

SPECIFICATION

Product Name: D4i Dimmable LED driver

Model No.: KL50C-PD4iN

Issue Date: December 25, 2024

CUSTOMER APPROVED



Version	Product Name / Product Model	Reason / content for change	Stage	Date
A0	KL50C-PD4iN D4i LED driver		Design verification	2024-12-25

Specification for D4i Dimmable LED Driver KL50C-PD4iN C.C.



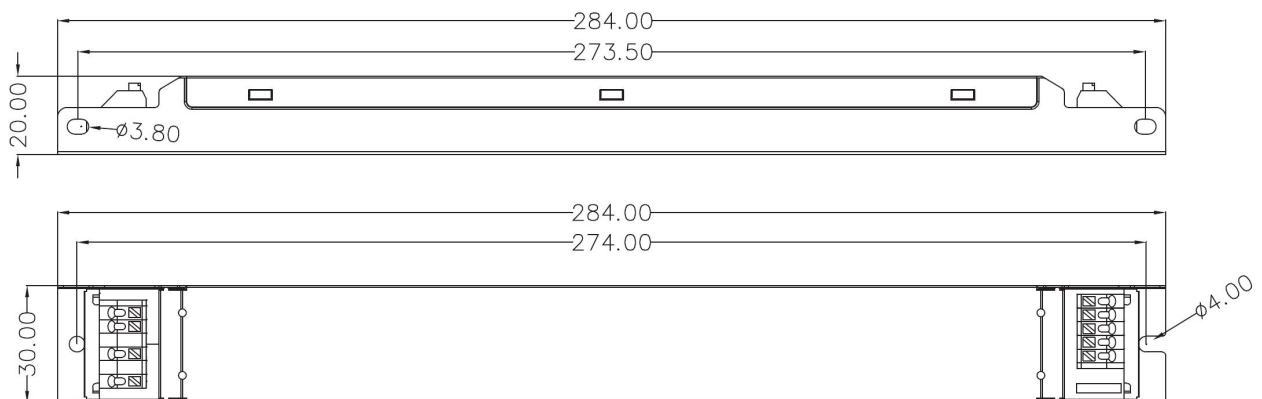
- Flicker-free for whole dimming range
- NFC technology for wireless programming
- Stand-by power below 0.5W
- Primary dimming with push button
- Built-in DALI interface D4i
- Centrally-supplied DC emergency operation DT19
- Protection: short circuit / over temperature/ over voltage
- CLO compensation
- Derating current for over high ambient temperature
- Push dim with memory function
- 5 year warranty

1. Parameters

Input	Operating Voltage	198-264Vac 50Hz/60Hz						
	Rated Input Voltage	220-240Vac 50Hz/60Hz						
	DC Input Voltage range	200-240Vdc						
	Input Current	0.23A Max.						
	Input Inrush Current	<15A (Half current pulse width100μs) @230Vac						
	Power factor(@230V100% load)	≥ 0.95						
	Total harmonic distortion	Typical:15% (@230Vac, 100% load)						
	Stand-by power	≤0.5W (@230Vac when DALI turn off)						
	Efficiency(@230Vac,100% load)	87% Max.						
	Wiring Method	Wire cross section:0.75-1.5mm ²						
	Automatic circuit breaker (Calculate current in the wire)	type	B10	B13	B16	B20	B25	/
Number		20	25	30	40	50	/	
type		C10	C13	C16	C20	C25	C32	
Number		30	43	50	60	80	100	
Output	Operating mode	Constant Current						
	Load type	LED						
	Ripple requirement (Flickering or Flickering-Free)	Flicker value: less than 5% for whole dimming range						
	Start up time	<1s (@230Vac)						
	No-load output voltage	68V DC Max.						
	Load output voltage range	15-58V DC						
	Full load output power	50W Max.						
	Load output current	500-1100mA						
	Constant current/voltage Precision	Constant Current Precision ±5%						
	Wiring method	Wire cross section:0.75-1.5mm ²						

Control Method	Output auxiliary power port	18Vdc, 100mA
	DALI Dimming	DALI dimming (Max. lead length: 300m)
	DALI Power Supply	Ips 55mA (60mA Max.)
	Primary PUSH Dimming	Primary PUSH dimming (Max. lead wire length: 20m)
	Dimming range	Primary PUSH & DALI dimming: 0%-100%
Exception Protection Requirements	Output over temperature protection	Yes, without self recovery function (Can be inquired)
	Output short circuit protection	Yes, with self recovery function (Can be inquired)
Operating Environment	Operating temperature/ humidity	-25℃~50℃ Humidity: 85% (Non-condensing)
	Storage temperature/ humidity	-40℃~80℃, Humidity: 85% (Non-condensing)
	Max. case temp (Tc)	85℃
Safety & EMC	EMC standard	EN55015 EN61547 EN61000-3-2 EN61000-3-3
	DALI protocol standard	IEC62386-101 / 102 / 207 DT6 / 220 DT19 / 250 / 251 / 252 / 253
	Safety standard	EN61347-1 EN61347-2-13
	Certification	CE
	Withstand voltage	3750Vac, 5mA, 60s (Input "L N"- Output "SEC")
Others	Degrees of protection	IP20
	Type of protection	Class I
	Installation type	Built-in installation
	Dimension	284*30*20mm
	Blackout memory function	Yes, PUSH blackout memory
	PUSH dimming synchronization	15 units Max.
	Packaging requirement	PE bag + white box + manual + partition + outer box (K=A)
	Weight	198±5g
	Life	5 year @Ta full load
Note: All parameters are tested at the input voltage of 230Vac and 25 degree environment unless specified.		

2. Dimension (Unit: mm)



3. Wiring Diagram

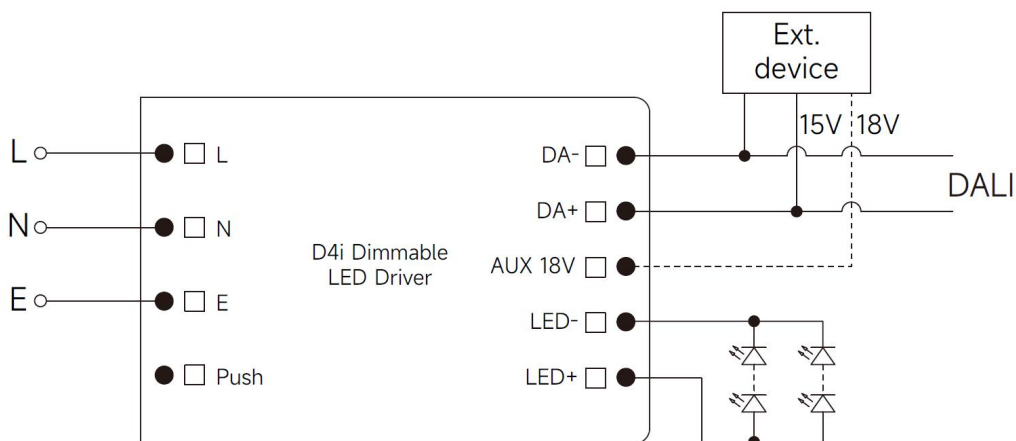


Fig. A: DALI Dimming

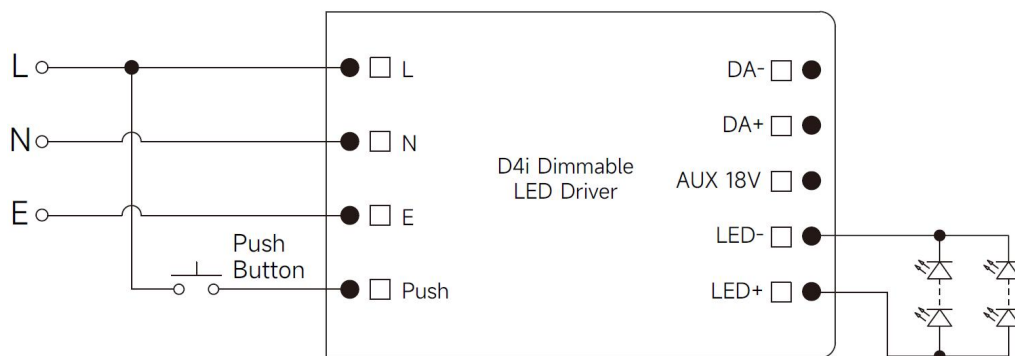
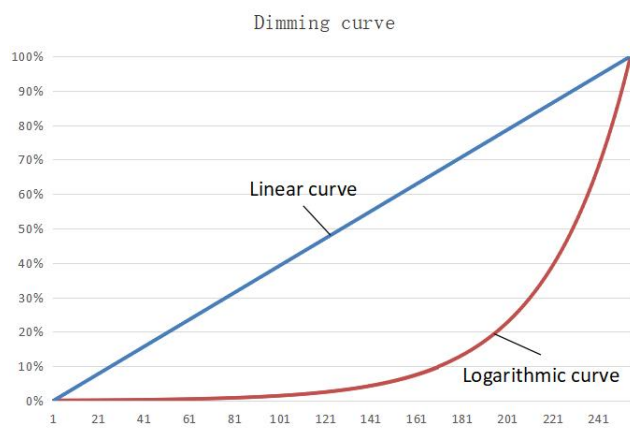
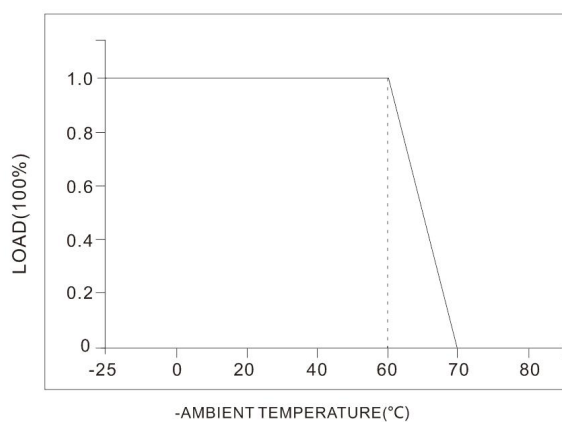


Fig. B: Push Dimming

4. Derating & Dimming curve



5. Current setting:

Table of Typical Corresponding Parameters for Current

KL50C-PD4iN		
Current (mA)	Pomax (W)	Uout (V)
500	29.0	15~ 58
550	31.9	15~ 58
600	34.8	15~ 58
650	37.7	15~ 58
700	40.6	15~ 58
750	43.5	15~ 58
800	46.4	15~ 58
850	49.3	15~ 58
900	50.4	15~ 56
950	50.4	15~ 53
1000	50.0	15~ 50
1050	50.4	15~ 48
1100	49.5	15~ 45

The typical current data sets are for reference when selecting LED fixture models. More current levels can be set by NFC using mobile APP adjustable in 1mA step.



Scan the code to download Merrytek NFC

6. ON/OFF & Description of Dimming Operation

- Short press the PUSH switch (short press time 0.1s-1s), the LED driver will turn on or off.
- Dimming: Press and hold the PUSH switch (1s-8s), the LED driver can achieve dimming, brightening or dimming, the dimming range is 2-100%.

C. Memory: PUSH dimming has dimming memory function.

D. Dimming synchronization: The power connected to the same PUSH switch can be synchronized by pressing and holding the PUSH switch for longer than 15s.

E. DALI dimming mode: Connect the power supply to the DALI system, and it can be dimmed by the DALI host. The dimming range is 0-100%.

7. matters needing Attention

1) The LED string must be connected to the load before turning on the input power, otherwise the LED string may be damaged.

2) After the LED drive input is powered off, there will be a residual voltage at the output, which can be maintained for about 3 minutes.

3) Before setting the parameters by NFC, please make sure the driver is powered off.