

**LS2HF 3.50/24/90 3.5SN OR BX**

Weidmüller Interfaces GmbH & Co. KG

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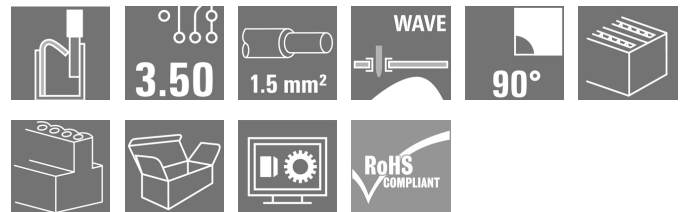
**Product image**



Similar to illustration

Double-level PCB terminal for the wave soldering process, with PUSH IN wire connection system. Conductor insertion and slider operation from the same direction (TOP).

- Solid and flexible conductors with wire-end ferrules can just be inserted - done
- When connecting flexible wires without wire-end ferrules, the actuating element is used to open the clamping point
- Intuitive handling thanks to the clear distinction between wire entry and actuating element
- Packed in a box
- Conductor outlet direction 90°



**General ordering data**

Version	Printed circuit board terminals, 3.50 mm, Number of poles: 24, 90°, Solder pin length (l): 3.5 mm, orange, PUSH IN with actuator, Clamping range, max.: 1.5 mm², Box
Order No.	<a href="#">2001040000</a>
Type	LS2HF 3.50/24/90 3.5SN OR BX
GTIN (EAN)	4050118382631
Qty.	20 Stück
Product data	IEC: 400 V / 17.5 A / 0.2 - 1.5 mm² UL: 150 V / 12.5 A / AWG 26 - AWG 16
Packaging	Box

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## Technische Daten

### Dimensions and weights

Depth	18 mm	Depth (inches)	0.709 inch
Height	27.7 mm	Height (inches)	1.091 inch
Height of lowest version	24.2 mm	Width	47 mm
Width (inches)	1.85 inch	Net weight	22.35 g

### Temperatures

Operating temperature, min.	-50 °C	Operating temperature, max.	120 °C
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### System parameters

Product family	OMNIMATE Signal - series LS	Wire connection method	PUSH IN with actuator
Mounting onto the PCB	THT solder connection	Conductor outlet direction	90°
Pitch in mm (P)	3.5 mm	Pitch in inches (P)	0.138 inch
Number of poles	24	Pin series quantity	2
Fitted by customer	No	Number of rows	2
Solder pin length (l)	3.5 mm	Solder pin length tolerance	-0.1 / 0 mm
Solder pin dimensions	1.0 x 0.6 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	0.4 x 2.5	Stripping length	8 mm
L1 in mm	38.5 mm	L1 in inches	1.516 inch
Touch-safe protection acc. to DIN VDE 0470	IP 20	Touch-safe protection acc. to DIN VDE 57 106	Safe from finger touch
Protection degree	IP20		

### Material data

Insulating material	PA 66/6	Colour	orange
Colour chart (similar)	RAL 2000	Comparative Tracking Index (CTI)	≥ 600
UL 94 flammability rating	V-0	Contact material	Copper alloy
Layer structure of solder connection	4...7 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.	100 °C		

### Conductors suitable for connection

Clamping range, min.	0.2 mm <sup>2</sup>
Clamping range, max.	1.5 mm <sup>2</sup>
Wire connection cross section AWG, min.	AWG 26
Wire connection cross section AWG, max.	AWG 16
Solid, min. H05(07) V-U	0.2 mm <sup>2</sup>
Solid, max. H05(07) V-U	1.5 mm <sup>2</sup>
Flexible, min. H05(07) V-K	0.2 mm <sup>2</sup>
Flexible, max. H05(07) V-K	1.5 mm <sup>2</sup>
w. plastic collar ferrule, DIN 46228 pt 4, 0.2 mm <sup>2</sup> min.	
w. plastic collar ferrule, DIN 46228 pt 4, 0.75 mm <sup>2</sup> max.	
w. wire end ferrule, DIN 46228 pt 1, min.	0.2 mm <sup>2</sup>
w. wire end ferrule, DIN 46228 pt 1, max.	1.5 mm <sup>2</sup>

Erstellungs-Datum May 15, 2023 4:25:21 PM CEST

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Clampable conductor	Cross-section for conductor connection	Type	fine-wired
		nominal	0.25 mm <sup>2</sup>
wire end ferrule	wire end ferrule	Stripping length	nominal 10 mm
		Recommended wire end ferrule	<a href="#">H0,25/12 HBL</a>
Cross-section for conductor connection	Cross-section for conductor connection	Type	fine-wired
		nominal	0.34 mm <sup>2</sup>
wire end ferrule	wire end ferrule	Stripping length	nominal 10 mm
		Recommended wire end ferrule	<a href="#">H0,34/12 TK</a>
Cross-section for conductor connection	Cross-section for conductor connection	Type	fine-wired
		nominal	0.5 mm <sup>2</sup>
wire end ferrule	wire end ferrule	Stripping length	nominal 10 mm
		Recommended wire end ferrule	<a href="#">H0,5/14 OR</a>
Cross-section for conductor connection	Cross-section for conductor connection	Type	fine-wired
		nominal	0.75 mm <sup>2</sup>
wire end ferrule	wire end ferrule	Stripping length	nominal 10 mm
		Recommended wire end ferrule	<a href="#">H0,75/14T HBL</a>
Cross-section for conductor connection	Cross-section for conductor connection	Type	fine-wired
		nominal	1.5 mm <sup>2</sup>
wire end ferrule	wire end ferrule	Stripping length	nominal 7 mm
		Recommended wire end ferrule	<a href="#">H1,5/7</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 60947-7-4	Rated current, min. number of poles (Tu=20°C)	17.5 A
Rated current, max. number of poles (Tu=20°C)	9 A	Rated current, min. number of poles (Tu=40°C)	17.5 A
Rated current, max. number of poles (Tu=40°C)	8 A	Rated voltage for surge voltage class / pollution degree II/2	400 V
Rated voltage for surge voltage class / pollution degree III/2	200 V	Rated voltage for surge voltage class / pollution degree III/3	160 V
Rated impulse voltage for surge voltage class/ pollution degree II/2	2.5 kV	Rated impulse voltage for surge voltage class/ pollution degree III/2	2.5 kV
Rated impulse voltage for surge voltage class/ contamination degree III/3	2.5 kV		

**Rated data acc. to CSA**

Rated voltage (Use group B / CSA)	150 V	Rated voltage (Use group D / CSA)	150 V
Rated current (Use group B / CSA)	12.5 A	Rated current (Use group D / CSA)	12.5 A
Wire cross-section, AWG, min.	AWG 26	Wire cross-section, AWG, max.	AWG 16

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**Technische Daten**

**Rated data acc. to UL 1059**

Institute (cURus)



Certificate No. (cURus) www.weidmueller.com

E60693

Rated voltage (Use group B / UL 1059)	150 V	Rated voltage (Use group D / UL 1059)	150 V
Rated current (Use group B / UL 1059)	12.5 A	Rated current (Use group D / UL 1059)	12.5 A
Wire cross-section, AWG, min.	AWG 26	Wire cross-section, AWG, max.	AWG 16
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

**Packing**

Packaging	Box	VPE length	260 mm
VPE width	210 mm	VPE height	30 mm

**Type tests**

Test: Durability of markings	Test	mark of origin, type identification, pitch, date clock	
	Evaluation	available	
Test for damage to and accidental loosening of conductors	Standard	IEC 60999-1 section 9.4 / 11.99, IEC 60999-1 section 9.5 / 11.99	
	Requirement	0.2 kg	
	Conductor type	Type of conductor and conductor cross-section	stranded 0.2 mm <sup>2</sup>
	Evaluation	passed	
	Requirement	0.3 kg	
	Conductor type	Type of conductor and conductor cross-section	solid 0.5 mm <sup>2</sup>
	Evaluation	passed	
	Requirement	0.4 kg	
	Conductor type	Type of conductor and conductor cross-section	stranded 0.5 mm <sup>2</sup>
		Type of conductor and conductor cross-section	solid 0.5 mm <sup>2</sup>
	Evaluation	passed	

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IEC 60999-1 section 9.4 / 11.99, IEC 60999-1 section 9.5 / 11.99  
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**Technische Daten**

Pull-out test	Standard	IEC 60999-1 section 9.4 / 11.99, IEC 60999-1 section 9.5 / 11.99	
	Requirement	≥10 N	
	Conductor type	Type of conductor and conductor cross-section stranded 0.2 mm <sup>2</sup>	
	Evaluation	passed	
	Requirement	≥20 N	
	Conductor type	Type of conductor and conductor cross-section	solid 0.5 mm <sup>2</sup>
	Evaluation	passed	
	Requirement	≥40 N	
	Conductor type	Type of conductor and conductor cross-section	stranded 1.5 mm <sup>2</sup>
		Type of conductor and conductor cross-section	solid 1.5 mm <sup>2</sup>
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
- Additional variants on request
  - 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.
  - Crimping shape "A" for wire end ferrules with PZ 6/5 crimping tool recommended.
  - Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months

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## Technische Daten

### Approvals

Approvals



ROHS	Conform
UL File Number Search	UL Website
Certificate No. (cURus)	E60693

### Downloads

Engineering Data	<a href="#">CAD data – STEP</a>
Engineering Data	<a href="#">WSCAD, EPLAN</a>
Catalogues	<a href="#">Catalogues in PDF-format</a>
Brochures	<a href="#">FL DRIVES EN</a> <a href="#">FL ANALO.SIGN.CONV. EN</a> <a href="#">MB DEVICE MANUF. EN</a> <a href="#">FL DRIVES DE</a> <a href="#">FL BUILDING SAFETY EN</a> <a href="#">FL APPL LED LIGHTING EN</a> <a href="#">FLIndustr.CONTROLS EN</a> <a href="#">FL MACHINE SAFETY EN</a> <a href="#">FL HEATING ELECTR EN</a> <a href="#">FL APPL INVERTER EN</a> <a href="#">FL BASE STATION EN</a> <a href="#">FL ELEVATOR EN</a> <a href="#">FL POWER SUPPLY EN</a> <a href="#">FL 72H SAMPLE SER EN</a> <a href="#">PO OMNIMATE EN</a>

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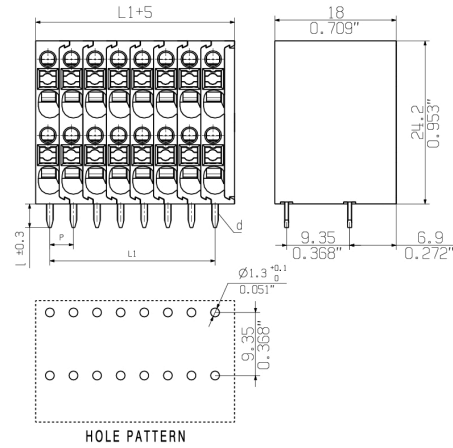
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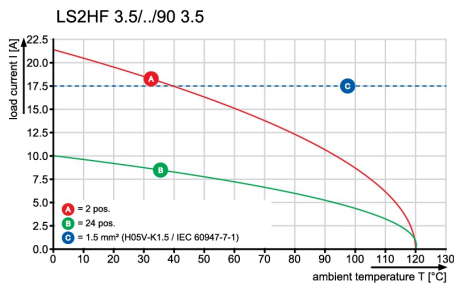
Fax. +49 5231 14-2083

**Zeichnungen**

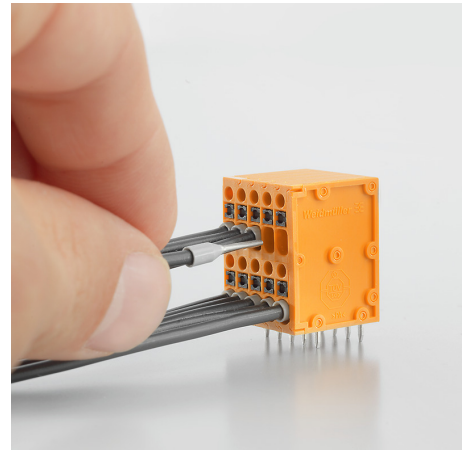
**Dimensional drawing** [info@weidmueller.com](mailto:info@weidmueller.com)



**Graph**

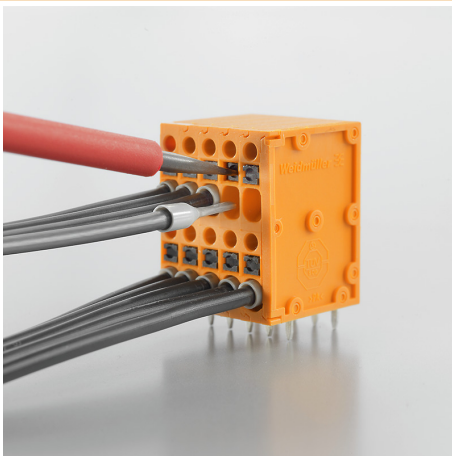


**Product benefits**



Fast conductor entry through PUSH IN

**Product benefits**



Simple and reliable connection

**Product benefits**



Compact design with 2 levels

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## Zeichnungen

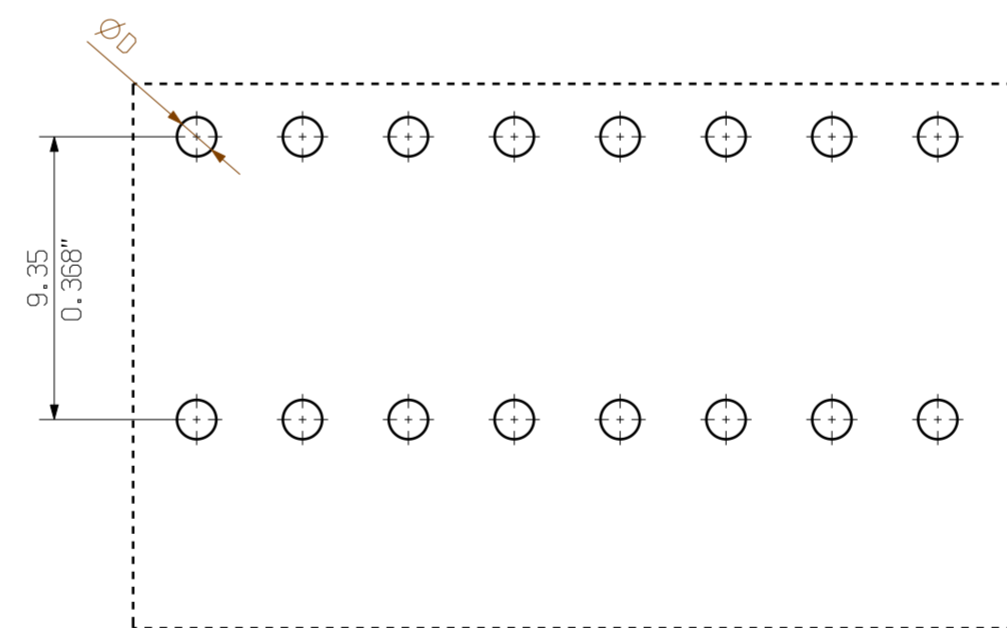
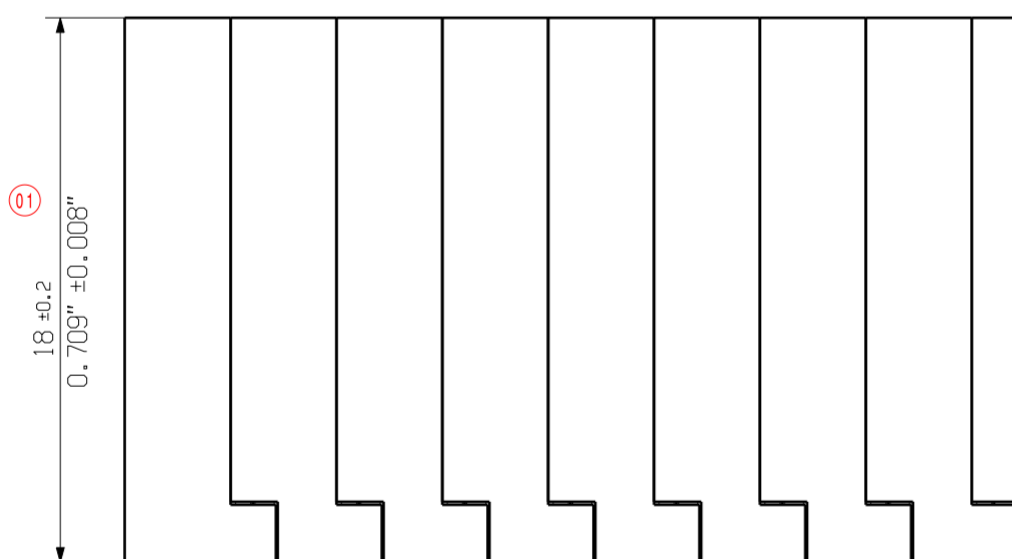
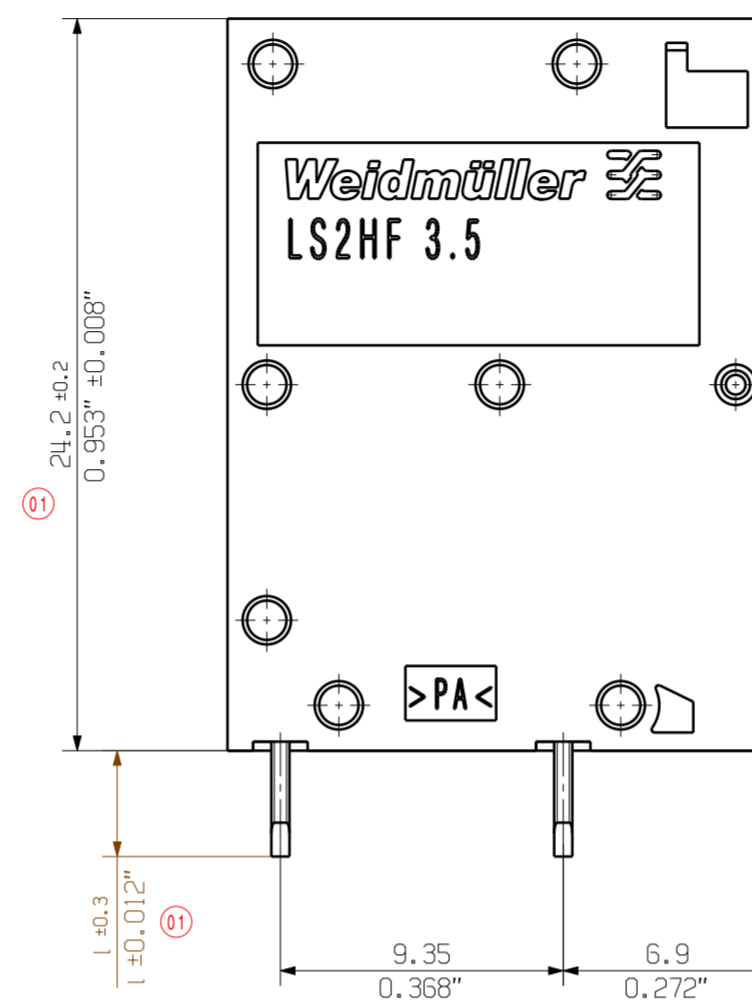
### Product benefits



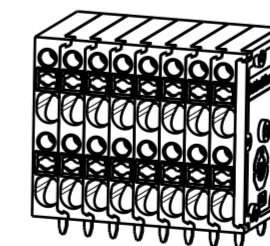
Maintenance through test tap



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



HOLE PATTERN



M 1/1

P = 3.50 RASTER PITCH  
 D = Ø1.3 +0.1  
 0.051"  
 d = 0.6x1.0  
 4 3.5 0.138  
 2 0.0 0.0  
 l = 3.5  
 0.138"

48	80.5	3.169
46	77.0	3.031
44	73.5	2.894
42	70.0	2.756
40	66.5	2.618
38	63.0	2.480
36	59.5	2.343
34	56.0	2.205
32	52.5	2.067
30	49.0	1.929
28	45.5	1.791
26	42.0	1.654
24	38.5	1.516
22	35.0	1.378
20	31.5	1.240
18	28.0	1.102
16	24.5	0.965
14	21.0	0.827
12	17.5	0.689
10	14.0	0.551
8	10.5	0.413
6	7.0	0.276
4	3.5	0.138
2	0.0	0.0
POLES	L1 [mm]	L1 [inch]

ALLGEMEINGUELTIGE KUNDENZEICHNUNG, AKTUELLER STAND NUR AUF ANFRAGE  
 GENERAL CUSTOMER DRAWING, TOPICAL VERSION ONLY IF REQUIRED

GENERAL TOLERANCE: DIN ISO 2768-m		93889/5 22.09.15 XIANG_K 04		CAT. NO.: 1514540000										
				<b>C 59281</b> 01 <small>DRAWING NO. SHEET 02 OF 02 SHEETS</small>										
		<table border="1"> <tr><th>DATE</th><th>NAME</th></tr> <tr><td>09.02.2015</td><td>ZHOU_N</td></tr> <tr><td>22.09.2015</td><td>ZHOU_N</td></tr> <tr><td>XU_S</td><td></td></tr> </table>		DATE	NAME	09.02.2015	ZHOU_N	22.09.2015	ZHOU_N	XU_S		<b>LS2HF 3.5/.../90...</b> LEITERPLATTENKLEMME PCB TERMINAL		PRODUCT FILE: LS2HF 7647
DATE	NAME													
09.02.2015	ZHOU_N													
22.09.2015	ZHOU_N													
XU_S														
SCALE: 4/1		SUPERSEDES: .												

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## 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.