



FEATURES

- AC DIMMER + FADER
- Input: 230Vac
- BUS command options:
 - DMX
 - DALI
- Local control options, only for DMX version:
 - N.O. Push Button
 - Analog signal 0/1-10V and Potentiometer 10KΩ
- 4 independent outputs
- 230Vac outputs for R-C loads
- Brightness adjustment for LED loads
- “Trailing Edge” phase cut output for dimmable LED lamps
- Minimum dimming settable, only for DMX version
- Adjustable dimming curve, only for DMX version
- Soft start and soft stop
- Memory function
- 100% Functional test – 5 years warranty

➤ PRODUCT CODE

PRODUCT CODE	SUPPLY VOLTAGE	OUTPUT	OUTPUT CHANNELS	BUS COMMAND	LOCAL COMMAND
DAC230-4CH-DMX	230VAC	4 x 200W/CH	4	DMX	N°4 N.O. PUSH BUTTON N°4 Analog signal 0-10V N°4 Analog signal 1-10V N°4 POTENTIOMETERS 10KΩ
DAC230-4CH-DALI	230VAC	4 x 200W/CH	4	DALI	-



➤ REFERENCE STANDARDS

EN 55015	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
EN 61000-3-2	Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)
EN 61000-3-3	Electromagnetic compatibility (EMC) – Part 3-3 Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection
EN 61547	Equipment for general lighting purposes – EMC immunity requirements
EN 61347-1	Lamp controlgear – Part 1: General and safety requirements
EN 61347-2-13	Lamp controlgear – Part 2: Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules
ANSI E1.11	Entertainment Technology – USITT DMX512-A – Asynchronous Serial Digit Data Transmission Standard for Controlling Lighting Equipment and Accessories
ANSI E1.20	Entertainment Technology – RDM – Remote Device Management Over DMX512 Networks
IEC 62386-101	Digital addressable lighting interface – Part 101: General requirements – System components
IEC 62389-102	Digital addressable lighting interface – Part 102: General requirements – Control gear
IEC 60929-E2.1	Control Interface for controllable control gear – Control by d.c. voltage – Functional specification
ANSI E1.3	Entertainment Technology – Lighting Control Systems – 0 to 10V Analog Control Specification

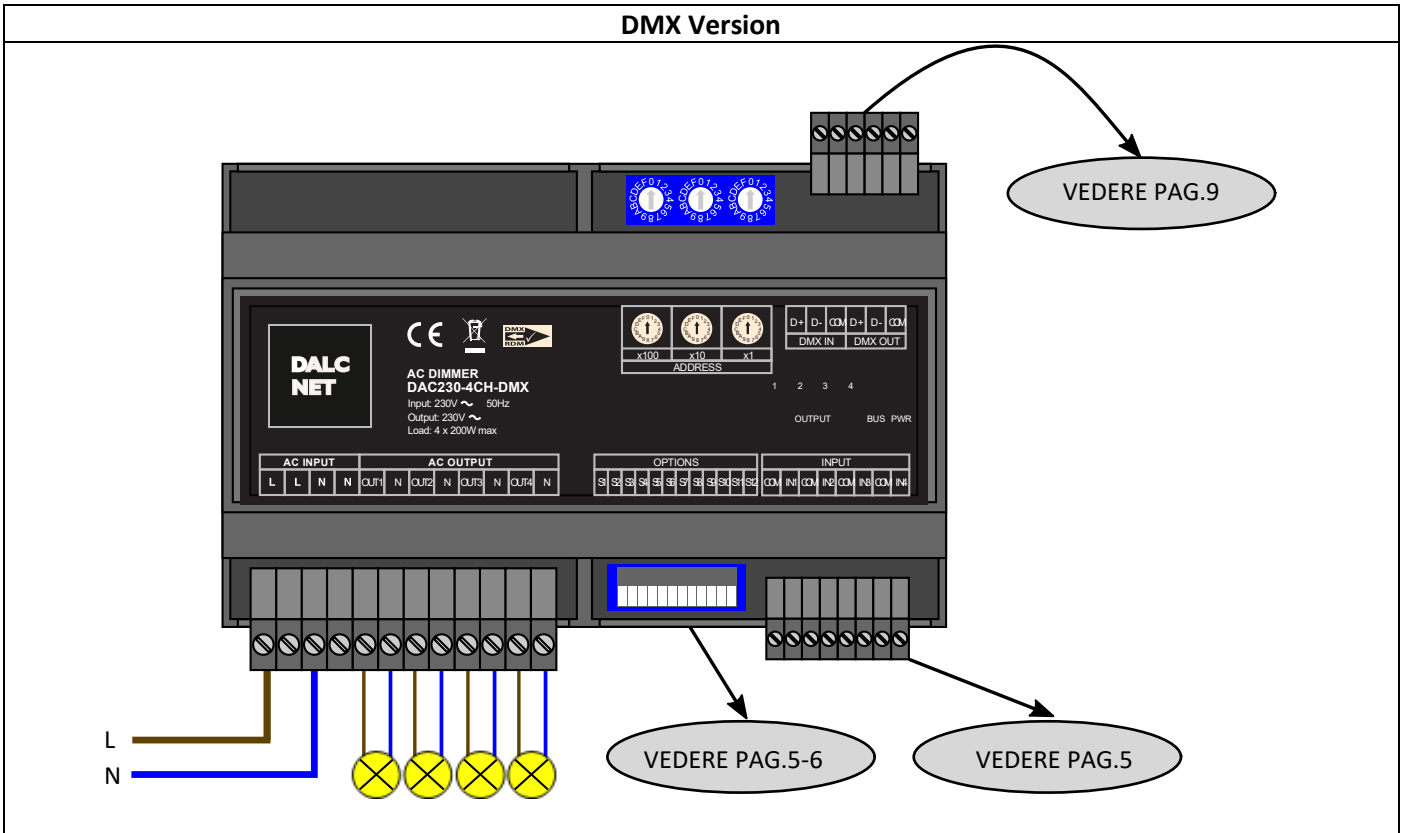
➤ TECHNICAL SPECIFICATIONS

		DAC230-4CH	
INPUT	Nominal supply voltage	230Vac	
	Input voltage	210...240Vac	
	Network frequency	50Hz	
	Full load efficiency	>95%	
	Power loss in standby mode	<500mW	
OUTPUT	Output voltage	210...240Vac	
		Single channel	4 channels
	Output current	Max 0.8A	Max 3.2A
	Minimum load power	1W/ch	-
	Nominal power for LED Load	200W/ch	800W tot
	Nominal power for Halogen Load	150W/ch	600W tot
	Type of load	R – C	
DIMMING	Dimming resolution	16bit	
	Dimming mode – phase cut	Trailing Edge	
	Dimming range ¹	1-100%	
ENVIRONMENTAL	Storage temperature	Min: -40°C ... Max: +60°C	
	Ambient temperature	Min: -40°C ... Max: +40°C	
	Protection grade	IP10	
	Power & Leds wiring	0,2 ÷ 2,5 mm ² – 30 ÷ 12 AWG	
	Analogic input & Bus wiring ²	0,2 ÷ 1,5 mm ² – 30 ÷ 16 AWG	
	Power & Leds wire preparation length	11,5 mm	
	Analogic input & Bus wire preparation length ²	10 mm	
	Casing material	Plastica	
	Mechanical dimensions	143 x 91 x 62 – DIN RAIL 8M	
	Packaging dimensions	156 x 124 x 71 mm	
Weight	200g		

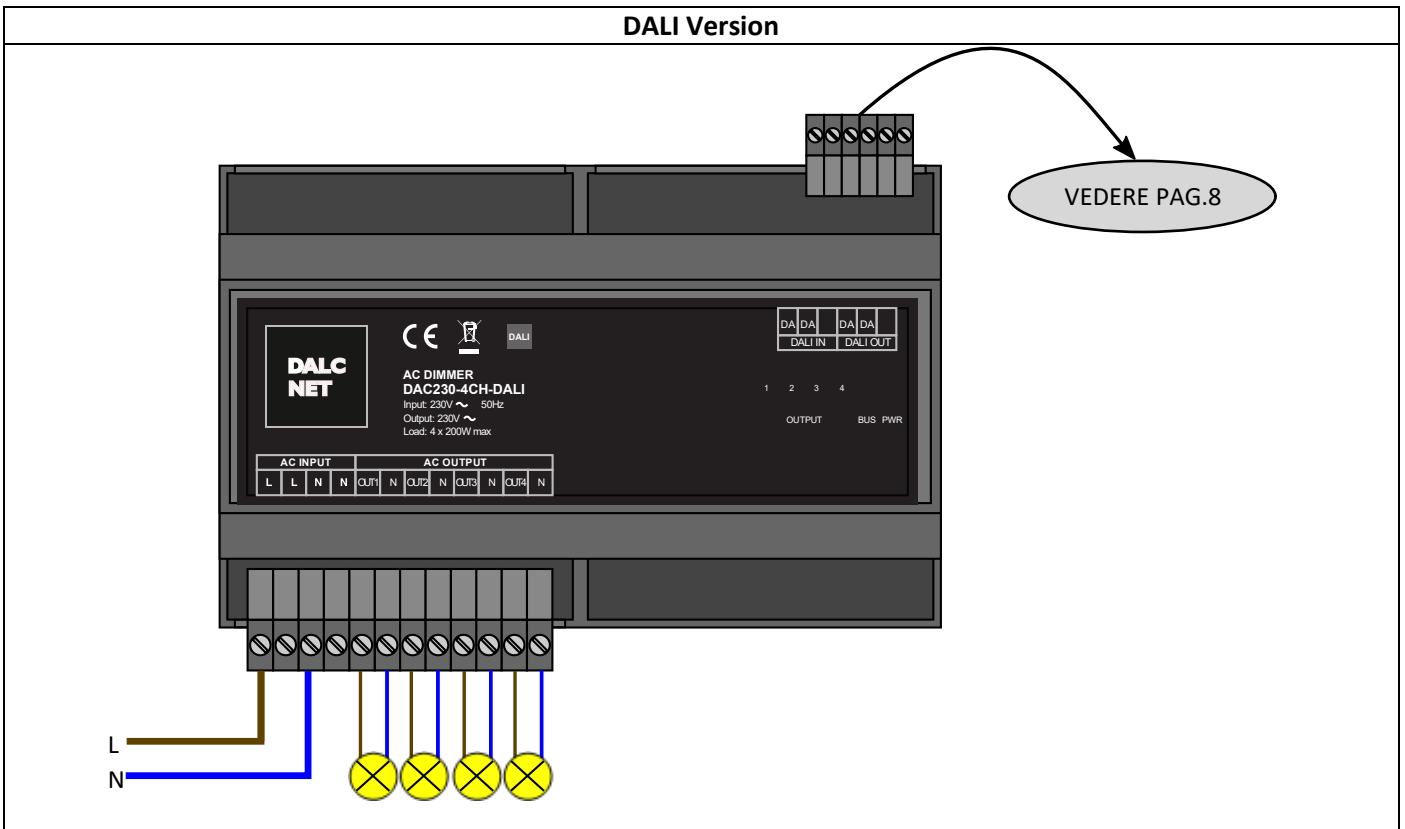
¹ The dimming range depends on the technology of the bulb and / or LED module² Only for DMX version

➤ **INSTALLATION**

DMX Version



DALI Version





➤ TECHNICAL NOTES

Installation

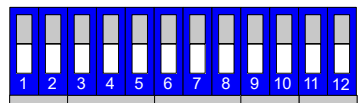
- Installation and maintenance must be performed in the absence of voltage.
- Installation and maintenance must only be performed by qualified personnel in compliance with current regulations.
- The product must be installed inside an electrical panel protected from overvoltages.
- The product must be protected by a suitably sized fuse.
- The product must be protected by a suitably sized magnetothermic switch.
- The product must be installed in a vertical position with the front / label facing the front or in a horizontal position with the front / label facing upwards. Other installation positions of the product are not allowed. The bottom position with the front panel / label facing down is not allowed.
- Use in thermally harsh environments could limit the output power.
- Keep 230V circuits (LV) and non-SELV circuits separate from SELV circuits with very low safety voltage.

Commands and Outputs

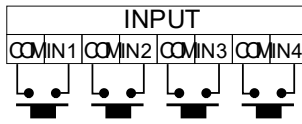
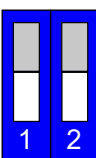
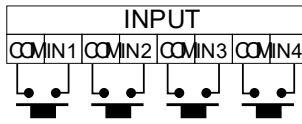
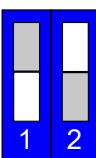
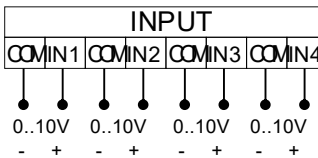
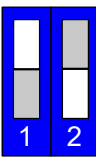
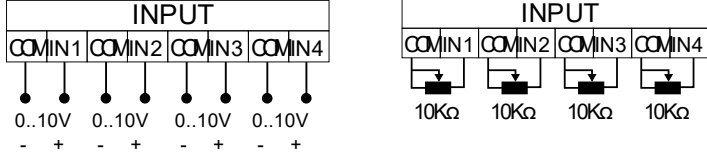
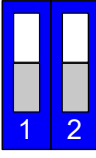
- The length of the connection cables between the local controls (N.O. Push Button, 0-10V, 1-10V or other) and the product must be less than 25m long.
- The length of the connection cables between the product and the LED module(s) must be less than 25m.

➤ **SETUP & INSTALLATION (ONLY DMX VERSION)**

○ **TYPE OF INPUT COMMANDS**

	<ul style="list-style-type: none"> - DIP FROM 1 TO 2: Type of input - DIP FROM 3 TO 5: Minimum dimming of channels 1 and 2 - DIP FROM 6 TO 8: Minimum dimming of channels 3 and 4 - DIP FROM 9 TO 10: Curve type - DIP FROM 11 TO 12: Reserved 					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">INPUT</td> <td style="width: 25%;">MIN. DIM. CH 1 e 2</td> <td style="width: 25%;">MIN. DIM. CH 3 e 4</td> <td style="width: 25%;">CURVA</td> <td style="width: 25%;">RIS.</td> </tr> </table>	INPUT	MIN. DIM. CH 1 e 2	MIN. DIM. CH 3 e 4	CURVA	RIS.	
INPUT	MIN. DIM. CH 1 e 2	MIN. DIM. CH 3 e 4	CURVA	RIS.		

○ **INPUT TYPE**

TYPE OF COMMAND	DESCRIPTION	CONNECTIONS	SETTINGS
N.O. PUSH BUTTON	N.O. Push Button Without memory		
	N.O. Push Button With memory		
0-10V	Analog Input 0-10V		
1-10V	Analog Input 1-10V & Potentiometer 10kΩ		



○ **MINIMUM OF DIMMING CH 1 and 2**

MINIMUM DIMMING VALUE	MINIMUM SET ON CHANNELS	SETTINGS	MINIMUM DIMMING VALUE	MINIMUM SET ON CHANNELS	SETTINGS
Minimum of dimming 1%	CH1 and CH2		Minimum of dimming 30%	CH1 and CH2	
Minimum of dimming 6%	CH1 and CH2		Minimum of dimming 40%	CH1 and CH2	
Minimum of dimming 10%	CH1 and CH2		Minimum of dimming 50%	CH1 and CH2	
Minimum of dimming 20%	CH1 and CH2		Minimum of dimming 100%	CH1 and CH2	

○ **MINIMUM OF DIMMING CH 3 and 4**

MINIMUM DIMMING VALUE	MINIMUM SET ON CHANNELS	SETTINGS	MINIMUM DIMMING VALUE	MINIMUM SET ON CHANNELS	SETTINGS
Minimum of dimming 1%	CH3 and CH4		Minimum of dimming 30%	CH3 and CH4	
Minimum of dimming 6%	CH3 and CH4		Minimum of dimming 40%	CH3 and CH4	
Minimum of dimming 10%	CH3 and CH4		Minimum of dimming 50%	CH3 and CH4	
Minimum of dimming 20%	CH3 and CH4		Minimum of dimming 100%	CH3 and CH4	



○ TYPE OF CURVE

Default		Quadratic		Logaritmic		Linear	
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➤ LOCAL COMMAND OPERATION – PUSH DIMMER (ONLY DMX VERSION)

The intensity and the status change (ON/OFF) are controlled by the N.O. push button.

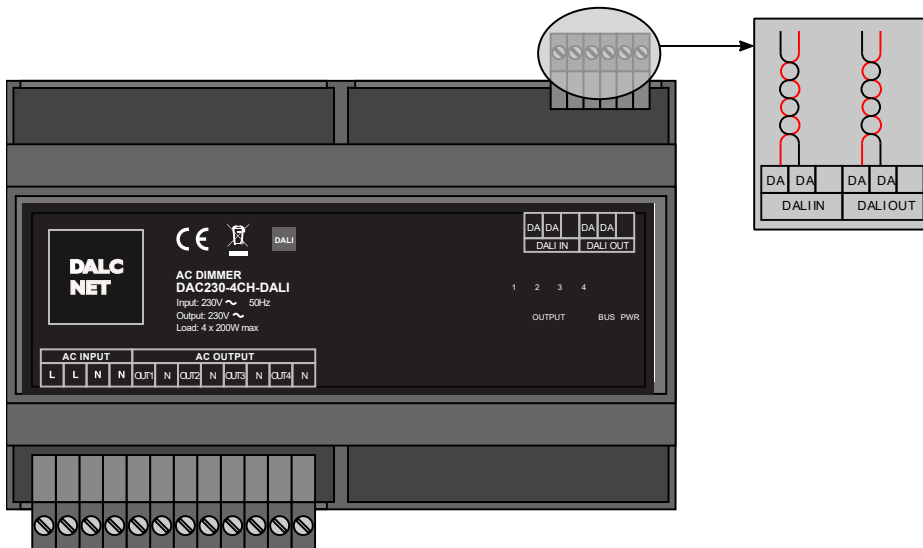
Button	Intensity
Click	On / Off
Double Click	Maximum intensity
Long pressure (>1s) from OFF	Turn ON at 1% (Nightly Time), then dimmer up/down
Long pressure (>1s) from ON	Dimmer up/down

➤ 0-10V & 1-10V & POTENTIOMETER OPERATION (DMX VERSION ONLY)

The intensity is controlled by input voltage variation.

Input type	Intensity
0-10V	Dimmer: 0-1V=0% 10V=100%
1-10V	
Potentiometer 10KΩ	

➤ **DALI BUS SETUP**



TYPE OF BUS:

DALI Standard

REFERENCE STANDARDS:

IEC 62386-101	Digital addressable lighting interface – Part 101: General requirements – System components
IEC 62389-102	Digital addressable lighting interface – Part 102: General requirements – Control gear

ONBOARD LED:

In the case of no bus power detected, or bus error, the led blinks fast (2 pulse per second).

In the case of bus power but no data, led blinks slow (1 pulse per second).

In the case of data link active, the led stands on.

ADDRESSING:

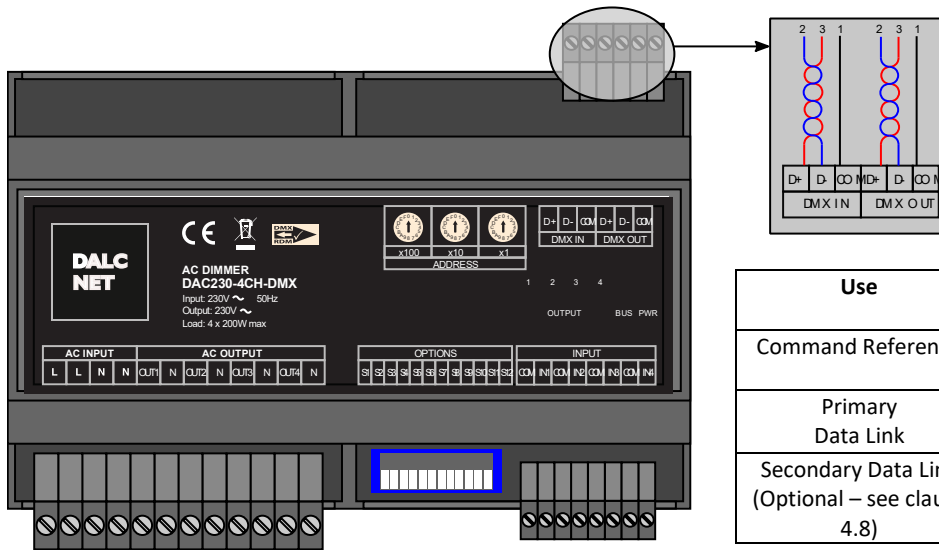
- Simplified method: One ballast connected at a time
- Random Address Allocation

CHANNELS MAP - DALI:

○ Type of load: Single color up to 4 loads

Addr	Function	Map: Dimmer
0	Dimmer 1	Dimmer (Brightness Value) 0 .. 254
1	Dimmer 2	Dimmer (Brightness Value) 0 .. 254
2	Dimmer 3	Dimmer (Brightness Value) 0 .. 254
3	Dimmer 4	Dimmer (Brightness Value) 0 .. 245

➤ **DMX+RDM BUS SETUP**



Use	3-Pin XLR Pin #	DMX512 Function
Command Reference	1	Data Link Common
Primary Data Link	2	Data 1-
	3	Data 1+
Secondary Data Link (Optional – see clause 4.8)	4	Data 2-
	5	Data 2+

TYPE OF BUS:

DMX512-A/RDM Standard

REFERENCE STANDARDS:

ANSI E1.11	Entertainment Technology – USITT DMX512-A – Asynchronous Serial Digit Data Transmission Standard for Controlling Lighting Equipment and Accessories
ANSI E1.20	Entertainment Technology – RDM – Remote Device Management Over DMX512 Networks

ONBOARD LED:

In the case of no bus error, the led blinks fast (2 pulse per second).

In the case of no bus detected, led blinks slow (1 pulse per second).

In the case of data link active, the led stands on.

RELATION WITH LOCAL COMMANDS:

At power-up, in case of absence of connection to the BUS, local control is active.

When the BUS is detected, the control passes to the BUS. It remains to the BUS until there is signal.

In the absence:

- If the local command is N.O. PUSH BUTTON, the control passes to local command in the event of a N.O. push button pressure
- If the local command is 0-10V or 1-10V the control passes immediately to the local command.



ADDRESSING:

- RDM
- By selectors

	DIP Value	DIP positioning	DIP Value	DIP positioning	Description
DMX	000				Addressing by RDM protocol
	from 001		to 512		Manual DMX addressing from 1 to 512

CHANNEL MAP - DMX:

Type of load: Single color up to 4 loads

Ch	Function	Map: Dimmer
1	Dimmer 1	Dimmer (Brightness Value) 0 .. 255
2	Dimmer 2	Dimmer (Brightness Value) 0 .. 255
3	Dimmer 3	Dimmer (Brightness Value) 0 .. 255
4	Dimmer 4	Dimmer (Brightness Value) 0 .. 255

RDM COMMANDS:

REQUIRED PARAMETERS	
DISC_UNIQUE_BRANCH	✓
DISC_UN_MUTE	✓
SUPPORTED_PARAMETERS	✓
PARAMETERS_DESCRIPTION	✓
DEVICE_INFO	✓
SOFTWARE_VERSION_LABEL	✓
DMX_START_ADDRESS	✓
IDENTIFY_DEVICE	✓

SUPPORTD PARAMETERS	
PRODUCT_DETAIL_ID_LIST	✓
DEVICE_MODEL_DESCRIPTION	✓
MANUFACTURER_LABEL	✓
DEVIDE_LABEL	✓
BOOT_SOFTWARE_VERSION_ID	✓
BOOT_SOFTWARE_VERSION_LABEL	✓
DMX_PERSONALITY	✓
DMX_PERSONALITY_DESCRIPTION	✓
SLOT_INFO	✓
SLOT_DESCRIPTION	✓
DEFAULT_SLOT_VALUE	✓