2022-07-04
Product version 03
Document revision 00

Data sheet

Item No.: 1943535

Type: ICV 2,5 HC/ 2-G-5,08

PCB headers

The figure shows a 10-position version of the product

1 Main features

- No. of pos. 2
- Nominal cross section 2.5 mm²
- Color green (6021)
- Pitch 5.08 mm
- Mounting type Wave soldering
- Nominal current 16 A
- Nominal voltage 320 V
- Connection direction 90 °
- Type of packaging packed in cardboard

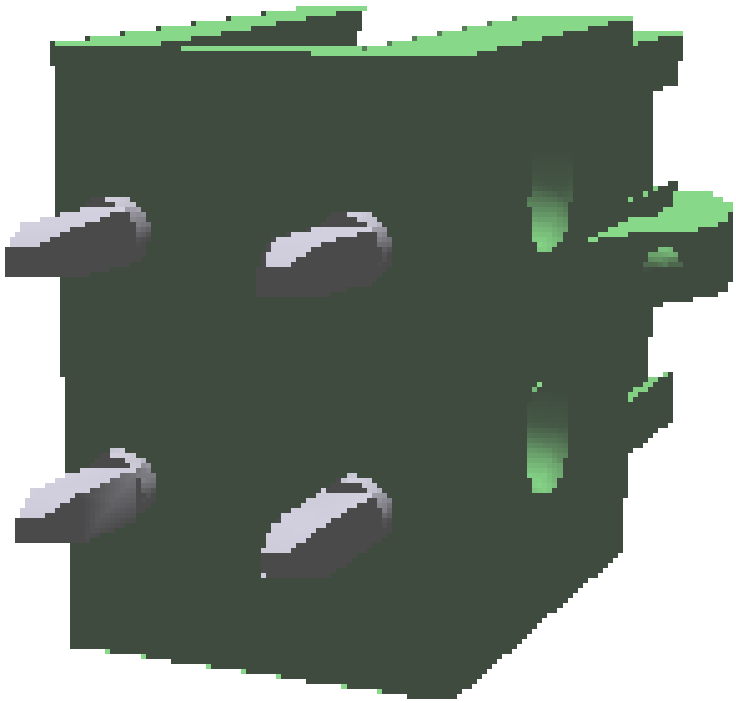
2 Your advantages

- Well-known mounting principle allows worldwide use
- Inverted header with socket contacts for touch-proof device outputs or PCB/PCB connections
- Integrated double steel spring provides additional safety in the event of temperature and power fluctuations

Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1943535

3 Table of contents

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



5 General Technical Data

5.1 item properties

Item no.	1943535
Type	ICV 2,5 HC/ 2-G-5,08
Product line	COMBICON Connectors M
Connector system	COMBICON MSTB 2,5 HC
Product type	PCB headers
Type of contact	Female connector
Range of articles	ICV 2,5 HC/..-G
Pitch	5.08 mm
Number of positions	2
Number of rows	1
Number of connections	2
Number of potentials	2
Connection direction of the connector to the PCB	90 °
Pin layout	Linear pinning
Solder pins per potential	2
Type	Inverted

6 Mounting

6.1 Flange mounting

Type of locking	without
Mounting flange	without

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
Surface contact area	Tin (4 - 8 µm Sn)
Soldering area surface	Tin (4 - 8 µm Sn)
Surface characteristics	hot-dip tin-plated

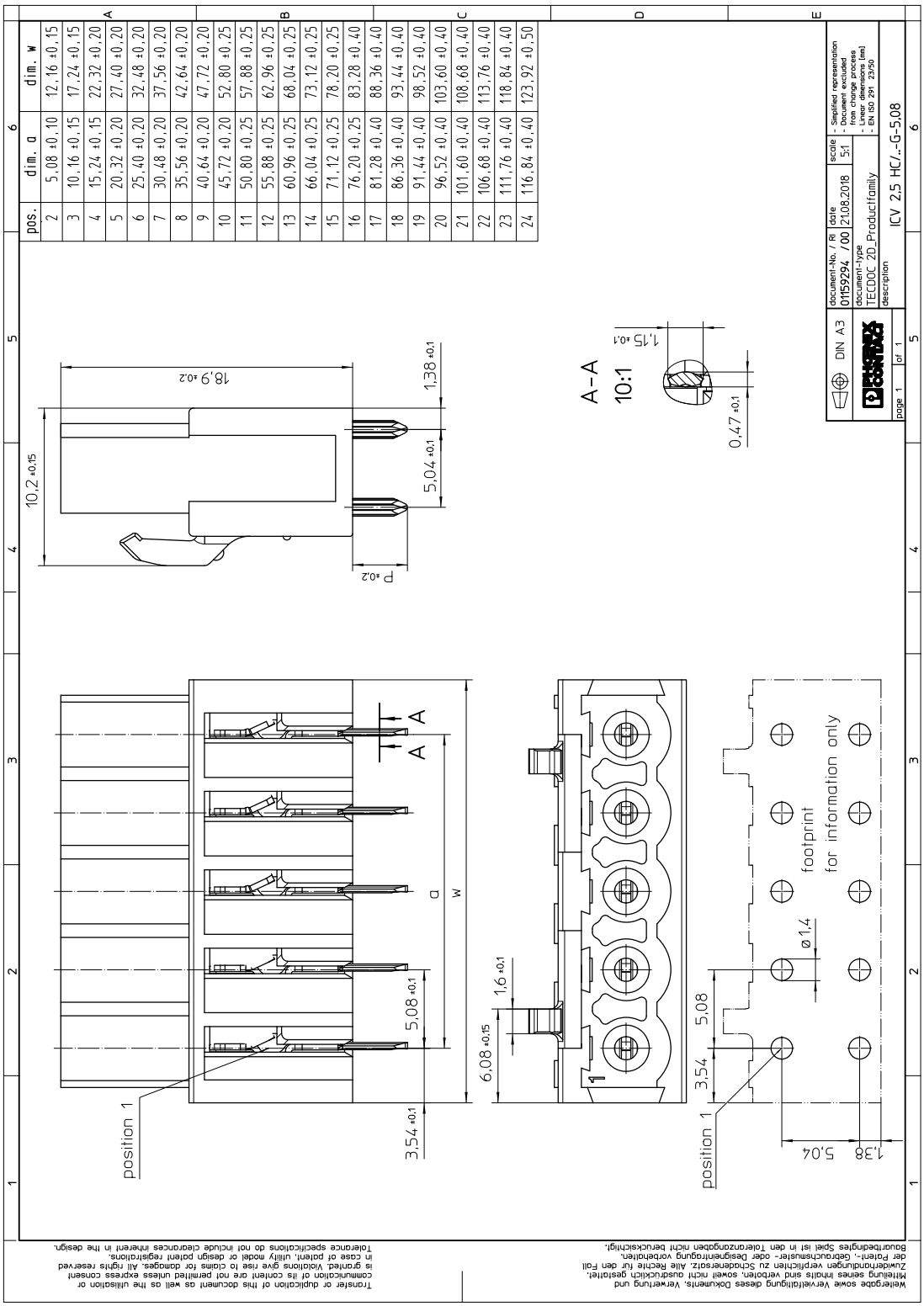
Insulating material data	Housing
Color	green (6021)
Insulating material	PA
Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0
Glow wire flammability index GWFI according to EN 60695-2-12	850
Glow wire ignition temperature GWIT according to EN 60695-2-13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

8 Dimensions

8.1 Dimensions for the product

Length	10.2 mm
Width	12.16 mm
Height (without solder pin)	19 mm
Total height	22.6 mm
Solder pin [P]	3.6 mm

9 Series drawing



10 Product notes

10.1 General information

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.

11 Application

12 Packaging information

Type of packaging	packed in cardboard
Pieces per package	50

12.1 Temperature limit values

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

13 Mechanical tests

13.1 Visual examination

Specification	
Visual examination	Test passed
Specification	IEC 60512-1-1:2002-02

13.2 Dimensional test

Dimensional test	Test passed
Specification	IEC 60512-1-2:2002-02

13.3 Resistance of marking

Resistance of marking	Test passed
Specification	IEC 60068-2-70:1995-12

13.4 Contact retention in insert

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

14 Insertion and withdrawal forces

Insertion and withdrawal force	Test passed
Specification	IEC 60512-13-2:2006-02
No. of cycles	25
Insertion strength per pos. approx.	12 N
Withdraw strength per pos. approx.	10 N

15 Electrical tests

Rated current / conductor cross section	16 A / 2.5 mm²
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Contact resistance	1.5 mΩ
Degree of pollution	2

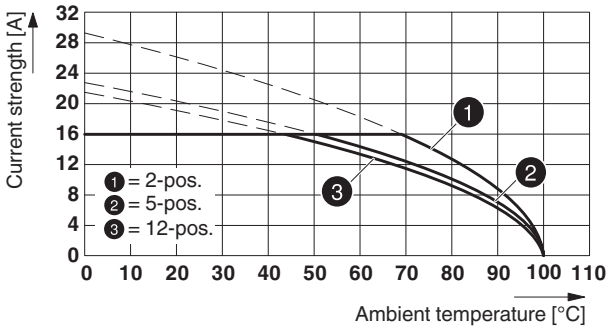
16 Air and creepage distances

Component	PCB headers		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112)	CTI 600		
Rated insulation voltage	320 V	320 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

17 Current carrying capacity/derating curves

Specification	IEC 61984:2008-10
Note	Representation based on IEC 60512-5-2:2002-02
Note	For number of positions, see diagram
Reduction factor	0.8
Conductor cross section	2.5 mm²

Type: FKIC 2,5 HC/...-ST- 5,08 with ICV 2,5 HC/...-G-5,08



18 Environmental and durability tests

18.1 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	5g (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.

18.2 Insulation resistance

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

19 Data transmission

20 Approvals / Certificates

IECEE CB Scheme	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm²]
	250 V	16 A	-	-

EAC				

cULus Recognized	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm²]
Usegroup B				
	250 V	16 A	-	-
Usegroup D				
	300 V	10 A	-	-

VDE Zeichengenehmigung	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm²]
	250 V	16 A	-	-

21 Commercial Data

Item no.	1943535
Type	ICV 2,5 HC/ 2-G-5,08
Pieces per package	50
Net weight	3.518 g
GTIN	4017918885267
	Information that applies locally, see link on page 1

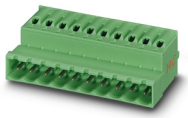
22 corresponding plugs

Item no.	Type
1923869	MSTBA 2,5 HC/ 2-G-5,08
1924305	MSTBVA 2,5 HC/ 2-G-5,08
1942594	FKIC 2,5 HC/ 2-ST-5,08

23 Accessories

Description	Item No.	**Type**
	0201647	RPS
Coding profile, is inserted into the slot on the plug or inverted header, red insulating material	1734634	CP-MSTB
	0201744	MPS-MT
	0201663	MPS-IH WH
	0201676	MPS-IH RD
	0201689	MPS-IH BU
	0201692	MPS-IH YE
	0201702	MPS-IH GN
	0201731	MPS-IH BK

24 Combination tests



ICV 2,5 HC/..-G	**FKIC 2,5 HC/..-ST**			
IEC 61984	IEC 61984			
Mechanical tests (A)				
Insertion/withdrawal force per position	approx. 12 N / 10 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 1st level	1.5 mΩ			
Contact resistance R_1 2nd level				
Insertion/withdrawal cycles	25			
Contact resistance R_2	1.6 mΩ			
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	4.8 kV			
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV			
Insulation resistance Requirements > 5 MΩ	> 5 MΩ			
Thermal tests (C)				
Tested number of positions	12			
Tested conductor cross section	2.5 mm^2			
Test current	16 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)	4.8 kV			
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV			
Environmental and endurance tests (E)				
Specification	IEC 61984:2008-10			
Degree of protection	Finger safety with IP20 test finger			