# SPECIFICATION

**Product Name:** **DALI 2 Dimmable LED driver**

**Model No.:** **KL10C-PDiiN; KL20C-PDiiN; KL35C-PDiiN**

**Issue Date:** **January 15, 2025**

| CUSTOMER APPROVED |
| --- |
| |

| Version | Product Name / Product Model | Reason / content for change | Stage | Date |
|---|---|---|---|---|
| A0 | DALI LED driver | | Design verification | 2025-01-15 |
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# Specification for DALI 2 Dimmable LED Driver Micro NFC series C.C.

KL10C-PDiiN

KL20C-PDiiN

KL35C-PDiiN

- Flicker-free for whole dimming range
- Stand-by power below 0.5W
- NFC technology for wireless programming
- Primary dimming with push button
- Built-in DALI interface DT6
- Centrally-supplied DC emergency operation DT19
- CLO compensation
- Protection: short circuit / over temperature/ over voltage
- Derating current for over high ambient temperature
- Push dim with memory function
- 5 year warranty

## 1. Parameters

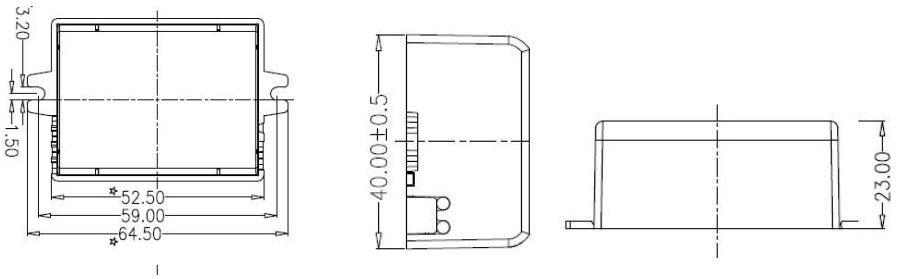
| | Micro series | KL10C-PDiiN | KL20C-PDiiN | KL35C-PDiiN |
|---|---|---|---|---|
| Input | Operating Voltage | 198-264Vac 50Hz/60Hz | | |
| | Rated Input Voltage | 220-240Vac 50Hz/60Hz | | |
| | DC Input Voltage range | 200-240Vdc | | |
| | Input Current | 0.06A Max. | 0.11A Max. | 0.19A Max. |
| | Input Inrush Current | <15A (Half current pulse width100μs) @230Vac | | |
| | Power factor(@230V100% load) | ≥ 0.9C | ≥ 0.93 | ≥ 0.95 |
| | Total harmonic distortion | Typical:15% (@230Vac, 100% load) | | |
| | Stand-by power | ≤0.5W (@230Vac when PUSH or DALI turn off) | | |
| | Efficiency(@230Vac,100% load) | 81% | 86% | 87% |
| | Wiring Method | 0.75mm$^2$ | 0.75-1.5mm$^2$ | |

| Automatic circuit breaker | | | | | | |
|---|---|---|---|---|---|---|
| KL10C-PDiiN (Calculate current in the wire) | | | | | | |
| type | B10 | B13 | B16 | B20 | B25 | / |
| Number | 40 | 50 | 65 | 85 | 100 | / |
| type | C10 | C13 | C16 | C20 | C25 | C32 |
| Number | 70 | 90 | 110 | 140 | 170 | 220 |
| KL20C-PDiiN (Calculate current in the wire) | | | | | | |
| type | B10 | B13 | B16 | B20 | B25 | / |
| Number | 25 | 35 | 45 | 55 | 65 | / |
| type | C10 | C13 | C16 | C20 | C25 | C32 |
| Number | 60 | 70 | 80 | 110 | 130 | 160 |
| KL35C-PDiiN (Calculate current in the wire) | | | | | | |
| type | B10 | B13 | B16 | B20 | B25 | / |
| Number | 25 | 30 | 40 | 50 | 60 | / |
| type | C10 | C13 | C16 | C20 | C25 | C32 |
| Number | 40 | 55 | 60 | 80 | 105 | 130 |

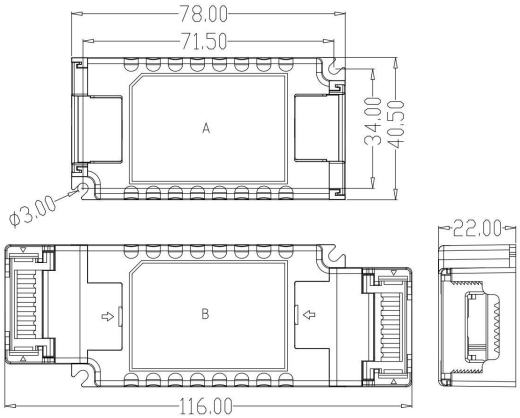
| | | | | |
|---|---|---|---|---|
| **Output** | Operating mode | Constant Current | | |
| | Load type | LED | | |
| | Ripple requirement (Flickering or Flickering-Free） | Flicker value: less than 5% for whole dimming range | | |
| | Start up time | <1s (@230Vac) | | |
| | No-load output voltage | 50V DC Max. | 55V DC Max. | 55V DC Max. |
| | Load output voltage range | 3-40V DC | 12-40V DC | 12-40V DC |
| | Full load output power | 10W | 20W | 35W |
| | Load output current | 150-350mA | 100-550mA | 500-1050mA |
| | Constant current/voltage Precision | Constant Current Precision ±5% | | |
| | Wiring method | 0.5mm$^2$ | Push terminal, wire cross section: 0.75-1.5mm$^2$ | |
| **Control Method** | Primary PUSH Dimming | Primary PUSH dimming (Max.lead length：20M） | | |
| | Dimming Range | Primary PUSH & DALI dimming: 0%-100% | | |
| | DALI Dimming | DALI dimming (Max.lead length：300M） | | |
| **Exception Protection Requirements** | Output over temperature protection | Yes, without self recovery function（Can be inquired） | | |
| | Output short circuit protection | Yes, without self recovery function（Can be inquired） | | |
| **Operating Environment** | Operating temperature/ humidity | -25℃~50℃ Humidity:85% (Non-condensing) | | |
| | Storage temperature/ humidity | -40℃~80℃, Humidity:10% - 95% | | |
| | Max. case temp (Tc) | 85℃ | | |
| **Safety & EMC** | EMC standard | EN55015 EN61547 EN61000-3-2 EN61000-3-3 | | |
| | DALI protocol standard | IEC62386-102, IEC62386-207 DT6 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 II | | |
| | Installation type | Independent installation & built-in installation | | |
| | With crimping | / | 116*40.5*22mm | 136*42.5*24mm |
| | Without crimping | 64.5*40*23mm | 78*40.5*22mm | 96*42.5*24mm |
| | Blackout memory function | Yes, PUSH blackout memory | | |
| | PUSH dimming synchronization | 15 units Max. | | |
| | Packaging requirement | PE bag+Instruction+clapboard+outer carton（K=A） | | |
| | Weight (With crimping) | / | 86.9±5g | 115.1±5g |
| | Weight (Without crimping) | 54±5g | 100.5±5g | 132.7±5g |
| | Life | 5 year @Ta full load | | |

Note: All parameters are tested at the input voltage of 230Vac and 25 degree environment unless specified.

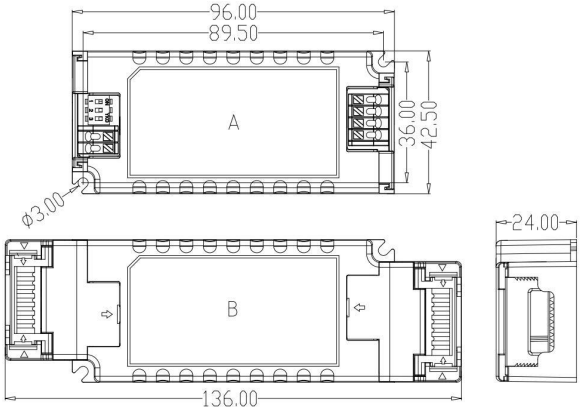
## 2. Dimension (Unit: mm)




**KL10C-PDiiN**




**KL20C-PDiiN**




**KL35C-PDiiN**

## 3. Wiring Diagram

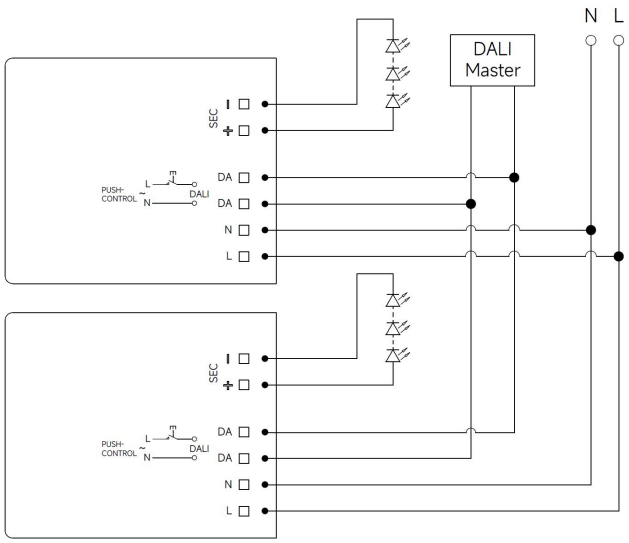



**Fig. A DALI Dimming**

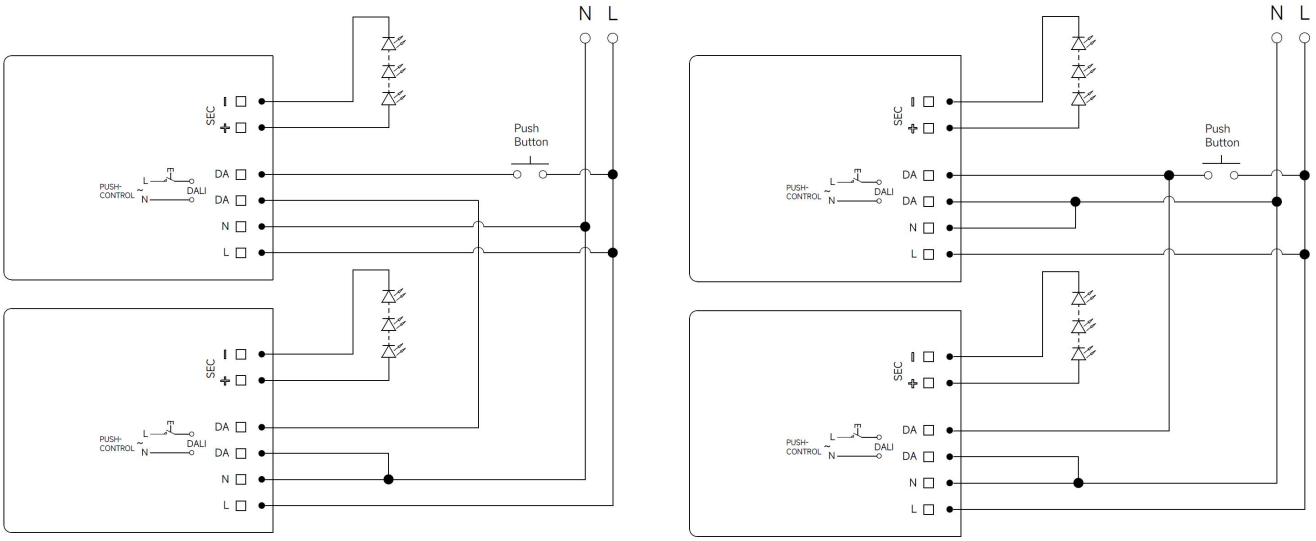
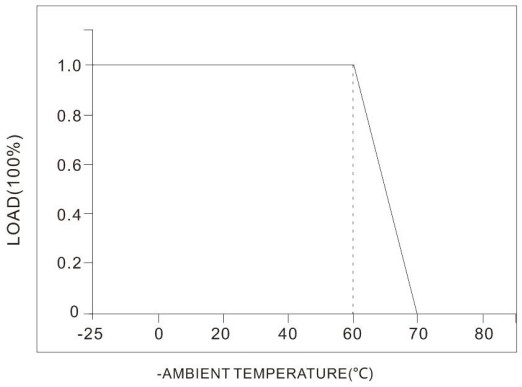
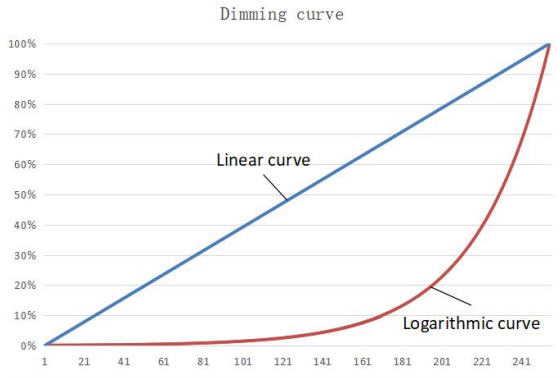



**Fig. B Push Dimming**

## 4. Derating




## 5. Dimming curve



## 6. Current setting:

Table of Typical Corresponding Parameters for Current

| KL10C-PDiiN | | |
|---|---|---|
| Current(mA) | Pomax(W) | Uout(V) |
| 150 | 6.0 | 3~ 40 |
| 200 | 8.0 | 3~ 40 |
| 250 | 10.0 | 3~ 40 |
| 300 | 9.9 | 3~ 33 |
| 350 | 10.2 | 3~ 29 |

| KL20C-PDiiN | | |
|---|---|---|
| Current(mA) | Pomax(W) | Uout(V) |
| 100 | 4.0 | 12~ 40 |
| 150 | 6.0 | 12~ 40 |
| 200 | 8.0 | 12~ 40 |
| 250 | 10.0 | 12~ 40 |
| 300 | 12.0 | 12~ 40 |
| 350 | 14.0 | 12~ 40 |
| 400 | 16.0 | 12~ 40 |
| 450 | 18.0 | 12~ 40 |
| 500 | 20.0 | 12~ 40 |
| 550 | 19.8 | 12~ 36 |

| KL35C-PDiiN | | |
|---|---|---|
| Current(mA) | Pomax(W) | Uout(V) |
| 500 | 20.0 | 12~ 40 |
| 550 | 22.0 | 12~ 40 |
| 600 | 24.0 | 12~ 40 |
| 650 | 26.0 | 12~ 40 |
| 700 | 28.0 | 12~ 40 |
| 750 | 30.0 | 12~ 40 |
| 800 | 32.0 | 12~ 40 |
| 850 | 34.0 | 12~ 40 |
| 900 | 35.1 | 12~ 39 |
| 950 | 35.2 | 12~ 37 |
| 1000 | 35.0 | 12~ 35 |
| 1050 | 34.7 | 12~ 33 |

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

## 7. ON/OFF & Description of Dimming Operation

A. Short press the PUSH switch (short press time 0.1s-1s), the LED driver will turn on or off.

B. Dimming: Press and hold the PUSH switch (1s-8s), the LED driver can achieve dimming, brightening or dimming, the dimming range is 1-100%.

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%.

## 8. 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.