

OPTOTRONIC Intelligent – DEXAL (SELV)

Linear constant current LED driver – Dimmable



Areas of application

- Linear lighting for office, education, industry, storage areas and retail
- DEXAL, easy connection to different partner BMS systems
- Suitable for "Works with OSRAM DEXAL" partner components
- Suitable for luminaires of protection class I

Product family benefits

- D4i certified SELV DX LED driver up to 80 W due to flexible output characteristic
- Integrated DEXAL Bus power supply for sensors and wireless radios
- Simplified luminaire design for wireless lighting control system and sensors
- Locking and unlocking of luminaire/driver data
- Advanced luminaire/driver data (power, energy, operating hours...) for analytics
- Following DiiA Specification Parts -250, -251, -252 and -253
- Fully programmable via T4T software (NFC, DALI Interface)
- Very high efficiency
- Wide operating range up to 2100 mA

Product family features

- Line frequency: 0 Hz | 50 Hz | 60 Hz
- Supply voltage: 220...240 V
- Constant Lumen Output (CLO)
- Monitoring of luminaire operating parameters
- SELV driver

Product family datasheet

Technical data

Electrical data

| Product description | Nominal input voltage | Mains frequency | Input voltage AC | Current set | Total harmonic distortion |
|---|--|--|-------------------------------|-----------------------------|--|
| OTi 30/120...277/1A0 DX L ¹⁾ | 120...277 V | 50/60 Hz | 108...305 V ²⁾ | Programmable | < 10 % ³⁾ |
| OTi 50/120...277/1A4 DX L ¹⁾ | 120...277 V | 50/60 Hz | 108...305 V ²⁾ | Programmable | < 10 % ³⁾ |
| Product description | Power factor λ | Efficiency in full-load | Device power loss | Inrush current | Max. ECG no. on circuit breaker 10 A (B) |
| OTi 30/120...277/1A0 DX L ¹⁾ | > 0.95 ⁴⁾ | 87 % ⁵⁾ | 4.2 W | 30 A ⁶⁾ | 10 |
| OTi 50/120...277/1A4 DX L ¹⁾ | > 0.95 ⁴⁾ | 88 % ⁵⁾ | 6.5 W | 30 A ⁶⁾ | 10 |
| Product description | Max. ECG no. on circuit breaker 16 A (B) | Max. ECG no. on circuit breaker 25 A (B) | Surge capability (L/N-Ground) | Surge capability (L-N) | |
| OTi 30/120...277/1A0 DX L ¹⁾ | 16 | 27 | 2 kV | 1 kV | |
| OTi 50/120...277/1A4 DX L ¹⁾ | 16 | 27 | 2 kV | 1 kV | |
| Product description | Nominal output voltage | U-OUT (working voltage) | Nominal output current | Default output current | Output current tolerance |
| OTi 30/120...277/1A0 DX L ¹⁾ | 10...56 V | < 60 V | 150...1050 mA | 1050 mA | ±5 % |
| OTi 50/120...277/1A4 DX L ¹⁾ | 10...56 V | < 60 V | 600...1400 mA | 1400 mA | ±5 % |
| Product description | Output ripple current (100 Hz) | Output PSTLM | Output SVM | Nominal output power | |
| OTi 30/120...277/1A0 DX L ¹⁾ | < 1 % ⁷⁾ | ≤1 | ≤0.4 | 10...30 W | |
| OTi 50/120...277/1A4 DX L ¹⁾ | < 1 % ⁷⁾ | ≤1 | ≤0.4 | 15...50 W | |
| Product description | Maximum output power | Galvanic isolation | DEXAL Peak Supply Current | Power loss in stand-by mode | |
| OTi 30/120...277/1A0 DX L ¹⁾ | 30 W | SELV | 125 mA | <0.5 W | |
| OTi 50/120...277/1A4 DX L ¹⁾ | 50 W | SELV | 125 mA | <0.5 W | |
| Product description | DEXAL Guaranteed Supply Current | Galvanic isolation primary/secondary | DEXAL Supply Voltage | | |
| OTi 30/120...277/1A0 DX L ¹⁾ | 53 mA | 3 kV ⁸⁾ | 12 V | | |
| OTi 50/120...277/1A4 DX L ¹⁾ | 53 mA | 3 kV ⁸⁾ | 12 V | | |

¹⁾ See product remark

²⁾ Permitted voltage range

³⁾ At full load

⁴⁾ Full load at 230 V

⁵⁾ at 230 V, 50 Hz

Product family datasheet

6) $t_{width} = 200 \mu s$ (measured at 50 % I_{peak})
7) For output currents above 450 mA, for lower currents PWM dimming with 460 Hz
8) SELV

Dimensions & weight

| Product description | Mounting hole spacing, length | Product weight | Cable cross-section, input side | Cable cross-section, output side | Wire preparation length, input side |
|---|-------------------------------|----------------|---|---|-------------------------------------|
| OTi 30/120...277/1A0 DX L ¹⁾ | 350.0 mm | 30000 g | 0.5...1.5 mm ² ²⁾ | 0.5...1.5 mm ² ²⁾ | 8.5...9.5 mm |
| OTi 50/120...277/1A4 DX L ¹⁾ | 350.0 mm | 30000 g | 0.5...1.5 mm ² ²⁾ | 0.5...1.5 mm ² ²⁾ | 8.5...9.5 mm |

| Product description | Wire preparation length, output side | Height | Width | Length |
|---|--------------------------------------|--------|--------|---------|
| OTi 30/120...277/1A0 DX L ¹⁾ | 8.5...9.5 mm | 254 mm | 300 mm | 3600 mm |
| OTi 50/120...277/1A4 DX L ¹⁾ | 8.5...9.5 mm | 254 mm | 300 mm | 3600 mm |

¹⁾ See product remark
²⁾ Solid or flexible leads

Colors & materials

| Product description | Casing material |
|---|-----------------|
| OTi 30/120...277/1A0 DX L ¹⁾ | Metal |
| OTi 50/120...277/1A4 DX L ¹⁾ | Metal |

¹⁾ See product remark

Temperatures & operating conditions

| Product description | Ambient temperature range | Maximum temperature at tc test point | Max.housing temperature in case of fault | Temperature range at storage |
|---|---------------------------|--------------------------------------|--|------------------------------|
| OTi 30/120...277/1A0 DX L ¹⁾ | -30...+50 °C | 75 °C ²⁾ | 110 °C | -25...80 °C |
| OTi 50/120...277/1A4 DX L ¹⁾ | -30...+50 °C | 75 °C ²⁾ | 110 °C | -25...80 °C |

| Product description | Permitted rel. humidity during operation |
|---|--|
| OTi 30/120...277/1A0 DX L ¹⁾ | 5...85 % ³⁾ |
| OTi 50/120...277/1A4 DX L ¹⁾ | 5...85 % ³⁾ |

¹⁾ See product remark
²⁾ Maximum at the Tc-point
³⁾ Maximum 56 days/year at 85 %

Product family datasheet

Lifespan

| Product description | ECG lifetime |
|---|--------------------------------|
| OTi 30/120...277/1A0 DX L ¹⁾ | 50000 / 100000 h ²⁾ |
| OTi 50/120...277/1A4 DX L ¹⁾ | 50000 / 100000 h ²⁾ |

¹⁾ See product remark

²⁾ At maximum T_c = 75°C / 10% failure rate / At T_c = 65°C / 10% failure rate

Expected Lifetime

| Product name | | | | |
|---------------------------|------------------------------|---------------------|---------------------|---|
| OTi 30/120...277/1A0 DX L | ECG ambient temperature [ta] | 50 | 40 | - |
| | Temperature at tc-point [°C] | 75 | 65 | - |
| | Lifetime [h] | 50000 ¹⁾ | 75000 ¹⁾ | - |
| OTi 50/120...277/1A4 DX L | ECG ambient temperature [ta] | 50 | 40 | - |
| | Temperature at tc-point [°C] | 75 | 65 | - |
| | Lifetime [h] | 50000 ²⁾ | 75000 ²⁾ | - |

¹⁾ Max. 10% failure rate at tc max and input voltage 230 V_{AC}

²⁾ Max. 10% failure rate at tc max and input voltage 230 V_{AC}

Additional product data

| Product description | Encapsulated |
|---|--------------|
| OTi 30/120...277/1A0 DX L ¹⁾ | No |
| OTi 50/120...277/1A4 DX L ¹⁾ | No |

¹⁾ See product remark

Capabilities

| Product description | Programming interface | Dimmable | Dimming interface | Dimming range |
|---|--------------------------------------|--------------------------|------------------------|--------------------------------|
| OTi 30/120...277/1A0 DX L ¹⁾ | Prog+ | Yes | DALI-2 / DEXAL | 1...100 % |
| OTi 50/120...277/1A4 DX L ¹⁾ | Prog+ | Yes | DALI-2 / DEXAL | 1...100 % |
| Product description | Dimming method | Constant lumen function | Overheating protection | |
| OTi 30/120...277/1A0 DX L ¹⁾ | Analog and PWM dimming ²⁾ | Programmable | Automatic reversible | |
| OTi 50/120...277/1A4 DX L ¹⁾ | Analog and PWM dimming ²⁾ | Programmable | Automatic reversible | |
| Product description | Overload protection | Short-circuit protection | No-load proof | Intended for no-load operation |
| OTi 30/120...277/1A0 DX L ¹⁾ | Automatic reversible | Automatic reversible | Yes | No |

Product family datasheet

| Product description | Overload protection | Short-circuit protection | No-load proof | Intended for no-load operation |
|---|----------------------|--------------------------|---------------|--------------------------------|
| OTi 50/120...277/1A4 DX L ¹⁾ | Automatic reversible | Automatic reversible | Yes | No |

| Product description | Max. cable length to lamp/LED module | Suitable for fixtures with prot. class | Type of connection, input side | Type of connection, output side |
|---|--------------------------------------|--|--------------------------------|---------------------------------|
| OTi 30/120...277/1A0 DX L ¹⁾ | - ³⁾ | I | Push terminal | Push terminal |
| OTi 50/120...277/1A4 DX L ¹⁾ | - ³⁾ | I | Push terminal | Push terminal |

| Product description | DALI-2 Diagnostic Data | DALI-2 Energy Data | Number of channels |
|---|------------------------|--------------------|--------------------|
| OTi 30/120...277/1A0 DX L ¹⁾ | Yes | Yes | 1 |
| OTi 50/120...277/1A4 DX L ¹⁾ | Yes | Yes | 1 |

¹⁾ See product remark
²⁾ < 450 mA PWM, > 450 mA amplitude dimming
³⁾ Output wires must be routed as close as possible to each other

Programming

| Product description | Programming device |
|---|--------------------|
| OTi 30/120...277/1A0 DX L ¹⁾ | OT Programmer |
| OTi 50/120...277/1A4 DX L ¹⁾ | OT Programmer |

¹⁾ See product remark

Programmable features

| Product description | Constant Lumen | DEXAL Power Supply Unit | DALI-2 Luminaire Data |
|---|----------------|-------------------------|-----------------------|
| OTi 30/120...277/1A0 DX L ¹⁾ | Yes | Yes | Yes |
| OTi 50/120...277/1A4 DX L ¹⁾ | | | Yes |

¹⁾ See product remark

Certificates & standards

| Product description | Approval marks – approval | Standards | Type of protection |
|---|---------------------------|--|--------------------|
| OTi 30/120...277/1A0 DX L ¹⁾ | CE / UL listed / CB | Acc. to IEC 61347-1/Acc. to IEC 61347-2-13/Acc. to EN 55015, CISPR 15/Acc. to EN 61547/Acc. to IEC 62386-101/Acc. to IEC 62386-102:Ed1/Acc. to IEC 62386-207:Ed1 | IP20 |
| OTi 50/120...277/1A4 DX L ¹⁾ | CE / UL listed / CB | Acc. to EN 61347-1/Acc. to EN 61347-2-13/Acc. to EN 55015, CISPR 15/Acc. to EN 61547/Acc. to IEC 62386-101/Acc. to IEC 62386-101:Ed1/Acc. to IEC 62386-207:Ed1 | IP20 |

¹⁾ See product remark

Logistical data

| Product description | Commodity code |
|---|----------------|
| OTi 30/120...277/1A0 DX L ¹⁾ | 850440839000 |
| OTi 50/120...277/1A4 DX L ¹⁾ | 850440839000 |

¹⁾ See product remark

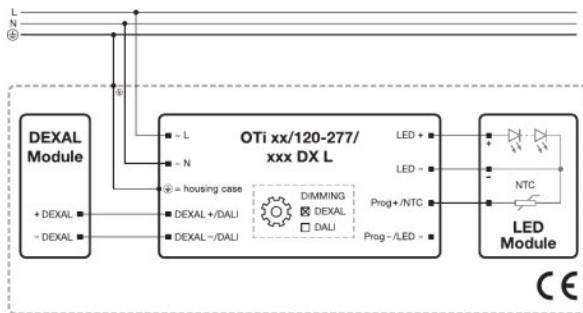
Environmental information
Information according Art. 33 of EU Regulation (EC) 1907/2006 (REACH)

| Product description | Date of Declaration | Primary Article Identifier | Candidate List Substance 1 |
|---|---------------------|----------------------------|----------------------------|
| OTi 30/120...277/1A0 DX L ¹⁾ | 05-05-2023 | 4052899345829 | Lead |
| OTi 50/120...277/1A4 DX L ¹⁾ | 19-05-2023 | 4052899345836 | Lead |

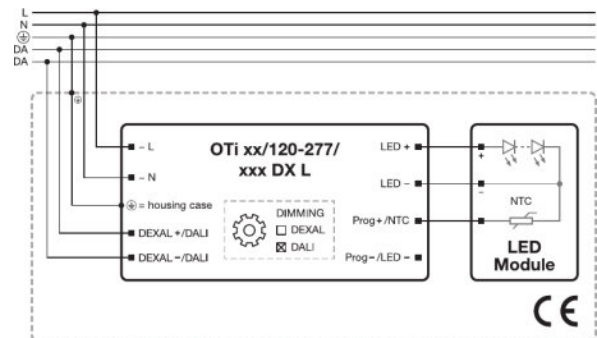
| Product description | CAS No. of substance 1 | Safe Use Instruction | Declaration No. in SCIP database |
|---|------------------------|--|--------------------------------------|
| OTi 30/120...277/1A0 DX L ¹⁾ | 7439-92-1 | The identification of the Candidate List substance is sufficient to allow safe use of the article. | f9b67dbd-a8c1-4215-9d5a-a8ea7f4657b3 |
| OTi 50/120...277/1A4 DX L ¹⁾ | 7439-92-1 | The identification of the Candidate List substance is sufficient to allow safe use of the article. | f58e9256-bb77-47f6-871e-b99576a0cebe |

¹⁾ See product remark

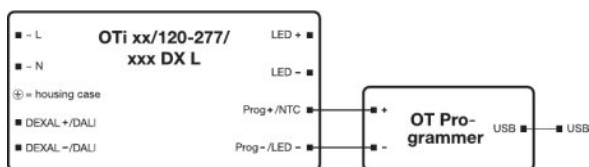
Wiring Diagram



OTi 30/120...277/1A0 DX L



OTi 30/120...277/1A0 DX L



OTi 30/120...277/1A0 DX L

Product remark

Product family datasheet

The default dimming mode is DEXAL - linear dimming. For DALI Luminaires the DEXAL mode needs to be switched to DALI mode by the programming software./By default the NTC port is enabled with following values: start derating: 6.3 kOhm, end derating 5.0 kOhm, derating level 50 %./The lowest output current is 6 mA and the minimum percentage of dimming is dependent on the programmed nominal output current of the driver./The metal housing must be grounded via the fixation holes. Disconnect power before service./DEXAL Port has basic insulation to mains./1400 mA type: Default output current is 1050 mA

Application advice

For more detailed application information and graphics please see product datasheet.








Additional product information

- The DEXAL interface is polarity sensitive, even if the DEXAL bus power supply in the driver is turned off. Therefore the polarity of all connected drivers should not be mixed.
- For efficiency and standby power measurement, the D4i bus power supply shall be switched off by using Tuner4TRONIC. Refer to www.tuner4tronic.com.

Sales and Technical Support

Sales and Technical Support www.osram.com

Download Data

| File | |
|---|--|
|  | Brochures Technical application guide DEXAL LED drivers (EN) |
|  | Brochures Smart Building Component Brochure |
|  | Certificates OTi DX L UK DoC 4308595 010621 |
|  | CAD data 3-dim 3D CAD Model: OTi50 and OTi30 DEXAL Drawings |
|  | Product movie DEXAL Overview Video |
|  | Video Overview of DEXAL Technology |
|  | User instruction DEXAL Intra-luminaire, bi-directional interface (EN) |

Product family datasheet

Ecodesign regulation information:

Intended for use with LED modules.

The forward voltage of the LED light source shall be within the defined operating window of the control gear in all operating conditions including dimming if applicable.

Separate control gear and light sources must be disposed of at certified disposal companies in accordance with Directive 2012/19/EU (WEEE) in the EU and with Waste Electrical and Electronic Equipment (WEEE) Regulations 2013 in the UK. For this purpose, collection points for recycling centres and take-back systems (CRSO) are available from retailers or private disposal companies, which accept separate control gear and light sources free of charge. In this way, raw materials are conserved and materials are recycled.

Logistical Data

| Product code | Product description | Packaging unit (Pieces/Unit) | Dimensions (length x width x height) | Volume | Gross weight |
|---------------|---------------------------|------------------------------|--------------------------------------|----------------------|--------------|
| 4052899345829 | OTi 30/120...277/1A0 DX L | Shipping carton box 20 | 376 mm x 174 mm x 141 mm | 9.22 dm ³ | 6281.00 g |
| 4052899345836 | OTi 50/120...277/1A4 DX L | Shipping carton box 20 | 376 mm x 174 mm x 141 mm | 9.24 dm ³ | 6281.00 g |

The mentioned product code describes the smallest quantity unit which can be ordered. One shipping unit can contain one or more single products. When placing an order, for the quantity please enter single or multiples of a shipping unit.

Data privacy

This OSRAM driver can be configured using the Tuner4TRONIC software. This requires registering on www.myosram.com and downloading the Tuner4TRONIC software from the Internet. The Tuner4TRONIC software enables users to access and view the operational data of a luminaire or driver via the corresponding programming interfaces. A password key (Config Lock) must be set up in the driver via the Tuner4TRONIC software in order to control which users can access and view operational data. Follow the instructions for password setup. To grant an external person or company rights to access or view operational data, you can assign password keys. In this case, however, you are responsible for ensuring that the third party concerned takes notice of the information described here. However, OSRAM can read out operating data from devices for maintenance and service purposes even when a password key has been assigned. In individual cases, OSRAM will also use its access rights in order to optimize or improve driver hardware and driver functions. In accordance with data privacy principles, any user of operating data (luminaire manufacturers, third parties with access rights) must ensure that personal data (e.g. name, address, location IDs) are only merged with the prior written consent of the person (end user) concerned. The respective user of the operating data is responsible for providing evidence of consent.

Disclaimer

Subject to change without notice. Errors and omission excepted. Always make sure to use the most recent release.