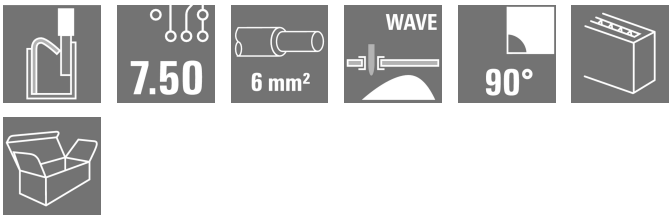
Data sheet

# LLF 7.50/04/90V 5.0SN BK BX

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

www.weidmueller.com




The sturdy, direct connection for extreme current and voltage requirements in all power electronics applications such as solar inverters, frequency converters, servo-controllers and power supplies.

## General ordering data

| | |
|---|---|
| Version | Printed circuit board terminals, 7.50 mm, Number of poles: 4, 90°, Solder pin length (l): 5 mm, tinned, black, PUSH IN with lever, Clamping range, max. : 6 mm², Box |
| Order No. | 2472100000 |
| Type | LLF 7.50/04/90V 5.0SN BK BX |
| GTIN (EAN) | 4050118543780 |
| Qty. | 80 items |
| Product data | IEC: 1000 V / 41 A / 0.5 - 6 mm²<br>UL: 600 V / 35 A / AWG 24 - AWG 8 |
| Packaging | Box |

# Data sheet

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# Technical data

### Approvals

| | |
|---|---|
| Approvals | |
| ROHS | Conform |
| UL File Number Search | UL Website |
| Certificate No. (cURus) | E60693 |

### Dimensions and weights

| | | | |
|---|---|---|---|
| Depth | 22.07 mm | Depth (inches) | 0.8689 inch |
| Height | 36.55 mm | Height (inches) | 1.439 inch |
| Height of lowest version | 31.55 mm | Width | 31.8 mm |
| Width (inches) | 1.252 inch | Net weight | 14.71 g |

### Environmental Product Compliance

| | |
|---|---|
| RoHS Compliance Status | Compliant without exemption |
| REACH SVHC | No SVHC above 0.1 wt% |

### System parameters

| | | | |
|---|---|---|---|
| Product family | OMNIMATE Power - series LL | Wire connection method | PUSH IN with lever |
| Mounting onto the PCB | THT solder connection | Conductor outlet direction | 90° |
| Pitch in mm (P) | 7.50 mm | Pitch in inches (P) | 0.295 " |
| Number of poles | 4 | Pin series quantity | 1 |
| Fitted by customer | No | Number of rows | 1 |
| Solder pin length (l) | 5 mm | Solder pin dimensions | d = 1.5 mm |
| Solder eyelet hole diameter (D) | 2 mm | Solder eyelet hole diameter tolerance (D) | + 0,1 mm |
| Number of solder pins per pole | 1 | Stripping length | 12 mm |
| L1 in mm | 22.50 mm | L1 in inches | 0.885 " |
| 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 | Wemid (PA) | Colour | black |
| Colour chart (similar) | RAL 9011 | Insulating material group | I |
| Moisture Level (MSL) | | UL 94 flammability rating | V-0 |
| Contact material | Cu-alloy | Contact surface | tinned |
| Layer structure of solder connection | 4...10 µm Sn matt | Storage temperature, min. | -40 °C |
| Storage temperature, max. | 70 °C | Operating temperature, min. | -40 °C |
| Operating temperature, max. | 120 °C | | |

### Conductors suitable for connection

| | |
|---|---|
| Clamping range, min. | 0.25 mm² |
| Clamping range, max. | 6 mm² |
| Wire connection cross section AWG, min. | AWG 24 |
| Wire connection cross section AWG, max. | AWG 8 |
| Solid, min. H05(07) V-U | 0.5 mm² |
| Solid, max. H05(07) V-U | 6 mm² |
| Stranded, min. H07V-R | 0.5 mm² |

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| | | | | |
|---|---|---|---|---|
| Flexible, min. H05(07) V-K | 0.5 mm² | | | |
| Flexible, max. H05(07) V-K | 6 mm² | | | |
| w. plastic collar ferrule, DIN 46228 pt 4, min. | 0.25 mm² | | | |
| w. plastic collar ferrule, DIN 46228 pt 4, max. | 6 mm² | | | |
| w. wire end ferrule, DIN 46228 pt 1, min. | 0.25 mm² | | | |
| w. wire end ferrule, DIN 46228 pt 1, max. | 6 mm² | | | |
| Clampable conductor | Cross-section for conductor connection | Type | fine-wired | |
| | | nominal | 0.5 mm² | |
| | wire end ferrule | Stripping length | nominal | 14 mm |
| | | Recommended wire-end ferrule | H0,5/18 OR | |
| | Cross-section for conductor connection | Type | fine-wired | |
| | | nominal | 1 mm² | |
| | wire end ferrule | Stripping length | nominal | 15 mm |
| | | Recommended wire-end ferrule | H1,0/18 GE | |
| | Cross-section for conductor connection | Type | fine-wired | |
| | | nominal | 1.5 mm² | |
| | wire end ferrule | Stripping length | nominal | 15 mm |
| | | Recommended wire-end ferrule | H1,5/18D SW | |
| | | Stripping length | nominal | 12 mm |
| | | Recommended wire-end ferrule | H1,5/12 | |
| | Cross-section for conductor connection | Type | fine-wired | |
| | | nominal | 0.75 mm² | |
| | wire end ferrule | Stripping length | nominal | 14 mm |
| | | Recommended wire-end ferrule | H0,75/18 W | |
| | Cross-section for conductor connection | Type | fine-wired | |
| | | nominal | 2.5 mm² | |
| | wire end ferrule | Stripping length | nominal | 14 mm |
| | | Recommended wire-end ferrule | H2,5/19D BL | |
| | | Stripping length | nominal | 12 mm |
| | | Recommended wire-end ferrule | H2,5/12 | |
| | Cross-section for conductor connection | Type | fine-wired | |
| | | nominal | 4 mm² | |
| | wire end ferrule | Stripping length | nominal | 12 mm |
| | | Recommended wire-end ferrule | H4,0/12 | |
| | | Stripping length | nominal | 14 mm |
| | | Recommended wire-end ferrule | H4,0/20D GR | |
| | Cross-section for conductor connection | Type | fine-wired | |
| | | nominal | 6 mm² | |
| | wire end ferrule | Stripping length | nominal | 14 mm |
| | | Recommended wire-end ferrule | H6,0/20 SW | |
| | | Stripping length | nominal | 12 mm |
| | | Recommended wire-end ferrule | H6,0/12 | |
| 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 | In accordance with IEC 60947-7-1 | Rated current, min. number of poles (Tu=20°C) | 41 A |
| Rated current, max. number of poles (Tu=20°C) | 35 A | Rated current, min. number of poles (Tu=40°C) | 41 A |
| Rated current, max. number of poles (Tu=40°C) | 30 A | Rated voltage for surge voltage class / pollution degree II/2 | 1000 V |
| Rated voltage for surge voltage class / pollution degree III/2 | 1000 V | Rated voltage for surge voltage class / pollution degree III/3 | 1000 V |
| Rated impulse voltage for surge voltage class/ pollution degree II/2 | 8 kV | Rated impulse voltage for surge voltage class/ pollution degree III/2 | 8 kV |
| Rated impulse voltage for surge voltage class/ contamination degree III/3 | 8 kV | | |

### Rated data acc. to CSA

| | | | |
|---|---|---|---|
| Rated voltage (Use group B / CSA) | 600 V | Rated voltage (Use group C / CSA) | 600 V |
| Rated voltage (Use group D / CSA) | 600 V | Rated current (Use group B / CSA) | 35 A |
| Rated current (Use group C / CSA) | 35 A | Rated current (Use group D / CSA) | 5 A |
| Wire cross-section, AWG, min. | AWG 24 | Wire cross-section, AWG, max. | AWG 8 |

### Rated data acc. to UL 1059

| | | | |
|---|---|---|---|
| Institute (cURus) | CURUS | Certificate No. (cURus) | E60693 |
| Rated voltage (Use group B / UL 1059) | 600 V | Rated voltage (Use group C / UL 1059) | 600 V |
| Rated voltage (Use group D / UL 1059) | 600 V | Rated current (Use group B / UL 1059) | 35 A |
| Rated current (Use group C / UL 1059) | 35 A | Rated current (Use group D / UL 1059) | 5 A |
| Wire cross-section, AWG, min. | AWG 24 | Wire cross-section, AWG, max. | AWG 8 |
| Reference to approval values | Specifications are maximum values, details - see approval certificate. | | |

### Packing

| | | | |
|---|---|---|---|
| Packaging | Box | VPE length | 300.00 mm |
| VPE width | 210.00 mm | VPE height | 45.00 mm |

### Type tests

| | | | |
|---|---|---|---|
| Test: Durability of markings | Standard | IEC 60947-7-4 section 7.1.4 / 08.13 | |
| | Test | mark of origin, type identification, type of material, pitch, durability, stripping length | |
| | Evaluation | available | |
| Test: Clampable cross section | Standard | IEC 60999-1 section 7 and 9.1 / 11.99, IEC 60947-1 section 8.2.4.5.1 / 03.11 | |
| | Conductor type | Type of conductor and conductor cross-section | solid 0.5 mm² |
| | | Type of conductor and conductor cross-section | stranded 0.5 mm² |
| | | Type of conductor and conductor cross-section | solid 6 mm² |
| | | Type of conductor and conductor cross-section | stranded 6 mm² |
| | | Type of conductor and conductor cross-section | AWG 24/19 |

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| | | | |
|---|---|---|---|
| | | Type of conductor and conductor cross-section | AWG 24/1 |
| | | Type of conductor and conductor cross-section | AWG 10/1 |
| | | Type of conductor and conductor cross-section | AWG 10/19 |
| | | Type of conductor and conductor cross-section | H07V-K10 |
| | Evaluation | passed | |
| 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 | 0.3 kg | |
| | Conductor type | Type of conductor and conductor cross-section | H05V-K0.5 |
| | | Type of conductor and conductor cross-section | H05V-U0.5 |
| | Evaluation | passed | |
| | Requirement | 0,4 kg | |
| | Conductor type | Type of conductor and conductor cross-section | H07V-K1 |
| | | Type of conductor and conductor cross-section | H07V-U1 |
| | Evaluation | passed | |
| | Requirement | 0.7 kg | |
| | Conductor type | Type of conductor and conductor cross-section | H07V-K2.5 |
| | | Type of conductor and conductor cross-section | H07V-U2.5 |
| | Evaluation | passed | |
| | Requirement | 0.9 kg | |
| | Conductor type | Type of conductor and conductor cross-section | H07V-K4 |
| | | Type of conductor and conductor cross-section | H07V-U4.0 |
| | Evaluation | passed | |
| | Requirement | 1.4 kg | |
| | Conductor type | Type of conductor and conductor cross-section | H07V-K6 |
| | | Type of conductor and conductor cross-section | H07V-U6 |
| | Evaluation | passed | |
| Pull-out test | Standard | DIN EN 60999-1 section 9.5 / 12.00 | |
| | Requirement | ≥20 N | |
| | Conductor type | Type of conductor and conductor cross-section | H05V-K0.5 |
| | | Type of conductor and conductor cross-section | H05V-U0.5 |

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| | | |
|---|---|---|
| Evaluation | passed | |
| Requirement | ≥50 N | |
| Conductor type | Type of conductor and conductor cross-section | H07V-K2.5 |
| | Type of conductor and conductor cross-section | H07V-U2.5 |
| Evaluation | passed | |
| Requirement | ≥60 N | |
| Conductor type | Type of conductor and conductor cross-section | H07V-K4 |
| | Type of conductor and conductor cross-section | H07V-U4.0 |
| Evaluation | passed | |
| Requirement | ≥80 N | |
| Conductor type | Type of conductor and conductor cross-section | H07V-K6 |
| | Type of conductor and conductor cross-section | H07V-U6 |
| Evaluation | passed | |
| Requirement | ≥35 N | |
| Conductor type | Type of conductor and conductor cross-section | H07V-K1 |
| | Type of conductor and conductor cross-section | H07V-U1 |
| Evaluation | passed | |

### 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<br>• Rated current related to rated cross-section & min. No. of poles.<br>• Wire end ferrule without plastic collar to DIN 46228/1<br>• Wire end ferrule with plastic collar to DIN 46228/4<br>• P on drawing = pitch<br>• 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.<br>• The test point can only be used as potential-pickup point.<br>• The single-position PCB terminal block can be used for voltages up to 1500 V (DC) and 1000 V (AC). The relevant device standard and the appropriate required clearances and creepage distances should be observed in the application<br>• Long term storage of the product with average temperature of 50 °C and maximum humidity 70%, 36 months |

### Classifications

| | | | |
|---|---|---|---|
| ETIM 6.0 | EC002643 | ETIM 7.0 | EC002643 |
| ETIM 8.0 | EC002643 | ETIM 9.0 | EC002643 |
| ETIM 10.0 | 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 | ECLASS 14.0 | 27-46-01-01 |
| ECLASS 15.0 | 27-46-01-01 | | |

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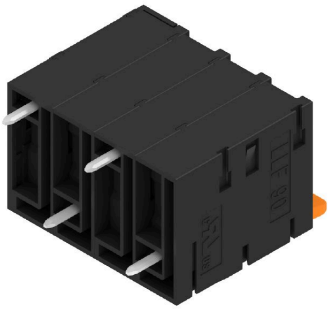
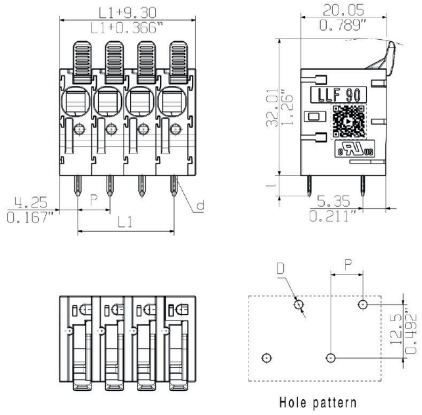
## Drawings

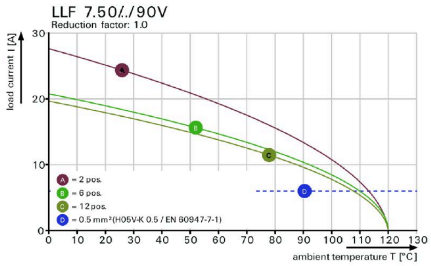
### Product image



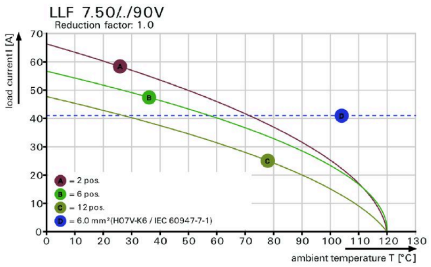
### Dimensional drawing



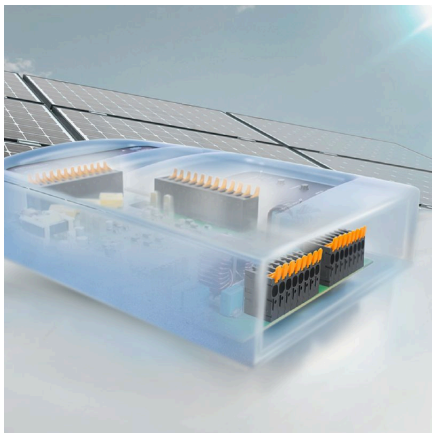

### Derating curve




### Derating curve

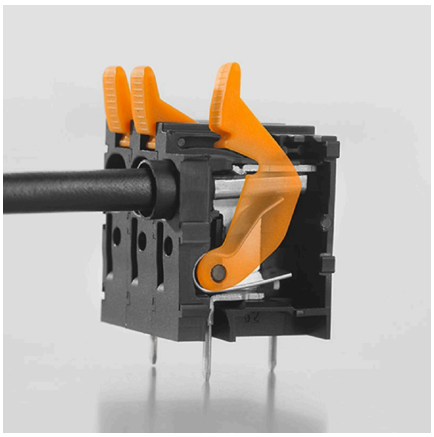



### Product benefits



Power up to UL 600 VOffset solder pins

### Product benefits



Tool-free wiringTop contact security

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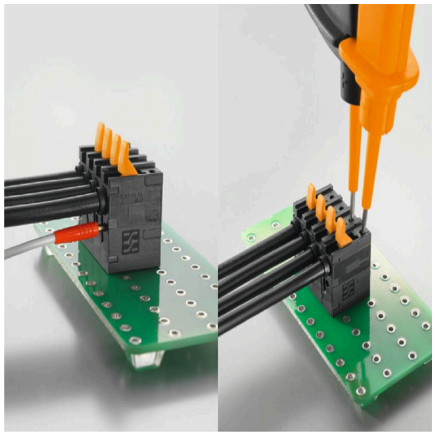
## Drawings

### Product benefits



Maximum diagnosis flexibilityEasily accessible test point