## TRIDONIC

LED Driver
Compact fixed output

## Product description

- Independent LED Driver with cable clamps
- Max. output power 40 W
- Output current 900 or 1,050 mA
- For luminaires with M and MM as per EN 60598, VDE 0710 and VDE 0711
- Temperature protection as per EN 61347-2-13 C5e
- Nominal life-time up to $50,000 \mathrm{~h}$
- 5-year guarantee


## Properties

- Casing: polycarbonat, white
- Type of protection IP20
- Push-in terminals
- 2 separate strain relief parts for input and output cables with highly robust clamps


## Functions

- Overload protection
- Short-circuit protection
- No-load protection
- No output current overshoot at mains on/off
- Burst protection voltage 1 kV
- Surge protection voltage $1 \mathrm{kV}(\mathrm{L}$ to N$)$
- Surge protection voltage 2 kV (L/N to earth)


## Typical applications

- For spot light and downlight in retail and hospitality application

- For panel light and area light in office and education application


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## TRIDONIC

## LED Driver

Compact fixed output

Driver LC 40W 900/1050mA fixC SR SNC2
ESSENCE series

| Technical data | $220-240 \mathrm{~V}$ |
| :--- | :--- |
| Rated supply voltage | $198-264 \mathrm{~V}$ |
| AC voltage range | $<450 \mu \mathrm{~A}$ |
| Leakage current (at $230 \mathrm{~V}, 50 \mathrm{~Hz}$, full load) | $50 / 60 \mathrm{~Hz}$ |
| Mains frequency | $320 \mathrm{~V} \mathrm{AC}, 1 \mathrm{~h}$ |
| Overvoltage protection | $\leq 20 \%$ |
| THD (at $230 \mathrm{~V}, 50 \mathrm{~Hz}$, full load) | $\leq 20 \%$ |
| THD (at $230 \mathrm{~V}, 50 \mathrm{~Hz}$, min. load) | $\pm 7.5 \%$ |
| Output current tolerance ${ }^{\text {® }}$ | $\pm 25 \%$ |
| Typ. output LF current ripple at full load ${ }^{\circledR}$ | $\leq 0.5 \mathrm{~s}$ |
| Turn on time (at $230 \mathrm{~V}, 50 \mathrm{~Hz}$, full load) | $\leq 0.5 \mathrm{~s}$ |
| Turn off time (at $230 \mathrm{~V}, 50 \mathrm{~Hz}$, full load) | 0 s |
| Hold on time at power failure | $-20 \ldots+50{ }^{\circ} \mathrm{C}$ |
| Ambient temperature ta | $40{ }^{\circ} \mathrm{C}$ |
| Ambient temperature ta (at life-time $50,000 \mathrm{~h}$ ) | $-40 \ldots+80^{\circ} \mathrm{C}$ |
| Storage temperature ts | $127 \times 43 \times 30 \mathrm{~mm}$ |
| Dimensions $\mathrm{L} \times \mathrm{W} \times \mathrm{H}$ |  |



## Ordering data

| Type | Article <br> number | Packaging, <br> carton | Packaging, <br> low volume | Packaging, <br> high volume | Weight per |
| :--- | :--- | :--- | :--- | :--- | :--- |
| LC 40/900/45 fixC SR SNC2 | $\mathbf{8 7 5 0 0 7 6 2}$ | $14 \mathrm{pc}(\mathrm{s})$. | $364 \mathrm{pc}(\mathrm{s})$. | $2,548 \mathrm{pc}(\mathrm{s})$. | 0.113 kg |
| LC 40/1050/39 fixC SR SNC2 | $\mathbf{8 7 5 0 0 7 6 3}$ | $14 \mathrm{pc}(\mathrm{s})$. | $364 \mathrm{pc}(\mathrm{s})$. | $2,548 \mathrm{pc}(\mathrm{s})$. | 0.113 kg |

## Specific technical data

| Type | Output current ${ }^{(2)}$ | Typ. rated current (at 230 V , 50 Hz , full load) | Max. input power | Typ. power consumption (at 230 V , 50 Hz , full load) | Output power | $\begin{gathered} \lambda \text { at } \\ \text { full load }{ }^{(®)} \end{gathered}$ | Efficiency <br> at full load ${ }^{\text {( }}$ | $\begin{gathered} \lambda \text { at } \min \\ \text { load }^{\oplus} \end{gathered}$ | Efficiency at min. load ${ }^{(1)}$ | Min. <br> forward voltage ${ }^{(1)}$ | Max. forward voltage ${ }^{\oplus}$ | Max. <br> output <br> voltage | Max. peak output current at full load ${ }^{\text {(1) }}$ | Max. peak output current at min. load $^{(4)}$ | Max. casing temperature tc |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| LC 40/900/45 fixC SR SNC2 | 900 mA | 0.220 A | 46 W | 45.0 W | $24.3-40.5 \mathrm{~W}$ | 0.95 | $90 \%$ | 0.90C | 88 \% | 27 V | 45 V | 60 V | 1,260 mA | 1,450 mA | $80^{\circ} \mathrm{C}$ |
| LC 40/1050/39 fixC SR SNC2 | 1050 mA | 0.220 A | 47 W | 45.5 W | $24.2-41.0 \mathrm{~W}$ | 0.95 | $90 \%$ | 0.90C | 88 \% | 23 V | 39 V | 60 V | 1,470 mA | 1,700 mA | $85^{\circ} \mathrm{C}$ |

[^0]${ }^{\text {(2) }}$ Output current is mean value.
${ }^{(3)}$ Typical value at full load, depends on load's voltage-current character.
${ }^{(1)}$ The trend between min. and full load is linear and depends on load's voltage-current character.

## 1. Standards

EN 55015
EN 61000-3-2
EN 61000-3-3
EN 61347-1
EN 61347-2-13
EN 61547
EN 60598-1
EN 62384

### 1.1 Glow wire test

according to EN $60598-1$ with increased temperature of $850^{\circ} \mathrm{C}$ passed.

## 2. Thermal details and life-time

### 2.1 Expected life-time

| Expected life-time |  |  |  |
| :--- | :--- | :---: | :---: |
| Type | ta | $\mathbf{4 0}{ }^{\circ} \mathrm{C}$ | $\mathbf{5 0}{ }^{\circ} \mathrm{C}$ |
| LC 40/900/45 fixC SR SNC2 | tc | $70^{\circ} \mathrm{C}^{\oplus}$ | $80^{\circ} \mathrm{C}^{\oplus}$ |
|  | Life-time | $50,000 \mathrm{~h}$ | $30,000 \mathrm{~h}$ |
| LC 40/1050/39 fixC SR SNC2 | tc | $75^{\circ} \mathrm{C}^{(1)}$ | $85^{\circ} \mathrm{C}^{\oplus}$ |
|  | Life-time | $50,000 \mathrm{~h}$ | $30,000 \mathrm{~h}$ |

${ }^{(1)}$ Test result at max. output voltage.
The LED Drivers are designed for a life-time stated above under reference conditions and with a failure probability of less than $10 \%$.
Life-time declarations are informative and represent no warranty claim.

## 3. Installation / wiring

3.1 Circuit diagram

220-240 V
$50 / 60 \mathrm{~Hz}$


### 3.2 Wiring type and cross section

The wiring can be in stranded wires with ferrules or solid with a cross section of $0.5-1.5 \mathrm{~mm}^{2}$. Strip $8.5-9.5 \mathrm{~mm}$ of insulation from the cables to ensure perfect operation of the push-wire terminals.
Use one wire for each terminal connector only.

### 3.3 Release of the wiring

Press down the "push button" and remove the cable from front.


### 3.4 Fixing conditions

Dry, acidfree, oilfree, fatfree. It is not allowed to exceed the maximum ambient temperature (ta) stated on the device. Minimum distances stated below are recommendations and depend on the actual luminaire. Is not suitable for fixing in corner.


### 3.5 Wiring guidelines

- All connections must be kept as short as possible to ensure good EMI behaviour.
- Mains leads should be kept apart from LED Driver and other leads (ideally $5-10 \mathrm{~cm}$ distance)
- Max. lenght of output wires is 2 m .
- Secondary switching is not permitted.
- Incorrect wiring can demage LED modules.
- To avoid the damage of the Driver, the wiring must be protected against short circuits to earth (sharp edged metal parts, metal cable clips, louver, etc.).


### 3.6 Replace LED module

1. Mains off
2. Remove LED module
3. Wait for 20 seconds
4. Connect LED module again

Hot plug-in or secondary switching of LEDs is not permitted and may cause a very high current to the LEDs.

### 3.7 Installation instructions

The LED module and all contact points within the wiring must be sufficiently insulated against 3 kV surge voltage.
Air and creepage distance must be maintained.

## LED Driver

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## 4. Electrical values

### 4.1 Diagrams LC 40W 900mA fixC SR SNC2

4.1.1 Efficiency vs load

4.1.2 Power factor vs load

4.1.3 Input power vs load

4.1.4 Input current vs load

4.1.5 THD vs load

THD without harmonic $<5 \mathrm{~mA}(0.6 \%)$ of the input current:


Compact fixed output

### 4.2 Diagrams LC 40W 1050mA fixC SR SNC2

### 4.2.1 Efficiency vs load


4.3.2 Power factor vs load

4.3.4 Input current vs load

4.3.5 THD vs load

THD without harmonic $<5 \mathrm{~mA}(0.6 \%)$ of the input current:

4.3.3 Input power vs load


### 4.3 Maximum loading of automatic circuit breakers

| Automatic circuit <br> breaker type | C 10 | C 13 | C 16 | C 20 | B10 | B13 | B16 | B20 | Inrush current |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Installation $\varnothing$ | $1.5 \mathrm{~mm}^{2}$ | $1.5 \mathrm{~mm}^{2}$ | $1.5 \mathrm{~mm}^{2}$ | $2.5 \mathrm{~mm}^{2}$ | $1.5 \mathrm{~mm}^{2}$ | $1.5 \mathrm{~mm}^{2}$ | $1.5 \mathrm{~mm}^{2}$ | $2.5 \mathrm{~mm}^{2}$ | Imax | Time |
| LC 40/900/45 fixC SR SNC2 | 35 | 50 | 65 | 75 | 28 | 40 | 52 | 60 | 10 A | $100 \mu \mathrm{~S}$ |
| LC 40/1050/39 fixC SR SNC2 | 35 | 50 | 65 | 75 | 28 | 40 | 52 | 60 | 10 A | $100 \mu \mathrm{~S}$ |

### 4.4 Harmonic distortion in the mains supply (at $230 \mathrm{~V} / 50 \mathrm{~Hz}$ and full load)

## in \%

|  | THD | 3. | 5. | 7. | 9. | 11. |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| LC 40/900/45 fixC SR SNC2 | $<15$ | $<15$ | $<5$ | $<4$ | $<3$ | $<3$ |
| LC 40/1050/39 fixC SR SNC2 | $<15$ | $<15$ | $<5$ | $<4$ | $<3$ | $<3$ |

Acc. to 6100-3-2. Harmonics < 5 mA or $<0.6 \%$ (whatever is greater) of the input current are not considered for calculation of THD

## 5. Functions

### 5.1 Short-circuit behaviour

In case of a short circuit on the secondary side (LED) the LED Driver switches into hic-cup mode. After elimination of the short-circuit fault the LED Driver will recover automatically.

### 5.2 No-load operation

The LED Driver works in burst working mode to provide a constant output voltage regulation which allows the application to be able to work safely when LED string opens due to a failure.

### 5.3 Overload protection

If the output voltage range is exceeded the LED Driver will protect itself and LED may flicker. After elimination of the overload, the nominal operation is restored automatically.

## 6. Miscellaneous

### 6.1 Isolation and electric strength testing of luminaires

Electronic devices can be damaged by high voltage. This has to be considered during the routine testing of the luminaires in production.

According to IEC 60598-1 Annex Q (informative only!) or ENEC 303-Annex A, each luminaire should be submitted to an isolation test with 500 V dc for 1 second. This test voltage should be connected between the interconnected phase and neutral terminals and the earth terminal.
The isolation resistance must be at least $2 \mathrm{M} \Omega$.

As an alternative, IEC 60598-1 Annex Q describes a test of the electrical strength with $1500 V_{\text {AC }}$ (or $1.414 \times 1500 \mathrm{~V}$ DC). To avoid damage to the electronic devices this test must not be conducted.

### 6.2 Conditions of use and storage

Humidity: $\quad 5 \%$ up to max. $85 \%$, not condensed (max. 56 days/year at $85 \%$ )

Storage temperature: $-40^{\circ} \mathrm{C}$ up to max. $+80^{\circ} \mathrm{C}$
The devices have to be within the specified temperature range (ta) before they can be operated.

### 6.3 Additional information

Additional technical information at www.tridonic.com $\rightarrow$ Technical Data

Guarantee conditions at www.tridonic.com $\rightarrow$ Services

Life-time declarations are informative and represent no warranty claim. No warranty if device was opened


[^0]:    Test result at $230 \mathrm{~V}, 50 \mathrm{~Hz}$

