

# CC 2,5/16-GF-LR P20 THR - PCB header



1836829

<https://www.phoenixcontact.com/de/produkte/1836829>

Please be informed that the data shown in this PDF document is generated from our Online Catalog. Please find the complete data in the user documentation. Our General Terms of Use for Downloads are valid.



PCB headers, nominal cross section: 2.5 mm<sup>2</sup>, color: black, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Male connector, number of potentials: 16, number of rows: 1, number of positions: 16, number of connections: 16, product range: CC 2,5/..-GF-LR, pitch: 5 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 2 mm, number of solder pins per potential: 1, plug-in system: COMBICON MSTB 2,5, Pin connector pattern alignment: Standard, locking: Snap-in locking, mounting: Lock & release threaded flange, type of packaging: packed in cardboard

## Your advantages

- Designed for integration into the SMT soldering process
- Maximum flexibility when it comes to device design – one header for connectors with different connection technologies
- Automatic locking and intuitive release through Lock and Release operating lever in contrasting color
- Screwable flange for superior mechanical stability

## Commercial Data

Item number	1836829
Packing unit	52 pc
Minimum order quantity	52 pc
Note	Made to Order (non-returnable)
Sales Key	E1 - Leiterplattenanschl.
Product Key	AACTAB
GTIN	4055626021119
Weight per Piece (including packing)	2,22 g
Weight per Piece (excluding packing)	2,22 g
Customs tariff number	85366930
Country of origin	DE

## Technical Data

### Product properties

Type	Component suitable for through hole reflow
Product line	COMBICON Connectors M
Product type	PCB headers
Product family	CC 2,5/..-GF-LR
Number of positions	16
Pitch	5 mm
Number of connections	16
Number of rows	1
Mounting flange	Lock & release threaded flange
Number of potentials	16
Pin layout	Linear pinning
Solder pins per potential	1

### Electrical properties

Nominal current $I_N$	12 A
Nominal voltage $U_N$	320 V
Degree of pollution	3
Contact resistance	1.1 mΩ
Rated voltage (III/3)	250 V
Rated surge voltage (III/3)	4 kV
Rated voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
	400 V
Rated surge voltage (II/2)	4 kV

### Mounting

Mounting type	THR soldering
Pin layout	Linear pinning

### Flange

Tightening torque	0.3 Nm
-------------------	--------

### Processing notes

Process	Reflow/wave soldering
Moisture Sensitive Level	MSL 1
Classification temperature $T_c$	260 °C
Solder cycles in the reflow	3

### Material specifications

#### Material data - contact

Note	WEEE/RoHS-compliant, free of whiskers according to IEC
------	--

# CC 2,5/16-GF-LR P20 THR - PCB header

1836829

<https://www.phoenixcontact.com/de/produkte/1836829>

	60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Surface characteristics	Tin-plated
Metal surface contact area (top layer)	Tin (3 - 5 $\mu\text{m}$ Sn)
Metal surface contact area (middle layer)	Nickel (1.3 - 3 $\mu\text{m}$ Ni)
Metal surface soldering area (top layer)	Tin (3 - 5 $\mu\text{m}$ Sn)
Metal surface soldering area (middle layer)	Nickel (1.3 - 3 $\mu\text{m}$ Ni)

## Material data - housing

Color (Housing)	black (9005)
Insulating material	LCP
Insulating material group	IIIa
CTI according to IEC 60112	175
Flammability rating according to UL 94	V0

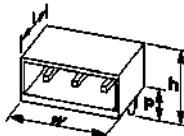
## Material data – actuating element

Color ()	()
----------	----

## Notes

Details for soldering processes	Processing using reflow processes in compliance with IEC 60068-2-58 or DIN EN 61760-1 (latest version) Moisture Sensitive Level (MSL) = 1 according to IPC/JEDEC J-STD-020-C
Notes on operation	In accordance with IEC 61984, COMBICON connectors have no switching power (COC). During designated use, they must not be plugged in or disconnected when carrying voltage or under load.

## Dimensions

Dimensional drawing	
Pitch	5 mm
Width [w]	90 mm
Height [h]	10.57 mm
Length [l]	12 mm
Installed height	8.57 mm
Solder pin length [P]	2 mm

## Mechanical tests

### Test for conductor damage and slackening

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

### Pull-out test

# CC 2,5/16-GF-LR P20 THR - PCB header



1836829

<https://www.phoenixcontact.com/de/produkte/1836829>

Specification	IEC 60999-1:1999-11
Conductor cross section/conductor type/tractive force setpoint/actual value	0.2 mm <sup>2</sup> / solid / > 10 N
	0.2 mm <sup>2</sup> / flexible / > 10 N
	2.5 mm <sup>2</sup> / solid / > 50 N
	2.5 mm <sup>2</sup> / flexible / > 50 N

## Insertion and withdrawal forces

Result	Test passed
No. of cycles	25
Insertion strength per pos. approx.	8 N
Withdraw strength per pos. approx.	6 N

## Torque test

Specification	IEC 60999-1:1999-11
---------------	---------------------

## Contact holder in insert

Specification	IEC 60512-15-1:2008-05
Contact holder in insert Requirements >20 N	Test passed

## Resistance of inscriptions

Specification	IEC 60068-2-70:1995-12
Result	Test passed

## Polarization and coding

Specification	IEC 60512-13-5:2006-02
Result	Test passed

## Visual inspection

Specification	IEC 60512-1-1:2002-02
Result	Test passed

## Dimension check

Specification	IEC 60512-1-2:2002-02
Result	Test passed

## Electrical tests

### Thermal test | Test group C

Specification	IEC 60512-5-1:2002-02
Tested number of positions	20

### Insulation resistance

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

### Air clearances and creepage distances |

Specification	IEC 60664-1:2007-04
Insulating material group	IIIa

1836829

<https://www.phoenixcontact.com/de/produkte/1836829>

Comparative tracking index (IEC 60112)	CTI 175
Rated insulation voltage (III/3)	250 V
Rated surge voltage (III/3)	4 kV
minimum clearance value - non-homogenous field (III/3)	3 mm
minimum creepage distance (III/3)	4 mm
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
minimum clearance value - non-homogenous field (III/2)	3 mm
minimum creepage distance (III/2)	3.2 mm
Rated insulation voltage (II/2)	400 V
Rated surge voltage (II/2)	4 kV
minimum clearance value - non-homogenous field (II/2)	3 mm
minimum creepage distance (II/2)	4 mm

## Environmental and real-life conditions

### Vibration test

Specification	IEC 60068-2-6:2007-12
Frequency	10 - 150 - 10 Hz
Sweep speed	1 octave/min
Amplitude	0.35 mm (10 Hz ... 60.1 Hz)
Sweep speed	5g (60.1 Hz ... 150 Hz)
Test duration per axis	2.5 h

### Durability test

Specification	IEC 60512-9-1:2010-03
Impulse withstand voltage at sea level	4.8 kV
Contact resistance $R_1$	1.1 m $\Omega$
Contact resistance $R_2$	1.2 m $\Omega$
Insertion/withdrawal cycles	25
Insulation resistance, neighboring positions	> 5 M $\Omega$

### Climatic test

Specification	ISO 6988:1985-02
Corrosive stress	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> /40 °C/1 cycle
Thermal stress	100 °C/168 h
Power-frequency withstand voltage	2.21 kV

### Shocks

Specification	IEC 60068-2-27:2008-02
Pulse shape	Semi-sinusoidal
Acceleration	30g
Shock duration	18 ms
Test directions	X-, Y- and Z-axis (pos. and neg.)

### Ambient conditions

# CC 2,5/16-GF-LR P20 THR - PCB header



1836829

<https://www.phoenixcontact.com/de/produkte/1836829>

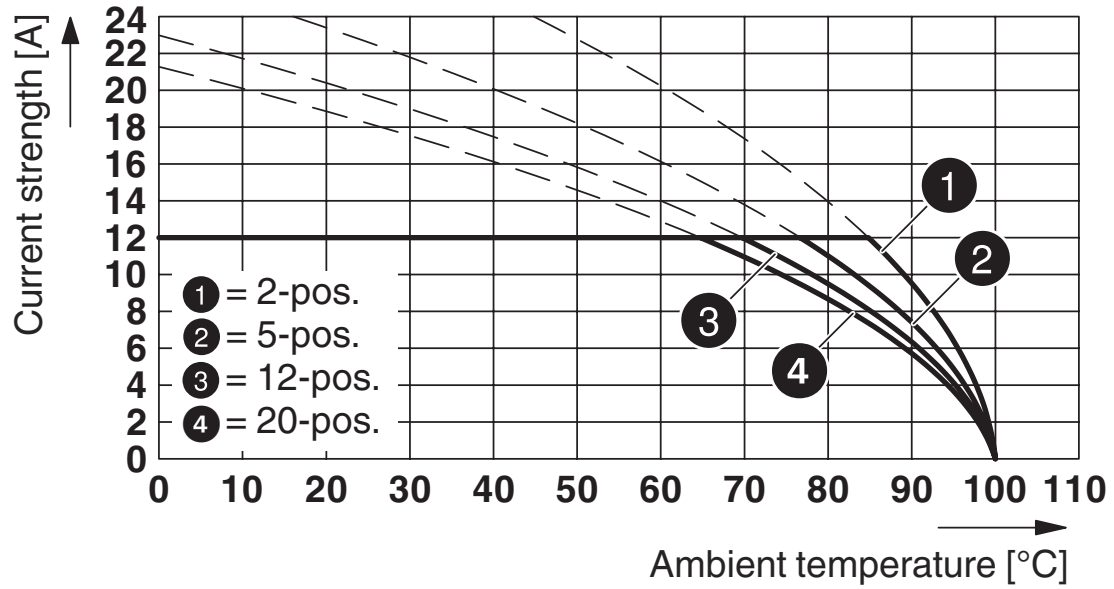
Ambient temperature (operation)	-40 °C ... 100 °C (dependent on the derating curve)
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Relative humidity (storage/transport)	30 % ... 70 %
Ambient temperature (assembly)	-5 °C ... 100 °C

## Packaging specifications

Type of packaging	packed in cardboard
-------------------	---------------------

## Drawings

Diagram



Type: MSTB 2,5/...-STF with CC 2,5/...-GF-LR P20 THR

# CC 2,5/16-GF-LR P20 THR - PCB header



1836829

<https://www.phoenixcontact.com/de/produkte/1836829>

## Approvals



**EAC**

Approval ID: B.01687



**cULus Recognized**

Approval ID: E60425-19931011

	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
Use group B				
Standard	300 V	16 A	-	-
Use group D				
Standard	300 V	10 A	-	-
Alternative 1	150 V	15 A	-	-

1836829

<https://www.phoenixcontact.com/de/produkte/1836829>

## Classifications

### ECLASS

ECLASS-9.0	27440402
ECLASS-10.0.1	27440402
ECLASS-11.0	27460201

### ETIM

ETIM 8.0	EC002637
----------	----------

### UNSPSC

UNSPSC 21.0	39121400
-------------	----------

# CC 2,5/16-GF-LR P20 THR - PCB header



1836829

<https://www.phoenixcontact.com/de/produkte/1836829>

## Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

# CC 2,5/16-GF-LR P20 THR - PCB header

1836829

<https://www.phoenixcontact.com/de/produkte/1836829>

## Accessories

### CR-MSTB NAT HT - Coding section

1954362

<https://www.phoenixcontact.com/de/produkte/1954362>

HT coding section, prior to the reflow soldering process it is inserted into the recess on the header, made from high-temperature-resistant beige insulation material



---

### QC 1,5/16-STF - PCB connector

1718258

<https://www.phoenixcontact.com/de/produkte/1718258>

PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 630 V, contact surface: Tin, type of contact: Female connector, number of rows: 1, number of positions: 16, product range: QC 1,5/..-STF, pitch: 5 mm, connection method: Displacement connection, conductor/PCB connection direction: 0 °, locking clip: - without locking clip, plug-in system: COMBICON MSTB 2,5, locking: Screw locking, mounting: Screw flange, type of packaging: packed in cardboard



# CC 2,5/16-GF-LR P20 THR - PCB header

1836829

<https://www.phoenixcontact.com/de/produkte/1836829>

## FKCN 2,5/16-STF - PCB connector

1733097

<https://www.phoenixcontact.com/de/produkte/1733097>



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, number of potentials: 16, number of rows: 1, number of positions: 16, number of connections: 16, product range: FKCN 2,5/...-STF, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: Screw locking, mounting: Screw flange, type of packaging: packed in cardboard

## MVSTBW 2,5/16-STF - PCB connector

1835423

<https://www.phoenixcontact.com/de/produkte/1835423>



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, number of potentials: 16, number of rows: 1, number of positions: 16, number of connections: 16, product range: MVSTBW 2,5/...-STF, pitch: 5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: -90 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: Screw locking, mounting: Screw flange, type of packaging: packed in cardboard

## CC 2,5/16-GF-LR P20 THR - PCB header

1836829

<https://www.phoenixcontact.com/de/produkte/1836829>



## MVSTBR 2,5/16-STF - PCB connector

1835614

<https://www.phoenixcontact.com/de/produkte/1835614>



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, number of potentials: 16, number of rows: 1, number of positions: 16, number of connections: 16, product range: MVSTBR 2,5/..-STF, pitch: 5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 90 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: Screw locking, mounting: Screw flange, type of packaging: packed in cardboard

## FKCT 2,5/16-STF - PCB connector

1909540

<https://www.phoenixcontact.com/de/produkte/1909540>



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, number of potentials: 16, number of rows: 1, number of positions: 16, number of connections: 16, product range: FKCT 2,5/..-STF, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, locking clip: - without locking clip, plug-in system: COMBICON MSTB 2,5, locking: Screw locking, mounting: Screw flange, type of packaging: packed in cardboard

# CC 2,5/16-GF-LR P20 THR - PCB header

1836829

<https://www.phoenixcontact.com/de/produkte/1836829>



## FKCVR 2,5/16-STF - PCB connector

1910021

<https://www.phoenixcontact.com/de/produkte/1910021>



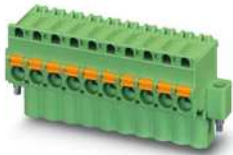
PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, number of potentials: 16, number of rows: 1, number of positions: 16, number of connections: 16, product range: FKCVR 2,5/..-STF, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 90 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: Screw locking, mounting: Screw flange, type of packaging: packed in cardboard

---

## FKCVW 2,5/16-STF - PCB connector

1910348

<https://www.phoenixcontact.com/de/produkte/1910348>



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, number of potentials: 16, number of rows: 1, number of positions: 16, number of connections: 16, product range: FKCVW 2,5/..-STF, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: -90 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: Screw locking, mounting: Screw flange, type of packaging: packed in cardboard

# CC 2,5/16-GF-LR P20 THR - PCB header

1836829

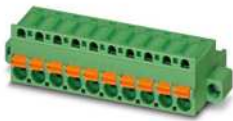
<https://www.phoenixcontact.com/de/produkte/1836829>



## FKC 2,5/16-STF - PCB connector

1910665

<https://www.phoenixcontact.com/de/produkte/1910665>



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, number of potentials: 16, number of rows: 1, number of positions: 16, number of connections: 16, product range: FKC 2,5/..-STF, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: Screw locking, mounting: Screw flange, type of packaging: packed in cardboard

## SMSTB 2,5/16-STF - PCB connector

1971015

<https://www.phoenixcontact.com/de/produkte/1971015>



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, number of potentials: 16, number of rows: 1, number of positions: 16, number of connections: 16, product range: SMSTB 2,5/..-STF, pitch: 5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: -45 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: Screw locking, mounting: Screw flange, type of packaging: packed in cardboard

Phoenix Contact 2023 © - all rights reserved  
<https://www.phoenixcontact.com>

PHOENIX CONTACT Deutschland GmbH  
Flachsmarktstraße 8  
D-32825 Blomberg  
+49 52 35/3-1 20 00  
[info@phoenixcontact.de](mailto:info@phoenixcontact.de)