

## CC TRACK DIP SWITCH GEN. 3



## EASYLINE DIP SWITCH UT-160 GEN. 3

**187366, 187367, 187368**

### Typical Applications

For common track systems

- Retail lighting



EasyLine DIP switch UT-160 Gen. 3

- **SELECTABLE OUTPUT CURRENT VIA DIP SWITCH**
- **COMPATIBLE WITH DIFFERENT 3-PHASE TRACK SYSTEMS**
- **SELV**
- **LONG SERVICE LIFE:  
UP TO 100,000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**



## EasyLine DIP switch UT-160 Gen. 3

### Product features

- Adapter with integrated LED driver electronics for common 3-phase track systems (compatibility see page 4)
- Available in three different casing colours: white (RAL 9003), black (RAL 9005) and grey (RAL 7040)

### Functions

- Selectable current output by DIP switches
- The output current can be freely adjusted between 300 mA and 1050 mA

### Electrical features

- Mains voltage: 220–240 V  $\pm 10\%$
- Mains frequency: 50–60 Hz
- Power factor at full load:  $> 0.95$
- Open circuit voltage ( $U_{max.}$ ): 55 V
- Secondary side switching of LED modules is not allowed.
- SVM:  $< 0.4$
- PstLM:  $< 1$

### Safety features

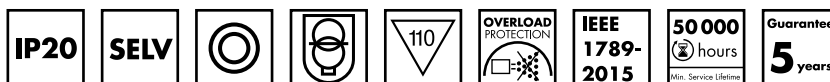
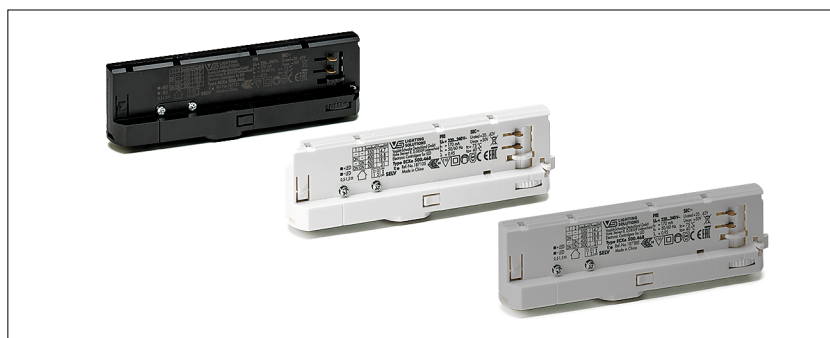
- Protection against transient main peaks up to 1 kV (between L and N)
- Electronic short-circuit protection
- Overload protection
- Degree of protection: IP20
- Protection class II
- SELV

### Packaging units

| Type          | Packaging unit |                  |          |
|---------------|----------------|------------------|----------|
|               | Pieces per box | Boxes per pallet | Weight g |
| ECXe 1050.646 | 50             | 36               | 110      |

### 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](http://www.vossloh-schwabe.com)). We will be happy to send you these conditions upon request.



### Applied standards

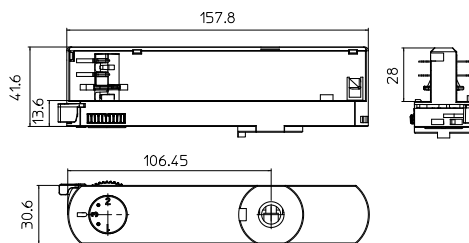
- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 61000-3-2
- EN 61000-3-3
- EN 62384
- EN 55015



### Dimensions

| Type          | Casing   | Length mm | Width mm | Height (mm) visible |
|---------------|----------|-----------|----------|---------------------|
| ECXe 1050.646 | UT-160.3 | 157.8     | 30.6     | 41.6 13.6           |

### UT-160.3

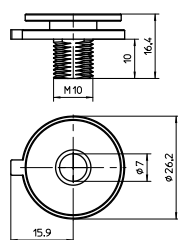


### Connector nipple for track adapter

Material: zinc die-cast

**Ref. No.: 187360**

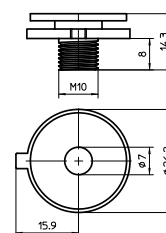
M10x1, length: 10 mm



Material: aluminium

**Ref. No.: 187275**

M10x1, length: 8 mm



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<br>W | Type          | Ref. No. | Casing colour    | Voltage<br>50–60 Hz<br>V | Mains<br>current<br>mA | Inrush<br>current<br>A / $\mu$ s | Current<br>output DC<br>mA ( $\pm$ 7%) | Voltage<br>output<br>DC (V) | THD<br>at full load<br>% (230 V) | Efficiency<br>at full load<br>% (230 V) | Ripple<br>100 Hz<br>% |
|------------------|---------------|----------|------------------|--------------------------|------------------------|----------------------------------|----------------------------------------|-----------------------------|----------------------------------|-----------------------------------------|-----------------------|
| 42               | ECXe 1050.646 | 187366   | white (RAL 9003) | 220–240                  | 220–202                | 7 / 28                           | 300–1050                               | see table<br>DIP settings   | 8                                | 88                                      | 5                     |
|                  |               | 187367   | black (RAL 9005) |                          |                        |                                  |                                        |                             |                                  |                                         |                       |
|                  |               | 187368   | grey (RAL 7040)  |                          |                        |                                  |                                        |                             |                                  |                                         |                       |

Maximum ratings

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

| Type          | Ambient temperature<br>range |                   | Operation humidity<br>range |        | Storage temperature<br>range |                   | Storage humidity<br>range |        | Max. operation<br>temperature at $t_c$ point<br>$^{\circ}$ C | Degree of<br>protection |
|---------------|------------------------------|-------------------|-----------------------------|--------|------------------------------|-------------------|---------------------------|--------|--------------------------------------------------------------|-------------------------|
|               | $^{\circ}$ C min.            | $^{\circ}$ C max. | % min.                      | % max. | $^{\circ}$ C min.            | $^{\circ}$ C max. | % min.                    | % max. |                                                              |                         |
| ECXe 1050.646 | –20                          | +35               | 10                          | 90     | –40                          | +85               | 10                        | 90     | +75                                                          | IP20                    |

Expected service life time

at operation temperatures at  $t_c$  point

| Operation<br>current | Ref. No.<br>187366, 187367, 187368 |                 |
|----------------------|------------------------------------|-----------------|
| All                  | 65 $^{\circ}$ C                    | 75 $^{\circ}$ C |
| hrs.                 | 100,000                            | 50,000          |

Product labels

ECXe 1050.646

|                                                                                                                                                                                                                                                                                                                                                                                         |  |     |     |      |     |     |      |     |     |      |     |      |    |     |      |    |     |      |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----|-----|------|-----|-----|------|-----|-----|------|-----|------|----|-----|------|----|-----|------|----|
| <b>VS LIGHTING SOLUTIONS</b><br>Ums=220...240 V-<br>I <sub>nom</sub> =0,28 A max<br>I <sub>nom</sub> =50/60 Hz<br>Vossloh-Schwabe Deutschland GmbH<br>Stuttgarter Straße 61/1, 73614 Schorndorf<br>Electronic Controller for LED<br><b>Type ECXe1050.646</b> Ref.-No. 187366<br>Made in China<br>E 15885PAB72/SEC 13<br>SELV<br>LED=■<br>LED=■<br>k=41212997<br>U <sub>max</sub> =55 V= |  | DIP | 300 | 12.6 | DIP | 500 | 21   | DIP | 700 | 29.4 | DIP | 900  | 36 | DIP | 1000 | 40 | DIP | 1050 | 42 |
|                                                                                                                                                                                                                                                                                                                                                                                         |  | ON  | 350 | 14.7 | ON  | 550 | 23.1 | ON  | 750 | 31.5 | ON  | 950  | 38 | ON  | 1000 | 40 | ON  | 1050 | 42 |
|                                                                                                                                                                                                                                                                                                                                                                                         |  | OFF | 400 | 16.8 | OFF | 600 | 25.2 | OFF | 800 | 33.6 | OFF | 1000 | 40 | OFF | 1000 | 40 | OFF | 1050 | 42 |
|                                                                                                                                                                                                                                                                                                                                                                                         |  | OFF | 450 | 18.9 | OFF | 650 | 27.3 | OFF | 850 | 34   | OFF | 1050 | 42 | OFF | 1050 | 42 | OFF | 1050 | 42 |

|                                                                                                                                                                                                                                                                                                                                                                                         |  |     |     |      |     |     |      |     |     |      |     |      |    |     |      |    |     |      |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----|-----|------|-----|-----|------|-----|-----|------|-----|------|----|-----|------|----|-----|------|----|
| <b>VS LIGHTING SOLUTIONS</b><br>Ums=220...240 V-<br>I <sub>nom</sub> =0,28 A max<br>I <sub>nom</sub> =50/60 Hz<br>Vossloh-Schwabe Deutschland GmbH<br>Stuttgarter Straße 61/1, 73614 Schorndorf<br>Electronic Controller for LED<br><b>Type ECXe1050.646</b> Ref.-No. 187367<br>Made in China<br>E 15885PAB72/SEC 13<br>SELV<br>LED=■<br>LED=■<br>k=41212997<br>U <sub>max</sub> =55 V= |  | DIP | 300 | 12.6 | DIP | 500 | 21   | DIP | 700 | 29.4 | DIP | 900  | 36 | DIP | 1000 | 40 | DIP | 1050 | 42 |
|                                                                                                                                                                                                                                                                                                                                                                                         |  | ON  | 350 | 14.7 | ON  | 550 | 23.1 | ON  | 750 | 31.5 | ON  | 950  | 38 | ON  | 1000 | 40 | ON  | 1050 | 42 |
|                                                                                                                                                                                                                                                                                                                                                                                         |  | OFF | 400 | 16.8 | OFF | 600 | 25.2 | OFF | 800 | 33.6 | OFF | 1000 | 40 | OFF | 1000 | 40 | OFF | 1050 | 42 |
|                                                                                                                                                                                                                                                                                                                                                                                         |  | OFF | 450 | 18.9 | OFF | 650 | 27.3 | OFF | 850 | 34   | OFF | 1050 | 42 | OFF | 1050 | 42 | OFF | 1050 | 42 |

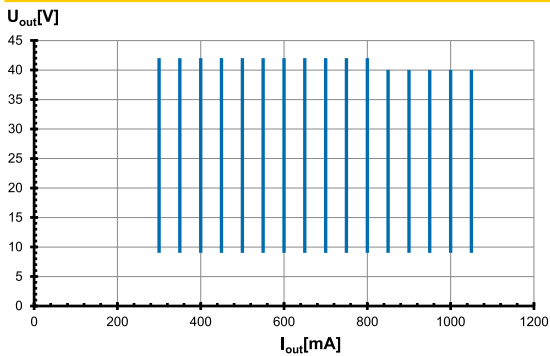
|                                                                                                                                                                                                                                                                                                                                                                                         |  |     |     |      |     |     |      |     |     |      |     |      |    |     |      |    |     |      |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----|-----|------|-----|-----|------|-----|-----|------|-----|------|----|-----|------|----|-----|------|----|
| <b>VS LIGHTING SOLUTIONS</b><br>Ums=220...240 V-<br>I <sub>nom</sub> =0,28 A max<br>I <sub>nom</sub> =50/60 Hz<br>Vossloh-Schwabe Deutschland GmbH<br>Stuttgarter Straße 61/1, 73614 Schorndorf<br>Electronic Controller for LED<br><b>Type ECXe1050.646</b> Ref.-No. 187368<br>Made in China<br>E 15885PAB72/SEC 13<br>SELV<br>LED=■<br>LED=■<br>k=41212997<br>U <sub>max</sub> =55 V= |  | DIP | 300 | 12.6 | DIP | 500 | 21   | DIP | 700 | 29.4 | DIP | 900  | 36 | DIP | 1000 | 40 | DIP | 1050 | 42 |
|                                                                                                                                                                                                                                                                                                                                                                                         |  | ON  | 350 | 14.7 | ON  | 550 | 23.1 | ON  | 750 | 31.5 | ON  | 950  | 38 | ON  | 1000 | 40 | ON  | 1050 | 42 |
|                                                                                                                                                                                                                                                                                                                                                                                         |  | OFF | 400 | 16.8 | OFF | 600 | 25.2 | OFF | 800 | 33.6 | OFF | 1000 | 40 | OFF | 1000 | 40 | OFF | 1050 | 42 |
|                                                                                                                                                                                                                                                                                                                                                                                         |  | OFF | 450 | 18.9 | OFF | 650 | 27.3 | OFF | 850 | 34   | OFF | 1050 | 42 | OFF | 1050 | 42 | OFF | 1050 | 42 |

| ECXe 1050.646 |     |     |     | Output<br>W | Current<br>mA | Voltage<br>V | Factory<br>settings (mA) |
|---------------|-----|-----|-----|-------------|---------------|--------------|--------------------------|
| Pin<br>1      | 2   | 3   | 4   |             |               |              |                          |
| OFF           | OFF | OFF | OFF | 12.6        | 300           | 9-42V        | 1050                     |
| ON            | OFF | OFF | OFF | 14.7        | 350           |              |                          |
| OFF           | ON  | OFF | OFF | 16.8        | 400           |              |                          |
| ON            | ON  | OFF | OFF | 18.9        | 450           |              |                          |
| OFF           | OFF | ON  | OFF | 21.0        | 500           |              |                          |
| ON            | OFF | ON  | OFF | 23.1        | 550           |              |                          |
| OFF           | ON  | ON  | OFF | 25.2        | 600           |              |                          |
| ON            | ON  | ON  | OFF | 27.3        | 650           |              |                          |
| OFF           | OFF | OFF | ON  | 29.4        | 700           |              |                          |
| ON            | OFF | OFF | ON  | 31.5        | 750           |              |                          |
| OFF           | ON  | OFF | ON  | 33.6        | 800           | 9-40V        |                          |
| ON            | ON  | OFF | ON  | 34.0        | 850           |              |                          |
| OFF           | OFF | ON  | ON  | 36.0        | 900           |              |                          |
| ON            | OFF | ON  | ON  | 38.0        | 950           |              |                          |
| OFF           | ON  | ON  | ON  | 40.0        | 1000          |              |                          |
| ON            | ON  | ON  | ON  | 42.0        | 1050          |              |                          |

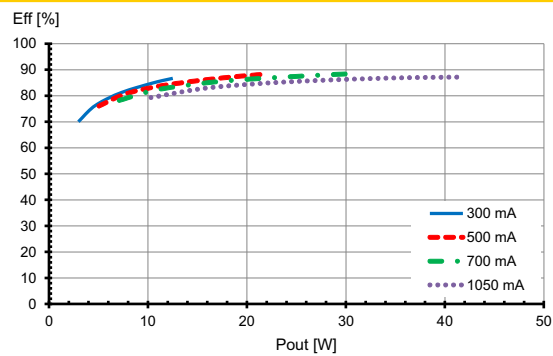
The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

## Typ. performance graphs for 187366, 187367, 187368 / Type ECXe 1050.646

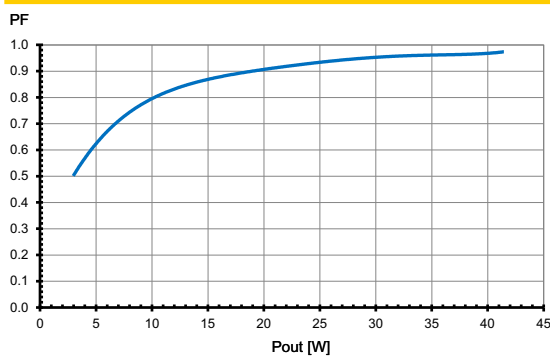
### Working area



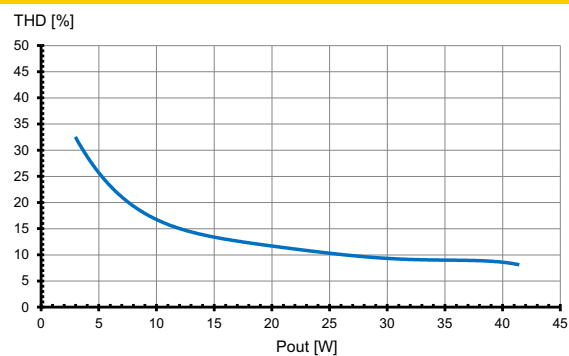
### Efficiency



### Power factor



### Total harmonic factor (THD)



## 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 shut down 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 IEC 61347-1 C 5a. In case of overheating the control gear will shut down and auto resume after temperature problem is removed.

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.

## Compatibility of track rails

Suitable for following tracks (3-phase, without DALI)

- Global
- PowerGear
- Ivela
- Stucchi
- Side
- Eutrac
- Zumtobel

Vossloh-Schwabe does not guarantee the compatibility of the tracks and the track-adaptor, because manufacturing tolerances of the tracks or changes made at the tracks by the manufacturer could affect the compatibility between the tracks and the adaptor.

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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

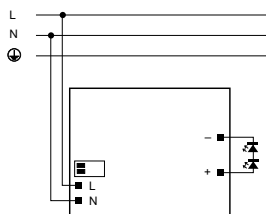
- DIN VDE 0100
- EN 60598-1

### Mechanical mounting

- Mounting position and location:  
Common track system
- 3-phase option: 3 phases are selectable with a rotary switch.  
The neutral is in a fixed position in the track.
- Degree of protection: IP20
- Fastening: Double mechanical locking for perfect track fixing
- Load: max. up to 50 Nm

### Electrical installation

- Connection terminals: Push-in terminals for rigid or flexible conductors with a section of 0.2–0.75 mm<sup>2</sup>
- Stripped length: 8.5–10 mm
- 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:



### 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 mm<sup>2</sup>] 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. |        |        |
|---------------------------------|-------------------------------|------------------------------------------------------------|--------|--------|
| <b>Automatic cut-out type B</b> |                               | B 10 A                                                     | B 16 A | B 20 A |
| ECXe 1050.646                   | <b>187366, 187367, 187368</b> | 40                                                         | 53     | 81     |
| <b>Automatic cut-out type C</b> |                               | C 10 A                                                     | C 16 A | C 20 A |
| ECXe 1050.646                   | <b>187366, 187367, 187368</b> | 40                                                         | 53     | 81     |

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