EcoStruxure™
Innovation At Every Level

SpaceLogic RP-C-EXT-DALI-M-PD

RP Controller Expansion Modules

EcoStruxure™ Building

DALI light module with power distribution

Introduction

SpaceLogic™ RP-C-EXT-DALI-M-PD light module connects to the SpaceLogic RP room controllers and provides I/O expansion for lighting control with DALI (Digital Addressable Lighting Interface).

The DALI light module enables power supply and control of lights equipped with DALI ballasts (DALI control gear).

The DALI light module is a DALI-2 certified control device (application controller) with multi-master capability. DALI-2 compliance means benefits such as improved interoperability and easier installation and maintenance. The DALI light module

can be used with DALI version-1 products because DALI-2 is designed to be backward compatible with DALI version-1. The multi-master capability of the DALI light module allows the module to function as a DALI master in a DALI network and can thus work together with DALI-2 sensors and push-buttons.

Lighting can be controlled by the RP controller through motion detection and light intensity measurement provided by the Multi-sensor or Insight-Sensor, or by SpaceLogic Sensors connected to the RP controller.

The DALI light module is part of the RP controller expansion modules for connected room solution and can be combined with other modules from this product range.

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SpaceLogic RP-C-EXT-DALI-M-PD

Features

The DALI light module has the following features:

- Power and communications through the room bus
- DALI-2 certified control device (application controller)
- DALI multi-master function for communication with DALI sensors and push-buttons on the DALI bus, which minimizes wiring and installation costs
- Group and individual addressing of DALI control gear (lights)
- One DALI channel, which is split into four inputs/outputs (terminals), for DALI bus power supply and control of up to 32 lights and 16 input devices (the maximum number of lights and input devices per input/output is determined by the maximum inrush current)
- Up to 16 DALI groups for common control of lights
- Up to 16 DALI input devices in total. Each input device supports up to four sensors or buttons.
- Simplified commissioning support for DALI lights connected to the same terminal
- Energy saving by automatic disconnection of power to DALI drivers/ballasts when all lights on the same terminal are off
- Support for on/off (relay) control of non-DALI lights on terminals not used for DALI lighting control
- Four digital inputs for connection of light switches and window contacts. The digital inputs are SELV (Safety Extra-Low Voltage).
- Measurement of energy consumption per module
- Suitable for mounting in ceilings
- Wieland connectors for quick and easy installation
- Engage mobile application for room comfort settings
- Status LED for the device
- One status LED for each DALI input/output
- Rotary switch for address configuration

DALI lighting control

The DALI inputs/outputs are connected to the power supply network through the DALI light module. For the DALI bus wires, you may use the standard installation equipment permitted for ELV (Extra-Low Voltage) installations. The DALI bus meets SELV (Safety Extra-Low Voltage) requirements.

The DALI-2 interface has the following features:

- DALI groups can combine lights regardless of which outputs the lights belong to.
- Lights that belong to the same DALI group are controlled simultaneously for switching on/off, dimming, and color temperature (tunable white) adjustment

- Management of ballast and lamp alarms
- Automatic addressing of lights

Simplified commissioning support

By using a DALI channel group, you can control all DALI lights connected to the same input/output (terminal) as one logical light, which simplifies and speeds up the commissioning process.

Room bus

The RP controller room bus allows RP controller expansion modules to be connected to the controller for people counting, motion detection, luminosity and sound pressure level measurements, Bluetooth Low Energy based applications, and control of electric lights and window blinds.

The RP-C Pro and RP-C Pro Plus controller room bus supports up to nine connected RP controller expansion modules with the following restrictions:

- Maximum of two DALI light modules
- Maximum of two SMI blind modules
- Maximum of seven Multi-sensor or Insight-Sensor devices

The RP-C Advanced controller room bus supports up to six connected RP controller expansion modules with the following restrictions:

- Maximum of two DALI light modules
- Maximum of two SMI blind modules
- Maximum of four Multi-sensor or Insight-Sensor devices

The RP-V Advanced controller room bus supports up to four connected RP controller expansion modules with the following restrictions:

- Maximum of one DALI light module
- Maximum of one SMI blind module
- Maximum of two Multi-sensor or Insight-Sensor devices

Maximum total length of the room bus is 72 m (236 ft).

Engage mobile application

The Engage mobile application enables control of room temperature, fan speed, lights, and blinds/shades directly from a smartphone. A user can manage these settings when the application is connected to the RP controller.

The Engage mobile application is free and available for download from Google Play and Apple App Store.

For more information, see the Engage Specification Sheet.
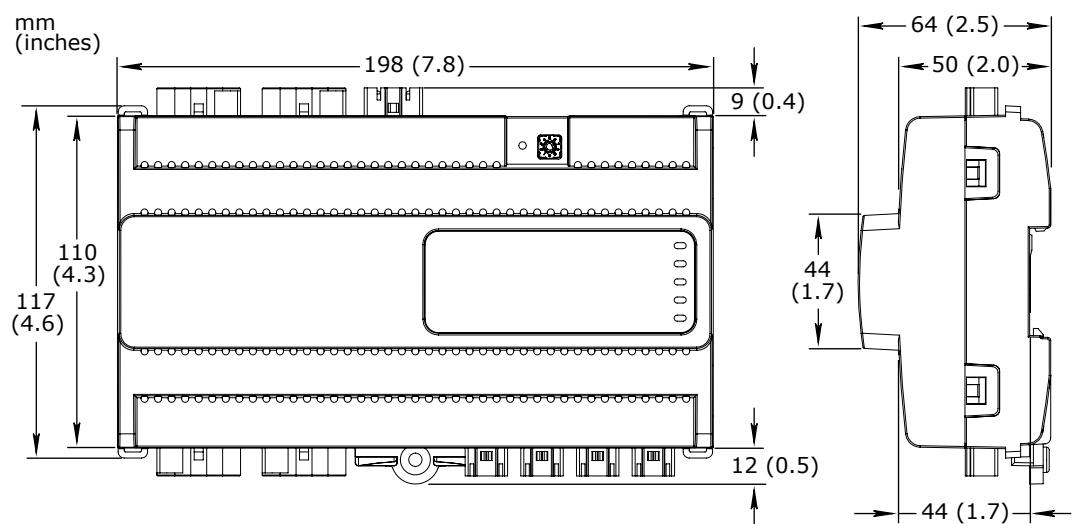
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Part Numbers

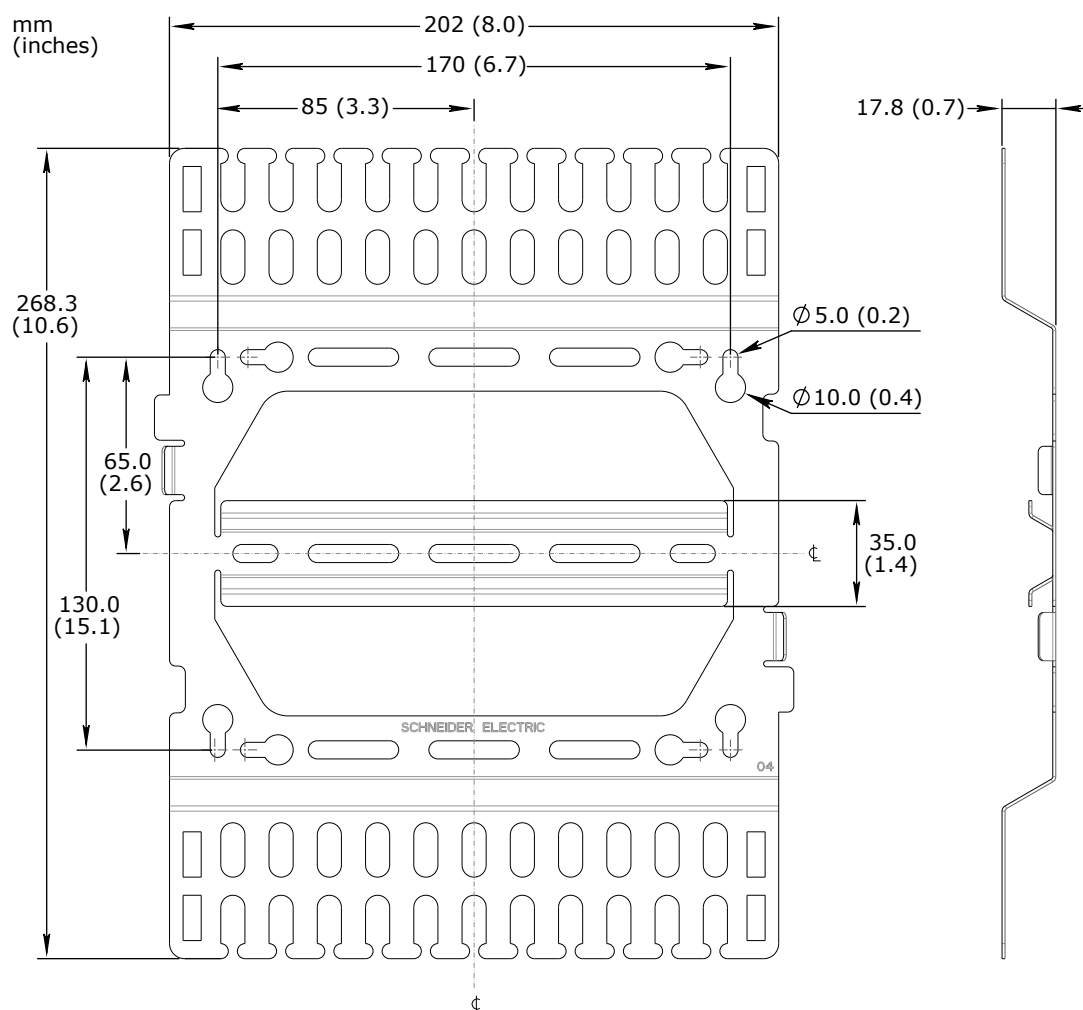| Product	Part number
RP-C-EXT-DALI-M-PD	SXWREDAMPD10001
DIN-RAIL-CLIP, DIN-rail end clip package of 25 pieces	SXWDINEND10001
Mounting plate - RP controller expansion modules package of 5 pieces	SXWREMPK510001

Specifications

SpaceLogic RP-C-EXT-DALI-M-PD	
Electrical	
Nominal voltage	230 VAC
Operating voltage range	+/-10 %
Frequency	50/60 Hz
Maximum current consumption	10 A
Room bus power consumption	0.3 W (24 VDC)
Protection	Maximum 16 A external fuse (circuit breaker) is needed
Overvoltage category	III
Environment	
Ambient temperature, operating	0 to 50 °C (32 to 122 °F)
Ambient temperature, storage	-20 to +70 °C (-4 to +158 °F)
Humidity	20 to 90 % RH non-condensing
Pollution degree	2
Material	
Plastic flame rating	UL94 V-0
Ingress protection rating	IP 20
Mechanical	
Dimensions	198 W x 110 H x 64 D mm (7.8 W x 4.3 H x 2.5 D in.)

SpaceLogic RP-C-EXT-DALI-M-PD

Weight	0.433 kg (0.955 lb)
Recommended installation	DIN rail or flat surface in a cabinet[a]

a) It is recommended to install the device in an enclosure (cabinet), unless local regulations allow an exception.

Connectors	Power input: 1 x 3-pin Wieland GST15i3 connector DALI inputs/outputs: 4 x 5-pin Wieland GST15i5 connector Digital inputs: 4 x 2-pin Wieland GST15i2 connector

Optional mounting plate

The mounting plate is used to facilitate mounting and cable management for the RP controller expansion module as well as to provide strain relief for the connectors.

Dimensions	202 W x 268.3 H x 17.8 D mm (8.0 W x 10.6 H x 0.7 D in.)

SpaceLogic RP-C-EXT-DALI-M-PD

mm
(inches)

202 (8.0)

170 (6.7)

85 (3.3)

17.8 (0.7)

268.3
(10.6)

∅ 5.0 (0.2)

∅ 10.0 (0.4)

65.0
(2.6)

35.0
(1.4)

130.0
(15.1)

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Weight	0.306 kg (0.675 lb)
Compatibility	
EcoStruxure BMS server communication EcoStruxure Building Operation	version 3.1.1 and later
Energy metering support EcoStruxure Building Operation	version 3.3.1 and later
DALI multi-master support EcoStruxure Building Operation	version 4.0.1 and later
Support for simplified commissioning and energy saving for DALI lights, and relay control of non-DALI lights EcoStruxure Building Operation	version 5.0.3 and later
Agency compliances	
Emission	RCM; BS/EN 61000-6-3; BS/EN IEC 63044-5-2; FCC Part 15, Sub-part B, Class B
Immunity	BS/EN 61000-6-2; BS/EN IEC 63044-5-3
Safety standards	BS/EN 60730-1; BS/EN 60730-2-11; BS/EN IEC 63044-3
Digital addressable lighting interface	IEC 62386-101; IEC 62386-103

SpaceLogic RP-C-EXT-DALI-M-PD

Communication ports	
Room bus	RS-485 Dual RJ45 ports for daisy-chain configurations Use a Cat 5 (or higher) cable Maximum total length of the room bus: 72 m (236 ft)
Room bus protection	Transient voltage suppressors on communication and power signals

Hardware	
Main microcontroller	
CPU type	ARM Cortex-M4 single-core
Frequency	80 MHz
SRAM (embedded)	320 KB
Flash memory (embedded)	1024 KB
Memory	
NOR flash memory	16 MB
DALI microcontroller	
CPU type	ARM Cortex-M0 single-core
Frequency	32 MHz
SRAM (embedded)	8 KB
Flash memory (embedded)	64 KB
Additional hardware	
Status indicator	LED (green and red) that shows the status of the device
Light status indicator	One status LED (green) for each DALI input/output
Address switch	Rotary switch 0 to 9
Set button	Push-button switch

Energy metering	
Energy consumption measurement	
The energy consumption is measured in Wh, shared by the four outputs.	
Accuracy class (according to IEC 61557-12)	Active energy measurement: Class 1
Typical measurement accuracy at room temperature	20 to 100 W: 5% 100 to 3000 W: 1%

DALI inputs/outputs	
Inputs/outputs	4, Light 1 to Light 4
The four inputs/outputs share one DALI channel.	
Input/output terminals	N, PE, L, DA+, and DA-
DALI bus voltage	18 VDC
Maximum supply current	250 mA
Guaranteed supply current	64 mA

SpaceLogic RP-C-EXT-DALI-M-PD

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Maximum cable length	See the SpaceLogic and EasyLogic - Hardware Installation System Guide
Power distribution	230 VAC (same voltage as power supply) Maximum 5 A load per output Maximum 10 A total load for the 4 outputs Maximum 165 A inrush current (<20 ms) per output Maximum 800 A inrush current (<200 µs) per output

DALI devices

Supported control gear		See table below.

Device type number	Type of control gear	Supported
Device Type 0 (DT0)	Fluorescent lamp control gear	Yes
Device Type 1 (DT1)	Control gear for self-contained emergency lighting	Yes
Device Type 3 (DT3)	Low-voltage halogen lamp control gear	Yes
Device Type 4 (DT4)	Incandescent lamp dimmers	Yes
Device Type 6 (DT6)	LED lamp control gear (LED modules)	Yes
Device Type 8 (DT8)	Color control gear	Yes[a]

a) Color type Tc (Color temperature) of Part 209 of the IEC 62386 standard is supported.

Supported input device types		See table below.

Type/part number[a]	Type of input device	Supported[bc]
301	Push-buttons	Yes
302	Absolute input devices	Yes
303	Occupancy sensors	Yes
304	Light (luminosity) sensors	Yes

a) Parts of the IEC 62386 standard.
b) For a list of supported input devices, see the Product Database on the DiiA website, www.dali-alliance.org
c) It is recommended to always test an input device at an early stage in a project.

Digital inputs

Inputs	4, DI1 to DI4
Range	Dry contact, 0 to 5.0 VDC, 2.2 mA, SELV (Safety Extra-Low Voltage)

Connections

Follow proper installation wiring diagrams and instructions. For more information on wiring, see the SpaceLogic and EasyLogic - Hardware Installation System Guide.

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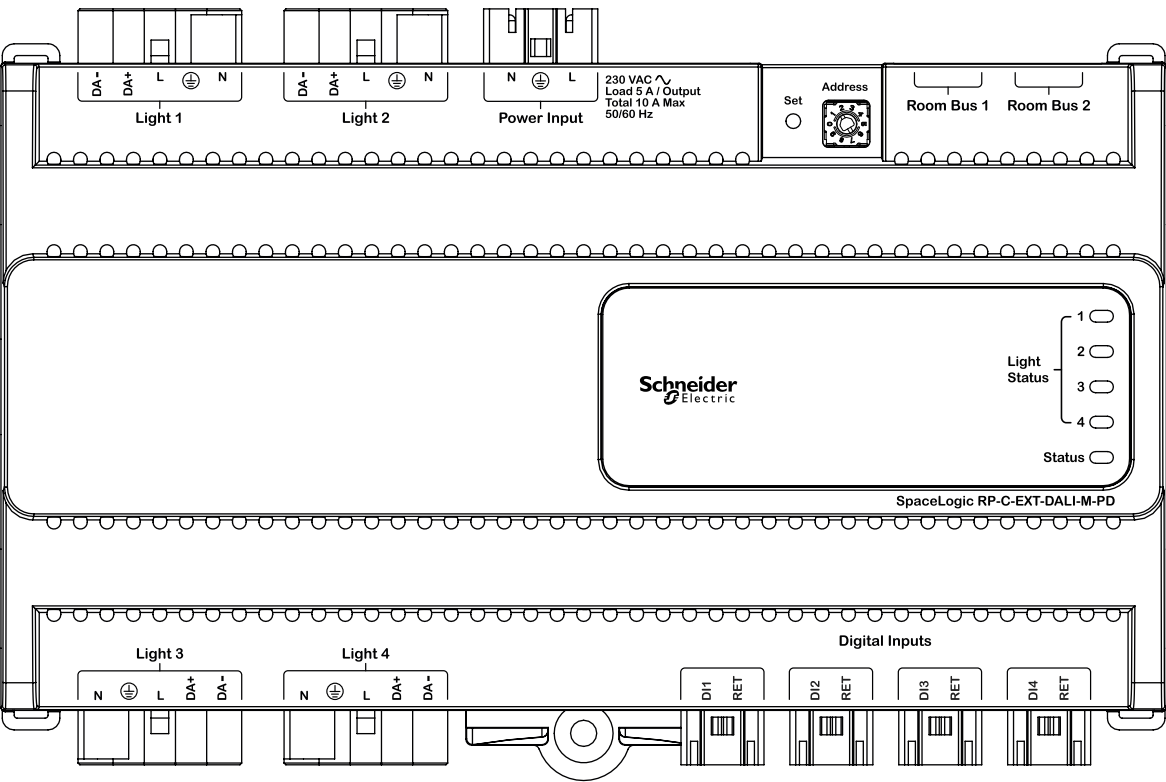
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Required External Connectors

Use	Part number	Reference	Connector type	Suitable for cable diameters mm (inches)	Marking	Color of coding /housing	Minimum order quantity
Power supply input	SXWRPCCON WWPOW	91.931.4053.1	Female	5.6–11 (0.22–0.43)	L, PE, N	Black /Black	100
DALI inputs/outputs	SXWRPCCON WWLIGHTPD	91.952.4453.0	Male	8.5–12.5 (0.34–0.49)	N, PE, L, D2, D1 D2: DA+ D1: DA-	Pastel blue /White	50
Digital inputs	SXWRPCCON WDI	91.921.2353.0	Female	3.4–5.5 (0.14–0.21)	1, 2 1: DI1..4 2: RET	Light blue /White	100

The external connectors need to be ordered separately. The connectors can be ordered in quantities of 50 or 100 from Schneider Electric using the above part numbers. The connectors can also be ordered directly from Wieland using the above reference numbers. For more information, see the Wieland Electric web site.

SpaceLogic RP-C-EXT-DALI-M-PD

Regulatory Notices

Federal Communications Commission
FCC Rules and Regulations CFR 47, Part 15, Class B
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference. (2) This device must accept any interference received, including interference that may cause undesired operation.
Industry Canada
This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Regulatory Compliance Mark (RCM) - Australian Communications and Media Authority (ACMA)
This equipment complies with the requirements of the relevant ACMA standards made under the Radiocommunications Act 1992 and the Telecommunications Act 1997. These standards are referenced in notices made under section 182 of the Radiocommunications Act and 407 of the Telecommunications Act.

DALI-2 Certified Product.
This product is DALI-2 certified and conforms to Parts 101 and 103 of IEC 62386.
All DALI-2 certified product are listed in the Product Database on the DiiA website www.digitalilluminationinterface.org.

CE - Compliance to European Union (EU)
2014/30/EU Electromagnetic Compatibility Directive
2014/35/EU Low Voltage Directive
2011/65/EU Restriction of Hazardous Substances (RoHS) Directive
2015/863/EU amending Annex II to Directive 2011/65/EU
This equipment complies with the rules, of the Official Journal of the European Union, for governing the Self Declaration of the CE Marking for the European Union as specified in the above directive(s).

WEEE - Directive of the European Union (EU)
This equipment and its packaging carry the waste of electrical and electronic equipment (WEEE) label, in compliance with European Union (EU) Directive 2012/19/EU, governing the disposal and recycling of electrical and electronic equipment in the European community.

UK Conformity Assessed
S.I. 2016/1091 - Electromagnetic Compatibility Regulations 2016
S.I. 2016/1101 - Electrical Equipment (Safety) Regulations 2016
S.I. 2012/3032 - Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012
S.I. 2013/3113 - Waste Electrical and Electronic Equipment Regulations 2013
This equipment complies with the rules, of the UK regulations, for governing the UKCA Marking for the United Kingdom specified in the above directive(s).

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