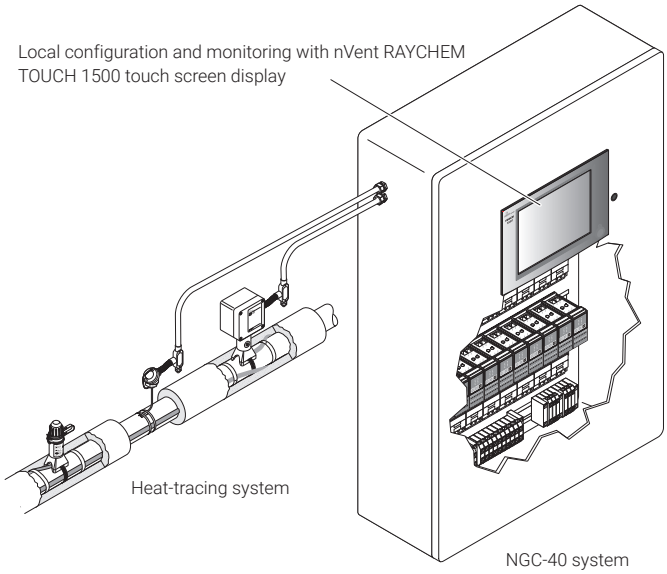
NGC-40 Safe Area Panels

CONNECT AND PROTECT

Control, monitoring and power distribution panels

PRODUCT OVERVIEW



nVent RAYCHEM distribution panels are specially designed to power, control and monitoring electrical heat tracing circuits. The system offers a complete standard set of configurations, serving most heat-tracing applications. The panels vary from power distribution panels up to systems with full control and monitoring capability. The panels are available with a combined incomer or with a separate incomer section.

The power distribution panels with control and monitoring functionality are equipped with the advanced nVent RAYCHEM control and monitoring systems like the nVent RAYCHEM NGC-40. Multiple panels can be combined and optionally supervised by means of the nVent RAYCHEM TOUCH 1500 interface.

Standard panel advantages

Standard control, monitoring and power distribution panels have the following advantages:

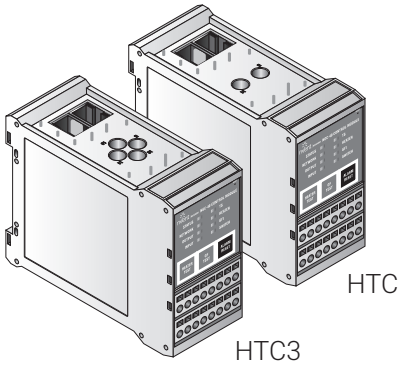
- No surprises or unpredictable cost increases
  - All dimensions and features known during quotation stage so full clarity at the moment of ordering
  - Proven design
- High Quality:
  - Design optimized for electrical heat-tracing and based on years of experience in the industry
  - Repeatedly build and pre-tested at the panel shop so no need for FAT
- Optimized scheduling:
  - No need to spend time on detailed panel design
  - Reduced time spend for the client leading to cost reduction
  - Short lead times

Panels are available as:

- Incomer sections: Power Supply System (PSS)
- Outgoing sections: Power Distribution System (PDS)
- Combination of incomer and outgoing in one panel enclosure

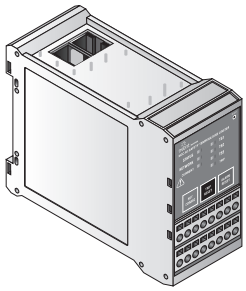
Control system power distribution panels: nVent RAYCHEM NGC-40

The NGC-40 is a multipoint electronic control and monitoring system with unique single-point controller architecture for heat-tracing used in process temperature maintenance and freeze protection applications. By taking advantage of innovative modular packaging techniques, the NGC-40 system provides configuration and component flexibility so that it may be optimized for specific applications needs. The NGC-40 system consists out of the following components:



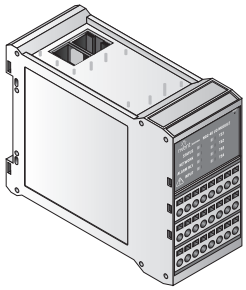
Control modules: NGC-40-HTC & NGC-40-HTC3

The NGC-40 system uses a single controller module per heat-tracing circuit for maximum reliability. There are dedicated control modules available for single phase (NGC-40-HTC) and three-phase (NGC-40-HTC3) heat-tracing circuits.
The NGC-40 control modules include ground-fault detection and protection while guaranteeing precise single phase and three-phase line current measurements.
Up to eight (8) temperature sensors (RTDs) can be used for each heat-tracing circuit allowing a variety of temperature control, monitoring, and alarming configurations.
The temperature sensors can be connected via the NGC-40-HTC and -HTC3, NGC-40-IO and the field mounted nVent RAYCHEM RMM2 module. The NGC-40 control modules provides digital inputs as well as alarm outputs that can be used to control an external annunciator. The digital input is programmable and may be used for various functions such as forcing heat-tracing outputs on or off or generating CB trip alarms, making the system more flexible to match each customer's specific needs.



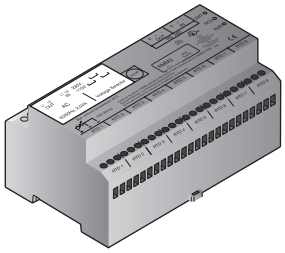
Safety temperature limiter: NGC-40-SLIM

The NGC-40 includes an optional safety temperature limiter module. The module can be used with up to 3 temperature inputs for three phase heat-tracing circuits. The limiter can be associated with a NGC-40 control module and use the heater current information to manage the trip functionality. The front panel of the limiter module has LED indicators, like the other modules, for various status conditions and provides buttons to confirm a new trip setpoint, and reset trip or alarm conditions. The module has one output for the contactor and one output for external alarm annunciation. The safety temperature limiter can also be reset via the digital input, the user interface TOUCH 1500 and Supervisor.



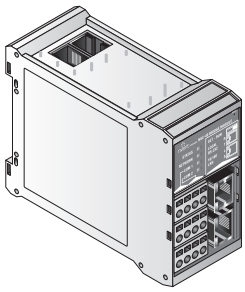
IO module: NGC-40-IO

In addition to hardwiring an RTD directly into a Heat Trace Control module, RTDs can be wired to Input/Output modules (NGC-40-IO) within the panel and assigned to heat-tracing circuits through software. This means that a NGC-40 system can be optimised for the specific application needs. Each IO module accepts up to four additional RTD inputs. The alarm output can be used to control an external annunciator. The digital input is programmable and may be used for various functions such as forcing heat-tracing outputs on or off or generating CB trip alarms.



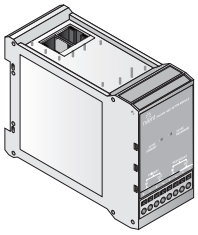
RMM2

The NGC-40 system works with the MONI-RMM2 module and each RMM2 can accept up to 8 RTDs. 16 RMM2 Modules can be daisy chained together via RS-485 for a total of 128 temperature inputs per NGC-40-BRIDGE. This will significantly reduce the cost of RTD field wiring.



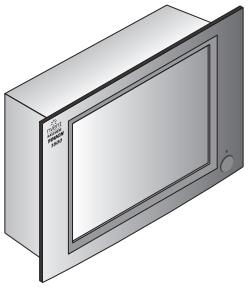
Communication module: NGC-40-BRIDGE

The NGC-40 system supports multiple communications ports, allowing serial interfaces (RS-485 and RS-232) and network connections (Ethernet) to be used with external devices. All communications with the NGC-40 panel are accomplished through the NGC-40-BRIDGE module which acts as the central router for the system, connecting the panel's control modules, IO modules, safety limiter modules, RMM2 modules, as well as upstream devices such as TOUCH 1500 touch screen, Supervisor and Distributed Control System (DCS). Communications to devices external to the NGC-40 panel use the Modbus protocol over Ethernet, RS-485 or RS-232.



Power termination module: NGC-40-PTM

The NGC-40-PTM distributes power to the NGC-40 modules. Each NGC-40-PTM can provide power to a maximum of 10 NGC-40 modules and supports redundant power supply connections.



nVent RAYCHEM TOUCH 1500

The TOUCH 1500 user interface has easy-to-navigate displays, with intuitive screens for use with the NGC-40 and nVent RAYCHEM NGC-20 control panels. The TOUCH 1500 is to be installed where the physical heat-tracing hardware is located to assist with system commissioning, setup, troubleshooting and on-site monitoring and control. The TOUCH 1500 has a 15-inch LCD color display with touch-screen technology, and provides an easy user interface for programming without using keyboards.
It has RS485, RS232, and 10/100Base-T Ethernet communications ports that allow communication with the Bridge Module (NGC-40-BRIDGE). An USB interface is included for configuration and software upgrades.

nVent RAYCHEM Supervisor software

The Supervisor software package provides a remote, graphic interface for the NGC-family. The software allows the user to configure and monitor various NGC systems from a central location. It also provides an audible alarm tone, acknowledges and clears alarms; and contains advanced features such as data logging, trending, batched change management, and other useful functions. Users can access all information from anywhere in the world, making Supervisor a powerful management tool for the entire Heat Management System.

For more detailed specifications of the modules see the NGC-40 datasheet.

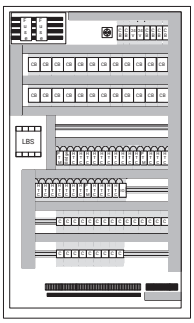
PRODUCT SPECIFICATIONS

Technical details

- Colour: RAL 7035
- Protection degree: IP55
- Cable entry: bottom panel, split bottom plate
- Power: 3 Phase + Neutral
- Phase-to-phase: 400 V
- Incomer: 3P+N+PE
- Earthing: TN-S
- Short circuit protection: 10 kA / 25 kA depending upon panel selection
- Load break switch: 160 A, 250 A, 400 A depending upon panel selection
- Outgoing circuits:
  - ELCB 1-phase circuits: 16 A, 2P, 30 mA or 25 A, 2P, 30 mA depending upon panel selection
  - ELCB 3-phase circuits: 40 A, 4P, 30 mA
- Terminal size outgoing circuits: 10 mm^2
- Panel dimensions: depending upon configuration. See section panel combinations

Standard panel combinations

The following table shows typical combinations of panels usable in different applications, followed by a list showing individual panels including their part number.

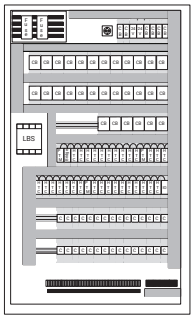


PSS-160A/10kA-PDS-40-24HTC/16A

- NGC-40 control & monitoring system
- Incomer: rated 160 A, 3P+N, 10 kA short circuit
- Outgoing circuits: 24 * 1-Phase controller, 2P EMR, ELCB 16 A (2P), 30 mA
- Size: 1200 (w) * 2200 (h) * 400 (d) including plinth

PSS-160A/10kA-PDS-40-24HTC/16A–T

- Including User Interface TOUCH 1500

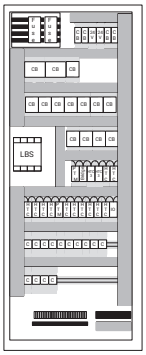


PSS-160A/10kA-PDS-40-30HTC/16A

- NGC-40 control & monitoring system
- Incomer: rated 160 A, 3P+N, 10 kA short circuit
- Outgoing circuits: 30 * 1-Phase controller, 2P EMR, ELCB 16 A (2P), 30 mA
- Size: 1200 (w) * 2200 (h) * 400 (d) including plinth

PSS-160A/10kA-PDS-40-30HTC/16A-T

- Including User Interface TOUCH 1500

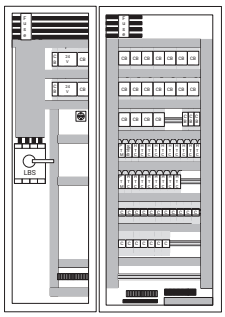


PSS-160A/10kA-PDS-40-12HTC/25A-2HTC3/40A

- NGC-40 control & monitoring system
- Incomer: rated 160 A, 3P+N, 10 kA short circuit
- Outgoing circuits:
  - 12 * 1-Phase controller, 2P EMR, ELCB 25 A (2P), 30 mA
  - 2 * 3-Phase controller, 4P EMR, ELCB 40 A (4P), 30 mA
- Size: 800 (w) * 2200 (h) * 400 (d) including plinth

PSS-160A/10kA-PDS-40-12HTC/25A-2HTC3/40A-T

- Including User Interface TOUCH 1500

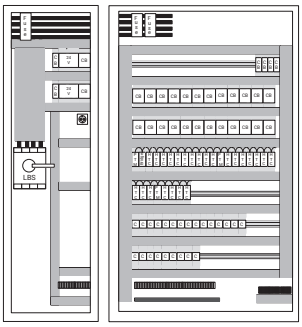


Incomer section: PSS-250A/25kA (-T)

- 250 A, 3P+N, 25 kA short circuit
- Size: 600 (w) * 2200 (h) * 400 (d) including plinth
- Optional: User Interface TOUCH 1500

Outgoing section: PDS-40R-18HTC/25A

- 18 * 1-Phase controller, 2P EMR, ELCB 25 A (2P), 30 mA
- Size: 800 (w) * 2200 (h) * 400 (d) including plinth

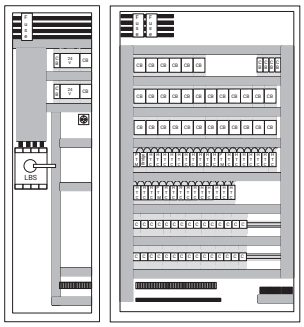


Incomer section: PSS-250A/25kA (-T)

- 250 A, 3P+N, 25 kA short circuit
- Size: 600 (w) * 2200 (h) * 400 (d) including plinth
- Optional: User Interface TOUCH 1500

Outgoing section: PDS-40R-24HTC/25A

- 24 * 1-Phase controller, 2P EMR, ELCB 25 A (2P), 30 mA
- Size: 1200 (w) * 2200 (h) * 400 (d) including plinth

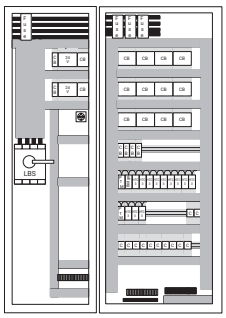


Incomer section: PSS-250A/25kA (-T)

- 250 A, 3P+N, 25 kA short circuit
- Size: 600 (w) * 2200 (h) * 400 (d) including plinth
- Optional: User Interface TOUCH 1500

Outgoing section: PDS-40R-30HTC/25A

- 30 * 1-Phase controller, 2P EMR, ELCB 25 A (2P), 30 mA
- Size: 1200 (w) * 2200 (h) * 400 (d) including plinth



Incomer section: PSS-400A/25kA (-T)

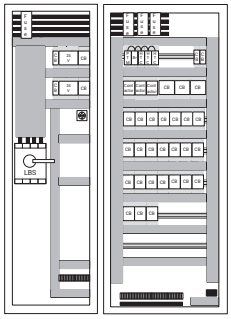
- 400 A, 3P+N, 25 kA short circuit
- Size: 600 (w) * 2200 (h) * 400 (d) including plinth
- Optional: User Interface TOUCH 1500

Outgoing section: PDS-40R-12HTC3/40A

- 12 * 3-Phase controller, 4P EMR, ELCB 40 A (4P), 30 mA
- Size: 800 (w) * 2200 (h) * 400 (d) including plinth

Outgoing section: PDS-40-12SLIM

- 12 * Safety Temperature Limiter, 40 A 4P EMR
- Up to 3 sensors per NGC-40-SLIM device
- To be combined with all other NGC-40 power distribution panels (PDS)
- Size: 600 (w) * 2200 (h) * 400 (d) including plinth

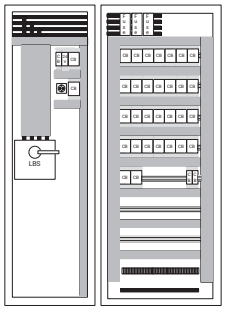


Incomer section: PSS-250A/25kA (-T)

- 250 A, 3P+N, 25 kA short circuit
- Size: 600 (w) * 2200 (h) * 400 (d) including plinth
- Optional: User Interface TOUCH 1500

Outgoing section: PDS-40R-3PASC-24CB/25A

- 3 PASC controlled groups, 3 * EMR, 4P, 80 A
- CB: 24 * 25 A (1-Phase, 2P), 30 mA
- Size: 800 (w) * 2200 (h) * 400 (d) including plinth



Incomer section: PSS-250A/25kA

- 250 A, 3P+N, 25 kA short circuit
- Size: 600 (w) * 2200 (h) * 400 (d) including plinth

Outgoing section: PDS-R-30CB/25A

- ELCB 30 * 25 A (2P), 30 mA
- No controllers
- Auxiliary contacts CBs to terminals
- Size: 800 (w) * 2200 (h) * 400 (d) including plinth

For a more detailed description of the panels please ask your local representative.

APPROVALS

For use in ordinary area

Product certification

Complete panel

Controllers

ORDERING INFORMATION

Standard panel description

Product Name	Description	Part Number
PSS-160A/10kA-PDS-40-24HTC/16A-T	Incoming section 160 A, 10 kA, Outgoing section 24 * NGC-40-HTC 16A circuits with TOUCH 1500	1244-014348
PSS-160A/10kA-PDS-40-24HTC/16A	Incoming section 160 A, 10 kA, Outgoing section 24 * NGC-40-HTC 16A circuits. No TOUCH 1500	1244-014349
PSS-160A/10kA-PDS-40-30HTC/16A-T	Incoming section 160 A, 10 kA, Outgoing section 30 * NGC-40-HTC 16A circuits with TOUCH 1500	1244-014350
PSS-160A/10kA-PDS-40-30HTC/16A	Incoming section 160 A, 10 kA, Outgoing section 30 * NGC-40-HTC 16A circuits. No TOUCH 1500	1244-014351
PSS-160A/10kA-PDS-40-12HTC/25A-HTC3/40A-T	Incoming section 160 A, 10 kA, Outgoing section 12 * NGC-40-HTC 25A and 2 * NGC-40-HTC3 40A circuits with TOUCH 1500	1244-014352
PSS-160A/10kA-PDS-40-12HTC/25A-2HTC3/40A	Incoming section 160 A, 10 kA, Outgoing section 12 * NGC-40-HTC 25A and 2 * NGC-40-HTC3 40A circuits. No TOUCH 1500	1244-014353
PSS-250A/25kA-T	Incomer panel 250 A, 25 kA with TOUCH 1500 User Interface	1244-014354
PSS-250A/25kA	Incomer panel 250 A, 25 kA, No TOUCH 1500 User Interface	1244-014355
PSS-400A/25kA-T	Incomer panel 400 A, 25 kA with TOUCH 1500 User Interface	1244-014356
PSS-400A/25kA	Incomer panel 400 A, 25 kA, No TOUCH 1500 User Interface	1244-014357

Product Name	Description	Part Number
PDS-40L-18HTC/25A	NGC-40 Outgoing panel, 18 HTC circuits, 25A CB, positioned on left side of PSS panel.	1244-014358
PDS-40R-18HTC/25A	NGC-40 Outgoing panel, 18 HTC circuits, 25A CB, positioned on right side of PSS panel.	1244-014359
PDS-40L-24HTC/25A	NGC-40 Outgoing panel, 24 HTC circuits, 25A CB, positioned on left side of PSS panel.	1244-014360
PDS-40R-24HTC/25A	NGC-40 Outgoing panel, 24 HTC circuits, 25A CB, positioned on right side of PSS panel.	1244-014361
PDS-40L-30HTC/25A	NGC-40 Outgoing panel, 30 HTC circuits, 25A CB, positioned on left side of PSS panel.	1244-014362
PDS-40R-30HTC/25A	NGC-40 Outgoing panel, 30 HTC circuits, 25A CB, positioned on right side of PSS panel.	1244-014363
PDS-40L-12HTC3/40A	NGC-40 Outgoing panel, 12 HTC3 circuits, 40A CB, positioned on left side of PSS panel.	1244-014364
PDS-40R-12HTC3/40A	NGC-40 Outgoing panel, 12 HTC3 circuits, 40A CB, positioned on right side of PSS panel.	1244-014365
PDS-40-12SLIM	NGC-40 outgoing panel, 12 * Safety Temperature Limiter panel.	1244-014476
PDS-40L-3PASC-24CB/25A	NGC-40 outgoing panel, 3 PASC circuits feeding 24 outgoing Circuits, 25 A each, positioned on right side of PSS panel.	1244-014477
PDS-40R-3PASC-24CB/25A	NGC-40 outgoing panel, 3 PASC circuits feeding 24 outgoing Circuits, 25 A each, positioned on right side of PSS panel.	1244-014478
PDS-L-30CB/25A	Outgoing panel, 30 uncontrolled circuits, 25 A each, positioned on right side of PSS panel.	1244-014479
PDS-R-30CB/25A	Outgoing panel, 30 uncontrolled circuits, 25 A each, positioned on right side of PSS panel.	1244-014480

Product name definition

	PSS-***A/**kA-T
PSS	Power Supply System
***A	250: 250 A incomer switch 400: 400 A incomer switch
**kA	10: 10 kA short circuit protection 25: 25 kA short circuit protection
T	TOUCH 1500 (optional)

	PDS-40*-**HTC/*A-**HTC3/*A-*PASC-**CB/*A
	Power Distribution System
40*	40: Panel equipped with NGC-40 controllers. L: The panel is positioned on left side of PSS panel. R: The panel is positioned on right side of PSS panel.
****HTC/*A**	**: Number of NGC-40-HTC controllers *: CB rating of electrical heat tracing circuits
****HTC3/*A**	**: Number of NGC-40-HTC3 controllers *: CB rating of electrical heat tracing circuits (per phase)
***PASC**	*: number of PASC controllers
****CB/*A**	**: Number on uncontrolled/PASC outgoing circuits *: CB rating of uncontrolled/PASC circuits.
	PSS-***A/**kA-PDS-40-**HTC/**A
	Panel including incoming and outgoing sections in one enclosure. For individual description of components see explanation text above.

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