

CV 24 V



COMFORTLINE 24 V C

186640

Typical Applications

Built-in in luminaires for 24 V systems

- Retail lighting
- Residential lighting
- Furniture lighting

ComfortLine 24 V C

- **VERY LOW RIPPLE CURRENT: < 5%**
- **WITH INTEGRATED CORD GRIP**
- **FOR INDEPENDENT OPERATION**
- **SELV**
- **FOR CONDUCTOR CROSS SECTION:
UP TO 2.5 MM²**
- **LONG SERVICE LIFE:
UP TO 100,000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**



ComfortLine 24 V C

Product features

- Compact casing shape
- For use in applications with low capacity range of up to 20 W

Electrical features

- Mains voltage: 220–240 V $\pm 10\%$
- Mains frequency: 50–60 Hz
- Push-in terminals: 0,5–2,5 mm²
- Power factor at full load: > 0.5 C

Safety features

- Protection against transient main peaks up to 2 kV (between L and N)
- Electronic short-circuit protection
- Overload protection: reversible
- Protection against "no load" operation
- Degree of protection: IP20
- Protection class II
- SELV

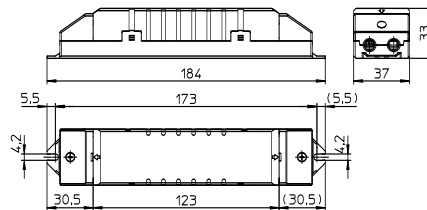
Packaging units

Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
186640	20	60	115



Dimensions

- Casing: K39.2
- Length: 184 mm
- Width: 37 mm
- Height: 33 mm



Applied standards

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



Product guarantee

- 5 years
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage (www.vossloh-schwabe.com). We will be happy to send you these conditions upon request.

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Electrical characteristics

Max. output W	Type	Ref. No.	Voltage 50–60 Hz V	Mains current mA	Inrush current A / μ s	Current output DC mA (\pm 5%)	Voltage output DC (V)	Efficiency at full load % (230 V)	Ripple 100 Hz %
20	EDXe 120/24.044	186640	220–240	230–210	30 / 100	0–850	24	> 85	<5

Maximum ratings

Exceeding the maximum ratings can lead to reduction of service life or destruction of the drivers.

Ref. No.	Ambient temperature range		Operation humidity range		Storage temperature range		Storage humidity range		Max. operation temperature at t_c point °C	Degree of protection
	°C min.	°C max.	% min.	% max.	°C min.	°C max.	% min.	% max.		
186640	-25	+50	5	60	-40	+85	5	95	+75	IP20

Expected service life time

at operation temperatures at t_c point

Operation current	Ref. No.	
	186640	
All	65 °C	75 °C
hrs.	100,000	50,000

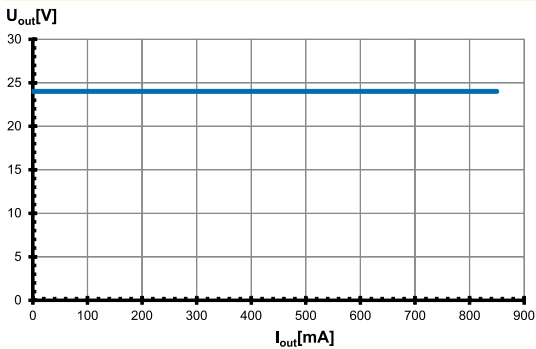
Product label

VS LIGHTING SOLUTIONS	$t_a = -25...+50^\circ\text{C}$	EN 61347-1	SEC
Vossloh-Schwabe Deutschland GmbH	$t_c = 75^\circ\text{C}$	EN 61347-2-13	ULtotal = 24 Vdc
Stuttgarter Straße 61/1, D-73614 Schorndorf		EN 62384	Rated = 0.05 A
Electronic Converter for LED		EN 61547	Power = 20 W
Type E30x 120/24.044		EN 61000-3-2	IP 20
Ref. No. 186640		EN 55015	SELV
PSI			t_c
L $U_n = 220...240\text{ V-}$			
I_n = 230...210 mA			
N $f_n = 50...60\text{ Hz}$			
$\lambda = 0.5\text{ C}$			
Made in Germany			

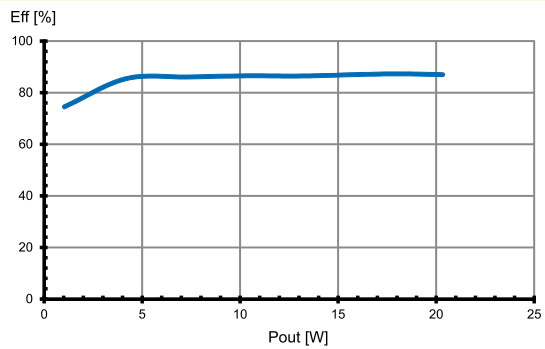
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Typ. performance graphs for 186640 / Typ EDXe 120/24.044

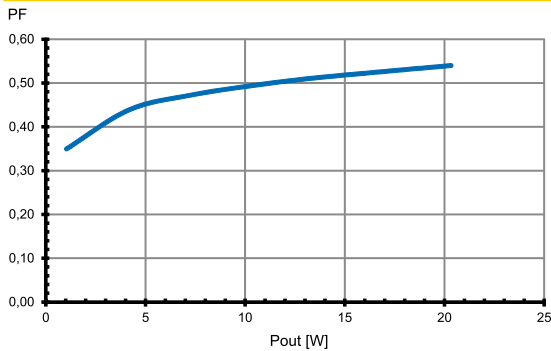
Working area



Efficiency



Power factor



Safety features

- Transient mains peaks protection:
 - Values are in compliance with EN 61547 (interference immunity).
 - Surges between L-N: up to 2 kV
- Short-circuit protection:
 - The control gear is protected against permanent short-circuit with automatic restart function.
- Overload protection: The control gear only works in range of rated output power and voltage problemfree. Please check that the selected LED load is suitable (see Electrical Characteristics on this data sheet).
- No load operation: The control gear is protected against no load operation (open load).
- If any of the above mentioned safety functions will be triggered, disconnect the control gear from the power supply then find and eliminate the cause of the problem.

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Assembly and Safety Information

Installation must be carried out under observation of the relevant regulations and standards. Installation must be carried out in a voltage-free state (i.e. disconnection from the mains). The following advices must be observed; non-observance can result in the destruction of the LED drivers, fire and/or other hazards.

Mandatory regulations

- DIN VDE 0100
- EN 60598-1

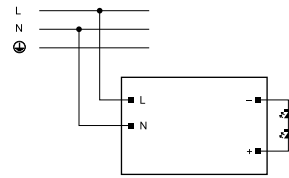
Mechanical mounting

- Mounting position: Drivers are suitable for independent operation.
- Mounting location: Independent LED drivers do not need to be integrated into a casing.
Installation in outdoor luminaires: degree of protection for luminaire with water protection rate ≥ 4 (e.g. IP54 required).
- Degree of protection: IP20
- Clearance: Min. 0.10 m from walls, ceilings and insulation
- Surface: Solid and plane surface for optimum heat dissipation required.
- Heat transfer: If the driver is destined for installation in a luminaire, sufficient heat transfer must be ensured between the driver and the luminaire casing.
LED drivers should be mounted with the greatest possible clearance to heat sources. During operation, the temperature measure at the driver's t_c point must not exceed the specified maximum value.
- Fastening: Using M4 screws in the designated holes
- Tightening torque: 0.2 Nm

Electrical installation

- Connection terminals: Push-in terminals for rigid or flexible conductors with a section of 0.5–2.5 mm²
- Stripped length: 8.5–10 mm
- Wiring: The mains conductor within the luminaire must be kept short (to reduce the induction of interference).
Mains and lamp conductors must be kept separate and if possible should not be laid in parallel to one another.
- Polarity: Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- Through-wiring: Is not allowed
- Secondary load: The sum of forward voltages of LED loads is within the tolerances which are mentioned in the Electrical Characteristics on the data sheet.

- Wiring diagram:



Selection of automatic cut-outs for VS LED drivers

- Dimensioning automatic cut-outs
High transient currents occur when an LED driver is switched on because the capacitors have to load. Ignition of LED modules occurs almost simultaneously. This also causes a simultaneous high demand for power. These high currents when the system is switched on put a strain on the automatic conductor cut-outs, which must be selected and dimensioned to suit.
- Release reaction
The release reaction of the automatic conductor cut-outs comply with VDE 0641, part 11, for B, C characteristics. The values shown in the following tables are for guidance purposes only and are subject to system-dependent change.
- No. of LED drivers
The maximum number of VS LED drivers applies to cases where the devices are switched on simultaneously. Specifications apply to single-pole fuses. The number of permissible drivers must be reduced by 20% for multi-pole fuses. The considered circuit impedance equals 400 m Ω (approx. 20 m [2.5 mm²] of conductor from the power supply to the distributor and a further 15 m to the luminaire).

Type	Ref. No.	Automatic cut-out type and possible no. of VS drivers pcs.					
Automatic cut-out type		B 10 A	B 13 A	B 16 A	C 10 A	C 13 A	C 16 A
EDXe 120/24.044	186640	28	36	45	43	56	69

- To limit capacitive inrush currents the current carrying capacity of each circuit breaker (fuse) can be increased by a factor with the help of our ESB (Ref. No.: 149820, 149821, 149822) inrush current limiters.

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