

**SV-SMT 7.62IT/04/90MSF4 2.6SN BK BX****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://www.weidmueller.com)

Similar to illustration

**OMNIMATE Power for IT networks – scalable to 50 kVA****Tailor-made solutions for special requirements**

More standard-compliance means fewer compromises: OMNIMATE Power for IT networks has integrated features incorporated as standard across the range. This makes the design-in and approvals process simpler and makes them safer and more reliable in operation.

Results for the application and advantages for the user: unlimited use in 400-V IT systems and touch safety according to IEC 61800-5-1 (+ 5.5 mm). The self-snapping one-handed safety flange enables intuitive and safe usage. Operational reliability is guaranteed by the automatic interlock feature during the plug-in process. In conclusion: You need no additional device covering. The application-oriented design means that no compromises are necessary during the approval process.

**General ordering data**

|              |                                                                                                                                                                         |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Version      | PCB plug-in connector, male header, Middle screw flange, THT/THR solder connection, 7.62 mm, Number of poles: 4, 90°, Solder pin length (l): 2.6 mm, tinned, black, Box |
| Order No.    | <a href="#">2499850000</a>                                                                                                                                              |
| Type         | SV-SMT 7.62IT/04/90MSF4 2.6SN BK BX                                                                                                                                     |
| GTIN (EAN)   | 4050118513271                                                                                                                                                           |
| Qty.         | 48 pc(s).                                                                                                                                                               |
| Product data | IEC: 1000 V / 41 A<br>UL: 300 V / 40.5 A                                                                                                                                |
| Packaging    | Box                                                                                                                                                                     |

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## Technical data

## Dimensions and weights

|                          |         |                |            |
|--------------------------|---------|----------------|------------|
| Depth                    | 28.3 mm | Depth (inches) | 1.114 inch |
| Height of lowest version | 11.4 mm | Net weight     | 8.8 g      |

## System specifications

|                                            |                                      |                                              |                                                      |
|--------------------------------------------|--------------------------------------|----------------------------------------------|------------------------------------------------------|
| Product family                             | OMNIMATE Power - series BV/SV 7.62HP | Type of connection                           | Board connection                                     |
| Mounting onto the PCB                      | THT/THR solder connection            | Pitch in mm (P)                              | 7.62 mm                                              |
| Pitch in inches (P)                        | 0.3 inch                             | Outgoing elbow                               | 90°                                                  |
| Number of poles                            | 4                                    | Number of solder pins per pole               | 2                                                    |
| Solder pin length (l)                      | 2.6 mm                               | Solder pin length tolerance                  | +0.1 / -0.3 mm                                       |
| Solder pin dimensions                      | 0.8 x 1.0 mm                         | Solder eyelet hole diameter (D)              | 1.4 mm                                               |
| Solder eyelet hole diameter tolerance (D)+ | 0.1 mm                               | L1 in mm                                     | 30.48 mm                                             |
| L1 in inches                               | 1.2 inch                             | Number of rows                               | 1                                                    |
| Pin series quantity                        | 1                                    | Touch-safe protection acc. to DIN VDE 57 106 | safe to back of hand above the printed circuit board |
| Touch-safe protection acc. to DIN VDE 0470 | IP 20                                | Volume resistance                            | 2.00 mΩ                                              |
| Tightening torque for screw flange, min.   | 0.2 Nm                               | Tightening torque for screw flange, max.     | 0.3 Nm                                               |
| Plugging cycles                            | 25                                   | Plugging force/pole, max.                    | 12 N                                                 |
| Pulling force/pole, max.                   | 7 N                                  |                                              |                                                      |

## Material data

|                                       |                                |                                       |                                |
|---------------------------------------|--------------------------------|---------------------------------------|--------------------------------|
| Insulating material                   | PA GF HT3                      | Colour                                | black                          |
| Colour chart (similar)                | RAL 9011                       | Insulating material group             | I                              |
| Comparative Tracking Index (CTI)      | ≥ 600                          | Insulation strength                   | ≥ 10 <sup>8</sup> Ω            |
| Moisture Level (MSL)                  | 3                              | UL 94 flammability rating             | V-0                            |
| Contact material                      | Copper alloy                   | Contact surface                       | tinned                         |
| Layer structure of solder connection  | 1...3 μm Ni / 4...6 μm Sn matt | Layer structure of plug contact       | 1...3 μm Ni / 4...6 μm Sn matt |
| Storage temperature, min.             | -40 °C                         | Storage temperature, max.             | 70 °C                          |
| Operating temperature, min.           | -50 °C                         | Operating temperature, max.           | 130 °C                         |
| Temperature range, installation, min. | -25 °C                         | Temperature range, installation, max. | 130 °C                         |

## Rated data acc. to IEC

|                                                                           |                        |                                                                       |                   |
|---------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------|-------------------|
| tested acc. to standard                                                   | IEC 60664-1, IEC 61984 | Rated current, min. number of poles (Tu=20°C)                         | 41 A              |
| Rated current, max. number of poles (Tu=20°C)                             | 41 A                   | Rated current, min. number of poles (Tu=40°C)                         | 41 A              |
| Rated current, max. number of poles (Tu=40°C)                             | 41 A                   | Rated voltage for surge voltage class / pollution degree II/2         | 1,000 V           |
| Rated voltage for surge voltage class / pollution degree III/2            | 630 V                  | Rated voltage for surge voltage class / pollution degree III/3        | 630 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 | 6 kV              |
| Rated impulse voltage for surge voltage class/ contamination degree III/3 | 6 kV                   | Short-time withstand current resistance                               | 3 x 1s with 420 A |

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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 D / UL 1059) 300 V

Rated current (Use group C / UL 1059) 40.5 A

Clearance distance, min. 6.9 mm

Reference to approval values

Specifications are maximum values, details - see approval certificate.

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

Rated current (Use group B / UL 1059) 40.5 A

Rated current (Use group D / UL 1059) 10 A

Creepage distance, min. 9.6 mm

## Packing

|           |        |            |        |
|-----------|--------|------------|--------|
| Packaging | Box    | VPE length | 338 mm |
| VPE width | 130 mm | VPE height | 33 mm  |

## 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 | ECLASS 11.0 | 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

- Additional colours on request
- Rated current related to rated cross-section & min. No. of poles.
- P on drawing = pitch
- 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.
- Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months

## Approvals

Approvals



UL File Number Search E60693

## Downloads

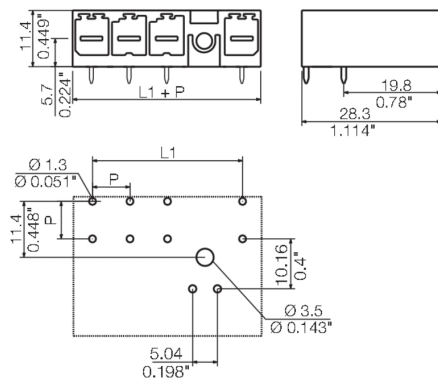
|                    |                                          |
|--------------------|------------------------------------------|
| Engineering Data   | <a href="#">STEP</a>                     |
| Brochure/Catalogue | <a href="#">Catalogues in PDF-format</a> |

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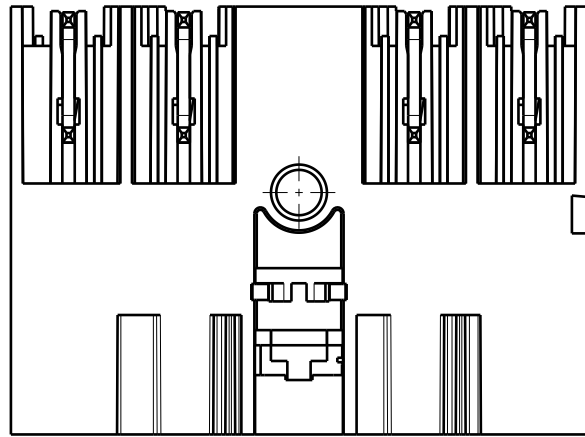
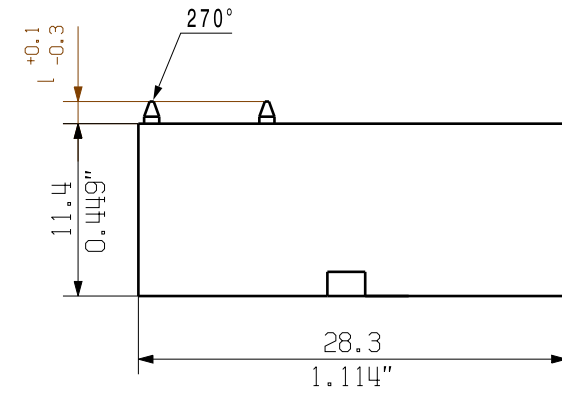
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# Drawings

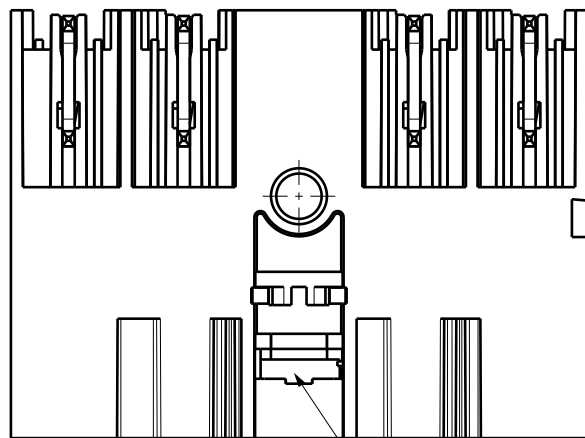
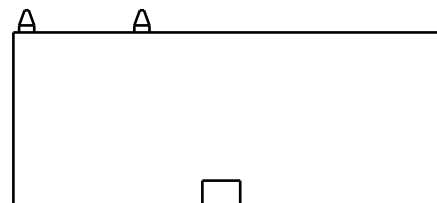


Technical drawing of a 5-position rotary switch. The drawing shows the top view of the switch with five positions labeled 1 through 5. The dimensions are as follows:

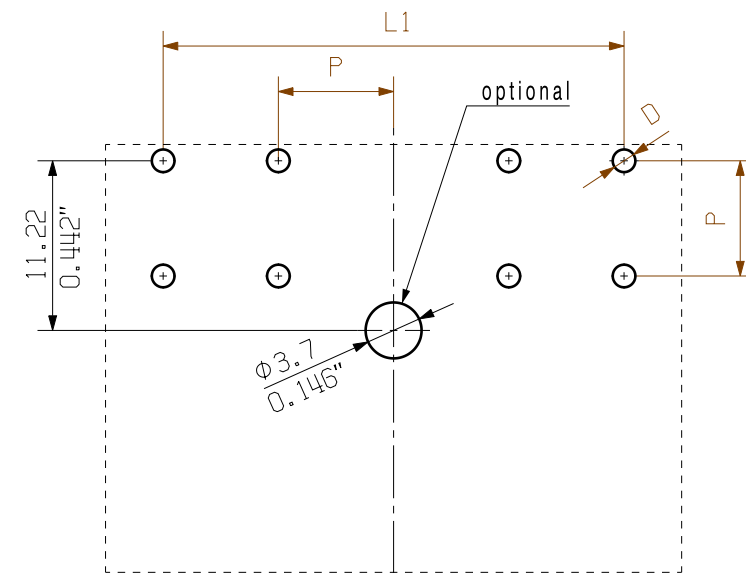
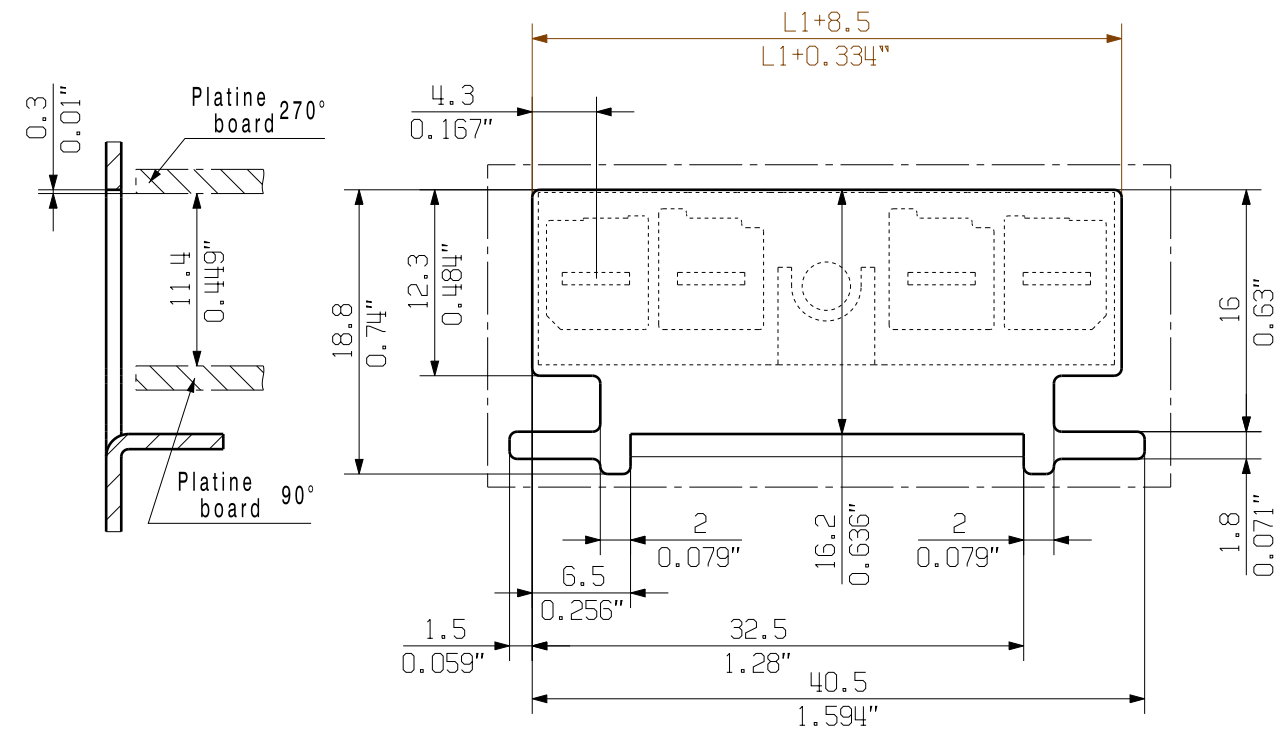
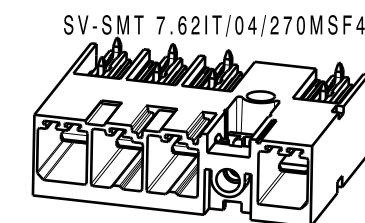
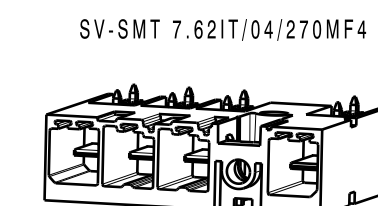
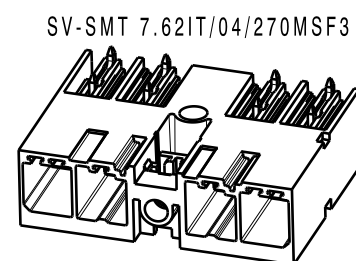
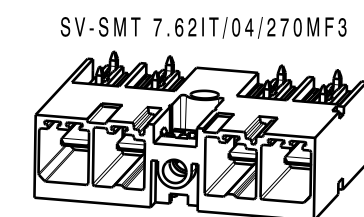
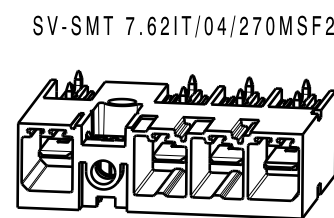
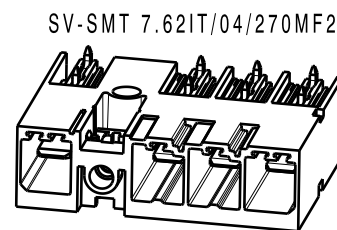
- L1 + 7.62**: Total length of the switch assembly.
- L1**: Distance from the center of the first contact (position 1) to the center of the last contact (position 5).
- P**: Pitch (distance) between the centers of adjacent contacts.
- d**: Diameter of the contact pin.
- 5.7**: Height of the contact pin.
- 223**: Total height of the switch assembly.



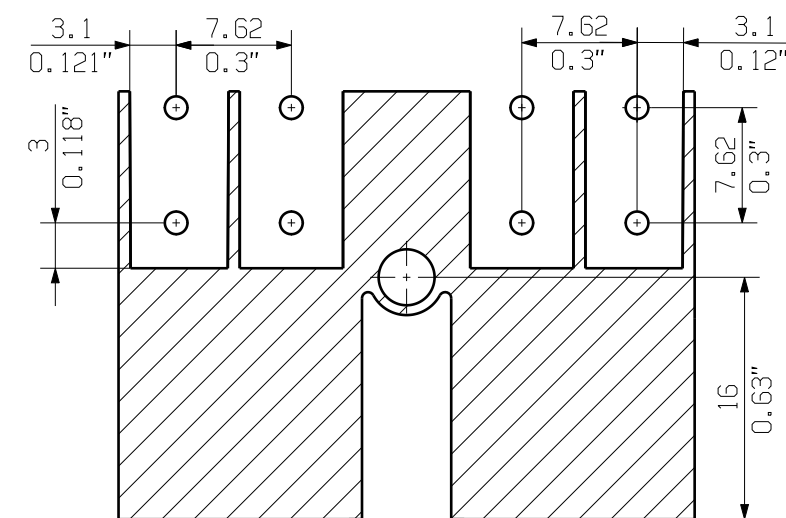
A technical drawing of a mechanical assembly, likely a multi-chambered container or a specialized transport unit. The drawing shows a top-down view of a rectangular assembly divided into four main sections by vertical dividers. Each section contains a rectangular component with a horizontal slot and a small square feature. The assembly is supported by a base with four legs. The drawing is labeled with 'A' at the top of each section, indicating cross-sections.



VKMU nur für MSF-Varianten /  
square nut only for MSF-variants



hole pattern



paste free area  
max. dimension

SO = ohne voreilenden Kontakt/  
without leading pin

$$\begin{aligned} D &= \emptyset 1.4 + 0.1 / -0.05 \\ d &= 0.8 \times 1.0 \end{aligned}$$

POL = Pol/pole  
PE = Voreilender Kontakt / leading pin  
P = Raster / pitch 7.62

MF= Mittelflansch  
middle flange

MSF= Mittelschraubflansch  
middle flange with screw

For the mounting of PCBs, it should be noted that the rated data relates only to the PCB components alone. The necessary creepage and clearance paths must be observed in connection with the respective applicant in accordance to IEC 664 / VDE 0110. The current-carrying capacity and pitch tolerance is to be determined according to DIN IEC 326 part 3 very fine.

Weidmüller PCB components are tested to the DIN EN 61984 standard, and are valid for its field of application. Provided that the components are used to the intended purpose, all requirements with respect to the occurring of electrical, mechanical, thermic and corrosive stress will be satisfied.

|      |
|------|
| 1.5  |
| 2.6  |
| 3.5  |
| l    |
| [mm] |

GENERAL TOLERANCE:  
DIN ISO 2768-m

|                           |             |         |           |             |     |     |     |     |     |   |   |   |  |
|---------------------------|-------------|---------|-----------|-------------|-----|-----|-----|-----|-----|---|---|---|--|
| SV 7.62IT/05/...M(S)F5    | 5           | 38.10   | 1.50      | Pol         | Pol | Pol | Pol | MF  | PE  |   |   |   |  |
| SV 7.62IT/05/...M(S)F4    |             |         |           | Pol         | Pol | Pol | MF  | Pol | Pol |   |   |   |  |
| SV 7.62IT/05/...M(S)F3    |             |         |           | Pol         | Pol | MF  | Pol | Pol | Pol |   |   |   |  |
| SV 7.62IT/05/...M(S)F2    |             |         |           | PE          | MF  | Pol | Pol | Pol | Pol |   |   |   |  |
| SV 7.62IT/04/...M(S)F4    | 4           | 30.48   | 1.20      | Pol         | Pol | Pol | MF  | PE  |     |   |   |   |  |
| SV 7.62IT/04/...M(S)F3    |             |         |           | Pol         | Pol | MF  | Pol | Pol |     |   |   |   |  |
| SV 7.62IT/04/...M(S)F2    |             |         |           | PE          | MF  | Pol | Pol | Pol |     |   |   |   |  |
| SV 7.62IT/03/...M(S)F3    | 3           | 22.86   | 0.90      | Pol         | Pol | MF  | PE  |     |     |   |   |   |  |
| SV 7.62IT/03/...M(S)F2    |             |         |           | PE          | MF  | Pol | Pol |     |     |   |   |   |  |
| SV 7.62IT/02/...M(S)F2 SO |             |         |           |             |     |     |     |     |     |   |   |   |  |
|                           |             |         |           | Pol         | MF  | Pol |     |     |     |   |   |   |  |
| description               | no of poles | L1 [mm] | L1 [inch] | 1           | 2   | 3   | 4   | 5   | 6   | 7 | 8 | 9 |  |
|                           |             |         |           | position MF |     |     |     |     |     |   |   |   |  |

|                                                                                       |                                |             |                                                                                                         |                                                                                       |                               |                                                                     |                               |
|---------------------------------------------------------------------------------------|--------------------------------|-------------|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------|-------------------------------|
|  | EC00002212                     |             | Prim PLM Part No.: 225880                                                                               |                                                                                       | Prim ERP Part No.: 2499550000 |                                                                     |                               |
|                                                                                       | First Issue Date<br>14.11.2016 | Max. nos.   | <b>Weidmüller</b>  |                                                                                       | <b>63450</b>                  | <div><div>4</div><div>Drawing no. _____ Issue no. _____</div></div> |                               |
| Modification                                                                          |                                |             |                                                                                                         |                                                                                       |                               |                                                                     |                               |
|  |                                | Date        | Name                                                                                                    | <div>SV-SMT 7.62HP/IT../90/270...</div> <div>STISTLEISTE</div> <div>MALE HEADER</div> |                               |                                                                     |                               |
|                                                                                       |                                | Drawn       | 30.08.2019                                                                                              |                                                                                       |                               |                                                                     | Helis, Maria                  |
| Scale: 2:1      Size: A2                                                              |                                | Responsible | Döhner, Karl                                                                                            |                                                                                       |                               |                                                                     | Product file: 7407 BLF 7.50HP |
|                                                                                       |                                | Approved    | 09.10.2019                                                                                              |                                                                                       |                               |                                                                     |                               |
| Drawings Assembly                                                                     |                                |             |                                                                                                         |                                                                                       |                               |                                                                     |                               |

## 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.

We reserve the right to make technical changes.

## 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.