

Light is OSRAM



OTi DALI 210/220-240/24 1-4 CH P

24 V DALI Constant Voltage LED driver
Dimmable range 0/0,1% - 100%

Benefits

Long lasting and high reliability.
From 1 to 4 channels to arbitrarily distribute the power.
Suitable for installation under sunlight.
IP66/IP67, salt mist resistant and DC functionality.
AstroDim functionality for automatic turn on/off and dimming.

Applications

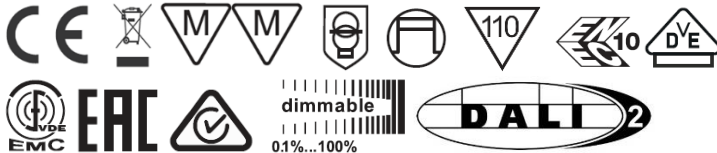
In building facades, luminous signage, public squares and architecture lighting.
Suitable for indoor and outdoor SELV installation.



Housing material: natural anodized aluminum

* image for information purpose only

Approvals



When not printed on product label, they are under evaluation.

L	330 mm	Total length
L1	320 mm	Inter-axis spacing
B	69 mm	Width
H	37 mm	Height

Product Features

- 1 to 4 self-configuring DALI channels
- Lamp Failure detection
- Independent (Suitable for Class I luminaires)
- Smart Power Supply
- SELV, Vout: 24,7 V
- Wide ta range -30...+60°C
- Driver with output power range to 210 W
- Overload/Over temperature and Short circuit protection
- Tc max = 85 °C
- AstroDim functionality
- Dimmable via DALI interface
- Very low min dimming level: 0,1%
- High level surge protection: up to 6 kV (L-N), 8 kV (L/N-PE)
- Mains voltage: 220–240 Vac / 176–276 VDC
- 50'000 h lifetime at TC **
- 5 years guarantee*
- High IP protection (IP66/IP67)
- Output wire length up to 50 m

*10% cumulated failure, ** 24 h = 14 h ON 10 h Standby

Electrical specification

	Item	Value	Unit	Remarks
INPUT	Nominal line voltage	220 - 240	V	
	Mains line frequency	0 / 50 / 60	Hz	DC operation with external fuse, e.g. Littelfuse 04773.15MXP
	AC voltage range	198 - 264	V	
	DC voltage range	176 – 276	V	DC operation with external fuse only (e.g. Littelfuse 04773.15MXP)
	Nominal current	1.05	A	Full load, 230 V _{ac} , 50 Hz
	Total Harmonic Distortion (THD)	< 5	%	Full load, 230 V _{ac} , 50 Hz, see graphs
	Power factor λ	> 0,95		Full load, 230 V _{ac} , 50 Hz, see graphs
	ECG Efficiency	93	%	Typical, Full load, 230 V _{ac} , 50 Hz, see graphs
	Power loss in stand-by mode	< 500	mW	230 V _{ac} , 50 Hz
	Protection class	I		
	Suitable for fixtures with prot. Class	I		
	Inrush current	3.7	A	Full Load, 240 V _{ac} , Cold Start Duration = 200 μs, 50% / 50% I _{pk}
	Max. units per circuit breaker:			
	Max. ECG no. on circuit breaker 10 A (B)	7		
	Max. ECG no. on circuit breaker 16 A (B)	11		
	Max. ECG no. on circuit breaker 25 A (B)	17		
Max. ECG no. on circuit breaker 10 A (C)	7			
Max. ECG no. on circuit breaker 16 A (C)	11			
OUTPUT	Nominal voltage	24.7	V	
	Voltage accuracy	+/- 1,2	%	
	Voltage ripple	< 5	%	Ripple / average @ 100 Hz; Full load
	Nominal output power	0 – 210	W	Power factor, harmonics and EMI guaranteed between 80 – 210 W
	Device power loss	18.4	W	Full load, 230 Vac, 50 Hz, Typical
	Maximum power	100	W	Smart Power to manage up to Pout_max +25% Full load on one channel only is allowed
	Galvanic isolation	SELV		
DIMMING	Dimming interface	DALI 2.0		DALI operations are guaranteed to work properly with a min. load of 9.5 W per channel.
	Dimming range	0,1 – 100	%	
	Dimming method	PWM		
	PWM frequency	1	kHz	
	Galvanic Isolation	Basic / Double		Basic DALI to Primary / Double DALI to Secondary
ENVIRONMENTAL	Ambient temperature range	-30...+60	°C	
	Max. temperature at T _c test point	+85	°C	Measured on T _c point indicated of the prod label, T _a not exceeded
	Storage temperature range	-40...+85	°C	
	Permitted rel. humidity during operation	5 – 85	%	Not condensing
	Surge capability (L vs N / LN vs PE)	6 / 8	kV	acc to. EN 61547
	Environmental rating	Outdoor		
	IP protection class	IP 67, IP 66		
	Mains switching cycles	> 10000	cycles	@ T _a = 25°C
	Expected ECG lifetime	30000	h	@ T _a = 60°C, T _c = 85°C and 10% failure rate, always ON
		50000	h	@ T _a = 60°C, T _c = 85°C and 10% failure rate, 14 h ON and 10 h stand-by per day

	No-load proof	Yes		Auto recovery
	Overheating protection	Yes		Auto recovery
	Overload protection	Yes		Auto recovery + Smart Power
	Short-circuit protection	Yes		Auto recovery
	Type of connection	Cables		
DIMENSIONS	Height	37	mm	
	Length	330	mm	Overall including fixing brackets
	Width	69	mm	
	Casing material	Aluminium		Natural anodized
	Mounting hole spacing, length	320	mm	On two side

Protection

Over temperature, Overload, Short-circuit, Input overvoltage, Output overvoltage. Reversible.

Full load on one channel only is allowed.



INPUT	Colour L, N and PE	Blue, Brown and Green/Yellow		
	Cable cross section	1.0	mm ²	H05RN-F 3G1.0 mm ²
	Wire preparation length	90	mm	Overall unsheathed
	Wire peeling length	10	mm	
	Lead length	300	mm	
OUTPUT	Colour + and -	Orange, Blue & and Light Purple / Orange, Black and Purple		24 V x 2 (Orange) CH1 x 1 (Blue) CH2 x 1 (Light Purple) CH3 x 1 (Black) CH4 x 1 (Purple)
	Cable cross section	1.5	mm ²	H07RN-F/3x1.5 mm ²
	Wire preparation length	90	mm	Overall unsheathed
	Wire peeling length	15	mm	
	Lead length	300	mm	
DALI DIMMING	Colour DALI cable	Black and Black		
	Cable cross section	1.0	mm ²	H05RN-F/2x1.0 mm ²
	Wire preparation length	90	mm	Overall unsheathed
	Wire peeling length	10	mm	
	Lead length	300	mm	

Led wire length

The wire length from the ECG to the LED module at full load can reach 50 m.

Some combinations of cable length / section don't allow full power output. See below table for reference.

Choose a proper wire section to ensure that the LED module input voltage is at least 23 V.

Example with Pout = 210 W connected to only one channel.

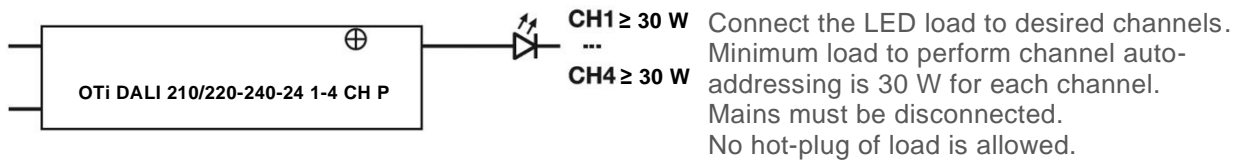
		Cable length [m] 24.7 V					
		5	10	20	30	40	50
Cable section [mm ²]	0,5	118	60	30	20	15	12
	0,75	178	89	45	30	22	18
	1	210	118	60	40	30	23
	1,5	210	178	89	59	44	36
	2,5	210	210	148	100	74	59
	4	210	210	210	158	118	95
	6	210	210	210	210	178	142
	10	210	210	210	210	210	210
16	210	210	210	210	210	210	

Channel addressing procedure

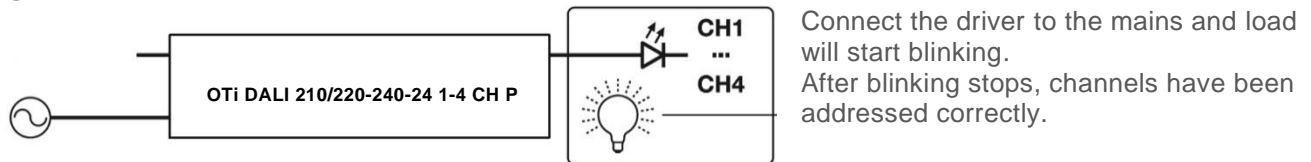
AUTO ADDRESSING ON FIRST POWER UP

Driver performs auto channel detection on first power up. No magnet is needed for this operation.

STEP 1:

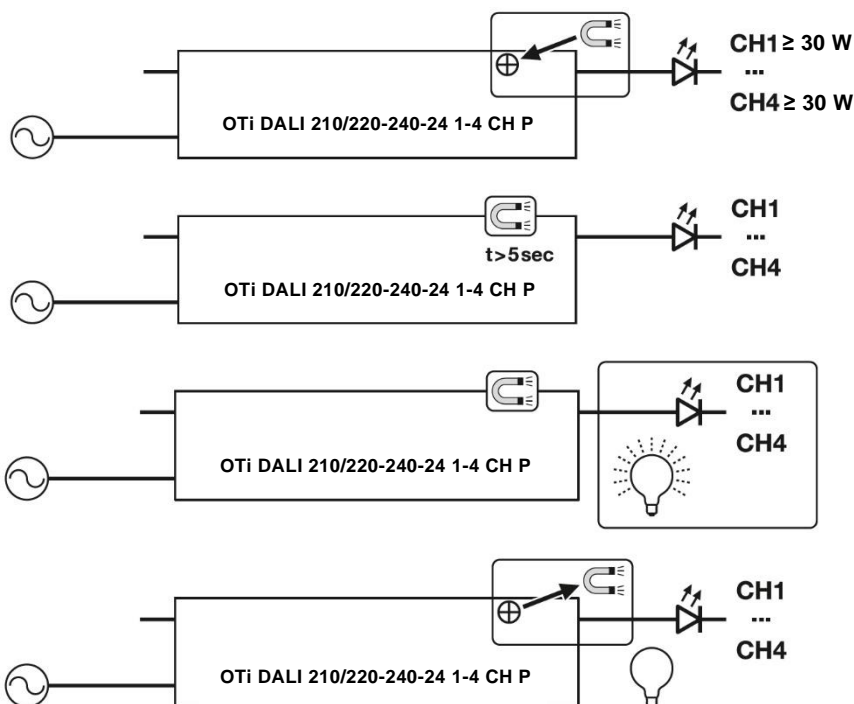


STEP 2:



ADDRESS ERROR FIXING OR RESET

Next procedure is needed only for re-addressing in case of installation error or reset. Driver must be under operation (not in stand-by).

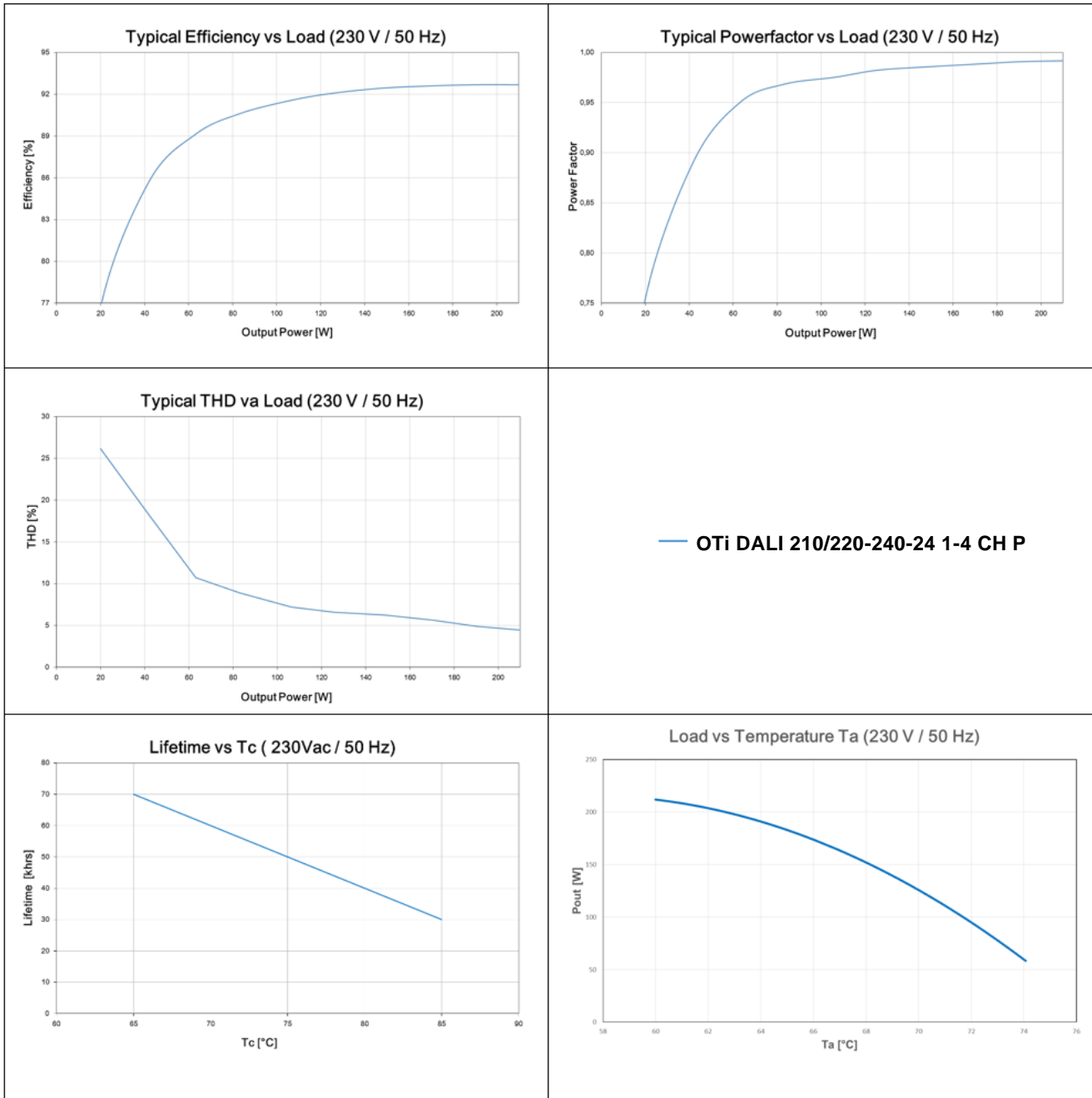


During normal operation, ensure each channel is loaded with at least 30W, then put the provided magnet on top of the sensor located where the ⊕ symbol is printed on the driver.

Once magnet is on the correct position, allow at least 5 seconds.

The load will blink few times showing the channels are being recognized.

Remove magnet and the re-addressing is completed.



Remarks

- **Product performances below minimal load condition:** the output power is still generated if the load is below the minimum output power (80 W on single channel or distributed), without any safety risk, but performances regarding THD, EMI, etc. are not guaranteed. See typical operation window graph for details.
- **Output short circuit protection:** short circuit current is limited without damaging the unit. The short circuit protection is self-restoring.
- **Output overload protection:** in case of overload (< 25%), the device automatically dims down the output to keep the power within 210 W and let the LED load to warm-up. When the overload exceeds the 25% of maximum nominal output power, the LED load will blink to manifest a fault condition.
- **Lamp failure detection:** minimum load per channel that doesn't trigger open circuit detection is 30 W.
- **No load operation:** do not put a switch between ECG and load.
- **Over temperature protection:** the driver is protected against temporary overheating, so it automatically dims down when T_c is exceeded. The protection is self-restoring.
- **Exit cables:** the supplied, internally wired cables cannot be replaced; if the cord is damaged, the LED driver must be replaced.
- **Waterproof:** the driver is designed for outdoor installation with IP66 / IP67 protection grade. Input and output cables must be connected by means of a sealed cable clamp.
- **Recommendations on how to dispose of it at the end of its life in line with Directive 2012/19/EU:** separate control gear must be disposed of, in accordance with WEEE, at certified waste disposal companies. For this purpose, recycling centres and take-back systems (CRSO) collection points are available in the trade or at private disposal companies that accept separate control gears free of charge. In this way, raw materials are conserved, and materials are recycled.

Standards

EN 61347-1

EN 61347-2-13

EN 55015

EN 61547

EN 61000-3-2

EN 61000-3-3

EN 60598-1

EN 62384

Ordering information

Product name	EAN 10	EAN 40	Pieces / Box	Pieces / Shipping carton
OTi DALI 210/220-240/24 1-4CH P	4062172032087	4062172032094	1	6

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