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Product version 00
Document revision 00

Data sheet

Order No.: 1716989

Type: LPCH 6/ 4+6-STL4-7,62

PCB hybrid connector, Push-in spring connection

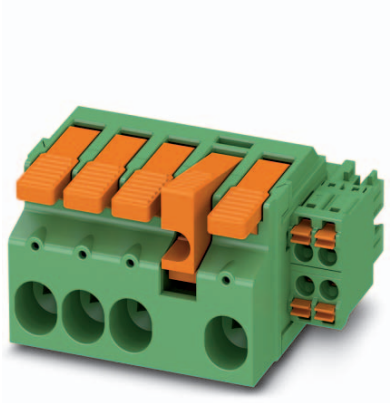

Figure shows a 4+4-pos. version with locking flange at position 4

1 Main features

- No. of pos. 10
- Conductor cross section 6 mm²
- Color green (6021)
- Pitch 7.62 mm
- Connection method Push-in spring connection
- Nominal current 41 A
- Nominal voltage 1000 V
- Connection direction 0 °
- 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

Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1716989

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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.	1716989
Type	LPCH 6/ 4+6-STL4-7,62
Plug-in system	POWER COMBICON 6 Hybrid
Product type	PCB hybrid connector
Type of contact	Female connector
Range of articles	LPCH 6/..-STL
Number of positions	10
Number of connections	10
Number of potentials	10
Type of locking	Snap-in locking
	Self-locking flange
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 mm² ... 10 mm²	0.2 mm² ... 1.5 mm²
Conductor cross section, flexible	0.75 mm² ... 6 mm²	0.2 mm² ... 1.5 mm²
Conductor cross section flexible, with ferrule without plastic sleeve	0.75 mm² ... 6 mm²	0.25 mm² ... 1.5 mm²
Conductor cross section flexible, with ferrule with plastic sleeve	0.75 mm² ... 6 mm²	0.25 mm² ... 1 mm²
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

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6 Material properties

6.1 RoHs/WEEE compliant

Note	WEEE/RoHS-compliant, free of whiskers according to IEC 60068-2-82/JEDEC JESD 201

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 (6021)

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)

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7 Dimensions

7.1 Dimensions for the product

Length	48 mm
Width	51.73 mm
Total height	35.65 mm
Dimension a	30.48 mm

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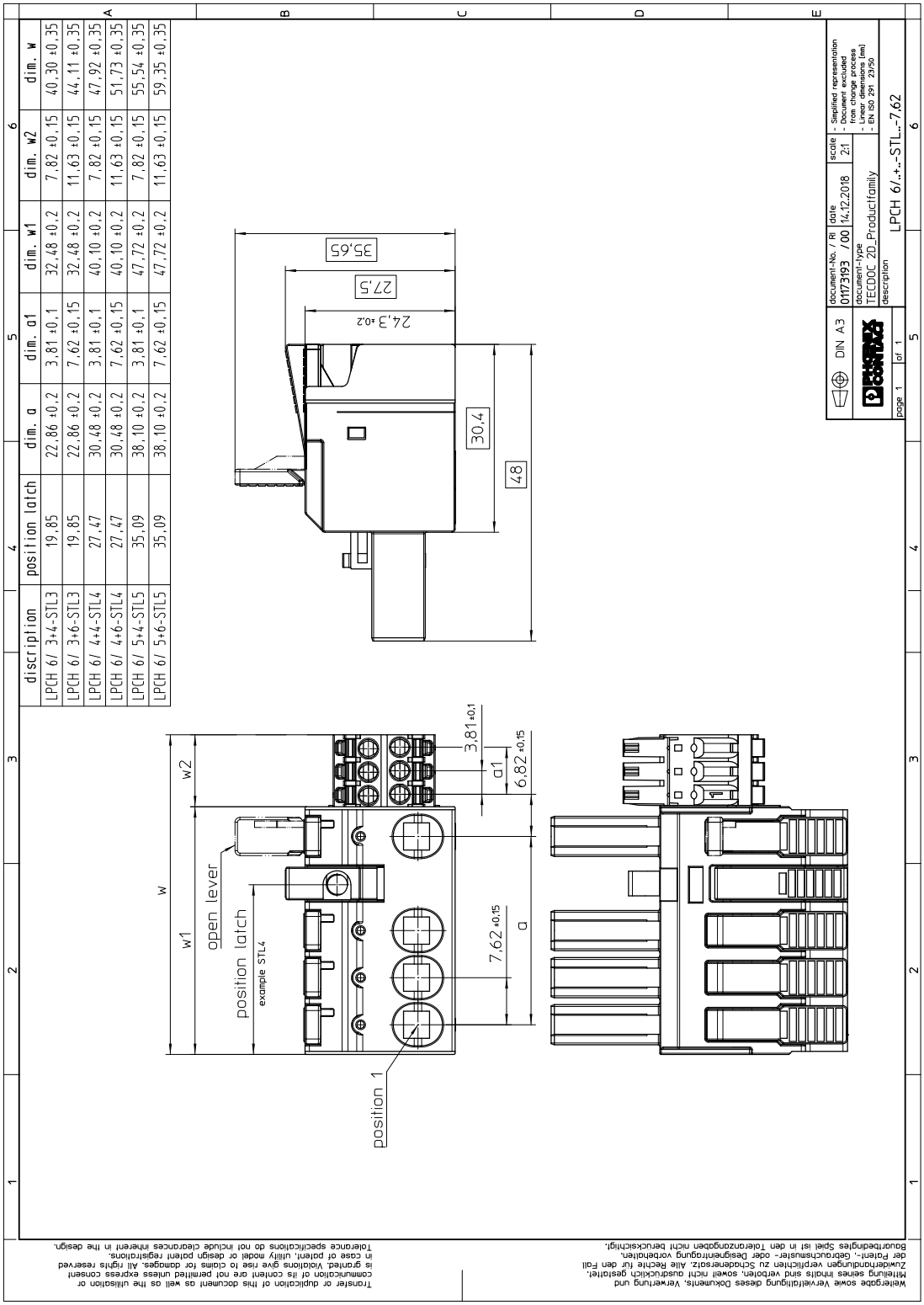
1716989 LPCH 6/ 4+6-STL4-7,62

8 Series drawing



discription	position latch	dim. a	dim. a1	dim. w1	dim. w2	dim. w
LPCH 6/ 3+4-STL3	19,85	22,86 ±0,2	3,81 ±0,1	32,48 ±0,2	7,82 ±0,15	40,30 ±0,35
LPCH 6/ 3+6-STL3	19,85	22,86 ±0,2	7,62 ±0,15	32,48 ±0,2	11,63 ±0,15	44,11 ±0,35
LPCH 6/ 4+4-STL4	27,47	30,48 ±0,2	3,81 ±0,1	40,10 ±0,2	7,82 ±0,15	47,92 ±0,35
LPCH 6/ 4+6-STL4	27,47	30,48 ±0,2	7,62 ±0,15	40,10 ±0,2	11,63 ±0,15	51,73 ±0,35
LPCH 6/ 5+4-STL5	35,09	38,10 ±0,2	3,81 ±0,1	47,72 ±0,2	7,82 ±0,15	55,54 ±0,35
LPCH 6/ 5+6-STL5	35,09	38,10 ±0,2	7,62 ±0,15	47,72 ±0,2	11,63 ±0,15	59,35 ±0,35

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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)

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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^2 / solid / > 30 N
Conductor cross section/conductor type/tractive force actual value	0.75 mm^2 / flexible / > 30 N
Conductor cross section/conductor type/tractive force actual value	10 mm^2 / solid / > 90 N
Conductor cross section/conductor type/tractive force actual value	6 mm^2 / 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

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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

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13 Electrical tests

13.1 Electrical data

Rated current / conductor cross section	41 A / 6 mm²
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 mm² ... 6 mm²
Conductor cross section, solid	0.75 mm² ... 10 mm²

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 $U_{\text{after 24 h}}$ 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 mm² ... 6 mm²
Conductor cross section, solid	0.75 mm² ... 10 mm²

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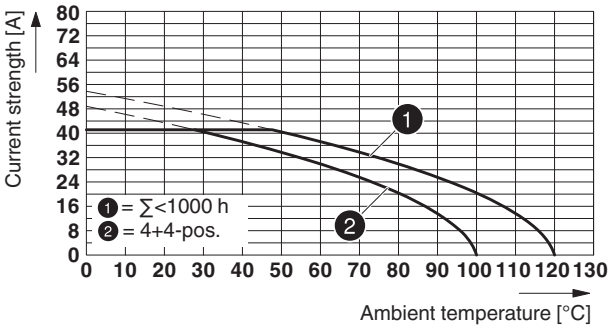
14 Current carrying capacity/derating curves

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 mm²

Type: LPCH 6/...+...-STL...-7,62 with PCH 6/...+...-GL...-7,62



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

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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	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.

Shock	
Specification	IEC 60068-2-27:2008-02
Result	Test passed
Pulse shape	Semi-sinusoidal
Peak acceleration	30g
Shock duration	18 ms
Number of shocks per direction	3
Test directions	X-, Y- and Z-axis (pos. and neg.)

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 MΩ

17 Approvals

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

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18 Commercial Data

Order No.	1716989
Type	LPCH 6/ 4+6-STL4-7,62
Pieces per package	25
Net weight	2.22 g
GTIN	4055626530444
	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	AI 6 -18 YE
Crimping pliers, for uninsulated and insulated ferrules, DIN 46228 Part 1 and 4, from 0.14 mm² … 6 mm², also for TWIN ferrules up to 2 x 4 mm², automatic cross section adjustment, lateral insertion, equipped with fall protection	1213144	CRIMPFOX CENTRUS 6S
Stripping tool, for cables and conductors from 0.02 - 10 mm², self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm² stranded/1.5 mm² solid, replaceable stripping blade	1212150	WIREFOX 10

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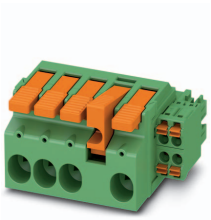
20 Combination tests



LPCH 6/..-STL	**PCH 6/..-GL4**			
IEC 61984	IEC 61984			
Mechanical tests (A)				
Insertion/withdrawal force per position	approx. 7 N / 4 N			
Polarization when inserted Requirement >20 N	Test passed			
Contact holder in insert Requirements >20 N	Test passed			
Durability tests (B)				
Contact resistance R_1	0.42 mΩ			
Insertion/withdrawal cycles	25			
Contact resistance R_2	0.46 mΩ			
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	7.3 kV			
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	3.31 kV			
Thermal tests (C)				
Tested number of positions	4			
Tested conductor cross section	6 mm^2			
Test current	41 A			
Upper limiting temperature Requirements < 100°C	Test passed			
Climatic tests (D)				
Test sequence 1: low temperature storage	-40 °C/2 h			
Test sequence 2: heat storage	100 °C/168 h			
Test sequence 3: noxious gas storage (ISO 6988)	0.2 dm^3 SO_2 on 300 dm^3/ 40 °C/1 cycle			
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	7.3 kV			
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	3.31 kV			
Environmental and endurance tests (E)				
Specification	IEC 61984:2008-10			
Degree of protection	Back of hand safety with IP10 access probe			

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