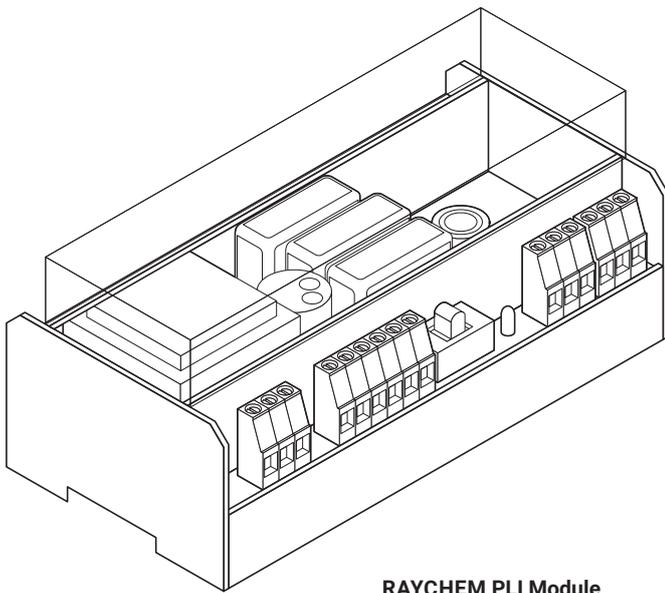


HEAT-TRACING POWER-LINE CARRIER INTERFACE FOR HAZARDOUS LOCATIONS



RAYCHEM PLI Module

PRODUCT OVERVIEW

nVent RAYCHEM PLI (Power Line Carrier Interface) modules provide temperature-monitoring capability for heat-tracing control and monitoring systems by communicating the temperature data to the control system over the heat-tracing bus wires and the AC power line, eliminating the need for RTD wiring. The PLI module receives input from special transmitters connected to the heat-tracing cable. The transmitters provide pipe temperatures from RTDs and continuity confirmation; they are typically located at the front and/or end of the heat-tracing circuit. For further information regarding the special transmitters, please refer to RAYCHEM SES, SPC and 700-TT-R transmitter datasheets and installation instructions.

A single twisted-pair RS-485 cable connects the PLI modules to a RAYCHEM NGC-controller.

CONTROL AND MONITORING

PLI modules collect temperature data for control and monitoring of the heat-tracing system by the RAYCHEM NGC controller panel. For example the NGC-30 can accept up to 127 temperature inputs

from SES/SPC or 255 temperature inputs 700-TT-R transmitters per PLI module and up to four PLI modules per NGC-30 controller. PLI modules are placed in the NGC-30 control panel.

POWER-LINE CARRIER TECHNOLOGY

The PLI system uses frequency-shift keying to encode digital data on the power-line network. Digital ones and zeros are transmitted by coupling high-frequency signals onto the heat-tracing bus wires and the AC power line. The digital data are transmitted in packets

that contain error-checking fields to validate the correctness of the data. Since no additional wiring is required to bring temperature and continuity data back to a central location, installation and maintenance costs are significantly reduced.

CONFIGURATIONS

The PLI modules are designed to be local to the distribution transformer that supplies power to the heat-tracing circuits. Only one PLI module may be used on the secondary side of each heat-tracing transformer. A front-end filter (FEF) is required on the primary side of each transformer to provide electrical noise isolation between the plant environment and the

heat-tracing power-line network environment. This ensures that transmissions between the PLI module and the 700-TT-R, SES or SPC transmitters are reliable and error-free.

The PLI module is an electronic device mounted in an enclosure that is to be clipped to a DIN 35-mm rail in a nonhazardous, indoor location.

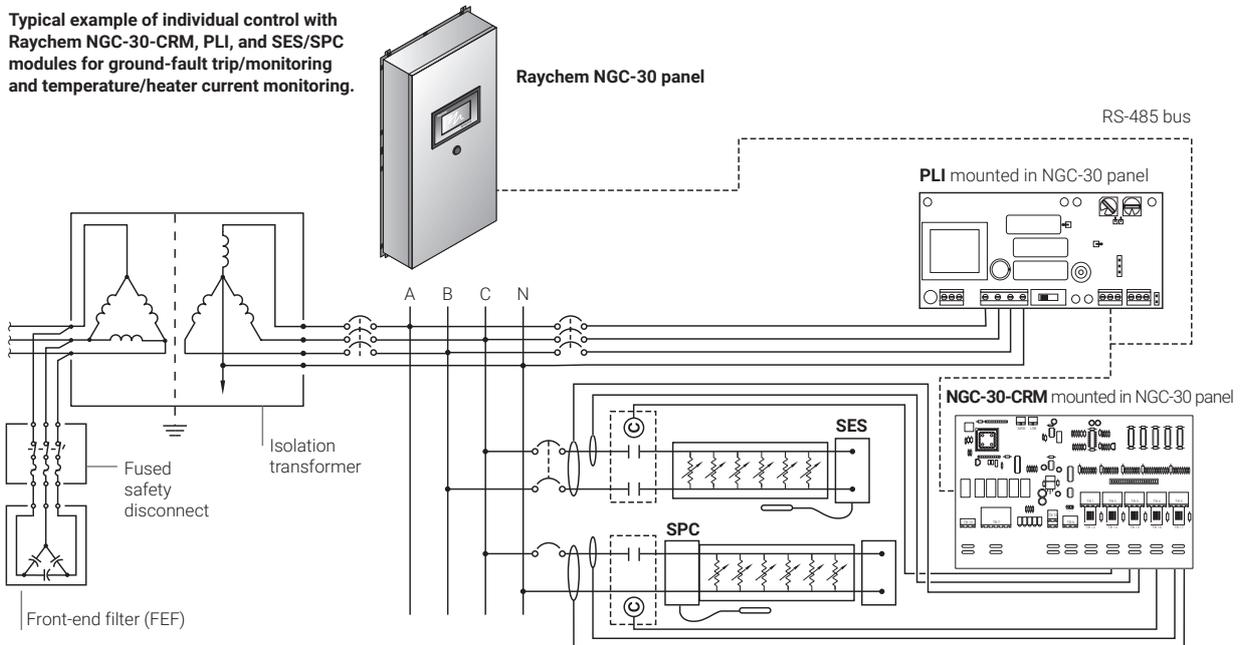
GENERAL

Area of use	Nonhazardous locations Hazardous indoor locations...in TYPE 7 panels Hazardous outdoor locations...in TYPE 4,7,9 panels
Approvals	 80BJ OPEN ENERGY MANAGEMENT SYSTEM ACCESSORY
Supply voltage	100–120 Vac, 208–240 Vac, switch-selectable; 50/60 Hz
Internal power consumption	< 5 W
Operating temperature	–13°F to 140°F (–25°C to 60°C)
Storage temperature	–40°F to 167°F (–40°C to 75°C)

TEMPERATURE SENSORS; USE WITH RAYCHEM 700-TT-R, SES, OR SPC TRANSMITTERS

Type	100-ohm platinum RTD, three-wire, $\alpha = 0.00385 \text{ ohm/ohm/}^\circ\text{C}$ Can be extended with a three-conductor shielded cable of 20-ohm maximum per conductor.
Quantity per PLI	255 x 700-TT-R; 127 x SES or SPC Note: The 700-TT-R and SES/SPC transmitters cannot be used on the same PLI module.

LINE-SENSING CONTROL AND MONITORING



COMMUNICATIONS TO RAYCHEM NGC CONTROLLER

Type	RS-485
Connection terminals	28–12 AWG (0.08–2.5 mm ²)
Cable	One shielded twisted pair
Length	4000 ft (1200 m) maximum total
Address	Switch-selectable, 1–99

CONNECTION TERMINALS

Control power	Two terminals, 24–12 AWG (0.2–3.3 mm ²)
Power-line interface (PLI)	Four terminals, 24–12 AWG (0.2–3.3 mm ²)

DIMENSIONS

Length x width x height	6 in (152 mm) x 2-7/8 in (73 mm) x 2-1/2 in (64 mm)
-------------------------	---

MOUNTING

Method	Mounts on a DIN 35-mm rail
--------	----------------------------

ORDERING DETAILS

	Catalog number	Part number	Weight
RAYCHEM PLI modules			
Interface unit	PLI	488323	1.0 lb (0.4 kg)
Accessories			
Front-end filter	FEF-480V	922847	15 lb (6.8 kg)
	FEF-600V	P000000312	15 lb (6.8 kg)
RS-485 bus 1000-ft reel	MONI-RS485-WIRE	549097	17 lb (7.5 kg)

North America

Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nvent.com

Europe, Middle East, Africa

Tel +32.16.213.511
Fax +32.16.213.603
thermal.info@nvent.com

Asia Pacific

Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nvent.com

Latin America

Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nvent.com



nVent.com

Our powerful portfolio of brands:

CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER