



Applications

Meets the requirements of the following applications:

- Fan Coil Units
- Unit Ventilators
- Chilled Ceilings
- Small Air Handling Units
- Lighting and Sunblinds when associated to RCx add-on modules

Improves energy efficiency when combined with:

- Motion detectors to automatically adjust a zone's occupancy mode from standby to occupied when presence is detected
- CO₂ sensors as part of a demand-controlled ventilation strategy that adjusts the amount of fresh air intake according to the number of building occupants
- Window-contact sensors

Works with a wide range of sensors

Features & Benefits

- Easily configurable using LNS-based plug-ins or EC-Net^{AX}-based wizards, allowing you to work with your preferred network management platform
- Most advanced yet cost-effective solution for addressing any terminal unit application, eu.bac certified (RCL-PFC-207 only)
- Expandable with lighting and sunblinds add-on modules for unprecedented adaptability
- Smart cross-management of HVAC, lighting and sunblinds as a whole for up to 45% energy savings
- LonMark certified according to the Interoperability Guidelines Version 3.4
- Compatible with the RFR-K Wireless Receiver, letting you create wire-free installations and use various wireless battery-less sensors and switches.
- A single point on the network for the main HVAC controller and its associated add-on modules, leading to easier BMS integration
- Optional strain relief and terminal block cover for flexible installation, in ceilings, closed to lighting and sunblind devices, or directly on HVAC equipments, to reduce wiring costs and expand installation possibilities
- Separable connectors, allowing to start on-site wiring while engineering is done at the office
- DIN rail mounting integrated into the enclosure for fast and reliable installation

Overview

The **RCL-PFC Series** are microprocessor-based configurable controllers designed to control a wide variety of terminal units such as powered fan coil units, unit ventilators, chilled ceilings and small air handling units.

This series can command up to 4 lights and 4 sunblinds through RCx modules. These are add-on modules that operate off of a separate sub-bus, giving this controller the ability to manage lighting and sunblinds for a full cross-management solution forming a single point on the network. These controllers use the LONTALK® communication protocol and are LONMARK® certified as SCC Fan Coil controllers.

The RCL-PFC Series supports various input types including sensor, pulse, and digital-based ones. Moreover, they provide analog, floating, and proportional control outputs for valves, heating elements and fans.

All controller models work with a wide range of sensors, such as the Allure™ RS-Smart-Sense, a customizable room sensor that features a color TFT Touch screen and graphical menus. These sensors are used for indoor temperature measurement, setpoint adjustment, fan speed selection, and occupancy state override, as well as light and sunblinds management for a complete cross-management integration.

Each controller can be configured using LNS®-based plug-in or the EC-Net^{AX} wizard, powered by the Niagara^{AX} Framework®. Either way, a configuration interface exists that simplifies the setup of HVAC and lighting and sunblinds applications through an intuitive menu-based user interface.

RCL-PFC



Model	RCL-PFC-107	RCL-PFC-108	RCL-PFC-207	RCL-PFC-208
Points	12-Point Controller	12-Point Controller	14-Point Controller	14-Point Controller
Configurable inputs	6	6	6	6
Electric Heater outputs	1	1	1	1
Analog output 0-10 V			2	2
Fan outputs	3	3	3	3
PWM Valve outputs 230 VAC	2		2	
PWM Valve outputs 24 V		2		2
24 VAC Generation 7 VA				■
Expandable with lighting & sunblinds add-on modules	■	■	■	■
Product Number	XPCP0255	XPCP0259	XPCP0257	XPCP0261

Recommended Applications

Model	RCL-PFC-107	RCL-PFC-108	RCL-PFC-207	RCL-PFC-208
2 Pipe Fan Coil	■	■	■	■
2 Pipe Fan Coil with Changeover	■	■	■	■
2 Pipe Fan Coil with Electric Heater	■	■	■	■
2 Pipe Fan Coil with Electric Heater and Changeover	■	■	■	■
4 Pipe Fan Coil	■	■	■	■
4 Pipe Fan Coil with Electric Heater	■	■	■	■
Electric Heater	■	■	■	■
Unit Ventilator	■	■	■	■
Chilled Ceiling	■	■	■	■
Variable Fan Speed Control			■	■
0-10 V Valves Control			■	■
Air Quality Management			■	■

Wireless Receivers



To reduce the cost of installation, and minimize the impact on existing partition walls, these wireless receivers enable the controllers to communicate with a line of wireless battery-less room sensors, remote controls and switches

RFR Series



RFR-K

Radio receiver

RFR-K-ENOCEAN

EnOcean radio receiver 868 MHz

RIR Series



RIR-L

White infrared receiver and lux sensor

RIR-B

White infrared receiver

RIR-I

Transparent infrared receiver

Inputs Configuration Table

Assignable Input Functions	D11	D12	S13	D14	A15	D16
Window	■	■		■		■
Presence	■	■		■		■
Dewpoint	■	■		■		■
Changeover	■	■		■		■
Auxiliary contact	■	■		■		■
Flow switch	■	■		■		■
Alarm	■	■		■		■
Analog input 0-10V					■	
Counter 1	■	■				■
Counter 2	■	■				■
Counter 3	■	■				■
Room temperature - 10K Type Z			■			
Room temperature - 10K Type II			■			
Room temperature with occupancy reinitialization push button and LED indicator - 10K Type II			■			
Room temperature with occupied/unoccupied push button and LED indicator - 10K Type II			■			
Discharge air temperature - 10K Type Z	■		■			
Discharge air temperature - 10K Type II	■		■			
Setpoint offset - 0-5V					■	
Setpoint offset - 10K rotary potentiometer		■				
Fan speed selector - 0-5V	■					
Fan speed selector - 10K rotary potentiometer	■					

Supported Platforms



EC-Net^{AX}

EC-Net^{AX} is a web-enabled multi-protocol integration solution powered by the Niagara^{AX} Framework, establishing a fully Internet-enabled, distributed architecture for real-time access, automation and control of devices. EC-Net^{AX}'s open framework creates a common development and management environment for integration of LONWORKS[®], BACnet[®] and other protocols. Regardless of manufacturer and protocol, the EC-Net^{AX} system provides a unified modeling of diverse systems and data, providing one common platform for development, management and enterprise applications.



LONWORKS Network Services (LNS)

LNS[®] is a client-server platform that allows multiple users, running different LNS-compatible applications, to access a common source for directory, installation, management, monitoring and control services for the network system being managed. Distech Controls' Lonwatcher is an example of a LNS-based network management tool that can use Plug-Ins to configure and monitor controllers and devices in the control system.

EC-Net^{AX} Wizards and LNS Plug-Ins

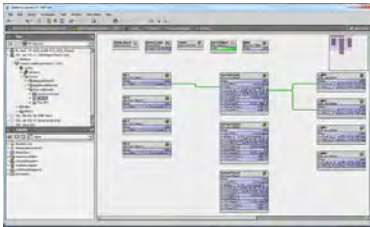


Designed for use respectively with EC-Net^{AX} (powered by the Niagara^{AX} Framework) or LNS-based softwares such as Distech Controls' Lonwatcher 3, the EC-Net^{AX} Wizards and LNS plug-in can be used to easily configure a device's parameters including inputs, outputs, fan and valve settings, heating and cooling setpoints, amongst others, as well as all the connected add-on modules' parameters

- User-friendly interface to easily and efficiently configure the controller's parameters
- One wizard only for the controller and its associated add-on modules
- Powerful import/export functionalities to duplicate a controller's settings for reuse
- Download configuration to multiple devices for large BMS integration

Configuration Softwares

EC-Net^{AX}

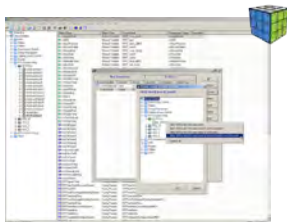


EC-Net^{AX} is a suite of Niagara^{AX}-based products designed to integrate diverse smart devices into a unified, Internet-enabled, web-based system. EC-Net^{AX} solutions integrate LONWORKS[®], BACnet[®], oBIX, Internet and web services protocols in a software platform that can be used in embedded controllers or server applications.

EC-Net^{AX} includes integrated network management tools to support the design, configuration, installation, and maintenance of interoperable networks.

- Connects to almost any embedded device, regardless of manufacturer or communication protocol, as a result the common environment created by Niagara^{AX}'s open Java-based Framework.
- Includes a comprehensive, graphical toolset that enables users to build rich applications in a drag-and-drop environment. By wiring components together, developers build control strategies, alarming and scheduling applications as well as browser-based displays and reports.
- Reduces development time by merging automation, IT and Internet technologies in a single solution. With an EC-BOS^{AX}, advanced web-services applications, such as TCP/IP, HTTP, XML, SOAP, and oBIX, can be implemented so that you can read data, send commands, and respond to alarms in real-time from anywhere using any standard web browser.
- Integrates geographically dispersed, multi-vendor devices into an interoperable application to save time and money.

LonWatcher 3

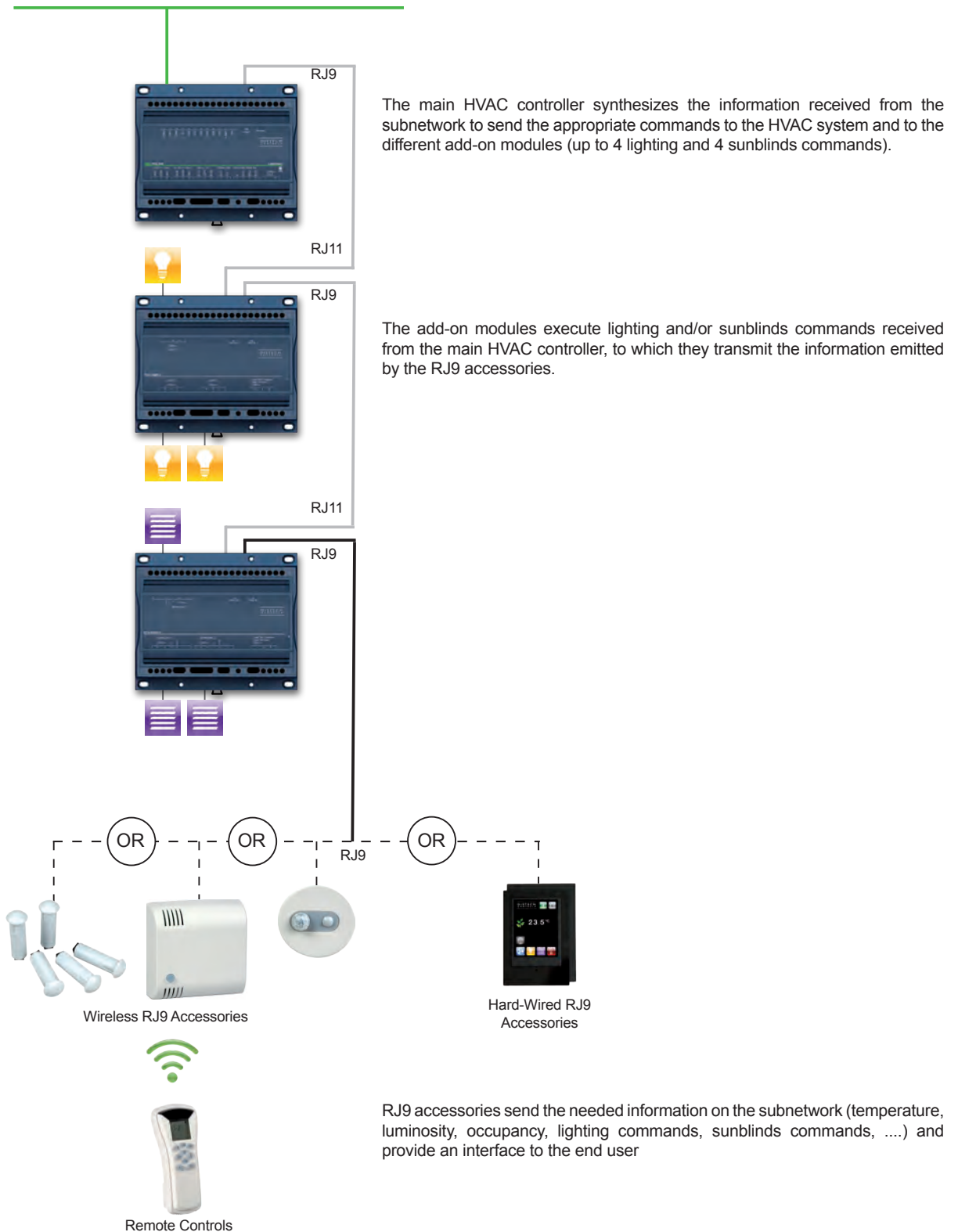


The Lonwatcher 3 network management tool is an innovative software for fast set-up and cost efficient implementation of the Distech Controls' LONWORKS products, as well as other multivendor open and interoperable LONWORKS networks, and their interaction. This intuitive yet sophisticated tool provides network integrators with advanced features and all the resources necessary to install, operate and maintain LONWORKS networks. Based on LNS TURBO Edition network operating system, Lonwatcher 3 is a performance-driven, highspeed application, allowing a fast response time from the application and increasing user productivity.

- Build, commission and maintain multi-vendor, open and interoperable LONWORKS networks.
- Manage multiple LONWORKS networks simultaneously.
- Batch operations to copy/paste multiple networks, subsystems and devices reducing time for commissioning, replacing and loading devices.
- Compatible with other LNS[®] databases created with any LNS network management tool.
- Supports LNS standard plug-in applications, allowing for easy integration of Distech Controls devices as well as other manufacturers' devices.
- Create device status reports to get information such as devices in override, in alarm, etc.
- Fully supports iLON[®] Internet Servers.
- Create dynamic network variables.
- User Manager, to prevent unauthorized system access, and to manage user rights.
- Support of any LNS or IP network interfaces.

RCL-PFC Subnetwork Overview

The RCL-PFC Solution combines a main HVAC Controller with add-on modules dedicated to lighting and sunblinds management to form a modular solution within a single point on the network.



Complementary Products

Add-On Modules

Lighting Add-On Modules



RCx-Light-3

3 ON/OFF light add-on module (receives L1, L2 and L3 commands)



RCx-Light-3D

3 dimming light add-on module (receives L1, L2 and L3 commands)

Sunblinds Add-On Modules



RCx-Blind-3

3 sunblind (230 VAC) add-on module (receives S1, S2 and S3 commands)



RCx-Blind-2LV

2 sunblind (24 V) add-on module (receives S1 and S2 commands)

Lighting & Sunblinds Add-On Modules



RCx-Duo-2D1

2 dimming light + 1 sunblind (230 VAC) add-on module (receives L3, L4 and S4 commands)

Remote Controls

TCND Series

Line of multi-discipline remote controls: Infrared, Radio and EnOcean technologies



TCND-I

Infrared multi-discipline remote control¹

TCND-IT

Infrared multi-discipline remote control with temperature sensor¹ (wall-mounted stand required -provided)

TCND-R

Radio multi-discipline remote control¹

TCND-RT

Radio multi-discipline remote control with temperature sensor¹ (wall-mounted stand required -provided)

TCND-ENOCEAN

EnOcean multi-discipline remote control with temperature sensor (wall-mounted stand required -provided)

¹ Models available in grey.

Smart-Sense Room Control



Smart-Sense Room Control

iPhone application for remote HVAC, lighting, sunblinds and occupancy control

Room Modules

Allure RS-Smart-Sense



Allure RS-Smart-Sense

Digital room sensor device with a touch-sensitive LCD color screen for HVAC, lighting, sunblinds and occupancy control

Allure EC-Sensor

Line of discrete sensors



EC-Sensor

Room temperature sensor with communication jack

EC-Sensor-O

Room temperature sensor with occupancy override button and communication jack

EC-Sensor-S

Room temperature sensor with setpoint adjustment and communication jack

EC-Sensor-SO

Room temperature sensor with setpoint adjustment, occupancy override button, and communication jack

EC-Sensor-SOF

Room temperature sensor with setpoint adjustment, occupancy override button, fan speed selection, and communication jack

Allure Wireless Battery-less ECW-Sensor

Line of wireless, battery-less sensors (EnOcean 868.3 MHz).



ECW-Sensor

Room temperature sensor

ECW-Sensor-O

Room temperature sensor with occupancy override button

ECW-Sensor-S

Room temperature sensor with setpoint adjustment

ECW-Sensor-SO

Room temperature sensor with setpoint adjustment and occupancy override button

ECW-Sensor-SOF

Room temperature sensor with setpoint adjustment, occupancy override button, and fan speed selection

RS-ANA Series

Analog room sensors



RS-ANA1

Analog room temperature sensor

RS-ANA2

Analog room temperature sensor with setpoint adjustment

RS-DL Series

Line of digital link room sensors



RS-DL2

Digital room temperature sensor with setpoint adjustment

RS-DL3

Digital room temperature sensor with setpoint adjustment and occupancy override button

RS-DL4

Digital room temperature sensor with setpoint adjustment, occupancy override button, and fan speed selection

RS-LCD

Room temperature sensor with a LCD screen for HVAC, lighting and sunblinds control

In-ceiling Multi-sensors

MS2 Series



MS2-I-P

Infrared mini multi-sensor - presence detection

MS2-I-PL

Infrared mini multi-sensor - presence detection and light sensor

MS2-I-PLT

Infrared mini multi-sensor - presence detection, light sensor and temperature sensor

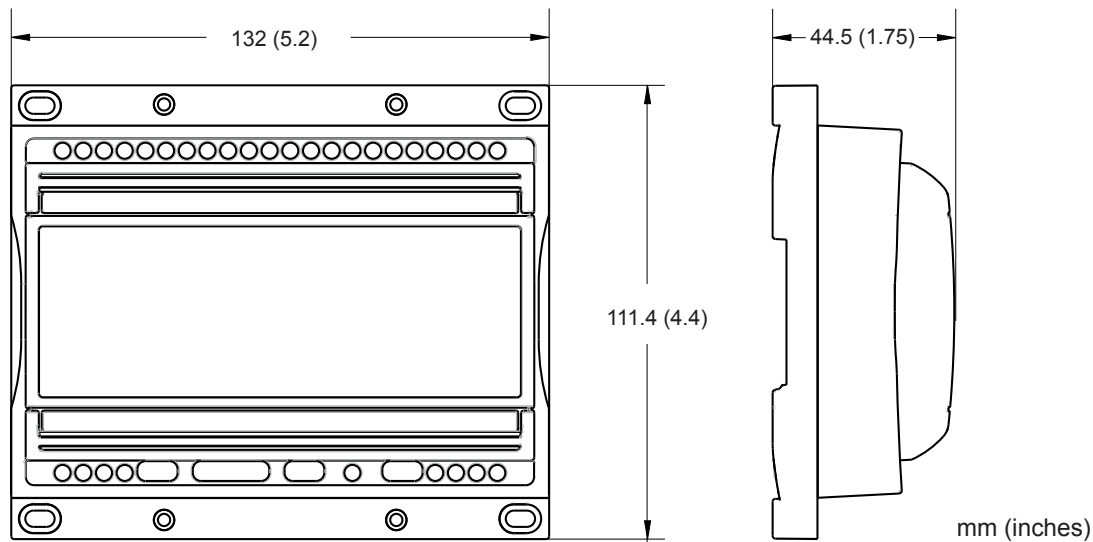
MS2-R-PL

Radio mini multi-sensor - presence detection and light sensor

MS2-R-PLT

Radio mini multi-sensor - presence detection, light sensor and temperature sensor

Product Dimensions



Product Specifications

Power

Voltage	230 VAC ; 50/60 Hz ; +10%/-15%
Protection	Self-protected Transformer 10 A External Circuit Breaker
Power Consumption	30 mA + all external loads
RCL-PFC-107/207:	5 A maximum
RCL-PFC-108/208/209:	3.3 A maximum



: Double insulation devices

Interoperability

Communication	LONTALK Protocol
Channel	TP/FT-10; 78 Kbps
LONMARK Interoperability Guidelines	Version 3.4
Device Class	SCC - Fan Coil
LONMARK Functional Profile	
- Output Objects	SCC Fan Coil #8501
- Node Object	Node Object #0000
- Lamp Object	Lamp Actuator #3040
- Sunblind Object	Sunblind Actuator #6110

Hardware

Processor	Neuron® FT5000; 8 bits
CPU Speed	80 MHz
Memory	Non-volatile Flash 64k

Environmental

Operating Temperature	+5°C to 45°C
Storage Temperature	-20°C to +70°C
Relative Humidity	+20% to +90% Non-condensing
Altitude	< 2000 m

Inputs

Resistive	10 kΩ Type 2, Type Z NTC (max cable length 3 m) Accuracy: ± 0.2°C @ 20°C (controller only)
Analog	0-10 V
Digital	Dry Contact - closed contact treshold < 1 V - open contact treshold > 3V - impedance < 660 Ω - max cable length 100m

Outputs

Analog (AO7 & AO8)	0-10 Vdc 2 mA max
Digital Relay Contacts (DO1, DO2 & DO3)	Typically Fan Speeds 230 VAC 3 A max (total) All share the same common
Digital Relay Contact (DO6-C6)	Typically Heater 230 VAC 10 A - 2 kW Cycle time adjustable from 100 to 250 s Dedicated Common
Digital (DO4 & DO5)	
RCL-PFC-107/207	230 VAC Triac, digital (ON/OFF), PWM or floating - 1 A continuous for each output - 3 A starting current for each output - PWM control ajustable from 20 to 250 s - Floating control: requires two outputs - Adjustable drive time period 1 common per pair of ouputs
RCL-PFC-108/208	24 V Triac, digital (ON/OFF), or PWM or floating - 300mA continuous for the aggregate sum of all valve outputs - 3 A starting current for each output - PWM control ajustable from 20 to 250 s - Floating control: requires two outputs - Adjustable drive time period 1 common per pair of ouputs

Enclosure

Material	FR/ABS
Color	Blue casing & grey connectors
Dimensions (with screws)	111,4 mm x 132 mm
Shipping weight	
RCL-PFC-107:	470 g
RCL-PFC-108:	630 g
RCL-PFC-207:	470 g
RCL-PFC-208:	630 g
Installation	Direct din-rail mounting or wall-mounting

Wireless Receiver¹

Communication	EnOcean wireless standard
Number of wireless inputs	1
Supported Wireless Receivers	RFR-K-ENOCEAN (868 MHz)
Cable	RJ9 Link, 50m maximum

Electromagnetic Compatibility

CE - Emission	EN 61000-6-1: Generic standard for residential, commercial and light-industrial environments EN 61000-6-2: Generic standard for industrial environments
CE - Immunity	EN 61000-6-3: Generic standard for residential, commercial and light-industrial environments EN 61000-6-4: Generic standard for industrial environments

Electrical Safety

General requirements	EN 60730: Specification for automatic electrical controls for household and similar use.
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Extension Modules (RCx Series)

Communication	RJ9/RJ11
Number of extension modules per controller	Up to 4 Lights + 4 Sunblinds controlled, in daisy-chain configuration

Agency Approvals

Material	UL94-5VA ²
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Communication Protocols and Standards

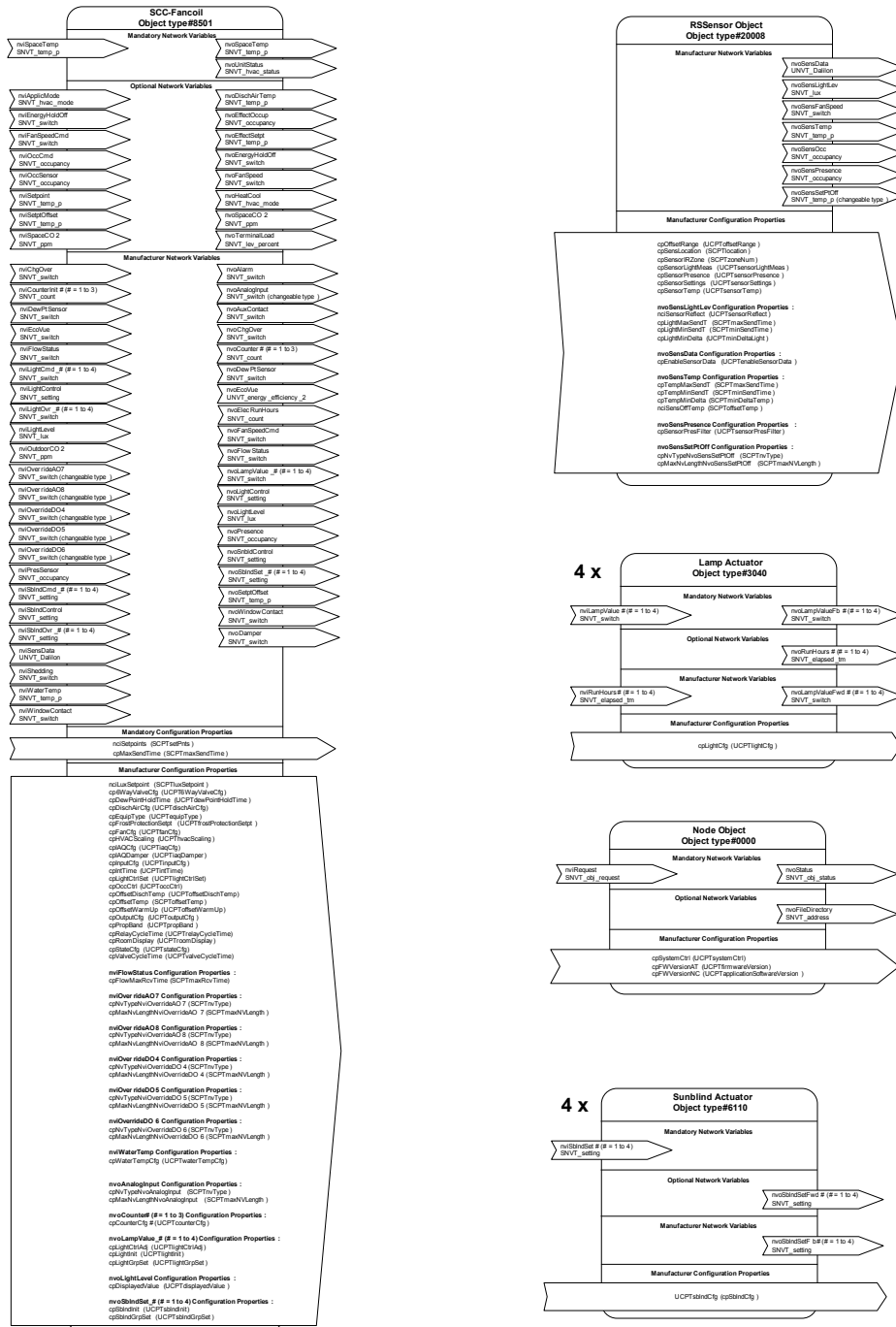


Certified Performances (RCL-PFC-207 only)

Cooling Control Accuracy (CA)	0.1°C (4 pipes) 0.2 °C (2 pipes+electric heater)
Heating Control Accuracy (CA)	0.2°C



1. Available when an optional external RFR-K-ENOCEAN receiver module is connected to the controller.
2. All materials and manufacturing processes comply with the RoHS directive  and are marked according to the Waste Electrical and Electronic Equipment (WEEE) directive  .



Product Warranty & Total Quality Commitment

All Distech Controls product lines are built to meet rigorous quality standards and carry a two-year warranty. Distech Controls is an ISO 9001 registered company.

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