

TVFKCL 1,5/ 4-ST CP2,3BD:S12SO - PCB connector



1701293

<https://www.phoenixcontact.com/us/products/1701293>

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The figure shows a 10-position version of the product

PCB TWIN plug, nominal cross section: 1.5 mm², color: green, nominal current: 10 A, rated voltage (III/2): 320 V, contact surface: Sn, contact connection type: Socket, number of potentials: 4, number of rows: 1, number of positions: 4, number of connections: 8, product range: TVFKCL 1,5/..-ST, 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: without, mounting method: without, type of packaging: packed in cardboard

Your advantages

- Time saving push-in connection, tools not required
- Potentials can be easily looped through – ideal for BUS applications
- Intuitive operation due to color-coded actuating push button
- Can be combined with the MSTB 2,5 range
- Quick and convenient testing using integrated test option

Commercial data

Item number	1701293
Packing unit	50 pc
Minimum order quantity	50 pc
Product key	AACFNB
GTIN	4046356525107
Weight per piece (including packing)	6.636 g
Weight per piece (excluding packing)	6.276 g
Country of origin	GR

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Technical data

Product properties

Product type	PCB TWIN plug
Product family	TVFKCL 1,5/..-ST
Product line	COMBICON Connectors M
Number of positions	4
Pitch	5 mm
Number of connections	8
Number of rows	1
Number of potentials	4
Mounting type	without

Electrical properties

Properties

Nominal current I_N	10 A
Nominal voltage U_N	320 V
Contact resistance	1.3 m Ω
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
Rated voltage (II/2)	630 V
Rated surge voltage (II/2)	4 kV

Connection data

Connection technology

Type	Standard
Connector system	COMBICON MSTB 2,5
Nominal cross section	1.5 mm ²
Contact connection type	Socket

Interlock

Locking type	without
Mounting type	without

Conductor connection

Connection method	Push-in spring connection
Conductor/PCB connection direction	0 °
Conductor cross-section rigid	0.2 mm ² ... 1.5 mm ²
Conductor cross-section flexible	0.2 mm ² ... 1.5 mm ²
Conductor cross-section AWG	24 ... 16
Conductor cross-section, flexible, with ferrule, without plastic sleeve	0.25 mm ² ... 1.5 mm ² (only together with CRIMPFOX 6)

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Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.25 mm ² ... 1.5 mm ² (only together with CRIMPFOX 6)
Cylindrical gauge a x b / diameter	2.4 mm x 1.5 mm / 1.9 mm
Stripping length	8 mm

Specifications for ferrules without insulating collar

recommended crimping tool	1212034 CRIMPFOX 6
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Specifications for ferrules with insulating collar

recommended crimping tool	1212034 CRIMPFOX 6
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Material specifications

Material data - contact

Note	WEEE/RoHS-compliant, free of whiskers according to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Surface characteristics	hot-dip tin-plated
Metal surface terminal point (top layer)	Tin (4 µm - 8 µm Sn)
Metal surface contact area (top layer)	Tin (4 µm - 8 µm Sn)

Material data - housing

Color (Housing)	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

Material data – actuating element

Color (Actuating element)	orange (2003)
Insulating material	PA
Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0

Dimensions

Dimensional drawing	
Pitch	5 mm
Width [w]	20 mm

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Height [h]	15 mm
Length [l]	25.8 mm

Notes

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.
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Mechanical tests

Conductor connection

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

Test for conductor damage and slackening

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

Repeated connection and disconnection

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

Pull-out test

Specification	IEC 60999-1:1999-11
Conductor cross-section/conductor type/tractive force setpoint/actual value	0.2 mm ² / solid / > 10 N
	0.2 mm ² / flexible / > 10 N
	1.5 mm ² / solid / > 40 N
	1.5 mm ² / flexible / > 40 N

Insertion and withdrawal forces

Specification	IEC 60512-13-2:2006-02
Result	Test passed
No. of cycles	25
Insertion strength per pos. approx.	8 N
Withdraw strength per pos. approx.	6 N

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

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

Environmental and real-life conditions

Durability test

Specification	IEC 60512-9-1:2010-03
Impulse withstand voltage at sea level	4.8 kV
Contact resistance R ₁	1.3 mΩ
Contact resistance R ₂	1.4 mΩ
Insertion/withdrawal cycles	25
Insulation resistance, neighboring positions	> 5 MΩ

Climatic test

Specification	ISO 6988:1985-02
Corrosive stress	0.2 dm ³ SO ₂ on 300 dm ³ /40 °C/1 cycle
Thermal stress	105 °C/168 h
Power-frequency withstand voltage	2.21 kV

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)
Acceleration	5g (60.1 Hz ... 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis

Ambient conditions

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 ... 105 °C (dependent on the derating curve)

Ambient conditions

Ambient temperature (operation)	-40 °C ... 105 °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

Electrical tests

Thermal test | Test group C

Specification	IEC 60512-5-1:2002-02
Tested number of positions	10

Insulation resistance

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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	I
Comparative tracking index (IEC 60112)	CTI 600
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)	3.2 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 mm
Rated insulation voltage (II/2)	630 V
Rated surge voltage (II/2)	4 kV
minimum clearance value - non-homogenous field (II/2)	3 mm
minimum creepage distance (II/2)	3.2 mm

Packaging specifications

Type of packaging	packed in cardboard
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Drawings

Diagram



Type: TVFKC 1,5/...-ST with MSTB 2,5/...-G

Diagram



Type: TVFKC 1,5/...-ST with MSTBO 2,5/...-G1(L/R)

Diagram



Type: TVFKC 1,5/...-ST with MSTBA 2,5/...-G

Diagram



Type: TVFKC 1,5/...-ST with MSTBV 2,5/...-G

Diagram



Type: TVFKC 1,5/...-ST with MSTBVA 2,5/...-G

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Approvals

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 cULus Recognized Approval ID: E60425-19931011		Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
B					
Only rigid conductors	300 V	10 A	24 - 16	-	
Standard	300 V	8 A	24 - 16	-	
D					
Only rigid conductors	300 V	10 A	24 - 16	-	
Alternative 1	300 V	8 A	24 - 16	-	

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Classifications

ECLASS

ECLASS-13.0	27460202
ECLASS-15.0	27460202

ETIM

ETIM 10.0	EC002638
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UNSPSC

UNSPSC 21.0	39121400
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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EF3.1 Climate Change

CO2e kg	0.093 kg CO2e
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