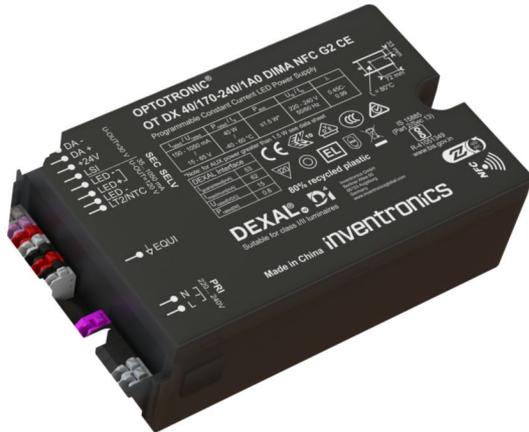# inventronics

The trusted value of OSRAM Digital Systems continues with Inventronics Global – where experience meets innovation.

OT DX 40/170-240/1A0 DIMA NFC G2 CE

OPTOTRONIC - DEXAL NFC IP20 G2 | D4i, DEXAL, AstroDIM, StepDIM - constant current LED drivers

Product family features

- DEXAL interface based on DALI-2 communication
- Current output range: 35…1,050 mA
- Available with different wattage: 24 W, 40 W, 75 W, 110 W, 165 W and 200 W
- AstroDIM for autonomous dimming with five independent levels (astro, time mode)
- Standby power consumption: < 0.35 W
- Integrated customizable thermal management (Driver Guard)
- Constant Lumen Output (CLO)
- Easy and fast wireless luminaire programming via NFC
- Flexible current setting with one additional wire (LEDset2)
- Additional LSI digital interface for connection of accessories and sensors

Product family benefits

- For Zhaga Book18 Luminaires and D4i certified incl. Parts 25x + AUX
- Electrical interface and data communication fully based on open standards
- Fully programmable via software (DALI Interface, NFC)
- Low luminous efficacy tolerance through low output current tolerance of ± 1,5 %
- High surge protection: up to 10 kV in protection class I or II
- Lifetime: up to 100,000 h (depending on T_c temperature, max. 10 % failure rate)
- Mains input undervoltage protection
- DEXAL interface (with 15V current supply on DALI-2 lines - DALI Part 250)
- SELV DEXAL and 24V AUX interface (DALI Part 150) up to 6W
- Standardized DALI-2 communication (incl. monitoring data, energy metering)
- Integrated ESD protection: more robust for installation on non-conductive poles
- Additional built-in ESD protection (EQUI-N, LED Output-EQUI, DEXAL-EQUI)
- Inventronics DALI light- and presence sensor connectable
- Surge and overvoltage protection on DALI interface for DALI installations
- Full compatibility with Tuner4TRONIC and T4T Field App
- BOX Programming: all drivers in one BOX can be programmed in one step

Areas of application

- Street and urban lighting
- Industry
- Suitable for outdoor applications in luminaires with IP > 54
- Suitable for use in outdoor luminaires of protection class I and II

Technical data

Electrical data

Nominal input voltage	220…240 V
Mains frequency	0/50/60 Hz [1]
Input voltage AC	170…264 V [2]
Input voltage DC	170…276 V [1]
Nominal input current at 230 V	0.22 A
Total harmonic distortion	< 5 % [3]
Power factor λ	0.77C...0.99 [4]
Efficiency in full-load	90 % [5]
Device power loss	4.5 W [6]
Networked standby power	0.35 W [7]
Inrush current	27 A [8]
Max. ECG no. on circuit breaker 10 A (B)	18 [9]
Max. ECG no. on circuit breaker 16 A (B)	30 [9]
Surge capability (L-N)	6 kV [10]
Surge capability (L/N-Ground)	10 kV
Nominal output voltage	15...65 V
U-OUT (working voltage)	120 V
Nominal output current	150…1050 mA
Minimum output current	35 mA
Default output current	700 mA
Output current tolerance	±1.5 % [11]
Output ripple current (100 Hz)	4 %
Output PSTLM	≤1
Output SVM	≤0.4
Output current LEDset open	70 mA
Output current LEDset shorted	Not allowed
Nominal output power	40 W [12]
Maximum output power	40 W
Auxiliary Power Supply	24 V [13]

1) Additional fuse needed in DC operation
2) Permitted voltage range
3) Full load, 230V, 50 Hz
4) Within the full operating window
5) at 230 V, 50 Hz
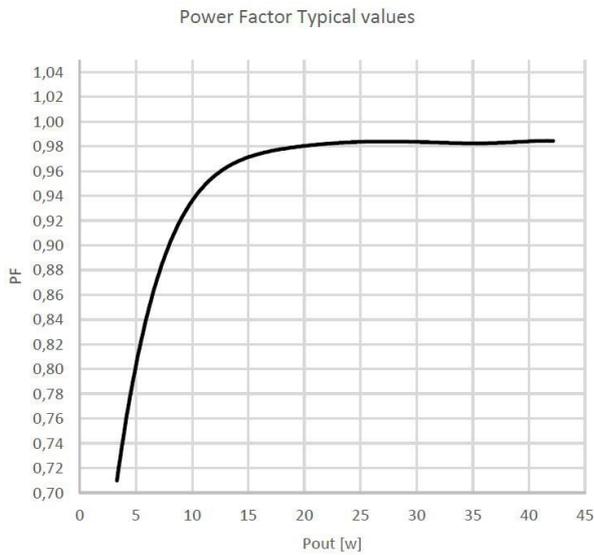6) Maximum
7) DEXAL power supply disabled
8) At 217 µs
9) Type B
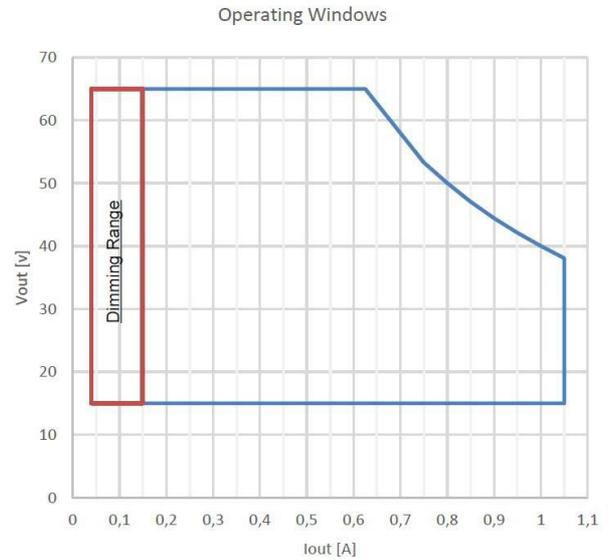10) @ 2 Ohm, acc. to EN61547
11) ±3% for Output current lower than 150 mA
12) Max. 75% in DC operating mode
13) 3W average, 6W peak power

Typical Power Factor v Load

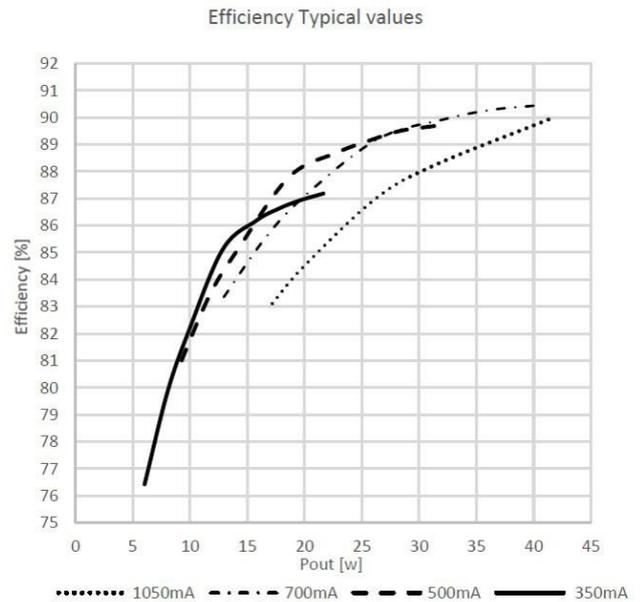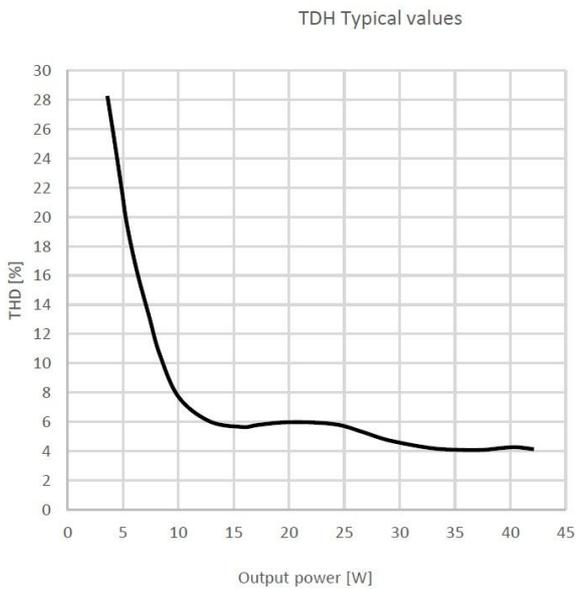OT DX 40 G2 Typical Power Factor vs. Load

Typical THD v Load

OT DX 40 G2 Typical THD vs Load

Operating Window

OT DX 40 G2 Operating Window

Typical Efficiency v Load 230 V 50 Hz

OT DX 40 G2 Typical Efficiency vs. Load (230 V 50 Hz)

Dimensions & weight
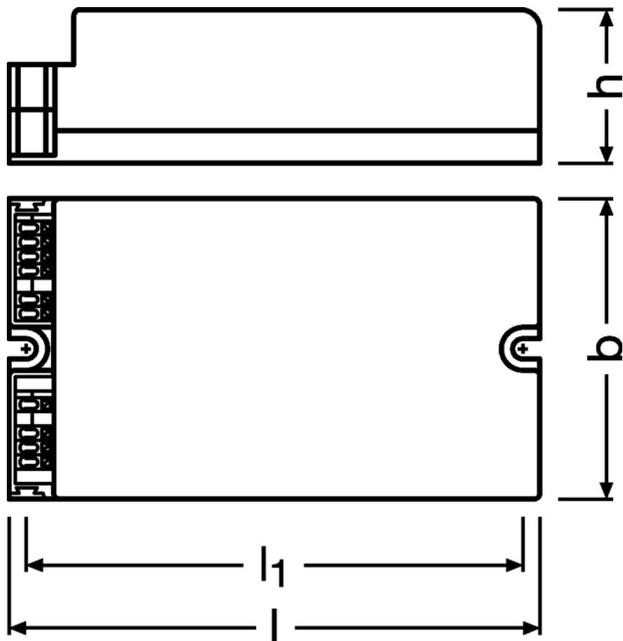
Product weight	230.00 g
Length	133.0 mm
Width	77.0 mm
Height	40.0 mm
Mounting hole spacing, length	122.5 mm
Cable cross-section, input side	0.2…1.5 mm² [1]
Cable cross-section, output side	0.2…1.5 mm² [2]
Wire preparation length, input side	8.5…9.5 mm

1) Solid/ Flexible Leads

2) Wire cross section for LT2/NTC and LED-: 0.2…1.0 mm²

Colors & materials

Casing material	Plastic

Temperatures & operating conditions

Ambient temperature range	-40…+60 °C
Maximum temperature at tc test point	80 °C
Max.housing temperature in case of fault	110 °C
Temperature range at storage	-40…+85 °C
Permitted rel. humidity during operation	5…95 % [1]

1) The luminaire manufacturer must ensure that condensation water cannot be created within the fixture.

Expected Lifetime

Product name				
OT DX 40/170-240/1A0 DIMA NFC G2 CE	ECG ambient temperature [ta]	60	53	50
	Temperature at tc-point [°C]	80	73	70
	Lifetime [h]	50000	85000	100000

Lifespan

ECG lifetime	50000 / 100000 h [1]

1) At maximum T_c = 80°C / 10% failure rate, At T_c = 70°C / 10% failure rate

Capabilities

Dimmable	Yes
Dimming interface	AstroDIM / DALI/DEXAL/D4i / StepDIM [1]
Dimming range	3…100 %
DALI-2 Diagnostic Data	Yes [2]
DALI-2 Energy Data	Yes [3]
Constant lumen function	Yes
LEDset	Yes
Max. cable length to lamp/LED module	2.0 m [4]
Suitable for fixtures with prot. class	I / II
Suitable for emergency lighting	Yes
Number of channels	1
Overheating protection	Yes
Overload protection	Yes
Short-circuit protection	Yes
Intended for no-load operation	No
No-load proof	Yes

1) StepDIM functionality with external component 'OT DX SD BOX' only

2) Acc. DALI part 253

3) Acc. DALI part 252

4) Output wires must be routed as close as possible to each other

Programming

Programming device	DALI / NFC
Tuner4TRONIC	Yes
Tuner4TRONIC Field App	Yes
Box programming	Yes

Programmable features

DALI-2 Luminaire Data	Yes [1]
Configuration Lock	Yes
AstroDIM	Yes
StepDIM	Yes [2]
MainsDIM	No
Driver Guard	Yes
Thermal Protection	Yes
Emergency Mode	Yes

1) Acc. DALI part 251
2) StepDIM functionality with external component 'OT DX SD BOX' only

Certificates & standards

|	
Approval marks – approval	CCC / CE / D4i / DALI-2 / EL / ENEC / RCM / VDE
Standards	EN 61347-1 / EN 61347-2-13 / EN 62384 / EN 55015:2006 + A1:2007 + A2:2009 / EN 61547 / FCC 47 part 15 class B / IEC 61000-3-2 / IEC 61000-3-3 / IEC 62386-101 / IEC 62386-102 / IEC 62386-207 / IEC 62386-150 / IEC 62386-250 / IEC 62386-251, -252, -253
Type of protection	IP20

Logistical data

Commodity code	85044083900

Environmental information

Information according Art. 33 of EU Regulation (EC) 1907/2006 (REACh)	
Date of Declaration	09-01-2026
Primary Article Identifier	4052899631649 | 6977770432703
Declaration No. in SCIP database	In work
SCIP_STATUS	In work
SCIP_ID	

Wiring Diagram
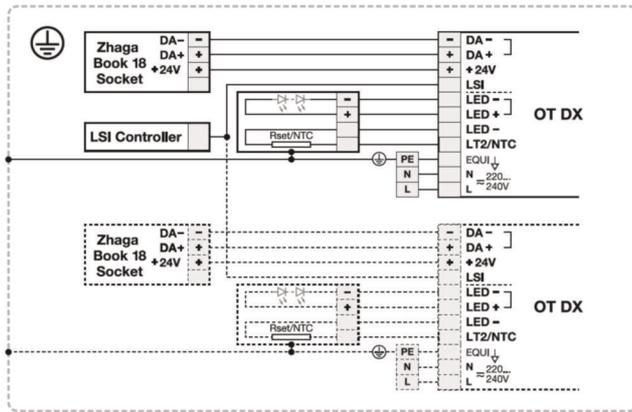
OT DX NFC G2 Wiring diagram I
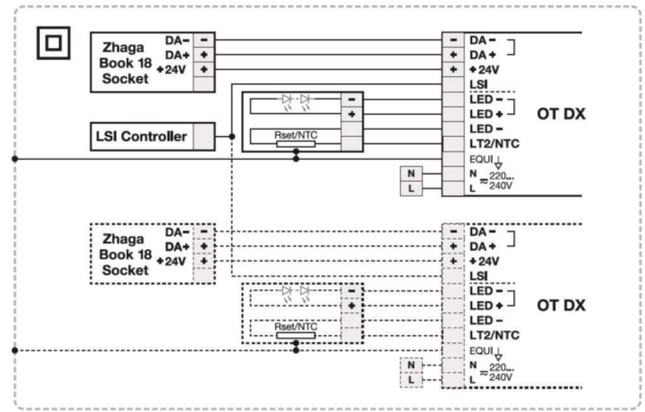
OT DX NFC G2 Wiring diagram II

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.

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Additional product information

- Default output current is 700 mA without any resistor connected to the LEDset port. As soon as the driver detects one time a resistor value within the resistor range of 33.3 kOhm (1050 mA) and 24.9 kOhm (150 mA) for more than 3 s, the driver activates the LEDset2 mode.
- The driver withstands an input voltage of up to 350 V AC for a maximum of two hours. An output load shutdown can occur in case the supply voltage exceeds the input voltage range defined.
- Shut down of output load happens if the input voltage of the load is below the allowed minimum output voltage of the driver. The driver automatically tries to switch on the load cyclically.
- The driver automatically reduces the output current in case the maximum allowed output power is exceeded, as long as the input voltage of the load is within the declared output voltage range of the driver. In all other cases the driver may shut down the load.
- The driver is protected against temporary overheating by automatically reduction of the output current.
- Several external NTCs are supported for temperature protection of the LED module or luminaire. The type of NTC can be selected in the programming software in the temperature based mode.
  By default the resistor based mode is actived with following values: start derating: 6.3 kOhm, end derating 5.0 kOhm, shut off: 4.3 kOhm, derating level 50 %.
- If the dimming mode is changed via NFC while the driver is not powered, one additional power on/off cycle is needed before the dimming mode becomes active.
- The constant lumen feature is disabled by default.
- If any output level is below the physical min level, the physical min level will be used.
- The driver is intended for luminaire built-in use.
- Mind the polarity of the DALI lines. DA+ to DA+, DA- to DA- only.
- 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.
- To ensure an optimal communication during the NFC programming, the NFC antenna should be placed on the top of the LED Driver, above the NFC marking. This improves the accessibility to the NFC tag also in application, for instance within Luminaires.
- In order to ensure an optimal NFC programming of the Led Driver during the luminaire production, the luminaire maker shall not place any metal parts in proximity of the NFC reader, at least within a distance of 10 cm.
- Default output current is supplied without any resistor connected to the LEDset port. As soon as the driver detects one time a resistor value within the allowed resistor range for more than 3 s, the driver activates the LEDset2 mode.
- The driver withstands an input voltage of up to 320 Vac with unlimited time. Shut down of output load might occur in case the supply voltage exceeds (270 Vac). Under operation conditions in which overvoltage level > 264 Vac occur, the product shall be additionally protected by an external fuse (400V 4A, time lag, I2 t > 160 160 A2s).
- The maximum number of units per circuit breaker is an indicative value due mainly to high tolerance for the tripping current for narrow pulses.
- The EQUI pin should be connected to the heat sink of the LED module to improve the surge withstand capability of the system and EMI in critical luminaires.
- The dimming mode feature is disabled by default. If the dimming mode is changed via NFC while the driver is not powered, one additional power on/off cycle is needed before the new dimming mode becomes active.
- For input voltage of 170…190 Vac, the maximum allowed output power is linear limited starting from 100 % at 190 Vac down to 85 % at 170 Vac.
- LEDset and NTC functionality share the same connection terminal; both features are not simultaneously available.
- LEDset functionalities are limited only to the current setting, via codified resistor, and thermal protection via PTC (5V supply, miswiring protection, thermal protection with NTC are not available).
- All functionalities are ensured for output cables up to 10 m. For cable length more than 2 m, EMI compliance has to be checked in the application.
- The luminaire manufacturer must ensure that condensation water cannot be created within the fixture and, in particular, cannot affect the functionality of the product. Failing to comply with this requirement will make invalid any warranty claim
- Driver has additional, built-in protection (EQUI-N, LED Output-EQUI, DEXAL-EQUI) against ESD events, that protects drivers from unwanted discharges. Depending on the luminaire design, charge accumulation can be discharged through neutral wire.

Download Data

File		
Certificates	PDF	▶OT DX 40 1A0 DIMA NFC G2 CE EATON (CEAG) 05 080523
Certificates	PDF	▶OT DX 40 1A0 DIMA NFC G2 CE INOTEC 080523
Certificates	PDF	▶Recycled Content Declaration 210725
Certificates	PDF	▶OT VDE ENEC 40050684 290125
Mandatory Publications	PDF	▶OT DX NFC G2 CE CE 4486034 04 200225

ISOLATION	Input/Mains	EQUI	DALI	LEDset	LED Output	Case	AUX	LSI	NTC
Input/Mains	-	Double	Double	Double	Double	Double	Double	Double	Double
EQUI	Double	-	Supplementary	Basic	Basic	Basic	Basic	Basic	Basic
DALI	Double	Supplementary	-	Basic	Basic	Basic			Basic
LEDset	Double	Basic	Basic	-		Basic	Basic	Basic	
LED Output	Double	Basic	Basic		-	Basic	Basic	Basic	
Case	Double	Basic	Basic	Basic	Basic	-	Basic	Basic	Basic
AUX	Double	Basic		Basic	Basic	Basic	-		Basic
LSI	Double	Basic		Basic	Basic	Basic		-	Basic
NTC	Double	Basic	Basic			Basic	Basic	Basic	-

Logistical Data

Product code	Product description	Packaging unit (Pieces/Unit)	Dimensions (length x width x height)	Volume	Gross weight
4052899631649 OSRAM	OT DX 40/170-240/1A0 DIMA NFC G2 CE	Shipping carton box 18 Pieces	285 x 268 x 156 mm	11.92 dm³	256.44 g
6977770432703 INVENTRONICS	OT DX 40/170-240/1A0 DIMA NFC G2 CE	Shipping carton box 18 Pieces	285 x 268 x 156 mm	11.92 dm³	256.44 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

Disclaimer

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