

Driver LCBI 15 W 350/500/700 mA basic phase-cut Ip
basic series

Product description

- Dimmable via leading edge and trailing edge phase dimmers
- Output dimmed analogue (current amplitude)
- Dimming range typ. 5 to 100 % (depending on dimmer)
- Type of protection IP20
- Push-in terminals
- Connecting cable, cable cross-section 0.5 – 1.5 mm²
- SELV
- 350, 500 or 700 mA output current
- Output power 15/16 W
- Nominal lifetime of 50,000 h (at ta max. 50 °C with a failure rate of max. 0.2 % per 1,000 h)
- 5 years guarantee (conditions at www.tridonic.com)



Properties

- Casing: polycarbonate, white
- Compact dimensions
- Overload protection
- Short-circuit protection
- No-load protection



Standards, page 3

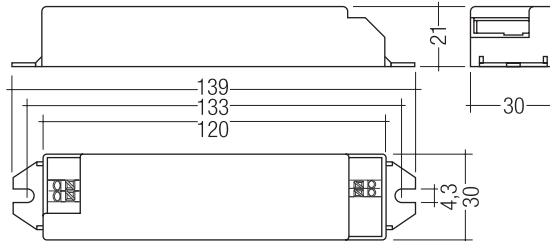
Wiring diagrams and installation examples, page 4

IP20 SELV     RoHS

Driver LCBI 15 W 350/500/700 mA basic phase-cut Ip basic series

Technical data

Rated supply voltage	220 – 240 V
AC voltage range	198 – 264 V
Mains frequency	50 / 60 Hz
Typ. rated current (at 230 V, 50 Hz, full load)	0.1 A
λ at full load ^①	0.99
λ at min. load ^②	0.97C
Output current tolerance at full load ^{③④}	± 75 %
Typ. current ripple (at 230 V, 50 Hz, full load)	± 30 %
Starting time (at 230 V, 50 Hz, full load)	≤ 0.1 s
Turn off time (at 230 V, 50 Hz, full load)	≤ 0.1 s
Hold on time at power failure (output)	0 s
Ambient temperature t_a	-25 ... +50 °C
Storage temperature t_s	-40 ... +85 °C
Lifetime	up to 50,000 h
Guarantee (conditions at www.tridonic.com)	5 years
Dimensions L x W x H	139 x 30 x 21 mm



Ordering data

Type	Article number	Packaging, carton	Packaging, pallet	Weight per pc.
LCBI 15W 350mA basic Ip	89800255	25 pc(s).	1200 pc(s).	0.053 kg
LCBI 15W 500mA basic Ip	89800256	25 pc(s).	600 pc(s).	0.053 kg
LCBI 15W 700mA basic Ip	89800257	25 pc(s).	600 pc(s).	0.053 kg

Specific technical data

Type	Efficiency at full load ^①	Efficiency at min. load ^②	Output current ^③	Max. repetitive output peak current at full load ^{④⑤}	Max. repetitive output peak current at min. load ^{④⑤}	Max. non-repetitive output peak current at full load ^{④⑤}	Max. non-repetitive output peak current at min. load ^{④⑤}	Max. forward voltage ^⑥	Min. forward voltage ^⑥	Max. output voltage ^⑥	Max. input power	Max. output power
LCBI 15W 350mA basic Ip	78 %	76 %	350 mA	540 mA	720 mA	540 mA	720 mA	46.0 V	21.0 V	51 V	21 W	16 W
LCBI 15W 500mA basic Ip	77 %	75 %	500 mA	840 mA	1,040 mA	840 mA	1,040 mA	30.0 V	13.5 V	34 V	20 W	15 W
LCBI 15W 700mA basic Ip	76 %	74 %	700 mA	1,280 mA	1,640 mA	1,280 mA	1,640 mA	21.5 V	10.0 V	24 V	20 W	15 W

^① Test result at 230 V, 50 Hz.

^② The trend between min. and full load is linear.

^③ Output current tolerance at min. load max. 22 %.

^④ At failure mode.

^⑤ Output current is mean value.

Standards

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

Overload protection

If the maximum load is exceeded by a defined internal limit, the LED Driver reduces the LED output current. After elimination of the overload the nominal operation is restored automatically.

Short-circuit behaviour

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

No-load operation

The LED Driver works in constant current mode. In no-load operation there is the max. output voltage at the output (see page 1).

Installation instructions

Note the requirements set out in the document
LED_driver_installation_advise.pdf
(<http://www.tridonic.com/com/en/technical-docs.asp>).

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

Expected lifetime

Type	ta	40 °C	45 °C	50 °C	60 °C
LCBI 15W 350mA basic Ip	tc	75 °C	80 °C	85 °C	x
	Lifetime	100,000 h	70,000 h	50,000 h	x
LCBI 15W 500mA basic Ip	tc	75 °C	80 °C	85 °C	x
	Lifetime	100,000 h	70,000 h	50,000 h	x
LCBI 15W 700mA basic Ip	tc	75 °C	80 °C	85 °C	x
	Lifetime	100,000 h	70,000 h	50,000 h	x

The LED Drivers are designed for a lifetime stated above under reference conditions and with a failure probability of less than 10 %.

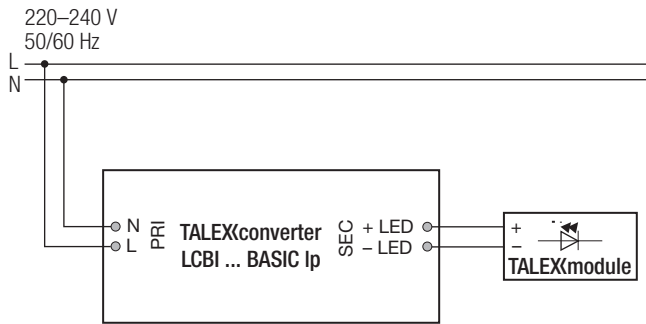
The relation of tc to ta temperature depends also on the luminaire design. If the measured tc temperature is approx. 5 K below tc max., ta temperature should be checked and eventually critical components (e.g. ELCAP) measured. Detailed information on request.

Maximum loading of automatic circuit breakers in relation to inrush current

Automatic circuit breaker type									Inrush current	
	C10	C13	C16	C20	B10	B13	B16	B20	I _{max}	Time
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		
LCBI 15W 350mA basic Ip	50	65	80	100	50	65	80	100	1.7 A	40 µs
LCBI 15W 500mA basic Ip	50	65	80	100	50	65	80	100	1.7 A	40 µs
LCBI 15W 700mA basic Ip	50	65	80	100	50	65	80	100	1.7 A	40 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.

Wiring diagram



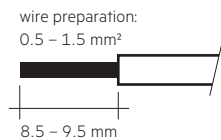
Glow wire test according to IEC 60695-2-11

850 °C passed.

Wiring type and cross section

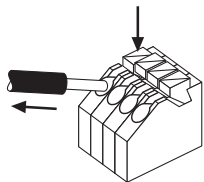
The wiring can be stranded wires with ferrules or rigid wires with a cross section of 0.5 – 1.5 mm².

Strip 7.5 – 8.5 mm of insulation from the cables to ensure perfect operation of the push-wire terminals (WAGO 250).



Release of the wiring

Press down the “push button” and remove the cable from front.



Wiring instructions

The secondary leads should be separated from the mains connections and wiring for good EMC performance.

Maximum lead length on secondary side is 0.6 m. For a good EMC performance keep the the LED wiring as short as possible.

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.).

Mounting of device

Max. torque for fixing: 0.5 Nm/M4

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.

Conditions of use

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).

Maximum number of switching cycles

All LED Driver are tested with 50,000 switching cycles.

Additional information

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

Lifetime declarations are informative and represent no warranty claim. No warranty if device was opened.