

# Technical Guide

For:

**COB Holder Hybrid Series 630**

**Release:**

01.03

**Release-Date:**

2019-08-21



**Please take note of the following instructions for the selection and assembling of the B+W COB Holder Hybrid Series 630.**

*The information in this document is provided without liability and subject to change without notice.*

## 1. Scope

The B+W LED Holder Series 630 offers a wide range of different standard COB holders.

This technical guide incorporates all important aspects of handling and assembling our holders appropriately and explains our encoding system.

Our customer service team will help you to identify (or create) the best solution for your application. Please feel free to contact us for any further questions or demands.



## 2. Safety instructions

B+W LED holders are designed for an optimal fixation of Chip on Board (COB) LED's. For the correct operation, handling, thermal management and electrical connection you have to follow the COB manufacturer's instructions.

The holder is part of an electrical circuit, therefore only trained personnel should handle them.

## 3. Certificates

The complete B+W COB Holder Hybrid Series 630 including all customized versions is certified according to:

- + UL 8754
  - + CAN/ULC-S8754
  - + DIN EN 60838-1
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The original certificates of compliances are downloadable from our online catalogue.

- + VDE Certificate No. **40050075**
- + UL- File **E472943**

## 4. Encoding system

B+W developed a family of standard holder versions with different housings for all suitable COBs. This chapter will explain the encoding system and how to differentiate the holders.

### 4.1 Codes

Part No.            **XXXXX**

Drawing No.    **XXXz**    /    **XXXXX**    -    **X**  
                                └─ Article No.                          └─ Part No.                          └─ Index

Description    **COB Holder Hybrid XXXz**                          **YYYYYY**            **ZZZZZZ**  
  └─ Article No.                          └─ Housing                          └─ Wire

### 4.2 Part Number / Teilenummer

**XXXXX**

The part number is the legal order code. You find it on every offer, order acknowledgement and invoice in the first row.

### 4.3 Drawing Number / Zeichnungsnummer

**XXXz / XXXXX – X**

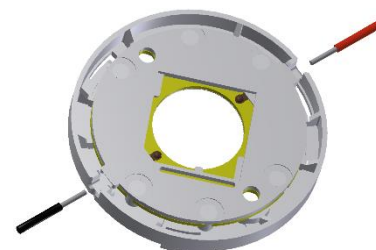
Each part number has an individual drawing number (1:1 relationship). It contains the article number, the part number itself and optionally an index. You find it on every offer, order acknowledgement and invoice in the second row (and, of course, on every drawing).

### 4.4 Article Number / Artikelnummer

**XXXz**

The article number designates which COB is suitable for the selected holder. You find it within the drawing number and within the description.

XXX defines the size of COBs (eg. Holder 633 19mmx19mm) and z declares the exact contact position (eg. Holder 633a for Citizen CLU038).



All versions are listed in the data sheets of Holder XXX available at [www.nrcelectronics.com/B&W\\_contact\\_form/com](http://www.nrcelectronics.com/B&W_contact_form/com)

### 4.5 Description / Artikelbeschreibung

**COB Holder Hybrid XXXz**      **YYYYYY ZZZZZZ**

You find the description on every offer, order acknowledgement and invoice in the third row. It contains the article number, the housing and contact info.

#### 4.5.1 Article Number / Artikelnummer

COB Holder Hybrid **XXXz**      **YYYYYY ZZZZZZ**

See above (chapter 4.4)

#### 4.5.2 Housing / Gehäuseform

COB Holder Hybrid XXXz      **YYYYYY ZZZZZZ**

All holders are available with several housings.

The different versions including suitable optics and order codes are shown in the data sheets of all different holders on our online catalogue.



#### 4.5.3 Wire / Leitung

COB Holder Hybrid XXXz      **YYYYYY ZZZZZZ**

Each holder is available in two versions with different contacts pending on the wire sizes:

0,35/0,5      for stranded tinned wires 0,35mm<sup>2</sup>/0,5mm<sup>2</sup> (AWG22/AWG20)

0,75      for stranded tinned wires 0,75mm<sup>2</sup> (AWG18)

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## 5. Handling

- + Please avoid mechanical stress onto the wires or contacts (for e.g. pushing or pulling of the wires) after installation of wire into the push-in terminals..
- + The holders should stay within the original package in a dry and tempered location until assembling.
- + Of course all handling instructions of the COB supplier have to be followed as well.

## 6. Assembly instructions

Due to the high performance material B+W COB Holders create a constant pressure onto the COB, even at high temperatures where other materials yield. This ensures a minimal thermal resistance.

### 6.1 Thermal Interface Material (TIM)

The additional use of a Thermal Interface Material (TIM) reduces the thermal resistance.

B+W COB Holders can be used with the following TIM's:

- + **Paste** (must be applied finely)
- + **Graphite pads**
- + **Silicon pads** (mostly used for insulated applications / HV versions)
- + **Phase change material** (must be very thin to get the optimal performance)

With an insulating TIM (min. 2kV) the holder can be used up to 450VDC. See VDE and UL certificates for more details.

The optimal thermal functionality always depends on different parameters. The component combination should be tested with cautiousness.

### 6.2 Assembly

#### 6.2.1 Insertion of COB

The COB holder hybrid series 630 provides for all variants a pre-fixation of the COBs to allow an easy and safe assembly of the modules.



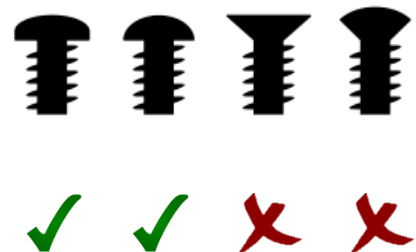
Take care of the correct position of COB (“+” an “-“ position). The right position is marked on the housing so that the wire installation can be done later without problems.



The upper side is marked with “+” and “-“.  
Additionally the “-“ side has a cutoff visible from both sides

#### 6.2.2 Fixing screws

The holders are designed to have maximum screw force on the inner temp resistant mica layer for getting best thermal connection. Therefore use screws with a flat inner face only. Do not use screws with a conical / tapering inner face. They can damage the mica layer.



The maximum fixing torque for all screws is **0,5 Nm**. We recommend to use a torque screw driver to ensure the correct fixing.

### 6.2.3 Install wire

See details for suitable wires in Chapter 7.

Ensure that the wire is inserted correctly. Due to the high fixation force the push-in force is a bit higher but ensures an optimal electrical connection.

## 7. Electrical Connection

### 7.1 Contacts

The contacts are made of CuSn with Ni or Si plating.

### 7.2 Contact pads of the COB

For the best performance the contact pads at the COBs must be gilded. Tinned contact pads are not acceptable due to possible oxidation.

### 7.3 Connection leads

Suitable connection leads are pending on the installed contacts:

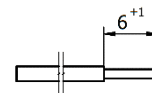
Contact 0,35/0,5 for stranded tinned wires 0,35mm<sup>2</sup>/0,5mm<sup>2</sup> (AWG22/AWG20)

Contact 0,75 for stranded tinned wires 0,75mm<sup>2</sup> (AWG18)

Take care of the right Temp and Voltage rating for your application. Only copper conductors are allowed.

### 7.4 Wire ends

Wire ends have to be 6mm stripped and tinned.



Take care that the wire is still round after tinning.



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## 8. Technical details and standard ratings

<b>rated voltage:</b>	250 V DC (optionally 450V DC)
<b>rated current:</b>	5 A
<b>rated operating temperature:</b>	T120
<b>standard connection:</b>	Push-In terminals for stranded tinned wires available in 2 versions
<b>fixing:</b>	screw M3
<b>max. torque:</b>	0,5 Nm
<b>material:</b>	PBT / Mica
<b>contact material:</b>	CuSn

## 9. Disclaimer

This technical guide was created to provide guidance in customer applications for the COB holder hybrid series 630 of Bender + Wirth. Bender + Wirth assumes no responsibility regarding the completeness and accuracy of the contents, as well as the suitability of the systems for a particular purpose.

Bender + Wirth is in no way liable to third parties for direct or indirect consequential damages arising directly or indirectly from the use of this document.

It is the responsibility of the customer to ensure that the design meets all the necessary requirements and safety certifications that are needed for its intended use.

## 10. Contact

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