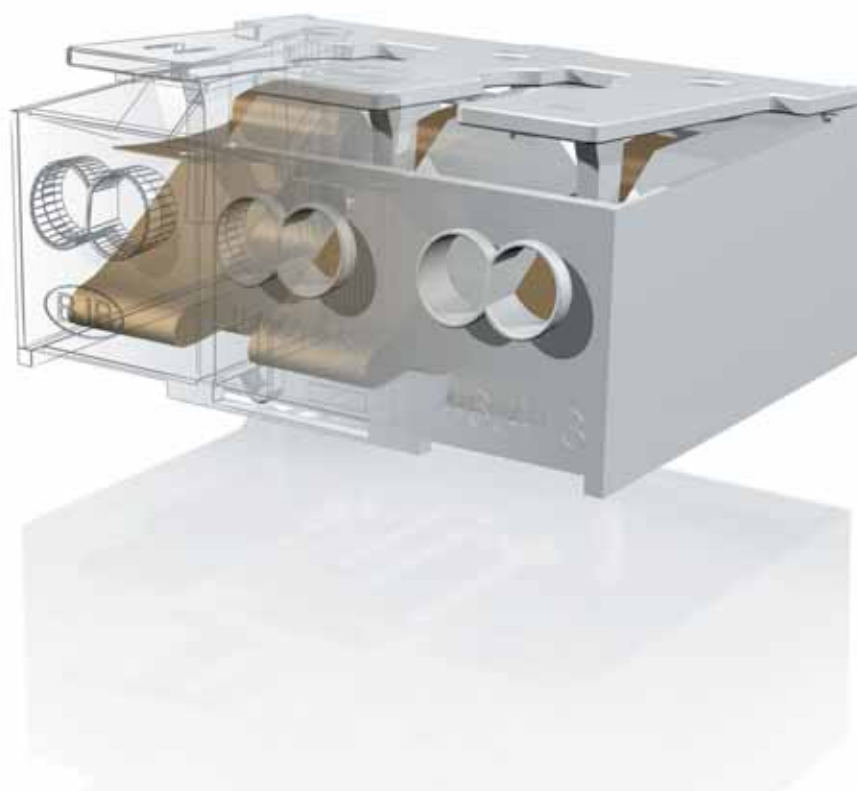
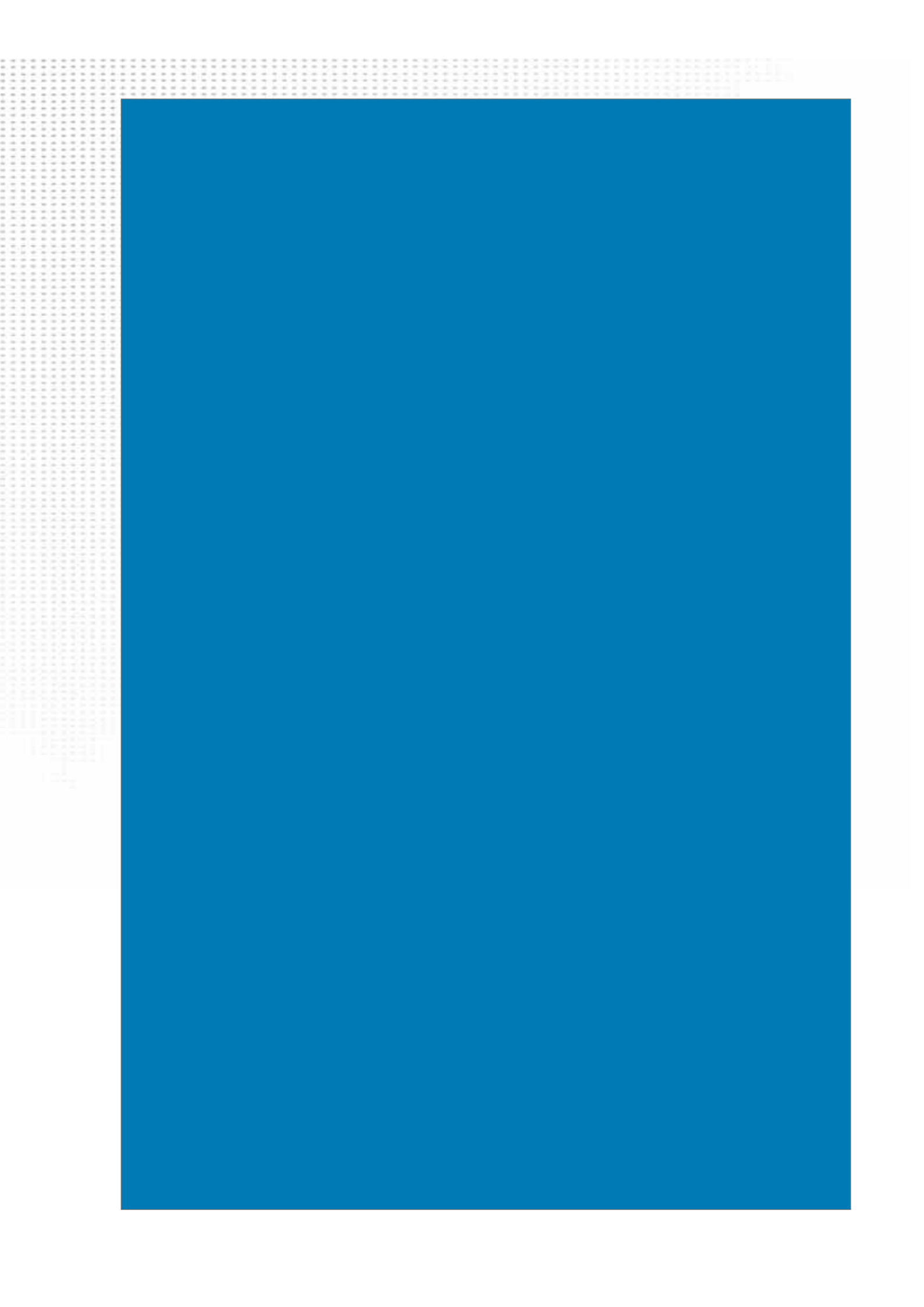




## Terminal blocks and connecting pieces



Your Connection to Light



# Terminal blocks and connecting pieces

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# Terminal blocks and connecting pieces

## General information



All articles in this catalogue have been designed according to the appropriate national and international standards (VDE / IEC).

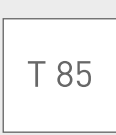
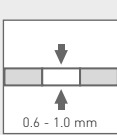
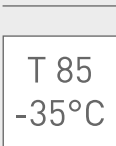
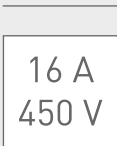
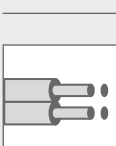
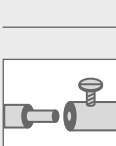
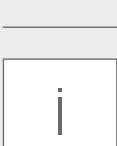
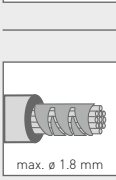
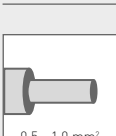
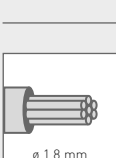
The choice of product and correct technical embodiment is the sole responsibility of the user.

Exact information can be obtained upon request.

We reserve the right to modify products.

Please note also the general information at the end of this catalogue and the directions for use.

### Explanation of the symbols shown on the product pages.

|                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p><b>Temperature rating T 85</b><br/>The maximum operating temperature is given by a T marking. This is the maximum operating temperature for which the product is designed.<br/>Additional information may be given for the rear of the product (e. g. Tm 110°C).</p>                                                                    |  <p><b>Material thickness</b><br/>Indication in mm<br/>(In this example 0.6 - 1.0 mm)</p>                                                                 |
|  <p><b>Temperature rating</b><br/>Declaration of the minimum and maximum permissible environmental temperatures according to IEC 60998 / VDE 0613, part 1 and 2</p>                                                                                                                                                                         |  <p><b>Rating</b><br/>Current rating is given in A and voltage rating in V.<br/>Testing current according to EN 60998:24A</p>                             |
|  <p><b>Twin push wire terminals</b></p>                                                                                                                                                                                                                                                                                                    |  <p><b>Automatic final testing of light fitting</b><br/>Detailed information can be found on page [05] 7</p>                                             |
|  <p><b>Quad push wire terminals</b></p>                                                                                                                                                                                                                                                                                                   |  <p><b>CAD-Data in 2D or 3D format available</b></p>                                                                                                    |
|  <p><b>Screw terminals</b><br/>With indication of the maximum diameter</p>                                                                                                                                                                                                                                                                |  <p><b>Additional information</b><br/>Further information about the products shown on this page can be found on the pages shown within this symbol.</p> |
|  <p><b>For tinned wire ends within the cross sectional range stated</b><br/>(In this example <math>\varnothing</math> 1.8 mm)<br/>When regulations deviate from IEC, other cross sections are possible (e. g. UL / CSA: cable 18 AWG).</p>                                                                                                |                                                                                                                                                                                                                                            |
|  <p><b>For wire ends with ferrule to the maximum diameter stated</b><br/>(In this example max. <math>\varnothing</math> 1.8 mm)<br/>The cable and termination used must be compatible in respect of:<br/>Diameter and length of the ferrule, strip length of insulation<br/>For further information see DIN 46228, part 3, size 1 - 7</p> |                                                                                                                                                                                                                                            |
|  <p><b>For solid conductors within the cross sectional range stated</b><br/>(In this example 0.5 - 1.0 mm<sup>2</sup>)<br/>When regulations deviate from IEC, other cross sections are possible (e. g. UL / CSA: cable 18 AWG).</p>                                                                                                       |                                                                                                                                                                                                                                            |
|  <p><b>For 7 stranded wire ends within the cross sectional range stated</b><br/>(In this example <math>\varnothing</math> 1.8 mm)</p>                                                                                                                                                                                                     |                                                                                                                                                                                                                                            |

# Terminal blocks and connecting pieces

## Technical information

### Terminal blocks with earth contact (Rapid-Earth-Contact (REC))



The REC provides an electrical connection between the earth pole of the terminal block and the mounting plate also a mechanical connection is made in addition to the electrical connection.

#### Metalwork specification

Acceptable materials: All types of steel plate in common usage (Aluminium plate is not suitable, because the earth contacts are made of a copper alloy).

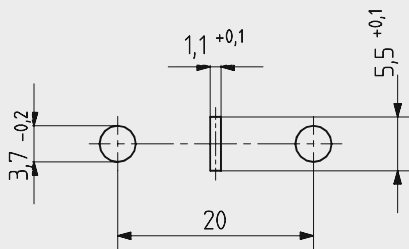
Permissible thickness: 0.5 - 1.0 mm

Surface: Must be protected against corrosion (e. g. steel plates may be plated, painted or plastic coated).

#### Cut-outs

The cut-outs must correspond with the following drawing.

Rapid-Earth-Contact:



The diameter of the fixing holes allows for a finish to be applied.

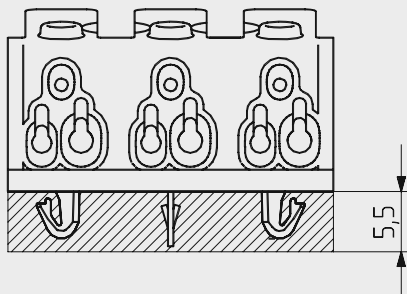
The dimensions of the cut-out for the earth contact must correspond to those stated.

A maximum punching tolerance of 0.1 mm is permissible in the direction of insertion.

#### Approvals

The terminal blocks are approved to EN 60998.

#### Embodiment



The risk of damage to the Rapid Earth Contact (see shaded area of drawing above) during production, packing, transport, assembly, as well as distribution of the light fittings must be eliminated by the method of construction.

For example:

- Assembly onto a separate component carrier inside the light fitting (e.g. bus)
- Increased construction
- Depressions or spacers in suitable positions and of a suitable size.

The design detail is therefore dependent on embodiment, metalwork stability and the specific production methods of the user. We recommend an agreement is made with the relevant test house.

#### Assembly

The terminal block must be inserted into the cut-out at right angles to the metalwork.

Pressure to snap in the terminal block should only be applied when correctly positioned above the cut-out.

Depending upon the construction of the fitting and the material used, it may be necessary to support the metalwork in the area of the cut-out during installation to eliminate the possibility of distortion, thus ensuring correct location and contact of REC.

Distortion of the snap in pins must be avoided.

It must be ensured that the snap in pins as well as the REC have located correctly.

#### Testing

Once fully assembled, the light fitting must undergo a full electrical final test for earth continuity according to IEC IEC 60598.

# Terminal blocks and connecting pieces

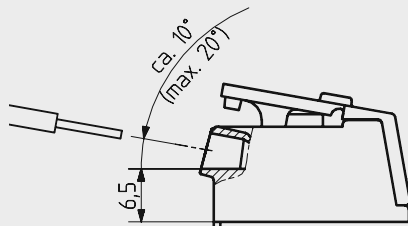
## Technical information

### Terminal blocks 46.412 - 46.415, Light fitting final testing



- Incoming mains supply cables can be released by depressing the lever above the contact.

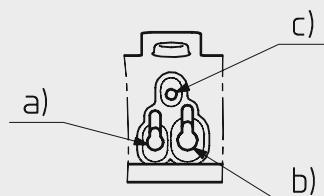
- Wiring may be inserted at an angle between 0° and 20° (optimal 10°)



- Strip length  
0.5 - 1.0 mm<sup>2</sup>: 8±1 mm  
1.5 - 2.5 mm<sup>2</sup>: 12±1 mm  
Suppression capacitor: 8±1 mm

- Cable diameters:  
External: 2 x 0.5 - 2.5 mm<sup>2</sup> with release facility

- Internal: a) 1 x 0.5 - 1.0 mm<sup>2</sup>, releasable  
b) 1 x 0.5 - 2.5 mm<sup>2</sup>, releasable  
c) Suppression capacitor:  
1 x 0.5 - 0.75 mm<sup>2</sup>, not releasable



- When embodying the terminal blocks, ensure sufficient space is allowed for connections to be made.
- The surrounding rim must lie flat.
- The cables must not exert any bending forces onto the terminal block contacts during connection.

To avoid exceeding the nominal currents steps must be taken during the design and installation of lighting systems to avoid operating conditions that require the terminal block to perform outside its design parameters.

#### Examples:

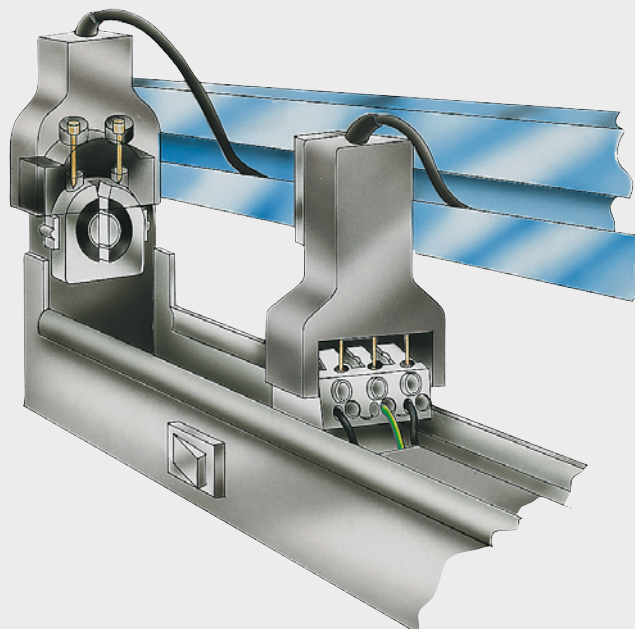
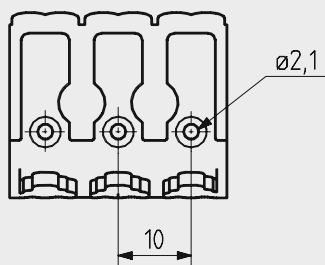
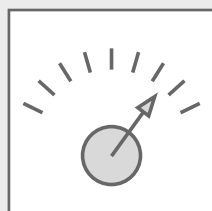
- Long lasting ignition procedures with resulting increase in current
- Non-symmetrical load distribution in three-phase lighting systems (compensation currents)  
e. g. through  
- Uneven number of light fittings per phase  
- Lamp failures  
- On and off switching of individual strands  
- Failure of phases

- Upper waves of the operating currents can add up in the neutral wire.

Especially during installation of light strips or lighting groups, large current carrying capacity is achieved through sliding through of the wires.

#### Automatic final testing

Test openings on the top of the terminal blocks (see drawing) make the insertion of a test adaptor possible. The electrodes of the adaptor meet the terminal block contacts, so that electronic test apparatus can measure the result. Please contact us for further details of the test adaptor.  
For a test movement vertical to the assembly surface, we recommend an electrode of max.  $\varnothing$  1.8 mm.



## Terminal blocks and connecting pieces

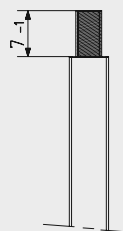
### General information for capacitor connectors

46.208 46.211  
46.220 46.221



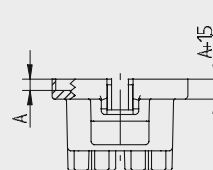
#### Information for conductors

- Approx. 6 - 7 mm of insulation should be stripped from the wires.
- Information on suitable conductor cross-sections can be found in the article text
- Conductor can be released



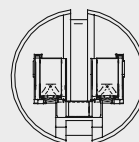
#### Specification for the capacitor connectors

- Dimension „A“ is dependent on dimension of capacitor top and can be found in the article text.
- Two versions are available: A = 2 mm and A = 3 mm.
- The adaptor with A = 2 mm will fit in most cases.



#### Information for capacitor connectors 46.208

- Capacitor conductors with solder tag Form R - DIN 41496 should be used.
  - Alternative solder tags with the following dimensions can also be used
- |                           |                         |
|---------------------------|-------------------------|
| Length:                   | 8.0 - 12.0 mm           |
| Width:                    | 3.0 <sup>+0.12</sup> mm |
| Thickness:                | ca. 0.4 mm              |
| Distance between centres: | 10.0 mm                 |



#### Information for capacitor connectors 46.211 / 46.220 and 46.221

- Details for internal connection and types of capacitor connections, available upon request.
- Exact dimensions available upon request.

#### Rating

- Current rating is given in A and voltage rating in V, specific mode 500V/2A.
- Capacitor connectors for 6A on request.
- Maximum discharge resistance: P=0.5 W.

2 A  
500 V