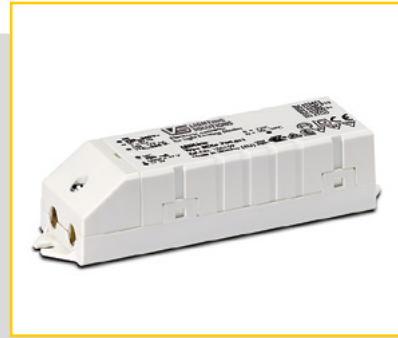


CC COMPACT SIMPLE FIX



COMFORTLINE SIMPLE FIX C-SLIM

186679, 186680, 186681, 186682

Typical Applications

Built-in in compact luminaires for

- Residential lighting
- Downlights



ComfortLine Simple Fix C-slim

- **VERY LOW RIPPLE CURRENT: < 3%**
- **FOR CONDUCTOR CROSS SECTION:
UP TO 2.5 MM²**
- **SUITABLE FOR EMERGENCY ESCAPE LIGHTING
SYSTEMS ACC. TO EN 50172**
- **WITH INTEGRATED CORD GRIP
FOR INDEPENDENT OPERATION**
- **SELV**
- **SUITABLE FOR BUILT-IN INTO FURNITURE**
- **LONG SERVICE LIFE:
UP TO 100,000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**



ComfortLine Simple Fix C-slim

Product features

- Compact casing shape

Electrical features

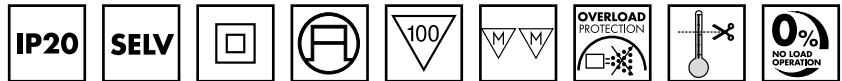
- Mains voltage: 220–240 V $\pm 10\%$
- Mains frequency: 50–60 Hz
- DC operation: 198–264 V DC, 0 Hz (can be reduced to 176 V with reduced service life time)
- Screw terminals: 0.5–2.5 mm²
- Power factor at full load: > 0.55
- Open circuit voltage ($U_{max.}$): 60 V
- Secondary side switching of LED modules is not allowed.

Safety features

- Protection against transient main peaks up to 1 kV (between L and N)
- Electronic short-circuit protection
- Overload protection
- Overtemperature protection
- Protection against "no load" operation
- Degree of protection: IP20
- Protection class II
- SELV

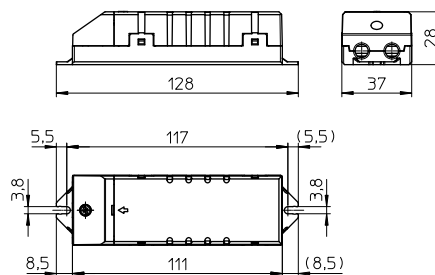
Packaging units

Ref. No.	Packaging unit		Weight g
	Pieces per box	Boxes per pallet	
186679	36	60	79
186680	36	60	79
186681	36	60	79
186682	36	60	79



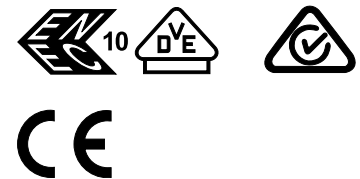
Dimensions

- Casing: K39
- Length: 128 mm
- Width: 37 mm
- Height: 28 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.

LED Drivers – ComfortLine Simple Fix C-slim

Electrical characteristics

Max. output W	Type	Ref. No.	Voltage 0 Hz, 50–60 Hz V	Mains current mA	Inrush current A / μ s	Current output DC mA (\pm 5%)	Voltage output DC (V)	THD at full load % (230 V)	Efficiency at full load % (230 V)	Ripple 100 Hz %
11	ECXe 350.009	186679	176–264	75–51	14.6 / 105	350	2–32	80	87	< 2
			220–240	107–100						
16	ECXe 500.010	186680	176–264	106–72	17.3 / 131	500	2–32	81	87	< 2
			220–240	150–141						
17.5	ECXe 700.011	186681	176–264	117–79	16.6 / 168	700	2–25	82	87	< 2
			220–240	160–151						
20	ECXe 1050.012	186682	176–264	137–92	18.2 / 152	1050	2–19	81	87	< 2
			220–240	190–176						

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.		
186679, 186680, 186681	-20	+50	5	60	-40	+85	5	95	—	IP20
186682	-20	+45								

Expected service life time

at operation temperatures at t_c point

Operation current	Ref. No.			
	186679	186680, 186681, 186682		
All	60 °C	70 °C	65 °C	75 °C
hrs.	100,000	50,000	100,000	50,000

Product labels

L **PRI** $U_n=220...240\text{ V}\sim$ **V** **VS LIGHTING SOLUTIONS** $t_c = 70\text{ }^\circ\text{C}$ EN 61347-1
 $I_n = 107...100\text{ mA}$ EN 61347-2-13
N $f_n = 50...60\text{ Hz}$ EN 62384
 $I = 0,55\text{C}$ EN 61000-3-2
SEC $I_{rated} = 350\text{ mA}$ EN 55015
 $U = 2...32\text{ V}\sim$ EN 61547
 $U_{max} = 34\text{ V}$
SEC $P_{rated} = 11,2\text{ W}$
+ **SELV**

Vossloh-Schwabe Deutschland GmbH
 Hohe Steinert 8, D-58509 Lüdenscheid
 Electronic converter for LED
Type ECXe 350.009
 Ref.-No. 186679
 Made in Serbia (Europe)
 Range of application DC 198...264V

L **PRI** $U_n=220...240\text{ V}\sim$ **V** **VS LIGHTING SOLUTIONS** $t_c = 75\text{ }^\circ\text{C}$ EN 61347-1
 $I_n = 150...141\text{ mA}$ EN 61347-2-13
N $f_n = 50...60\text{ Hz}$ EN 62384
 $I = 0,55\text{C}$ EN 61000-3-2
SEC $I_{rated} = 500\text{ mA}$ EN 55015
 $U = 2...32\text{ V}\sim$ EN 61547
 $U_{max} = 34\text{ V}$
SEC $P_{rated} = 16\text{ W}$
+ **SELV**

Vossloh-Schwabe Deutschland GmbH
 Hohe Steinert 8, D-58509 Lüdenscheid
 Electronic converter for LED
Type ECXe 500.010
 Ref.-No. 186680
 Made in Serbia (Europe)
 Range of application DC 198...264V

L **PRI** $U_n=220...240\text{ V}\sim$ **V** **VS LIGHTING SOLUTIONS** $t_c = 75\text{ }^\circ\text{C}$ EN 61347-1
 $I_n = 160...151\text{ mA}$ EN 61347-2-13
N $f_n = 50...60\text{ Hz}$ EN 62384
 $I = 0,55\text{C}$ EN 61000-3-2
SEC $I_{rated} = 700\text{ mA}$ EN 55015
 $U = 2...25\text{ V}\sim$ EN 61547
 $U_{max} = 34\text{ V}$
SEC $P_{rated} = 17,5\text{ W}$
+ **SELV**

Vossloh-Schwabe Deutschland GmbH
 Hohe Steinert 8, D-58509 Lüdenscheid
 Electronic converter for LED
Type ECXe 700.011
 Ref.-No. 186681
 Made in Serbia (Europe)
 Range of application DC 198...264V

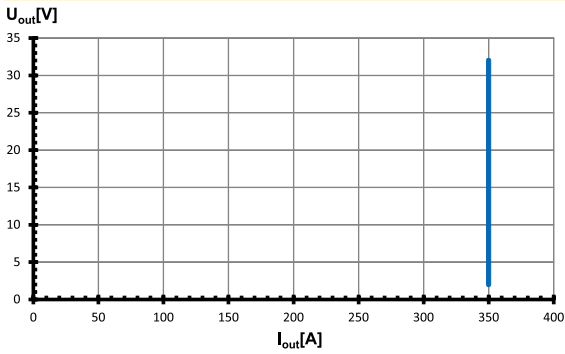
L **PRI** $U_n=220...240\text{ V}\sim$ **V** **VS LIGHTING SOLUTIONS** $t_c = 75\text{ }^\circ\text{C}$ EN 61347-1
 $I_n = 190...176\text{ mA}$ EN 61347-2-13
N $f_n = 50...60\text{ Hz}$ EN 62384
 $I = 0,55\text{C}$ EN 61000-3-2
SEC $I_{rated} = 1050\text{ mA}$ EN 55015
 $U = 2...19\text{ V}\sim$ EN 61547
 $U_{max} = 34\text{ V}$
SEC $P_{rated} = 20\text{ W}$
+ **SELV**

Vossloh-Schwabe Deutschland GmbH
 Hohe Steinert 8, D-58509 Lüdenscheid
 Electronic converter for LED
Type ECXe 1050.012
 Ref.-No. 186682
 Made in Serbia (Europe)
 Range of application DC 198...264V

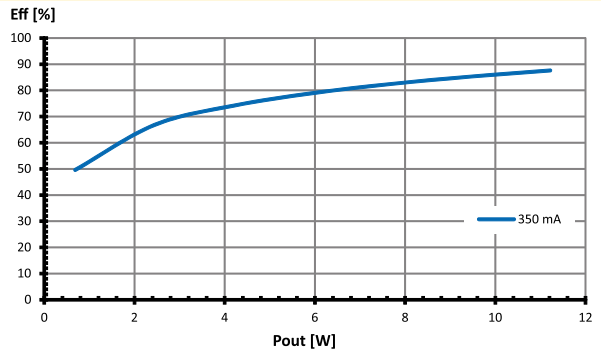
The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Typ. performance graphs for 186679 / Type ECXe 350.009

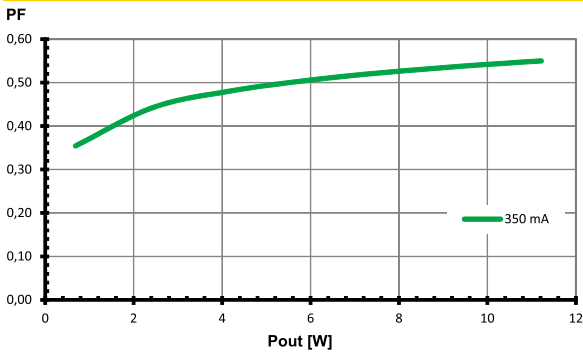
Working area



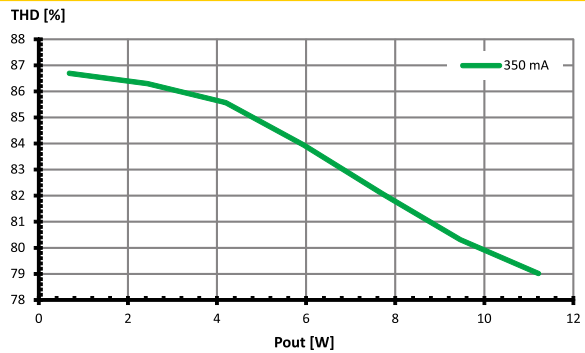
Efficiency



Power factor

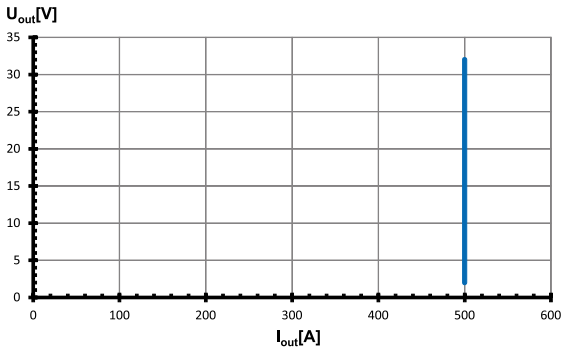


Total harmonic factor (THD)

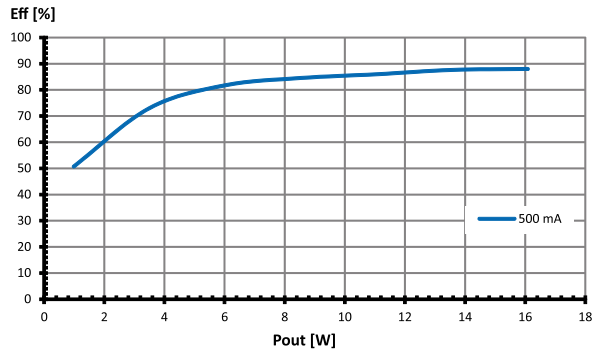


Typ. performance graphs for 186680 / Type ECXe 500.010

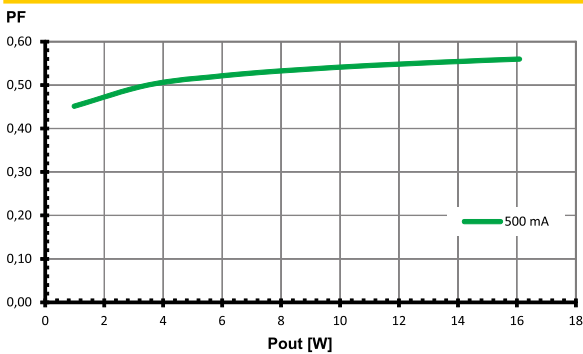
Working area



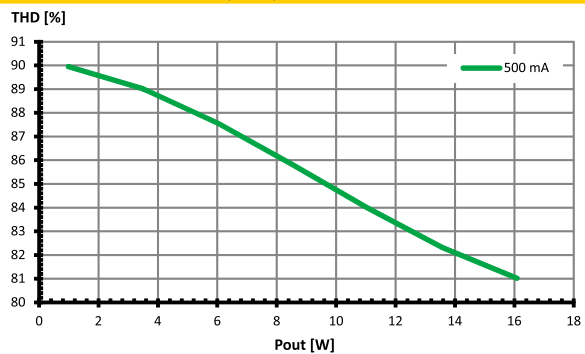
Efficiency



Power factor



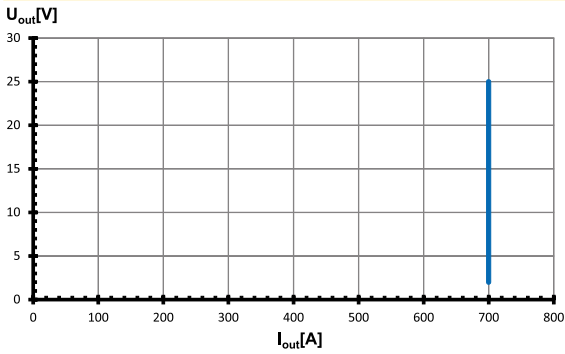
Total harmonic factor (THD)



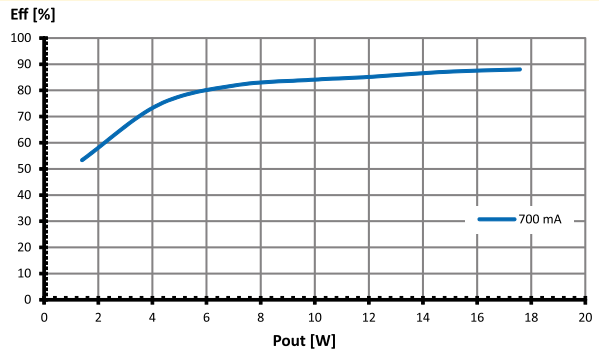
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Typ. performance graphs for 186681 / Type ECXe 700.011

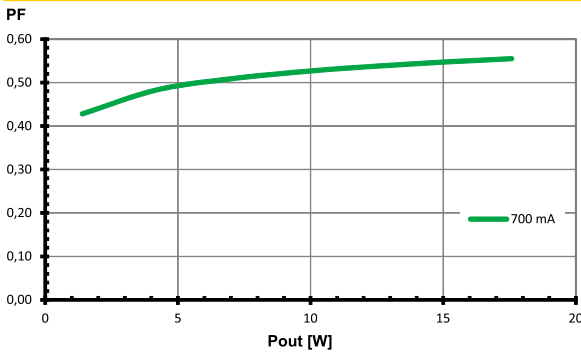
Working area



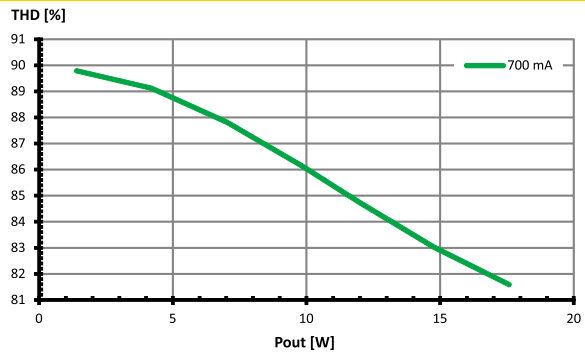
Efficiency



Power factor

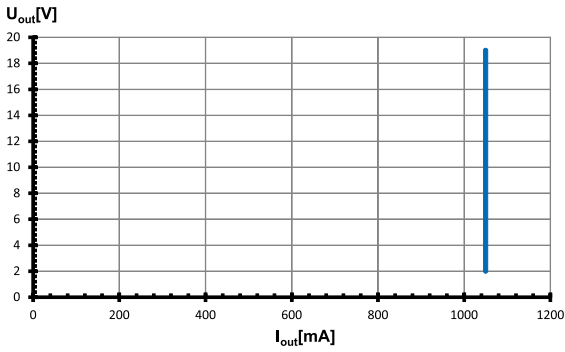


Total harmonic factor (THD)

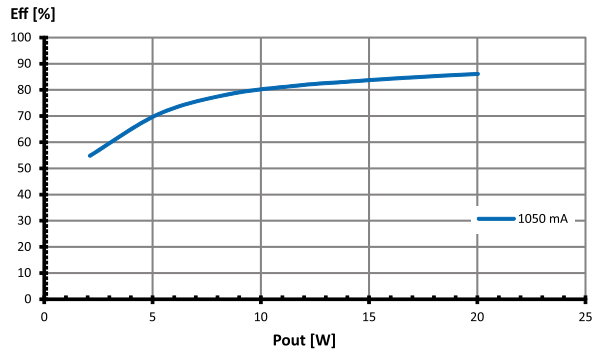


Typ. performance graphs for 186682 / Type ECXe 1050.012

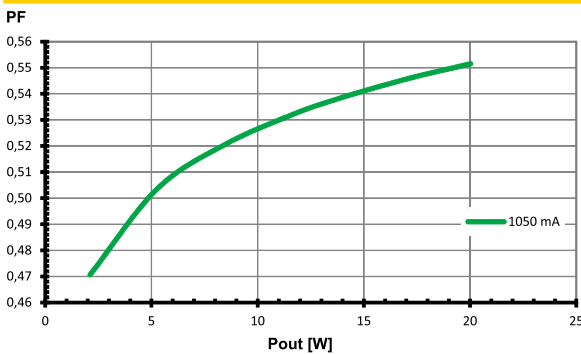
Working area



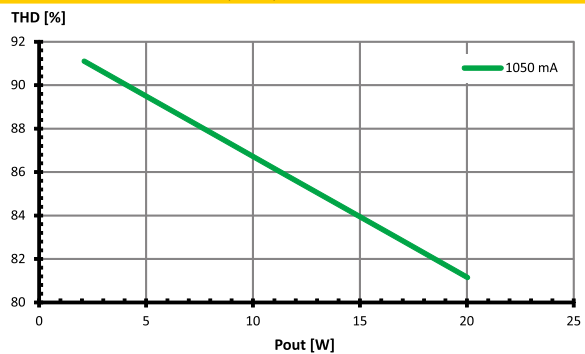
Efficiency



Power factor



Total harmonic factor (THD)



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Safety functions

- Transient mains peaks protection:
Values are in compliance with EN 61547
(interference immunity).
Surges between L-N: up to 1 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 (< 60 V DC).
Please check before switch-on mains power supply that the selected LED load is suitable (see Electrical Characteristics on data sheet).
- Overheating: The control gear has overheating protection. In case of overheating the output current of the control gear will be reduced. After the temperature will drop below the critical temperature value, the output current rises again to the previously set value.
- 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

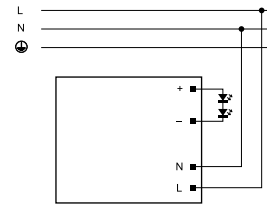
Mechanical mounting

- Mounting position: Built-in: Any position inside a luminaire is allowed
Independent application: Drivers with integrated cord grip are allowed to use for independent applications.
- Mounting location: LED drivers are designed for integration into luminaires or comparable devices. 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: Screw 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. Max. secondary side lead length: 5 m
- 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.
- Parallel wiring: Parallel connection of LED loads is not allowed.
- 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
ECXe 350.009	186679	55	72	88	92	120	147
ECXe 500.010	186680	37	48	59	61	80	89
ECXe 700.011	186681	30	39	48	50	65	80
ECXe 1050.012	186682	30	39	48	50	65	80

- To limit capacitive inrush currents the current carrying capacity of each circuit breaker (fuse) can be increased by a factor of 2.5 with the help of our ESB (Ref. No.: 149820, 149821, 149822) inrush current limiters.

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