Lunatone

wDALI-2

BT5 Long Range

Transmitter - Receiver

Datasheet

Wireless DALI

Module for the wireless integration
of spatially separated DALI ballasts
in a DALI system

Art.Nr. 89453321-GRTM (Transmitter)

Art.Nr. 89453321-GRR (Receiver)

Art.Nr. 89453321-GRRPS (Receiver with PS20)

wDALI-2 BT5 Long Range Transmitter – Receiver

wireless DALI

Overview

- Module for the wireless integration of spatially separated DALI ballasts in a DALI system.
- At least one transmitter (sending unit) and one receiver (receiving unit) are required for the wireless connection.
- Range of the wireless connection is up to 300m outdoors, 10m-20m inside buildings.
- Easy configuration with the DALI Cockpit Software and suitable interface.
- Broadcast commands and commands sent to groups assigned to the receiver are forwarded to the receiver subnet.
- Commands are sent broadcast on the subnet.
- Support of DALI-2 control commands.

- The transmitter is supplied by the DALI power supply of the main DALI line.
- Receiver variant Art.Nr. 89453321-GRR is supplied by the DALI power supply of the DALI subnet.
- Receiver variant Art.Nr.: 89453321-GRRPS: is supplied by mains and provides a 20mA DALI bus power supply for the subnet. If more power is required, the DALI sub-circuit can be extended with a DALI-Expander.
- Unlimited DALI sub-circuits can be controlled with one transmitter (a receiver is required for each subnet).
- 2 sets of DALI terminals for easy connection – the DALI line can be connected through the device .

Specification, Characteristics

type	wDALI-2 BT5 Long Range **Transmitter**	wDALI-2 BT5 Long Range **Receiver**	wDALI-2 BT5 Long Range **Receiver PS20**
article number	89453321-GRTM	89453321-GRR	89453321-GRRPS
function	**Sending** DALI commands wirelessly	**Receiving** DALI commands wirelessly	

input: L, N			
input type	---	---	supply, mains- voltage
marking terminals	---	---	L, N
input voltage range	---	---	210-250VAC
input supply frequency	---	---	50-60Hz

DALI: DA,DA			
input/output type	DALI control input	DALI control output	DALI power supply 20mA DALI control output
marking terminals	DA, DA	DA, DA	DA+, DA-
voltage range	9,5Vdc … 22,5Vdc (acc. IEC62386)	9,5Vdc … 22,5Vdc (acc. IEC62386)	power supply 12Vdc … 20,5Vdc (acc. IEC62386)

guaranteed DALI supply current	---	---	20mA
max DALI supply current	---	---	250mA[1]
typ. current consumption Iin	4.2 mA	9 mA	---

general data

wireless technology	Bluetooth 5 Long Range
dimensions (L x B x H)	59mmx33mmx15mm
mounting	back box installation
protection class	II (when used/installed as intended)
protection degree housing	IP40
protection degree terminals	IP20

terminals

connection type	spring terminal connectors
wire size solid core	0,5 … 1,5 mm^2 (AWG20 … AWG16)
Wire size stranded wired	0,5 … 1,5 mm^2 (AWG20 … AWG16)
wire size using wire end ferrule	0,25 … 1 mm^2
stripping length	8,5 … 9,5mm / 0,33 … 0,37inch
release of wire	push button

environmental conditions

storing and transportation temperature	-20°C…+75°C	-20°C…+75°C	-20°C…+75°C
operational ambient temperature ta	-20°C…+75°C	-20°C…+75°C	-20°C…+60°C
rel. humidity, none condensing	15% … 90%	15% … 90%	15% … 90%

standards

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DALI	EN 62386-101
EMC	EN 61547 EN 50015 / IEC CISPR15
Safety	EN 61347-2-11 EN 61347-1
markings	CE

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[1] No additional DALI bus power supplied can be connected, a DALI bus extension is possible via a DALI Expander.
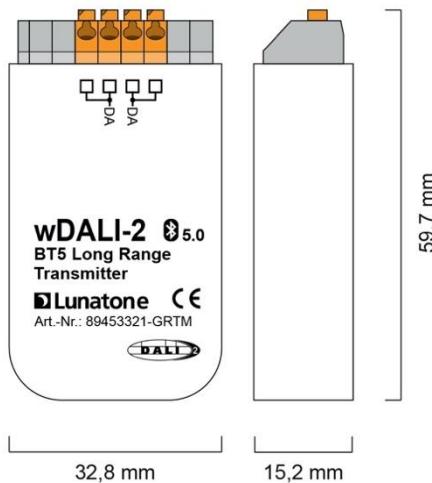
dimensions **wDALI-2 BT5 Long Range Transmitter**
89453321-GRTM
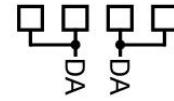
connection plan **wDALI-2 BT5 Long Range Transmitter**
89453321-GRTM
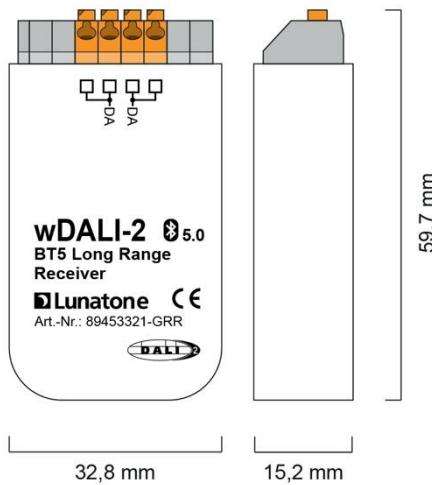
dimensions **wDALI-2 BT5 Long Range Receiver**
89453321-GRR
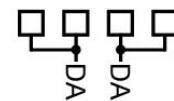
connection plan **wDALI-2 BT5 Long Range Receiver**
89453321-GRR
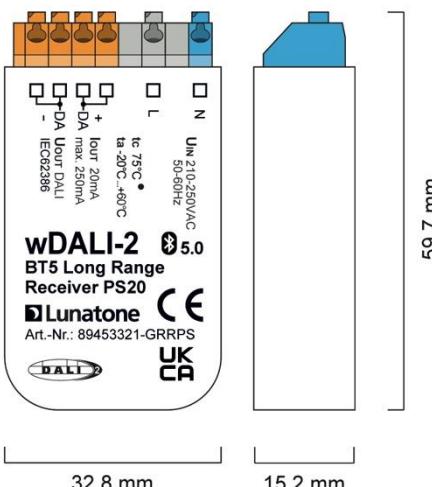
dimensions **wDALI-2 BT5 Long Range Receiver PS20**
89453321-GRRPS
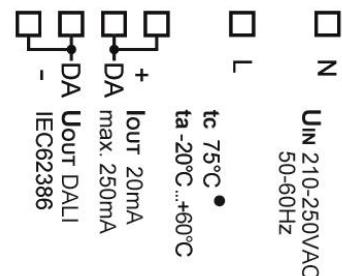
connection plan **wDALI-2 BT5 Long Range Receiver
PS20** 89453321-GRRPS

Application Example
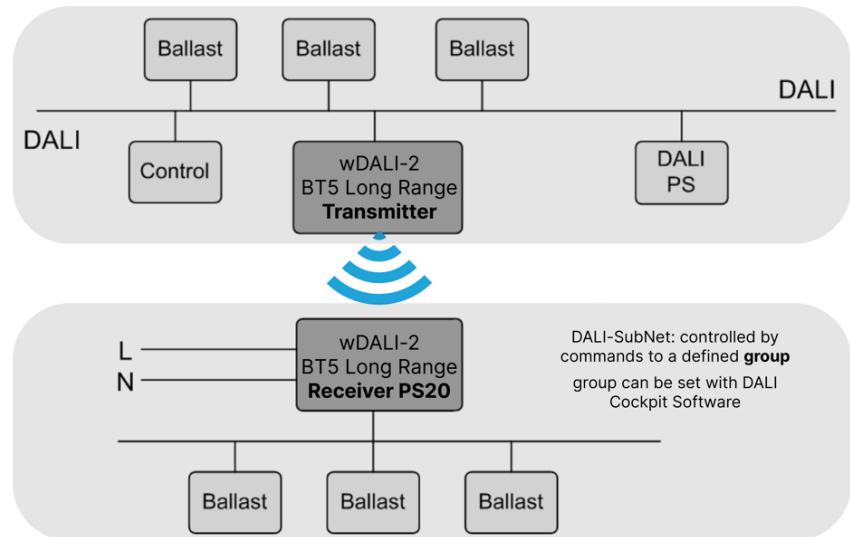
Typical application: integration of spatially separated DALI-ballasts
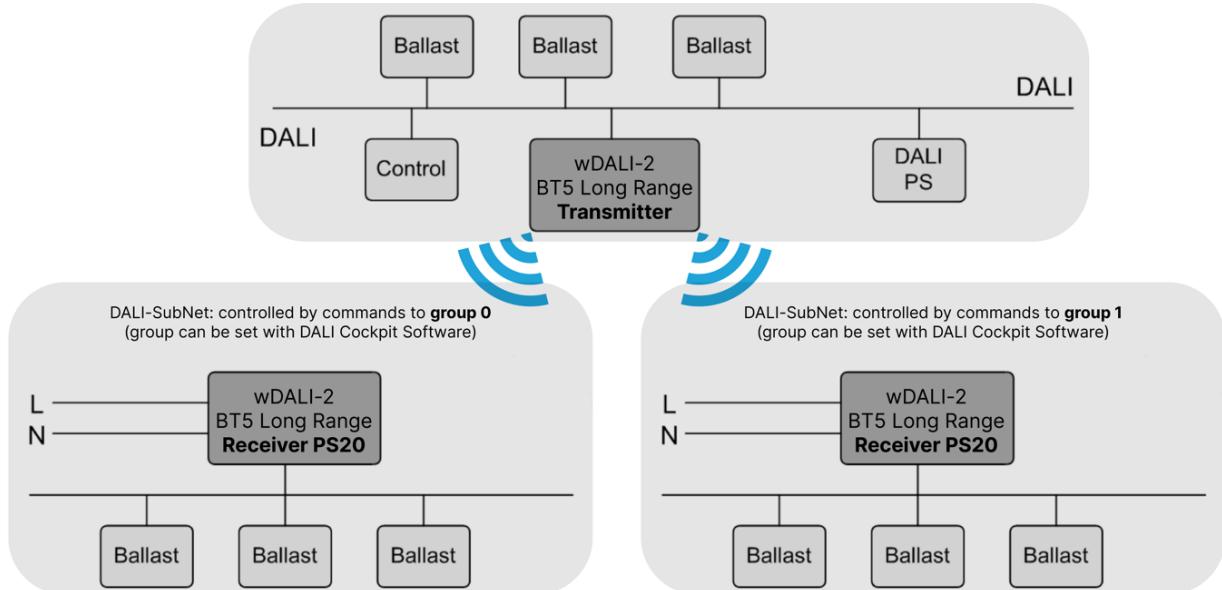
Typical application: integration of multiple spatially separated areas, control via commands to group 0 and group 1

Installation

- The devices are intended for back box installation or in an enclosure, ensure proper cable relief for installation in protection class II devices

wDALI-2 BT5 Long Range Transmitter (Art.Nr. 89453321-GRTM) and
wDALI-2 BT5 Long Range Receiver (Art.Nr. 89453321-GRR)

- o The wDALI-2 BT5 Long Range Transmitter (Art.Nr.: 89453321-GRTM) as well as the wDALI-2 BT5 Long Range Receiver (Art.Nr.: 89453321-GRR) are connected directly to the DALI bus and supplied by it (current consumption typical 3.8 mA). A DALI bus power supply is required.

- o The connection to the DALI terminals can be made regardless of polarity, it is protected against overvoltage (mains voltage).

wDALI-2 BT5 Long Range Receiver PS20 (Art.Nr. 89453321-GRR)

- o Connect power supply terminals L and N to mains voltage according to the labelling.

- o The wDALI-2 BT5 Long Range Receiver PS20 (item no. 89453321-GRR) is supplied from the mains and provides a 20mA DALI bus supply for the subnet. If the power supply is insufficient, the sub-circuit can be extended with a DALI-Expander.

- There are two sets of DALI terminals for easy connection, the signal line can be looped through.

- The wiring should be carried out as a permanent installation in a dry and clean environment.

- Installation may only be carried out in a voltage-free state of the system and by qualified specialists.
- National regulations for setting up electrical systems must be followed.
- The DALI line may be routed together with the mains voltage (in one cable or as single wires in a tube)

- The DALI-line must not be connected to mains or an extra low voltage system (SELV)
- Only 1 wire may be connected to each terminal. When using double wire end ferrules, the connection capacity of the terminal must be considered.
- The DALI wiring can be realised with standard low-voltage installation material. No special cables are required.
- Wiring topology of the DALI-line: Line, Tree, Star

☞ **Attention:** The DALI-signal is not classified as SELV circuit (Safety Extra Low Voltage). Therefore, the installation regulations for low voltage apply.

☞ The voltage drop on the DALI line must not exceed 2V at maximum length (300m) and maximum bus load (250mA).

- Do not use standard DC power supplies on the DALI-line, since they do not meet the requirements for DALI communication

Commissioning

The modules are ready for operation after connection.
Coupling of the Transmitter and Receiver is not necessary. Receivers and Transmitters have the same pairing number as default and are thus automatically linked.

The receiving range depends on the structural conditions, outside it is up to 300m, in buildings the range is typically 10m-20m.

Commands sent broadcast on the main DALI line are forwarded to the subnet, in addition one of the 16 DALI groups (G0...G15) can be assigned to a Receiver via the DALI Cockpit, see section "Function & Configuration".

Function & Configuration

The wDALI-2 BT5.0 Long Range Transmitter and Receiver allows the integration of spatially separated DALI ballasts in a DALI-line without them being physically connected.

The DALI commands are transmitted wirelessly to all receivers. The receivers filter the commands accordingly: only Broadcast commands and commands sent to the respective group are forwarded to the DALI subnet. The received commands are always sent broadcast on the DALI subnet.

For group configuration the software tool DALI Cockpit is required. The PC must be connected to the DALI bus via a suitable Lunatone interface module (DALI USB, DALI 4Net, DALI SCI RS232, DALI-2 IoT, DALI-2 WLAN,..).
The wDALI-2 BT5 Long Range Receiver is automatically recognized by the DALI Cockpit during the addressing process and displayed in the device overview. DALI Cockpit device page see Figure 1 below.
Additionally the pairing number of transmitters and receivers can be changed in the DALI Cockpit, if receivers and transmitters in the same reception area should not be interconnected. The same pairing number needs to be entered in the Transmitter and Receiver
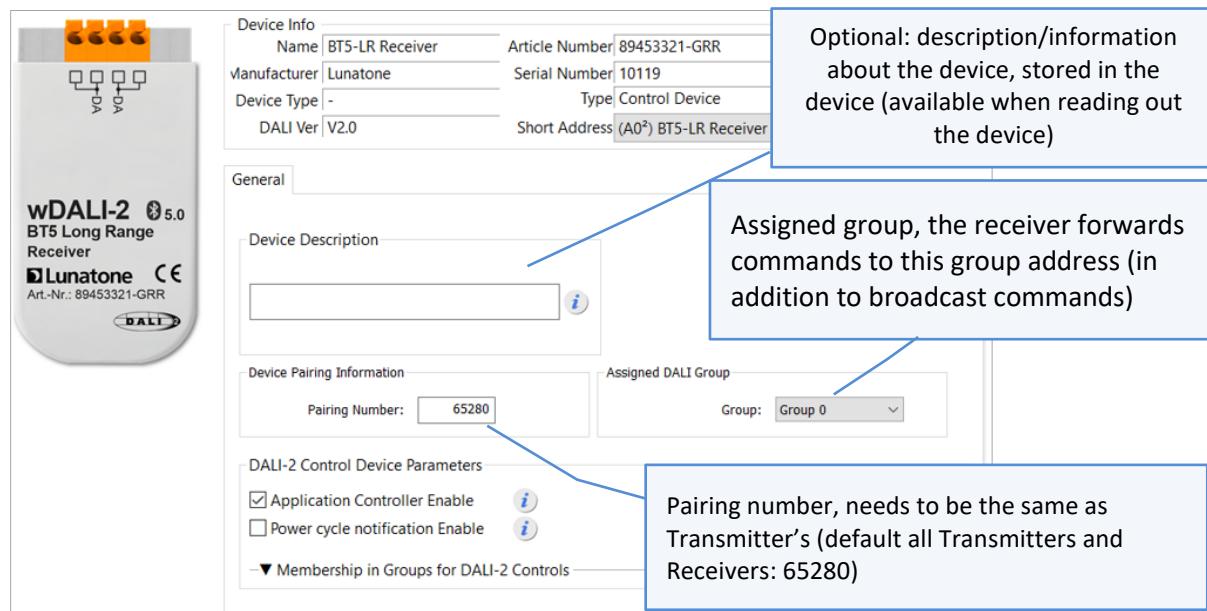
Figure 1 DALI Cockpit device configuration w-DALI-2 BT5 Long Range Receiver

wDALI-2 BT5 Long Range Transmitter + Receiver

range	300m / 10-20m in buildings
configuration	DALI Cockpit PC Software
amount subnets	unlimited
wireless connection	unidirectional, broadcast forwarding

Similar devices

wDALI Group Transmitter + Receiver

range	150m / 8-12m in buildings
configuration	rotary switch on device
amount subnets	unlimited
wireless connection	unidirectional, broadcast forwarding

wDALI-2 Bluetooth 5 wireless Bridge

range	300m / 10-20m in buildings
configuration	DALI Cockpit PC Software
amount subnets	max. 10
wireless connection	bidirectional, addressed subnets

wDALI-2 Extra Long Range wireless Bridge

range	800m/100-500m in buildings
configuration	DALI Cockpit PC Software
amount subnets	max. 10
wireless connection	unidirectional, addressed subnets

Purchase Information

Art. Nr. 89453321-GRTM: wDALI-2 BT5 Long Range Transmitter, back box installation

Art. Nr. 89453321-GRR: wDALI-2 BT5 Long Range Receiver, back box installation

Art. Nr. 89453321-GRRPS: wDALI-2 BT5 Long Range Receiver PS20, integrated 20mA DALI bus power supply for the DALI subnet, back box installation

Additional Information and Equipment

DALI Cockpit - free configuration software for DALI systems
https://www.lunatone.com/en/product/dali-cockpit/

Lunatone DALI products
https://www.lunatone.com/en

Lunatone Datasheets and Manuals
https://www.lunatone.com/en/download s-a-z/

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www.lunatone.com

Disclaimer

Subject to change. Information provided without guarantee. The datasheet refers to the current delivery.

The function in installations with other devices must be tested for compatibility in advance.