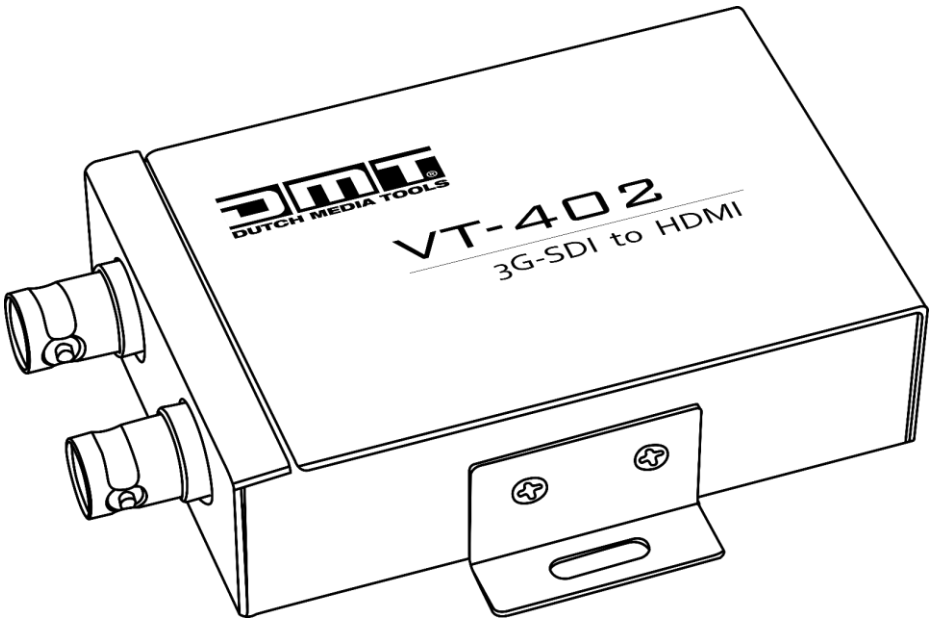
DUTCH MEDIA TOOLS

USER MANUAL



ENGLISH

VT 402 – 3G SDI to HDMI Converter V2

Product code: 101272

Preface

Thank you for purchasing this DMT product.

The purpose of this user manual is to provide instructions for the correct and safe use of this product.

Keep the user manual for future reference as it is an integral part of the product. The user manual shall be stored at an easily accessible location.

This user manual contains information concerning:

- Safety instructions
- Installation and operation of the device
- Intended and non-intended use of the device
- Maintenance procedures
- Troubleshooting
- Transport, storage and disposal of the device

Non-observance of the instructions in this user manual may result in serious injuries and damage of property.

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1. Introduction

1.1. Before Using the Product

Important
Read and follow the instructions in this user manual before installing, operating or servicing this product.

The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual.

After unpacking, check the contents of the box. If any parts are missing or damaged, contact your Highlite International dealer.

Your shipment includes:

- VT 402 – 3G SDI to HDMI Converter
- 2 x mounting brackets
- 1 x 5 V USB power adapter
- 1 x USB-C to USB-C power cable (0,9 m)
- User manual

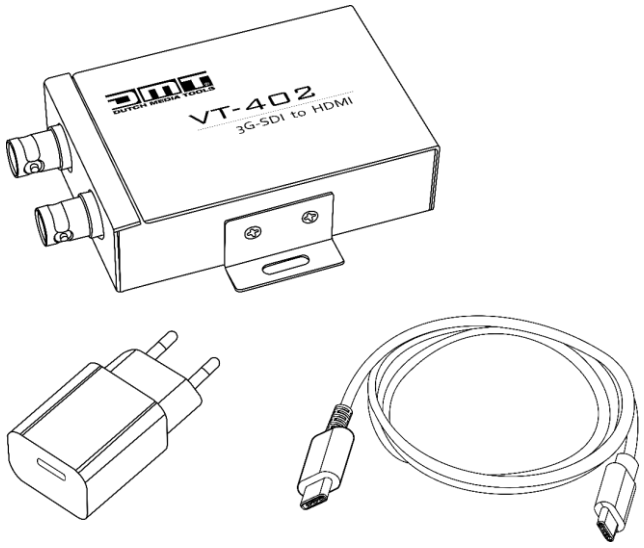


Fig. 01

1.2. Intended Use

This device is intended for professional use as a 3G SDI to HDMI converter. It is suitable only for indoor installation. This device is not suitable for households.

Any other use, not mentioned under intended use, is regarded as non-intended and incorrect use.

1.3. Product Lifespan

This device is not designed for permanent operation. Disconnect the device from the electrical power supply when the device is not in operation. This will reduce the wear and will improve the device's lifespan.

1.4. Text Conventions

Throughout the user manual the following text conventions are used:

- References: References to chapters and parts of the device are in bold lettering, for example: "Refer to **2. Safety**", "turn the **adjustment screw (02)**"
- 0–255: Defines a range of values
- Notes: **Note:** (in bold lettering) is followed by useful information or tips

1.5. Symbols and Signal Words

Safety notes and warnings are indicated throughout the user manual by safety signs.

Always follow the instructions provided in this user manual.

	**DANGER**	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
	**WARNING**	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	**CAUTION**	Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury.
	**Attention**	Indicates important information for the correct operation and use of the product.
	**Important**	Read and observe the instructions in this document.
		Provides important information about the disposal of this product.

1.6. Symbols on the Information Label

This product is provided with an information label. The information label is located on the bottom plate of the device.

The information label contains the following symbols:

	This device is designed for indoor use.
	This device falls under IEC protection class III.
	This device shall not be treated as household waste.
	Read and observe the instructions in this document.

2. Safety



Important
Read and follow the instructions in this user manual before installing, operating or servicing this product.

The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual.

2.1. Warnings and Safety Instructions



DANGER
Danger for children

For adult use only. The device must be installed beyond the reach of children.

Do not leave various parts of the packaging (plastic bags, polystyrene foam, nails, etc.) within children's reach. Packaging material is a potential source of danger for children.



CAUTION
Risk of fire and injury

This device is delivered with a USB power adapter. Incorrect handling of the USB power adapter may result in injuries and material damage.

The USB power adapter may become very warm during normal use.

- Avoid prolonged contact with the USB power adapter when it is in use.
- Do not cover the USB power adapter with anything when it is plugged into the socket-outlet. This may cause overheating.
- Do not expose the USB power adapter to water or other liquids.
- Disconnect the USB power adapter from the electrical power supply when the USB power adapter is not in use.

Do not use the USB power adapter:

- If it shows signs of overheating, for example the plastic is damaged
- If the AC input pins show signs of corrosion or overheating
- If the USB cable is damaged or shows signs of material fatigue.



Attention
General safety

- Do not shake the device. Avoid brute force when installing or operating the device.
- If the device is dropped or struck, disconnect the device from the electrical power supply immediately.
- If the device is exposed to extreme temperature variations (e.g. after transportation), do not switch it on immediately. Let the device reach room temperature before switching it on, otherwise it may be damaged by the formed condensation.
- If the device fails to work correctly, discontinue the use immediately.

Attention
This device shall be used only for the purposes it is designed for.

This device is designed to be used as a 3G SDI to HDMI converter. Any incorrect use may lead to hazardous situations and result in injuries and material damage.

- This device is not designed for permanent operation.
- This device does not contain user-serviceable parts. Unauthorized modifications to the device will render the warranty void. Such modifications may result in injuries and material damage.

Attention
Do not expose the device to conditions that exceed the rated IP class conditions.

This device is IP20 rated. IP (Ingress Protection) 20 class provides protection against solid objects greater than 12 mm, such as fingers, and no protection against harmful ingress of water.

2.2. Requirements for the User

This product may be used by ordinary persons. Maintenance and installation may be carried by ordinary persons. Service shall be carried out only by instructed or skilled persons. Contact your Highlite International dealer for more information.

Instructed persons have been instructed and trained by a skilled person, or are supervised by a skilled person, for specific tasks and work activities associated with the operation, installation, service and maintenance of this product, so that they can identify risks and take precautions to avoid them.

Skilled persons have training or experience, which enables them to recognize risks and to avoid hazards associated with the operation, installation, service and maintenance of this product.

Ordinary persons are all persons other than instructed persons and skilled persons. Ordinary persons include not only users of the product but also any other persons that may have access to the device or who may be in the vicinity of the device.

3. Description of the Device

The VT 402 is a compact 3G SDI to HDMI signal converter. You can use the SDI loop to send SDI signals to other devices. The VT 402 is powered with a micro USB connector. You can use the 2 supplied mounting brackets to mount the device.

3.1. Front View

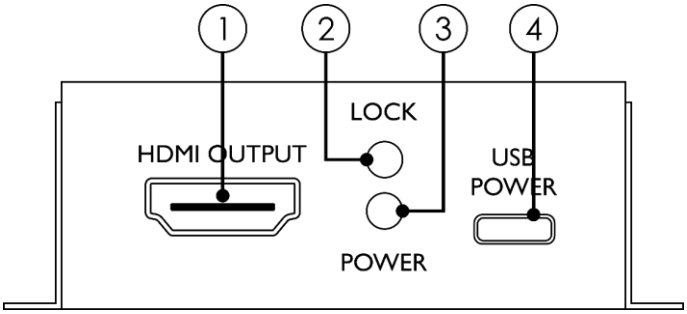


Fig. 02

01) HDMI signal connector OUT
02) Lock LED indicator (Green)
03) Power LED indicator (Red)
04) USB-C power connector IN

3.2. Back View

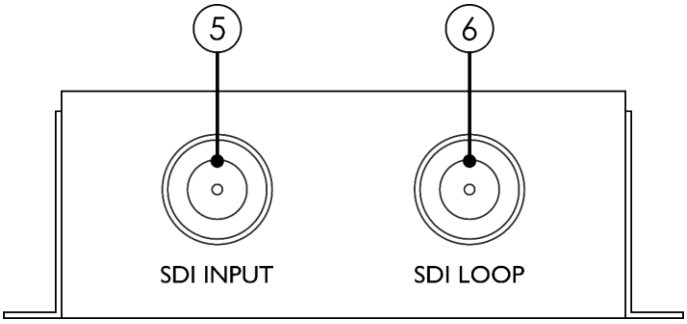


Fig. 03

05) BNC SDI video signal connector IN
06) BNC SDI video signal connector LOOP

3.3. Side View

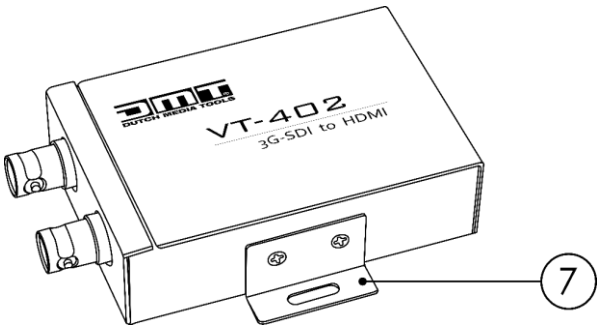


Fig. 04

07) 2 x mounting brackets

3.4. Product Specifications

Model:	VT 402 – 3G SDI to HDMI Converter
Electrical:	
Input voltage:	5 V DC (via USB)
Power consumption:	5 W
Impedance:	75 Ω
Physical:	
Dimensions:	97 x 74 x 23 mm (LxWxH)
Weight:	0,2 kg
Video Specifications:	
SDI input resolutions:	720p @ 30/50/60 Hz 1080i @ 50/60 Hz 1080p @ 50/60 Hz 1080p @ 24/25/30 Hz
HDMI output resolutions:	720p @ 52/60 Hz 1080i @ 50/60 Hz 1080p @ 24/25/30/50/60 Hz
SDI input format:	SD-SDI, HD-SDI, 3G-SDI
SDI data transfer rates:	270 Mb/s, 1.485 Gb/s, 2.97 Gb/s
Connections:	
Input:	3G SDI
Output:	1 x HDMI 1.3, 3G SDI LOOP
Power connections:	USB-C
Construction:	
Housing:	Metal
Color:	Black
IP rating:	IP20
Cooling:	Convection
Thermal:	
Ambient temperature t_a:	0–40 °C
Maximum housing temperature t_c:	70 °C

3.5. Dimensions

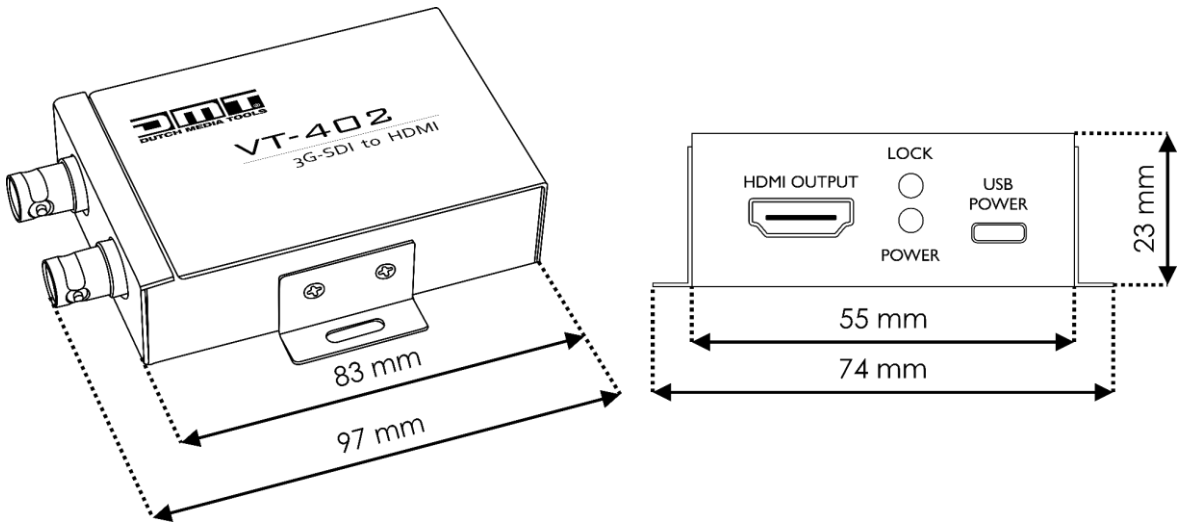


Fig. 05

4. Setup and Operation

4.1. Warnings and Precautions

Attention
Connect all data cables before supplying power.
Disconnect power supply before connecting or disconnecting data cables.

4.2. Installation Site Requirements

- The device must be installed only indoors.
- The device can be positioned on a flat surface or can be mounted to a display or a monitor.
- The maximum ambient temperature t_a = 40 °C must never be exceeded.
- The relative humidity must not exceed 50 % with an ambient temperature of 40 °C.

4.3. Setup Example

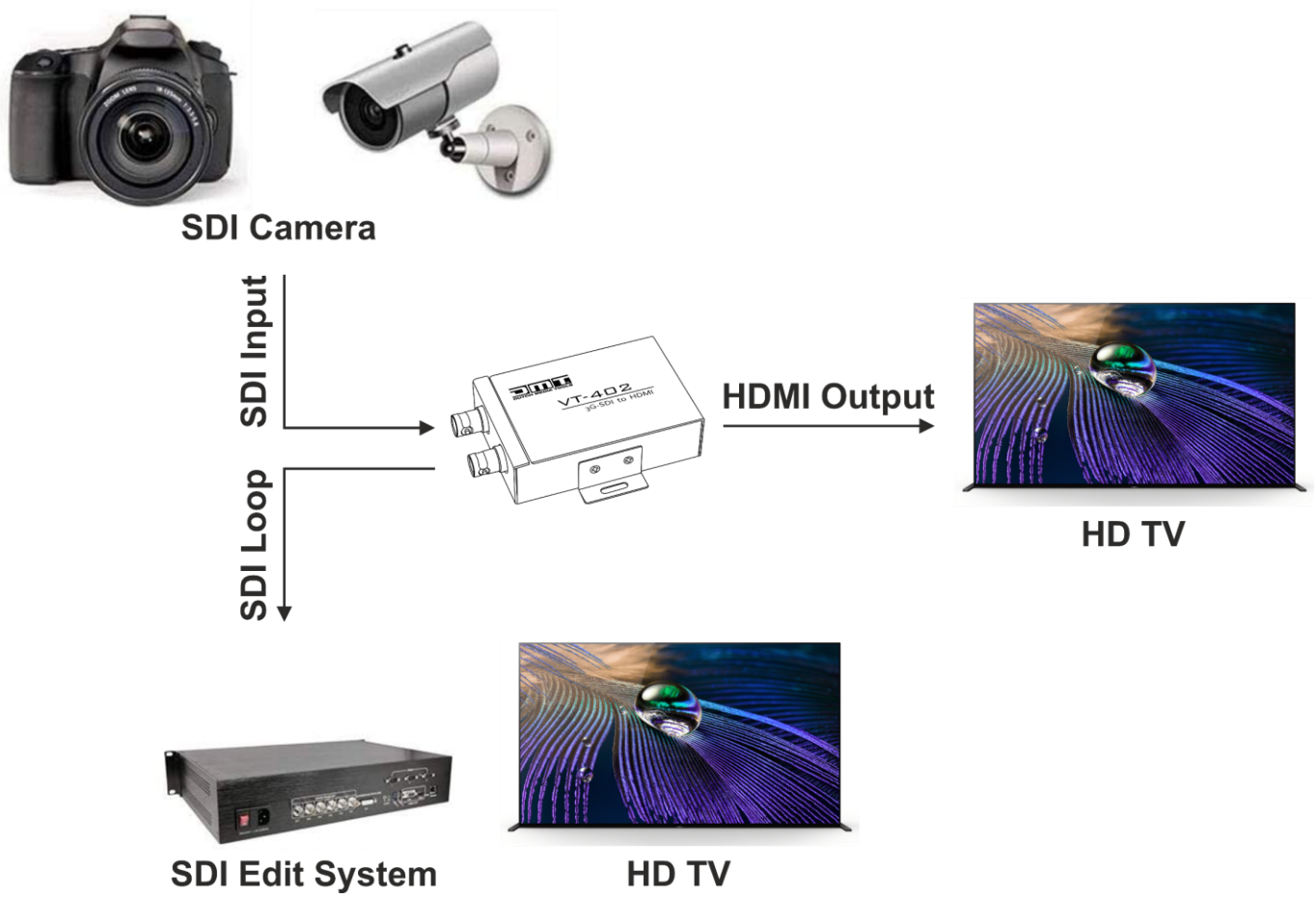


Fig. 06

To connect the device to other devices, follow the steps below:

01) Insert 2 screws into the **2 x mounting brackets (06)** and tighten them, to mount the device on a display or a monitor. See Fig. 07.

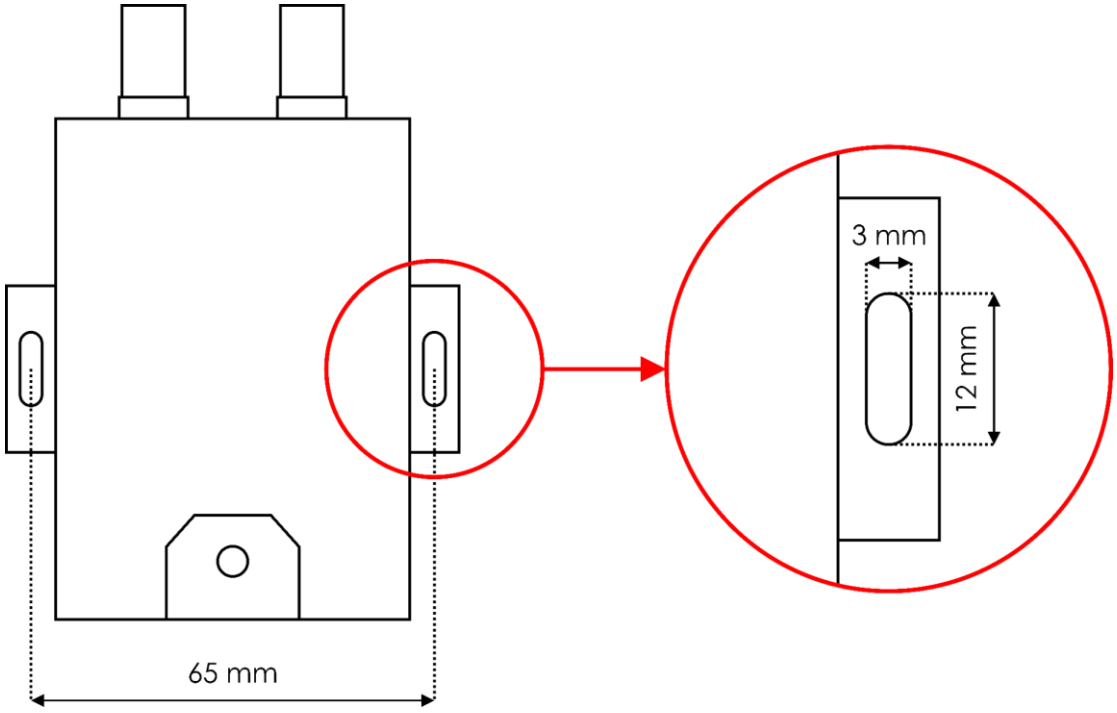


Fig. 07

02) Connect an SDI source device (digital camera or a surveillance camera) to the **BNC SDI video signal connector IN (05)**. See Fig. 06 on page 9.
03) Set the SDI source device to SDI output mode (if necessary).
04) Connect devices (TV or an SDI device) to the **BNC SDI video signal connector LOOP (06)**. See Fig. 06 on page 9.
05) Connect display devices (TV) to the **HDMI signal connector OUT (01)**. See Fig. 06 on page 9.
06) Connect the device to the power supply. See **4.4. Connecting to Power Supply** on page 10. The **power LED indicator (Red) (03)** will turn on.
07) See if the device works correctly. See **4.5. LED Statuses** on page 11 for more information.

Notes:

- If the resolution of the SDI source is supported by the display devices, the SDI signal will be sent to the **BNC SDI video signal connector LOOP (06)**.
- If an HDMI display device is present, the SDI signal will be converted and sent to the **HDMI signal connector OUT (01)**.

4.4. Connecting to Power Supply

Connect the device to the socket-outlet with the delivered USB power adapter. Use only the USB power adapter delivered with the device.

To connect the device to the power supply, follow the steps below:

01) Connect the delivered USB cable to the delivered USB power adapter.
02) Plug the USB cable into the **USB-C power connector IN (04)**.
03) Plug the USB power adapter into the socket-outlet.

Notes:

- Make sure that the socket-outlet is easily accessible.
- Disconnect the USB power adapter from the socket-outlet when the device is not in use.

4.5. LED Statuses

There are 2 LED indicators: **lock LED indicator (Green) (02)** and **power LED indicator (Red) (03)**. The LED indicators have the following functions:

- LOCK:
  - If the light is on, the device is receiving a correct SDI signal and the HDMI output is connected.
  - If the light is blinking, the device is receiving a correct SDI signal but the HDMI output is not connected.
- POWER: If the light is on, the device is powered.

5. Troubleshooting

This troubleshooting guide contains actions which can be carried out by the user. The device does not contain user-serviceable parts.

Unauthorized modifications to the device will render the warranty void. Such modifications may result in injuries and material damage.

Refer servicing to instructed or skilled persons. Contact your Highlite International dealer in case the solution is not described in the table.

Problem	Probable cause(s)	Solution
The device does not power up	No power to the device	• Check if power is switched on • Check if the USB cable is correctly connected • Replace the USB cable
The device does not function	The device is not correctly connected	• Check if the cables are correctly connected • Replace the cables
	The device cannot convert the received signal	• Check if the output devices work correctly • Check if the resolution settings are correct • Check if the input and output devices are compatible
The output devices show a test pattern (color bars)	The signal source is disconnected	• Check if the signal source is correctly connected

6. Maintenance

6.1. Preventive Maintenance

Make sure that there are no deformations on housings, fixations and installation points.

6.1.1. Basic Cleaning Instructions

To clean the device, follow the steps below:

01) Disconnect the device from the electrical power supply.
02) Remove the dust collected on the external surface with a soft brush.

Attention

- Do not immerse the device in liquid.
- Do not use alcohol or solvents.
- Make sure that the connections are fully dry before connecting the device to the power supply and to other devices.

6.2. Corrective Maintenance

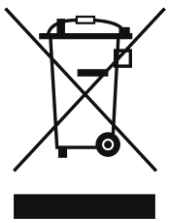
The device does not contain user-serviceable parts. Do not open the device and do not modify the device.

Refer repairs and servicing to instructed or skilled persons. Contact your Highlite International dealer for more information.

7. Deinstallation, Transportation and Storage

- Disconnect power supply before deinstallation.
- Use the original packaging to transport the device, if possible.
- Always observe the handling instructions printed on the outer carton box, for example: “Handle with care”, “This side up”, “Fragile”.
- Clean the device before storing. Follow the cleaning instructions in chapter **6.1.1. Basic Cleaning Instructions** on page 11.
- Store the device in the original packaging, if possible.

8. Disposal



Correct disposal of this product

Disposal of Old Electrical and Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems)

This symbol on the product, its packaging or documents indicates that the product shall not be treated as household waste. Dispose of this product by handing it to the applicable collection point for the recycling of electrical and electronic equipment. This is to avoid environmental damage or personal injury due to uncontrolled waste disposal. For more detailed information about recycling of this product contact the local authorities or the authorized dealer.

9. Approval

CE

UK CA

Check the respective product page on the website of Highlite International (www.highlite.com) for an available declaration of conformity.



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