DAUITOR
DEVELOPMENT ENGINEERING

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.

Art. Nr. DTX-LR-DA1

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

Typical applications

- Large outdoor and indoor arenas to replace signal cabling
- Lightning towers for parking and warehouses to prevent new cabling laying to the ground
- Street lightning utilizing the relaying fetaure
- Any situation where a distibuted DALI network is to be controlled at a greater distance than physically possible within the DALI standard istelf.

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 autmation 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 topology of the LoRa LAN network is STAR. But any DALI device (wirelss node) can be set as a "relaying" node via the config port. That means that greater distances could in fact be reached than the just the central-to-node distance above.
- There are some basic commands that can be used from the central to monitor the network without interfere with DALI traffic like PING.
- The theoratical max distance is 7km but in practice it is 1km in open range and 100m indoors or between buildings.
- 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

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 mm2 (AWG20 - AWG14)
Wire size fine wired	0,5 - 2,5 mm2 (AWG20 - AWG14)
Wire size using wire end ferrule	0,25 - 1,5 mm2
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

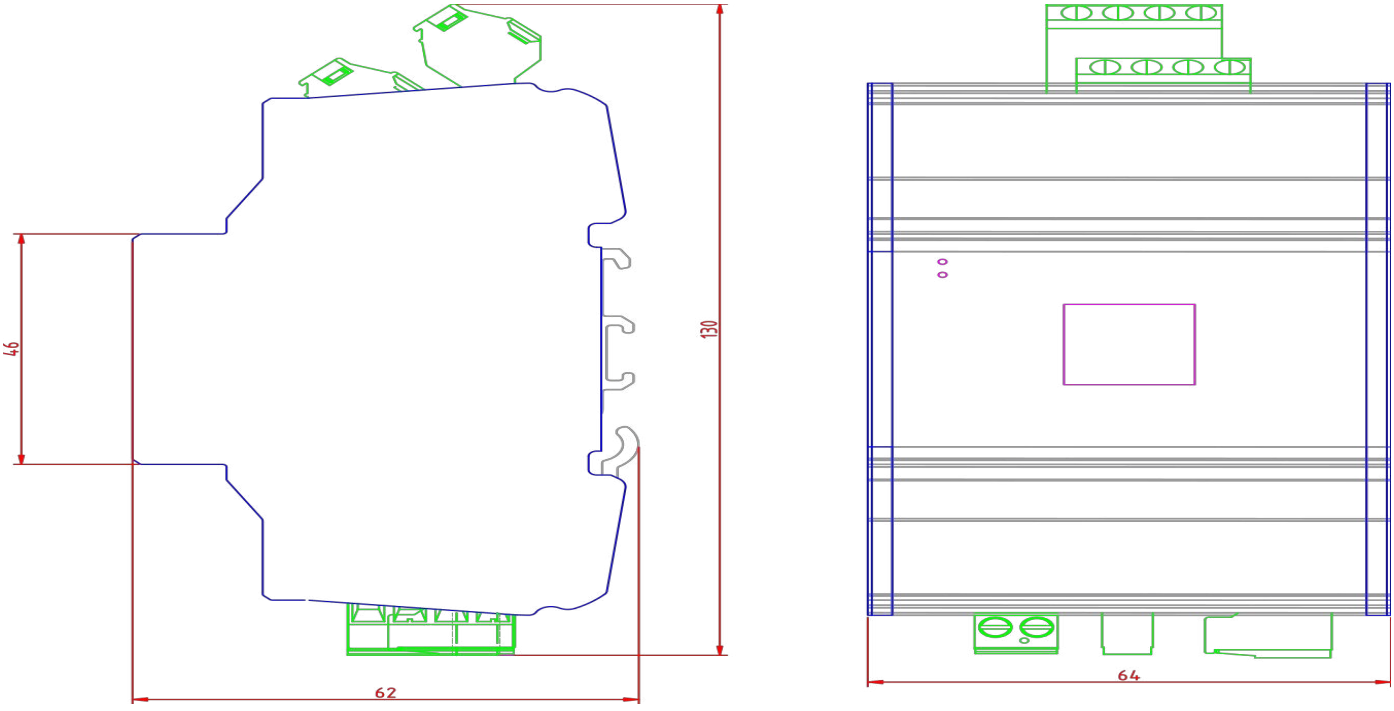
- Wiring as fixed installation in a dry and clean environment
- Attend regulations regarding electrical installations of national authorities
- The QR code on front panel is unique to each individual and can be used in DAVITOR ScanTrack for maintanance. Contact DAVITOR for more information.
- Installation 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.

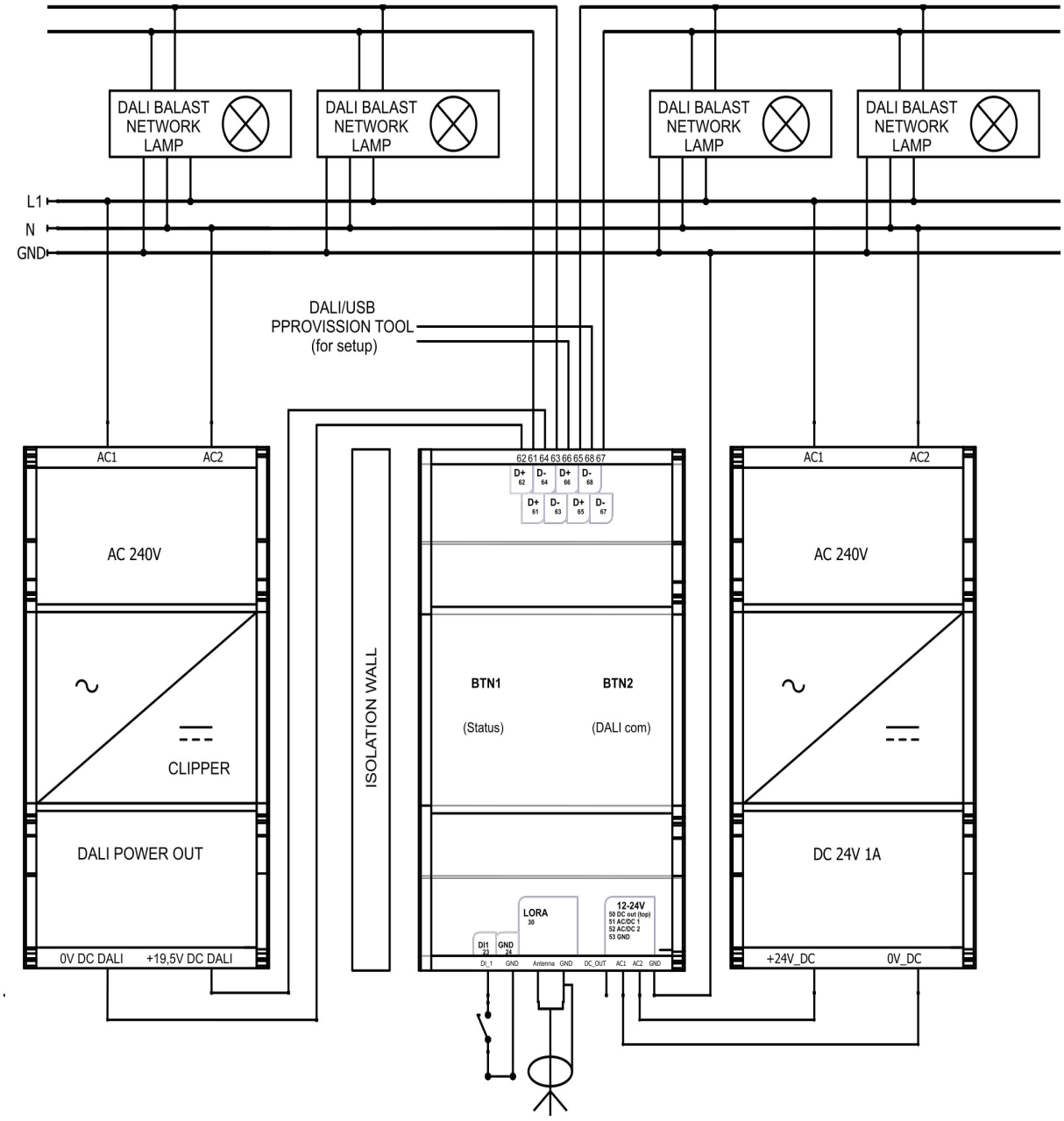
- See table below. There are two combined button and status led on this device. Each with different purpose.

Button/LED	BTN1	BTN2 / S1 (external btn)
Short press	N/A	Sends "btn press" command to central.
Long Pess > 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.