

LS2HF 3.50/48/90 3.5SN OR BX

Weidmüller Interfaces GmbH & Co. KG

Postfach 3030

32760 Detmold

Tel. +49 5231 14-0

Fax. +49 5231 14-2083

info@weidmueller.com

www.weidmueller.com

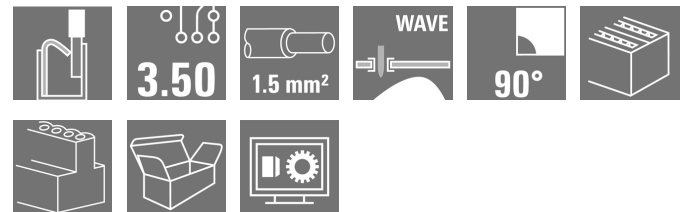
Product image



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: 48, 90°, Solder pin length (l): 3.5 mm, orange, PUSH IN with actuator, Clamping range, max.: 1.5 mm², Box
Order No.	2001160000
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

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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

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	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 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 ²
Clamping range, max.	1.5 mm ²
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 ²
Solid, max. H05(07) V-U	1.5 mm ²
Flexible, min. H05(07) V-K	0.2 mm ²
Flexible, max. H05(07) V-K	1.5 mm ²
w. plastic collar ferrule, DIN 46228 pt 4, 0.2 mm ² min.	
w. plastic collar ferrule, DIN 46228 pt 4, 0.75 mm ² max.	
w. wire end ferrule, DIN 46228 pt 1, min.	0.2 mm ²
w. wire end ferrule, DIN 46228 pt 1, max.	1.5 mm ²

Creation date March 9, 2023 3:10:33 PM CET

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Clampable conductor	Cross-section for conductor connection	Type	fine-wired
	wire end ferrule	nominal	0.25 mm ²
		Stripping length	nominal 10 mm
		Recommended wire-end ferrule	H0,25/12 HBL
	Cross-section for conductor connection	Type	fine-wired
	wire end ferrule	nominal	0.34 mm ²
		Stripping length	nominal 10 mm
		Recommended wire-end ferrule	H0,34/12 TK
	Cross-section for conductor connection	Type	fine-wired
	wire end ferrule	nominal	0.5 mm ²
		Stripping length	nominal 10 mm
		Recommended wire-end ferrule	H0,5/14 OR
	Cross-section for conductor connection	Type	fine-wired
	wire end ferrule	nominal	0.75 mm ²
		Stripping length	nominal 10 mm
		Recommended wire-end ferrule	H0,75/14T HBL
	Cross-section for conductor connection	Type	fine-wired
	wire end ferrule	nominal	1.5 mm ²
		Stripping length	nominal 7 mm
		Recommended wire-end ferrule	H1,5/7

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

Approvals

Approvals



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

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Catalogue status 03.03.2023 / We reserve the right to make technical changes.

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Technical data

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	

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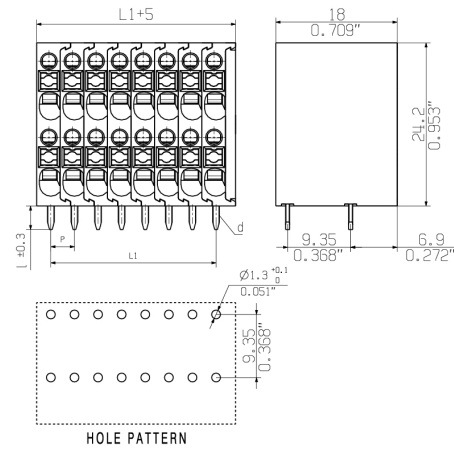
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Tel. +49 5231 14-0

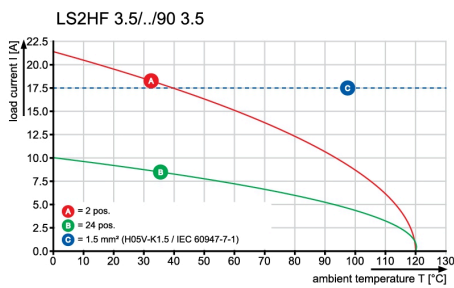
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Drawings

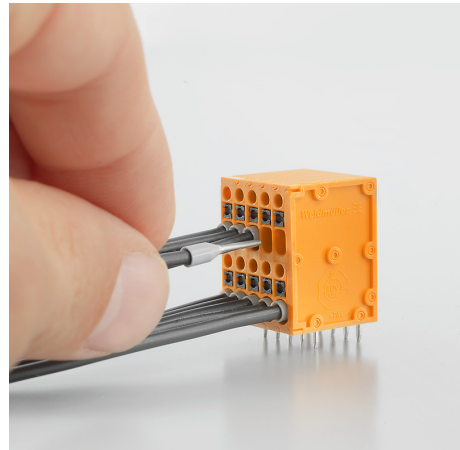
Dimensional drawing info@weidmueller.com



Graph

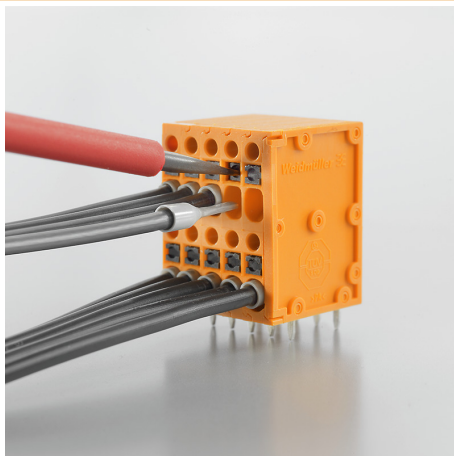


Product benefits



Fast conductor entry through PUSH IN

Product benefits



Simple and reliable connection

Product benefits



Compact design with 2 levels

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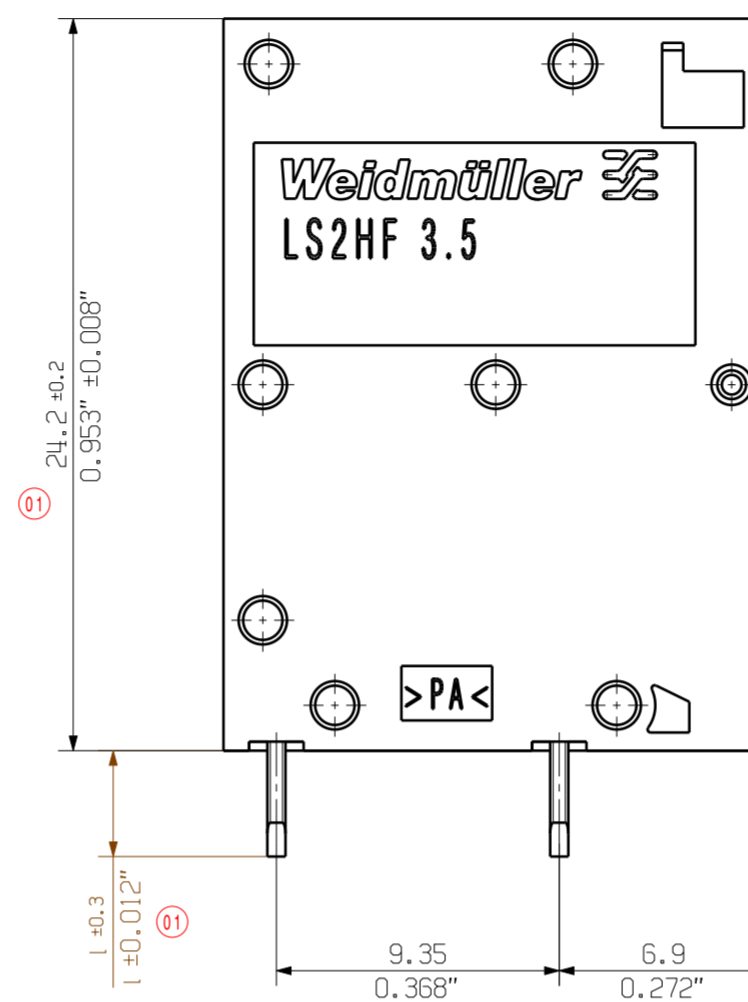
Drawings

Product benefits

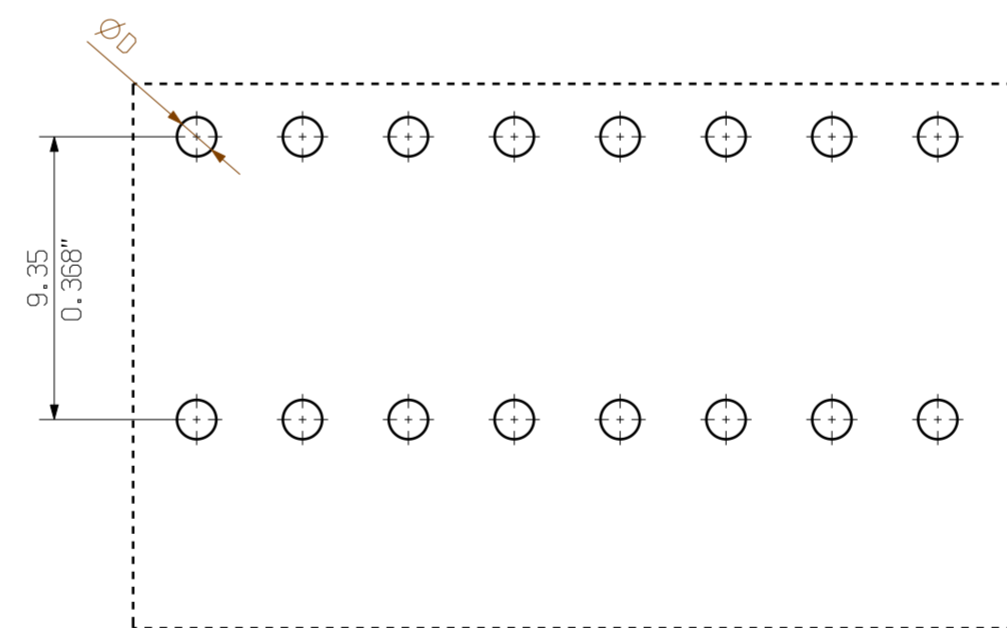
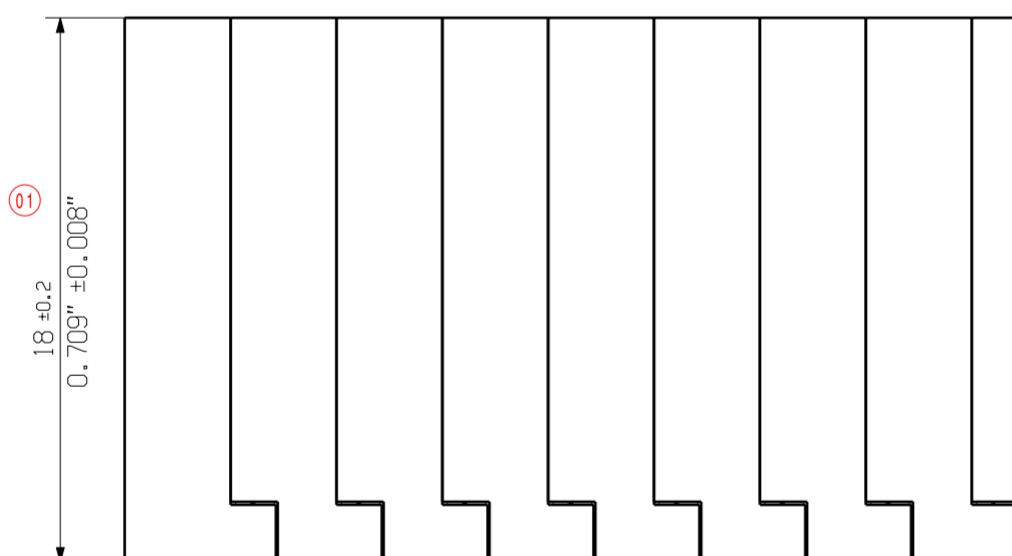


Maintenance through test tap

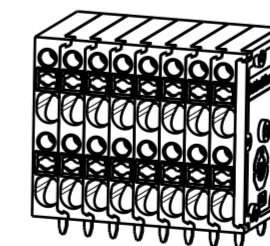
MASSE OHNE TOLERANZ SIND KEINE PRUEFMASSE
 DIMS. WITHOUT TOLERANCE ARE NOT CONTROL DIMS.



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
 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	
RoHS COMPLIANT		MODIFICATION		Weidmüller	
SCALE: 4/1		DRAWN 09.02.2015 ZHOU_N		C 59281 01	
SUPERSEDES: .		RESPONSIBLE XIANG_K		DRAWING NO. SHEET 02 OF 02 SHEETS	
		CHECKED 22.09.2015 ZHOU_N		LS2HF 3.5/.../90... LEITERPLATTENKLEMME PCB TERMINAL	
		APPROVED XU_S		PRODUCT FILE: LS2HF 7647	

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Recommended wave soldering profiles

Weidmüller Interface GmbH & Co. KG
 Klingenbergstraße 16
 D-32758 Detmold
 Germany
 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.