

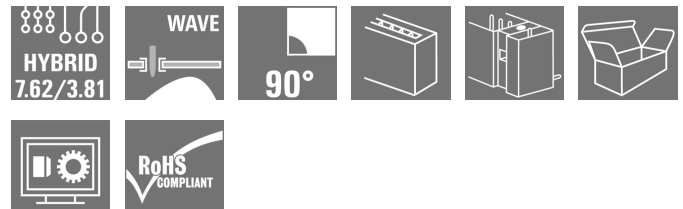
**SV 7.62HP/03/90MSF3 SC/04R SN BK BX****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

**Product image**

Similar to illustration

Combined 90° male header with power and signal contacts in PUSH IN connection technology incl. self-locking middle flange interlock and (optional) pluggable shield connection with a 7.62 pitch.

Enables simultaneous connection of power, signals and (optional) EMC shielding. Ideal for connecting servo and asynchronous drives.

Meets the requirements of IEC 61800-5-1 and enables UL approval as per UL840 600 V when combined with female header BVF 7.62HP/...BCF..R...

Without a female header, the mating profile guarantees minimum power-contact touch-safety of >3 mm with 20 N pressure on the test finger.

The self-locking middle flange reduces the space requirements by one pitch width in comparison with conventional solutions.

Optionally on request: without flange fastening, with additional screw mount or with soldered flange fastening.

**General ordering data**

|              |                                                                                                                                                                                  |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Version      | PCB plug-in connector, male header, closed side, Middle screw flange, THT solder connection, 7.62 mm, Number of poles: 3, 90°, Solder pin length (l): 3.5 mm, tinned, black, Box |
| Order No.    | <a href="#">1089890000</a>                                                                                                                                                       |
| Type         | SV 7.62HP/03/90MSF3 SC/04R SN BK BX                                                                                                                                              |
| GTIN (EAN)   | 4032248858484                                                                                                                                                                    |
| Qty.         | 48 pc(s).                                                                                                                                                                        |
| Product data | IEC: 1000 V / 41 A<br>UL: 300 V / 35 A                                                                                                                                           |
| Packaging    | Box                                                                                                                                                                              |

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## Technical data

## Dimensions and weights

|                          |            |                 |            |
|--------------------------|------------|-----------------|------------|
| Depth                    | 28.3 mm    | Depth (inches)  | 1.114 inch |
| Height                   | 14.9 mm    | Height (inches) | 0.587 inch |
| Height of lowest version | 11.4 mm    | Width           | 39.07 mm   |
| Width (inches)           | 1.538 inch | Net weight      | 5.01 g     |

## System specifications

|                                                   |                                      |                                              |                                                      |
|---------------------------------------------------|--------------------------------------|----------------------------------------------|------------------------------------------------------|
| Product family                                    | OMNIMATE Power - series BV/SV 7.62HP | Type of connection                           | Board connection                                     |
| Mounting onto the PCB                             | THT solder connection                | Pitch in mm (P)                              | 7.62 mm                                              |
| Pitch in inches (P)                               | 0.3 inch                             | Outgoing elbow                               | 90°                                                  |
| Number of poles                                   | 3                                    | Number of solder pins per pole               | 2                                                    |
| Solder pin length (l)                             | 3.5 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                                     | 22.86 mm                                             |
| L1 in inches                                      | 0.9 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                                              |
| Can be coded                                      | Yes                                  | Tightening torque for screw flange, min.     | 0.2 Nm                                               |
| Tightening torque for screw flange, max.          | 0.3 Nm                               |                                              |                                                      |

## Material data

|                                       |                                |                                       |                                |
|---------------------------------------|--------------------------------|---------------------------------------|--------------------------------|
| Insulating material                   | PA GF                          | Colour                                | black                          |
| Colour chart (similar)                | RAL 9011                       | Insulating material group             | II                             |
| Comparative Tracking Index (CTI)      | ≥ 500                          | 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 CSA

Institute (CSA)



Certificate No. (CSA)

200039-1121690

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) 33 A

Rated current (Use group C / CSA) 33 A

Rated current (Use group D / CSA) 5 A

Reference to approval values

Specifications are maximum values, details - see approval certificate.

## 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) 35 A

Rated current (Use group C / UL 1059) 35 A

Rated current (Use group D / UL 1059) 5 A

Clearance distance, min. 6.9 mm

Creepage distance, min. 9.6 mm

Reference to approval values

Specifications are maximum values, details - see approval certificate.

## Packing

|           |        |            |        |
|-----------|--------|------------|--------|
| Packaging | Box    | VPE length | 350 mm |
| VPE width | 135 mm | VPE height | 41 mm  |

## Technical data - hybrid

|                                              |                                     |                                                     |
|----------------------------------------------|-------------------------------------|-----------------------------------------------------|
| Pitch in mm (hybrid)                         | nominal                             | 3.81 mm                                             |
|                                              | Hybrid component                    | Signal                                              |
| Pitch in mm (Signal)                         | 3.81 mm                             |                                                     |
| Pitch in inch (hybrid)                       | nominal                             | 0.15 inch                                           |
|                                              | Hybrid component                    | Signal                                              |
| Pitch in inches (Signal)                     | 0.15 inch                           |                                                     |
| Pole count (hybrid)                          | nominal                             | 4                                                   |
|                                              | Hybrid component                    | Signal                                              |
| Number of poles (Signal)                     | 4                                   |                                                     |
| Number of solder pins per pole (hybrid)      | Hybrid component                    | Signal                                              |
|                                              | nominal                             | 1                                                   |
| Number of solder pins per pole (Signal)      | 1                                   |                                                     |
| Solder pin dimensions (hybrid)               | Solder pin dimensions               | 0.8 x 0.8 mm                                        |
|                                              | Hybrid component                    | Signal                                              |
| Solder pin dimensions (Signal)               | 0.8 x 0.8 mm                        |                                                     |
| Solder pin dimensions = d tolerance (hybrid) | Hybrid component                    | Signal                                              |
|                                              |                                     | Lower tolerance with prefix (reveals minimum) -0,03 |
|                                              | Solder pin dimensions = d tolerance | Upper tolerance with prefix (reveals maximum) +0,01 |
|                                              |                                     | Tolerance, unit mm                                  |

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## Technical data

|                                                                                       |                                           |                |          |
|---------------------------------------------------------------------------------------|-------------------------------------------|----------------|----------|
| Solder pin dimensions = d tolerance (Signal)                                          | -0,03 / +0,01 mm                          |                |          |
| Diameter of solder eyelet (hybrid)                                                    | Hybrid component                          | Signal         |          |
|                                                                                       | nominal                                   | 1.3 mm         |          |
| PCB hole diameter (Signal)                                                            | 1.3 mm                                    |                |          |
| Tolerance of the diameter of the solder eyelet (hybrid)                               | Hybrid component                          | Signal         |          |
|                                                                                       | Solder eyelet hole diameter tolerance (D) | ± 0.1 mm       |          |
| PCB hole diameter tolerance (Signal)                                                  | ± 0.1 mm                                  |                |          |
| L2 in mm                                                                              | 3.81 mm                                   |                |          |
| L2 in inch                                                                            | 0.15 inch                                 |                |          |
| Number of rows (hybrid)                                                               | Hybrid component                          | Signal         |          |
|                                                                                       | Number of rows                            | 2              |          |
| Number of rows (Signal)                                                               | 2                                         |                |          |
| Contact material (hybrid)                                                             | Hybrid component                          | Signal         |          |
|                                                                                       | Contact material                          | CuMg           |          |
| Contact material (Signal)                                                             | CuMg                                      |                |          |
| Contact surface (hybrid)                                                              | Hybrid component                          | Signal         |          |
|                                                                                       | Contact surface                           | tinned         |          |
| Contact surface (Signal)                                                              | tinned                                    |                |          |
| Layer structure of the solder connection (hybrid)                                     | Hybrid component                          | Signal         |          |
|                                                                                       | Layer structure of the solder connection  | Layer strength | min. 1 µ |
|                                                                                       |                                           |                | max. 3 µ |
|                                                                                       |                                           | Material       | Ni       |
|                                                                                       |                                           | Layer strength | min. 4 µ |
|                                                                                       |                                           | max. 8 µ       |          |
| Material                                                                              | Sn                                        |                |          |
| Layer structure of the solder connection (Signal)                                     | 1-3 µ Ni / 4-8 µ Sn                       |                |          |
| Layer structure of the plug contact (hybrid)                                          | Layer structure of the plug contact       | Material       | Ni       |
|                                                                                       |                                           | Layer strength | min. 1 µ |
|                                                                                       |                                           |                | max. 3 µ |
|                                                                                       |                                           | Material       | Sn       |
|                                                                                       | Layer strength                            | min. 4 µ       |          |
|                                                                                       |                                           | max. 8 µ       |          |
| Hybrid component                                                                      | Signal                                    |                |          |
| Layer structure of the plug contact (Signal)                                          | 1-3 µ Ni / 4-8 µ Sn                       |                |          |
| Rated voltage for overvoltage class / pollution severity level II/2 (hybrid)          | Hybrid component                          | Signal         |          |
|                                                                                       | nominal                                   | 320 V          |          |
| Rated voltage for overvoltage class/ pollution severity level II/2 (Signal)           | 320 V                                     |                |          |
| Rated voltage for overvoltage class / pollution severity level III/2 (hybrid)         | Hybrid component                          | Signal         |          |
|                                                                                       | nominal                                   | 160 V          |          |
| Rated voltage for overvoltage class/ pollution severity level III/2 (Signal)          | 160 V                                     |                |          |
| Rated voltage for overvoltage class / pollution severity level III/3 (hybrid)         | Hybrid component                          | Signal         |          |
|                                                                                       | nominal                                   | 160 V          |          |
| Rated voltage for overvoltage class/ pollution severity level III/3 (Signal)          | 160 V                                     |                |          |
| Rated impulse voltage for overvoltage class / pollution severity level II/2 (hybrid)  | Hybrid component                          | Signal         |          |
|                                                                                       | nominal                                   | 2.5 kV         |          |
| Rated impulse voltage for overvoltage class/pollution severity level II/2 (Signal)    | 2.5 kV                                    |                |          |
| Rated impulse voltage for overvoltage class / pollution severity level III/2 (hybrid) | Hybrid component                          | Signal         |          |
|                                                                                       | nominal                                   | 2.5 kV         |          |

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## Technical data

|                                                                                       |                                         |                  |
|---------------------------------------------------------------------------------------|-----------------------------------------|------------------|
| Rated impulse voltage for overvoltage class/pollution severity level III/2 (Signal)   | 2.5 kV                                  |                  |
| Rated impulse voltage for overvoltage class / pollution severity level III/3 (hybrid) | Hybrid component                        | Signal           |
|                                                                                       | nominal                                 | 2.5 kV           |
| Rated impulse voltage for overvoltage class/pollution severity level III/3 (Signal)   | 2.5 kV                                  |                  |
| Rated current, number of poles (Tu=40°C) (hybrid)                                     | Hybrid component                        | Signal           |
|                                                                                       | min.                                    | 12.7 A           |
| Rated current, number of poles (Tu=20°C) (hybrid)                                     | Hybrid component                        | Signal           |
|                                                                                       | min.                                    | 14.2 A           |
| Short-time withstand current capacity (hybrid)                                        | Short-time withstand current resistance | 3 x 1s with 80 A |
|                                                                                       | Hybrid component                        | Signal           |
| Short-time withstand current resistance (Signal)                                      | 3 x 1s with 80 A                        |                  |
| Creepage distance (hybrid)                                                            | Hybrid component                        | Signal           |
|                                                                                       | min.                                    | 4.38 mm          |
| Clearance distance (hybrid)                                                           | Hybrid component                        | Signal           |
|                                                                                       | min.                                    | 3.6 mm           |
| Rated voltage (Use group B / CSA) (Hybrid)                                            | Hybrid component                        | Signal           |
|                                                                                       | nominal                                 | 300 V            |
| Rated voltage (Use group B / CSA) (Signal)                                            | 300 V                                   |                  |
| Rated voltage (Use group C / CSA) (Hybrid)                                            | Hybrid component                        | Signal           |
|                                                                                       | nominal                                 | 50 V             |
| Rated voltage (Use group C / CSA) (Signal)                                            | 50 V                                    |                  |
| Rated current (Use group B / CSA) (Hybrid)                                            | Hybrid component                        | Signal           |
|                                                                                       | nominal                                 | 9 A              |
| Rated current (Use group B / CSA) (Signal)                                            | 9 A                                     |                  |
| Rated current (Use group C / CSA) (Hybrid)                                            | Hybrid component                        | Signal           |
|                                                                                       | nominal                                 | 9 A              |
| Rated current (Use group C / CSA) (Signal)                                            | 9 A                                     |                  |
| Rated current (Use group D / CSA) (Hybrid)                                            | Hybrid component                        | Signal           |
|                                                                                       | nominal                                 | 9 A              |
| Rated current (Use group D / CSA) (Signal)                                            | 9 A                                     |                  |
| Rated voltage (Use group B / UL 1059) (Hybrid)                                        | Hybrid component                        | Signal           |
|                                                                                       | nominal                                 | 300 V            |
| Rated voltage (Use group B / UL 1059) (Signal)                                        | 300 V                                   |                  |
| Rated voltage (Use group C / UL 1059) (Hybrid)                                        | Hybrid component                        | Signal           |
|                                                                                       | nominal                                 | 50 V             |
| Rated voltage (Use group C / UL 1059) (Signal)                                        | 50 V                                    |                  |
| Rated voltage (Use group D / UL 1059) (Hybrid)                                        | Hybrid component                        | Signal           |
|                                                                                       | nominal                                 | 5 A              |
| Rated current (Use group B / UL 1059) (Signal)                                        | 5 A                                     |                  |
| Rated current (Use group C / UL 1059) (Hybrid)                                        | Hybrid component                        | Signal           |
|                                                                                       | nominal                                 | 5 A              |

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## Technical data

Rated current (Use group C / UL 1059) 5 A  
(Signal)Rated current (Use group D / UL 1059) Hybrid component  
(Hybrid)

Signal

## 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 | 27-46-03-01 |

## 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

- Technical specifications refer to the power contacts
- Technical data of signal contacts: 50V / 5A, stripping length 8mm
- Rated current related to rated cross-section & min. No. of poles.
- Specifications of diagram: P1=7.62 mm; P2=3.81 mm
- 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.
- MFX and MSFX: X= Position of the middle flange e.g. MF2, MSF3
- Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months

## 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="#">Declaration of the Manufacturer</a>                                                                                                                                                                                                                                                                                                                                                               |
| Engineering Data                            | <a href="#">CAD data – STEP</a>                                                                                                                                                                                                                                                                                                                                                                               |
| Engineering Data                            | <a href="#">EPLAN, WSCAD</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> |

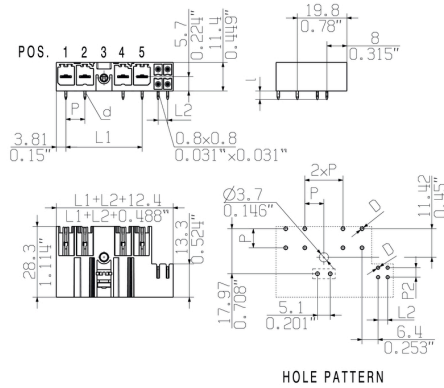
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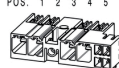
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## Drawings

## Dimensional drawing



## Connection diagram

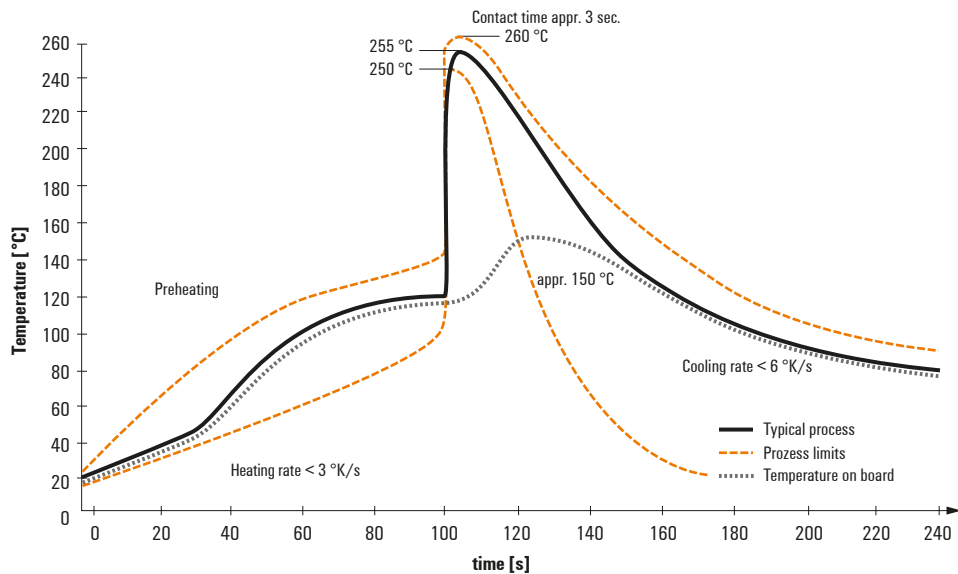
|                |                                  |                                                                                     |   |   |   |   |   |   |
|----------------|----------------------------------|-------------------------------------------------------------------------------------|---|---|---|---|---|---|
| 6              | M(S)F6                           | o                                                                                   | o | o | o | o | X | o |
| 6              | M(S)F5                           | o                                                                                   | o | o | o | X | o | o |
| 6              | M(S)F4                           | o                                                                                   | o | o | X | o | o | o |
| 6              | M(S)F3                           | o                                                                                   | o | X | o | o | o | o |
| 6              | M(S)F2                           | o                                                                                   | X | o | o | o | o | o |
| 5              | M(S)F5                           | o                                                                                   | o | o | o | X | o |   |
| 5              | M(S)F4                           | o                                                                                   | o | o | X | o | o |   |
| 5              | M(S)F3                           | o                                                                                   | o | X | o | o | o |   |
| 5              | M(S)F2                           | o                                                                                   | X | o | o | o | o |   |
| 4              | M(S)F4                           | o                                                                                   | o | o | X | o |   |   |
| 4              | M(S)F3                           | o                                                                                   | o | X | o | o |   |   |
| 4              | M(S)F2                           | o                                                                                   | X | o | o | o |   |   |
| 3              | M(S)F3                           | o                                                                                   | o | X | o |   |   |   |
| 3              | M(S)F2                           | o                                                                                   | X | o | o |   |   |   |
| 2              | M(S)F2                           | o                                                                                   | X | o |   |   |   |   |
| NO OF<br>POLES | X = MIDDLE<br>FLANGE<br>POSITION | 1                                                                                   | 2 | 3 | 4 | 5 | 6 | 7 |
|                |                                  |  |   |   |   |   |   |   |



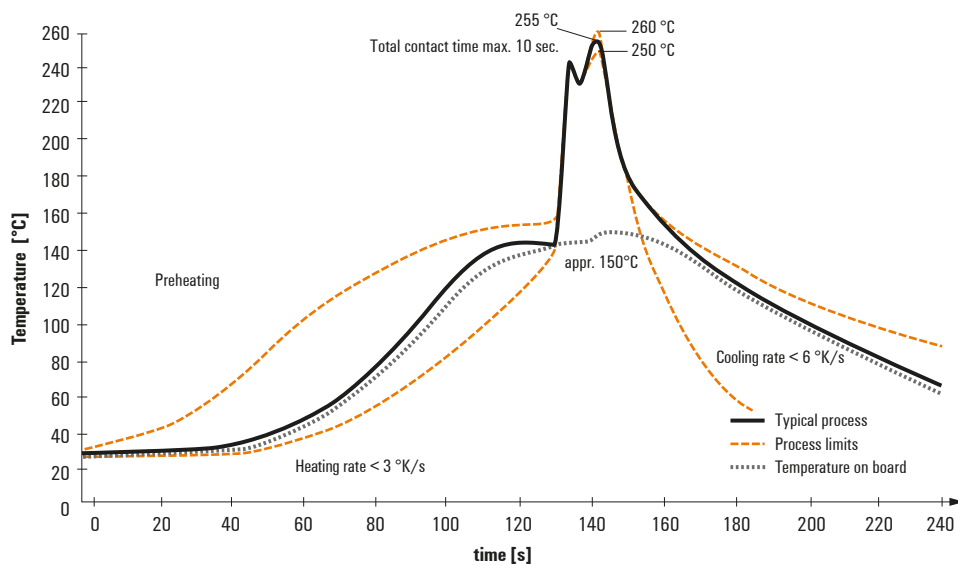
## Recommended wave soldering profiles

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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.

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