



USER MANUAL



TBP6-EU-W
TBP6-EU-K

Button Panel

Bookmark Page



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cations

Important Safety Instructions

Class II apparatus construction.

The equipment should be operated only from the power source indicated on the product.

To disconnect the equipment safely from power, remove the power cord from the rear of the equipment, or from the power source. The MAINS plug is used as the disconnect device, the disconnect device shall remain readily operable.

There are no user-serviceable parts inside of the unit. Removal of the cover will expose dangerous voltages. To avoid personal injury, do not remove the cover. Do not operate the unit without the cover installed.

The appliance must be safely connected to multimedia systems. Follow instructions described in this manual.

Ventilation

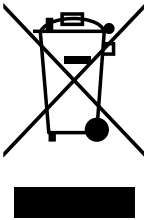
For the correct ventilation and to avoid overheating, ensure enough free space around the appliance. Do not cover the appliance, leave the ventilation holes free and never block or bypass the ventilators (if there are any).

WARNING

To prevent injury, the apparatus is recommended to be securely attached to the floor/wall, or mounted in accordance with the installation instructions. The apparatus shall not be exposed to dripping or splashing, and no objects filled with liquids, such as vases, shall be placed on the apparatus. No naked flame sources, such as lit candles, should be placed on the apparatus.

Waste Electrical & Electronic Equipment (WEEE)

This marking shown on the product or its literature indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources. Household users should contact either the retailer where they purchased this product or their local government office for details of where and how they can take this item for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.



Common Safety Symbols

Symbol	Description
	Direct current
	Alternating current
	Protective conductor terminal
	Equipotential Connector
	On (Power)
	Off (Power)
	Double insulation
	Caution, possibility of electric shock
	Caution
	Laser radiation
	Warning, Rotating fan
	Caution: for indoor use only

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Document Revision History

Rev.	Release date	Changes	Editor
v1	2026-05-27	Initial release.	Nikolett Keindl
v2	2026-09-10	ToC correction.	Laszlo Zsedenyi

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1

Introduction

Thank you for choosing Lightware’s Table Button Panel devices. In the first chapter we would like to introduce the device by highlighting the most important features in the sections listed below:

‣ Description	7
‣ Box Contents	8
‣ Features of the Device	8
‣ Typical Application	9

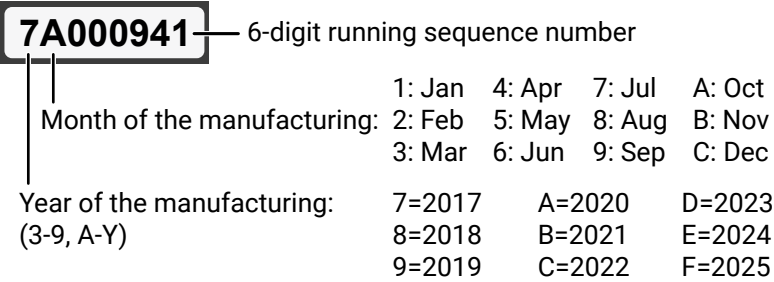
1.1. Description

TBP6 button panel was designed to be used with the Event Manager built-in control feature in select Lightware matrix switcher and extender products. The button panel can be installed in meeting rooms to perform basic system control actions like input selection, switching the system on/off, increasing or lowering the volume, etc.

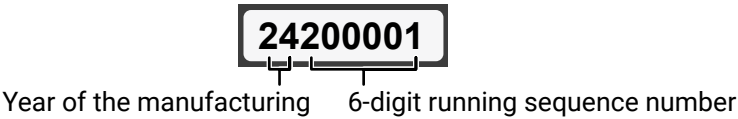
This product has a status LED and a backlight, which are fed from the 7th pin of the GPIO connector. The backlight can be switched off, or its intensity can be set to two levels with the help of traditional jumper switches.

About the Serial Number

Lightware devices contain a label indicating the unique serial number of the product. The structure is the following:

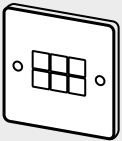
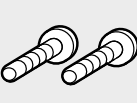
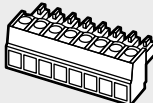
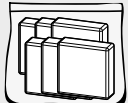
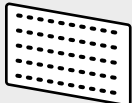


From 1st of October 2024, serial number format of Lightware devices is the following: the first two digits are of the year of manufacture, while the remaining digits make up the running sequence number.



1.2. Box Contents

The assembling of certain accessories can be found in the [Mounting Options](#) section

	Supplied accessories					
						
	Button Panel	Mounting screws 2pcs	Phoenix® Combicon 8-pole Connector	Transparent button caps in a plastic bag*	Labels for button caps	Safety and Warranty Info, QSG
TBP6-EU-W	✓	✓	✓	✓	✓	✓
TBP6-EU-K	✓	✓	✓	✓	✓	✓

1.3. Features of the Device



Event Manager (On the Connected Device)

The Event Manager tool takes care of all the necessary control in a smaller configuration by performing predefined actions in response to device status changes. This feature is available on the connected compatible Lightware device and is used to set the button functions of TBP6 models.



Front Panel Buttons

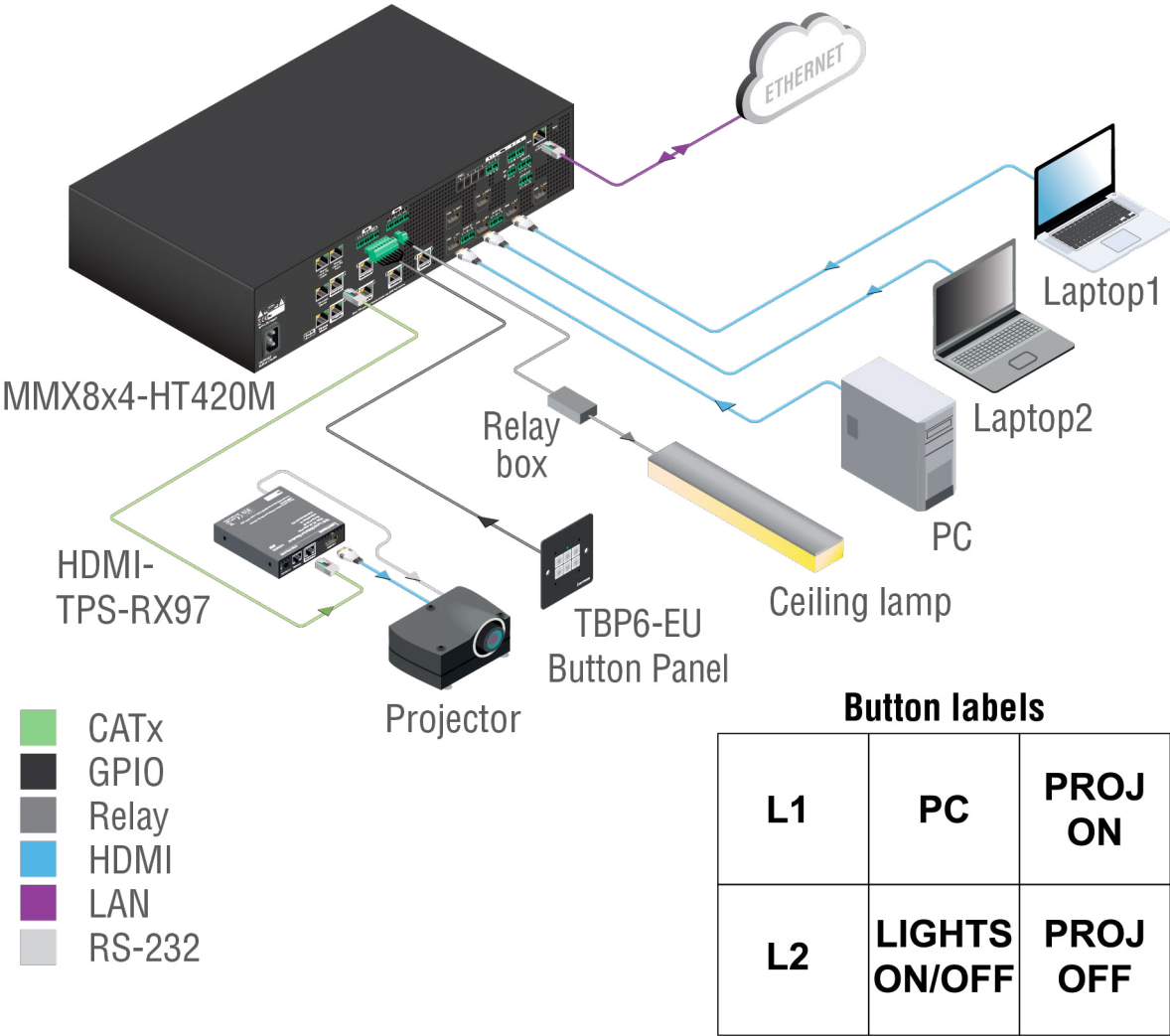
Integrated keypad with 6 programmable backlight buttons.



GPIO Control Port

7 configurable GPIO pins that can act as triggers for Events in Event Manager (in the conected Lightware Device) for room control purposes.

1.4. Typical Application



Example Description

The Button panel is connected to the GPIO port of the matrix. The six buttons have the following functions:

Button	Function	The Realized Action
L1	Switching Laptop1 to the Projector (RX97).	Crosspoint change
L2	Switching Laptop2 to the Projector (RX97).	Crosspoint change
PC	Switching the PC to the Projector (RX97).	Crosspoint change
LIGHTS ON/OFF	Toggles the On/Off stat of the Ceiling lamp.	Toggles the Relay connection
PROJ ON	Switching the Projector on.	Message sending over RS-232
PROJ OFF	Switching the Projector off	Message sending over RS-232

The direction of the P1-P6 GPIO pins in the matrix are set as Input. Thus, when a button is pressed, the input level on the pin changes to Low. This is used as a Condition that triggers an Action in the Event Manager for the six buttons.

2

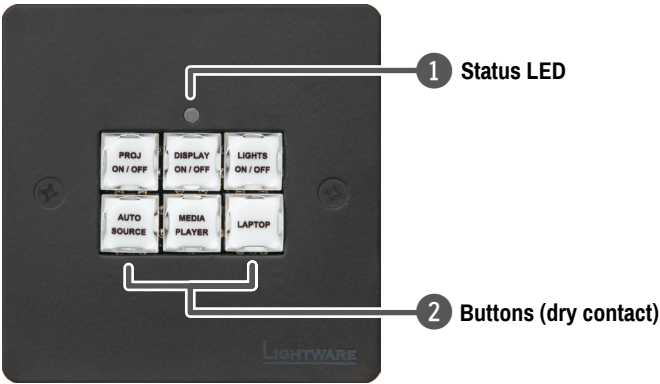
Product Overview

The following sections are about the physical structure of the devices, and their connectors:

▶ Front/Rear View	11
▶ Programmable Buttons	11

2.1. Front/Rear View

Front View



Front View

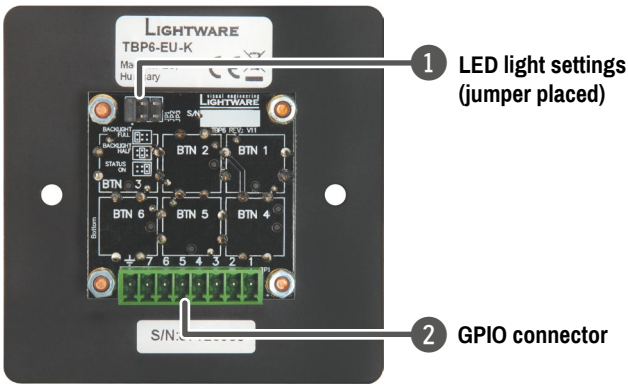
1 Status LED

The Status LED gives a feedback about the jumper position on the rear side. If the jumper is placed on the rightmost pin pair, the status LED is constantly on (in green).

2 Buttons (Dry Contact)

The buttons can be programmed to a desired function in Event Manager. Labels can be attached as needed.

Rear View



Rear View

1 LED Light Settings

The placement of the jumper changes the LED settings.

- Jumper positions:
-  The backlight of the buttons is bright (full).
 -  The backlight of the buttons is low (half).
 -  The front panel status LED is constantly on.

2 GPIO Connector

GPIO connector for connection to the device, powering and button functionality setting. See the details in the GPIO connector section.

INFO: The two models are built exactly the same, the only difference is their color.

2.2. Programmable Buttons

Pressing the buttons can be used as trigger for Events set in the Event Manager of the connected Lightware device. For more information about setting up an Event, see the [Event Manager Application Notes](#).

3

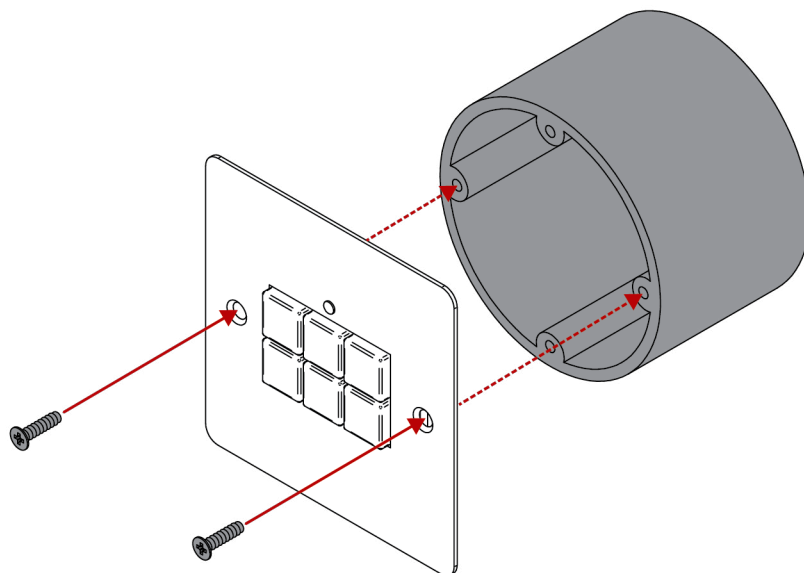
Installation

This chapter is about the installation of the device and connecting to other appliances, presenting also the mounting options and further assembly steps.

▶ Mounting Options	13
▶ Setting Up the Buttons	13
▶ Electrical Connections	14
▶ Compatible Devices	14

3.1. Mounting Options

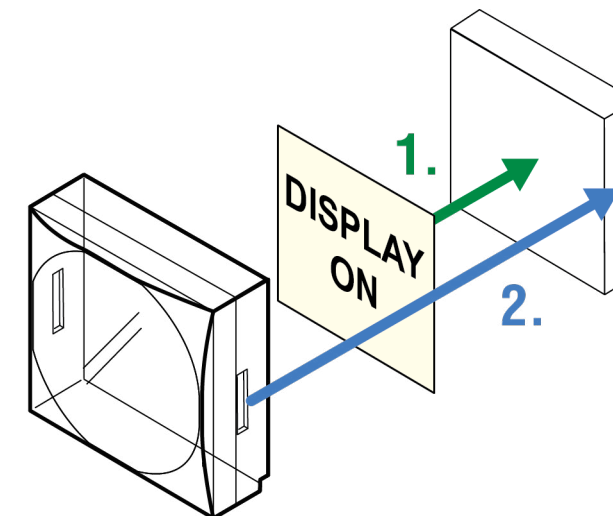
The TBP6-EU button panel can be mounted to a standard European round/circular wall mounting box.



3.2. Setting Up the Buttons

The caps of the buttons are supplied with the product in a separate plastic bag, so that inserting the desired labels and fixing the caps is easy.

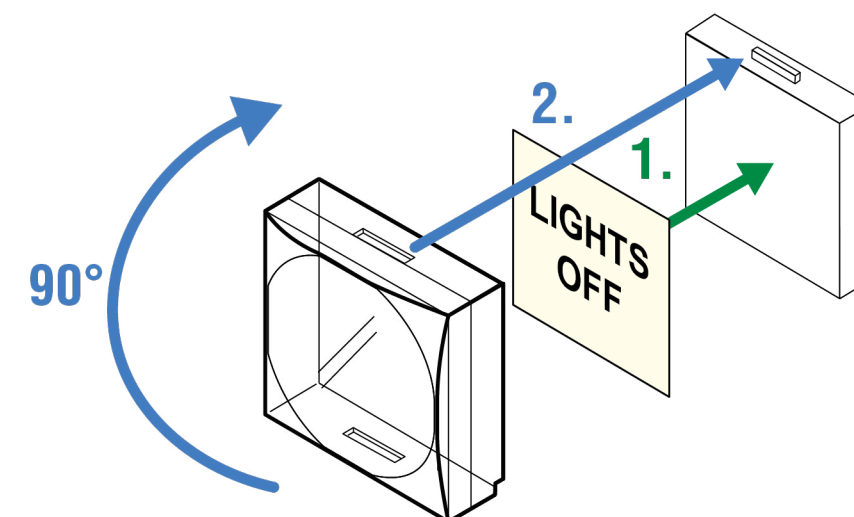
Select the desired label and insert it as shown on the next illustration.



Step 1. Insert the label.

Step 2. Place the cap and pay attention to the nut.

ATTENTION: The directions of the buttons are different, which means certain caps must be rotated by 90°.



3.3. Electrical Connections

3.3.1. Jumper Pins

The status LED and the backlight function of the buttons can be set by placing a jumper in specific positions.

Setting name	Jumper position	Function description
JP1		The backlight of the buttons is bright (full).
JP2		The backlight of the buttons is low (half).
JP3		The front panel status LED is constantly on.

3.3.2. GPIO - General Purpose Input/Output Ports

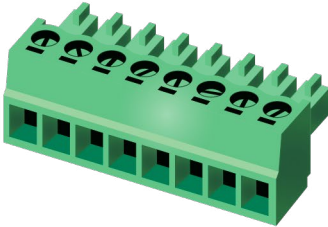
The switcher transmitter is supplied with an 8-pole Phoenix® connector with six GPIO pins that operate at TTL digital signal levels, and can be set to high or low level (Push-Pull). The direction of the pins can be input or output (adjustable). Voltage ranges for GPIO inputs are the following:

	Input voltage [V]	Output voltage [V]	Max. output current [mA]
Logical low level	0 - 0.8	0 - 0.5V	30
Logical high level	2 - 5	4.5 - 5V	18

The maximum total current for the six GPIO pins is 180 mA.



Pin nr.	Signal
1	Configurable
2	
3	
4	
5	
6	
7	5V
8	Ground



GPIO connector and plug pin assignments

INFO: The recommended cable for the connectors is the AWG24 (0.2 mm² diameter) or the generally used ‘alarm cable’ with 4x0.22 mm² wires.

Compatible plug type

Phoenix® Combicon series (3.5mm pitch 8-pole), type: MC 1.5/8-ST-3.5.

Functionality for Pin 7

The 7th pin of the GPIO connection can be used for any of the following functions:

1. Button Backlight Function

The 7th pin of the button panel is connected to the 7th pin of the GPIO port in the Lightware device. Set the **pin direction** of the 7th pin to **Output** and the **Output level** to **High** e.g. by using the Lightware Device Controller (LDC) software. The jumper is placed to **JP1** or **JP2** position. Thus, the backlight buttons are powered over the 7th pin.

2. Remote Status Feedback (Event Manager Action)

The 7th pin of the button panel is connected to the 7th pin of the GPIO port in the Lightware device. The jumper is placed to **JP3**, the pin direction of the 7th pin is set as **Output** and the **Output level** to **Low**. Thus, the 7th pin of the GPIO port in the Lightwrae device can be used as an Action. E.g. when the projector is switched on, the LED lights (the output level of the 7th pin is changed to High).

DIFFERENCE: This feature is not available in case of MMX8x4-HT420M.

3. Custom Usage of the 7th Pin

In this case the LEDs of the button panel will be dark. The **7th pin** of the button panel is **not connected**. The 7th pin of the GPIO port in the Lightware device will be free and can be used as an input or an output.

INFO: The 7th pin of the GPIO port in the MMX8x4-HT420M matrix sends 5V constantly.

3.4. Compatible Devices

The button panel can be connected to a Lightware device assembled with an 8-pole GPIO port:

- UMX-TPS-TX130, UMX-TPS-TX140, UMX-TPS-TX140-Plus
- UMX-HDMI-140, UMX-HDMI-140-Plus
- DP-TPS-TX220
- HDMI-TPS-TX220
- SW4-OPT-TX240RAK
- DVI-HDCP-TPS-TX220
- SW4-TPS-TX240, SW4-TPS-TX240-Plus
- MMX8x4-HT420M, MMX8x8-HT440, MMX8x8-HT080

4

Troubleshooting

Usually, if the system seems not to transport the signal as expected, the best strategy for troubleshooting is to check signal integrity through the whole signal chain starting from source side and moving forward to receiver end.

- ▶ Use Cases 16
- ▶ How to Speed Up the Troubleshooting Process 16

4.1. Use Cases

Legend

 Link to the section of connections/cabling.

Symptom	Root cause	Action	Refer to
Video issues			
No action happens after pressing a button	The cables between the pins are connected incorrectly.	Check the Cable Wiring Guide to make sure the correct pins are connected.	 5.2
	The Event is inactive.	Check the Event activity status in the Event Manager of the connected device.	
	The Condition of the Event is set incorrectly.	Check the Condition settings of the related Event in the Event Manager of the connected device.	
	The Action of the Event is set incorrectly..	Check the Action settings of the related Event in the Event Manager of the connected device.	

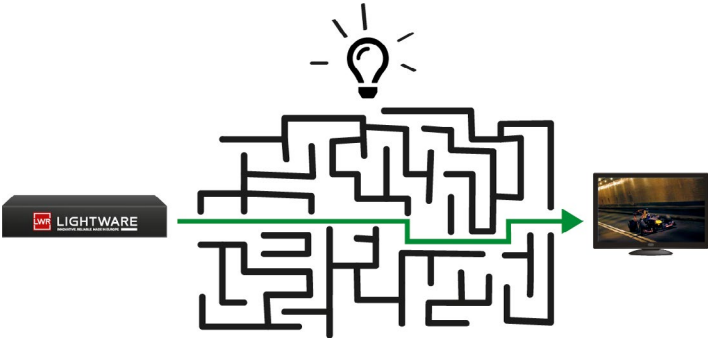
4.2. How to Speed Up the Troubleshooting Process

Lightware’s technical support team is always working hard to provide the fastest support possible. Our team’s response time is one of the best in the industry, and in the toughest of cases we can directly consult with the hardware or software engineer who designed the product to get the information from the most reliable source.

However, the troubleshooting process can be even faster... with your help.

There are certain pieces of information that push us in the right direction to find the root cause of the problem. If we receive most of this information in the first e-mail, or it is gathered at the time when you call us, then there is a pretty high chance that we will be able to respond with the final solution right away. This information is the following:

- Schematic (a pdf version is preferred, but a hand drawing is sufficient).
- Serial number(s) of the device(s) (it is either printed somewhere on the box or you can query it in the Device Controller software or on the built-in website).
- Firmware versions of the devices (please note that there may be multiple CPUs or controllers in the device and we need to know all of their firmware versions, a screenshot is the best option).
- Cable lengths and types (in our experience, it’s usually the cable).
- Patch panels, gender changers or anything else in the signal path that can affect the transmission.
- Signal type (resolution, refresh rate, color space, deep color).
- Emulated EDID(s) (please save them as a file and send it to us).
- Actions to take in order to re-create the problem (if we cannot reproduce the problem, it is hard for us to find the cause).
- Photo or video about the problem (‘image noise’ can mean many different things, it’s better if we see it too).
- Error logs from the Device Controller software.
- In the case of Event Manager issue, the event file and/or backup file from the Device Controller software.
- The more of the information above you can give us, the better. Please send this information to the Lightware Support Team (support@lightware.com) to speed up the troubleshooting process.



5

Appendix

Tables, drawings, guides, and technical details as follows:

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▶ Cable Wiring Guide	18
▶ Mechanical Drawings	19
▶ Further Document Information	20
▶ Limited Warranty Statement	20

5.1. Specifications

INFO: Specifications are subject to change without notice.

General

Compliance	CE, UKCA
EMC (emission)	EN 55032:2015+A1:2020
EMC (immunity)	EN 55035:2017+A11:2020
RoHS	EN 63000:2018
Electrical safety	EN 62368-1:2020
Warranty	3 years
Operating temperature	0° to +50°C (+32° to +122°F)
Operating humidity	10% to 90%, non-condensing
Cooling	Passive

Enclosure

Rack mountable	no
Enclosure material	1 mm steel
Dimensions (mm)	80 W x 20 D x 80 H
Dimensions (inch)	31.5 W x 7.78 D x 31.5 H
Weight	90 g (0.2 lb)

Power

Power supply	remote power via the 7th pin of the GPIO (only for the light function)
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Control

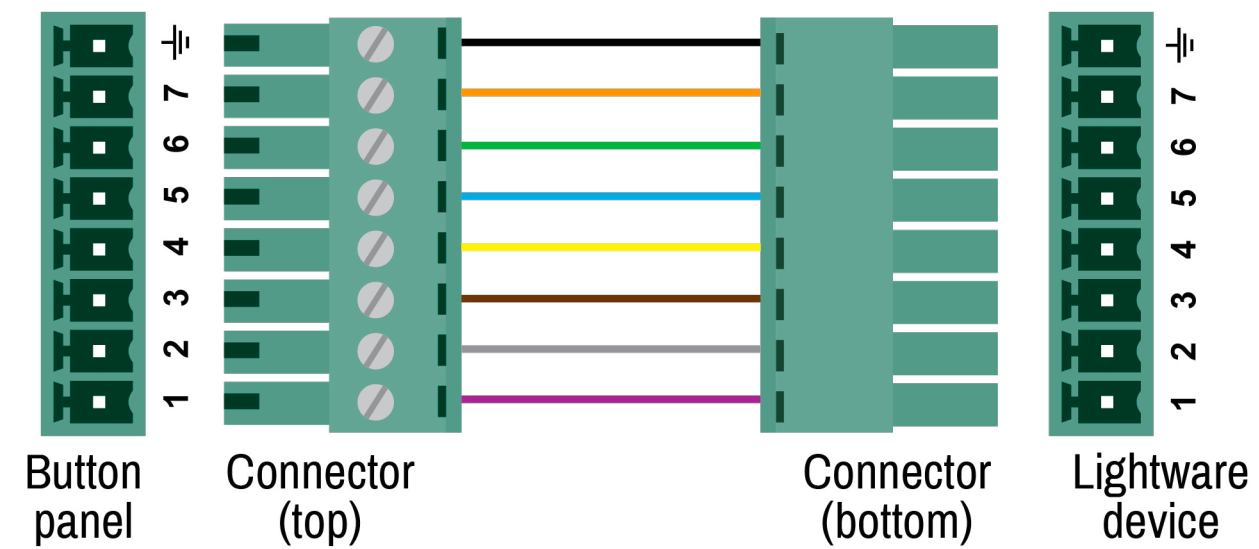
GPIO

Connector type	8-pole Phoenix connector
Number of configurable pins	7
Port direction	Input or Output
Input voltage: Low / High level	0-0.8 V / 2-5 V
Output voltage: Low / High level	0-0.5 V / 4.5-5 V

5.2. Cable Wiring Guide

Phoenix Connector Wiring

The recommended cable for the connectors is the AWG24 (0.2 mm² diameter) or the generally used 'alarm cable' with 8x0.22 mm² wires.

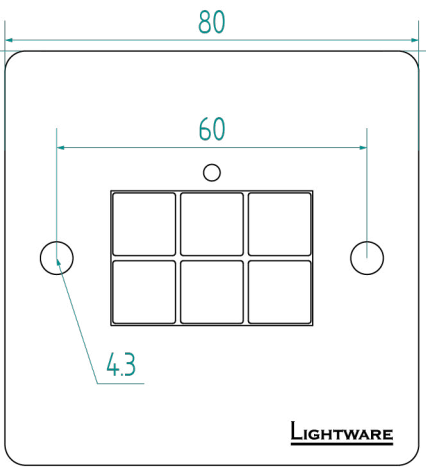


INFO: The connection between the button panel and the GPIO ports was tested by 50 m AWG23 cable type. For longer distance, please contact Lightware.

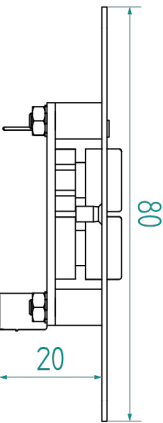
5.3. Mechanical Drawings

- INFO: TBP6-EU-W and TBP6-EU-K have the same dimensions, the only difference is the color.
- INFO: Dimensions are in mm.

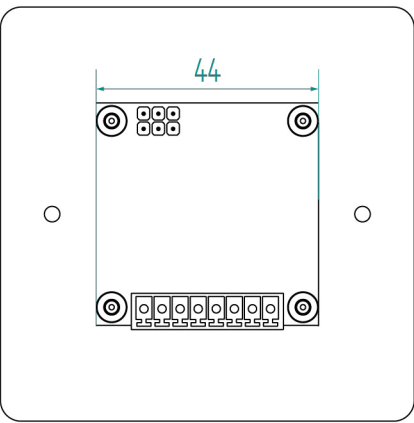
Front view



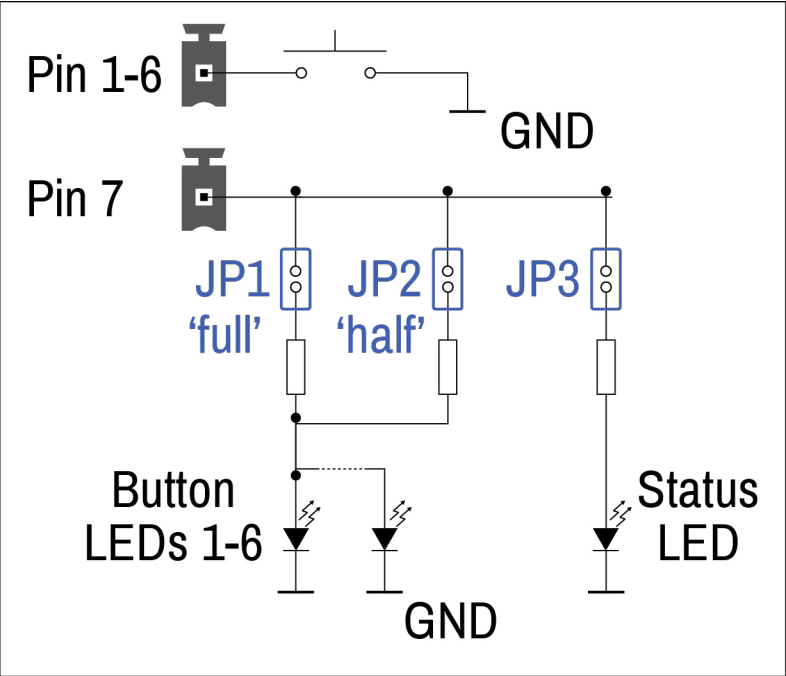
Side view



Rear view



The Simplified Schematic of the Button Panel



5.4. Further Document Information

Symbol Legend

The following symbols and markings are used in the document:

- WARNING! Safety-related information that is highly recommended to read and keep in every case!**
- ATTENTION:** Useful information for performing a successful procedure; it is recommended to read.
- DIFFERENCE:** Feature or function that is available with a specific firmware/hardware version or product variant.
- INFO:** A notice, which contains additional information. Procedure can be successful without reading it.
- DEFINITION:** The short description of a feature or a function.
- TIPS AND TRICKS:** Ideas that you may have not known yet, but can be useful.

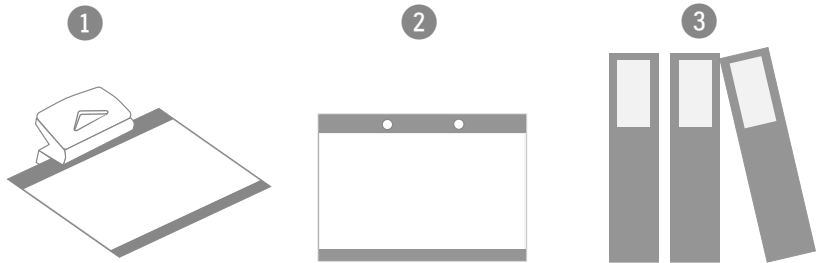
Navigation Buttons

Buttons in the PDF version	Buttons in the HTML version
 Navigate to the Table of Contents .	 Open the main Table of Contents .
 Go back to the previous page . If you clicked on a link previously, you can go back to the source page by pressing the button.	 Navigate to the Online User Manuals webpage.
 Navigate to the Bookmark page .	 Navigate to the Bookmark page in this User Manual.
 Visit www.lightware.com .	 Download the PDF version of the User Manual.

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- Page size: A4
- Output size: Fit to page or Match page size
- Orientation: Landscape



TIPS AND TRICKS: Thanks to the size of the original page, a border around the content (gray on the second picture below) makes it possible to organize the pages better. After punching holes in the printed pages, they can easily be placed into a ring folder.

5.5. Limited Warranty Statement

- Lightware Visual Engineering PLC (Lightware) warrants to all trade and end user customers that any Lightware product purchased will be free from manufacturing defects in both material and workmanship for three (3) years from purchase unless stated otherwise below. The warranty period will begin on the latest possible date where proof of purchase/delivery can be provided by the customer. In the event that no proof can be provided (empty 'Date of purchase' field or a copy of invoice), the warranty period will begin from the point of delivery from Lightware.
 - 25G and MODEX product series will be subject to a seven (7) year warranty period under the same terms as outlined in this document.
 - If during the first three (3) months of purchase, the customer is unhappy with any aspect of a Lightware product, Lightware will accept a return for full credit.
 - Any product that fails in the first six (6) months of the warranty period will automatically be eligible for replacement and advanced replacement where available. Any replacements provided will be warranted for the remainder of the original unit's warranty period.
 - Product failures from six (6) months to the end of the warranty period will either be repaired or replaced at the discretion of Lightware. If Lightware chooses to replace the product, then the replacement will be warranted for the remainder of the original unit's warranty period.
- The above-stated warranty and procedures will not apply to any product that has been:
 - Modified, repaired or altered by anyone other than a certified Lightware engineer unless expressly agreed beforehand.
 - Used in any application other than that for which it was intended.
 - Subjected to any mechanical or electrical abuse or accidental damage.
 - Any costs incurred for repair/replacement of goods that fall into the categories above (2.1., 2.2., 2.3.) will be borne by the customer at a pre-agreed figure.
- All products to be returned to Lightware require a return material authorization number (RMA) prior to shipment, and this number must be clearly marked on the box. If an RMA number is not obtained or is not clearly marked on the box, Lightware will refuse the shipment.
 - The customer will be responsible for in-bound, and Lightware will be responsible for out-bound shipping costs.
 - Newly repaired or replaced products will be warranted to the end of the originally purchased product's warranty period.