

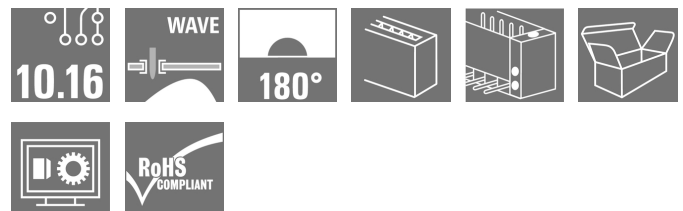
**SU 10.16HP/02/180F 3.5AG BK BX****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

**Product image**

Similar to illustration

Single-row, high-current male header, for side-by-side mounting without sacrificing any poles, or with patented flange for fast locking without tools. Maximum connection and operating reliability thanks to a mating profile that prevents incorrect connection, with unique coding diversity, additional fastening and integrable positioning aid. 3.5 mm pin length is optimised for wave soldering, plug-in direction 180° to solder pins.

**General ordering data**

|              |                                                                                                                                                                         |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Version      | PCB plug-in connector, male header, Clip-on flange, THT solder connection, 10.16 mm, Number of poles: 2, 180°, Solder pin length (l): 3.5 mm, silver-plated, black, Box |
| Order No.    | <a href="#">1813650000</a>                                                                                                                                              |
| Type         | SU 10.16HP/02/180F 3.5AG BK BX                                                                                                                                          |
| GTIN (EAN)   | 4032248297870                                                                                                                                                           |
| Qty.         | 42 pc(s).                                                                                                                                                               |
| Product data | IEC: 1000 V / 78.3 A<br>UL: 300 V / 60 A                                                                                                                                |
| Packaging    | Box                                                                                                                                                                     |

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## Technical data

### Dimensions and weights

Net weight 15.24 g

### System specifications

|                                              |                                       |                     |                                                    |
|----------------------------------------------|---------------------------------------|---------------------|----------------------------------------------------|
| Product family                               | OMNIMATE Power - series BU/SU 10.16HP |                     |                                                    |
| Type of connection                           | Board connection                      |                     |                                                    |
| Mounting onto the PCB                        | THT solder connection                 |                     |                                                    |
| Pitch in mm (P)                              | 10.16 mm                              |                     |                                                    |
| Pitch in inches (P)                          | 0.4 inch                              |                     |                                                    |
| Outgoing elbow                               | 180°                                  |                     |                                                    |
| Number of poles                              | 2                                     |                     |                                                    |
| Number of solder pins per pole               | 3                                     |                     |                                                    |
| Solder pin length (l)                        | 3.5 mm                                |                     |                                                    |
| Solder pin length tolerance                  | +0.1 / -0.3 mm                        |                     |                                                    |
| Solder pin dimensions                        | 1.2 x 1.1 mm                          |                     |                                                    |
| Solder pin dimensions = d tolerance          | +0.1 / -0.1 mm                        |                     |                                                    |
| Solder eyelet hole diameter (D)              | 1.6 mm                                |                     |                                                    |
| Solder eyelet hole diameter tolerance (D)    | + 0.1 mm                              |                     |                                                    |
| L1 in mm                                     | 10.16 mm                              |                     |                                                    |
| L1 in inches                                 | 0.4 inch                              |                     |                                                    |
| Number of rows                               | 1                                     |                     |                                                    |
| Pin series quantity                          | 1                                     |                     |                                                    |
| Touch-safe protection acc. to DIN VDE 57 106 | Safe from finger touch, plugged       |                     |                                                    |
| Touch-safe protection acc. to DIN VDE 0470   | IP20 plugged                          |                     |                                                    |
| Volume resistance                            | 2.00 mΩ                               |                     |                                                    |
| Can be coded                                 | Yes                                   |                     |                                                    |
| Tightening torque                            | Torque type                           | Mounting screw, PCB |                                                    |
|                                              | Usage information                     | Thickness           | min. 1.44 mm                                       |
|                                              |                                       |                     | max. 1.76 mm                                       |
|                                              |                                       | Tightening torque   | min. 0.25 Nm                                       |
|                                              |                                       |                     | max. 0.3 Nm                                        |
|                                              |                                       | Recommended screw   | Part number <a href="#">SU 10.16 BFSC P 35X 14</a> |
|                                              |                                       |                     |                                                    |
|                                              |                                       | Thickness           | min. 2.88 mm                                       |
|                                              |                                       |                     | max. 3.52 mm                                       |
|                                              |                                       | Tightening torque   | min. 0.2 Nm                                        |
|                                              |                                       |                     | max. 0.25 Nm                                       |
|                                              |                                       | Recommended screw   | Part number <a href="#">SU 10.16 BFSC P 35X 14</a> |
|                                              |                                       |                     |                                                    |
|                                              |                                       | Thickness           | min. 1.44 mm                                       |
|                                              |                                       |                     | max. 3.52 mm                                       |
|                                              |                                       | Tightening torque   | min. 0.8 Nm                                        |
|                                              |                                       |                     | max. 0.9 Nm                                        |
|                                              |                                       | Recommended screw   | Part number <a href="#">SU 10.16 BFSC S 35X12</a>  |
|                                              |                                       |                     |                                                    |

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## Technical data

## Material data

|                                       |              |                                       |               |
|---------------------------------------|--------------|---------------------------------------|---------------|
| Insulating material                   | PBT GF       | Colour                                | black         |
| Colour chart (similar)                | RAL 9011     | Insulating material group             | IIIa          |
| Comparative Tracking Index (CTI)      | ≥ 200        | UL 94 flammability rating             | V-0           |
| Contact material                      | Copper alloy | Contact surface                       | silver-plated |
| Layer structure of solder connection  | ≥ 3 µm Ag    | Layer structure of plug contact       | ≥ 3 µm Ag     |
| Storage temperature, min.             | -40 °C       | Storage temperature, max.             | 70 °C         |
| Operating temperature, min.           | -50 °C       | Operating temperature, max.           | 120 °C        |
| Temperature range, installation, min. | -25 °C       | Temperature range, installation, max. | 120 °C        |

## Rated data acc. to IEC

|                                                                           |                        |                                                                       |                   |
|---------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------|-------------------|
| tested acc. to standard                                                   | IEC 60664-1, IEC 61984 | Rated current, min. number of poles (Tu=20°C)                         | 78.3 A            |
| Rated current, max. number of poles (Tu=20°C)                             | 67.9 A                 | Rated current, min. number of poles (Tu=40°C)                         | 70.6 A            |
| Rated current, max. number of poles (Tu=40°C)                             | 61.3 A                 | Rated voltage for surge voltage class / pollution degree II/2         | 1,000 V           |
| Rated voltage for surge voltage class / pollution degree III/2            | 1,000 V                | Rated voltage for surge voltage class / pollution degree III/3        | 690 V             |
| Rated impulse voltage for surge voltage class/ pollution degree II/2      | 6 kV                   | Rated impulse voltage for surge voltage class/ pollution degree III/2 | 8 kV              |
| Rated impulse voltage for surge voltage class/ contamination degree III/3 | 8 kV                   | Short-time withstand current resistance                               | 3 x 1s mit 1000 A |
| Clearance, min.                                                           | 8.9 mm                 | Creepage distance, min.                                               | 10.5 mm           |

## Rated data acc. to CSA

|                                   |       |                                   |       |
|-----------------------------------|-------|-----------------------------------|-------|
| Rated voltage (Use group B / CSA) | 300 V | Rated voltage (Use group C / CSA) | 300 V |
| Rated voltage (Use group D / CSA) | 600 V | Rated current (Use group B / CSA) | 60 A  |
| Rated current (Use group C / CSA) | 60 A  | Rated current (Use group D / CSA) | 5 A   |

## Rated data acc. to UL 1059

|                                       |                                                                                     |                                       |         |
|---------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------|
| Institute (cURus)                     |  | Certificate No. (cURus)               | E60693  |
| Rated voltage (Use group B / UL 1059) | 300 V                                                                               | Rated voltage (Use group C / UL 1059) | 300 V   |
| Rated voltage (Use group D / UL 1059) | 600 V                                                                               | Rated current (Use group B / UL 1059) | 60 A    |
| Rated current (Use group C / UL 1059) | 60 A                                                                                | Rated current (Use group D / UL 1059) | 5 A     |
| Clearance distance, min.              | 8.9 mm                                                                              | Creepage distance, min.               | 10.5 mm |
| Reference to approval values          | Specifications are maximum values, details - see approval certificate.              |                                       |         |

## Packing

|           |        |            |        |
|-----------|--------|------------|--------|
| Packaging | Box    | VPE length | 338 mm |
| VPE width | 130 mm | VPE height | 44 mm  |

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## Technical data

### Classifications

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 6.0    | EC002637    | ETIM 7.0    | EC002637    |
| ETIM 8.0    | EC002637    | ECLASS 9.0  | 27-44-04-02 |
| ECLASS 9.1  | 27-44-04-02 | ECLASS 10.0 | 27-44-04-02 |
| ECLASS 11.0 | 27-46-02-01 | ECLASS 12.0 | 27-46-02-01 |

### Important note

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IPC conformity | Conformity: The products are developed, manufactured and delivered according international recognized standards and norms and comply with the assured properties in the data sheet resp. fulfill decorative properties in accordance with IPC-A-610 "Class 2". Further claims on the products can be evaluated on request.                                                                                                                                                                                                                                                                                                                                                |
| Notes          | <ul style="list-style-type: none"> <li>• Additional variants on request</li> <li>• Rated current related to rated cross-section &amp; min. No. of poles.</li> <li>• P on drawing = pitch</li> <li>• Rated data refer only to the component itself. Clearance and creepage distances to other components are to be designed in accordance with the relevant application standards.</li> <li>• For all applications with flange we recommend to fix the pin header with the help of the soldering flange or a self-tapping screw on the board.</li> <li>• Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months</li> </ul> |

### Approvals

Approvals



|                         |            |
|-------------------------|------------|
| ROHS                    | Conform    |
| UL File Number Search   | UL Website |
| Certificate No. (cURus) | E60693     |

### Downloads

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Approval/Certificate/Document of Conformity | <a href="#">Declaration of the Manufacturer</a>                                                                                                                                                                                                                                                                                                                                                              |
| Engineering Data                            | <a href="#">CAD data – STEP</a>                                                                                                                                                                                                                                                                                                                                                                              |
| Engineering Data                            | <a href="#">EPLAN, WSCAD</a>                                                                                                                                                                                                                                                                                                                                                                                 |
| Product Change Notification                 | <a href="#">PCN_2017_122_PL33x_Packaging_SU1016_DE</a><br><a href="#">PCN_2017_122_PL33x_Packaging_SU1016_EN</a>                                                                                                                                                                                                                                                                                             |
| Catalogues                                  | <a href="#">Catalogues in PDF-format</a>                                                                                                                                                                                                                                                                                                                                                                     |
| Brochures                                   | <a href="#">FL DRIVES EN</a><br><a href="#">MB DEVICE MANUF. EN</a><br><a href="#">FL DRIVES DE</a><br><a href="#">FL HEATING ELECTR EN</a><br><a href="#">FL APPL INVERTER EN</a><br><a href="#">FL_BASE_STATION_EN</a><br><a href="#">FL ELEVATOR EN</a><br><a href="#">FL POWER SUPPLY EN</a><br><a href="#">FL 72H SAMPLE SER EN</a><br><a href="#">PO OMNIMATE EN</a><br><a href="#">PO OMNIMATE EN</a> |

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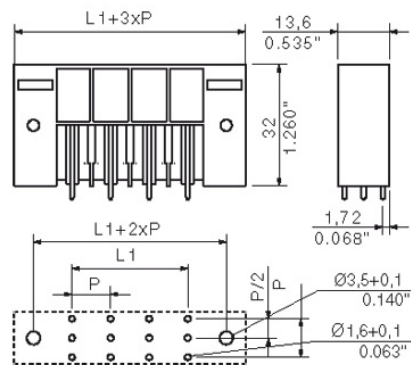
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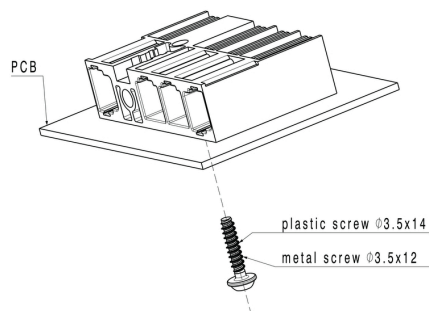
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# Drawings

## Dimensional drawing



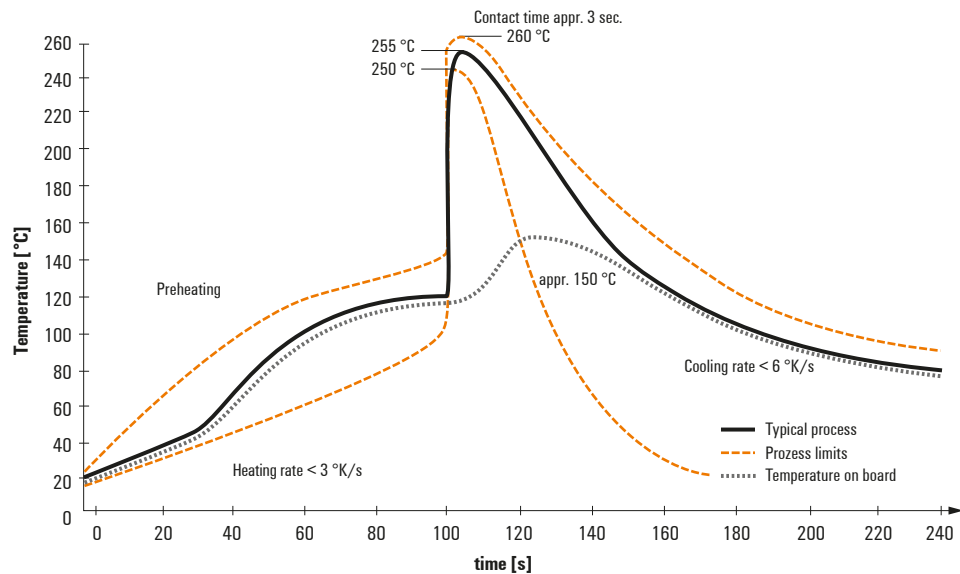
## Example of use



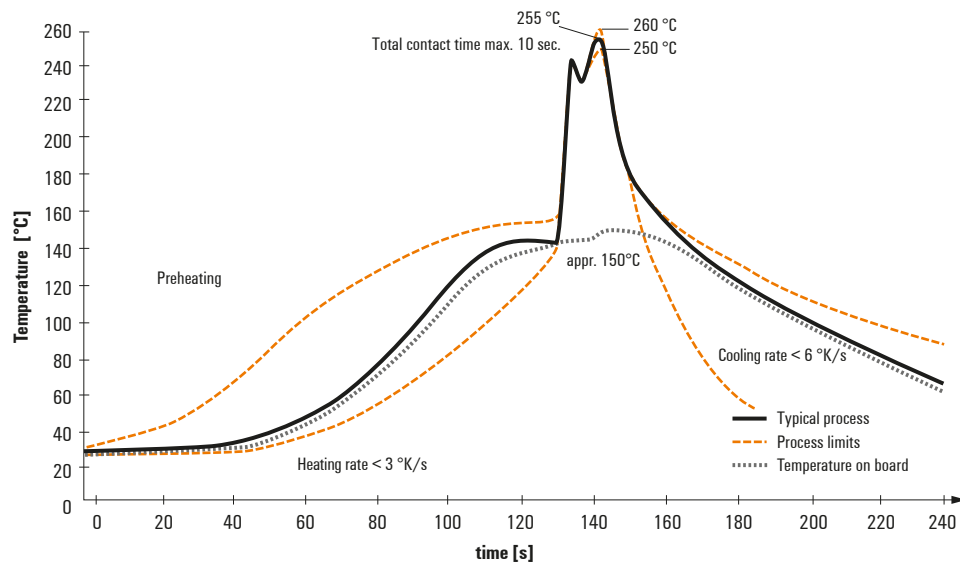
## Recommended wave soldering profiles

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### Single Wave:



### Double Wave:



### Wave soldering profiles

Wired connection elements should be processed in accordance with the DIN EN 61760-1 standard. We have included two recommendations for practical wave soldering profiles, with which Weidmüller PCB terminals and connectors are qualified.

When choosing a suitable profile for your application, the following factors also need to be considered:

- PCB thickness
- Proportion of Cu in the layers
- Single/double-sided assembly
- Product range
- Heating and cooling rates

The single and double wave profiles each indicate the recommended operating range, including the maximum soldering temperature of 260°C. In practice, the maximum soldering temperature is quite often well below the above maximum profile.

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