CONNECT AND PROTECT

DISTRIBUTED CONTROL SOLUTIONS

For electric heat-tracing systems

nVent Thermal Management

GAIN TOTAL ACCESS TO YOUR BUILDING HEAT TRACING SYSTEM

The nVent RAYCHEM **ACS-30 Control System** is a state of the art, multi-application centralized monitoring system with distributed control panels pre-configured for commercial heating applications including: hot water temperature maintenance, pipe freeze protection, greasy waste, fuel oil flow maintenance, freezer frost heave prevention, floor heating, roof & gutter de-icing and surface snow melting.

The ACS-30 features a centralized User Interface Terminal (ACS-UIT2), which interfaces with up to 52 distributed power control panels (ACS-PCM2-5), or C910-485 single circuit controllers, located throughout the installation. The UIT features a 10" touch screen display and is focused around intuitive application based control screens. All of the heating cable circuits are monitored from the UIT providing status updates with just a quick glance.

THE ACS-30 CONTROL SYSTEM OFFERS THE FOLLOWING BENEFITS:

ENERGY SAVINGS

• 24/7 time-clock control and schedulers

• Energy Monitoring of every circuit displaying both real time and cumulative kWH

• Proportional Ambient Sensing Control (PASC)

• Hot Water Maintenance control with economy set back

ON THE COVER:

Spaceport America
New Mexico

Application: Hot Water
Temperature Maintenance

• 10 circuits

• 2 Distributed Control Panels

Superior Ink — High Rise Residential
New York City, NY

Application: Hot Water Temperature
Maintenance

• 13 circuits

• 3 Distributed Control Panels

Russia Wharf — Residential High Rise
Boston, MA

Application: Heat Loss Replacement

• 20 circuits

• 6 Distributed Control Panels

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BUILT-IN SAFETY

- Integrated ground-fault protection to satisfy national electrical codes
- Automated self-test feature to ensure all circuits are functional, even when not in use
- Local and remote programmable alarm outputs
- Distributed control panels contain circuit control logic in the event of network communication failure
- Loss of power indication and alarm
- Low/high temperature alarm

COMMUNICATION

- Tie the heating cable system into BMS for load shedding, weather control integration, HVAC management, and fire control systems
- ModBus RTU protocol can be programmed directly into BMS
- ProtoNode pre-programmed multi-protocol gateways are available for translating to BacNet, and MetaSys N2 systems

DISTRIBUTED CONTROL

- Power control panels placed at convenient power drops near the application
- Avoid expensive power distribution wiring
- Expandable to adapt to changes and additions to the installation
- Single user-interface terminal to monitor all of the heating circuits

American Indian Cultural Center & Museum
Oklahoma City, OK

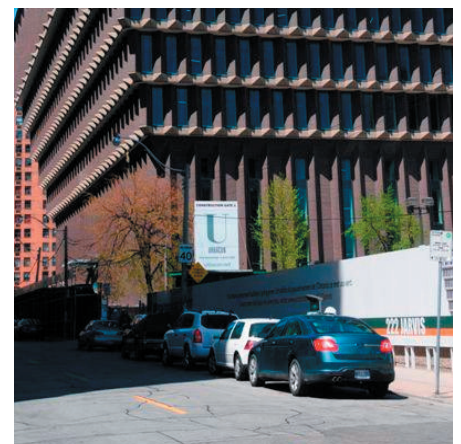Application: Roof De-icing & Pipe Freeze Protection

- 27 circuits
- 6 Distributed Control Panels

Minnesota Golden Gophers' Stadium
Minneapolis, MN

Application: Roof & Gutter De-Icing

- 15 circuits
- 5 Distributed Control Panels

222 Jarvis St — Ontario Government Office Building
Toronto, Ontario

Application: Ramp & Pedestrian Snow Melting & Pipe Freeze Protection

- 35 circuits
- 3 Custom 3-Phase Distributed Control Panels
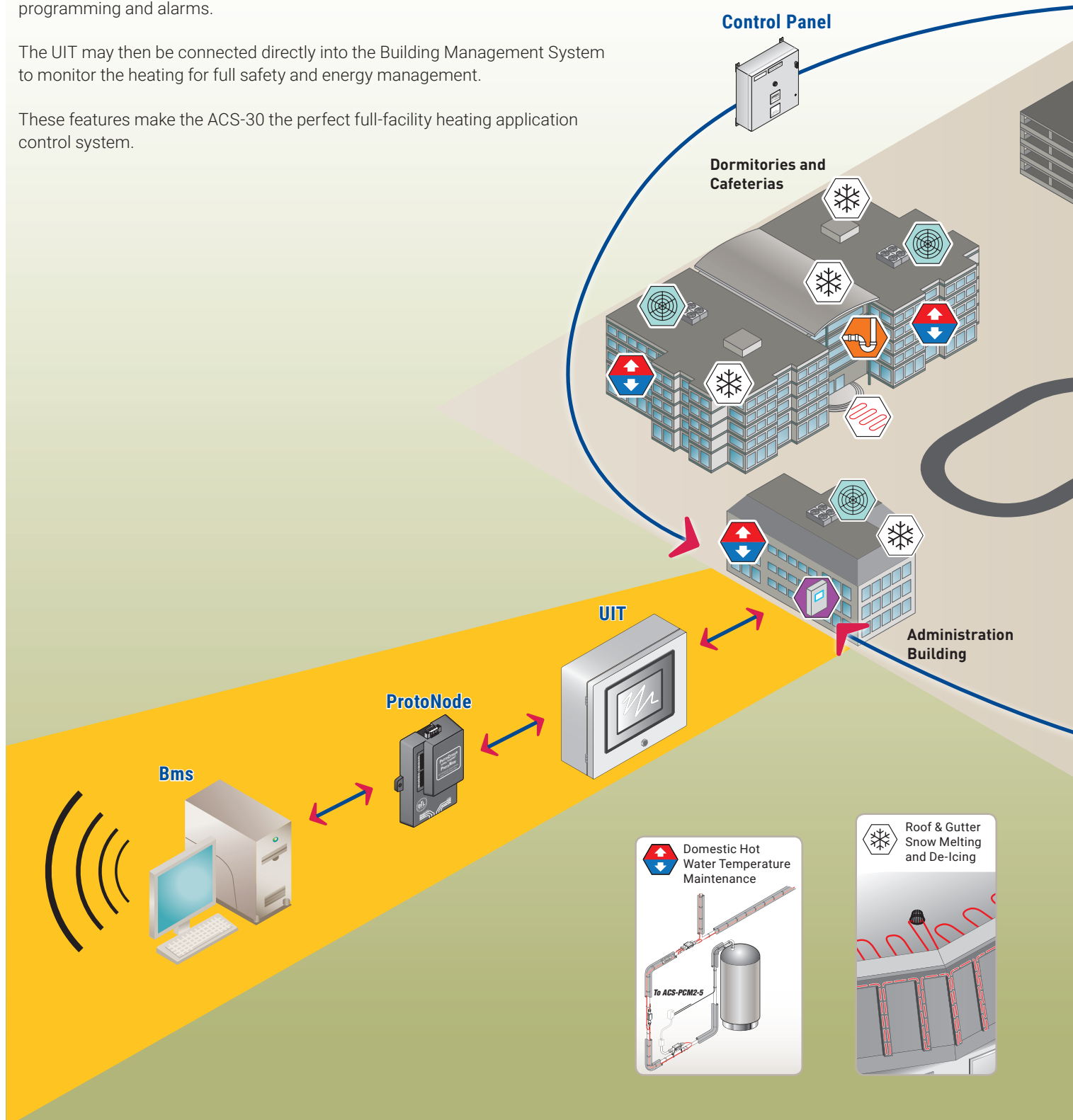
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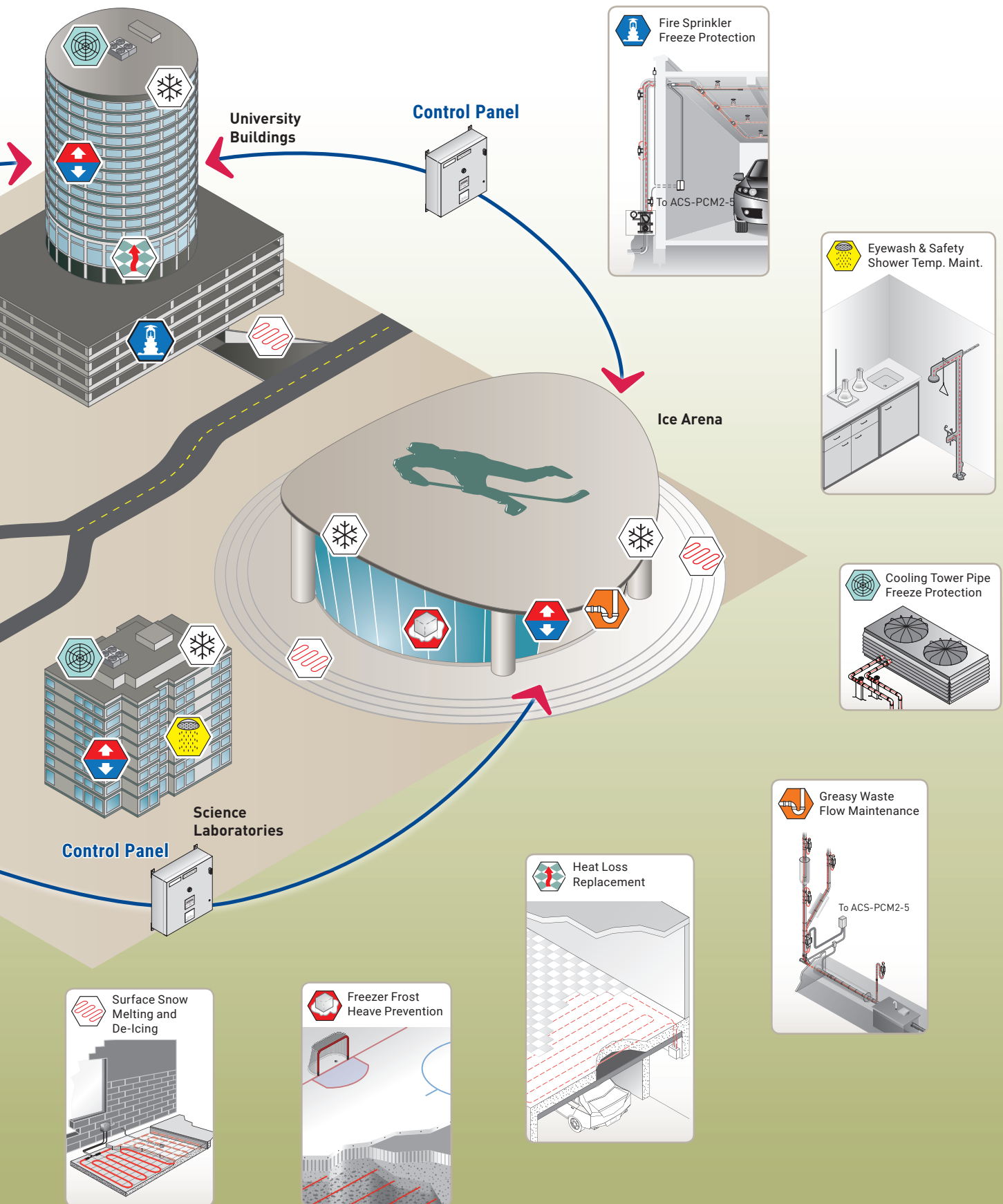
APPLICATION BASED DISTRIBUTED CONTROL SYSTEM

The ACS-30 system incorporates a modular approach, distributing control panels at convenient power drops near heating applications.

The control panels, or C910-485 controllers, can be used for multiple heating applications, so dedicated independent application controllers are not required. For more sophisticated and cost effective control temperature, sensors may be shared between heating cable circuits. The power control panels are interconnected back to the User Interface Terminal with nVent RAYCHEM RS-485 cable for localized programming and alarms.

The UIT may then be connected directly into the Building Management System to monitor the heating for full safety and energy management.

These features make the ACS-30 the perfect full-facility heating application control system.
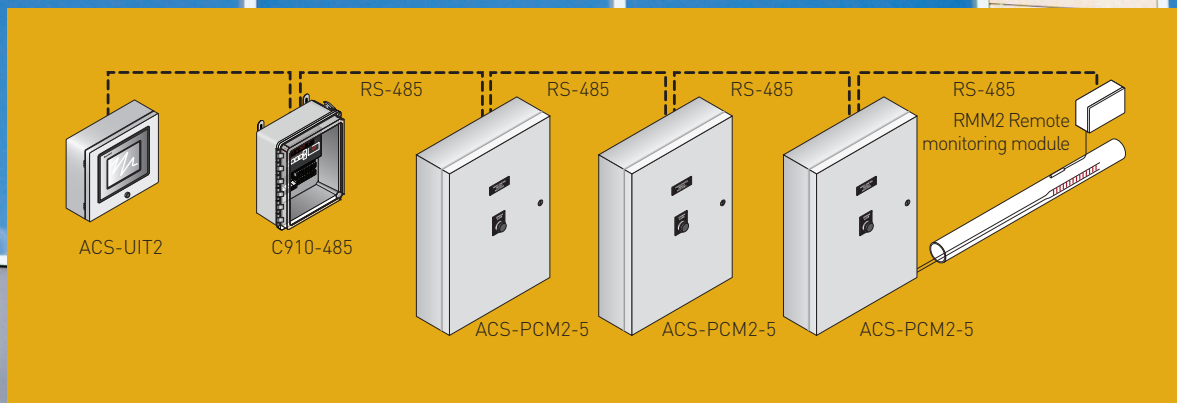
Control Panel

Dormitories and Cafeterias

Administration Building

UIT

ProtoNode

Bms

Domestic Hot Water Temperature Maintenance

To ACS-PCM2-5

Roof & Gutter Snow Melting and De-Icing

University
Buildings

Control Panel

Fire Sprinkler
Freeze Protection

To ACS-PCM2-5

Eyewash & Safety
Shower Temp. Maint.

Ice Arena

Cooling Tower Pipe
Freeze Protection

Science
Laboratories

Control Panel

Greasy Waste
Flow Maintenance

To ACS-PCM2-5

Heat Loss
Replacement

Surface Snow
Melting and
De-Icing

Freezer Frost
Heave Prevention

nVent Thermal Management

RAYCHEM ACS-30 SYSTEM

The ACS-30 system consists of the User Interface Terminal, up to 52 distributed control panels, the C910-485 controller, RMM2 remote temperature monitoring modules and the ProtoNode multi-protocol gateway.

ACS-UIT2

The RAYCHEM ACS-UIT2 User Interface Terminal is a color touch-screen, panel-mounted display designed for use in indoor or outdoor nonhazardous locations with ACS-PCM2-5 distributed control panels, or the C910-485 single circuit controllers. The ACS-UIT2 has a 7 inch x 5 ½ inch LCD color display with touch-screen technology, and provides an easy user interface for programming without keyboards or cryptic labels.

It has RS-485, RS-232, or 10/100Base-T Ethernet communications ports that allow communication with Building Management Systems.

The ACS-UIT2 has three user programmable alarm relays for clear annunciation of fault conditions.

ACS-UIT2

ACS-PCM2-5

The ACS-PCM2-5 provides ground-fault and line current sensing, alarming, switching (electromechanical relays) and RTD inputs for five heat-tracing circuits when used with the ACS-UIT2. The ACS-PCM2-5 enclosure is rated NEMA 4/12 and is approved for nonhazardous indoor or outdoor locations.

Up to 52 ACS-PCM2-5 panels may be connected in series with the ACS-UIT2 on a RS-485 network.

The ACS-PCM2-5 contains control logic circuitry to continue heating cable operation in the event of communication failure.

ACS-PCM2-5

C910-485

The C910-485 provides single circuit extensions to the ACS-30 system. The C910-485 features ground-fault and line current sensing, alarming, switching (electromechanical relays) and 2 RTD inputs for one heat-tracing circuit when used with the ACS-UIT2. The CS C910-485 enclosure is rated NEMA 4X and is approved for nonhazardous indoor or outdoor locations.
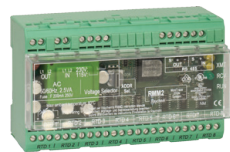

C910-485

RMM2

The RMM2 Remote Monitoring Module accepts up to eight RTDs to measure additional temperatures for control and monitoring of the heat-tracing circuits. Multiple RMM2s communicate with a single UIT to provide centralized monitoring of temperatures.

Up to 16 RMM2s for a total monitoring capability of 128 temperature points can be connected in series with the ACS-30 and RS-485 network. The RMM2s are placed near desired measurement locations.

The RMM2 is available for DIN rail mount or pre-installed inside a polycarbonate NEMA-4X enclosure.

RMM2

PROTONODE

The RAYCHEM ProtoNode is an external, high performance multi-protocol gateway for customers needing protocol translation between Building Management Systems (BMS) using BACnet or Metasys N2 and the RAYCHEM C910-485 or ACS-30 Modbus protocol controllers.

ProtoNode

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