

**OMNIMATE Power - series LUP  
LUP 12.70/02/90 5.0SN GY BX****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 16

D-32758 Detmold

Germany

Fon: +49 5231 14-0

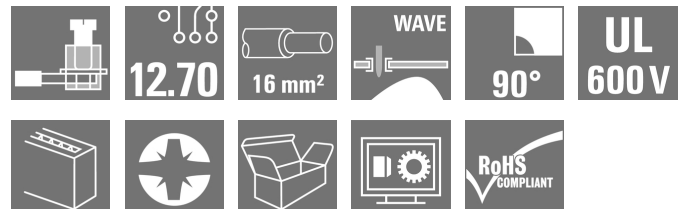
Fax: +49 5231 14-292083

www.weidmueller.com

**Product image**

Similar to illustration

This PCB terminal provides connections for 1000 V, 76 A and 16 mm<sup>2</sup> conductor cross-section with proven clamping yoke connection at 12.7 mm pitch, conductor outlet direction in 90° design.

**General ordering data**

|              |                                                                                                                                                                                              |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type         | LUP 12.70/02/90 5.0SN GY BX                                                                                                                                                                  |
| Order No.    | <a href="#">2015140000</a>                                                                                                                                                                   |
| Version      | Printed circuit board terminals, 12.70 mm, No. of poles: 2, 90°, Solder pin length (l): 5 mm, tinned, Pebble grey, Clamping yoke connection, Clamping range, max. : 16 mm <sup>2</sup> , Box |
| GTIN (EAN)   | 4050118399998                                                                                                                                                                                |
| Qty.         | 20 pc(s).                                                                                                                                                                                    |
| Product data | IEC: 1000 V / 76 A / 0.5 - 16 mm <sup>2</sup><br>UL: 600 V / 65 A / AWG 22 - AWG 6                                                                                                           |
| Packaging    | Box                                                                                                                                                                                          |

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### Technical data

#### Dimensions and weights

|                          |            |                 |            |
|--------------------------|------------|-----------------|------------|
| Width                    | 23.66 mm   | Width (inches)  | 0.931 inch |
| Height                   | 36.5 mm    | Height (inches) | 1.437 inch |
| Height of lowest version | 31.5 mm    | Depth           | 25.1 mm    |
| Depth (inches)           | 0.988 inch | Net weight      | 19.64 g    |

#### System parameters

|                                            |                              |                                              |                          |
|--------------------------------------------|------------------------------|----------------------------------------------|--------------------------|
| Product family                             | OMNIMATE Power - series LUP  | Wire connection method                       | Clamping yoke connection |
| Mounting onto the PCB                      | THT solder connection        | Conductor outlet direction                   | 90°                      |
| Pitch in mm (P)                            | 12.7 mm                      | Pitch in inches (P)                          | 0.5 inch                 |
| No. of poles                               | 2                            | Fitted by customer                           | Yes                      |
| Max. adjacent poles per row                | 12                           | Solder pin length (l)                        | 5 mm                     |
| Solder pin dimensions                      | 1.2 x 1.2 mm                 | Solder eyelet hole diameter (D)              | 1.6 mm                   |
| Solder eyelet hole diameter tolerance (D)+ | 0, 1 mm                      | Number of solder pins per pole               | 2                        |
| Screwdriver blade                          | 1.0 x 5.5, PZ 2              | Screwdriver blade standard                   | DIN 5264                 |
| Tightening torque, min.                    | 1.2 Nm                       | Tightening torque, max.                      | 1.5 Nm                   |
| Clamping screw                             | M 4                          | Stripping length                             | 12 mm                    |
| L1 in mm                                   | 12.7 mm                      | L1 in inches                                 | 0.5 inch                 |
| Touch-safe protection acc. to DIN VDE 0470 | IP20 plugged/ IP10 unplugged | Touch-safe protection acc. to DIN VDE 57 106 | Safe from finger touch   |
| Volume resistance                          | 0.50 mΩ                      |                                              |                          |

#### Material data

|                                       |                              |                                       |             |
|---------------------------------------|------------------------------|---------------------------------------|-------------|
| Insulating material                   | Wemid (PA)                   | Colour                                | Pebble grey |
| Colour chart (similar)                | RAL 7032                     | Insulating material group             | I           |
| CTI                                   | ≥ 600                        | UL 94 flammability rating             | V-0         |
| Contact material                      | E-Cu                         | Contact surface                       | tinned      |
| Layer structure of solder connection  | 1.5-3 µm Ni / 4-6 µm Sn matt | Storage temperature, min.             | -25 °C      |
| Storage temperature, max.             | 55 °C                        | Max. relative humidity during storage | 80 %        |
| Operating temperature, min.           | -50 °C                       | Operating temperature, max.           | 120 °C      |
| Temperature range, installation, min. | -25 °C                       | Temperature range, installation, max. | 120 °C      |

#### Conductors suitable for connection

|                                                                     |                      |
|---------------------------------------------------------------------|----------------------|
| Clamping range, min.                                                | 0.13 mm <sup>2</sup> |
| Clamping range, max.                                                | 16 mm <sup>2</sup>   |
| Wire connection cross section AWG, min.                             | AWG 22               |
| Wire connection cross section AWG, max.                             | AWG 6                |
| Solid, min. H05(07) V-U                                             | 0.5 mm <sup>2</sup>  |
| Solid, max. H05(07) V-U                                             | 16 mm <sup>2</sup>   |
| Stranded, min. H07V-R                                               | 6 mm <sup>2</sup>    |
| Stranded, max. H07V-R                                               | 16 mm <sup>2</sup>   |
| Flexible, min. H05(07) V-K                                          | 0.5 mm <sup>2</sup>  |
| Flexible, max. H05(07) V-K                                          | 16 mm <sup>2</sup>   |
| w. plastic collar ferrule, DIN 46228 pt 4, 2.5 mm <sup>2</sup> min. |                      |
| w. plastic collar ferrule, DIN 46228 pt 4, 10 mm <sup>2</sup> max.  |                      |
| w. wire end ferrule, DIN 46228 pt 1, min. 2.5 mm <sup>2</sup>       |                      |
| w. wire end ferrule, DIN 46228 pt 1, 10 mm <sup>2</sup> max.        |                      |

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**Technical data**

Plug gauge in accordance with EN 60999 a x b; ø 5.4 mm x 5.1 mm; 5.3 mm

|                     |                                        |                  |                     |       |
|---------------------|----------------------------------------|------------------|---------------------|-------|
| Clampable conductor | Cross-section for conductor connection | Type             | fine-wired          |       |
|                     |                                        | nominal          | 2.5 mm <sup>2</sup> |       |
|                     | AEH                                    | Stripping length | nominal             | 12 mm |
|                     |                                        | Stripping length | nominal             | 14 mm |
|                     | Cross-section for conductor connection | Type             | fine-wired          |       |
|                     |                                        | nominal          | 4 mm <sup>2</sup>   |       |
|                     | AEH                                    | Stripping length | nominal             | 12 mm |
|                     |                                        | Stripping length | nominal             | 14 mm |
|                     | Cross-section for conductor connection | Type             | fine-wired          |       |
|                     |                                        | nominal          | 6 mm <sup>2</sup>   |       |
|                     | AEH                                    | Stripping length | nominal             | 12 mm |
|                     |                                        | Stripping length | nominal             | 14 mm |
|                     | Cross-section for conductor connection | Type             | fine-wired          |       |
|                     |                                        | nominal          | 10 mm <sup>2</sup>  |       |
|                     | AEH                                    | Stripping length | nominal             | 15 mm |
|                     |                                        | Stripping length | nominal             | 12 mm |

Max. clamping range 16 mm<sup>2</sup>

**Rated data acc. to IEC**

|                                                                           |                        |                                                                       |                   |
|---------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------|-------------------|
| tested acc. to standard                                                   | IEC 60664-1, IEC 61984 | Rated current, min. no. of poles (Tu=20°C)                            | 76 A              |
| Rated current, max. no. of poles (Tu=20°C)                                | 74 A                   | Rated current, min. no. of poles (Tu=40°C)                            | 76 A              |
| Rated current, max. no. of poles (Tu=40°C)                                | 64 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        | 1,000 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                               | 1 x 1s with 700 A |

**Rated data acc. to CSA**

|                                   |        |                                   |       |
|-----------------------------------|--------|-----------------------------------|-------|
| Rated voltage (Use group B / CSA) | 600 V  | Rated voltage (Use group C / CSA) | 600 V |
| Rated current (Use group B / CSA) | 65 A   | Rated current (Use group C / CSA) | 65 A  |
| Wire cross-section, AWG, min.     | AWG 22 | Wire cross-section, AWG, max.     | AWG 6 |

**Rated data acc. to UL 1059**

|                                       |                                                                                     |                                       |        |
|---------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|--------|
| Institute (cURus)                     |  | Certificate No. (cURus)               | E60693 |
| Rated voltage (Use group B / UL 1059) | 600 V                                                                               | Rated voltage (Use group C / UL 1059) | 600 V  |
| Rated current (Use group B / UL 1059) | 65 A                                                                                | Rated current (Use group C / UL 1059) | 65 A   |
| Wire cross-section, AWG, min.         | AWG 22                                                                              | Wire cross-section, AWG, max.         | AWG 6  |
| Reference to approval values          | Specifications are maximum values, details - see approval certificate.              |                                       |        |

**Packing**

|           |        |            |        |
|-----------|--------|------------|--------|
| Packaging | Box    | VPE length | 45 mm  |
| VPE width | 125 mm | VPE height | 145 mm |

Creation date May 27, 2019 6:56:33 PM CEST

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## Technical data

### Classifications

|            |             |            |             |
|------------|-------------|------------|-------------|
| ETIM 3.0   | EC001284    | ETIM 4.0   | EC002643    |
| ETIM 5.0   | EC002643    | ETIM 6.0   | EC002643    |
| eClass 6.2 | 27-26-11-01 | eClass 9.0 | 27-44-04-01 |
| eClass 9.1 | 27-44-04-01 |            |             |

### Notes

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notes          | <ul style="list-style-type: none"> <li>• Additional colours on request</li> <li>• Rated current related to rated cross-section &amp; min. No. of poles.</li> <li>• Wire end ferrule without plastic collar to DIN 46228/1</li> <li>• Wire end ferrule with plastic collar to DIN 46228/4</li> <li>• The data given under CSA relates to a cUL approval - E60693</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> </ul> |
| 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

### Downloads

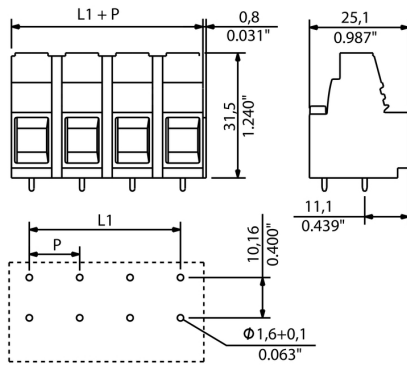
|                                             |                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Approval/Certificate/Document of Conformity | <a href="#">Declaration of the Manufacturer</a>                                                                                                                                                                                                                                                                                     |
| Brochure/Catalogue                          | <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 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> |
| Engineering Data                            | <a href="#">EPLAN, WSCAD</a>                                                                                                                                                                                                                                                                                                        |
| Engineering Data                            | <a href="#">STEP</a>                                                                                                                                                                                                                                                                                                                |
| Motion controllers white paper              | <a href="#">Download Whitepaper</a>                                                                                                                                                                                                                                                                                                 |
| User Documentation                          | <a href="#">QR-Code product handling video</a>                                                                                                                                                                                                                                                                                      |
| White Paper UL 600 V                        | <a href="#">Download Whitepaper</a>                                                                                                                                                                                                                                                                                                 |

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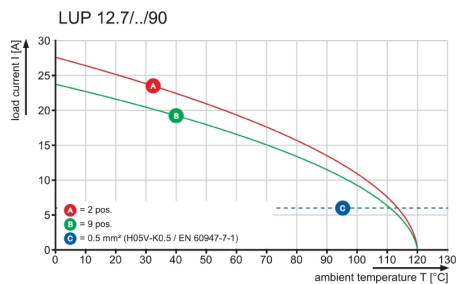
**Weidmüller Interface GmbH & Co. KG**  
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# Drawings

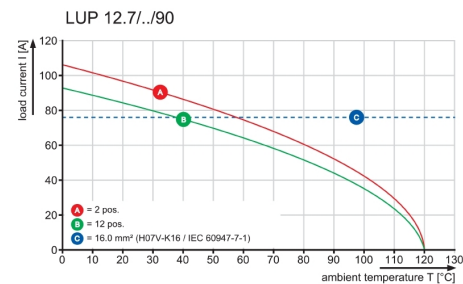
## Dimensional drawing



## Graph



## Graph



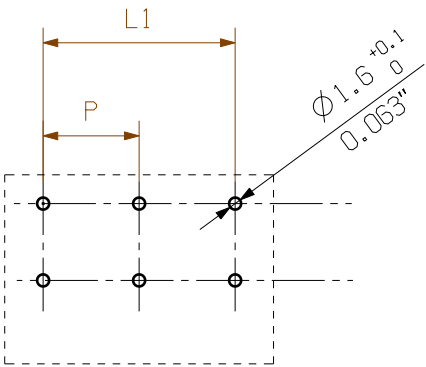
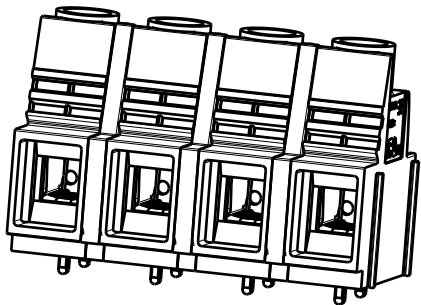
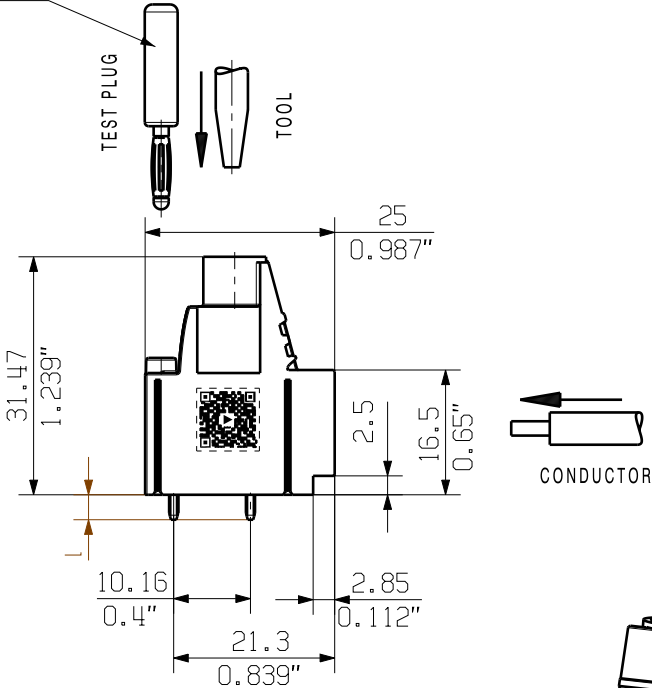
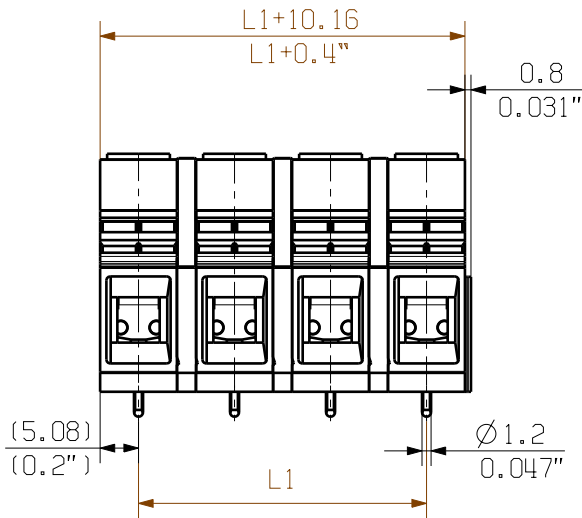
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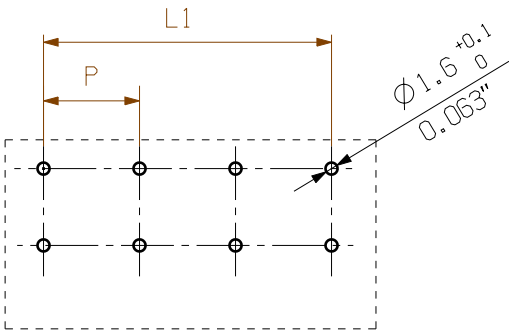
Dimensions without tolerances are no check dimensions

The English version is binding

PS 2.0 / ORDER NO.  
031000 0000



HOLE PATTERN (BLOCK)

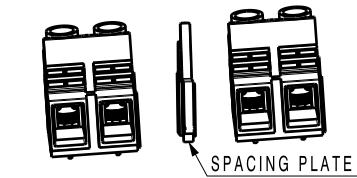


HOLE PATTERN

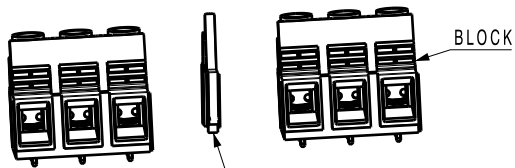
n=NO OF POLES  
P= PITCH=12.70  
l= STIFTLAENGE/ 5.0mm/0.197"  
PIN LENGTH 3.2mm/0.126"  
SHOWN: LUP 12.70/02/90...SO (BLOCK)  
LUP 12.70/03/90...SO (BLOCK)  
LUP 12.7/04/90... (SINGLE POL)

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

Weidmüller connectors are tested to the DIN VDE 0627 standard, and are valid for its field of application. Provided that the connectors are used to the intended purpose, all requirements with respect to the occurring of electrical, mechanical, thermic and corrosive stress will be satisfied.

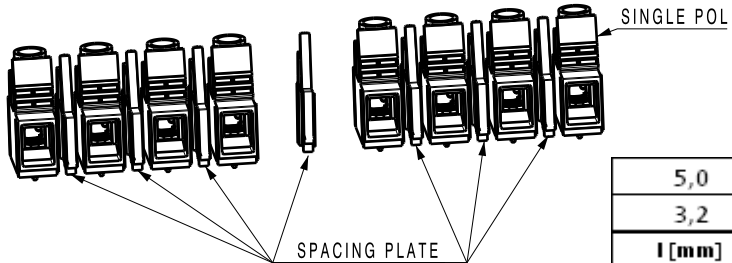


SPACING PLATE



BLOCK

SPACING PLATE



SINGLE POL

SPACING PLATE

TO MAINTAIN THE NECESSARY VOLTAGE DISTANCES FOR 600V - UL & 1000V - IEC, A SPACING PLATE IS REQUIRED BETWEEN ASSEMBLED LUP 12.7 PCB TERMINAL BLOCKS

|        |        |                   |
|--------|--------|-------------------|
| 12     | 139,70 | 5,500             |
| 11     | 127,00 | 5,000             |
| 10     | 114,30 | 4,500             |
| 9      | 101,60 | 4,000             |
| 8      | 88,90  | 3,500             |
| 7      | 76,20  | 3,000             |
| 6      | 63,50  | 2,500             |
| 5      | 50,80  | 2,000             |
| 4      | 38,10  | 1,500             |
| 3      | 25,40  | 1,000             |
| 2      | 12,70  | 0,500             |
| l [mm] | n      | L1 [mm] L1 [inch] |

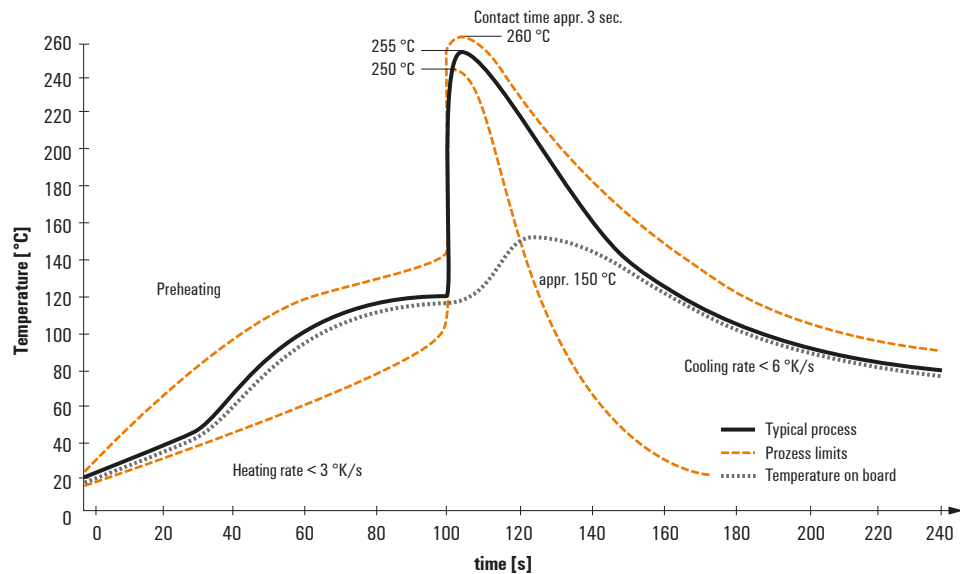
GENERAL TOLERANCE:  
DIN ISO 2768-mK

|                                |                                   |                               |
|--------------------------------|-----------------------------------|-------------------------------|
| 102479                         | Prim PLM Part No.: 411688         | Prim ERP Part No.: 1160810000 |
| First Issue Date<br>03.03.2018 | Modification                      | <b>Weidmüller</b>             |
| Scale: 2:1                     | Size: A3                          | <b>34163</b>                  |
| Drawings Assembly              | Product file: 7233 LUP 10.16/12.7 | Sheet 02 of 02 sheets         |
| LUP12.70/././90                |                                   | 10                            |
| not released                   |                                   |                               |

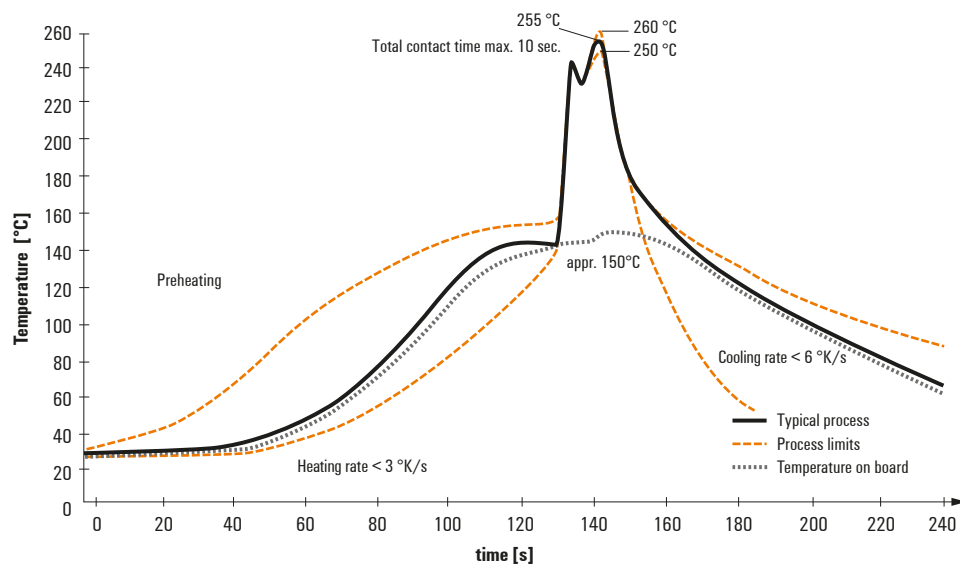
## Recommended wave soldering profiles

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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.