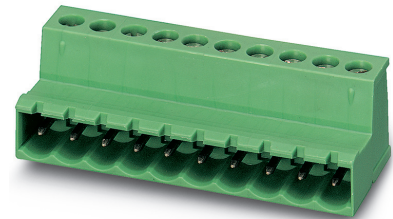


Data sheet

Order No.: 1786255

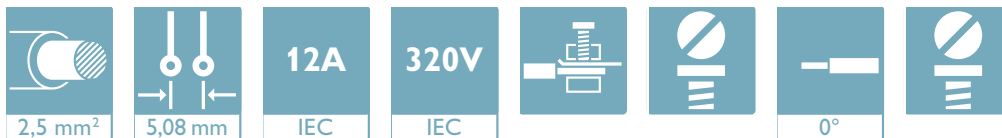
Type: IC 2,5/10-ST-5,08

PCB connector, Screw connection with tension sleeve



The figure shows a 10-position version of the product

1 Main features



• No. of pos.	10	• Nominal current	12 A
• Conductor cross section	2.5 mm ²	• 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/1786255

3 Table of contents

1	Main features.....	1
2	Your advantages	1
3	Table of contents	2
4	3D model in PDF can be activated (Acrobat Reader only).....	3
5	General Technical Data	4
6	Mounting.....	5
7	Conductor connection	6
8	Material properties.....	7
9	Dimensions.....	8
10	Series drawing.....	9
11	Product notes	10
12	Packaging information	10
13	Application.....	10
14	General tests	11
15	Mechanical tests.....	11
16	Insertion and withdrawal forces	12
17	Electrical tests	13
18	Current carrying capacity/derating curves	14
19	Environmental and durability tests	15
20	Type approval and special tests	16
21	Approvals / Certificates.....	17
22	Commercial Data.....	18
23	corresponding headers.....	18
24	Accessories.....	18
25	Combination tests.....	19

1786255 IC 2,5/10-ST-5,08

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



1786255 IC 2,5/10-ST-5,08**5 General Technical Data****5.1 item properties**

Order No.	1786255
Type	IC 2,5/10-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	10
Number of rows	1
Number of connections	10
Number of potentials	10
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

1786255 IC 2,5/10-ST-5,08

6 Mounting

6.1 Flange mounting

Type of locking	without
Mounting flange	without

1786255 IC 2,5/10-ST-5,08**7 Conductor connection****7.1 Connection capacity**

Nominal cross section	2.5 mm ²
Conductor cross section, rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross section, flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm ² ... 2.5 mm ²
Conductor cross section flexible, with ferrule with plastic sleeve	0.25 mm ² ... 2.5 mm ²
2 conductors with same cross section, solid	0.2 mm ² ... 1 mm ²
2 conductors with same cross section, stranded	0.2 mm ² ... 1.5 mm ²
2 conductors with same cross section, stranded, with ferrule without plastic sleeve	0.25 mm ² ... 1 mm ²
2 conductors with the same cross section flexible with TWIN ferrule and plastic sleeve	0.5 mm ² ... 1.5 mm ²
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
-----------------------------	-----------

1786255 IC 2,5/10-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

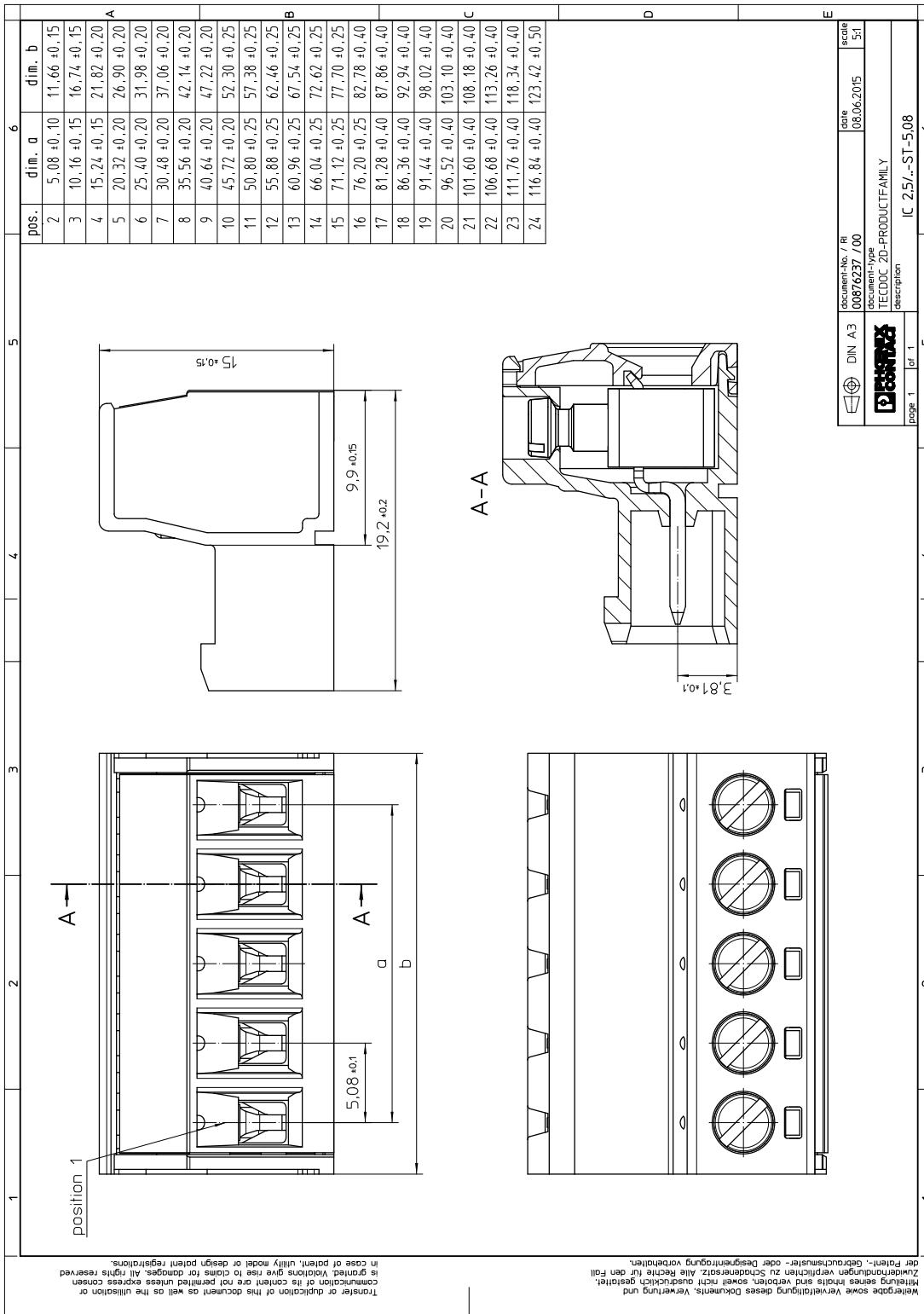
	Housing
Color	green (6021)
Insulating material	PA
Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0
Glow wire flammability index GWFI according to EN 60695-2-12	850
Glow wire ignition temperature GWIT according to EN 60695-2-13	775
Temperature for the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

1786255 IC 2,5/10-ST-5,08**9 Dimensions****9.1 Dimensions for the product**

Length		19.2 mm
Width		52.3 mm
Installed height		15 mm
Total height		15 mm

1786255 IC 2,5/10-ST-5,08

10 Series drawing



1786255 IC 2,5/10-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)

1786255 IC 2,5/10-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 ² / solid / > 10 N
Conductor cross section/conductor type/tractive force actual value	0.2 mm ² / flexible / > 10 N
Conductor cross section/conductor type/tractive force actual value	2.5 mm ² / solid / > 50 N
Conductor cross section/conductor type/tractive force actual value	2.5 mm ² / 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

1786255 IC 2,5/10-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

1786255 IC 2,5/10-ST-5,08**17 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	2.9 mΩ
Degree of pollution	2

17.1 Air and creepage distances

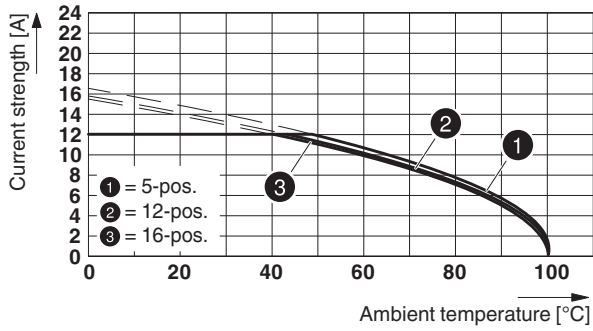
Component	PCB connector		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	250 V	320 V	630 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	2	2
Overvoltage category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

1786255 IC 2,5/10-ST-5,08

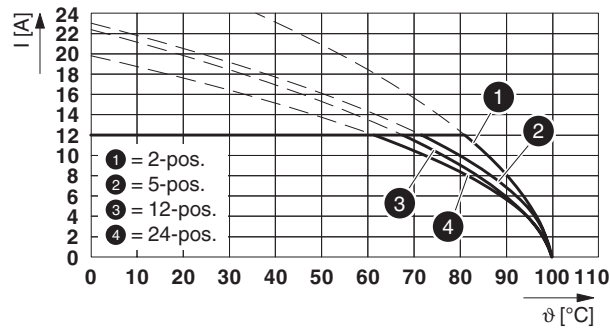
18 Current carrying capacity/derating curves

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 ²

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



1786255 IC 2,5/10-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

20 Type approval and special tests

1786255 IC 2,5/10-ST-5,08

21 Approvals / Certificates

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

1786255 IC 2,5/10-ST-5,08**22 Commercial Data**

Order No.	1786255
Type	IC 2,5/10-ST-5,08
Pieces per package	50
Net weight	16.273 g
GTIN	4017918042400
	Information that applies locally, see link on page 1

23 corresponding headers

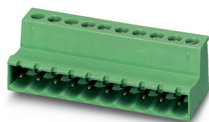
Order No.	Type
1786488	IC 2,5/10-G-5,08
1792320	MVSTBR 2,5/10-ST-5,08
1777361	FRONT-MSTB 2,5/10-ST-5,08
1769094	MSTBP 2,5/10-ST-5,08
1764303	MSTB 2,5/10-STZ-5,08
1757093	MSTB 2,5/10-ST-5,08
1917985	QC 0,75/10-ST-5,08
1873731	FKCVW 2,5/10-ST-5,08
1873139	FKC 2,5/10-ST-5,08
1873029	ZFKK 1,5-ICV-5,08
1872774	A-ICV 2,5/10-G-5,08
1853094	TMSTBP 2,5/10-ST-5,08
1833894	UMSTBVK 2,5/10-ST-5,08
1831391	MSTBVK 2,5/10-ST-5,08
1826364	SMSTB 2,5/10-ST-5,08
1883336	QC 1/10-ST-5,08
1874031	FKCVR 2,5/10-ST-5,08
1902194	FKCT 2,5/10-ST-5,08
1809585	MSTBC 2,5/10-STZ-5,08
1824201	MSTBU 2,5/10-STD-5,08

24 Accessories

Description	Order No.	Type
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
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
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
	1783740	KGS-MSTB 2,5/10

1786255 IC 2,5/10-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 R₁ 1st level

2.9 mΩ

1.6 mΩ

Contact resistance R₁ 2nd level

Insertion/withdrawal cycles

25

25

Contact resistance R₂

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 mm²2.5 mm²

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 dm³ SO₂ on 300 dm³/
40 °C/1 cycle0.2 dm³ SO₂ on 300 dm³/
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