



LIGHT CONTROLLER LSW - RADIO-OPERATED VERSION



ENOCEAN RADIO-OPERATED CONTROLLER

Based on the Light Controller LW model, the LSW Light Controller is fitted with an integrated timer, which means it provides additional functions:

The radio-operated module of the VS Light Controllers is based on the established EnOcean technology. Communication between the Light Controller and the luminaire is achieved using the standard DALI protocol. The Light Controllers comply with all the parts of standard IEC 62386 currently valid.

The controllers have been designed for mounting to a 35 mm DIN installation rail. The lighting system can be configured completely and easily without a PC or radio control being necessary.

The LSW Light Controller is perfect for reducing installation expenditure during modernisation work, thus saving on installation costs and time.



Additional advantages of radio-operated version: Light Controller LSW

- **INTEGRATION OF RADIO-OPERATED KEYS**
- **AVOIDANCE OF MORTISING WORK, REDUCTION OF FIRE LOADS**
- **TIME- AND DATE-DEPENDENT LIGHTING CONTROL**
- **WEEKDAY AND PUBLIC HOLIDAY SPECIFICATION**
- **RANDOM ACTIVATION OF LUMINAIRES (TO DISCOURAGE BURGLARIES)**
- **CONVENIENCE FUNCTIONS SUCH AS ADJUSTABLE FADING TIMES**

Overview of the LiCS Indoor System

Product matrix	Light Controller L / LS	Light Controller LW / LSW	Light Controller S	Light Controller XS
	 for integration into the distribution board	 for integration into the distribution board - EnOcean wireless version	 for independent operation	 for independent operation
MultiSensors	 MultiSensors (motion and brightness)			
High Bay Sensors	 HB Sensors (motion) or brightness (constant light control)			
Extender				
Accessories	max. 6 buttons (mains voltage-compatible)	antenna (magnetic-base or screw-base); max. 6 buttons (mains voltage-compatible); EnOcean wireless modules (max. 16 pcs.)	button (mains voltage-compatible)	button (mains voltage-compatible)

Functions	Light Controller		Light Controller		Light Controller	Light Controller
	L	LS	LW	LSW	S	XS
Control options	single and group	group	single and group	group	broadcast	broadcast
No. of groups	max. 16		max. 16		–	–
No. of operating devices (DALI-EBs, LiCS-Extender, HB sensors)	max. 64		max. 64		max. 64	max. 10
No. of MultiSensors	max. 36		max. 36		max. 36	max. 4
Motion detection (automatic and semi-automatic)		●		●	●	●
Constant light control		●		●	●	●
Scene settings	●	–	●	–	–	–
Push function (on/off, up and down)	●		●		●	●
Dimming (only up or only down)	●		●		–	–
ON/OFF function	●		●		●	●
Overriding central control	●		●		–	–
Stairwell function (timer)	●		●		–	–
With integrated timer clock	–	●	–	●	–	–
Discourage burglaries	–	●	–	●	–	–
System analysis software		●		●	–	–
Password protection		●		●	–	–
Minimising standby losses		●		●	–	–
Menu navigation in	German, English, French, Italian, Spanish		German, English, French, Italian, Spanish		–	–
Configuration using	rotary push key and screen		rotary push key and screen		dip switch	dip switch

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Light Controller LSW

For installation in a distribution board

This light control gear is designed for installation in a distribution board.

Technical notes

Configuration interface: display screen

and rotary push key (on the controller)

Ambient temperature t_a : 5 to 50 °C

Push-in terminals with lever opener: 0.5-1.5 mm²

Degree of protection: IP20, Protection class: I

RFI-suppressed

The MultiSensors are connected directly to the DALI bus

No. of operating devices (DALI EBs, LiCS Extender, HB sensors): max. 64 pcs.

No. of MultiSensors: max. 36 pcs.

Connections

Mains connection: 220-240 V AC, 50-60 Hz,
max. power consumption 9 W

1 DALI bus to 3 pairs of terminals: max. current on DALI bus = 200 mA (see the respective data sheet for current consumption of individual components)

As a standard DALI bus is not SELV-compliant, the DALI cable must be rated for mains voltage.

The DALI bus features reversible electronic overload and short-circuit protection.

6 independently configurable push button inputs:
cables must be rated for mains voltage;
220-240 V AC, 50-60 Hz

1 closing relay contact to 2 pairs of terminals
(can be reconfigured as an opener):

Minimising standby losses

Antenna jack:

radio signal with a frequency of 868 MHz

Functions

Automatic and semi-automatic motion detection,
constant light control, discourage burglaries, timer clock,
push function, ON/OFF function (also central),
stairwell function (timer), system analysis software,
password protection, control options (group)

Software languages: German, English, French, Spanish, Italian

LightController LSW

Suitable for wireless operation with EnOcean

No. of wireless modules: 16 pcs.

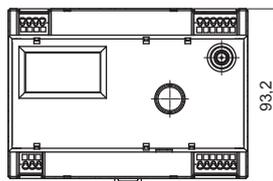
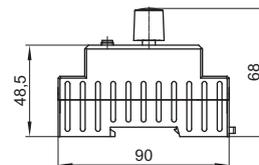
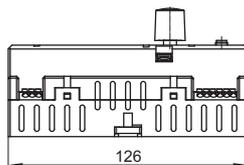
Antenna needed (see p. 480)

Dimensions (LxWxH): 126x90x68 mm,

7hp (horizontal pitches)

Weight: 250 g

Ref. No.: 186323



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Antennas

To supplement LiCS Indoor system

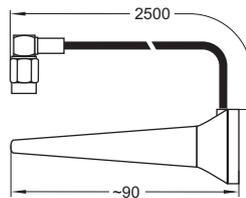
To ensure faultless wireless operation, an antenna must be connected that is set to the respective frequency.

When fitting the antenna, care must be taken that it is not shielded by metal objects, e.g. steel cabinets, radiators, ventilation shafts etc., to ensure optimum signal reception.

The requisite antenna is provided by Vossloh-Schwabe in two models: the screw-base model comes with a detachable connection cable, while the magnetic-base model is fitted with a non-detachable connection cable.

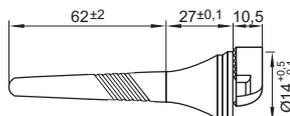
Magnetic-base antenna with connection cable

Antenna dimensions (ØxH): 29x88 mm
Cable diameter: Ø 6 mm, length: 2.5 m
Min. bending radius of the cable: 50 mm
Impedance: 50 Ω
Capacity: 10 W pulsed
Ambient temperature t_a : -40 to 80 °C
Storage temperature: -40 to 80 °C
Degree of protection: IP66
Weight: 62 g
Ref. No.: 186211



Screw-base antenna

Antenna dimensions (ØxH): 33x89 mm
Impedance: 50 Ω
Capacity: 8 W pulsed
Ambient temperature t_a : -40 to 70 °C
Storage temperature: -40 to 80 °C
Degree of protection: IP66
Weight: 41 g
Ref. No.: 186212



Connection cable for the screw-base antenna

Cable diameter: Ø 6 mm, length: 1.5 m
Min. bending radius of the cable 50 mm
Weight: 66 g
Ref. No.: 186213



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General safety information

- LiCS products may only be installed and commissioned by authorised and fully qualified staff.
- These instructions must be carefully read before installing and commissioning the system, as this is the only way to ensure safe and correct handling.
- Before any work is carried out on the equipment, it must be disconnected from the mains.
- All valid safety and accident-prevention regulations must be observed.
- The products should never be inexpertly opened as this poses lethal danger due to electrical shock. Repairs may only be undertaken by the manufacturer.
- On no account may the DALI control line be used to carry mains voltage or any other external voltage as this can destroy individual system components.

Light Controller LSW

Installation

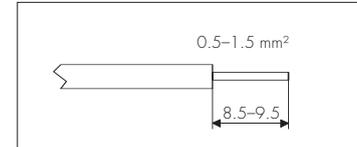
- In a distribution board on a 35-mm mounting rail in acc. with DIN 43880; required installation space: 7 hp (horizontal pitches) (126 mm)
- The controller must be installed so the display screen is in the upper left corner.
- Hook the light controller over the upper edge of the rail using the two mounting notches. Then carefully press the controller onto the lower part of the rail until the mounting spring on the controller snaps into place over the rail. If required, use a screwdriver to help you with the spring.

Removal

To remove the controller from the mounting rail, use a screwdriver to loosen the spring and ease the controller over the rail flange from the bottom.

Installation instructions

- Conductor cross-section for all terminals: 0.5-1.5 mm² for rigid or flexible conductors
- Cable preparation (see right)
- To protect the equipment, a 10 A or 16 A, Type B automatic circuit breaker must be fitted.
- Push button inputs 1-6: cables must be rated for mains voltage; max. cable length = 100 m.
- As a standard DALI bus is not SELV-compliant, the DALI cable must be rated for mains voltage.
- A max. of 64 DALI operating devices in aggregate can be connected as well as up to 36 MultiSensors, which in total must not exceed 200 mA. The exact number of components can be found in the manual.
- The power supply and the DALI line can be laid in a single cable provided the cable does not exceed a maximum length of 100 m, e.g. using 5 x 1.5 mm².
- Three electrically connected DALI outputs make it easier to connect DALI control gear. Please observe the maximum lengths of the DALI bus during installation:



	1.5 mm ²	1 mm ²	0.75 mm ²	0.5 mm ²
6,2 Ω max.	300 m	180 m	130 m	80 m

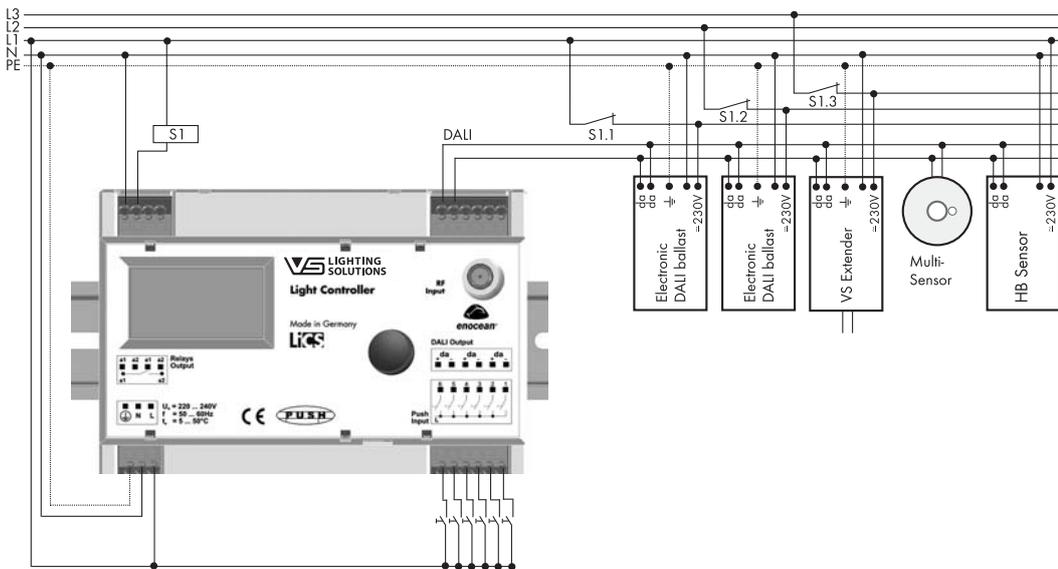
- The relay contact is a potential-free closing contact. The current load of the relay contact must not exceed an Ohmic load of $I_{max.} = 3$ A. When using the standby contact, an additional external power relay should be used.
- Although models of the Light Controller L/LS and LW/LSW feature an antenna-connection jack (located top right on the front), only the jack on the LW/LSW model is functional. This is where the antenna is connected to enable wireless operation (EnOcean) of the Light Controller LW/LSW.

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Additional information

- To ensure faultless wireless operation, an antenna must be connected that is set to the respective frequency. This antenna is not included in the scope of delivery.
- Please refer to the manual at www.vossloh-schwabe.com/en/home/products/light-management-systems-for-indoor-applications.html for exact instructions on how to configure the system using the controller.
- The outputs of different controllers must not be connected with each other.
- To ensure safe operation of the controller, the maximum ambient temperature must not be exceeded.

Circuit diagram of Light Controller LSW



Technical data Light Controller LSW

Light Controller	LSW
Ref. No.	186323
Supply voltage	220-240 V AC, 50-60 Hz
Power consumption	9 W
Ambient temperature ta	5 to 50 °C
DALI output (da+ -)	max. 200 mA current drain
No. of operating devices (DALI-EBs, LiCS-Extender, HB sensors)	max. 64 pcs. per Controller (expandable with the Extender)
No. of MultiSensors	max. 36 pcs.
RF input	Antenna for a reception range of 868 MHz
Wireless module	All radio buttons with PTM radio sensors by EnOcean with 868 MHz
No. of wireless modules	max. 16 pcs. with up to 4 buttons
Relay (outputs a1, a2)	250 V, max. 3 A ohmic load
Push inputs 1 -6	220-240 V AC, 50-60 Hz
Degree of protection	IP20
Protection class	I
Weight	250 g
CE requirements	EMC in acc. with EN 61547, RFI in acc. with EN 55015, Safety in acc. with EN 61347-2-11

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Sales information – Light Controller LSW

Developed for use in indoor applications, the LW Controller – in combination with the standard DALI protocol (DIN EN 62386) – enables control of dimmable electronic ballasts with a DALI interface. The individually configurable Controller performs all tasks associated with commissioning and managing a modern lighting system. Instead of needing additional equipment, such as a PC plus respective software, the Controller can be operated using the integrated rotary push key and display screen. The combination of 6 wired and 16 wireless (radio transmission using the 868 MHz) push buttons or push-button modules makes the Controller highly flexible and extremely user-friendly, both during installation and commissioning. In addition, huge energy-saving potential can be harnessed by integrating motion, occupancy and brightness data loggers (sensors) powered via the DALI bus into the lighting system. Thanks to the fact that values can be adjusted directly at the Controller, the various data logger (sensor) functions (motion detection and/or brightness control) can be fine-tuned to suit the given need. In addition, the Controller can also be used to define the various motion data logger (sensor) modes (automatic/semi-automatic). An integrated real-time clock automatically switches and dims the lighting system in line with previously set parameters. It is fitted with a mounting bracket for fixing the unit to a 35 mm installation rail (DIN 43880). The LW Light Controller covers 7TE (125 mm) on the installation rail (hat rail).



Text for invitations to tender – Light Controller LSW

Light controller type: Integration in a distribution board with an antenna jack for self-sufficient installation with multi-sensors to deliver the DALI supply voltage for all DALI control gear devices that are connected to the communication interface within a permanently operating lighting system. The integrated display screen and the rotary encoder are used to configure the system. System parameters are saved without an additional prompt and can be changed at will without requiring additional devices. Six individually configurable 230 V inputs as well as up to 16 868 MHz wireless addresses with a maximum of four keypads are available as control elements for the lighting system. In addition, defined DALI lighting values (0-254) can be called up in an automated and date-specific manner using the integrated real-time clock. Moreover, it is also possible to choose from a range of fading times, which serves to keep DALI lighting values flexible.

100 addresses can be allocated using the DALI bus system; a maximum of 64 addresses can be used to individually address standardised DALI control gear devices and a maximum of 36 addresses to clearly allocate data loggers (sensors) that do not feature a standardised protocol.

Several addresses can be grouped together a maximum of 16 times. Both operating elements/data loggers (push buttons or sensors) and functions can be allocated to the individual addresses and groups. In this regard, a single data logger (sensor) can be allocated to the same address of a push button to jointly control a luminaire or a luminaire group, to deliver feedback for motion detection and to call up or switch off defined DALI lighting values. Possible functions are manual dimming, call up or switching off of defined DALI lighting values (0-254), call up of up to three defined lighting values (0-254) with an adjustable delay of 10 seconds to 90 minutes. The functions lighting value logger and movement detection of the MultiSensor data logger can also be taken over independently.

Parameters are set using just the integrated display screen and the rotary encoder. An integrated potential-free relay contact makes it possible to activate connected control gear via a power relay (NO or NC).

Light Controller:	DALI master acc. to EN 62386
Software languages:	German, English, Spanish, French, Italian (further languages can be integrated)
Configuration screen:	Monochrome with high-contrast lighting (128x64 pixels)
Parameter setting:	Rotary encoder
Supply voltage:	230 V L, N, PE (±10%)
Communication interface:	DALI bus system (9.5-22.5 V) to 3 pairs of terminals
Relay contact:	Potential-free to 2 pairs of terminals (I _{max} = 3 A Ohmic load)
Antenna jack::	SMA
Data logger:	MultiSensor type: Surface mounting / Luminaire installation / Ceiling installation MovementSensor type: Surface mounting for high installation heights for movement detection
Ambient temperature:	0°C...50°C
Dimensions (LxWxH):	126 x 90 x 68 mm
Casing material:	PC, white
Short-circuit protection:	Yes
Power consumption:	9 W
Connection terminals:	Push-in terminals, max. 1.5 mm ²
Protection class:	I
Degree of protection:	IP20

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