

Wireless Long Range DALI-2 Device



Datasheet

DTX-LR

A wireless DALI-2 device for
controlling a remote DALI network
from a DTX-B4 platform.

Wireless Long Range DALI-2 Device DTX-LR-DA1

Overview

- LoRa-LAN 868Mhz
- Configurable air security key, network id and channel
- Supports DALI/DALI-2 command byte ranges
- DIN-mount
- Compatible with DTX-B4 series platform
- Range (typical) 1km outdoors and 100m indoors.
- Digital input for local push button
- Can act as both receiver and transmitter of DALI commands.
- NORM enclosure compatible

DALI specific features

- This device works in almost a transparent mode towards the central device. This means that all Forward Frames published on the DALI bus (eg. from a DALI-2 button) is sent "as is" to the central and can be decoded and used in automation control purpose or just monitoring. Equal can the central send raw HEX byte data to any wireless device which will publish the bytes to the connected DALI bus.
- In contrast to the RAW HEX transparent mode there are some fixed commands to be used for DIMMING, QUERY_ACTUAL_VALUE etc.

Wireless specific features

- The DALI device uses LoRa Spread Spectrum technique. Note that this is LoRa "LAN" which is not compatible with any LoRa "WAN" base stations. To access the device a DTX-B4 LoRa enabled platform is mandatory.
- The theoretical max distance is 7km but in practice it is 1km in open range and 100m indoors or between buildings.
- There are some basic commands that can be used from the central to monitor the network without interfere with DALI traffic like PING.
- The topology of the LoRa LAN network is STAR. But any DALI device (wireless node) can be set as a relaying node. That means that greater distances could in fact be reached than the just the central-to-node distance.
- Different antenna types can impact the range in both ways. It is recommended to have a couple of 868Mhz antennas to compare with for each setup.

Specification, Characteristics

Type

Article Number	DTX-LR-DA1
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Digital Inputs, Negative Logic (common ground)

Active Level	GND (shorted from GND terminal)
Inactive Level	Open circuit
Marking Terminals	DI_1

Config/Debug interface

Type	3.3V TTL (GND/TX/RX)
Settings	9600,8,N,1
Marking Terminals	CNF

Power Supply

Typical for 24V version	24V AC or DC
Acceptable voltage range on 24V version	34.52 - 16.2V AC or DC
DC Output	Supply Voltage-1.4V rectified, max 100mA
Marking Terminals	DC OUT, AC/DC1, AC/DC2, GND

Insulation Data

Impulse Voltage Category	II
Pollution Degree	2
Rated Insulation Voltage	250VAC
Insulation Test Voltage Housing	3000VAC

Environmental Conditions

Storing and Transportation Temperature	-30°C - +75°C
Operational Ambient Temperature	-30°C - +50°C
Rel. Humidity, None Condensing	15% - 90%

General Data

Dimensions (w x h x d)	64mm x 130mm x 62mm
Weight (net)	200g
Mounting	DIN Rail mounting integration in class II devices
Rated max Case Temperature	50°C
Expected life time @ max Case Temperature	50 000 h
Protection Class	II when used as intended
Protection Degree Housing	IP40
Protection Degree Terminals	IP20

Terminals

Connection Type	Pluggable Terminal Blocks (supplied)
Wire size solid core	0,5 - 2,5 mm ² (AWG20 - AWG14)
Wire size fine wired	0,5 - 2,5 mm ² (AWG20 - AWG14)
Wire size using wire end ferrule	0,25 - 1,5 mm ²
Stripping Length	7 mm / 0,27 inch
Locking Torque	0,5Nm

Standards

EMC immunity to interference	EN 61000-6-2:2005
EMC emission of interference	EN 55022:2011 Class B
Wireless frequency	ISM 868/915 Mhz band
Markings	CE

Installation

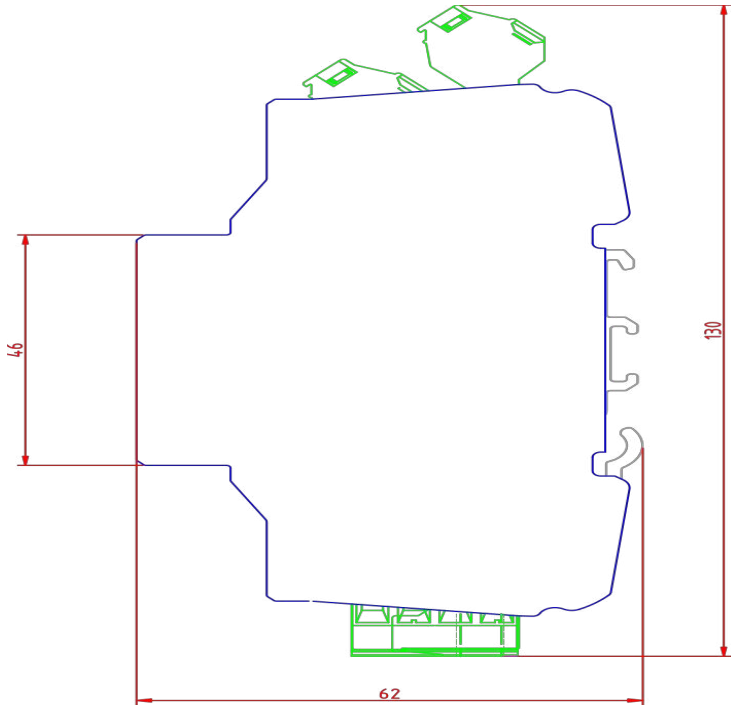
- Wiring as fixed installation in a dry and clean environment
- Attend regulations regarding electrical installations of national authorities
- The QR code on front panel is unique to each individual and can be used in DAVITOR ScanTrack for maintenance. Contact DAVITOR for more information.
- Installation only by qualified person when no voltage is applied
- Connect only one wire on each terminal, if twin ferrules are used take care to the maximum wire size

Push Button and Status LED.

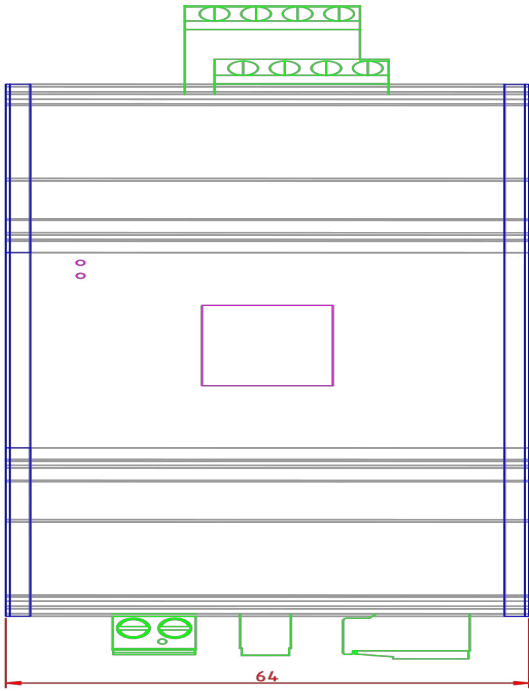
- See table below. There are two combined button and status led on this device. Each with different purpose.

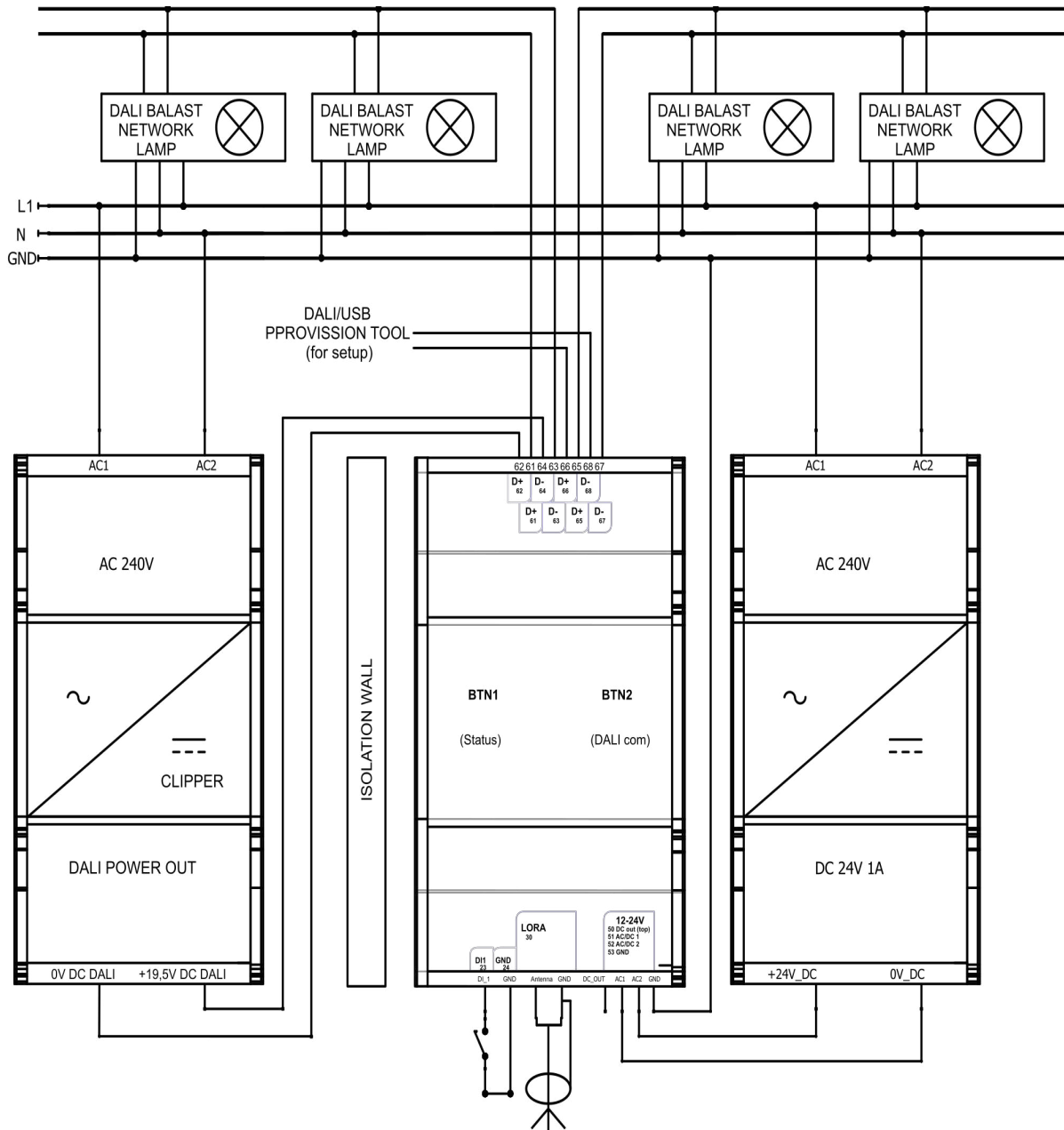
<i>Button/LED</i>	BTN1	BTN2 / S1 (external btn)
Short press	N/A	Sends "btn press" command to central.
Long Press > 5s	N/A	Force local broadcast (75% ON / OFF toggled)
LED	1s flash period for status OK	Flashes when DALI traffic

Button and LED function



Dimensions (mm)





Typical application

Purchase information

Art. Nr

DTX-LR-DA1

DTX Wireless LongRange DALI-2 device

DTX product guides, datasheets and manuals

<https://collab.davitor.com/redmine/projects/dtx-products>

DTX Runtime (DTXr) documentation

<https://collab.davitor.com/redmine/projects/dtxr/wiki/>

DTX Runtime (DTXr) Training and Test environment

<https://big-se-hub.davitor.com>

Contact DAVITOR at info@davitor.com for user account and instructions

Contact

Technical Support: info@davitor.com

Requests: info@davitor.com

www.davitor.com

Disclaimer

Subject to change. Information provided without guarantee.

The datasheet refers to the current delivery.

The compatibility with other devices must be tested in advance to the installation.