



A New Lighting Experience



- overload protection
- short circuiting protection
- SELV equivalent
- 50,000 hrs service life time

LED Constant Current Drivers

LEDLine ECX

Electronic converters for LED modules
operated with constant current drivers

LED Constant Current Drivers

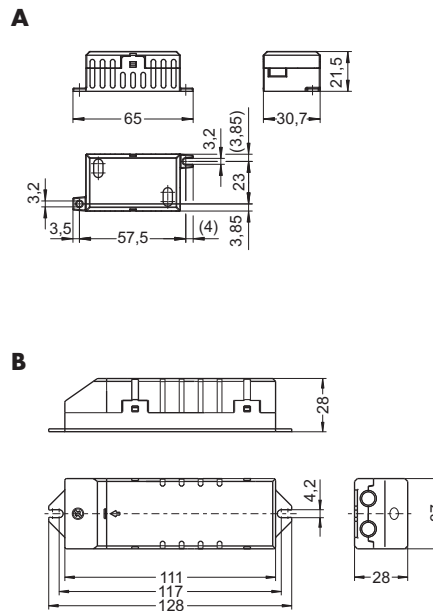
The electronic constant current drivers are optimised to drive VS HighPower LED modules. Primary side switching only. Before connecting LED modules ensure that the power supplier is isolated.

- Mains voltage: 220–240 V ± 10 %
- Mains frequency: 0 Hz, 50–60 Hz
- Electronic short-circuit protection
- Overload protection
- Protection against "no load" operation
- Degree of protection: IP20
- Protection class II
- SELV equivalent
- Power factor: 0.6
- Screw terminals: 2.5 mm²
- Quantity of screw terminals:
 - 1x2-poles primary
 - 1x2-poles secondary
- With integrated cord grip (except 186180)
- EN 61000-3-2
- EN 55015
- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 62384

Service life time: 50,000 hrs
 permanent operation when maximum temperature $t_{c,max}$. at t_c point will not be exceeded; failure rate: < 0.2 % per 1,000 hrs



The converters are designed for DC-operation (mains frequency: 0 Hz) and can be used for emergency power supplies.



Constant current driver											
Max. output W	Type	Ref. No.	Mains voltage 0 Hz, 50/60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Ambient temperature t_a °C	Casing temperature t_c °C	Drawing	Weight g
Shape: 65x30.7x21.5 mm											
8	ECXe 350mA/8W	186180	176/264 220/240	60/40 91/88	350 ± 5 %	2–24	25	–20 to 50	80	A	33
Shape: 128x37x28 mm											
11	ECXe 350mA/11W	186157	176/264 220/240	75/51 122/117	350 ± 5 %	2–32	34	–20 to 50	70	B	71
16	ECXe 500mA/16W	186158	176/264 220/240	106/72 160/155	500 ± 5 %	2–32	34	–20 to 50	75	B	71
17	ECXe 700mA/17W	186159	176/264 220/240	117/79 188/178	700 ± 5 %	2–25	34	–20 to 50	70	B	71
20	ECXe 1050mA/20W	186160	176/264 220/240	137/92 210/202	1050 ± 5 %	2–19	34	–20 to 45	70	B	71

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification. Please find further detailed information at www.vsslosh-schwabe.com.

LED Constant Current Drivers

The electronic constant current drivers are optimised to drive constant current High Power LED modules.

Primary side switching only.
Before connecting LED modules ensure that the power supplier is isolated.

Mains voltage: 220–240 V \pm 10 %
Mains frequency: 50–60 Hz
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class I
SELV equivalent
Power factor: 0.97
Push-in terminals: 2.5 mm²

Quantity of push-in terminals:
1x2-poles + earth terminal primary
1x2-poles secondary

EN 61000-3-2

EN 55015

EN 61347-1

EN 61347-2-13

EN 61547

EN 62384

When using ECXe350mA/42W together with LED modules in luminaires care must be taken to ensure safety according to EN 60598.

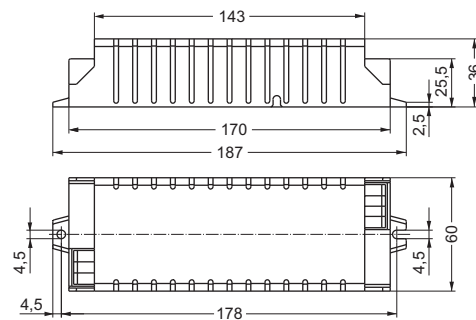
Service life time: 50,000 hrs
permanent operation when maximum temperature t_{cmax} at t_c point will not be exceeded;
failure rate: < 0.2 % per 1,000 hrs



Additional Technical Features



The electronic converter is protected against transient main peaks up to 3 kV (between L and N) and up to 4 kV (between L, N and PE).



Constant current driver										
Max. output W	Type	Ref. No.	Mains voltage 50/60 Hz V	Mains current mA	Current output DC mA	Voltage output DC (V)	Max. voltage without load DC (V)	Ambient temperature t_a (°C)	Casing temperature t_c (°C)	Weight g
Shape: 187x60x36 mm										
42	ECXe 350mA/42W	186175	220/240	210/190	350 \pm 5 %	40–115	120	–30 to 60	65	270

Dimmable LED Constant Current Drivers

The constant current driver of the ECXd series features a dimming range of 0.5 to 100 %.

During dimming operations, the driver can be controlled via DALI-compatible controllers or conventional light switches (PUSH).

The dimming function is achieved by applying a PWM signal to the nominal current of 700 mA. If no DALI interface is connected, brightness will stay at 100 %.

Mains voltage: 220–240 V ±10 %

Mains frequency: 0 Hz, 50–60 Hz

Electronic short-circuit protection

Overload protection

Protection against "no load" operation

Degree of protection: IP20

Protection class I

SELV-equivalent

Power factor: 0.97

Push-in terminals: 0.5–1.5 mm²

Quantity of push-in terminals:

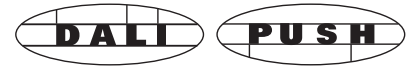
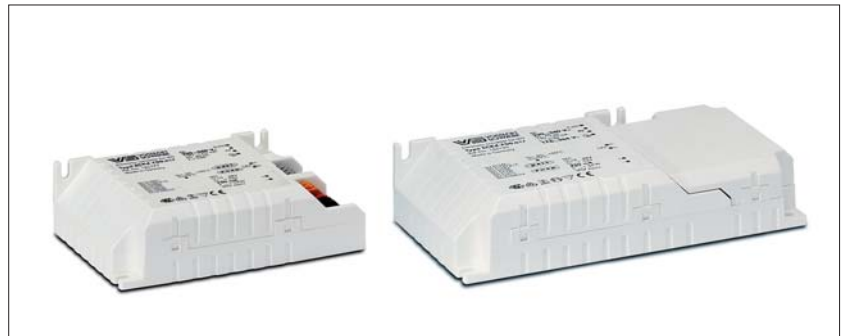
1x3-poles primary (1xPUSH, 2xDALI)

1x2-poles secondary

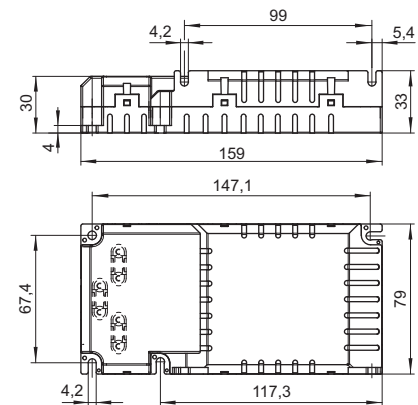
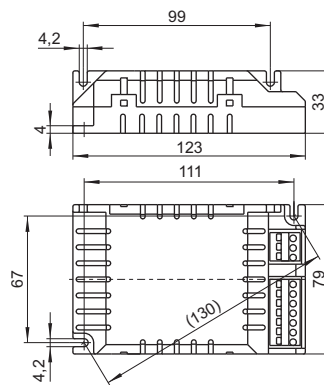
Service life time: 50,000 hrs

permanent operation when maximum temperature t_{cmax} . at t_c point will not be exceeded;

failure rate: < 0.2 % per 1,000 hrs



With cord grip



Constant current driver										
Max. output	Type	Ref. No.	Mains voltage	Mains current	Current output	Voltage output	Max. voltage without load	Ambient temperature	Casing temperature	Weight
W			0 Hz, 50/60 Hz V	mA	DC mA	DC V	DC V	t_a (°C)	t_c (°C)	g
Shape: 123x79x33 mm										
34	ECXd 700mA/34W	186177	176/264 220/240	230/160 190/170	700 ±5 %	9–48	52	–20 to 50	75	180
With cord grip – Shape: 147.1x79x33 mm										
34	ECXd 700mA/34W	186195	176/264 220/240	230/160 190/170	700 ±5 %	9–48	52	–20 to 50	75	215

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LED Constant Current Drivers

Light-emitting diodes are semiconductor devices with a light-emitting p-n junction. Due to the specific diode characteristics, the current can only flow through an LED in one direction.

Coupled with the special properties of a semiconductor, this non-linear behaviour can increase the current and power uptake of an LED as it heats up.

If this effect is not limited, unchecked heating can finally destroy the semiconductor junction.

For this reason, VS recommends using an external constant current driver to operate all HighPower LED modules.

To ensure that the same current flows through every LED, HighPower modules can only be wired in series.

The constant current source has to be selected to suit the respective application, i.e. it must supply the required current and also provide sufficient voltage for the LED string.

The number of VS LED modules that can be connected to a single operating device is dependent on the forward bias of the respective modules.

The table shows the maximum number of VS HighPower modules that can be connected to the corresponding VS constant current driver.

LED modules Type	Ref. No.	Max. quantity of LED modules per constant current driver						
		350mA/ 8V	11W	42W*	500mA/ 16V	700mA/ 17V	34W/DALI	1050mA/ 20V
HighPerformance Line – 300x12 mm / 6 W								
WU-M-291-W-.....	526742, 532638, 532639, 532640	1	1	3-7	–	–	–	–
WU-M-291-SB, -SG	530028, 530029	1	1	3-7	–	–	–	–
WU-M-291-SO, -SY	530030, 530031	2	2	4-10	–	–	–	–
HighPerformance Line – 300x12 mm / 12 W								
WU-M-292-W-.....	526743, 532641, 532642, 532643	–	–	–	–	1	2	–
WU-M-292-SB-SG, WU-M-292-SO, -SY	530032, 530033, 530034, 530035	–	–	–	–	1	24	–
HighPerformance Square – 20x20 mm / 1.2 W								
WU-M-293-W-.....	526744, 532645, 532646, 532647	6	9	12-35	–	–	–	–
WU-M-293-SB, ...SG	530036, 530037	6	9	12-35	–	–	–	–
WU-M-293-SO, ...SY	530038, 530039	9	13	18-52	–	–	–	–
HighPerformance Square – 35x35 mm / 2.5 W								
WU-M-294-W-.....	526745, 532648, 532649, 532650	3	4	6-16	–	–	–	–
WU-M-294-SB, ...SG	530040, 530041	3	4	6-16	–	–	–	–
WU-M-294-SO, ...SY	530042, 530043	4	6	9-26	–	–	–	–
HighPerformance Square – 50x50 mm / 5 W								
WU-M-295-W-.....	526746, 534395, 534396, 534397	1	2	3-8	–	–	–	–
Mini / Spot / Line XP and HC								
WU-M-392	all types	–	1	2-3	1	–	1	–
WU-M-393	all types	1	2	3-7	2	1	2	1
WU-M-394	all types	1	2	3-7	2	1	2	1
HeliosFlood / HeliosLine								
WU-M-399	all types	–	–	1	–	–	–	–
WU-M-400	all types	–	–	1	–	–	–	–
PowerEmitter XR-E								
VS-PowerEmitterXR-E-W	all types	5	7	12-30	8	5	3-11	4
VS-PowerEmitterXR-E-WW	all types	5	7	12-30	8	5	3-11	–
TriplePowerEmitter XR-E / IP67								
WU-M-325-XR-E-W-.....	all types	1	2	4-10	2	1	3	1
WU-M-325-XR-E-WW-.....	all types	1	2	4-10	2	1	3	–
FiveLED								
WU-M-376-XR-E-.....	all types	1	1	3-6	1	1	2	–
LEDLine High Power XR-E								
WU-M-329-WWW	all types	–	–	–	–	–	–	1

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