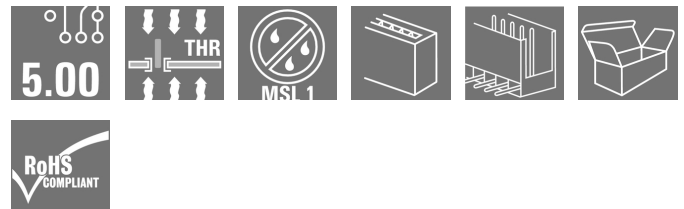
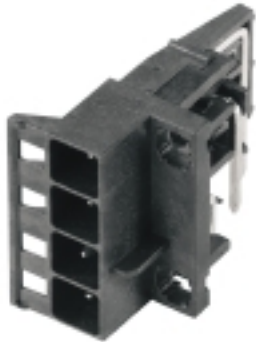


## OMNIMATE Housing - series CH20M SHL-SMT 5.00/04GL 5.9BX

**Weidmüller Interface GmbH & Co. KG**  
Klingenbergstraße 26  
D-32758 Detmold  
Germany  
Fon: +49 5231 14-0  
Fax: +49 5231 14-292083  
www.weidmueller.com



### Naturally, the CH20M system also shows its perfection in the peripheral interface.

If you are taking into consideration design options, processing, usability, reliability and security, then pin headers and connectors are just as critical in the real world as the entire system.

In every sector, the connection technology is at the top of its class.

- **100% non-interchangeable** the unique, captive "Auto-Set" encoding ensures a misconnection-proof assignment of the connections.
- **100% safe** Touch protection for the pin header and socket block on both sides
- **100% efficient** All THR pin headers are reflow compatible

### General ordering data

Type	SHL-SMT 5.00/04GL 5.9BX
Order No.	<a href="#">1069770000</a>
Version	PCB plug-in connector, Connection element, left, male header, open side, THT/THR solder connection, 5.00 mm, Number of poles: 4, 90°, Solder pin length (l): 5.9 mm, tinned, black, Box
GTIN (EAN)	4032248825097
Qty.	108 pc(s).
Product data	IEC: 400 V UL: 300 V / 9 A / AWG 26 - AWG 12
Packaging	Box

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**Technical data****Dimensions and weights**

Length	27.6 mm	Length (inches)	1.087 inch
Width	20.4 mm	Width (inches)	0.803 inch
Height	14.4 mm	Height (inches)	0.567 inch
Net weight	3.811 g		

**System specifications**

Product family	OMNIMATE Housing - series CH20M	Type of connection	Board connection
Mounting onto the PCB	THT/THR solder connection	Pitch in mm (P)	5 mm
Pitch in inches (P)	0.197 inch	Outgoing elbow	90°
Number of poles	4	Number of solder pins per pole	1
Solder pin length (l)	5.9 mm	Solder pin length tolerance	+0.1 / -0.2 mm
Tolerance of solder pin position	± 0.1 mm	L1 in mm	15 mm
L1 in inches	0.591 inch	Number of rows	1
Pin series quantity	1	Volume resistance	≤ 5mΩ
Can be coded	Yes	Plugging cycles	25

**Material data**

Insulating material	LCP	Colour	black
Colour chart (similar)	RAL 9011	Insulating material group	IIIa
Comparative Tracking Index (CTI)	≥ 175	Insulation strength	≥ 10 <sup>8</sup> Ω
Moisture Level (MSL)	1	UL 94 flammability rating	V-0
Contact material	Copper alloy	Contact surface	tinned
Storage temperature, min.	-25 °C	Storage temperature, max.	50 °C
Max. relative humidity during storage	70 %	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		

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**Technical data**

**Rated data acc. to CSA**

Institute (CSA)



Certificate No. (CSA)

200039-70153051

Rated voltage (Use group B / CSA)	300 V
Rated voltage (Use group D / CSA)	300 V
Rated current (Use group C / CSA)	9 A
Wire cross-section, AWG, min.	AWG 26
Reference to approval values	Specifications are maximum values, details - see approval certificate.

Rated voltage (Use group C / CSA)	50 V
Rated current (Use group B / CSA)	9 A
Rated current (Use group D / CSA)	9 A
Wire cross-section, AWG, max.	AWG 12

**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 D / UL 1059)	300 V
Rated current (Use group C / UL 1059)	9 A
Wire cross-section, AWG, min.	AWG 26
Reference to approval values	Specifications are maximum values, details - see approval certificate.

Rated voltage (Use group C / UL 1059)	50 V
Rated current (Use group B / UL 1059)	9 A
Rated current (Use group D / UL 1059)	9 A
Wire cross-section, AWG, max.	AWG 12

**Classifications**

ETIM 6.0	EC002637	ETIM 7.0	EC002637
eClass 9.0	27-44-04-02	eClass 9.1	27-44-04-02
eClass 10.0	27-44-04-02		

**Notes**

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

**Data sheet****OMNIMATE Housing - series CH20M  
SHL-SMT 5.00/04GL 5.9BX**

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**Technical data****Downloads**

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Approval/Certificate/Document of Conformity	<a href="#">CSA Certificate of Compliance</a>
Brochure/Catalogue	<a href="#">FL ANALO.SIGN.CONV. EN</a> <a href="#">MB DEVICE MANUF. EN</a> <a href="#">CAT 2 PORTFOLIOGUIDE EN</a> <a href="#">FL MACHINE SAFETY EN</a> <a href="#">FL 72H SAMPLE SER EN</a> <a href="#">PO OMNIMATE EN</a>
Engineering Data	<a href="#">STEP</a>

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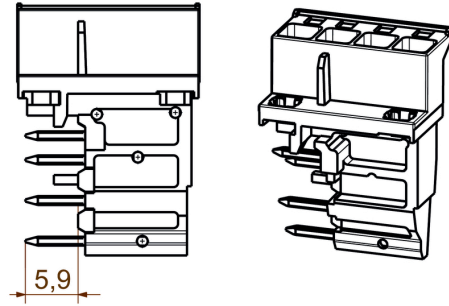
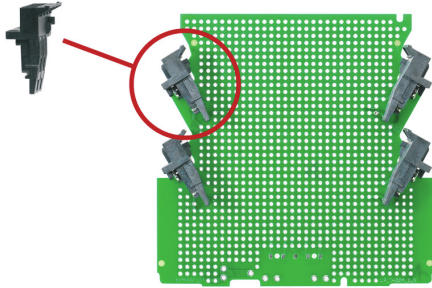
**Data sheet**

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**Drawings**

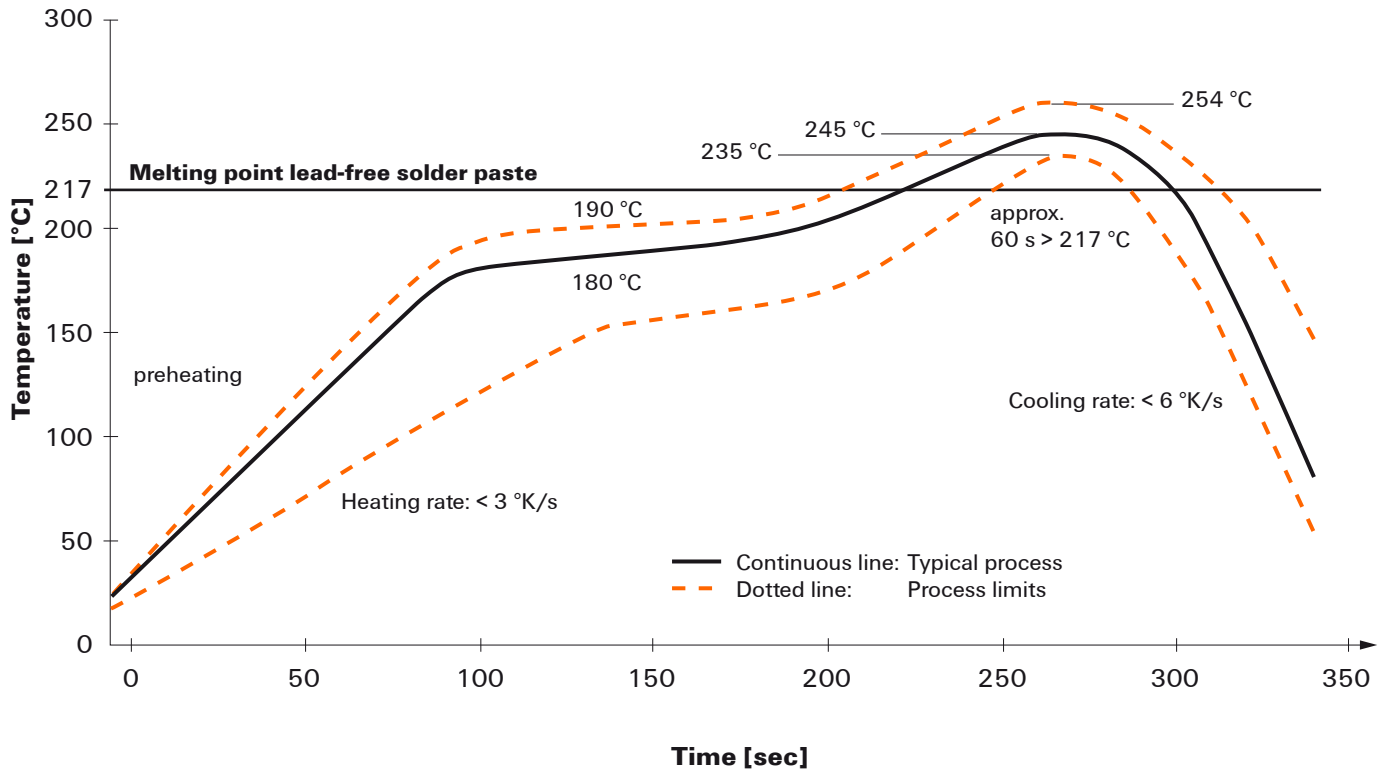
for left side



delivery

## Recommended reflow soldering profile

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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.

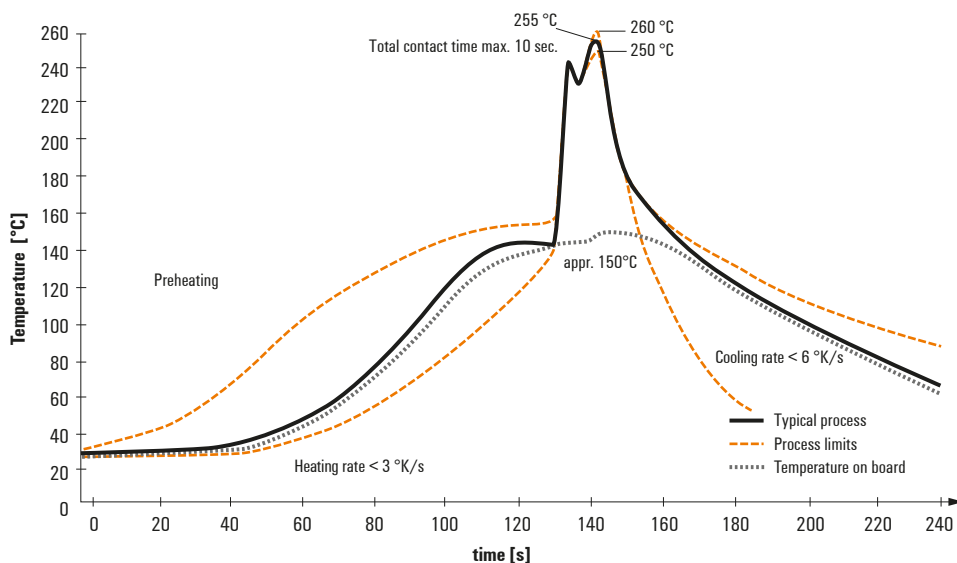
## Recommended wave soldering profiles

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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°C. In practice, the maximum soldering temperature is quite often well below the above maximum profile.

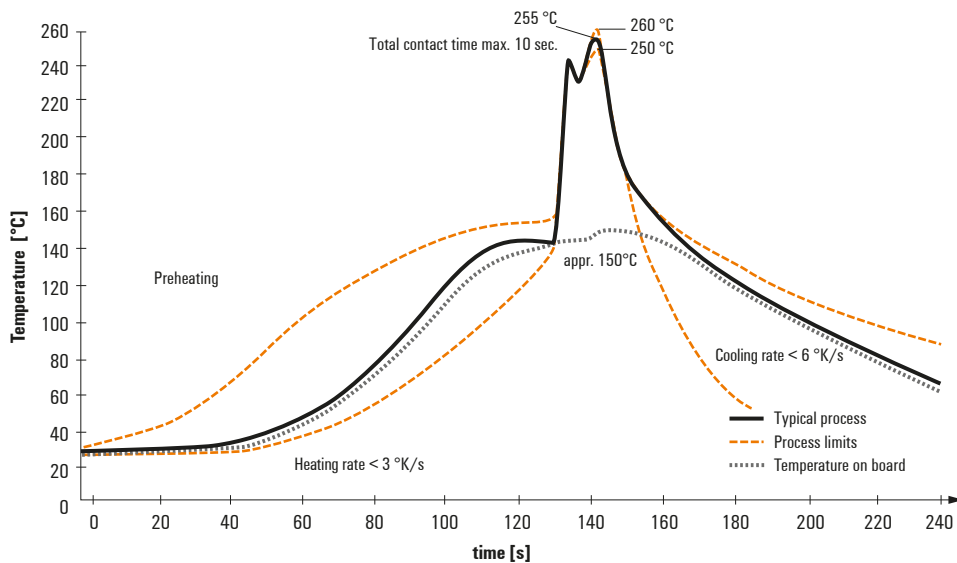
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### Single Wave:



### Double Wave:



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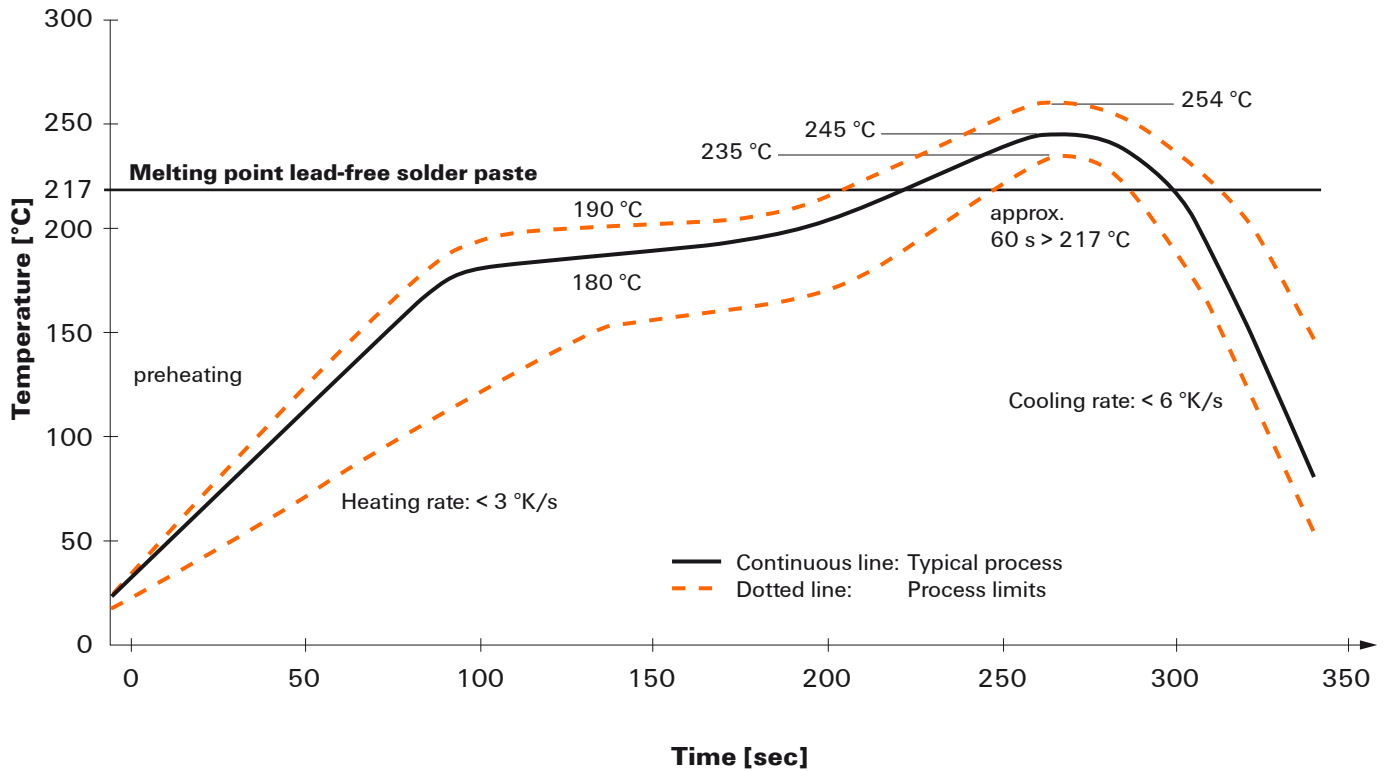
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