

CC COMPACT



PRIMELINE NFC C-TW DALI

187257, 187258

Typical Applications

Built-in in linear luminaires for

- Retail lighting
- Downlights



PrimeLine NFC L-TW DALI

- **ADJUSTABLE OUTPUT CURRENT VIA NFC**
- **DIMMABLE: DALI (ED. 2)**
- **VERY LOW RIPPLE CURRENT: < 1%**
- **SUITABLE FOR EMERGENCY ESCAPE LIGHTING SYSTEMS ACC. TO EN 50172 AND EN61347-2-13 ATTACHEMENT J**
- **LONG SERVICE LIFE: UP TO 100,000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**



PrimeLine NFC C-TW DALI

Product features

- Compact casing shape

Functions

- Programmable via NFC interface (contactless)
 - Selectable current output
 - Programmable CLO function
 - Adjustable DC level
 - Tuneable White function

Electrical features

- Mains voltage: 220–240 V ±10%
- Mains frequency: 50–60 Hz
- DC operation: 198–264 V, 0 Hz
- Push-in terminals: 0.2–1.5 mm²
- Power factor at full load: > 0.97
- Max. working voltage (U_{OUT}): 60 V (SELV)
- Secondary side switching of LED modules is not allowed.

Dimming

- Dimming range: 1 to 100%

Safety features

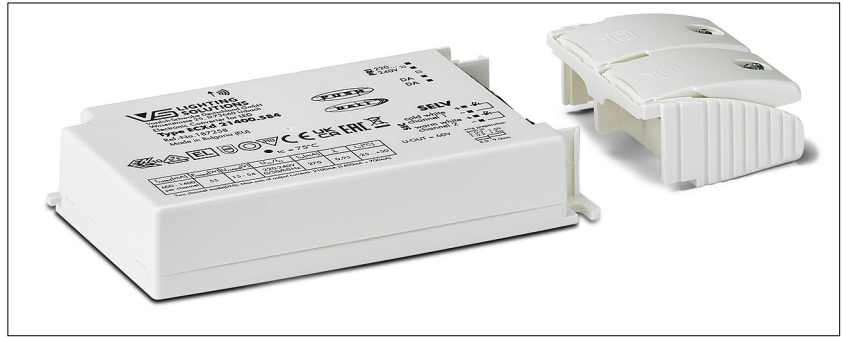
- Protection against transient main peaks up to 1 kV (between L and N)
- Electronic short-circuit protection
- Overload protection
- Overtemperature protection
- Protection against "no load" operation
- Degree of protection: IP20
- Protection class II
- SVM: < 0.4
- PstLM: < 1

Packaging units

Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
187257	20	105	235
187258	20	90	260

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.

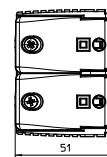
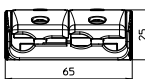
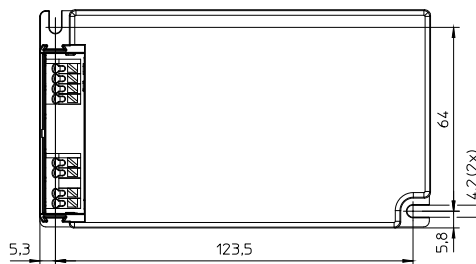
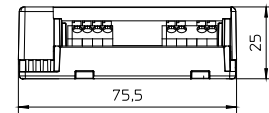
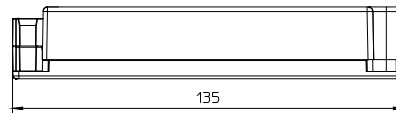


Applied standards

- EN 60598-2-22
- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 62384
- EN 62386
- EN 50172
- EN 55015

Dimensions

- Casing: K92
- Length: 135 mm
- Width: 75,5 mm
- Height: 25 mm



Cord grip for K92

Available for independent operation

Ref. No.: 187274

Current adjustment



Dimming

Analogue



LED Drivers – Primeline NFC C-TW DALI

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)	THD at full load % (230 V)	Efficiency at full load % (230 V)	Ripple 100 Hz %
30	ECXd 21050.583	187257	220–240	200	19 / 200	350–1050*	15–54	< 20	90	< 1
50	ECXd 21400.584	187258	220–240	270	27 / 205	600–1400**	15–54	< 20	91	< 1

*max. sum of output current 1050 mA (DT8)

**max. sum of output current 1400 mA (DT8)

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.		
187257, 187258	-25	+50	5	60	-25	+85	5	95	+75	IP20

Expected service life time

at operation temperatures at t_c point

Operation current	Ref. No.	
	187257, 187258	
All	65 °C	75 °C
hrs.	100,000	50,000

Product labels

Vossloh-Schwabe Deutschland GmbH
Stuttgarter Straße 61/1, D-73614 Schorndorf
Electronic Converter for LED
Type ECXd 21050.583
Ref.-No. 187257
Made in Bulgaria (EU)

Technical Specifications:

I_{rated} [mA]	P_{rated} [W]	U_{rated} [V]	U_N / f_N	I_N [mA]	λ	t_a [°C]
350 - 1050 per channel	38	15 - 54	220-240V 0/50/60Hz	200	0,95	-25...+60

Two channel mode(DT6): Max.sum of output currents: 1400mA (1050mA + 350mA)

Additional features: DALI, SELV, cold white channel 1, warm white channel 2, U-OUT = 60V, wire preparation push in \pm 0,2 - 1,5mm, 8.0 - 9.0mm.

Vossloh-Schwabe Deutschland GmbH
Stuttgarter Straße 61/1, D-73614 Schorndorf
Electronic Converter for LED
Type ECXd 21400.584
Ref.-No. 187258
Made in Bulgaria (EU)

Technical Specifications:

I_{rated} [mA]	P_{rated} [W]	U_{rated} [V]	U_N / f_N	I_N [mA]	λ	t_a [°C]
600 - 1400 per channel	55	15 - 54	220-240V 0/50/60Hz	270	0,95	-25...+50

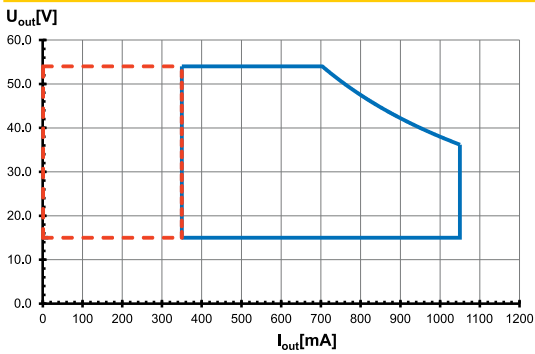
Two channel mode(DT6): Max.sum of output currents: 2100mA (1400mA + 700mA)

Additional features: DALI, SELV, cold white channel 1, warm white channel 2, U-OUT = 60V, wire preparation push in \pm 0,2 - 1,5mm, 8.0 - 9.0mm.

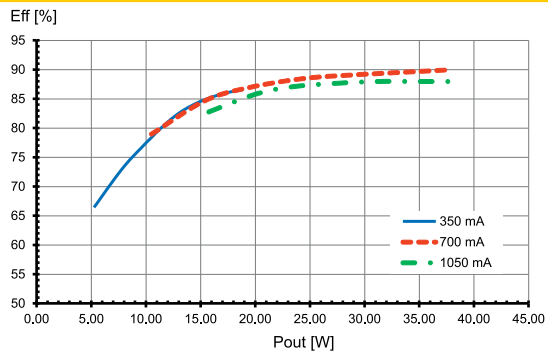
The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Typ. performance graphs for 187257 / Typ ECXd 21050.583

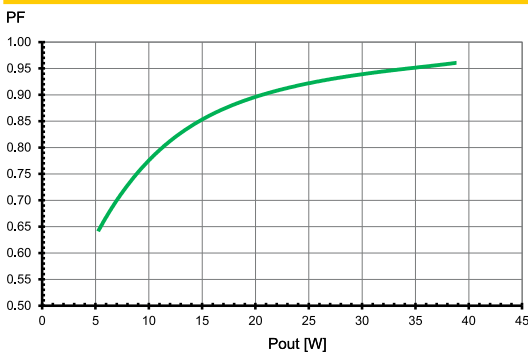
Working area



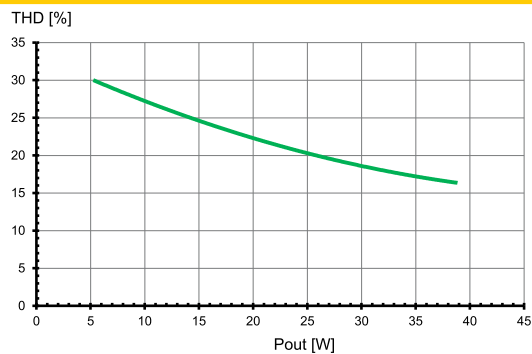
Efficiency



Power factor

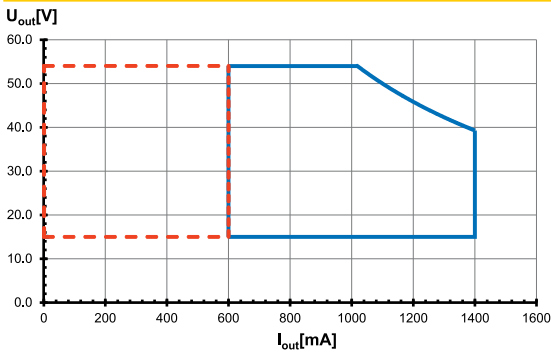


Total harmonic factor (THD)

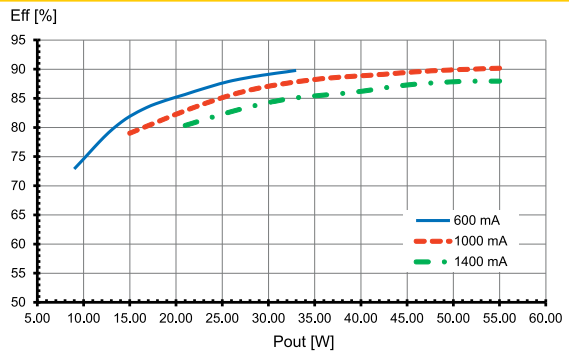


Typ. performance graphs for 187258 / Typ ECXd 21400.584

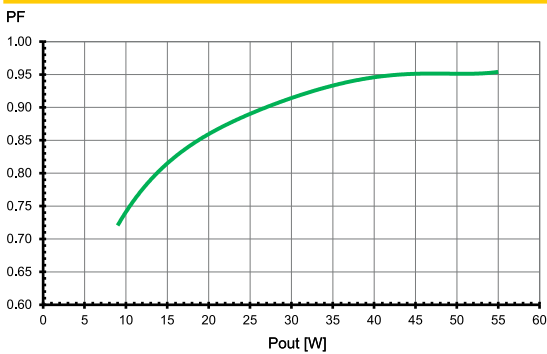
Working area



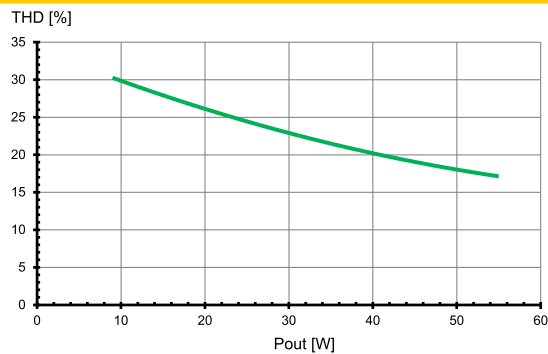
Efficiency



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
Surges between L/N–PE: 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 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 acc. to EN 61347-1 C 5e. In case of overheating the control gear will reduce the output power.
- 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.

PUSH function

- Just one key for dimming and ON/OFF
- Up to 20 drivers on one button (without indicator lamp) with max. 25 m total cable length.
- PUSH operating voltage ranges:
 - AC: 220–240 V $\pm 10\%$
 - Failing to observe these working voltage range can lead to non-recognition of the signals; exceeding the maximum voltages can lead to the destruction of the data inputs.
- PUSH control signals (key activation):
 - Short push (80 ms $< t < 500$ ms): Is used to switch between ON/OFF lighting states. After the device is switched on, the last selected lighting level is restored and the next dimming direction will be upwards.
 - Long push (0.5 s): Is used to dim upwards or downwards; a long push will change the dimming direction. Thus, a long push will reverse the dimming direction until the upper or lower limit is reached. If the light was off, a long push will switch it on and the dimmer will start at the lowest light intensity.
 - Operating modus
Modus 1: The switch-on value is the last dimming value before switching off.
Modus 2: (standard operation) The switch-on value is the value saved by double-clicking.
Save reference value: Double click (press briefly twice within 0.4 s) when the lamp is switched on (change to modus 2)
Delete reference value: Double click when the lamp is switched off (change to modus 1)
 - Synchronisation: Any 1-key dimmer that does not feature a central control module (as each ballast will have its own controls) can develop asynchronous behaviour (e.g. children might play with the key). The system will then be out of sync, i.e. some lamps will be on, others off or the dimming direction will differ from lamp to lamp. The following procedure can be used for synchronization:
 1. Press long (> 0.5 s): all lights switch on
 2. Press short (< 0.5 s): all lights switch off
 3. Press long (> 0.5 s): all lights switch on and dim
 4. Double click: Save dim setting (optional)After the first three steps the system is synchronized again.

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Parametrization via NFC

- DC and emergency lighting operation
 - The control gears are suitable for direct voltage operation (DC). Reliable DC operation is guaranteed if the specified working area of LED driver is maintained.
 - DC range: 198–276 V
 - Reducing to 176 V: With reduced service life time possible
 - Light level at DC operation (EOF_i): 15% (adjustable)
 - DC level range: 1–100% (programmable via NFC)
 - DC operation: acc. to EN 60598-2-22 the LED current reduction at high temperature is limited to 50% to nominal current.
- Constant lumen output (CLO)
 - In the most cases the CLO function is used to reduce system performance over the life of an LED system.
 - The luminous flux of LED modules decreases in a step-wise manner up to the end of the modules' service life. To guarantee constant luminous flux, the output of the control gear must be gradually increased over its service life.
 - Defining the CLO function its needed to program the start, provisional and end value, respectively the LED lifetime via the NFC programmer.
- Current adjustment (mA)
 - Factory setting: minimum current
 - Programmable output current via NFC

Output voltage (U_{OUT})

According to EN 61347-1, U_{OUT} indicates which voltage can occur at the output terminals directly or between the output terminals and the PE terminal of the LED driver. This value is given for non-insulated drivers.

The used LED module must have an insulation voltage that is at least as high as the specified U_{OUT} voltage of the driver.

System architecture – NFC configuration

- 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.

Leakage current

Leakage currents are present in all electronic converters or luminaires with PE connection and must be observed especially when using non-insulated LED drivers.

The PCB surfaces of LED modules form a capacitance with grounded LED aluminum circuit boards, heat sinks or mounting plates. This leads to capacitive leakage currents between the connection poles of the LED (+ and –) and the PE terminal. These capacitances should be kept as small as possible, since they are responsible for a possible glowing or flickering of the LEDs in standby mode. In extreme cases, the maximum permissible leakage current of the luminaire according to EN 60598 paragraph 10.3 may be exceeded. The leakage current is also relevant when using RCD circuit breakers.

Dimming

- 1–100 % of the selected output current
- Dimming current tolerance: ±3% of the adjusted output current
- DALI: The DALI colour control functionality (part 209/Device Type 8) of this product has not been verified. This product has been registered (DALI version-1), and is permitted to show the DALI version-1 Trademarks, but is not permitted to show the DALI-2 Trademarks. Please note that this product will need to be tested and re-submitted before August 31st 2020 once the 209 tests are released.

Constant lumen output (CLO)

The decrease in the luminous flux of an LED module can be compensated over its entire lifetime via a preprogrammed current curve. This not only ensures stable lighting but also saves energy and increases the lifetime of the LEDs.



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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

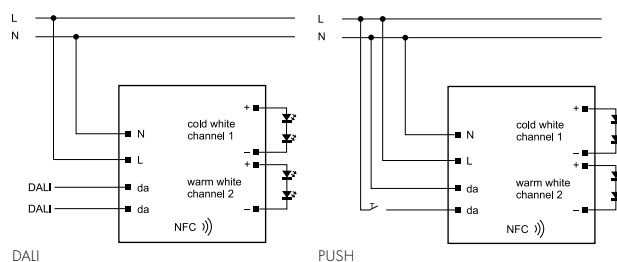
Mechanical mounting

- Mounting position: Any position inside a luminaire is allowed. LED drivers are not allowed to use for independent applications.
- 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.
- 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 0.5–1.5 mm² AWG20-16
- Stripped length: 8.5–9.5 mm
- Wiring: DALI or PUSH
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.
- PUSH wiring: Several LED drivers can be connected to a single PUSH button. Furthermore, several buttons can also be operated with a single PUSH system as long as the phase assignments (e.g. L1) are identical. In installations with PUSH function, an asynchronous dimming behaviour can occur. To minimize the risk, VS recommends the max. limit number of 20 LED drivers with one or more PUSH buttons. The lead length from the push button (n) to the LED driver (n) should not exceed 25 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 has to be within the tolerances which are mentioned in the table "Electrical Characteristics" in this data sheet.

Wiring diagram:



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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 mΩ (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				
		B 10 A	B 13 A	B 16 A
ECXd 21050.583	187257	21	28	34
ECXd 21400.584	187258	14	19	23
Automatic cut-out type C				
		C 10 A	C 13 A	C 16 A
ECXd 21050.583	187257	35	46	57
ECXd 21400.584	187258	24	31	31

EU compliance information

Hereby, Vossloh-Schwabe Deutschland GmbH declares that the radio equipment type PrimeLine NFC L-TW DALI is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address: www.vossloh-schwabe.com.

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