

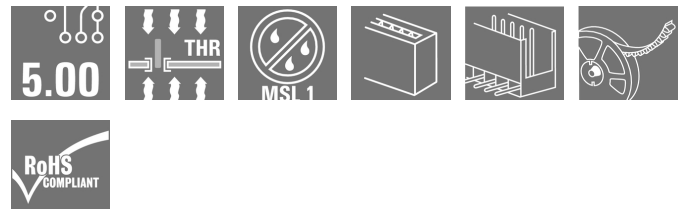
**SHL-SMT 5.00/03GL 5.9RL****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

**Product image**

Male connectors with solder pin length optimised for wave flow soldering. The pin headers provide space for labelling and can be coded.

**General ordering data**

|              |                                                                                                                                                                                          |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Version      | PCB plug-in connector, Connection element, left, male header, open side, THT/THR solder connection, 5.00 mm, Number of poles: 3, 90°, Solder pin length (l): 5.9 mm, tinned, black, Tape |
| Order No.    | <a href="#">1069790000</a>                                                                                                                                                               |
| Type         | SHL-SMT 5.00/03GL 5.9RL                                                                                                                                                                  |
| GTIN (EAN)   | 4032248825141                                                                                                                                                                            |
| Qty.         | 175 pc(s).                                                                                                                                                                               |
| Product data | IEC: 400 V<br>UL: 300 V / 9 A / AWG 26 - AWG 12                                                                                                                                          |
| Packaging    | Tape                                                                                                                                                                                     |

Creation date September 15, 2022 11:22:42 PM CEST

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## Technical data

## Dimensions and weights

|            |         |                 |            |
|------------|---------|-----------------|------------|
| Height     | 14.4 mm | Height (inches) | 0.567 inch |
| Width      | 15.4 mm | Width (inches)  | 0.606 inch |
| Length     | 23.3 mm | Length (inches) | 0.917 inch |
| Net weight | 2.79 g  |                 |            |

## System Parameters

|                     |                                 |                     |                  |
|---------------------|---------------------------------|---------------------|------------------|
| Product family      | OMNIMATE Housing - series CH20M | Type of connection  | Board connection |
| Pitch in mm (P)     | 5 mm                            | Pitch in inches (P) | 0.197 inch       |
| Number of poles     | 3                               | L1 in mm            | 10 mm            |
| L1 in inches        | 0.394 inch                      | Number of rows      | 1                |
| Pin series quantity | 1                               | Protection degree   | IP20             |
| Volume resistance   | ≤5 mΩ                           | Can be coded        | Yes              |

## Material data

|                                       |                 |                                       |              |
|---------------------------------------|-----------------|---------------------------------------|--------------|
| Insulating material                   | LCP             | Colour                                | black        |
| Colour chart (similar)                | RAL 9011        | Insulating material group             | IIIa         |
| Comparative Tracking Index (CTI)      | 175 ≤ CTI < 400 | Moisture Level (MSL)                  | 1            |
| UL 94 flammability rating             | V-0             | Contact material                      | Copper alloy |
| Contact surface                       | tinned          | Storage temperature, min.             | -40 °C       |
| Storage temperature, max.             | 70 °C           | Operating temperature, min.           | -40 °C       |
| Operating temperature, max.           | 120 °C          | Temperature range, installation, min. | -30 °C       |
| Temperature range, installation, max. | 120 °C          |                                       |              |

## Rated data acc. to IEC

|                                                                           |                        |                                                                       |       |
|---------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------|-------|
| tested acc. to standard                                                   | IEC 60664-1, IEC 61984 | Rated current, max. number of poles (Tu=20°C)                         | 10 A  |
| Rated current, max. number of poles (Tu=40°C)                             | 9 A                    | Rated voltage for surge voltage class / pollution degree II/2         | 400 V |
| Rated voltage for surge voltage class / pollution degree III/2            | 320 V                  | Rated voltage for surge voltage class / pollution degree III/3        | 250 V |
| Rated impulse voltage for surge voltage class/ pollution degree II/2      | 4 kV                   | Rated impulse voltage for surge voltage class/ pollution degree III/2 | 4 kV  |
| Rated impulse voltage for surge voltage class/ contamination degree III/3 | 4 kV                   |                                                                       |       |

## Rated data acc. to CSA

|                                   |                                                                                     |                                   |                 |
|-----------------------------------|-------------------------------------------------------------------------------------|-----------------------------------|-----------------|
| Institute (CSA)                   |  | Certificate No. (CSA)             | 200039-70153051 |
| Rated voltage (Use group B / CSA) | 300 V                                                                               | Rated voltage (Use group C / CSA) | 50 V            |
| Rated voltage (Use group D / CSA) | 300 V                                                                               | Rated current (Use group B / CSA) | 9 A             |
| Rated current (Use group C / CSA) | 9 A                                                                                 | Rated current (Use group D / CSA) | 9 A             |
| Wire cross-section, AWG, min.     | AWG 26                                                                              | Wire cross-section, AWG, max.     | AWG 12          |
| Reference to approval values      | Specifications are maximum values, details - see approval certificate.              |                                   |                 |

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## Technical data

## 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) 50 V

Rated voltage (Use group D / UL 1059) 300 V

Rated current (Use group B / UL 1059) 9 A

Rated current (Use group C / UL 1059) 9 A

Rated current (Use group D / UL 1059) 9 A

Wire cross-section, AWG, min. AWG 26

Wire cross-section, AWG, max. AWG 12

Reference to approval values  
Specifications are maximum values, details - see approval certificate.

## General data

Colour black

Colour chart (similar) RAL 9011

Encapsulation option No

Protection degree IP20

## Material data

Comparative Tracking Index (CTI)  $175 \leq \text{CTI} < 400$ 

Insulating material LCP

Insulating material group IIIa

UL 94 flammability rating

V-0

## 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.

## Approvals

Approvals



ROHS Conform

UL File Number Search UL Website

Certificate No. (cURus) E60693

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# Technical data

## Downloads

|                                             |                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Approval/Certificate/Document of Conformity | <a href="#">CSA Certificate of Compliance</a><br><a href="#">Declaration of the Manufacturer</a>                                                                                                                                                                                                        |
| Engineering Data                            | <a href="#">CAD data – STEP</a><br><a href="#">CAD data – Design IN construction drawings 2.3</a><br><a href="#">CAD data – Design IN PCB layout 2.3</a><br><a href="#">CAD data – PCB_position_70149_LP-POSITION_17MM</a><br><a href="#">CAD data – Pin_header_pin_length_CH20M_A_OV_PCB-SHL_70315</a> |
| Catalogues                                  | <a href="#">Catalogues in PDF-format</a>                                                                                                                                                                                                                                                                |
| Brochures                                   | <a href="#">FL ANALO.SIGN.CONV. EN</a><br><a href="#">MB DEVICE MANUF. EN</a><br><a href="#">FL MACHINE SAFETY 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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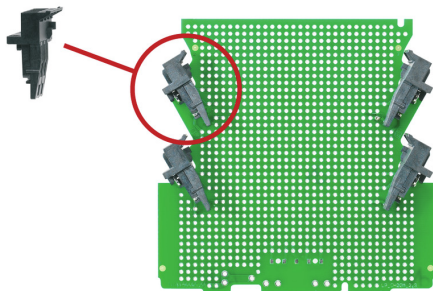
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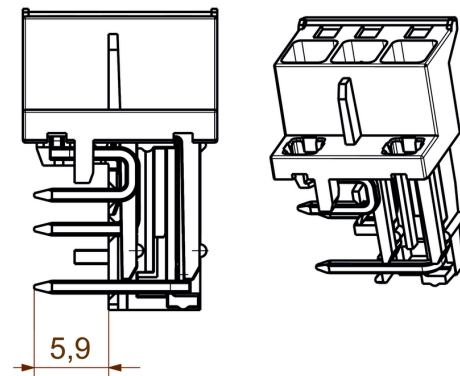
## Drawings

### Example of use

for left side



### Dimensioned drawing



### Example of use



delivery

### Example of use



delivery

## Recommended reflow soldering profile

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Klingenbergstraße 16

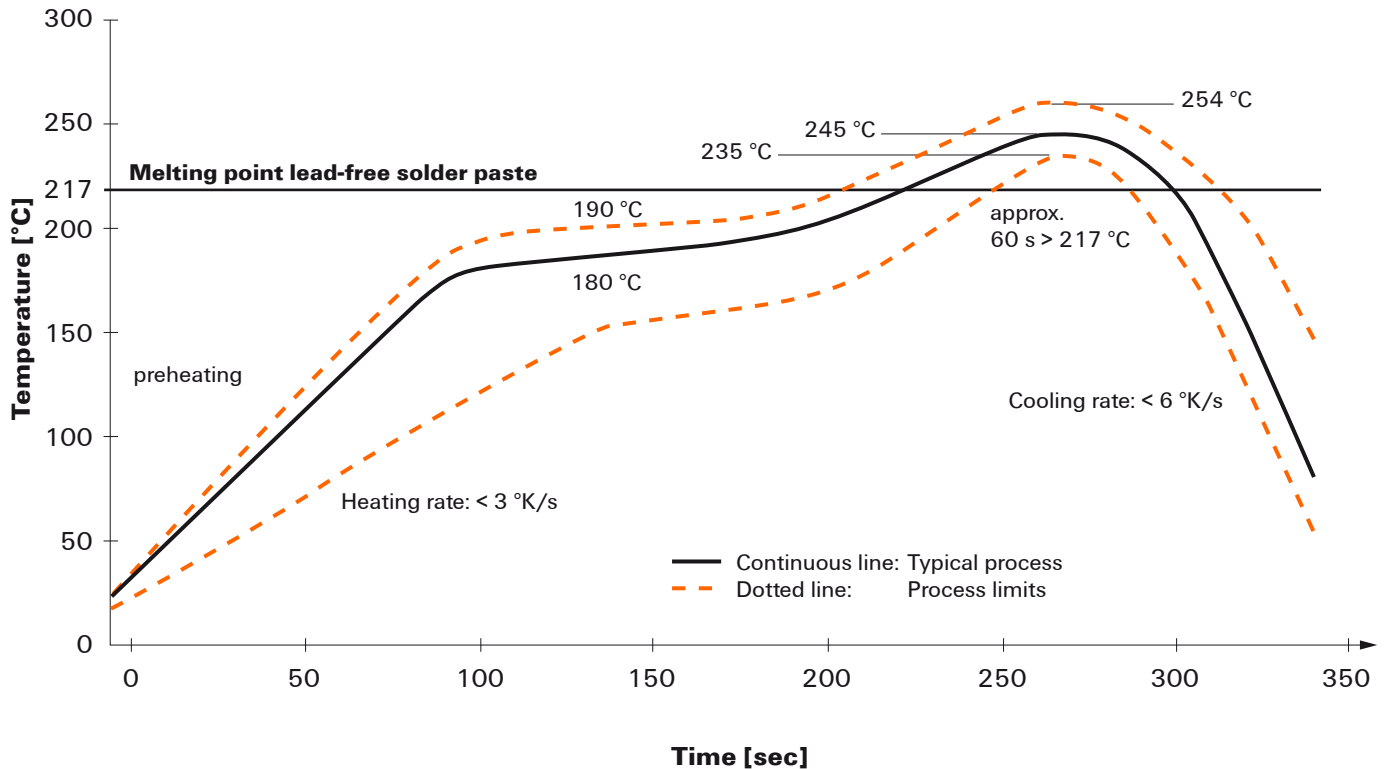
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## Reflow soldering profile

The perfect soldering profile for SMT Surface Mount Technology is one the most exiting question in SMT production. But there are more than one correct answer: The diagram of temperature-on-time is related to processing features of solder paste and to maximum load of components.

We have to consider the following parameters:

- Time for pre heating
- Maximum temperature
- Time above melting point
- Time for cooling
- Maximum heating rate
- Maximum cooling rate

We recommend a typical solder profile with associated process limits. With preheating components and board are prepared smoothly for the solder phase. Heating rate is typically  $\leq +3\text{K/s}$ . In parallel the solder paste is 'activated'. The time above melting point of 217°C the paste gets liquid and components and boards begin to connect. The maximum temperature of 245°C to 254°C should stay between 10 and 40 seconds. In the cooling phase at  $\geq -6\text{K/s}$  solder is cured. Board and components cool down while avoiding cold cracks.

## 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  $260 \text{ °C}$ . In practice, the maximum soldering temperature is quite often well below the above maximum profile.

We reserve the right to make technical changes.