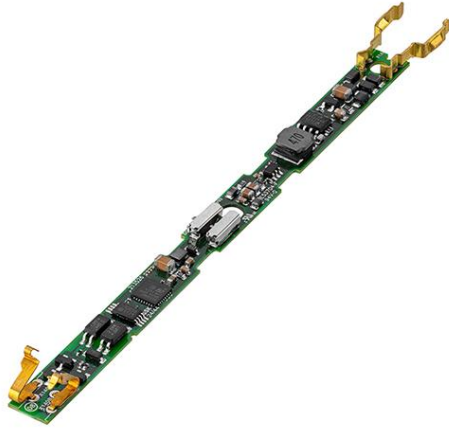


DC 48V MICRO 14W 50–700mA DA NF T

Dimming

**Product description**

- _ DALI-2 dimmable
- _ Up to 93.1 % efficiency
- _ Output voltage range 2 – 42 V
- _ Output current adjustable between 50 – 700 mA
- _ Pure AM dimming down to 1 %
- _ Max. output power 14.7 W
- _ Temperature range up to +35 °C
- _ 5 years guarantee (conditions at <https://www.tridonic.com/en/int/services/manufacturer-guarantee-conditions>)

Housing properties

- _ Pure PCB for built-in application
- _ Compatible with STUCCHI 48V MICRO/CORE11 system, see data sheet chapter 6.16
- _ Suitable for class III applications

Interfaces

- _ DALI – DT 6
- _ Terminal blocks: 0° push terminals
- _ Near field communication (NFC)

Functions

- _ Adjustable output current in 1-mA-steps (NFC, DALI-2)
- _ lumDATA (DALI-2 part ext. 251, 252 and 253)
- _ Protective features (overtemperature, short-circuit, no-load)
- _ Protection against wrong wiring of 48V to DALI
- _ 48V and DALI input polarity free
- _ Temperature declared thermally protected LED driver with integrated electronic protection means against overheating

Benefits

- _ Application-oriented operating window
- _ Small dimensions for miniaturization of luminaires
- _ Flexible configuration via companionSUITE (NFC, DALI-2)
- _ Support NFC multiple programming (1 carton with 10 pcs)

Typical applications

- _ For downlight, spotlight and decorative applications

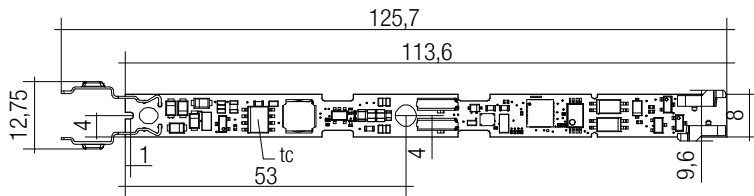
Website

<http://www.tridonic.com/28005579>



DC 48V MICRO 14W 50–700mA DA NF T

Dimming



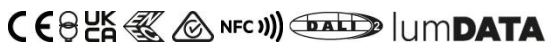
Ordering data

Type	Article number	Packaging, carton	Packaging, pallet	Weight per pc.
DC 48V MICRO 14/50-700/42 DA NF T	28005579	90 pc(s).	2,700 pc(s).	0.005 kg

Technical data

DC voltage input	48 V
DC voltage range	46 – 51 V
Mains frequency	0 Hz
Typ. current (full load)	347 mA
Max. input power	16.6 W
Output power range (P _{rated})	0.1 – 14.7 W
Typ. efficiency (full load) ^{①②}	93.1 %
Starting time (full load)	< 0.7 s
Hold on time at power failure	< 50 ms
Output current tolerance ^①	± 5 %
Output current tolerance (at min. dimming level)	± 10 %
Output LF current ripple	Same as LF ripple on 48 V bus
Max. output voltage (U-OUT)	60 V
Dimming range	1 – 100 % (min. 7 mA)
ESD classification	Severity level 2
Max. casing temperature t _c	105 °C
Guarantee (conditions at www.tridonic.com)	5 Year(s)
Dimensions L x W x H	125.7 x 12.8 x 10.1 mm

Approval marks



Specific technical data

Type	Output current	Min. output voltage	Max. output voltage	Max. output power (at 48 V, full load)	Typ. current consumption (at 48 V, full load)	Ambient temperature t _a
DC 48V MICRO 14/50-700/42 DA NF T	50 mA	2 V	42 V	2.1 W	54.2 mA	0 ... +35 °C
DC 48V MICRO 14/50-700/42 DA NF T	150 mA	2 V	42 V	6.3 W	144.7 mA	0 ... +35 °C
DC 48V MICRO 14/50-700/42 DA NF T	250 mA	2 V	42 V	10.5 W	239.1 mA	0 ... +35 °C
DC 48V MICRO 14/50-700/42 DA NF T	350 mA	2 V	42 V	14.7 W	332.6 mA	0 ... +35 °C
DC 48V MICRO 14/50-700/42 DA NF T	500 mA	2 V	29 V	14.5 W	341.9 mA	0 ... +35 °C
DC 48V MICRO 14/50-700/42 DA NF T	600 mA	2 V	24 V	14.4 W	343.9 mA	0 ... +35 °C
DC 48V MICRO 14/50-700/42 DA NF T	700 mA	2 V	21 V	14.7 W	347.1 mA	0 ... +35 °C

^① Valid at 100 % dimming level.

^② Depending on the selected output current.

1. Standards

EN 61347-1

EN 61347-2-13

EN 62384

EN 55015

EN 61000-3-2

EN 61000-3-3

EN 61547

According to EN 62386-101

According to EN 62386-102

According to EN 62386-207 (DALI-2, including part 251, 252, 253)

2. Thermal details and lifetime

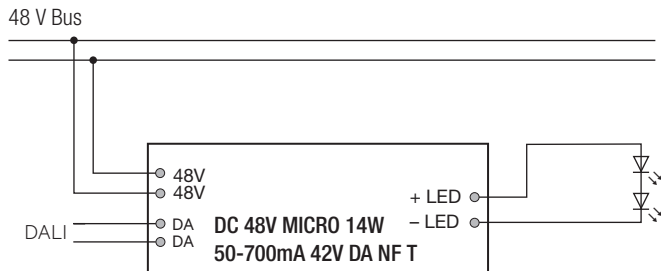
2.1 Expected lifetime

Lifetime is maximum of 100,000 h.

Max. tc point temperature must not be exceeded.

3. Installation / wiring

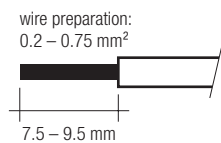
3.1 Circuit diagram



3.2 Wiring type and cross section

For wiring use stranded wire with ferrules or solid wire from 0.2 – 0.75 mm². Strip 7.5 – 9.5 mm of insulation from the cables to ensure perfect operation of terminals.

LED module/LED driver/supply



3.3 Wiring guidelines

- Run the 48 V cables separately from the mains connections and mains cables to ensure good EMC conditions.
- Keep the 48 V DC output wiring as short as possible to ensure good EMC. Tridonic did successfully EMC test with more than 30 m on grounded metal housings.
- For plastic housing reduce the cable length if the EMC gets worse.
- The max. cable length, including track light, is limited only by voltage drop: Supply the last DC MICRO in the track light with minimum 46 V. More details in the voltage drop application note!
- To avoid damage of the Driver protect the wiring against short circuits to earth (sharp edged metal parts, metal cable clips, louver, etc.).
- The max. secondary cable (LED module) length is 2 m (4 m circuit).
- To comply with the EMC regulations run the secondary wires (LED module) in parallel.

3.4 DC Micro Track Hot Plug

Hotplug of fixtures is allowed. All data will be saved and configuration is stored.

3.5 EOS/ESD safety guidelines



The device / module contains components that are sensitive to electrostatic discharge and may only be installed in the factory and on site if appropriate EOS/ESD protection measures have been taken. No special measures need be taken for devices/modules with enclosed casings (contact with the pc board not possible), just normal installation practice.

For further information for EOS/ESD safety guidelines and the ESD classification please refer to the brochure entitled <http://www.tridonic.com/esd-protection>.

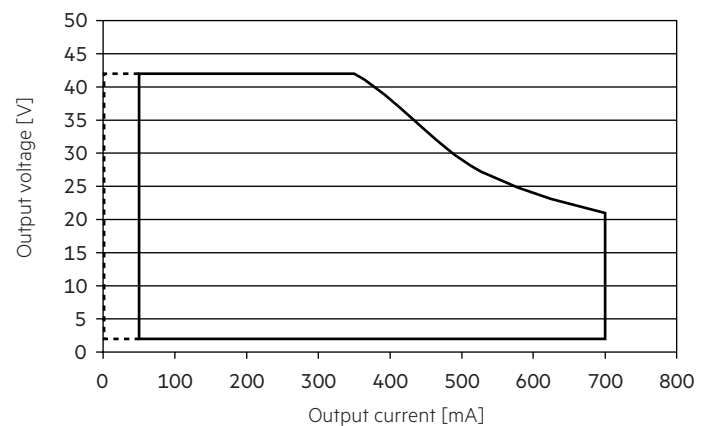
3.6 Control terminals



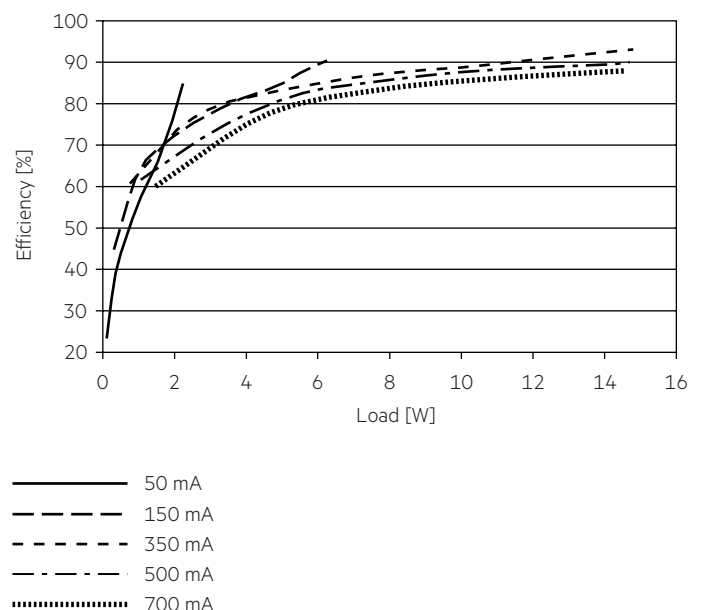
There is a risk of electric shock when touching these terminals in case of failure.

4. Electrical values

4.1 Operating window



4.2 Efficiency vs load



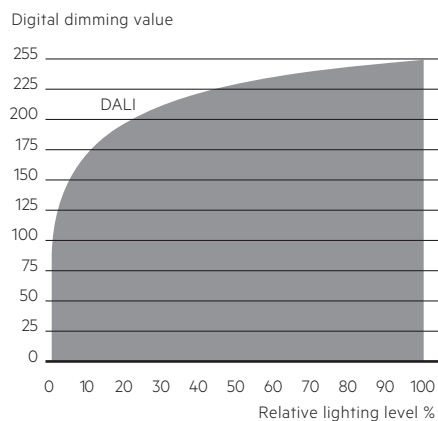
100 % load corresponds to the max. output power (full load) according to the table on page 2.

4.3 Dimming

Dimming range 1 to 100 % (min. 7 mA) of nominal current
 Programmable parameter:
 Minimum dimming level
 Maximum dimming level
 Default minimum = depending on nominal current level
 Default maximum = 100 %

Physical minimal current is 1 % of max. current of the driver.
 Dimming curve is adapted to the eye sensitiveness.
 Dimming is realized by amplitude dimming.

4.4 Dimming characteristics



Dimming characteristics as seen by the human eye

5. Interfaces / communication

5.1 Control input

The control input is non-polar for digital control signals (DALI).
 The control cable has to be installed in accordance to the requirements of low voltage installations.

5.2 Short-circuit behaviour

In case of a short-circuit at the LED output the LED output is switched off. After restart of the LED Driver the output will be activated again. The restart can either be done via mains reset or via interface (DALI).

5.3 No-load operation

In case of a no-load operation LED output is switched off. After restart of the LED Driver the output will be activated again.
 The restart can either be done via mains reset or via interface (DALI).

5.4 Overload protection

If the output power/voltage range is exceeded the LED Driver turns off the LED output. After restart of the LED Driver the output will be activated again. The restart can either be done via mains reset or via interface (DALI).

5.5 Overtemperature protection

Intelligent temperature guard (ITG)

5.6 NFC - configuration

The NFC Interface allows wireless communication with the LED Driver. This interface offers the option to write configuration and to read configuration, errors and events with the companionSUITE.

6. Functions

☉ companionSUITE:














DALI-USB, ready2mains Programmer, NFC

The companionSUITE with deviceGENERATOR, deviceCONFIGURATOR and deviceANALYSER is available via our WEB page:
<https://www.tridonic.com/com/en/products/companionsuite.asp>

◇ masterCONFIGURATOR:

DALI-USB, ready2mains Programmer (in DALI mode)

The masterCONFIGURATOR is available via our WEB page:
<https://www.tridonic.com/com/en/software-masterconfigurator.asp>

Icon	Function	NFC	DALI-2
	OEM Identification	☉	☉ ◇
	OEM GTIN	☉	☉ ◇
	Luminaire data	☉	☉ -
	LED current	☉	☉ ◇
	Constant light output (eCLO)	☉	☉ ◇
	Enhanced power on level (ePOL)	☉	☉ ◇
	DALI default parameters	☉	☉ ◇
	Scenes and groups	☉	☉ ◇
	fade2zero	☉	☉ -
	Power-up fading	☉	☉ -
	Dimming curve	☉	☉ -
	deviceKEY	☉	☉ ◇
	Intelligent temperature guard (ITG)	☉	☉ -

6.1 OEM Identification



The OEM (Original Equipment Manufacturer) can set his own identification number.

DALI Part 251: Memory bank 1 extension.

6.2 OEM GTIN



The Original Equipment Manufacturer (OEM) can set his own Global Trade Item Number (GTIN).

DALI Part 251: Memory bank 1 extension.

6.3 Luminaire data



This function provides the asset management with accurate data about the luminaire.

DALI Part 251: Memory bank 1 extension.

6.4 LED current



The LED output current must be adapted to the connected LED module. The value is limited by the current range of the respective device.

The output current of the LED driver can be adjusted in a certain range. For adjustment there are 4 options available.

Option 1: DALI
Adjustment is done by companionSUITE or by masterCONFIGURATOR.

Option 2: NFC
Adjustment is done by companionSUITE via NFC.

6.5 Enhanced Constant Light Output (eCLO)



With this function the light output of the LED module can be kept equal over the lifetime.

The light output of an LED module reduces over the course of its lifetime. The Constant Light Output (eCLO) function compensates for this natural decline by constantly increasing the output current of the LED driver throughout its lifetime.

Enhanced eCLO shall be achieved by limitation of the LED current at the commissioning of the LED driver and providing a linear interpolation of the current over the time, depending on the data points given by the user.

The user has to insert up to eight pairs of data (time, level).

The output curve is the result of connecting the user data points linear.

Detailed description for eCLO see product manual.

The minimal CLO starting point is limited by the smallest output current of the LED driver.

6.6 Enhanced power on level (ePOL)



The Enhanced Power On Level parameter defines the power level that is set automatically when power is restored after a power failure.

The Enhanced Power On Level can be set to a fixed value (0 – 100 %) or can recall the memory value.

The memory value is the last value the LED driver was set to before the power failure.

This value applies not only in DALI device operating mode, but also in the device operating mode switchDIM.

6.7 DALI default parameters



In order for all luminaires to react the same for each operation (switching, dimming, scene recall ...), these values must be set the same.

These DALI standard parameters are supported by every DALI-2 device.

6.8 Scenes and groups



Each device can be a member of up to 16 groups.

Also, 16 different scene values can be stored in each device.

6.9 fade2zero



When the Driver is switched off, fade2zero allows a smooth dimming down to almost zero.

Activate the fade2zero function when programming with companionSUITE and set a DALI fade time. fade2zero only works if the minimum dimming level of the Driver is the default value.

The device then dims to far below the limit of its working window (dimming range).

This function is deactivated by default.

6.10 Power-up fading



The power-up function offers the opportunity to modify the on behavior.

The time for fading on can be adjusted in a range of 0.2 to 16 seconds.

According to this value, the device dims from 0 % up to the power-on level.

By factory default no fading time is set (= 0 seconds).

6.11 Dimming curve



DALI:

The desired dimming behaviour is selected via two different dimming curves (logarithmic or linear).

The default setting of the dimming behaviour is logarithmic.

6.12 deviceKEY



This function enables a password protection for device settings to prevent unauthorized access or changes.

6.13 Intelligent Temperature Guard (ITG)



The intelligent temperature guard protects the LED driver from thermal overheating by reducing the output power or switching off in case of operation above the thermal limits of the luminaire or ballast.

Depending on the luminaire design, the ITG operates at about 5 to 10 °C above tc temperature.

If temperature threshold values are exceeded, the LED output current is limited.

These limits can be adjusted using the programming software.

Even the current ITG temperature in the device can be read out. With this function, the sensitivity of the temperature control can be adjusted.

6.14 Adjustable current

The output current of the LED driver can be adjusted in a certain range. Physical minimal current is 1 % of max. current of the driver.

6.15 Compatible track adapter

Adapter Type	Compatible Tracks
MICRO Adapter 9619-M	9600-.../...-ST1
MICRO Adapter 9619-M1	9600-.../...-ST5
MICRO Adapter 9620	9600-.../...-ST16
	9600-.../...-ST15

7. Miscellaneous

7.1 Conditions of use and storage

Humidity: 5 % up to max. 85 %,
not condensed
(max. 56 days/year at 85 %)

Storage temperature: -40 °C up to max. +80 °C

The LED drivers have to be acclimatised to the specified temperature range (ta range of DC power supply) before they can be operated.

The LED driver is declared as inbuilt LED controlgear, meaning it is intended to be used within a luminaire enclosure.

If the product is used outside a luminaire, the installation must provide suitable protection for people and environment (e.g. in illuminated ceilings).

7.2 Disposal of equipment



Return old devices in accordance with the WEEE directive to suitable recycling facilities.

7.3 Additional information

Additional technical information at www.tridonic.com → Technical Data

Lifetime declarations are informative and represent no warranty claim.
No warranty if device was opened.