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MS-NCE25xx-x

# Network Control Engine (NCE)

## Description

The Metasys® Network Control Engine (NCE) Series controllers combine the network supervisor capabilities and Internet Protocol (IP) network connectivity of a Network Automation Engine (NAE) with the Input/Output (I/O) point connectivity and direct digital control capabilities of a Field Equipment Controller (FEC). NCEs provide a cost-effective solution designed for integrating central plants and large built-up air handlers into your Metasys networks.

All NCE models provide IP Ethernet network connectivity, the Metasys Site Management Portal User Interface (UI), and the network supervisory capabilities featured on NAE35/NAE45 Series network automation engines.

All NCE models provide connectivity to and supervisory control of a specified field bus trunk with up to 32 field controllers. Depending on the model, an NCE25 supports either a BACnet® Master-Slave/Token-Passing (MS/TP) trunk, an N2 Bus trunk, or a LONWORKS® network trunk.

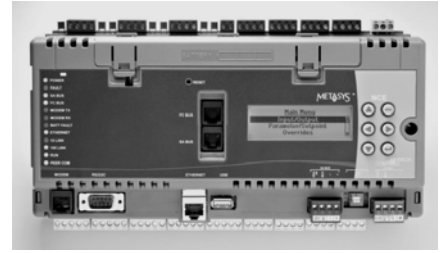
All NCE models feature 33 integral I/O points and a Sensor Actuator (SA) Bus, which allows you to increase the NCE's I/O field point capacity and integrate NS Series Network Sensors and Variable Frequency Drives (VFDs) into your NCE application.

Some NCE models feature an integral field controller display screen with a navigation keypad. Some NCE models feature an internal modem that supports standard dial-up capabilities.

Refer to the *Network Control Engine (NCE) Product Bulletin (LIT-12011283)* and the *NCE Technical Bulletin (LIT-12011267)* for important product application information.

## Features

- uses commonly accepted Information Technology (IT) standards at the automation and enterprise level
- Web-based user interface
- supervision of either an N2 Bus, LONWORKS network, or BACnet MS/TP bus field controller trunk



**MS-NCE2567-0**

- multiple connection options for data access
- integral field controller with 33 I/O points
- expandable I/O point capacity, NS sensor connectivity, and VFD control on field controller SA Bus

## Repair Information

If the NAE fails to operate within its specifications, refer to the *Network Control Engine (NCE) Product Bulletin (LIT-12011283)* for a list of repair parts available.

## Selection Chart

Product Code Number <sup>1</sup>	Description
<b>MS-NCE25xx-x (Base Features on Each NCE25)</b>	Each NCE25 Series model 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 NCE25 Series model has 33 integral I/O points and supports up to 128 additional I/O points on the SA Bus.
<b>MS-NCE2510-0</b>	Supports one N2 Bus trunk with up to 32 N2 devices.
<b>MS-NCE2511-0</b>	Supports one N2 Bus trunk with up to 32 N2 devices. Includes an internal modem.
<b>MS-NCE2516-0</b>	Supports one N2 Bus trunk with up to 32 N2 devices. Includes integral display screen.
<b>MS-NCE2517-0</b>	Supports one N2 Bus trunk with up to 32 N2 devices. Includes integral display screen and an internal modem.
<b>MS-NCE2520-0</b>	Supports one LONWORKS Network trunk with up to 32 LONWORKS devices.
<b>MS-NCE2521-0</b>	Supports one LONWORKS Network trunk with up to 32 LONWORKS devices. Includes an internal modem.
<b>MS-NCE2526-0</b>	Supports one LONWORKS Network trunk with up to 32 LONWORKS devices. Includes integral display screen.
<b>MS-NCE2527-0</b>	Supports one LONWORKS Network trunk with up to 32 LONWORKS devices. Includes integral display screen and an internal modem.
<b>MS-NCE2560-0</b>	Supports one FC Bus trunk with up to 32 MS/TP devices.
<b>MS-NCE2561-0</b>	Supports one FC Bus trunk with up to 32 MS/TP devices. Includes an internal modem.
<b>MS-NCE2566-0</b>	Supports one FC Bus trunk with up to 32 MS/TP devices. Includes integral display screen.
<b>MS-NCE2567-0</b>	Supports one FC Bus trunk with up to 32 MS/TP devices. Includes integral display screen and an internal modem.

1. All 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. For repair parts, add -700 after the code number.

## Accessories

Product Code Number (Part 1 of 2)	Description
<b>MS-BAT1020-0</b>	Replacement data protection battery for NAE35, NAE45, and NCE25. Rechargeable NiMH battery: 3.6 VDC 500 mAh, with a typical life of 10 years at 21°C (70°F)
<b>MS-BTCVT-1</b>	Wireless Commissioning Converter, with Bluetooth® technology, for configuring and commissioning the NCE field controller and the devices on the NCE SA Bus.
<b>MS-DIS1710-0</b>	Local Controller Display connects to NCE on SA Bus and provides menu display and navigation keypad for monitoring status and controlling parameters on the NCE's integral field controller. Note: A Local Controller Display does not operate on NCE models that have an integral controller display and navigation keypad.
<b>AS-XFR100-1</b>	Power transformer (Class 2, 24 VAC, 92 VA maximum output), with enclosure
<b>AS-XFR010-1</b>	Power transformer (Class 2, 24 VAC, 92 VA maximum output), no enclosure

## Network Control Engine (NCE) (Continued)

Product Code Number (Part 2 of 2)	Description
MS-RAP-0	Ready Access Portal Server, which provides a user interface that is a natural, complementary extension of the Metasys Site Management Portal UI. Note: This option is not necessary for sites that have an ADS/ADX as the Site Director because it is provided with the ADS/ADX solution.
MS-EXPORT-0	Metasys Export Utility, which extracts historical trend, alarm, and audit data from the system and presents the historical data in a variety of formats. Note: This option is not necessary for sites that have an ADS/ADX as the Site Director because it is provided with the ADS/ADX solution.

### Technical Specifications

NCE25	
<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 for NCE25 power only Note: The 25 VA rating does <b>not</b> include any power supplied by the NCE to devices connected at the NCE Binary Outputs (BOs). BO devices connected to and powered by an NCE 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 Battery</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>Processors</b>	Supervisory Controller: 192 MHz Renesas™ SH4 7760 RISC processor Field Controller: 20 MHz Renesas H8S2398 processor
<b>Memory</b>	Supervisory Controller: 128 MB Flash nonvolatile memory for operating system, configuration data, and operations data storage and backup and 128 MB Synchronous Dynamic Random Access Memory (SDRAM) for operations data dynamic memory Field Controller: 1 MB Flash and 1 MB Random Access Memory (RAM)
<b>Operating System</b>	Microsoft® Windows® CE embedded
<b>Network and Serial Interfaces (Depending on NCE model. See NCE25 Selection Chart for model information.)</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 NCE25 models) One optically isolated RS-485 port; with a pluggable and keyed 4-position terminal block (only on NCE25 models that support an N2 Bus or MS/TP Bus trunk) One LONWORKS port; FTT10 78 Kbps; pluggable, keyed 3-position terminal block (only on NCE25 models that support a LONWORKS Network trunk) One RS-232-C serial port with standard 9-pin sub-D connector that supports standard baud rates One USB serial port with standard USB connector Option: One 6-pin RJ-12 jack for connecting to internal modem; up to 56 Kbps
<b>Analog Input/Analog Output Resolution and Accuracy</b>	Analog Input Points: 16-bit resolution Analog Output Points: 16-bit resolution and ±200 mV accuracy on 0-10 VDC applications
<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>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>Shipping Weight</b>	1.2 kg (2.7 lb)
<b>Compliance</b>	<p><b>United States</b> UL Listed, File E107041, CCN PAZX, UL 916, Energy Management Equipment FCC Compliant to CFR47, Part 15, Subpart B, Class A</p> <p><b>Canada</b> UL Listed, File E107041, CCN PAZX7, CAN/CSA C22.2 No. 205, Signal Equipment Industry Canada Compliant, ICES-003</p> <p><b>Europe</b> CE Mark, EMC Directive 89/336/EEC, in accordance with EN 61000-6-3 (2001) Generic Emission Standard for Residential and Light Industry and EN 61000-6-2 (2001) Generic Immunity Standard for Heavy Industrial Environment</p> <p><b>Australia and New Zealand</b> C-Tick Mark, Australia/NZ Emissions Compliant</p> <p><b>BACnet International</b> BACnet Testing Laboratories™ (BTL) 135-2004 Listed BACnet Building Controller (B-BC)</p>