

SELV    RoHS

EM powerLED 50 W CPS 4x300/350 mA LED Driver for AC and DC power supplies

Product description

- LED Driver for mains operation with integrated Simple CORRIDOR FUNCTION (CF)
- 4 channels in mains and emergency operation
- For use in central battery systems
- SELV for output voltage < 60 V DC
- For luminaire installation
- For the use with STARK QLE G2 CLASSIC and LLE 24-280-1250
- 5 years guarantee

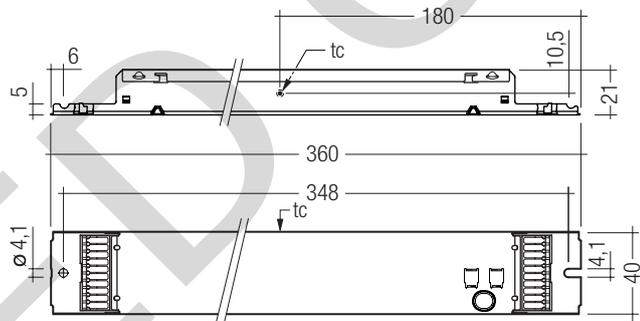
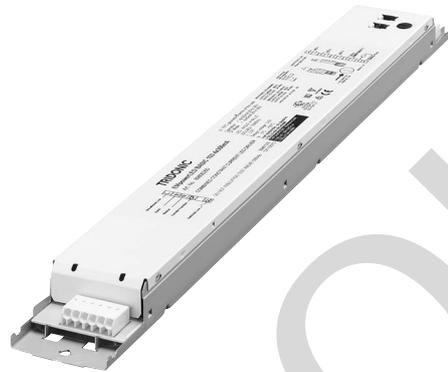
Properties

- Constant current LED Driver with 4 x 300 mA or 4 x 350 mA output current in mains operation
- Simple CORRIDOR FUNCTION (CF) with 10 % light level
- 10 or 100 % output when connected to DC
- For emergency lighting systems as per EN 50172



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Wiring diagrams and installation examples, page 6 and 7



Technical data

Rated supply voltage	220 – 240 V
Voltage range AC	198 – 264 V
Voltage range DC	176 – 280 V
Mains frequency	0 / 50 / 60 Hz
Typ. λ (at 230 V, 50 Hz, normal operation)	0.97
Typ. λ (at 230 V, 50 Hz, CF operation)	0.75
Leakage current (PE)	< 0.5 mA
Overvoltage protection	320 V (for 1 h)
Max. forward voltage Vf LED module	37.4 V
Min. forward voltage Vf LED module	28.0 V
Max. output voltage	60.0 V
Time to light (at 230 V, 50 Hz, full load)	180 ms
Output current ripple	± 25 %
Output current tolerance	- 9 / + 7 %
Max. repetitive output peak current	output current + 32 %
Max. non-repetitive output peak current	output current + 32 %
THD normal operation	12 %
THD CF operation	13 %
Ambient temperature t_a	0 ... +50 °C
Max. casing temperature t_c	75 °C
Dimensions LxBxH	360 x 40 x 21 mm
Type of protection	IP20

Ordering data

Type	Article number	Packaging, carton	Packaging, pallet	Weight per pc.
EM powerLED 4x300mA CPS	89800294	10 pc(s).	600 pc(s).	0.283 kg
EM powerLED 4x350mA CPS	89800295	10 pc(s).	600 pc(s).	0.283 kg

Specific technical data

Type	Article number	Mains power	Mains current	Efficiency	Typ. output power	Typ. output current
Normal operation						
EM powerLED 4x300mA CPS	89800294	47 W	210 mA	85 %	39 W	300 mA
EM powerLED 4x350mA CPS	89800295	53 W	240 mA	85 %	45 W	350 mA
CF operation						
EM powerLED 4x300mA CPS	89800294	8.5 W	55 mA	62 %	4.6 W	42 mA
EM powerLED 4x350mA CPS	89800295	8.5 W	55 mA	62 %	4.6 W	42 mA

PHASED OUT



ACCES-
SORIES

SWITCH Sensor HF 5BP

Automatic switching based on motion and light level

Product description

- Motion detector for luminaire installation
- Motion detection through glass and thin materials (except metal)
- For automatic on/off switching of electronic ballasts with corridor-FUNCTION
- "Bright-Out" function: luminaire is not switched on if there is adequate brightness
- Delay time, detection range and light value for the "Bright-Out" function can be set via 3 potentiometers
- Max. installation height 5 m
- Infinitely variable range (0.5 – 5.0 m)



Ordering data

Type	Article number	Packaging, carton	Weight per pc.
SWITCH Sensor HF 5BP	28000086	4 pc(s).	0,079 kg

Standards

EN 55015
EN 61000-3-2
EN 61000-3-3
EN 61347-1
EN 61347-2-13
EN 61547
EN 62384
according to EN 60598-2-22
according to EN 50172

Mechanical details

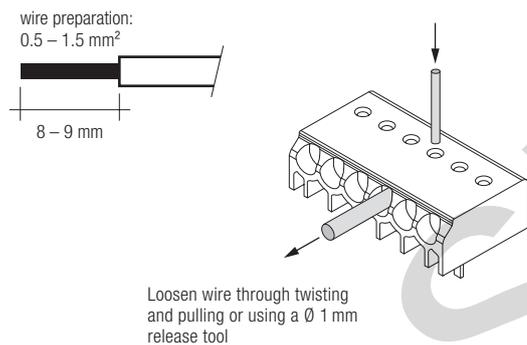
Channel manufactured from galvanised steel.
Cover manufactured from white pre-coated steel.

Module end termination
8.0 mm stripped insulation

Electrical connections

Wiring

LED module/LED Driver/supply



Earth connection

The earth connection via the terminal is classified as safety earth

Wiring type and cross section

Solid wire with a cross section of 0.5 – 1.5 mm². Strip 8 – 9 mm of insulation from the cables to ensure perfect operation of terminals.

Installation instruction

Max. torque for the mounting screws: 0.5 Nm / M4.

You must make sure that the LED is connected with the correct polarity. LEDs that are connected to EM powerLED should have polarity reversal protection such as a Schottky diode. There may be irreversible damage if the LED is connected with the wrong polarity. The protection device must be capable of handling a load of more than 700 mA.

Life-time

Average life-time 50,000 hours under rated conditions with a failure rate of less than 10 %. Average failure rate of 0.2 % per 1000 operating hours.

Maximum lead length

LED 1 m^①

^① Note: care should be taken not to exceed the total maximum LED lead length for the LED Driver. Leads should always be kept as short as possible.

Short-circuit behaviour

In case of a short circuit on one of the channels the remaining LED start to flash rapidly (ca. 5 times per second). After elimination of the short circuit the nominal operation is restored automatically.

No-load operation

In case of a no-load operation (open circuit) on one channel the remaining LED start to flash rapidly (ca. 5 times per second). After elimination of the open circuit the nominal operation is restored automatically.

The LED Driver is not damaged in the no-load operation. The max. output voltage can be obtained during no-load operation.

Storage conditions

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

Storage temperature: -40 °C up to max. +80 °C

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

Expected life-time

Type		ta = 40 °C		ta = 50 °C	
		tc	65 °C	75 °C	75 °C
EM powerLED 3x300mA CPS	Life-time	100,000 h	50,000 h		
	tc	65 °C	75 °C		
EM powerLED 3x350mA CPS	Life-time	100,000 h	50,000 h		
	tc	65 °C	75 °C		

Maximum loading of automatic circuit breakers

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}
EM powerLED 4x300mA CPS	20	30	40	50	10	15	20	30	20 A	190 µs
EM powerLED 4x350mA CPS	20	30	40	50	10	15	20	30	20 A	190 µs

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

Type	THD	3	5	7
EM powerLED 4x300mA CPS	15 %	14 %	8 %	5 %
EM powerLED 4x350mA CPS	11 %	8 %	5 %	6 %

Light output in corridor operation

	Approx. light output in corridor operation
EM powerLED 4x300mA CPS	14 %
EM powerLED 4x350mA CPS	12 %

Wiring guidelines

- The LED terminals are classified as SELV (output voltage < 60 V DC). Keep the wiring of the input terminals separated from the wiring of the SELV equivalent terminals or consider special wiring (double insulation, 6 mm creepage and clearance) when these connections should be kept SELV.
- The output to the LED is DC but has high frequency content, which should be considered for good EMC compliance.
- LED leads should be separated from the mains connections and wiring for good EMC performance.
- Maximum lead length on the LED terminals is 1 m. For a good EMC performance keep the LED wiring as short as possible.

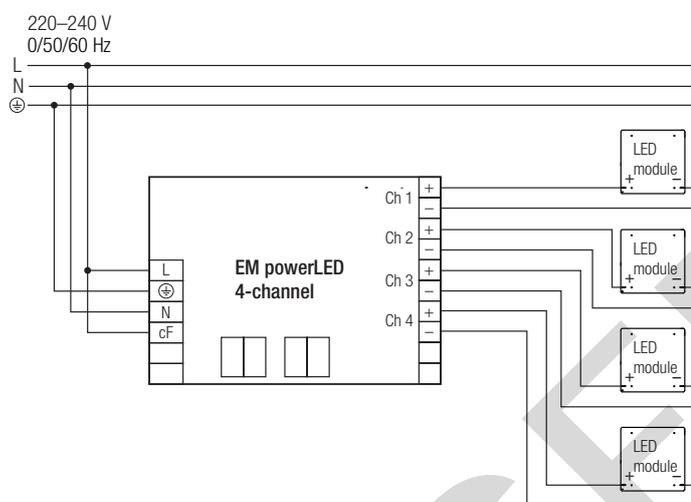
To ensure that a luminaire containing LED emergency units complies with EN 55015 for radio frequency conducted interference in both normal and emergency mode it is essential to follow good practice in the wiring layout.

Within the luminaire the switched and unswitched 50 Hz supply wiring must be routed as short as possible and be kept as far away as possible from the LED leads. Through wiring may affect the emc performance of the luminaire.

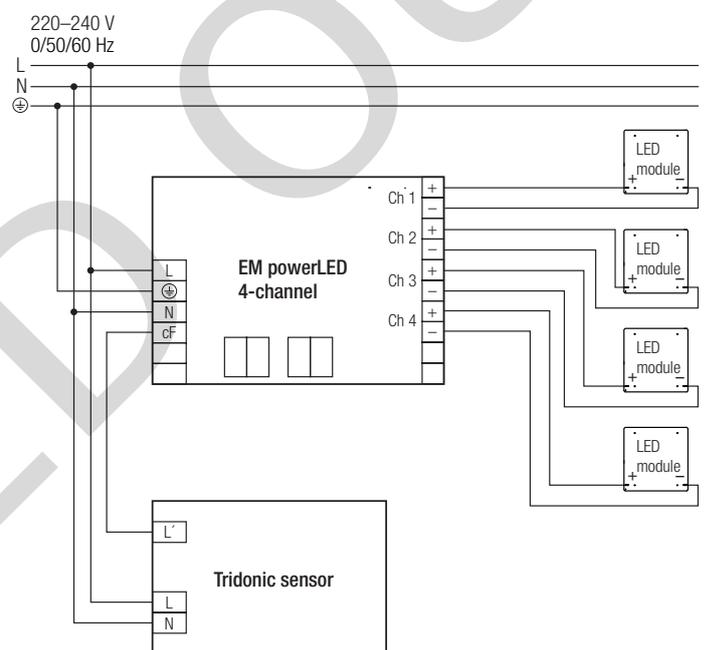
The length of LED leads must not be exceeded.

The output current depends on the forward voltage and the tolerance of the LED modules.

Wiring diagram EM powerLED 4-channel without sensor



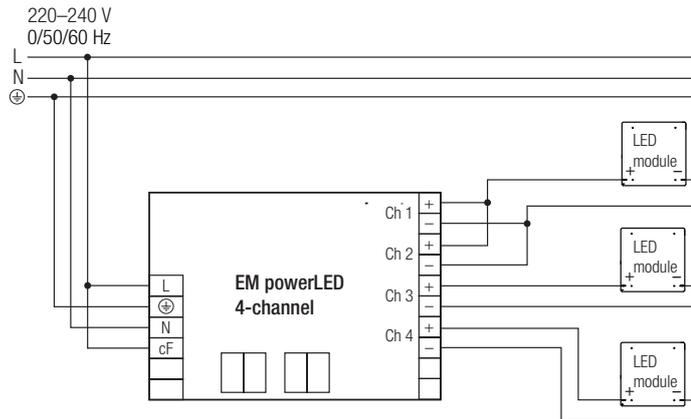
Wiring diagram EM powerLED 4-channel with sensor



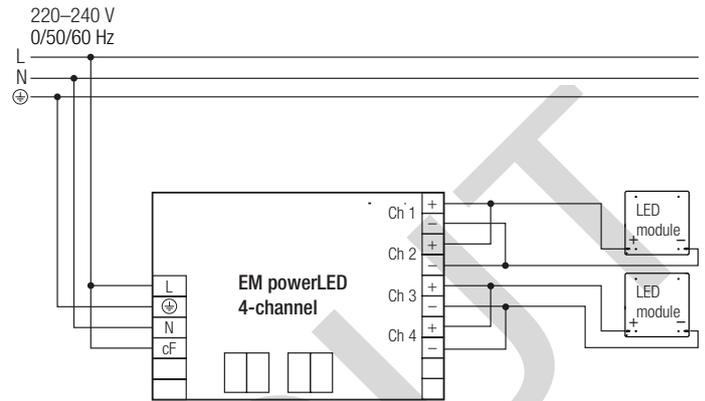
The sensor is not active in DC operation.

PIR input $\hat{=}$ 230 V

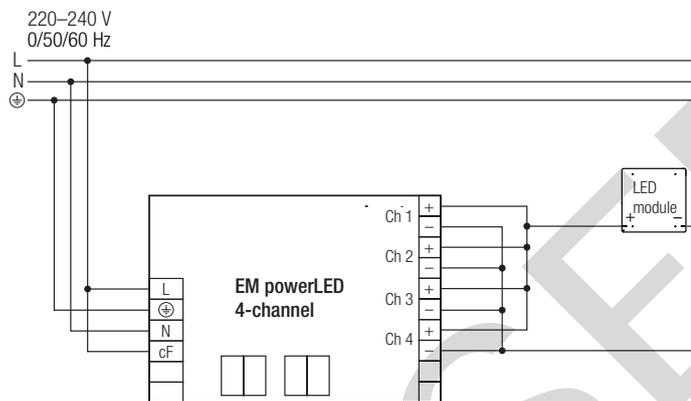
Wiring diagram EM powerLED 4-channel with bridged channels (1 x 700 mA, 2 x 350 mA)



Wiring diagram EM powerLED 4-channel with bridged channels (2 x 700 mA)



Wiring diagram EM powerLED 4-channel with bridged channels (1 x 1,400 mA)



Switching behaviour

L	CF	LED Maintained
off	off	off
off	on	off
on	off	12 – 14 %
on	on	100 %

The mains power must be removed before changing the LED load.

Secondary switching of LEDs is not allowed and may cause damage to the LEDs. The hot plug-in of LEDs during normal operation may result in high current peaks.

Additional information

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

Guarantee conditions at www.tridonic.com → Services

No warranty if device was opened.

DC operation behaviour:

The emergency level (10 % or 100 %) depends on the polarity of the DC voltage. All connected LED modules are used in mains and emergency operation.

L	+	-
N	-	+
CF	+	-
Emergency level	100 %	10 %