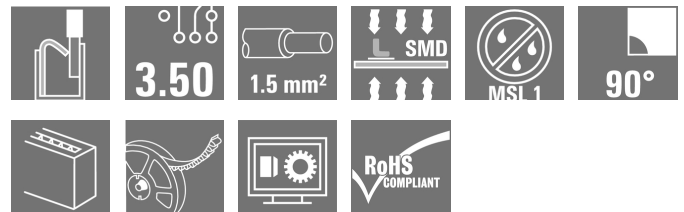


OMNIMATE Signal - series LSF LSF-SMD 3.50/03/90 SN BK RL

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 16
D-32758 Detmold
Germany
Fon: +49 5231 14-0
Fax: +49 5231 14-292083
www.weidmueller.com



The innovative quick connector - simple, safe and economical:

PCB terminals with spring connection and direct PUSH IN technology. A milestone in connection technology.

Amazingly simple and simply amazing in practice:

- Connect and easily detach solid wires or wires with wire-end ferrules without using tools
- Processed automatically in the reflow or vapour phase
- Potentials and clamping points marked clearly by coloured push buttons

World-class design-in and processing phases, and suitable for a vast range of applications.

PCB terminal for fully automatic assembly using reflow soldering (SMD), with PUSH IN wire connections. Conductor insertion and slider operation from the same direction (TOP).

- **Solid & flexible conductors with wire-end ferrules need only to be inserted and they are ready.**
- **When connecting stranded wires without wire-end ferrules the actuating element is used to open the terminal point**
- **Intuitive handling – since the wire-entry area and handling area are clearly separated.**
- **Packaged in tape-on-reel**
- **Conductor outlet direction 90°**

General ordering data

| | |
|--------------|---|
| Type | LSF-SMD 3.50/03/90 SN BK RL |
| Order No. | 1412420000 |
| Version | PCB terminal, 3.50 mm, No. of poles: 3, 90°, Black, PUSH IN, Clamping range, max. : 1.5 mm², Tape (Ø 330 mm); Rs = 10 ⁹ - 10 ¹² Ω |
| GTIN (EAN) | 4050118214055 |
| Qty. | 320 pc(s). |
| Product data | IEC: 320 V / 17.5 A / 0.2 - 1.5 mm² UL: 300 V / 12 A / AWG 24 - AWG 16 |
| Packaging | Tape (Ø 330 mm); Rs = 10 ⁹ - 10 ¹² Ω |

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Technical data
Dimensions and weights

Net weight 2.78 g

System parameters

| | | | |
|--|------------------------------|--|------------|
| Product family | OMNIMATE Signal - series LSF | Wire connection method | PUSH IN |
| Mounting onto the PCB | SMD solder connection | Conductor outlet direction | 90° |
| Pitch in mm (P) | 3.5 mm | Pitch in inches (P) | 0.138 inch |
| No. of poles | 3 | Fitted by customer | No |
| Coplanarity: | 100 µm | Number of solder pins per pole | 2 |
| Stripping length | 8 mm | L1 in mm | 7 mm |
| L1 in inches | 0.276 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 | 1.60 mΩ |

Material data

| | | | |
|---------------------------------------|--------------|---------------------------------------|---------------------|
| Insulating material | LCP GF | Colour | Black |
| Colour chart (similar) | RAL 9011 | Insulating material group | IIIa |
| CTI | ≥ 175 | Insulation resistance | ≥ 10 ⁸ Ω |
| Moisture Level (MSL) | 1 | UL 94 flammability rating | V-0 |
| Contact material | Copper alloy | Layer structure of solder connection | 4-6 µm Sn matt |
| Storage temperature, min. | -25 °C | Storage temperature, max. | 55 °C |
| Max. relative humidity during storage | 80 % | Operating temperature, min. | -50 °C |
| Operating temperature, max. | 120 °C | Temperature range, installation, min. | -30 °C |
| Temperature range, installation, max. | 120 °C | | |

Conductors suitable for connection

| | | | |
|---|----------------------|---|----------------------|
| Clamping range, min. | 0.13 mm ² | Clamping range, max. | 1.5 mm ² |
| Wire connection cross section AWG, min. | AWG 24 | 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, min. | 0.25 mm ² | w. plastic collar ferrule, DIN 46228 pt 4, max. | 0.75 mm ² |
| w. wire end ferrule, DIN 46228 pt 1, min. | 0.25 mm ² | w. wire end ferrule, DIN 46228 pt 1, max. | 1.5 mm ² |

Rated data acc. to IEC

| | | | |
|---|------------------------|---|------------------|
| tested acc. to standard | IEC 60664-1, IEC 61984 | Rated current, min. no. of poles (Tu=20°C) | 17.5 A |
| Rated current, max. no. of poles (Tu=20°C) | 16 A | Rated current, min. no. of poles (Tu=40°C) | 17.5 A |
| Rated current, max. no. of poles (Tu=40°C) | 14 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 80 A |

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Technical data

Rated data acc. to CSA

| | | | |
|-------------------------------|--------|-------------------------------|--------|
| Rated voltage (Use group B) | 300 V | Rated voltage (use group D) | 300 V |
| Rated current (use group B) | 10 A | Rated current (use group D) | 10 A |
| Wire cross-section, AWG, min. | AWG 24 | Wire cross-section, AWG, max. | AWG 16 |

Rated data acc. to UL 1059

| | | | |
|-------------------------------|---|-------------------------------|--------|
| Institute (cURus) |  | Certificate No. (cURus) | E60693 |
| Rated voltage (use group B) | 300 V | Rated voltage (use group D) | 300 V |
| Rated current (use group B) | 12 A | Rated current (use group D) | 10 A |
| Wire cross-section, AWG, min. | AWG 24 | Wire cross-section, AWG, max. | AWG 16 |
| Reference to approval values | Specifications are maximum values, details - see approval certificate. | | |

Classifications

| | | | |
|------------|-------------|------------|-------------|
| ETIM 3.0 | EC001284 | ETIM 4.0 | EC002643 |
| ETIM 5.0 | EC002643 | ETIM 6.0 | EC002643 |
| eClass 6.2 | 27-26-11-01 | eClass 7.1 | 27-44-04-01 |
| eClass 8.1 | 27-44-04-01 | eClass 9.0 | 27-44-04-01 |
| eClass 9.1 | 27-44-04-01 | | |

Notes

- Notes
- Additional push button colours on request
 - Operating force of slider max. 40 N
 - Rated current related to rated cross-section & min. No. of poles.
 - Wire end ferrule with plastic collar to DIN 46228/4
 - Wire end ferrule without plastic collar to DIN 46228/1
 - 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 are recommended for the largest cable sizes.

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.

Approvals

| | |
|-----------|---|
| Approvals |  |
| ROHS | Conform |

Creation date July 2, 2018 10:02:51 AM CEST

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Technical data**Downloads**

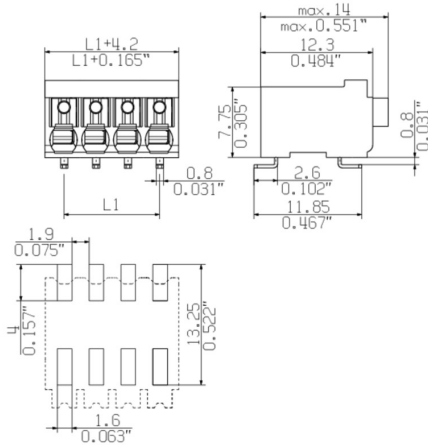
| | |
|---|---|
| Approval/Certificate/Document of Conformity | Declaration of the Manufacturer |
| Brochure/Catalogue | FL DRIVES EN PI OMNIMATE LSF SMD EN FL ANALO.SIGN.CONV. EN MB DEVICE MANUF. EN FL DRIVES DE FL BUILDING SAFETY EN FL APPL LED LIGHTING EN FLIndustr.CONTROLS EN FL MACHINE SAFETY EN 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 |
| Engineering Data | EPLAN, WSCAD |
| Engineering Data | STEP |
| SMT white paper | Download Whitepaper |

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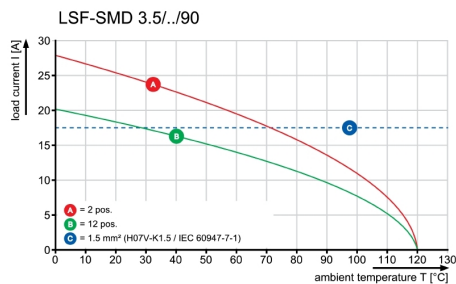
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Drawings

Dimensional drawing



Graph



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Dimensional drawing



Dimensional drawing



Recommended reflow soldering profile

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Reflow soldering profile

The perfect soldering profile for SMT Surface Mount Technology is one the most exiting question in SMT production. But there are more than one correct answer: The diagram of temperature-on-time is related to processing features of solder paste and to maximum load of components.

We have to consider the following parameters:

- Time for pre heating
- Maximum temperature
- Time above melting point
- Time for cooling
- Maximum heating rate
- Maximum cooling rate

We recommend a typical solder profile with associated process limits. With preheating components and board are prepared smoothly for the solder phase. Heating rate is typically $\leq +3\text{K/s}$. In parallel the solder paste is ‚activated‘. The time above melting point of 217°C the paste gets liquid and components and boards begin to connect. The maximum temperature of 245°C to 254°C should stay between 10 and 40 seconds. In the cooling phase at $\geq -6\text{K/s}$ solder is cured. Board and components cool down while avoiding cold cracks.