2021-04-14
Product version 00
Document revision 00

# Data sheet

**Order No.: 1190368**

**Type: LPTA 2,5/ 7-5,0**

**PCB terminal block, Lever Push-in connection**

## 1 Main features


- No. of pos. 7
- Conductor cross section 2.5 mm²
- Color green (6021)
- Pitch 5 mm
- Connection method Lever Push-in connection
- Nominal current 24 A
- Nominal voltage 400 V
- Connection direction 45 °
- Type of packaging packed in cardboard

## 2 Your advantages

- Tool-free lever principle enables time-saving connection and release of conductors with/without ferrules
- Clear lever positions provide reliable feedback on opened or closed clamping spaces
- Defined contact force ensures that contact remains stable over the long term
- Time-saving push-in connection when lever is closed
- Intuitive operation, thanks to a color-coded actuation lever

Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1190368

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# 3 Table of contents



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## 4 3D model in PDF can be activated (Acrobat Reader only)

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# 5 General Technical Data

## 5.1 item properties

| | |
|---|---|
| Order No. | 1190368 |
| Type | LPTA 2,5/ 7-5,0 |
| Product type | PCB terminal block |
| Range of articles | LPTA 2,5/ |
| Pitch | 5 mm |
| Number of positions | 7 |
| Number of levels | 1 |
| Number of connections | 7 |
| Number of potentials | 7 |
| Connection method | Lever Push-in connection |
| Mounting type | Wave soldering |
| Connection direction of the conductor to the PCB | 45 ° |
| Pin layout | Linear double pinning |

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# 6 Conductor connection

## 6.1 Connection capacity

| | |
|---|---|
| Conductor cross section, rigid | 0.2 mm² ... 4 mm² (Conductor connection with open terminal point) |
| Conductor cross section, rigid | 0.5 mm² ... 4 mm² (Push-in connection) |
| Conductor cross section, flexible | 0.2 mm² ... 4 mm² |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.2 mm² ... 2.5 mm² (Conductor connection with open terminal point) |
| Conductor cross section flexible, with ferrule with plastic sleeve | 0.2 mm² ... 2.5 mm² (Conductor connection with open terminal point) |
| 2 conductors with the same cross section flexible with TWIN ferrule and plastic sleeve | 0.5 mm² ... 1.5 mm² |
| Stripping length | 10 mm ... 12 mm |

## 6.2 Connection capacity AWG

| | |
|---|---|
| Conductor cross section AWG | 24 ... 12 |

# 7 Material properties

## 7.1 Material of metal parts

| | |
|---|---|
| Note | WEEE/RoHS-compliant, whisker-free acc. to IEC 60068-2-82/JEDEC JESD 201 |
| Contact material | Cu alloy |
| Terminal point surface | Tin (10 - 16 µm Sn) |
| Soldering area surface | Tin (10 - 16 µm Sn) |
| Surface characteristics | Tin-plated |

## 7.2 Material of plastic parts

| | Housing | Actuation element |
|---|---|---|
| Color | green (6021) | orange (2003) |
| Insulating material | PA | PA GF |
| Insulating material group | I | I |
| CTI according to IEC 60112 | 600 | 600 |
| Flammability rating according to UL 94 | V0 | V0 |
| Glow wire flammability index GWFI according to EN 60695-2-12 | 850 | |
| Glow wire ignition temperature GWIT according to EN 60695-2-13 | 775 | |
| Temperature for the ball pressure test according to EN 60695-10-2 | 125 °C | |

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# 8 Dimensions

## 8.1 Dimensions for the product

| | |
|---|---|
| Length | 21.35 mm |
| Width | 36.5 mm |
| Height (without solder pin) | 20.28 mm |
| Total height | 23.78 mm |
| Solder pin [P] | 3.5 mm |

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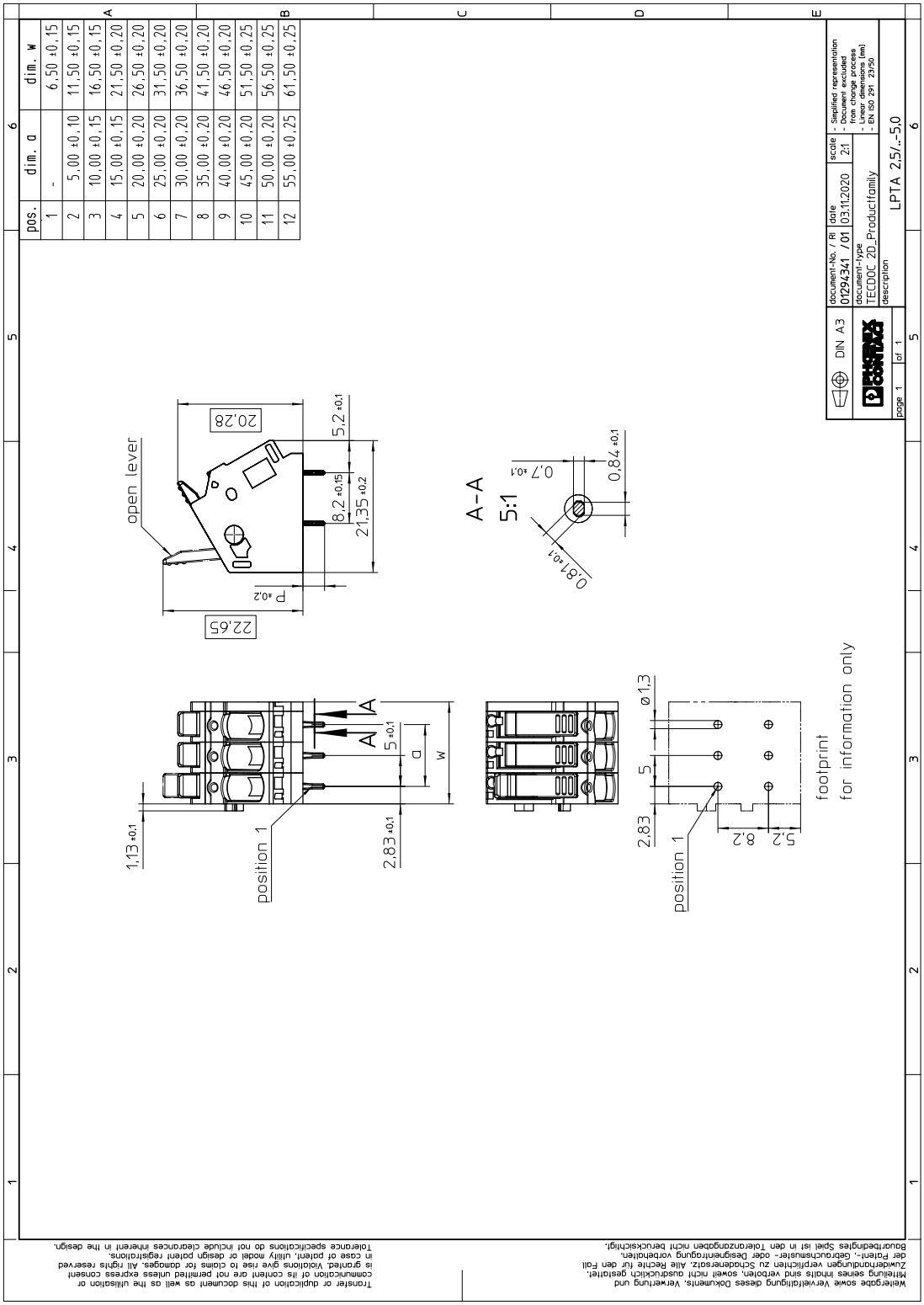
# 9 Series drawing

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# 10 Application

# 11 Packaging information

| | |
|---|---|
| Type of packaging | packed in cardboard |
| Pieces per package | 50 |

## 11.1 Temperature limit values

| | |
|---|---|
| Ambient temperature (storage/transport) | -40 °C ... 70 °C |
| Ambient temperature (assembly) | -5 °C ... 100 °C |
| Ambient temperature (operation) | -40 °C ... 105 °C (Depending on the current carrying capacity/derating curve) |

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# 12 Mechanical tests

## 12.1 Pull-out test

| | |
|---|---|
| Specification | IEC 60999-1:1999-11 |
| Result | Test passed |
| Conductor cross section/conductor type/tractive force actual value | 0.2 mm² / solid / > 10 N |
| Conductor cross section/conductor type/tractive force actual value | 0.2 mm² / flexible / > 10 N |
| Conductor cross section/conductor type/tractive force actual value | 4 mm² / solid / > 60 N |
| Conductor cross section/conductor type/tractive force actual value | 4 mm² / flexible / > 60 N |
| Conductor cross section/conductor type/tractive force actual value | 0.5 mm² / solid / > 20 N |

## 12.2 Check for damage to conductor or loosening

| | |
|---|---|
| Specification | IEC 60999-1:1999-11 |
| Result | Test passed |

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# 13 Electrical tests

| | |
|---|---|
| Rated current / conductor cross section | 24 A / 2.5 mm² |
| Rated insulation voltage (III/2) | 400 V |
| Rated surge voltage (III/2) | 4 kV |
| Contact resistance | 0.35 mΩ |
| Degree of pollution | 2 |

## 13.1 Air and creepage distances

| | | | |
|---|---|---|---|
| Component | PCB terminal block | | |
| Specification | IEC 60947-7-4:2019-01 | | |
| Mains type | unearthed mains | | |
| Insulating material group | | | |
| Comparative tracking index (IEC 60112:2003-01) | | | |
| Rated insulation voltage | 320 V | 400 V | 630 V |
| Rated surge voltage | 4 kV | 4 kV | 4 kV |
| Degree of pollution | 3 | 2 | 2 |
| Overvoltage category | III | III | II |
| Minimum clearance case A (inhomogeneous field) | 3 mm | 3 mm | 3 mm |
| Minimum value of the creepage path requirement in acc. with table | 4 mm | 3 mm | 3.2 mm |

## 13.2 Short-time withstand current test

| | |
|---|---|
| Specification | IEC 60947-7-4:2019-01 |
| Result | Test passed |
| Conductor cross section/short-time current | 4 mm² / 168 A |

## 13.3 Aging test (climatic impact and corrosion testing)

| | |
|---|---|
| Specification | IEC 60947-7-4:2019-01 |
| Result | Test passed |
| Contact resistance $R_1$ | 0.35 mΩ / 4 mm² |
| Test sequence 1: low temperature storage | -40 °C / 2 h |
| Test sequence 2: heat storage | 168 h/105 °C |
| Test sequence 3: noxious gas storage (ISO 6988) | KFW 0.2 S/1 cycle |
| Contact resistance $R_2$ | 0.41 mΩ / 4 mm² |
| Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs) | 4.8 kV |
| Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz) | 3.1 kV |

## 13.4 Insulation resistance

| | |
|---|---|
| Specification | IEC 60512-3-1:2002-02 |
| Result | Test passed |
| Insulation resistance, neighboring positions | > 5 MΩ |

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### 13.5 Mechanical connection test for the PCB terminal block

| | |
|---|---|
| Specification | IEC 60947-7-4:2019-01 |
| Result | Test passed |

### 13.6 Temperature rise test

| | |
|---|---|
| Specification | IEC 60947-7-4:2019-01 |
| Result | Test passed |
| Requirement temperature-rise test | The sum of ambient temperature and temperature rise of the PCB terminal block shall not exceed the upper limiting temperature. |
| Conductor cross section/test current/temperature rise | 2.5 $mm^2$ / 24 A / 41.4 K |
| Conductor cross section/test current/temperature rise | 4 $mm^2$ / 32 A / 49.3 K |

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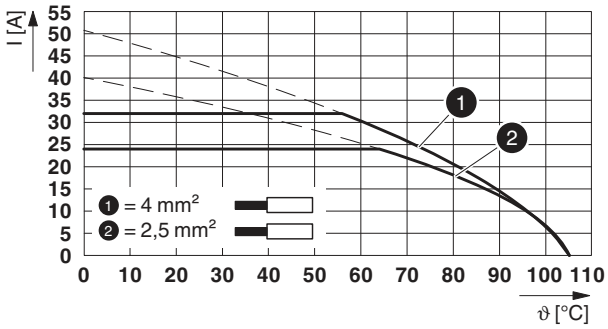
# 14 Current carrying capacity/derating curves

| | |
|---|---|
| Specification | IEC 60947-7-4:2019-01 |
| Note | Representation based on IEC 60512-5-2:2002-02 |
| Reduction factor | 1 |
| Number of positions | 4 |
| Conductor cross section | 2.5 mm² |

**Type: LPTA 2,5/...-5,0**

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# 15 Environmental and durability tests

## 15.1 Vibration test

| | |
|---|---|
| Specification | IEC 60068-2-6:2007-12 |
| Result | Test passed |
| Frequency | 10 - 150 - 10 Hz |
| Sweep speed | 1 octave/min |
| Amplitude | 0.35 mm (10 - 60.1 Hz) |
| Acceleration | 50 $m/s^2$ (60.1 - 150 Hz) |
| Test duration per axis | 2.5 h |
| Test directions | X-, Y- and Z-axis |
| Note | |

## 15.2 Assessment of fire risk (glow wire test)

| | | | |
|---|---|---|---|
| Specification | IEC 60695-2-10:2013-04 | | |
| Result | Test passed | | |
| Temperature | 850 °C | | |
| Time of exposure | 5 s | | |

## 15.3 Shock protection

| | |
|---|---|
| Specification | Following IEC 60529:1989-11 + AMD 1:1999-11 + AMD 2:2013-08 |
| Back of the hand protection (Ball ø 50) | |
| Finger protection (movable test finger) | guaranteed |
| Note | unenclosed basic insulation - protected against finger contact with IP20 test finger in acc. with IEC 60529 when connected, above the PCB |

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# 16 Commercial Data

| | |
|---|---|
| Order No. | 1190368 |
| Type | LPTA 2,5/ 7-5,0 |
| Pieces per package | 50 |
| Net weight | 2.22 g |
| GTIN | 4063151239039 |
| | Information that applies locally, see link on page 1 |
| | Information that applies locally, see link on page 1 |

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