

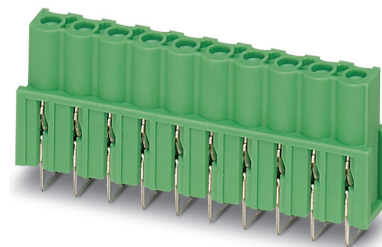
Data sheet

2021-03-10
Product version 04
Document revision 00

Order No.: 1785968

Type: ICV 2,5/ 4-G-5,08

PCB header



The figure shows a 10-position version of the product

1 Main features



- | | | | |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos. | 4 | • Nominal current | 12 A |
| • Nominal cross section | 2.5 mm ² | • Nominal voltage | 320 V |
| • Color | green (6021) | • Connection direction | 90 ° |
| • Pitch | 5.08 mm | • Type of packaging | packed in cardboard |
| • Mounting type | Wave soldering | | |

2 Your advantages

- ✓ Maximum flexibility when it comes to device design – one header for connectors with different connection technologies
- ✓ Easy PCB replacement thanks to plug-in modules
- ✓ Well-known mounting principle allows worldwide use
- ✓ Inverted header with socket contacts for touch-proof device outputs or PCB/PCB connections



Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1785968

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1785968 ICV 2,5/ 4-G-5,08

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



1785968 ICV 2,5/ 4-G-5,08**5 General Technical Data****5.1 item properties**

Order No.	1785968
Type	ICV 2,5/ 4-G-5,08
Plug-in system	CLASSIC COMBICON
Product type	PCB header
Type of contact	Female connector
Range of articles	ICV 2,5/..-G
Pitch	5.08 mm
Number of positions	4
Number of levels	1
Number of connections	4
Number of potentials	4
Mounting type	Wave soldering
Connection direction of the connector to the PCB	90 °
Pin layout	Linear pinning
Solder pins per potential	2
Type	Inverted

1785968 ICV 2,5/ 4-G-5,08**6 Mounting****6.1 Flange mounting**

Type of locking	without
Mounting flange	without

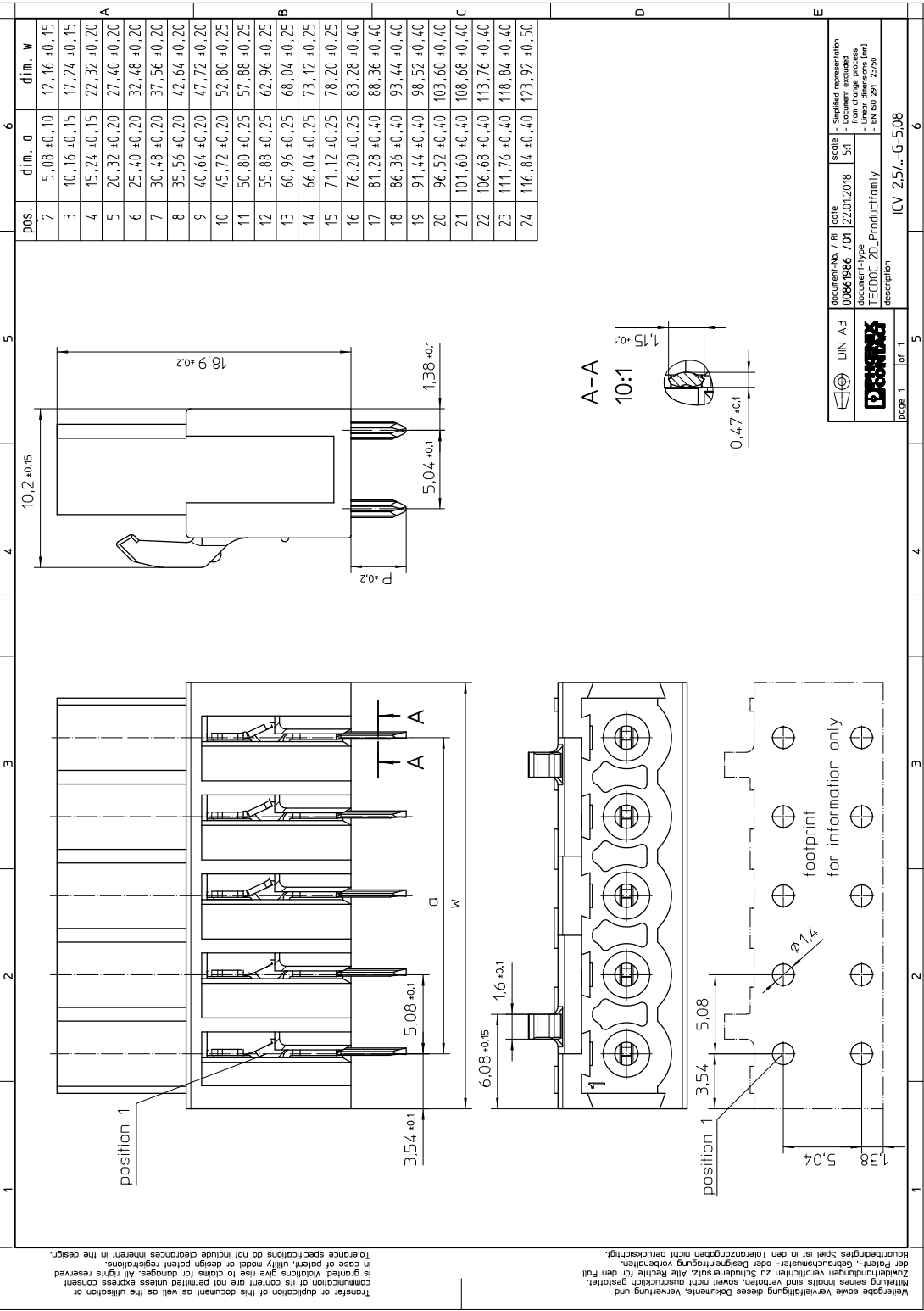
7 Material properties**7.1 Material of metal parts**

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	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

1785968 ICV 2,5/ 4-G-5,08**8 Dimensions****8.1 Dimensions for the product**

Length	10.2 mm
Width	22.32 mm
Height (without solder pin)	18.9 mm
Total height	22.4 mm
Solder pin [P]	3.5 mm

9 Series drawing



1785968 ICV 2,5/ 4-G-5,08**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

Ambient temperature (assembly)

-5 °C ... 100 °C

Ambient temperature (operation)

-40 °C ... 100 °C (dependent on the derating curve)

1785968 ICV 2,5/ 4-G-5,08**13 Mechanical tests****13.1 Visual examination**

Specification	IEC 61984:2008-10
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 Polarization and coding

Polarization and coding	Test passed
Specification	IEC 60512-13-5:2006-02
Test force	20 N

13.5 Contact retention in insert

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

1785968 ICV 2,5/ 4-G-5,08

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.

8 N

Withdraw strength per pos. approx.

6 N

1785968 ICV 2,5/ 4-G-5,08**15 Electrical tests**

Rated current / conductor cross section	12 A / 2.5 mm ²
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Contact resistance	1.5 mΩ
Degree of pollution	2

15.1 Air and creepage distances

Component	PCB header		
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	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

1785968 ICV 2,5/ 4-G-5,08

16 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

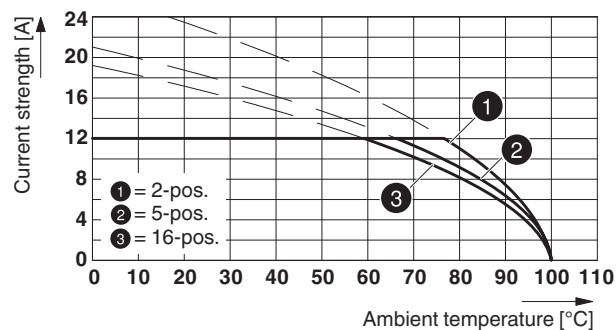
Reduction factor

0.8

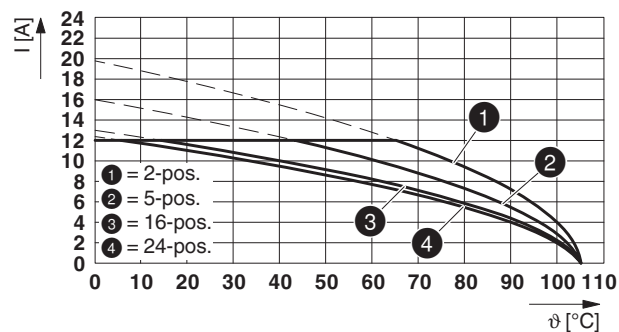
Conductor cross section

2.5 mm²

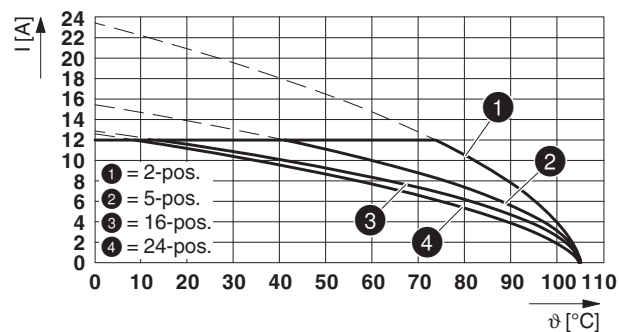
Type: FKIC 2,5/...-ST-5,08 with ICV 2,5/...-G-5,08

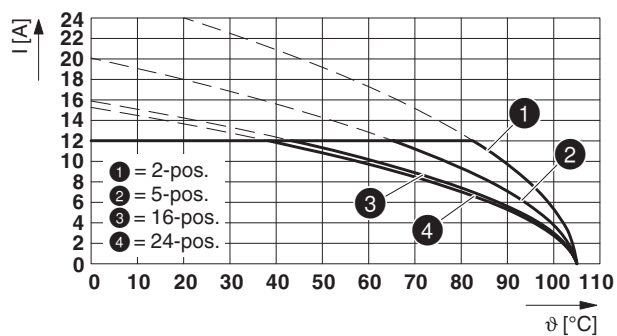
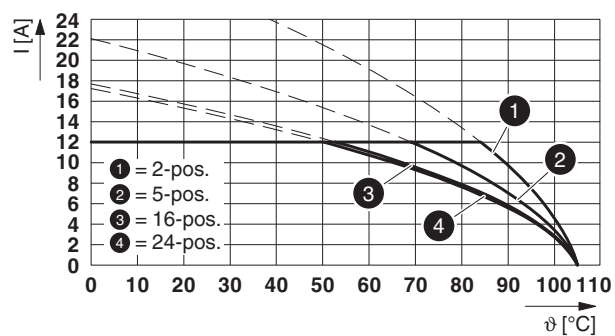


Type: ICV 2,5/...-G-5,08 with MSTBVA 2,5/...-G-5,08



Type: ICV 2,5/...-G-5,08 with MSTBV 2,5/...-G-5,08



1785968 ICV 2,5/ 4-G-5,08**Type: ICV 2,5/...-G-5,08 with MSTBW 2,5/...-G-5,08****Type: ICV 2,5/...-G-5,08 with MSTB 2,5/...-G-5,08**

1785968 ICV 2,5/ 4-G-5,08**17 Environmental and durability tests****17.1 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.

17.2 Insulation resistance

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

1785968 ICV 2,5/ 4-G-5,08**18 Approvals / Certificates**

CSA 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B				
	300 V	10 A	-	-
Usegroup D				
	300 V	10 A	-	-
IECEE CB Scheme 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	250 V	12 A	-	-
EAC 				
VDE Zeichengenehmigung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	250 V	12 A	-	-
cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B				
	250 V	12 A	-	-
Usegroup D				
	300 V	10 A	-	-
VDE Zeichengenehmigung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	250 V	12 A	-	-

1785968 ICV 2,5/ 4-G-5,08**19 Commercial Data**

Order No.	1785968
Type	ICV 2,5/ 4-G-5,08
Pieces per package	50
Net weight	2.788 g
GTIN	4017918042110
	Information that applies locally, see link on page 1
	Information that applies locally, see link on page 1

20 corresponding plugs

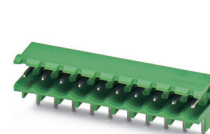
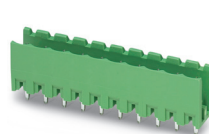
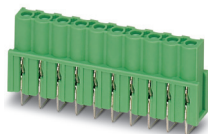
Order No.	Type
1898855	DFK-MSTBA 2,5/ 4-G-5,08
1850453	MSTBO 2,5/ 4-GL-5,08
1847123	MSTBO 2,5/ 4-GR-5,08
1872486	A-MSTBVA 2,5/ 4-G-5,08
1786190	IC 2,5/ 4-ST-5,08
1735866	MSTBW 2,5/ 4-G-5,08
1755752	MSTBVA 2,5/ 4-G-5,08
1758034	MSTBV 2,5/ 4-G-5,08
1759033	MSTB 2,5/ 4-G-5,08
1902767	MSTBA 2,5/ 4-G-5,08 THT
1902835	MSTBVA 2,5/ 4-G-5,08 THT
1899155	DFK-MSTBVA 2,5/ 4-G-5,08
1845358	MDSTBVA 2,5/ 4-G-5,08
1842089	MDSTBA 2,5/ 4-G-5,08
1880326	EMSTBA 2,5/ 4-G-5,08
1859535	EMSTBVA 2,5/ 4-G-5,08
1873375	FKIC 2,5/ 4-ST-5,08
1770960	MSTBA 2,5/ 4-G-5,08-LA
1757268	MSTBA 2,5/ 4-G-5,08
1770737	MSTB 2,5/ 4-G-5,08-LA
1736755	MDSTBV 2,5/ 4-G1-5,08
1736713	MDSTB 2,5/ 4-G1-5,08
1767397	SMSTBA 2,5/ 4-G-5,08
1769489	SMSTB 2,5/ 4-G-5,08
1823862	ICC 2,5/ 4-STZ-5,08

21 Accessories

Description	Order No.	Type
	0201744	MPS-MT
	0201647	RPS
Coding profile, is inserted into the slot on the plug or inverted header, red insulating material	1734634	CP-MSTB
Pair of guide rails, is inserted into the groove ICV/...G, height: 86 mm, hole diameter: 3.4 mm	1808353	FLRP/ICV 80

1785968 ICV 2,5/ 4-G-5,08

22 Combination tests

**ICV 2,5/..-G**

IEC 61984

Mechanical tests (A)

Insertion/withdrawal force per position

approx. 8 N / 6 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

1.5 mΩ

Rated impulse voltage at sea level
Voltage waveform $\geq (1.2/50 \mu s)$

4.8 kV

Power-frequency withstand voltage
Voltage waveform $\geq (50/60 \text{ Hz})$

2.21 kV

Thermal tests (C)

Tested number of positions

16

Tested conductor cross section

2.5 mm²

Test current

12 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 dm³ SO₂ on 300 dm³/
40 °C/1 cycleRated impulse voltage at sea level
Voltage waveform $\geq (1.2/50 \mu s)$

4.8 kV

Power-frequency withstand voltage
Voltage waveform $\geq (50/60 \text{ Hz})$

2.21 kV

Environmental and endurance tests (E)

Specification

IEC 61984:2008-10

Degree of protection

Finger safety with IP20
test finger**ICV 2,5/..-G**

IEC 61984

MSTBVA 2,5/..-G

IEC 61984

approx. 9 N / 8 N

Test passed

Test passed

2.4 mΩ

25

2.4 mΩ

4.8 kV

2.21 kV

24

2.5 mm²

12 A

Test passed

-40 °C/2 h

105 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger**MSTBV 2,5/..-G**

IEC 61984

approx. 10 N / 8 N

Test passed

Test passed

2.3 mΩ

25

2.4 mΩ

4.8 kV

2.21 kV

24

2.5 mm²

12 A

Test passed

-40 °C/2 h

105 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger**MSTBW 2,5/..-G**

IEC 61984

approx. 12 N / 8 N

Test passed

Test passed

1.3 mΩ

25

1.3 mΩ

4.8 kV

2.21 kV

24

2.5 mm²

12 A

Test passed

-40 °C/2 h

105 °C/168 h

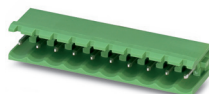
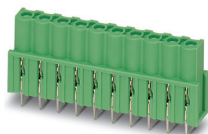
0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger

1785968 ICV 2,5/ 4-G-5,08**ICV 2,5/..-G**

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 1st levelContact resistance R_1 2nd level

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

MSTB 2,5/..-G

IEC 61984

approx. 11 N / 8 N

Test passed

Test passed

1.2 m Ω

25

1.3 m Ω

4.8 kV

2.21 kV

24

2.5 mm²

12 A

Test passed

-40 °C/2 h

105 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger