

FRONT 2,5-H/SA 5-EX - PCB terminal block

1701159

<https://www.phoenixcontact.com/us/products/1701159>

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PCB terminal block, nominal current: 21 A, nominal cross section: 2.5 mm², number of potentials: 1, number of rows: 1, number of positions per row: 1, product range: FRONT 2,5-H-EX, pitch: 5 mm, connection method: Front screw connection, screw head form: L Slotted, mounting: Wave soldering, conductor/PCB connection direction: 0 °, color: green, Pin layout: Linear pinning, Solder pin [P]: 3.5 mm, number of solder pins per potential: 2, type of packaging: packed in cardboard. The article can be aligned to create different nos. of positions!

Your advantages

- Well-known connection principle allows worldwide use
- Low temperature rise, thanks to maximum contact force
- Satisfies the more stringent safety requirements of "Ex e" protection according to IEC 60079-7 for potentially explosive areas
- Operation and conductor connection from one direction enable integration into front of device
- Two solder pins reduce the mechanical strain on the soldering spots
- The latching on the side enables various numbers of positions to be combined
- Allows connection of two conductors

Commercial data

Item number	1701159
Packing unit	50 pc
Minimum order quantity	50 pc
Sales key	AA13
Product key	AAMFDA
GTIN	4017918022990
Weight per piece (including packing)	3.56 g
Weight per piece (excluding packing)	3.32 g
Customs tariff number	85369010
Country of origin	PL

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Technical data

Product properties

Product type	PCB terminal block
Product family	FRONT 2,5-H-EX
Product line	COMBICON Terminals M
Type	PC terminal block can be aligned
Number of positions	1
Pitch	5 mm
Number of connections	1
Number of rows	1
Number of potentials	1
Pin layout	Linear pinning
Solder pins per potential	2

Electrical properties

Properties

Nominal current I_N	21 A
Nominal voltage U_N	176 V
Rated current / conductor cross-section	21 A/2.5 mm ²

Ex data

Ex approval

Identification	0344 [Ⓢ] II 2GD / Ex eb IIC Gb
EU-type examination certificate	KEMA 00ATEX2053 U
IECEx certificate	IECEx KEM 07.0023 U

Connection data

Connection technology

Type	PC terminal block can be aligned
Nominal cross section	2.5 mm ²

Conductor connection

Connection method	Front screw connection
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 AWG	24 ... 14
2 conductors with same cross section, rigid	0.2 mm ² ... 0.75 mm ²
2 conductors with same cross section, flexible	0.2 mm ² ... 0.75 mm ²
Stripping length	9 mm
Drive form screw head	Slotted (L)
Tightening torque	0.4 Nm ... 0.5 Nm

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Mounting

Mounting type	Wave soldering
Pin layout	Linear pinning

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 soldering 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

Dimensions

Dimensional drawing	
Pitch	5 mm
Width [w]	6.8 mm
Height [h]	21.8 mm
Length [l]	19.5 mm
Installed height	18.3 mm
Solder pin length [P]	3.5 mm
Pin dimensions	0.8 x 0.8 mm

PCB design

Pin spacing	5 mm
Hole diameter	1.2 mm

Mechanical tests

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Test for conductor damage and slackening

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
	2.5 mm ² / flexible / > 50 N
	2.5 mm ² / solid / > 50 N

Electrical tests

Temperature-rise test

Specification	IEC 60947-7-4:2013-08
Requirement temperature-rise test	The sum of ambient temperature and temperature rise of the PCB terminal block shall not exceed the upper limiting temperature.

Short-time withstand current

Specification	IEC 60947-7-4:2013-08
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Insulation resistance

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

Air clearances and creepage distances |

Insulating material group	I
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Environmental and real-life conditions

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

Glow-wire test

Specification	IEC 60695-2-10:2013-04
Temperature	850 °C
Time of exposure	5 s

Aging

Specification	IEC 60947-7-4:2013-08
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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)	-50 °C ... 110 °C

Packaging specifications

Type of packaging	packed in cardboard
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Drawings

Dimensional drawing



Diagram



Type: FRONT 2,5-H/SA 5/...

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Drilling plan/solder pad geometry



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1701159>

 cULus Recognized Approval ID: E192998-20200414				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
keine				
with pitch spacer	275 V	20 A	30 - 12	-
Standard	176 V	10 A	30 - 12	-

 ATEX Approval ID: KEMA 00ATEX2053 U				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
keine				
	176 V	21 A	-	- 2.5
with pitch spacer	275 V	21 A	-	- 2.5
with 2 pitch spacers	440 V	21 A	-	- 2.5

 IECEX Approval ID: IECEX KEM 07.0023U				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
keine				
	176 V	21 A	-	- 2.5
with pitch spacer	275 V	21 A	-	- 2.5
with 2 pitch spacers	440 V	21 A	-	- 2.5

 CCC Approval ID: 2021322313003649				
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Classifications

ECLASS

ECLASS-13.0	27460101
ECLASS-15.0	27460101

ETIM

ETIM 10.0	EC002643
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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	0.034 kg CO2e
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