

Overview

The **ECx-Light Series** Expansion Modules are microprocessor-based interfaces that extend the number of inputs and outputs provided by the ECLYPSE™ Connected System Controllers, ECLYPSE Connected VAV Controllers, ECL/ECB-PTU Series controllers, and ECL/ECB-VAV controllers. When connected to one of these HVAC programmable controllers, each ECx-Light-4 expansion module can control 4 ON/OFF lighting load and each ECx-Light-4D expansion module can control 4 ON/OFF or 1-10 V dimming lighting loads.

As part of the Smart Room Control solution, the ECx-Light-4/4D expansion modules can be freely combined with ECx-Light-4DALI lighting modules and ECx-Blind-4/4LV sunblind modules to control up to 8 light groups or DALI buses, and 8 shade / sunblind motors.

The ECx-Light Expansion Modules operate off of a separate sub-network bus (governed by the main HVAC controller). This optimizes the control possibilities while allowing such a modular solution (HVAC controller + expansion modules) to be interpreted as a single device by the network, thereby avoiding unnecessary system overloading.

In addition, by positioning the expansion modules directly in ceilings, close to the lights, the installation effort is reduced. As well, connecting the module to the main HVAC controller through a single RJ-45 cable reduces wiring costs and minimizes the risk of errors.

Moreover, the internal electronics being powered by the host controller, the lighting load consumption can easily be monitored, allowing for energy counting, and allowing the supervisor to instantly detect abnormal power usage and anticipate bulb maintenance as part of a proactive preventive maintenance program.

Custom program the ECx-Light expansion modules directly when configuring the main HVAC controller using EC-gfxProgram. This allows you to quickly and easily create your own control sequences capable of meeting the most demanding requirements of any engineering specification.

Applications

- ON/OFF lighting
- 1-10 V dimming lighting

Features & Benefits

- Part of an extensive range of lighting and shade / sunblind expansion modules that enables smart cross-management of HVAC, lighting, and shades / sunblinds as a whole, creating a unique Smart Room Control solution.
- The main HVAC controller and its associated expansion modules form a single device on the network that reduces network traffic and facilitates BMS integration.
- Seen as an extension of the main HVAC controller when configuring, allowing you to save engineering time.
- Quick-link connectors for direct installation into the ceilings, or traditional detachable connectors for use with optional strain reliefs and terminal block covers. This may eliminate the need for a protective enclosure in some jurisdictions.
- Integrated digital inputs to interface with light switches, window contacts, etc...
- Separate power supply for loads and internal electronics allows for dedicated metering, leading to more accurate energy consumption analysis.
- Fail-safe mode to comply with most regulation requirements.

ECx-Light Expansion Modules



Model	ECx-Light-4 -WD	ECx-Light-4 -ST	ECx-Light-4 -STP ¹	ECx-Light-4D -WD	ECx-Light-4D -ST	ECx-Light-4D -STP ¹
Digital Inputs	4	4	4	4	4	4
ON/OFF Light Outputs	4	4	4	4	4	4
Dimming Command Outputs (1-10 V)				4	4	4
Full ballast shut-off ²	■	■	■	■	■	■
Internal electronics powered by the host controller	■	■	■	■	■	■
0-240 VAC/DC power supply & light outputs	■	■		■	■	
0-277 VAC/DC power supply & light outputs			■			■
Quick-link connectors	■			■		
Traditional detachable connectors.		■	■		■	■

1. -STP versions are not CE certified.
2. Each ballast group is completely disconnected from the mains when its associated command is 0 %.

Required External Connectors

Model	Supplier	Type	Connector Reference	Number	Use	Provided
ECx-Light-4-WD	Wieland	Female connector with strain relief GST15I3S B1 ZR1W WS - 3 poles - marked L G N	91.931.3053.0	1	Power supply	-
	Wieland	Female connector, pitch 5,08 mm, - 6 poles - marked 1 to 6	25.340.0653.0	1	Digital inputs	■
	Wieland	Male connector with strain relief GST15I3S S1 ZR1W WS- 3 poles - marked L G N	91.932.3053.0	4	Light outputs	-
ECx-Light-4-ST ECx-Light-4-STP	Wieland	Female connector, pitch 5,08 mm, - 3 poles - marked 1 to 3	25.340.0353.0	5	Power supply & Light outputs	■
	Wieland	Female connector, pitch 5,08 mm, - 6 poles - marked 1 to 6	25.340.0653.0	1	Digital inputs	■
ECx-Light-4D-WD	Wieland	Female connector with strain relief GST15I3S B1 ZR1W WS - 3 poles - marked L G N	91.931.3053.0	1	Power supply	-
	Wieland	Female connector, pitch 5,08 mm, - 6 poles - marked 1 to 6	25.340.0653.0	1	Digital inputs	■
	Wieland	Male connector with strain relief GST15I3S S1 ZR1W WS- 3 poles - marked L G N	91.932.3053.0	4	Light outputs	-
	Wieland	Female connector, pitch 5,08 mm, - 4 poles - marked 1 to 4	25.340.0453.0	2	1-10 V light command	■
ECx-Light-4D-ST ECx-Light-4D-STP	Wieland	Female connector, pitch 5,08 mm, - 4 poles - marked 1 to 4	25.340.0453.0	2	1-10 V light command	■
	Wieland	Female connector, pitch 5,08 mm, - 3 poles - marked 1 to 3	25.340.0353.0	5	Power supply & Light outputs	■
	Wieland	Female connector, pitch 5,08 mm, - 6 poles - marked 1 to 6	25.340.0653.0	1	Digital inputs	■

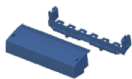
Complementary Products

External Connectors



Line of required external connectors

Strain Relief & Terminal Blocks Covers



Cover designed to conceal the wire terminals. Required to meet local safety regulations in certain jurisdictions.

EC-Multi-Sensor Series



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

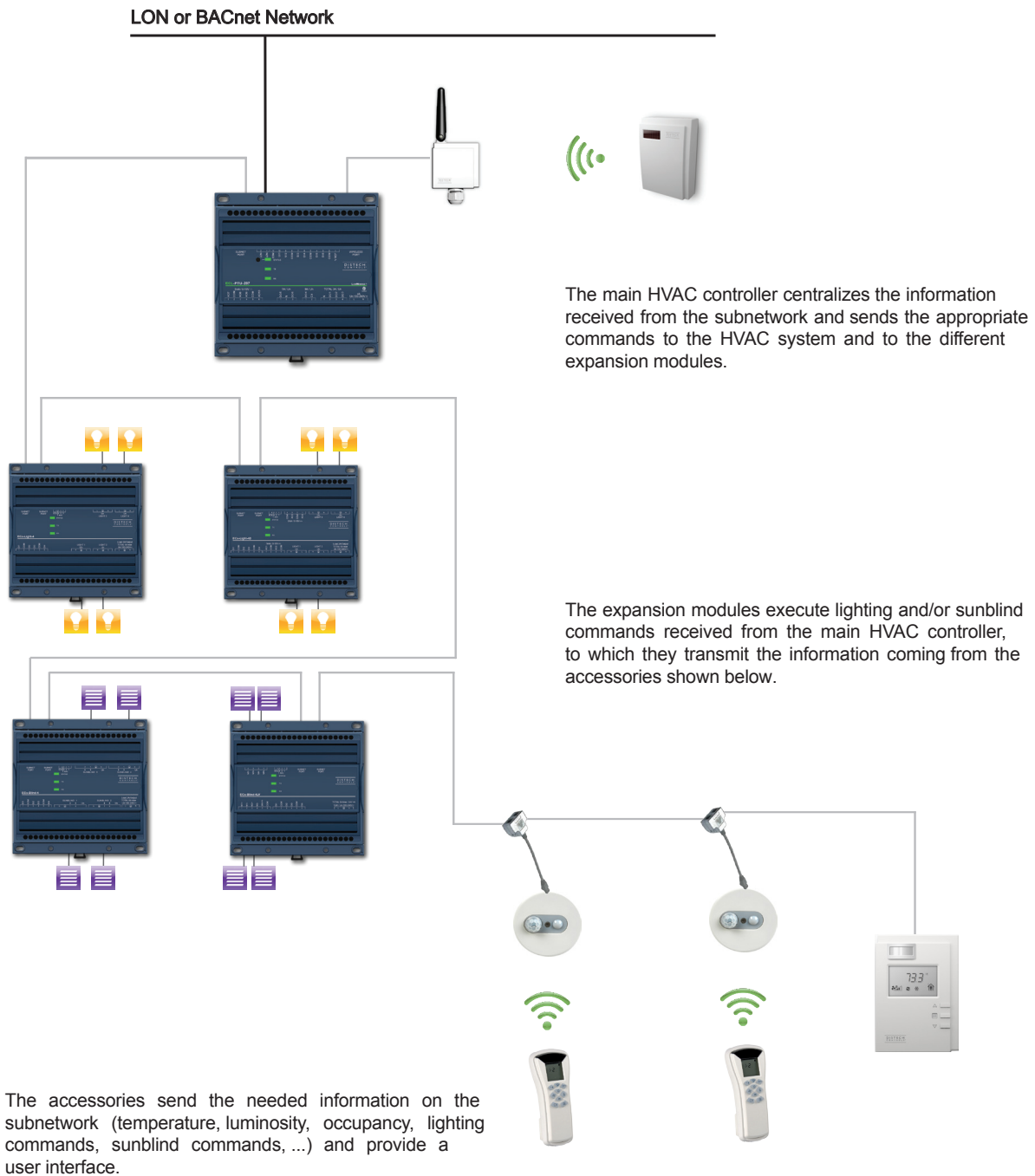
Smart-Sense Room Control Mobile App



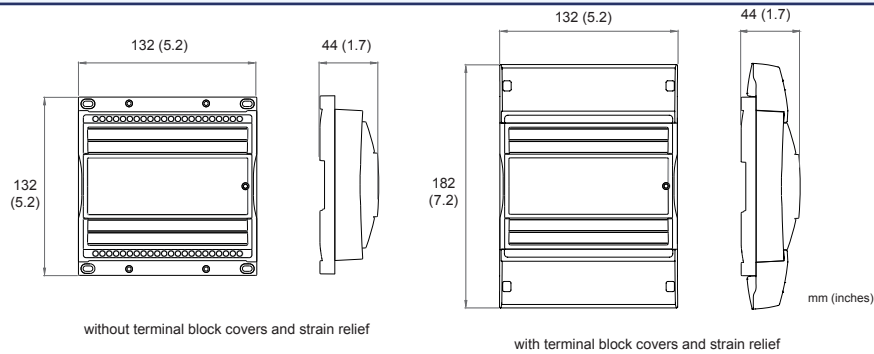
Remote Room Control Application for iPhone®, iPad®, and Android™ devices

Subnetwork Overview

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



ECx-Light-4 Dimensions



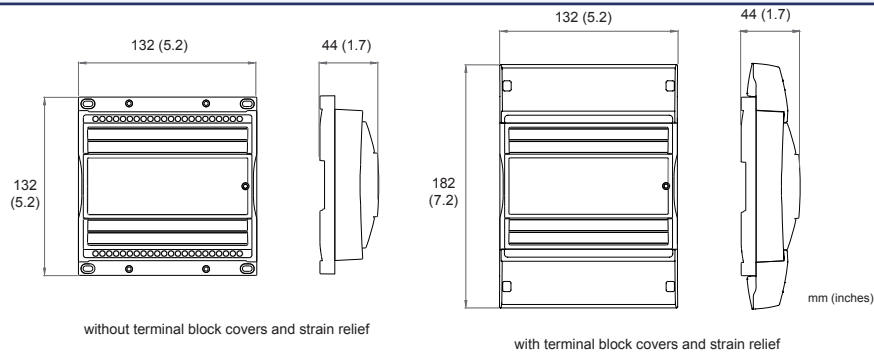
ECx-Light-4 Specifications

Power		Subnetwork¹	
Voltage		Communication	RS-485
-WD and -ST models :	0-240 VAC/DC; -15%/+10%; 50/60 Hz;	Cable	Cat 5e, 8 conductor twisted pair
-STP models ³	0-277 VAC/DC; -15%/+10%; 50/60 Hz;	Connector	RJ-45
	Only to power light outputs. The module is powered via the subnetwork.	Topology	Daisy-chain configuration
Protection	6.0 A external circuit breaker type C (250 VAC min)	Inputs²	
Typical Power Consumption	0.3 W typical on the RJ45 Link + all external loads	Digital Inputs (DI1, DI2, DI3, DI4)	Dry Contact 0-3.3 VDC
Maximum Power Consumption	6.0 A	Outputs	
Overvoltage Category	II - 2.5 kV	Light Outputs (LIGHT1, LIGHT2, LIGHT3, LIGHT4)	High inrush current bistable relay for lower power consumption. Same voltage as power supply - 2.0 A max. on an inductive load - 6.0 A max. total for the 4 outputs - Inrush current 80.0 A max. (< 20 ms)
Hardware		Standards and Regulation	
Processor	STM32 (ARM Cortex™ M3) MCU, 32 bit	CE - Emission ³⁴	IEC61000-6-3: 2006 + A1 : ed.2010 - Generic standards for residential, commercial and light-industrial environments
CPU Speed	36 MHz	CE - Immunity ³⁴	IEC61000-6-1: 2005 - Generic standards for residential, commercial and light-industrial environments
Memory	32 kB Non-volatile Flash 6 kB SRAM	FCC	This device complies with FCC rules part 15, subpart B, class B
Status Indicator	Green LEDs: Device & Power Status, LAN Tx & Rx	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
Environmental			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
Operating Temperature	+5°C to +40°C (41°F to 104°F)		File number: E352591
Storage Temperature	-20°C to 70°C (-4°F to 158°F)		UL94-5VB
Relative Humidity	+20 to 90% Non-condensing		EN 60730-1 : 2011 - Automatic electrical controls for household and similar use - Part 1: General requirements
Altitude	< 2000 m		
Pollution Degree	2		
Enclosure			
Material	Flame retardant ABS		
Color	Blue casing		
Dimensions	132 × 132 × 44 mm (5.2 × 5.2 × 1.7")		
- with terminal block covers	132 × 182 × 44 mm (7.2 × 5.2 × 1.7")		
Shipping Weight	0.36 kg (0.79 lbs)		
IP			
-WD models	30		
-ST and -STP models	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		
		Material ⁵	
		CE - Electrical Safety (Approved by an external Lab)	



- ECL-PTU Series and ECB-PTU Series controllers support 2 ECx-Light + 2 ECx-Blind, in daisy-chain configuration. For ECL-VAV and ECB-VAV controllers: The permitted quantities of supported ECx-Light/Blind expansion modules can be found by using the VAV-Smart Room Control Device Calculator spreadsheet. For ECLYPSE Controllers, the permitted quantities of supported ECx-Light/Blind expansion modules can be found by using the ECLYPSE Selection Tool spreadsheet. These spreadsheets are available for download from Distech Controls' SmartSource.
- SELV (Safety Extra Low Voltage) inputs/outputs.
- WD models can be directly mounted in false ceilings. -ST and -STP models must be mounted with strain reliefs and terminal block covers or in a junction box, as required to meet local safety regulations in your jurisdiction.
- STP models are not CE certified.
- All materials and manufacturing processes comply with the RoHS directive and are marked according to the Waste Electrical and Electronic Equipment (WEEE) directive.

ECx-Light-4D Dimensions



ECx-Light-4D Specifications

Power		Subnetwork¹	
Voltage		Communication	RS-485
-WD and -ST models :	0-240 VAC/DC; -15%/+10%; 50/60 Hz;	Cable	Cat 5e, 8 conductor twisted pair
-STP models	0-277 VAC/DC; -15%/+10%; 50/60 Hz;	Connector	RJ-45
	Only to power light outputs. The module is powered via the subnetwork.	Topology	Daisy-chain configuration
Protection	6.0 A external circuit breaker type C (250 VAC min)	Inputs²	
Typical Power Consumption	0.3 W typical on the RJ45 Link + all external loads	Digital Inputs (DI1, DI2, DI3, DI4)	Dry Contact 0-3.3 VDC
Maximum Power Consumption	6.0 A	Outputs	
Overvoltage Category	II - 2.5 kV	Light Outputs (LIGHT1, LIGHT2, LIGHT3, LIGHT4)	High inrush current bistable relay for lower power consumption. Same voltage as power supply - 2.0 A max. on an inductive load - 6.0 A max. total for the 4 outputs - Inrush current 80.0 A max. (< 20 ms)
Hardware		Analog Outputs (AO1, AO2, AO3, AO4)	Linear (1-10 VDC); Typically light dimming command Sourcing current / sinking current: +/- 5 mA for each output
Processor	STM32 (ARM Cortex™ M3) MCU, 32 bit	Standards and Regulation	
CPU Speed	36 MHz	CE - Emission ³⁴	IEC61000-6-3: 2006 + A1: ed.2010 - Generic standards for residential, commercial and light-industrial environments
Memory	32 kB Non-volatile Flash 6 kB SRAM	CE - Immunity ³⁴	IEC61000-6-1: 2005 - Generic standards for residential, commercial and light-industrial environments
Status Indicator	Green LEDs: Device & Power Status, LAN Tx & Rx	FCC	This device complies with FCC rules part 15, subpart B, class B
Environmental		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
Operating Temperature	+5°C to +40°C (41°F to 104°F)		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
Storage Temperature	-20°C to 70°C (-4°F to 158°F)		File number: E352591
Relative Humidity	+20 to 90% Non-condensing		UL94-5VB
Altitude	< 2000 m		EN 60730-1 : 2011 - Automatic electrical controls for household and similar use - Part 1: General requirements
Pollution Degree	2		
Enclosure		Material ⁵	
Material	Flame retardant ABS	CE - Electrical Safety	
Color	Blue casing	(Approved by an external Lab)	
Dimensions	132 × 132 × 44 mm (5.2 × 5.2 × 1.7") - with terminal block covers 132 × 182 × 44 mm (7.2 × 5.2 × 1.7")		
Shipping Weight	0.36 kg (0.79 lbs)		
IP			
-WD models	30		
-ST and -STP models	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		



- ECL-PTU Series and ECB-PTU Series controllers support 2 ECx-Light + 2 ECx-Blind, in daisy-chain configuration. For ECL-VAV and ECB-VAV controllers: The permitted quantities of supported ECx-Light/Blind expansion modules can be found by using the VAV-Smart Room Control Device Calculator spreadsheet. For ECLYPSE Controllers, the permitted quantities of supported ECx-Light/Blind expansion modules can be found by using the ECLYPSE Selection Tool spreadsheet. These spreadsheets are available for download from Distech Controls' SmartSource.
- SELV (Safety Extra Low Voltage) inputs/outputs.
- WD models can be directly mounted in false ceilings. -ST and -STP models must be mounted with strain reliefs and terminal block covers or in a junction box, as required to meet local safety regulations in your jurisdiction.
- STP models are not CE certified.
- All materials and manufacturing processes comply with the RoHS directive and are marked according to the Waste Electrical and Electronic Equipment (WEEE) directive.

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.

Distech Controls, the Distech Controls logo, Open-to-Wireless, ECO-Vue, ECLYPSE, Allure and EC-Net^{AX} are trademarks of Distech Controls Inc; LonWorks, LON, LONMARK, LNS, LonTalk are registered trademarks of Echelon Corporation; BACnet is a registered trademark of ASHRAE; Niagara^{AX} Framework is a registered trademark of Tridium, Inc.; ARM Cortex is a registered trademark of ARM Limited. EnOcean is a registered trademark of EnOcean GmbH. All other trademarks are property of their respective owners.

