CC ComfortLine NFC/LEDSet





COMFORTLINE NFC/LEDSET S-D

186880, 186881, 186882, 186883

Typical Applications

Built-in in compact luminaires

- Street lighting
- Industrial lighting







LED Drivers – ComfortLine NFC/LEDSet S-D

ComfortLine NFC/LEDSet S-D

Product features

Compact casing shape

Functions

- Selectable current output by secondary side LEDSet2 terminal or NFC
- Parameterization of MidNight function via NFC

Electrical features

- Mains voltage: 220–240 V ±10%
- Mains frequency: 50–60 Hz
- Push-in terminals: 0.2–1.5 mm²
- Power factor at full load: 186880, 186881: > 0.95 186882, 186883: > 0.98
- Open circuit voltage (U_{max.}): 60 V (186880, 186881) or 120 V (186882)
- Max. working voltage (U_{OUT}): 250 V (186883)
- Secondary side switching of LED modules is not allowed.

Safety features

- Protection against transient main peaks up to 6 kV (between L and N) and up to 10 kV (between L/N and PE)
- Electronic short-circuit protection
- Overtemperature protection
- Protection against "no load" operation
- Degree of protection: IP20
- Protection class II
- SELV (except 186883)

Packaging units

Ref. No.	Packaging unit									
	Pieces	Boxes	Weight							
	per box	per pallet	g							
186880	20	1280	210							
186881	20	1280	210							
186882	20	640	300							
186883	10	640	780							





Applied standards

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

Dimensions

0 0

Ref. No.	Casing	Length a	Width b	Height c
		mm	mm	mm
186880	K3.1	123.4	79.4	33
186881	K3.1	123.4	79.4	33
186882	K72	133	76.7	39.5
186883	K74	149.9	89.9	39.5





Current adjustment







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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.

Vossloh-Schwabe Deutschland GmbH · Hohe Steinert 8 · 58509 Lüdenscheid · Germany · Phone +49 23 51/10 10 · Fax +49 23 51/10 12 17 · www.vossloh-schwabe.com

LED Drivers – ComfortLine NFC/LEDSet S-D



Product drawings and photos











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Electrical characteristics

Max.	Туре	Ref. No.	Voltage	Mains	Inrush	Current	Factory	Voltage	THD	Efficiency	Ripple
output			50–60 Hz	current	current	output DC	settings	output	at full load	at full load	100 Hz
W			V (± 10%)	mA	A / µs	mA (± 5%)	mA	DC (V)	% (230 V)	% (230 V)	%
22	ECXe 1050.357	186880	220-240	120	25 / 150	200-1050	700	10–38	10	87	< 5
40	ECXe 1050.358	186881	220–240	200	25 / 180	200-1050	700	15-56	10	90	< 5
75	ECXe 1050.359	186882	220-240	360	54 / 190	200-1050	700	35-115	5	93	< 6
110	ECXe 1050.360	186883	220-240	540	70 / 170	200-1050	700	80-220	10	93	< 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	Degree of	
									temperature at t _c point	protection	
	°C min.	°C max.	% min.	% max.	°C min.	°C max.	% min.	% max.	°C		
186880	-40	+60	5	85	-25	+80	5	95	+75	IP20	
186881	-40	+60			-25	+80			+80		
186882	-40	+60			-40	+85]		+85]	
186883	-40	+55			-40	+85			+85		

Expected service life time

at operation temperatures at t_c point

Operation	Ref. No.											
current	186880		186881		186882, 186883							
All	63 °C	75 ℃	68 °C	80 °C	73 ℃	85 °C						
hrs.	100,000	50,000	100,000	50,000	100,000	50,000						

Product labels



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Typ. performance graphs for 186880 / Type ECXe 1050.357





Typ. performance graphs for 186881 / Type ECXe 1050.358



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Pout [W]

Typ. performance graphs for 186882 / Type ECXe 1050.359



Typ. performance graphs for 186883 / Type ECXe 1050.360

Pout [W]



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LED Drivers – ComfortLine NFC/LEDSet S-D



Safety functions

• Transient mains peaks protection:

Values are in compliance with EN 61547 (interference immunity). Surges between L–N: up to 6 kV Surges between L/N–PE: up to 10 kV

- Short-circuit protection: The control gear is protected against permanent short-circuit with automatic restart function.
- Overload protection: The control gears have overload protection. In case of overload the control gear will reduce the output current.
- Overheating: The control gear has overheating protection. In case of overheating the control gear will reduce the output current and shut down.
- No load operation: The control gear is protected against no load operation (open load) and switches off when no load is connected.
- 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.

System architecture

- You can program the NFC LED drivers contactless with the Feig Programmer.
- The LED driver is programmed via NFC in a de-energised state.
- The use of the NFC programmer is flexible in the production or already in the pre-assembly process. A complex commissioning is not required. The operation and parameterization is done in the simplest way. All operating parameters can be individually programmed and updated.
- The exact description of the programming can be found in the operation manual of the VS Tuner4Tronic software.



Feig Programmer, hand-held device FEIGPRH101, FEIGCPR30

VS NFC LED drivers

MidNight function

Tuner4Tronic software.

• Max. NTC resistor: 68 kΩ

reached

Automatic dimming via an integrated timer (no real-time clock).

NTC for thermal protection of the LED module

to the LED driver as shown in the wiring diagram.

• Start of output current reduction: 6.3–5 $k\Omega$

• End of output current reduction: 5–4.5 k Ω

Five independent dimming levels and zones can be set using the

The LEDs can be thermally protected by the NTC interface (Negative Temperature Coefficient Resistor) of the operating device, which

Connect an NTC on the LED module connectors which are connected

ensures the current will be reduced when a critical temperature is

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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
- Mounting location: LED drivers are designed for integration into luminaires or comparable devices.
 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.

0.2 Nm

- 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.

Using M4 screws in the designated holes

- Fastening:
- Tightening torque:

Electrical installation

terminals:	Push-in terminals for rigid or flexible conductors
	with a section of 0.2–1.5 mm ²
 Stripped length: 	8.5–9.5 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: 	ls not allowed.

Secondary load:

The sum of forward voltages of LED loads has to be within the tolerances which are mentioned in the table "Electrical Characteristics" in this data sheet.



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).

Туре	Ref. No.	Automatic cut-out type and possible no. of VS drivers pcs.							
Automatic cut-out	type B	B 10 A	B 13 A	B 16 A					
ECXe 1050.357	186880	23	29	36					
ECXe 1050.358	186881	18	23	28					
ECXe 1050.359	186882	8	10	12					
ECXe 1050.360	186883	7	9	11					
Automatic cut-out	type C	C 10 A	C 13 A	C 16 A					
ECXe 1050.357	186880	37	48	59					
ECXe 1050.358	186881	30	39	48					
ECXe 1050.359	186882	13	17	21					
ECXe 1050.360	186883	11	15	18					

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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Choice of LEDSet Resistor

Output current selection:

- The output current can be adapted within the rated output current range between 200 and 1050 mA.
- To change the output current it is necessary to use the correct LEDSet resistor. Values for different currents are figured out in the table below.
- The LEDSet resistor should have a maximum tolerance of 1%.
- Please refer to the electrical values and the operating window to see which combinations are possible.
- $\bullet\,$ Output current / needed LEDSet resistor can be calculated as follows:

 $l_{OUT} = 5V/Rset \times 1000$ $R_{set} = 5V/I_{OUT} \times 1000$

- If no LEDSet resistor is mounted (delivery condition) output current is less than nominal I_{min.}
- If LEDSet interface is short circuit output current is limitied to $\mathsf{I}_{\mathsf{max.}}$

Resistors 186880			186881			186882				186883							
Nominal	Resistor	LED ou	itput	LED nom	inal	LED ou	tput	LED nom	inal	LED ou	tput	LED nominal		LED output		LED nominal	
current	R	voltage	e (U _{LED})	output (P	rated)	voltage	e (U _{LED})	output (P	rated)	voltage	e (U _{LED})	output (P	rated)	voltage	e (U _{LED})	output (Pr	ated)
I _{rated} (mA)	kΩ	V min.	V max.	W min.	W max.	V min.	V max.	W min.	W max.	V min.	V max.	W min.	W max.	V min.	V max.	W min.	W max.
200	25.00	10	38	2	7.6	15	56	3	11.2	35	115	7	23	80	220	16	44
250	20.00	10	38	2.5	9.5	15	56	3.8	14	35	115	8.8	28.8	80	220	20	55
300	16.67	10	38	3	11.4	15	56	4.5	16.8	35	115	10.5	34.5	80	220	24	66
350	14.29	10	38	3.5	13.3	15	56	5.3	19.6	35	115	12.3	40.3	80	220	28	77
400	12.50	10	38	4	15.2	15	56	6	22.4	35	115	14	46	80	220	32	88
450	11.11	10	38	4.5	17.1	15	56	6.8	25.2	35	115	15.8	51.8	80	220	36	99
500	10.00	10	38	5	19	15	56	7.5	28	35	115	17.5	57.5	80	220	40	110
550	9.09	10	38	5.5	20.9	15	56	8.3	30.8	35	115	19.3	63.3	80	200	44	110
600	8.33	10	36.7	6	22	15	56	9	33.6	35	115	21	69	80	183.3	48	110
650	7.69	10	33.8	6.5	22	15	56	9.8	36.4	35	115	22.8	74.8	80	169.2	52	110
700	7.14	10	31.4	7	22	15	56	10.5	39.2	35	107.1	24.5	75	80	157.1	56	110
750	6.67	10	29.3	7.5	22	15	53.3	11.3	40	35	100	26.3	75	80	146.7	60	110
800	6.25	10	27.5	8	22	15	50	12	40	35	93.8	28	75	80	137.5	64	110
850	5.88	10	25.9	8.5	22	15	47.1	12.8	40	35	88.2	29.8	75	80	129.4	68	110
900	5.56	10	24.4	9	22	15	44.4	13.5	40	35	83.3	31.5	75	80	122.2	72	110
950	5.26	10	23.2	9.5	22	15	42.1	14.3	40	35	78.9	33.3	75	80	115.8	76	110
1000	5.00	10	22	10	22	15	40	15	40	35	75	35	75	80	110	80	110
1050	4.76	10	21	10.5	22	15	38.1	15.8	40	35	71.4	36.8	75	80	104.8	84	110

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