

LM 5.00/21/180 3.5SN OR BX

Weidmüller Interface GmbH & Co. KG

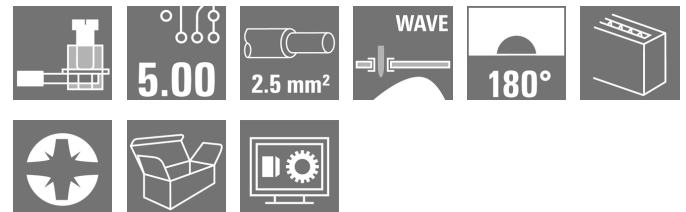
Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

Product image



PCB terminal with proven clamping yoke connection at 5.00 and 5.08 mm pitch. Conductor outlet direction 90°, 135° and 180°. Suitable for conductor cross-sections up to 2.5 mm².

General ordering data

| | |
|--------------|--|
| Version | Printed circuit board terminals, 5.00 mm, Number of poles: 21, 180°, Solder pin length (l): 3.5 mm, tinned, orange, Clamping yoke connection, Clamping range, max. : 2.5 mm ² , Box |
| Order No. | 1234430000 |
| Type | LM 5.00/21/180 3.5SN OR BX |
| GTIN (EAN) | 4050118018806 |
| Qty. | 50 pc(s). |
| Product data | IEC: 630 V / 17.5 A / 0.2 - 2.5 mm ² UL: 300 V / 15 A / AWG 24 - AWG 14 |
| Packaging | Box |

Creation date March 7, 2023 6:41:02 PM CET

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Technical data

Dimensions and weights

| | | | |
|--------------------------|------------|-----------------|------------|
| Depth | 13.8 mm | Depth (inches) | 0.543 inch |
| Height | 13.5 mm | Height (inches) | 0.531 inch |
| Height of lowest version | 10 mm | Width | 105.55 mm |
| Width (inches) | 4.156 inch | Net weight | 25 g |

Temperatures

| | | | |
|-----------------------------|--------|-----------------------------|--------|
| Operating temperature, min. | -50 °C | Operating temperature, max. | 120 °C |
|-----------------------------|--------|-----------------------------|--------|

System parameters

| | | | |
|--|-----------------------------|--|------------------------------|
| Product family | OMNIMATE Signal - series LM | Wire connection method | Clamping yoke connection |
| Mounting onto the PCB | THT solder connection | Conductor outlet direction | 180° |
| Pitch in mm (P) | 5 mm | Pitch in inches (P) | 0.197 inch |
| Number of poles | 21 | Pin series quantity | 1 |
| Fitted by customer | Yes | Number of rows | 1 |
| Max. adjacent poles per row | 24 | Solder pin length (l) | 3.5 mm |
| Solder pin dimensions | 0.95 x 0.8 mm | Solder eyelet hole diameter (D) | 1.3 mm |
| Solder eyelet hole diameter tolerance (D)+ | 0,1 mm | Number of solder pins per pole | 1 |
| Screwdriver blade | 0.6 x 3.5 | Screwdriver blade standard | DIN 5264 |
| Tightening torque, min. | 0.4 Nm | Tightening torque, max. | 0.5 Nm |
| Clamping screw | M 2.5 | Stripping length | 6 mm |
| L1 in mm | 100 mm | L1 in inches | 3.937 inch |
| Touch-safe protection acc. to DIN VDE 0470 | IP 10 | Touch-safe protection acc. to DIN VDE 57 106 | Safe from back-of-hand touch |
| Protection degree | IP20 | Volume resistance | 1.20 mΩ |

Material data

| | | | |
|---------------------------------------|------------|---------------------------------------|--------------------------------|
| Insulating material | Wemid (PA) | Colour | orange |
| Colour chart (similar) | RAL 2000 | Insulating material group | I |
| Comparative Tracking Index (CTI) | ≥ 600 | Insulation strength | ≥ 10 ⁸ Ω |
| UL 94 flammability rating | V-0 | Contact material | Copper alloy |
| Contact surface | tinned | Coating | 1-3 μm Ni, 4-6 μm SN |
| Tinning type | matt | Layer structure of solder connection | 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. | 120 °C |
| Temperature range, installation, min. | -25 °C | Temperature range, installation, max. | 120 °C |

Conductors suitable for connection

| | |
|--|---------------------------|
| Clamping range, min. | 0.2 mm ² |
| Clamping range, max. | 2.5 mm ² |
| Wire connection cross section AWG, min. | AWG 24 |
| Wire connection cross section AWG, max. | AWG 14 |
| Solid, min. H05(07) V-U | 0.2 mm ² |
| Solid, max. H05(07) V-U | 2.5 mm ² |
| Flexible, min. H05(07) V-K | 0.2 mm ² |
| Flexible, max. H05(07) V-K | 2.5 mm ² |
| w. plastic collar ferrule, DIN 46228 pt 4, | 0.25 mm ² min. |

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Technical data

w. plastic collar ferrule, DIN 46228 pt 4, 1.5 mm²
 max.

w. wire end ferrule, DIN 46228 pt 1, 0.25 mm²
 min.

w. wire end ferrule, DIN 46228 pt 1, 1.5 mm²
 max.

Plug gauge in accordance with EN 60999 a x b; ø 2.4 mm x 1.5 mm; 1.9mm

| Clampable conductor | Cross-section for conductor connection | Type | fine-wired |
|--|--|------------------------------|------------------------------|
| | | | nominal |
| wire end ferrule | | Stripping length | nominal 8 mm |
| | | Recommended wire-end ferrule | H0.5/12 OR |
| | | Stripping length | nominal 6 mm |
| | | Recommended wire-end ferrule | H0.5/6 |
| Cross-section for conductor connection | Type | fine-wired | |
| | nominal | 0.75 mm ² | |
| wire end ferrule | | Stripping length | nominal 8 mm |
| | | Recommended wire-end ferrule | H0.75/12 W |
| | | Stripping length | nominal 6 mm |
| | | Recommended wire-end ferrule | H0.75/6 |
| Cross-section for conductor connection | Type | fine-wired | |
| | nominal | 1 mm ² | |
| wire end ferrule | | Stripping length | nominal 8 mm |
| | | Recommended wire-end ferrule | H1.0/12 GE |
| | | Stripping length | nominal 6 mm |
| | | Recommended wire-end ferrule | H1.0/6 |
| Cross-section for conductor connection | Type | fine-wired | |
| | nominal | 0.25 mm ² | |
| wire end ferrule | | Stripping length | nominal 8 mm |
| | | Recommended wire-end ferrule | H0.25/10 HBL |
| | | Stripping length | nominal 5 mm |
| | | Recommended wire-end ferrule | H0.25/5 |
| Cross-section for conductor connection | Type | fine-wired | |
| | nominal | 0.34 mm ² | |
| wire end ferrule | | Stripping length | nominal 8 mm |
| | | Recommended wire-end ferrule | H0.34/10 TK |

Reference text Length of ferrules is to be chosen depending on the product and the rated voltage.. The outside diameter of the plastic collar should not be larger than the pitch (P)

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Technical data

Rated data acc. to IEC

| | | | | | |
|---|--|------------------------|---|--|-------------------|
| tested acc. to standard | | IEC 60664-1, IEC 61984 | Rated current, min. number of poles (Tu=20°C) | | 17.5 A |
| Rated current, max. number of poles (Tu=20°C) | | 16 A | Rated current, min. number of poles (Tu=40°C) | | 17.5 A |
| Rated current, max. number of poles (Tu=40°C) | | 14.2 A | Rated voltage for surge voltage class / pollution degree II/2 | | 630 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 | Short-time withstand current resistance | | 3 x 1s with 120 A |

Rated data acc. to CSA

| | | | | | |
|-----------------------------------|--|---|-----------------------------------|--|----------------|
| Institute (CSA) | |  | Certificate No. (CSA) | | 200039-1815154 |
| Rated voltage (Use group B / CSA) | | 300 V | Rated voltage (Use group D / CSA) | | 300 V |
| Rated current (Use group B / CSA) | | 18 A | Rated current (Use group D / CSA) | | 10 A |
| Wire cross-section, AWG, min. | | AWG 24 | Wire cross-section, AWG, max. | | AWG 14 |
| 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 D / UL 1059) | | 300 V |
| Rated current (Use group B / UL 1059) | | 15 A | Rated current (Use group D / UL 1059) | | 10 A |
| Wire cross-section, AWG, min. | | AWG 24 | Wire cross-section, AWG, max. | | AWG 14 |
| Reference to approval values | | Specifications are maximum values, details - see approval certificate. | | | |

Packing

| | | | |
|-----------|--------|------------|--------|
| Packaging | Box | VPE length | 275 mm |
| VPE width | 150 mm | VPE height | 105 mm |

Type tests

| | | |
|------------------------------|------------|---|
| Test: Durability of markings | Test | mark of origin, type identification, pitch, type of material, approval marking UL, approval marking CSA, durability |
| | Evaluation | available |

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| | | | |
|---|----------------|--|-------------------------------|
| Test: Clampable cross section | Standard | DIN EN 60999-1 section 7 and 9.1 / 12.00, DIN EN 60947-1 section 8.2.4.5.1 / 12.02 | |
| | Conductor type | Type of conductor and conductor cross-section | solid 0.2 mm ² |
| | | Type of conductor and conductor cross-section | stranded 0.2 mm ² |
| | | Type of conductor and conductor cross-section | stranded 1.5 mm ² |
| | | Type of conductor and conductor cross-section | solid 2.5 mm ² |
| | | Type of conductor and conductor cross-section | AWG 24/1 |
| | | Type of conductor and conductor cross-section | AWG 24/19 |
| | | Type of conductor and conductor cross-section | AWG 14/1 |
| | | Type of conductor and conductor cross-section | AWG 14/19 |
| Evaluation | passed | | |
| Test for damage to and accidental loosening of conductors | Standard | DIN EN 60999-1 section 9.4 / 12.00 | |
| | Requirement | 0.2 kg | |
| | Conductor type | Type of conductor and conductor cross-section | stranded 0.25 mm ² |
| | | Type of conductor and conductor cross-section | AWG 24/1 |
| | | Type of conductor and conductor cross-section | AWG 24/19 |
| | Evaluation | passed | |
| | Requirement | 0.3 kg | |
| | Conductor type | Type of conductor and conductor cross-section | solid 0.5 mm ² |
| | Evaluation | passed | |
| | Requirement | 0.4 kg | |
| | Conductor type | Type of conductor and conductor cross-section | stranded 1.5 mm ² |
| | Evaluation | passed | |
| | Requirement | 0.7 kg | |
| | Conductor type | Type of conductor and conductor cross-section | solid 2.5 mm ² |
| Type of conductor and conductor cross-section | | AWG 14/1 | |
| Type of conductor and conductor cross-section | | AWG 14/19 | |
| Evaluation | passed | | |

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| | | | | |
|---------------|----------------|---|-------------------------------|--|
| Pull-out test | Standard | DIN EN 60999-1 section 9.5 / 12.00 | | |
| | Requirement | ≥10 N | | |
| | Conductor type | Type of conductor and conductor cross-section | stranded 0.25 mm ² | |
| | | Type of conductor and conductor cross-section | AWG 24/1 | |
| | | Type of conductor and conductor cross-section | AWG 24/19 | |
| | Evaluation | passed | | |
| | Requirement | ≥20 N | | |
| | Requirement | ≥40 N | | |
| | Conductor type | Type of conductor and conductor cross-section | H07V-K1.5 | |
| | | Evaluation | passed | |
| | Requirement | ≥50 N | | |
| | Conductor type | Type of conductor and conductor cross-section | H07V-U2.5 | |
| | | Type of conductor and conductor cross-section | AWG 14/1 | |
| | | Type of conductor and conductor cross-section | AWG 14/19 | |
| | Evaluation | passed | | |

Classifications

| | | | |
|-------------|-------------|-------------|-------------|
| ETIM 6.0 | EC002643 | ETIM 7.0 | EC002643 |
| ETIM 8.0 | EC002643 | ECLASS 9.0 | 27-44-04-01 |
| ECLASS 9.1 | 27-44-04-01 | ECLASS 10.0 | 27-44-04-01 |
| ECLASS 11.0 | 27-46-01-01 | ECLASS 12.0 | 27-46-01-01 |

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 | <ul style="list-style-type: none"> • Rated current related to rated cross-section & min. No. of poles. • Wire end ferrule without plastic collar to DIN 46228/1 • Wire end ferrule with plastic collar to DIN 46228/4 • 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 |

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Technical data

Approvals

Approvals



| | |
|-------------------------|------------|
| UL File Number Search | UL Website |
| Certificate No. (cURus) | E60693 |

Downloads

| | |
|---|---|
| Approval/Certificate/Document of Conformity | Declaration of the Manufacturer |
| Engineering Data | CAD data – STEP |
| Engineering Data | WSCAD |
| Catalogues | Catalogues in PDF-format |
| Brochures | FL DRIVES EN FL ANALO.SIGN.CONV. EN MB DEVICE MANUF. EN FL DRIVES DE FL BUILDING SAFETY EN FL APPL LED LIGHTING EN FLIndustr.CONTROLS EN FL MACHINE SAFETY EN FL HEATING ELECTR EN FL APPL INVERTER EN FL_BASE_STATION EN FL ELEVATOR EN FL POWER SUPPLY EN FL 72H SAMPLE SER EN PO OMNIMATE EN PO OMNIMATE EN |

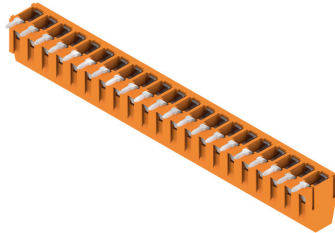
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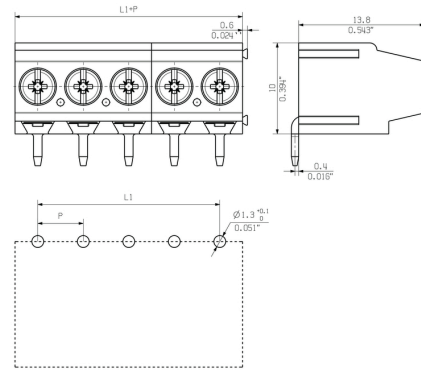
www.weidmueller.com

Drawings

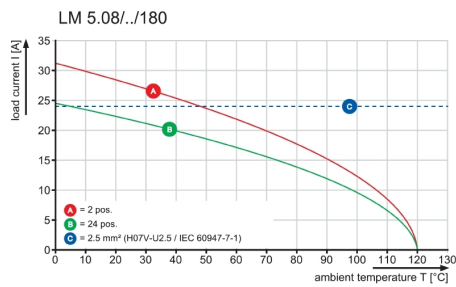
Product image



Dimensional drawing



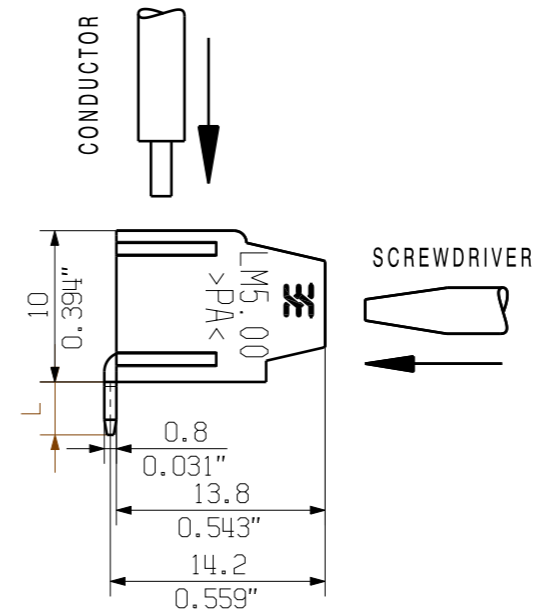
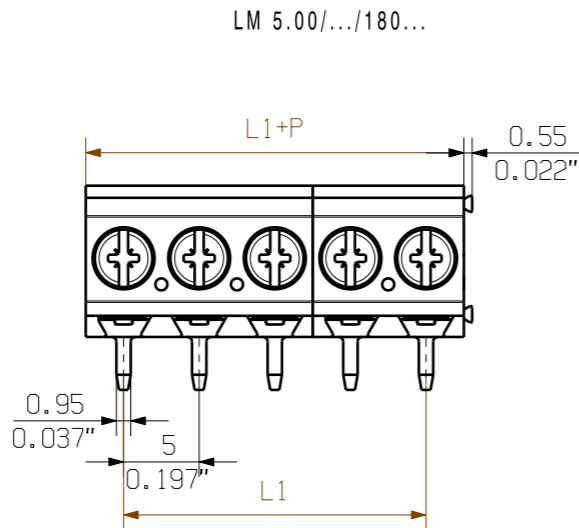
Graph



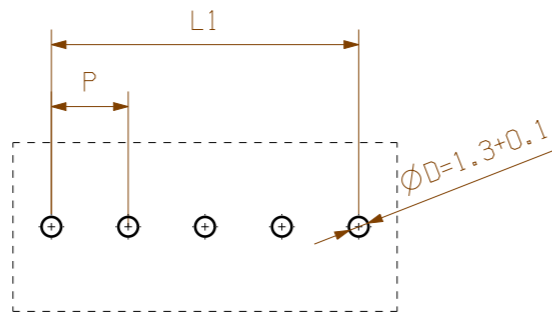
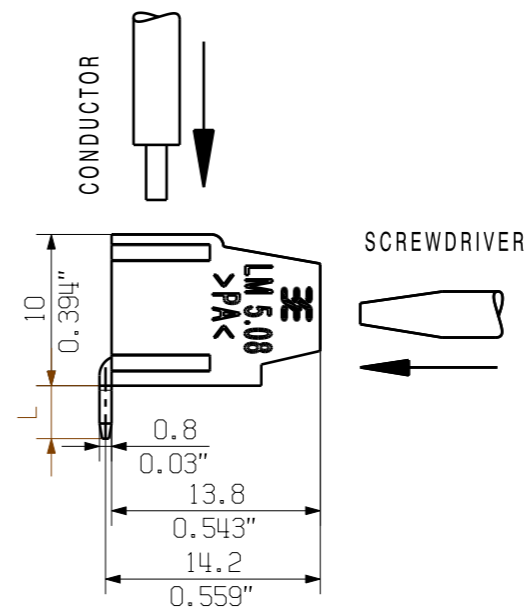
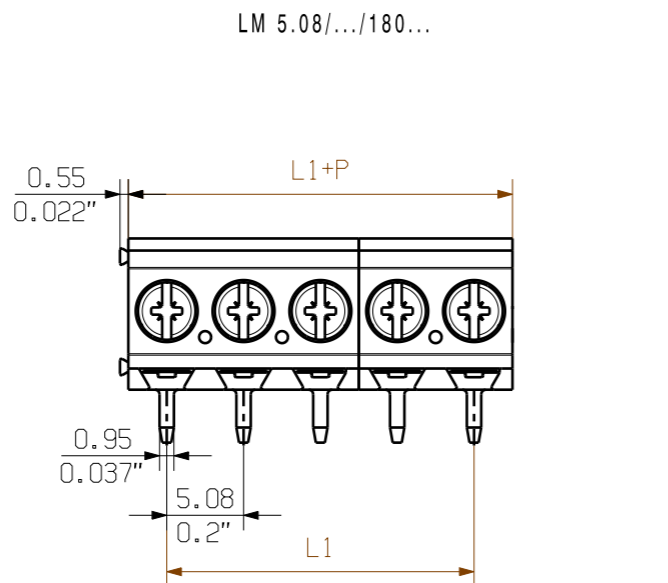
Derating curve valid for 5.00 & 5.08 pitch

MASSE OHNE TOLERANZ SIND KEINE PRUEFMASSE
 DIMS. WITHOUT TOLERANCE ARE NOT CONTROL DIMS.

09



| STIFTLÄNGE L PIN LENGTH L | TOLERANZ TOLERANCE |
|------------------------------|-----------------------|
| 3.5 | 0.2 -0.2 |



PCB LAYOUT

KUNDENZEICHNUNG
 CUSTOMER DRAWING

| | | | | |
|----|-------------------------|-----------|-------------------------|-----------|
| 24 | 115.00 | 4.528 | 116.84 | 4.600 |
| 23 | 110.00 | 4.331 | 111.76 | 4.400 |
| 22 | 105.00 | 4.134 | 106.68 | 4.200 |
| 21 | 100.00 | 3.937 | 101.60 | 4.000 |
| 20 | 95.00 | 3.740 | 96.52 | 3.800 |
| 19 | 90.00 | 3.543 | 91.44 | 3.600 |
| 18 | 85.00 | 3.346 | 86.36 | 3.400 |
| 17 | 80.00 | 3.150 | 81.28 | 3.200 |
| 16 | 75.00 | 2.953 | 76.20 | 3.000 |
| 15 | 70.00 | 2.756 | 71.12 | 2.800 |
| 14 | 65.00 | 2.559 | 66.04 | 2.600 |
| 13 | 60.00 | 2.362 | 60.96 | 2.400 |
| 12 | 55.00 | 2.165 | 55.88 | 2.200 |
| 11 | 50.00 | 1.969 | 50.80 | 2.000 |
| 10 | 45.00 | 1.772 | 45.72 | 1.800 |
| 9 | 40.00 | 1.575 | 40.64 | 1.600 |
| 8 | 35.00 | 1.378 | 35.56 | 1.400 |
| 7 | 30.00 | 1.181 | 30.48 | 1.200 |
| 6 | 25.00 | 0.984 | 25.40 | 1.000 |
| 5 | 20.00 | 0.787 | 20.32 | 0.800 |
| 4 | 15.00 | 0.591 | 15.24 | 0.600 |
| 3 | 10.00 | 0.394 | 10.16 | 0.400 |
| 2 | 5.00 | 0.197 | 5.08 | 0.200 |
| N | L1 [mm] | L1 [inch] | L1 [mm] | L1 [inch] |
| | P=5.00 mm, 0.197inch | | P=5.08mm, 0.200 inch | |

For the mounting of PCBs, it should be noted that the rated data stated in the catalog 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.

| | | | | | |
|--------------------------------------|--|-----------------------------|--|-------------------------------------|--|
| GENERAL TOLERANCE: DIN ISO 2768-m | | 78183/5 24.09.14 MA_J 01 | | CAT. NO.: | |
| RoHS COMPLIANT | | MAX. NRN./NOS. | | Weidmüller | |
| MODIFICATION | | DATE | | DRAWING NO. C 41709 09 | |
| DRAWN | | 31.03.2005 | | SHEET 01 OF 01 SHEETS | |
| RESPONSIBLE | | XU_S | | ISSUE NO. | |
| CHECKED | | 25.09.2014 | | LM 5.../.../180 ... | |
| APPROVED | | XU_S | | LEITERPLATTENKLEMME PCB TERMINAL | |
| SCALE: 2/1 | | ZHOU_N | | PRODUCT FILE: LM | |
| SUPERSEDES: . | | APPROVED | | 7065 | |

WEITERGABE SOWIE VERVIELFÄLTIGUNG DIESES DOKUMENTS, VERWERTUNG UND MITTEILUNG SEINES INHALTS SIND VERBOTEN, SOWEIT NICHT AUSDRUECKLICH GESTATTET.
 ZUWIDERHANDLUNGEN VERPFLICHTEN ZU SCHADENERSATZ. ALLE RECHTE FUER DEN FALL DER PATENT-, GEBRAUCHSMUSTER- ODER GESCHMACKSMUSTERENTRAGUNG VORBEHALTEN.
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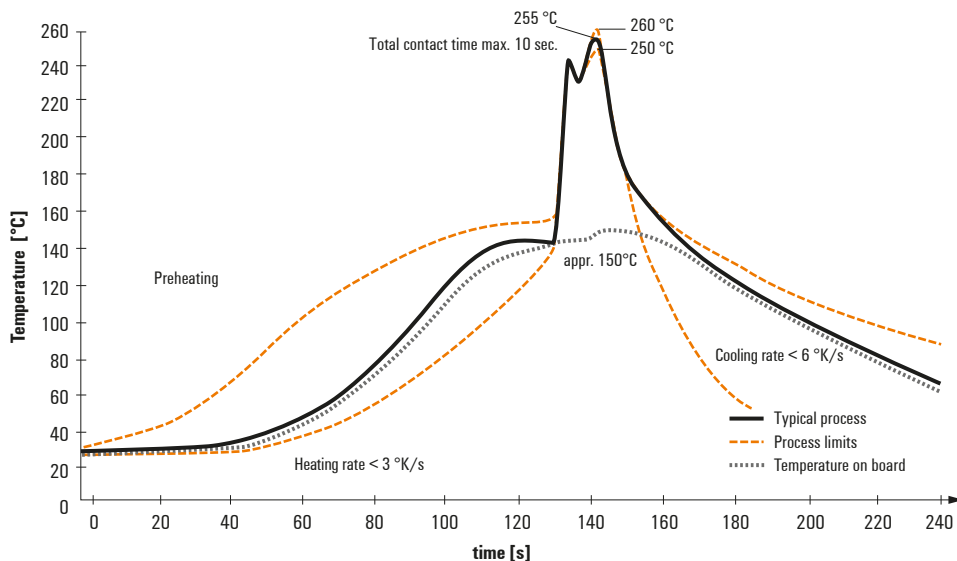
Recommended wave soldering profiles

Weidmüller Interface GmbH & Co. KG
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 Fon: +49 5231 14-0
 Fax: +49 5231 14-292083
 www.weidmueller.com

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.