

LP1N 5.00/03/90 3.2SN OR BX**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

Product image

Single- and multi-row PCB terminal with proven clamping yoke connection at 5.08 mm pitch, conductor outlet direction 90°. Suitable for conductor cross-sections up to 6.0 mm².

General ordering data

Version	Printed circuit board terminals, 5.00 mm, Number of poles: 3, 90°, Solder pin length (l): 3.2 mm, tinned, orange, Clamping yoke connection, Clamping range, max. : 6 mm², Box
Order No.	1640880000
Type	LP1N 5.00/03/90 3.2SN OR BX
GTIN (EAN)	4008 190449964
Qty.	100 pc(s).
Product data	IEC: 500 V / 32 A / 0.5 - 6 mm² UL: 300 V / 20 A / AWG 26 - AWG 12
Packaging	Box

Creation date March 24, 2021 4:52:00 PM CET

Available until 2019-12-31

Alternative product [1975260000](#)

Catalogue status 12.03.2021 / We reserve the right to make technical changes.

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Technical data

Dimensions and weights

Depth	11.5 mm	Depth (inches)	0.453 inch
Height	20.2 mm	Height (inches)	0.795 inch
Height of lowest version	31 mm	Net weight	6.67 g
Width	15.6 mm	Width (inches)	0.614 inch

System parameters

Product family	OMNIMATE Signal - series LP	Wire connection method	Clamping yoke connection
Mounting onto the PCB	THT solder connection	Conductor outlet direction	90°
Pitch in mm (P)	5 mm	Pitch in inches (P)	0.197 inch
Number of poles	3	Pin series quantity	1
Fitted by customer	Yes	Max. adjacent poles per row	24
Solder pin length (l)	3.2 mm	Solder pin dimensions	0.75 x 0.9 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.	0.5 Nm
Tightening torque, max.	0.6 Nm	Clamping screw	M 3
Stripping length	6 mm	L1 in mm	10 mm
L1 in inches	0.394 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	PA	Colour	orange
Colour chart (similar)	RAL 2000	Insulating material group	I
Comparative Tracking Index (CTI)	≥ 600	Insulation strength	≥ 10 ⁸ Ω
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	4...6 µm Ni / 4...6 µm Sn
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.	0.13 mm ²	Clamping range, max.	6 mm ²
Wire connection cross section AWG, min.	AWG 26	Wire connection cross section AWG, max.	AWG 12
Solid, min. H05(07) V-U	0.5 mm ²	Solid, max. H05(07) V-U	6 mm ²
Flexible, min. H05(07) V-K	0.5 mm ²	Flexible, max. H05(07) V-K	4 mm ²
w. plastic collar ferrule, DIN 46228 pt 4, min.	0.5 mm ²	w. plastic collar ferrule, DIN 46228 pt 4, max.	2.5 mm ²
w. wire end ferrule, DIN 46228 pt 1, min.	0.5 mm ²	w. wire end ferrule, DIN 46228 pt 1, max.	2.5 mm ²
Plug gauge in accordance with EN 60999 a x b; ø	2.8 mm x 2.4 mm; 3.0 mm		
		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)

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Technical data

Rated data acc. to IEC

tested acc. to standard

IEC 60664-1, IEC 61984

Rated current, max. number of poles
(Tu=20°C)

28 A

Rated current, max. number of poles
(Tu=40°C)

24 A

Rated voltage for surge voltage class /
pollution degree III/2

250 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)

32 A

Rated current, min. number of poles
(Tu=40°C)

32 A

Rated voltage for surge voltage class /
pollution degree II/2

500 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

Rated data acc. to CSA

Institute (CSA)



Certificate No. (CSA)

200039-1202191

Rated voltage (Use group B / CSA)

300 V

Rated current (Use group B / CSA)

20 A

Wire cross-section, AWG, min.

AWG 26

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 12

Rated data acc. to UL 1059

Institute (UR)



Certificate No. (UR)

E60693

Rated voltage (Use group B / UL 1059)

300 V

Rated current (Use group B / UL 1059)

20 A

Wire cross-section, AWG, min.

AWG 26

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 12

Packing

Packaging

Box

VPE length

84 mm

VPE width

117 mm

VPE height

168 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. • 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. • 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

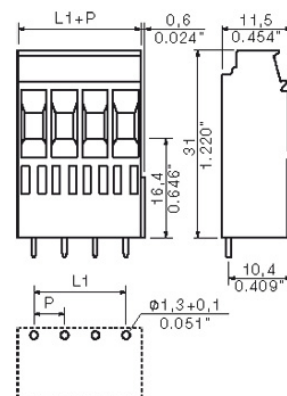
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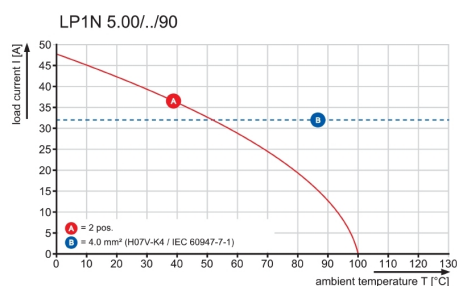
www.weidmueller.com

Drawings

Dimensional drawing



Graph



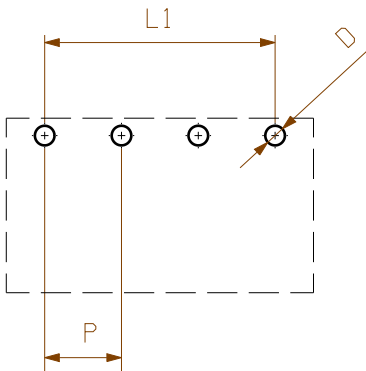
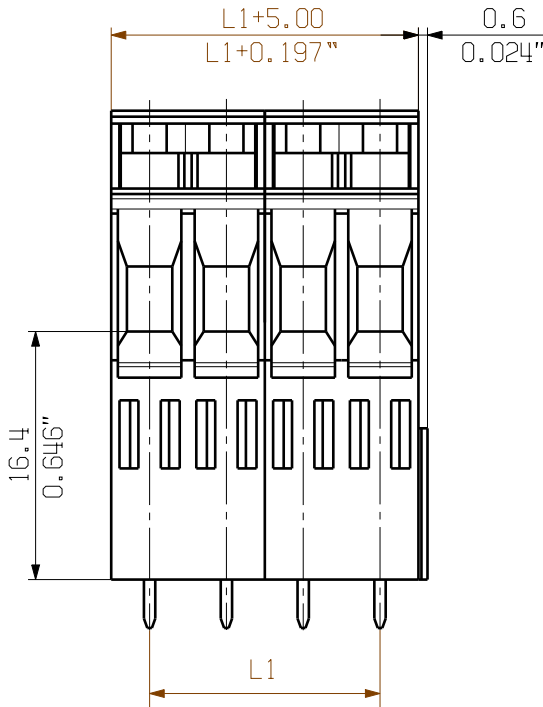
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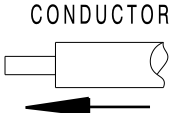
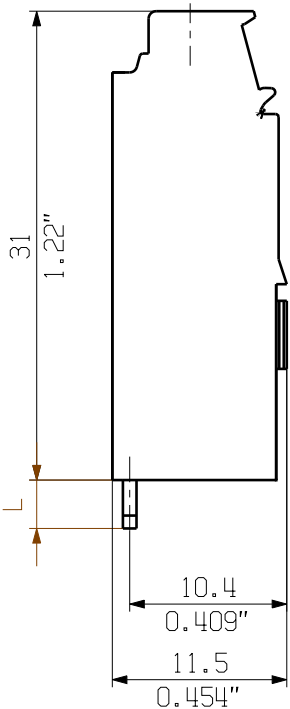
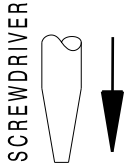
Technical Data

ev.

Material data		
Insulation material type		PA 66
Insulation material colours		orange
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	5.00/0.197
Number of rows		1
Dielectric strength (r.m.s withstand voltage)	kV	2.5
Through resistance (typical)	mOhm	0.5
Operating temperature range	°C	-55 ... +100
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		M3
Screw torque max. acc. to EN 60999	Nm	0.5
Screw driver type		SD 0.6x3.5
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
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	1.27/0.05
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	24
Conductor		
Clamping range	mm ²	0.12...6.0
"e" solid H05(07) V-U	mm ²	0.12...6.0
"f" flexible H05(07) V-K	mm ²	0.12...4.0
"f" with ferrule acc. to DIN 46228/1	mm ²	0.5...2.5
... with plastic collar acc. to DIN 46228/4	mm ²	0.5...2.5
Conductor insulation stripping length	mm/inch	6/0.236
Conductor insulation diameter max.	mm/inch	n.a.
Two wire clamping range	mm ²	0.5...1.5
Gauge to EN 60999 (a x b ; Ø)	mm	2.8x2.4; 3
IEC 664-1 / VDE0110 (4.97) rated data		
Rated cross section acc. to EN 60999	mm ²	4.0
Rated current @ 20°C ambient	A	32
Rated current @ 40°C ambient	A	28
Overvoltage category / Pollution degree		III/3 III/2 II/2
Rated voltage	V	250 250 500
Rated impulse voltage	kV	4 4 4
UL 1059 rated data		B C D
Rated voltage		300 300
Rated current		20 10
AWG wire range (field wiring / factory wiring)		26...12
CSA C22.2 rated data		B C D
Rated voltage		300 300
Rated current		20 10
AWG wire range (field wiring / factory wiring)		26...12
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 minimum pole number		
n.a. = not applicable		
Subject to technical changes		



LAYOUT FINISHED HOLES



24	115,00	4,528
23	110,00	4,331
22	105,00	4,134
21	100,00	3,937
20	95,00	3,740
19	90,00	3,543
18	85,00	3,346
17	80,00	3,150
16	75,00	2,953
15	70,00	2,756
14	65,00	2,559
13	60,00	2,362
12	55,00	2,165
11	50,00	1,969
10	45,00	1,772
9	40,00	1,575
8	35,00	1,378
7	30,00	1,181
6	25,00	0,984
5	20,00	0,787
4	15,00	0,591
3	10,00	0,394
2	5,00	0,197
n	L1 [mm]	L1 [Inch]

	METRIC TOLERANCES: X. = ±0.3 X.X = ±0.1 X.XX = ±0.05				CAT.NO.: . . .	
	42768/5 24.03.09 HELIS_MA 00		MODIFICATION		Weidmüller	
	DRAWN	13.03.2009	HELIS_MA	LP1N 5.00 LEITERPLATTENKLEMME PCB TERMINAL		
	RESPONSIBLE		KRUG_M			
SCALE: 2/1	CHECKED	24.03.2009	HECKERT_M			
SUPERSEDES: .	APPROVED		HECKERT_M	7361		

CAT.NO.: . . .

C 22751

DRAWING NO. SHEET 02 OF 03 SHEETS

ISSUE NO. 07

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.

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