Datasheet

ECx-Blind Series

Shades / Sunblinds Expansion Modules

Overview

The **ECx-Blind 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 expansion module can control 4 motorised shades / sunblinds.

As part of the Smart Room Control solution, the ECx-Blind Series expansion module can be freely combined with ECx-Light-4/4D and ECx-Light-4DALI lighting 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 shade / sunblind motors, 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 of the ECx-Blind-4 models being powered by the host controller, the shade / sunblind consumption can easily be monitored, allowing for energy counting, and allowing the supervisor to instantly detect abnormal power usage and anticipate maintenance as part of a proactive preventive maintenance program.

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

Applications

- 100-240 VAC shades / sunblinds
- 24 VDC shades / sunblinds

Features & Benefits

- 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 shade / sunblind switches, window contacts, etc...
- Fail-safe mode to comply with most regulation requirements.
- The ECx-Blind-4 has a separate power supply allowing for dedicated metering leading to more accurate energy consumption analysis.
- The ECx-Blind-4LV models have an embedded power supply that can eliminate the need for an external power supply to power the controlled device.

ECx-Blind Expansion Modules




Model	ECx-Blind-4-WD	ECx-Blind-4-ST	ECx-Blind-4LV-WD	ECx-Blind-4LV-ST
Digital Inputs	4	4	4	4
Line-powered Shade / Sunblind Outputs	4	4		
24 VDC Shade / Sunblind Outputs			4	4
24 VDC Power Supply Outputs			■	■
Internal electronics powered by the host controller	■	■		
100-240 VAC power supply	■	■	■	■
Quick-link connectors	■		■	
Traditional detachable connectors.		■		■

Required External Connectors

Model	Supplier	Type	Connector Reference	Number	Use	Provided
ECx-Blind-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 GST15I4S S1 ZW1V WS - 4 poles - marked N G 1 2	91.942.3053.0	4	Shade / sunblind outputs	-
ECx-Blind-4-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, - 4 poles - marked 1 to 4	25.340.0453.0	4	Shade / sunblind outputs	■
	Wieland	Female connector, pitch 5,08 mm, - 6 poles - marked 1 to 6	25.340.0653.0	1	Digital inputs	■
ECx-Blind-4LV-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, - 4 poles - marked 1 to 4	25.340.0453.0	1	Motor outputs	■
	Wieland	Female connector, pitch 5,08 mm, - 6 poles - marked 1 to 6	25.340.0653.0	2	Motor/24VDC outputs & digital inputs	■
ECx-Blind-4LV-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, - 4 poles - marked 1 to 4	25.340.0453.0	1	Motor outputs	■
	Wieland	Female connector, pitch 5,08 mm, - 6 poles - marked 1 to 6	25.340.0653.0	2	Motor/24VDC outputs & 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

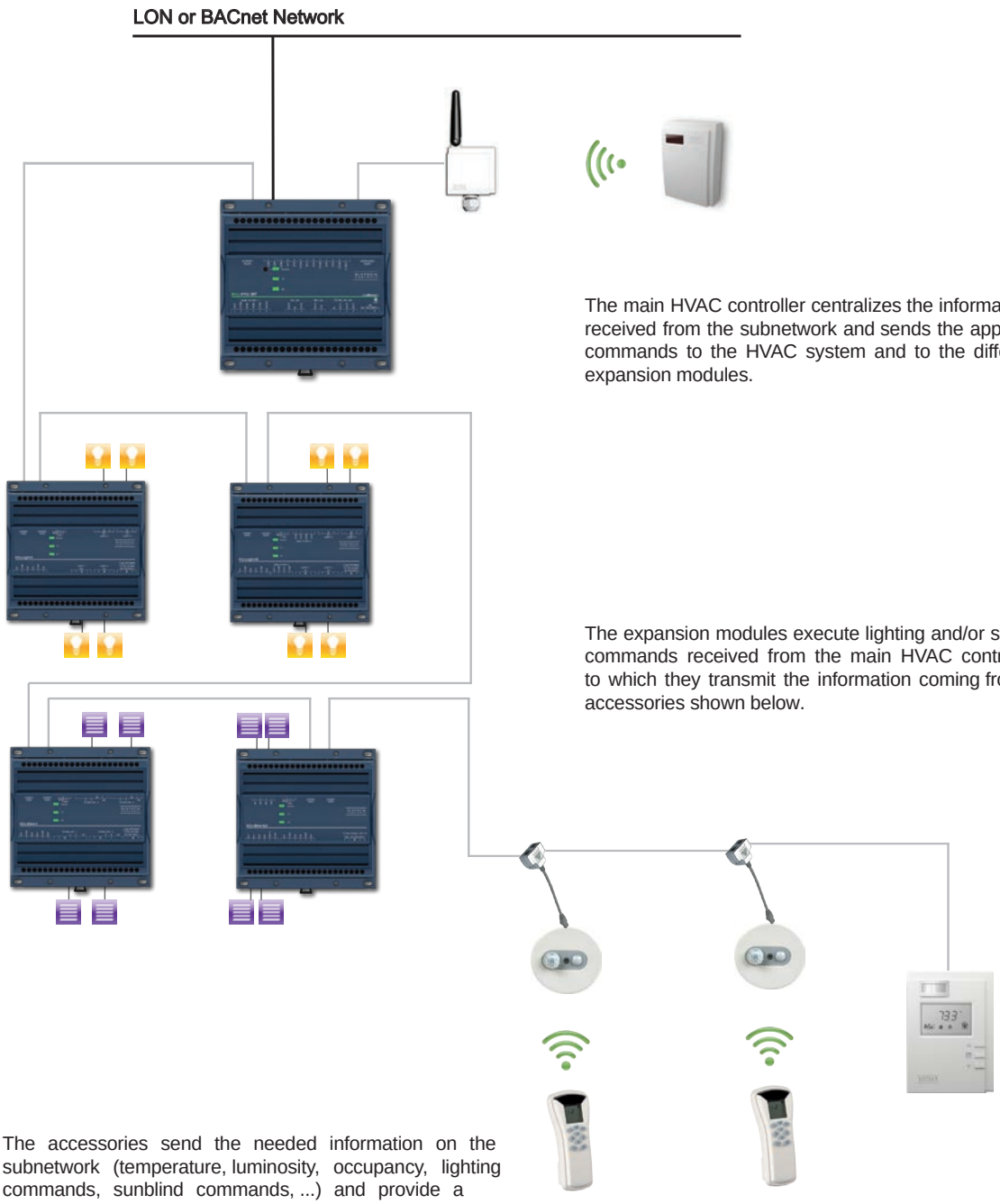
Line of in-ceiling multi-sensors. Models are available with presence detection, light sensor, temperature sensor, and infrared receiver.

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.

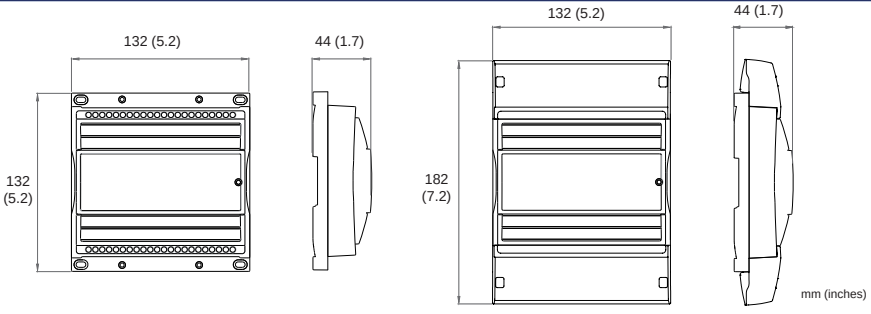


The main HVAC controller centralizes the information received from the subnetwork and sends the appropriate commands to the HVAC system and to the different expansion modules.

The expansion modules execute lighting and/or sunblind 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, sunblind commands, ...) and provide a user interface.

ECx-Blind-4 Dimensions



without terminal block covers and strain relief

with terminal block covers and strain relief

ECx-Blind-4 Specifications

Power

Voltage	100-240 VAC; -15%/+10%; 50/60 Hz;
Protection	8.0 A external circuit breaker type C (250 VAC min) or 8.0 fast acting, high breaking fuse (250 VAC min)
Typical Power Consumption	0.3 W typical on the RJ45 Link + all external loads
Maximum Power Consumption	8.0 A
Overvoltage Category	II - 2.5 kV

Hardware

Processor	STM32 (ARM Cortex™ M3) MCU, 32 bit
CPU Speed	36 MHz
Memory	32 kB Non-volatile Flash 6 kB SRAM
Status Indicator	Green LEDs: Device & 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	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	0.35 kg (0.77 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

Subnetwork[1]

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

Inputs[2]

Digital Inputs (DI1, DI2, DI3, DI4)	Dry Contact 0-3.3 VDC

Outputs

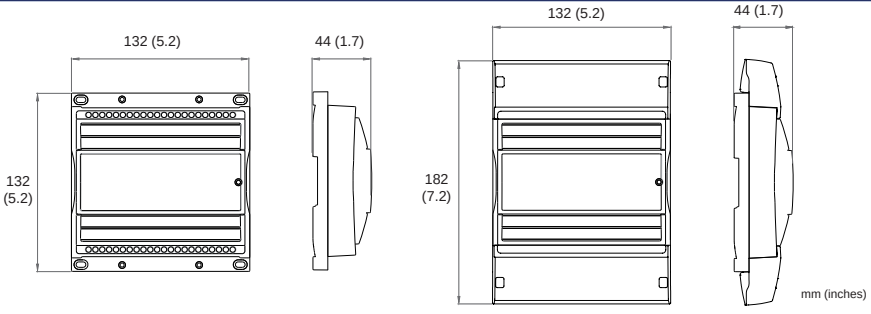
Shade / sunblind Outputs (BLIND1, BLIND2; BLIND3, BLIND4)	Same voltage as power supply 2.0 A max (inductive or resistive load) Current Peak 4 A max < 20ms 1 : Shade / sunblind UP command 2 : Shade / sunblind DOWN command

Standards and Regulation

CE - Emission[3]	IEC61000-6-3: 2006 + A1: ed.2010 - Generic standards for residential, commercial and light-industrial environments
CE - Immunity[3]	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[4]	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

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 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.
2. SELV (Safety Extra Low Voltage) inputs/outputs.
3. -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.
4. All materials and manufacturing processes comply with the RoHS directive and are marked according to the Waste Electrical and Electronic Equipment (WEEE) directive.

ECx-Blind-4LV Dimensions



without terminal block covers and strain relief

with terminal block covers and strain relief

ECx-Blind-4LV Specifications

Power

Voltage	100-240 VAC; -15%/+10%; 50/60 Hz;
Protection	2.0 A external circuit breaker type C or 2.0 A fast acting high breaking external fuse (250 VAC min)
Typical Power Consumption	< 1 W + all external loads
Maximum Power Consumption	1.2 A
Overvoltage Category	II - 2.5 kV

Hardware

Processor	STM32 (ARM Cortex™ M3) MCU, 32 bit
CPU Speed	36 MHz
Memory	32 kB Non-volatile Flash 6 kB SRAM
Status Indicator	Green LEDs: Device & 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

On-Board 24 VDC Power Supply

Use	Used to power both shade / sunblind outputs and 24 VDC outputs
Voltage[2]	24 VDC; ±10%
Current	2.0 A max. in aggregate (48 W @ 24 VDC)
Protection	Short-circuit protected

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 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

Subnetwork[1]

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

Inputs[2]

Digital Inputs (DI1, DI2, DI3, DI4)	Dry Contact 0-3.3 VDC

Outputs[2]

Shade / sunblind Outputs (M1+, M1-; M2+, M2-, M3+, M3-, M4+, M4-)	24 VDC (see *On-Board 24 VDC Power Supply* for more specifications) Mx+ Shade / sunblind UP command Mx- Shade / sunblind DOWN command 1 A max. per output
24 VDC Outputs	24 VDC on-board generated (see *On-Board 24 VDC Power Supply* for more specifications)

Standards and Regulation

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Total Quality Commitment

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