

# Data sheet

Order No.: 1716956

Type: LPCH 6/ 4+6-ST-7,62

PCB hybrid connector, Push-in spring connection

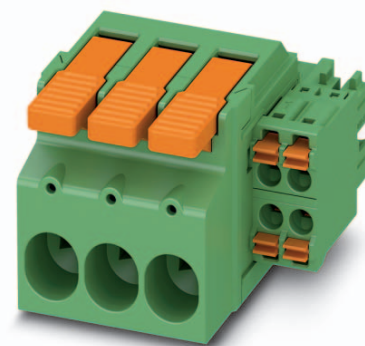


Figure shows a 3+4-pos. version

## 1 Main features



- |                           |                           |                        |                     |
|---------------------------|---------------------------|------------------------|---------------------|
| • No. of pos.             | 10                        | • Nominal current      | 41 A                |
| • Conductor cross section | 6 mm <sup>2</sup>         | • Nominal voltage      | 1000 V              |
| • Color                   | green (6021)              | • Connection direction | 0°                  |
| • Pitch                   | 7.62 mm                   | • Type of packaging    | packed in cardboard |
| • Connection method       | Push-in spring connection |                        |                     |

## 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



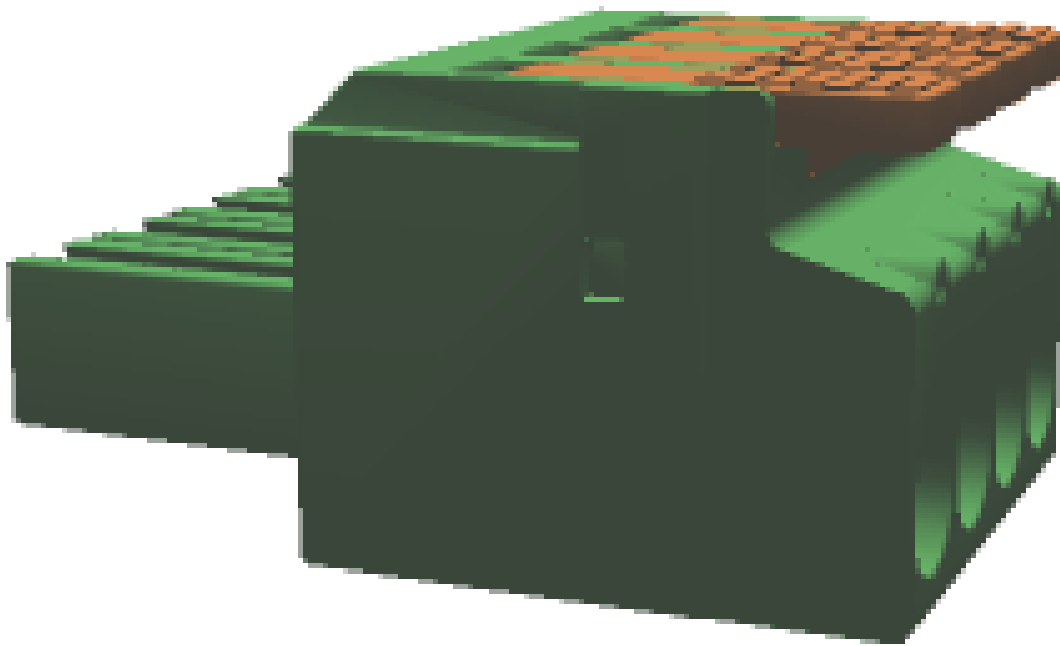
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**4 3D model in PDF can be activated (Acrobat Reader only)**



**1716956 LPCH 6/ 4+6-ST-7,62****5 General Technical Data****5.1 item properties**

Order No.	1716956
Type	LPCH 6/ 4+6-ST-7,62
Plug-in system	POWER COMBICON 6 Hybrid
Product type	PCB hybrid connector
Type of contact	Female connector
Range of articles	LPCH 6/...-ST
Number of positions	10
Number of connections	10
Number of potentials	10
Type of locking	without
	without
Connection direction of the connector to the PCB	0 °

	Power	Signal
Pitch	7.62 mm	3.81 mm
Connection method	Push-in spring connection	Push-in spring connection
Number of levels	1	2
Number of positions	4	6
Number of connections	4	6
Number of potentials	4	6

**5.2 Connection capacity**

	Power	Signal
Conductor cross section, solid	0.75 mm <sup>2</sup> ... 10 mm <sup>2</sup>	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section, flexible	0.75 mm <sup>2</sup> ... 6 mm <sup>2</sup>	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section flexible, with ferrule without plastic sleeve	0.75 mm <sup>2</sup> ... 6 mm <sup>2</sup>	0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section flexible, with ferrule with plastic sleeve	0.75 mm <sup>2</sup> ... 6 mm <sup>2</sup>	0.25 mm <sup>2</sup> ... 1 mm <sup>2</sup>
Cylindrical gauge a x b / diameter	4.3 mm x 4.0 mm / 4.0 mm	2.4 mm x 1.5 mm / 1.5 mm
Stripping length	18 mm	10 mm

**5.3 Connection capacity AWG**

Connection data AWG	Power	Signal
Conductor cross section AWG	18 ... 8	24 ... 16

**1716956 LPCH 6/ 4+6-ST-7,62****6 Material properties****6.1 RoHs/WEEE compliant**

Note	WEEE/RoHS-compliant, free of whiskers according to IEC 60068-2-82/JEDEC JESD 201
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**6.2 Material of metal parts**

	Power	Signal
Contact material	Cu alloy	Cu alloy
Terminal point surface	Tin (4 - 8 µm Sn)	Tin (4 - 8 µm Sn)
Surface contact area	Tin (4 - 8 µm Sn)	Tin (4 - 8 µm Sn)
Surface characteristics	Tin-plated	hot-dip tin-plated

**6.3 Material Kunststoffteile**

	Power	Signal
Insulating material	PA GF	PA
Insulating material group	I	I
CTI according to IEC 60112	600	600
Flammability rating according to UL 94	V0	V0
Color	green (6021)	green (2003)

**6.4 Insulation material specifications for actuating element**

	Power	Signal
Insulating material	PA GF	PBT
Insulating material group	I	I
CTI according to IEC 60112	600	600
Flammability rating according to UL 94	V0	V0
Color	orange (2003)	orange (2003)

**1716956 LPCH 6/ 4+6-ST-7,62**

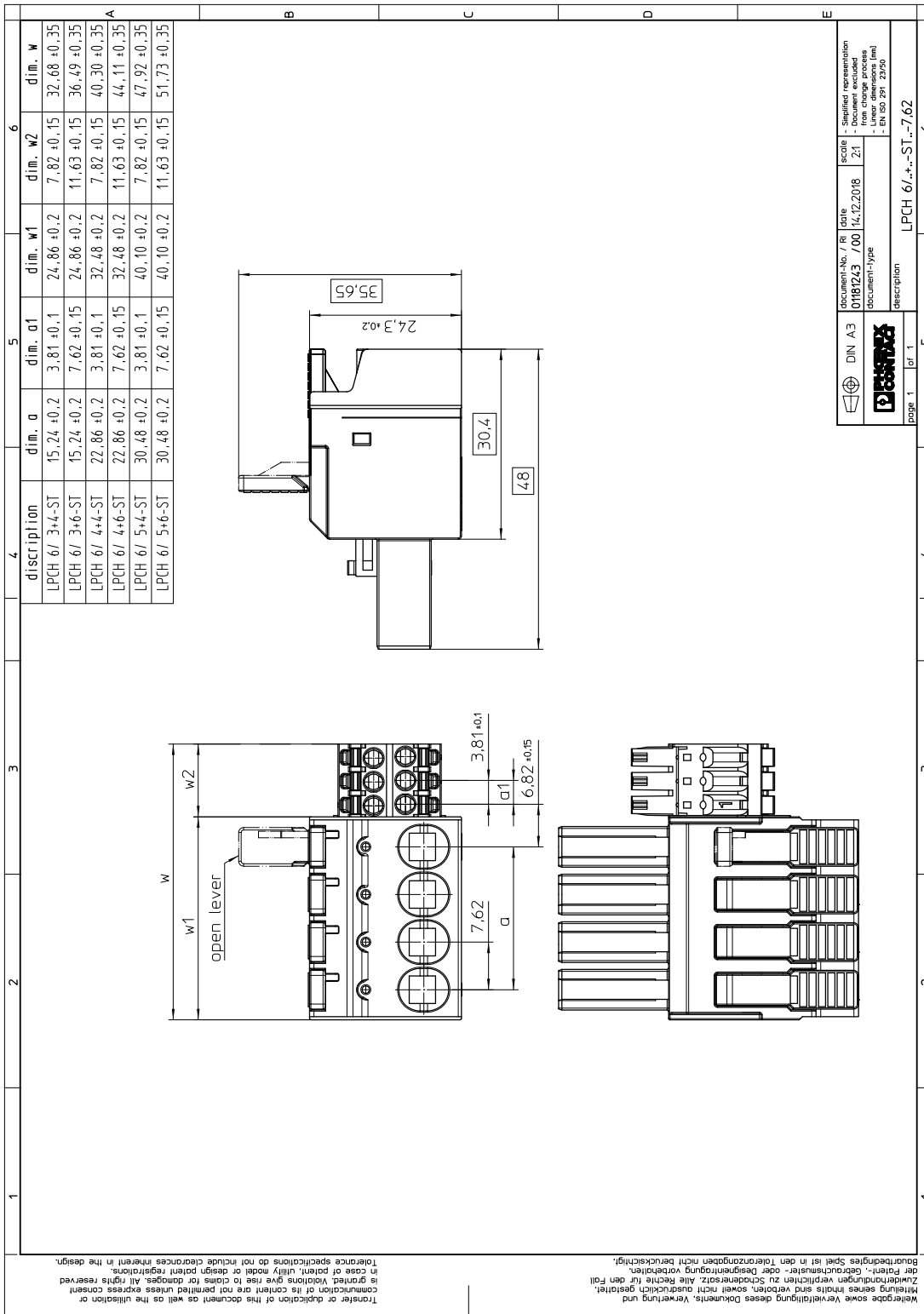
## 7 Dimensions

### 7.1 Dimensions for the product

Length	48 mm
Width	44.11 mm
Total height	35.65 mm
Dimension a	22.86 mm

1716956 LPCH 6/ 4+6-ST-7,62

8 Series drawing



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page 1 of 1		description	
LPCH 6/ 4+6-ST-7,62			

**1716956 LPCH 6/ 4+6-ST-7,62****9 Packaging information**

Type of packaging	packed in cardboard
Pieces per package	25

**10 Application****10.1 Temperature limit values**

Ambient temperature (storage/transport)	-40 °C ... 70 °C
Ambient temperature (assembly)	-5 °C ... 100 °C
Ambient temperature (operation)	-40 °C (dependent on the derating curve)



**1716956 LPCH 6/ 4+6-ST-7,62****11 General tests****11.1 Specification**

Specification	IEC 61984
Specification	IEC 60999-1
Brief description	PCB hybrid connector

**12 Mechanical tests****12.1 Check for damage to conductor or loosening**

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

**12.2 Pull-out test**

Specification	IEC 60999-1:1999-11
Result	Test passed
Conductor cross section/conductor type/tractive force actual value	0.75 mm <sup>2</sup> / solid / > 30 N
Conductor cross section/conductor type/tractive force actual value	0.75 mm <sup>2</sup> / flexible / > 30 N
Conductor cross section/conductor type/tractive force actual value	10 mm <sup>2</sup> / solid / > 90 N
Conductor cross section/conductor type/tractive force actual value	6 mm <sup>2</sup> / flexible / > 80 N

**12.3 Repeated connection and disconnection**

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

**12.4 Conductor connection**

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

**12.5 Mechanical test group A**

Specification	IEC 61984:2008-10
Visual examination	Test passed
Specification	IEC 60512-1-1:2002-02
Dimensional test	Test passed
Specification	IEC 60512-1-2:2002-02
Resistance of marking	Test passed
Specification	IEC 60068-2-70:1995-12
Insertion and withdrawal force	Test passed
Specification	IEC 60512-13-2:2006-02
No. of cycles	25
Insertion strength per pos. approx.	7 N
Withdraw strength per pos. approx.	4 N

**1716956 LPCH 6/ 4+6-ST-7,62**

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Polarization and coding	Test passed
Specification	IEC 60512-13-5:2006-02
Test force	20 N
Contact retention in insert	Test passed
Specification	IEC 60512-15-1:2008-05
Test force per pos.	20 N

**1716956 LPCH 6/ 4+6-ST-7,62****13 Electrical tests****13.1 Electrical data**

Rated current / conductor cross section	41 A / 6 mm <sup>2</sup>
Rated insulation voltage (III/2)	1000 V
Rated surge voltage (III/2)	8 kV
Contact resistance	0.42 mΩ
Degree of pollution	2

**13.2 Air and creepage distances**

Component	PCB hybrid connector		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	800 V	1000 V	1000 V
Rated surge voltage	8 kV	8 kV	6 kV
Degree of pollution	3	2	2
Overvoltage category	III	III	II
Minimum clearance case A (inhomogeneous field)	8 mm	8 mm	5.5 mm
Minimum value of the creepage path requirement in acc. with table	10 mm	5 mm	5 mm

**13.3 Electrical function**

Specification	IEC 60999-1:1999-11
Result	Test passed
Voltage drop	Voltage drop (U) after the load ≤ 15 mV
Conductor cross section, flexible	0.75 mm <sup>2</sup> ... 6 mm <sup>2</sup>
Conductor cross section, solid	0.75 mm <sup>2</sup> ... 10 mm <sup>2</sup>

**13.4 Temperature cycles**

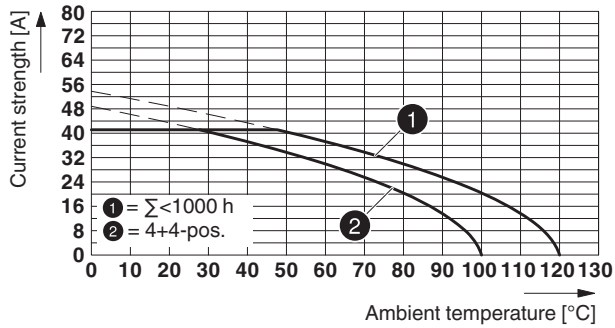
Specification	IEC 60999-1:1999-11
Result	Test passed
Voltage drop	Voltage drop (U) after the load ≤ 22.5 mV or 1.5 x U <sub>after 24 h</sub> The small value is to be used.
Test current (minimum cross section)	9 A DC
Test current (maximum cross section)	41 A DC
Temperature cycles	192
Conductor cross section, flexible	0.75 mm <sup>2</sup> ... 6 mm <sup>2</sup>
Conductor cross section, solid	0.75 mm <sup>2</sup> ... 10 mm <sup>2</sup>

## 1716956 LPCH 6/ 4+6-ST-7,62

## 14 Current carrying capacity/derating curves

Specification	IEC 61984:2008-10
Note	Representation based on IEC 60512-5-2:2002-02
Reduction factor	0.8
Number of positions	See diagram
Conductor cross section	6 mm <sup>2</sup>

Type: LPCH 6/...+...-ST-7,62 with PCH 6/...+...-G-7,62



Insulation resistance	
Specification	IEC 60512-3-1:2002-02
Result	Test passed
Insulation resistance, neighboring positions	> 5 M $\Omega$

**1716956 LPCH 6/ 4+6-ST-7,62****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	5 g (60.1 - 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis
Note	The connected conductor loops were guided to the test sample at a distance of approx. 10 cm.


**16 Classification for connectors**

Specification	IEC 61984:2008-10
Main features	Connectors without switching capacity (COC)
Construction form	Fixed connectors
Strain relief elements	without strain relief
Connection method	Can be reconnected
Protection against electric shock	not encapsulated - back of hand safety when plugged in
Protective conductor	without PE
Lock	no
Connection method	Screwless terminal points

**16.1 Insulation resistance**

Specification	IEC 60512-3-1:2002-02
Result	Test passed
Insulation resistance, neighboring positions	> 5 M $\Omega$

**17 Approvals**

cULus Recognized 				
Use group	B1	F	F1	
mm <sup>2</sup> /AWG/kcmil	24-16	18-8	24-16	
Voltage	150 V	600 V	160 V	
Current	6 A	35 A	6 A	

**1716956 LPCH 6/ 4+6-ST-7,62****18 Commercial Data**

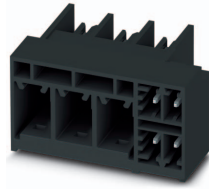
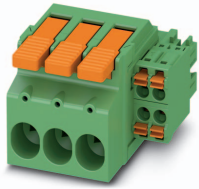
Order No.	1716956
Type	LPCH 6/ 4+6-ST-7,62
Pieces per package	25
Net weight	2.22 g
GTIN	4055626536644
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

**19 Accessories**

Description	Order No.	Type
Coding profile, for plugging into the coding ribs of the plug at a later date, insulating material, color: Red	1701967	CP-PC RD
	3200603	Al 6 -18 YE
Crimping pliers, for uninsulated and insulated ferrules, DIN 46228 Part 1 and 4, from 0.14 mm <sup>2</sup> ... 6 mm <sup>2</sup> , also for TWIN ferrules up to 2 x 4 mm <sup>2</sup> , automatic cross section adjustment, lateral insertion, equipped with fall protection	1213144	CRIMPFOX CENTRUS 6S
Stripping tool, for cables and conductors from 0.02 - 10 mm <sup>2</sup> , self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm <sup>2</sup> stranded/1.5 mm <sup>2</sup> solid, replaceable stripping blade	1212150	WIREFOX 10

## 1716956 LPCH 6/ 4+6-ST-7,62

## 20 Combination tests

**LPCH 6/..-ST**

IEC 61984

**Mechanical tests (A)**

Insertion/withdrawal force per position

Polarization when inserted  
Requirement >20 NContact holder in insert  
Requirements >20 N**Durability tests (B)**Contact resistance  $R_1$ 

Insertion/withdrawal cycles

Contact resistance  $R_2$ Rated impulse voltage at sea level  
Voltage waveform  $\geq (1.2/50 \mu s)$ Power-frequency withstand voltage  
Voltage waveform  $\geq (50/60 \text{ Hz})$ **Thermal tests (C)**

Tested number of positions

Tested conductor cross section

Test current

Upper limiting temperature  
Requirements < 100°C**Climatic tests (D)**

Test sequence 1: low temperature storage

Test sequence 2: heat storage

Test sequence 3: noxious gas storage  
(ISO 6988)Rated impulse voltage at sea level  
Voltage waveform  $\geq (1.2/50 \mu s)$ Power-frequency withstand voltage  
Voltage waveform  $\geq (50/60 \text{ Hz})$ **Environmental and endurance tests (E)**

Specification

Degree of protection

**PCH 6/..-G**

IEC 61984

approx. 7 N / 4 N

Test passed

Test passed

0.42 m $\Omega$ 

25

0.46 m $\Omega$ 

7.3 kV

3.31 kV

4

6 mm<sup>2</sup>

41 A

Test passed

-40 °C/2 h

100 °C/168 h

0.2 dm<sup>3</sup> SO<sub>2</sub> on 300 dm<sup>3</sup>/  
40 °C/1 cycle

7.3 kV

3.31 kV

IEC 61984:2008-10

Back of hand safety with  
IP10 access probe