DISTECH CONTROLS™

Datasheet

ECL-PTU Series

LONMARK® Certified Powered Terminal Unit Programmable Controllers

Overview

The ECL-PTU Series are microprocessor-based programmable controllers designed to control powered terminal units such as powered fan coil units, heat pumps units, and chilled beams. Additionally, these HVAC applications can support various pipe configurations such as 4-pipe, 2-pipe, and 4-pipe and 1-coil using a 6-way valve. These controllers use the LonTalk® communication protocol and are LONMARK certified as SCC Fan Coil controllers.

This series contains five models: ECL-PTU-107, ECL-PTU-207, ECL-PTU-208, ECL-PTU-307 and ECL-PTU-308. These controllers support various input types including resistance, voltage, pulse, and digital-based ones. Moreover, they provide analog, floating, and proportional control outputs for valves, electric heaters and fans.This series can control up to 8 lights and 8 shades / sunblinds through ECx-Light/Blind modules. These are expansion modules that operate off of a separate sub-bus, giving this controller the ability to manage lighting and shades / sunblinds for a full cross-management solution operating from a single network point.

These controllers work with a wide range of sensors, such as those in the Allure™ EC-Smart-Vue series of communicating room sensors that feature a backlit-display and graphical menus. These sensors are used for indoor temperature measurement, setpoint adjustment, fan speed selection, and occupancy override. Some models include CO_2 sensing and motion detection to allow the system to adjust to actual operating conditions for increased energy savings. In addition, these controllers are Open-to-Wireless™ ready, and when paired with the Wireless Receiver, they work with a variety of wireless battery-less sensors and switches.

Custom program these controllers using EC-*gfx*Program through either EC-Net^{AX}™ Pro which is powered by the Niagara^{AX} Framework® or through any LNS®-based software such as Distech Controls' Lonwatcher 3. This allows you to quickly and easily create your own control sequences capable of meeting the most demanding requirements of any engineering specification.

Applications

Meets the requirements of the following applications:

- Fan Coil Units
- Heat Pumps
- Chilled Beams
- Reversible Ceiling with 6-way valves
- Lighting fixtures and shade / sunblind motors when associated to ECx-Light/Blind expansion modules

Improves energy efficiency when combined with:

- CO_2 sensors as part of a demand-controlled ventilation strategy that adjusts the amount of fresh air intake according to the number of building occupants.
- Motion detectors to automatically adjust a zone's occupancy mode from standby to occupied when presence is detected.
- Window-contact sensors to shut-down HVAC systems when a window is opened.

Part of an integrated solution for light and shade / sunblind control.

Features & Benefits

- Expandable with lighting and shades / sunblinds expansion modules that enable smart cross-management of HVAC, lighting, and shades / sunblinds to build the Integrated Room Control Solution
- LONMARK SCC Fan Coil certified, guaranteeing interoperability with other manufacturers' LONMARK certified controllers
- Available with an optional Wireless Receiver that supports up to 24 wireless inputs, letting you create wire-free installations and use various wireless battery-less sensors and switches
- eu.bac-certified, ensuring highest control accuracy for increased energy efficiency
- Universal power supply allows for direct connection to the mains (no external transformer) and for improved reliability
- Can be operated as a stand-alone unit or as part of a networked system to suit any installation requirement
- Optional strain relief and terminal block covers provide enhanced electrical protection that can reduce installation costs by eliminating the need for a protective enclosure (when allowed by local regulations)
- Powered digital outputs allow for direct connection of controlled loads to save installation time and wiring costs.
- Optimized hardware design has ultra-low power consumption.
- Some models have a 24 VAC power supply that can be used to power analog input damper and valve actuators thereby eliminating the need for a transformer

ECL-PTU Series





Model	ECL-PTU-107	ECL-PTU-207	ECL-PTU-208	ECL-PTU-307	ECL-PTU-308
Points	12	16	14	17	16
Universal Inputs	2	2	2	2	2
Digital Inputs	3	3	3	2	3
Sensor Inputs (NTC 10 kΩ Type II, III)	1	1	1	2	1
Wireless Inputs[1]	24	24	24	24	24
Relay Contact Outputs *(typ. Electric Heater)*	1 x 2 kW	1 x 2 kW	1 x 2 kW	2 x 1 kW	1 x 2 kW
Powered Relay Outputs *(typ. Fan Speeds)*	3	3	3	3	3
Line-Powered Triac Outputs *(typ. Valves)*	2	2		4	
24 VAC Triac Outputs *(typ. Valves)*[2]			2		4
Analog Outputs		4	2	2	2
24 VAC Power Supply Outputs			■		■
Supply Voltage Input	100-240 VAC	100-240 VAC	100-240 VAC	100-240 VAC	100-240 VAC
Compatibility for optional subnet devices:					
- Allure EC-Smart-Vue	Up to 4[3,4]	Up to 4[3,4]	Up to 4[3,4]	Up to 4[3,4]	Up to 4[3,4]
- EC-Multi-Sensor series	Up to 4[4]	Up to 4[4]	Up to 4[4]	Up to 4[4]	Up to 4[4]
- ECx-Light-4 / ECx-Light-4D	2	2	2	2	2
- ECx-Blind-4 / ECx-Blind-4LV	2	2	2	2	2

1. All controllers are Open-to-Wireless ready. Available when an optional Wireless Receiver is connected to the controller. Some wireless sensors may use more than one wireless input from the controller.
2. Can be used to power certain types of valves and air dampers, thereby eliminating the need for a transformer.
3. A controller can support a maximum of two Allure EC-Smart-Vue models equipped with a CO_2 sensor. The remaining connected Allure EC-Smart-Vue models must be without a CO_2 sensor.
4. A controller can support four sensors among Allure EC-Smart-Vue and EC-Multi-Sensor.

Recommended Applications

Model	ECL-PTU-107	ECL-PTU-207	ECL-PTU-208	ECL-PTU-307	ECL-PTU-308
FCU[1]: 2/4 pipes - 3 speed fan - ON/OFF / thermal valves	■				
FCU: 2/4 pipes - Variable / 3-speed fan - ON/OFF / thermal valves		■	■		
FCU: 2/4 pipes - Variable / 3-speed fan - Analog actuator		■	■		
FCU: 2 pipes - Variable / 3-speed fan - Floating actuator		■	■		
FCU: 4 pipes - Variable / 3-speed fan - Floating actuator				■	■
HPU[2]: 3-speed fan	■				
HPU: Variable speed fan		■	■		
Chilled Beam: ON/OFF / thermal valves	■		■		
Chilled Beam: 2 pipes - Floating actuator	■		■		
Chilled Beam: 4 pipes - Floating actuator				■	■
Reversible Ceiling with 6-way valves		■	■		
Unit Ventilator		■	■		
Two-room FCU Application: 2/4 pipes - Variable speed fan - ON/OFF / thermal valves				■	■
Two-room Chilled Beam Application: 2/4 pipes - ON/OFF / thermal / analog valves				■	■

1. Fan Coil Unit
2. Heat Pump Unit

Open-to-Wireless Series – Controller Wireless Receiver Add-on

Open-to-Wireless™

To reduce the cost of installation, and minimize the impact on pre-existing partition walls, the Wireless Receiver enables these controllers to communicate with a line of wireless battery-less room sensors and switches. These Wireless Receivers are available in EnOcean® 315 MHz and 868.3 MHz versions.

Note that controllers have one wireless port to support a single Wireless Receiver.

For more information about the EnOcean and Open-to-Wireless technologies, refer to the Open-to-Wireless Solution Guide. For more information about the Wireless Receiver module, refer to the Wireless Receiver Datasheet. These documents can be found on our web site.

Supported Platforms

EC-Net^{AX} Solution

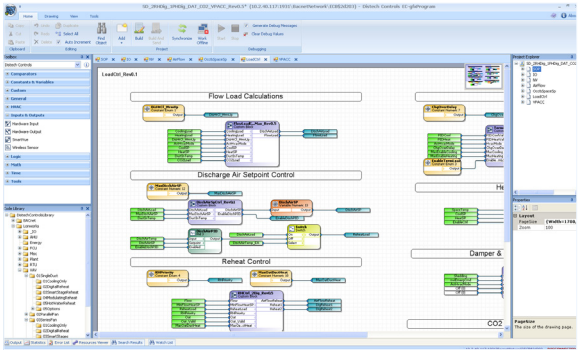
The EC-Net^{AX} multi-protocol integration solution is web-enabled and powered by the Niagara^{AX} Framework, establishing a fully Internet-enabled, distributed architecture for real-time access, automation and control of devices. The EC-Net^{AX} open framework solution creates a common development and 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)

The LNS® client-server platform 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

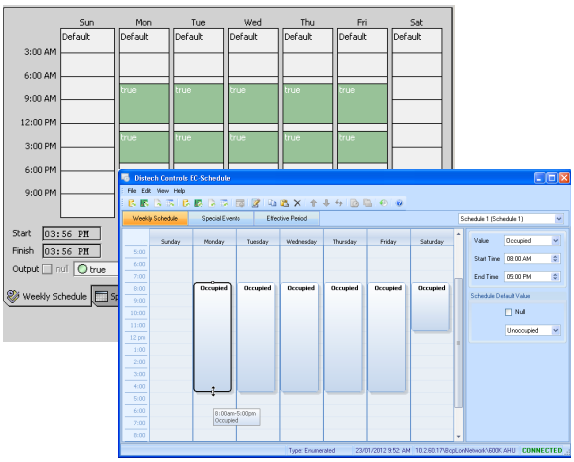
EC-*gfx*Program Graphical Programming Interface (GPI)



Distech Controls' EC-*gfx*Program is a programming tool that allows you to quickly create control sequences by "dragging and dropping" block objects and then linking the objects with a simple "click, select and release". Select objects from an extensive library of over 100 commonly used functions as well as create your own custom blocks. With a user-friendly interface and intuitive programming environment, HVAC programming could not be easier. Refer to the EC-*gfx*Program datasheet for more information.

- Program both ECP and ECL Series LONWORKS and ECB Series BACnet controllers with the same tool.
- Supplied as freeware – there are no associated licensing costs.
- Live debugging allows user to view code execution, input/output values and to detect errors in real-time.
- A code library for managing your favorite or most commonly used code or code sections.

EC-Net^{AX} Scheduling / EC-Schedule LNS Plug-in / EC-*gfx*Program EC-Schedule



Configure the controller's built-in schedules and holidays from EC-Net^{AX} solution (ECB and ECL series controllers), LNS (ECL series controllers), or directly from within EC-*gfx*Program (ECB and ECL series controllers) with an easy-to-use point, drag, and click interface. It features a weekly schedule for regular, repeating, events by «time-of-day» and «day-of-week», while a holiday schedule is available to define events for specific days.

- Easily configure schedules using a graphical slider.
- Allows you to easily copy and paste entries. Duplicate a schedule entry for Monday to Friday.
- Special events allow you to set exceptions such as holidays to a schedule.
- Holidays can be set for recurring events such as the 9th day, or the 3rd Thursday of a given month.
- A schedule has an effective period during which it is active.
- Schedule provides Next State and Time to Next State that are ideal for use with programming functions such as Optimum Start or Morning Warm Up.

Complementary Products

ECx-Light/Blind Series

Line of lighting and shades / sunblinds expansion modules for PTU Series controllers: ON/OFF lights, dimmable lights, mains-powered shades / sunblinds, 24 VDC shades / sunblinds, and more....

Allure™ EC-Smart-Vue Series

Line of communicating room temperature sensors with communication jack, a backlit-display and configurable graphic menus that allow occupants to set occupancy, setpoint adjustment, fan speed, or any other system parameters. Models are available with any combination of the following options: humidity sensor, motion sensor, and CO_2 sensor. The ECO-Vue™ icon shows how environmentally-friendly the zone's energy consumption is in real time.

Allure EC-Sensor Series

Line of discrete temperature sensors. Models are available with the following options: communication jack, occupancy override button, setpoint adjustment, and fan speed selection.

Allure Wireless Battery-less ECW-Sensor Series

Line of wireless, battery-less room temperature sensors. Models are available with the following options: occupancy override button, setpoint adjustment, and fan speed selection.

These sensors are available in EnOcean® 315 MHz and 868.3 MHz versions. The controller must be equipped with a Wireless Receiver.

EC-Multi-Sensor Series

Line of in-ceiling multi-sensors. Models are available with presence detection, light sensor, temperature sensor, and infrared receiver.

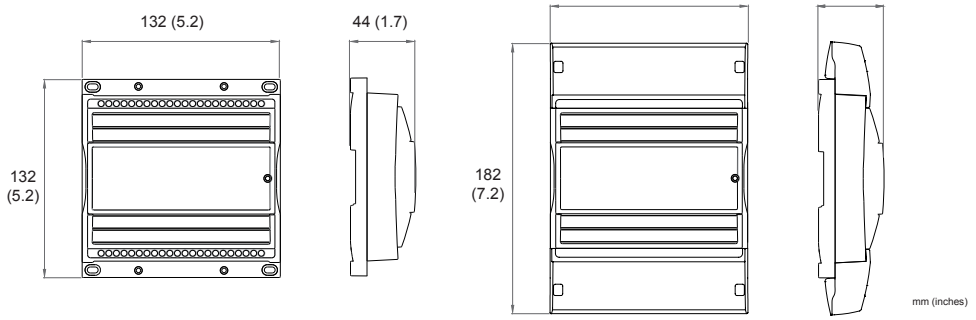
Wireless Sensors and Switches

A wide range of self-powered wireless sensors and switches, including the following: Motion sensor and light sensor, 2-/4-channel wireless light switches (North American and European models), outdoor temperature sensor, surface temperature contact sensor, duct temperature sensor, and more.

These sensors are available in EnOcean 315 MHz and 868.3 MHz versions. The controller must be equipped with a Wireless Receiver.

For more information about the available wireless sensors and switches, refer to the Open-to-Wireless™ Solution Guide which can be found on our web site.

ECL-PTU-107 Dimensions



without terminal block covers and strain relief

with terminal block covers and strain relief

ECL-PTU-107 Specifications

Power

Voltage	100-240 VAC; -15%/+10%; 50/60 Hz
Protection	4.0 A external circuit breaker type C or 4.0 A fast acting high breaking external fuse (250 VAC min)
Typical Consumption	0.9 W plus all external loads[1]
Maximum Consumption	4.0 A
⧈	Double Insulation Device
Overvoltage Category	II - 2.5 kV

Interoperability

Communication	LonTalk protocol
Channel	TP/FT-10; 78 Kbps
LonMark Interoperability Guidelines	Version 3.4
Device Class	SCC Fan Coil
LonMark Functional Profile	
- Node Objects	Node Object #0000
- SCC Object	SCC Fan Coil #8501
- Lamp Objects	Lamp Actuator #3040
- Sunblind Objects	Sunblind Actuator #6110
Connection	2 wires: LON1 / LON2

Hardware

Processor	STM32 (ARM Cortex™ M3) MCU, 32 bit
CPU Speed	68 MHz
Memory	384 kB Non-volatile Flash (applications) 1 MB Non-volatile Flash (storage) 64 kB RAM
Status Indicator	Green LEDs: Controller & Power Status, LAN Tx & Rx

Environmental

Operating Temperature	+5°C to +40°C (41°F to 104°F)
Storage Temperature	-20°C to 70°C (-4°F to 158°F)
Relative Humidity	+20 to 90% Non-condensing
Altitude	< 2000 m
Pollution Degree	2

Enclosure

Material	ABS type PA-765A
Color	Blue casing & grey connectors
Dimensions	132 × 132 × 44 mm (5.2 × 5.2 × 1.7”)
- with terminal block covers	182 × 132 × 44 mm (7.2 × 5.2 × 1.7”)
Shipping Weight	0.37 kg (0.82 lbs)
IP	30 when equipped with strain relief and terminal block cover
Installation	Direct din-rail mounting or wall-mounting - Refer to the Hardware Installation Guide for more information

Inputs[2]

⚠	Measurement Category: CAT I
Universal Inputs (UI1, UI2)	Software configurable
- Voltage	0-10 VDC
- Digital	Dry Contact 0-3.3 VDC
- Pulse	1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC
- Resistor	0 to 350 kΩ. All thermistor types that operate in this range are supported. The following temperature sensors are pre-configured:
Thermistor	10 kΩ Type II, III (10 kΩ @ 25°C; 77°F)
Sensor Inputs (SI3)	Software configurable Accuracy: ± 0.1°C @ 25°C (controller only)
- Digital	Dry Contact 0-3.3 VDC
- Pulse	1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC
- Resistor	10 kΩ Type II, III (10 kΩ @ 25°C; 77°F)
Digital Inputs (DI4, DI5, DI6)	Software configurable
- Digital	Dry Contact 0-3.3 VDC
- Pulse	20 Hz maximum; Min 20 ms On / 20 ms Off - Dry Contact 0-3.3 VDC
Power Supply Output (Vref)	5 VDC for polarization I < 1mA

Outputs

Triac Outputs (DO5, DO6)	PWM (Typically Thermal Valve Control) / Floating / Digital (ON/OFF) 100-240 VAC (same as device power supply) - 0.5 A continuous - 1 A @ 15% duty cycle for a 10-minute period - Inrush current 3.0 A max (< 20 ms) 1 common per pair of outputs - PWM control: - Adjustable period from 2 s to 65 s - Floating control: - Requires 2 consecutive outputs - Min pulse on/off: 500msec - Adjustable drive time period from 10 s to 600 s
Powered Relay Outputs (DO1, DO2, DO3)	Digital (Typically Fan Speeds) - 100-240 VAC (same as device power supply) - 3.0 A max. (inductive or resistive load) for the total sum of the 3 outputs Normally Open Contacts All share the same common
Digital Relay Contact (DO4, C4)	Digital (Typically Electric Heater) Dry contact from 100 VAC to 255 VAC The output must be protected with a 10.0 A external circuit breaker or a 10.0 A external fast acting, high breaking fuse (250 VAC min.) - 9.0 A max. on a resistive load (2 kW @ 230 VAC) Normally Open Contacts Digital dedicated common

ECL-PTU-107 Specifications (continued)

Wireless Receiver[3]

Communication	EnOcean wireless standard
Number of wireless inputs[4]	24
Supported wireless receivers	Wireless Receiver (315 MHz) Wireless Receiver (868 MHz)
Cable	Telephone cord
- Connector	4P4C modular jack
- Length	2 m (6.5 ft)

Standards and Regulation[5]

CE - Emission	IEC61000-6-3: 2006 + A1: ed.2010 Generic standards for residential, commercial and light-industrial environments
CE - Immunity	IEC61000-6-1: 2005; Generic standards for residential, commercial and light-industrial environments
FCC	This device complies with FCC rules part 15, subpart B, class B
UL Listed (CDN & US)	UL 61010-1 Safety Requirements For Electrical Equipment For Measurement, Control, And Laboratory Use - Part 1: General Requirements - Edition 2 - Revision Date 2008/10/28 CSA C22.2 NO. 61010-1 Safety Requirements For Electrical Equipment For Measurement, Control, And Laboratory Use - Part 1: General Requirements - Edition 2 - Revision Date 2008/10/01 File number: E352591
Material[6]	UL94-5VB
CE - Electrical Safety (Approved by an external Lab)	EN 60730-1 : 2011 - Automatic electrical controls for household and similar use - Part 1: General requirements

Subnetwork

Communication	RS-485
Cable	Cat 5e, 8 conductor twisted pair
Connector	RJ-45
Topology	Daisy-chain configuration

Certified Performances (pending)

Chilled Ceiling Systems
- Cooling Control Accuracy 0.2°C (0.36°F)

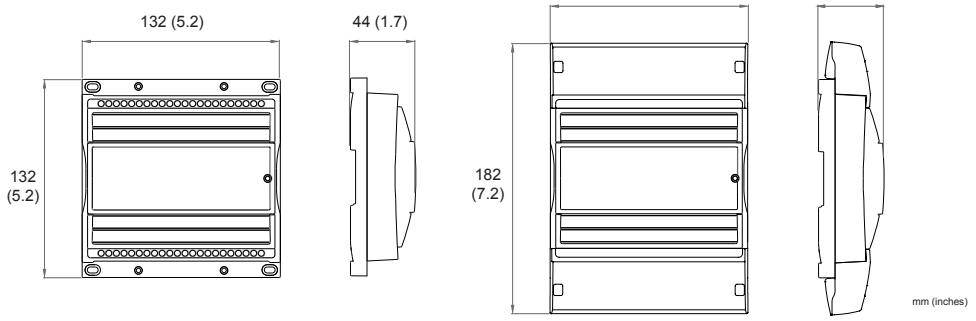
Fan Coil Systems (2 pipes + electric heater)
- Heating Control Accuracy 0.1°C (0.18°F)
- Cooling Control Accuracy 0.1°C (0.18°F)

Fan Coil Systems (4 pipes)
- Heating Control Accuracy 0.1°C (0.18°F)
- Cooling Control Accuracy 0.1°C (0.18°F)

Communication Protocols

1. External loads must include the power consumption of any connected module. Refer to the respective module's datasheet for related power consumption information.
2. SELV (Safety Extra Low Voltage) inputs/outputs.
3. Available when an optional external Wireless Receiver module is connected to the controller. Refer to the Open-to-Wireless Solution Guide for a list of supported EnOcean wireless modules.
4. Some wireless modules may use more than one wireless input from the controller.
5. Must be mounted with strain reliefs and terminal block covers or in a junction box to comply with CE and UL regulations.
6. All materials and manufacturing processes comply with the RoHS directive and are marked according to the Waste Electrical and Electronic Equipment (WEEE) directive.

ECL-PTU-207 Dimensions



without terminal block covers and strain relief

with terminal block covers and strain relief

ECL-PTU-207 Specifications

Power

Voltage	100-240 VAC; -15%/+10%; 50/60 Hz
Protection	4.0 A external circuit breaker type C or 4.0 A fast acting high breaking external fuse (250 VAC min)
Typical Consumption	0.9 W plus all external loads[1]
Maximum Consumption	4.0 A
⧈	Double Insulation Device
Overvoltage Category	II - 2.5 kV

Interoperability

Communication	LonTalk protocol
Channel	TP/FT-10; 78 Kbps
LonMark Interoperability Guidelines	Version 3.4
Device Class	SCC Fan Coil
LonMark Functional Profile	
- Node Objects	Node Object #0000
- SCC Object	SCC Fan Coil #8501
- Lamp Objects	Lamp Actuator #3040
- Sunblind Objects	Sunblind Actuator #6110
Connection	2 wires: LON1 / LON2

Hardware

Processor	STM32 (ARM Cortex™ M3) MCU, 32 bit
CPU Speed	68 MHz
Memory	384 kB Non-volatile Flash (applications) 1 MB Non-volatile Flash (storage) 64 kB RAM
Status Indicator	Green LEDs: Controller & Power Status, LAN Tx & Rx

Environmental

Operating Temperature	+5°C to +40°C (41°F to 104°F)
Storage Temperature	-20°C to 70°C (-4°F to 158°F)
Relative Humidity	+20 to 90% Non-condensing
Altitude	< 2000 m
Pollution Degree	2

Enclosure

Material	ABS type PA-765A
Color	Blue casing & grey connectors
Dimensions	132 × 132 × 44 mm (5.2 × 5.2 × 1.7”)
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Shipping Weight	0.37 kg (0.82 lbs)
IP	30 when equipped with strain relief and terminal block cover
Installation	Direct din-rail mounting or wall-mounting - Refer to the Hardware Installation Guide for more information

Inputs[2]

⚠	Measurement Category: CAT I
Universal Inputs (UI1, UI2)	Software configurable
- Voltage	0-10 VDC
- Digital	Dry Contact 0-3.3 VDC
- Pulse	1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC
- Resistor	0 to 350 kΩ. All thermistor types that operate in this range are supported. The following temperature sensors are pre-configured:
Thermistor	10 kΩ Type II, III (10 kΩ @ 25°C; 77°F)
Sensor Inputs (SI3)	Software configurable Accuracy: ± 0.1°C @ 25°C (controller only)
- Digital	Dry Contact 0-3.3 VDC
- Pulse	1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC
- Resistor	10 kΩ Type II, III (10 kΩ @ 25°C; 77°F)
Digital Inputs (DI4, DI5, DI6)	Software configurable
- Digital	Dry Contact 0-3.3 VDC
- Pulse	20 Hz maximum; Min 20 ms On / 20 ms Off - Dry Contact 0-3.3 VDC
Power Supply Output (Vref)	5 VDC for polarization I < 1mA

Outputs

Triac Outputs (DO5, DO6)	PWM (Typically Thermal Valve Control) / Floating / Digital (ON/OFF) 100-240 VAC (same as device power supply) - 0.5 A continuous - 1 A @ 15% duty cycle for a 10-minute period - Inrush current 3.0 A max (< 20 ms) 1 common per pair of outputs - PWM control: - Adjustable period from 2 s to 65 s - Floating control: - Requires 2 consecutive outputs - Min pulse on/off: 500msec - Adjustable drive time period from 10 s to 600 s
Powered Relay Outputs (DO1, DO2, DO3)	Digital (Typically Fan Speeds) - 100-240 VAC (same as device power supply) - 3.0 A max. (inductive or resistive load) for the total sum of the 3 outputs Normally Open Contacts All share the same common
Digital Relay Contact (DO4, C4)	Digital (Typically Electric Heater) Dry contact from 100 VAC to 255 VAC The output must be protected with a 10.0 A external circuit breaker or a 10.0 A external fast acting, high breaking fuse (250 VAC min.) - 9.0 A max. on a resistive load (2 kW @ 230 VAC) Normally Open Contacts Digital dedicated common
Analog[2] (AO7, AO8, AO9, AO10)	Linear (0-10VDC) - 5 mA max.

ECL-PTU-207 Specifications (continued)

Wireless Receiver[3]

Communication	EnOcean wireless standard
Number of wireless inputs[4]	24
Supported wireless receivers	Wireless Receiver (315 MHz) Wireless Receiver (868 MHz)
Cable	Telephone cord
- Connector	4P4C modular jack
- Length	2 m (6.5 ft)

Standards and Regulation[5]

CE - Emission	IEC61000-6-3: 2006 + A1: ed.2010 Generic standards for residential, commercial and light-industrial environments
CE - Immunity	IEC61000-6-1: 2005; Generic standards for residential, commercial and light-industrial environments
FCC	This device complies with FCC rules part 15, subpart B, class B
UL Listed (CDN & US)	UL 61010-1 Safety Requirements For Electrical Equipment For Measurement, Control, And Laboratory Use - Part 1: General Requirements - Edition 2 - Revision Date 2008/10/28 CSA C22.2 NO. 61010-1 Safety Requirements For Electrical Equipment For Measurement, Control, And Laboratory Use - Part 1: General Requirements - Edition 2 - Revision Date 2008/10/01 File number: E352591
Material[6]	UL94-5VB
CE - Electrical Safety (Approved by an external Lab)	EN 60730-1 : 2011 - Automatic electrical controls for household and similar use - Part 1: General requirements

Subnetwork

Communication	RS-485
Cable	Cat 5e, 8 conductor twisted pair
Connector	RJ-45
Topology	Daisy-chain configuration

Certified Performances (pending)

Chilled Ceiling Systems

- Cooling Control Accuracy 0.2°C (0.36°F)

Fan Coil Systems (2 pipes + electric heater)

- Heating Control Accuracy 0.1°C (0.18°F)
- Cooling Control Accuracy 0.1°C (0.18°F)

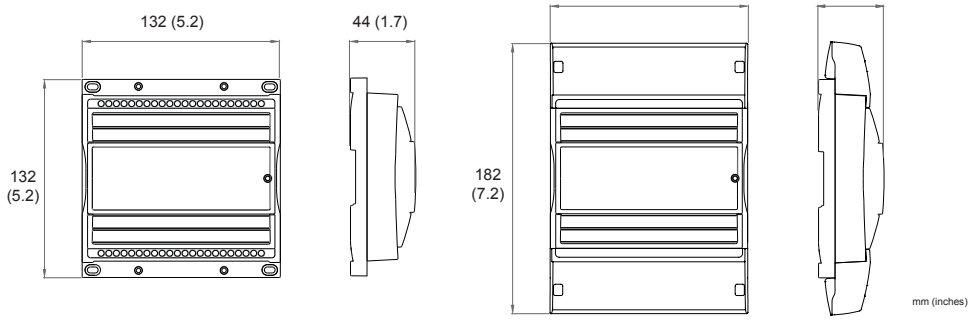
Fan Coil Systems (4 pipes)

- Heating Control Accuracy 0.1°C (0.18°F)
- Cooling Control Accuracy 0.1°C (0.18°F)

Communication Protocols

1. External loads must include the power consumption of any connected module. Refer to the respective module's datasheet for related power consumption information.
2. SELV (Safety Extra Low Voltage) inputs/outputs.
3. Available when an optional external Wireless Receiver module is connected to the controller. Refer to the Open-to-Wireless Solution Guide for a list of supported EnOcean wireless modules.
4. Some wireless modules may use more than one wireless input from the controller.
5. Must be mounted with strain reliefs and terminal block covers or in a junction box to comply with CE and UL regulations.
6. All materials and manufacturing processes comply with the RoHS directive and are marked according to the Waste Electrical and Electronic Equipment (WEEE) directive.

ECL-PTU-208 Dimensions



without terminal block covers and strain relief

with terminal block covers and strain relief

ECL-PTU-208 Specifications

Power

Voltage	100-240 VAC; -15%/+10%; 50/60 Hz
Protection	4.0 A external circuit breaker type C or 4.0 A fast acting high breaking external fuse (250 VAC min)
Typical Consumption	< 2.7 W plus all external loads[1]
Maximum Consumption	3.5 A
⧈	Double Insulation Device
Overvoltage Category	II - 2.5 kV

Interoperability

Communication	LonTalk protocol
Channel	TP/FT-10; 78 Kbps
LONMARK Interoperability Guidelines	Version 3.4
Device Class	SCC Fan Coil
LONMARK Functional Profile	
- Node Objects	Node Object #0000
- SCC Object	SCC Fan Coil #8501
- Lamp Objects	Lamp Actuator #3040
- Sunblind Objects	Sunblind Actuator #6110
Connection	2 wires: LON1 / LON2

Hardware

Processor	STM32 (ARM Cortex™ M3) MCU, 32 bit
CPU Speed	68 MHz
Memory	384 kB Non-volatile Flash (applications) 1 MB Non-volatile Flash (storage) 64 kB RAM
Status Indicator	Green LEDs: Controller & Power Status, LAN Tx & Rx

Environmental

Operating Temperature	+5°C to +40°C (41°F to 104°F)
Storage Temperature	-20°C to 70°C (-4°F to 158°F)
Relative Humidity	+20 to 90% Non-condensing
Altitude	< 2000 m
Pollution Degree	2

Enclosure

Material	ABS type PA-765A
Color	Blue casing & grey connectors
Dimensions	132 × 132 × 44 mm (5.2 × 5.2 × 1.7")
- with terminal block covers	182 × 132 × 44 mm (7.2 × 5.2 × 1.7")
Shipping Weight	0.42 kg (0.93 lbs)
IP	30 when equipped with strain relief and terminal block cover
Installation	Direct din-rail mounting or wall-mounting - Refer to the Hardware Installation Guide for more information

On-board 24 VAC Power Supply

Use	Used to power both 24 VAC Triac outputs and 24 VAC outputs.
Voltage	24 VAC; ± 10%; 50 Hz
Current	- 500 mA max. on a resistive load (12 VA @ 24 VAC) - Peak current 0.8 A max. - Short-circuit protected - Overload protected

Inputs[2]

⚠	Measurement Category: CAT I
Universal Inputs (UI1, UI2)	Software configurable
- Voltage	0-10 VDC
- Digital	Dry Contact 0-3.3 VDC
- Pulse	1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC
- Resistor	0 to 350 kΩ. All thermistor types that operate in this range are supported. The following temperature sensors are pre-configured:
Thermistor	10 kΩ Type II, III (10 kΩ @ 25°C; 77°F)
Sensor Inputs (SI3)	Software configurable Accuracy: ± 0.1°C @ 25°C (controller only)
- Digital	Dry Contact 0-3.3 VDC
- Pulse	1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC
- Resistor	10 kΩ Type II, III (10 kΩ @ 25°C; 77°F)
Digital Inputs (DI4, DI5, DI6)	Software configurable
- Digital	Dry Contact 0-3.3 VDC
- Pulse	20 Hz maximum; Min 20 ms On / 20 ms Off - Dry Contact 0-3.3 VDC
Power Supply Output (Vref)	5 VDC for polarization I < 1mA

Outputs

Triac Outputs[2] (DO5, DO6)	PWM (Typically Thermal Valve Control) / Floating / Digital (ON/OFF) See *On-board 24 VAC Power Supply* section for voltage and current specifications 1 common per pair of outputs - PWM control: - Adjustable period from 2 s to 65 s - Floating control: - Requires 2 consecutive outputs - Min pulse on/off: 500msec - Adjustable drive time period from 10 s to 600 s
Powered Relay Outputs (DO1, DO2, DO3)	Digital (Typically Fan Speeds) - 100-240 VAC (same as device power supply) - 3.0 A max. (inductive or resistive load) for the total sum of the 3 outputs Normally Open Contacts All share the same common
Digital Relay Contact (DO4, C4)	Digital (Typically Electric Heater) Dry contact from 100 VAC to 255 VAC The output must be protected with a 10.0 A external circuit breaker or a 10.0 A external fast acting, high breaking fuse (250 VAC min.) - 9.0 A max. on a resistive load (2 kW @ 230 VAC) Normally Open Contacts Digital dedicated common
Analog[2] (AO7, AO8)	Linear (0-10VDC) - 5 mA max.
24 VAC Outputs[2]	See *On-board 24 VAC Power Supply* section

ECL-PTU-208 Specifications (continued)

Wireless Receiver[3]

Communication	EnOcean wireless standard
Number of wireless inputs[4]	24
Supported wireless receivers	Wireless Receiver (315 MHz) Wireless Receiver (868 MHz)
Cable	Telephone cord
- Connector	4P4C modular jack
- Length	2 m (6.5 ft)

Standards and Regulation[5]

CE - Emission	IEC61000-6-3: 2006 + A1: ed.2010 Generic standards for residential, commercial and light-industrial environments
CE - Immunity	IEC61000-6-1: 2005; Generic standards for residential, commercial and light-industrial environments
FCC	This device complies with FCC rules part 15, subpart B, class B
UL Listed (CDN & US)	UL 61010-1 Safety Requirements For Electrical Equipment For Measurement, Control, And Laboratory Use - Part 1: General Requirements - Edition 2 - Revision Date 2008/10/28 CSA C22.2 NO. 61010-1 Safety Requirements For Electrical Equipment For Measurement, Control, And Laboratory Use - Part 1: General Requirements - Edition 2 - Revision Date 2008/10/01 File number: E352591
Material[6]	UL94-5VB
CE - Electrical Safety (Approved by an external Lab)	EN 60730-1 : 2011 - Automatic electrical controls for household and similar use - Part 1: General requirements

Subnetwork

Communication	RS-485
Cable	Cat 5e, 8 conductor twisted pair
Connector	RJ-45
Topology	Daisy-chain configuration

Certified Performances (pending)

Chilled Ceiling Systems

- Cooling Control Accuracy 0.2°C (0.36°F)

Fan Coil Systems (2 pipes + electric heater)

- Heating Control Accuracy 0.1°C (0.18°F)
- Cooling Control Accuracy 0.1°C (0.18°F)

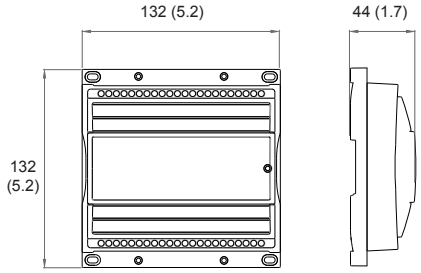
Fan Coil Systems (4 pipes)

- Heating Control Accuracy 0.1°C (0.18°F)
- Cooling Control Accuracy 0.1°C (0.18°F)

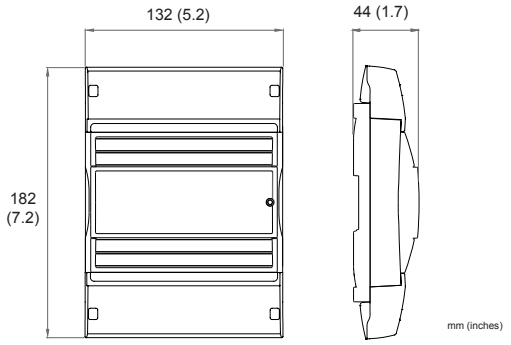
Communication Protocols

1. External loads must include the power consumption of any connected module. Refer to the respective module's datasheet for related power consumption information.
2. SELV (Safety Extra Low Voltage) inputs/outputs.
3. Available when an optional external Wireless Receiver module is connected to the controller. Refer to the Open-to-Wireless Solution Guide for a list of supported EnOcean wireless modules.
4. Some wireless modules may use more than one wireless input from the controller.
5. Must be mounted with strain reliefs and terminal block covers or in a junction box to comply with CE and UL regulations.
6. All materials and manufacturing processes comply with the RoHS directive and are marked according to the Waste Electrical and Electronic Equipment (WEEE) directive.

ECL-PTU-307 Dimensions



without terminal block covers and strain relief



with terminal block covers and strain relief

ECL-PTU-307 Specifications

Power

Voltage	100-240 VAC; -15%/+10%; 50/60 Hz
Protection	4.0 A external circuit breaker type C or 4.0 A fast acting high breaking external fuse (250 VAC min)
Typical Consumption	0.9 W plus all external loads[1]
Maximum Consumption	4.0 A
⧈	Double Insulation Device
Overvoltage Category	II - 2.5 kV

Interoperability

Communication	LonTalk protocol
Channel	TP/FT-10; 78 Kbps
LONMARK Interoperability Guidelines	Version 3.4
Device Class	SCC Fan Coil
LONMARK Functional Profile	
- Node Objects	Node Object #0000
- SCC Object	SCC Fan Coil #8501
- Lamp Objects	Lamp Actuator #3040
- Sunblind Objects	Sunblind Actuator #6110
Connection	2 wires: LON1 / LON2

Hardware

Processor	STM32 (ARM Cortex™ M3) MCU, 32 bit
CPU Speed	68 MHz
Memory	384 kB Non-volatile Flash (applications) 1 MB Non-volatile Flash (storage) 64 kB RAM
Status Indicator	Green LEDs: Controller & Power Status, LAN Tx & Rx

Environmental

Operating Temperature	+5°C to +40°C (41°F to 104°F)
Storage Temperature	-20°C to 70°C (-4°F to 158°F)
Relative Humidity	+20 to 90% Non-condensing
Altitude	< 2000 m
Pollution Degree	2

Enclosure

Material	ABS type PA-765A
Color	Blue casing & grey connectors
Dimensions	132 × 132 × 44 mm (5.2 × 5.2 × 1.7”)
- with terminal block covers	182 × 132 × 44 mm (7.2 × 5.2 × 1.7”)
Shipping Weight	0.39 kg (0.86 lbs)
IP	30 when equipped with strain relief and terminal block cover
Installation	Direct din-rail mounting or wall-mounting - Refer to the Hardware Installation Guide for more information

Inputs[2]

⚠	Measurement Category: CAT I
Universal Inputs (UI1, UI2)	Software configurable
- Voltage	0-10 VDC
- Digital	Dry Contact 0-3.3 VDC
- Pulse	1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC
- Resistor	0 to 350 kΩ. All thermistor types that operate in this range are supported. The following temperature sensors are pre-configured:
Thermistor	10 kΩ Type II, III (10 kΩ @ 25°C; 77°F)
Sensor Inputs (SI3, SI4)	Software configurable Accuracy: ± 0.1°C @ 25°C (controller only)
- Digital	Dry Contact 0-3.3 VDC
- Pulse	1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC
- Resistor	10 kΩ Type II, III (10 kΩ @ 25°C; 77°F)
Digital Inputs (DI5, DI6)	Software configurable
- Digital	Dry Contact 0-3.3 VDC
- Pulse	20 Hz maximum; Min 20 ms On / 20 ms Off - Dry Contact 0-3.3 VDC
Power Supply Output (Vref)	5 VDC for polarization I < 1mA

Outputs

Triac Outputs (DO5, DO6, DO9, DO10)	PWM (Typically Thermal Valve Control) / Floating / Digital (ON/OFF) 100-240 VAC (same as device power supply) - 0.5 A continuous - 1 A @ 15% duty cycle for a 10-minute period - Inrush current 3.0 A max (< 20 ms) 1 common per pair of outputs - PWM control: - Adjustable period from 2 s to 65 s - Floating control: - Requires 2 consecutive outputs - Min pulse on/off: 500msec - Adjustable drive time period from 10 s to 600 s
Powered Relay Outputs (DO1, DO2, DO3)	Digital (Typically Fan Speeds) - 100-240 VAC (same as device power supply) - 3.0 A max. (inductive or resistive load) for the total sum of the 3 outputs Normally Open Contacts All share the same common
Digital Relay Contact (DO4, C4 and DO11, C11)	Digital (Typically Electric Heater) Dry contact from 100 VAC to 255 VAC The output must be protected with a 10.0 A external circuit breaker or a 10.0 A external fast acting, high breaking fuse (250 VAC min.) - 6.0 A max. on a resistive load (1.4 kW @ 230 VAC) Normally Open Contacts Digital dedicated common
Analog[2] (AO7, AO8)	Linear (0-10VDC) - 5 mA max.

ECL-PTU-307 Specifications (continued)

Wireless Receiver[3]

Communication	EnOcean wireless standard
Number of wireless inputs[4]	24
Supported wireless receivers	Wireless Receiver (315 MHz) Wireless Receiver (868 MHz)
Cable	Telephone cord
- Connector	4P4C modular jack
- Length	2 m (6.5 ft)

Standards and Regulation[5]

CE - Emission	IEC61000-6-3: 2006 + A1: ed.2010 Generic standards for residential, commercial and light-industrial environments
CE - Immunity	IEC61000-6-1: 2005; Generic standards for residential, commercial and light-industrial environments
FCC	This device complies with FCC rules part 15, subpart B, class B
UL Listed (CDN & US)	UL 61010-1 Safety Requirements For Electrical Equipment For Measurement, Control, And Laboratory Use - Part 1: General Requirements - Edition 2 - Revision Date 2008/10/28 CSA C22.2 NO. 61010-1 Safety Requirements For Electrical Equipment For Measurement, Control, And Laboratory Use - Part 1: General Requirements - Edition 2 - Revision Date 2008/10/01 File number: E352591
Material[6]	UL94-5VB
CE - Electrical Safety (Approved by an external Lab)	EN 60730-1 : 2011 - Automatic electrical controls for household and similar use - Part 1: General requirements

Subnetwork

Communication	RS-485
Cable	Cat 5e, 8 conductor twisted pair
Connector	RJ-45
Topology	Daisy-chain configuration

Certified Performances (pending)

Chilled Ceiling Systems

- Cooling Control Accuracy 0.2°C (0.36°F)

Fan Coil Systems (2 pipes + electric heater)

- Heating Control Accuracy 0.1°C (0.18°F)
- Cooling Control Accuracy 0.1°C (0.18°F)

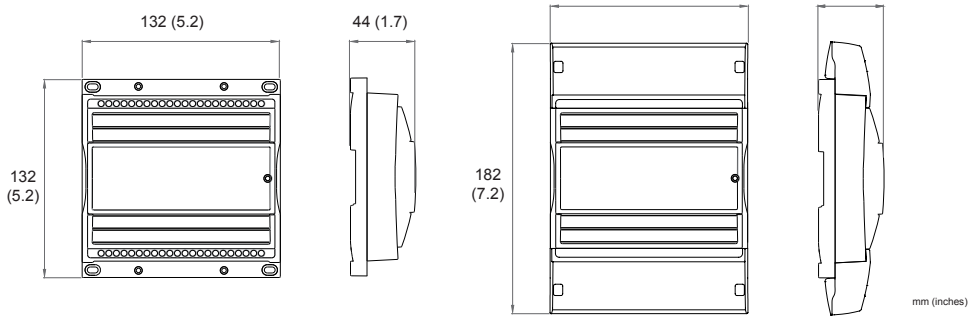
Fan Coil Systems (4 pipes)

- Heating Control Accuracy 0.1°C (0.18°F)
- Cooling Control Accuracy 0.1°C (0.18°F)

Communication Protocols

1. External loads must include the power consumption of any connected module. Refer to the respective module's datasheet for related power consumption information.
2. SELV (Safety Extra Low Voltage) inputs/outputs.
3. Available when an optional external Wireless Receiver module is connected to the controller. Refer to the Open-to-Wireless Solution Guide for a list of supported EnOcean wireless modules.
4. Some wireless modules may use more than one wireless input from the controller.
5. Must be mounted with strain reliefs and terminal block covers or in a junction box to comply with CE and UL regulations.
6. All materials and manufacturing processes comply with the RoHS directive and are marked according to the Waste Electrical and Electronic Equipment (WEEE) directive.

ECL-PTU-308 Dimensions



without terminal block covers and strain relief

with terminal block covers and strain relief

ECL-PTU-308 Specifications

Power

Voltage	100-240 VAC; -15%/+10%; 50/60 Hz
Protection	4.0 A external circuit breaker type C or 4.0 A fast acting high breaking external fuse (250 VAC min)
Typical Consumption	< 2.7 W plus all external loads[1]
Maximum Consumption	3.5 A
⧈	Double Insulation Device
Overvoltage Category	II - 2.5 kV

Interoperability

Communication	LonTalk protocol
Channel	TP/FT-10; 78 Kbps
LonMark Interoperability Guidelines	Version 3.4
Device Class	SCC Fan Coil
LonMark Functional Profile	
- Node Objects	Node Object #0000
- SCC Object	SCC Fan Coil #8501
- Lamp Objects	Lamp Actuator #3040
- Sunblind Objects	Sunblind Actuator #6110
Connection	2 wires: LON1 / LON2

Hardware

Processor	STM32 (ARM Cortex™ M3) MCU, 32 bit
CPU Speed	68 MHz
Memory	384 kB Non-volatile Flash (applications) 1 MB Non-volatile Flash (storage) 64 kB RAM
Status Indicator	Green LEDs: Controller & Power Status, LAN Tx & Rx

Environmental

Operating Temperature	+5°C to +40°C (41°F to 104°F)
Storage Temperature	-20°C to 70°C (-4°F to 158°F)
Relative Humidity	+20 to 90% Non-condensing
Altitude	< 2000 m
Pollution Degree	2

Enclosure

Material	ABS type PA-765A
Color	Blue casing & grey connectors
Dimensions	132 × 132 × 44 mm (5.2 × 5.2 × 1.7")
- with terminal block covers	182 × 132 × 44 mm (7.2 × 5.2 × 1.7")
Shipping Weight	0.42 kg (0.93 lbs)
IP	30 when equipped with strain relief and terminal block cover
Installation	Direct din-rail mounting or wall-mounting - Refer to the Hardware Installation Guide for more information

On-board 24 VAC Power Supply

Use	Used to power both 24 VAC Triac outputs and 24 VAC outputs.
Voltage	24 VAC; ± 10%; 50 Hz
Current	- 500 mA max. on a resistive load (12 VA @ 24 VAC) - Peak current 0.8 A max. - Short-circuit protected - Overload protected

Inputs[2]

⚠	Measurement Category: CAT I
Universal Inputs (UI1, UI2)	Software configurable
- Voltage	0-10 VDC
- Digital	Dry Contact 0-3.3 VDC
- Pulse	1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC
- Resistor	0 to 350 kΩ. All thermistor types that operate in this range are supported. The following temperature sensors are pre-configured:
Thermistor	10 kΩ Type II, III (10 kΩ @ 25°C; 77°F)
Sensor Inputs (SI3)	Software configurable Accuracy: ± 0.1°C @ 25°C (controller only)
- Digital	Dry Contact 0-3.3 VDC
- Pulse	1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC
- Resistor	10 kΩ Type II, III (10 kΩ @ 25°C; 77°F)
Digital Inputs (DI4, DI5, DI6)	Software configurable
- Digital	Dry Contact 0-3.3 VDC
- Pulse	20 Hz maximum; Min 20 ms On / 20 ms Off - Dry Contact 0-3.3 VDC
Power Supply Output (Vref)	5 VDC for polarization I < 1mA

Outputs

Triac Outputs[2] (DO5, DO6, DO9, DO10)	PWM (Typically Thermal Valve Control) / Floating / Digital (ON/OFF) See *On-board 24 VAC Power Supply* section for voltage and current specifications 1 common per pair of outputs - PWM control: - Adjustable period from 2 s to 65 s - Floating control: - Requires 2 consecutive outputs - Min pulse on/off: 500msec - Adjustable drive time period from 10 s to 600 s
Powered Relay Outputs (DO1, DO2, DO3)	Digital (Typically Fan Speeds) - 100-240 VAC (same as device power supply) - 3.0 A max. (inductive or resistive load) for the total sum of the 3 outputs Normally Open Contacts All share the same common
Digital Relay Contact (DO4, C4)	Digital (Typically Electric Heater) Dry contact from 100 VAC to 255 VAC The output must be protected with a 10.0 A external circuit breaker or a 10.0 A external fast acting, high breaking fuse (250 VAC min.) - 9.0 A max. on a resistive load (2 kW @ 230 VAC) Normally Open Contacts Digital dedicated common
Analog[2] (AO7, AO8)	Linear (0-10VDC). - 5 mA max.
24 VAC Outputs[2]	See *On-board 24 VAC Power Supply* section

ECL-PTU-308 Specifications (continued)

Wireless Receiver[3]

Communication	EnOcean wireless standard
Number of wireless inputs[4]	24
Supported wireless receivers	Wireless Receiver (315 MHz) Wireless Receiver (868 MHz)
Cable	Telephone cord
- Connector	4P4C modular jack
- Length	2 m (6.5 ft)

Standards and Regulation[5]

CE - Emission	IEC61000-6-3: 2006 + A1: ed.2010 Generic standards for residential, commercial and light-industrial environments
CE - Immunity	IEC61000-6-1: 2005; Generic standards for residential, commercial and light-industrial environments
FCC	This device complies with FCC rules part 15, subpart B, class B
UL Listed (CDN & US)	UL 61010-1 Safety Requirements For Electrical Equipment For Measurement, Control, And Laboratory Use - Part 1: General Requirements - Edition 2 - Revision Date 2008/10/28 CSA C22.2 NO. 61010-1 Safety Requirements For Electrical Equipment For Measurement, Control, And Laboratory Use - Part 1: General Requirements - Edition 2 - Revision Date 2008/10/01 File number: E352591
Material[6]	UL94-5VB
CE - Electrical Safety (Approved by an external Lab)	EN 60730-1 : 2011 - Automatic electrical controls for household and similar use - Part 1: General requirements

Subnetwork

Communication	RS-485
Cable	Cat 5e, 8 conductor twisted pair
Connector	RJ-45
Topology	Daisy-chain configuration

Certified Performances (pending)

Chilled Ceiling Systems

Cooling Control Accuracy	0.2°C (0.36°F)

Fan Coil Systems (2 pipes + electric heater)

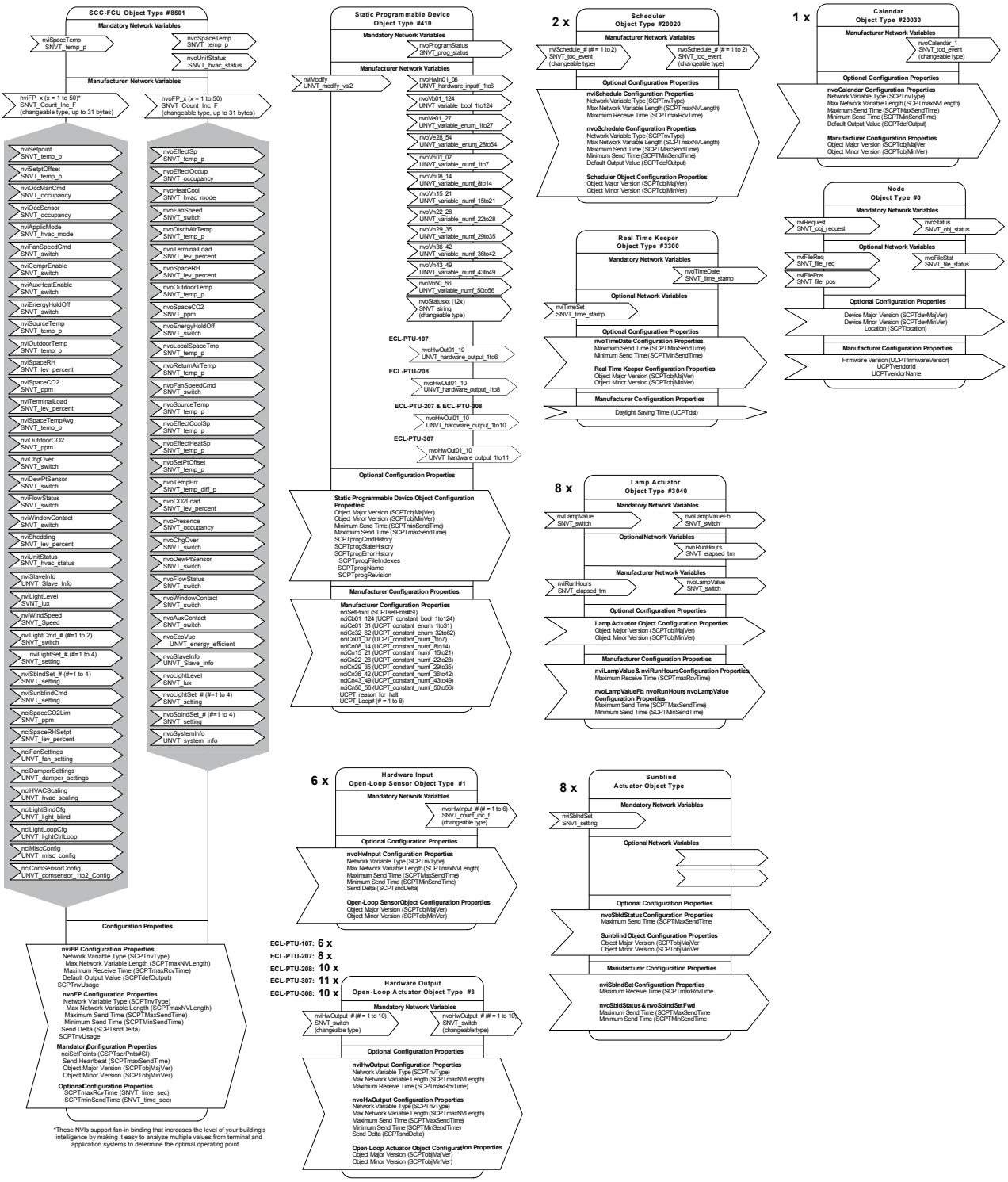
Heating Control Accuracy	0.1°C (0.18°F)
Cooling Control Accuracy	0.1°C (0.18°F)

Fan Coil Systems (4 pipes)

Heating Control Accuracy	0.1°C (0.18°F)
Cooling Control Accuracy	0.1°C (0.18°F)

Communication Protocols

1. External loads must include the power consumption of any connected module. Refer to the respective module's datasheet for related power consumption information.
2. SELV (Safety Extra Low Voltage) inputs/outputs.
3. Available when an optional external Wireless Receiver module is connected to the controller. Refer to the Open-to-Wireless Solution Guide for a list of supported EnOcean wireless modules.
4. Some wireless modules may use more than one wireless input from the controller.
5. Must be mounted with strain reliefs and terminal block covers or in a junction box to comply with CE and UL regulations.
6. All materials and manufacturing processes comply with the RoHS directive and are marked according to the Waste Electrical and Electronic Equipment (WEEE) directive.


SCC-FCU Object Type #8501
Mandatory Network Variables
nviSpaceTemp SNVT_temp_p
nvoSpaceTemp SNVT_temp_p
nvoUnitStatus SNVT_hvac_status
Manufacturer Network Variables
nviFP_x (x = 1 to 50)* SNVT_Count_Inc_F (changeable type, up to 31 bytes)
nvoFP_x (x = 1 to 50) SNVT_Count_Inc_F (changeable type, up to 31 bytes)
nviSetpoint SNVT_temp_p
nviSetptOffset SNVT_temp_p
nviOccManCmd SNVT_occupancy
nviOccSensor SNVT_occupancy
nviApplicMode SNVT_hvac_mode
nviFanSpeedCmd SNVT_switch
nviComprEnable SNVT_switch
nviAuxHeatEnable SNVT_switch
nviEnergyHoldOff SNVT_switch
nviSourceTemp SNVT_temp_p
nviOutdoorTemp SNVT_temp_p
nviSpaceRH SNVT_lev_percent
nviSpaceCO2 SNVT_ppm
nviTerminalLoad SNVT_lev_percent
nviSpaceTempAvg SNVT_temp_p
nviOutdoorCO2 SNVT_ppm
nviChgOver SNVT_switch
nviDewPtSensor SNVT_switch
nviFlowStatus SNVT_switch
nviWindowContact SNVT_switch
nviShedding SNVT_lev_percent
nviUnitStatus SNVT_hvac_status
nviSlaveInfo UNVT_Slave_Info
nviLightLevel SVNT_lux
nviWindSpeed SNVT_Speed
nviLightCmd_# (#=1 to 2) SNVT_switch
nviLightSet_# (#=1 to 4) SNVT_setting
nviSblndSet_# (#=1 to 4) SNVT_setting
nviSunblindCmd SNVT_setting
nciSpaceCO2Lim SNVT_ppm
nciSpaceRHSetpt SNVT_lev_percent
nciFanSettings UNVT_fan_setting
nciDamperSettings UNVT_damper_settings
nciHVACScaling UNVT_hvac_scaling
nciLightBlndCfg UNVT_light_blind
nciLightLoopCfg UNVT_lightCtrlLoop
nciMiscConfig UNVT_misc_config
nciComSensorConfig UNVT_comsensor_1to2_Config
nvoEffectSp SNVT_temp_p
nvoEffectOccup SNVT_occupancy
nvoHeatCool SNVT_hvac_mode
nvoFanSpeed SNVT_switch
nvoDischAirTemp SNVT_temp_p
nvoTerminalLoad SNVT_lev_percent
nvoSpaceRH SNVT_lev_percent
nvoOutdoorTemp SNVT_temp_p
nvoSpaceCO2 SNVT_ppm
nvoEnergyHoldOff SNVT_switch
nvoLocalSpaceTmp SNVT_temp_p
nvoReturnAirTemp SNVT_temp_p
nvoFanSpeedCmd SNVT_switch
nvoSourceTemp SNVT_temp_p
nvoEffectCoolSp SNVT_temp_p
nvoEffectHeatSp SNVT_temp_p
nvoSetPtOffset SNVT_temp_p
nvoTempErr SNVT_temp_diff_p
nvoCO2Load SNVT_lev_percent
nvoPresence SNVT_occupancy
nvoChgOver SNVT_switch
nvoDewPtSensor SNVT_switch
nvoFlowStatus SNVT_switch
nvoWindowContact SNVT_switch
nvoAuxContact SNVT_switch
nvoEcnVue UNVT_energy_efficient
nvoSlaveInfo UNVT_Slave_Info
nvoLightLevel SNVT_lux
nvoLightSet_# (#=1 to 4) SNVT_setting
nvoSblndSet_# (#=1 to 4) SNVT_setting
nvoSystemInfo UNVT_system_info
Configuration Properties
nviFP Configuration Properties
Network Variable Type (SCPTnvType)
Max Network Variable Length (SCPTmaxNVLength)
Maximum Receive Time (SCPTmaxRcvTime)
Default Output Value (SCPTdefOutput)
SCPTnvUsage
nvoFP Configuration Properties
Network Variable Type (SCPTnvType)
Max Network Variable Length (SCPTmaxNVLength)
Maximum Send Time (SCPTMaxSendTime)
Minimum Send Time (SCPTMinSendTime)
Send Delta (SCPTsndDelta)
SCPTnvUsage
Mandatory Configuration Properties
nciSetPoints (CSPTserPnts#SI)
Send Heartbeat (SCPTmaxSendTime)
Object Major Version (SCPTobjMajVer)
Object Minor Version (SCPTobjMinVer)
Optional Configuration Properties
SCPTmaxRcvTime (SNVT_time_sec)
SCPTminSendTime (SNVT_time_sec)
*These NVIs support fan-in binding that increases the level of your building's intelligence by making it easy to analyze multiple values from terminal and application systems to determine the optimal operating point.
Static Programmable Device Object Type #410
Mandatory Network Variables
nvoProgramStatus SNVT_prog_status
Manufacturer Network Variables
nviModify UNVT_modify_val2
nvoHwIn01_06 UNVT_hardware_inputf_1to6
nvoVb01_124 UNVT_variable_bool_1to124
nvoVe01_27 UNVT_variable_enum_1to27
nvoVe28_54 UNVT_variable_enum_28to54
nvoVn01_07 UNVT_variable_numf_1to7
nvoVn08_14 UNVT_variable_numf_8to14
nvoVn15_21 UNVT_variable_numf_15to21
nvoVn22_28 UNVT_variable_numf_22to28
nvoVn29_35 UNVT_variable_numf_29to35
nvoVn36_42 UNVT_variable_numf_36to42
nvoVn43_49 UNVT_variable_numf_43to49
nvoVn50_56 UNVT_variable_numf_50to56
nvoStatusxx (12x) SNVT_string (changeable type)
ECL-PTU-107
nvoHwOut01_10 UNVT_hardware_output_1to6
ECL-PTU-208
nvoHwOut01_10 UNVT_hardware_output_1to8
ECL-PTU-207 & ECL-PTU-308
nvoHwOut01_10 UNVT_hardware_output_1to10
ECL-PTU-307
nvoHwOut01_10 UNVT_hardware_output_1to11
Optional Configuration Properties
Static Programmable Device Object Configuration Properties:
Object Major Version (SCPTobjMajVer)
Object Minor Version (SCPTobjMinVer)
Minimum Send Time (SCPTminSendTime)
Maximum Send Time (SCPTmaxSendTime)
SCPTprogCmdHistory
SCPTprogStateHistory
SCPTprogErrorHistory
SCPTprogFileIndexes
SCPTprogName
SCPTprogRevision
Manufacturer Configuration Properties
Manufacturer Configuration Properties
nciSetPoint (SCPTsetPnts#SI)
nciCb01_124 (UCPT_constant_bool_1to124)
nciCe01_31 (UCPT_constant_enum_1to31)
nciCe32_62 (UCPT_constant_enum_32to62)
nciCn01_07 (UCPT_constant_numf_1to7)
nciCn08_14 (UCPT_constant_numf_8to14)
nciCn15_21 (UCPT_constant_numf_15to21)
nciCn22_28 (UCPT_constant_numf_22to28)
nciCn29_35 (UCPT_constant_numf_29to35)
nciCn36_42 (UCPT_constant_numf_36to42)
nciCn43_49 (UCPT_constant_numf_43to49)
nciCn50_56 (UCPT_constant_numf_50to56)
UCPT_reason_for_halt
UCPT_Loop#(# = 1 to 8)
2 x
Scheduler Object Type #20020
Mandatory Network Variables
nviSchedule_#(# = 1 to 2) SNVT_tod_event (changeable type)
nvoSchedule_#(# = 1 to 2) SNVT_tod_event (changeable type)
Optional Configuration Properties
nviSchedule Configuration Properties
Network Variable Type (SCPTnvTypes)
Max Network Variable Length (SCPTmaxNVLength)
Maximum Receive Time (SCPTmaxRcvTime)
nvoSchedule Configuration Properties
Network Variable Type (SCPTnvTypes)
Max Network Variable Length (SCPTmaxNVLength)
Maximum Send Time (SCPTMaxSendTime)
Minimum Send Time (SCPTMinSendTime)
Default Output Value (SCPTdefOutput)
Scheduler Object Configuration Properties
Object Major Version (SCPTobjMajVer)
Object Minor Version (SCPTobjMinVer)
1 x
Calendar Object Type #20030
Mandatory Network Variables
nvoCalendar_1 SNVT_tod_event (changeable type)
Optional Configuration Properties
nvoCalendar Configuration Properties
Network Variable Type (SCPTnvType)
Max Network Variable Length (SCPTmaxNVLength)
Maximum Send Time (SCPTMaxSendTime)
Minimum Send Time (SCPTMinSendTime)
Default Output Value (SCPTdefOutput)
Manufacturer Configuration Properties
Object Major Version (SCPTobjMajVer)
Object Minor Version (SCPTobjMinVer)
Real Time Keeper Object Type #3300
Mandatory Network Variables
nvoTimeDate SNVT_time_stamp
Optional Network Variables
nviTimeSet SNVT_time_stamp
Optional Configuration Properties
nvoTimeDate Configuration Properties
Maximum Send Time (SCPTMaxSendTime)
Minimum Send Time (SCPTMinSendTime)
Real Time Keeper Configuration Properties
Object Major Version (SCPTobjMajVer)
Object Minor Version (SCPTobjMinVer)
Manufacturer Configuration Properties
Daylight Saving Time (UCPTdst)
Node Object Type #0
Mandatory Network Variables
nviRequest SNVT_obj_request
nvoStatus SNVT_obj_status
Optional Network Variables
nviFileReq SNVT_file_req
nvoFileStat SNVT_file_status
nviFilePos SNVT_file_pos
Optional Configuration Properties
Device Major Version (SCPTdevMajVer)
Device Minor Version (SCPTdevMinVer)
Location (SCPTlocation)
Manufacturer Configuration Properties
Firmware Version (UCPTfirmwareVersion)
UCPTvendorId
UCPTvendorName
8 x
Lamp Actuator Object Type #3040
Mandatory Network Variables
nviLampValue SNVT_switch
nvoLampValueFb SNVT_switch
Optional Network Variables
nvoRunHours SNVT_elapsed_tm
Manufacturer Network Variables
nviRunHours SNVT_elapsed_tm
nvoLampValue SNVT_switch
Optional Configuration Properties
Lamp Actuator Object Configuration Properties
Object Major Version (SCPTobjMajVer)
Object Minor Version (SCPTobjMinVer)
Manufacturer Configuration Properties
nviLampValue & nviRunHours Configuration Properties
Maximum Receive Time (SCPTmaxRcvTime)
nvoLampValueFb, nvoRunHours nvoLampValue Configuration Properties
Maximum Send Time (SCPTMaxSendTime)
Minimum Send Time (SCPTMinSendTime)
6 x
Hardware Input Open-Loop Sensor Object Type #1
Mandatory Network Variables
nvoHwInput_#(# = 1 to 6) SNVT_count_inc_f (changeable type)
Optional Configuration Properties
nvoHwInput Configuration Properties
Network Variable Type (SCPTnvType)
Max Network Variable Length (SCPTmaxNVLength)
Maximum Send Time (SCPTMaxSendTime)
Minimum Send Time (SCPTMinSendTime)
Send Delta (SCPTsndDelta)
Open-Loop SensorObject Configuration Properties
Object Major Version (SCPTobjMajVer)
Object Minor Version (SCPTobjMinVer)
8 x
Sunblind Actuator Object Type
Mandatory Network Variables
nviSblndSet SNVT_setting
Optional Network Variables
Optional Configuration Properties
nvoSbldStatus Configuration Properties
Maximum Send Time (SCPTMaxSendTime
Sunblind Object Configuration Properties
Object Major Version (SCPTobjMajVer
Object Minor Version (SCPTobjMinVer
Manufacturer Configuration Properties
nviSblndSet Configuration Properties
Maximum Receive Time (SCPTmaxRcvTime
nvoSbldStatus & nvoSblndSetFwd
Maximum Send Time (SCPTMaxSendTime
Minimum Send Time (SCPTMinSendTime
ECL-PTU-107: 6 x
ECL-PTU-207: 8 x
ECL-PTU-208: 10 x
ECL-PTU-307: 11 x
ECL-PTU-308: 10 x
Hardware Output Open-Loop Actuator Object Type #3
Mandatory Network Variables
nviHwOutput_#(# = 1 to 10) SNVT_switch (changeable type)
nvoHwOutput_#(# = 1 to 10) SNVT_switch (changeable type)
Optional Configuration Properties
nviHwOutput Configuration Properties
Network Variable Type (SCPTnvType)
Max Network Variable Length (SCPTmaxNVLength)
Maximum Receive Time (SCPTmaxRcvTime)
nvoHwOutput Configuration Properties
Network Variable Type (SCPTnvType)
Max Network Variable Length (SCPTmaxNVLength)
Maximum Send Time (SCPTMaxSendTime)
Minimum Send Time (SCPTMinSendTime)
Send Delta (SCPTsndDelta)
Open-Loop Actuator Object Configuration Properties
Object Major Version (SCPTobjMajVer)
Object Minor Version (SCPTobjMinVer)

Total Quality Commitment

All Distech Controls product lines are built to meet rigorous quality standards. Distech Controls is an ISO 9001 registered company.