

# PTSM 0,5/ 4-HTB-2,5-SMD WH R44 - PCB header



1830142

<https://www.phoenixcontact.com/de/produkte/1830142>

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PCB headers, nominal cross section: 0.5 mm<sup>2</sup>, color: signal white, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 4, number of rows: 1, number of positions: 4, number of connections: 4, product range: PTSM 0,5/..-HTB-SMD WH, pitch: 2.5 mm, mounting: SMD soldering, pin layout: Linear pinning, number of solder pins per potential: 1, plug-in system: COMBICON PTSM, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: 44 mm wide tape

## Your advantages

- White design: Stable color when welding and during use
- Designed for integration into the SMT soldering process
- Supplied in tape-on-reel packing according to IEC 60286-3 for automated mounting
- Additional solder anchors reduce the mechanical strain on the soldering spots
- Through-board header for low plug-in connection height on the PCB

## Commercial Data

Item number	1830142
Packing unit	330 pc
Minimum order quantity	330 pc
Sales Key	E1 - Leiterplattenanschl.
Product Key	AAAUTA
Catalog Page	Page 23 (NTK-2014)
GTIN	4046356884549
Weight per Piece (including packing)	2,59 g
Weight per Piece (excluding packing)	1,46 g
Customs tariff number	85366930
Country of origin	IN

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## Technical Data

### Product properties

Type	Standard
Product line	COMBICON Connectors XS
Product type	PCB headers
Product family	PTSM 0,5/...-HTB-SMD WH
Number of positions	4
Pitch	2.5 mm
Number of connections	4
Number of rows	1
Mounting flange	without
Number of potentials	4
Pin layout	Linear pinning
Solder pins per potential	1

### Electrical properties

Nominal current $I_N$	6 A
Nominal voltage $U_N$	160 V
Degree of pollution	3
Contact resistance	2.4 m $\Omega$
Rated voltage (III/3)	125 V
Rated surge voltage (III/3)	2.5 kV
Rated voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV
	250 V
Rated surge voltage (II/2)	2.5 kV

### Mounting

Mounting type	SMD soldering
Pin layout	Linear pinning

### Processing notes

Process	Reflow soldering
Moisture Sensitive Level	MSL 1
Classification temperature $T_c$	260 °C
Solder cycles in the reflow	3

### 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	Tin-plated

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Metal surface contact area (top layer)	Tin (3 - 5 µm Sn)
Metal surface contact area (middle layer)	Nickel (1.3 - 3 µm Ni)
Metal surface soldering area (top layer)	Tin (3 - 5 µm Sn)
Metal surface soldering area (middle layer)	Nickel (1.3 - 3 µm Ni)

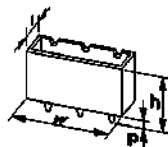
## Material data - housing

Color (Housing)	signal white (9003)
Insulating material	PA
Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0

## Material data – actuating element

Color ( )	( )
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## Dimensions

Dimensional drawing	
Pitch	2.5 mm
Width [w]	14.7 mm
Height [h]	8.5 mm
Length [l]	9.5 mm
Installed height	8.5 mm

## PCB design

Pad geometry	1.2 x 2.5 mm
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## Mechanical tests

### 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	0.14 mm <sup>2</sup> / solid / > 10 N
	0.2 mm <sup>2</sup> / flexible / > 10 N
	0.5 mm <sup>2</sup> / solid / > 20 N
	0.75 mm <sup>2</sup> / flexible / > 30 N

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## Insertion and withdrawal forces

Result	Test passed
No. of cycles	10
Insertion strength per pos. approx.	5 N
Withdraw strength per pos. approx.	3 N

## Contact holder in insert

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

## 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

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

## Electrical tests

## Thermal test | Test group C

Specification	IEC 60512-5-1:2002-02
Tested number of positions	8

## Insulation resistance

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

## Temperature cycles

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

## 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)	125 V
Rated surge voltage (III/3)	2.5 kV
minimum clearance value - non-homogenous field (III/3)	1.5 mm

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minimum creepage distance (III/3)	1.9 mm
Rated insulation voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV
minimum clearance value - non-homogenous field (III/2)	1.5 mm
minimum creepage distance (III/2)	1.5 mm
Rated insulation voltage (II/2)	250 V
Rated surge voltage (II/2)	2.5 kV
minimum clearance value - non-homogenous field (II/2)	1.5 mm
minimum creepage distance (II/2)	1.6 mm

## 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)
Sweep speed	5g (60.1 Hz ... 150 Hz)
Test duration per axis	2.5 h

### Durability test

Specification	IEC 60512-9-1:2010-03
Impulse withstand voltage at sea level	2.95 kV
Contact resistance $R_1$	2.4 m $\Omega$
Contact resistance $R_2$	2.3 m $\Omega$
Insertion/withdrawal cycles	10
Insulation resistance, neighboring positions	> 5 M $\Omega$

### Climatic test

Specification	ISO 6988:1985-02
Corrosive stress	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> /40 °C/1 cycle
Thermal stress	100 °C/168 h
Power-frequency withstand voltage	1.39 kV

### Ambient conditions

Ambient temperature (operation)	-40 °C ... 100 °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

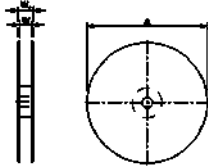
## Packaging specifications

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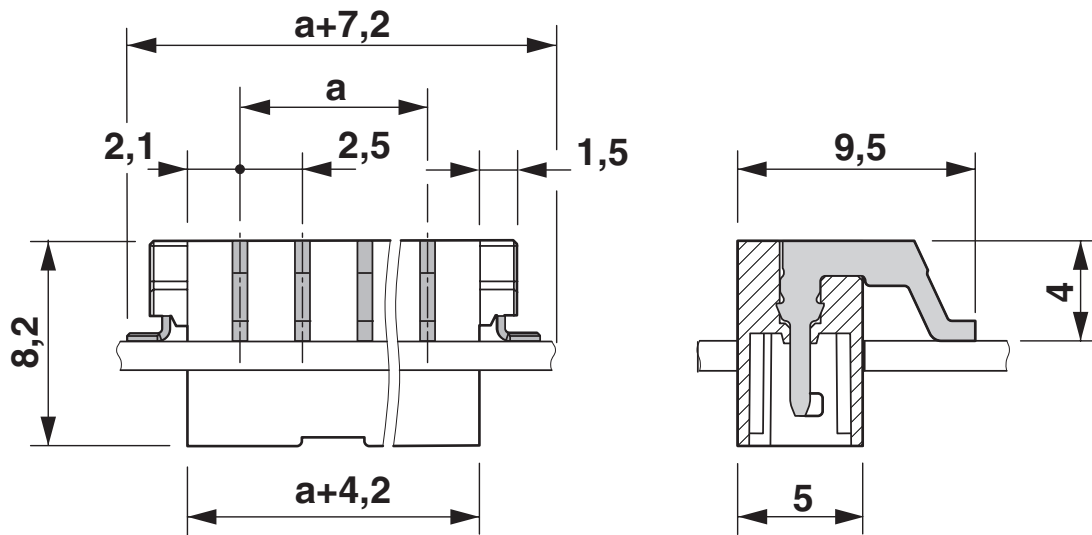
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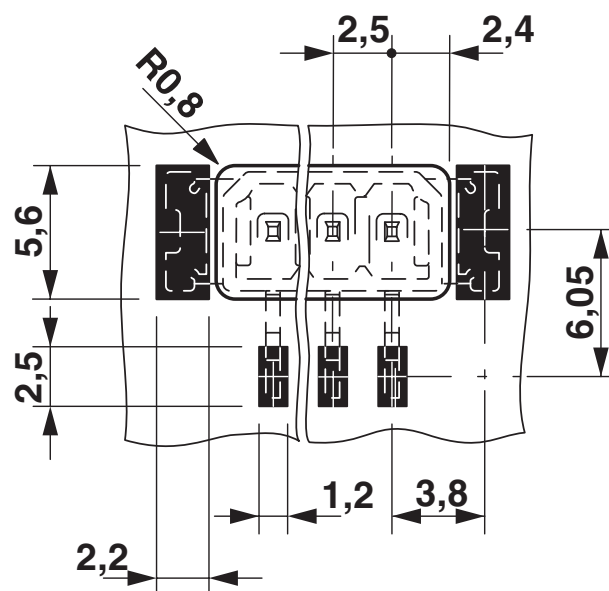
Dimensional drawing	
Type of packaging	44 mm wide tape
[W] tape width	44 mm
[W2] coil overall dimension	50.4 mm
[A] coil diameter	330 mm
Outer packaging type	Transparent-Bag
ESD level	(D) electrostatically conductive
Specification	DIN EN 61340-5-1 (VDE 0300-5-1): 2008-07

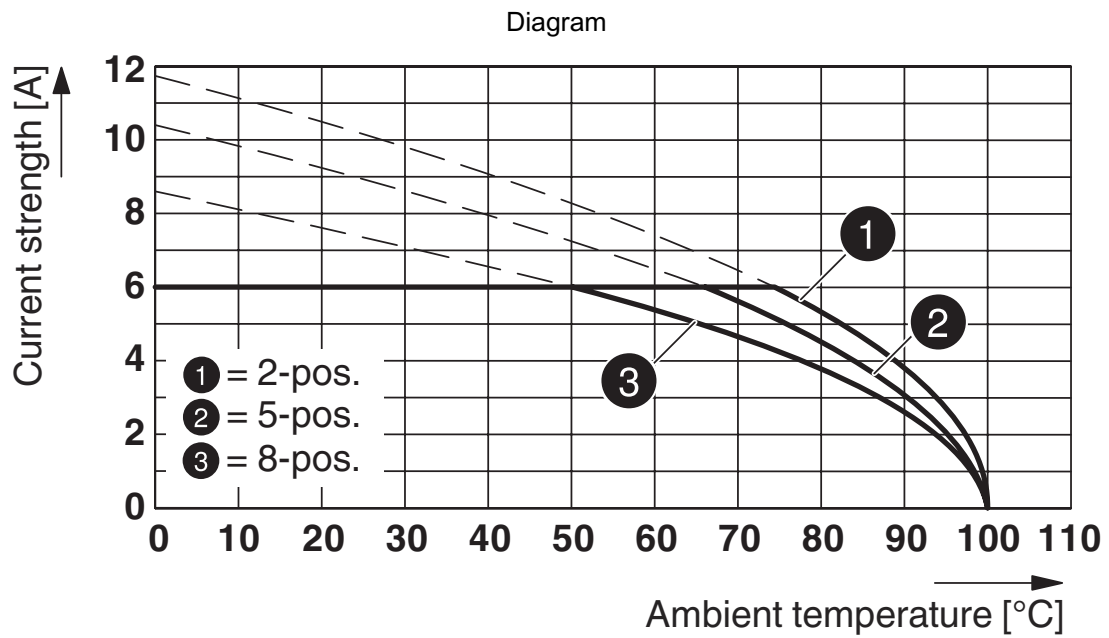
Drawings

Dimensional drawing



Drilling plan/solder pad geometry





Type: PTSM 0,5/...-P-2,5 WH with PTSM 0,5/...-HTB-2,5-SMD WH R...


# PTSM 0,5/ 4-HTB-2,5-SMD WH R44 - PCB header




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## Approvals

 <b>UL Recognized</b> Approval ID: E118976-20130619				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
Use group B				
	150 V	5 A	-	-

 <b>EAC</b> Approval ID: B.01687				
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 <b>cULus Recognized</b> Approval ID: E60425-20110108				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
Use group B				
	150 V	6 A	-	-

 <b>VDE Zeichengenehmigung</b> Approval ID: 40048497				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
	160 V	6 A	-	0.14 - 0.5

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## Classifications

### ECLASS

ECLASS-9.0	27440402
ECLASS-10.0.1	27440402
ECLASS-11.0	27460201

### ETIM

ETIM 8.0	EC002637
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### UNSPSC

UNSPSC 21.0	39121400
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## Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

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## Accessories

### PTSM 0,5/ 4-HHI-2,5-THR WH R32 - PCB header

1815002

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PCB headers, nominal cross section:  $0.5 \text{ mm}^2$ , color: signal white, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Female connector, number of potentials: 4, number of rows: 1, number of positions: 4, number of connections: 4, product range: PTSM 0,5/...-HHI-THR WH, pitch: 2.5 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 2.1 mm, number of solder pins per potential: 1, plug-in system: COMBICON PTSM, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: 32 mm wide tape

### PTSM 0,5/ 4-PL-2,5 WH - Printed-circuit board connector

1709460

<https://www.phoenixcontact.com/de/produkte/1709460>



PCB connector, nominal cross section:  $0.5 \text{ mm}^2$ , color: white, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Female connector, number of potentials: 4, number of rows: 1, number of positions: 4, number of connections: 4, product range: PTSM 0,5/...-PL WH, pitch: 2.5 mm, connection method: Push-in spring connection, conductor/PCB connection direction:  $0^\circ$ , plug-in system: COMBICON PTSM, locking: Snap-in locking, mounting: Self-locking flange, type of packaging: packed in cardboard

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