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CERTIFIED R&D CENTER OF AUTOMATION

Developer of Uniqueness

PRODUCT MANUAL

ITR832-001 & ITR832-002

KNX-DALI GATEWAY

SINGLE & DUAL CHANNEL

www.interra.com.tr

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1. CONTENT OF THE DOCUMENT

This document contains Interra's ITR832-001 KNX-DALI Gateway Single Channel & ITR832-002 KNX-DALI Gateway Dual Channel coded devices' electronic and all essential feature information for programming these products. In each subtitle is explained about the characteristics of the device. Modifications of the product and special change requests are only allowed in coordination with product management.

2. PRODUCT DESCRIPTION

ITR832-001 & ITR832-002 KNX-DALI Gateway devices are the newest products of Interra company. This manual provides detailed technical information concerning ITR832-001 KNX-DALI Gateway Single Channel and ITR832-002 KNX-DALI Gateway Dual Channel. Both of them are KNX-DALI Gateways and have identical functions but only difference is number of DALI outputs. These KNX-DALI Gateways can be used to control several DALI lamps individually or in groups on a DALI output via KNX bus. Little groups of ballasts in an office, for large areas lots of lights can be combined with Interra KNX-DALI Gateways according to desired configurations. This manual also describes installation, programming, commissioning and use of the devices with detailed information.

ITR832-001 & ITR832-002 KNX-DALI Gateways are used to control DALI equipments such as ballasts, transformers or LED converters with device type 0 DALI interfaces via KNX. Also, device type 1 DALI self-contained emergency lights with individual batteries can also be integrated.

ITR832-001 & ITR832-002 KNX-DALI Gateways themselves provide no functionality in terms of the emergency lighting regulations. They serve as an intelligent interface between KNX and DALI lines.

The several mandatory emergency tests such as duration tests can be triggered via KNX bus and the results provided in the same way. This information can then be used for higher-level management of the emergency lighting, which triggers at prescribed times and captures, saves or logs the result provided via KNX on the gateway.

ITR832-002 has two DALI outputs and can control up to 2 x 64 DALI devices individually or in up to 2 x 16 DALI groups. Group and individual control on the outputs also can be mixed. According to desired configuration, all the DALI devices can be controlled together in broadcast or in up to 2 x 16 light scenes. Interra KNX-DALI Gateway devices have highly versatile features so you can configure all the controls in any way on the DALI Gateways outputs.

ITR832-001 & ITR832-002 KNX-DALI Gateways are compatible with DALI 2 standards. Both of them can be commissioned with DALI 2 devices.

2.1. TECHNICAL INFORMATION

Device	ITR832-001 – Single Channel	ITR832-002 – Dual Channel
DALI Line Output	1x64, Single Channel	2x64, Dual Channel
Max. ECG Devices	Up to 64 devices (1x64)	Up to 128 devices (2x64)
Display	2x16 LCD Display	2x16 LCD Display
Short Circuit & Overvoltage Proof	Available	Available
Power Supply	100-240 V AC	100-240 V AC
Power Consumption	6 W	13 W
DALI Line Current Consumption	1x250 mA	2x250 mA
DALI Voltage	Typical 19V DC (12...20.5)	Typical 19V DC(12...20.5)
Cable cross-section & Distance between last DALI device and DALI Gateway	0.75 mm^2 - 150 m(*) 1.0 mm^2 - 200 m(*) 1.5 mm^2 - 300 m(*)	0.75 mm^2 - 150 m(*) 1.0 mm^2 - 200 m(*) 1.5 mm^2 - 300 m(*)
Network	1xEthernet, 1xKNX and 1xUSB Port	1xEthernet, 1xKNX and 1xUSB Port
Type of Protection	IP 20	IP 20
Temperature Range	Operation (-5℃...45℃) Storage (-25℃...55℃)	Operation (-5℃...45℃) Storage (-25℃...55℃)
Maximum Air Humidity	< 90 RH	< 90 RH
Flammability	Non-flammable Product	Non-flammable Product
Color	Light Grey and White	Light Grey and White
Dimensions	90x70x64.5 (HxWxD)	90x70x64.5 (HxWxD)
Certification	KNX Certified	KNX Certified
Configuration	Configuration with ETS	Configuration with ETS

Special Note

(*) : The length refers to the entire routed DALI control cable. The maximum values are rounded and refer to the resistance value. EMC influences are not taken into account and therefore the values should be considered as absolute maximum values.

2.2. CONNECTION DIAGRAM & FEATURE

Single Channel ITR832-001:

- ITR832-001 - KNX-DALI Gateway Single Channel device is supplied with 100-240 VAC mains voltage. The phase, neutral and ground connections are shown in the figure (L, N, PE).
- The positive (+) and negative (-) poles of the DALI electronic control units (ECGs) should be connected correctly via the single DALI line on the device to ensure DALI communication.
- The supply voltages of the DALI electronic control units are supplied from the mains and so the phase, neutral and ground connections of the ECGs should be properly connected.

Dual Channel ITR832-002:

- ITR832-002 - KNX-DALI Gateway Dual Channel device is supplied with 100-240 VAC mains voltage. The phase, neutral and ground connections are shown in the figure (L, N, PE).
- The positive (+) and negative (-) poles of the DALI electronic control units (ECGs) should be connected correctly via the two independent DALI line on the device to ensure DALI communication.
- The supply voltages of the DALI electronic control units are supplied from the mains and so the phase, neutral and ground connections of the ECGs should be properly connected.

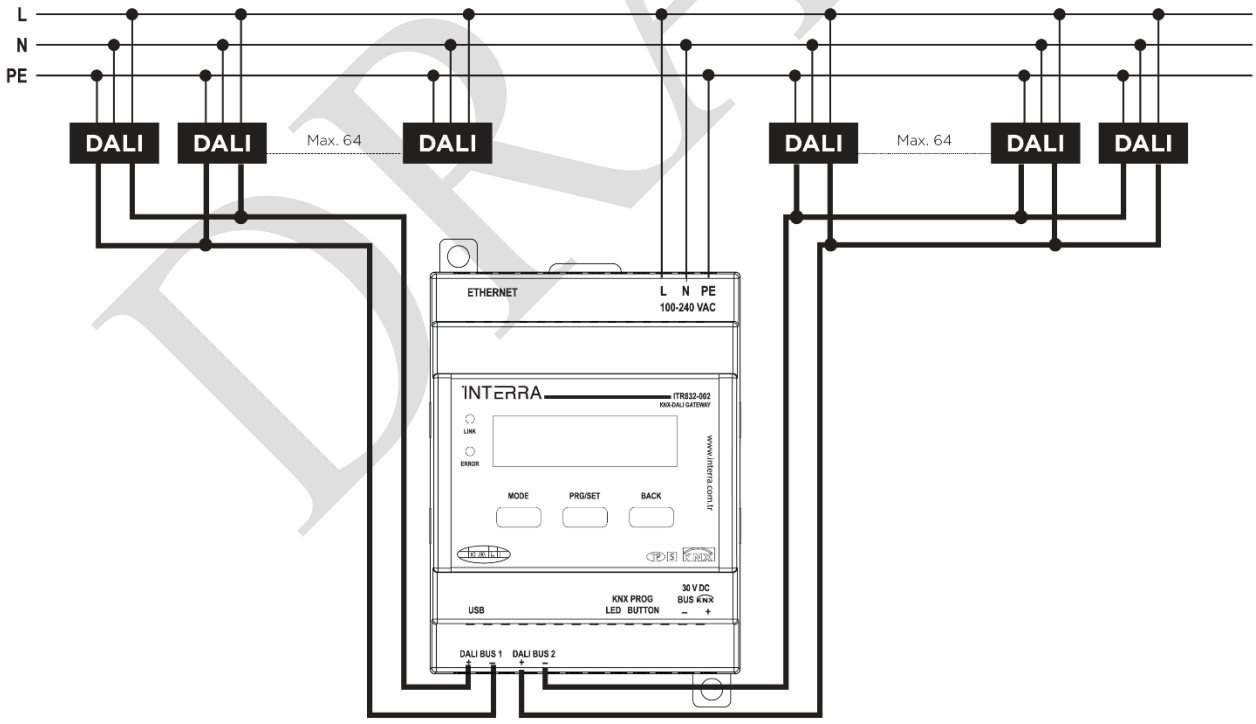

Figure 1 : Connection Diagram of KNX-DALI Gateway

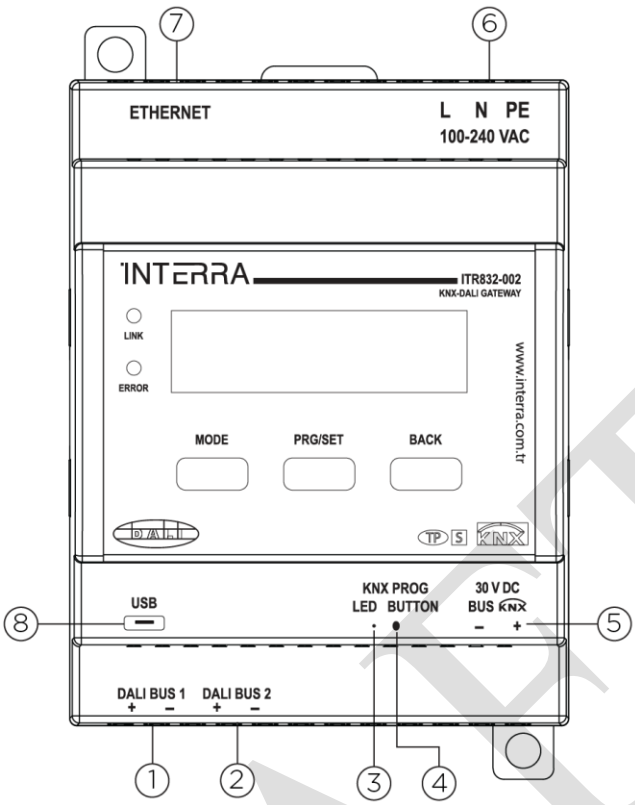

Figure 2 : General Features of KNX-DALI Gateway

Number	Feature
1	DALI Bus Channel 1
2	DALI Bus Channel 2
3	KNX Programming LED
4	KNX Programming Button
5	KNX Connector
6	Power Input
7	Ethernet
8	USB

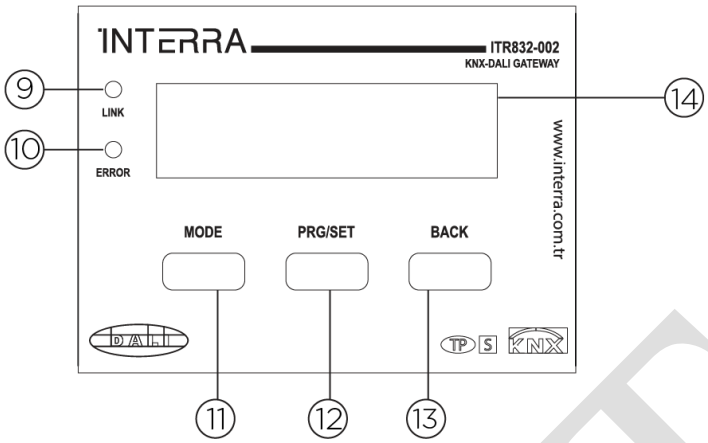

Figure 3 : Buttons & LCD Features of KNX-DALI Gateway

Number	Feature
9	Ethernet LED
10	Error Status LED
11	Menu Mode Button
12	Menu Setting Button
13	Menu Back Button
14	LCD Panel

2.3 DIMENSIONS

All values given in the device dimensions are millimetres. Also, the device can be used in an area of up to 4 modules.

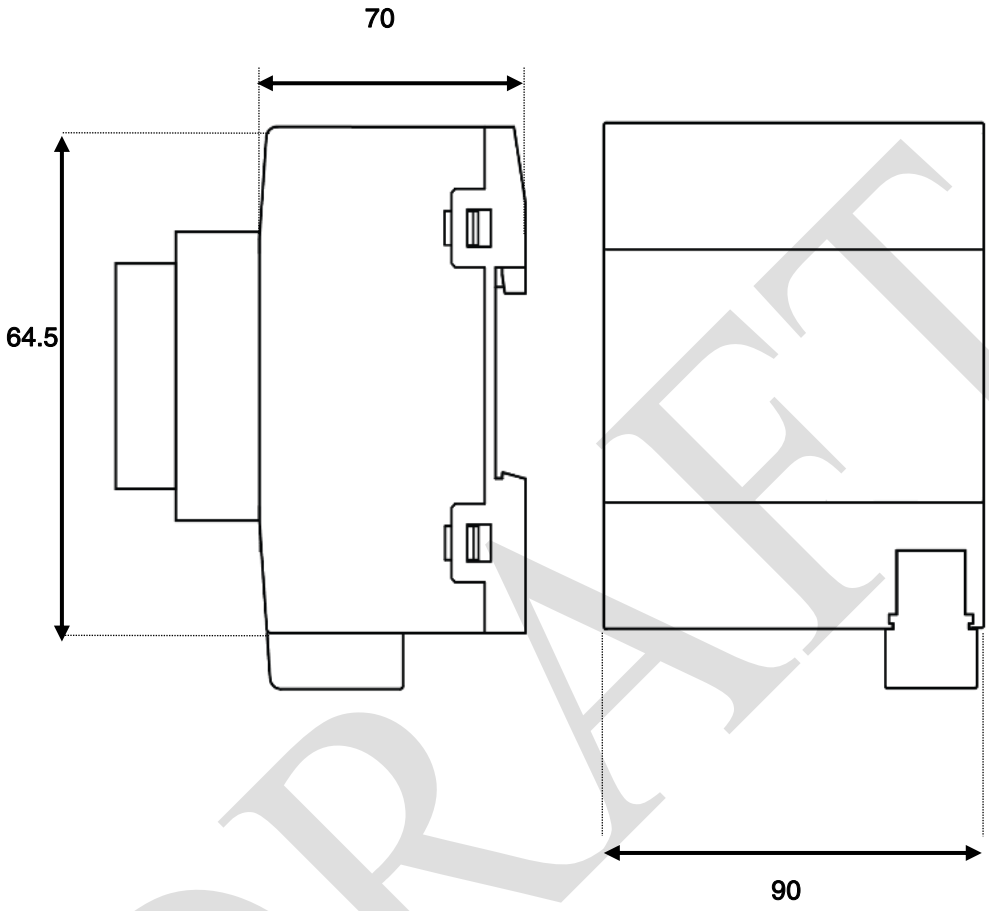

Figure 4 : Dimensions of KNX-DALI Gateway

2.4. FUNCTIONAL DESCRIPTIONS

ITR832-001 KNX-DALI Gateway Single Channel and ITR832-002 KNX-DALI Gateway Dual Channel devices are Master-Single Controllers according to DALI Standards. A KNX-DALI Gateway device provides the interface between the KNX bus installation and DALI lighting control.

ITR832-001 & ITR832-002 differ from each other only on the number of their outputs. The outputs of each devices are same and have identical functions and properties. Up to 64 DALI devices can be connected to each output. These 64 devices can be controlled in broadcast, single or in a DALI group. Single and group control can be combined on the same output.

Each device or group can be independently switched, dimmed and assigned a brightness value via the KNX. The gateways have group objects which can be programmed to signal lamp, ballast or combined lamp/ballast faults on the KNX. The fault status of an individual device can also be signalled or queried via coded group objects. The gateways also have a Scene function (16 per output), a Staircase Lighting function, and Slave, Block and Forced operation functions.

The prominent features of the KNX-DALI Gateway ITR832–001 & ITR832-002 are followings :

- Switching, dimming, brightness value setting.
- Programming of the brightness value (Power-On Level) after a ballast supply voltage recovery.
- Programming of individual maximum/minimum brightness dimming values(threshold values).
- Status signalling via common or separate group objects.
- Status signalling for a lamp and/or ballast malfunction.
- For switching, brightness setting and dimming different dimming speed can be configured.
- Reaction on DALI and KNX bus voltage failure and recovery.
- KNX control of all connected DALI devices without prior commissioning (DALI group assignment).
- Light schemes which are recalled or saved via KNX.
- A partial failure function, such as switch on other devices to compensate for brightness loss in the event of a failure.
- DALI Query variation such as to check ballast status.

2.5. INFORMATION ABOUT DALI & DALI-2 STANDARDS

The DALI protocol was first drafted in the late 1990s and has undergone a number of revisions as it has evolved. The requirements for modern lighting technology are extremely varied. Historically, lighting was only required for visual tasks, but nowadays there is a focus on factors such as comfort, ambience, functionality and energy saving.

Moreover, modern lighting systems are increasingly being incorporated into building installation facility management to monitor the status of the entire lighting system. The requirement is often for a complex lighting management system which meets the uses of the premises. All these requirements cannot be adequately met by traditional 1–10 V electrical installations, or only at considerable effort and cost. The DALI standard (EN 62386, formerly EN 60929) has emerged against this background in conjunction with leading manufacturers of lamp ballasts. It describes and defines the DALI (Digital Addressable Lighting Interface) digital interface for lighting technology equipment.

While Part IEC62386-101 describes the general characteristics of DALI, control gear standards are specified in the IEC62386-102. For different device types (DT0-8), additional standards (IEC62386-201 to IEC62386-209) were gradually added. For example, the device type 1 describes the property of DALI emergency lighting devices and the device type 6 LED control gears.

DALI has become established as an independent standard in the field of lighting technology. The range of ballasts, transformers, dimmers and relays with DALI interfaces has decisively influenced modern lighting technology.

Part 202 of DALI standard 62386 standardizes telegrams, which communicate with emergency lighting units (converters) in self-contained emergency lighting with individual batteries. These standardized DALI telegrams can be used to trigger emergency lighting tests (e.g. function or duration tests). The test results are provided on the DALI by the DALI emergency lighting converter.

This DALI technology allows cyclically required emergency lighting tests to be triggered via a higher-level building management control system and can also document the result.

Since November 2014, a new version of the DALI standard is available, the Edition 2 – also called “DALI-2”. DALI-2 is intended to eliminate ambiguities in the existing standard and to ensure better interoperability between devices of different manufacturers (revised parts 101 and 102). While Edition 1 described only control gear and general communication, Edition 2 includes, in addition to more detailed parts 101 and 102, a separate standard for control devices (part 103) and device type specifications for push buttons (301), analogue inputs (302), motion sensors (303) and light sensors (304).

DALI-2 helps fill the gaps in the original standard, resulting in significant improvements in interoperability. DALI-2 adds new features, and introduces standardisation of control devices including the recent addition of input devices, while maintaining backwards compatibility.

There are many improvements in the new version of the standard, including several new commands and features. Also, for the first time, IEC 62386 now includes standardisation of control devices.

To accommodate this, changes were necessary in Parts 101 and 102 to ensure there would be a clean split between system requirements in Part 101 and control-gear requirements in Part 102. Also, the new Part 103 of the standard introduced general requirements for control devices.

Publication of Part 103 “General requirements - Control devices” also enabled further standardisation on specific Parts for control devices. Parts of the standard have been published for the first four input devices; these are a type of control device that provides information – an input – to the system. Another type of control device known as an application controller can use the information provided by input devices and other sources to allow them to make decisions and send commands to control gear.

Application controllers can operate as single masters or multi-masters. The bus communication requirements for both types are described in Part 103. Input devices are multi-masters, but are also capable of operating in a mode where they are simply polled by application controllers.

Mixed Systems of DALI and DALI-2:

The table below gives some examples of different situations:

Situation	Outcome
Using DALI-2 control gear in older systems	No problems are expected. DALI-2 is designed for backward compatibility.
Using DALI version-1 control gear with DALI-2 application controllers	Check that the DALI version-1 control gear has been successfully tested. No problems are expected, but the DALI version-1 control gear will not have the new DALI-2 features.
Using bus power supplies that are not DALI-2 certified	There is no certainty that these will work, because there were no tests for bus power supplies before DALI-2
Using control devices that are not DALI-2 certified	There are no standards and no tests for control devices before DALI-2. Contact the control device manufacturer for compatibility.

3. MOUNTING & INSTALLATION

The gateways are modular installation devices for installation in the distribution board on 35 mm mounting rails to EN 60715. They can be installed in any mounting position.

Electrical connection is via screw terminals. Connection to the KNX is via the supplied KNX connection terminal. The terminal assignment is located on the housing.

The devices are ready to operate when the KNX voltage and gateway supply voltage are applied. The devices must be accessible for the purposes of operation, testing, visual inspection, maintenance and repair.

Mounting:

- First, the device is contacted to the DIN rail by holding it at an oblique angle.
- Then, it is pushed slightly from above in the direction of 1st numbered arrow.
- Finally, the device is pushed slightly in the direction of 2nd arrow and placed on the DIN rail to finish the mounting.

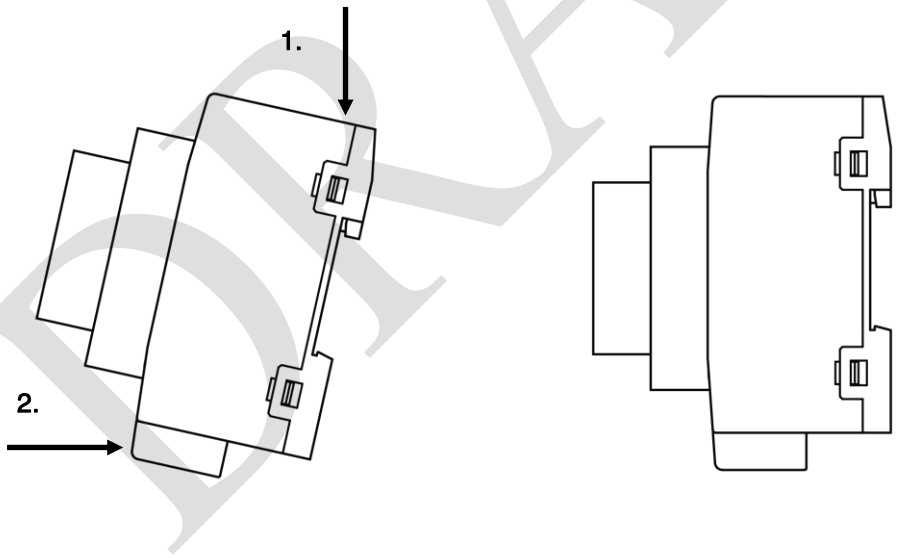

Figure 5 : Mounting method of KNX-DALI Gateway

Demounting:

- First, the device is pushed slightly from above in the direction of 1st numbered arrow.
- Then, the device is pulled slightly in the direction of 2nd arrow.
- Finally, when the device is at a sufficient oblique angle, it is completely withdrawn from the DIN rail and the demounting is finished.

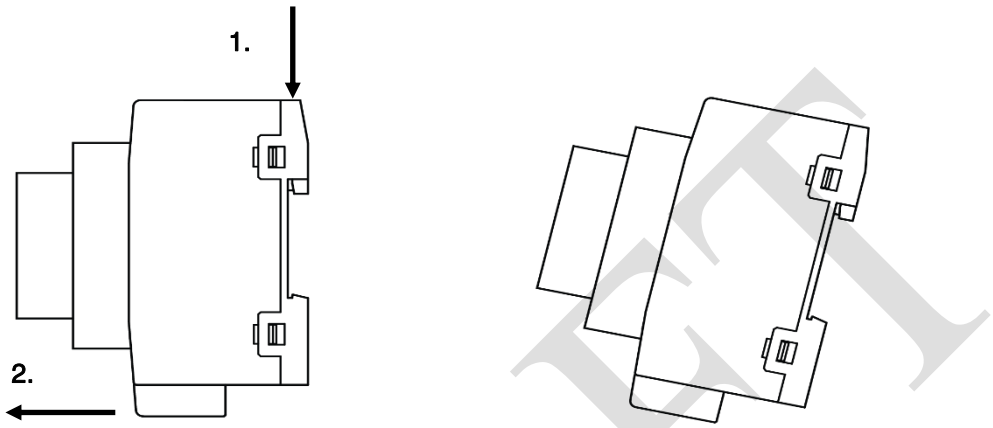

Figure 6 : Demounting method of KNX-DALI Gateway

Commissioning Requirement:

Gateway commissioning requires a PC with ETS and a KNX interface, e.g. USB or IP. Mounting and commissioning may only be carried out by electrical specialists. The applicable standards, directives, regulations and specifications for the country in question must be observed when planning and setting up electrical installations and security systems for intrusion and fire detection.

Protect the device from moisture, dirt and damage during transport, storage and operation. Do not operate the device outside the specified technical data. Only operate the device in a closed housing (distribution board). Switch off the device supply voltage before mounting.

To avoid dangerous touch voltages which originate through feedback from differing phase conductors, all poles must be disconnected when extending or modifying the electrical connections.

DALI is not a SELV (Safety Extra Low Voltage) system, therefore DALI control cables and the 230 V power supply cable must be routed into a single cable. Observe the corresponding installation regulations.

4. KNX-DALI GATEWAY DISPLAYS & PUSH BUTTON CONTROL

You can commission the connected KNX-DALI Gateway and set and change DALI functions via the three pushbuttons (MODE, PRG/SET, BACK) and the 2x16 character display on the front of the device. The user concept is menu based. Depending on the menu position, you can select sub menus. The current menu position is shown on the display. To navigate within the menu, press the pushbuttons briefly. Use the MODE button to select the next menu item on the same level. Use the PRG/SET button to go to the next lower sub menu. Press the BACK button to leave a current menu and return to the next higher menu.

Moreover, according to figure 3, when there is an ethernet connection the link LED will be GREEN. On contrary, if the ethernet connection is lost, they will be OFF. If there is a failure on the DALI line, the error LED will be ON, otherwise it will be OFF.

Special Note

Enabling a ballast in the A ballasts parameter window makes it an individual DALI device. It has been specified for individual control and cannot be assigned to a group.

Menu Displays:

Each model of the KNX-DALI Gateways has a 2x16 character display menu. The information of the menus are described below.

Main Menu 1:

DALI GATEWAY 2CH ITR832 - vx.x.x	This menu contains device information. Since there are 2 different devices for single and dual channel, for single channel this screen shows 1 CH and for dual channel shows 2 CH. The device version is specified as vx.x.x. For example, v1.1.5 can be a device version.

Main Menu 2:

NETWORK IP ADDRESS	This menu contains device IP address and MAC address. If you briefly press the PRG/SET button you can enter to the sub menus: IP address and MAC address.

Sub Menus of Menu 2:

IP ADDRESS	This menu contains device IP address. If you briefly press the PRG/SET button you can enter and learn the current IP address of KNX-DALI Gateway. In this screen, if you press the BACK button, you will enter the parent menu. If you press the MODE button you will switch to equal level another menu named MAC ADDRESS.
IP: 192.168.1.171	This menu shows the current IP address. You can briefly press the BACK button to switch parent menu.
MAC ADDRESS	This menu contains device MAC address. If you briefly press the PRG/SET button you can enter and learn the device MAC address of KNX-DALI Gateway. In this screen, if you press the BACK button, you will enter the parent menu. If you press the MODE button you will switch to equal level other menu named IP ADDRESS.
MAC: 80 -XY-KL-MN-PQ-RS	This menu shows the device MAC address. You can briefly press the BACK button to switch parent menu.

Main Menu 3:

NEW DALI ADDRESSING	Short press the PRG/SET button to change from the main menu NEW DALI ADDRESS to the sub-menu.

Sub Menus of Menu 3:

CHANNEL A SEARCH ECGs	Short press the PRG/SET button to enter the sub-menus. Both channel A & B have this function.
START SEARCH ECGs?	Short press the PRG/SET button again to start the initialisation and search process. All ECGs connected to the DALI segment are automatically reset and any previously set parameters and group assignments are deleted. Then searches for the connected ECGs via their random long address. The ECGs are automatically recognised in ascending order.
CH: A FOUND ECGs: x?	In this menu, when the search process is complete, the number of ECGs found is shown on the display and the question mark disappears. Depending on the number of connected ECGs the search process may take a few minutes.

Main Menu 4:

SEARCH DALI ADDRESSING	Short press the PRG/SET button to change from the main menu SEARCH DALI ADDRESS to the sub-menu.

Sub Menus of Menu 4:

CHANNEL A SEARCH ECGs	Short press the PRG/SET button to enter the sub-menus. Both channel A & B have this function.
START SEARCH ECGs?	In this menu, hold the PRG/SET button to change into programming mode. Short press the PRG/SET button again to start the verification and search process. The device searches for the connected ECGs via their long address and automatically compares them to the previous configuration
CH:A,DELETED/NEW xx/yy	If ECGs have been removed from the DALI segment the entries are deleted from the device. After that, the DALI segment is searched for newly installed devices. Newly added ECGs are automatically reset and any previously programmed parameters and group assignments are deleted Once the whole process is complete, the display shows both the deleted and the newly found ECGs (deleted devices / new devices from left to right.

Main Menu 5:

ECG QUICK REPLACEMENT	Short press the PRG/SET button to change from the main menu ECG QUICK REPLACEMENT to the sub-menus.

Sub Menus of Menu 5:

CHANNEL A SEARCH ECGs	In this menu hold the PRG/SET button to change into programming mode and enter the sub menu. Both channel A & B have got this manual function.
START SEARCH ECGs?	In this sub-menu short press the PRG/SET button again to start the quick exchange. The device first checks if one or several ECGs in the system were faulty. It then automatically looks for newly connected ECGs in the segment. The quick exchange is only possible if just one ECG in the segment was faulty and one new ECG is found.
CH:A, ECG XX REPLACED	If the process is successful, the number of the replaced ECG is shown on the screen.
CH:A, ERROR TYPE X	If the search process cannot be completed because the required conditions are not met, an error code appears in the display. Press BACK button to return to parent menu The error codes : Type 7 : No ECG failure, Type 8 : More than one ECG failure, Type 9 : No new ECG can be found, Type 10 : ECG has wrong device type, Type 11 : More than one new ECG.

Main Menu 6:

BROADCAST TEST	This menu is used to use the broadcast function manually. A short press on the PRG/SET button changes to a sub-menu.

Sub Menus of Menu 6:

CHANNEL A TEST	This menu is used to test the A channel. Short press of the PRG/SET button while in this menu enters sub-menus. Pressing MODE button will switch to the related menu for B channel.
BROADCAST TEST -> ON	If a short press of the PRG/SET button is performed while in this menu, the broadcast test will run in on and off mode, respectively. This means that all the lights connected to the DALI Gateway will be on or off. If the display shows ON, pressing the button turns OFF. If the button is pressed for a long time, dimming is performed to lower direction.
BROADCAST TEST -> DIMMING...	If the PRG/SET button is still pressed, "DIMMING" appears on the display. When the button is released, value is displayed.
BROADCAST TEST -> XX	When the PRG/SET button is released the dimming value is displayed on the screen. The value can be 0…100.

BROADCAST TEST
-> OFF

If a short press of the PRG/SET button is performed while in this menu, the broadcast test will run in on and off mode, respectively. This means that all the lights connected to the DALI Gateway will be on or off. If the display shows OFF, pressing the button turns ON. If the button is pressed for a long time, dimming is performed to upper direction.

BROADCAST TEST
-> DIMMING...

If the PRG/SET button is still pressed, "DIMMING" appears on the display. When the button is released, value is displayed.

BROADCAST TEST
-> YY

When the PRG/SET button is released the dimming value is displayed on the screen. The value can be 0…100.

Special Notes

To perform a function or change a configuration within a sub-menu, go to the respective position and change into programming mode. To change into programming mode, hold the PRG/SET button for more than 2 seconds. If the programming mode is active, use the Move button to change a parameter or setting. Briefly press the PRG/SET button again to complete the process and save the set parameter or activate the function.

5. ETS PARAMETERS & DESCRIPTIONS

In this chapter, the ETS parameters of ITR832-001 & ITR832-002 KNX-DALI Gateway devices are described using the parameter pages and options. The parameter pages features are dynamic structures which means further parameters and parameter pages are enabled depending on the configuration and function of the groups.

Moreover, in the descriptions below, [x] group stands for a group from 1 to 16 that consists of up to 64 ballasts. The term “ballast” refers to a DALI device which can be individually or group controlled via Interra KNX-DALI gateways. The emergency lighting converter or converter term stands for a type 1 DALI emergency light with an individual battery.

In the ETS parameter configuration pages, each of the parameters have got a default parameter value. The This default values are written in bold.

- E.g. : Values will be received •**via parameter** via communication object

Special Notes

Information about Switch or Brightness value group objects are also applying to the group objects Switch Status or Brightness value Status.

A DALI device can be controlled either individually via ballast commands or in a group via group commands. Initially the KNX-DALI Gateway assumes that group control is in use. If a ballast is to be individually controlled, it must be specifically parameterized in most current ETS software. The ballast concerned must be enabled in the [X] ballasts parameter window, which is enabled by selecting individual control in the A or B DALI configuration parameter window. To control individual DALI devices and groups together, a common KNX group assignment is required.

5.1. GENERAL PAGE

When the KNX-DALI Gateway ITR832-001 or ITR832-002 is attached to the project from the ETS program, a configuration setting must be made primarily before loading. When entering the “GENERAL” in the parameter page, the configuration screen will be appeared shown below. Global parameter settings for the whole device are made in this window.

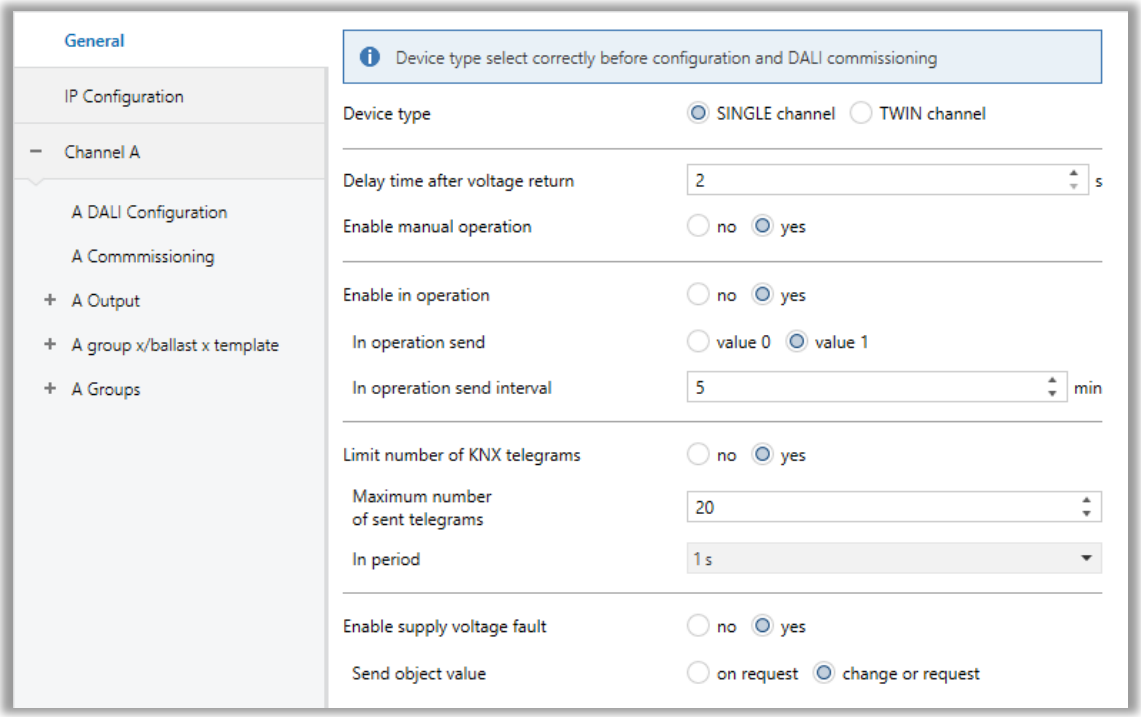

Fig 7 : General Parameter Configuration Page

5.1.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Device type	This parameter, is used to determine the type of the KNX-DALI Gateway. If the device to be configured is ITR832-001 KNX-DALI Gateway Single Channel, please select SINGLE channel. If the device to be configured is ITR832-001 Dual Channel, please select TWIN channel.	**SINGLE channel** TWIN channel
Delay time after voltage return	This parameter, is used to determine the delay time after voltage return in seconds. When in delay state, the KNX-DALI Gateway does not send any KNX telegrams. Incoming telegrams are received,	**2**...60

	and updated in the background. Switching, brightness value and scene commands are updated in the background, immediately saving the end brightness value without any transition time. Dimming commands are ignored. The updated values are only executed when wait state ends and then sent according to the parametrization.	
Enable manual operation	This parameter, is used to enable or disable the manual push button on the front of the KNX-DALI Gateway. If manual operation is enabled, it can be disabled by Disable manual operation/Status group object. **Yes :** Manual operation is enabled. Pressing the push button for 2-5 seconds activates test mode. In test mode, all DALI devices can be switched on and off to check the cable connections and verify that they are correct. Pressing the button for more than 5 seconds triggers DALI addressing which assigns a DALI address to any DALI devices without one. **No :** The push button is disabled. No manual action is allowed on the device.	**No** Yes
Enable In Operation	This parameter, is used to determine the presence of the KNX-DALI Gateway on the KNX bus line. The cyclic telegram can be monitored by an external KNX device. If a telegram is not received, the device may be defective or the KNX cable to the transmitting device may be interrupted. **Yes :** The group object is enabled. **No :** The group object is not enabled.	**No** Yes
-> In operation send	This parameter, is used to determine the send value of the in operation group object on the KNX bus line.	Value 0 **Value 1**
-> In operation send interval	This parameter, is used to set the cyclically sending time interval value of the In operation group object	1...**5**...255
Limit number of KNX telegrams	This parameter, is used to limit the KNX-DALI Gateway device to ease the bus load. This limit concerns all of KNX telegrams sent by KNX-DALI Gateway.	**No** Yes

-> Maximum number of sent telegrams	This parameter, is used to set the maximum number of sent telegrams by the device.	1...**20**...255
-> In period	This parameter defines the number of telegrams sent by the device within a certain period of time. The telegrams are sent as quickly as possible at the start of a period. As soon as the maximum number of sent telegrams is reached, no further telegrams are sent on the KNX until the end of the period. A new period commences at the end of the previous period. The telegram counter is reset to zero, and sending of telegrams is allowed again. The current group object value at the time of sending is always sent.	50 ms 100 ms 200 ms 500 ms **1 s** 2 s 3 s 10 s 30 s 1 min
Enable supply voltage fault	This parameter, is used to enable or disable the supply voltage fault. **Yes :** As soon as the device supply voltage is interrupted, the KNX-DALI Gateway supply voltage fault group object sends a telegram with the value 1 on the KNX. The time at which a telegram is sent can be adjusted using the parameter below. **No :** The KNX-DALI Gateway supply voltage failure is not signalled to the KNX bus line.	**no** yes
-> Send object value	This parameter, is used to set the sending object value method. **On request :** The status is sent when a request occurs. **Change or request :** The status is sent when either a change or request occurs.	On request **Change or request**

5.2. IP CONFIGURATION

This function is used to make the IP Configuration. Host name, HTTP port, IP address assignment, Subnet mask assignment, Default gateway assignment, DNS Server assignment and user authentication configurations can be made in this parameter page.

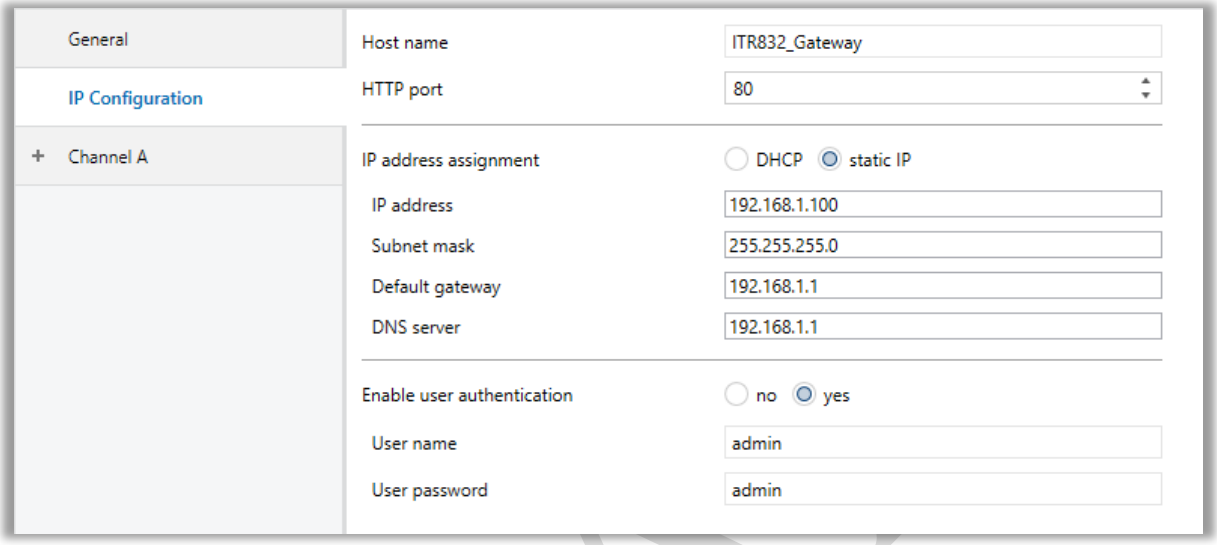

Fig 8 : IP Configuration Parameter Page

5.2.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Host Name	This parameter, is used to determine a user-friendly Host name for the KNX-DALI Gateway. Up to 15 bytes allowed for Host name.	**ITR832_Gateway**
HTTP port	This parameter, is used to configure the HTTP port number.	0...**80**...65535
IP address assignment	This parameter, is used to assign a static IP address or a dynamic address by a DHCP server. The parameters for the static IP address are only visible if you select “Static IP”.	**DHCP** Static IP

-> IP address	This parameter, is used to set the static IP address of the KNX-DALI Gateway if you do not select the DHCP.	**192.168.1.100**
-> Subnet mask	This parameter, is used to set the subnet mask of the KNX-DALI Gateway if you do not select DHCP.	**255.255.255.0**
-> Default gateway	This parameter, is used to set the address of a standard gateway for direct access via the Internet. The setting is only possible if you do not select the DHCP.	**192.168.1.1**
-> DNS server	This parameter, is used to set the DNS server address of the KNX-DALI Gateway if you do not select the DHCP.	**192.168.1.1**
Enable user authentication	This parameter allows to login the web server via a user name and password.	**No** Yes
-> User name	This parameter, is used to configure a user-friendly name for the user area of the web server. User names consist of up to 15 bytes.	**admin**
-> User password	This parameter, is used to configure a password for the user area of the web server. Passwords consist of up to 15 bytes.	**admin**

5.3. CHANNEL A

General parameter settings for channel A are made in this main parameter page. ITR832-002 KNX-DALI Gateway Dual Channel also supports Channel B for configuration.

5.3.1. A DALI Configuration

The main parameter settings defining the entire DALI output are made in this page. Various control options for the DALI devices are enabled from this page.

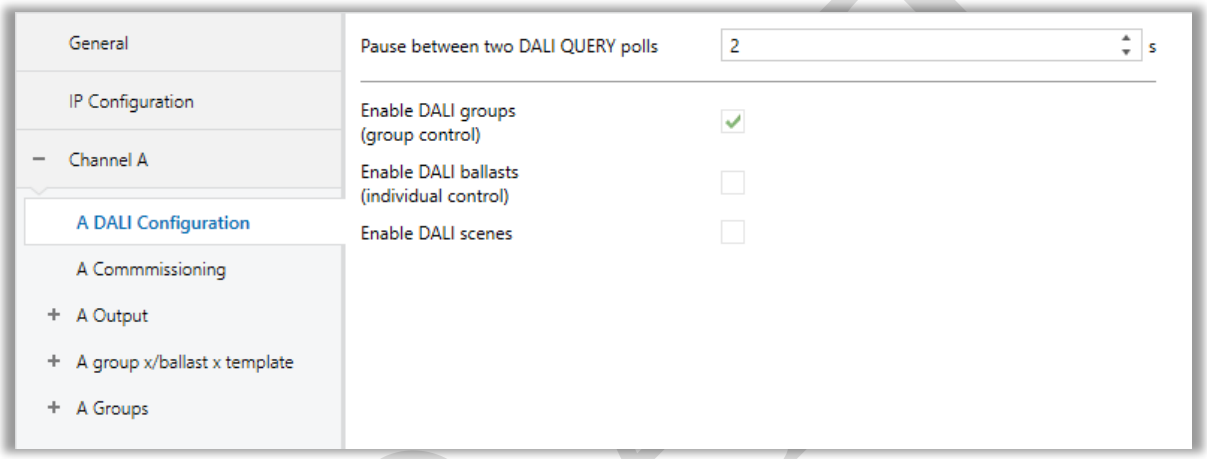

Fig 9 : A DALI Configuration Parameter Page

5.3.1.1. Parameters List

PARAMETERS	DESCRIPTIONS	VALUES
Pause between two DALI QUERY polls	This parameter, is used to set the time interval between DALI QUERY polls. The KNX-DALI Gateway cyclically and automatically sends brightness value query on the DALI line to each possible DALI devices. The KNX-DALI Gateway uses this poll to establish whether a DALI device with a DALI address is present. If it does not receive a response from the monitored DALI device, the gateway interprets this as a device fault. If it does receive a response, it polls other	0...**2**...255

	properties of the DALI device (e.g. lamp faults and DALI device type). The time interval configuration has a deep influence on the DALI telegram bus load. A long interval reduces the load significantly. Nevertheless, the disadvantage of this is that a fault on a DALI device may not be detected straight away. Likewise, it takes longer to detect a new or recovered device. Besides, the time interval setting has no influence on DALI telegram rate. DALI commands (e.g. switching, dimming and brightness value settings etc.) and status signals (e.g. brightness values, emergency lighting information etc.) or functions in progress (e.g. staircase lighting, forced operation etc.) are neither influenced nor delayed.	
Enable DALI groups (group control)	This parameter, is used to enable or disable DALI group control. **Checked:** DALI group control is enabled on DALI output. Related parameter pages and group objects are enabled. Up to 16 DALI groups available for each DALI output. Individual DALI groups can be selected in the [x] Group parameter page. **Unchecked:** DALI group control is disabled and so DALI group control is not supported on the DALI output. No related parameter pages and group objects are enabled.	Unchecked **Checked**

Enable DALI ballasts (individual control)	This parameter, is used to enable or disable the DALI ballasts control. **Checked:** DALI individual device control is supported on the DALI output. Related parameter pages and group objects are enabled. Up to 64 DALI ballasts can be connected to each output. Individual [x] Ballast DALI devices can be hidden in the A ballasts parameter window. **Unchecked:** Individual DALI device control is disabled on the DALI output. There will be no related parameter pages and group objects are enabled. If a DALI device is controlled individually, it cannot also be assigned to a DALI group. A DALI device can be controlled either individually via ballast commands or in a group via group commands. Overlapping DALI groups are not supported. Initially the DALI gateway assumes that group control is in use. If a ballast is to be individually controlled, it must be specifically parametrized in ETS. The ballast concerned must be enabled in the X ballasts parameter window, which is enabled by selecting individual control in the X DALI configuration parameter window.	**Unchecked** Checked
Enable DALI scenes	This parameter, is used to enable or disable the DALI scenes control. **Checked:** DALI Gateway outputs allow control up to 16 DALI scenes. Related parameter page x scenes and the Scenes 1...16 group object is enabled. There are 16 DALI light scenes available on each DALI output, scenes can be assigned to any of the KNX scenes. **Unchecked:** DALI output does not support scenes function. No related parameter page and group objects are enabled. Scene numbers 1 to 16 in the gateway are mapped to 0 to 15 on the DALI line.	**Unchecked** Checked

5.3.2. A Commissioning

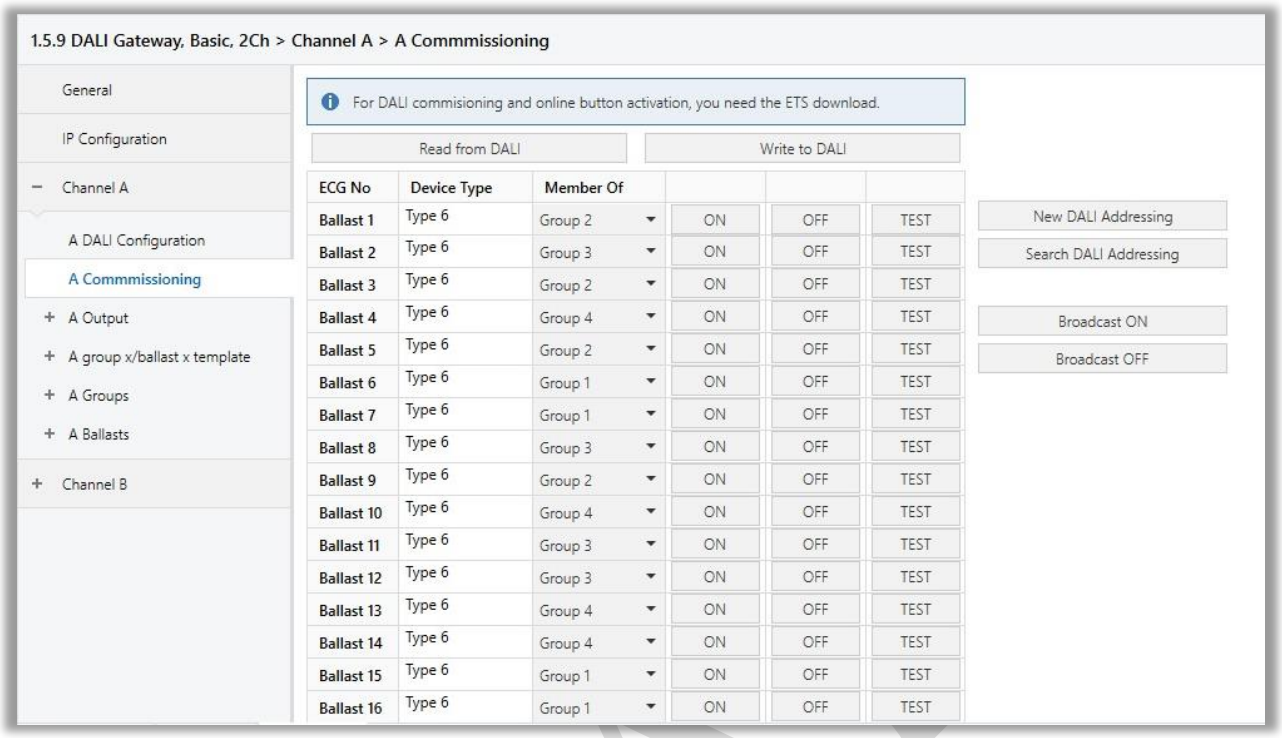

Fig 10 : A Commissioning Parameter Page

Depending on the number of each ballast, the device type and the name of the group to which it is a member can be obtained from this parameter page. Operations such as opening and closing of any ballast, addressing of test operations and commissioning of new ballasts to be added to the commissioned infrastructure can be performed and opening and closing commands can be sent to all ballasts regardless of addressing operations. The features of this parameter page are explained in detail below.

ECG No:

Up to 64 ballasts can be installed in one channel of the KNX-DALI Gateway. The number of all ballasts is listed sequentially from 1 to 64 in the column ECG No. From this section, the device type of the ballast, the group number etc. can be determined by looking at the corresponding ballast number.

Device Type:

The information about the device types of the ballasts in the field is shown in this column. The device type corresponding to the specified ballast number is also given in the device type column on the same page. Device types 0 to 8 are shown here, each with a different type. The following table shows the type of controller according to the device type number.

Type of Control Gear	Device Type Number
Fluorescent lamp control gear	Device Type 0 (DT0)
Self-contained emergency control gear	Device Type 1 (DT1)
Discharge (HID) lamp control gear	Device Type 2 (DT2)
Low-voltage halogen lamp control gear	Device Type 3 (DT3)
Incandescent lamp dimmer	Device Type 4 (DT4)
Conversion to D. C. Voltage (1-10V, 0-10V converter)	Device Type 5 (DT5)
LED lamp control gear	Device Type 6 (DT6)
Switching (relay) control gear	Device Type 7 (DT7)
Colour control gear	Device Type 8 (DT8)

Member Of:

After pressing the New DALI addressing button, for example, 20 ballasts have been detected in the field. These ballasts can be assigned to one of the groups from 1 to 16 of the member of list if they wish to be assigned to a group. For example, if the Write to DALI button is pressed after the associations are made, the ballasts assigned to the groups in this list are written to the KNX-DALI Gateway.

ON, OFF & TEST:

In the "ECG No" list, suppose that there are 30 ballasts in the field, from 1 to 64 ballasts. For example, suppose that the ballast 5 is one of the commissioned ballasts. Pressing the ON button opposite the ballast 5 will switch on the ballast lighting. Likewise, if the OFF button is pressed, the ballast lighting is switched off. When the TEST button is pressed, the illumination of the relevant ballast performs blinking for 1 minute. If the TEST button is pressed again while the blinking is in progress for 1 minute, the relevant ballast lighting goes out.

Suppose 1 minute has expired and the TEST button is not pressed again. In this case, the burn-out is performed for 1 minute and after the time has elapsed, the ballast lighting will return to the last position. The lighting of the ballast, for example, was at 80% brightness and returns to the same brightness after testing. The ballast lighting is not switched off.

This feature is generally used to understand which ballasts in the field are detected and which are not.

Read from DALI:

The information on the KNX-DALI Gateway can be obtained by pressing this button. Types of ballasts, assigned group number, ON-OFF information, etc. can be obtained here.

Write to DALI:

The configured information can be transferred to the KNX-DALI Gateway by pressing this button. Types of ballasts, assigned group number, on-off information can be loaded into KNX-DALI Gateway by pressing this button.

New DALI Addressing:

The New DALI addressing button is used to address all ballasts in the field. There is also one object that can do the same work of this button. So, this button and the object is actually make the same work. After addressing, the device types of the number of ballasts found are shown in the column on the relevant page. For example, if 18 ballasts were found, the information of 18 ballasts is written here. The device types corresponding to the specified ballast number are shown as type 0, type 1 .... type 8. For example, when an integrator installs ACK, it will write type 1 in this section. As an example, when an integrator uses RGB, it will type type 8.

Search DALI Addressing:

Assume that there is a field that all DALI ballasts are commissioned and addressed. For example, 30 ballasts are active in this field and you want to add 2 new ballasts. In this case, the ballast number will be 32. In such a case, it is generally not desirable to re-address all of the ballasts in the field. With the help of the Search DALI addressing button, the addressing of the newly installed 2 ballasts is performed. In this way, all ballasts in the field are addressed. When you press the Search DALI Addressing button, the ballasts without an address get an address.

Broadcast ON:

The Broadcast ON button is used to turn on all ballasts in the field. The number of ballasts connected to the corresponding output of the KNX-DALI Gateway is switched on. Broadcasting is performed independently of the addressing process. Even if no operation is performed in the field (including addressing), the ballast lights are switched on with the broadcast ON command.

Broadcast OFF:

The Broadcast OFF button is used to turn off all ballasts in the field. The number of ballasts connected to the corresponding output of the KNX-DALI Gateway is switched off. Regardless of addressing, broadcast OFF is performed. Even if no operations have been performed on the field (including addressing), the ballast lights are switched off by the broadcast OFF command.

5.3.3. A Output

The parameter settings for the DALI output are made in this page. Various control options for the DALI devices are enabled from this page.

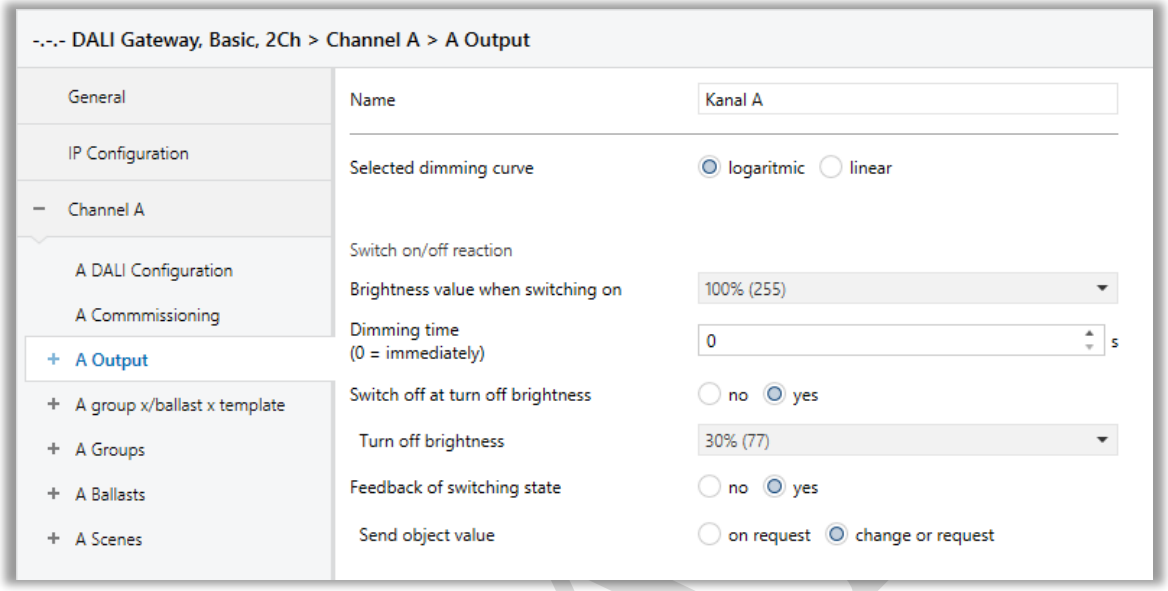

Fig 11 : A Output Configuration

5.3.3.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Name	This parameter, is used to determine an output name. Each group can be assigned a name consisting of up to 40 characters. The name is stored in the ETS database, and also stored in the gateway by downloading the application.	**Kanal A**
Selected dimming curve	This parameter, is used to determine the DALI characteristic. You can define whether the KNX setpoint and KNX status value refer to the DALI control value or luminous flux. **Logarithmic:** KNX value refers to DALI control value. **Linear:** KNX value refers to the luminous flux.	**Logarithmic** linear
Switch on/off reaction		

Brightness value when switching on	This parameter, is used to determine the brightness value when the DALI output switches on after receiving an ON telegram. The dimming thresholds (upper and lower dimming value) are calibrated automatically to the maximum or minimum dimming values. **Previous value:** The output switches on at the brightness value it was switched off at by the Switch group object. The brightness value of each ballast and group are saved when they are switched off, and restored when they are switched back on. If a ballast or group is OFF when switched off, the previous brightness value is saved as 0% (OFF) and is switched back on in the same state. This means that the group or ballast will be switched off unless it has a brightness value other than 0 when switched back on. **0%...100% :** When the output switches on, the selected % brightness value will be set to each group or ballast that is not configured individually.	0%...**100%** Previous value
Dimming time (0=immediately)	This parameter can be used to set a start by defining how long the output takes to dim up or down from the previous brightness value to the desired brightness when it receives telegram. **0 :** The related output is getting the desired brightness value immediately. **1...255 :** During this time, the related output is dimmed from previous brightness to the desired brightness.	**0**...255
Switch off at turn off brightness	This parameter, is used to enable or disable the switch off at turn off brightness. If an OFF telegram is receipt, whether the related lighting will be turn off or it will first reach a turn off brightness is determined. **Yes:** The turn off brightness is a parametrizable brightness value. **No:** The lighting switches off completely (the brightness value will be %0).	**no** yes

-> Turn off brightness	This parameter, is used to determine the brightness value for the switch off at turn off brightness. For example, the brightness at which the group members switch off when receiving an OFF telegram. If the turn off brightness is set outer of the maximum and minimum limits, the turn of brightness will be automatically calibrated to maximum or minimum.	1%...**30%**...100%
Feedback of switching state	This parameter, is used to enable or disable the output x status object in order to send information via this object to KNX bus line. **Yes:** The output x status group object is enabled. The information is given by 1 bit group object. **No:** The group object is not enabled.	**no** yes
-> send object value	This parameter, is used to determine the sending object value according to action type. **Change or request :** The status is sent when a change occurs or request demanding from the KNX bus line. **On request :** The status is sent when a request occurs from the KNX bus line.	**Change or request** On request

5.3.3.2. Dimming

Dimming controls reduce the output and energy consumption of light sources. Compared to on-off controls, they potentially increase energy savings, better align lighting with human needs, and can extend lamp life. Dimming systems should be considered carefully and compared to simpler systems that may also produce the desired results.

The dimming characteristics of the selected output is can be parameterized separately. Under certain circumstances, dimming configurations of each output are described below. The following image shows the A Output parameter page.

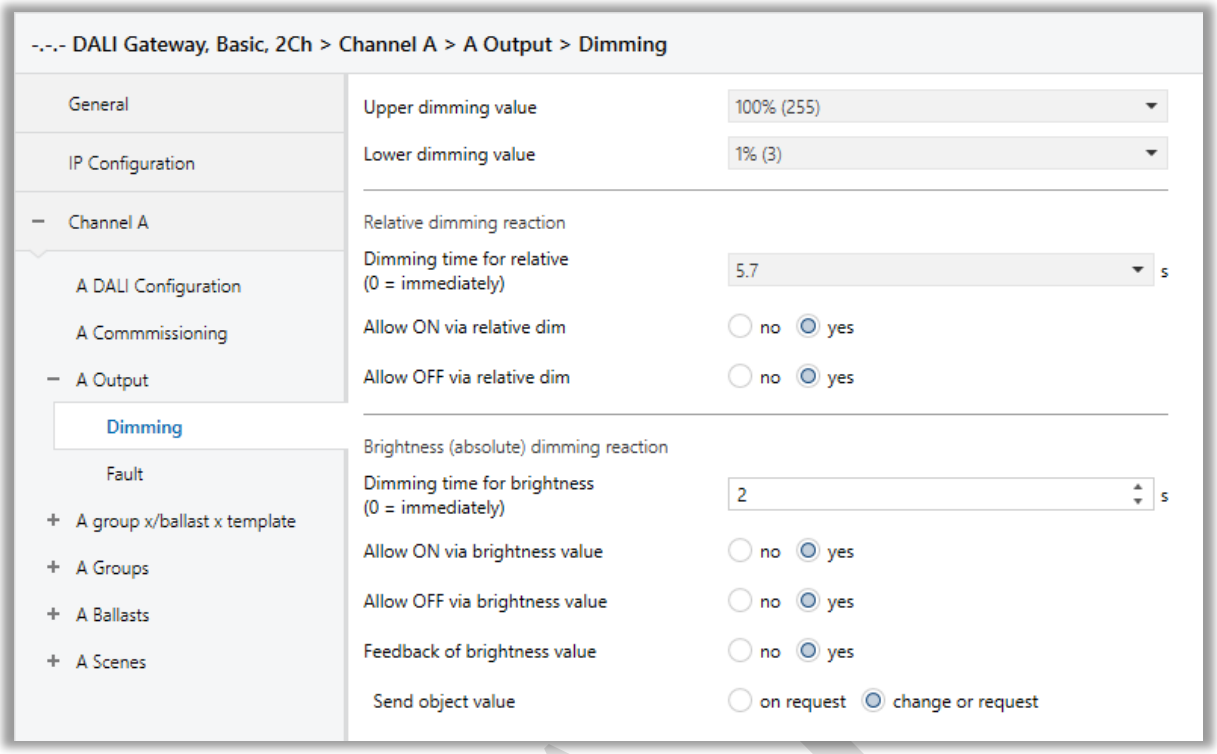

Fig 12 : Dimming Function Configuration

5.3.3.3. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Upper dimming value	This parameter defines the upper dimming value will be applied to the ballast or group. This value is stored in the KNX-DALI Gateway and thus applies for all functions. If the defined upper dimming value exceeds the maximum brightness value, the KNX-DALI Gateway equalize them.	1%...**100%**
Lower dimming value	This parameter defines the lower dimming value will be applied to the ballast or group. This value is stored in the KNX-DALI Gateway and thus applies for all functions. If the defined lower dimming value exceeds the maximum brightness value, the KNX-DALI Gateway equalize them. The lower dimming value also applies with dimming and scenes.	**1%**...100%
Relative dimming reaction		

Dimming time for relative (0 = immediately)	This parameter can be used to set a start by defining how long the output takes to dim up or down from the previous brightness value to the desired brightness when it receives telegram. **0 :** The related output is get the desired brightness value immediately. **1...255 :** During this time, the related output is dimmed from previous brightness to the desired brightness.	0.7, 1.0, 1.4, 2.0, 2.8, 4.0, **5.7**, 8.0, 11.3, 16.0, 22.6, 32.0, 45.3, 64.0, 90.5
Allow ON via relative dim	This parameter defines the ballast or group behaviour when switching on with dimming value. For example, the lighting is OFF and you send a %3 dimming telegram. If this object is selected as yes, the lighting will be switched on and its brightness is %3. Relative dim telegram can be sent via 4 bit value. **Yes:** Switching on using the relative dim telegram is allowed. **No:** Switching on using the relative dim telegram is not allowed. The ballast, group or output must be switched on in order to be dimmed.	No **yes**
Allow OFF via relative dim	This parameter defines the ballast or group behaviour when switching off with dimming value. For example, the lighting is ON and its dimming value is % 45 and when you send a dimming telegram for lowering %45. If this object is selected as yes, the lighting will be switched OFF. Relative dim telegram can be sent via 4 bit value. **Yes:** Switching OFF using the brightness telegram is allowed. **No:** Switching OFF using the brightness telegram is not allowed. The ballast or group dims to the lower dimming value and stops there.	**No** yes
Brightness (absolute) dimming reaction		
Dimming time for brightness (0 = immediately)	This parameter can be used to set a start by defining how long the output takes to dim up or down from the previous brightness value to the desired brightness when it receives telegram.	0...**2**...65535

	0 : The related output is get the desired brightness value immediately. **1...65535 :** During this time, the related output is dimmed from previous brightness to the desired brightness.	
Allow ON via brightness value	This parameter defines the ballast or group behaviour when switching on with brightness value. For example, the lighting is OFF and you send a %67 brightness telegram. If this object is selected as yes, the lighting will be switched on and its brightness is %67. Brightness telegram can be sent via 1 byte value. **Yes:** Switching on using the brightness telegram is allowed. **No:** Switching on using the brightness telegram is not allowed. The ballast, group or output must be switched on in order to be dimmed.	No **yes**
Allow OFF via brightness value	This parameter defines the ballast or group behaviour when switching off with dimming value. For example, the lighting is ON and its dimming value is % 45 and when you send a dimming telegram for lowering %45. If this object is selected as yes, the lighting will be switched OFF. Brightness(absolute) dim telegram can be send via 1 byte value. **Yes:** Switching OFF using the brightness telegram is allowed. **No:** Switching OFF using the brightness telegram is not allowed. The ballast or group dims to the lower dimming value and stops there.	No **yes**
Feedback of brightness value	This parameter, is used to enable or disable the current status of the DALI output brightness value is sent on the KNX bus line via related object. **Yes:** The output x status brightness value group object is enabled. The information is given by 1 byte group object.	**No** yes

	No: The group object is not enabled hence the status brightness value is not sent on the KNX bus line.	
-> send object value	This parameter, is used to determine the sending object value according to action type. **Change or request :** The status is sent when a change occurs or request demanding from the KNX bus line. **On request :** The status is sent when a request occurs from the KNX bus line.	On request **Change or request**

5.3.3.4. Fault

Output fault parameter page is used to determine X Output's reaction when a fault event occurs. ITR832-002 Interra KNX-DALI Gateway Dual Channel model's second fault parameter page can be configured separately.

Moreover, the status response of the individual ballast and group can be set in the respective ballast/group in the Group x fault and Ballast x fault parameter windows. The ballast/group template window does not apply to the output.

Special Notes

A ballast with a fault receives OFF status and a brightness value of 0.

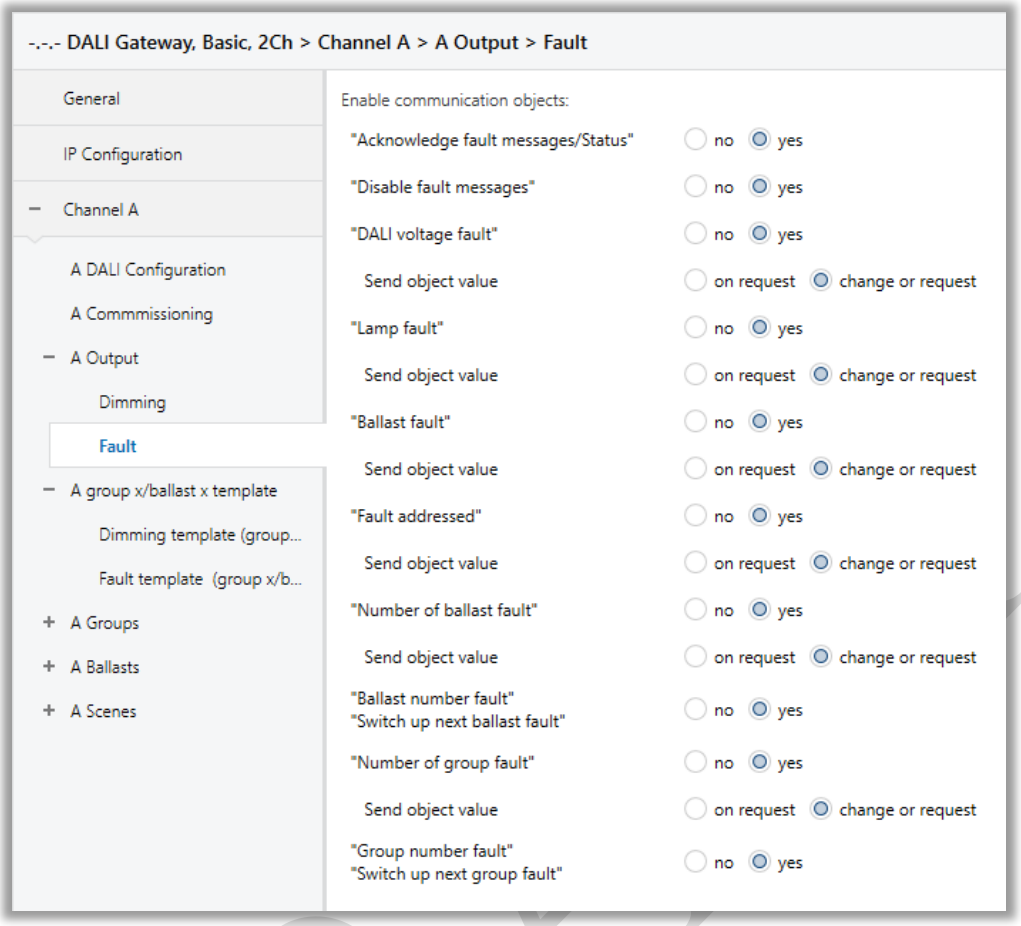

Fig 13 : Fault Function Configuration

5.3.3.5. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Enable communication objects		
"Acknowledge fault message /Status"	This parameter, is used to enable or disable the Acknowledge fault message. The acknowledge fault message function is related with the whole DALI output. Fault messages for ballasts and groups can be acknowledged separately but only exception of the KNX-DALI Gateway supply voltage fault. Generally, If the fault has been corrected, the fault messages are automatically reset. When the acknowledge fault message function is used, the messages are only cleared by acknowledgements. For example, with a value 0	**No** yes

	telegram should be sent via the corresponding group object for related fault. **Yes:** The acknowledge fault message function is enabled. The related group object is visible in the object list. **No:** The acknowledge fault message function and its group object is disabled.	
"Disable fault messages"	This parameter, is used to enable or disable the Disable fault messages function. Although fault messages disabled, the faults are evaluated behind but they are not sent to the KNX bus line. Also, related group objects' values are not updated. When fault messages are enabled, all faults are sent in accordance with their parametrization. If your system is under heavy KNX bus load, disabling the fault messages can be useful to lowering the telegram traffic **Yes :** The disable fault messages function and its group object is enabled. **No :** The disable fault messages function and its group object is disabled.	**No** yes
"DALI voltage fault"	This parameter, demonstrates that there is a DALI voltage fault in the line. For instance, if there is a short circuit or overvoltage case, there is a DALI voltage fault. **Yes :** The DALI voltage fault function and its group object is enabled. **No :** The DALI voltage fault function and its group object is disabled.	**No** yes
-> send object value	This parameter, is used to object value information to KNX bus according to following options : **On request:** The object value status is sent when a request occurs from KNX bus line. **Change or request:** The object value status is sent when change or a request occurs from KNX bus line.	On request **Change or request**

"Lamp fault"	This parameter, demonstrates that there is a lamp fault in the line. **Yes :** The Lamp fault function and its group object is enabled. **No :** The Lamp fault function and its group object is disabled.	**No** yes
-> send object value	This parameter, is used to object value information to KNX bus according to following options : **On request:** The object value status is sent when a request occurs from KNX bus line. **Change or request:** The object value status is sent when change or a request occurs from KNX bus line.	On request **Change or request**
"Ballast fault"	This parameter, demonstrates that there is a ballast fault in the line. The DALI devices are continually monitored regardless of whether the lamp is active or not. The DALI devices must be properly installed and have a supply voltage. Any existing lamp fault is reset, as it is no longer possible to state information about the group or ballast. When the KNX-DALI Gateway polls the DALI devices, a ballast fault can be detected. DALI **Yes :** The ballast fault function and its group object are enabled. **No :** The ballast fault function and its group object are disabled.	**No** yes
-> send object value	This parameter, is used to object value information to KNX bus according to following options : **On request:** The object value status is sent when a request occurs from KNX bus line. **Change or request:** The object value status is sent when change or a request occurs from KNX bus line.	On request **Change or request**
"Fault addressed"	This parameter, is used to send the status of ballast or group fault with a specific 2 byte data point type. (DPT:237.600) **Yes :** The fault addressed function and its group object is enabled. If a fault occurs in DALI line,	**No** yes

	the fault is demonstrated via value 1 bit in the specific 2 byte data. **No :** The fault addressed function and its group object is disabled.	
-> send object value	This parameter, is used to object value information to KNX bus according to following options : **On request:** The object value status is sent when a request occurs from KNX bus line. **Change or request:** The object value status is sent when change or a request occurs from KNX bus line.	On request **Change or request**
"Number of ballast fault"	This parameter, is used to establish the faulty DALI devices on the related output. Faulty devices mean that sum of lamp and ballast faults. **Yes :** The number of ballast fault function and its group object is enabled. **No :** The number of ballast fault function and its group object is disabled.	**No** yes
-> send object value	This parameter, is used to object value information to KNX bus according to following options : **On request:** The object value status is sent when a request occurs from KNX bus line. **Change or request:** The object value status is sent when change or a request occurs from KNX bus line.	On request **Change or request**
"Ballast number fault" **"Switch up next ballast fault"**	This parameter, is used to gain additional fault message displays. Also, this parameter enables two different group objects. **-> "Ballast number fault" :** This object demonstrates the number of the faulty ballasts. **-> "Switch up next ballast fault":** If there is more than one faulty ballast in DALI line, with this object the address of the next DALI device with its fault can be displayed. The switching continues in a loop : when switched again at the last faulty device, the display shows the first faulty device.	**No** yes

	Yes : The ballast number fault & switch up next ballast fault function and their group objects are enabled. **No :** The ballast number fault & switch up next ballast fault function and their group objects are disabled.	
"Number of group fault"	This parameter, is used to determine the number of faulty groups(lamp or ballast fault) on the DALI line. **Yes :** The number of group fault function and its group object is enabled. **No :** The number of group fault function and its group object is disabled.	**No** yes
-> send object value	This parameter, is used to object value information to KNX bus according to following options : **On request:** The object value status is sent when a request occurs from KNX bus line. **Change or request:** The object value status is sent when change or a request occurs from KNX bus line.	On request **Change or request**
"Group number fault" **"Switch up next group fault"**	This parameter, is used to gain additional fault message displays. Also, this parameter enables two different group objects. **-> "Group number fault" :** This object demonstrates the number of the faulty groups. **-> "Switch up next group fault":** If there is more than one faulty group in DALI line, with this object the address of the next DALI group with its fault can be displayed. The switching continues in a loop : when switched again at the last faulty group, the display shows the first faulty group. **Yes :** The group number fault & switch up next group fault function and their group objects are enabled. **No :** The group number fault & switch up next group fault function and their group objects are disabled.	**No** yes

5.3.4. A Group x / Ballast x Template

The group x/ballast x template parameter tab provides access to template parameter pages that can relate to any group or ballast on the DALI output. Whether they relate to the parametrization of a group or ballast in the template window or in an individual parameter window is selected when first parameterizing the groups or ballasts. The template windows have a major advantage in that the settings made here relate to all groups or ballasts, so each group or ballast on the DALI output reacts in the same way.

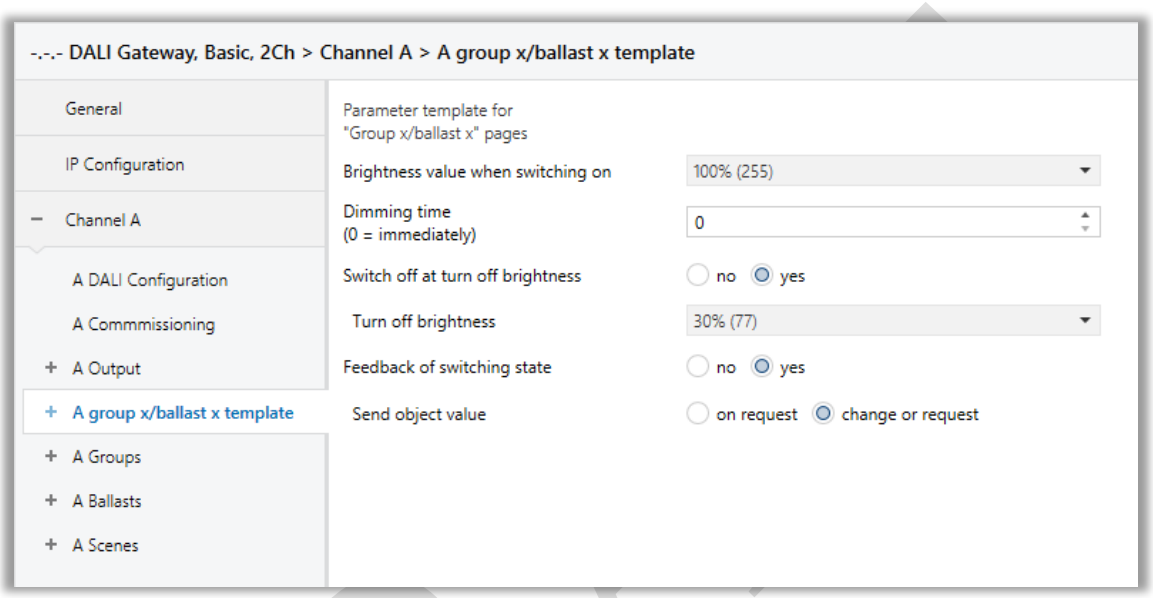

Fig 14 : A Group x / Ballast x Template Parameter Page Configuration

Using the template windows also considerably reduces the amount of parametrization work involved and provides a clearer overview. As a parameter change in the template window affects every group or ballast, the programmer only needs to change one parameter rather than up to 16 group and 64 ballast parameters. For example, if the maximum brightness value for the system needs to be limited to 90%, making this setting in the template window applies it to all groups and ballasts.

The template parameter window is illustrated above. Also, the parameter descriptions are described below. They are the same as the individual parameter windows except for the fact that they relate to all groups and ballasts while the individual windows relate only to a particular group or specific ballast.

5.3.4.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Parameter template for "Group x/ballast x" pages		
Brightness value when switching on	This parameter, is used to determine the brightness value when the DALI group or ballast switches on after receiving an ON telegram. The dimming thresholds(upper and lower dimming value) are calibrated automatically to the maximum or minimum dimming values. **Previous value:** The group or ballast switch on at the brightness value it was switched off at by the Switch group object. The brightness value of each ballast and group are saved when they are switched off, and restored when they are switched back on. If a ballast or group is OFF when switched off, the previous brightness value is saved as 0% (OFF) and is switched back on in the same state. This means that the group or ballast will be switched off unless it has a brightness value other than 0 when switched back on. **0%...100% :** When the group or ballast switch on, the selected % brightness value will be set to each group or ballast that are not configured individually.	Previous value 0%...**100%**
Dimming time **(0 = immediately)**	This parameter can be used to set a start by defining how long the output takes to dim up or down from the previous brightness value to the desired brightness when it receives telegram. **0 :** The corresponding output immediately achieves the desired brightness value. **1...255 :** During this time, the related output is dimmed from previous brightness to the desired brightness.	**0**...255
Switch off at turn off brightness	This parameter, is used to enable or disable the switch off at turn off brightness. If an OFF telegram is receipt, whether the related lighting will be turn off or it will first reach a turn off brightness is determined.	**No** yes

	Yes: The turn off brightness is a parametrizable brightness value. **No:** The lighting switches off completely (the brightness value will be %0).	
-> Turn off brightness	This parameter, is used to determine the brightness value for the switch off at turn off brightness. For example, the brightness at which the group members switch off when receiving an OFF telegram. If the turn off brightness is set outer of the maximum and minimum limits, the turn of brightness will be automatically calibrated to maximum or minimum.	1%...**30%**...100%
Feedback of switching state	This parameter, is used to enable or disable the output x – [x] Group status object or output x – [x] ballast status object in order to send information via this object to KNX bus line. **Yes:** The output x – [x] Group status object or output x – [x] ballast status group object is enabled. The information is given by 1 bit group object. **No:** The group object is not enabled.	**No** yes
-> send object value	This parameter, is used to determine the sending object value according to action type. **Change or request :** The status is sent when a change occurs or request demanding from the KNX bus line. **On request :** The status is sent when a request occurs from the KNX bus line.	On request **Change or request**

5.3.4.2. Dimming Template (Group x / Ballast x)

The dimming characteristics of the selected output is can be parameterized from a template. Under certain circumstances, dimming configurations of template parameter page are described below. The following image shows the Dimming template (group x / ballast x) parameter page.

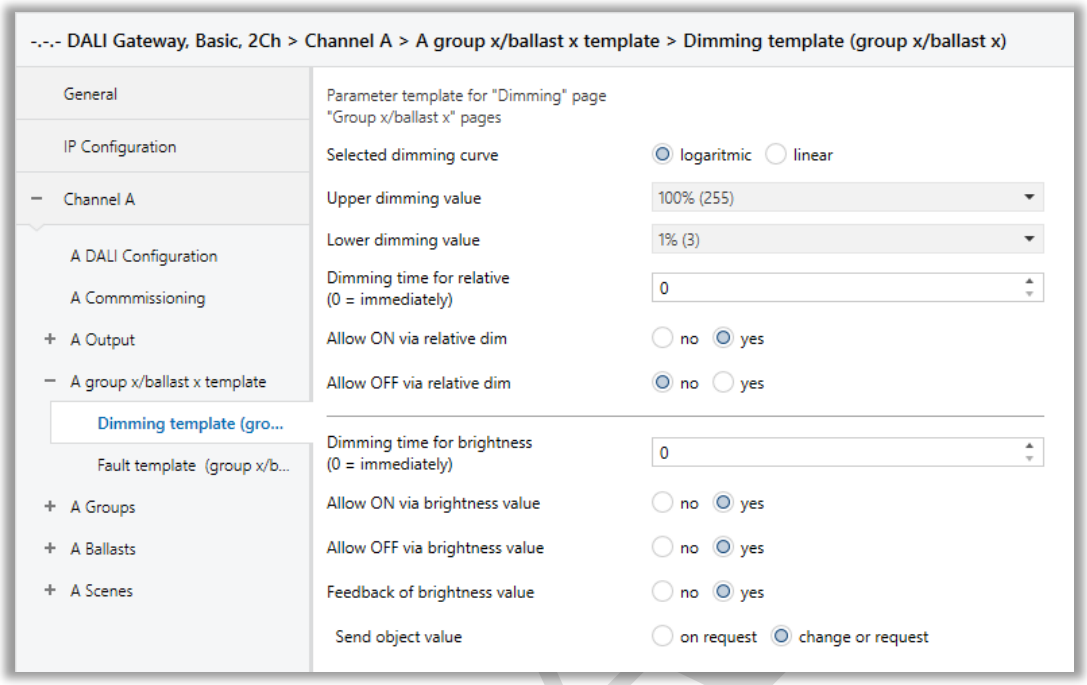

Fig 15 : Dimming Template (Group x / Ballast x) Configuration

5.3.4.3. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Parameter template for "Dimming" page "Group x/ballast x" pages		
Selected dimming curve	This parameter, is used to determine the DALI characteristic. You can define whether the KNX setpoint and KNX status value refer to the DALI control value or luminous flux. **Logarithmic:** KNX value refers to DALI control value. **Linear:** KNX value refers to the luminous flux.	**Logarithmic** linear
Upper dimming value	This parameter defines the upper dimming value will be applied to the ballast or group. This value is stored in the KNX-DALI Gateway and thus applies for all functions. If the defined upper	1%...**100%**

	dimming value exceeds the maximum brightness value, the KNX-DALI Gateway equalize them.	
Lower dimming value	This parameter defines the lower dimming value will be applied to the ballast or group. This value is stored in the KNX-DALI Gateway and thus applies for all functions. If the defined lower dimming value exceeds the maximum brightness value, the KNX-DALI Gateway equalize them. The lower dimming value also applies with dimming and scenes.	**1%**...100%
Dimming time for relative **(0 = immediately)**	This parameter can be used to set a start by defining how long the output takes to dim up or down from the previous brightness value to the desired brightness when it receives telegram. **0 :** The corresponding output immediately achieves the desired brightness value. **1...255 :** During this time, the related output is dimmed from previous brightness to the desired brightness.	**0**...255
Allow ON via relative dim	This parameter defines the ballast or group behaviour when switching on with dimming value. For example, the lighting is OFF and you send a %3 dimming telegram. If this object is selected as yes, the lighting will be switched on and its brightness is %3. Relative dim telegram can be sent via 4 bit value. **Yes:** Switching on using the relative dim telegram is allowed. **No:** Switching on using the relative dim telegram is not allowed. The ballast, group or output must be switched on in order to be dimmed.	No **yes**

Allow OFF via relative dim	This parameter defines the ballast or group behaviour when switching off with dimming value. For example, the lighting is ON and its dimming value is % 45 and when you send a dimming telegram for lowering %45. If this object is selected as yes, the lighting will be switched OFF. Relative dim telegram can be sent via 4 bit value. **Yes:** Switching OFF using the brightness telegram is allowed. **No:** Switching OFF using the brightness telegram is not allowed. The ballast or group dims to the lower dimming value and stops there.	**No** yes
Dimming time for brightness (0 = immediately)	This parameter can be used to set a start by defining how long the output takes to dim up or down from the previous brightness value to the desired brightness when it receives telegram. **0 :** The corresponding output immediately achieves the desired brightness value. **1...65535 :** During this time, the related output is dimmed from previous brightness to the desired brightness.	**0**...65535
Allow ON via brightness value	This parameter defines the ballast or group behaviour when switching on with brightness value. For example, the lighting is OFF and you send a %67 brightness telegram. If this object is selected as yes, the lighting will be switched on and its brightness is %67. Brightness telegram can be sent via 1 byte value. **Yes:** Switching on using the brightness telegram is allowed. **No:** Switching on using the brightness telegram is not allowed. The ballast, group or output must be switched on in order to be dimmed.	No **yes**

Allow OFF via brightness value	This parameter defines the ballast or group behaviour when switching off with dimming value. For example, the lighting is ON and its dimming value is % 45 and when you send a dimming telegram for lowering %45. If this object is selected as yes, the lighting will be switched OFF. Brightness(absolute) dim telegram can be send via 1 byte value. **Yes:** Switching OFF using the brightness telegram is allowed. **No:** Switching OFF using the brightness telegram is not allowed. The ballast or group dims to the lower dimming value and stops there.	No **yes**
Feedback of brightness value	This parameter, is used to enable or disable the DALI output x – [x] Group status brightness value object or output x – [x] ballast status brightness value object in order to send brightness value on the KNX bus line via related object. **Yes:** The DALI output x – [x] Group status brightness value object or output x – [x] ballast status brightness value group object is enabled. The information is given by 1 byte group object. **No:** The DALI output x – [x] Group status brightness value object or output x – [x] ballast status brightness value object is not enabled hence the status brightness value is not sent on the KNX bus line.	**No** yes
-> send object value	This parameter, is used to determine the sending object value according to action type. **Change or request :** The status is sent when a change occurs or request demanding from the KNX bus line. **On request :** The status is sent when a request occurs from the KNX bus line.	On request **Change or request**

5.3.4.3. Fault Template (Group x / Ballast x)

Parameters for the reaction of the ballast or group to KNX/DALI voltage or gateway supply voltage failure and recovery are made in this parameter window.

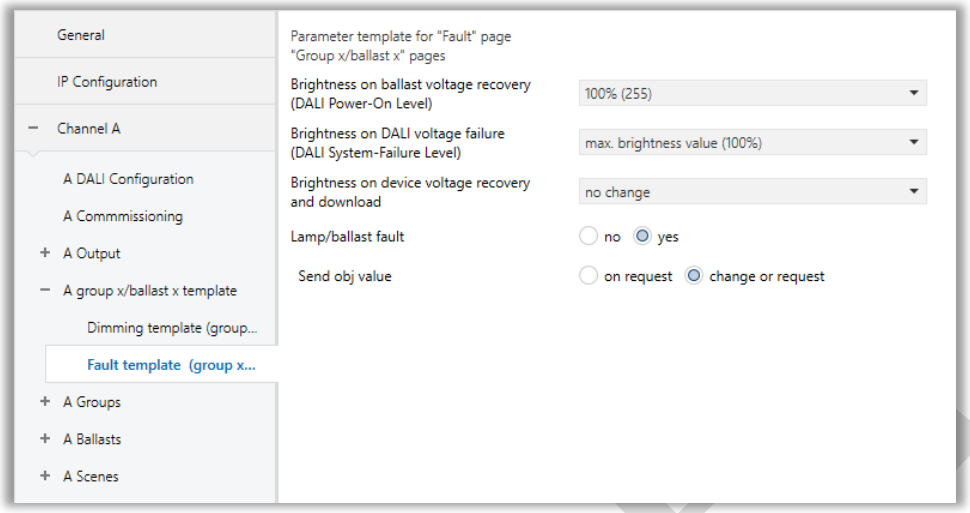

Fig 16 : Fault Template (Group x / Ballast x) Configuration

5.3.4.4. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Parameter template for "Fault" page "Group x/ballast x" pages		
Brightness on ballast voltage recovery (DALI Power-On Level)	This parameter is used to determine of a ballast or all ballasts that remain in a group to react when a ballast supply voltage recovery occurs. A save function can be used to save the last value to proper storage location. The brightness value (DALI Power-On Level) that the ballast uses to switch on the lamp when the ballast supply voltage recovers is stored in this location. **Current KNX value:** The DALI device (ballast) is switched on using the previous set brightness value used before ballast voltage failure. To use this function, the system ballasts must support last situation values. If you face any problem, please contact ballast manufacturer. **0%...100%:** The DALI device is switched on to the set brightness value from %0 to %100.	Current KNX value 0%...**100%**

Brightness on DALI voltage failure (DALI System-Failure Level)	This parameter is used to determine the ballast or group reaction that take their parameter configuration via fault template when a DALI voltage failure occurs such as DALI short circuit or KNX-DALI Gateway supply voltage failure. **Max. brightness value:** The ballast/group ballasts switch on to the maximum brightness value. **Min. brightness value:** The ballast/group ballasts switch on to the minimum brightness value. **OFF:** The ballast or group that applied from the template ballasts switch off. **No change:** The brightness of the ballast/group ballasts does not change. DALI devices that are switched off remain off.	max. brightness value min. brightness value OFF **No change**
Brightness on device voltage recovery and download	This parameter determines the value will be sent. **Last value before failure:** The ballast or group is restored to its before failure status. After the device voltage recovery, the ballast or group must be set at least two or more seconds before to restore. **Max. brightness value:** The ballast/group ballasts switch on to the maximum brightness value. **Min. brightness value:** The ballast/group ballasts switch on to the minimum brightness value. **OFF:** The ballast or group that applied from the template ballasts switch off. **No change:** The brightness of the ballast/group ballasts does not change. DALI devices that are switched off remain off.	max. brightness value min. brightness value OFF no change **last value before failure**
Lamp/ballast fault	This parameter, is used to enable or disable the lamp/ballast fault. This parameter indicates a fault in a group or ballast. Yes : When this option is selected, the related fault object is enabled and visible. No : The related fault object is disabled.	**No** yes

-> send object value	This parameter, is used to object value information to KNX bus according to following options : **On request:** The object value status is sent when a request occurs from KNX bus line. **Change or request:** The object value status is sent when change or a request occurs from KNX bus line.	On request **Change or request**

Special Note

According to the DALI standard, no exact priority has been defined between Brightness on ballast voltage recovery & Brightness on DALI voltage failure function. The reaction depends on when the ballast is ready to receive again its power and when it detects that there is no DALI voltage. Both depend on the electronics and firmware of the ballast.

5.3.5. A GROUPS

This parameter page is where groups are enabled for use on the DALI output. As a group and a ballast are equivalents on the DALI output hence, they have the same functions and parameter windows. The group parameter window and its properties are described below. The related parameter window for the ballast looks exactly the same, except with the word ballast instead of group.

Selecting the Yes option under Enable DALI groups (group control) or Enable DALI ballasts (individual control) in the A DALI configuration parameter window enables the X groups and X ballasts parameter windows.

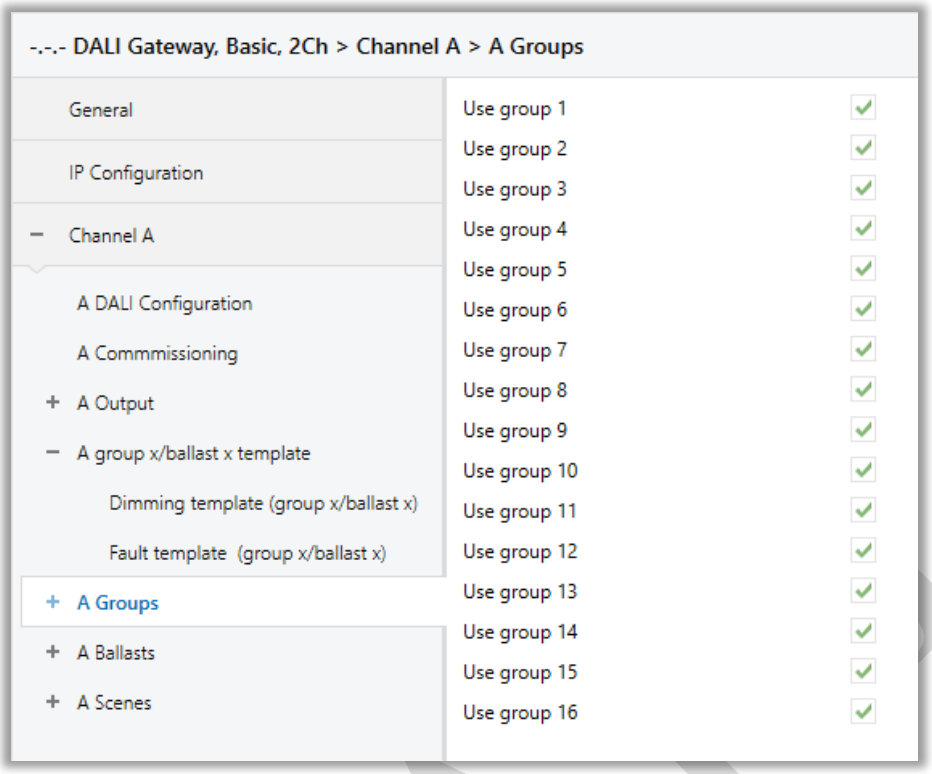

Fig 17 : A Groups Configuration

5.3.5.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Use group 1 ... **Use group 16**	This parameter, is used to enable or disable the related group. **Checked:** Group x is enabled for the output. This option enables further parameter pages and group objects for that group. **Unchecked:** Group x is not enabled for the output. The related parameter pages and groups are not shown.	**Checked** Unchecked

Special Note

Enabling a ballast in the A ballasts parameter window makes it an individual DALI device. It has been specified for individual control and cannot be assigned to a group.

5.3.5.2. [x] Group

As previously mentioned, there are 16 possible Groups. In this section, due to the all of the groups parameters and configurations are same only one group will be explained.

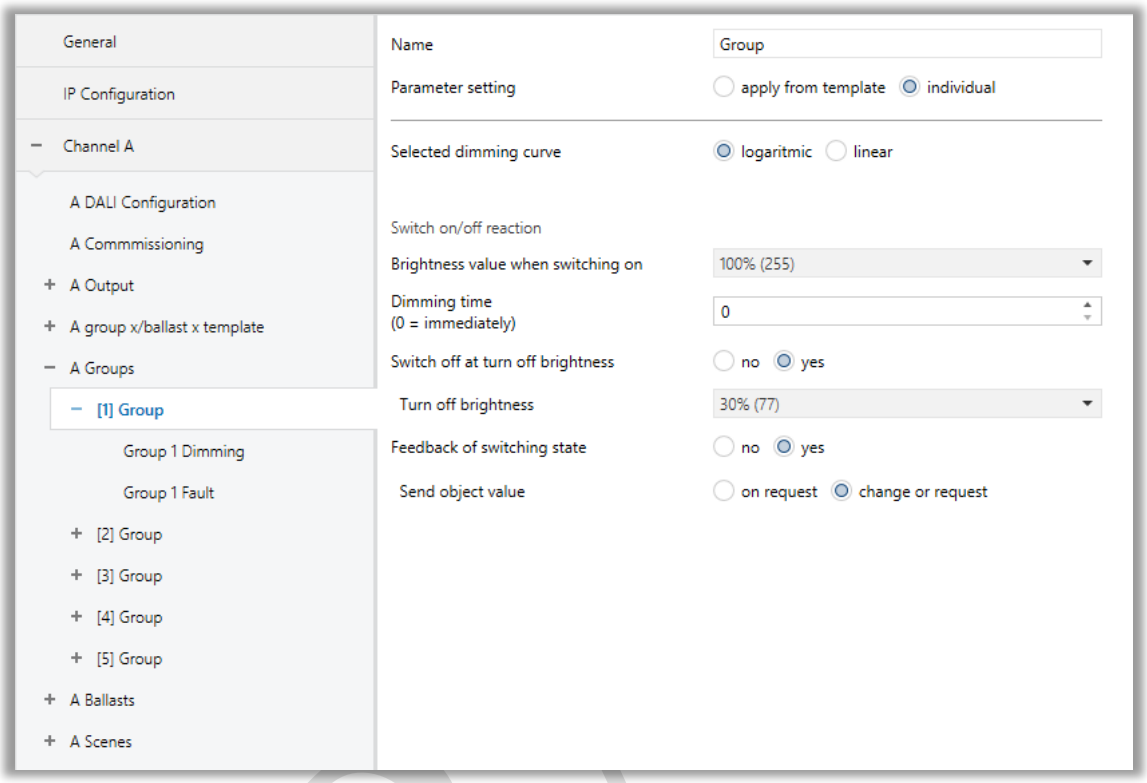

Fig 18 : [x] Group Parameter Page Configuration

5.3.5.3. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Name	This parameter, is used to determine a group name. Each group can be assigned a name consisting of up to 40 characters. The name is stored in the ETS database, and also stored in the gateway by downloading the application.	**Group**
Parameter setting	This parameter, is used to determine the related group's settings according to template or with individual configuration. **Apply from template :** The related group's configuration is taken from the X group x / ballast x template.	**Apply from template** individual

	Individual : The related group is configured individually. Corresponding parameters for the related group are shown on the parameter page. The individual parameters are same as the X group x / ballast x template parameter page. Specific configurations can be made from this page that exclude from template.	
Selected dimming curve	This parameter, is used to determine the DALI characteristic. You can define whether the KNX setpoint and KNX status value refer to the DALI control value or luminous flux. **Logarithmic:** KNX value refers to DALI control value. **Linear:** KNX value refers to the luminous flux.	**Logarithmic** linear
Switch on / off reaction		
Brightness value when switching on	This parameter, is used to determine the brightness value when the DALI group switches on after receiving an ON telegram. The dimming thresholds(upper and lower dimming value) are calibrated automatically to the maximum or minimum dimming values. **Previous value:** The group switches on at the brightness value it was switched off at by the Switch group object. The brightness value of the related group is saved when it is switched off, and restored when it is switched back on. If a group is OFF when switched off, the previous brightness value is saved as 0% (OFF) and is switched back on in the same state. This means that the group will be switched off unless it has a brightness value other than 0 when switched back on. **0%...100% :** When the related group switches on, the selected % brightness value will be set to each group that are not configured individually.	Previous value 0%...**100%**

Dimming time (0 = immediately)	This parameter can be used to set a start by defining how long the output takes to dim up or down from the previous brightness value to the desired brightness when it receives telegram. **0 :** The corresponding output immediately achieves the desired brightness value. **1...255 :** During this time, the related output is dimmed from previous brightness to the desired brightness.	**0**...255
Switch off at turn off brightness	This parameter, is used to enable or disable the switch off at turn off brightness. If an OFF telegram is receipt, whether the related lighting will be turn off or it will first reach a turn off brightness is determined. **Yes:** The turn off brightness is a parametrizable brightness value. **No:** The lighting switches off completely (the brightness value will be %0).	**No** yes
-> Turn off brightness	This parameter, is used to determine the brightness value for the switch off at turn off brightness. For example, the brightness at which the group members switch off when receiving an OFF telegram. If the turn off brightness is set outer of the maximum and minimum limits, the turn of brightness will be automatically calibrated to maximum or minimum.	1%...**30%**...100%
Feedback of switching state	This parameter, is used to enable or disable the output x – [x] Group status object in order to send information via this object to KNX bus line. **Yes:** The output x – [x] Group status object is enabled. The information is given by 1 bit group object. **No:** The group object is not enabled.	**No** yes

-> Send object value	This parameter, is used to determine the sending object value according to action type. **Change or request :** The status is sent when a change occurs or request demanding from the KNX bus line. **On request :** The status is sent when a request occurs from the KNX bus line.	On request **Change or request**

5.3.5.4. Group X Dimming

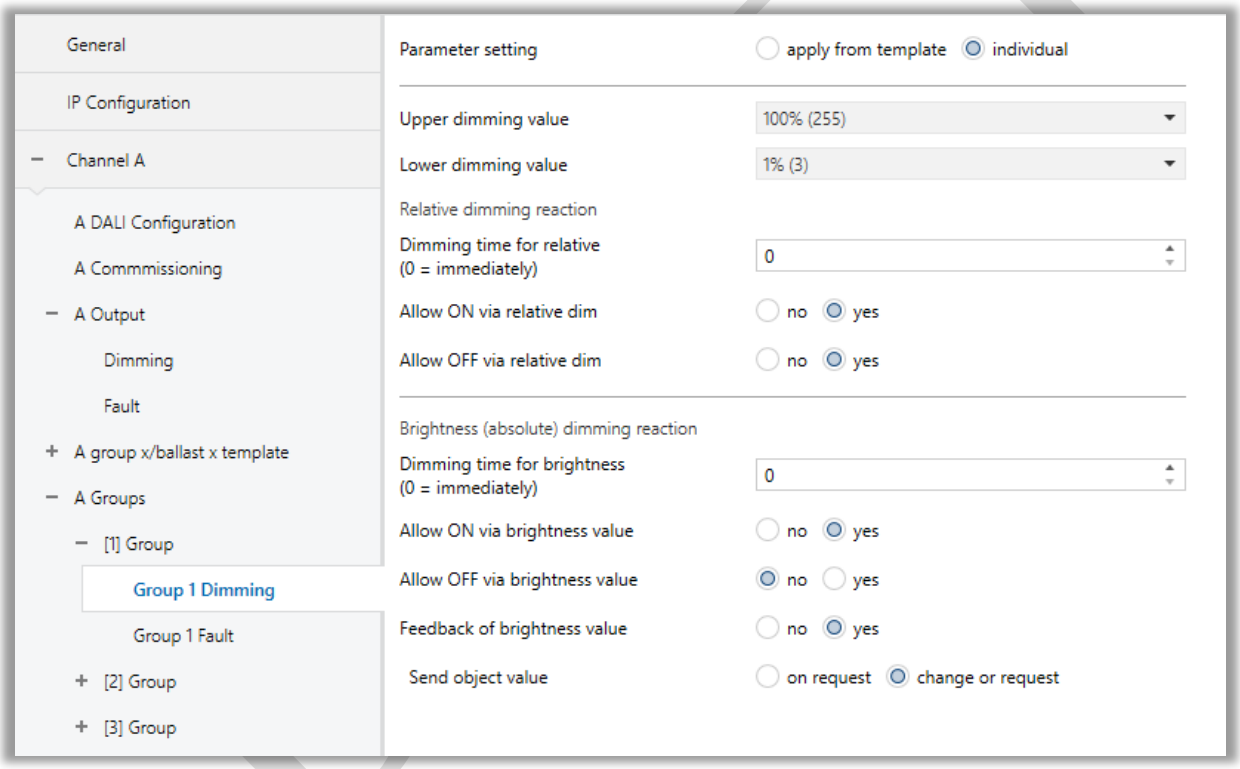

Fig 19 : Group X Dimming Parameter Page Configuration

5.3.5.5. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Parameter setting	This parameter, is used to determine the related group's settings according to template or with individual configuration.	**Apply from template** individual

	Apply from template : The related group's configuration is taken from the Dimming template group x / ballast x. **Individual :** The related group is configured individually. Corresponding parameters for the related ballast are shown on the parameter page. The individual parameters are same as the Dimming template group x / ballast x parameter page. Specific configurations can be made from this page that exclude from template.	
Upper Dimming Value	This parameter defines the upper dimming value will be applied to the ballast or group. This value is stored in the KNX-DALI Gateway and thus applies for all functions. If the defined upper dimming value exceeds the maximum brightness value, the KNX-DALI Gateway equalize them.	1%...**100%**
Lower Dimming Value	This parameter defines the lower dimming value will be applied to the ballast or group. This value is stored in the KNX-DALI Gateway and thus applies for all functions. If the defined lower dimming value exceeds the maximum brightness value, the KNX-DALI Gateway equalize them. The lower dimming value also applies with dimming and scenes.	**1%**...100%
Relative dimming reaction		
Dimming time for relative (0 = immediately)	This parameter can be used to set a start by defining how long the output takes to dim up or down from the previous brightness value to the desired brightness when it receives telegram. **0 :** The corresponding output immediately achieves the desired brightness value. **1...255 :** During this time, the related output is dimmed from previous brightness to the desired brightness.	**0**...255

Allow ON via relative dim	This parameter defines the ballast or group behaviour when switching on with dimming value. For example, the lighting is OFF and you send a %3 dimming telegram. If this object is selected as yes, the lighting will be switched on and its brightness is %3. Relative dim telegram can be sent via 4 bit value. **Yes:** Switching on using the relative dim telegram is allowed. **No:** Switching on using the relative dim telegram is not allowed. The ballast, group or output must be switched on in order to be dimmed.	**Yes** no
Allow OFF via relative dim	This parameter defines the ballast or group behaviour when switching off with dimming value. For example, the lighting is ON and its dimming value is % 45 and when you send a dimming telegram for lowering %45. If this object is selected as yes, the lighting will be switched OFF. Relative dim telegram can be sent via 4 bit value. **Yes:** Switching OFF using the brightness telegram is allowed. **No:** Switching OFF using the brightness telegram is not allowed. The ballast or group dims to the lower dimming value and stops there.	Yes **no**
Brightness (absolute) dimming reaction		
Dimming time for brightness (0 = immediately)	This parameter can be used to set a start by defining how long the output takes to dim up or down from the previous brightness value to the desired brightness when it receives telegram. **0** : The corresponding output immediately achieves the desired brightness value. **1...65535 :** During this time, the related output is dimmed from previous brightness to the desired brightness.	**0**...65535

Allow ON via brightness value	This parameter defines the ballast or group behaviour when switching on with brightness value. For example, the lighting is OFF and you send a %67 brightness telegram. If this object is selected as yes, the lighting will be switched on and its brightness is %67. Brightness telegram can be sent via 1 byte value. **Yes:** Switching on using the brightness telegram is allowed. **No:** Switching on using the brightness telegram is not allowed. The ballast, group or output must be switched on in order to be dimmed.	No **yes**
Allow OFF via brightness value	This parameter defines the ballast or group behaviour when switching off with dimming value. For example, the lighting is ON and its dimming value is % 45 and when you send a dimming telegram for lowering %45. If this object is selected as yes, the lighting will be switched OFF. Brightness(absolute) dim telegram can be sent via 1 byte value. **Yes:** Switching OFF using the brightness telegram is allowed. **No:** Switching OFF using the brightness telegram is not allowed. The ballast or group dims to the lower dimming value and stops there.	No **yes**
Feedback of brightness value	This parameter, is used to enable or disable the DALI output x – [x] Group status brightness value object in order to send brightness value on the KNX bus line via related object. **Yes:** The DALI output x – [x] Group status brightness value group object is enabled. The information is given by 1 byte group object. **No:** The DALI output x – [x] Group status brightness value group object is not enabled hence the status brightness value is not sent on the KNX bus line.	**No** yes

-> Send object value	This parameter, is used to determine the sending object value according to action type. **Change or request :** The status is sent when a change occurs or request demanding from the KNX bus line. **On request :** The status is sent when a request occurs from the KNX bus line.	On request **Change or request**

5.3.5.6. Group X Fault

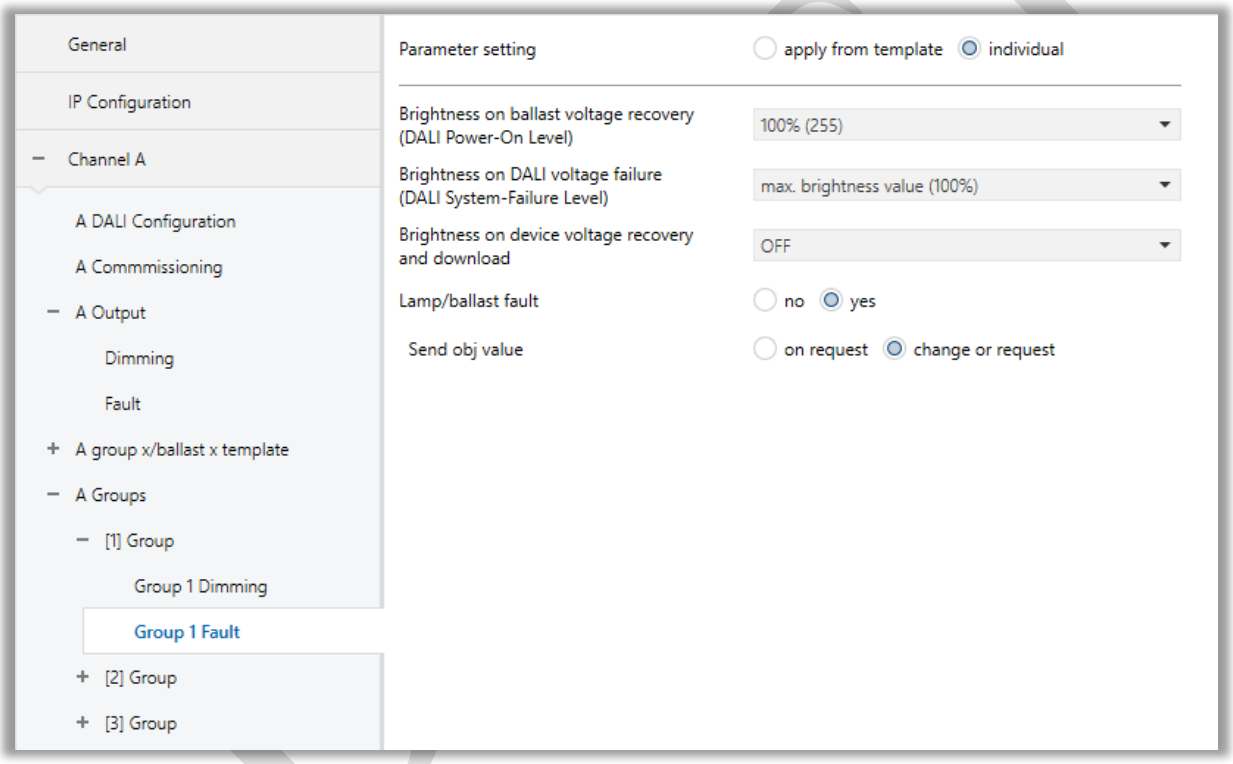

Fig 20 : Group X Fault Parameter Page Configuration

5.3.5.7. Parameters List

PARAMETER	DESCRIPTION	VALUES
Parameter setting	This parameter, is used to determine the related group's settings according to template or with individual configuration.	**Apply from template** individual

	Apply from template : The related group's configuration is taken from the fault template(group x / ballast x). **Individual :** The related group is configured individually. Corresponding parameters for the related group are shown on the parameter page. The individual parameters are same as the fault template(group x / ballast x) parameter page. Specific configurations can be made from this page that exclude from template.	
Brightness on ballast voltage recovery (DALI Power-On Level)	This parameter is used to determine of a ballast or all ballasts that remain in a group to react when a ballast supply voltage recovery occurs. A save function can be used to save the last value to proper storage location. The brightness value (DALI Power-On Level) that the ballast uses to switch on the lamp when the ballast supply voltage recovers is stored in this location. **Current KNX value:** The DALI device (ballast) is switched on using the previous set brightness value used before ballast voltage failure. To use this function, the system ballasts must support last situation values. If you face any problem, please contact ballast manufacturer. **0%...100%:** The DALI device is switched on to the set brightness value from %0 to %100.	%0...**%100** Current KNX value
Brightness on DALI voltage failure (DALI System-Failure Level)	This parameter is used to determine the ballast or group reaction that take their parameter configuration via fault template when a DALI voltage failure occurs such as DALI short circuit or KNX-DALI Gateway supply voltage failure. **Max. brightness value:** The ballast/group ballasts switch on to the maximum brightness value. **Min. brightness value:** The ballast/group ballasts switch on to the minimum brightness value. **OFF:** The ballast or group that applied from the template ballasts switch off. **No change:** The brightness of the ballast/group ballasts does not change. DALI devices that are switched off remain off.	Max. Brightness value (100%) Min. Brightness value (1%) OFF **No change**

Brightness on device voltage recovery and download	This parameter determines the value will be sent. **Last value before failure:** The ballast or group is restored to its before failure status. After the device voltage recovery, the ballast or group must be set at least two or more seconds before to restore. **Max. brightness value:** The ballast/group ballasts switch on to the maximum brightness value. **Min. brightness value:** The ballast/group ballasts switch on to the minimum brightness value. **OFF:** The ballast or group that applied from the template ballasts switch off. **No change:** The brightness of the ballast/group ballasts does not change. DALI devices that are switched off remain off.	Max. Brightness value (100%) Min. Brightness value (1%) OFF No change **Last value before failure**
Lamp/ballast fault	This parameter, is used to enable or disable the lamp/ballast fault. This parameter indicates a fault in a group or ballast. Yes : When this option is selected, the related fault object is enabled and visible. No : The related fault object is disabled.	**No** yes
Send object value	This parameter, is used to object value information to KNX bus according to following options : **On request:** The object value status is sent when a request occurs from KNX bus line. **Change or request:** The object value status is sent when change or a request occurs from KNX bus line.	On request **Change or request**

5.3.6. A BALLASTS

This parameter page is where ballasts are enabled for use on the DALI output. As a group and a ballast are equivalents on the DALI output hence, they have the same functions and parameter windows. The ballast parameter window and its properties are described below. The related parameter window for the ballast groups exactly the same, except with the word group instead of ballast.

Selecting the Yes option under Enable DALI groups (group control) or Enable DALI ballasts (individual control) in the A DALI configuration parameter window enables the X groups and X ballasts parameter windows.

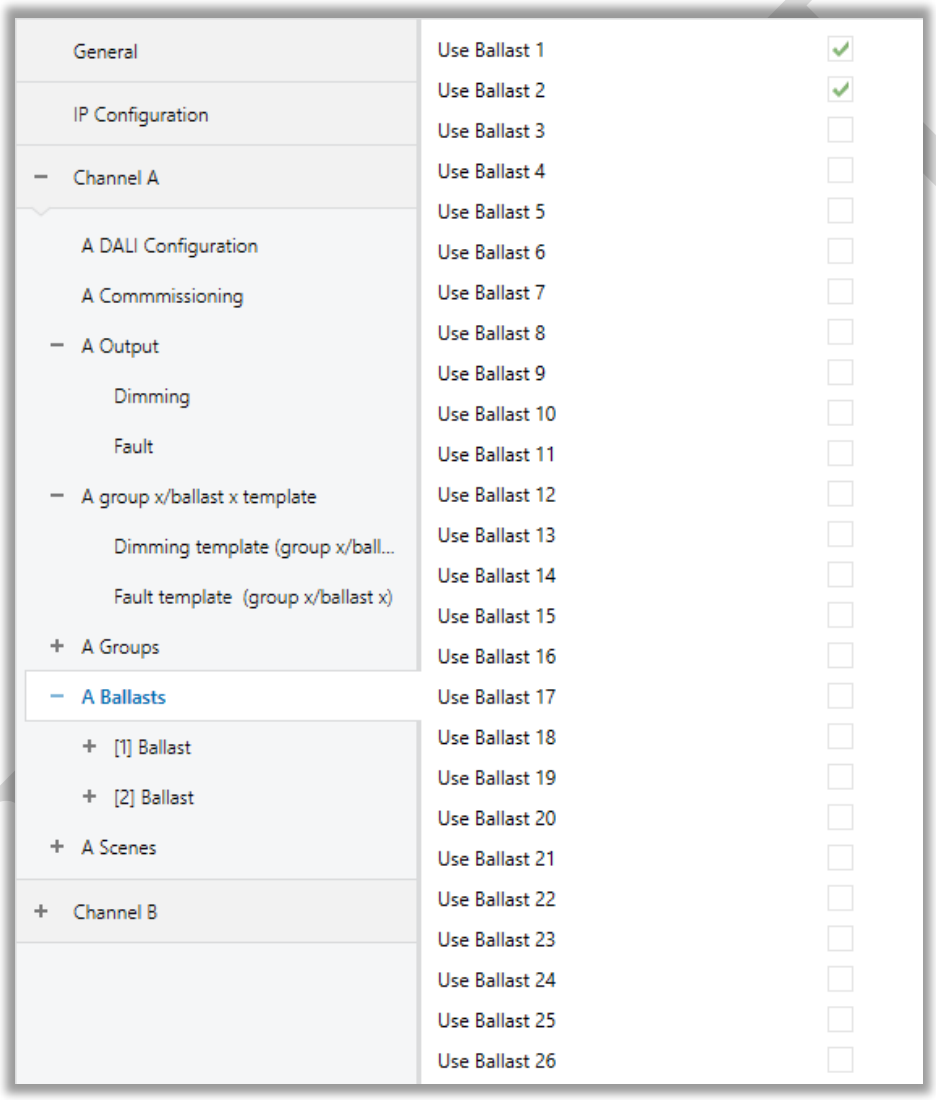

Fig 21 : A Ballasts Configuration

5.3.6.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Use Ballast 1 ... **Use Ballast 64**	This parameter, is used to enable or disable the related ballast. **Checked: Ballast** x is enabled for the output. This option enables further parameter pages and group objects for that ballast. **Unchecked:** Ballast x is not enabled for the output. The related parameter pages and groups are not shown.	**Checked** Unchecked

5.3.6.2. [x] Ballast

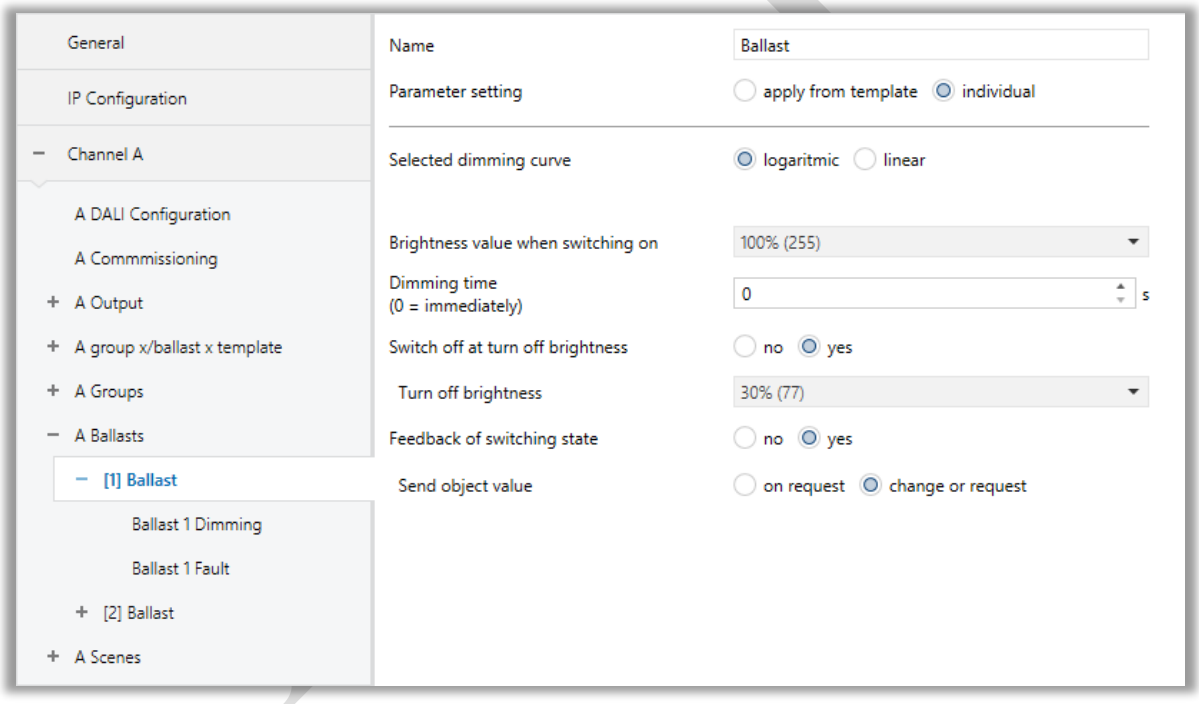

Fig 22 : [x] Ballast Parameter Page Configuration

5.3.6.3. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Name	This parameter, is used to determine a ballast name. Each group or ballast can be assigned a name consisting of up to 40 characters. The name is stored in the ETS database, and also stored in the gateway by downloading the application.	**Ballast**
Parameter setting	This parameter, is used to determine the related ballast's settings according to template or with individual configuration. **Apply from template :** The related ballast's configuration is taken from the X group x / ballast x template. **Individual :** The related ballast is configured individually. Corresponding parameters for the related ballast are shown on the parameter page. The individual parameters are same as the X group x / ballast x template parameter page. Specific configurations can be made from this page that exclude from template.	**Apply from template** individual
Selected dimming curve	This parameter, is used to determine the DALI characteristic. You can define whether the KNX setpoint and KNX status value refer to the DALI control value or luminous flux. **Logarithmic:** KNX value refers to DALI control value. **Linear:** KNX value refers to the luminous flux.	**Logarithmic** linear

Brightness value when switching on	This parameter, is used to determine the brightness value when the DALI ballast switches on after receiving an ON telegram. The dimming thresholds(upper and lower dimming value) are calibrated automatically to the maximum or minimum dimming values. **Previous value:** The ballast switches on at the brightness value it was switched off at by the Switch group object. The brightness value of the related ballast is saved when it is switched off, and restored when it is switched back on. If a ballast is OFF when switched off, the previous brightness value is saved as 0% (OFF) and is switched back on in the same state. This means that the ballast will be switched off unless it has a brightness value other than 0 when switched back on. **0%...100% :** When the related ballast switches on, the selected % brightness value will be set to each ballast that are not configured individually.	Previous value 0%...**100%**
Dimming time (0 = immediately)	This parameter can be used to set a start by defining how long the output takes to dim up or down from the previous brightness value to the desired brightness when it receives telegram. **0 :** The corresponding output immediately achieves the desired brightness value. **1...255 :** During this time, the related output is dimmed from previous brightness to the desired brightness.	**0**...255
Switch off at turn off brightness	This parameter, is used to enable or disable the switch off at turn off brightness. If an OFF telegram is receipt, whether the related lighting will be turn off or it will first reach a turn off brightness is determined. **Yes:** The turn off brightness is a parametrizable brightness value. **No:** The lighting switches off completely (the brightness value will be %0).	**No** yes

-> Turn off brightness	This parameter, is used to determine the brightness value for the switch off at turn off brightness. For example, the brightness at which the group members switch off when receiving an OFF telegram. If the turn off brightness is set outer of the maximum and minimum limits, the turn of brightness will be automatically calibrated to maximum or minimum.	1%...**30%**...100%
Feedback of switching state	This parameter, is used to enable or disable the output x – [x] ballast status object in order to send information via this object to KNX bus line. **Yes:** The output x – [x] ballast status group object is enabled. The information is given by 1 bit group object. **No:** The group object is not enabled.	**No** yes
-> Send object value	This parameter, is used to determine the sending object value according to action type. **Change or request :** The status is sent when a change occurs or request demanding from the KNX bus line. **On request :** The status is sent when a request occurs from the KNX bus line.	On request **Change or request**

Special Note

There are some useful features of using the templates for configuration the parameters :
-> Clear, compact and comprehensible interface for Integrators.
-> All of the ballasts that configured via template react as identical
-> Only template configuration changes affect all of the ballasts, so fast c

5.3.6.4. Ballast X Dimming

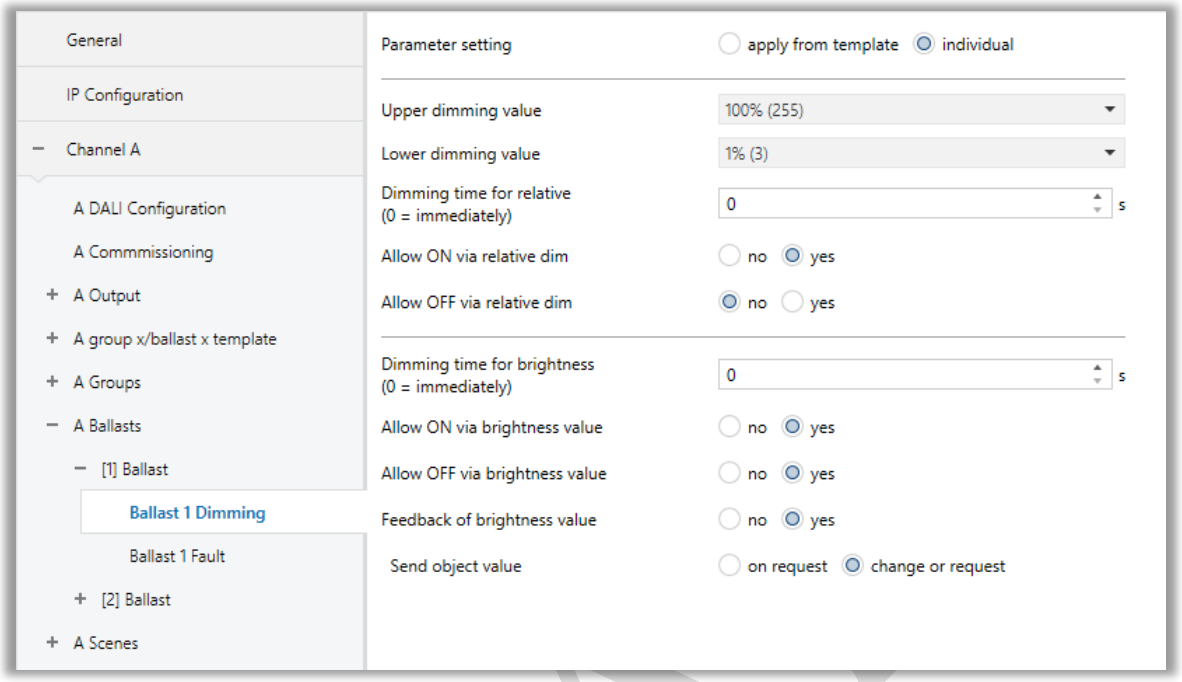

Fig 22 : Ballast X Dimming Parameter Page Configuration

5.3.6.5. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Parameter setting	This parameter, is used to determine the related ballast's settings according to template or with individual configuration. **Apply from template :** The related ballast's configuration is taken from the Dimming template group x / ballast x. **Individual :** The related ballast is configured individually. Corresponding parameters for the related ballast are shown on the parameter page. The individual parameters are same as the Dimming template group x / ballast x parameter page. Specific configurations can be made from this page that exclude from template.	**Apply from template** individual

Upper Dimming Value	This parameter defines the upper dimming value will be applied to the ballast or group. This value is stored in the KNX-DALI Gateway and thus applies for all functions. If the defined upper dimming value exceeds the maximum brightness value, the KNX-DALI Gateway equalize them.	1%...**100%**
Lower Dimming Value	This parameter defines the lower dimming value will be applied to the ballast or group. This value is stored in the KNX-DALI Gateway and thus applies for all functions. If the defined lower dimming value exceeds the maximum brightness value, the KNX-DALI Gateway equalize them. The lower dimming value also applies with dimming and scenes.	**1%**...100%
Relative dimming reaction		
Dimming time for relative (0 = immediately)	This parameter can be used to set a start by defining how long the output takes to dim up or down from the previous brightness value to the desired brightness when it receives telegram. **0 :** The corresponding output immediately achieves the desired brightness value. **1...255 :** During this time, the related output is dimmed from previous brightness to the desired brightness.	**0**...255
Allow ON via relative dim	This parameter defines the ballast or group behaviour when switching on with dimming value. For example, the lighting is OFF and you send a %3 dimming telegram. If this object is selected as yes, the lighting will be switched on and its brightness is %3. Relative dim telegram can be sent via 4 bit value. **Yes:** Switching on using the relative dim telegram is allowed. **No:** Switching on using the relative dim telegram is not allowed. The ballast, group or output must be switched on in order to be dimmed.	**Yes** no

Allow OFF via relative dim	This parameter defines the ballast or group behaviour when switching off with dimming value. For example, the lighting is ON and its dimming value is % 45 and when you send a dimming telegram for lowering %45. If this object is selected as yes, the lighting will be switched OFF. Relative dim telegram can be sent via 4 bit value. **Yes:** Switching OFF using the brightness telegram is allowed. **No:** Switching OFF using the brightness telegram is not allowed. The ballast or group dims to the lower dimming value and stops there.	Yes **no**
Brightness (absolute) dimming reaction		
Dimming time for brightness (0 = immediately)	This parameter can be used to set a start by defining how long the output takes to dim up or down from the previous brightness value to the desired brightness when it receives telegram. **0 :** The corresponding output immediately achieves the desired brightness value. **1...65535 :** During this time, the related output is dimmed from previous brightness to the desired brightness.	**0**...65535
Allow ON via brightness value	This parameter defines the ballast or group behaviour when switching on with brightness value. For example, the lighting is OFF and you send a %67 brightness telegram. If this object is selected as yes, the lighting will be switched on and its brightness is %67. Brightness telegram can be sent via 1 byte value. **Yes:** Switching on using the brightness telegram is allowed. **No:** Switching on using the brightness telegram is not allowed. The ballast, group or output must be switched on in order to be dimmed.	No **yes**

Allow OFF via brightness value	This parameter defines the ballast or group behaviour when switching off with dimming value. For example, the lighting is ON and its dimming value is % 45 and when you send a dimming telegram for lowering %45. If this object is selected as yes, the lighting will be switched OFF. Brightness(absolute) dim telegram can be send via 1 byte value. **Yes:** Switching OFF using the brightness telegram is allowed. **No:** Switching OFF using the brightness telegram is not allowed. The ballast or group dims to the lower dimming value and stops there.	No **yes**
Feedback of brightness value	This parameter, is used to enable or disable the DALI output x – [x] ballast status brightness value object in order to send brightness value on the KNX bus line via related object. **Yes:** The DALI output x – [x] ballast status brightness value group object is enabled. The information is given by 1 byte group object. **No:** The DALI output x – [x] ballast status brightness value object is not enabled hence the status brightness value is not sent on the KNX bus line.	**No** yes
-> Send object value	This parameter, is used to determine the sending object value according to action type. **Change or request :** The status is sent when a change occurs or request demanding from the KNX bus line. **On request :** The status is sent when a request occurs from the KNX bus line.	On request **Change or request**

5.3.6.6. Ballast X Fault

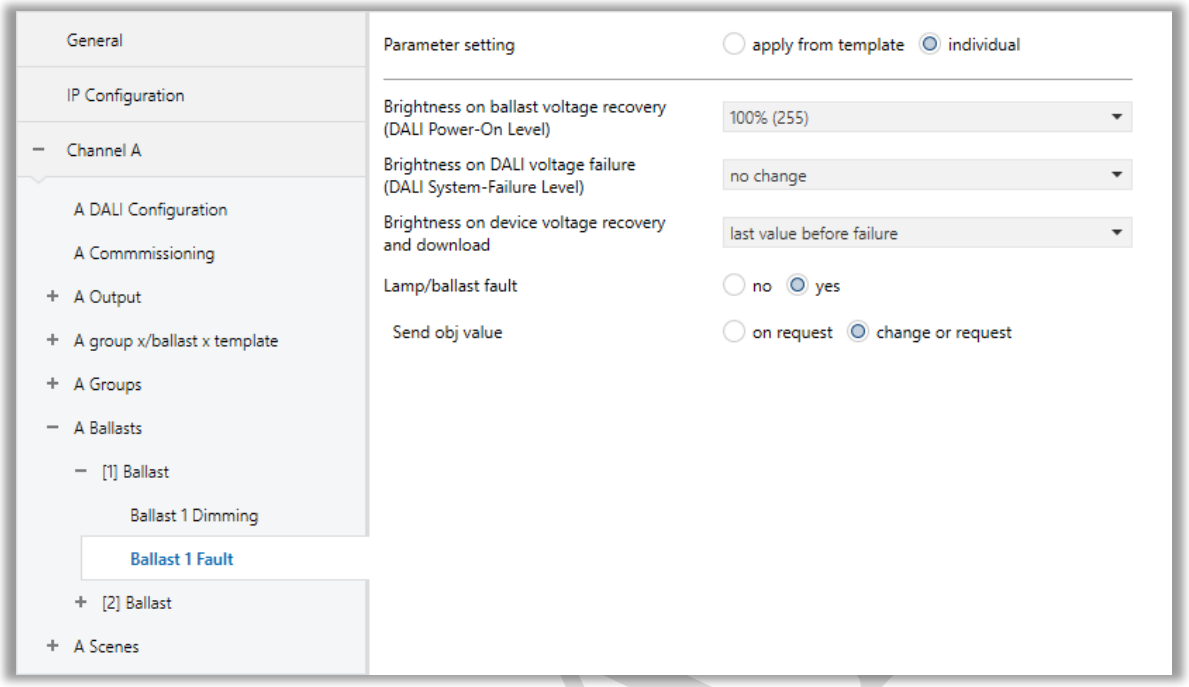

Fig 23 : Ballast X Fault Parameter Page Configuration

5.3.6.7. Parameters List

PARAMETER	DESCRIPTION	VALUES
Parameter setting	This parameter, is used to determine the related ballast's settings according to template or with individual configuration. **Apply from template :** The related ballast's configuration is taken from the fault template(group x / ballast x). **Individual :** The related ballast is configured individually. Corresponding parameters for the related ballast are shown on the parameter page. The individual parameters are same as the fault template(group x / ballast x) parameter page. Specific configurations can be made from this page that exclude from template.	**Apply from template** individual

Brightness on ballast voltage recovery (DALI Power-On Level)	This parameter is used to determine of a ballast or all ballasts that remain in a group to react when a ballast supply voltage recovery occurs. A save function can be used to save the last value to proper storage location. The brightness value (DALI Power-On Level) that the ballast uses to switch on the lamp when the ballast supply voltage recovers is stored in this location. **Current KNX value:** The DALI device (ballast) is switched on using the previous set brightness value used before ballast voltage failure. To use this function, the system ballasts must support last situation values. If you face any problem, please contact ballast manufacturer. **0%...100%:** The DALI device is switched on to the set brightness value from %0 to %100.	%0...**%100** Current KNX value
Brightness on DALI voltage failure (DALI System-Failure Level)	This parameter is used to determine the ballast or group reaction that take their parameter configuration via fault template when a DALI voltage failure occurs such as DALI short circuit or KNX-DALI Gateway supply voltage failure. **Max. brightness value:** The ballast/group ballasts switch on to the maximum brightness value. **Min. brightness value:** The ballast/group ballasts switch on to the minimum brightness value. **OFF:** The ballast or group that applied from the template ballasts switch off. **No change:** The brightness of the ballast/group ballasts does not change. DALI devices that are switched off remain off.	Max. Brightness value (100%) Min. Brightness value (1%) OFF **No change**
Brightness on device voltage recovery and download	This parameter determines the value will be sent. **Last value before failure:** The ballast or group is restored to its before failure status. After the device voltage recovery, the ballast or group must be set at least two or more seconds before to restore. **Max. brightness value:** The ballast/group ballasts switch on to the maximum brightness value. **Min. brightness value:** The ballast/group ballasts switch on to the minimum brightness value.	Max. Brightness value (100%) Min. Brightness value (1%) OFF No change **Last value before failure**

	OFF: The ballast or group that applied from the template ballasts switch off. **No change:** The brightness of the ballast/group ballasts does not change. DALI devices that are switched off remain off.	
Lamp/ballast fault	This parameter, is used to enable or disable the lamp/ballast fault. This parameter indicates a fault in a group or ballast. Yes : When this option is selected, the related fault object is enabled and visible. No : The related fault object is disabled.	**No** yes
Send object value	This parameter, is used to object value information to KNX bus according to following options : **On request:** The object value status is sent when a request occurs from KNX bus line. **Change or request:** The object value status is sent when change or a request occurs from KNX bus line.	On request **Change or request**

5.3.7. A SCENES

The Interra KNX-DALI Gateways have 16 scenes on per output and these scenes correspond to DALI scenes. Each scene can be assigned to any ballasts or groups or both of them on the output. DALI groups and ballasts are referred to as scene members below. A scene member can be a member of several scenes.

This parameter window is visible if DALI scenes are enabled in the X DALI configuration parameter window.

DALI scenes are assigned to KNX scenes in this parameter page. So, the integration of any of the KNX scenes(up to 64) scenes into the DALI scenes can be possible.

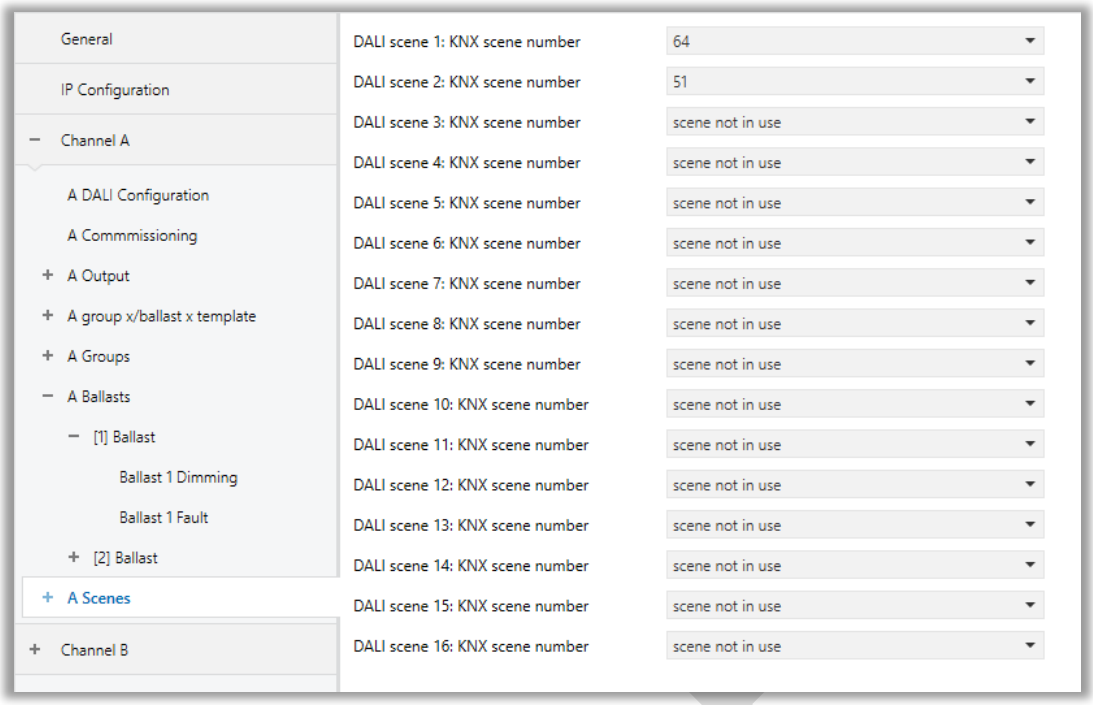

Fig 23 : A Scenes Parameter Page Configuration

Special Note

The Interra KNX-DALI Gateways' DALI scenes can only include members from the same output(A or B). If you want to configure a scene with ballasts and groups from both output, 2 separate scenes must be used as DALI scenes. Also, these DALI scenes should be linked by a common KNX group address.

5.3.7.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
DALI scene 1: KNX scene number ... **DALI scene 16: KNX scene number**	This parameter, is used to link a DALI scene to a KNX scene. All of the possible KNX scenes(64 possible scenes) can be linked to different 16 DALI scenes. **Scene not in use :** The related DALI scene x is not in use. **1...64 :** The selected KNX scene Q(1 to 64) is assigned to selected DALI scene x. This selection enables the related DALI scene parameter window. For example, if you select to assign KNX	**Scene not in use** 1...64

	scene 44 to DALI scene 7. Scene 7 parameter page under X scenes will be enabled.	

5.3.7.2. Scene X

The scene x parameter page is only visible if DALI scene x is linked to a KNX scene(1 to 64 different KNX Scene) in the X scenes parameter page.

A scene member can be any ballast or group on the related DALI output line. The scenes properties and their members are parameterized in this parameter page.

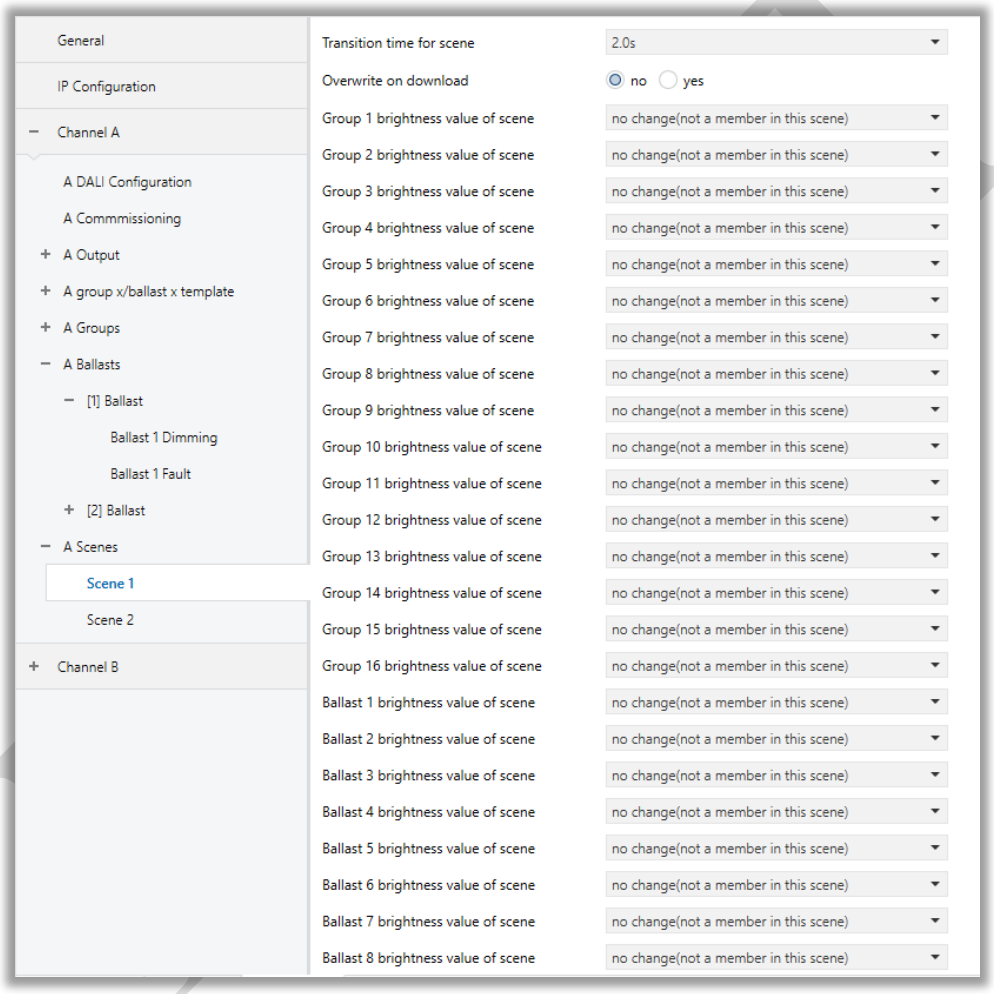

Fig 24 : Scene X Parameter Page Configuration

Special Note

In this parameter page all the possible groups and ballasts are shown. Moreover, the integrators must be aware of that the required members should be connected to the related output. Because, Interra KNX-DALI Gateways and the ETS software do not check this situation.

5.3.7.3. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Transition time for scene	This parameter is used to determine the process time for scene members to reach their scene value after a scene is called. The times are listed in the parameter specified by the DALI standard and are stored in the related ballast. When dimming process is finished, the scene members have reached the set brightness for the scene. For instance, Group 6, which is dimmed from 20% to 50%, and ballast 11, which is dimmed from 60% to 90%, and ballast 37, which is dimmed from %40 to %10, all of them reach the set brightness value of the scene simultaneously. **Jump to:** When a scene is recalled, the scene members are switched on immediately at the set brightness value of the scene. **0.7 s…90.5 s:** When a scene is recalled, all the lighting scene members are dimmed from their current brightness value to the set brightness value within this time.	0.7s, 1.0s, 1.4s, **2.0s**, 2.8s, 4.0s, 5.7s, 8.0s, 11.3s, 16.0s, 22.6s, 32.0s, 45.3s, 64.0s, 90.5s Jump to
Overwrite on download	This parameter, is used to prevent manually set scene values from being overwritten by ETS download or KNX bus voltage recovery. Generally, the configured scene values are downloaded to the Interra KNX-DALI Gateway by ETS. But with this option, the saved scene configuration values via KNX are retained. **Yes:** The scene values for the scene members can be overwritten with the values configured in ETS by an application download or KNX bus voltage recovery. **No:** The scene values for the scene members can not be overwritten with the values configured in ETS by an application download or KNX bus voltage recovery.	No **yes**

Group 1 brightness value of scene . . . **Group 16 brightness value for scene**	This parameter, is used the determine the brightness value of the related group when a scene is recalled. **No change (not a member in this scene):** The related group is not a member of selected scene and is not affected by a scene recall. The current brightness of value remains unchanged and even when the scene is stored via the KNX, the brightness value is not stored in the ballast. **100% (255)…0% (OFF) :** The related group is a member of the selected scene. During a scene recall, the scene member is set to the brightness value parameterized here. If the set brightness value is above or below the upper or lower dimming value defined for the scene member in question, the corresponding dimming value is stored in the scene.	**No change(not a member in this scene)** 0%...%100
Ballast 1 brightness value of scene . . . **Ballast 64 brightness value of scene**	This parameter, is used the determine the brightness value of the related ballast when a scene is recalled. **No change (not a member in this scene):** The related ballast is not a member of selected scene and is not affected by a scene recall. The current brightness of value remains unchanged and even when the scene is stored via the KNX, the brightness value is not stored in the ballast. **100% (255)…0% (OFF) :** The related ballast is a member of the selected scene. During a scene recall, the scene member is set to the brightness value parameterized here. If the set brightness value is above or below the upper or lower dimming value defined for the scene member in question, the corresponding dimming value is stored in the scene.	**No change(not a member in this scene)** 0%...%100

Special Note

When a download occurs, the parametrized scene values are usually transferred to the gateway. Note that if no change has been made in the ETS application, ETS does not transfer these values again when a partial ETS download occurs. To transfer the values to the gateway even when no parameters have been changed, run a normal download using "Program application program".

6. ETS OBJECTS LIST & DESCRIPTIONS

The Interra KNX-DALI Gateways can communicate via the KNX bus line. In this section, the group objects of the Interra KNX-DALI Gateways are described.

ITR832-002 KNX-DALI Gateway Dual Channel device have an additional channel B that is equal to the A so, just describing the Output A group objects is enough.

ETS group objects are divided 4 main parts, and these are :

- **General** - General group objects for the single & dual channel KNX-DALI Gateway.
- **Output X** - The output x objects are for the whole channel outputs. For channel A -> output A and for channel B -> output B.
- **Output X - [x] Group** - These objects are regarding to clustered ballasts within a group.
- **Output X - [x] Ballast** - These objects are for a single ballast that numbered x.

Special Note

Due to the flexible ETS configurations feature, some group objects are dynamic and they are only visible if the related parameters are activated in the application program.

All of the group objects of single & dual channel Interra KNX-DALI Gateways are listed below. You can quickly browse through this table to get the functional capabilities of Interra KNX-DALI Gateways. In this table, [x] group represents a group and [x] ballast represents a single DALI device.

The detailed functions of group objects are described in different topics.

No	Name	Function	DTP Type	Length	Flags			
					C	R	W	T
1	General	In operation	1.002	1 bit	X			X
2	General	Disable manual operation/Status	1.003	1 bit	X	X	X	X
3	General	Gateway supply voltage fault	1.005	1 bit	X	X		X
4	Logic 1	Input 1	1.002	1 bit	X		X	
5	Logic 1	Input 2	1.002	1 bit	X		X	
6	Logic 1	Input 3	1.002	1 bit	X		X	
7	Logic 1	Input 4	1.002	1 bit	X		X	
8	Logic 1	Output	1.002	1 bit	X	X		X
24	Converter 1	Input	1.001	1 bit	X		X	
			2.001	2 bits	X		X	
			5.010	1 byte	X		X	
			7.001	2 bytes	X		X	
25	Converter 1	Output	1.001	1 bit	X	X		X
			2.001	2 bits	X	X		X
			5.010	1 byte	X	X		X
			7.001	2 bytes	X	X		X
40	Output A	New DALI addressing	1.003	1 bit	X		X	
41	Output A	Search DALI addresses	1.010	1 bit	X		X	
42	Output A	Switch	1.001	1 bit	X		X	
43	Output A	Status switch	1.001	1 bit	X	X		X
44	Output A	Relative dimming	3.007	4 bits	X		X	
45	Output A	Brightness value	5.001	1 byte	X		X	
46	Output A	Status brightness value	5.001	1 byte	X	X		X
47	Output A	DALI voltage fault	1.005	1 bit	X	X		X
48	Output A	Lamp fault	1.005	1 bit	X	X		X
49	Output A	Ballast fault	1.005	1 bit	X	X		X

50	Output A	Fault addressed	237.600	2 bytes	X	X	X	X
51	Output A	Number of ballast fault	5.010	1 byte	X	X		X
52	Output A	Ballast number fault	5.010	1 byte	X	X		X
53	Output A	Switch up next ballast fault	1.008	1 bit	X		X	
54	Output A	Number of group fault	5.010	1 byte	X	X		X
55	Output A	Group number fault	5.010	1 byte	X	X		X
56	Output A	Switch up next group fault	1.008	1 bit	X		X	
57	Output A	Acknowledge fault messages /Status	1.015	1 bit	X	X	X	X
58	Output A	Disable fault messages	1.003	1 bit	X		X	
59	Output A	Scenes 1…16	18.001	1 byte	X		X	
60	Output A	Burn-in lamps/Status	1.010	1 bit	X	X	X	X
61	Output A – [x] Group	Switch	1.001	1 bit	X		X	
62	Output A – [x] Group	Status switch	1.001	1 bit	X	X		X
63	Output A – [x] Group	Relative dimming	3.007	4 bits	X		X	
64	Output A – [x] Group	Brightness value	5.001	1 byte	X		X	
65	Output A – [x] Group	Status brightness value	5.001	1 byte	X	X		X
66	Output A – [x] Group	Lamp/ballast fault	1.005	1 bit	X	X		X
67	Output A – [x] Group	Forced operation 1-bit	1.003	1 bit	X	X	X	
		Forced operation 2-bit	2.001	2 bits	X	X	X	
68	Output A – [x] Group	Block	1.003	1 bit	X	X	X	
69	Output A – [x] Group	Burn-in lamp	1.010	1 bit	X	X	X	X
70	Output A – [x] Group	Staircase start	1.003	1 bit	X	X	X	
71	Output A – [x] Group	Staircase permanent on	1.001	1 bit	X		X	
72	Output A – [x] Group	OHC start/limiting value	7.007	2 bytes	X		X	
73	Output A – [x] Group	OHC reset	1.015	1 bit	X		X	
74	Output A – [x] Group	OHC value	7.007	2 bytes	X			X
75	Output A – [x] Group	OHC elapsed	1.002	1 bit	X			X
76	Output A – [x] Group	Colour temp absolute dim	7.600	2 bytes	X		X	
		Colour setting	232.600	3 bytes	X		X	

			251.600	6 bytes	X		X	
77	Output A – [x] Group	Colour temp relative dim	3.007	4 bits	X		X	
78	Output A – [x] Group	Colour dimming value	232.600	2 bytes	X	X		X
		Colour temp status	7.600	2 bytes	X	X		X
			251.600	6 bytes	X	X		X
349	Output A – [x] Ballast	Switch	1.001	1 bit	X		X	
350	Output A – [x] Ballast	Status switch	1.001	1 bit	X	X		X
351	Output A – [x] Ballast	Relative dimming	3.007	4 bits	X		X	
352	Output A – [x] Ballast	Brightness value	5.001	1 byte	X		X	
353	Output A – [x] Ballast	Status brightness value	5.001	1 byte	X	X		X
354	Output A – [x] Ballast	Lamp/ballast fault	1.005	1 bit	X	X		X
355	Output A – [x] Ballast	Forced operation 1-bit	1.003	1 bit	X	X	X	
		Forced operation 2-bit	2.001	2 bits	X	X	X	
356	Output A – [x] Ballast	Block	1.003	1 bit	X	X	X	
357	Output A – [x] Ballast	Burn-in lamp	1.010	1 bit	X	X	X	X
358	Output A – [x] Ballast	Staircase start	1.003	1 bit	X	X	X	
359	Output A – [x] Ballast	Staircase permanent on	1.001	1 bit	X		X	
360	Output A – [x] Ballast	OHC start/limiting value	7.007	2 bytes	X		X	
361	Output A – [x] Ballast	OHC reset	1.015	1 bit	X		X	
362	Output A – [x] Ballast	OHC value	7.007	2 bytes	X			X
363	Output A – [x] Ballast	OHC elapsed	1.002	1 bit	X			X
364	Output A – [x] Ballast	Colour temp absolute dim	7.600	2 bytes	X		X	
		Colour setting	232.600	3 bytes	X		X	
			251.600	6 bytes	X		X	
365	Output A – [x] Ballast	Colour temp relative dim	3.007	4 bits	X		X	
366	Output A – [x] Ballast	Colour dimming value	232.600	2 bytes	X	X		X
		Colour temp status	7.600	2 bytes	X	X		X
			251.600	6 bytes	X	X		X

1499	Output A – Emergency light x	New lighting test	20.611	1 byte	X		X	
1450	Output A – Emergency light x	New lighting test result	245.600	6 bytes	X	X		x
1451	Output A – Emergency light x	New lighting converter status	244.600	2 bytes	X	X		X
1501	Output B	New DALI addressing	1.003	1 bit	X		X	
1502	Output B	Search DALI addresses	1.010	1 bit	X		X	
1503	Output B	Switch	1.001	1 bit	X		X	
1504	Output B	Status switch	1.001	1 bit	X	X		X
1505	Output B	Relative dimming	3.007	4 bits	X		X	
1506	Output B	Brightness value	5.001	1 byte	X		X	
1507	Output B	Status brightness value	5.001	1 byte	X	X		X
1508	Output B	DALI voltage fault	1.005	1 bit	X	X		X
1509	Output B	Lamp fault	1.005	1 bit	X	X		X
1510	Output B	Ballast fault	1.005	1 bit	X	X		X
1511	Output B	Fault addressed	237.600	2 bytes	X	X	X	X
1512	Output B	Number of ballast fault	5.010	1 byte	X	X		X
1513	Output B	Ballast number fault	5.010	1 byte	X	X		X
1514	Output B	Switch up next ballast fault	1.008	1 bit	X		X	
1515	Output B	Number of group fault	5.010	1 byte	X	X		X
1516	Output B	Group number fault	5.010	1 byte	X	X		X
1517	Output B	Switch up next group fault	1.008	1 bit	X		X	
1518	Output B	Acknowledge fault messages /Status	1.015	1 bit	X	X	X	X
1519	Output B	Disable fault messages	1.003	1 bit	X		X	
1520	Output B	Scenes 1…16	18.001	1 byte	X		X	
1521	Output B	Burn-in lamps/Status	1.010	1 bit	X	X	X	X
1522	Output B – [x] Group	Switch	1.001	1 bit	X		X	
1523	Output B – [x] Group	Status switch	1.001	1 bit	X	X		X

1524	Output B – [x] Group	Relative dimming	3.007	4 bits	X		X	
1525	Output B – [x] Group	Brightness value	5.001	1 byte	X		X	
1526	Output B – [x] Group	Status brightness value	5.001	1 byte	X	X		X
1527	Output B – [x] Group	Lamp/ballast fault	1.005	1 bit	X	X		X
1528	Output B – [x] Group	Forced operation 1-bit	1.003	1 bit	X	X	X	
		Forced operation 2-bit	2.001	2 bits	X	X	X	
1529	Output B – [x] Group	Block	1.003	1 bit	X	X	X	
1530	Output B – [x] Group	Burn-in lamp	1.010	1 bit	X	X	X	X
1531	Output B – [x] Group	Staircase start	1.003	1 bit	X	X	X	
1532	Output B – [x] Group	Staircase permanent on	1.001	1 bit	X		X	
1533	Output B – [x] Group	OHC start/limiting value	7.007	2 bytes	X		X	
1534	Output B – [x] Group	OHC reset	1.015	1 bit	X		X	
1535	Output B – [x] Group	OHC value	7.007	2 bytes	X			X
1536	Output B – [x] Group	OHC elapsed	1.002	1 bit	X			X
1537	Output B – [x] Group	Colour temp absolute dim	7.600	2 bytes	X		X	
		Colour setting	232.600	3 bytes	X		X	
			251.600	6 bytes	X		X	
1538	Output B – [x] Group	Colour temp relative dim	3.007	4 bits	X		X	
1539	Output B – [x] Group	Colour dimming value	232.600	2 bytes	X	X		X
		Colour temp status	7.600	2 bytes	X	X		X
			251.600	6 bytes	X	X		X
1810	Output B – [x] Ballast	Switch	1.001	1 bit	X		X	
1811	Output B – [x] Ballast	Status switch	1.001	1 bit	X	X		X
1812	Output B – [x] Ballast	Relative dimming	3.007	4 bits	X		X	
1813	Output B – [x] Ballast	Brightness value	5.001	1 byte	X		X	
1814	Output B – [x] Ballast	Status brightness value	5.001	1 byte	X	X		X
1815	Output B – [x] Ballast	Lamp/ballast fault	1.005	1 bit	X	X		X
1816	Output B – [x] Ballast	Forced operation 1-bit	1.003	1 bit	X	X	X	
		Forced operation 2-bit	2.001	2 bits	X	X	X	

1817	Output B – [x] Ballast	Block	1.003	1 bit	X	X	X	
1818	Output B – [x] Ballast	Burn-in lamp	1.010	1 bit	X	X	X	X
1819	Output B – [x] Ballast	Staircase start	1.003	1 bit	X	X	X	
1820	Output B – [x] Ballast	Staircase permanent on	1.001	1 bit	X		X	
1821	Output B – [x] Ballast	OHC start/limiting value	7.007	2 bytes	X		X	
1822	Output B – [x] Ballast	OHC reset	1.015	1 bit	X		X	
1823	Output B – [x] Ballast	OHC value	7.007	2 bytes	X			X
1824	Output B – [x] Ballast	OHC elapsed	1.002	1 bit	X			X
1825	Output B – [x] Ballast	Colour temp absolute dim	7.600	2 bytes	X		X	
		Colour setting	232.600	3 bytes	X		X	
			251.600	6 bytes	X		X	
1826	Output B – [x] Ballast	Colour temp relative dim	3.007	4 bits	X		X	
1827	Output B – [x] Ballast	Colour dimming value	232.600	2 bytes	X	X		X
		Colour temp status	7.600	2 bytes	X	X		X
			251.600	6 bytes	X	X		X
2960	Output B – Emergency light x	New lighting test	20.611	1 byte	X		X	
2961	Output B – Emergency light x	New lighting test result	245.600	6 bytes	X	X		x
2962	Output B – Emergency light x	New lighting converter status	244.600	2 bytes	X	X		X

6.1. GENERAL OBJECTS

This section describes the "general" group objects and their properties. General group objects, as the name suggests, indicate the general characteristics of the KNX-DALI Gateway. These features concern both channels (channel A & B).

Object Name	Function	Type	Flags
General	In operation	1 bit	CT
This object, is used to monitor the presence of the device on the KNX bus line regularly. However, monitoring telegram can be sent cyclically on the KNX bus line. **DPT** : 1.002 (boolean)			
General	Disable manual operation/Status	1 bit	CRWT
This object, is used to disable manual operation. The DALI devices that connected to KNX-DALI Gateway can not be manually switched via KNX-DALI Gateway when manual operation is disabled. If a logic 1 value send via this object, manual operation is disabled. On contrary when logic 0 value send, manual operation is enabled. **DPT** : 1.003 (enable)			
General	Gateway supply voltage fault	1 bit	CRT
This object, is used to detect the KNX-DALI Gateway's supply voltage fault. If the KNX-DALI gateway supply voltage fails for a few seconds, a fault message telegram is sent immediately. The time depends on the DALI load If a logic 1 value send via this object, there is a gateway supply voltage fault. On contrary when logic 0 value send, there is no fault. **DPT** : 1.005 (alarm)			

6.1. OUTPUT X OBJECTS

This section describes the "Output A" group objects for DALI output channel A. Interra KNX-DALI Gateway dual channel version have an additional independent output channel B. However, the same objects are available on channel B.

Between output A and output B there is no overarching function. For example, a common KNX group is required in order to assign groups or individual lamps from both outputs to an overarching group or scene.

Object Name	Function	Type	Flags
Output A	New DALI addressing	1 bit	CW

This object, is used to start a DALI addressing process. If the KNX-DALI Gateway receives a telegram with the value 1 on this group object, a new DALI addressing progress starts. All DALI devices without a DALI address receive one. Besides, this group object is always enabled and visible in the group object list.

DPT : 1.003 (enable)

Output A	Search DALI addresses	1 bit	CW

This object, is used to store the current KNX-DALI Gateway status as a reference state. The KNX-DALI Gateway must know all connected DALI devices in order to detect a ballast fault.

If a logic 1 value send via this object and the KNX-DALI Gateway receives the telegram, search DALI addresses run automatically in the background.

Also, search DALI address monitoring should be carried out straight after commissioning or when adding or removing DALI devices. The DALI devices are continually monitored, regardless of whether the lighting equipment is activated/deactivated. The DALI devices must be properly installed and have a supply voltage if necessary.

DPT : 1.010 (start/stop)

Output A	Switch	1 bit	CW

This object, is used to switch all the DALI devices connected to the DALI output ON or OFF at the brightness values defined in the X Output parameter page.

If a logic 1 value send via this object, the parameter settings define whether a predefined brightness value or the value before switch off is set. On contrary when logic 0 value send, all connected lamps are switched on. If DALI devices are already switched on and the DALI gateway receives an ON telegram, all DALI devices are set to the parametrized switch on value.

DPT : 1.001 (switch)

Output A	Status switch	1 bit	CRT

This object, is used to gain information of the group objects that indicates the current switch state of the DALI output.

If a logic 1 value send via this object, at least one DALI device are switched on(or all). On contrary when logic 0 value send, all DALI devices are switched off.

DPT : 1.001 (switch)

Output A	Relative dimming	4 bits	CW

This object, is used to receive dimming telegram for all DALI devices connected to the DALI output X.

When a start telegram is received, the brightness value is changed in the defined direction. If a stop telegram is received before the dimming process ends or the upper dimming or lower dimming value is reached, the dimming process is interrupted and the brightness value reached is retained.

The minimum and maximum dimming thresholds apply and cannot be exceeded.
The dimming thresholds for the individual groups or ballasts also continue to apply. Switch off via dimming is parametrizable. This setting switches off the DALI lamps on the output if all the devices have reached the minimal dimming value. Dimming time cannot be changed via KNX.

DPT : 3.007 (dimming control)

Output A	Brightness value	1 byte	CW

This object, is used to receive brightness value for all DALI devices connected to the DALI output X. Dimming time to reach brightness value can be parameterized in the X output parameter page.

Brightness values higher or lower from the configured max brightness or minimum brightness are matched to the threshold values.

1 byte data is from decimal 0 to decimal 255. So, sending 0 is mapped to 0%, 255 is mapped to 100%, 128 is mapped to 50%...so, be aware of the values corresponding to brightness.

DPT : 5.001(percentage - 0..100%)

Output A	Status brightness value	1 byte	CRT

This object, is used to gain the status of brightness value for all DALI devices connected to the DALI output X. Status value can be send on ‘request’ or ‘change or request’.

1 byte data is from decimal 0 to decimal 255. So, sending 0 is mapped to 0%, 255 is mapped to 100%, 128 is mapped to 50%...so, be aware of the values corresponding to brightness.

DPT : 5.001(percentage - 0..100%)

Output A	DALI voltage fault	1 bit	CRT

This object, is used to send DALI fault when a fault is detected. For instance, a short-circuit or overload can be cause of a DALI fault.

If a logic 1 value send via this object, there is a DALI fault in the line. On contrary when logic 0 value send, there is no DALI fault.

DPT : 1.005(alarm)

Output A	Lamp fault	1 bit	CRT

This object, is used to send lamp fault when a lamp fault is detected. This function must be supported by the linked DALI device and sent via DALI by the KNX-DALI Gateway on request.

If a logic 1 value send via this object, there is a lamp fault in the line. On contrary when logic 0 value send, there is no lamp fault.

DPT : 1.005(alarm)

Output A	Ballast fault	1 bit	CRT

This object, is used to send ballast fault when a ballast fault is detected.

If a logic 1 value send via this object, there is a ballast fault in the line. On contrary when logic 0 value send, there is no ballast fault. Ballast fault can occur at these situations :
The ballast malfunctions and does not send telegrams on the DALI control line.
The ballast has no ballast supply voltage and does not send telegrams on the DALI control line.
The DALI control line to the ballast is interrupted and the gateway does not receive a status response.
The ballast has lost its address and a query from the gateway remains unanswered.

DPT : 1.005(alarm)

Output A	Fault addressed	2 bytes	CRWT

This object, is used to give detailed information about the DALI faults. This group object consists of two bytes. The High byte contains the fault status of the corresponding device or group. The Low byte contains the device or group number and the information as to whether it is a status request or a sent status. Via this group object, the KNX-DALI Gateway transmits the status of a fault on any group or any individual DALI device on the KNX. The telegrams are sent as soon as the fault is detected. Should several faults occur at the same time, the telegrams are sent consecutively on the KNX. If a fault is corrected, this is also signalled on the group object.
DPT : 237.600(diagnostic value)

Output A	Number of ballast fault	1 byte	CRT

This object, is used to display the number of individual DALI devices with at least one lamp or ballast fault. The value of the group object is sent on the KNX whenever a change occurs.

Individual ballasts count can be up to 64 so, telegram values are between 0…64.

DPT : 5.010(counter pulses)

Output A	Ballast number fault	1 byte	CRT

This object, is used to display the first DALI device with a fault as a numeric value. A correction by 1 as required for the values in Fault addressed group objects is not necessary here. All the DALI devices with a fault can be displayed successively in conjunction with the group object ‘’Switch up next ballast fault’’.

Individual ballasts counts can be up to 64 so, telegram values are between 0...64.

DPT : 5.010(counter pulses)

Output A	Switch up next ballast fault	1 bit	CW

This object should be considered in conjunction with the Ballast number fault group object. If there are several ballast faults, this group object can be used to switch to the next number on the Ballast number fault object. Value 1 switches to the next number and value 0 to the previous number.

If a logic 1 value send via this object, it displays the next highest ballast number with a fault on the Ballast number fault group object. On contrary when logic 0 value send, it displays the next lowest ballast number with a fault on the Ballast number fault group object.

DPT : 1.008 (up/down)

Output A	Number of group fault	1 byte	CRT

This object, is used to display the number of DALI groups with at least one lamp or ballast fault. The value of the group object is sent on the KNX whenever a change occurs.

DALI groups counts can be up to 16 so, telegram values are between 1...16.

DPT : 5.010(counter pulses)

Output A	Group number fault	1 byte	CRT

This object, is used to display the first DALI group with a fault as a numeric value. A correction by 1 as required for the values in Fault addressed group objects is not necessary here.

DALI groups counts can be up to 16 so, fault indicating telegram values are between 1...16.

All the DALI groups with a fault can be displayed successively in conjunction with the group object Switch up next group fault.

DPT : 5.010(counter pulses)

Output A	Switch up next group fault	1 bit	CW

This object should be considered in conjunction with the Group number fault group object. If there are several group faults, this group object can be used to switch to the next number on the Group number fault object. Value 0 switches to the next number and value 1 to the previous number.

If a logic 1 value send via this object, it displays the next highest group number with a fault on the group number fault group object. On contrary when logic 0 value send, it displays the next lowest group number with a fault on the group number fault group object.

DPT : 1.008 (up/down)

Output A	Acknowledge fault messages /Status	1 bit	CRWT

This object, is used to reset a DALI output fault. The fault may be a lamp or ballast or fault relating to individual devices or a DALI group. The fault is only reset after acknowledgement if it has been corrected.

If a logic 1 value send via this object, the fault messages are reset. On contrary when logic 0 value send there will be no reset.

DPT : 1.015 (reset)

Output A	Disable fault messages	1 bit	CW

This object, is used to disable the fault messages for the related DALI output. The KNX-DALI Gateway will continue checking fault messages even when the messages themselves are disabled. During the inhibit, the faults are evaluated but not sent on the KNX. The values of the group objects are also not updated. Disabling fault messages minimizes system latency by reducing the KNX load.
When fault messages are enabled, all faults are sent in accordance with their parametrization.

DPT : 1.003(enable)

Output A	Scenes 1...16	1 byte	CW

This object, is used to send a scene telegram which integrates the groups in a KNX scene. The telegram contains the number of the scene concerned as well as the information as to whether to recall it or assign the current brightness values in the scene to the groups in the scene.

DPT : 18.001 (scene control)

6.2. OUTPUT X – [x] GROUP OBJECTS

In this section, [x] group objects are described in the table. x indicates the group numbers from 1 to 16 and group objects mean DALI groups. At the first column name of the object, at second column function name, at third column data type and at fourth column the objects flags information are given.

According to device model(ITR832-001 or ITR832-002) X can be A or B. The channel B [x] group objects are identical as channel A because, the channel B is a copied one of channel A.

Object Name	Function	Type	Flags
Output X – [x] Group	Switch	1 bit	CW

This object, is used to switch [x] group DALI devices connected to the DALI output ON or OFF at the brightness values defined in the X Group parameter page.

If a logic 1 value send via this object, the parameter settings define whether a predefined brightness value or the value before switch off is set. On contrary when logic 0 value send, all connected lamps are switched on. If DALI devices are already switched on and the DALI gateway receives an ON telegram, all DALI devices are set to the parametrized switch on value.

DPT : 1.001 (switch)

Output X – [x] Group	Status switch	1 bit	CRT

This object, is used to gain information of the group objects that indicates the current switch state of the [x] group.

If a logic 1 value send via this object, at least one DALI device are switched on(or all). On contrary when logic 0 value send, all DALI devices are switched off.

DPT : 1.001 (switch)

Output X – [x] Group	Relative dimming	4 bits	CW

This object, is used to receive dimming telegram for [x] group DALI devices connected to the DALI output X.

When a start telegram is received, the brightness value is changed in the defined direction. If a stop telegram is received before the dimming process ends or the upper dimming or lower dimming value is reached, the dimming process is interrupted and the brightness value reached is retained.

The minimum and maximum dimming thresholds apply and cannot be exceeded.
The dimming thresholds for the individual groups or ballasts also continue to apply. Switch off via dimming is parametrizable. This setting switches off the DALI lamps on the output if all the devices have reached the minimal dimming value. Dimming time cannot be changed via KNX.

DPT : 3.007 (dimming control)

Output X – [x] Group	Brightness value	1 byte	CW

This object, is used to receive brightness value for [x] group DALI devices connected to the DALI output X. Dimming time to reach brightness value can be parameterized in the X Groups parameter page.

Brightness values higher or lower from the configured max brightness or minimum brightness are matched to the threshold values.

1 byte data is from decimal 0 to decimal 255. So, sending 0 is mapped to 0%, 255 is mapped to 100%, 128 is mapped to 50%...so, be aware of the values corresponding to brightness.

DPT : 5.001(percentage - 0..100%)

Output X – [x] Group	Status brightness value	1 byte	CRT

This object, is used to gain the status of brightness value for [x] group DALI devices connected to the DALI output X. Status value can be send on ‘request’ or ‘change or request’.

1 byte data is from decimal 0 to decimal 255. So, sending 0 is mapped to 0%, 255 is mapped to 100%, 128 is mapped to 50%...so, be aware of the values corresponding to brightness.

DPT : 5.001(percentage - 0..100%)

Output X – [x] Group	Lamp/ballast fault	1 bit	CRT

This object, is used to send lamp/ballast fault when a lamp or ballast fault is detected in the linked [x] group. For lamp faults, this function must be supported by the linked DALI device and sent via DALI by the KNX-DALI Gateway on request. Moreover, ballast fault can occur at these situations :

The ballast malfunctions and does not send telegrams on the DALI control line.
The ballast has no ballast supply voltage and does not send telegrams on the DALI control line.
The DALI control line to the ballast is interrupted and the gateway does not receive a status response.
The ballast has lost its address and a query from the gateway remains unanswered.

If a logic 1 value send via this object, there is a fault in the related group. On contrary when logic 0 value send, there is no fault.

DPT : 1.005(alarm)

6.3. OUTPUT X – [x] BALLAST OBJECTS

In this section, [x] ballast objects are described in the table. x indicates the ballast numbers from 1 to 64. At the first column name of the object, at second column function name, at third column data type and at fourth column the objects flags information are given.

According to device model(ITR832-001 or ITR832-002) X can be A or B. The channel B [x] ballast objects are identical as channel A because, the channel B is a copied one of channel A.

Object Name	Function	Type	Flags
Output X – [x] Ballast	Switch	1 bit	CW
This object, is used to switch [x] ballast DALI devices connected to the DALI output ON or OFF at the brightness values defined in the X Ballast parameter page. If a logic 1 value send via this object, the parameter settings define whether a predefined brightness value or the value before switch off is set. On contrary when logic 0 value send, all connected lamps are switched on. If DALI devices are already switched on and the DALI gateway receives an ON telegram, all DALI devices are set to the parametrized switch on value. **DPT** : 1.001 (switch)			
Output X – [x] Ballast	Status switch	1 bit	CRT
This object, is used to gain information of the group objects that indicates the current switch state of the [x] ballast. If a logic 1 value send via this object, at least one DALI device are switched on(or all). On contrary when logic 0 value send, all DALI devices are switched off. **DPT** : 1.001 (switch)			
Output X – [x] Ballast	Relative dimming	4 bits	CW
This object, is used to receive dimming telegram for [x] ballast DALI devices connected to the DALI output X. When a start telegram is received, the brightness value is changed in the defined direction. If a stop telegram is received before the dimming process ends or the upper dimming or lower dimming value is reached, the dimming process is interrupted and the brightness value reached is retained. The minimum and maximum dimming thresholds apply and cannot be exceeded. The dimming thresholds for the individual groups or ballasts also continue to apply. Switch off via dimming is parametrizable. This setting switches off the DALI lamps on the output if all the devices have reached the minimal dimming value. Dimming time cannot be changed via KNX. **DPT** : 3.007 (dimming control)			
Output X – [x] Ballast	Brightness value	1 byte	CW

This object, is used to receive brightness value for [x] ballast DALI devices connected to the DALI output X. Dimming time to reach brightness value can be parameterized in the X Ballast parameter page.

Brightness values higher or lower from the configured max brightness or minimum brightness are matched to the threshold values.

1 byte data is from decimal 0 to decimal 255. So, sending 0 is mapped to 0%, 255 is mapped to 100%, 128 is mapped to 50%...so, be aware of the values corresponding to brightness.

DPT : 5.001(percentage - 0..100%)

Output X – [x] Ballast	Status brightness value	1 byte	CRT

This object, is used to gain the status of brightness value for [x] ballast DALI devices connected to the DALI output X. Status value can be send on 'request' or 'change or request'.

1 byte data is from decimal 0 to decimal 255. So, sending 0 is mapped to 0%, 255 is mapped to 100%, 128 is mapped to 50%...so, be aware of the values corresponding to brightness.

DPT : 5.001(percentage - 0..100%)

Output X – [x] Ballast	Lamp/ballast fault	1 bit	CRT

This object, is used to send lamp/ballast fault when a lamp or ballast fault is detected in the linked [x] ballast. For lamp faults, this function must be supported by the linked DALI device and sent via DALI by the KNX-DALI Gateway on request. Moreover, ballast fault can occur at these situations :

The ballast malfunctions and does not send telegrams on the DALI control line.
The ballast has no ballast supply voltage and does not send telegrams on the DALI control line.
The DALI control line to the ballast is interrupted and the gateway does not receive a status response.
The ballast has lost its address and a query from the gateway remains unanswered.

If a logic 1 value send via this object, there is a fault in the related group. On contrary when logic 0 value send, there is no fault.

DPT : 1.005(alarm)

CONTACT INFORMATION

THE INTERRA WEB SITE

Interra provides documentatıon support via our WWW site www.interra.com.tr. This web site is used as a means to make files and information easily available to customers. Accessible by using your favorite Internet browser, the web site contains the following information:

- Information about our products and projects.
- Overview of Interra company and values.
- Product Support: Data sheets, product manuals, application descriptions, latest software releases, ETS databases and archived softwares.

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