalable line of NIEs.

- **Mapping Capability of N1 Data Types Including Analog, Binary, Multistate and Control System Objects, and Access to Scheduling Feature**—Allows you to perform all day-by-day operations for an integrated N1 network from the web-enabled *Metasys* Site Management Portal user interface.
- **Trending, Totalization, and Alarm Functions Automatically Regenerated in the *Metasys* System**—Protects functionality and data recording capabilities, and fully integrates processing, presentation, and storage of N1 network data in the web-enabled system.

Flexible Networking

The NIE has multiple connection port options, enabling you to integrate one or several Network Communication Module (NCM) devices that reside on an N1 network and build an extremely flexible network at the automation and enterprise level of your system.

Web Browser Access

You view and access an N1 network via the NIE with a supported web browser on a desktop, laptop, or any other type of computer platform. The computer does not require any special workstation software. The web browser accesses the NIE directly over the IP network, or via the Internet or public telephone service.

IP Ethernet Network

Network Integration Engines (NIEs) connect directly to an IP Ethernet network running at 10, 100 Mbps, or 1 Gbps. Multiple NIEs communicate with each other and with NAEs over the network. You can designate one NIE, Network Automation Engine (NAE), or ADS as the Site Director. The device is then the point of UI access to the site network.

Authorized users log on to the Site Director via a supported browser to access the entire *Metasys* system for the site. Data transmission on the network uses standard IT protocols, services, and formats. The NIE supports domain name system (DNS).

Networks in different buildings may be interconnected using standard WAN technologies and network service providers. Transmission speed depends on the technology used.

Remote NIE

The NIE can be accessed locally by connecting a computer to the NIE Ethernet port or to one of the NIE serial ports. Remote access can be set up over the Internet using an ISP line or over the public telephone network using a modem and Point-to-Point Protocol (PPP). Several NIE models have an optional internal modem; other NIE models support an external analog modem on the NIE USB port.

Application and Data Server (ADS)

The ADS is an optional software package running on a server platform, which provides storage of the system configuration database, trend logs, alarm logs, and audit trails.

An ADS can also be configured as the Site Director to allow more concurrent users and coordinate access to all components on a site via a web browser connected over the network, Internet, or telephone line via dial-up communication. Refer to the *Application and Data Server (ADS) and Extended Application and Data Server (ADX) Product Bulletin (LIT-1201525)* for more information about ADSs.

Engineering Workstation on the N1 Network

At least one operator workstation (OWS) should remain on the integrated N1 network as an engineering workstation for managing and archiving the N1 network system configuration database. You may continue to use M5 Workstation/OWS on the *Metasys* N1 network for operator functions as functions transfer to the NIE and the new system. When the transfer is complete, the integrated N1 network can be controlled and monitored via the *Metasys* UI.

Integration Capabilities

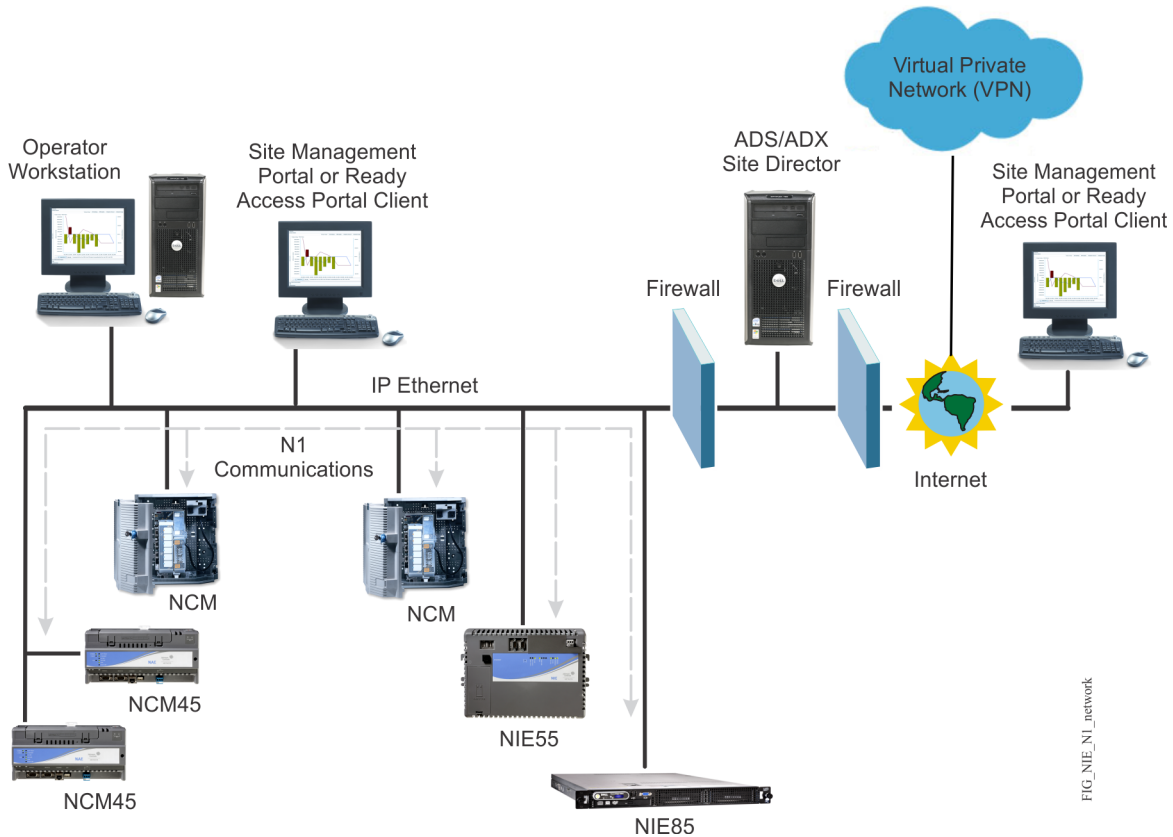
The NIE55 supports the integration of one or more NCMs on an Ethernet-based *Metasys* N1 network. The NIE55 supports approximately 5,000 objects on an N1 network. If a network has more than 5,000 objects, consider using an NIE85, which can support up to 25,000 objects. (You can also use multiple NIE55s to integrate large N1 networks or multiple N1 networks with more than 5,000 objects.)

Data is exchanged between NIEs, NAEs, and NCEs on the network; displayed on web browsers; and stored in an ADS. These features allow your N1 network and the *Metasys* system to operate as one virtual control network.

Automation Level Communication

Each NIE shares data and has access to information on all other NIEs, NCEs, and NAEs on the IP network. The NIEs, NCEs, and NAEs use this peer-to-peer communication to coordinate the overall functions of the building control system at the automation level.

Figure 2: *Metasys* N1 Networks



Metasys N1 Network Communication

The NIE communicates over the IP Ethernet network with the NCM devices on the N1 network. The NIE is configured as a *Metasys* N1 node and stores N1 network global data, including a list of NCM devices and system names.

The NIE continuously monitors the integrated N1 network just like a workstation. This monitoring allows the NIE to efficiently integrate NCM devices into the *Metasys* system.

Integrating N1 Data

The *Metasys* N1 Integration solution provides online and offline options for generating a table of N1 point objects. These N1 point objects are mapped to the NIE and displayed in the system navigation tree on the Site Management Portal user interface. The following N1 object types can be mapped to the *Metasys* system through the NIE:

- analog data (AD)
- Active Interconnect (AI)
- analog output digital object (AOD)
- analog outputs (AOs)
- analog output setpoint (AOS)
- binary data (BD)
- binary input (BI)

- binary output (BO)
- message storage device (MSD)
- multistate input (MSI)
- multistate object output (MSO)
- Control System (CS)

The N1 migration process leaves the N1 object configurations unchanged.

Migrating N1 Features

The N1 Integration solution also provides options to automatically generate features configured for data point objects in the N1 network system as data object extensions in the NIE. The N1 Integration solution supports the following features:

- alarms and alarm limit parameters
- point history trend data collection
- totalization of events, runtime, and analog rate value

These feature generation options leave the existing N1 feature configurations unchanged.

The *Metasys* system also provides a new Site Management Portal user interface, which allows you to view and edit existing N1 schedules and calendars.

N1 Network Data Import Utility

The N1 network data import utility is part of the System Configuration Tool (SCT) and facilitates the N1 Integration process in offline mode. The utility reads the N1 point object configuration from a *Metasys* OWS file and converts this information to an XML-based data structure, which can be used to automatically set up the table of N1 point objects in the NIE. This utility also imports the N1 Personal Computer (PC) Groups for generating a similar display structure in the navigation tree of the web-enabled *Metasys* UI, as shown on the OWS.

Automatic Discovery

The table of N1 point objects can also be generated online by the NIE. The NIE uses the N1 global data to penetrate the NCM database and automatically populate the navigation tree with the objects it finds. The user can then confirm or delete each point object for permanent mapping into the NIE database. This feature also helps keep the NIE synchronized with any changes that you make on the integrated *Metasys* N1 network.

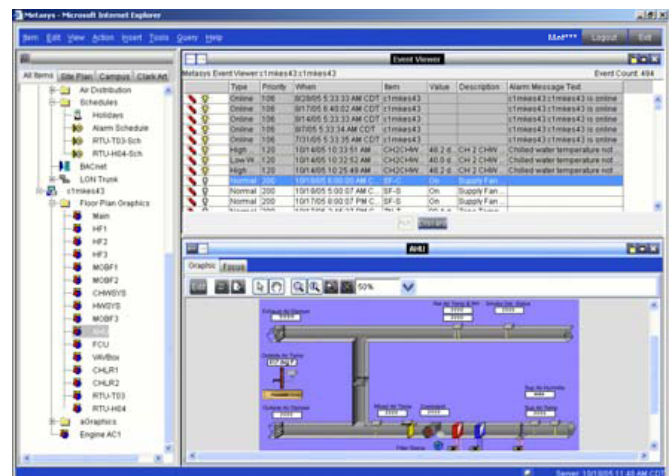
When mapping N1 point objects to the NIE database, the automatic discovery process also generates alarm, trend, and totalization extensions to the mapped objects that match the parallel features in the N1 network.

Software for Efficient Building Operation

NIEs ship with the latest version of the *Metasys* system software, which provides the following features:

- **Metasys Site Management Portal User Interface** provides data and graphic screens to supported web browsers. Authorized users simply log in to the NIE from the web browser to access the Site Management Portal. This embedded user interface is ideal for smaller networks and remote locations where a dedicated computer platform to support a user interface is not required.
- **System Security** enables an NIE to recognize legitimate users with valid user IDs and passwords at the Site Management Portal user interface. User access data is encrypted in the transmission and in the NIE database. The system administrator manages user profiles, authorization levels, user ID, password, and specific NIE data access privileges in each user account.

Figure 3: *Metasys* Site Management Portal Screen



- **Monitoring and Control** works with all the mechanical and electrical systems in a typical building by collecting data from the field devices and then coordinating and sending the required commands to the controlled equipment at the required priority.
- **Transaction Recording** audits and logs all user actions performed through the NIE.
- **Alarm and Event Processing** enables NIEs to send alarm and event messages to web browsers, pagers, email servers, Network Management Systems, and serial printers, as well as store and view alarm and event logs on the NIE and transfer it to an ADS.
- **Historical Trend Data** is collected by NIEs for any monitored value at user-defined intervals, or trending

can be based on Change-of-Value. You can use trend logs to analyze building system performance and locate system problems. NIE trend logs can be transferred to the ADS at defined intervals or when the NIE logs are full.

- **Totalization Data** allows you to monitor energy (and other consumables) use and generate cost reports to support utility cost reductions, and also provides data for service, maintenance, and early identification of building system problems.
- **Trend Studies** allows you to view multiple trend extensions in a single view to facilitate monitoring and troubleshooting your *Metasys* site.
- **Scheduling** allows you to define occupancy periods and start and stop times for mechanical or electrical equipment. Operating parameters can be set according to time of day, day/days of the week, holiday, or for calendar dates.
- **Network-Wide System Interlocking** enables NIEs to collect field controller data, make logical comparisons, and issue relevant commands to other field controllers anywhere on the network.
- **Optimal Start** automatically determines the best time to start heating and cooling systems to ensure that the facility is ready for occupants. It adjusts to seasonal variations and reduces energy use.
- **Demand Limiting Load Rolling (DLLR)** monitors energy meters for electricity, gas, steam, or water, and automatically sheds equipment loads according to user-defined levels. Demand Limit helps manage utility demand charges. Load Rolling controls equipment operating levels to reduce total energy consumption. Comfort overrides prioritize equipment shedding.
- **Database Configuration Management** allows you to define the *Metasys* system configuration and database offline for download to the NIE. All the required database configuration software resides on the NIE or SCT. You do not need a copy of the database on your local client computer to make authorized changes.

All the software required for the *Metasys* N1 network configuration and the configuration of N2 devices connected to NCMs continues to reside on an OWS. The N1 network configuration is normally complete and requires only minor changes after the N1 network has been integrated through an NIE.

Hardware Features

NIE55

We designed the NIE to provide industrial level reliability for the building controls market.

The NIE55 Series features:

- industrial single board computer (SBC)
- Johnson Controls® OEM Version of Microsoft® Windows® Embedded Standard 2009 operating system
- nonvolatile solid-state flash memory to store all programs and data
- battery backup to keep the NIE online and operating during short power outages, and to transfer data from dynamic random access memory (DRAM) into flash memory when the power supply fails
- real-time clock with battery backup
- status-indicating LEDs for power, communications, and fault detection allow easy troubleshooting
- optional internal modem
- removable terminal block plugs for 24 VAC power
- standard 9-pin sub-D connectors for RS232C Serial ports A and B
- standard USB ports for USB Serial Ports A and B
- 6-pin modular telephone line port for internal modem
- RJ45 port for Ethernet connection

Software Features

NIE85

The NIE85 software has most of the same functions and capabilities as the NIE55 and features a scalable design. The NIE85 integrates large numbers of BACnet IP devices into your *Metasys* network.

Note: The NIE85 is available in software only.

The NIE85 supports virtual environments, including VMWare® and Microsoft Hyper-V™. Refer to the for more information.

The NIE85 does **not** support:

- BACnet MS/TP field controllers directly
- N2 Bus networks
- LONWORKS networks
- dial-out to an ADS/ADX

- device Reset command in the *Metasys* Site Management Portal UI
- upgrade using the NAE/NIE Update Tool

Consider the following when adding an NIE85. The NIE85:

- supports up to four supervisory devices when configured as a Site Director
- is limited to ten simultaneous users
- should use an uninterruptible power supply (UPS) for orderly shutdown in the event of sudden power loss. Order the UPS separately.

Conclusion

The *Metasys* N1 Network Integration solution affirms Johnson Controls as a leader in the building automation systems industry. The NIE shows the commitment to provide an effective and innovative way to migrate existing *Metasys* N1 systems to benefit from new technologies that provide even more opportunities for the efficient management of buildings.

The integration of IT and Internet standards into the NIE merges the benefits of global communications and building automation controls into one system. Web browser-based access from any location is a key to the effective use of the automation network.

The *Metasys* system continues to be the network integration solution in buildings and is now extended to connect to the business and communication network systems of the enterprise. The NIE and the *Metasys* web-enabled networks are wise investments that yield returns to the building owner and operator well into the future.

Repair Information

If the NIE fails to operate within its specifications, replace the unit. For a replacement NIE, contact the nearest Johnson Controls representative.

Ordering Information

Table 1: NIE55-2 Series Ordering Information

Product Code Number ¹	Description
MS-NIE55xx-3 (Base Features of Each NIE55)	NIE Network Integration Engines: Requires a 24 VAC power supply. Each model includes two RS-232-C serial ports, two USB serial ports, one Ethernet port, and one MS-BAT1010-0 Data Protection Battery. Supports an IP Ethernet network.
MS-NIE5510-2	Supports N1 network migrations
MS-NIE5511-2	Supports N1 network migrations, includes an internal modem

- ¹ Some models are also available in a Buy American version (add a G after the code number). For the European version, add an E after the code number.

Table 2: NIE55-3 Series Ordering Information

Product Code Number ¹	Description
MS-NIE55xx-3 (Base Features of Each NIE55)	NIE Network Integration Engines: Requires a 24 VAC power supply. Each model includes two RS-232-C serial ports, two USB serial ports, one Ethernet port, and one MS-BAT1010-0 Data Protection Battery. Supports an IP Ethernet network.
MS-NIE5510-3	Supports N1 network migrations
MS-NIE5511-3	Supports N1 network migrations, includes an internal modem

- ¹ Some models are also available in a Buy American version (add a G after the code number). For the European version, add an E after the code number.

Table 3: NxE5xx-1 Series Windows Embedded Standard 2009 Image Files

Product Code Number	Description
MS-NxE5-1WES-10	10 Licenses—operating system upgrade from Windows XP Embedded to Windows Embedded Standard 2009
MS-NxE5-1WES-25	25 Licenses—operating system upgrade from Windows XP Embedded to Windows Embedded Standard 2009
MS-NxE5-1WES-50	50 Licenses—operating system upgrade from Windows XP Embedded to Windows Embedded Standard 2009

Note: These product codes apply to NxE55-1 engines only. They provide a paid license upgrade from the WindowsXP® embedded operating system to the WES2009 embedded operating system.

Table 4: NIE85 Series Ordering Information

Product Code Number	Description
MS-NxE85SW-0 ¹	New NxE85 software; for new installations/projects
MS-NxE85SW-6 ¹	Upgrade NxE85 software; for existing NxE85 engines

¹ Standard NIE85 models support 10,000 objects; an expansion upgrade is available to support an additional 15,000 objects.

Table 5: NIE Accessories Ordering Information

Product Code Number	Description
MS-15KUPG-0	15,000 object expansion upgrade for NxE85 (one expansion only per NxE85)
MS-MULTENGSW-6	Contains ToggleTunnel utility for converting an NAE55/NIE55 to an NAE55 model with the N2 Tunneling features enabled
MS-RAP-0	Ready Access Portal Server provides a user interface that is a natural, complementary extension of the <i>Metasys</i> Site Management Portal.
MS-EXPORT-0	Export Utility extracts historical trend, alarm, and audit data from the system and presents the historical data in a variety of formats.
MS-BAT1010-0	Replacement data protection battery for NAE55 and NIE55; rechargeable gel cell battery with a typical life of 3 to 5 years at 21°C (70°F)
AS-XFR100-1	Power transformer (Class 2, 24 VAC, 92 VA maximum output), with enclosure
AS-XFR010-1	Power transformer (Class 2, 24 VAC, 92 VA maximum output), no enclosure
(OEM Part No.) SC450RM1U	Recommended Uninterruptible Power Supply for NIE85 Models: Smart-UPS SC 450 VA, 280 W 120 VAC input/output with NEMA 5-15R output connections

Technical Specifications

Table 6: NIE55xx-2

Power Requirement	Dedicated Nominal 24 VAC, Class 2 Power Supply (North America), safety extra-low voltage (SELV) Power Supply (Europe), at 50/60 Hz (20 VAC Minimum to 30 VAC Maximum)
Power Consumption	50 VA Maximum
Ambient Operating Conditions	0 to 50°C (32 to 122°F), 10 to 90% RH, 30°C (86°F) maximum dew point
Ambient Storage Conditions	-40 to 70°C (-40 to 158°F), 5 to 95% RH, 30°C (86°F) maximum dew point
Data Protection Battery	Supports data protection on power failure. Rechargeable gel cell battery: 12 V, 1.2 Ah, with a typical life of 3 to 5 years at 21°C (70°F); Product Code Number: MS-BAT1010-0
Clock Battery	Maintains real-time clock through a power failure. Onboard cell; typical life 10 years at 21°C (70°F)

Table 6: NIE55xx-2

Processor	1.6 GHz Intel® Atom® processor N270
Memory	4 GB (2 GB partitioned) flash nonvolatile memory for operating system, configuration data, and operations data storage and backup 1 GB synchronous dynamic random access memory (SDRAM) for operations data dynamic memory
Operating System	Johnson Controls OEM Version of Microsoft Windows Embedded Standard 2009
Network and Serial Interfaces	One Ethernet port; connects at 10 Mbps, 100 Mbps, or 1 Gbps; 8-pin RJ-45 connector Two RS-232-C serial ports, with standard 9-pin sub-D connectors, that support all standard baud rates Two USB serial ports; standard USB connectors support an optional, user-supplied external modem Options: One telephone port for internal modem; up to 56 kbps; 6-pin modular connector
Housing	Plastic housing with internal metal shield Plastic material: ABS + polycarbonate UL 94-5VBProtection: IP20 (IEC 60529)
Mounting	On flat surface with screws on four mounting feet or on dual DIN rail
Dimensions(Height x Width x Depth)	226 x 332 x 96.5 mm (8.9 x 13.1 x 3.8 in.) including mounting feet minimum space for mounting NIE: 303 x 408 x 148 mm (12.0 x 16.1 x 5.8 in.)
Shipping Weight	4.15 kg (9.15 lb)
Compliance 	United States: UL Listed, File E107041, CCN PAZX, UL 916, Energy Management Equipment; FCC Compliant to CFR47, Part 15, Subpart B, Class A
	Canada: UL Listed, File E107041, CCN PAZX7, CAN/CSA C22.2 No. 205, Signal Equipment; Industry Canada Compliant, ICES-003
	Europe: CE Mark – Johnson Controls, Inc. declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive.
	Australia and New Zealand: RCM Mark, Australia/NZ Emissions Compliant

Table 7: NIE55xx-3

Power Requirement	Dedicated nominal 24 VAC, Class 2 power supply (North America), SELV power supply (Europe), at 50/60 Hz (20 VAC minimum to 30 VAC maximum)
Power Consumption	50 VA maximum
Ambient Operating Conditions	0 to 50°C (32 to 122°F); 10 to 90% RH, 30°C (86°F) maximum dew point
Ambient Storage Conditions	-40 to 70°C (-40 to 158°F); 5 to 95% RH, 30°C (86°F) maximum dew point
Data Protection Battery	Supports data protection on power failure. Rechargeable gel cell battery: 12 V, 1.2 Ah, with a typical life of 3 to 5 years at 21°C (70°F); Product Code Number: MS-BAT1010-0
Clock Battery	Maintains real-time clock through a power failure. Onboard cell; typical life 10 years at 21°C (70°F)
Processor	1.46 GHz Intel® Atom™ Bay Trail E3815 processor
Memory	16 GB flash nonvolatile memory for operating system, configuration data, and operations data storage and backup. 4 GB DDR3 SDRAM for operations data dynamic memory
Operating System	Johnson Controls OEM Version of Microsoft Windows Embedded Standard 7 with SP1 (WES7)

Table 7: NIE55xx-3

Network and Serial Interfaces	One Ethernet port; connects at 10 Mbps, 100 Mbps, or 1 Gbps; 8-pin RJ-45 connector Two RS-232-C serial ports, with standard 9-pin sub-D connectors, that support all standard baud rates Two USB serial ports; standard USB connectors support an optional, user-supplied external modem Options: One telephone port for internal modem; up to 56 kbps; 6-pin modular connector
Housing	Plastic housing with internal metal shield Plastic material: ABS + polycarbonate; Protection: IP20 (IEC 60529)
Mounting	On flat surface with screws on four mounting feet or on dual 35 mm DIN rail
Dimensions(Height x Width x Depth)	226 x 332 x 96.5 mm (8.9 x 13.1 x 3.8 in.) including mounting feet Minimum space for mounting: 303 x 408 x 148 mm (12.0 x 16.1 x 5.8 in.)
Shipping Weight	4.15 kg (9.15 lb)
Compliance	United States: UL Listed, File E107041, CCN PAZX, UL 916, Energy Management Equipment, FCC Compliant to CFR47, Part 15, Subpart B, Class A Canada: UL Listed, File E107041, CCN PAZX7, CAN/CSA C22.2 No. 205, Signal Equipment, Industry Canada Compliant, ICES-003 Europe: CE Mark - Johnson Controls, Inc. declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive. Australia and New Zealand: RCM Mark, Australia/NZ Emissions Compliant BACnet International: BACnet Testing Laboratories™ (BTL) 35-2004 Listed BACnet Building Controller (B-BC)

**Table 8: Nx E85 Software System Recommendations for Installation/Upgrade**

Product Code	MS-NxE85SW-0: Nx E85 software for 10,000 objects (new projects only software)
Recommended Computer Platform	Intel® Xeon® E5506, 2.13 GHz, 4 MB Cache 2 x 160 GB 7.2K RPM , 8.9 cm (3.5 in.) Cabled 3 Gbps, RAID 1 configuration with add-in SAS6/iR (SATA/SAS Controller)
Recommended Memory	2 GB RAM minimum
Hard Disk	160 GB minimum
Supported Operating Systems and Software	Windows Server® 2012 R2 Editions Microsoft .NET Framework Version 3.5 SP1 Windows Server 2012 Editions Microsoft .NET Framework Version 3.5 SP1 Windows Server 2008 R2 Standard and Enterprise Editions with SP1 Microsoft .NET Framework Version 3.5 SP1 Windows Server 2008 R2 Web Edition with SP1 Microsoft .NET Framework Version 3.5 SP1

Table 8: NxES5 Software System Recommendations for Installation/Upgrade

Supported Operating Systems for Metasys Client Computer	Windows® 8.1 Pro and Windows 8.1 Enterprise Editions (64-bit) Windows 8 Pro and Windows 8 Enterprise Editions (64-bit) Windows 7 Professional, Enterprise, and Ultimate Editions with SP1 (32-bit or 64-bit) Apple® OS X® 10.8 Mountain Lion Apple OS X 10.9 Mavericks Note: Apple operating systems are supported for Metasys client computers only. Note: In OS X, you cannot view Graphics+ graphics in the Site Management Portal UI.
Internal Optical Drive	DVD ROM, SATA
Recommended Antivirus Software	Symantec Endpoint Protection Version 12
Supported Web Browser Software for Metasys Client Computers	Windows Internet Explorer® versions 8, 9, 10, and 11 Note: In Internet Explorer 11, select the Use Microsoft compatibility lists option, found under Tools > Compatibility View Settings, to ensure that websites appear and function correctly. Apple Safari® version 6.0.5 and 7.0 (Other browsers, such as Google® Chrome™ and Mozilla® Firefox®, may also be used but are not fully supported.) Note: You use the web browser to download the Launcher application. After you install the Launcher application, you use the Launcher, not the web browser, to log in to Metasys Site Management Portal (SMP) UI.
Supported Virtual Environments	Microsoft Hyper-V™, VMware®
Network Communication	Network Interface: Single 1 Gbps Ethernet network interface card 10/100/1000 Mbps (100 Mbps or better recommended)
Recommended Data Protection	UPS: APC® Smart-UPS SC 450 VA, 280 W, 120 VAC input/output, National Electrical Manufacturers' Association (NEMA) 5-15R output connections, OEM Part No. SC450RM1U

The performance specifications are nominal and conform to acceptable industry standard. For application at conditions beyond these specifications, consult the local Johnson Controls® office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

North American Emissions Compliance

United States Emissions Compliance

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 this 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 may cause harmful interference, in which case the users will be required to correct the interference at their own expense.

Canadian Emissions Compliance

This Class (A) digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe (A) respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Single Point of Contact: NA/SA Single Point of Contact:

JOHNSON CONTROLS
WESTENDHOF 3
45143 ESSEN
GERMANY

JOHNSON CONTROLS
507 E MICHIGAN ST
MILWAUKEE WI 53202
USA

APAC Single Point of Contact:

JOHNSON CONTROLS
C/O CONTROLS PRODUCT
MANAGEMENT
NO. 22 BLOCK D NEW DISTRICT
WUXI JIANGSU PROVINCE 214142
CHINA



Building Efficiency
507 E. Michigan Street, Milwaukee, WI 53202

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