ATTACHMENT
CONVERTER DALI
KNX-DALI-301-62-DT6/DT8-DIN (230V)

CONTENTS

1. TECHNICAL DATA

Power Supply	Operating voltage	85 ~265VAC 50/60Hz
	KNX-BUS power	DC 21V~31V, Use twisted pair cable (diameter 0.8mm) conforming to KNX standard
	Static bus current	< 6mA
	DALI bus	Voltage: Max 15V DC; Current: Max 150mA;
DALI parameters Угол излучения Длина ленты в упаковке	Number of DALI devices	64 devices
	DALI cable lengt	1.5mm2 max 300m
		1.0mm2 max 200m
		0.75mm2 max 150m
		0.5mm2 max 100m
Operation and display interface	Programming buttons and LED	The key assigns the physical address, and the programming LED is on to indicate that the device is in the programming state
		In normal mode, short press to enter/exit test mode; When in fault query, short press to return to the previous level or exit the fault query, the LED light does not change; Press and hold for more than 3 seconds to enter/exit the manual mode, the LED indicator lights up/off;
		When a fault occurs, short press to enter the fault inquiry or enter the next level, the LED light does not change; In non-manual mode, press and hold for more than 5 seconds to start the search and record the number of monitored DALI devices, the LED light flashes during the search process, and the LED light turns off after the search is completed; In manual mode, press and hold for more than 5 seconds to enter the addressing mode, and the LED light will light up; In test mode, long press for more than 5 seconds to delete the DALI short address of the selected device;
		Channel A up and down buttons: In test mode, switch the device number currently under test up and down; Under fault inquiry, switch the faulty device number or fault status up and down; In manual mode, short press the switch light, long press (more than 1 second) to dim the light, the LED light turns on/off; In addressing mode, long press (more than 1 second) the up button to automatically address all devices in channel A, long press (more than 5 seconds) the down button to delete the addresses of all devices in channel A;
Protection type	IP20	EN60529
Protection class	II	EN61140
Temperature range	Operation	+5...+45 °C
	Storage	-25...+55 °C
	Transport	-30...+70 °C
Environmental Requirement	Max air humidity	93%, except moisture condensation
Specifications	Volume	72×90×63 mm
	Weight	Around 180g
	Installation	Standard 35mm U-shape rail of the distribution box
Appearance	Grey white, PVC	
Certification	KNX EN50090-1 EN50090-2	

2. OVERVIEW FUNCTIONS

(Digitally Addressable Lighting Interface, DALI) It has become a standard in Europe's response to the energy crisis, mainly for commercial and industrial use.
The DALI gateway can realize the connection of the dimming drive device conforming to the DALI protocol into the KNX system, so as to realize the control of the DALI protocol dimming drive device by the KNX bus.

The DALI single-channel gateway of model only supports channel A independent control channel, and supports the DT8 function with color control.
The DALI gateway does not need an external DALI power supply, and can automatically address the DALI device, manually write the specified address of the DALI device, or manually delete the DALI device address.

The main functions are as follows:

1: **SHORT ADDRESS ALLOCATION:** automatic allocation, manual allocation and address deletion;
2: **GENERAL FUNCTIONS:** power-on action setting, power-down action setting, communication fault action setting, aging function setting;
3: **OPERATION MODE:**

- **Normal mode:**

  Support switch, absolute dimming and relative dimming;

  Support brightness value range setting, turn-on brightness value setting;

  Support switching time, absolute dimming time and relative dimming time to be set independently;

  Support switch status feedback, dimming brightness value feedback;

- **Dynamic mode:**

  Support brightness value range setting;

  Support setting startup scene, startup hold time;

  Support setting end scene and end hold time;

- **Slave mode:** On the basis of the normal mode, the switch and relative dimming functions are disabled, and the others remain unchanged;

4: **MASTER CONTROL FUNCTION:**

Support the setting of the brightness value of the light;

Support switching time, absolute dimming time and relative dimming time to be set independently;

Support color control settings;

5: **SCENE FUNCTION:**

Support 16 single light brightness & color scene;

Support 16 groups of brightness & color scenes;

Support scene number setting, scene calling and learning functions;

6: **GROUP FUNCTION:**

Support up to 16 DALI group functions, each group can add up to 64 devices;

Support group switch, group absolute dimming, group relative dimming and group status feedback;

Support group DT8 color control;

7: **STATUS FUNCTION:**

Support selection of device dimming status and fault status sending settings;

Support DALI drive equipment, lamps and communication fault status settings to send and respond;

Support message receiving and sending communication timeout settings;

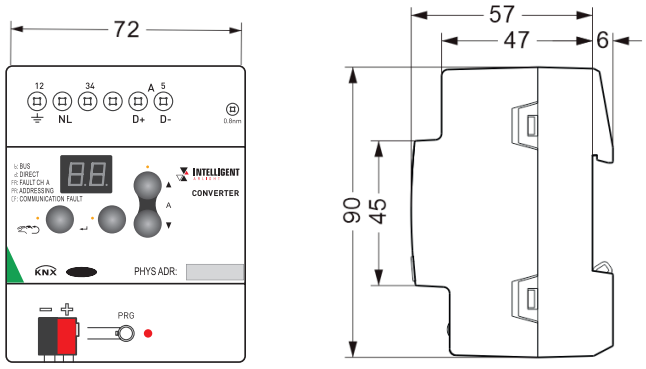
8: **COLOR CONTROL:**

Support DT8 type: color temperature, RGB\RGBW and XY mode;

Support startup color preset value setting;

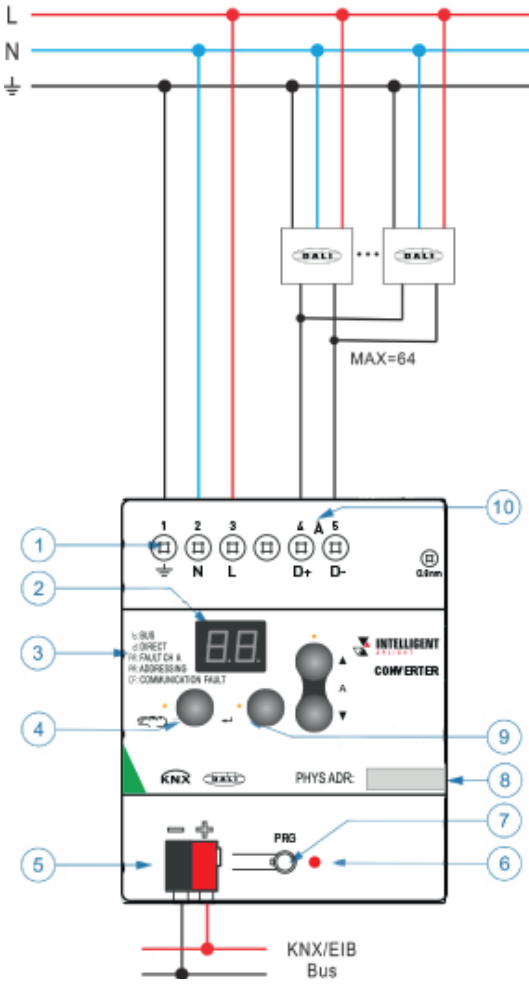
Support startup behavior settings;

3. DIMENSION DRAWING



Unit:mm

4. CIRCUIT DIAGRAM



1: Operating voltage
2: Code Display
3: Code Meaning
4: Return Button and LED
5: EIB / KNX connection terminal
6: EIB / KNX programming LED
7: EIB / KNX programming button
8: Label carrier
9: Enter button and LED
10: A DALI outputs

5. STATUS CODE DISPLAY

b	Bus control mode
d	Manual control mode, long press the manual button for 3 secondsto enter or exit
CF	Communication telegram failure status
FA	DALI A channel device fault status
PA	DALI device addressing mode, first enter manual mode, then long press the confirm button for 5 seconds to enter, long press the up button for 3 seconds to automatically address, long press the down button for 5 seconds to delete the address (use with caution)
bd	Detect and search DALI device mode, long press the confirm button for 5 seconds to enter the search mode
--	Test mode, short press the manual button to enter or exit the test mode in bus mode
CP	DALI parameter automatic configuration mode, automatically run after changing configuration parameters

Display code in addressing mode:

PS	Addressing success status code, displayed after the addressing is completed or there is no response from the device
PF	Addressing success status code, displayed after the addressing is completed or there is no response from the device

Display code under fault status query:

F1	DALI device failure status
F2	Lamp failure status
F3	DALI communication failure status
01-64	The faulty device number is displayed, the device number 01~64 corresponds to the DALI driver with the short address 00~63, for example, the device number 01 displays the DALI driver with the short address 00

Display code in test mode:

00	No device is under test
01-64	The test device number shows that the device number 01~64 corresponds to the DALI driver with the short address 00~63, for example, the device number 01 shows the DALI driver with the short address 00

6. ADDRESSING OPERATION STEPS

DALI gateway supports the operations of automatic addressing, detection of assigned addresses, manual addressing and deletion of addresses. The following lists several addressing operations and specific operation steps that may be encountered in engineering applications. Before operating, all DALI drive devices must be connected to the power supply and DALI bus. It is worth noting that the connection method of the DALI driver device bus must be connected together at the same end to prevent cross-connection between the left and right ends, especially in the case of multiple devices, to avoid hidden dangers such as unstable DALI communication.

APPLICATION 1: The DALI drive device is in the factory state, there is no addressing record, and automatic addressing can be used

1: DALI gateway is powered on, KNX bus and DALI communication bus;

2: Download the physical address of the DALI gateway and the database application configuration (the same configuration has been downloaded and there is no need to download it again);

3: After the download is completed, test whether the wiring is normal. Press and hold the manual button for more than 3 seconds to enter the manual mode d. Operate the up and down button of A channel to switch and dim;

4: First turn off all lights in manual mode, then press and hold the confirm button for more than 5 seconds, will enter the addressing mode PA, press and hold the upper button of channel for more than 3 seconds, and the LED will flash automatically. The channel's DALI drive device is addressed;

5: The more devices there are, the longer the automatic addressing time will be. After the addressing is successful, PS will appear, and then the DALI driver configuration parameters will be written into the DALI driver. After the addressing fails, PF will appear;

Automatic addressing will not delete the existing address of the device, and if no device is detected or there is no device with no address, PS will also be displayed;

6: After addressing is completed, short press the return key to return to manual mode d, and then long press the return key for 3 seconds to return to bus mode b.

APPLICATION 2: The DALI drive device has been programmed with a short address, and the DALI gateway does not want to be reconfigured. Use the detection of the assigned address.

1: The DALI gateway is connected to the power supply and KNX bus, and the DALI communication bus is not connected first;

2: Download the physical address of the DALI gateway and the database application configuration(the same configuration has been downloaded and there is no need to download it again);

3: After the download is completed, press and hold the confirmation button for more than 5 seconds to display bd, enter the detection and record the configured address and number of devices of the DALI drive device, because the DALI bus is not connected, so the purpose of this operation is to clear the internal DALI gateway. have records;

4: The DALI gateway is powered off, connected to the DALI communication bus, and then powered on to test whether the wiring is normal. Press and hold the manual button for more than 3 seconds to enter the manual mode d, then turn on the light first, then turn off the light, and exit the manual mode by the same operation;

5: In bus mode b, press and hold the confirmation button for more than 5 seconds, and bd will appear, it will automatically detect and record the configured address and number of devices of the DALI drive device, and automatically update the configuration data to the drive when one is detected, and automatically exit after completion.

APPLICATION 3: Write the specified short address to the DALI drive device through the DALI gateway, and use manual addressing.

1: DALI gateway is powered on, KNX bus and DALI communication bus;

Note: To change the driver that has been programmed with an address, you must first select the device with object 8/26 "Select Device";

A driver with no address can only be connected to one device. If multiple devices are connected, multiple devices will be programmed into the same short address!

2: Configure the parameter shown in the figure below as No, and disable the automatic addressing function;

Configure the 17 groups of addresses of the A channel object. If you want to select the device, you must configure the address of the object 8/26 "Select Device" group:

Then download the physical address of the DALI gateway and the database application configuration (the same configuration has been downloaded and there is no need to download it repeatedly);

3: After the download is completed, connect the DALI drive device that needs to be addressed to test whether the wiring is normal. Press and hold the manual button for more than 3 seconds to enter the manual mode d, and operate the up and down buttons to switch and dimming;

4: Turn off the lights and then exit the manual mode, send the value of object 17/35 through ETS diagnosis to write the specified short address to all DALI devices or selected devices, decimal values 0~63 correspond to DALI short addresses respectively Address 0~63, other values are invalid. After the address is written successfully, the relevant DALI driver parameters will be updated, and the configuration parameters will be written into the DALI device at the same time. After all manual addressing is completed, enter the bd mode to scan and update the internal gateway for Controls the recorded DALI address.

APPLICATION 4: The DALI drive device is already equipped with an address, and you want to use the automatic addressing to reassign the address, because the automatic addressing will not delete the address that has been assigned to the DALI drive device, you can delete the address first and then perform automatic addressing.

1: DALI gateway is powered on, KNX bus and DALI communication bus;

2: Test whether the wiring is normal, press and hold the manual button for more than 3 seconds to enter the manual mode d, and operate the up and down buttons to switch and dim;

3: First turn off all lights in manual mode, then press and hold the confirm button for more than 5 seconds, PA will enter the addressing mode, and press and hold the down button for more than 5 seconds to automatically change all. DALI drives the device to delete the address, the LED will automatically turn on and off once, and automatically return to the manual mode d, then the address is deleted successfully.

APPLICATION 5: Replacing a faulty DALI drive device, replacing one or more dev

1: To replace a device, first replace the faulty DALI drive device with a new DALI drive device without an address; if multiple devices are replaced, first replace the device with the lower address and successfully address it, and then replace the next lower address. device, until all the replacement addresses are completed, because the automatic addressing will start from the low address first, if there are multiple unaddressed drives at the same time, the address of each drive location is random, and it will not match the original project configuration;

2: Refer to the steps of application 1 to start automatic addressing, and activate the "DALI QUERY" function for real-time monitoring of the alarm and search of faulty equipment.

Note: The DALI driver device to be replaced must be an unaddressed de

7. RELATED INSTRUCTIONS FOR USE

INSTRUCTIONS FOR USE IN TEST MODE:

The test mode is usually used in the early stage of engineering debugging. After the DALI device address is automatically assigned, it is used to find the specific location of the target address device. The operation steps are as follows:

1: In bus mode b, short press the manual button  to enter the test mode --, short press the manual button again to exit the test mode;

2: In the test mode, operating the up and down buttons of channel A/B can switch the test device number, and the test device number displays 00~64, of which 00 means no device is in the test state, and 00~64 means the current device is in the test state;

3: The device in the test state is turned on and off in a cycle of 2.6 seconds. Find the cyclically on and off lamps and record the corresponding device number displayed by the digital tube, until all the devices are searched and short press to return to the bus mode.

4: If a DALI driver with a duplicate address is found during the test, such as multiple lights flashing at the same time, you can press and hold the confirm button  for more than 5 seconds to delete the selected duplicate address. After deletion, the lamp will not continue to flash, and other driver addresses will not be affected. If it is not affected, you can perform the automatic addressing and light finding steps again later.