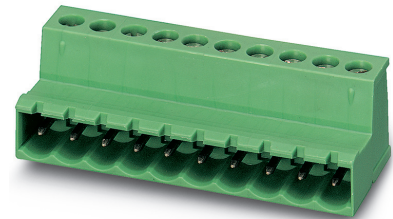


# Data sheet

Order No.: 1786190

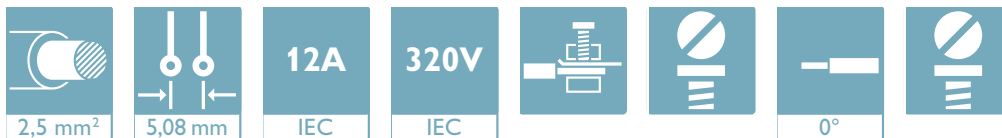
Type: IC 2,5/ 4-ST-5,08

PCB connector, Screw connection with tension sleeve



The figure shows a 10-position version of the product

## 1 Main features



• No. of pos.	4	• Nominal current	12 A
• Conductor cross section	2.5 mm <sup>2</sup>	• Nominal voltage	320 V
• Color	green (6021)	• Connection direction	0 °
• Pitch	5.08 mm	• Type of packaging	packed in cardboard
• Connection method	Screw connection with tension sleeve		

## 2 Your advantages

- ✓ Well-known connection principle allows worldwide use
- ✓ Easy PCB replacement thanks to plug-in modules
- ✓ Inverted connector with pin contacts for touch-proof device outputs or free-hanging cable/cable connections
- ✓ Can be combined with the MSTB 2,5 range
- ✓ Low temperature rise, thanks to maximum contact force



Make sure you always use the latest documentation.

It can be downloaded at: [phoenixcontact.net/product/1786190](https://phoenixcontact.net/product/1786190)

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



**1786190 IC 2,5/ 4-ST-5,08****5 General Technical Data****5.1 item properties**

Order No.	1786190
Type	IC 2,5/ 4-ST-5,08
Connector system	CLASSIC COMBICON
Product type	PCB connector
Type of contact	Male connector
Range of articles	IC 2,5/...-ST
Pitch	5.08 mm
Number of positions	4
Number of rows	1
Number of connections	4
Number of potentials	4
Connection method	Screw connection with tension sleeve
Screw thread	M3
Drive form screw head	Slotted (L)
Connection direction of the conductor to plug-in direction	0 °
Type	Inverted

**1786190 IC 2,5/ 4-ST-5,08**

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**6 Mounting**

**6.1 Flange mounting**

Type of locking	without
Mounting flange	without

**1786190 IC 2,5/ 4-ST-5,08****7 Conductor connection****7.1 Connection capacity**

Nominal cross section	2.5 mm <sup>2</sup>
Conductor cross section, rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section, flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible, with ferrule with plastic sleeve	0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
2 conductors with same cross section, solid	0.2 mm <sup>2</sup> ... 1 mm <sup>2</sup>
2 conductors with same cross section, stranded	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
2 conductors with same cross section, stranded, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 1 mm <sup>2</sup>
2 conductors with the same cross section flexible with TWIN ferrule and plastic sleeve	0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Cylindrical gauge a x b / diameter	2.8 mm x 2.0 mm / 2.4 mm
Stripping length	7 mm
Tightening torque	0.5 Nm ... 0.6 Nm

**7.2 Connection capacity AWG**

Conductor cross section AWG	24 ... 12
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**1786190 IC 2,5/ 4-ST-5,08****8 Material properties****8.1 Material of metal parts**

Note	WEEE/RoHS-compliant, whisker-free acc. to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Terminal point surface	Nickel (2 - 3 µm Ni) , Tin (5 - 7 µm Sn)
Surface contact area	Nickel (2 - 3 µm Ni) , Tin (5 - 7 µm Sn)
Surface characteristics	Tin-plated

**8.2 Material of plastic parts**

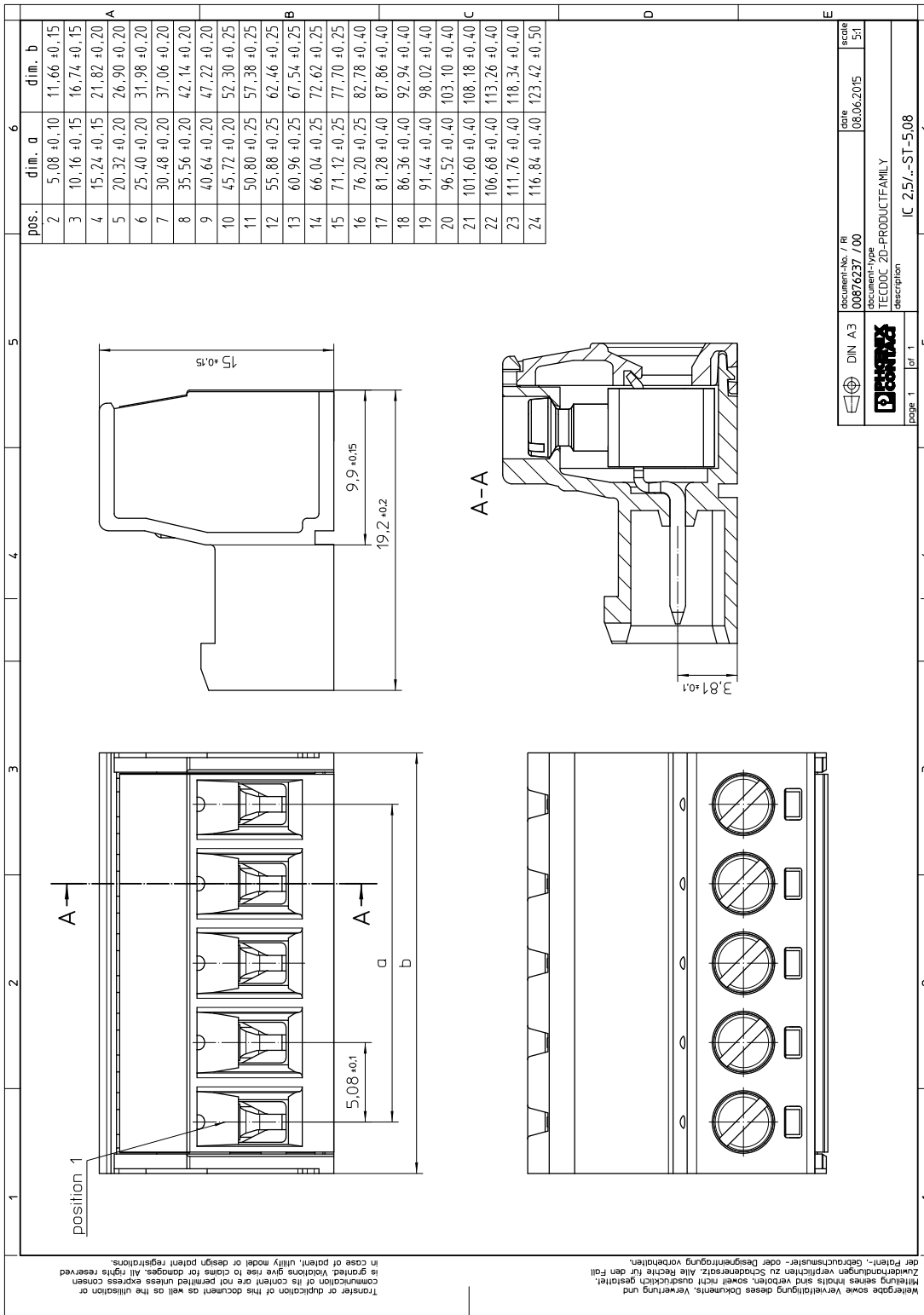
	Housing
Color	green (6021)
Insulating material	PA
Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0
Glow wire flammability index GWFI according to EN 60695-2-12	850
Glow wire ignition temperature GWIT according to EN 60695-2-13	775
Temperature for the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

**1786190 IC 2,5/ 4-ST-5,08****9 Dimensions****9.1 Dimensions for the product**

Length		19.2 mm
Width		21.82 mm
Installed height		15 mm
Total height		15 mm

1786190 IC 2,5/ 4-ST-5,08

10 Series drawing



**1786190 IC 2,5/ 4-ST-5,08****11 Product notes****11.1 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.

**12 Packaging information**

Type of packaging

packed in cardboard

Pieces per package

50

**13 Application****13.1 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)

**1786190 IC 2,5/ 4-ST-5,08****14 General tests****14.1 Specification**

Specification	IEC 61984
Specification	IEC 60999-1
Brief description	DIN rail connectors

**15 Mechanical tests****15.1 Check for damage to conductor or loosening**

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

**15.2 Pull-out test**

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

**15.3 Torque test**

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

**15.4 Visual examination**

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

**15.5 Dimensional test**

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

**15.6 Resistance of marking**

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

**1786190 IC 2,5/ 4-ST-5,08****16 Insertion and withdrawal forces**

Insertion and withdrawal force	
Specification	Test passed
No. of cycles	25
Insertion strength per pos. approx.	8 N
Withdraw strength per pos. approx.	7 N

**1786190 IC 2,5/ 4-ST-5,08****17 Electrical tests**

Rated current / conductor cross section	12 A / 2.5 mm <sup>2</sup>
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Contact resistance	2.9 mΩ
Degree of pollution	2

**17.1 Air and creepage distances**

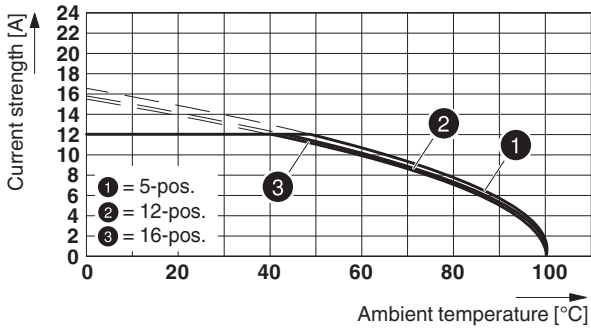
Component	PCB connector		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	250 V	320 V	630 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	2	2
Overvoltage category	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	3.2 mm	3 mm	3.2 mm

1786190 IC 2,5/ 4-ST-5,08

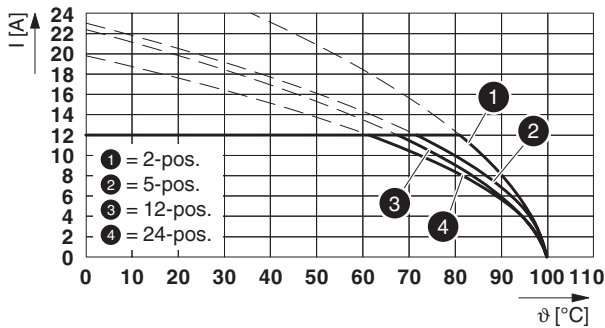
18 Current carrying capacity/derating curves

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 mm <sup>2</sup>

Type: (U)MSTBVK 2,5/...-ST-5,08 with IC 2,5/...-ST-5,08



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



**1786190 IC 2,5/ 4-ST-5,08****19 Environmental and durability tests****19.1 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.

**19.2 Insulation resistance**

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






1786190 IC 2,5/ 4-ST-5,08

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## 20 Type approval and special tests

## 1786190 IC 2,5/ 4-ST-5,08

## 21 Approvals / Certificates

CSA 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm <sup>2</sup> ]
<b>Usegroup B</b>				
	300 V	10 A	28 - 12	-
<b>Usegroup D</b>				
	300 V	10 A	28 - 12	-
IECEE CB Scheme 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm <sup>2</sup> ]
	250 V	12 A	-	0.2 - 2.5
EAC 				
cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm <sup>2</sup> ]
<b>Usegroup B</b>				
	250 V	12 A	30 - 12	-
<b>Usegroup D</b>				
	300 V	10 A	30 - 12	-
VDE Zeichengenehmigung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm <sup>2</sup> ]
	250 V	12 A	-	0.2 - 2.5

**1786190 IC 2,5/ 4-ST-5,08****22 Commercial Data**

Order No.	1786190
Type	IC 2,5/ 4-ST-5,08
Pieces per package	50
Net weight	6.74 g
GTIN	4017918042349
	Information that applies locally, see link on page 1

**23 corresponding headers**

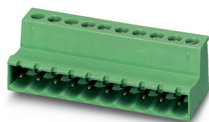
Order No.	Type
1757035	MSTB 2,5/ 4-ST-5,08
1785968	ICV 2,5/ 4-G-5,08
1809527	MSTBC 2,5/ 4-STZ-5,08
1808832	MSTBC 2,5/ 4-ST-5,08
1792773	MVSTBW 2,5/ 4-ST-5,08
1792265	MVSTBR 2,5/ 4-ST-5,08
1780002	MSTBT 2,5/ 4-ST-5,08
1917927	QC 0,75/ 4-ST-5,08
1902136	FKCT 2,5/ 4-ST-5,08
1883271	QC 1/ 4-ST-5,08
1873977	FKCVR 2,5/ 4-ST-5,08
1873074	FKC 2,5/ 4-ST-5,08
1873029	ZFKK 1,5-ICV-5,08
1872716	A-ICV 2,5/ 4-G-5,08
1777303	FRONT-MSTB 2,5/ 4-ST-5,08
1776155	MSTB 2,5/ 4-STZ-5,08
1769036	MSTBP 2,5/ 4-ST-5,08
1873676	FKCVW 2,5/ 4-ST-5,08

**24 Accessories**

Description	Order No.	Type
Coding section, inserted into the recess in the header or the inverted plug, red insulating material	1734401	CR-MSTB
	0804293	SK 5,08/3,8:FORTL.ZAHLEN
	1803882	KGG-MSTB 2,5/ 4
Actuation tool, for ST terminal blocks, insulated, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip	1205053	SZS 0,6X3,5
Keying cap, for forming sections, plugs onto header pin, green insulating material	1755477	MSTB-BL
Insertion bridge for connectors with 5.0 mm or 5.08 mm pitch	1733169	EBP 2- 5

## 1786190 IC 2,5/ 4-ST-5,08

## 25 Combination tests

**IC 2,5/..-ST**

IEC 61984

**MSTBVK 2,5/..-ST**

IEC 61984

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

IEC 61984

**Mechanical tests (A)**

Insertion/withdrawal force per position

approx. 8 N / 7 N

approx. 8 N / 6 N

Polarization when inserted  
Requirement >20 N

Test passed

Test passed

**Durability tests (B)**Contact resistance R<sub>1</sub> 1st level

2.9 mΩ

1.6 mΩ

Contact resistance R<sub>1</sub> 2nd level

Insertion/withdrawal cycles

25

25

Contact resistance R<sub>2</sub>

3 mΩ

1.6 mΩ

Rated impulse voltage at sea level  
Voltage waveform ≥ (1.2/50 μs)

4.8 kV

4.8 kV

Power-frequency withstand voltage  
Voltage waveform ≥ (50/60 Hz)

2.21 kV

2.21 kV

**Thermal tests (C)**

Tested number of positions

16

24

Tested conductor cross section

2.5 mm<sup>2</sup>2.5 mm<sup>2</sup>

Test current

12 A DC

12 A

Upper limiting temperature  
Requirements < 100°C

Test passed

Test passed

**Climatic tests (D)**

Test sequence 1: low temperature storage

-40 °C/2 h

-40 °C/2 h

Test sequence 2: heat storage

100 °C/168 h

100 °C/168 h

Test sequence 3: noxious gas storage  
(ISO 6988)0.2 dm<sup>3</sup> SO<sub>2</sub> on 300 dm<sup>3</sup>/  
40 °C/1 cycle0.2 dm<sup>3</sup> SO<sub>2</sub> on 300 dm<sup>3</sup>/  
40 °C/1 cycleRated impulse voltage at sea level  
Voltage waveform ≥ (1.2/50 μs)

4.8 kV

4.8 kV

Power-frequency withstand voltage  
Voltage waveform ≥ (50/60 Hz)

2.21 kV

2.21 kV

**Environmental and endurance tests (E)**

Specification

IEC 61984:2008-10

IEC 61984:2008-10

Degree of protection

Finger safety with IP20  
test fingerFinger safety with IP20  
test finger