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NL

KNX-DALI-2-Gateway tunable white
KNX-DALI-2-Gateway wit moduleerbaar



TYA670WD2

Product description

The DALI-2 KNX gateway is used to interface DALI and DALI-2 lighting applications with the KNX system.

Function

System information

This device is a product of the KNX system and complies with the KNX directives. Detailed technical knowledge obtained in KNX training courses is a prerequisite to proper understanding... The function of this device depends upon the software. Detailed information on loadable software and attainable functionality as well as the software itself can be obtained from the manufacturer's product database.

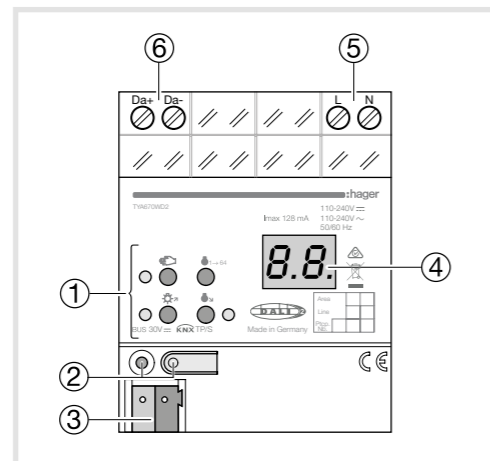
Planning, installation and commissioning of the device are carried out with the aid of KNX-certified software. Full functionality with KNX commissioning software version ETS5 onwards.

An updated version of the product database, technical descriptions and conversion programs and other auxiliary programs are available on our internet website.

Product characteristics

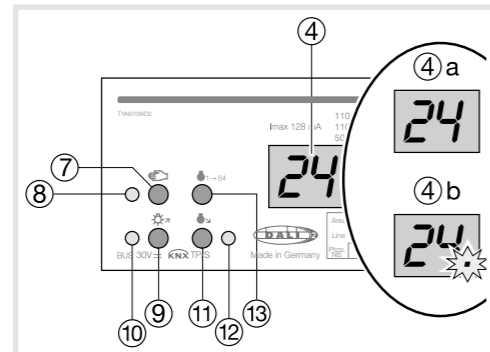
- Controls up to 64 DALI, DALI-2 products in up to 32 groups
- Individual control, group control or general control
- Setting the color temperature for luminaires with DALI operating device Type 8 for Tunable White in accordance with IEC 62386-209
- 16 scenes
- Effect control for dynamic sequences and sets of colours
- Reading of the status of DALI products via KNX, e.g. light intensity, light fitting fault, etc.
- Manual control of DALI groups
- Priority
- Feedback on the status of switching and the value of light intensity in bus mode and manual mode
- General status feedback
- General command function
- Emergency lighting function
- Inhibition function for each group
- Separate switching and tripping delay
- Timer function with cut-off pre-warning
- Movement function : in combination with a presence detector, reduction of the light intensity when no movement is detected before turning off
- Online or offline commissioning of DALI products with ETS plug-ins
- Surge protection and overload protection
- Possibility to replace an individual DALI product without software during service
- Operating hours counter
- Delivery status : job-site mode, possibility of ordering DALI groups using the keyboard. All DALI products are ordered jointly.
- Signal of the global switching status of the DALI devices, e.g. to switch off the mains voltage of the DALI devices to avoid standby losses.

Description



- 1 Keyboard for manual control
- 2 Push Button and LED indicator for addressing
- 3 KNX Connection
- 4 Display of DALI numbers
- 5 Connection to the network
- 6 DALI connection.

Operating mode Control Elements



- 4 Display of the DALI numbers
 - 4a DALI Groups (1...32)
 - 4b Individual participants (1...64)
 - bc : If the display shows bc (broadcast operation), the device is not programmed or set to master control in the KNX configuration. All DALI devices are then controlled jointly.
- 7 Key : manual control
- 8 LED on : Manual mode permanently enabled
- 9 Key : Turn on or adjust the light intensity brighter
- 10 LED on : Individual participant or DALI group enabled : light intensity 1...100%
- 11 Key : Turn off or adjust the light intensity darker
- 12 LED on : Individual participant or DALI group disabled: light intensity 0%
- 13 Key : Turn off all DALI participants.

Electrical equipment must be installed and fitted by qualified electricians only.

- Failure to observe the instructions may cause damage to the device and result in fire or other hazards
- This device is not suitable for disconnection of the mains power supply.

• Risk of electric shock: always disconnect the mains supply before working on the device or on load. Cut in particular all circuit breakers that provide voltages dangerous to the device or load.

• The DALI control voltage is a functional extra-low voltage (FELV). During the installation, ensure there is a safe separation between KNX and DALI.

• DALI-2 and interoperability: Interoperability (guaranteed compatibility with all DALI equipment) and certification (the product's guaranteed interoperability with ones made by a different manufacturer) are what distinguish DALI-2 from the previous DALI version

• Note: This product is DALI-2 certified. In the event of a fault, please check that the ballasts controlled are DALI-2 certified.

Operating mode

Bus mode	controls via push button
Short-term manual mode	manual control using the keyboard, automatic return to bus mode
Permanent manual mode	manual control exclusively via the gateway

- In manual mode, a bus mode is not possible.
- In the event of a failure of the bus, manual control is possible.
- After the bus failure and a return to service, the device operates in bus mode.
- After a power cut and a return to service, the gateway operates in bus mode.
- Manual mode is disabled by a telegram in current mode.

Enabling short-term manual mode

The operation of the keyboard is programmed and is not locked.

- Press the key briefly (<1 second). **01** is displayed on the screen, the LED remains off or **bc** is displayed on the screen (refer to **bc**). In this mode, individual control of the participants is not possible.

Disabling short-term manual mode

The gateway is in short-term manual mode.

- No manipulation for 5 seconds or
- Short press on the key (<1 second) until the gateway exits short-term manual mode. The display turns off.

Enabling permanent manual mode

The operation of the keyboard is programmed and is not locked.

- Press the key for at least 5 seconds. The LED is lit, **01** is displayed on the screen, permanent manual mode is enabled.
- or
- **bc** is displayed on the screen (refer to **bc**).

Disabling permanent manual mode

- Press the key for at least 5 seconds. The LED turns off and bus mode is enabled.

Controlling the DALI participants

The gateway is in permanent or short-term manual mode.

- Press briefly on the key (< 1 second) until the number of the desired DALI participant is displayed. The and LEDs display the status.
- Control the DALI participant with the key or with the key Short press : turns on and off Long press : varies the light intensity brighter/darker
- The and LEDs display the status.
- In permanent manual mode, after having been through all the available DALI participant

numbers, the gateway exits manual mode after an additional press.

Turning off all the DALI participants

The gateway is in permanent manual mode.

- Press the key.

All DALI participants are switched off.

Locking the DALI participants or groups individually

The gateway is in permanent manual mode.

- Press briefly on the key (< 1 second) until the desired DALI number is displayed. The and LEDs display the status.
- Press the and keys simultaneously for at least 5 seconds. The DALI number selected flashes on the display screen. The DALI participant or group is locked.
- Enable bus mode (leaving permanent manual mode).

A locked DALI participant can be controlled in manual mode.

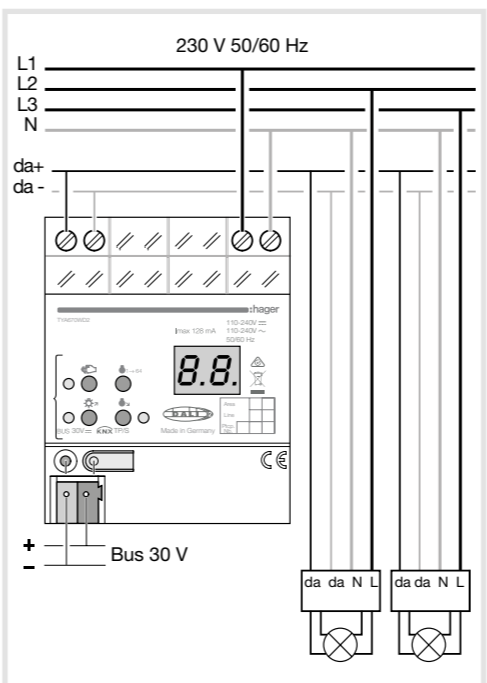
Unlocking the DALI participants or groups individually

The gateway is in permanent manual mode

- Press briefly on the key (<1 second) until the desired DALI number is displayed.
- Press the and keys simultaneously for at least 5 seconds. The DALI participant or group is released. The display on the screen no longer flashes.
- Enable bus mode (leaving permanent manual mode).

Any additional DALI power is prohibited!

Connection



Electrical connection

Connect the device according to the diagram above. Observe the temperature range. Ensure adequate cooling.

When performing installation, perform the installation in such a way that when the area is disconnected the lines carrying both the DALI and also the mains voltage are disconnected.

If multiple circuit breakers supply dangerous voltages to the device or load, couple the miniature circuit breakers or label them with a warning, to ensure disconnection is guaranteed.

DALI devices from some manufacturers have expanded functions and can be controlled. In the case of upgrades of existing DALI installations, remove all the corresponding control devices.

The DALI control voltage is a functional extra-low voltage (FELV).

Types of compatible ballast

Under the IEC standard, ballasts are classified based on their Device Type (DT). Below is a list of DTs that are compatible with the product:

- DT0 = fluorescent lamp
- DT2 = discharge lamp
- DT3 = low-voltage halogen lamp
- DT4 = power supply voltage regulator for incandescent lamps
- DT5 = DC voltage digital signal converter
- DT6 = LED modules
- DT7 = switching function (ON / OFF only)
- DT8 = colour and colour temperature

The total length of the DALI command line installed is considered the maximum length here.

Operation of the emergency lighting

The device can be used in centrally-powered emergency lighting systems.

The statutory and standard specifications vary from country to country. In any event, the user / technical planner should check whether the specific specifications should be maintained.

Observe the number of DALI devices in the emergency luminaires used.

Emergency lighting systems with a central safety supply are required in buildings larger than 2000 m². Depending on the scope of functions of the system, only the emergency luminaires are supplied by the central safety supply (figure 1), or the KNX system and DALI-2 gateway are also supplied (figure 2). In the latter case, in emergency operation, the DALI-2 gateway can transmit the appropriate fault messages to a central system and other DALI-2 gateways in the system.

Figure 1 : Emergency lighting supplied by the central emergency power supply

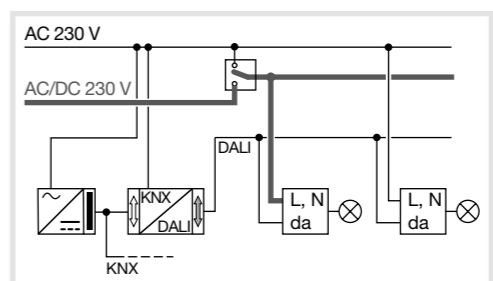
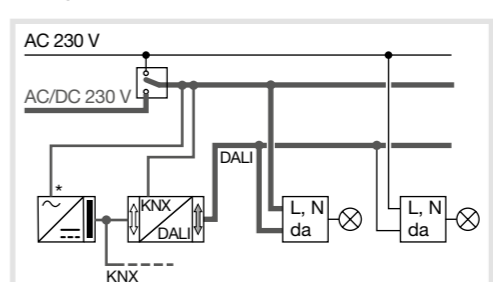


Figure 2 : Emergency lighting, KNX supply and the DALI-2 gateway are supplied by the central emergency power supply circuit.



*The KNX power supply must be adapted to the voltage of the AC / DC safety source.

Commissioning

Downloading the physical address and the application software

- Supply power to the product from the mains
- Connect the KNX bus
- Download the physical address
- Commission DALI system using commissioning software
- Download the application software into the device

Programming is not possible if the product is not powered via the mains.

Technical data

Supply

Rated voltage	110 ... 240 V ~
Mains frequency	50 / 60 Hz
Rated voltage DC	110 ... 240 V =
Power loss	max. 3 W

Ambient conditions

Operating temperature	-5 ... +45 °C
Storage /transport temperature	-25 ... +70 °C

DALI

DALI power supply voltage	6 V =FELV
Number of participants	max 64
DALI EN62386 protocol	
Guaranteed current	128 mA
Maximum current	250 mA
Cable type	Sheathed cable 230V e.g. NYM
Start-up time/v	<11 ms

DALI cable length

with Ø 1,5 mm ²	max. 300 m
with Ø 1,0 mm ²	max. 238 m
with Ø 0,75 mm ²	max. 174 m
with Ø 0,5 mm ²	max. 116 m

The total length of the DALI command line installed is considered the maximum length here.

Housing

Fitting width	72 mm / 4 modules
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Connection of power supply and DALI

Connection mode	Screw terminal
single stranded	0,5 ... 4 mm ²
Finely strande without conductor sleeve	0,5 ... 4 mm ²
Finely strande with conductor sleeve	0,5 ... 2,5 mm ²

KNX

KNX Medium	TP
Commissioning mode	S Mode
Rated voltage KNX	21 ... 32 V = SELV
Power consumption KNX	typ. 150 mW
Connection type for bus	KNX Terminal

This manual is an integral part of the product and must be kept by the end user.

What to do if...

The screen displays **Er**, the connected DALI devices have no functions, no control is possible

Cause : network voltage on the DALI bus	Solution : correct the installation wiring fault
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The screen displays **bc** in manual mode, control of some light fittings is not possible.

Cause : the device has not been programmed or is programmed to "Broadcast"	Solution : program the gateway, commission the DALI system
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Individual DALI devices have no function

Cause 1 : Load is defective, e.g. lamp	Solution : Exchange load
Cause 2 : DALI device is defective	Solution : Exchange defective device and switch on voltage

Press buttons 7 and 13 together for at least 10 seconds. The device detects the exchanges DALI-2 device and loads in the necessary data. The display shows **Lf**.

Simultaneous exchange of multiple DALI devices is only possible with commissioning software and project data.

None of the DALI groups can be operated

Cause 1 : All DALI groups disabled via bus or manual operation	Solution : Cancel disabling
Cause 2 : Continuous manual mode switched on	Solution : Deactivating permanent manual control
Cause 3 : Application software has been stopped, programming LED is flashing	Solution : Perform reset: Disconnect device from bus, switch on again after approx. 5 seconds
Cause 4 : Application software missing or faulty	Solution : Check programming and correct

Correct Disposal of This product (Waste Electrical & Electronic Equipment). (Applicable in the European Union and other European countries with separate collection systems).

This marking shown on the product or its literature indicates that it should not be disposed with other household waste at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of waste and recycle it responsibly to promote the sustainable reuse of material resources. Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial waste for disposal.

Usable in all Europe and in Switzerland

