

DALI LED Drivers (With System Feedback)

Constant Voltage Version - DALI/1-10V/Switch-Dim

HYTRONIK®

HED4030-A / HED6030-A / HED2075-A / HED3075-A



Applications

Ideal for use with 'plug n' play' or DALI broadcast master.

Fully addressable DALI systems

Switch-Dim

1-10V Dimming Systems

Suitable for LED strip and low voltage spot lamps - insulated terminal cover with cord restraint:

- Office / Commercial Lighting
- Domestic / Decorative
- Retail & Display
- Hotels

Use for retrofit upgrades & new luminaire designs.

Features

- with DALI feedback
- 1-10V
- Switch-Dim with Synchronization
- Active PFC Design
- Hybrid Flicker-free Dimming (HED2075-A only)
- Configurable Constant Voltage (CV) Output
- Logarithmic Dimming Curve
- Linear Dimming
- Thermal Cut-out Protection
- Short Circuit Protection
- Over-load Protection
- Permanent Settings Memory, Protected against Loss of Power
- 5 Year, 50,000hr Warranty

All with Auto-restart



DALI Group Selection (for HED3075-A only)

DALI group configuration can be done via software setting from PC or by hardware setting of the rotary switch on the driver.

1. PC grouping can overwrite the rotary switch grouping and vice versa. The latest setting is always applied.
2. There are 16 channels available on the rotary switch. "0" means ungrouped. The rotary switch channel corresponds to the groups listed as below:

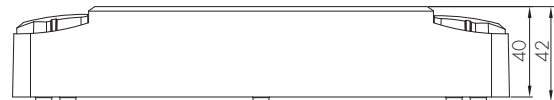
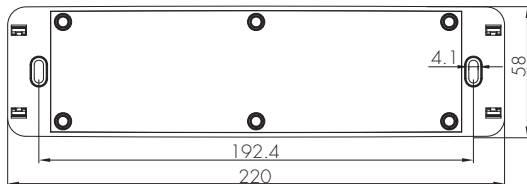
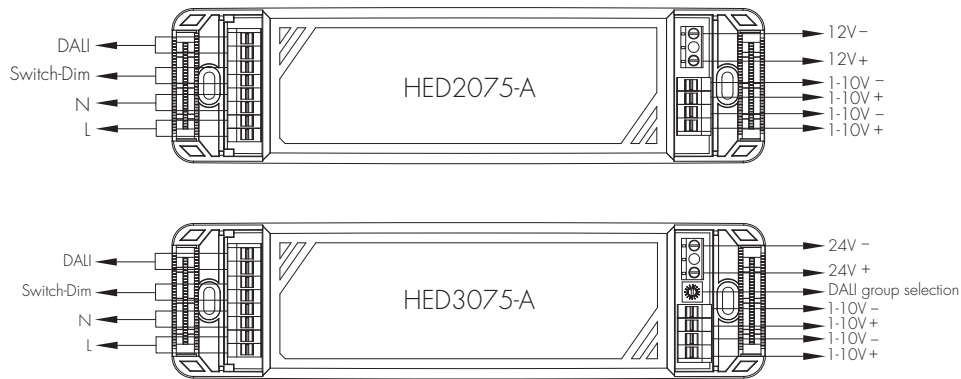
Switch Channel	DALI Group	Switch Channel	DALI Group
0	ungrouped	8	group 7
1	group 0	9	group 8
2	group 1	A	group 9
3	group 2	B	group 10
4	group 3	C	group 11
5	group 4	D	group 12
6	group 5	E	group 13
7	group 6	F	group 14

Technical Data

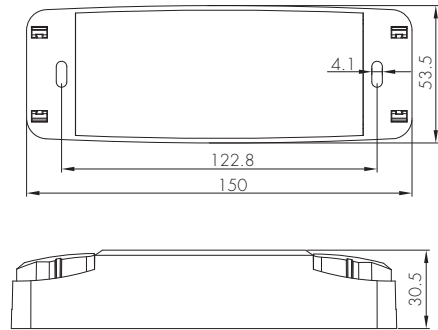
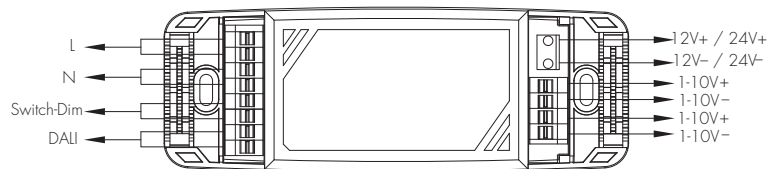
	Model No.	HED4030-A	HED6030-A	HED2075-A	HED3075-A
Input	Mains Voltage	220~240VAC 50/60Hz			
	Mains Current	0.175~0.16A	0.165~0.15A	0.39~0.36A	0.4~0.35A
	Power Factor	≥0.95	≥0.95	≥0.97	≥0.97
	Max. Efficiency	88%			
	Dielectric Strength	Input→Output : 3000VAC			
	Leakage Current	<0.25mA			
Output	Power (Max.)	30W	30W	75W	75W
	Uout Max.	12V	24V	12V	24V
	Turn-on Time	<0.5s	<0.5s	<0.5s	<0.5s
	Dimming Interface	DALI, Switch-Dim, 1-10V			
Environment	Operation Temp.	Ta: -20~+45°C	Ta: -20~+45°C	Ta: -20~+45°C	Ta: -20~+45°C
	Case Temp. (Max.)	80°C	75°C	85°C	85°C
	IP Rating	IP20	IP20	IP20	IP20
Safety and EMC	EMC Standard	EN55015, EN61547, EN61000-3-2, EN61000-3-3			
	Safety Standard	EN61347-1, EN62493, EN61347-2-13			
	DALI Standard	IEC62386-101; IEC62386-102; IEC62386-207			
	Certifications	Semko, CB, SAA, CE, EMC			

Dimensions and Terminals

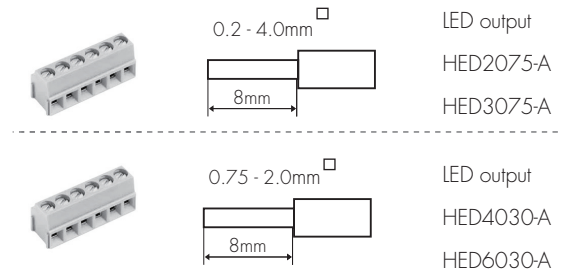
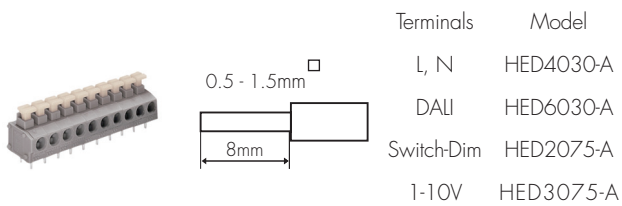
Model: HED2075-A 1x75W, 12V
HED3075-A 1x75W, 24V



Model: HED4030-A 1x30W, 12V
HED6030-A 1x30W, 24V



Wire Preparation



To make or release the wire from the terminal, use a screwdriver to push down the button.

Loading and In-rush Current

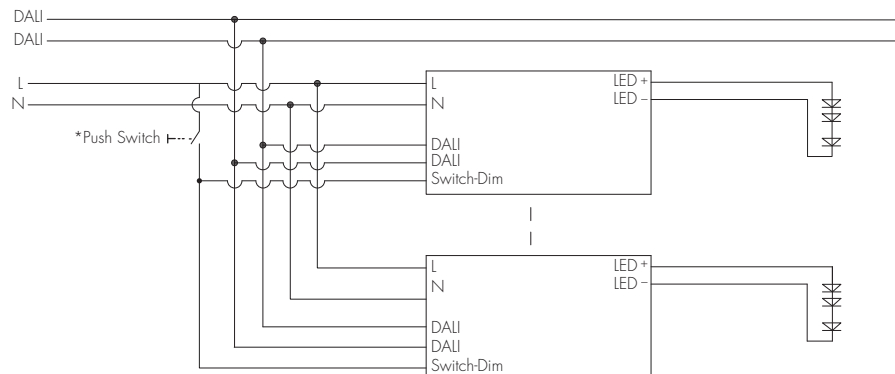
Model	HED4030-A	HED6030-A	HED2075-A	HED3075-A
In-rush Current (I _{max} .)	2.8 A	2.8 A	26 A	26.6 A
Pulse Time	70 μs	70 μs	400 μs	400 μs

Number of Drivers Based upon 16A Circuit Breaker

Cct Breaker Type	HED4030-A	HED6030-A	HED2075-A	HED3075-A
Type B	60	60	10	10
Type C	100	100	20	20

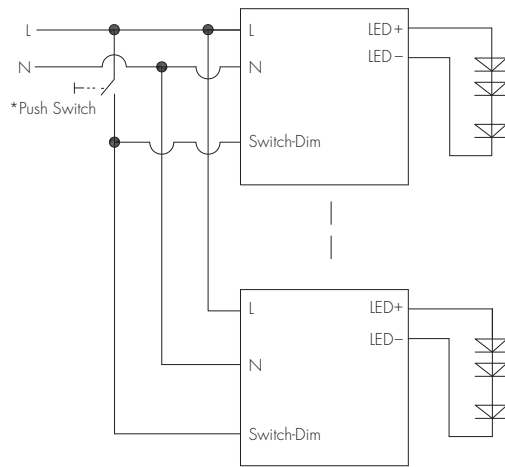
Wiring Diagrams

DALI Connections



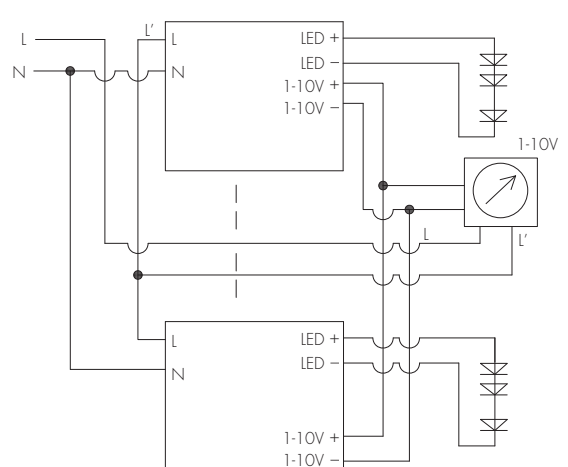
- * Optional Switch-Dim for manual over-ride of DALI 1-10V is disabled upon DALI connection
- * Unused terminals have been omitted for clarity.

Switch-Dim Connections



* Unused terminals have been omitted for clarity.

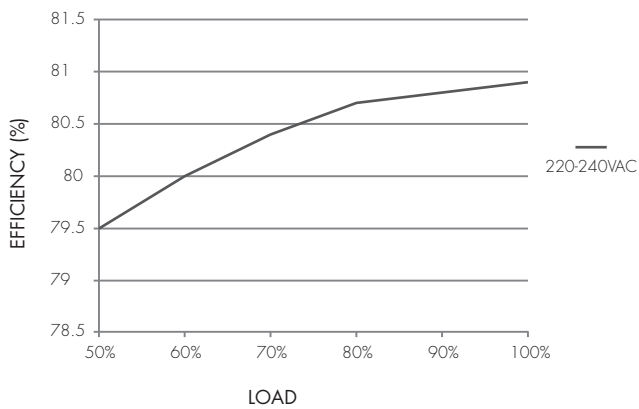
1-10V Connections



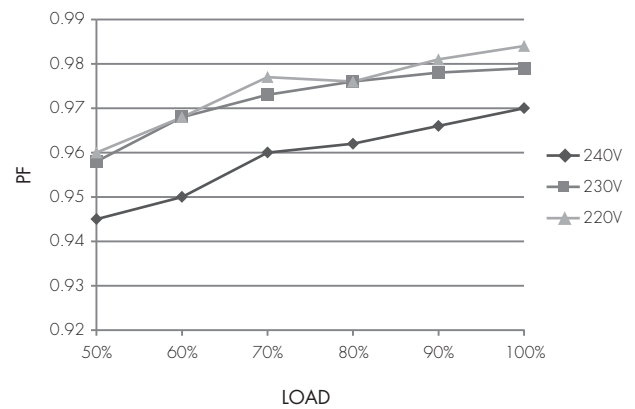
* Unused terminals have been omitted for clarity.

Performance Characteristics

HED4030-A

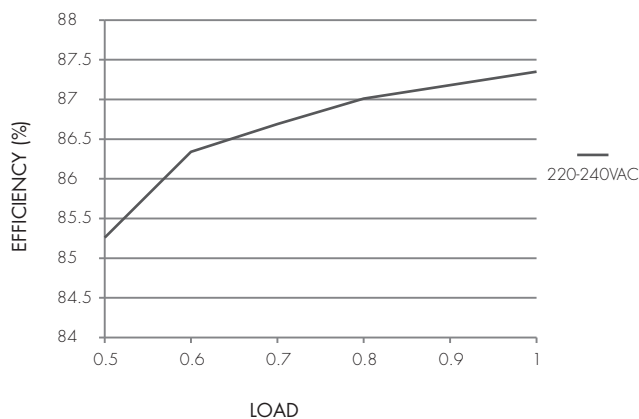


* Typical Efficiency vs Load

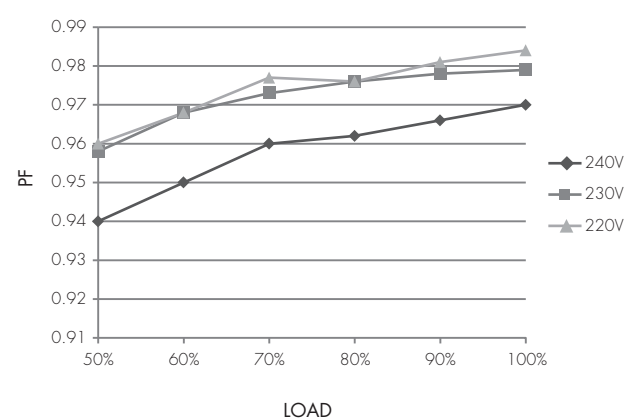


* Typical Power Factor vs Load

HED6030-A

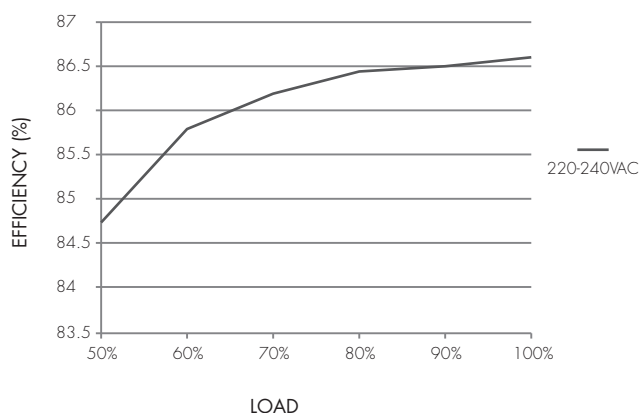


* Typical Efficiency vs Load

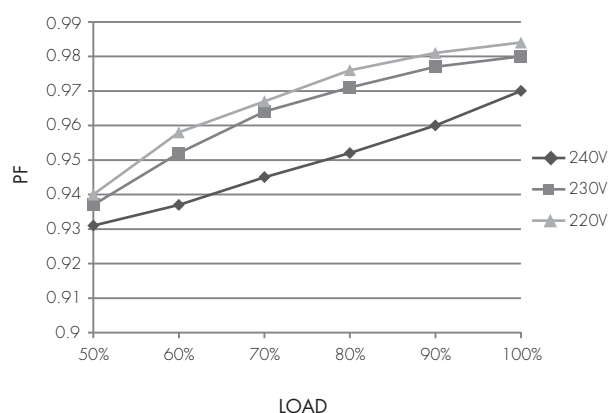


* Typical Power Factor vs Load

HED2075-A

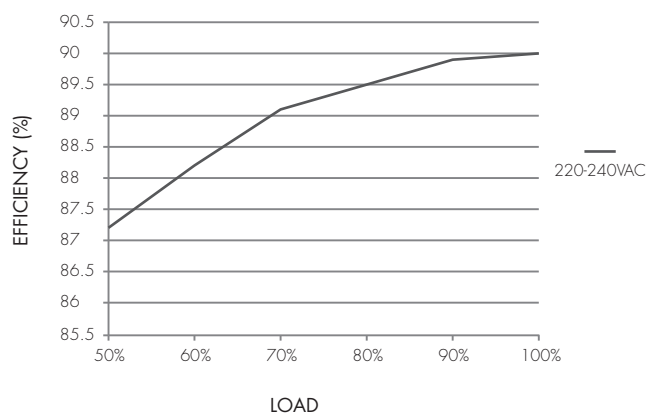


* Typical Efficiency vs Load

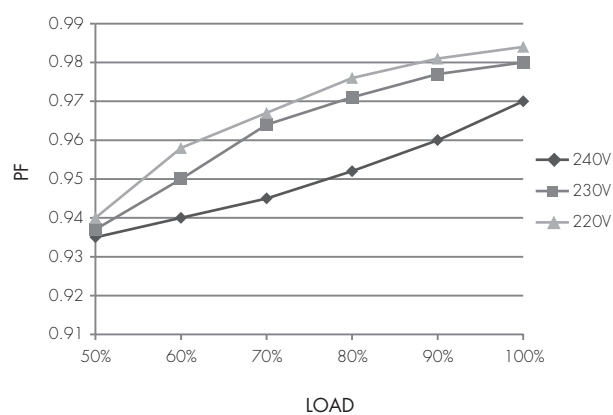


* Typical Power Factor vs Load

HED3075-A



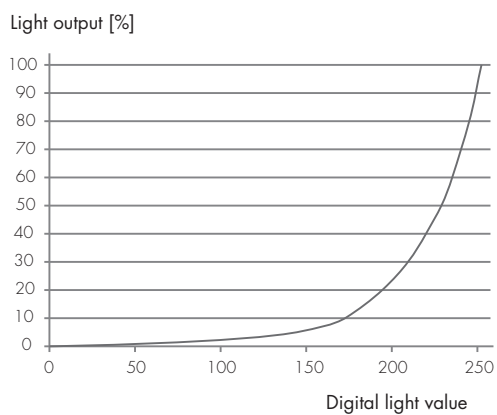
* Typical Efficiency vs Load



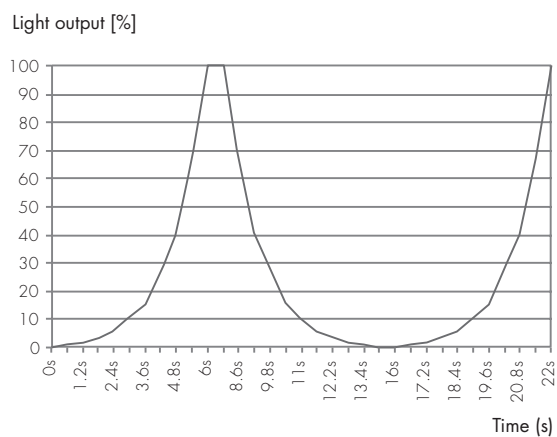
* Typical Power Factor vs Load

Dimming Characteristics

DALI Dimming Curve

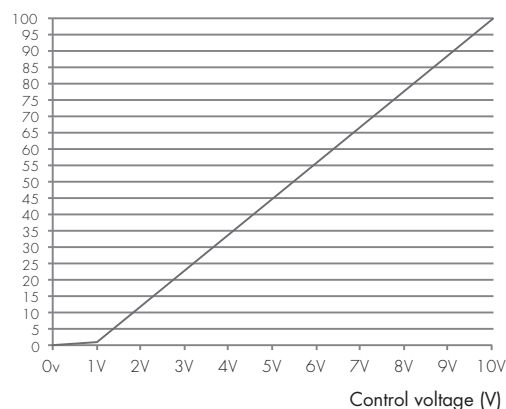


Switch-Dim Dimming Curve



1-10V Dimming Curve

Light output [%]



Dimming Interface Operation Notes

DALI

This series of products are supplied as DALI default group 0 and are 'plug n'play DALI' or 'independent DALI' system ready. These models are also fully DALI addressable and may be assigned to groups within the limits specified by the DALI protocol or supporting DALI controllers by using a DALI programming tool.

Switch-Dim

The provided Switch-Dim interface allows a simple dimming method using commercially available non-latching (momentary) wall switches. Up to 64 LED drivers may be connected to one switch. The Switch-Dim interface may also be used at the same time as DALI to serve as a manual override.

Switch Action
Short press (< 1 second)
Long press (> 1 second)

Response
Toggle light on / off
Toggle dim light / increase brightness

Synchronization

Switch Action
Long press (> 15 seconds)

Response
All lights will dim down to minimum then return to 50% brightness

1-10V

The 1-10V input is operable via commercially available simple rotary wall switches designed for 1-10V dimming equipment or from dedicated system central dimming controllers.

Note: In the unlikely event that the LED driver be used with the Switch-Dim or DALI interface prior to using the 1-10V interface, the 1-10V interface may need to be re-set. This is achieved by placing a short circuit across the 1-10V terminals until the light returns to full brightness (approx. 3-5 seconds).