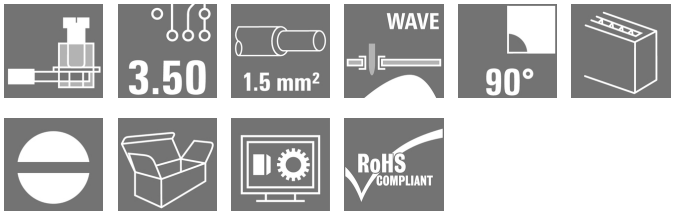
LM2N 3.50/18/90 3.2SN OR BX

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 26
D-32758 Detmold
Germany

www.weidmueller.com

Product image

Similar to illustration



Small, compact PCB terminal or -tier PCB terminal with proven clamping yoke connection and 3.5 mm pitch. Suitable for conductor cross-sections up to 1.5 mm².

General ordering data

Version	Printed circuit board terminals, 3.50 mm, Number of poles: 18, 90°, Solder pin length (l): 3.2 mm, tinned, orange, Clamping yoke connection, Clamping range, max. : 2.08 mm², Box
Order No.	1703770000
Type	LM2N 3.50/18/90 3.2SN OR BX
GTIN (EAN)	4008190910846
Qty.	50 pc(s).
Product data	IEC: 320 V / 13 A / 0.5 - 1.5 mm² UL: 300 V / 10 A / AWG 28 - AWG 14
Packaging	Box

Creation date March 24, 2021 9:04:31 PM CET

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Technical data

Dimensions and weights

Depth	16.75 mm	Depth (inches)	0.659 inch
Height	27.3 mm	Height (inches)	1.075 inch
Height of lowest version	24.1 mm	Net weight	13.68 g
Width	33.85 mm	Width (inches)	1.333 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)	3.5 mm	Pitch in inches (P)	0.138 inch
Number of poles	18	Pin series quantity	2
Fitted by customer	Yes	Max. adjacent poles per row	24
Solder pin length (l)	3.2 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
Screwdriver blade standard	DIN 5264	Tightening torque, min.	0.2 Nm
Tightening torque, max.	0.2 Nm	Clamping screw	M 2
Stripping length	5 mm	L1 in mm	28 mm
L1 in inches	1.102 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	3.60 mΩ

Material data

Insulating material	PA	Colour	orange
Colour chart (similar)	RAL 2000	Insulating material group	I
Comparative Tracking Index (CTI)	≥ 600	UL 94 flammability rating	V-2
Contact material	Copper alloy	Contact surface	tinned
Coating	1-3 µm Ni, 4-6 µm SN	Tinning type	matt
Layer structure of solder connection	1.5...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.	100 °C	Temperature range, installation, min.	-25 °C
Temperature range, installation, max.	100 °C		

Conductors suitable for connection

Clamping range, min.	0.08 mm²
Clamping range, max.	2.08 mm²
Wire connection cross section AWG, min.	AWG 28
Wire connection cross section AWG, max.	AWG 14
Solid, min. H05(07) V-U	0.5 mm²
Solid, max. H05(07) V-U	1.5 mm²
Flexible, min. H05(07) V-K	0.5 mm²
Flexible, max. H05(07) V-K	1.5 mm²
w. plastic collar ferrule, DIN 46228 pt 4, min.	0.5 mm²
w. plastic collar ferrule, DIN 46228 pt 4, max.	0.75 mm²
Plug gauge in accordance with EN 60999 a x b; ø	2.4 mm x 1.5 mm

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Clampable conductor	Cross-section for conductor connection	Type	fine-wired
		nominal	0.75 mm²
	wire end ferrule	Stripping length	nominal 8 mm
		Recommended wire-end ferrule	H0,75/12 W
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, min. number of poles (Tu=20°C)	13 A
Rated current, max. number of poles (Tu=20°C)	12 A	Rated current, min. number of poles (Tu=40°C)	11 A
Rated current, max. number of poles (Tu=40°C)	10 A	Rated voltage for surge voltage class / pollution degree II/2	320 V
Rated voltage for surge voltage class / pollution degree III/2	160 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	Short-time withstand current resistance	3 x 1s with 72 A

Rated data acc. to CSA

Institute (CSA)		Certificate No. (CSA)	154685-1202192
Rated voltage (Use group B / CSA)	300 V	Rated voltage (Use group D / CSA)	300 V
Rated current (Use group B / CSA)	10 A	Rated current (Use group D / CSA)	10 A
Wire cross-section, AWG, min.	AWG 28	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 (UR)		Certificate No. (UR)	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)	10 A	Rated current (Use group D / UL 1059)	10 A
Wire cross-section, AWG, min.	AWG 28	Wire cross-section, AWG, max.	AWG 14
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

Packing

Packaging	Box	VPE length	52 mm
VPE width	99 mm	VPE height	181 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

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Technical data

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 colours on request • Rated current related to rated cross-section & min. No. of poles. • Max. outer diameter of the conductor: 2.9 mm • 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

Approvals

Approvals	
ROHS	Conform
UL File Number Search	E60693

Downloads

Approval/Certificate/Document of Conformity	Declaration of the Manufacturer
Engineering Data	EPLAN, WSCAD

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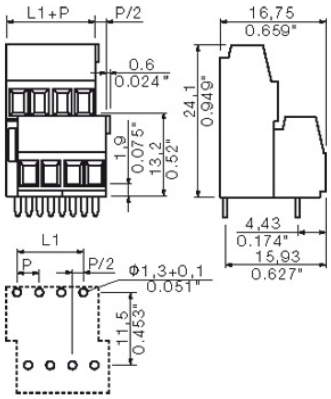
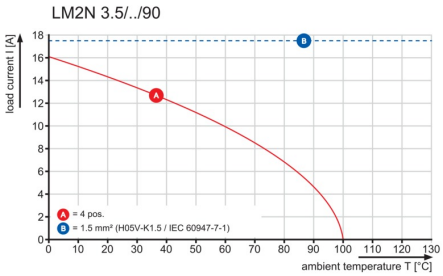
Drawings

Dimensional drawing



Graph



Technical Data

Rev.

Material data			
Insulation material type		PA 66	
Insulation material colours		orange/black	
Insulation material flammability class	UL94	V - 2	
Insulation resistance	MOhm	10^3	
Conatct base material		Cu-alloy	
Contact plating		tin-plated	
System characteristic values			
Pitch **P**	mm/inch	3.5/0.138	
Number of rows		2	
Dielectric strength (r.m.s withstand voltage)	kV	>1.5	
Through resistance (typical)	mOhm	2.2	
Operating temperature range	°C	-55°...+100°	1)
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	
Screw torque max. acc. to EN 60999	Nm	0.2	
Screw driver type		SDI 0.4x2.5	
Solder pin length **L**	mm/inch	3.2/0.126	
PCB hole diameter **D** (wave soldering)	mm/inch	1.3+0.1/0.051+0.004	2)
PCB hole diameter **D** (reflow soldering)	mm/inch	n.a.	3)
Resistance to soldering heat acc. to DIN IEC 60512-6	°C/sec	260/10	4)
Resistance to soldering heat acc. to EN 61760-1	°C/sec	n.a.	5)
Solderability classification acc. to EN 61760-1		n.a.	
Solder connection type		wave soldering	
Solder pin diameter **d** (max.)	mm/inch	1.22/0.048	
Application notes			
Coding possibility	yes/no	no	
Joinable without loss of pitch	yes/no	no	
Manual assembly of modules	yes/no	yes	
Max. number of poles	n	48	
Conductor			
Clamping range	mm^2	0.08...1.5	
"e" solid H05(07) V-U	mm^2	0.08...1.5	
"f" flexible H05(07) V-K	mm^2	0.08...1.5	
"f" with ferrule acc. to DIN 46228/1	mm^2	n.a.	
... with plastic collar acc. to DIN 46228/4	mm^2	n.a.	
Conductor insulation stripping length	mm/inch	5/0.197	
Conductor insulation diameter max.	mm/inch	n.a.	
Two wire clamping range	mm^2	0.5	
Gauge to EN 60999 (a x b ; Ø)	mm	2.4x1.5	

IEC 664-1 / VDE0110 (4.97) rated data					
Rated cross section acc. to EN 60999	mm^2	1.5			
Rated current @ 20°C ambient	A	10			6)
Rated current @ 40°C ambient	A	8,5			6)
Overvoltage category / Pollution degree		**III/3**	**III/2**	**II/2**	
Rated voltage	V	160	160	320	
Rated impulse voltage	kV	2.5	2.5	2.5	

UL 1059 rated data **File No.: E60693**		**B**	**C**	**D**
Rated voltage		300	---	300
Rated current		10	---	10
AWG wire range (field wiring / factory wiring)		28...14		

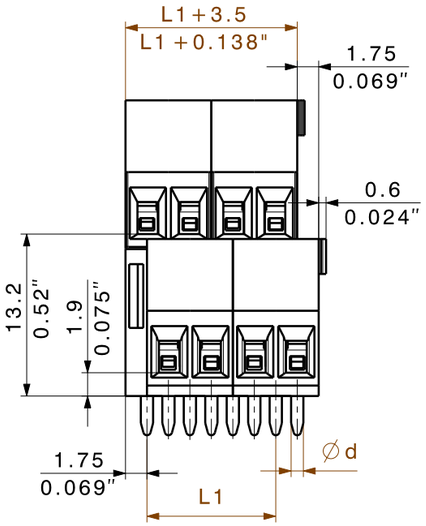
CSA C22.2 rated data **File No.: LR12400**		**B**	**C**	**D**
Rated voltage		300	---	300
Rated current		10	---	10
AWG wire range (field wiring / factory wiring)		28...14		

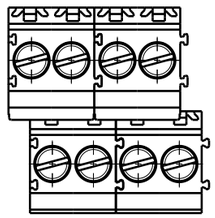
Packaging	carton
Downloads	www.weidmueller.de

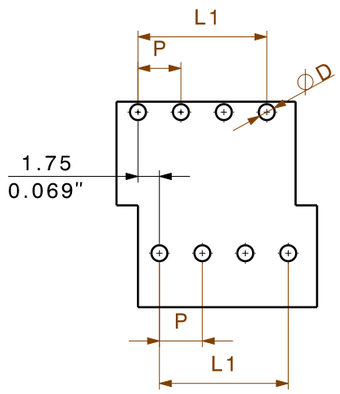
1) Sum of ambient temperature and temperature rise
2) Recommendation for manual assembly
3) Recommendation for automatic assembly
4) Recommendation for wave soldering
5) Recommendation for reflow soldering
6) Referred to rated cross section and 12 pole number

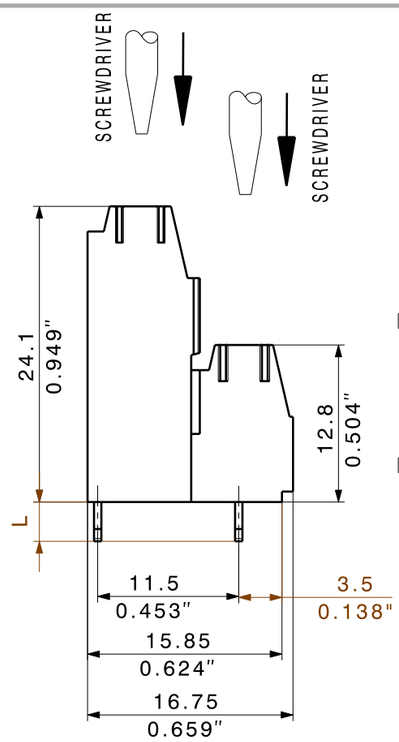
n.a. = not applicable

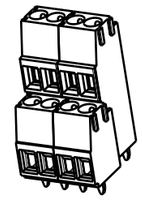
Subject to technical changes











DIE DEUTSCHE VERSION IST VERBINDLICH
THE GERMAN VERSION IS BINDING

48	80,50	3,169
46	77,00	3,031
44	73,50	2,894
42	70,00	2,756
40	66,50	2,618
38	63,00	2,480
36	59,50	2,343
34	56,00	2,205
32	52,50	2,067
30	49,00	1,929
28	45,50	1,791
26	42,00	1,654
24	38,50	1,516
22	35,00	1,378
20	31,50	1,240
18	28,00	1,102
16	24,50	0,965
14	21,00	0,827
12	17,50	0,689
10	14,00	0,551
8	10,50	0,413
6	7,00	0,276
4	3,50	0,138
n	**L1 [mm]**	**L1 [Inch]**

SHOWN LM2N3.5/8/90

For the mounting of PCBs, it should be noted that the rated data stated here relates only to the PCB components alone.
The neccessary 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 occuring of electrical, mechanical, thermic and corrosive stress will be satisfied.

RoHS COMPLIANT

METRIC TOLERANCES
X. = ±0.3
X.X = ±0.1
X.XX = ±0.05

43264/5
17.06.09 HELIS_MA 00
MODIFICATION

CAT.NO.: .

Weidmüller

C 23209 08
DRAWING NO. ISSUE NO.
SHEET 02 OF 03 SHEETS

	DATE	NAME
DRAWN	23.09.2008	HELIS_MA
RESPONSIBLE		KRUG_M
CHECKED	18.06.2009	HECKERT_M
APPROVED		HECKERT_M

SCALE: 5/1
SUPERSEDES: .

LM2N 3.5/../90
LEITERPLATTENANSCHLUSSKLEMME
PCB TERMINAL

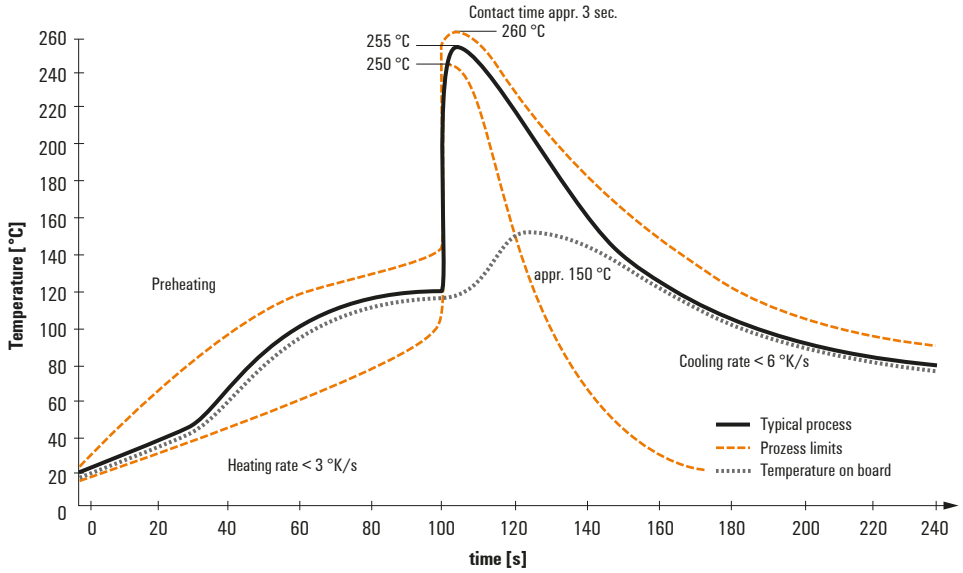
PRODUCT FILE: LM1N 3.5 1111

Wave Solder Profile

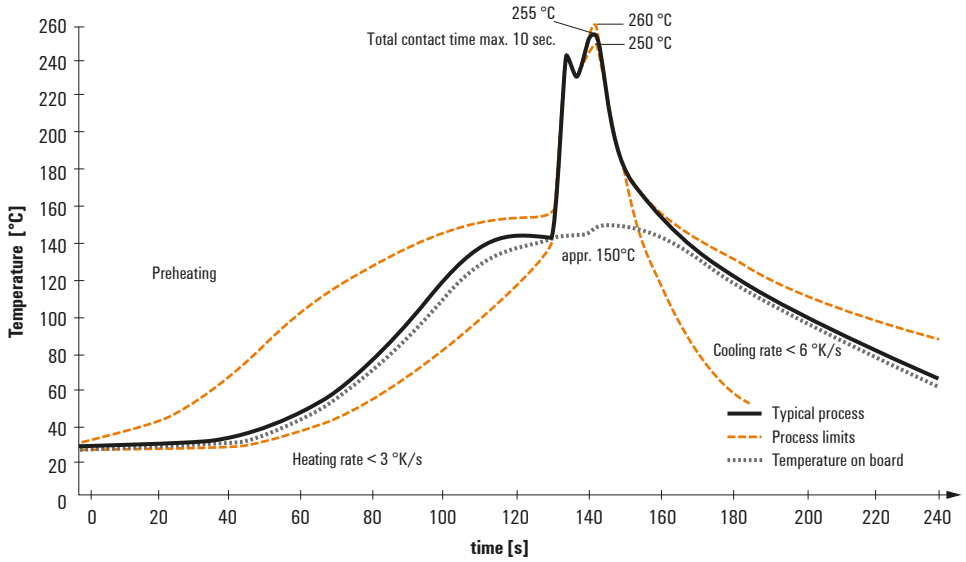
Recommended wave solderding profiles

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.