

User Manual and Safety Guide

DoP Converter DINrail and DoP Converter UM DMX over Power Line Converters



Rev. 20220320-01



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GLP® DoP Converter DINrail/UM User Manual – Revision 20220320-01

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Manufacturer's head office:

German Light Products GmbH (GLP), Industriestrasse 2, 76307 Karlsbad, Germany
Tel (Germany): +49 7248 92719 - 0

Service & Support EMEA:

GLP, Industriestrasse 2, 76307 Karlsbad, Germany
Tel. (Germany): +49 7248 9271955
Email: support@glp.de
www.glp.de

Service & Support USA:

GLP USA, 1145 Arroyo St., Ste. A, 91340 San Fernando, California
Tel (USA): +1 818 767 8899
Support (US): info@germanlightproducts.com
www.germanlightproducts.com

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1. Safety

Key to symbols

The following symbols are used in this user manual:



Warning! Safety hazard.
Risk of severe injury or death.



Warning! Hazardous voltage.
Risk of lethal or severe electric shock.



Warning! See user manual for important safety information.



Warning! Fire hazard.



Warning! Risk of eye injury.



General safety information

Read this manual carefully before installing, using or servicing a GLP DoP (DMX over Power Line) Converter UM or DINrail.

If you have any doubts or questions about how to use the DoP Converter safely, please contact your GLP® supplier who will be happy to help.

This document is supplied with the DoP Converter and available for download from the GLP website at www.glp.de. Check the GLP website when you unbox the converter and periodically while using the converter to make sure that you have the latest version of this document.

The GLP DoP Converter is intended for use by experienced professionals with the knowledge and skills to set up, operate, and maintain high-powered, remotely controlled lighting equipment safely and efficiently. These operations require expertise that may not be provided in the user documentation.


- Respect all warnings and directions given in the user documentation and on products. Read the user documentation and familiarize yourself with the safety precautions it contains before installing or using the products. GLP and affiliated companies will take no responsibility for damage or injury resulting from disregard for the information in the user documentation.
- Check the GLP website at www.glp.de and make sure that you have the latest version of this manual. Check the software version indicated on page 2 of this manual and then check the version displayed in the DoP Converter's control panel. If the versions are not the same, this manual may still cover your converter because

software updates do not always affect the way you use the elements in the system. However, it is possible that this manual does not match the system perfectly. Software release notes can help clarify this question. You can consult software release notes and download the correct version of this manual on the GLP website if necessary.

- Make all user documentation available to all installers and operators. Save this user manual for future reference.
- If you have any questions about the safe operation of the DoP Converter, please contact an authorized GLP distributor (see list of distributors at www.glp.de).
- Use the DoP Converter only as directed in this manual. Observe all markings in this manual and on the products.
- Refer all repairs and any service operation not described in this manual to a technician authorized by GLP.
- Read and follow the user documentation for all additional equipment.



Electrical safety

- The DoP Converter has screw terminals that are live when power is applied to the DoP Converter and that can present a danger of lethal electric shock. Make sure that it is impossible for people to come into contact with live parts while power is applied to the DoP Converter by blocking access to the DoP Converter or locating the DoP Converter out of reach. Put up notices warning of the danger of electric shock.
- As soon as you apply power to the DoP Converter DINrail model's mains power IN terminals, the mains power OUT (thru) terminals become live. If you are not using the power OUT terminals, install a connector on the terminals to make accidental contact with them impossible. Install the DoP Converter DINrail version inside a closed electric power cabinet that is marked with a highly visible electric shock hazard warning sign similar to the one shown on the right. 
- Before using the DoP Converter's mains power OUT terminals to relay power to lighting fixtures (or other devices) in a daisy chain, add together the current draw of all the fixtures in the chain and do not allow the total current draw to exceed 16 A maximum.
- Support the weight of all cable runs so that they do not pull on the connections to screw terminals.
- Use the DoP Converter in dry locations only. Do not allow the product to become immersed. Do not expose the product to water or moisture.
- Use only a source of AC mains power that complies with local building and electrical codes and has both overload and ground fault (earth fault) protection.
- Disconnect the installation from AC mains power before carrying out any installation or service work and when the installation is not in use.

- Disconnect the DoP Converter from power immediately if the DoP Converter or any component appears to be damaged, defective, deformed or showing signs of overheating. Do not reapply power until the item has been repaired and judged to be safe by a technician authorized by GLP.
- Check that all power distribution equipment, cables and connectors are in perfect condition, rated for the electrical requirements of all connected devices, suitable for their application and suitable for the installation environment.
- Do not connect devices to power in a chain if the total maximum current draw of all the devices in the chain when added together will exceed the current rating of any cable or connector used at any point in the chain.
- The voltage and frequency at the DoP Converter's mains power output terminals are the same as the voltage and frequency applied to the mains power input terminals. Only connect devices to the mains power output terminals that accept this voltage and frequency.
- The DoP Converter does not have a user-replaceable fuse. If you suspect that a fuse has blown, disconnect the Converter from power and send it to a technician authorized by GLP for repair.
- Check the user documentation of all the devices that you connect to the DoP Converter and follow all the safety precautions and instructions provided by the device manufacturers.



Fire safety and protection from burns

- Do not operate the DoP Converter if the ambient temperature (T_a) exceeds 45° C (115° F).
- Do not install the DoP Converter in direct sunlight.
- Keep flammable materials such as volatile liquids well away from the DoP Converter.
- Install the DoP Converter in a ventilated area only.



Installation safety and protection from personal injury

- Installation must be performed by qualified personnel only and carried out in accordance with applicable regulations such as DIN VDE 0711-217.
- The safety of the installation is the responsibility of the installer.
- Install the DoP Converter only as directed in this manual.

- Restrict access below the work area and work from a stable platform whenever installing or servicing the DoP Converter overhead.
- Make sure that it is impossible for the DoP Converter to fall and cause injury or damage when installed.
- If a DoP Converter becomes damaged, stop using it immediately and disconnect it from power. Do not attempt to use a product that is obviously damaged.
- Do not modify the DoP Converter in any way that is not described in its user documentation.
- Install genuine GLP parts only.

2. DoP Converter DINrail overview

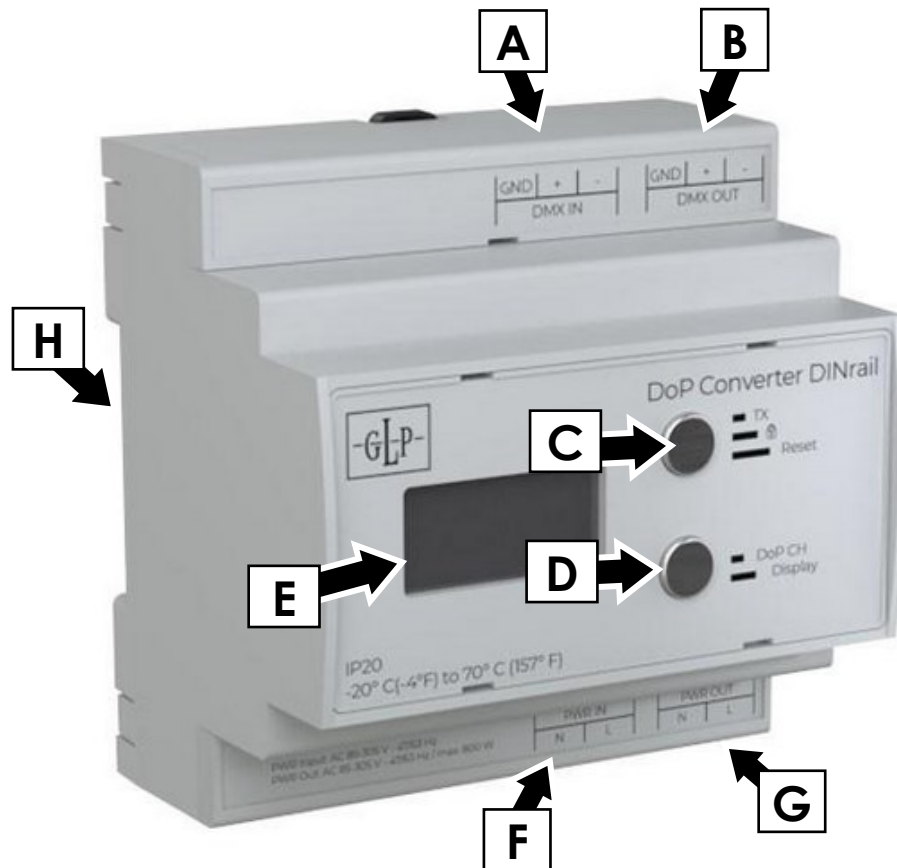
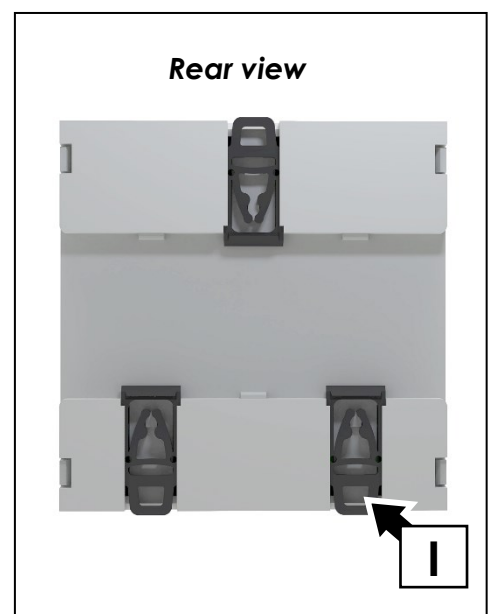


Figure 1. DoP Converter DINrail (DIN rail mount version) overview

- A – DMX IN terminals
 - B – DMX OUT terminals
 - C – Control button A
 - D – Control button B
 - E – Monochrome OLED display
 - F – Mains power IN terminals (Live, Neutral)
 - G – Mains power OUT (thru) terminals (Live, Neutral)
- WARNING! These terminals are live as soon as power is applied to the mains power IN terminals!**
- H – 35 mm DIN rail mounting, EN5022
 - I – Rear view: DIN rail mounting clips (x 3)



3. DoP Converter UM overview

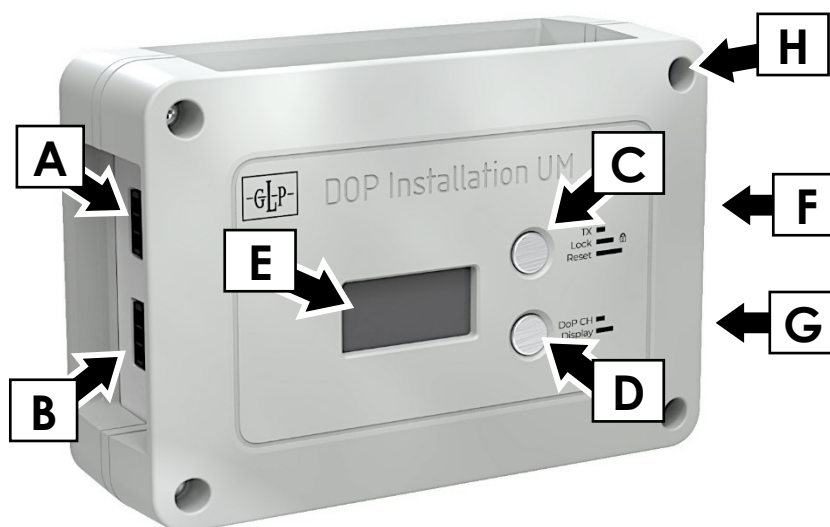


Figure 2. DoP Converter UM (universal mount version) overview

- A – DMX IN terminals
- B – DMX OUT terminals
- C – Control button A
- D – Control button B
- E – Monochrome OLED display
- F – Mains power IN terminals (Live, Neutral, Ground/Earth*)
- G – Mains power OUT terminals (Live, Neutral, Ground/Earth*)
- H – Mounting points (x 4) for optional surface mounting bracket

**Ground/Earth connection is provided for convenience when looping through and is not required by the DOP converter*

4. Introduction

The DoP Converter from GLP is an interface which can transmit DMX data over an existing power line, reducing the need for DMX cabling.

GLP's DoP technology makes it possible to transmit up to ten DMX universes over one AC mains power line that can be up to 300 m / 980 ft. long.

DoP Converter mounting versions

The DoP Converter is available in two housing versions to suit different types of installation:

- **DoP Converter DINrail** – designed for mounting on standard 35 mm EN 5022 DIN rail.
- **DoP Converter UM** – designed for universal mounting: can be mounted on a surface or structure with or without the optional mounting bracket from GLP.

DoP Converter operating modes

Both DoP Converter versions can operate in two modes:

- **Transmitting (TX) mode** – the Converter takes the DMX signal that it is receiving at its DMX input and modulates it on the power line output. All Converters can modulate 512 DMX channels.
- **Receiving (RX) mode** – the Converter demodulates the DMX signal that it is receiving on the power line input and sends it via its DMX output. Depending on the RX channel version of the Converter (see below), it is possible to demodulate 24 (RX024), 128 (RX128) or 512 (RX512) DMX channels.

DoP Converter RX channel versions

DoP Converter DINrail and UM versions are available in three different RX channel versions. All versions will always convert all 512 DMX channels to a DoP signal when the Converter is in transmitter mode (TX). But the versions have a different number of DMX channels available when the Converter is in receiving mode (RX):

- **TX512/RX024** – This version will convert up to **24 DMX channels** from a DoP signal back to DMX channels and send them via its DMX output.
- **TX512/RX128** – This version will convert up to **128 DMX channels** from a DoP signal back to DMX channels and send them via its DMX output.
- **TX512/RX512** – This version will convert up to **512 DMX channels** from a DoP signal back to DMX channels and send them via its DMX output.

5. Installation



Warning! Read 'Safety' starting on page 4 for important safety information that you must understand before you install or operate a GLP DoP system. Install DoP Converters only as described in this chapter, or you may create an installation that is unsafe.

The safety of the installation is the responsibility of the installer. If in any doubt about safety, consult an expert or contact your GLP supplier for advice.

Installation and system limitations

The DoP system uses a high-frequency signal that can interfere with any other systems that use the same frequency band to send a data signal over mains power circuits. Note that the DoP data is freely transmitted over the power network within the transmission range of the DoP Converter.

If you need to prevent the transmission of DoP data over the mains power infrastructure, we recommend that you install line filters that block the DoP signal at the appropriate system endpoints.

When installing DoP systems, observe the following safety limits and recommendations:

Description	Limits
Mains power input/output	Minimum 85 VAC nominal, 47/63 Hz Maximum 305 VAC nominal, 47/63 Hz
Mains current safety limit	Maximum permitted current flow through the DoP Converter = 16 A.
Operating temperature range	Minimum -20° C (-4°F) Maximum 70° C (158°F)
Recommended DMX cable type	DMX cable, 2 x 0.34 mm ² Cat 5e/7 cable, 27 AWG
Maximum number of devices on one DMX link	32 devices
Maximum number of devices on one mains power line	Theoretically 128 devices Recommended maximum 32 devices
Maximum DMX cable length between two devices	100 m / 328 ft. (DMX cable, 2 x 0.34 mm ²) 125 m / 410 ft. (Cat 5e/7 cable, 27 AWG)

Maximum DMX cable length from controller to last device on DMX link	250 m / 820 ft. (DMX cable, 2 x 0.34mm ²) 310 m / 1017 ft. (Cat 5e/7 cable, 27 AWG)
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★ Important! The above information is based on a theoretical best possible transmission rate under ideal conditions. The functionality of GLP DoP systems is very much dependent on the type of installation (cable lengths, installation materials, cable types and environmental influences such as the presence of external interference etc.). Actual data throughput also depends heavily on network conditions and environmental factors, including traffic volume and network overhead. Interference from devices that generate electrical noise can also affect the performance of this product.

These factors can cause actual transmission performance to vary greatly in practice. GLP is not liable for impaired functionality due to factors beyond its control such as external interference, poor installation methods or poor quality of installation infrastructure materials.

We strongly recommend that you carry out a test setup under real ambient conditions before creating a complex fixed installation.

Physical installation



Warning! Read 'Safety' starting on page 4 for important safety information that you must understand before you install or operate the fixture.

Install the DoP Converter in a ventilated, dry location only.

You can install the Converter in any orientation.

Installing the DIN rail model

To install the DoP Converter DINrail, clip it onto standard 35 mm top-hat DIN rail that is securely mounted on a surface or structure.

To remove the DoP Converter DINrail, use an electrician's screwdriver to release the clips (see I in 'DoP Converter DINrail overview' on page 8).

Installing the UM model

You can mount the DoP Converter UM either directly onto a mounting surface or first onto a mounting bracket (orderable separately) and then onto a mounting surface.

Use 4.5 mm fasteners (such as screws with wall plugs or machine screws with washers and self-locking nuts, for example) in high-strength steel that are suitable for the application, the mounting surface and the installation environment.

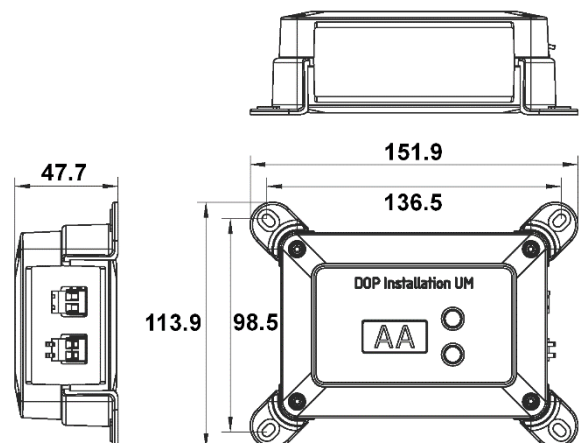
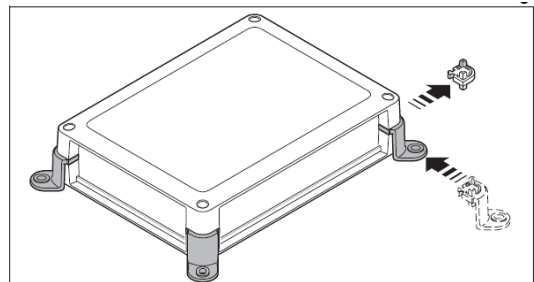
The DoP Converter UM comes in a compact housing and is ideal for placing in installations in corners, IP-rated weather protection housings, suspended ceilings, or anywhere that you need it.

Fastening to a surface

The supplied "Wall bracket for UCSWM-B" lets you install the DoP Converter UM directly on a mounting surface.

To install the DoP Converter UM using the wall bracket:

1. Replace the corner inserts with corner mounting clips (see illustration on right).
2. Prepare four holes with the dimensions 136.5 x 98.5 mm (see illustration on right).
3. Fasten the clips to the surface using 4.5 mm fasteners (screws with screw plugs or machine screws with washers and self-locking nuts, for example) in high-strength steel that are suitable for the mounting surface and the installation environment.



6. Connecting to AC mains power



Warning! Read 'Safety' starting on page 4 for important safety information that you must understand before you install or operate the fixture.

Check that all cables and connectors are suitable for the installation environment and application.

Provide supports to carry the weight of all cable runs. Do not allow the weight of cables to hang from screw terminals, as this may pull cables out of the terminals and create a risk of serious or lethal electric shock.

The AC mains power supply must be protected against ground / earth leakage and overload. The DoP Converter's internal power circuits accept AC power at 100-240 V, 50/60 Hz. Do not connect the Converter to power at any other voltage or to an external dimmer.

All DoP Converters are class II protected and do not require a ground / protective earth connection.

The DoP Converter does not have a power ON/OFF switch. Power is applied to the Converter as soon as a power cable connected to the Converter becomes live.

The voltage at the DoP Converter's mains power throughput terminals is the same as that at the input terminals.

DoP Converter DINrail

The DoP Converter DINrail does not have ground / earth connection terminals. Use the external installation options on your electrical distribution board or control cabinet to connect the electrical installation correctly to ground / earth.

The DoP Converter DINrail has two screw terminals for mains power input (L / N) and two terminals for mains power throughput (L / N).



Warning! As soon as you apply power to the DoP Converter DINrail model's mains power IN terminals, the mains power OUT (thru) terminals become live. If you are not using the power OUT terminals, install a connector on the terminals to make accidental contact with the terminals impossible. Install the DoP Converter DINrail version inside a closed electric power cabinet that is clearly marked with an electric shock hazard warning notice similar to the one shown on the right.



DoP Converter UM

The DoP Converter UM has three screw terminals for mains power input (L / N / Ground) and three terminals for mains power throughput (L / N / Ground). The voltage at the throughput terminals is the same as that at the input terminals.

- The **DoP Converter UM** does not need to be connected to ground / earth but it has ground / earth terminals that you can use to loop through the earth / ground conductor when using three-conductor mains power cable. If you do not use the DoP Converter UM's ground /earth terminals, use the external installation options on your electrical distribution board or control cabinet to connect the electrical installation correctly to ground / earth.



Warning! If you daisy-chain the ground /earth conductor using the DoP Converter UM's GROUND IN and GROUND OUT terminals, note that disconnecting these terminals disconnects the ground / earth protection circuit.

Connecting to power

To connect the DoP Converter DINrail or DoP Converter UM to power:

1. Shut down and lock out power to the power input cable.
2. Prepare the power input cable by stripping a small amount of insulation from the end of each conductor as follows:
 - DoP Converter DINrail – remove approximately 4 mm (1/8 inch) of insulation
 - DoP Converter UM – remove approximately 9 mm (3/8 inch) of insulation.
3. Fasten the conductors into the supplied power input quick connector clip as follows:
 - Fasten the neutral conductor into the power input terminal marked **N**
 - Fasten the live conductor into the power input terminal marked **L**
 - The DoP Converter DINrail does not include a ground / earth connection, so you will need to make a separate, external connection to ensure continuity of the ground / earth conductor when connecting devices to power in a daisy-chain.
 - On the DoP Converter UM only: If you are using three-conductor power cable, fasten the earth / ground conductor into the power input terminal marked **PE**. This conductor is not necessary for the operation or safety of the DoP Converter UM and will simply be looped through to the earth / ground output terminal.
 - **Warning!** On the DoP Converter DINrail, as soon as you apply power to the power input cable, the exposed power OUT (thru) terminals become live. Take measures to avoid accidental contact with these terminals. See warning at the beginning of this chapter or on page 5 of this user manual.
 - **Warning!** On the DoP Converter UM, if you disconnect the earth / ground conductor from power IN or power OUT terminals, you will remove the ground / earth protection from all devices connected to the DoP Converter.

Check that all conductors are held securely and cannot be pulled out of the terminals.

4. Fasten the power output / throughput cable to the power output quick connector clip as described above.
5. Insert the quick connector clips into their correct position for power IN and power OUT on the DoP Converter.
6. Do not apply power to the installation until all installation work is complete and the installation has been carefully checked for safety.

To disconnect the DoP Converter, shut down and lock out power to the installation, then remove the quick connectors from the Converter.

Respect the wire color coding in your local mains power wiring system. US and EU systems use the color coding shown below:

	Live or L	Neutral or N	Ground / Earth or PE or ⊕
US system	Black	White	Green
EU system	Brown or black	Blue	Yellow/green

7. Connecting to DMX / RDM

If you would like advice with planning and installing a DMX / RDM link, your GLP supplier will be happy to help.

Provide supports to carry the weight of all cable runs. Do not allow the weight of cables to hang from screw terminals, as this may pull wires out of the terminals and cause a failure of data transmission.

Transmitter mode

When in transmitter mode (TX), the DoP Converter inserts the DMX / RDM signal that is present at its **DMX IN** terminals into a DoP signal and sends it over the mains power cable that is connected to its **PWR** out terminals.

To connect a DMX controller to the DoP Converter:

1. Shut down power to the installation.
2. Prepare the DMX input cable by stripping approximately 6 mm (1/4 inch) of insulation from the hot (positive) and cold (negative) conductors.
3. Fasten the conductors into the quick connector clip terminals marked **DMX IN** as follows:
 - Insert the shield conductor into the terminal marked **GND**
 - Insert the hot DMX conductor into the terminal marked **+**
 - Insert the cold DMX conductor into the terminal marked **-**

Check that the conductors are held securely and cannot be pulled out of the terminals.

If needed, you can use the DoP Converter's DMX OUT connections to relay the DMX signal through multiple DoP Converters and to other DMX devices in a DMX daisy chain.

Receiver mode

When in receiver mode (RX), the DoP Converter demodulates the DMX / RDM signal from the mains power cable that is connected to its **PWR IN** terminals and relays it to other DMX-controlled devices via DMX cable connected to its **DMX OUT** terminals.

To connect DMX-controlled devices to the DoP Converter:

1. Shut down power to the installation.
2. Prepare the DMX output / throughput cable by stripping approximately 6 mm (0.3 inches) of insulation from the hot (positive) and cold (negative) conductors.
3. Fasten the conductors into the quick connector clip terminals marked **DMX OUT** as follows:
 - Insert the shield conductor into the terminal marked **GND**
 - Insert the hot DMX conductor into the terminal marked **+**
 - Insert the cold DMX conductor into the terminal marked **-**

Check that the conductors are held securely and cannot be pulled out of the terminals.

★ Important! See 'Installation and system limitations' on page 11. Electromagnetic interference and disturbances on the mains power line can affect the performance of the system. We strongly recommend that you test system functionality under real conditions and adjust cable length and shielding as necessary.

8. Setting up the DoP Converter

Recommended setup sequence

After physically installing the DoP Converter and making power and DMX connections, configure the Converter as follows:

1. Select the appropriate operating mode depending on whether the Converter will be used as a transmitter or a receiver.
2. Select the DoP channel that you want to use (see 'Setting the DoP channel' on page 22).
3. Move the DMX start address if needed* (see 'RX start address' on page 22)
4. Lock / unlock the display or change between display modes (see 'Locking and unlocking the control panel' on page 23 and 'Display modes' on page 23)

*Optional step

Control panel display



See illustration above. The DoP Converter's display shows information on:

Top line:

- Currently installed device software / firmware version
- DoP Converter version (number of DMX channels available for transmission)
- Control panel locked / unlocked
- Display auto sleep setting

Second line:

- Current mode (TX or RX) followed by:
 - TX mode – number of DMX channels being used for transmitting + currently active DoP channel

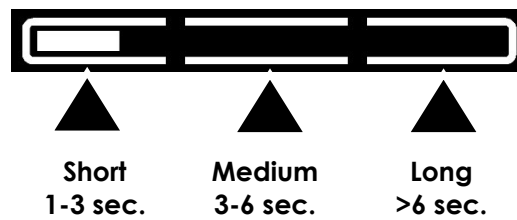
- RX mode – number of DMX channels being used for receiving + DMX start address.

Third and fourth lines:

- Current DMX and DoP signal status

Control Button Functions

The DoP Converter's control buttons have different functions depending on the length of time you hold the button pressed in. The button press status is indicated by a line in a box at the top of the display (see illustration below). The three sections of the box indicate the length of time the button is pressed.



The functions of the control buttons are as shown below:

	Short press (press and hold for 1-3 seconds)	Medium press (press and hold for 3-6 seconds)	Long press (press and hold for 6 seconds or more)
Button A	Toggle TX and RX modes (see Operating modes on page 21)	Toggle control panel LOCK and UNLOCK (see 'Locking and unlocking the control panel' on page 23)	Reset the Converter (See 'Resetting the Converter' on page 24)
Button B	Set DoP Channel from 01 to 10 (See 'Setting the DoP channel' on page 22)	Toggle display mode (ON / Auto) (See 'Display modes' on page 23)	Load factory default settings (See 'Restoring factory default settings' on page 24)

9. Features and settings

Overview of Converter versions available

The following versions of the DoP Converter DINrail and DoP Converter UM are available.

TX512/RX024

A GLP DoP Converter UM / DINrail TX512/RX024 version will always convert all 512 DMX channels to a DoP signal in transmitter mode (TX). It will reconvert up to **24 DMX channels** from a DoP signal back to a DMX signal at its DMX output.

TX512/RX128

A GLP DoP Converter UM / DINrail TX512/RX128 version will always convert all 512 DMX channels to a DoP signal in transmitter mode (TX). It will reconvert up to **128 DMX channels** from a DoP signal back to a DMX signal at its DMX output.

TX512/RX512

A GLP DoP Converter UM / DINrail TX512/RX512 version will always convert all 512 DMX channels to a DoP signal in transmitter mode (TX). It will reconvert up to **512 DMX channels** from a DoP signal back to a DMX signal at its DMX output.

Operating modes

The GLP DoP Converter DINrail / UM can operate as a transmitter (TX) or as a receiver (RX).

In Transmitter Mode (TX) the Converter takes the standard DMX signal that it is receiving and converts it to a DoP signal. The number behind the "TX" indicates how many DMX channels will be modulated. In all versions of the DoP Converter, all the 512 DMX channels received will be converted to DoP (TX512). The Converter then transmits this DoP signal on the selected DoP Channel on the power line that the Converter is connected to.

In Receiver Mode (RX) the Converter takes the DoP signal that it is receiving on its selected DoP channel on the power line that the Converter is connected to and converts it to a standard DMX data signal. The Converter then sends this DMX signal via its DMX output. The number behind the "RX" shows how many DMX channels the Converter will be able to demodulate. Depending on the converter version, it is possible to demodulate 24 (RX024), 128 (RX128) or 512 (RX512) DMX channels.

To toggle between transmitter and receiver modes, press and hold control button **A** for between 1 and 3 seconds. The display will indicate the current operating mode as TX or RX.

Setting the DoP channel

The GLP DoP Converter can transmit or receive a GLP DoP signal on one of ten different DoP channels via the same mains power line. This means that up to ten DMX universes in total can be transmitted over the same power line.

To set the DoP channel that the Converter uses:

1. Press and hold control button **B** for 1-3 seconds. The current DoP channel will appear in the center of the LCD display. The default DoP channel is Channel 01.
2. Press and hold control button **A** for 1-3 seconds to increase the DoP channel number by one (from 01 to 02, for example). Each short press on control button **A** increases the channel number by one. After DoP channel 10 the number begins again at DoP channel 01.

DoP in GLP fixtures

GLP's proprietary DoP technology is already implemented in some GLP fixtures. You can control these fixtures directly using the DoP signal on the power line that the fixture is connected to.

Since a GLP DoP Converter in transmitter mode can transmit on up to ten different DoP channels (i.e. up to ten different DMX universes), you must set up the DoP-compatible fixture to use the correct DoP channel. You can set the fixture's DoP channel using either a coding switch or the fixture's integrated control panel.

If the DoP channels are correctly set on the GLP DoP Converter in transmitter (TX) mode and the GLP DoP fixture, you can control the fixture with the DMX signal that you send to the DoP Converter. The DoP Converter sends the DMX signal as a DoP signal over the power line, the fixture receives the DoP signal, and then the fixture internally converts it back into the original DMX data to control the fixture.

A GLP fixture with an integrated DoP module will always receive all 512 DMX channels. There is no limitation on the number of channels that the fixture will receive.

RX start address

When the DoP is in receiver mode (RX), the RX start address is the first DMX channel that the DoP retrieves from the power line and demodulates. Starting from this channel, the DoP demodulates the number of DMX channels that are available in its version.

For example:

1. A DoP Converter **RX024** version that is set up with RX start address 001 will retrieve the data on DMX channels 01 to 24 from the DoP power line and send that data out as DMX channels 01 to 24 at its DMX output.

The display will show **RX024/001**, indicating:

- Receiver mode
- 24-channel version
- starting demodulation from DMX channel 001.

2. A DoP Converter **RX024** version that is set up with RX start address 101 will retrieve the data on DMX Channels 101 to 124 from the DoP power line and send that data out as DMX channels 101 to 124 at its DMX output.

The display will show **RX024/101**, indicating:

- Receiver mode
- 24-channel version
- starting demodulation from DMX channel 101.

It is possible to move the range of demodulated DMX channels that are available in the Converter RX024 and RX128 versions to anywhere within the entire range of 512 possible channels in one DMX universe.

Changing the Converter's RX start address requires an RDM-compatible controller. The default RX start address is 001. To change the RX start address:

To change the RX start address:

1. Connect the DoP Converter to an RDM-compatible controller.
2. Use the RDM scan function of the RDM controller to discover the DoP Converter.
TIP: Sending an **Identify** command makes the DOP Converter's display flash for easy identification when using multiple Converters in an installation.
3. Enter the required RX address value in the **RX Address** field in the Converter's information page at the RDM controller.

Locking and unlocking the control panel

You can protect the DoP Converter from tampering by applying the control panel lock:

- To apply the lock, use a medium press (press and hold for 3 to 6 seconds) on control button **A**. The display will show a locked padlock icon.
- To disable the lock and re-activate the Converter, use another medium press (press and hold for 3 to 6 seconds) on control button **A**. The display will show an unlocked padlock icon.

You can change the Converter's settings via RDM even if the control panel lock is applied.

Display modes

You can toggle between different display modes using control button **B**:

Use a medium press (press and hold for 3 to 6 seconds) on button **B** to toggle between **Display On** (display shows a sun icon) and **Display Auto** (Display shows a sun icon with an **A**):

- **Display On** keeps the display constantly on.
- **Display Auto** sets the display to sleep after 30 seconds. To re-activate the display, press any button briefly (this works even if the control panel lock is enabled).

Resetting the Converter

You can reset the DoP Converter without changing any of its settings. To carry out a reset, use a long press (press and hold for more than 6 seconds) on control button **A**.

Restoring factory default settings

As well as restarting the DoP Converter (see above), you can also reinitialize it and return all settings to their factory defaults. To restore the Converter's factory default settings, use a long press (press and hold for more than 6 seconds) on control button **B**.

10. Cleaning and maintenance



Warning! There are no user-serviceable parts inside the GLP DoP Converter. Opening a Converter can cause damage that is not covered by the product warranty. Any service operation not described in this user manual must be performed by a GLP technician only.

Cleaning

The GLP DoP Converter may require occasional cleaning to prevent the buildup of dust, dirt, and residue from atmospheric effects that can obscure the Converter's LCD display.

Shut down power to the Converter before cleaning. Clean the Converter using a soft cloth slightly dampened with a household or automotive glass cleaning product only. Do not use caustic or abrasive cleaning products. Do not wash with water.

GLP Service and Support

Contact information for the nearest GLP Service and Support is available online at www.glp.de/en/service, by email at info@glp.de, or by telephone at the following numbers:

- GLP Germany: +49 (7248) 927 19-55
- GLP N. America: +1 818 767-8899
- GLP UK: +44 1392 690140
- GLP Asia: +852 (3151) 7730
- GLP Nordic: +46 737 57 11 40

11. Technical specifications

Control

Control protocols: DMX (USITT DMX512-A), RDM (ANSI/ESTA E1.20)

Operating modes: 2 (transmitter and receiver modes)

Number of DMX channels relayed:

- TX512/RX024 version: transmits 512 Channels - receives 24 Channels
- TX512/RX128 version: transmits 512 Channels - receives 128 Channels
- TX512/RX512 version: transmits 512 Channels - receives 512 Channels

Settings and addressing: Onboard control buttons and monochrome OLED display or via RDM

Construction

DoP Converter DIN rail and UM models

Color: White

Housing: Flame-retardant high-impact thermoplastic

Ingress protection rating: IP20

Installation

Operating position: Any

Installation environment: Dry, ventilated location only

Max. length of daisy-chained DMX line from controller to last device (DMX cable, 2 x 0.34 mm²): 250 m / 820 ft.

Max. length of daisy-chained DMX line from controller to last device (Cat 5e/7, 27 AWG): 310 m / 1017 ft.

Max. number of devices on one DMX line: 32

Max. length of AC mains power line carrying DoP signal: 300 m / 980 ft. (under ideal conditions)

Max. number of devices on one AC mains power line: 32 (recommended), 128 (theoretical maximum)

Mounting options

DIN rail model: 35 mm DIN rail mounting

UM model: Direct surface mounting

Installation hardware

UM model: Installation Bracket (supplied)

Connections

DoP Converter DIN rail and UM models

AC mains power IN and OUT (THRU): Screw terminals

DMX/RDM data IN and OUT (THRU): Screw terminals

Electrical

Appliance protection class: Protection Class II (double-insulated)
AC mains power: 100-240 V nominal, 50/60 Hz
Internal power supply unit: Auto-ranging electronic switch mode
Max. permitted throughput current at 100-120 V, 60 Hz: 16 A
Max. permitted throughput current at 200-240 V, 50 Hz: 16 A
Protection: Overcurrent, thermal cutout

Thermal

Maximum surface temperature: 55° C / 149° F
Minimum ambient temperature: -20° C / -4° F
Maximum ambient temperature: 70° C / 158° F

Included items

DoP Converter DIN rail model

Mains power quick-connect clips with screw terminals
DMX data quick-connect clips with screw terminals

DoP Converter UM model

Surface mounting bracket
Mains power quick-connect clips with screw terminals
DMX data quick-connect clips with screw terminals

Dimensions and weight

DoP Converter DIN rail model

Height: 92 mm/3.62 in.
Width: 90 mm/3.55 in.
Depth: 66 mm/2.60 in.

DoP Converter UM model without mounting bracket

Height: 88 mm/3.47 in.
Width: 126 mm/4.97 in.
Depth: 47 mm/1.86 in.

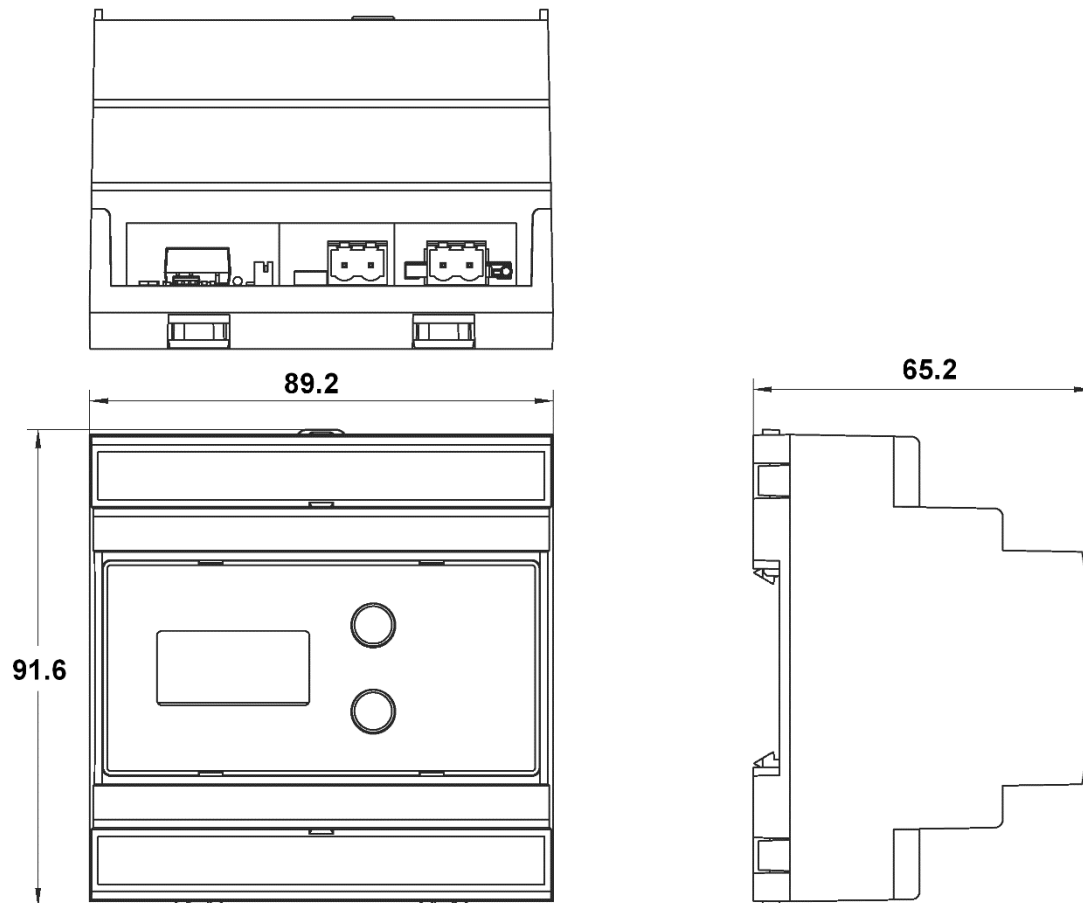
DoP Converter UM model with mounting bracket

Height: 114 mm/4.49 in.
Width: 152 mm/5.99 in.
Depth: 48 mm/1.89 in.

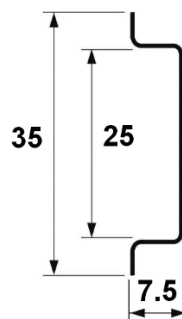
12. Dimensions

DoP Converter DINrail

All dimensions are in millimeters

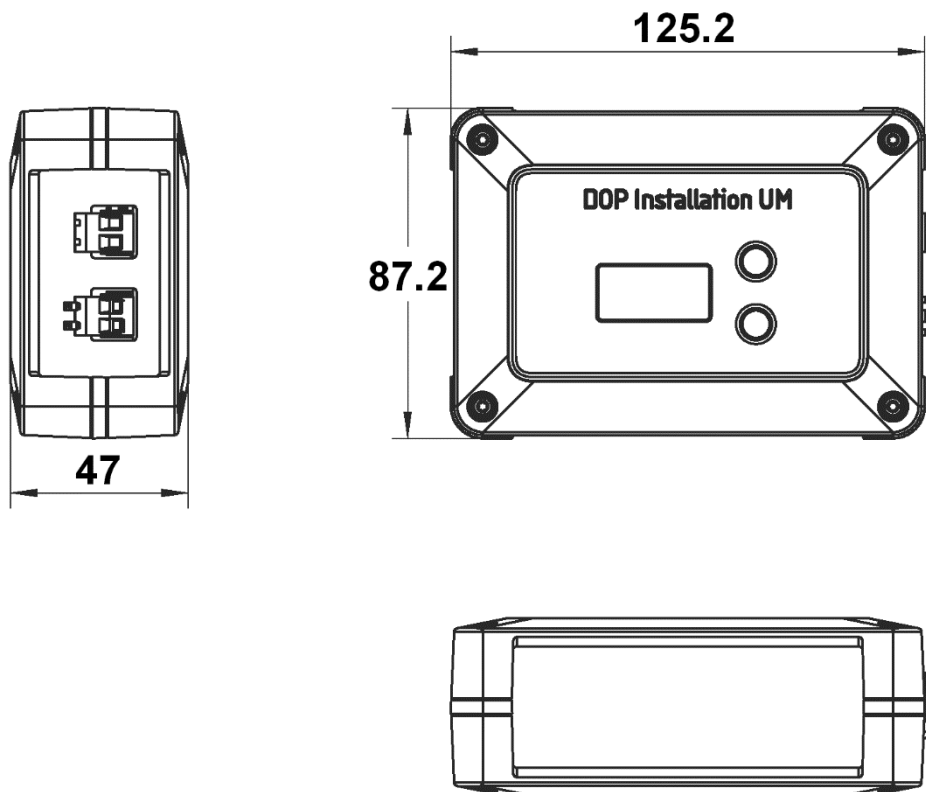


**35 mm top hat
DIN rail (EN 5022)**



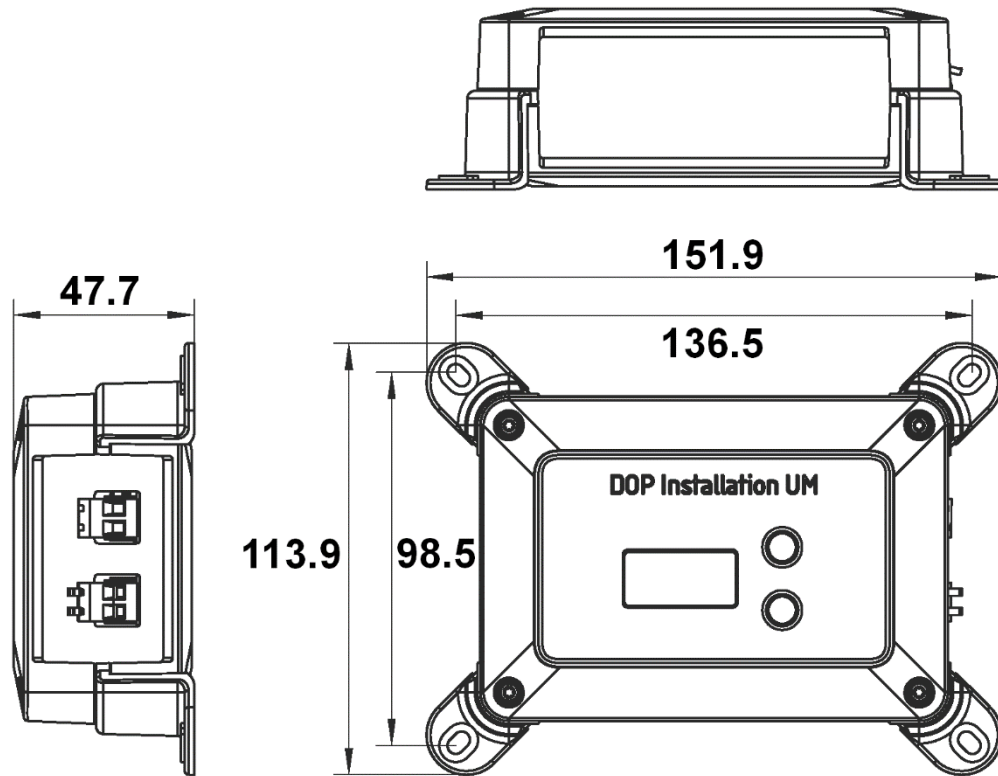
DoP Converter UM

All dimensions are in millimeters



DoP Converter UM with mounting bracket

All dimensions are in millimeters



-GLP-