

The Commercial

LED Lighting Specialist

Superlight[®]

Dimmable Constant Current LED Driver

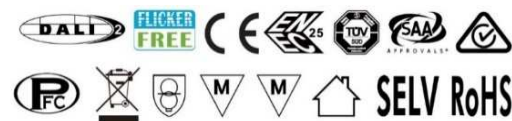
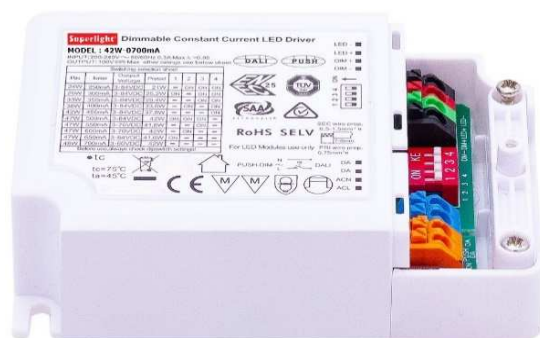
PRODUCT CATEGORY DATA SHEET

Dimmable Constant Current LED Driver

Summary

| Model Number | Max P rated | Max I rated | Min P rated | Min I rated | MAX Output Voltage | Dimension |
|--------------|-------------|-------------|-------------|-------------|--------------------|-------------|
| 42W-0700mA | 42W | 700mA | 21W | 250mA | 100VDC | 103x68x30mm |
| 60W-2000mA | 60W | 2000mA | 33.6W | 800mA | 50VDC | 123x79x31mm |

Dimmable Constant Current LED Driver - MODEL: 42W-0700mA (DALI 2.0)



FEATURES

1. 180-264VAC input
2. Flicker free
3. Built in active PFC function, high PF, low THD
4. Standby power consumption <0.5W to turn off dimmable port
5. Built in DALI dimming function
6. Constant current mode output with multiple levels selectable by DIP switch
7. Supporting multi-power supplies synchronous dimming connected in parallel
8. Cooling by free air convection
9. Suitable for indoor LED lighting applications
10. 3 years warranty

APPLICATION

1. LED indoor lighting
2. LED office lighting
3. LED architectural lighting

ELECTRICAL SPECIFICATIONS

INPUT

- **Rated voltage:** 200-240VAC / 200-240VDC
- **Input AC voltage range:** 180-264VAC
- **Input DC voltage range:** 180-264VDC
- **Frequency range:** 47-63Hz
- **Power factor:** PF>0.95 @ 230VAC/full load, PF>0.90 @ 230VAC/>50% load
- **Total harmonic distortion:** THD<15% @ 230VAC/full load, THD<20% @ 230VAC/>50% load
- **Efficiency (Typ.):** 89%
- **Standby power (note.3):** <0.5W @ 230Vac
- **Input current:** <0.3A @ 230Vac
- **Inrush current(Typ.):** Cold start <30A (Twidth=120us measured at 50% Ipeak) @ 230Vac
- **Max. No. of PSUs on 16A circuit breaker:** 23 units (Type B) / 40 units (Type C)
- **Turn on delay:** <0.5s @ 230Vac

ENVIRONMENT

- **Operation temperature:** -20-45°C
- **Operation humidity:** 10-90% RH, non-condensing
- **Storage temperature/humidity:** -40-80°C, 5-95% RH
- **IP class:** IP20
- **Tc:** 75°C (Ta=45°C)
- **MTBF:** 50000H, MIL-HDBK-217F (25°C)
- **LIFETIME:** See life curve for details

OUTPUT

- **DC current:** 0.25-0.7A
- **DC voltage range:** 3-84V
- **Rated power:** 42W Max
- **Voltage ripple & noise (note.2):** ≤200mV (Vpp)
- **Current ripple & noise:** ≤30mA (RMS)
- **Constant current ADJ. Range:** DIP switch
- **Constant current accuracy:** ±20mA
- **Line regulation:** ±20mA
- **Load regulation:** ±20mA
- **DALI port input current:** ≤2mA
- **External PWM interface:** N/A

PROTECTION

- **Short circuit:** Hiccup, recovers automatically after environment temperature declines
- **Max output voltage:** 100V
- **Over temperature:** Hiccup, recovers automatically after fault condition is removed

EMC

- **EMC emission (note.4):** Compliance to EN55015, GB17743, EN61000-3-2 Class C ($\geq 30\%$ load), EN61000-3-3
- **EMC immunity:** Compliance to EN61000-4-2,3,4,5,6,8,1, EN61547 ,surge:DM 2KV

SAFETY

- **Safety standards:** EN61347-1/2-13, GB19510.1/14, EN62384, IEEE1789
- **DALI standards:** IEC62386-101,102,207
- **Certificate:** CE-SUD ENEC CCC SAA RCM
- **Withstand voltage:** I/P - O/P: 3750VAC
- **Leakage current:** $< 0.7\text{mA}$ @ 240Vac
- **Isolation resistance:** I/P - O/P: $100\text{M}\Omega$ / 500Vdc / 25°C / 70% RH

CONNECTOR

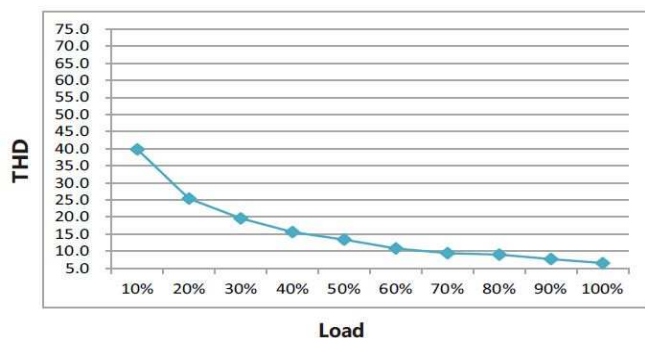
- **Environmental protection:** RoHS
- **Input connection:** PCB connector / 4PINs / orange+orange+blue+blue / $0.75\text{-}1.5\text{mm}^2$
- **Output connection:** PCB connector / 2PINs / red+black / $0.5\text{-}1.5\text{mm}^2$

NOTE

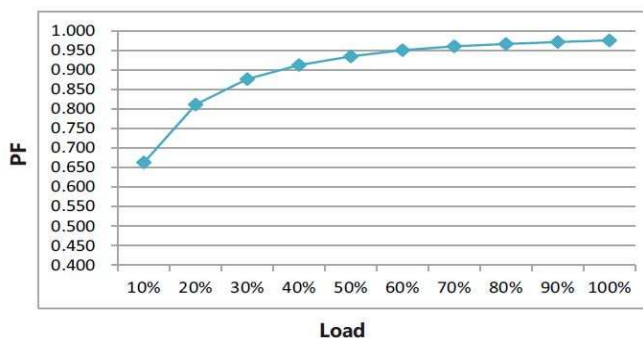
1. All parameters are measured at 230VAC input, rated load and 25°C of ambient temperature.
2. Ripple & Noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a $0.1\mu\text{F}$ & $47\mu\text{F}$ paralalled capacitor.
3. Stand-by power consumption is measured at dimmable off condition.
4. The power supply is considers as a compent that wil be operated in combination with final equipment. Since EMC performance will be affected by the complete installation the final equipment manfactures must re-quality EMC directive on the complete installation again.
5. If this driver used for led lighting, the Tc should not higher than Tc showed on the driver when the lighting working on the highest rated working tempreture.

ELECTRICAL CHARACTERISTICS (84V/0.5A)

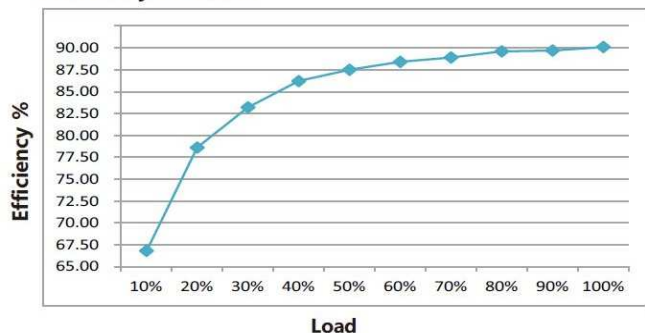
THD vs. Load



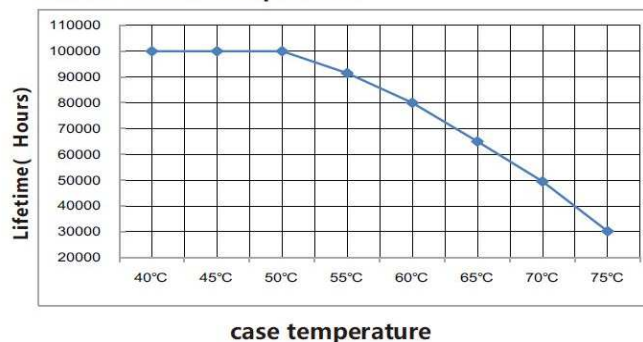
Power factor vs. Load



Efficiency vs. Load



Lifetime vs. case temperature



Superlight Dimmable Constant Current LED Driver
MODEL : 42W-0700mA

INPUT: 200-240VAC ~ 50/60Hz 0.3A Max λ:0.95
 OUTPUT: 100V --- Max other ratings see below sheet

Switching selection sheet

| PtN | Irated | Output Voltage | Prated | 1 | 2 | 3 | 4 |
|-----|--------|----------------|--------|----|----|----|----|
| 24W | 250mA | 3-84VDC | 21W | - | ON | ON | ON |
| 29W | 300mA | 3-84VDC | 25.2W | ON | - | ON | ON |
| 33W | 350mA | 3-84VDC | 29.4W | - | - | ON | ON |
| 38W | 400mA | 3-84VDC | 33.6W | - | ON | - | ON |
| 42W | 450mA | 3-84VDC | 37.8W | - | - | - | ON |
| 47W | 500mA | 3-84VDC | 42W | ON | ON | ON | - |
| 47W | 550mA | 3-76VDC | 41.8W | - | - | ON | - |
| 47W | 600mA | 3-70VDC | 42W | - | ON | - | - |
| 47W | 650mA | 3-64VDC | 41.6W | ON | - | - | - |
| 48W | 700mA | 3-60VDC | 42W | - | - | - | - |

Before use, always check dipswitch settings!

•tc tc=75°C
 ta=45°C

For LED Modules use only

SEC wire prep. 0.5-1.5mm²
 PRI wire prep. 0.75 mm²

LED - ■
 LED + ■
 DIM + ■
 DIM - ■

DA ■
 DA ■
 ACN ■
 ACL ■

RoHS SELV

DAI 2 PUSH

SAA APPROVALS

EN 25 TUV SUD

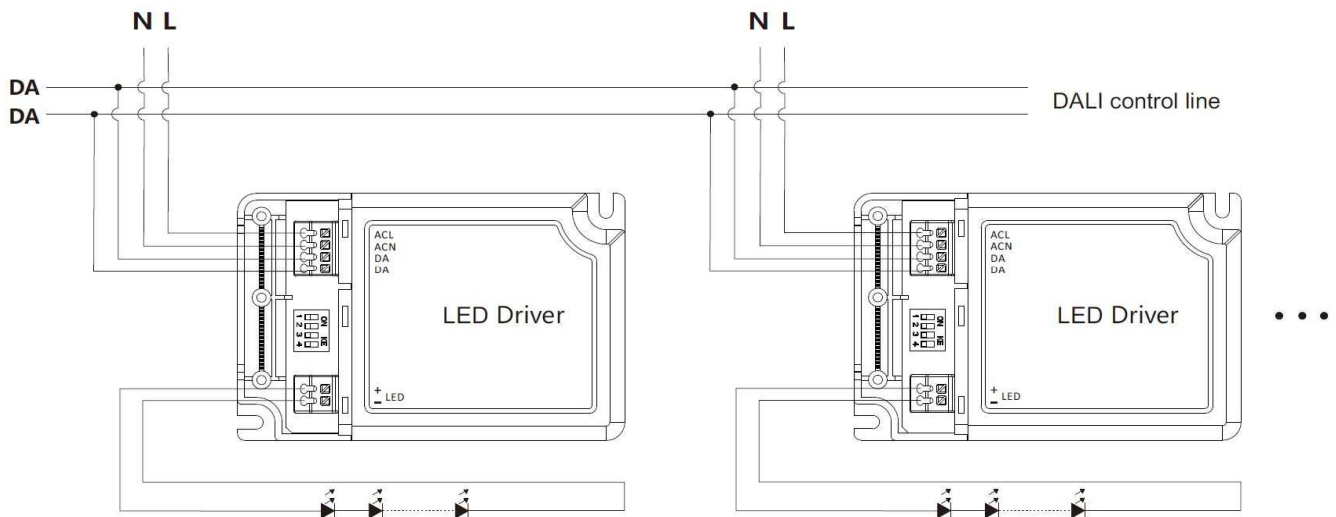
PUSH-DIM N L

DAI

Unit:mm

DALI DIMMING

Wiring diagram



Note

- Standard DALI control line voltage range: 9.5 V to 22.5 V, type 16V.
- The two DALI control lines are polarity-reversible.
- Max. 64 DALI drivers per DALI control line.
- The maximum Distance length of the DALI control line is 300m at 2 x1.5mm².
- DALI bus can be wired together with any mains voltage cables, but separate wiring is recommended.

HOT PLUG-IN PROTECTION FUNCTION

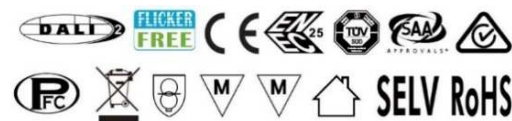
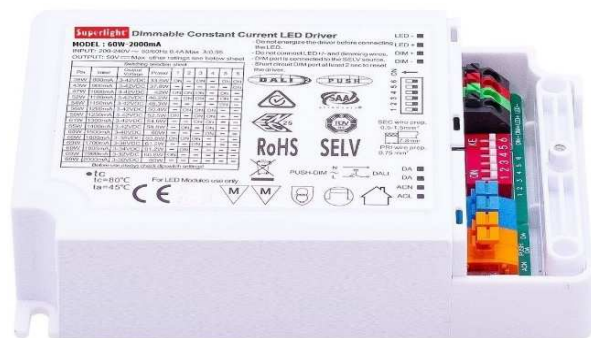
In the following two cases, the LED driver will automatically turn off the output to protect the LED:

1. When the driver is powered on first and the LED is connected later.
2. When the driver is powered on, disconnected and connected again.

The LED can be activated in two ways:

1. Through the AC input port: disconnect the AC of the drive and power it again.
2. Through DALI interface: send "OFF" command first, then send "MAX" command.

Dimmable Constant Current LED Driver - MODEL: 60W-2000mA (DALI 2.0)



FEATURES

1. 180-264VAC input
2. Flicker free
3. Built in active PFC function, high PF, low THD
4. Standby power consumption <0.5W to turn off dimmable port
5. Built in DALI dimming function
6. Constant current mode output with multiple levels selectable by DIP switch
7. Supporting multi-power supplies synchronous dimming connected in parallel
8. Cooling by free air convection
9. Suitable for indoor LED lighting applications
10. 3 years warranty

ELECTRICAL SPECIFICATIONS

INPUT

- **Rated voltage:** 200-240VAC / 200-240VDC
- **Input AC voltage range:** 180-264VAC
- **Input DC voltage range:** 180-264VDC
- **Frequency range:** 47-63Hz
- **Power factor:** PF>0.95 @ 230VAC/full load, PF>0.90 @ 230VAC/>50% load
- **Total harmonic distortion:** THD<15% @ 230VAC/full load, THD<20% @ 230VAC/>50% load
- **Efficiency (Typ.):** 90%
- **Standby power (note.3):** <0.5W @ 230Vac
- **Input current:** <0.4A @ 230Vac
- **Inrush current(Typ.):** Cold start <30A (Twidth=120us measured at 50% Ipeak) @ 230Vac
- **Max. No. of PSUs on 16A circuit breaker:** 16 units (Type B) / 28 units (Type C)
- **Turn on delay:** <0.5s @ 230Vac

ENVIRONMENT

- **Operation temperature:** -20-45°C
- **Operation humidity:** 10-90% RH, non-condensing
- **Storage temperature/humidity:** -40-80°C, 5-95% RH
- **IP class:** IP20
- **Tc:** 75°C (Ta=45°C)
- **MTBF:** 50000H, MIL-HDBK-217F (25°C)
- **LIFETIME:** See life curve for details

APPLICATION

1. LED indoor lighting
2. LED office lighting
3. LED architectural lighting

OUTPUT

- **DC current:** 0.8-2.0A
- **DC voltage range:** 3-42V
- **Rated power:** 61.2W Max
- **Voltage ripple & noise (note.2):** ≤200mV (Vpp)
- **Current ripple & noise:** ≤30mA (RMS)
- **Constant current ADJ. Range:** DIP switch
- **Constant current accuracy:** ±40mA
- **Line regulation:** ±40mA
- **Load regulation:** ±40mA
- **DALI port input current:** ≤2mA
- **External PWM interface:** N/A

PROTECTION

- **Short circuit:** Hiccup, recovers automatically after environment temperature declines
- **Max output voltage:** 50V
- **Over temperature:** Hiccup, recovers automatically after fault condition is removed

EMC

- **EMC emission (note.4):** Compliance to EN55015, GB17743, EN61000-3-2 Class C ($\geq 30\%$ load), EN61000-3-3
- **EMC immunity:** Compliance to EN61000-4-2,3,4,5,6,8,1, EN61547, surge:DM 2KV

SAFETY

- **Safety standards:** EN61347-1/2-13, GB19510.1/14, EN62384, IEEE1789
- **DALI standards:** IEC62386-101,102,207
- **Certificate:** CE-SUD ENEC CCC SAA RCM
- **Withstand voltage:** I/P - O/P: 3750VAC
- **Leakage current:** $< 0.7\text{mA}$ @ 240Vac
- **Isolation resistance:** I/P - O/P: $100\text{M}\Omega$ / 500Vdc / 25°C / 70% RH

CONNECTOR

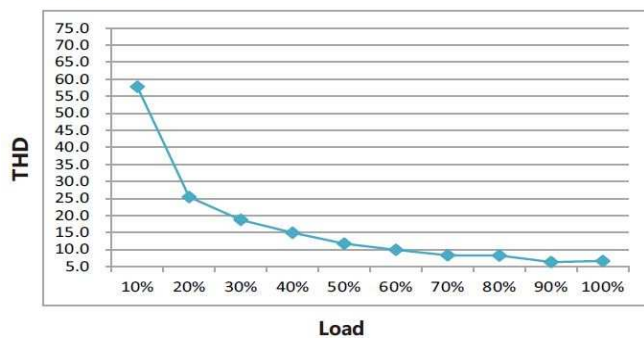
- **Environmental protection:** RoHS
- **Input connection:** PCB connector / 4PINs / orange+orange+blue+blue / $0.75\text{-}2.0\text{mm}^2$
- **Output connection:** PCB connector / 2PINs / red+black / $0.5\text{-}1.5\text{mm}^2$

NOTE

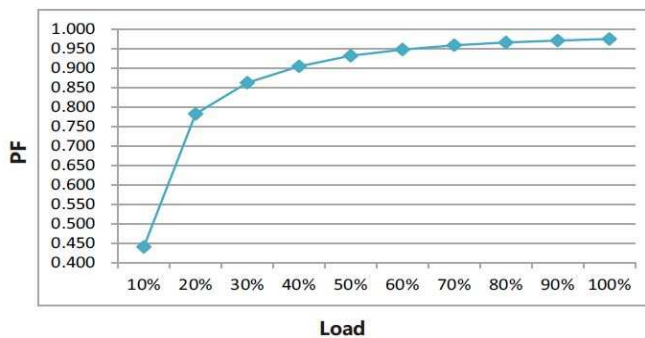
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3. Stand-by power consumption is measured at dimmable off condition.
4. The power supply is considers as a compent that wil be operated in combination with final equipment. Since EMC performance will be affected by the complete installation the final equipment manfactures must re-quality EMC directive on the complete installation again.
5. If this driver used for led lighting, the Tc should not higher than Tc showed on the driver when the lighting working on the highest rated working tempreture.

ELECTRICAL CHARACTERISTICS (42V/1.5A)

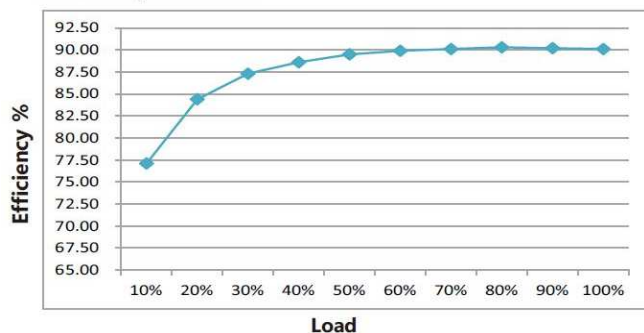
THD vs. Load



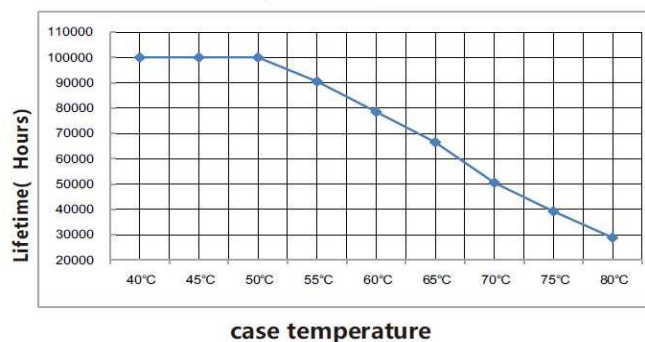
Power factor vs. Load



Efficiency vs. Load



Lifetime vs. case temperature



Superlight Dimmable Constant Current LED Driver

MODEL : 60W-2000mA

INPUT: 200-240V ~ 50/60Hz 0.4A Max $\lambda: 0.95$

OUTPUT: 50V --- Max other ratings see below sheet

| Switching selection sheet | | | | | | | |
|---------------------------|--------|----------------|--------|----|----|----|----|
| Pin | Rated | Output Voltage | Prated | 1 | 2 | 3 | 4 |
| 38W | 800mA | 3-42VDC | 33.6W | ON | ON | ON | ON |
| 43W | 900mA | 3-42VDC | 37.8W | ON | ON | ON | ON |
| 47W | 1000mA | 3-42VDC | 42W | ON | ON | ON | ON |
| 52W | 1100mA | 3-42VDC | 46.2W | ON | ON | ON | ON |
| 54W | 1150mA | 3-42VDC | 48.3W | ON | ON | ON | ON |
| 56W | 1200mA | 3-42VDC | 50.4W | ON | ON | ON | ON |
| 59W | 1250mA | 3-42VDC | 52.5W | ON | ON | ON | ON |
| 61W | 1300mA | 3-42VDC | 54.6W | ON | ON | ON | ON |
| 65W | 1400mA | 3-42VDC | 58.8W | ON | ON | ON | ON |
| 68W | 1500mA | 3-40VDC | 60W | ON | ON | ON | ON |
| 69W | 1600mA | 3-38VDC | 60.8W | ON | ON | ON | ON |
| 69W | 1700mA | 3-36VDC | 61.2W | ON | ON | ON | ON |
| 69W | 1800mA | 3-34VDC | 61.2W | ON | ON | ON | ON |
| 69W | 1900mA | 3-32VDC | 60.8W | ON | ON | ON | ON |
| 69W | 2000mA | 3-30VDC | 60W | ON | ON | ON | ON |

Before use, always check dipswitch settings!

• $t_c = 80^\circ\text{C}$
 $t_c = 80^\circ\text{C}$
 $t_a = 45^\circ\text{C}$

For LED Modules use only

CE

RoHS SELV

DALE 2 PUSH

SAA APPROVALS

EN 25 TUV SUD

PUSH-DIM N L

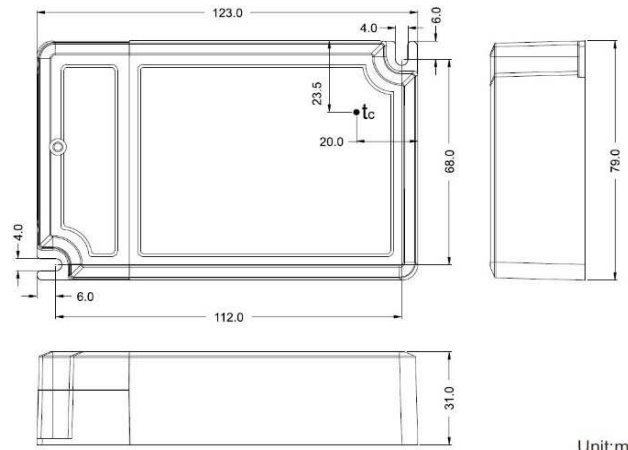
LED -
 LED +
 DIM +
 DIM -

1 2 3 4 5 6 ON

SEC wire prep. 0.5-1.5mm²
 7-8mm

PRI wire prep. 0.75mm²

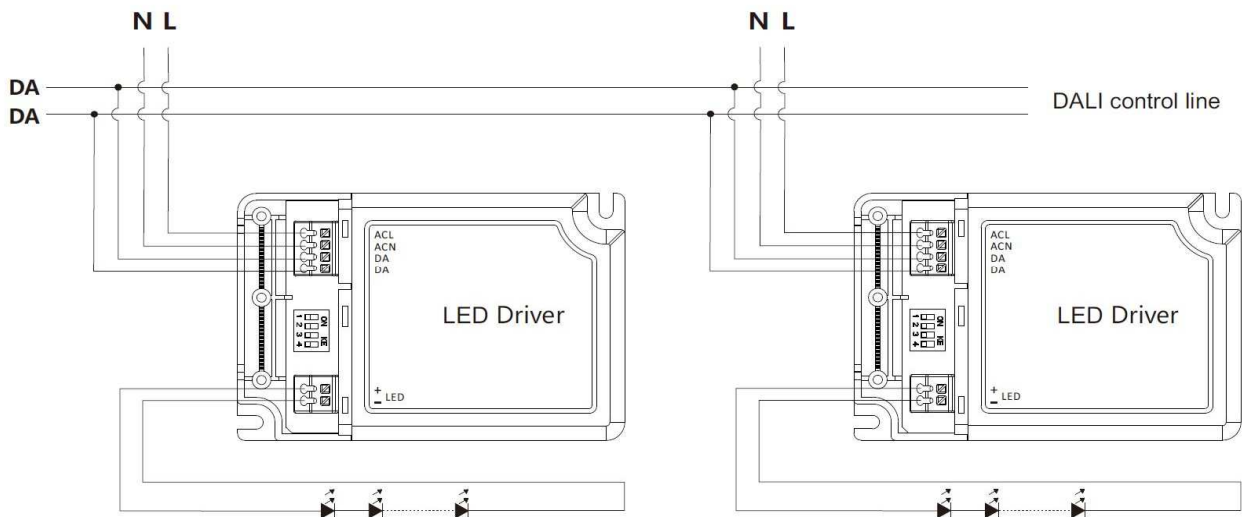
DA
 DA
 ACN
 ACL



Unit:mm

DALI DIMMING

Wiring diagram



Note

- Standard DALI control line voltage range: 9.5 V to 22.5 V, type 16V.
- The two DALI control lines are polarity-reversible.
- Max. 64 DALI drivers per DALI control line.
- The maximum Distance length of the DALI control line is 300m at 2 x1.5mm².
- DALI bus can be wired together with any mains voltage cables, but separate wiring is recommended.

HOT PLUG-IN PROTECTION FUNCTION

In the following two cases, the LED driver will automatically turn off the output to protect the LED:

1. When the driver is powered on first and the LED is connected later.
2. When the driver is powered on, disconnected and connected again.

The LED can be activated in two ways:

1. Through the AC input port: disconnect the AC of the drive and power it again.
2. Through DALI interface: send "OFF" command first, then send "MAX" command.