

## IT DX 165/220-240/1A0 NFC E

IT DEXAL NFC IP20 | D4i, DEXAL, AstroDIM, - constant current LED drivers



### Product family features

- DEXAL interface based on DALI-2 communication
- DALI-2 and D4i Certified
- Always-on Auxiliary Power: 24Vdc, 125mA, 3W (Transient Peak up to 6W)
- Integrated 16Vdc Bus Power Supply Based on DALI-2
- Full Power at Wide Output Current Range (Constant Power)
- Adjustable Output Current (AOC) with NFC
- Autonomous Dimming with Five Independent Levels (Astro, Time Mode)
- Dim-to-Off with Standby Power  $\leq 0.5$  W
- Constant Lumen
- End-of-life indication
- Input Surge Protection: DM 6kV, CM 10kV
- All-Around Protection: OTP, OVP, SCP, OLP, NLP
- Support DALI Programming and NFC Programming
- Integrated Power Monitoring with Accuracy up to  $\pm 5\%$
- Enables programming via DALI cables up to 15m length
- Full Compatibility with T4T(Tuner4TRONIC) and T4T Field App

### Product family benefits

- For Zhaga Book18 Luminaires and D4i certified incl. Parts 25x + AUX
- 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)
- DEXAL interface (with 15V current supply on DALI-2 lines - DALI Part 250)
- Standardized DALI-2 communication (incl. monitoring data, energy metering)
- Inventronics DALI light- and presence sensor connectable
- Full compatibility with Tuner4TRONIC and T4T Field App
- Enables programming via DALI cables up to 15m length



## Areas of application

- IP20 Design and Suitable for Outdoor Applications in Luminaires with IP>54
- Suitable for luminaires of protection class I and II
- Street and urban lighting

## Technical data

### Electrical data

Nominal input voltage	220...240 V
Mains frequency	0/50/60 Hz <sup>1)</sup>
Input voltage AC	170...264 V <sup>2)</sup>
Input voltage DC	170...276 V <sup>1)</sup>
Nominal input current at 230 V	0.78 A
Total harmonic distortion	< 5 % <sup>3)</sup>
Power factor $\lambda$	0.98 / 0.95 <sup>4)</sup>
Efficiency in full-load	94 % <sup>5)</sup>
Device power loss	9.9 W <sup>6)</sup>
Networked standby power	0.50 W <sup>7)</sup>
Inrush current	71 A <sup>8)</sup>
Max. ECG no. on circuit breaker 10 A (B)	6 <sup>9)</sup>
Max. ECG no. on circuit breaker 16 A (B)	10 <sup>9)</sup>
Surge capability (L-N)	6 kV <sup>10)</sup>
Surge capability (L/N-Ground)	10 kV
Nominal output voltage	90...260 V
U-OUT (working voltage)	320 V
Nominal output current	200...1050 mA
Minimum output current	50 mA
Default output current	700 mA
Output current tolerance	$\pm 5$ % <sup>11)</sup>
Output ripple current (100 Hz)	4 %
Output PSTLM	$\leq 1$
Output SVM	$\leq 0.4$
Output current LEDset open	not relevant
Output current LEDset shorted	not relevant
Nominal output power	165 W <sup>12)</sup>
Maximum output power	165 W
Galvanic isolation primary/secondary	Double
Galvanic isolation DALI/mains	Double
Galvanic isolation DALI/output	Basic
DEXAL Supply Voltage	15 V
DEXAL Peak Supply Current	60 mA
DEXAL Guaranteed Supply Current	53 mA
Auxiliary Power Supply	24 V <sup>13)</sup>

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 173  $\mu$ s

9) Type B

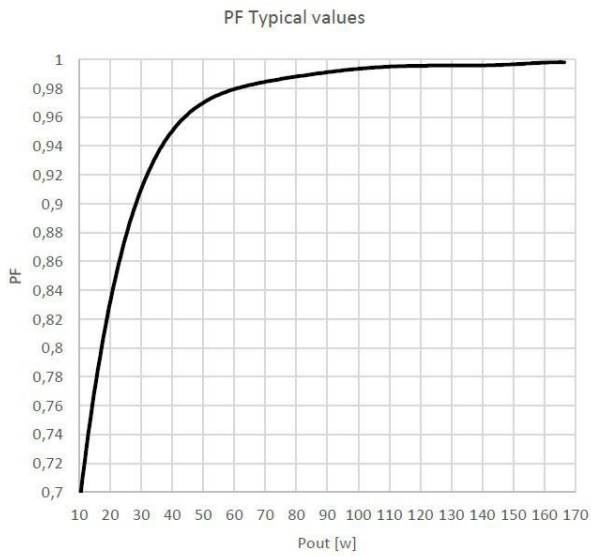
10) @ 2 Ohm, acc. to EN61547

11)  $\pm 3$ % 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



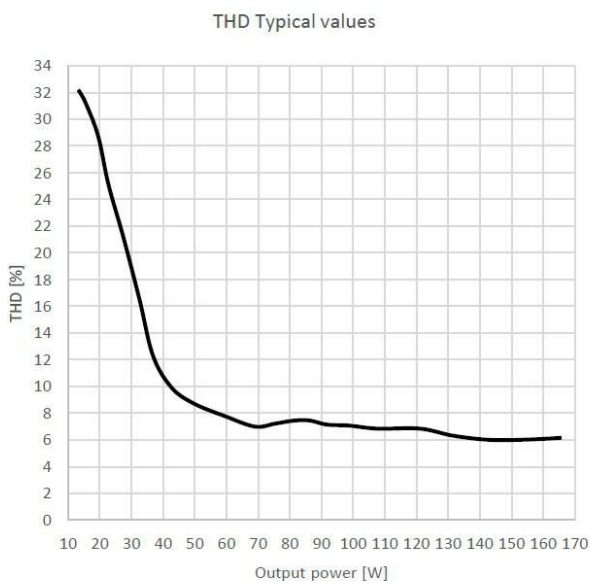
## Operating Window



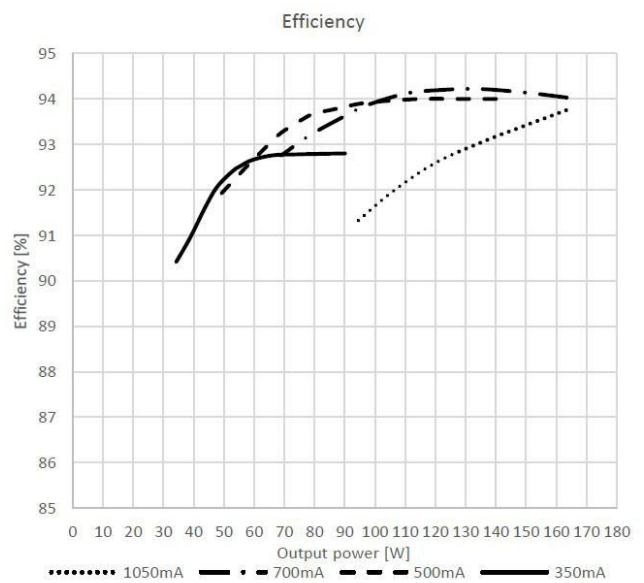
IT DX 165/220-240/1A0 NFC E Typical Power Factor vs. Load

IT DX NFC E 165W Operating Window

## Typical THD v Load



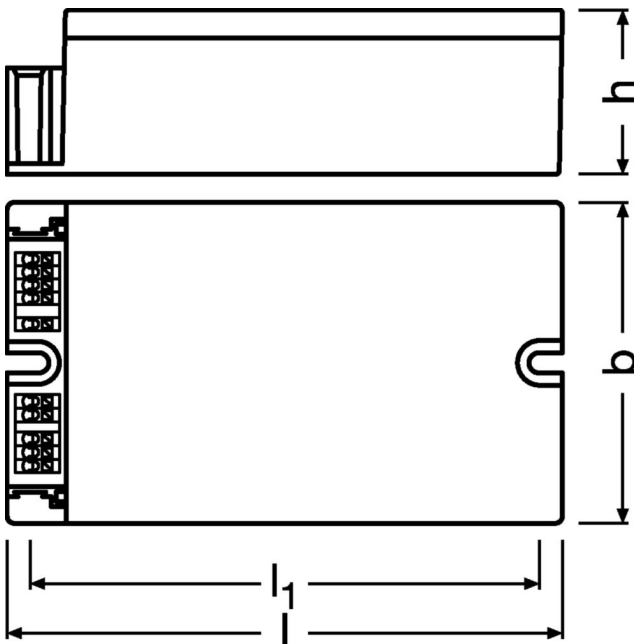
## Typical Efficiency v Load 230 V 50 Hz



IT DX 165/220-240/1A0 NFC E Typical THD Vs Load

IT DX NFC E 165W Typical Efficiency vs Load (230 V 50 Hz)

## Dimensions & weight



Product weight	980.00 g
Length	150.0 mm
Width	90.0 mm
Height	40.0 mm
Mounting hole spacing, length	134.0 mm
Cable cross-section, input side	0.2...1.5 mm <sup>2</sup> <sup>1)</sup>
Cable cross-section, output side	0.2...1.5 mm <sup>2</sup> <sup>2)</sup>
Wire preparation length, input side	8.5...9.5 mm
Wire preparation length, output side	8.5...9.5 mm

1) Solid/ Flexible Leads

2) Wire cross section for NTC: 0.2...1.0 mm<sup>2</sup>

## Colors & materials

Casing material	Plastic
Product color	Grey

## Temperatures & operating conditions

Ambient temperature range	-40...+55 °C
Maximum temperature at tc test point	95 °C
Max.housing temperature in case of fault	110 °C
Temperature range at storage	-40...+85 °C
Permitted rel. humidity during operation	5...85 % <sup>1)</sup>

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

## Expected Lifetime

Product name				
IT DX 165/220-240/1A0 NFC E	ECG ambient temperature [ta]	55	48	45
	Temperature at tc-point [°C]	95	88	85
	Lifetime [h]	50000	85000	100000

## Lifespan

<b>ECG lifetime</b>	50000 / 100000 h <sup>1)</sup>
---------------------	--------------------------------

1) At maximum  $T_c = 95^\circ\text{C}$  / 10% failure rate / At  $T_c = 85^\circ\text{C}$  / 10% failure rate

## Capabilities

<b>Dimmable</b>	Yes
<b>Dimming interface</b>	AstroDIM / DALI/DEXAL/D4i <sup>1)</sup>
<b>Dimming range</b>	10...100 %
<b>DALI-2 Diagnostic Data</b>	Yes <sup>2)</sup>
<b>DALI-2 Energy Data</b>	Yes <sup>3)</sup>
<b>Constant lumen function</b>	Yes
<b>LEDset</b>	No
<b>Max. cable length to lamp/LED module</b>	2.0 m <sup>4)</sup>
<b>Suitable for fixtures with prot. class</b>	I / II
<b>Suitable for emergency lighting</b>	No
<b>Number of channels</b>	1
<b>Overheating protection</b>	Yes
<b>Overload protection</b>	Yes
<b>Short-circuit protection</b>	Yes
<b>Intended for no-load operation</b>	No
<b>No-load proof</b>	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	No

## Programmable features

DALI-2 Luminaire Data	Yes <sup>1)</sup>
AstroDIM	Yes
StepDIM	No <sup>2)</sup>
MainsDIM	No
Driver Guard	Yes
Thermal Protection	Yes
Emergency Mode	No

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 / ENEC / 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

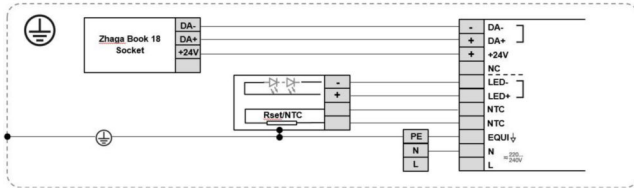
## Logistical data

Commodity code	85044083900
----------------	-------------

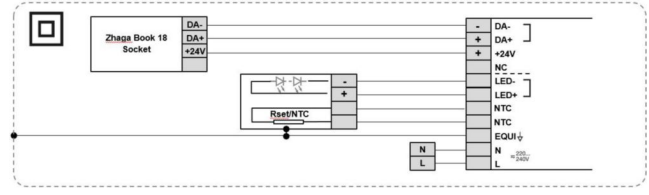
## Environmental information

Information according Art. 33 of EU Regulation (EC) 1907/2006 (REACH)	
Date of Declaration	02-03-2026
Primary Article Identifier	6937186158802
Declaration No. in SCIP database	In work
SCIP_ID	

## Wiring Diagram



IT DX NFC E Wiring diagram Class I (with NTC)



IT DX NFC E Wiring diagram Class II (with NTC)

## 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.

## Additional product information

- 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.
- 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](http://www.tuner4tronic.com).
- 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.
- 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, I<sup>2</sup> t > 160 160 A<sup>2</sup>s).
- 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 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

Download Data

File		
User instruction	PDF	▶G15131363_UI_IT_DX_NFC_CE_MiCh_LOW_01

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

## Logistical Data

Product code	Product description	Packaging unit (Pieces/Unit)	Dimensions (length x width x height)	Volume	Gross weight
6937186158802 INVENTRONICS	IT DX 165/220-240/1A0 NFC E	Shipping carton box 12 Pieces	319 x 210 x 156 mm	10.45 dm <sup>3</sup>	1012.33 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.