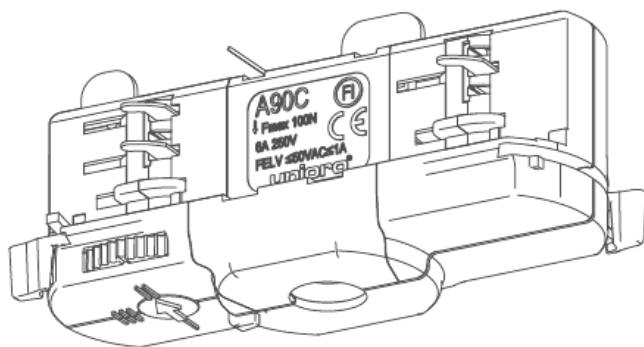
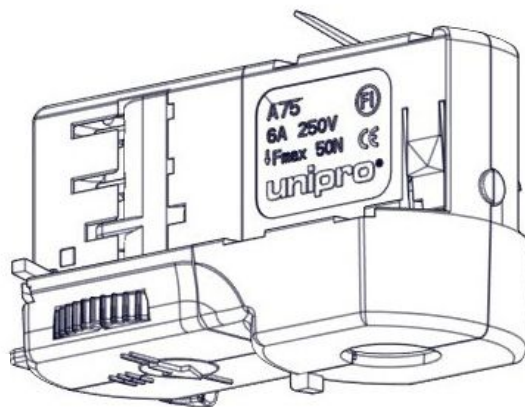


unipro[®]

lighting

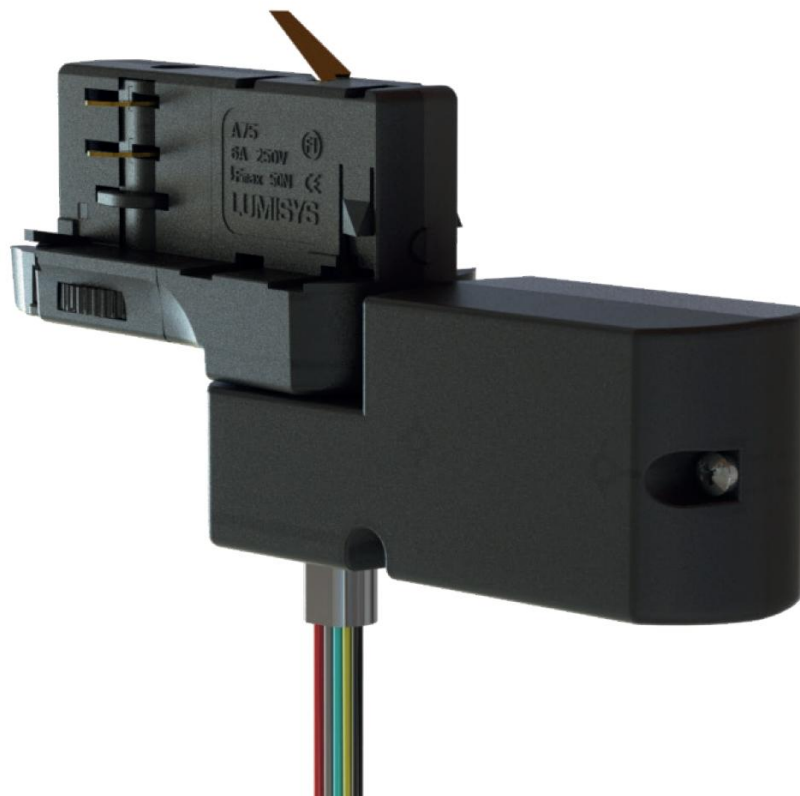


track adaptors

unipro ® A80BT datasheet V1

Features

- Wirelessly controllable with a smart device.
- Mains output for On/Off function
- Configurable analog/digital output:
 - 0-10V compatible light intensity adjustment
 - Standalone DALI light intensity adjustment
 - Color Temperature Control with compatible lamps
- Wirelessly updatable firmware
- Automatically creates a mesh network between devices
- No need for an external gateway device.
- Device firmware can be updated over-the-air.



Revision history

Revision	Date	Change
1	15.04.2015	Document created

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3	Description and operation.....	3
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3 Description and operation

Description

A80BT adapter is a wireless control unit for LED and halogen drivers with mains output with on-off function and control interface which can be configured to analog 0-10V, 1-10V dimming or to digital standalone DALI dimming or RGB control.

A80BT is powered by Casambi CBU-ASD control unit and is controlled wirelessly with Casambi smartphone and tablet applications using Bluetooth 4.0 protocol.

Operation

A80BT control output can be configured either as analog 0-10V (and 1-10V) or digital Standalone DALI control interface. When the output is configured as Standalone DALI, A80BT acts both as a controller and as a power supply making it possible to connect directly to an LED driver with DALI interface without the need for an external DALI power supply. This so called Standalone DALI makes it possible to implement multi-channel light fixtures with adjustable color (RGB) or color temperature, while keeping the wiring and number of components at their minimum. A80BT does not comply with IEC 60929 and therefore is not designed to be connected to an existing DALI network. (CBU-ASD datasheet V1.1)

For applications where the driver or device cannot be turned completely off through its control interface, A80BT has a controllable switched mains output. This mains output is taken directly from the mains input and routed through a fuse and a solid-state relay. The control output of A80BT is double insulated from the mains voltage. This makes it possible to use A80BT with isolated LED drivers and maintain protection class II. The control output is protected against short circuit.

A80BT is controlled wirelessly by a smart phone or a tablet with Casambi application (available in Apple store or Google Play). Multiple devices form automatically a mesh network, which can be controlled from any point and network communicates directly with the smart phone or tablet using Bluetooth 4.0 without need for external gateway device or Wireless LAN network.

The device can be operated also from a regular on/off wall switch. By flicking the switch on and off the user can select different pre-set modes which can affect one or several devices on the network.

Settings and modes can be configured using the Casambi application and are automatically stored in Casambi cloud service and are available for everyone who is connected to the network. (CBU-ASD datasheet V1.1)

4 Connections

The analog/digital output of A80BT is connected to the control input of a driver. Plus (+) and minus (-) signs on the connecting instructions denotes the polarity of 0-10V control interface. When A80BT is configured for DALI configuration, the control interface can be used without regard for polarity. At least basic insulated wires will have to be used in 0-10V/DALI control interface.

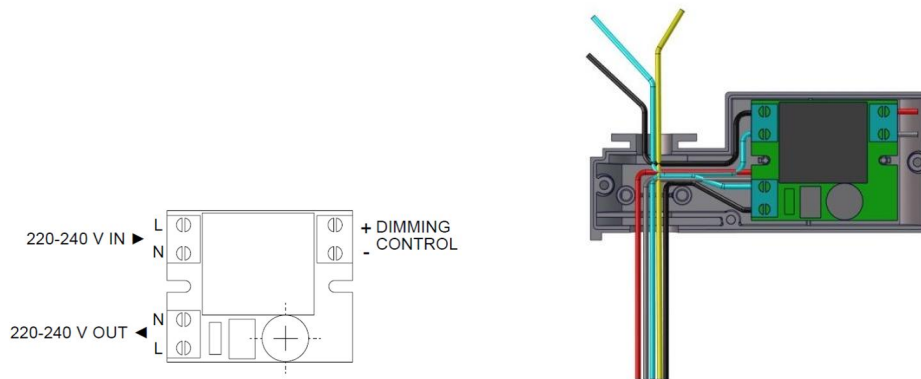


Figure 1. A80BT module connections

It is highly recommended to use only drivers which can be switched completely off from its control input. However, A80BT has a switched mains output for cases where the selected driver requires an external mains voltage relay. When mains voltage relay is used, designer of the system will have to take into careful consideration the inrush current and power of the driver as well as maximum ambient temperature where A80BT will be operated. For additional information please see chapters “Mains Output”, “Inrush Current” and “Ambient Temperature”. (CBU-ASD datasheet V1.1)

Warning!

If you are using the switched mains output of A80BT, you must read chapters “Mains Output” and “Inrush Current”. (CBU-ASD datasheet V1.1)

5 0-10V Output

By default, the output of A80BT is configured as analog 0-10V dimming interface. In this mode A80BT can be connected to any driver with 0-10V or 1-10V dimming interface. Analog dimming interface of A80BT can sink or source up to 7 mA and is protected against short circuit.

0-10V dimming interface enables only one channel dimming. If several channels are required, for example in RGB solution, multiple A80BT modules will have to be used together with multiple LED drivers with 0-10V dimming interface. The 0-10V output may be used with only one LED driver and it should never be branched to multiple drivers. It is important to make sure that the wires of 0-10V control interface are connected in right polarity. Schematics for connections can be found from chapter “Connections”.

In multi-channel applications other option is to configure the output to digital Standalone DALI interface. This way the A80BT can be used together with a multi-channel LED driver with DALI control interface. See chapter “Standalone DALI Output” for more information. (CBU-ASD datasheet V1.1)

6 Standalone DALI Output

The control output of A80BT can be configured also as a digital Standalone DALI control interface. With this configuration the module can be connected to an LED driver with DALI interface. The DALI interface makes it possible, for example, to use multi-channel LED drivers in applications where color or color temperature can be controlled.

A80BT is designed to control only one driver, whether it has a 0-10V or DALI control interface. If multiple channels are wanted to be controlled simultaneously, a multi-channel driver with DALI interface, or multiple A80BTs connected to individual drivers, will have to be used.

The operation of the DALI interface has been divided into two. Basic operation does not require the use of LED driver short addresses, i.e. it does not require pre-configured drivers. Instead it utilises broadcast commands “forcing” the driver into a desired state. This method of control does not support multi-channel systems. For multi-channel systems, an advanced DALI interface will have to be used. This requires assigning short addresses to the LED driver as well as configuring these addresses to the A80BT firmware. The short addresses are assigned to the driver by using a USB-DALI configuration tool which is usually provided by the driver manufacturer.

The A80BT firmware can be configured by using Casambi Utility application. For large quantities A80BT can be factory-configured by request. Drivers with DALI control interface can be switched off though DALI commands, so when using the A80BT in Standalone DALI configuration, it is recommended to power the driver directly from mains voltage and not through A80BT. This way the driver power consumption and inrush current may be ignored when designing a light fixture. (CBU-ASD datasheet V1.1)

Warning!

A80BT is not designed according to IEC 60929 and therefore should not be connected to an existing DALI network. The module can be used only in a closed system, i.e. inside a light fixture which does not have an external DALI interface. To make a distinction between

regular DALI system and a closed DALI system, term “Standalone DALI” is used in this datasheet. A80BT is designed to control only one driver, whether it has a 0-10V or DALI control interface. If multiple channels are wanted to be controlled simultaneously, a multi-channel driver with DALI interface will have to be used. (CBU-ASD datasheet V1.1)

7 Mains Output

For applications where the driver cannot be turned completely off through its control interface (e.g. 0-10V and 1-10V), A80BT has a controllable switched mains output. This mains output is taken from the mains input and routed through a solid-state relay. Solid-state relay switches only the live wire of mains voltage, while neutral is directly connected between mains input and output. Both the mains input and output are protected with a common 2A slow blow fuse connected to the live wire.

The maximum allowable current drawn from the mains output is 1,2 A. This is the absolute maximum rating and it is highly dependent on the operating (ambient) temperature. It is strongly recommended to keep the mains load under 70 W, especially with luminaires that produce excessive amount of heat. Please see, chapter “Ambient Temperature” for more information.

A special care must be taken when choosing the right LED driver for A80BT. The mains voltage inrush current of the driver shall not exceed the maximum amount allowed by the A80BT. More information on the inrush current can be found in chapter “Inrush Current”.

DALI controlled drivers and some 0-10V controlled drivers can be switched off through their controls interface. It is strongly recommended to use such drivers and power the driver directly from mains voltage and not through A80BT. This way the driver power consumption and inrush current may be ignored when designing a light fixture. (CBU-ASD datasheet V1.1)

8 Protection Class

A80BT is a class I device with SELV (Safety Extra-Low Voltage) output. If the module is connected to a device with only basic insulation, the output of A80BT is considered ELV, not SELV. For example, DALI and 0-10V are considered as basic insulated control interfaces, which means that even if the driver is specified as double insulated device, the DALI or 0-10V control interface between A80BT and driver, by definition, is not. In such a case, the control wires between A80BT and the driver are considered having only a basic insulation

9 Integrated antenna

A80BT has an integrated antenna. The antenna is located on right bottom the corner of the enclosure.

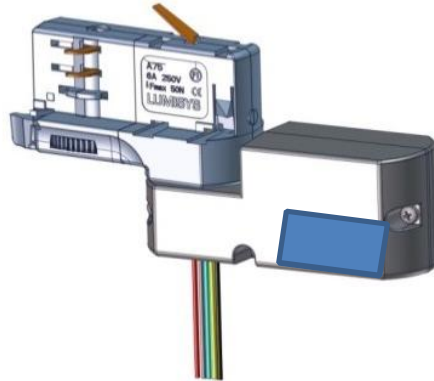


Figure 2. Antenna location

10 Inrush Current

All LED drivers have a steady state operating current and an inrush current (or input surge current, as it is sometimes called). The inrush current refers to the maximum instantaneous input current drawn by the electrical device when it is first turned on. The amount of the inrush current is usually much higher than the device's steady state operating current.

Inrush current is caused by capacitors in the input stage of an LED driver. When these capacitors are suddenly charged during the initial application of power, a large current spike is drawn. The value of the inrush current varies according to the power-on timing and the presence or absence of the inrush current protection devices. Typically inrush current of an LED driver is 10-70 A.

The absolute maximum allowable inrush current flown through A80BT is specified at 12 A for the duration of 8 ms. The amount of inrush current is inversely proportional to the duration of it. In most cases the inrush current spike is much shorter than 8 ms, which means the maximum inrush current may be higher than 12 A. In order to determine if the inrush current of a certain LED driver is suitable for A80BT, one has to know both the specified inrush current rating and the duration of it. If these values are not given in the datasheet of the LED driver, they will have to be measured or verified from the manufacturer. The duration and amount of inrush current varies a lot, and it cannot be estimated from the other specifications of the driver, such as power rating.

Maximum amount of inrush current for a certain duration can be derived from the following equation:

$$I = 12 \sqrt{\frac{8}{t}}$$

where

I = maximum allowable inrush current

t = duration of the LED driver inrush current

If the specified inrush current (for the duration of t) of the LED driver is less than I, then the driver is suitable for A80BT.

(CBU-ASD datasheet V1.1)



Figure 3. Absolute maximum inrush current (CBU-ASD datasheet V1.1)

Warning!

Exceeding maximum allowable inrush current even once may result to permanent damage to the internal solid state relay. This may cause it to overheat even with low load power causing a fire hazard. When using the mains voltage output of A80BT, always make sure that the inrush current is below its limits.

If the datasheet of the driver does not state specific value for inrush current, it will have to be reliably measured. Do not use the mains voltage output of A80BT if you are unsure about the inrush current. (CBU-ASD datasheet V1.1)

11 Ambient Temperature

The operating temperature range of A80BT is $-20...+70^{\circ}\text{C}$. However, the ambient temperature affects the maximum allowable AC current (mains) output of A80BT. The maximum specified AC current output of A80BT is 1,2 A, and it is valid at temperatures below $+40^{\circ}\text{C}$. At temperatures higher than $+40^{\circ}\text{C}$, the current drawn from A80BT will have to be limited.

If A80BT is mounted in a place where the ambient temperature rises above $+40^{\circ}\text{C}$, the LED driver or Luminaire connected to the module will have to be selected so that its current consumption does not exceed the maximum current output of A80BT at that temperature.

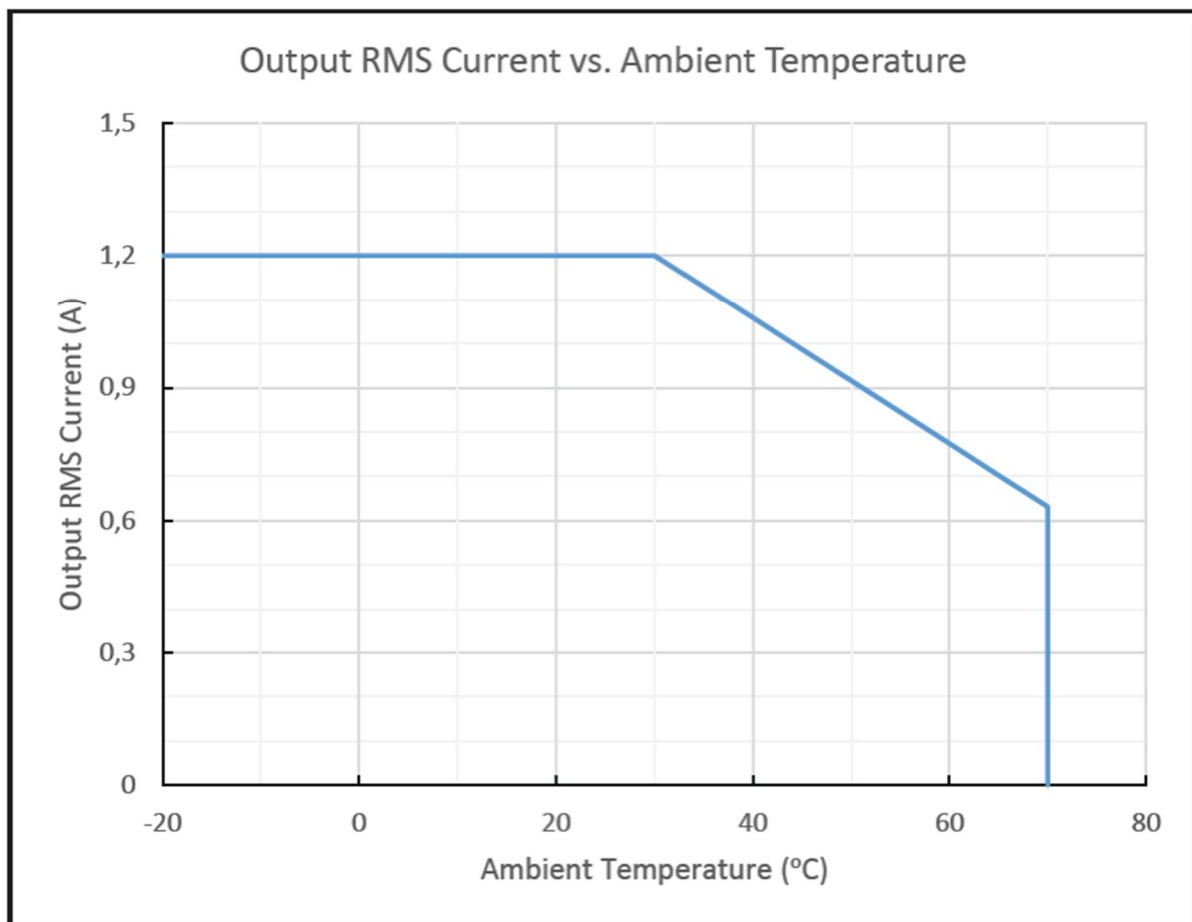


Figure 4. Current vs Temperature (CBU-ASD datasheet V1.1)

For example, with luminaires producing large amount of heat, current must be kept under 0,3 A (Pmax 70 W) to ensure that maximum case temperature of 70°C is not exceeded.

12 Case Temperature

Maximum case temperature of A80BT on any point of case surface shall not exceed +70°C, otherwise it may have a negative effect on the lifetime or performance of the module.

13 Dimensions

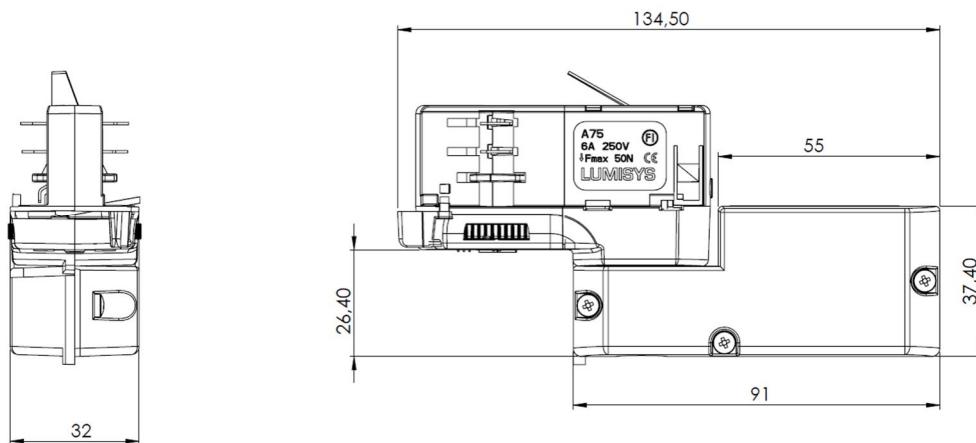


Figure 5. Dimensions for A80BT

14 Technical data

Mains Input

Voltage range: 220-240 VAC

Frequency: 50 Hz

Max. mains current: 1,2 A

(0,3 A with luminaires with incandescent lamps)

Mains Output

Output relay: SSR on phase line

Suggested max. RMS power: 70 W

Inrush current: 12 A (8 ms)

24 A (2 ms)

36 A (0,9 ms)

48 A (0,5 ms)

Warning: Do not exceed these limits!

0-10 V Output

Voltage range: 0-10 VDC

Max. sink/source current: 7 mA

DALI Output

Bus voltage: 12 VDC

Shortcut current: 7 mA

Radio Transceiver

Operating frequencies 2,4...2,483 Ghz

Maximum output power +4 dBm

Operating Conditions

Ambient temperature, t_a : -20...+70 °C

Max. case temperature, t_c : +70 °C

Storage temperature: -25...+75 °C

Max. relative humidity: 0...80%, non-cond.

Connectors

Wire range: 0,75-1mm²

Solid wire: 17-20 AWG

Stranded wire: 17-20 AWG

Wire strip length: 5-6 mm

Tightening torque: 0,4 Nm/4 Kgf.cm/2,6 Lb-In

Mechanical Data

Dimensions: 135 x 38 x 33 mm

Weight: 102 g (with A75 adapter)

Degree of protection: IP20

Conformity and Standards

Radio frequency interference: EN 55015

Mains current harmonics: EN 61000-3-2

Volt. changes, fluctuations and flicker: EN 61000-3-3

General and safety requirements: EN 61347-1

Particular requirements: EN 61347-2-11

EMC immunity requirements EN 61547

Electrical supply track system for luminaires:

EN60570:2003 used in conjunction with EN60598-1 2008+A11:2009 Luminaires . General requirements and tests

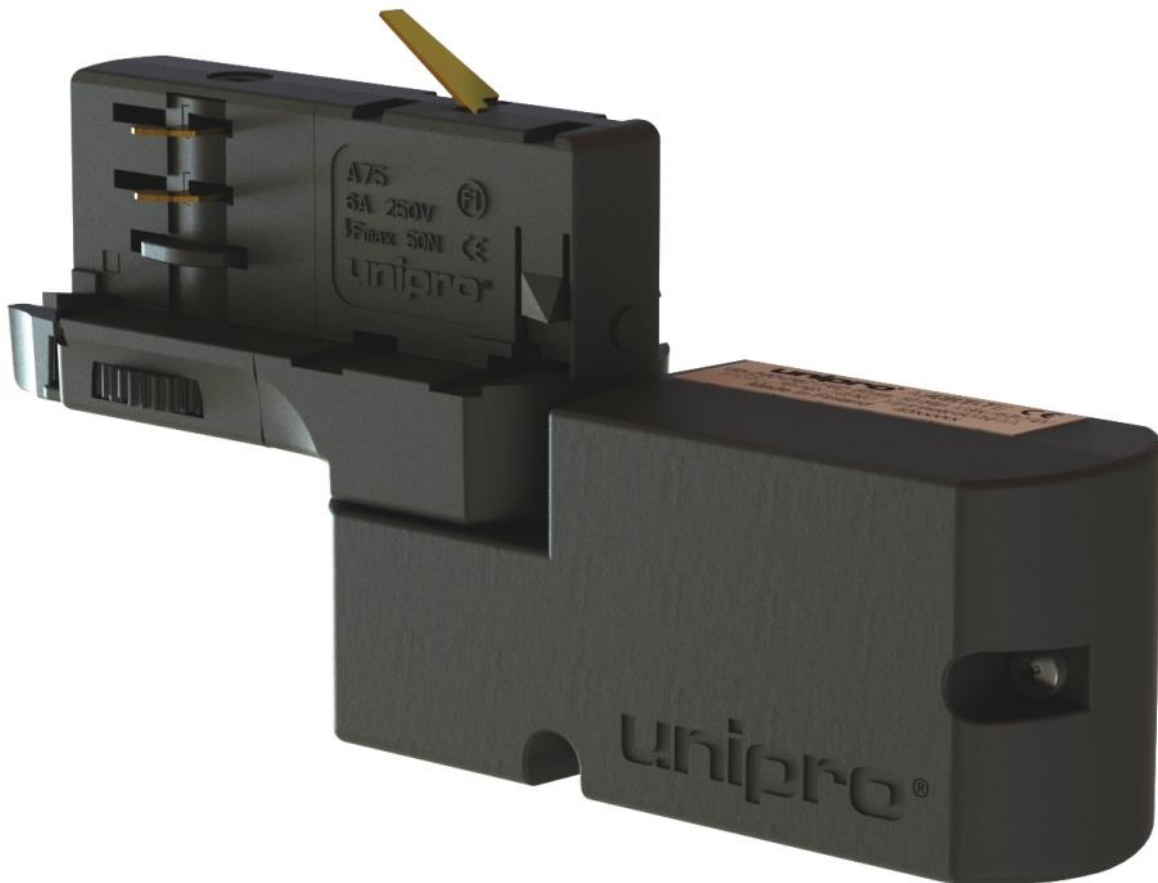
REFERENCES:

1. Casambi CBU-ASD datasheet V1.1

unipro® A80BT-TE datasheet

Features

- High quality trailing edge dimmer for dimmable mains voltage powered loads
- Wirelessly controllable with a smart device.
 - The Casambi app is available free of charge from Apple App Store and Google Play Store.
- Wirelessly updatable firmware
- Automatically creates a mesh network between devices
- No need for an external gateway device.
- Device firmware can be updated over-the-air.



Revision history

Revision	Date	Change
1	08.01.2016	Document created

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3	Load suitability for mains output.....	5
4	Protection Class	5
5	Integrated antenna.....	5
6	Case Temperature.....	6
7	Dimensions	6
8	Technical data	7

1 Description

A80BT-TE is high quality trailing edge dimmer for dimmable mains voltage powered loads and it is powered by Casambi CBU-TED and has the following features:

- Forms automatically a wireless mesh network with other devices
 - Wireless control with a Casambi app for smart phones and tablets.
 - App is available free of charge from Apple App Store and Google Play Store.
 - Integrates the use of regular wall switches for dimming and scene control.
 - With the free app it is also possible to use the following functions with A80BT-TE
 - Dimming of single or multiple luminaires equipped with A80BT-TE / A80BT with simple touch gestures.
 - Control luminaires visually directly from pictures of your shop, offices or personal rooms.
 - Set up scenes with several luminaires in them. It is possible to create up to 255 different scenes with up to 127 units in each scene. All the luminaires in one scene can have different light levels, colours and colour temperatures.
 - Use timers to turn on and off scenes at predefined times.
 - Define the security of the network. There are four different security levels for access control.
 - The strength of mesh network is the perfect control of multiple luminaires in a same network without gateways, routers, repeaters or extra wiring. A80BT-TE, A80BT, CBU-ASD and CBU-TED use Bluetooth Low Energy to form a direct connection between a mobile device and the unit.
 - A80BT-TE complements other Casambi powered products with mains voltage dimming. It is possible to use a single unit to control one luminaire or multiple units to create a perfect light control system.
- (CBU-TED datasheet V1)

2 Connections

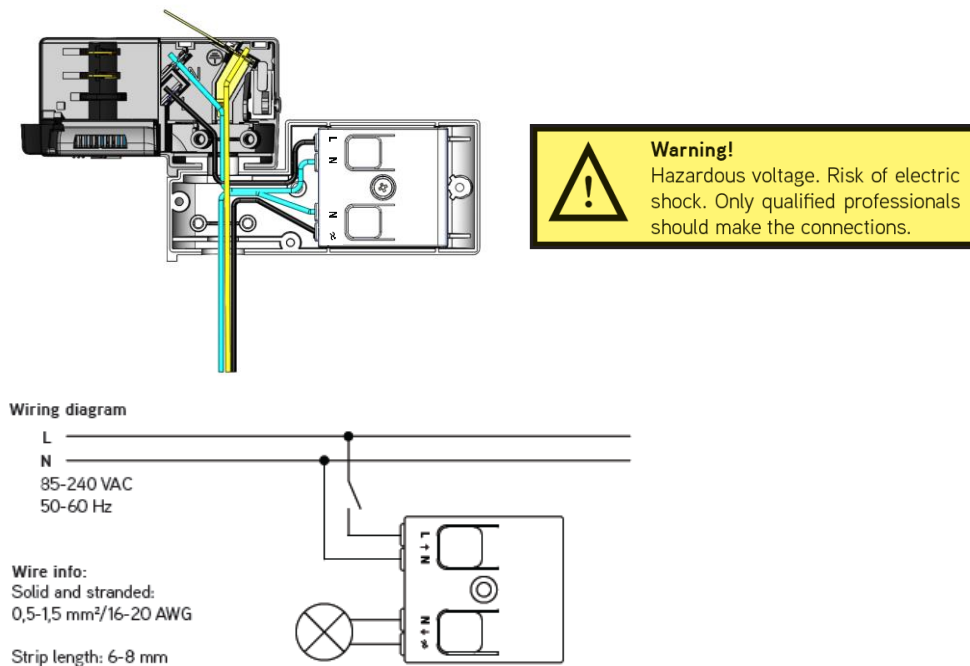


Figure 1. A80BT-TE module connections

3 Load suitability for mains output

Maximum loads for different types of load types are shown on table below:

Load Suitability		
Type of Load	Suitability	Comments
High voltage halogens, max. load 150 W		
High quality dimmable LED bulbs, max. load 50 W		Dimming quality depends solely on the LED bulb. See 1)
High quality dimmable CFL bulbs, max. load 50 W		Dimming quality depends solely on the CFL bulb. See 1)
Trailing edge dimmable LED drivers, max. load 50 W		Dimming quality depends solely on the LED driver. See 1)
AC LED modules, max. load 150 W		Depending on the LED modules. See 2)
Luminescent lamps, non-dimmable LED and CFL bulbs		Not supported.
Wire wound transformers, electric motors		Not supported. May cause permanent damage.

1) Load response and minimum dimming level depends on the LED/CFL driver.

2) Some AC LED modules may flicker at low dimming level.

4 Protection Class

A80BT-TE is IP20 Class I protected.

5 Integrated antenna

A80BT-TE has an integrated antenna. The antenna is located on right bottom the corner of the enclosure.

6 Case Temperature

Maximum case temperature of A80BT-TE on any point of case surface shall not exceed +65°C, otherwise it may have a negative effect on the lifetime or performance of the module.

7 Dimensions

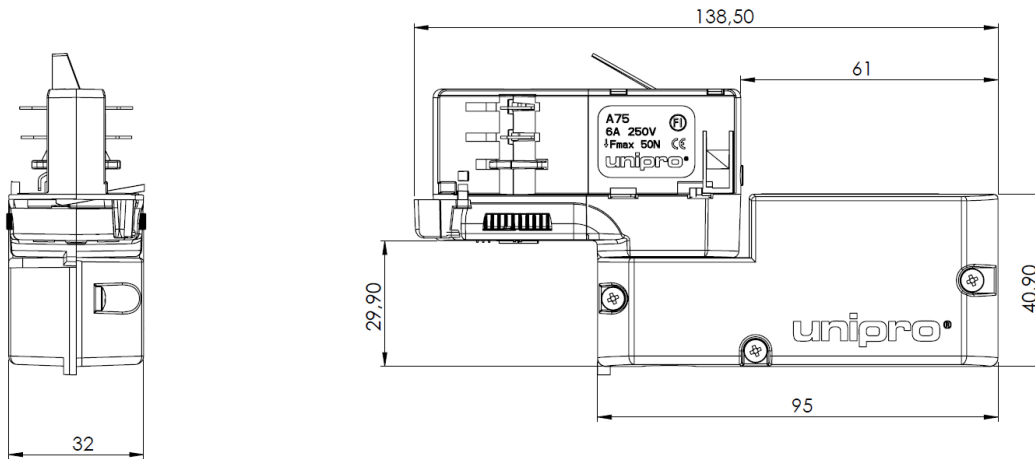


Figure 5. Dimensions for A80BT

8 Technical data

Input

Voltage range: 85-240 VAC

Frequency: 50-60 Hz

Max. mains current: 0,65 A

No-load standby power: < 0,3 W

Output

Dimming method: trailing-edge phase control

Max. output power:

- Incandescent and high voltage halogen bulbs: 150 W @ 230 VAC
(please note maximum tc temperature with luminaires that are producing excessive heat)
- High voltage AC LED modules: 150 W @ 230 VAC
- Dimmable LED and CFL bulbs: 50 W @ 230 VAC

- Dimmable electronic transformers: 50 W @ 230 VAC

Radio transceiver

Operating frequencies: 2,4...2,483 Ghz

Maximum output power: +4 dBm

Operating conditions

Ambient temperature, ta: -20...+45 °C

Max. case temperature, tc: +65 °C

Storage temperature: -25...+75 °C

Max. relative humidity: 0...80%, non-cond.

Connectors

Wire range, solid & stranded: 0,5-1,5 mm² (16-20 AWG)

Wire strip length: 6-8 mm

REFERENCES:

Casambi CBU-TED datasheet

unipro®

Unipro Oy Ltd.

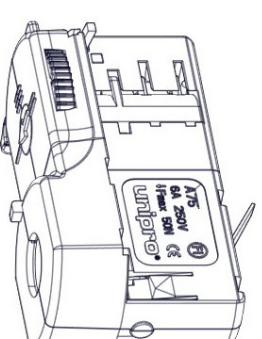
Konetie 25

FI-90620 Oulu

+358 207 450 800

www.unipro.fi

A75 ADAPTER INSTALLATION INSTRUCTION



Rated Value 6A, 250V

Protection Class I, IP20

Pull strength 50 N



unipro® products are manufactured from recyclable materials.

For more information about recycling, please contact your local municipal waste management authority.

ATTENTION!

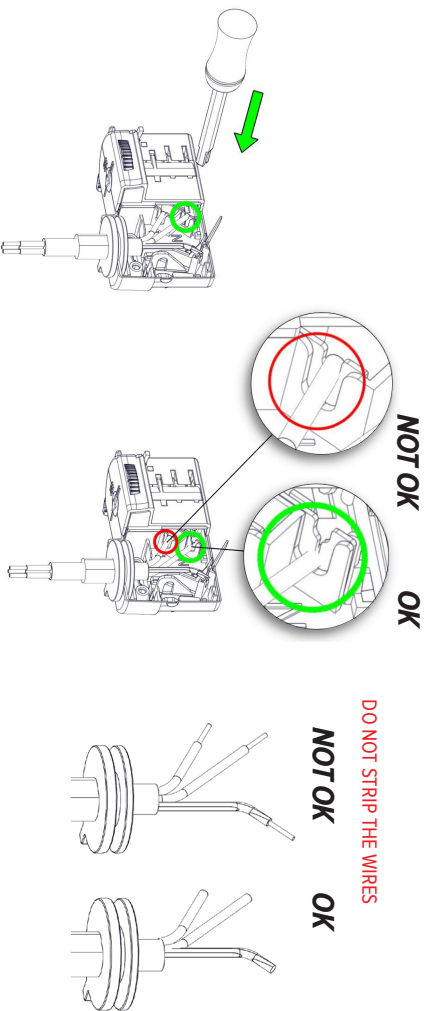
unipro® adapter must not be used with any type of solvent, adhesives, greases, oils, cleaning chemicals, etc.

A70 / A75 adapters are for connection of spotlights to unipro® and other suitable 3-phase tracks.
Compatible nipples for the adapter are unipro® ALN10R8 ja ALN10R12

Installation instructions for unipro® A75 adapter

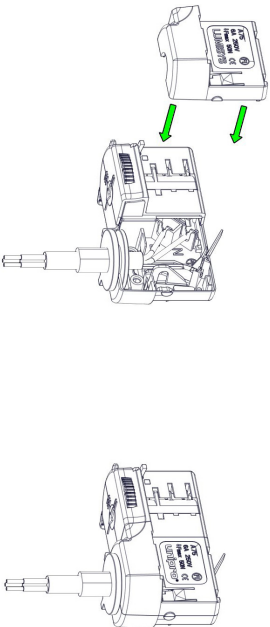
1. Press conductors to connectors using unipro® T1L -tool

Conductors must be pressed to bottom of slot in the connector to ensure reliable contact
Conductor size 0,5 - 1,0 mm²



2. Check that conductors are properly installed and assemble lid by pressing it to adapter body

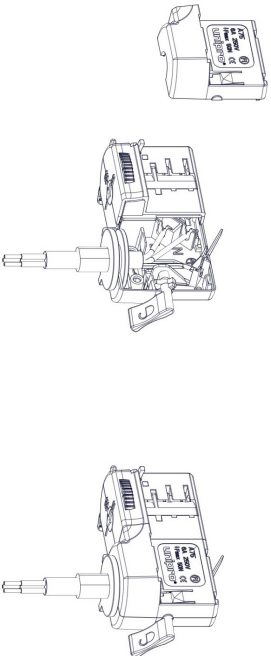
Lid cannot be removed after assembly



3. Installing unipro® L70 locker

Remove the locker hole cover from the lid and adapter body

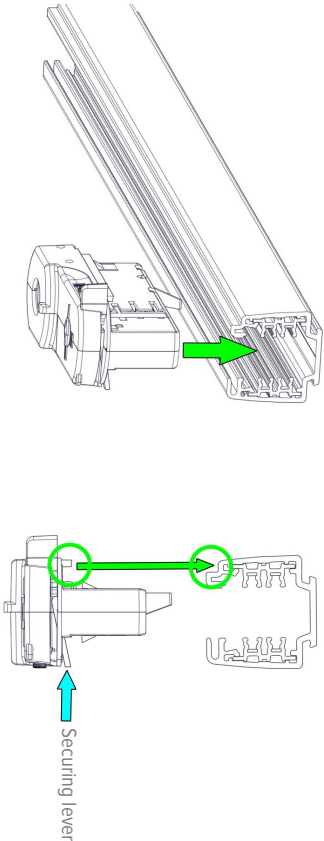
-Place the locker to its position in the adapter body
-Carefully press the lid to adapter body



unipro® A75 adapter installation to 3-circuit track

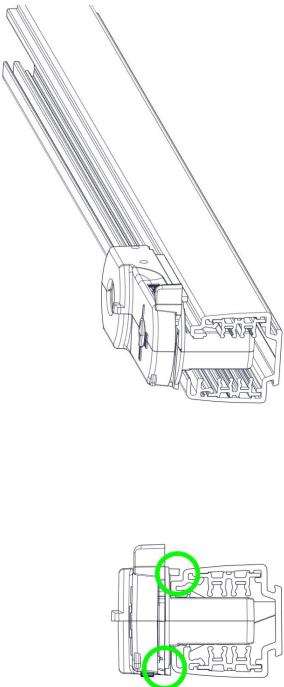
1. Check that adapter orientation is correct

Rib in the adapter is on the same side as groove in the track



2. Press adapter against track

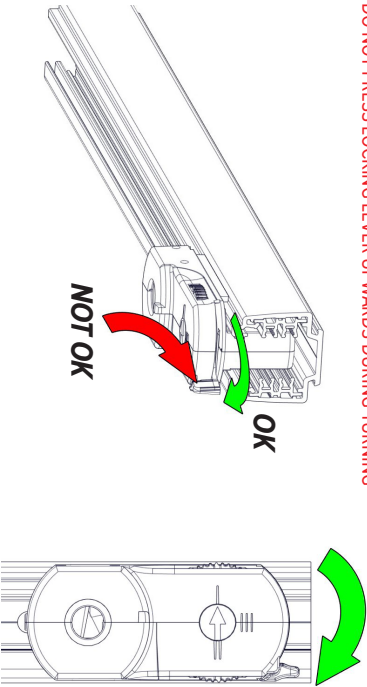
Check that securing lever is fully pressed against track
Rib in the adapter is in groove of the track



3. Turn locking lever to lock adapter to track

Locking lever is parallel to track when adapter is locked

DO NOT PRESS LOCKING LEVER UPWARDS DURING TURNING



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Konetie 25
FI-90620 Oulu, FINLAND
+358 207 450 800
www.unipro.fi



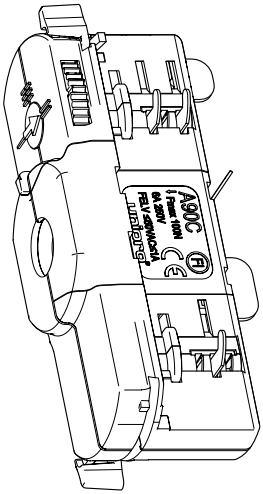
unipro® tuotteet valmistetaan kierrätettyistä materiaaleista. unipro® produkter tillverkas av återvinningsbart material. unipro® products are manufactured from recyclable materials.

unipro® kosketinkiskojärjestelmässä halogeenivapaita tuotteita ovat Control-DALI kosketinkiskot, Control-DALI liitososat ja muoviva sisälämätönätkiinnikkeet ja kannakkeet. De halogenfria produkterna inom unipro®-kontaktssystemet är Control-DALI-kontaktskenor, Control-DALI-kontaktkonsoler och de fria produkterna inom unipro®-lighting track family är Control-DALI-lighting tracks, Control-DALI accessories as well as all the brackets without any plastic parts.

unipro®

A90 / A90C

ASENNUSOHJE / INSTALLATIONSANVISNING / INSTALLATION INSTRUCTION



Nimellisarvot / Nominella värden / Rated values: **6A, 250V**
Suojaluokka / Skyddsklass / Protection class: **IP20**
Vetolujuus / Draghållfasthet / Pull strength: **100 N**

A90	A90	A90
Kohdevalaisimien kiinnitykseen unipro® T3 3-vaiheiskiskoon.	För anslutning av spotlights i unipro® T3 3-fassskenor.	For connection of spotlights to unipro® T3 3-phase tracks.

A90C	A90C	A90C
Kohdevalaisimien kiinnitykseen unipro® TC3 Control-DALI 3-vaiheiskiskoon.	För anslutning av spotlights i unipro® TC3 Control-DALI 3-fassskenor.	For connection of spotlights to unipro® TC3 Control-DALI tracks.

HUOMI:

unipro® adapterin kanssa ei saa käyttää minkäänlaisia liuottimia, liimoja, rasvoja, öljyjä, puhdistuskemikaaleja jne.

OBS!

Ingå som helst lösningsmedel, lim, fetter, oljor, rengöringskemikalier osv. får användas med unipro® adaptern.

ATTENTION!

Adapterin kanssa yhteensopivat nippeilit ovat unipro® ALNIO8 ja ALNIO12. Lämpiliga nipplar för adaptern är unipro® ALNIO8 och ALNIO12. Compatible nipples for the adapter are unipro® ALNIO8 and ALNIO12.

1. Paina johtimet liittimiin käyttämällä unipro® TIL -työkalua

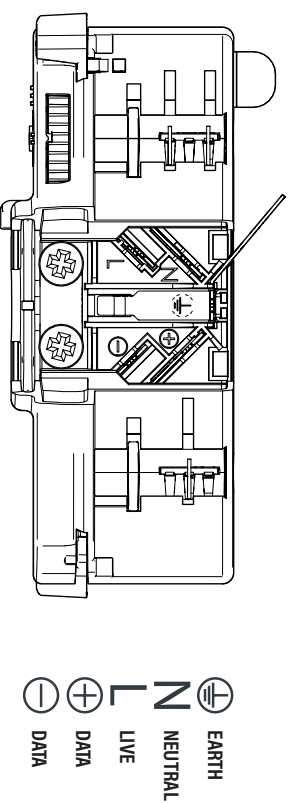
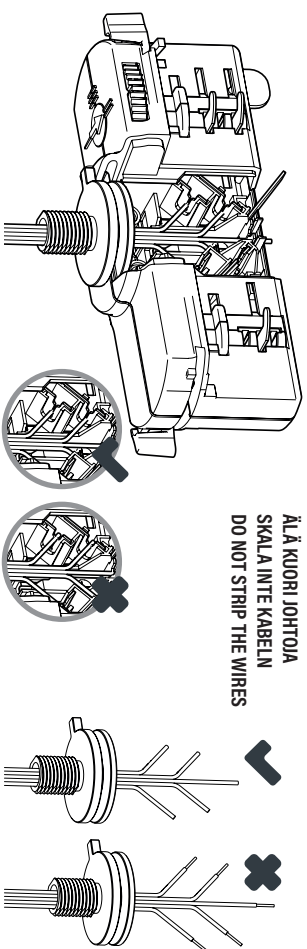
Johtimet pitää painaa liittimen pohjaan saakka hyvän kosketuksen saamiseksi. Johtimen koko 0,5 - 1,0 mm².

1. Tryck ledarna in i anslutningarna med unipro® TIL -verktyget

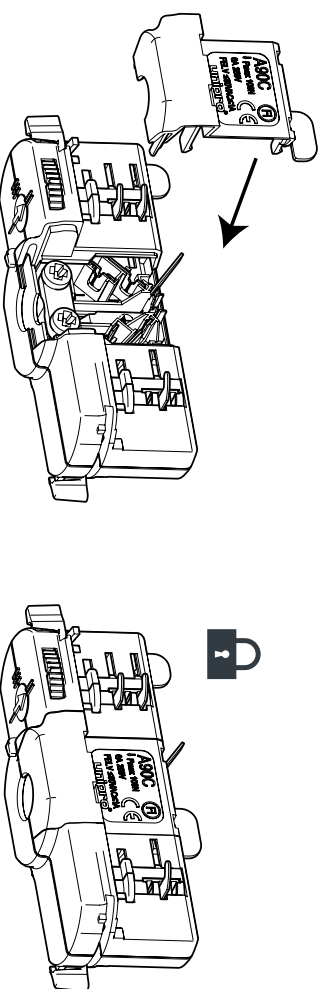
Ledarna måste tryckas ända ned till anslutningens botten för att säkerställa god kontakt. Ledarens storlek 0,5 - 1,0 mm².

1. Press conductors to connectors using unipro® TIL -tool

Conductors must be pressed to bottom of slot in the connector to ensure reliable contact. Conductor size 0,5 - 1,0 mm².



2. Tarkista, että johtimet ovat oikein asennettu ja asenna adapterin kansi painamalla se runkoon.
2. Kontrollera att ledarna är rätt installerade och montera adapterns skydd.
2. Check that conductors are properly installed and assemble lid by pressing it to adapter body.



1. Varmista, että adapteri on oikein päin.

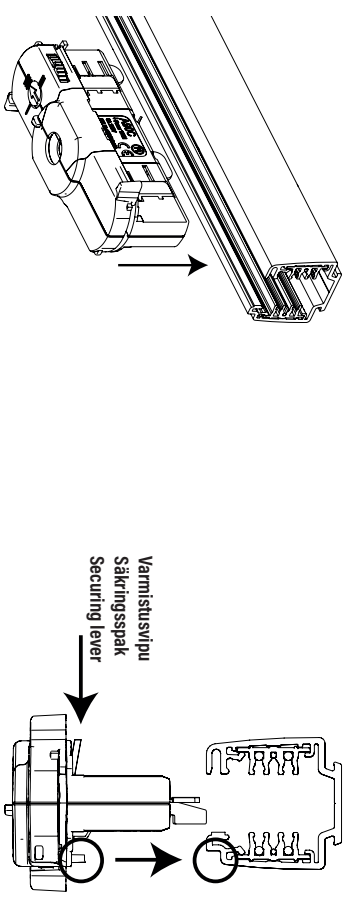
Adapterin riipa on samalla puolella kuin ura kosketinkiskossa.

1. Säkerställ att adaptern är rätt vänd.

Adapterns fläns ska vara på samma sida som spåret i kontaktskenan.

1. Check that adapter orientation is correct.

Rib in the adapter is on the same side as groove in the track.



2. Paina adapteri kosketinkiskoon kiinni.

Varmista, että varmistusvipu painuu pohjaan kosketinkiskoa vasten. Adapterin riipa painuu kosketinkiskossa olevaan uraan.

2. Tryck fast adaptern i kontaktskenan.

Säkerställ att säkringsspaken går ned till botten mot kontaktskenan. Adapterns fläns trycks in i spåret på kontaktskenan.

2. Press adapter against track.

Check that securing lever is fully pressed against track and the rib in the adapter is in groove of the track.



3. Käännä lukitusvipua lukitaksesi adapteri paikalleen.

Lukitusvipu on yhdensuuntainen kosketinkiskon kanssa kun adapteri on lukittu.

3. Vrid låsningsspaken för att låsa adaptern på sin plats.

Låsningsspaken ligger parallellt med kontaktskenan när adaptern är låst.

3. Turn locking lever to lock adapter to track.

Locking lever is parallel to track when adapter is locked.



Unipro Oy Ltd.

Konetie 25

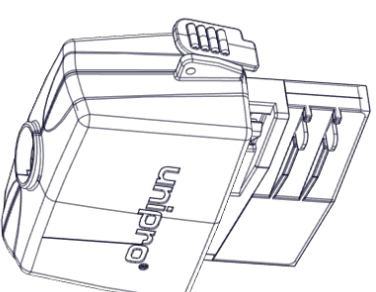
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unipro®

A100 POWER TAKE-OFF ADAPTER INSTALLATION INSTRUCTION



Rated Value 16A, 400VAC
Protection Class I, IP20
Pull strength 100 N



unipro® products are manufactured from recyclable materials.

For more information about recycling, please contact your local municipal waste management authority.

ATTENTION!

unipro® adapter must not be used with any type of solvent, adhesives, greases, oils, cleaning chemicals, etc.

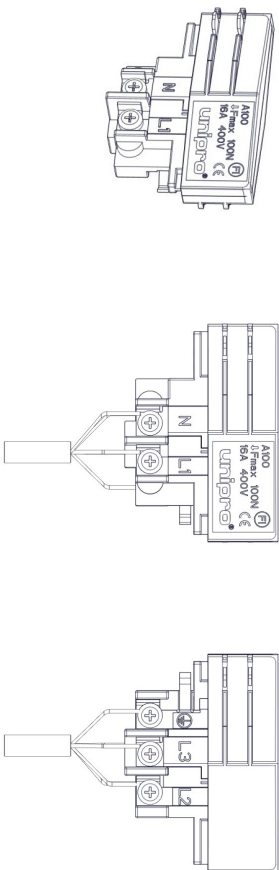
Adapter A100 is compatible with unipro® 3-circuit T3.. and T3..F lighting tracks.

Adapter is used to connect lighting fixtures and 1- and 3- phase devices to lighting track

Installation instructions for unipro® A100 power take-off adapter

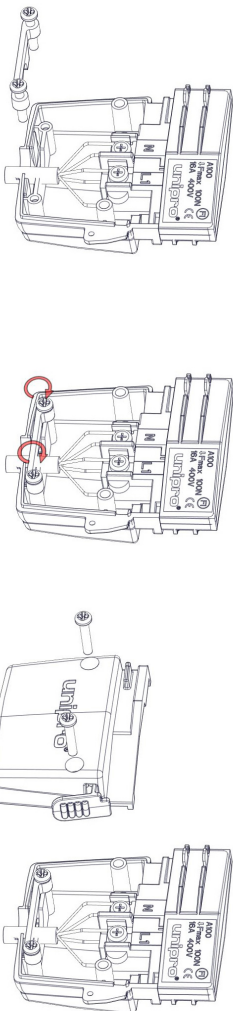
1. Instal conductors to screw terminals

Conductors must be stripped before screwing them to connector to ensure reliable contact. Stranded or solid wire, 1,5 - 2,5 mm². Fork or pin terminals must be used with stranded wires.

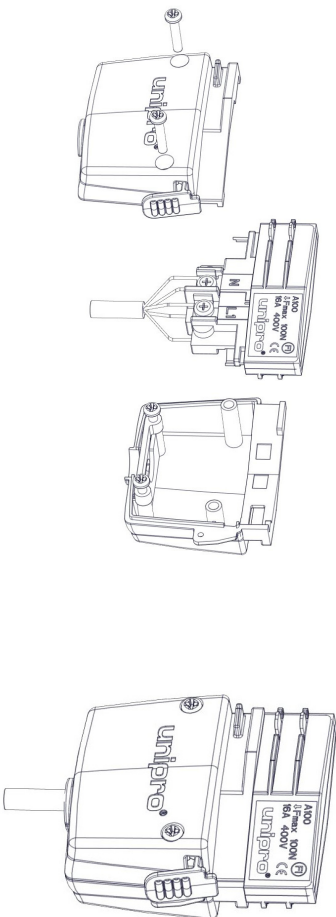


2. Instal strain relief

For strain relief, minimum outer diameter of wire 7 mm.



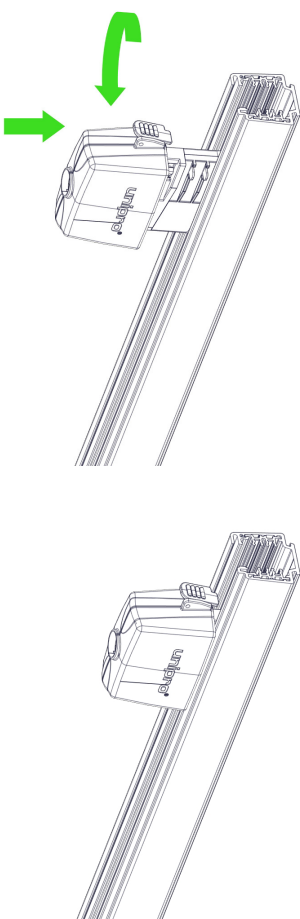
3. Close adapter covers



unipro® A100 power take-off adapter installation to 3-circuit track

1. Fastening power take-off adapter to track

Press power take-off adapter against the track
Turn power take-off adapter to lock it to track.



2. Removing power take-off adapter from track

Check that securing lever is fully pressed against track
Rib in the adapter is in groove of the track

