

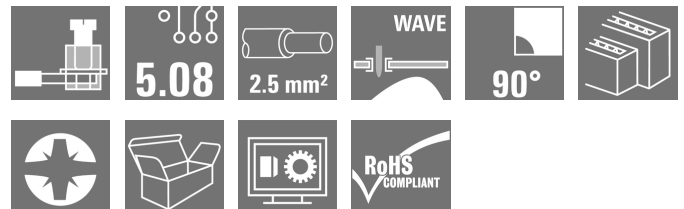
**LM2N 5.08/40/90 3.5SN OR BX****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

**Product image**

Similar to illustration

Single- and multi-row PCB terminal with proven clamping yoke connection at 5.08 mm pitch. Suitable for conductor cross-sections up to 2.5 mm<sup>2</sup>.

**General ordering data**

|              |                                                                                                                                                                                               |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Version      | Printed circuit board terminals, 5.08 mm, Number of poles: 40, 90°, Solder pin length (l): 3.5 mm, tinned, orange, Clamping yoke connection, Clamping range, max. : 2.5 mm <sup>2</sup> , Box |
| Order No.    | <a href="#">1769030000</a>                                                                                                                                                                    |
| Type         | LM2N 5.08/40/90 3.5SN OR BX                                                                                                                                                                   |
| GTIN (EAN)   | 4032248115846                                                                                                                                                                                 |
| Qty.         | 8 pc(s).                                                                                                                                                                                      |
| Product data | IEC: 630 V / 17.5 A / 0.2 - 2.5 mm <sup>2</sup><br>UL: 300 V / 15 A / AWG 24 - AWG 14                                                                                                         |
| Packaging    | Box                                                                                                                                                                                           |

Creation date March 25, 2021 4:47:23 AM CET

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## Technical data

## Dimensions and weights

|                          |           |                 |            |
|--------------------------|-----------|-----------------|------------|
| Depth                    | 21.6 mm   | Depth (inches)  | 0.85 inch  |
| Height                   | 28.7 mm   | Height (inches) | 1.13 inch  |
| Height of lowest version | 25.2 mm   | Net weight      | 59.3 g     |
| Width                    | 105.14 mm | Width (inches)  | 4.139 inch |

## System parameters

|                                              |                             |                                            |                          |
|----------------------------------------------|-----------------------------|--------------------------------------------|--------------------------|
| Product family                               | OMNIMATE Signal - series LM | Wire connection method                     | Clamping yoke connection |
| Mounting onto the PCB                        | THT solder connection       | Conductor outlet direction                 | 90°                      |
| Pitch in mm (P)                              | 5.08 mm                     | Pitch in inches (P)                        | 0.2 inch                 |
| Number of poles                              | 40                          | Pin series quantity                        | 2                        |
| Fitted by customer                           | Yes                         | Max. adjacent poles per row                | 48                       |
| 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                                   | 96.52 mm                 |
| L1 in inches                                 | 3.8 inch                    | Touch-safe protection acc. to DIN VDE 0470 | IP 20                    |
| Touch-safe protection acc. to DIN VDE 57 106 | Safe from finger touch      | 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                          | 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 <sup>2</sup>  |
| Clamping range, max.                            | 2.5 mm <sup>2</sup>  |
| 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 <sup>2</sup>  |
| Solid, max. H05(07) V-U                         | 2.5 mm <sup>2</sup>  |
| Flexible, min. H05(07) V-K                      | 0.2 mm <sup>2</sup>  |
| Flexible, max. H05(07) V-K                      | 2.5 mm <sup>2</sup>  |
| w. plastic collar ferrule, DIN 46228 pt 4, min. | 0.25 mm <sup>2</sup> |
| w. plastic collar ferrule, DIN 46228 pt 4, max. | 1.5 mm <sup>2</sup>  |
| w. wire end ferrule, DIN 46228 pt 1, min.       | 0.25 mm <sup>2</sup> |

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w. wire end ferrule, DIN 46228 pt 1, max. 1.5 mm<sup>2</sup>

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                      | 0.5 mm <sup>2</sup>          |
|                     | wire end ferrule                       | Stripping length             | nominal 8 mm                 |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H0.5/12 OR</a>   |
|                     |                                        | Stripping length             | nominal 6 mm                 |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H0.5/6</a>       |
|                     | Cross-section for conductor connection | Type                         | fine-wired                   |
|                     |                                        | nominal                      | 0.75 mm <sup>2</sup>         |
|                     | wire end ferrule                       | Stripping length             | nominal 8 mm                 |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H0.75/12 W</a>   |
|                     |                                        | Stripping length             | nominal 6 mm                 |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H0.75/6</a>      |
|                     | Cross-section for conductor connection | Type                         | fine-wired                   |
|                     |                                        | nominal                      | 1 mm <sup>2</sup>            |
|                     | wire end ferrule                       | Stripping length             | nominal 8 mm                 |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H1.0/12 GE</a>   |
|                     |                                        | Stripping length             | nominal 6 mm                 |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H1.0/6</a>       |
|                     | Cross-section for conductor connection | Type                         | fine-wired                   |
|                     |                                        | nominal                      | 0.25 mm <sup>2</sup>         |
|                     | wire end ferrule                       | Stripping length             | nominal 8 mm                 |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H0.25/10 HBL</a> |
|                     |                                        | Stripping length             | nominal 5 mm                 |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H0.25/5</a>      |
|                     | Cross-section for conductor connection | Type                         | fine-wired                   |
|                     |                                        | nominal                      | 0.34 mm <sup>2</sup>         |
|                     | wire end ferrule                       | Stripping length             | nominal 8 mm                 |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H0.34/10 TK</a>  |

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)

## Rated data acc. to IEC

tested acc. to standard

IEC 60664-1, IEC 61984

|                                                                           |        |
|---------------------------------------------------------------------------|--------|
| Rated current, max. number of poles (Tu=20°C)                             | 16 A   |
| Rated current, max. number of poles (Tu=40°C)                             | 14.2 A |
| Rated voltage for surge voltage class / pollution degree III/2            | 320 V  |
| Rated impulse voltage for surge voltage class/ pollution degree II/2      | 4 kV   |
| Rated impulse voltage for surge voltage class/ contamination degree III/3 | 4 kV   |

|                                                                       |                   |
|-----------------------------------------------------------------------|-------------------|
| Rated current, min. number of poles (Tu=20°C)                         | 17.5 A            |
| Rated current, min. number of poles (Tu=40°C)                         | 17.5 A            |
| Rated voltage for surge voltage class / pollution degree II/2         | 630 V             |
| Rated voltage for surge voltage class / pollution degree III/3        | 250 V             |
| Rated impulse voltage for surge voltage class/ pollution degree III/2 | 4 kV              |
| Short-time withstand current resistance                               | 3 x 1s with 120 A |

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## Technical data

## Rated data acc. to CSA

Institute (CSA)



Certificate No. (CSA)

200039-1815154

|                                   |                                                                        |
|-----------------------------------|------------------------------------------------------------------------|
| Rated voltage (Use group B / CSA) | 300 V                                                                  |
| Rated current (Use group B / CSA) | 18 A                                                                   |
| Wire cross-section, AWG, min.     | AWG 24                                                                 |
| Reference to approval values      | Specifications are maximum values, details - see approval certificate. |

|                                   |        |
|-----------------------------------|--------|
| Rated voltage (Use group D / CSA) | 300 V  |
| Rated current (Use group D / CSA) | 10 A   |
| Wire cross-section, AWG, max.     | AWG 14 |

## Rated data acc. to UL 1059

Institute (cURus)



Certificate No. (cURus)

E60693

|                                       |                                                                        |
|---------------------------------------|------------------------------------------------------------------------|
| Rated voltage (Use group B / UL 1059) | 300 V                                                                  |
| Rated current (Use group B / UL 1059) | 15 A                                                                   |
| Wire cross-section, AWG, min.         | AWG 24                                                                 |
| Reference to approval values          | Specifications are maximum values, details - see approval certificate. |

|                                       |        |
|---------------------------------------|--------|
| Rated voltage (Use group D / UL 1059) | 300 V  |
| Rated current (Use group D / UL 1059) | 10 A   |
| Wire cross-section, AWG, max.         | AWG 14 |

## Packing

|           |        |            |        |
|-----------|--------|------------|--------|
| Packaging | Box    | VPE length | 45 mm  |
| VPE width | 120 mm | VPE height | 175 mm |

## Classifications

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 6.0    | EC002643    | ETIM 7.0    | 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 |

## 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"> <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>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> <li>Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months</li> </ul> |

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[www.weidmueller.com](http://www.weidmueller.com)**Technical data****Approvals**

Approvals



ROHS Conform

UL File Number Search E60693

**Downloads**Approval/Certificate/Document of  
Conformity [Declaration of the Manufacturer](#)Engineering Data [EPLAN, WSCAD](#)Product Change Notification [Change of packaging - DE](#)  
[Change of packaging - EN](#)

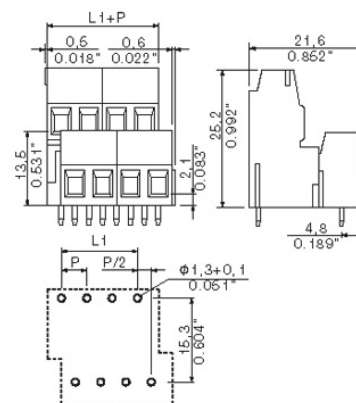
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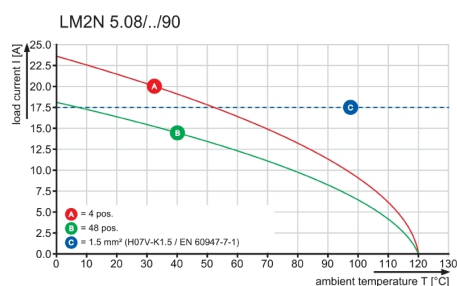
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# Drawings

## Dimensional drawing



## Graph



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Technical Data

Rev.

Material data

|                                        |                         |
|----------------------------------------|-------------------------|
| Insulation material type               | PA 66/6(WEMID)          |
| Insulation material colours            | orange,black,green,grey |
| Insulation material flammability class | UL94 V-0                |
| Insulation resistance                  | >10 <sup>3</sup>        |
| Conatct base material                  | Cu-alloy                |
| Contact plating                        | Tin-plated              |

System characteristic values

|                                                      |         |                        |
|------------------------------------------------------|---------|------------------------|
| Pitch P                                              | mm/inch | 5.08 / 0.200           |
| Number of rows                                       |         | 2                      |
| Dielectric strength (r.m.s withstand voltage)        | kV      | >2.5                   |
| Through resistance (typical)                         | mOhm    | 1.4                    |
| Operating temperature range                          | °C      | -55°...+120°           |
| Degree of protection acc. to VDE 0106                |         | finger safe            |
| Degree of protection acc. to DIN EN 60529            |         | IP20                   |
| Conductor connection method                          |         | clamping yoke          |
| Screw size                                           |         | M2.5                   |
| Screw torque max. acc. to EN 60999                   | Nm      | 0.4 - 0.5              |
| Screwdriver type                                     | ⊖/⊕     | SD 0.6 x 3.5 / SDK PZ0 |
| Solder pin length L                                  | mm/inch | 3.5 / 0.138            |
| PCB hole diameter D (wave soldering)                 | mm/inch | 1.3+0.10/0.051+0.004   |
| PCB hole diameter D (reflow soldering)               | mm/inch | n.a.                   |
| Resistance to soldering heat acc. to DIN IEC 60512-6 | °C/sec  | 260/10                 |
| Resistance to soldering heat acc. to EN 61760-1      | °C/sec  | n.a.                   |
| Solderability classification acc. to EN 61760-1      |         | n.a.                   |
| Solder connection type                               |         | wave soldering         |
| Solder pin diameter d (max.)                         | mm/inch | 1.24/0.049             |

Application notes

|                                |        |     |
|--------------------------------|--------|-----|
| Coding possibility             | yes/no | no  |
| Joinable without loss of pitch | yes/no | yes |
| Manual assembly of modules     | yes/no | yes |
| Max. number of poles           | n      | 48  |

Conductor

|                                             |                 |                         |
|---------------------------------------------|-----------------|-------------------------|
| Clamping range                              | mm <sup>2</sup> | 0.20-2.5                |
| "e" solid H05(07) V-U                       | mm <sup>2</sup> | 0.20-2.5                |
| "f" flexible H05(07) V-K                    | mm <sup>2</sup> | 0.20-1.5                |
| "f" with ferrule acc. to DIN 46228/1        | mm <sup>2</sup> | 0.25-1.5                |
| ... with plastic collar acc. to DIN 46228/4 | mm <sup>2</sup> | 0.25-1.5                |
| Conductor insulation stripping length       | mm/inch         | 6.0                     |
| Conductor insulation diameter max.          | mm/inch         | n.a.                    |
| Two wire clamping range                     | mm <sup>2</sup> | n.a.                    |
| Gauge to EN 60999 (a x b ; Ø)               | mm              | 2.4x1.5 (A1); Ø1.9 (B1) |

IEC 664-1 / VDE0110 (4.97) rated data

|                                                      |                 |      |
|------------------------------------------------------|-----------------|------|
| Rated cross section acc. to EN 60999                 | mm <sup>2</sup> | 1.5  |
| Rated current @ 20°C ambient (min. pole , max. wire) | A               | 17.5 |
| Rated current @ 40°C ambient (min. pole , max. wire) | A               | 17.5 |

Overvoltage category / Pollution degree

|                       | III/3 | III/2 | II/2 |
|-----------------------|-------|-------|------|
| Rated voltage         | 250   | 320   | 630  |
| Rated impulse voltage | 4.0   | 4.0   | 4.0  |

UL 1059 rated data



File No.: E60693

|                                                | B     | C    | D   |
|------------------------------------------------|-------|------|-----|
| Rated voltage                                  | 300   | n.a. | 300 |
| Rated current                                  | 15    | n.a. | 10  |
| AWG wire range (field wiring / factory wiring) | 24-14 |      |     |

CSA C22.2 rated data



File No.: LR12400

|                                                | B     | C    | D   |
|------------------------------------------------|-------|------|-----|
| Rated voltage                                  | 300   | n.a. | 300 |
| Rated current                                  | 18    | n.a. | 10  |
| AWG wire range (field wiring / factory wiring) | 24-14 |      |     |

Packaging

cardboard box

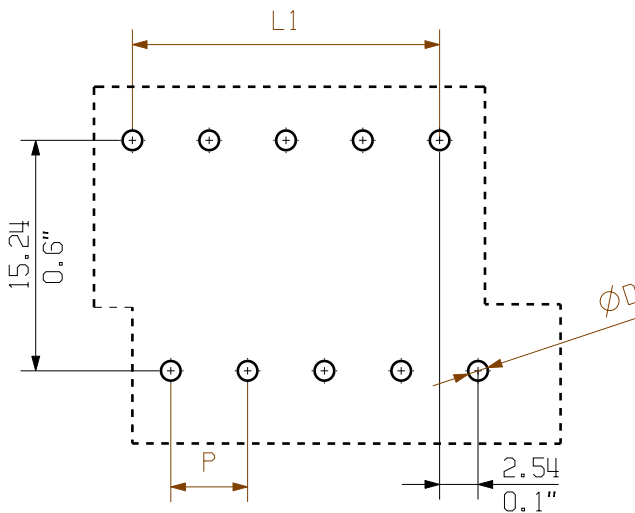
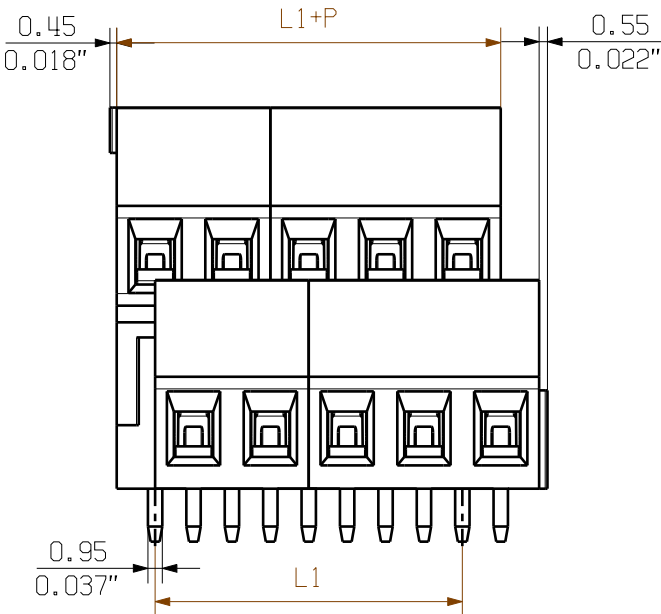
Downloads

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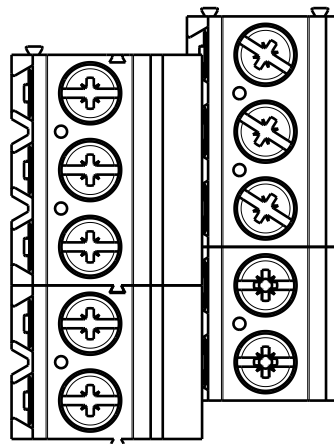
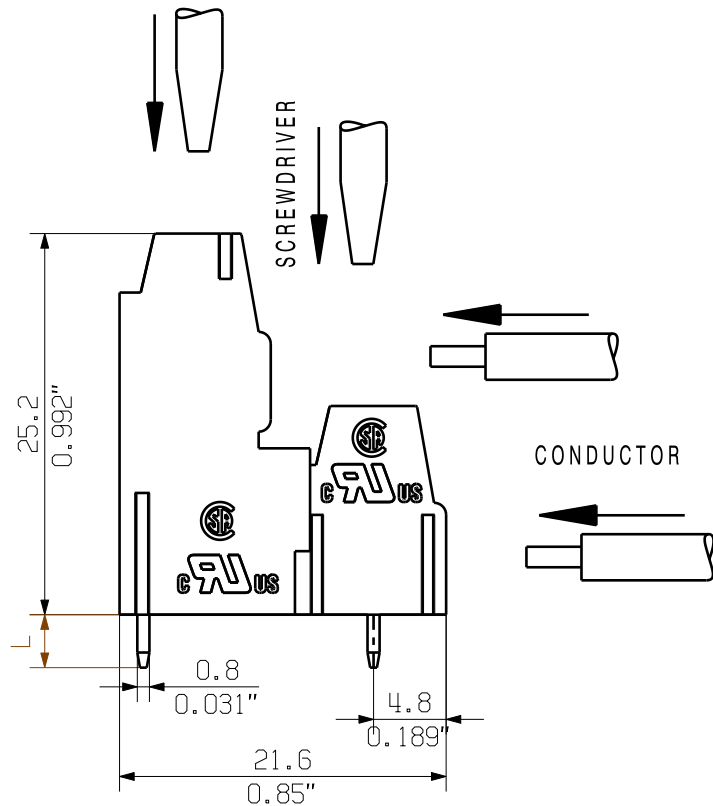
- 1) Sum of ambient temperature and temperature rise
- 2) Recommendation for manual assembly
- 3) Recommendation for automatic assembly
- 4) Recommendation for wave soldering
- 5) Recommendation for reflow soldering
- 6) Referred to rated cross section and minimum pole number

n.a. = not applicable

Subject to technical changes



PCB LAYOUT



KUNDENZEICHNUNG  
CUSTOMER DRAWING

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

SHOWN: LM2N 5.08/10

|                                                              |                                 |                                                      |  |
|--------------------------------------------------------------|---------------------------------|------------------------------------------------------|--|
| METRIC TOLERANCES<br>X. = ±0.3<br>X.X = ±0.1<br>X.XX = ±0.05 | 41404/5<br>05.11.08 SHI_S<br>00 | CAT.NO.: .                                           |  |
| MODIFICATION                                                 |                                 | C 41737 07                                           |  |
| SCALE: 2/1                                                   | DRAWN 31.03.2005 XU_S           | DRAWING NO. ISSUE NO.                                |  |
| SUPERSEDES: 4 29161/01                                       | CHECKED 20.07.2007 LIU_ZH       | LM2N 5.08/...<br>LEITERPLATTENKLEMME<br>PCB TERMINAL |  |
| SUPERSEDED BY: .                                             | APPROVED DONG_H                 | PRODUCT FILE: LM2N 5.08 7065                         |  |

## 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.



