

iLumTech Connected Lighting
innovative, intelligent, inventive electronics



DALI 4 x RELAY

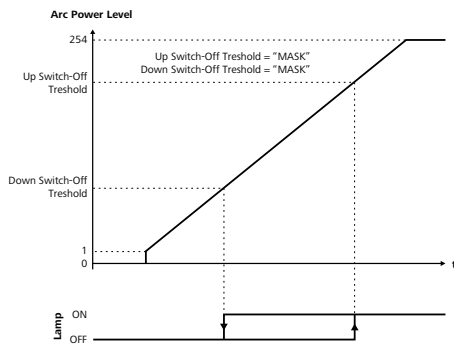
The InControl 03AB – DALI 4 x Relay is a DALI compatible relay device designed to allow for the independent switching of four devices (luminaires and others) through a DALI interface.

On the front panel of the device can be found an integrated push button for the manual control of the relays for testing purposes, additional to five device status indicator LEDs.

The device is housed in a standard DIN-rail mountable box for easy installation in electrical switchboards.

DALI Interface

The device fulfils EN 62386-208 type 7 standards



Example configuration

Connections

Mains cable	Wires AWG 24–12 (0.2–2.5 mm ²)
DALI cable	Wires AWG 28–16 (0.08–1.5 mm ²)
Relays cable	Wires AWG 24–12 (0.2–2.5 mm ²)

Power

Mains supply	220–240 V AC / 50–60 Hz
Max. system power	6 W
DALI consumption	< 2 mA
Relay loads	12 A (per contact)
Insulation	4 kV

Mechanical Data

Housing	4U DIN rail box 71 mm wide
Weight	300 g
IP rating	IP 20

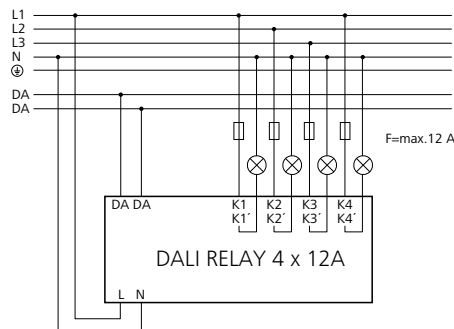
Operating Conditions

Operating temp. range	from 0 °C up to 40 °C
Relative Humidity	85 % max., non-condensing
Storage temp. range	from -40 °C up to 70 °C

Conformance with regulations

EN 55015	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
EN 61547	Equipment for general lighting purposes EMC immunity requirements
EN 60950-1	Information technology equipment – Safety – Part 1: General requirements
EN 62386-208	Digital addressable lighting interface

Connection



Key features

- four independent relay contacts
- 12 A maximum switching current per contact
- push button for manual control (test function)
- one DALI address for each contact (DALI device type 7, EN 62386-208)

Function

After powering-up the device, an internal test sequence is initiated that lasts for no more than 2 seconds. The device then acts in Normal Mode and awaits DALI commands.

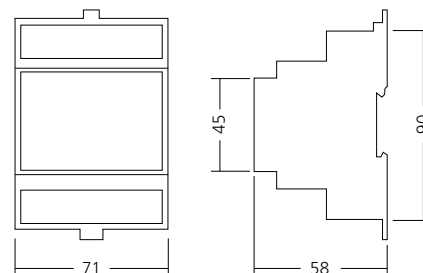
The 'STATUS' LED indicator is lit when the DALI bus is correctly supplied. LED indicators 1 to 4 show the current status of each relay: a lit LED means the corresponding relay is switched on, an unlit LED means the corresponding relay is switched off.

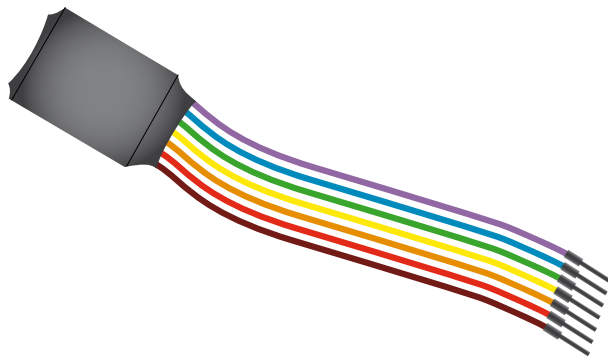
Test mode

Test Mode can be activated at any time by pressing the push button 'TEST'.

A short push of the button, for a period less than 3 seconds, changes which relay is selected, indicated by the corresponding LED indicator blinking. By pressing the push button for a period of more than 3 seconds the selected relay is switched on/off, indicated by the way in which the LED indicator blinks (predominantly on means the relay is switched on, predominantly off means the relay is switched off). The device will return to Normal Mode after 5 seconds of push button inactivity.

Dimensions





- purple Input 1
- blue Input 2
- green Input 3
- yellow Input 4
- orange COM
- red DALI bus
- brown DALI bus

Key features

- Powered from DALI bus, compatible with standard DALI rating
- Up to four user inputs
- Default functions – ready to use out-of-box
- Small dimensions (L x W x H): 27 x 20 x 4 mm
- DALI consumption < 9 mA

Connections

- Mains cable Wires AWG 24 (0.5 mm²)
- DALI cable Wires AWG 24 (0.5 mm²)

Power

- DALI voltage 12–25 V DC
- DALI consumption < 9 mA

Control Inputs

- Voltage range open 5 V DC / closed max. 0.3 V DC
- Current range max. 1 mA

Mechanical Data

- Housing Encapsulated PCB
- Weight 10 g
- Dimensions 27 x 20 x 4 mm

Operating Conditions

- Ambient temp. range from 0 °C up to 40 °C
- Relative Humidity 85 %, non-condensing
- Storage temp. range from -40 °C up to 70 °C

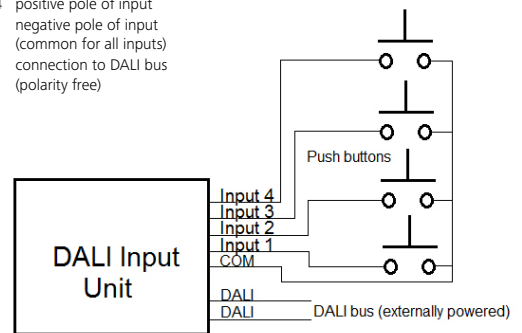
Input	Address	Short press	Long press
Input 1	Broadcast	Recall Max level	UP
Input 2	Broadcast	OFF	DOWN
Input 3	Group 1	Recall Max level	UP
Input 4	Group 1	OFF	DOWN

DALI Input Unit

The DALI Input Unit is a fully DALI-compatible interface, designed to allow customer specified switches, sensors, time clocks or other on/off control devices to be incorporated into a standard DALI installation. The DALI Input Unit is a small, pre-wired, encapsulated PCB module and it is suitable for inclusion into all standard size back boxes together with a suitable mains rated switch.

Connection

- Input 1-4 positive pole of input
- COM negative pole of input (common for all inputs)
- DALI connection to DALI bus (polarity free)



Function

DALI Input Unit detects short-circuit connection between wires Input 1-4 and COM. Module is designed to be used with standard push buttons – short-circuit connection is the active state. The logic of the module differentiates between short and long press of the push buttons. Short press is detected when the short-circuit detection lasts shorter than 1 second. If the short-circuit connection lasts longer it is detected as long press. User can configure different reaction to short and long press.

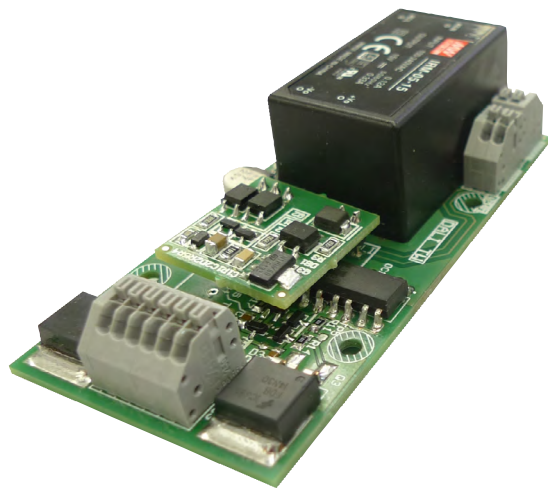
Each input of DALI Input Unit can be configured with different DALI address (device support broadcast, group addresses and short addresses). Three types of reactions can be configured for each input: Static commands, Direct level or Toggle. In Static commands mode device transmit defined command each time a press is detected. The most useful commands are: MIN_LEVEL, MAX_LEVEL, UP or DOWN. If desirable user can set up any command listed in DALI standard (IEC 62386-102). In Direct level mode device transmit defined brightness level each time a press is detected (for example 50%). In Toggle mode device toggles between two commands each time a press is detected. The user can choose from 3 toggle functions: MIN/MAX, ON/OFF and Scene X/ Scene Y. Scene X and Scene Y are settable number of DALI scenes which are toggled. The configuration can be changed using special programmer (on demand).

For the reaction on long press it is possible to set whether the command should be sent only once or it should be repeated (for example UP/DOWN commands). The period of repetition is also settable (1 second period). DALI Input Unit is delivered with default configuration.

DALI Input Unit is a DALI powered device therefore external DALI power supply has to be connected on the DALI line.

Note

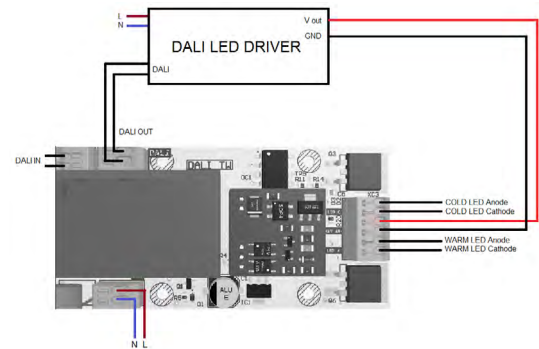
The DALI Input Unit is intended to be used with push buttons that come back to non-active position after release. The compatibility with other devices should be discussed with the manufacturer. The push buttons used as input devices for DALI Input Unit must have mains rating (DALI bus provides basic insulation only).



DALI TW MODULE type 6

DALI TW MODULE is a DALI compatible device (device type 6) especially designed to allow for the TunableWhite control of LED modules through a DALI interface. For correct function an external LED driver is required (DALI LED driver if brightness control is desired). The device itself is powered independently from mains. The device is open-frame module that can be easily mounted into the luminaire.

Connection



Connections

Mains cable	Wires AWG 28-16 (0.08–1.5 mm ²)
DALI cable	Wires AWG 28-16 (0.08–1.5 mm ²)
LED cable	Wires AWG 28-16 (0.08–1.5 mm ²)

Power

Mains supply	90–260 V AC / 47-400 Hz 120–370 V DC
System power	< 200 mW
DALI consumption	< 2 mA
Insulation	Class II

Output

Output voltage range	30 V DC - 180 V DC
Output current range	0 - 2 A
Output power range	0 – 150 W

Mechanical Data

Housing	Open Frame
Weight	60 g
Dimensions	94 x 45 x 25 mm

Operating Conditions

Ambient temp. range	from 0 °C up to 55 °C
Relative Humidity	< 85 %, non-condensing
Storage temp. range	from -40 °C up to 70 °C

Key features

- independent control of CCT
- up to 180 V voltage range
- DALI control (device type 6)

Function

DALI TW MODULE is a DALI device designed for TunableWhite control. It is not a power source for LEDs! For correct function an external LED driver must be used (constant current). Selection of the LED driver depends on the LED load used (forward voltage and current). DALI TW MODULE controls the CCT of light according to the DALI commands received. On DALI line, the device appears as standard DALI device type 6 (LED driver) allowing for direct CCT level control, group addressing, fading and scene settings.

DALI TW MODULE represents simple way of CCT control via DALI using standard components – LED driver and DALI controller.

Conformance with regulations

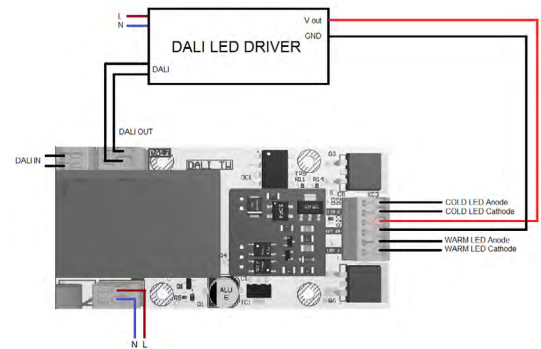
EN 55015	limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
EN 61547	Equipment for general lighting purposes EMC immunity requirements
EN 62386-102	Digital addressable lighting interface, general requirements for control gears
EN 62386-207	Digital addressable lighting interface, LED drivers



DALI TW MODULE type 8

DALI TW MODULE is a DALI compatible device (device type 8) especially designed to allow for the TunableWhite control of LED modules through a DALI interface. **For correct function an external LED driver is required (DALI LED driver if brightness control is desired).** The device itself is powered independently from mains. The device is open-frame module that can be easily mounted into the luminaire.

Connection



Connections

Mains cable	Wires AWG 28-16 (0.08–1.5 mm ²)
DALI cable	Wires AWG 28-16 (0.08–1.5 mm ²)
LED cable	Wires AWG 28-16 (0.08–1.5 mm ²)

Power

Mains supply	90–260 V AC / 47-400 Hz 120–370 V DC
System power	< 200 mW
DALI consumption	< 2 mA
Insulation	Class II

Output

Output voltage range	30 V DC - 180 V DC
Output current range	0 - 2 A
Output power range	0 – 150 W

Mechanical Data

Housing	Open Frame
Weight	60 g
Dimensions	94 x 45 x 25 mm

Operating Conditions

Ambient temp. range	from 0 °C up to 55 °C
Relative Humidity	< 85 %, non-condensing
Storage temp. range	from -40 °C up to 70 °C

Key features

- independent control of CCT
- up to 180 V voltage range
- DALI control (device type 8) – one address only

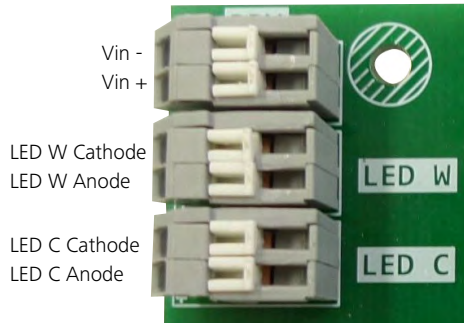
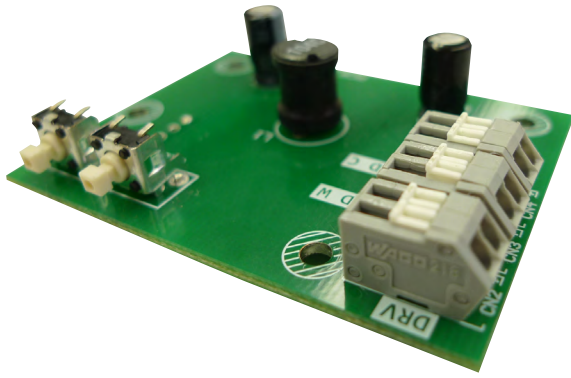
Function

DALI TW MODULE is a DALI device designed for Tunable White control. It is not a power source for LEDs! For correct function an external LED driver must be used (constant current). Selection of the LED driver depends on the LED load used (forward voltage and current). DALI TW MODULE controls the CCT of light according to the DALI commands received. On DALI line, the device appears with one address as standard DALI device type 8 (Colour control) allowing for direct brightness and CCT level control, group addressing, and fading and scene settings.

DALI TW MODULE represents simple way of CCT control via DALI using standard components – LED driver and DALI controller.

Conformance with regulations

EN 55015	limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
EN 61547	Equipment for general lighting purposes EMC immunity requirements
EN 62386-102	Digital addressable lighting interface, general requirements for control gears
EN 62386-207	Digital addressable lighting interface, LED drivers
EN 62386-209	Digital addressable lighting interface, Colour control



Connections

Cable Wires AWG 24-12 (0.5–2.5 mm²)

Power

Input voltage 25 V DC - 56 V DC

Output

Output voltage 25 V DC - 56 V DC

Output current 0 - 1.5 A

Module consumption 50 mW

Mechanical Data

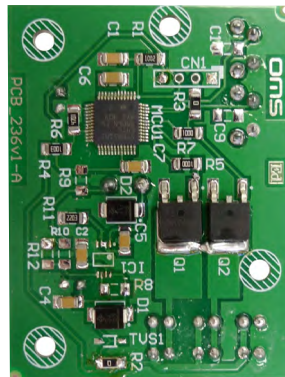
Housing Open case

Weight 18 g

Dimensions 60 x 45 x 15 mm

Operating Conditions

Ambient temp. range from 0 °C up to 55 °C

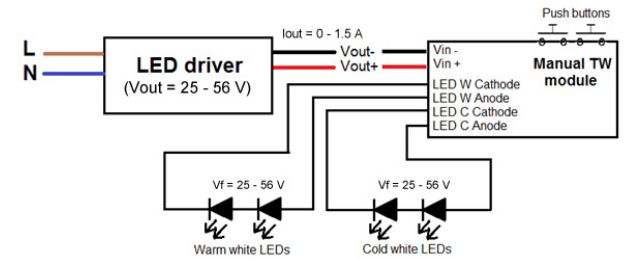


MANUAL TW MODULE 01

MANUAL TW is module with patented current splitter topology for Tunable white control. It is intended to be used in any Tunable white luminaire that fits its operating range (input voltage and output current). **The module requires external LED driver for its biasing and LED powering.**

MANUAL TW 01 has a fixed position of buttons so the module should be placed in a fixture on the place, where the button can be reachable.

Connection



Key features

- Two push buttons for manual control
- Output current range: up to 2 A
- Output power: up to 110 W
- Module internal biasing: 5 V / 8 mA (40 mW)

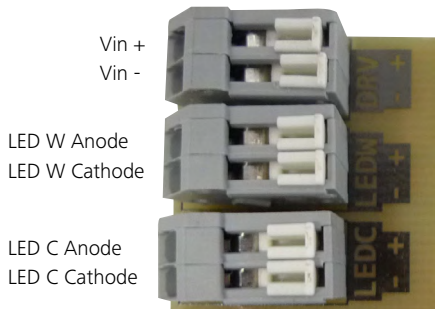
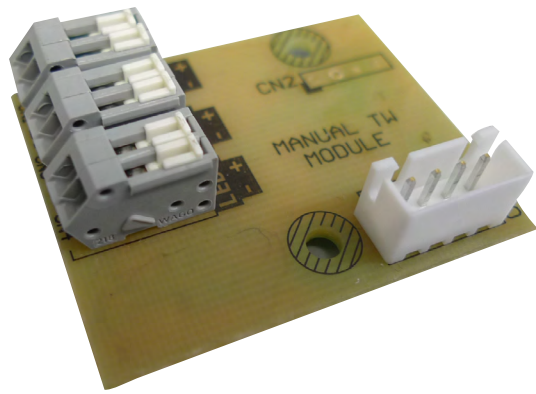
Function

After powering up Manual TW electronic reloads last used setting of output current ratio. The new level is saved to memory after 10 seconds of push button inactivity. Push button 1 (PB 1) serves for increasing and Push button 2 (PB 2) for decreasing of output current ratio. There are two modes of current ratio transients – smooth mode and discrete mode.

Discrete mode / discrete mode is activated by default. When short pressing one of the push buttons (holding pressed shorter than 1 second) the current ratio level is changed in discrete steps according to the table below. One press activates change of one step.

Smooth mode – smooth mode is activated when one of the push buttons is hold pressed longer than 1 second. After this period current ratio starts to change (increase or decrease) smoothly with approximately 2 % per second.

Step Index	1	2	3	4	5	6	7	8
Channel C Level (%)	0	9,8	20	31,7	45,1	63,5	85,5	100
Channel W Level (%)	100	90,2	80	68,3	54,9	36,5	14,5	0



Connections

Cable Wires AWG 24-12 (0.5–2.5 mm²)

Power

Input voltage 25 V DC - 70 V DC

Output

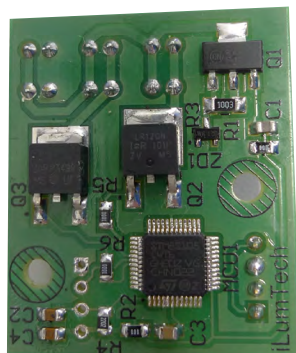
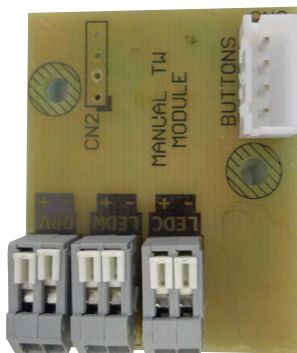
Output voltage 25 V DC - 70 V DC
 Output current 0 - 1.5 A
 Module consumption 15 mW

Mechanical Data

Housing Open case
 Weight 10 g
 Dimensions 42 x 34 x 15 mm

Operating Conditions

Ambient temp. range from 0 °C up to 55 °C

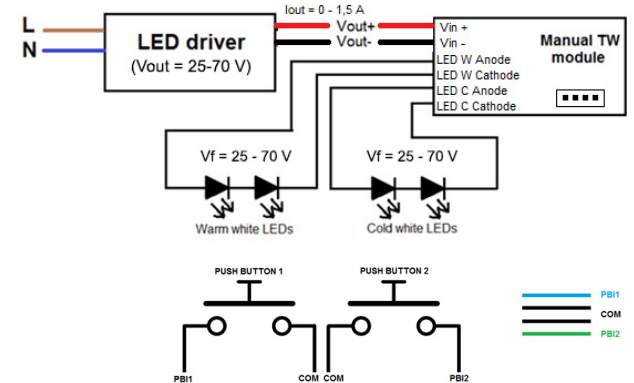


MANUAL TW MODULE 02

MANUAL TW is module with patented current splitter topology for Tunable white control. It is intended to be used in any Tunable white luminaire that fits its operating range (input voltage and output current). **The module requires external LED driver for its biasing and LED powering.**

Manual TW Module 02 is without the fixed position of the buttons, so can be placed anywhere in a luminaire.

Connection



Key features

- Two push buttons for manual control
- Output current range: up to 2 A
- Output power: up to 100 W
- Module internal biasing: 5 V / 3 mA (15 mW)

Function

After powering up Manual TW electronic reloads last used setting of output current ratio. The new level is saved to memory after 10 seconds of push button inactivity. Push button 1 (PB 1) serves for increasing and Push button 2 (PB 2) for decreasing of output current ratio. There are two modes of current ratio transients – smooth mode and discrete mode.

Discrete mode – discrete mode is activated by default. When short pressing one of the push buttons (holding pressed shorter than 1 second) the current ratio level is changed in discrete steps according to the table below. One press activates change of one step.

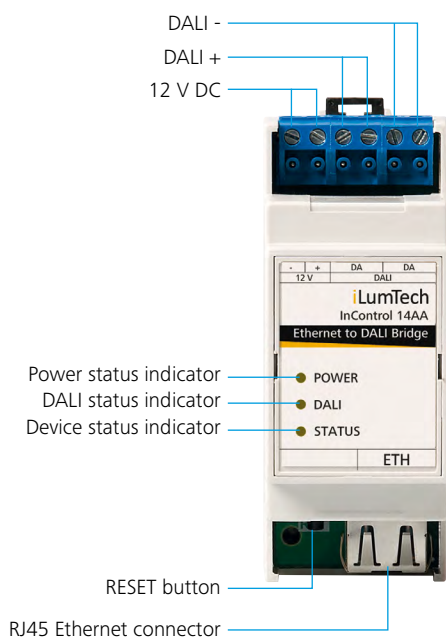
Smooth mode – smooth mode is activated when one of the push buttons is hold pressed longer than 1 second. After this period current ratio starts to change (increase or decrease) smoothly with approximately 2 % per second.

Purpose: electronic control device, manually controlled control device, built-in control device, for normally polluted environment. Mode of action: type 1.

Connection of push buttons

Manual TW module is delivered with cable harness for push button connection. The cable harness consists of 4 wires – Push button 1 input (PBI1), Push button input 2 (PBI2) and common ground (COM). Wires can be connected to any type of mechanical push buttons.

Step Index	1	2	3	4	5	6	7	8
Channel C Level (%)	0	9,8	20	31,7	45,1	63,5	85,5	100
Channel W Level (%)	100	90,2	80	68,3	54,9	36,5	14,5	0



Connections

Power cable	Wires AWG 28-16 (0.08–1.5 mm ²)
DALI cable	Wires AWG 28-16 (0.08–1.5 mm ²)
Ethernet cable	UTP CAT5E

Power

Input voltage	12 VDC
System power	< 0,5 W
DALI consumption	< 2 mA
Insulation	Class II

Mechanical Data

Housing	2U sized DIN box
Weight	70 g
Dimensions	94 x 36 x 60 mm

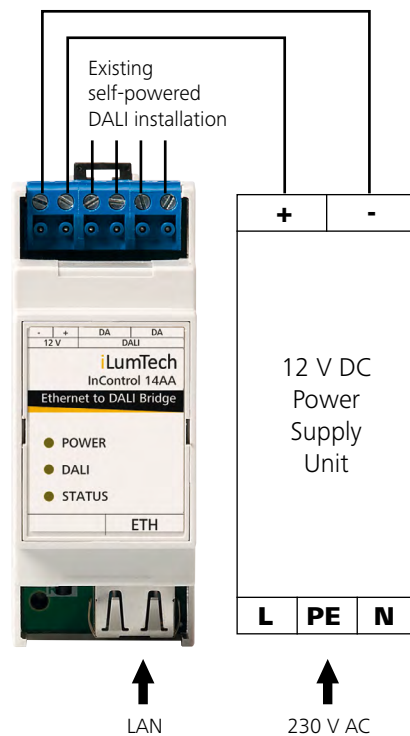
Operating Conditions

Ambient temp. range	from 0 °C up to 40 °C
Relative Humidity	< 85 %, non-condensing
Storage temp.range	from -40 °C up to 70 °C

DEE BRIDGE

DEE Bridge belongs to i-Products family. It is a solution comprising an Ethernet to DALI bridge device and easily operated user interface application. This solution enables intuitive control of luminaires within a DALI installation via an Ethernet network using a PC, tablet or smartphone.

Connection



Conformance with regulations

EN 61347-1	Lamp control gear. Part 1: General and safety requirements
EN 61347-2-1	Lamp control gear. Part 2-11: Particular requirements for miscellaneous electronic circuits used with luminaires
EN 62386-102	Digital addressable lighting interface, general requirements for control gears

Initial Dee Bridge device TCP/IP and port configuration settings:

TCP/IP address	192.168.1.252
Port	8421

Default web configuration settings:

Username	admin
Password	admin



MAIN MENU



CONTROL MODE

TIME LINE



USER SETTING



General

Power consumption	max. 9W
Power input	12 VDC
Cooling system	fanless
Temp.-Range	0°C to 40°C

System Hardware

CPU	Texas Instruments AM3354, 720MHz
Memory	256 MB SDRAM
Flash	128 MB NAND FLASH
Networking	LAN 100BaseTX, Bluetooth, Wi-Fi
I/O	3xDALI (1xDALI internally powered - 250mA)

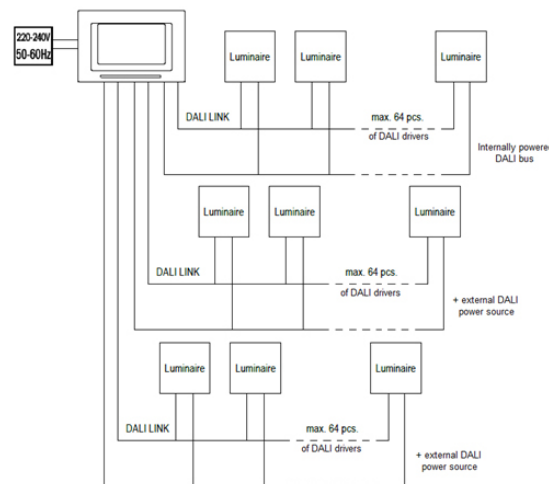
Display

Size	7"
LCD Type	TFT, Transmissive, Anti-Glare
Resolution	800x480, 262K colors
Viewing angle (H/V)	140 / 120 deg
Luminance	350 Cd/m ²
Contrast ratio	350:1
Touchscreen	Capacitive
Temp. Range	0°C to 40°C

DLS Touch Panel II

DLS TOUCH PANEL II is 7" touchscreen display which is suitable mainly for use in offices. It can be used also in classrooms, smaller manufacturing facilities and similar areas of application. DLS TOUCH PANEL II offers wide possibilities for Tunable White and RGB control. User can use pre-defined sequences or customize his own. Automatic control can be overridden by manual control at any time. Possibility of sensor connection makes the lighting installation even more intelligent by reacting to ambient light level changes and presence of people. DLS TOUCH PANEL II offers control of 3 DALI lines thus allowing for large lighting installation. Additionally DLS TOUCH PANEL II is DALI type 8 compatible.

Connection



Key features

- 2 modes: RGB and Dynamic white
- Manual or fully automatic control of light
- DALI type 8 support – up to 192 DALI type 8 devices
- Possibility of connecting up to 81 TW luminaires or 64 RGB luminaires
- 3 independent DALI lines – 1 internally powered, 2 externally powered
- User configurable time scheduler
- Possibility of connection light-level and movement sensor
- Energy saving solution
- Daylight simulation - bringing natural conditions into interior
- Security option – password protection of settings
- Simple and fast setting of colour with TW or RGB
- User friendly graphic interface
- User pre-settable screen savers
- Static scene pre-sets
- Dynamic scene pre-sets

Dimensions

