

MS-NIE29xx-0E / MS-NIE39xx-2E / MS-NIE49xx-2E / MS-NIE59xx-1E

## Network Integration Engine (NIEx9) for 3rd Party Integrations

### Description

Network Integration Engines (NIEx9s) for 3<sup>rd</sup> party integrations enable Internet Protocol (IP) connectivity and Web-based access to Metasys® Building Management Systems (BMSs).

NIEx9s leverage standard building management communication technologies, including BACnet® protocol, LONWORKS® network, and N2 Bus protocol, Modbus and 3<sup>rd</sup> party proprietary protocols to monitor and supervise a wide variety of Heating, Ventilating, and Air Conditioning (HVAC); lighting; security; fire; electrical and thermal measuring and access control equipment.

NIEx9s provide comprehensive equipment monitoring and control, scheduling, alarm and event management, energy management, data exchange, data trending, and data storage.

NIEx9s feature an embedded Site Management Portal user interface, support multiple concurrent Web browser sessions with password and permission access control, and provide the protection of industry standard Information Technology (IT) security.

NIE59 models support a comprehensive set of supervisory features and functions for large facilities and technically advanced buildings and complexes.

The NIE39/NIE49 models enable cost effective NAE connectivity and control in

smaller facilities, and can extend NIEx9 supervisory functions in larger facilities.

The NIE29 models enable compact and combined solution including supervisory and control capacity. It can be used in smaller facilities where an “all-in-one” (supervisory, control and integration) platform is required.

Refer to the Network Integration Engine for 3<sup>rd</sup> Party Integrations Product Bulletin (LIT-SIS0011) for important product application information.

### Features

- communication using commonly accepted IT standards at the automation and enterprise level Web-based user interface
- Site Director function
- support for Web services at the automation network level
- user interface and online system
- configuration software embedded in NAE supervision of field controller networks including N2 Bus, LONWORKS network, BACnet Master-Slave/Token-Passing (MS/TP), BACnet IP devices, Modbus RTU, Modbus IP and other 3<sup>rd</sup> party protocols
- multiple connection options for data access

### Availability

The Network Integration Engines (NIEx9s) for 3<sup>rd</sup> party integrations solution is valid only for Europe and Asia.



NIE29



NIE39/NIE49



NIE59

### Selection Charts

#### NIE29

Product Code Number	Description
<b>MS-NIE29xx-x (Base Features of Each NIE29)</b>	NIE29 Network Integration Engines: Requires a 24 VAC power supply and includes one RS-232-C serial port, one RS-485 optically isolated SA Bus port, one USB serial port, one Ethernet port, and an MS-BAT1020-0 Data Protection Battery. Each NIE29 Series model has 33 integral I/O points and supports up to 128 additional I/O points on the SA Bus. NOTE: Only one port can be defined for 3rd party integration. The other ports have to be defined in order to use standard protocols (N2, BACnet or LON)
<b>MS-NIE2910-0E</b>	Supports one 3rd party trunk (RS-232 or Ethernet TCP/IP). The number of devices depends on protocol. Supports one N2 Bus trunk with up to 32 N2 devices.
<b>MS-NIE2916-0E</b>	Supports one 3rd party trunk (RS-232 or Ethernet TCP/IP). The number of devices depends on protocol. Supports one N2 Bus trunk with up to 32 N2 devices. Includes integral display screen
<b>MS-NIE2920-0E</b>	Supports one 3rd party trunk (RS-232 or Ethernet TCP/IP). The number of devices depends on protocol. Supports one LONWORKS Network trunk with up to 32 LONWORKS devices.
<b>MS-NIE2926-0E</b>	Supports one 3rd party trunk (RS-232 or Ethernet TCP/IP). The number of devices depends on protocol. Supports one LONWORKS Network trunk with up to 32 LONWORKS devices. Includes integral display screen
<b>MS-NIE2960-0E</b>	Supports one 3rd party trunk (RS-232 or Ethernet TCP/IP). The number of devices depends on protocol. Supports one FC Bus trunk with up to 32 MS/TP devices.
<b>MS-NIE2966-0E</b>	Supports one 3rd party trunk (RS-232 or Ethernet TCP/IP). The number of devices depends on protocol. Supports one FC Bus trunk with up to 32 MS/TP devices. Includes integral display screen

## Network Integration Engine (NIE<sub>x</sub>) for 3<sup>rd</sup> Party Integrations (Continued)

### NIE39

Product Code Number	Description
<b>MS-NIE39xx-x (Base Features of Each NIE39)</b>	NIE39 Network Integration Engines: Requires a 24 VAC power supply. Each model includes two RS-232-C serial port, one USB serial port, one Ethernet port, and an MS-BAT1020-0 Data Protection Battery. NOTE: Only one port can be defined for 3 <sup>rd</sup> party integration. The other ports have to be defined in order to use standard protocols (N2, BACnet or LON)
<b>MS-NIE3910-2E</b>	Supports one 3 <sup>rd</sup> party trunk (RS-232 or Ethernet TCP/IP). The number of devices depends on protocol. Supports up to 50 devices on the N2 or BACnet MS/TP trunk.
<b>MS-NIE3920-2E</b>	Supports one 3 <sup>rd</sup> party trunk (RS-232 or Ethernet TCP/IP). The number of devices depends on protocol. Supports one LONWORKS Network trunk with up to 64 LONWORKS devices.

### NIE49

Product Code Number	Description
<b>MS-NIE49xx-x (Base features of each NIE49)</b>	NIE49 Network Integration Engines: Requires a 24 VAC power supply. Each model includes two RS-232-C serial port, one USB serial port, one Ethernet port, and an MS-BAT1020-0 Data Protection Battery. NOTE: Only one port can be defined for 3 <sup>rd</sup> party integration. The other ports have to be defined in order to use standard protocols (N2, BACnet or LON)
<b>MS-NIE4910-2E</b>	Supports one 3 <sup>rd</sup> party trunk (RS-232 or Ethernet TCP/IP). The number of devices depends on protocol. Supports up to 100 devices on the N2 or BACnet MS/TP trunk.
<b>MS-NIE4920-2E</b>	Supports one 3 <sup>rd</sup> party trunk (RS-232 or Ethernet TCP/IP). The number of devices depends on protocol. Supports one LONWORKS Network trunk with up to 128 LONWORKS devices.

### NIE59

Product Code Number	Description
<b>MS-NIE59xx-x (Base features of each NIE59)</b>	NIE59 Network Integration Engines: Requires a 24 VAC power supply. Each model includes two RS-232-C serial ports, two USB serial ports, two RS-485 ports, one Ethernet port, and one MS-BAT1010-0 Data Protection Battery. Supports up to 100 devices on each N2 or BACnet MS/TP trunk. NOTE: Only one port can be defined for 3 <sup>rd</sup> party integration. The other ports have to be defined in order to use standard protocols (N2, BACnet or LON)
<b>MS-NIE5960-1E</b>	Supports one 3 <sup>rd</sup> party trunk (RS-232 or Ethernet TCP/IP). The number of devices depends on protocol. Supports up to 100 devices on the N2 or BACnet MS/TP trunk.
<b>MS-NIE5920-1E</b>	Supports one 3 <sup>rd</sup> party trunk (RS-232 or Ethernet TCP/IP). The number of devices depends on protocol. Supports up to 100 devices on the N2 or BACnet MS/TP trunk and one LONWORKS Network trunk with up to 255 LONWORKS devices.

### Accessories

Product Code Number	Description
<b>MS-BAT1010-0</b>	Replacement data protection battery for NIE59. Rechargeable gel cell battery: 12 V, 1.2 Ah, with a typical life of 3 to 5 years at 21°C (70°F)
<b>MS-BAT1020-0</b>	Replacement data protection battery for NIE29, NIE39, and NIE49. Rechargeable NiMH battery: 3.6 V 500 mAh, with a typical life of 10 years at 21°C (70°F)

## Network Integration Engine (NIE9) for 3rd Party Integrations (Continued)

### Technical Specifications

NIE29	
<b>Power Requirement</b>	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)
<b>Power Consumption</b>	25 VA maximum Note: The 25 VA rating does <b>not</b> include any power supplied by the NIE9 to devices connected at the NIE9 Binary Outputs (BOs). BO devices connected to and powered by an NIE9 can require an additional 125 VA (maximum).
<b>Ambient Operating Conditions</b>	0 to 50°C (32 to 122°F); 10 to 90% RH, 30°C (86°F) maximum dew point
<b>Ambient Storage Conditions</b>	-40 to 70°C (-40 to 158°F); 5 to 95% RH, 30°C (86°F) maximum dew point
<b>Data Protection</b>	Supports data protection on power failure. Rechargeable NiMH battery: 3.6 VDC 500 mAh, with a typical life of 5 to 7 years at 21°C (70°F); Product Code Number: MS-BAT1020-0
<b>Processor</b>	192 MHz Renesas™ SH4 7760 RISC processor
<b>Memory</b>	128 MB Flash nonvolatile memory for operating system, configuration data, and operations data storage and backup 128 MB Synchronous Dynamic Random Access Memory (DRAM) for operations data dynamic memory
<b>Operating System</b>	Microsoft® Windows® CE embedded
<b>Network and Serial Interfaces</b>	One Ethernet port; 10/100 MB; 8-pin RJ-45 connector One optically isolated RS-485 port SA Bus; with a pluggable and keyed 4-position terminal block (on all NIE29 models) One optically isolated RS-485 port; with a pluggable and keyed 4-position terminal block (available on NIE2910, NIE2916, NIE2960 and NIE2966 models only) One LONWORKS port; FTT10 78 Kbps; pluggable, keyed 3-position terminal block (available on NIE2920 and NIE2926 models only) One RS-232-C serial port with standard 9-pin sub-D connector that supports standard baud rates: 9600, 19.2k, 38.4k, or 76.8k baud; with pluggable keyed 4-position terminal block One USB serial port with standard USB connector
<b>Housing</b>	Plastic housing Plastic material: ABS and polycarbonate Protection: IP20 (IEC60529)
<b>Mounting</b>	On flat surface with screws on three mounting clips or a single 35 mm DIN rail
<b>Dimensions (Height x Width x Depth)</b>	155 x 270 x 64 mm (6.1 x 10.6 x 2.5 in.) Minimum mounting space required: 250 x 370 x 110 mm (9.8 x 14.6 x 4.3 in.)
<b>Shipping Weight</b>	1.2 kg (2.7 lb)
<b>Compliance</b>	<b>Europe:</b> CE Mark, EMC Directive 2004/108/EEC, in accordance with EN 61000-6-3 Generic Emission Standard for Residential and Light Industry and EN 61000-6-2 Generic Immunity Standard for Heavy Industrial Environment <b>BACnet International:</b> BACnet Testing Laboratories™ (BTL) 135-2004 Listed BACnet Building Controller (B-BC)

## Network Integration Engine (NIEx9) for 3rd Party Integrations (Continued)

<b>NIE39 and NIE49</b>	
<b>Power Requirement</b>	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)
<b>Power Consumption</b>	25 VA maximum
<b>Ambient Operating Conditions</b>	0 to 50°C (32 to 122°F); 10 to 90% RH, 30°C (86°F) maximum dew point
<b>Ambient Storage Conditions</b>	-40 to 70°C (-40 to 158°F); 5 to 95% RH, 30°C (86°F) maximum dew point
<b>Data Protection</b>	Supports data protection on power failure. Rechargeable NiMH battery: 3.6 VDC 500 mAh, with a typical life of 5 to 7 years at 21°C (70°F); Product Code Number: MS-BAT1020-0
<b>Processor</b>	192 MHz Renesas™ SH4 7760 RISC processor
<b>Memory</b>	128 MB Flash nonvolatile memory for operating system, configuration data, and operations data storage and backup 128 MB Synchronous Dynamic Random Access Memory (DRAM) for operations data dynamic memory
<b>Operating System</b>	Microsoft® Windows® CE embedded
<b>Network and Serial Interfaces</b>	<p>One Ethernet port; 10/100 Mbps; 8-pin RJ-45 connector</p> <p>One optically isolated RS-485 port; 9600, 19.2k, 38.4k, or 76.8k baud (depending on protocol); with a pluggable and keyed 4-position terminal block (available on NIE3901 and NIE4901 models only)</p> <p>One LONWORKS port; FTT10 78 Kbps; pluggable, keyed 3-position terminal block (available on NIE3920 and NAE4920 models only)</p> <p>Two RS-232-C serial port with standard 9-pin sub-D connector that supports standard baud rates: 9600, 19.2k, 38.4k, or 76.8k baud; with pluggable keyed 4-position terminal block (1 for Modbus RTU Bus and 1 for a diagnostic port)</p> <p>One USB serial port with standard USB connector that supports an optional, user-supplied external modem.</p>
<b>Housing</b>	<p>Plastic housing material: ABS + polycarbonate UL94-5VB</p> <p>Protection: IP20 (IEC 60529)</p>
<b>Mounting</b>	On flat surface with screws on three mounting clips or a single 35 mm DIN rail
<b>Dimensions (Height x Width x Depth)</b>	<p>131 x 270 x 62 mm (5.2 x 10.6 x 2.5 in.)</p> <p>Minimum space for mounting: 210 x 350 x 110 mm (8.3 x 13.8 x 4.3 in.)</p>
<b>Shipping Weight</b>	1.2 kg (2.7 lb)
<b>Compliance</b>	<p><b>Europe:</b> CE Mark, EMC Directive 2004/108/EC, in accordance with EN 61000-6-3 Generic Emission Standard for Residential and Light Industry and EN 61000-6-2 Generic Immunity Standard for Heavy Industrial Environment</p> <p><b>BACnet International:</b> BACnet Testing Laboratories™ (BTL) 135-2004 Listed BACnet Building Controller (B-BC)</p>

## Network Integration Engine (NIE9) for 3rd Party Integrations (Continued)

<b>NIE59</b>	
<b>Power Requirement</b>	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)
<b>Power Consumption</b>	50 VA maximum
<b>Ambient Operating Conditions</b>	0 to 50°C (32 to 122°F); 10 to 90% RH, 30°C (86°F) maximum dew point
<b>Ambient Storage Conditions</b>	-40 to 70°C (-40 to 158°F); 5 to 95% RH, 30°C (86°F) maximum dew point
<b>Data Protection</b>	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
<b>Clock Battery</b>	Maintains real-time clock through a power failure. Onboard cell; typical life 10 years at 21°C (70°F)
<b>Processor</b>	400 MHz Geode GX533
<b>Memory</b>	512 MB Flash nonvolatile memory for operating system, configuration data, and operations data storage and backup. 256 MB Synchronous Dynamic Random Access Memory (DRAM) for operations data dynamic memory.
<b>Operating System</b>	Microsoft Windows XP® embedded
<b>Network and Serial Interfaces</b>	One Ethernet port; 10/100 Mb; 8-pin RJ-45 connector (Metasys communications & Modbus TCP Bus) One optically isolated RS-485 ports; 9600, 19.2K, or 38.4K baud; pluggable and keyed 4 position terminal blocks One RS-232-C serial port, with standard 9-pin sub-D connector, that support all standard baud rates (used Modbus RTU Bus or diagnostic port) One LONWORKS port; FTT10 78 Kbps; pluggable, keyed 3-position terminal block (available on NIE5920 model only) Two USB serial ports, standard USB connectors, one operating as a diagnostic logging port.
<b>Housing</b>	Plastic housing with internal metal shield Plastic material: ABS + polycarbonate UL94-5VB Protection: IP20 (IEC 60529)
<b>Mounting</b>	On flat surface with screws on four mounting feet or on dual DIN rail
<b>Dimensions (Height x Width x Depth)</b>	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.)
<b>Shipping Weight</b>	2.9 kg (6.4 lb)
<b>Compliance</b>	<b>Europe:</b> CE Mark, EMC Directive 2004/108/EC, in accordance with EN 61000-6-3 Generic Emission Standard for Residential and Light Industry and EN 61000-6-2 Generic Immunity Standard for Heavy Industrial Environment <b>BACnet International:</b> BACnet Testing Laboratories™ (BTL) 135-2004 Listed BACnet Building Controller (B-BC)