

Driver LC 24W 500-600mA flexC R ADV2 F

advanced round series

Product description

- Fixed output built-in LED Driver
- Constant current LED Driver
- For luminaires of protection class I and II
- Adjustable output current 500 or 600 mA
- Up to 90 % efficiency
- For ambient temperatures up to 60 °C
- Nominal life-time up to 50,000 h (at ta 50 °C)
- 5-year guarantee



Housing properties

- Casing: polycarbonat, white
- Type of protection IP20

Functions

- Overload protection
- Short-circuit protection
- No-load protection

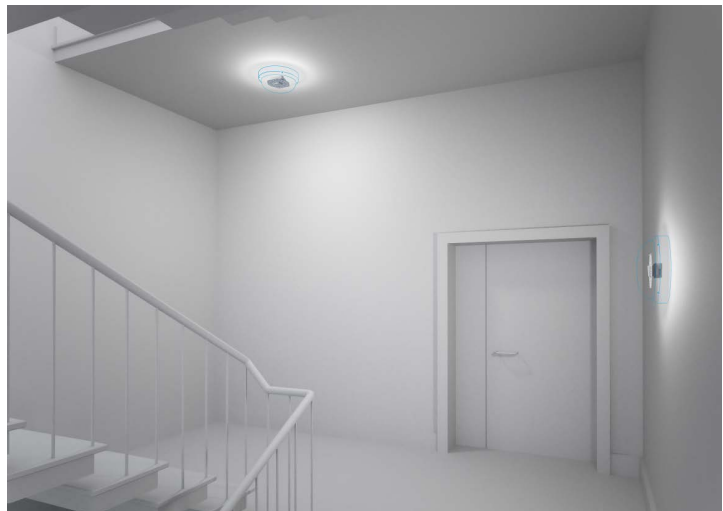
Typical applications

- For spot light, track light and wall light in retail and hospitality application



Standards, page 3

Wiring diagrams and installation examples, page 3



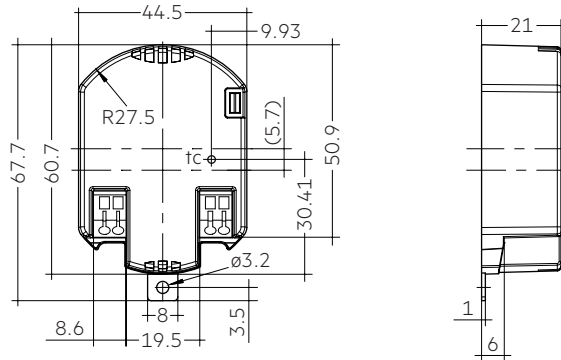
IP20 SELV 

Driver 24W 500-600mA flexC R ADV2 F

advanced round series

Technical data

| | |
|---|---------------------|
| Rated supply voltage | 220 – 240 V |
| AC voltage range | 198 – 264 V |
| Mains frequency | 50 / 60 Hz |
| Typ. efficiency (at 230 V / 50 Hz / full load) ^① | 90 % |
| λ (at 230 V, 50 Hz, full load) ^① | 0.95 |
| THD (at 230 V, 50 Hz, full load) ^① | < 15 % |
| Output current tolerance ^② | ± 7.5 % |
| Max. output current peak | 614 mA |
| Max. output voltage (U-OUT) | 50 V |
| Typ. output LF current ripple at full load | ± 5 % |
| Output P_{st}^{LM} (at full load) | ≤ 1 |
| Output SVM (at full load) | ≤ 0.4 |
| Starting time (at 230 V, 50 Hz, full load) | ≤ 0.5 s |
| Turn off time (at 230 V, 50 Hz, full load) | ≤ 0.5 s |
| Hold on time at power failure (output) | 0 s |
| Ambient temperature t_a (at life-time 50,000 h) | 50 °C |
| Storage temperature t_s | -20 ... +60 °C |
| Mains burst capability | 1 kV |
| Mains surge capability (between L – N) | 1 kV |
| Mains surge capability (between L/N – PE) | 2 kV |
| Life-time | up to 50,000 h |
| Guarantee | 5 years |
| Dimensions L x W x H | 60.7 x 44.5 x 21 mm |



Ordering data

| Type | Article number | Packaging, carton | Packaging, pallet | Weight per pc. |
|---------------------------------|----------------|-------------------|-------------------|----------------|
| LC 24/500-600/40 flexC R ADV2 F | 28003215 | 200 pc(s). | 6,400 pc(s). | 0.063 kg |

Specific technical data

| Type | Output current ^② | Min. forward voltage | Max. forward voltage | Max. output power | Typ. power consumption (at 230 V, 50 Hz, full load) | Typ. current consumption (at 230 V, 50 Hz, full load) | Max. casing temperature t_c | Ambient temperature t_a | I-out select |
|---------------------------------|-----------------------------|----------------------|----------------------|-------------------|---|---|-------------------------------|---------------------------|---------------|
| LC 24/500-600/40 flexC R ADV2 F | 500 mA | 24 V | 40 V | 20 W | 24 W | 110 mA | 90 °C | -20 ... +60 °C | open |
| | 600 mA | 24 V | 40 V | 24 W | 28 W | 130 mA | 90 °C | -20 ... +60 °C | short-circuit |

^① Test result at 600 mA.

^② Output current is mean value.

1. Standards

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

1.1 Glow-wire test

according to EN 61347-1 with increased temperature of 850 °C passed.

2. Thermal details and life-time

2.1 Expected life-time

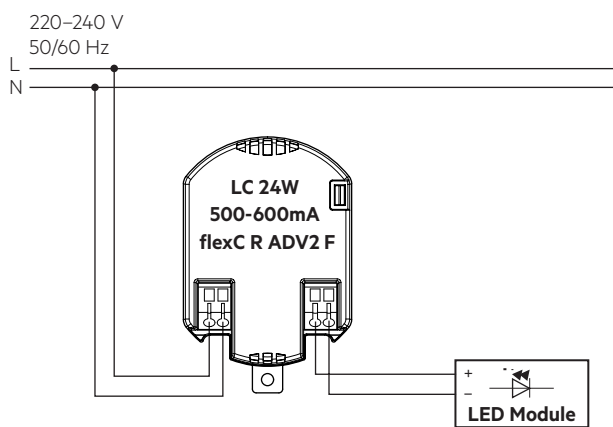
| Expected life-time | | | |
|---------------------------------|-----------|--------------------|--------------------|
| Type | ta | 50 °C | 60 °C |
| LC 24/500-600/40 flexC R ADV2 F | tc | 80 °C ^① | 90 °C ^① |
| | Life-time | 50,000 h | 30,000 h |

^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 %.

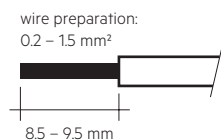
3. Installation / wiring

3.1 Circuit diagram



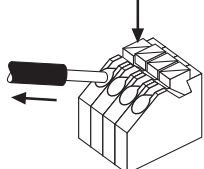
3.2 Wiring type and cross section

The wiring can be in stranded wires with ferrules or solid with a cross section of 0.2–1.5 mm². Strip 8.5–9.5 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 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 cm distance)
- Max. length of output wires is 2 m.
- The secondary wires (LED module) should be routed in parallel to ensure good EMC performance.
- Secondary switching is not permitted.
- Incorrect wiring can damage 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.).

3.5 Fixing

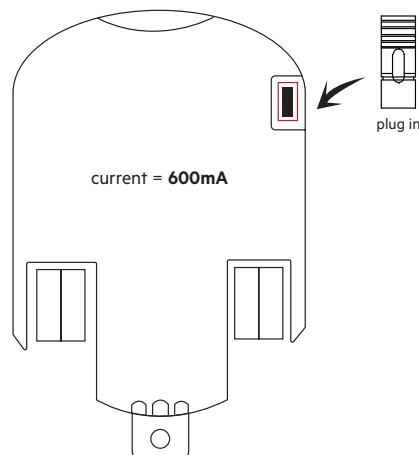
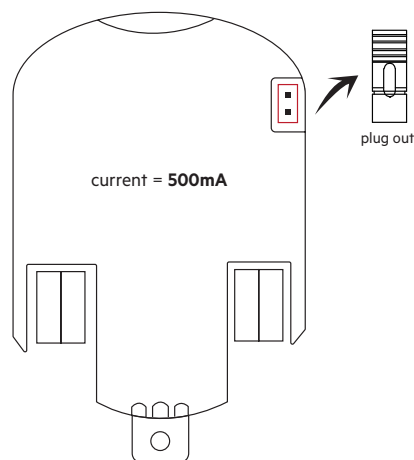
The LED Driver can be fixed via the metal plate.
Max. torque at the clamping screw: 0.3 Nm / M3.

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.

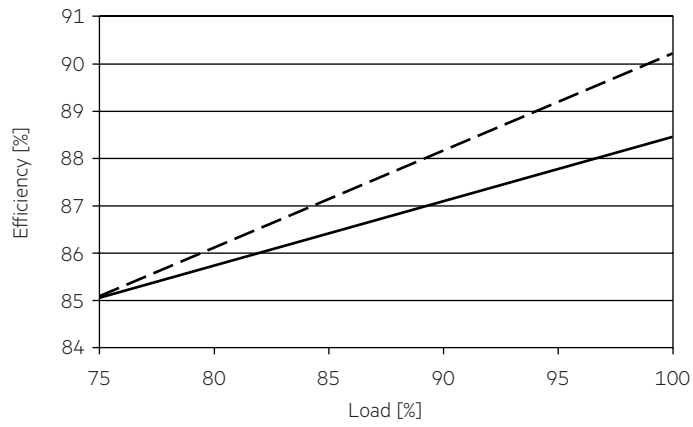
3.7 Current setting



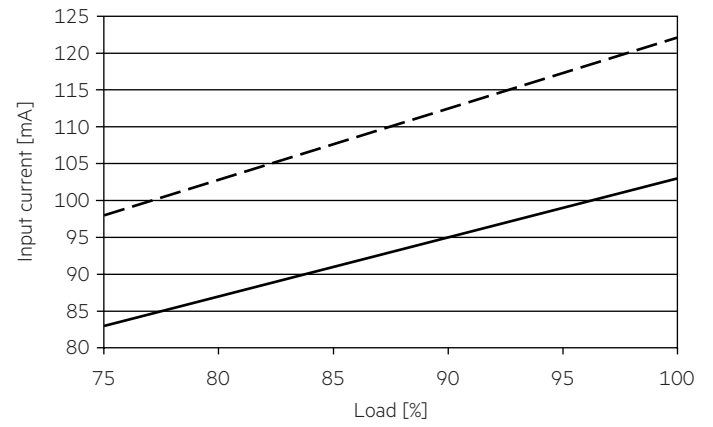
4. Electrical values

4.1 Diagrams

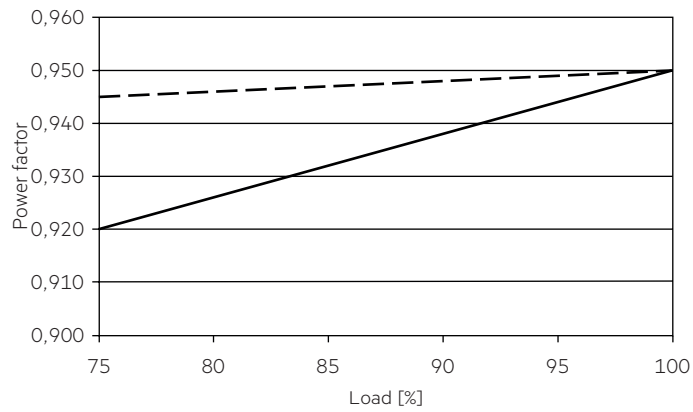
4.1.1 Efficiency vs load



4.1.4 Input current vs load

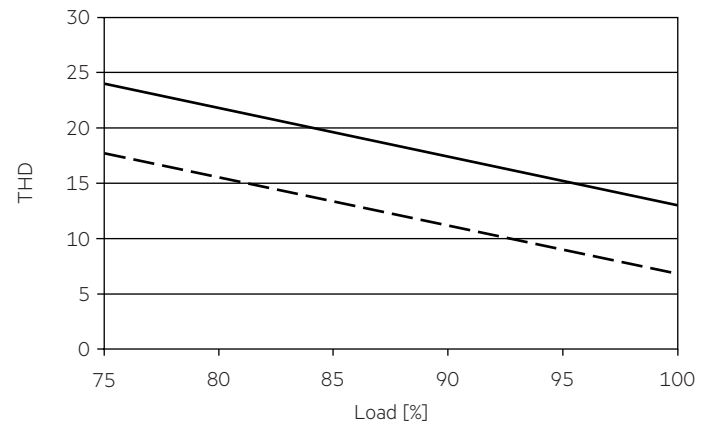


4.1.2 Power factor vs load

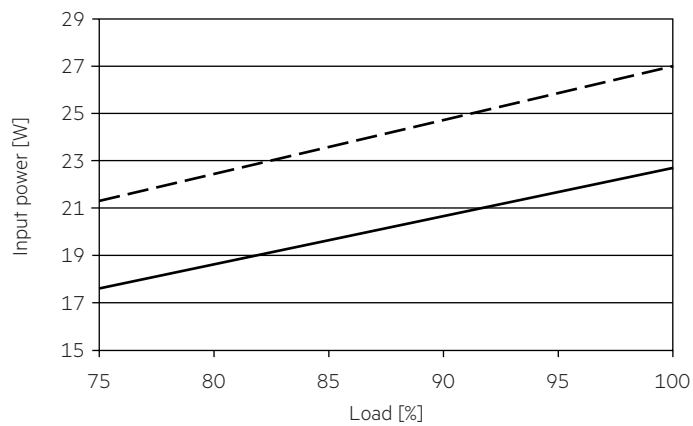


4.1.5 THD vs load

THD without harmonic < 5 mA (0.6 %) of the input current:



4.1.3 Input power vs load



— 500 mA
- - - 600 mA

4.2 Maximum loading of automatic circuit breakers in relation to inrush current

| Automatic circuit breaker type | C10 | C13 | C16 | C20 | B10 | B13 | B16 | B20 | Inrush current | |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------------|--------|
| Installation Ø | 1.5 mm ² | 1.5 mm ² | 1.5 mm ² | 2.5 mm ² | 1.5 mm ² | 1.5 mm ² | 1.5 mm ² | 2.5 mm ² | I _{max} | Time |
| LC 24/500-600/40 flexC R ADV2 F | 40 | 51 | 63 | 78 | 24 | 31 | 38 | 47 | 15 A | 183 µs |

This are max. values calculated out of inrush current! Please consider not to exceed the maximum rated continuous current of the circuit breaker. Calculation uses typical values from ABB series S200 as a reference. Actual values may differ due to used circuit breaker types and installation environment.

4.3 Harmonic distortion in the mains supply (at 230 V / 50 Hz and full load) in %

| | THD | 3. | 5. | 7. | 9. | 11. |
|--|------|------|-----|-----|-----|-----|
| LC 24/500-600/40 flexC R ADV2 F | < 15 | < 12 | < 7 | < 5 | < 4 | < 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 off. 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 the output current will decrease till LED flicker. After elimination of the overload, the nominal operation is restored automatically.

6. Miscellaneous

6.1 Insulation 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 insulation 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 insulation resistance must be at least 2 MΩ.

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

6.2 Conditions of use and storage

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

Storage temperature: -20 °C up to max. +60 °C

The devices have to be within the specified temperature range (ta) before they can be operated.

The LED Driver is declared as inbuilt LED controlgear, meaning it is intended to be used within a luminaire enclosure. If the product is used outside a luminaire, the installation must provide suitable protection for people and environment (e.g. in illuminated ceilings).

6.3 Additional information

Additional technical information at www.tridonic.com → Technical Data

Guarantee conditions at www.tridonic.com → Services

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