**Manuals+** — User Manuals Simplified.

LIGHTWARE
**TBP6 Button Panel**



# LIGHTWARE TBP6 Button Panel User Guide

**Contents**

LWR LIGHTWARE
INNOVATIVE. RELIABLE. MADE IN EUROPE.

**LIGHTWARE TBP6 Button Panel**

## Product Information

### Specifications

- **Model:** TBP6-EU-W, TBP6-EU-K Button Panels
- **Buttons:** 2 (dry contact)
- **Button Backlight:** Full or Half
- **LEDs:** Status LED, Button LEDs 1-6
- **Connector Type:** Phoenix Connector
- **Cable Recommendation:** AWG24 (0.2 mm2 diameter) or 8×0.22 mm2 alarm cable

## Product Usage Instructions

### Button Panel Setup
To set up the button panel, follow these steps:

1. Connect the button panel to the GPIO port of the matrix using a recommended cable.
2. Insert desired labels for the buttons from the attached sheet.
3. To disable the backlight or status LED, do not link the 7th pins of the GPIO connectors or set the Output level of pin7 to Low in the Lightware device.

### Button Functions
The six buttons on the panel have the following functions:

| Button | Function | Realized Action |
|---|---|---|
| L1 | Switching the Laptop1 to the Projector (RX97) | Crosspoint change |
| L2 | Switching the Laptop2 to the Projector (RX97) | Crosspoint change |
| PC LIGHTS ON/OFF | Toggle the On/Off state of the Ceiling lamp | Toggle 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 |

**Jumper Positions**
The backlight of the buttons can be set to bright (full) or low (half) by positioning the jumper at JP1 or JP2.

**Phoenix Connector Wiring**
For proper wiring, use recommended cable AWG24 or 8×0.22 mm2 alarm cable for the connectors.

**Tips and Tricks with Pin7**
The 7th pin of the GPIO connection can be used for various functions, including powering the button backlight. Set pin direction to Output and level to High in the Lightware Device Controller software.

**FAQ**

- **Q: How can I disable the backlight or status LED?**

   A: To disable the backlight or status LED, do not link the 7th pins of the GPIO connectors or set the Output level

   of pin7 to Low in the Lightware device.

- **Q: What cable should I use for connecting the button panel?**

   A: It is recommended to use AWG24 cable or 8×0.22 mm2 alarm cable for proper connection.

- **Q: How can I set the backlight brightness of the buttons?**

   A: The backlight brightness can be set to full or half by positioning the jumper at JP1 or JP2.

## Important Safety Instructions

Please read the supplied safety instruction document before using the product and keep it available for future reference.
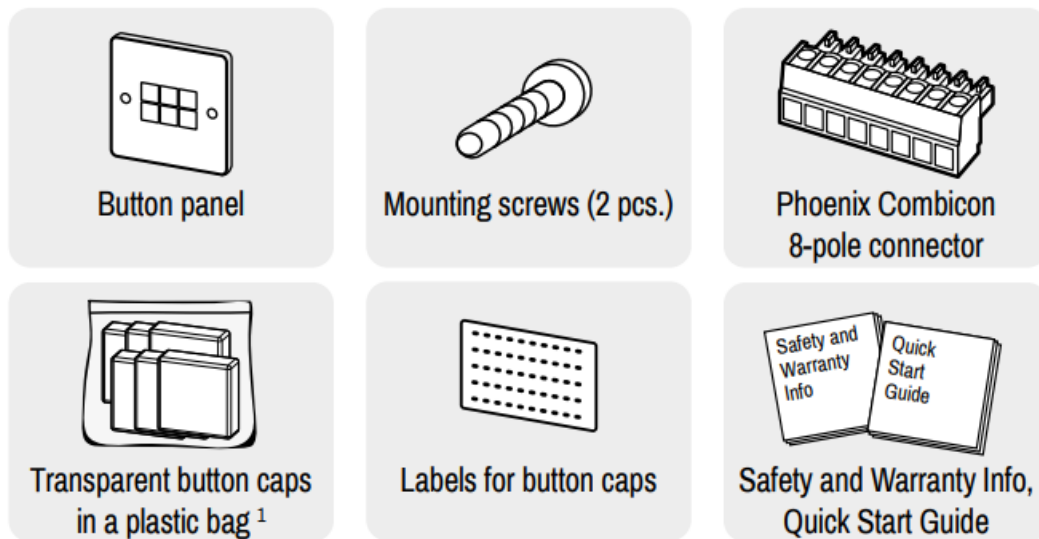
**Introduction**
TBP6 button panel was designed to be used with the Event Manager built-in control feature in select Lightware matrix switcher and extender products. The button panel can be installed in meeting rooms to perform basic system control actions like input selection, switching the system on/off, 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.

**Event Manager**
The Event Manager is a smart, built-in feature in the Lightware HDBaseTTM compatible TPS extender family, the MODEX line and in certain matrix switchers like the MMX8x4 series. The feature can be customized through the Lightware Device Controller (LDC) software. The Event Manager reacts to internal status changes or user interactions without any external control system. The detected event is called Condition, the response is called Action.
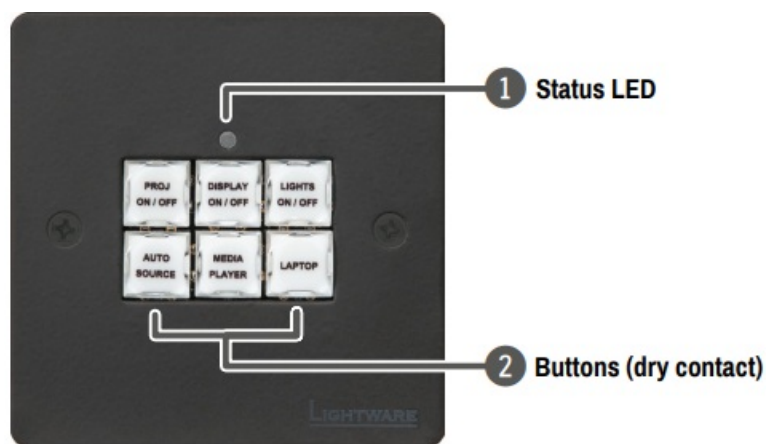
## Box Contents

| | | |
|---|---|---|
| Button panel | Mounting screws (2 pcs.) | Phoenix Combicon 8-pole connector |
| Transparent button caps in a plastic bag [1] | Labels for button caps | Safety and Warranty Info, Quick Start Guide |

The transparent caps are not placed onto the buttons, thus, you can easily insert the desired labels and fix the caps – see the related section.

## OVERVIEW

### Front View



- The labels of the buttons are just for illustration since the button caps are empty by default. The user can insert the desired label from the attached sheet.
- To disable the backlight/status LED at all, do not link the 7th pins of the GPIO connectors, or set the Output level of the GPIO pin7 to Low in the Lightware device.

### Rear View

**① LED light settings (jumper placed)**

**② GPIO connector**
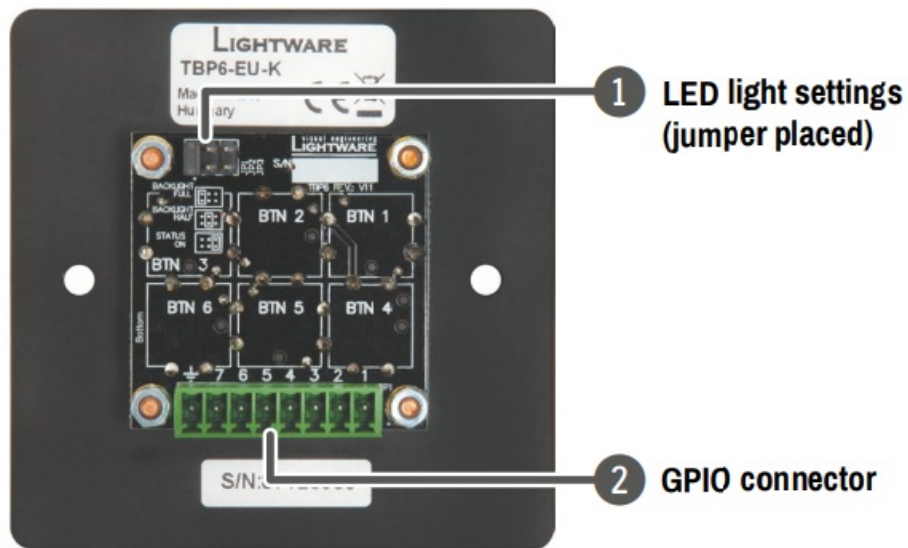
**Jumper positions**



The backlight of the buttons is bright (full).
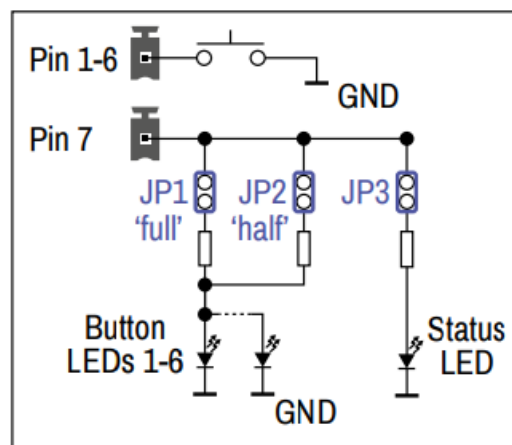
The backlight of the buttons is low (half).

The front panel status LED is constantly on.

**The Simplified Schematic of the Button Panel**



Pin 1-6

GND

Pin 7

JP1 'full'   JP2 'half'   JP3

Button LEDs 1-6

Status LED

GND

**Typical Application (Example)**

**Button labels**

| | | |
|---|---|---|
| **L1** | **PC** | **PROJ ON** |
| **L2** | **LIGHTS ON/OFF** | **PROJ OFF** |
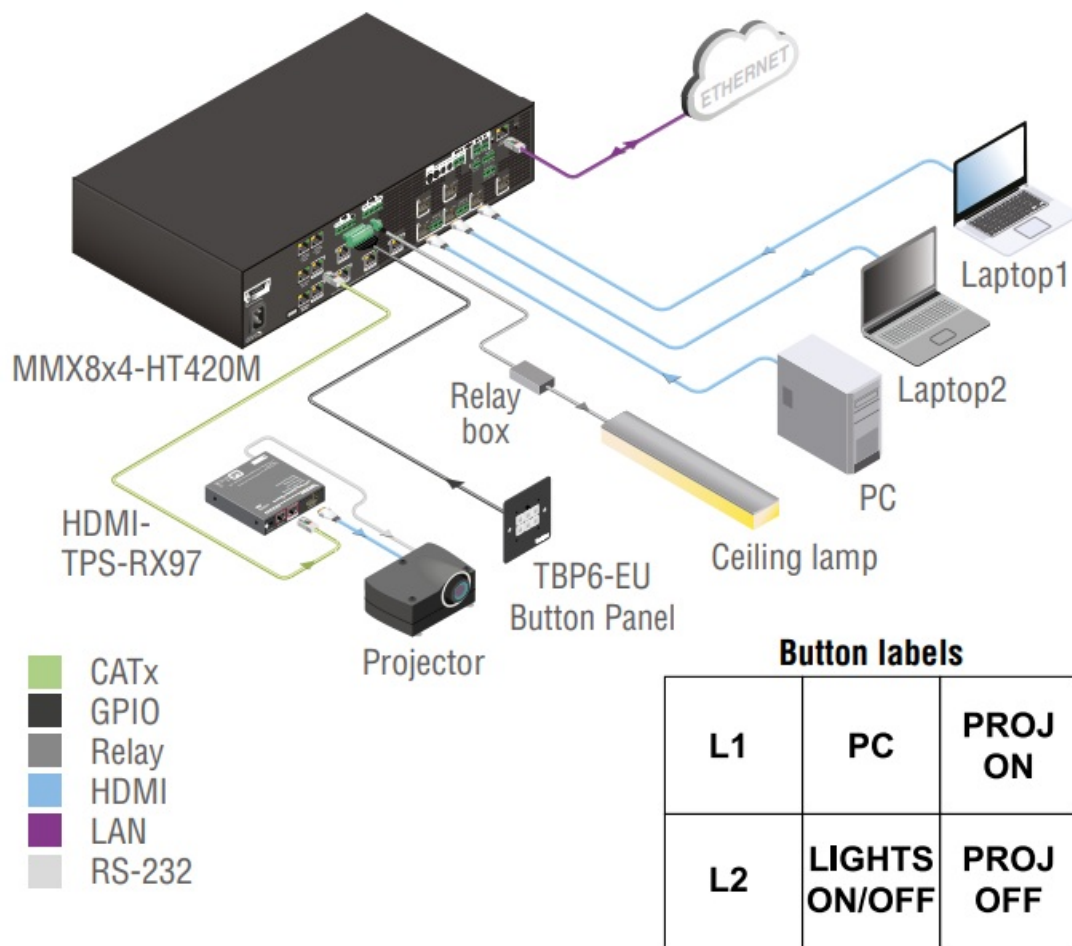
**Example Description**

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 the Laptop1 to the Projector (RX97) | Crosspoint change |
| L2 | Switching the Laptop2 to the Projector (RX97) | Crosspoint change |
| PC | Switching the PC to the Projector (RX97) | Crosspoint change |
| LIGHTS ON/OFF | Toggle the On/Off state of the Ceiling lamp | Toggle 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 of the pin is changed to Low. That is used as a Condition which triggers an Action in the Event Manager. Six events are defined in the Event Manager for the six buttons.
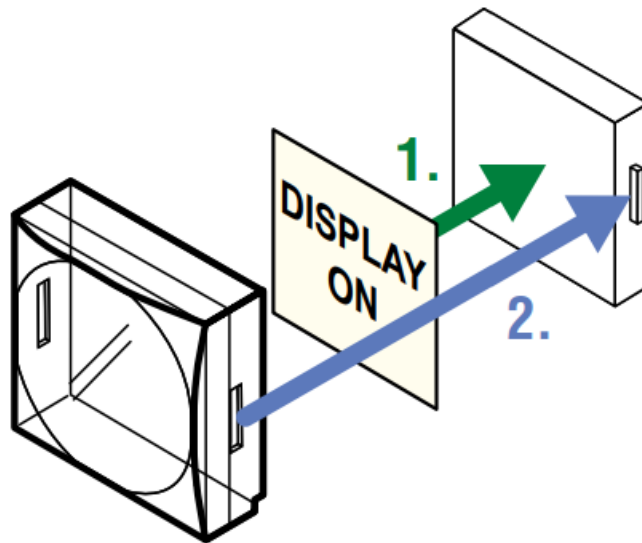
## Button Panel Mounting

The TBP6-EU button panel can be mounted to a standard European round / circular wall mounting box:
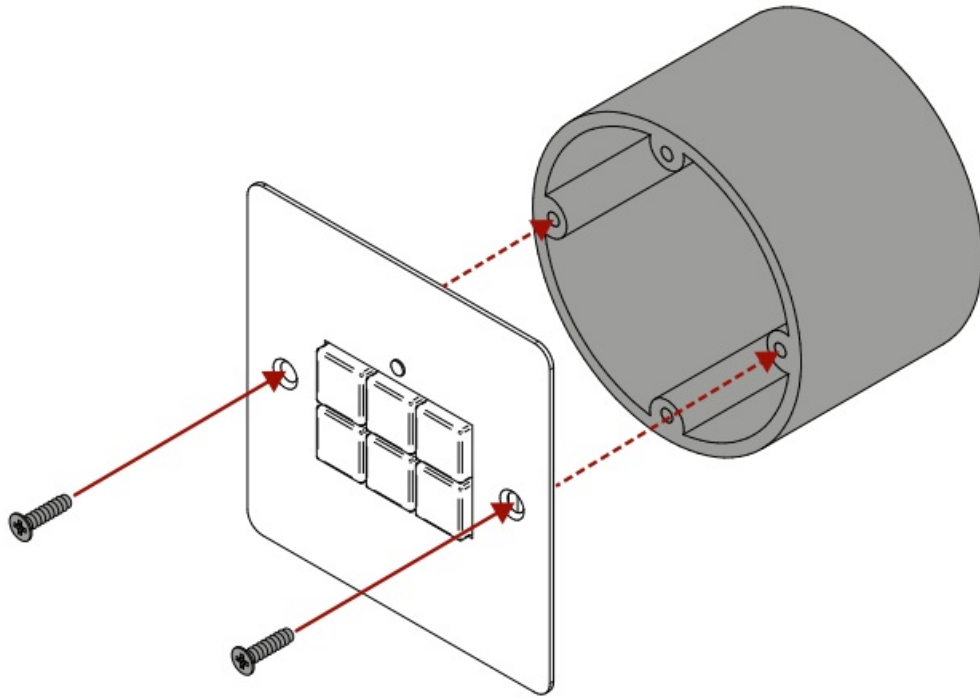
**Label and Cap Fixation**

The caps of the buttons are supplied separately with the product in a plastic bag. Select the desired label and insert it as shown in attached figure:



1. Insert the label.
2. Place the cap and pay attention to the nut; the direction of the buttons are different, thus, certain caps must be rotated by 90°.

## Phoenix Connector Wiring

The recommended cable for the connectors is the AWG24 (0.2 mm2 diameter) or the generally used 'alarm cable' with 8×0.22 mm2 wires.

Button panel — Connector (top) — Connector (bottom) — Lightware device
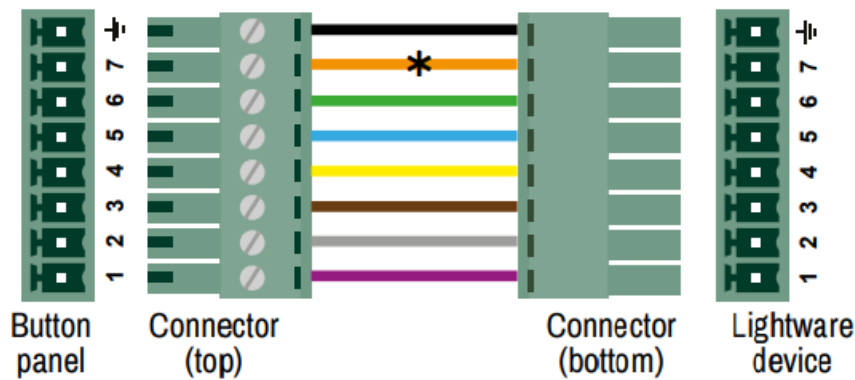
The cable between the button panel and the GPIO port was tested by 50 m, AWG23 cable type. For longer distance, please contact Lightware.

**\* Tips and Tricks with Pin7**

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 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 LDC (Lightware Device Controller) software. The jumper is placed to JP1 or JP2 position. Thus, the backlight of the 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 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 Lightware 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).

   - This feature is not available in the 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 output.

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

## Specification

**General**

- **Compliance** …………………………………………………………………………………..CE, UKCA
- **EMC (Emission)**……………………………………………………….EN 55032:2015+A1:2020
- **EMC (Emission)**……………………………………………………..EN 55035:2017+A11:2020
- **Safety compliance**………………………………………………………… EN 62368-1:2020
- **RoHS**…………………………………………………………………………EN 63000:2018
- **Warranty**…………………………………………………………………………..3 years
- **Operating temperature**…………………………………………. 0 to +50˚C (+32 to +122˚F)
- **Operating humidity**…………………………………………… 10% to 90%, non-condensing
- **Cooling** ………………………………………………………………………... Passive

- **Enclosure**..........................................................................................................1 mm steel
- **Dimensions**.......................................................................................... 80 W x 20 D x 80 H mm
- **Weight** .........................................................................................................................90 g

## Power

- **Power supply** ……………………………………….. remote power via the 7th pin of the GPIO
  ……………………………………………………………………….. (only for the light function)

## GPIO

- **Connector type**……………………………………………………..8-pole Phoenix connector
- **Number of configurable pins**………………………………………………………………….7
- **Port direction**……………………………………………………………………Input or output
- **Input voltage: Low / High level** …………………………………………………0 – 0,8V / 2 – 5V
- **Output voltage: Low / High level** ………………………………………… 0 – 0,5 V / 4.5 – 5 V

## Dimensions

The values are in mm.
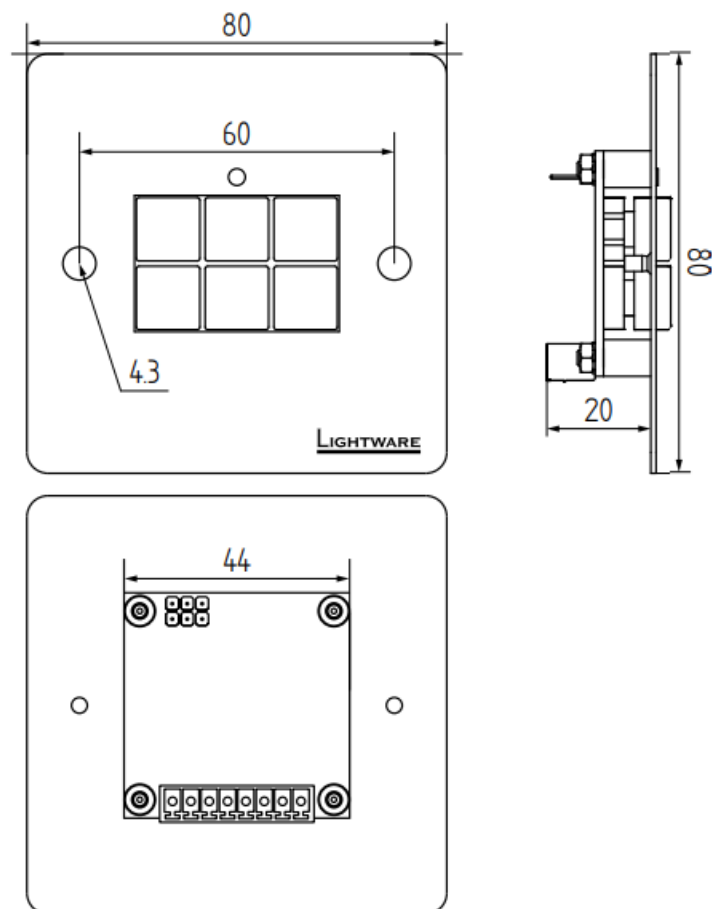


## Compatible Devices

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

Lightware Visual Engineering PLC.
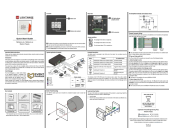Budapest, Hungary
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## Documents / Resources



**LIGHTWARE TBP6 Button Panel** [pdf] User Guide
TBP6-EU-W, TBP6-EU-K, TBP6 Button Panel, TBP6, Button Panel, Panel

## References

- **User Manual**