

USB Large Dome Button



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Introduction

The “USB Dome Button” is a large mushroom/ dome button that connects to a workstation or PC via a USB cable.

The USB Dome Button is recognized by the PC as a “Human Interface Device” (HID). Microsoft Windows and other operating systems have intrinsic support for HID. No drivers are necessary.

Specifically, the USB Dome Button implements a “keyboard” HID function, with only a single key. The key to transmit to the PC is configured via a configuration utility (see the section “Configuring the USB Button”). In the factory setting, the button transmits the key “1”.

Multiple USB Dome Buttons may be attached to a PC at the same time, with each button configured to transmit a different key code

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The USB Dome Button is a robust switch, for indoor and outdoor use. The USB connector allows for splash-proof connection (when used with a cable with the appropriate sealing connector). The USB Dome Button supports long cables (up to 5 metres is not a problem). A software “debounce” filter avoids false triggering and an ESD protection filter on the USB connection guarantees a reliable operation.

This device is intended to be connected to USB host devices or USB hubs. Connecting the device to equipment that does not adhere to the USB standard may damage the device.

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Connecting the USB Dome Button

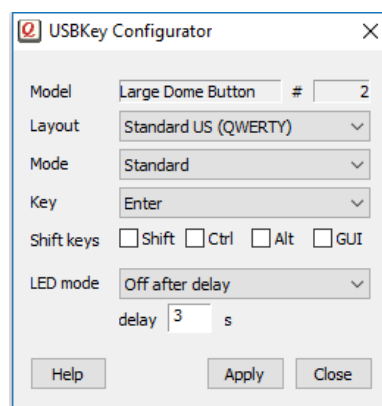
The USB button has a “mini-B” style connector. Any cable with a mini-B plug can, in principle, be used for the USB button. It is recommended, however, to use a cable with a screw lock and seal, for a reliable and waterproof connection. Cables with screw lock/seal are available in various lengths.



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Configuring the USB Dome Button

The configuration utility is available from <http://www.compuphase.com/usbkey/>.



The utility configures only a single button at a time. The serial number, at the right of the model name, shows which button is being configured. The last

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three digits of the serial number are also printed on the USB button itself, above the USB connector.


If not using a US keyboard layout, please select the appropriate layout of the keyboard (QWERTY/AZERTY).

The mode can be “Standard”, “Pulse” or “Macro”. In *standard* mode, the USB button sends a key-down message on a press and a key-up message on a release. When holding the button pressed, the key-down is repeated (just like a key repeats when you hold it down). In *pulse* mode, the USB button sends a key-up message shortly after the key-down. The button therefore does not repeat. In *macro* mode, you can specify a sequence of keys to be transmitted. For the syntax of macro mode, please see the help file in the application.

After changing the configuration, you must click on Apply to store the settings in the USB button.

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Starting programs or commands

In Microsoft Windows, the  + R key combination shows the “Run” dialog. In “macro” mode, you can pop up this dialog with the key sequence “#R”. You can follow this by a command and then “{ENTER}” at the end to execute it. Other operating systems support similar functions, but may require a different key combination to pop up a “Run” dialog.

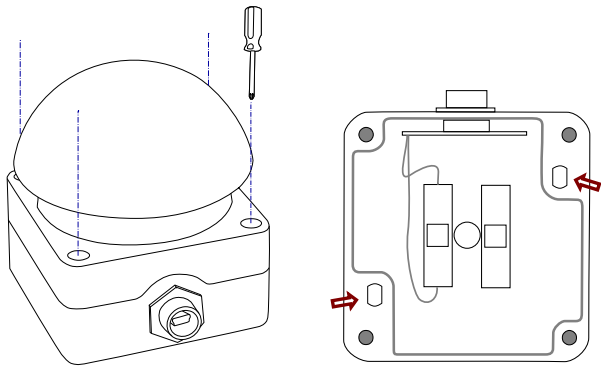
In addition, the USB Dome Button supports several consumer control functions, like play, pause and others. These require standard or pulse modes.

Temporary or permanent mount

The USB Dome Button has a 1/4-20 UNC thread for mounting on a (camera) tripod or a (microphone) stand.

Alternatively, the base of the button has two mounting holes/slots for a permanent mounting. The mounting holes are suitable for 4 to 4.5 mm screws.

To get access to the two mounting holes in the base, the first step is to unscrew the top part of the button from the base.



Using the LED indicator

This section is only relevant for models with a LED.

Standard functions for the LED indicator can be configured with the Key Configurator tool. The ButtonLights utility allows more advanced control, including “lock-out” functionality for Quiz software. See <http://www.compuphase.com/usbkey/> for downloads.

For controlling the LED indicators from your own application, see the API descriptions in the Help file of the ButtonLights utility. The ButtonLights utility supports message passing, command line arguments and a HTTP network interface.

Note that the ButtonLights utility requires Microsoft Windows.

Specifications

Mechanical

Dimensions.....Base: 85×85 mm, height: 45 mm,
dome diameter: 94 mm;
total height: 101 mm;
USB connector protrudes the
base by 11 mm.
Colour.....Base: black & grey; dome: red,
black or yellow.
Mechanical lifespan.....> 10⁶ operations.
Protection level.....IEC/EN 60529: IP65, IP67
Actuation force.....20 to 25 N.

Operating conditions

Operating temperature...-25 °C to +40 °C.
Humidity.....5% to 95% non-condensing.

Electronic interface

Operating voltage.....4.5 to 5.5 V/DC; USB-powered.
Current.....15 mA nominal; 50 mA nominal
with LED illumination on (for
models that include illumination).
Debounce criterion.....20 ms stable period.
Switch latency.....50 ms maximum, 35 ms average.
LED indicator.....470 mcd at a 120° viewing angle;
red (640 nm); only applicable for
models that include illumination.
USB connector.....Mini-B, buccaneer (sealed IP68).
USB protocol.....USB 1.1 compatible (low-speed
USB device).

Compatibility

Compatible with Microsoft Windows® XP and later,
Macintosh®, and Linux. No client-side software is
needed. (Free configuration software requires
Windows® operating system).

Conformity

EMC.....Compliant with EU Directive
2004/108/EC: EN 55022 and
EN 55024 + A1 (2001) + A2
(2003).
Electrical safety.....Compliant with EU Directive
2006/95/EC: EN 60950-21
RoHS.....Compliant with EU Directive
2002/95/EC.

Legal disclaimer

ITB CompuPhase shall not be liable for the incidental
or consequential losses or damage to tangible
property, injury or death of a person in connection
with the use of this device.

This device is intended to be connected to USB host
devices or USB hubs. Connecting the device to
equipment that does not adhere to the USB
standard may damage the device.