

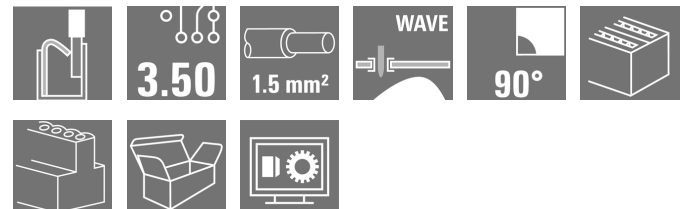
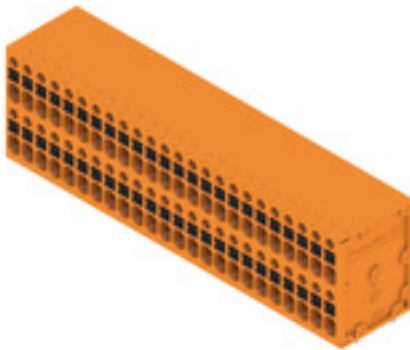
**LS2HF 3.50/48/90 3.5SN OR BX****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

**Product image**

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: 48, 90°, Solder pin length (l): 3.5 mm, orange, PUSH IN with actuator, Clamping range, max.: 1.5 mm², Box
Order No.	<a href="#">2001160000</a>
Type	LS2HF 3.50/48/90 3.5SN OR BX
GTIN (EAN)	4050118382907
Qty.	20 pc(s).
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

Creation date May 2, 2024 9:29:50 AM CEST

# LS2HF 3.50/48/90 3.5SN OR BX

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## Technical data

### 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	89 mm
Width (inches)	3.504 inch	Net weight	44.7 g

### 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 "
Number of poles	48	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	80.5 mm	L1 in inches	3.169 "
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	Cu-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, 0.2 mm <sup>2</sup> min.	
w. wire end ferrule, DIN 46228 pt 1, 1.5 mm <sup>2</sup> max.	

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## Technical data

Clampable conductor	Cross-section for conductor connection	Type	fine-wired
		nominal	0.25 mm <sup>2</sup>
	wire end ferrule	Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H0.25/12 HBL</a>
	Cross-section for conductor connection	Type	fine-wired
		nominal	0.34 mm <sup>2</sup>
	wire end ferrule	Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H0.34/12 TK</a>
	Cross-section for conductor connection	Type	fine-wired
		nominal	0.5 mm <sup>2</sup>
	wire end ferrule	Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H0.5/14 OR</a>
	Cross-section for conductor connection	Type	fine-wired
		nominal	0.75 mm <sup>2</sup>
	wire end ferrule	Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H0.75/14T HBL</a>
	Cross-section for conductor connection	Type	fine-wired
		nominal	1.5 mm <sup>2</sup>
	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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## Technical data

## Rated data acc. to UL 1059

Institute (cURus)



Certificate No. (cURus)

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	215 mm	VPE height	25 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 stranded 0.2 mm <sup>2</sup> conductor cross-section
	Evaluation	passed
	Requirement	0.3 kg
	Conductor type	Type of conductor and solid 0.5 mm <sup>2</sup> conductor cross-section
	Evaluation	passed
	Requirement	0.4 kg
	Conductor type	Type of conductor and stranded 0.5 mm <sup>2</sup> conductor cross-section
		Type of conductor and solid 0.5 mm <sup>2</sup> conductor cross-section
	Evaluation	passed

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## Technical data

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 stranded 0.2 mm <sup>2</sup> conductor cross-section
	Evaluation	passed
	Requirement	≥20 N
	Conductor type	Type of conductor and solid 0.5 mm <sup>2</sup> conductor cross-section
	Evaluation	passed
	Requirement	≥40 N
	Conductor type	Type of conductor and stranded 1.5 mm <sup>2</sup> conductor cross-section Type of conductor and solid 1.5 mm <sup>2</sup> conductor cross-section
	Evaluation	passed

## Classifications

ETIM 6.0	EC002643	ETIM 7.0	EC002643
ETIM 8.0	EC002643	ETIM 9.0	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	ECLASS 13.0	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>Additional variants 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>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>Crimping shape "A" for wire end ferrules with PZ 6/5 crimping tool recommended.</li> <li>Long term storage of the product with average temperature of 50 °C and maximum humidity 70%, 36 months</li> </ul>

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## Technical data

## Approvals

Approvals



UL File Number Search	UL Website
-----------------------	------------

Certificate No. (cURus)	E60693
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## Downloads

Approval/Certificate/Document of Conformity

[Declaration of the Manufacturer](#)

Engineering Data

[CAD data – STEP](#)

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](#)  
[FL INDUSTR.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](#)

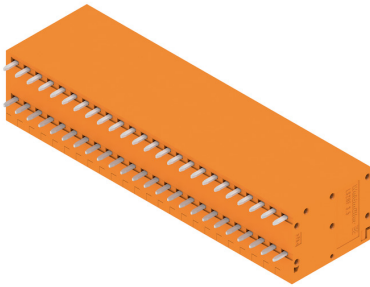
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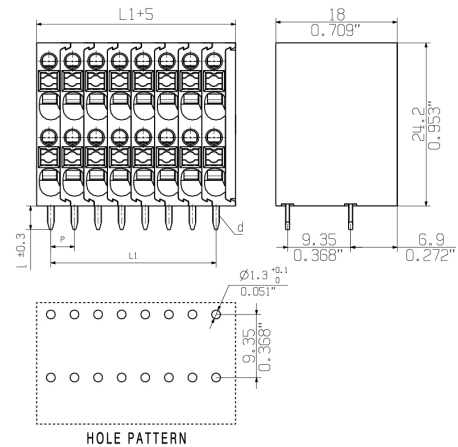
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## Drawings

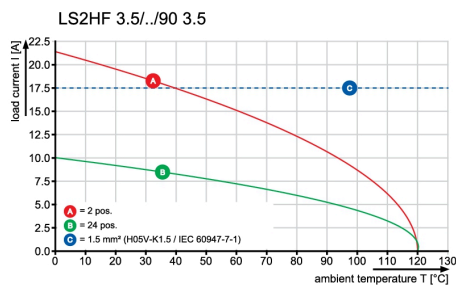
### Product image



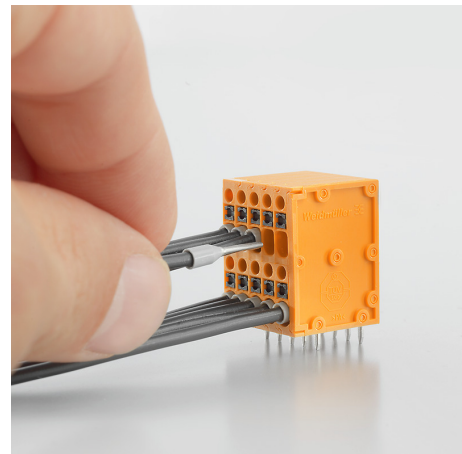
## Dimensional drawing



## Graph

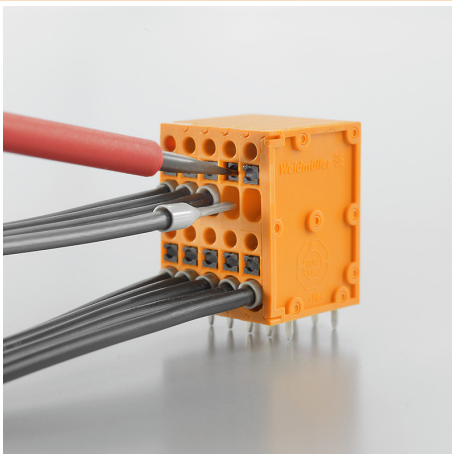


## Product benefits



## Fast conductor entry through PUSH IN

## Product benefits



### Simple and reliable connection

### Product benefits



### Compact design with 2 levels

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## Accessories

### Additional accessories



#### No task is too small when creating the perfect solution.

Connections form just one part of the overall process. Small details are often the key to the perfect solution in applications where potentials are tested, grouped or even isolated.

A system is not a system without small but essential details:

- Test plugs ensure reliable pick-up from diagnostic sockets

In tandem with the manufacturing process and application.

### General ordering data

Type	PS 2.0 MC	Version	Product data	Packaging
Order No.	<a href="#">0310000000</a>	PCB plug-in connector, Accessories, Test plug, red, Number of poles: 1		Box
GTIN (EAN)	4008190000059			
Qty.	20 pc(s).			

### Slotted screwdriver



VDE insulated slot-head screwdriver, SDI DIN 7437, ISO 2380/2, drive output acc. to DIN 5264, ISO 2380/1. SoftFinish grip

### General ordering data

Type	SDIS 0.4X2.5X75	Version
Order No.	<a href="#">9008370000</a>	Screwdriver, Screwdriver
GTIN (EAN)	4032248056330	
Qty.	1 pc(s).	

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[www.weidmueller.com](http://www.weidmueller.com)**Accessories****Slotted screwdriver**

Slotted screwdriver with rounded blade SD DIN 5265,  
ISO 2380/2, output to DIN 5264, ISO 2380/1.  
ChromTop tip, SoftFinish grip

**General ordering data**

Type	SDS 0.4X2.5X75	Version
Order No.	<a href="#">9009030000</a>	Screwdriver, Screwdriver
GTIN (EAN)	4032248266944	
Qty.	1 pc(s).	

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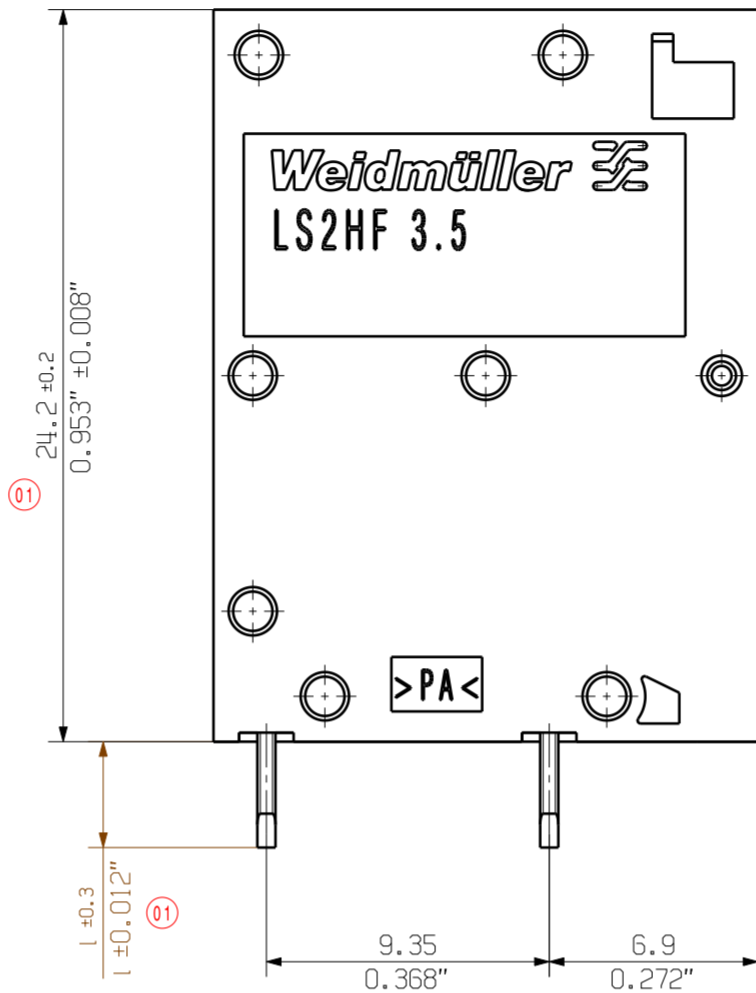
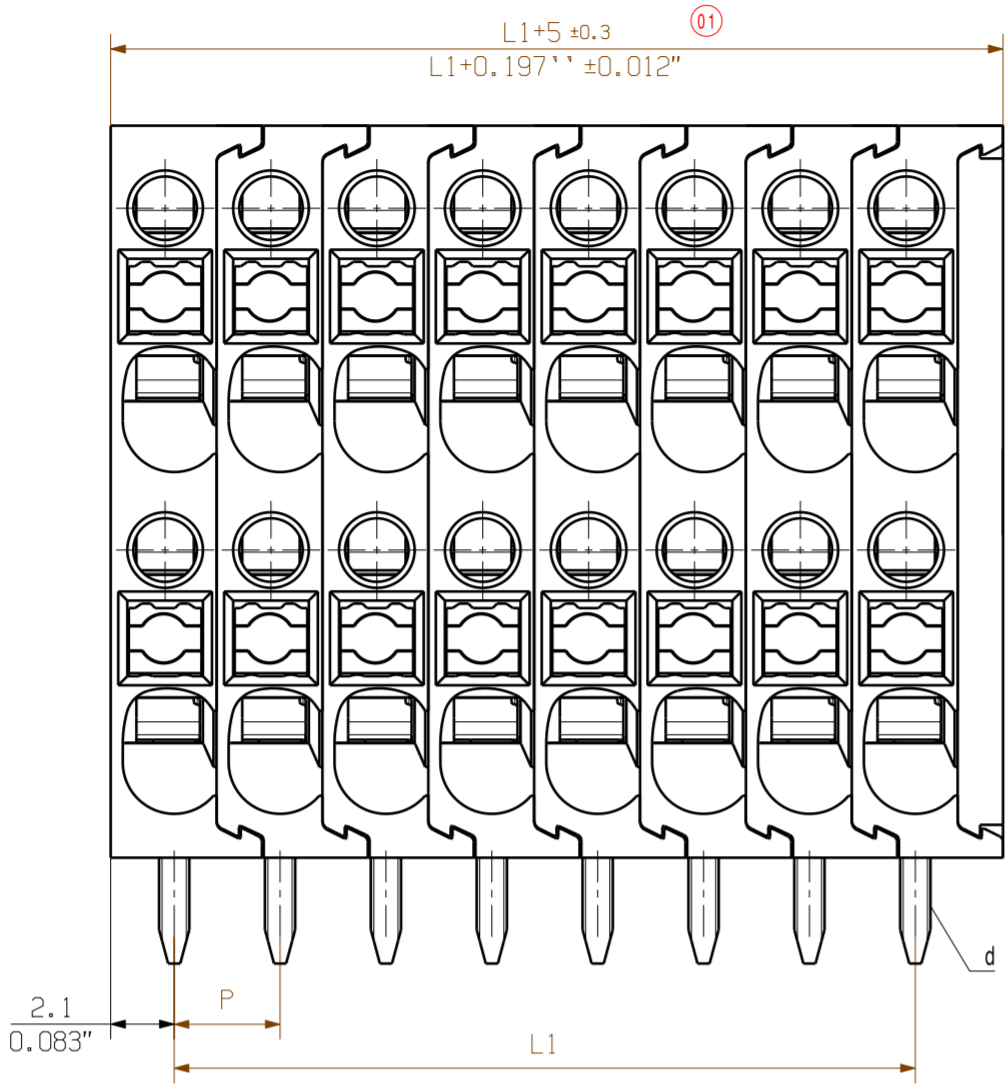
## Drawings

### Product benefits

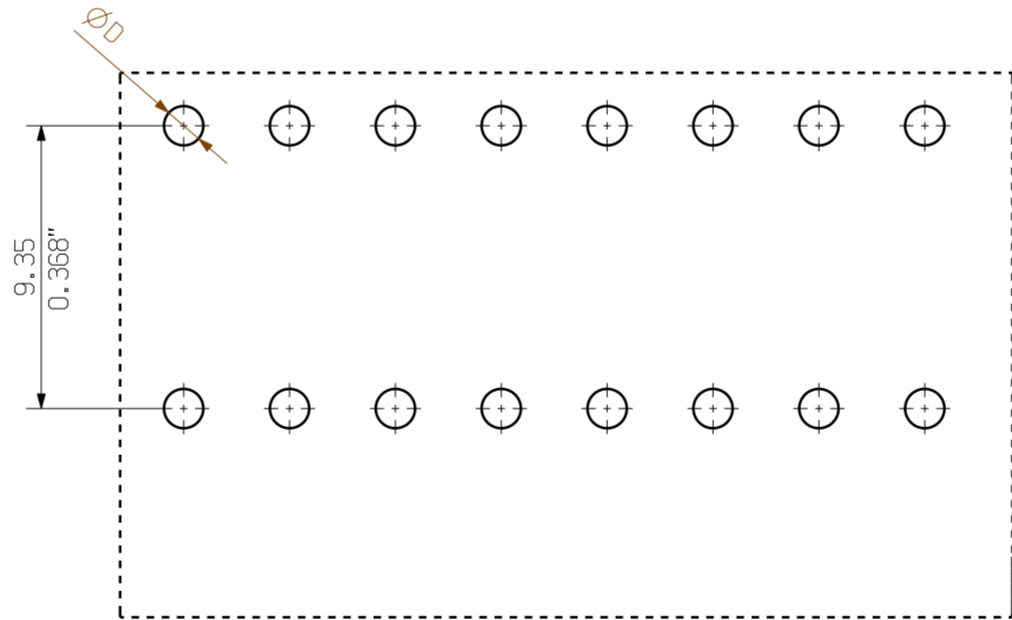
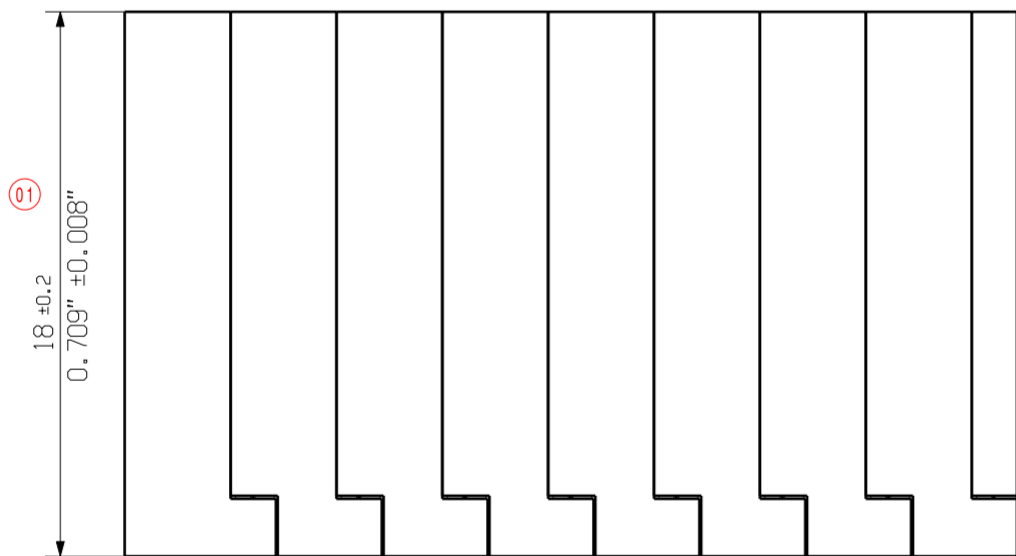


Maintenance through test tap

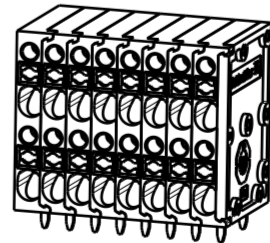
MASSE OHNE TOLERANZ SIND KEINE PRUEFMASSE  
DIMS. WITHOUT TOLERANCE ARE NOT CONTROL DIMS.



SCREWDRIVER AND  
CONDUCTOR DIRECTION



HOLE PATTERN



M 1/1

P = 3.50 RASTER  
PITCH  
D = Ø1.3 +0.1  
0.051"  
d = 0.6x1.0  
0.024"x0.039"  
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		83889/5 22.09.15 XIANG_K 04		CAT.NO.: 1514540000	
		MODIFICATION		<b>Weidmüller</b>	
		DATE	NAME	<b>LS2HF 3.5/.../90...</b> LEITERPLATTENKLEMME PCB TERMINAL	
SCALE: 4/1		DRAWN	09.02.2015 ZHOU_N		
SUPERSEDES: .		RESPONSIBLE	XIANG_K		
		CHECKED	22.09.2015 ZHOU_N		
		APPROVED	XU_S	PRODUCT FILE: LS2HF 7647	

## Recommended wave soldering profiles

**Weidmüller Interface GmbH & Co. KG**  
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Fon: +49 5231 14-0  
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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.