

Overview

The **ECx-Light-4DALI** Expansion Modules are microprocessor-based interfaces that extend the number of inputs and outputs provided by the ECL/ECB-PTU Series controllers as well as ECL/ECB-VAV controllers. When connected to one of these HVAC programmable controllers, each ECx-Light-4DALI expansion module can control up to 4 DALI buses (typically 16 ballasts).

As part of the Smart Room Control solution, the ECx-Light-4DALI expansion module can be freely combined with ECx-Light-4/4D 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/Blind 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-4DALI 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

- DALI ballasts control

Features & Benefits

- Unique DALI broadcast technology, eliminating the need for DALI addressing and commissioning for fast and easy integration.
- Complete disconnection from mains (ballast power supply and DALI buses) when all DALI commands are off allows for further energy savings.
- Smart management of DALI buses (runhours counter, lamp failure detection,...) saves maintenance times and costs.
- Only one connector per DALI output (ballast power supply and DALI buses) reduces installation and wiring costs while reducing the risks of errors.
- Fail-safe mode to comply with most regulation requirements.
- Embedded power supply eliminates the need for an external power supply to power the controlled device, minimizing installation time and cost.
- Same wiring architecture as the ECx-Light-4D expansion modules, to convert easily 1-10V dimming lighting projects into DALI lighting projects.
- A wide 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...

ECx-Light-4DALI Expansion Modules



Model	ECx-Light-4DALI-WD	ECx-Light-4DALI-ST
Digital Inputs	4	4
DALI Buses	4	4
Ballasts per bus (typical / max) ¹	4 / 16	4 / 16
Commands per bus	1	1
Max current per output	5 A	5 A
Max total current for the 4 outputs	10 A	10 A
Internal electronics powered by the host controller	■	■
Full ballast shut-off ²	■	■
100-240 VAC power supply	■	■
Quick-link connectors	■	
Traditional detachable connectors.		■

1. Please refer to output specifications for more information.

2. Complete disconnection from mains (ballast power supply and DALI buses) when all DALI commands are off.

Required External Connectors

Model	Supplier	Type	Connector Reference	Number	Use	Provided
ECx-Light-4DALI-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 GST15I5S S1 ZW1VW PB01 - 5 poles - marked L G N D1 D2	91.952.3453.0	4	Light outputs	-
ECx-Light-4DALI-ST	Wieland	Female connector, pitch 5,08 mm, - 3 poles - marked 1 to 3	25.340.0353.0	1	Power supply	■
	Wieland	Female connector, pitch 5,08 mm, - 6 poles - marked 1 to 6	25.340.0653.0	1	Digital inputs	■
	Wieland	Female connector, pitch 5,08 mm, - 5 poles - marked 1 to 5	25.340.0553.0	4	Light outputs	■

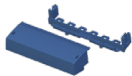
Complementary Products

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.

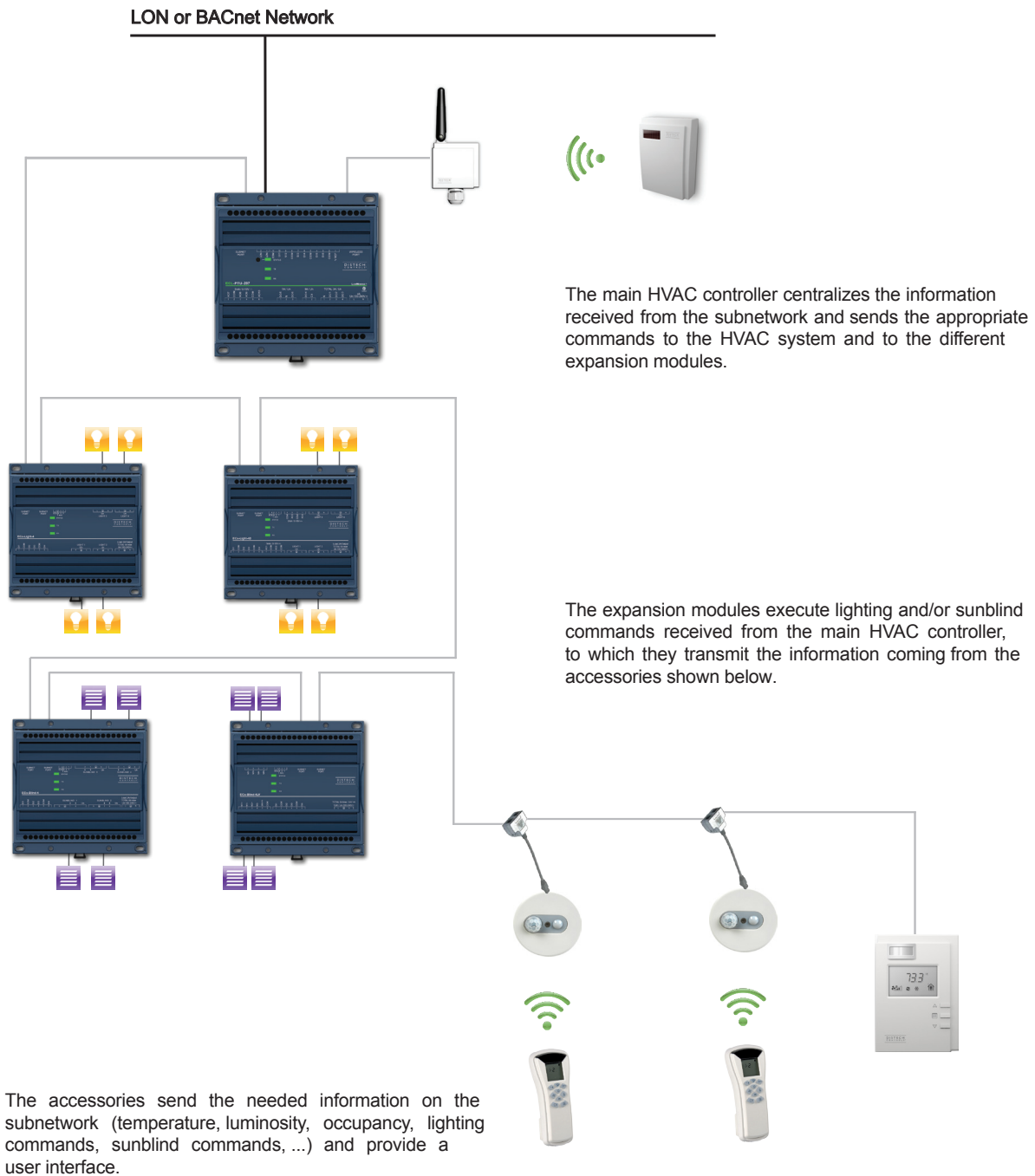
Smart-Sense Room Control Mobile App

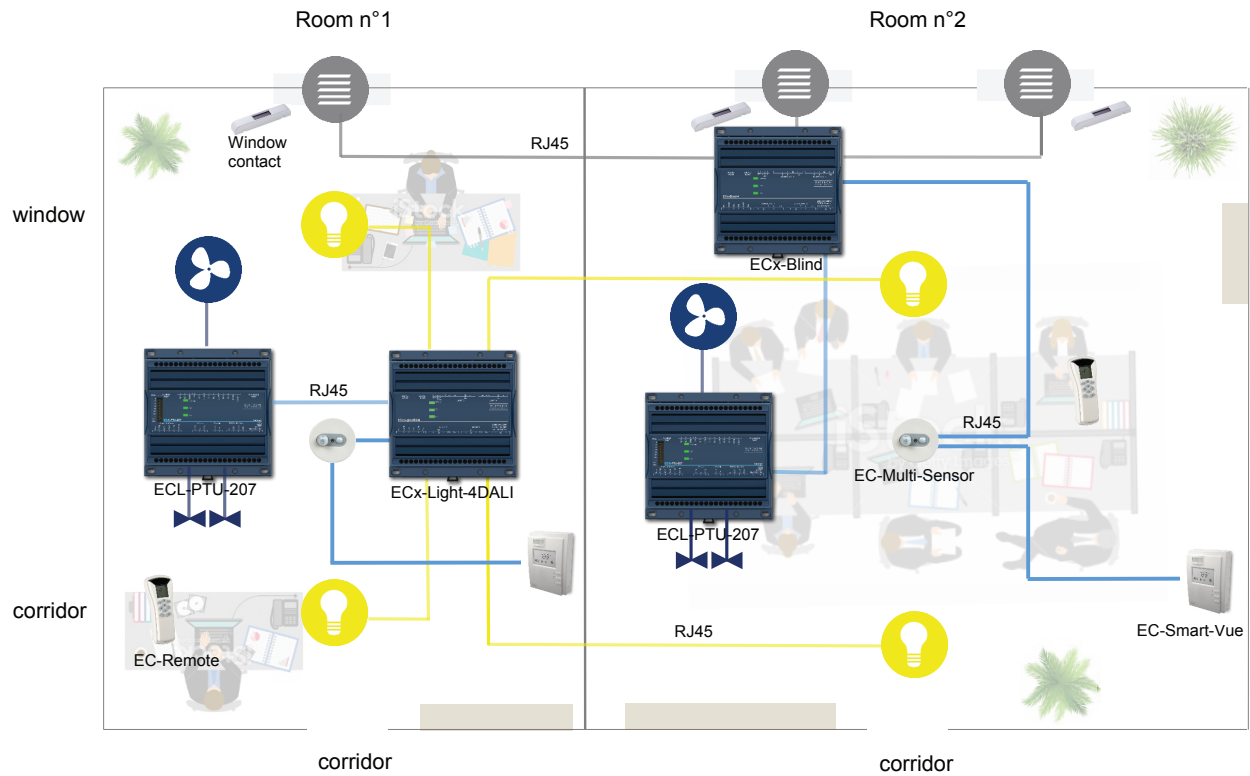


Remote Room Control Application for iPhone®, iPad®, and Android™ devices

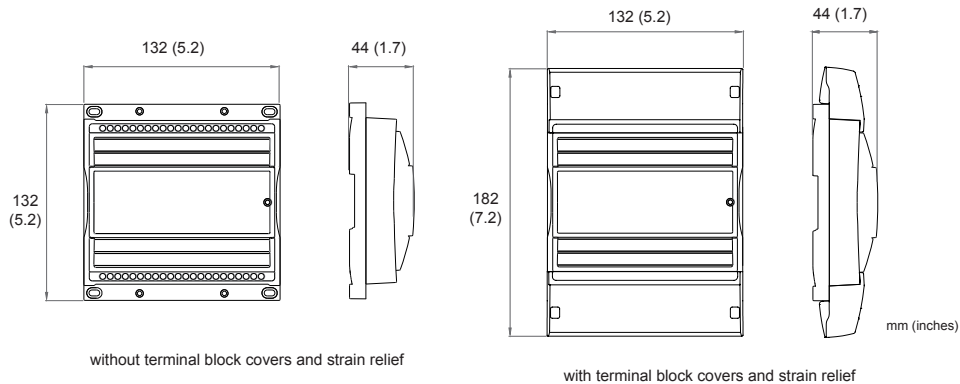
Subnetwork Overview

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-4DALI Dimensions



ECx-Light-4DALI Specifications

Power		Subnetwork¹	
Voltage	100-240 VAC; -15%/+10%; 50/60 Hz;	Communication	RS-485
Protection	10.0 A external circuit breaker type C (250 VAC min)	Cable	Cat 5e, 8 conductor twisted pair
Typical Power Consumption	< 0.9 W typical on the RJ45 Link + all external loads	Connector	RJ-45
Maximum Power Consumption	10.0 A	Topology	Daisy-chain configuration
Overvoltage Category	II - 2.5 kV	Inputs²	
Hardware		Digital Inputs (DI1, DI2, DI3, DI4)	Dry Contact 0-3.3 VDC
Processor	STM32 (ARM Cortex™ M3) MCU, 32 bit	Outputs	
CPU Speed	36 MHz	Light Outputs (LIGHT1, LIGHT2, LIGHT3, LIGHT4: L, T, N pins)	High inrush current relay Same voltage as power supply - 5.0 A max. on an inductive load - 10.0 A max. total for the 4 outputs - Inrush current 80.0 A max. (< 20 ms) for the 4 outputs
Memory	32 kB Non-volatile Flash 6 kB SRAM	DALI Outputs ³ (LIGHT1, LIGHT2, LIGHT3, LIGHT4: DA+, DA- pins)	4 DALI network buses (Broadcast only - No addressing - Each bus acts as a single group) Typically 4 ballasts per bus Up to 16 ballasts per bus
Status Indicator	Green LEDs: Device & Power Status, LAN Tx & Rx	Standards and Regulation	
Environmental		CE - Emission ⁴	IEC61000-6-3: 2006 + A1: ed.2010 - Generic standards for residential, commercial and light-industrial environments
Operating Temperature	+5°C to +40°C (41°F to 104°F)	CE - Immunity ⁴	IEC61000-6-1: 2005 - Generic standards for residential, commercial and light-industrial environments
Storage Temperature	-20°C to 70°C (-4°F to 158°F)	FCC (pending)	This device complies with FCC rules part 15, subpart B, class B
Relative Humidity	+20 to 90% Non-condensing	UL Listed (CDN & US) (pending)	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
Altitude	< 2000 m	Material ⁵	UL94-5VB
Pollution Degree	2	CE - Electrical Safety (Approved by an external Lab)	EN 60730-1 : 2011 - Automatic electrical controls for household and similar use - Part 1: General requirements
Enclosure			
Material	Flame retardant ABS		
Color	Blue casing		
Dimensions	132 x 132 x 44 mm (5.2 x 5.2 x 1.7")		
- with terminal block covers	132 x 182 x 44 mm (7.2 x 5.2 x 1.7")		
Shipping Weight	0.35 kg (0.78 lbs)		
IP			
-WD models	30		
-ST 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		



1. 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 room device calculator spreadsheet, which is available for download from Distech Controls' SmartSource: **VAV- Smart Room Control Device Calculator.xlsm**

2. SELV (Safety Extra Low Voltage) inputs/outputs.

3. DALI network buses are not SELV / PELV outputs.

4. -WD models can be directly mounted in false ceilings. -ST 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.

5. 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.

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