



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, chilled beams, small air handling units, and 6-way valves applications. This series can command up to 8 lights and 8 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 sunblinds for a full cross-management solution operating from a single network point. 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.

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 CO₂ sensing and motion detection thus providing every aspect of an energy efficient system. In addition, this controller is Open-to-Wireless™ ready, and when paired with the Wireless Receiver, it works with a variety of wireless battery-less sensors and switches.

Custom program these controllers using EC-gfxProgram 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. 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
- Small Air Handling Units
- 6-Way Valves Applications
- Lighting fixtures and sunblind motors when associated to ECx-Light/Blind expansion modules

Improves energy efficiency when combined with:

- 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.
- Motion detectors to automatically adjust a zone's occupancy mode from standby to occupied when presence is detected.
- Lux level sensor to fit the necessary light power to the actual luminosity in the room.

Works with a wide range of wireless battery-less sensors

Features & Benefits

- Accelerate custom programming development by using pre-built HVAC control sequences supplied with EC-gfxProgram.
- Most advanced yet cost-effective solution for any terminal unit application
- Expandable with lighting and sunblinds expansion modules thus enabling smart cross-management of HVAC, lighting, and sunblinds for up to 45% energy savings
- The main HVAC controller and its associated expansion modules are considered as a single point on the network to reduce network traffic and facilitate BMS integration
- 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
- 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 (depending on your local regulations)
- Powered digital outputs saves installation time and wiring costs
- Optimized hardware design allows for ultra low consumptions
- DIN rail mounting is integrated into the enclosure for fast and reliable installation

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
Room Devices ¹	4	4	4	4	4
Wireless Inputs ²	24	24	24	24	24
Electric Heater Outputs	1 x 2 kW	1 x 2 kW	1 x 2 kW	2 x 1 kW	1 x 2 kW
Universal Outputs		4	2	2	2
Powered Fan Outputs	3	3	3	3	3
PWM Valve Outputs (Mains-Powered)	2	2		4	
PWM Valve Outputs (24 VAC)			2		4
24 VAC Outputs			■		■
ECx-Light/Blind Modules Support	■	■	■	■	■
Supply Voltage	100-240 VAC	100-240 VAC	100-240 VAC	100-240 VAC	100-240 VAC

1. A controller can support a maximum of two Allure EC-Smart-Vue models equipped with a CO₂ sensor. The remaining connected Allure EC-Smart-Vue models must be without a CO₂ sensor.
2. 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.

Recommended Applications

Model	ECL-PTU-107	ECL-PTU-207	ECL-PTU-208	ECL-PTU-307	ECL-PTU-308
FCU: 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: 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				■	■
6-Way Valve Application		■	■		
Small AHU		■	■		
Unit Ventilator		■	■		
Double FCU Application: 2/4 pipes - Variable speed fan -- On/Off / thermal valves				■	■
Double Chilled Beam Application: 2/4 pipes - On/Off / thermal / analog valves				■	■

Open-to-Wireless Series – Controller Wireless Receiver Expansion



To reduce the cost of installation, and minimize the impact on 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.

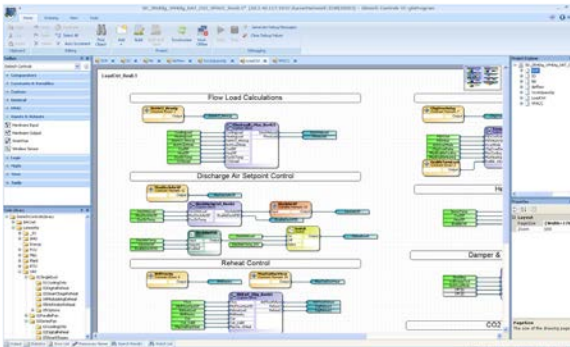


LonWorks Network Services (LNS)

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

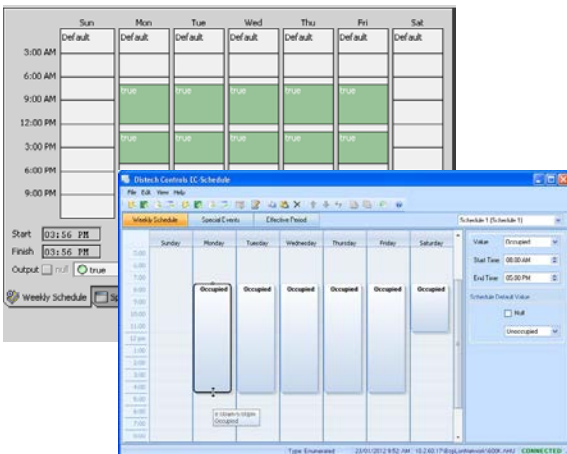
EC-gfxProgram Graphical Programming Interface (GPI)



Distech Controls' EC-gfxProgram 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-gfxProgram 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 Plugin / EC-gfxProgram EC-Schedule



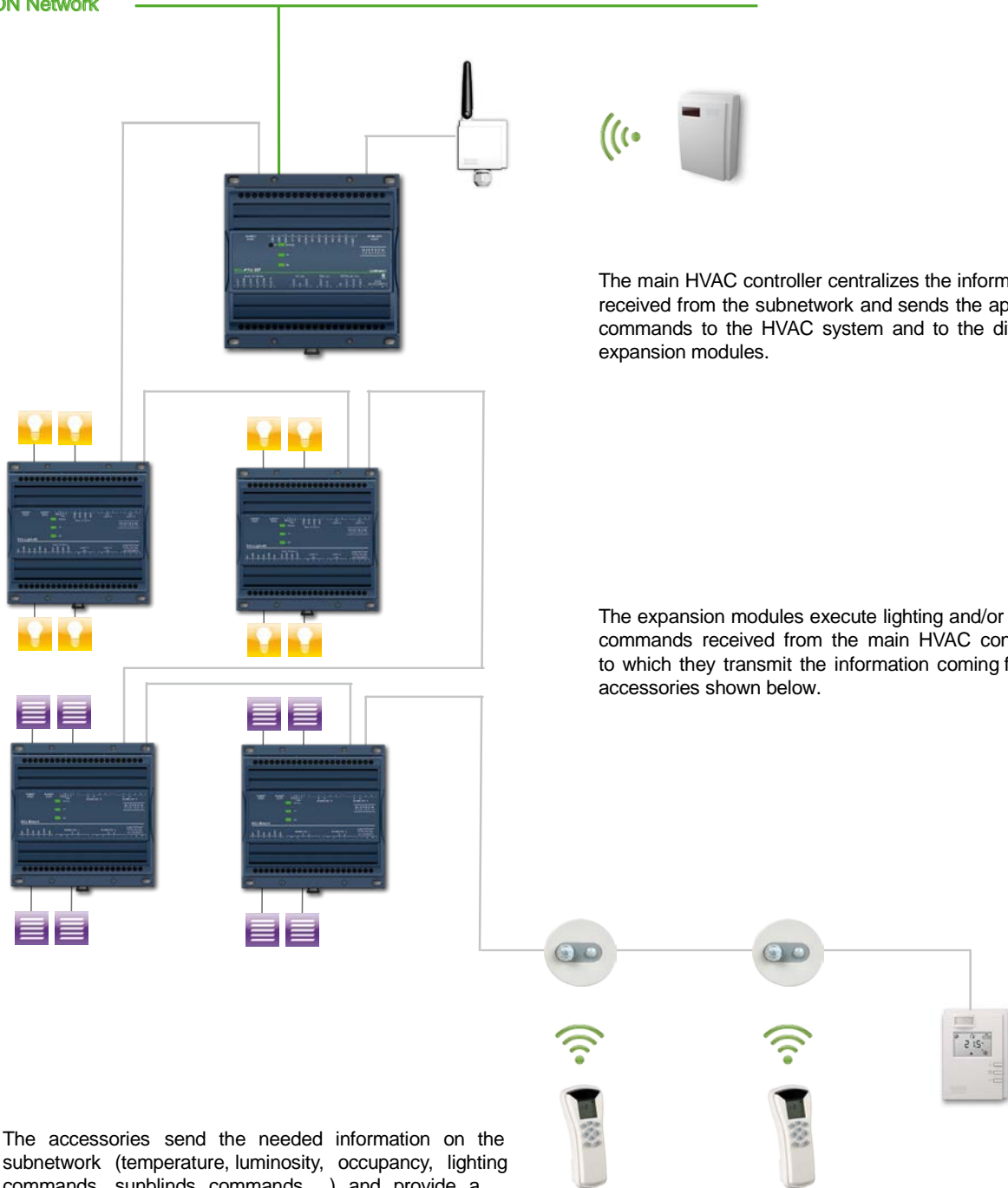
Configure the controller's built-in schedules and holidays from EC-Net^{AX} solution (ECB and ECL series controllers), LNS (ECL series controllers), or directly from within EC-gfxProgram (ECB and ECL series controllers) with an easy-to-use point, drag, and click interface. It features a weekly schedule 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.

Subnetwork Overview

The Integrated Room Control Solution combines a main HVAC Controller with expansion modules dedicated to lighting and sunblinds management to form a modular solution that uses a single point on the network.

LON Network



The main HVAC controller centralizes the information received from the subnetwork and sends the appropriate commands to the HVAC system and to the different expansion modules.

The expansion modules execute lighting and/or sunblinds commands received from the main HVAC controller, to which they transmit the information coming from the accessories shown below.

The accessories send the needed information on the subnetwork (temperature, luminosity, occupancy, lighting commands, sunblinds commands, ...) and provide a user interface.

Complementary Products

ECx-Light/Blind Series



Line of lighting and sunblinds expansion modules for PTU Series controllers: on/off lights, dimmable lights, mains-powered sunblinds, 24 V sunblinds...

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 CO₂ 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 315MHz and 868.3MHz versions. The controller must be equipped with a Wireless Receiver.

EC-Multi-Sensor Series



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

Wireless Sensors and Switches

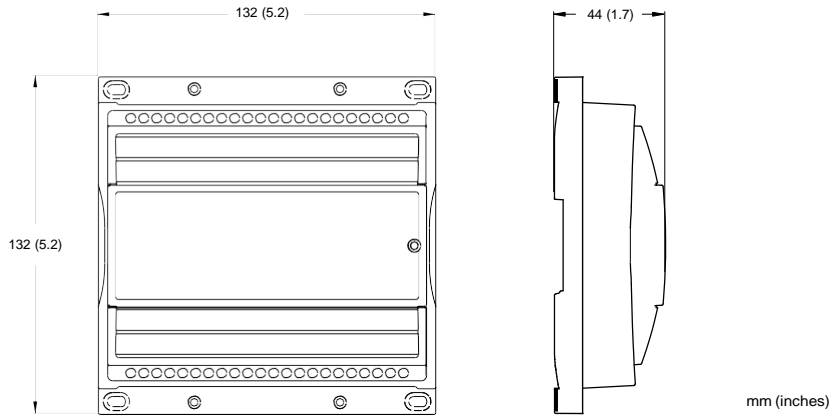


A wide range of self-powered wireless sensors and switches, including the following: Motion detector and light sensor, 2-/4-channel wireless light switches (North American and European models), outdoor temperature sensor, surface temperature contact sensor, duct temperature sensor, and more.



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



ECL-PTU-107 Specifications

Power		Inputs	
Voltage	100-240 VAC; $\pm 15\%$ 50/60 Hz	 <p>Universal Inputs (UI1, UI2)</p> <ul style="list-style-type: none"> - Voltage - Digital - Pulse <p>Sensor Inputs (SI3)</p> <ul style="list-style-type: none"> - Digital - Pulse <p>Digital Inputs (DI4, DI5, DI6)</p> <ul style="list-style-type: none"> - Digital - Pulse <p>Power Supply Output (Vref)</p>	Measurement Category: CAT I
Protection	4.0 A external circuit breaker type C or 4.0 A fast acting high breaking external fuse (250 VAC min)		Software configurable 0-10 VDC
Typical Consumption	0.9 W plus all external loads ¹		Dry Contact 0-3.3 VDC
Maximum Consumption	4.0 A		1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC
	Double Insulation Device		10 k Ω Type II, III (10 k Ω @ 25°C; 77°F)
Overvoltage Category	II - 2.5 kV		Software configurable
Interoperability			Dry Contact 0-3.3 VDC
Communication Channel	LonTalk protocol		1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC
LonMark Interoperability Guidelines	TP/FT-10; 78 Kbps		10 k Ω Type II, III (10 k Ω @ 25°C; 77°F)
Device Class	Version 3.4		Software configurable
LonMark Functional Profile	SCC Fan Coil	Dry Contact 0-3.3 VDC	
- Node Objects	Node Object #0000	1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC	
- SCC Object	SCC Fan Coil #8501		
- Lamp Objects	Lamp Actuator #3040		
- Sunblind Objects	Sunblind Actuator #6110		
Connection	2 wires: LON1 / LON2		
Hardware		Outputs	
Processor	STM32 (ARM Cortex™ M3) MCU, 32 bit	Triac Outputs (DO5, DO6)	PWM (Typically Valve Control) / Floating / Digital (ON/OFF)
CPU Speed	72 MHz		100-240 VAC (same as device power supply)
Memory	284 kB Non-volatile Flash (Applications) 2 MB Non-volatile Flash (Storage) 64 kB RAM		- 0.5 A continuous
Status Indicator	Green LEDs: Controller & Power Status, LAN Tx & Rx		- 1 A @ 15% duty cycle for a 10-minute period
Environmental			- Inrush current 3.0 A max (< 20 ms)
Operating Temperature	+5°C to +40°C (41°F to 104°F)		1 common per pair of outputs
Storage Temperature	-20°C to 70°C (-4°F to 158°F)		- PWM control:
Relative Humidity	+20 to 90% Non-condensing		- Adjustable period from 2 s to 15 min
Altitude	< 2000 m		- Floating control:
Pollution Degree	2		- Requires 2 consecutive outputs
Enclosure			- Min pulse on/off: 500msec
Material	ABS type PA-765A	Powered Relay Outputs (DO1, DO2, DO3)	- Adjustable drive time period from 2 s to 15 min
Color	Blue casing & grey connectors		Digital (Typically Fan Speeds)
Dimensions (with screws)	132 x 132 x 44 mm (5.2 x 5.2 x 1.7")		- 100-240 VAC (same as device power supply)
Shipping Weight	0.37 kg (0.82 lbs)		- 3.0 A max. (inductive or resistive load) for the total sum of the 3 outputs
IP	20	Digital Relay Contact (DO4, C4)	Normally Open Contacts
			All share the same common
			Digital (Typically Electric Heater)
			Contact up 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

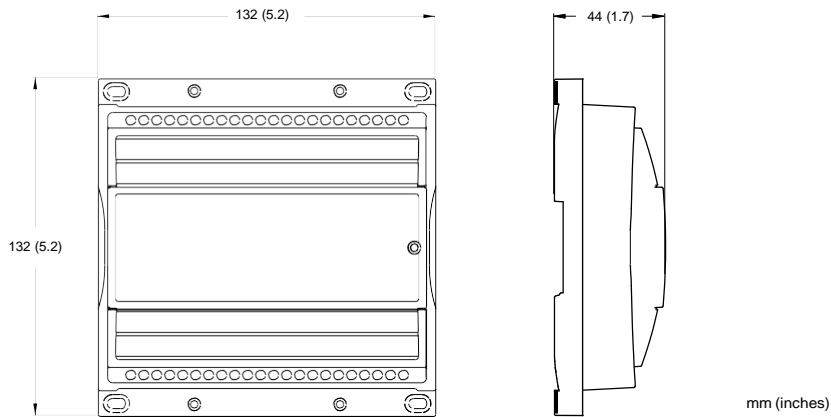
ECL-PTU-107 Specifications (continued)

Wireless Receiver ²		Standards and Regulation	
Communication	EnOcean wireless standard	CE - Emission	IEC61000-6-3: 2006 + A1: ed.2010 Generic standards for residential, commercial and light-industrial environments
Number of wireless inputs ³	24	CE - Immunity	IEC61000-6-1: 2005; Generic standards for residential, commercial and light-industrial environments
Supported wireless receivers	Wireless Receiver (315 MHz) Wireless Receiver (868 MHz) Telephone cord	FCC	This device complies with FCC rules part 15, subpart B, class B
Cable	4P4C modular jack	UL Listed (CDN & US)	UL61010-1: Electrical Equipment For Measurement, Control, and Laboratory Use; Part 1: General Requirements (pending)
- Connector	2 m (6.5 ft)	Material ⁵	UL94-5VB
- Length		CE - Electrical Safety (Approved by an external Lab)	EN60730-1: 2000 - Automatic electrical controls for household and similar use - Part 1: General requirements EN60730-1/A2: 2008 - Automatic electrical controls for household and similar use - Part 1: General requirements
Room Devices		Communication Protocols	
Supported room devices	Allure EC-Smart-Vue EC-MultiSensor	 	
Communication	RS-485		
Number of devices per controller	Up to 4, in daisy-chain configuration ⁴		
Cable	Cat 5e, 8 conductor twisted pair		
Connector	RJ-45		
Expansion Modules			
Supported expansion modules	ECx-Light-4 ECx-Light-4D ECx-Blind-4 ECx-Blind-4LV		
Communication	RS-485		
Number of expansion modules per controller	2 ECx-Light + 2 ECx-Blind, in daisy-chain configuration		
Cable	Cat 5e, 8 conductor twisted pair RJ-45		
Connector			





- External loads must include the power consumption of any connected modules. Refer to the respective module's datasheet for related power consumption information.
- 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.
- Some wireless modules may use more than one wireless input from the controller.
- A controller can support a maximum of two Allure EC-Smart-Vue models equipped with a CO₂ sensor. The remaining connected Allure EC-Smart-Vue models must be without a CO₂ sensor.
- 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



ECL-PTU-207 Specifications

Power		Inputs	
Voltage	100-240 VAC; $\pm 15\%$ 50/60 Hz	 Universal Inputs (UI1, UI2)	Measurement Category: CAT I
Protection	4.0 A external circuit breaker type C or 4.0 A fast acting high breaking external fuse (250 VAC min)		- Voltage
Typical Consumption	0.9 W plus all external loads ¹	- Digital	Dry Contact 0-3.3 VDC
Maximum Consumption	4.0 A	- Pulse	1 Hz maximum; Min 500 ms On / 500 ms Off
	Double Insulation Device	- Resistor	Dry Contact 0-3.3 VDC
Overvoltage Category	II - 2.5 kV	Sensor Inputs (SI3)	10 k Ω Type II, III (10 k Ω @ 25°C; 77°F)
Interoperability		- Digital	Software configurable
Communication Channel	LonTalk protocol	- Pulse	Dry Contact 0-3.3 VDC
LonMark Interoperability Guidelines	TP/FT-10; 78 Kbps	- Resistor	1 Hz maximum; Min 500 ms On / 500 ms Off
Device Class	Version 3.4	Digital Inputs (DI4, DI5, DI6)	Dry Contact 0-3.3 VDC
LonMark Functional Profile	SCC Fan Coil	- Digital	10 k Ω Type II, III (10 k Ω @ 25°C; 77°F)
- Node Objects	Node Object #0000	- Pulse	Software configurable
- SCC Object	SCC Fan Coil #8501	Power Supply Output (Vref)	Dry Contact 0-3.3 VDC
- Lamp Objects	Lamp Actuator #3040		1 Hz maximum; Min 500 ms On / 500 ms Off
- Sunblind Objects	Sunblind Actuator #6110		Dry Contact 0-3.3 VDC
Connection	2 wires: LON1 / LON2	Outputs	
Hardware		Triac Outputs (DO5, DO6)	PWM (Typically Valve Control) / Floating / Digital (ON/OFF)
Processor	STM32 (ARM Cortex™ M3) MCU, 32 bit		100-240 VAC (same as device power supply)
CPU Speed	72 MHz		- 0.5 A continuous
Memory	284 kB Non-volatile Flash (Applications)		- 1 A @ 15% duty cycle for a 10-minute period
	2 MB Non-volatile Flash (Storage)		- Inrush current 3.0 A max (< 20 ms)
	64 kB RAM		1 common per pair of outputs
Status Indicator	Green LEDs: Controller & Power Status, LAN Tx & Rx		- PWM control:
			- Adjustable period from 2 s to 15 min
			- Floating control:
			- Requires 2 consecutive outputs
			- Min pulse on/off: 500msec
			- Adjustable drive time period from 2 s to 15 min
Environmental		Powered Relay Outputs (DO1, DO2, DO3)	Digital (Typically Fan Speeds)
Operating Temperature	+5°C to +40°C (41°F to 104°F)		- 100-240 VAC (same as device power supply)
Storage Temperature	-20°C to 70°C (-4°F to 158°F)		- 3.0 A max. (inductive or resistive load) for the total sum of the 3 outputs
Relative Humidity	+20 to 90% Non-condensing		Normally Open Contacts
Altitude	< 2000 m		All share the same common
Pollution Degree	2	Digital Relay Contact (DO4, C4)	Digital (Typically Electric Heater)
			Contact up 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
Enclosure		Universal (UO7, UO8, UO9, UO10)	Linear (0-10VDC) or digital (0-12 VDC); software configurable.
Material	ABS type PA-765A		- 5 mA max.
Color	Blue casing & grey connectors		
Dimensions (with screws)	132 x 132 x 44 mm (5.2 x 5.2 x 1.7")		
Shipping Weight	0.37 kg (0.82 lbs)		
IP	20		

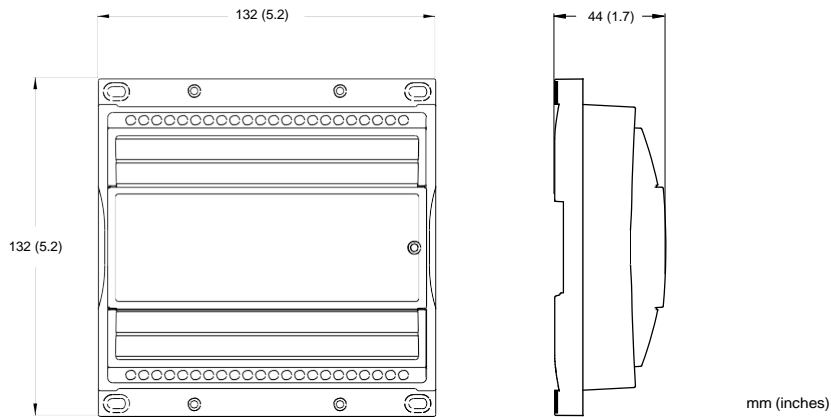
ECL-PTU-207 Specifications (continued)

Wireless Receiver ²		Standards and Regulation	
Communication	EnOcean wireless standard	CE - Emission	IEC61000-6-3: 2006 + A1: ed.2010 Generic standards for residential, commercial and light-industrial environments
Number of wireless inputs ³	24	CE - Immunity	IEC61000-6-1: 2005; Generic standards for residential, commercial and light-industrial environments
Supported wireless receivers	Wireless Receiver (315 MHz) Wireless Receiver (868 MHz) Telephone cord	FCC	This device complies with FCC rules part 15, subpart B, class B
Cable	4P4C modular jack	UL Listed (CDN & US)	UL61010-1: Electrical Equipment For Measurement, Control, and Laboratory Use; Part 1: General Requirements (pending)
- Connector	2 m (6.5 ft)	Material ⁵	UL94-5VB
- Length		CE - Electrical Safety	EN60730-1: 2000 - Automatic electrical controls for household and similar use - Part 1: General requirements
Room Devices		(Approved by an external Lab)	EN60730-1/A2: 2008 - Automatic electrical controls for household and similar use - Part 1: General requirements
Supported room devices	Allure EC-Smart-Vue EC-MultiSensor	Communication Protocols	
Communication	RS-485	 	
Number of devices per controller	Up to 4, in daisy-chain configuration ⁴		
Cable	Cat 5e, 8 conductor twisted pair		
Connector	RJ-45		
Expansion Modules			
Supported expansion modules	ECx-Light-4 ECx-Light-4D ECx-Blind-4 ECx-Blind-4LV		
Communication	RS-485		
Number of expansion modules per controller	2 ECx-Light + 2 ECx-Blind, in daisy-chain configuration		
Cable	Cat 5e, 8 conductor twisted pair RJ-45		
Connector			



- External loads must include the power consumption of any connected modules. Refer to the respective module's datasheet for related power consumption information.
- 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.
- Some wireless modules may use more than one wireless input from the controller.
- A controller can support a maximum of two Allure EC-Smart-Vue models equipped with a CO₂ sensor. The remaining connected Allure EC-Smart-Vue models must be without a CO₂ sensor.
- 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



ECL-PTU-208 Specifications

Power

Voltage	100-240 VAC; $\pm 15\%$ 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 Channel	LonTalk protocol 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	72 MHz
Memory	284 kB Non-volatile Flash (Applications) 2 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 (with screws)	132 x 132 x 44 mm (5.2 x 5.2 x 1.7")
Shipping Weight	0.42 kg (0.93 lbs)
IP	20

On-board 24 VAC Power Supply

Use	Used to power both 24 V Triac outputs and 24 VAC outputs
Voltage	24 VAC; $\pm 10\%$; 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



Universal Inputs (UI1, UI2)
- Voltage
- Digital
- Pulse

- Resistor
Sensor Inputs (SI3)
- Digital
- Pulse

- Resistor
Digital Inputs (DI4, DI5, DI6)
- Digital
- Pulse

Power Supply Output (Vref)

Outputs

Triac Outputs (DO5, DO6)

Powered Relay Outputs (DO1, DO2, DO3)

Digital Relay Contact (DO4, C4)

Universal (UO7, UO8)



24 VAC Output

Measurement Category: CAT I

Software configurable 0-10 VDC
Dry Contact 0-3.3 VDC
1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC
10 kΩ Type II, III (10 kΩ @ 25°C; 77°F)
Software configurable
Dry Contact 0-3.3 VDC
1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC
10 kΩ Type II, III (10 kΩ @ 25°C; 77°F)
Software configurable
Dry Contact 0-3.3 VDC
1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC
5 VDC for polarization I < 1mA

PWM (Typically Valve Control) / Floating / Digital (ON/OFF)
See on-board power supply for voltage and current specifications
1 common per pair of outputs
- PWM control:
- Adjustable period from 2 s to 15 min
- Floating control:
- Requires 2 consecutive outputs
- Min pulse on/off: 500msec
- Adjustable drive time period from 2 s to 15 min
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 (Typically Electric Heater)
Contact up 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
Linear (0-10VDC) or digital (0-12 VDC); software configurable.
- 5 mA max.
See on-board 24 VAC power supply

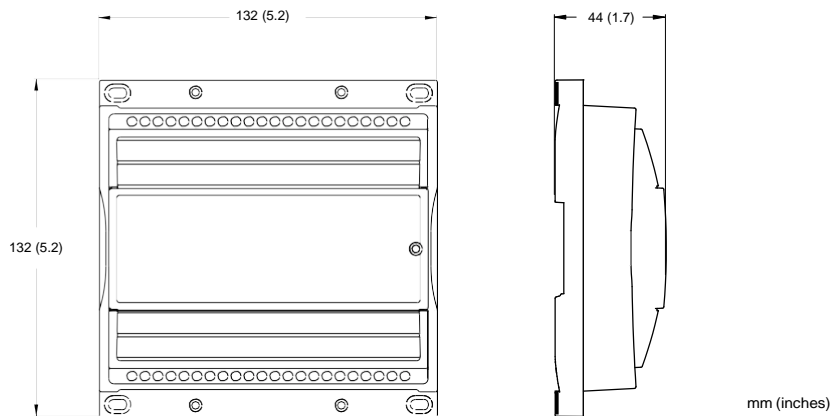
ECL-PTU-208 Specifications (continued)

Wireless Receiver ²		Standards and Regulation	
Communication	EnOcean wireless standard	CE - Emission	IEC61000-6-3: 2006 + A1: ed.2010 Generic standards for residential, commercial and light-industrial environments
Number of wireless inputs ³	24	CE - Immunity	IEC61000-6-1: 2005; Generic standards for residential, commercial and light-industrial environments
Supported wireless receivers	Wireless Receiver (315 MHz) Wireless Receiver (868 MHz) Telephone cord	FCC	This device complies with FCC rules part 15, subpart B, class B
Cable	4P4C modular jack	UL Listed (CDN & US)	UL61010-1: Electrical Equipment For Measurement, Control, and Laboratory Use; Part 1: General Requirements (pending)
- Connector	2 m (6.5 ft)	Material ⁵	UL94-5VB
- Length		CE - Electrical Safety (Approved by an external Lab)	EN60730-1: 2000 - Automatic electrical controls for household and similar use - Part 1: General requirements EN60730-1/A2: 2008 - Automatic electrical controls for household and similar use - Part 1: General requirements
Room Devices		Communication Protocols	
Supported room devices	Allure EC-Smart-Vue EC-MultiSensor	 	
Communication	RS-485		
Number of devices per controller	Up to 4, in daisy-chain configuration ⁴		
Cable	Cat 5e, 8 conductor twisted pair		
Connector	RJ-45		
Expansion Modules			
Supported expansion modules	ECx-Light-4 ECx-Light-4D ECx-Blind-4 ECx-Blind-4LV		
Communication	RS-485		
Number of expansion modules per controller	2 ECx-Light + 2 ECx-Blind, in daisy-chain configuration		
Cable	Cat 5e, 8 conductor twisted pair RJ-45		
Connector			




- External loads must include the power consumption of any connected modules. Refer to the respective module's datasheet for related power consumption information.
- 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.
- Some wireless modules may use more than one wireless input from the controller.
- A controller can support a maximum of two Allure EC-Smart-Vue models equipped with a CO₂ sensor. The remaining connected Allure EC-Smart-Vue models must be without a CO₂ sensor.
- 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



ECL-PTU-307 Specifications

Power

Voltage	100-240 VAC; $\pm 15\%$ 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 Channel	LonTalk protocol
LonMark Interoperability Guidelines	TP/FT-10; 78 Kbps
Device Class	Version 3.4
LonMark Functional Profile	SCC Fan Coil
- 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	72 MHz
Memory	284 kB Non-volatile Flash (Applications) 2 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 (with screws)	132 x 132 x 44 mm (5.2 x 5.2 x 1.7")
Shipping Weight	0.39 kg (0.86 lbs)
IP	20

Inputs



Universal Inputs (UI1, UI2)

- Voltage
- Digital
- Pulse

- Resistor

Sensor Inputs (SI3, SI4)

- Digital
- Pulse

- Resistor

Digital Inputs (DI5, DI6)

- Digital
- Pulse

Power Supply Output (Vref)

Measurement Category: CAT I

Software configurable 0-10 VDC

Dry Contact 0-3.3 VDC
1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC

10 kΩ Type II, III (10 kΩ @ 25°C; 77°F)

Software configurable

Dry Contact 0-3.3 VDC

1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC

10 kΩ Type II, III (10 kΩ @ 25°C; 77°F)

Software configurable

Dry Contact 0-3.3 VDC

1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC

5 VDC for polarization I < 1mA

Outputs

Triac Outputs (DO5, DO6, DO9, DO10)

PWM (Typically 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 15 min
- Floating control:
- Requires 2 consecutive outputs
- Min pulse on/off: 500msec
- Adjustable drive time period from 2 s to 15 min

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)
Contact up 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

Universal (UO7, UO8)

Linear (0-10VDC) or digital (0-12 VDC); software configurable.
- 5 mA max.

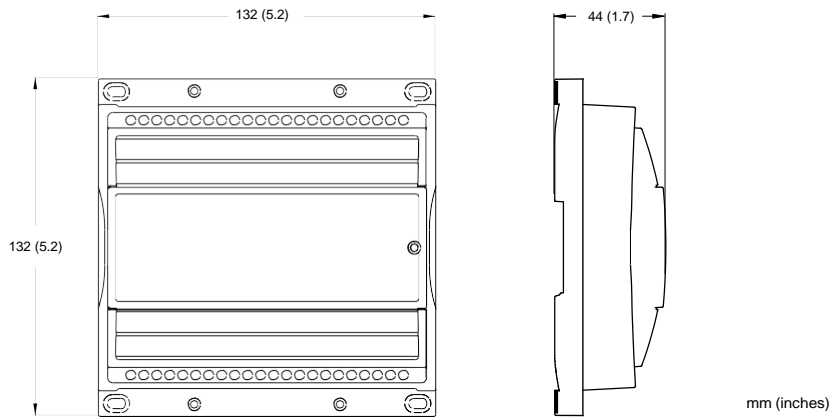
ECL-PTU-307 Specifications (continued)

Wireless Receiver ²		Standards and Regulation	
Communication	EnOcean wireless standard	CE - Emission	IEC61000-6-3: 2006 + A1: ed.2010 Generic standards for residential, commercial and light-industrial environments
Number of wireless inputs ³	24	CE - Immunity	IEC61000-6-1: 2005; Generic standards for residential, commercial and light-industrial environments
Supported wireless receivers	Wireless Receiver (315 MHz) Wireless Receiver (868 MHz) Telephone cord	FCC	This device complies with FCC rules part 15, subpart B, class B
Cable	4P4C modular jack	UL Listed (CDN & US)	UL61010-1: Electrical Equipment For Measurement, Control, and Laboratory Use; Part 1: General Requirements (pending)
- Connector	2 m (6.5 ft)	Material ⁵	UL94-5VB
- Length		CE - Electrical Safety (Approved by an external Lab)	EN60730-1: 2000 - Automatic electrical controls for household and similar use - Part 1: General requirements EN60730-1/A2: 2008 - Automatic electrical controls for household and similar use - Part 1: General requirements
Room Devices		Communication Protocols	
Supported room devices	Allure EC-Smart-Vue EC-MultiSensor	 	
Communication	RS-485		
Number of devices per controller	Up to 4, in daisy-chain configuration ⁴		
Cable	Cat 5e, 8 conductor twisted pair		
Connector	RJ-45		
Expansion Modules			
Supported expansion modules	ECx-Light-4 ECx-Light-4D ECx-Blind-4 ECx-Blind-4LV		
Communication	RS-485		
Number of expansion modules per controller	2 ECx-Light + 2 ECx-Blind, in daisy-chain configuration		
Cable	Cat 5e, 8 conductor twisted pair RJ-45		
Connector			



- External loads must include the power consumption of any connected modules. Refer to the respective module's datasheet for related power consumption information.
- 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.
- Some wireless modules may use more than one wireless input from the controller.
- A controller can support a maximum of two Allure EC-Smart-Vue models equipped with a CO₂ sensor. The remaining connected Allure EC-Smart-Vue models must be without a CO₂ sensor.
- 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



ECL-PTU-308 Specifications

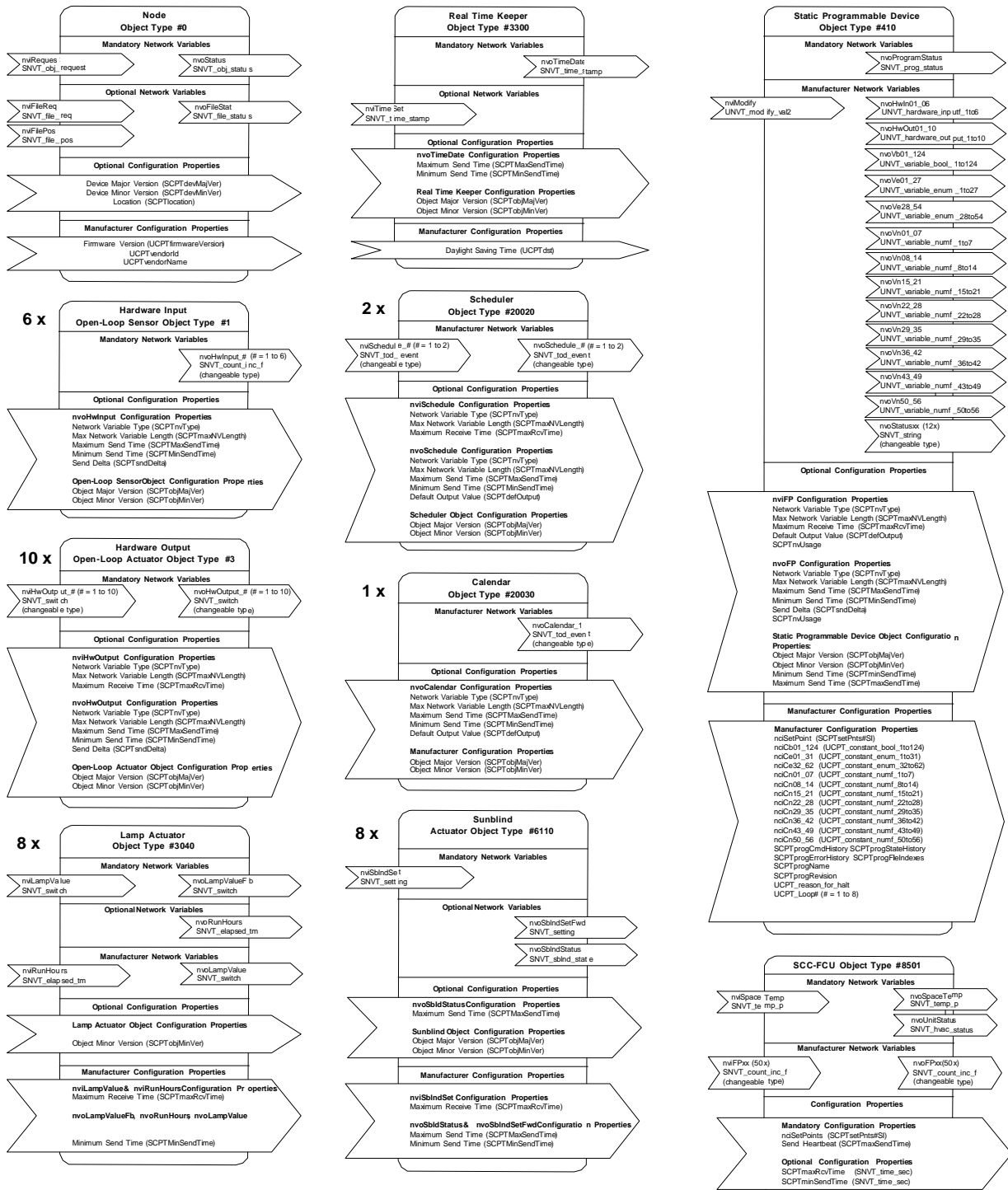
Power		Inputs	
Voltage	100-240 VAC; $\pm 15\%$ 50/60 Hz		Measurement Category: CAT I
Protection	4.0 A external circuit breaker type C or 4.0 A fast acting high breaking external fuse (250 VAC min)		Universal Inputs (UI1, UI2)
Typical Consumption	0.9 W plus all external loads ¹	- Voltage	Dry Contact 0-3.3 VDC
Maximum Consumption	4.0 A	- Digital	1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC
	Double Insulation Device	- Pulse	10 k Ω Type II, III (10 k Ω @ 25°C; 77°F)
Overvoltage Category	II - 2.5 kV	- Resistor	Software configurable
Interoperability		Sensor Inputs (SI3)	Dry Contact 0-3.3 VDC
Communication Channel	LonTalk protocol	- Digital	1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC
LonMark Interoperability Guidelines	TP/FT-10; 78 Kbps	- Pulse	10 k Ω Type II, III (10 k Ω @ 25°C; 77°F)
Device Class	Version 3.4	- Resistor	Software configurable
LonMark Functional Profile	SCC Fan Coil	Digital Inputs (DI4, DI5, DI6)	Dry Contact 0-3.3 VDC
- Node Objects	Node Object #0000	- Digital	1 Hz maximum; Min 500 ms On / 500 ms Off - Dry Contact 0-3.3 VDC
- SCC Object	SCC Fan Coil #8501	- Pulse	5 VDC for polarization I < 1mA
- Lamp Objects	Lamp Actuator #3040	Power Supply Output (Vref)	
- Sunblind Objects	Sunblind Actuator #6110	Outputs	
Connection	2 wires: LON1 / LON2	Triac Outputs (DO5, DO6, DO9, DO10)	PWM (Typically Valve Control) / Floating / Digital (ON/OFF)
Hardware			See on-board power supply for voltage and current specifications
Processor	STM32 (ARM Cortex™ M3) MCU, 32 bit		1 common per pair of outputs
CPU Speed	72 MHz		- PWM control:
Memory	284 kB Non-volatile Flash (Applications)		- Adjustable period from 2 s to 15 min
	2 MB Non-volatile Flash (Storage)		- Floating control:
	64 kB RAM		- Requires 2 consecutive outputs
Status Indicator	Green LEDs: Controller & Power Status, LAN Tx & Rx		- Min pulse on/off: 500msec
Environmental			- Adjustable drive time period from 2 s to 15 min
Operating Temperature	+5°C to +40°C (41°F to 104°F)	Powered Relay Outputs (DO1, DO2, DO3)	Digital (Typically Fan Speeds)
Storage Temperature	-20°C to 70°C (-4°F to 158°F)		- 100-240 VAC (same as device power supply)
Relative Humidity	+20 to 90% Non-condensing		- 3.0 A max. (inductive or resistive load) for the total sum of the 3 outputs
Altitude	< 2000 m		Normally Open Contacts
Pollution Degree	2		All share the same common
Enclosure		Digital Relay Contact (DO4, C4)	Digital (Typically Electric Heater)
Material	ABS type PA-765A		Contact up to 255 VAC
Color	Blue casing & grey connectors		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.)
Dimensions (with screws)	132 x 132 x 44 mm (5.2 x 5.2 x 1.7")		- 9.0 A max. on a resistive load (2 kW @ 230 VAC)
Shipping Weight	0.42 kg (0.93 lbs)		Normally Open Contacts
IP	20		Digital dedicated common
On-board 24 VAC Power Supply		Universal (UO7, UO8)	Linear (0-10VDC) or digital (0-12 VDC); software configurable.
Use	Used to power both 24 V Triac outputs and 24 VAC outputs		- 5 mA max.
Voltage	24 VAC; $\pm 10\%$; 50 Hz	24 VAC Output	See on-board 24 VAC power supply
Current	- 500 mA max. on a resistive load (12 VA @ 24 VAC)		
	- Peak current 0.8 A max.		
	- Short-circuit protected		
	- Overload protected		

ECL-PTU-308 Specifications (continued)

Wireless Receiver ²		Standards and Regulation	
Communication	EnOcean wireless standard	CE - Emission	IEC61000-6-3: 2006 + A1: ed.2010 Generic standards for residential, commercial and light-industrial environments
Number of wireless inputs ³	24	CE - Immunity	IEC61000-6-1: 2005; Generic standards for residential, commercial and light-industrial environments
Supported wireless receivers	Wireless Receiver (315 MHz) Wireless Receiver (868 MHz) Telephone cord	FCC	This device complies with FCC rules part 15, subpart B, class B
Cable	4P4C modular jack	UL Listed (CDN & US)	UL61010-1: Electrical Equipment For Measurement, Control, and Laboratory Use; Part 1: General Requirements (pending)
- Connector	2 m (6.5 ft)	Material ⁵	UL94-5VB
- Length		CE - Electrical Safety (Approved by an external Lab)	EN60730-1: 2000 - Automatic electrical controls for household and similar use - Part 1: General requirements EN60730-1/A2: 2008 - Automatic electrical controls for household and similar use - Part 1: General requirements
Room Devices		Communication Protocols	
Supported room devices	Allure EC-Smart-Vue EC-MultiSensor	 	
Communication	RS-485		
Number of devices per controller	Up to 4, in daisy-chain configuration ⁴		
Cable	Cat 5e, 8 conductor twisted pair		
Connector	RJ-45		
Expansion Modules			
Supported expansion modules	ECx-Light-4 ECx-Light-4D ECx-Blind-4 ECx-Blind-4LV		
Communication	RS-485		
Number of expansion modules per controller	2 ECx-Light + 2 ECx-Blind, in daisy-chain configuration		
Cable	Cat 5e, 8 conductor twisted pair RJ-45		
Connector	45		



- External loads must include the power consumption of any connected modules. Refer to the respective module's datasheet for related power consumption information.
- 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.
- Some wireless modules may use more than one wireless input from the controller.
- A controller can support a maximum of two Allure EC-Smart-Vue models equipped with a CO₂ sensor. The remaining connected Allure EC-Smart-Vue models must be without a CO₂ sensor.
- All materials and manufacturing processes comply with the RoHS directive and are marked according to the Waste Electrical and Electronic Equipment (WEEE) directive.



Note: In the final version of the ECL-PTU, the nvtFPx and nvtFPx used for the typical code will be assigned the correct snvt type by default. In consequence, the names will be corrected in the LNS or EC-Net[®] template according to their function.

Total Quality Commitment

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

©, Copyright Distech Controls Inc., 2013. All rights reserved. Specifications subject to change without notice.

Images are simulated. Distech Controls, the Distech Controls logo, Open-to-Wireless, Innovative Solutions for Greener Buildings, ECO-Vue, and Allure are trademarks of Distech Controls Inc.; LonWorks is a registered trademark of Echelon Corporation; Niagara^{AX} Framework is a registered trademark of Tridium, Inc.; ARM Cortex is a registered trademark of ARM Limited; BACnet is a registered trademark of ASHRAE; BTL is a registered trademark of the BACnet Manufacturers Association; Windows, Visual Basic.Net are registered trademarks of Microsoft Corporation. EnOcean is a registered trademark of EnOcean GmbH. All other trademarks are property of their respective owners.