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M23, PCB hybrid connector, series: SH, straight, shielded: yes, for standard and SPEEDCON interlock, No. of pos.: 4+2+4+PE / 3+N+PE, contact connection type: Pin, Wave soldering

## Your advantages

- Reliable transmission of signals, data, and power in a single connector
- 80% faster assembly and 60% less installation space compared to litz wire assemblies
- Cost reduction due to the elimination of additional PCB connectors
- Reduction of PCB complexity and EMC risks
- Elimination of work steps with high error potential

## Commercial data

Item number	1840871
Packing unit	20 pc
Minimum order quantity	20 pc
Product key	ABRCDX
GTIN	4067923484856
Weight per piece (including packing)	22.22 g
Weight per piece (excluding packing)	22.22 g
Country of origin	DE

# SH-8EPC5-PCB-H2-L4-S-V3 - PCB hybrid connector



1840871

<https://www.phoenixcontact.com/in/products/1840871>

Set consists of

SH-8EPC5-PCB-L4-ABCD-PE-12 - Contact insert

1835953

<https://www.phoenixcontact.com/in/products/1835953>



Contact insert, straight, M23, number of positions: 4+2+4+PE / 3+N+PE, contact connection type: Pin, Wave soldering, series: SH, only suitable for use with the M23 hybrid solder-in connector

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SH-0000000H200S - Housing for circular connector

1555725

<https://www.phoenixcontact.com/in/products/1555725>

Housing for M23 Hybrid wave soldering



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## SH-FLAT-SEAL-0,5 - Flat gasket

1692442

<https://www.phoenixcontact.com/in/products/1692442>

Sealing ring for M23 hybrid PCB



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## SH-NUT-M26X1-GLUE - Flat nut

1555723

<https://www.phoenixcontact.com/in/products/1555723>

Flat nut M26 x 1 with screw locking mechanism



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## SH-00000-PCB-EXTENDER - Accessories

1555726

<https://www.phoenixcontact.com/in/products/1555726>

Extender to ensure air clearances and creepage distances, only suitable for use in M23 Hybrid



## Technical data

### Notes

#### Safety note

Safety note	<p><b>WARNING:</b> The connectors may not be plugged in or disconnected under load. Ignoring the warning or improper use may damage persons and/or property.</p> <ul style="list-style-type: none"><li>• <b>WARNING:</b> Commission properly functioning products only. The products must be regularly inspected for damage. Decommission defective products immediately. Replace damaged products. Repairs are not possible.</li><li>• <b>WARNING:</b> Only electrically qualified personnel may install and operate the product. They must observe the following safety notes. The qualified personnel must be familiar with the basics of electrical engineering. They must be able to recognize and prevent danger. The relevant symbol on the packaging indicates that only personnel familiar with electrical engineering are allowed to install and operate the product.</li><li>• The products are suitable for applications in plant, controller, and electrical device engineering.</li><li>• When operating the connectors in outdoor applications, they must be separately protected against environmental influences.</li><li>• Assembled products may not be manipulated or improperly opened.</li><li>• Only use mating connectors that are specified in the technical data of the standards listed (e.g. the ones listed in the product accessories online at <a href="https://www.phoenixcontact.com/products">phoenixcontact.com/products</a>).</li><li>• When using the product in direct connection with third-party manufacturers, the user is responsible.</li><li>• For operating voltages &gt; 50 V AC, conductive connector housings must be grounded</li><li>• Ensure that the protective or functional ground has been properly connected.</li><li>• VDE 0100/1.97 § 411.1.3.2 and DIN EN 60 204/11.98 § 14.1.3 are applicable when combining several circuits in a cable and/or connector</li><li>• Only use tools recommended by Phoenix Contact</li><li>• The installation notes/Design In documents online on the download page at <a href="https://www.phoenixcontact.com/products">phoenixcontact.com/products</a> must be observed for this product.</li><li>• Operate the connector only when it is fully plugged in and interlocked.</li><li>• Ensure that when laying the cable, the tensile load on the connectors does not exceed the upper limit specified in the standards.</li><li>• Observe the minimum bending radius of the cable. Lay the cable without twisting it.</li><li>• The connector warms up in normal operation. Depending on the ambient conditions, the surface of the connector can continue to warm up. In this case, the user is responsible for posting warnings (e.g. DIN EN ISO 13732-1:2008-12).</li></ul>
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## Product properties

Product type	Circular connectors (device side)
Series	SH
Thread type	M23

## Connector

### Insulating body

Protection against electric shock	IEC 61984 and VDE 0623
Material (Insulating body)	PA
Material (Contact)	CuZn
Material (Contact surface)	Au
Flammability rating according to UL 94	V0
Insertion/withdrawal cycles	100
Connection method	Wave soldering
Contact switching type	Pin
Application	Hybrid
Number of positions	11
Connection profile	4+2+4+PE / 3+N+PE
Installation height	2000 m (4000 m at 300 V system voltage in accordance with DIN EN 60664-1)
Number Contact (Power contacts)	5
Diameter Contact (Power contacts)	2 mm
Rated current Contact (Power contacts)	30 A (for max. connection cross section)
Rated voltage Contact (Power contacts)	630 V AC (Overvoltage category III/3) 850 V DC (Overvoltage category II/3)
Rated surge voltage	6 kV
Overvoltage category	III
Degree of pollution	3
Number Contact (Data contacts)	4
Diameter Contact (Data contacts)	0.8 mm
Rated current Contact (Data contacts)	3.6 A (for max. connection cross section)
Rated voltage Contact (Data contacts)	50 V (Contact 5 ... 8)
Rated surge voltage	1.5 kV
Overvoltage category	II, III
Degree of pollution	3
Number Contact (Signal contacts)	2
Diameter Contact (Signal contacts)	1 mm
Rated current Contact (Signal contacts)	8 A (for max. connection cross section)
Rated voltage Contact (Signal contacts)	50 V (Contact 1 and 2)
Rated surge voltage	1.5 kV
Overvoltage category	III
Degree of pollution	3

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## Housing

Order information:	only to be used with item number 1524754 or 1835953
Thread type	M23
Design	straight
Type of locking	for standard and SPEEDCON interlock
Mounting type	Rear wall/screw mounting (M26 x 1)
Assembly note	Central fastening
Material (Housing)	GD-Zn
Material (Housing surface)	Ni
Material (Seal)	FKM

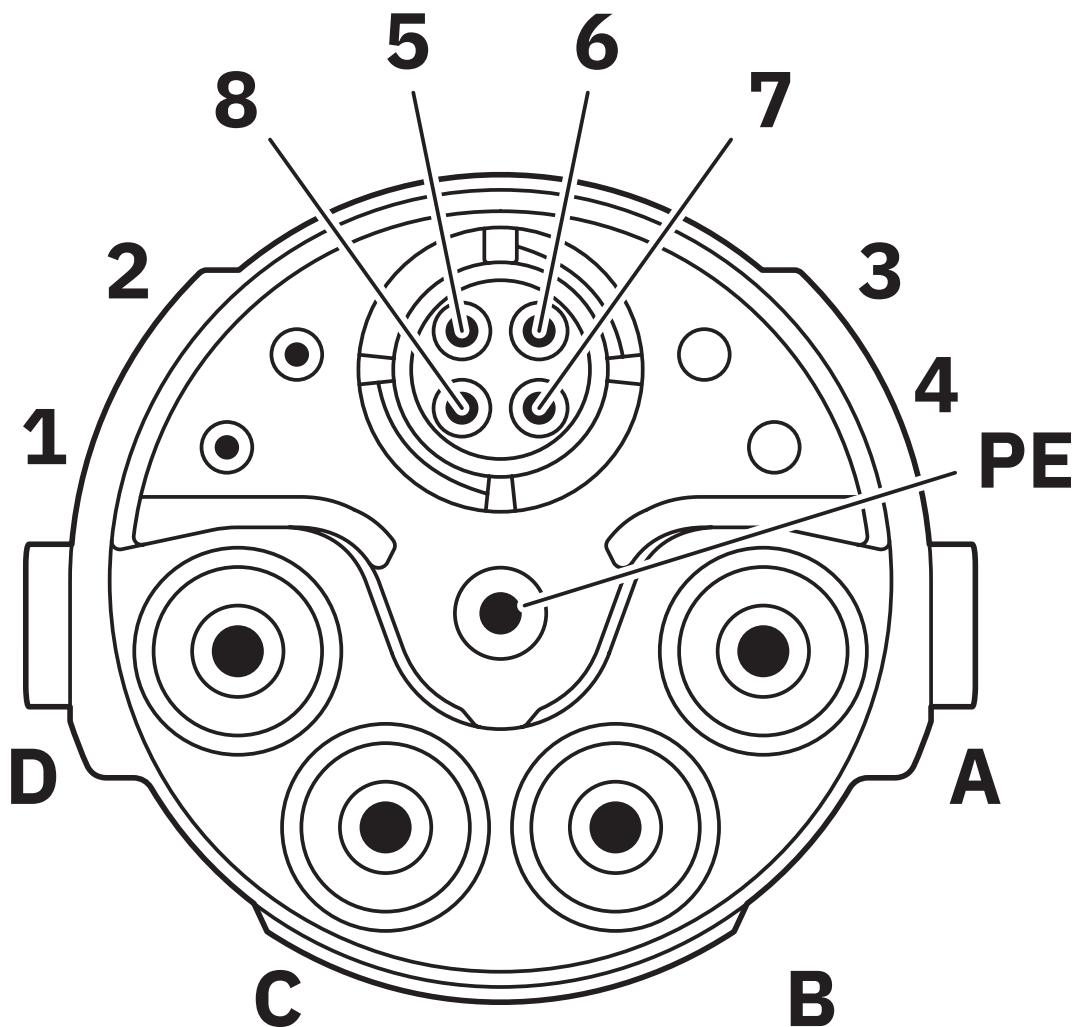
## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP66
	IP67
	IP68 (2 m / 24 h)
Ambient temperature (operation)	-40 °C ... 115 °C (see derating curve)

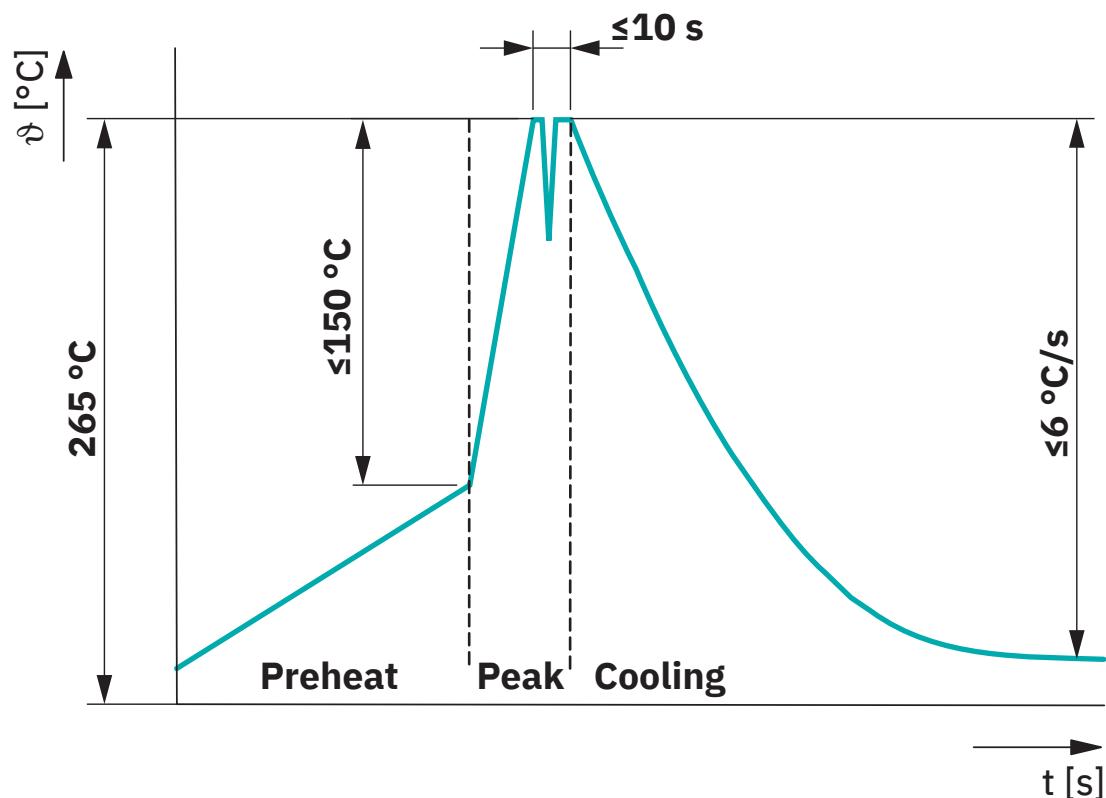
Drawings

Schematic diagram



Pin assignment CAT5 pin, partially assembled

Diagram



Classification wave soldering profile

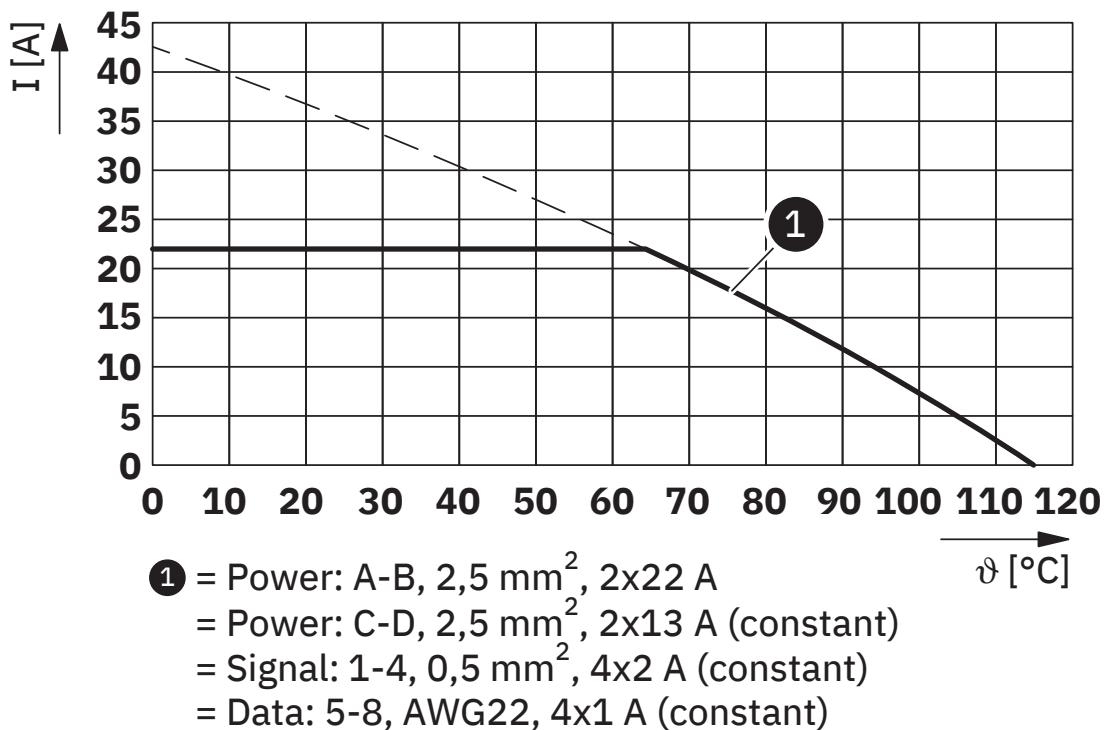
# SH-8EPC5-PCB-H2-L4-S-V3 - PCB hybrid connector

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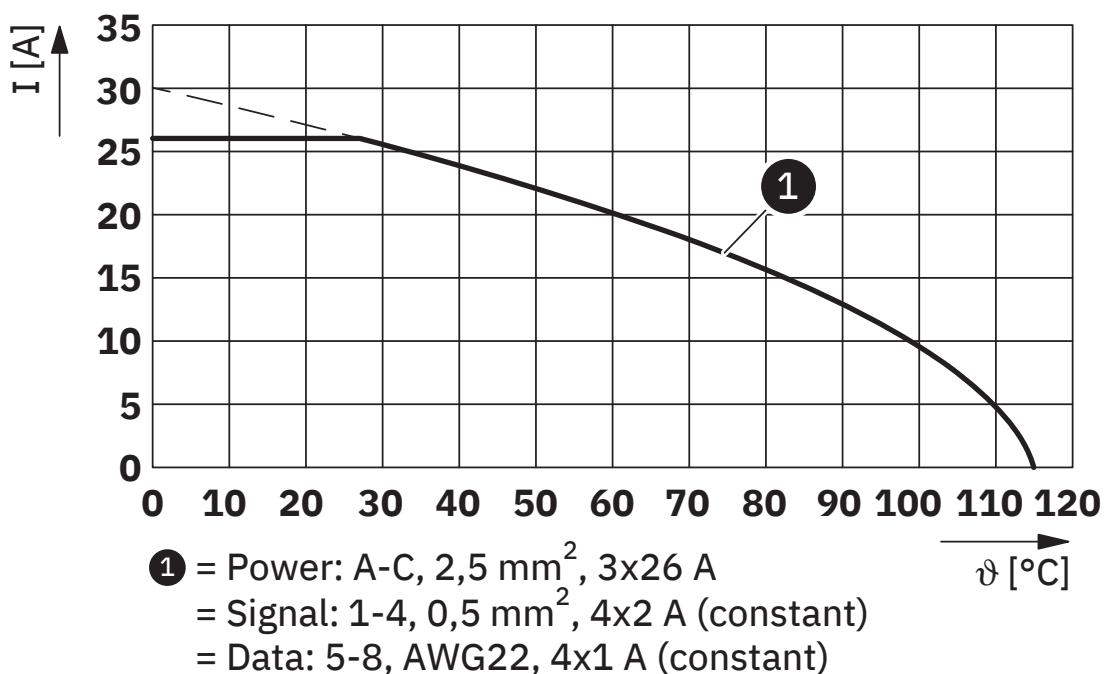


Diagram



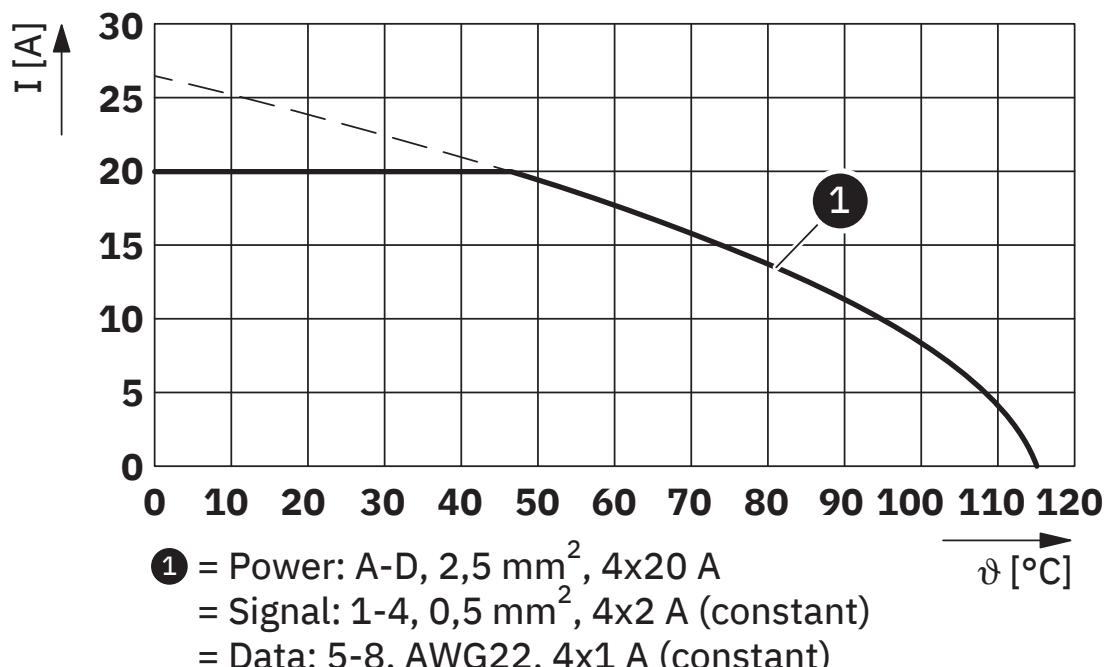
$I$  = current strength,  $\vartheta$  = ambient temperature, power contacts A-B:  $2.5 \text{ mm}^2$ ,  $2 \times 22 \text{ A}$ , power contacts C-D:  $2.5 \text{ mm}^2$ ,  $2 \times 13 \text{ A}$  (constant), signal contacts 1-4:  $0.5 \text{ mm}^2$ ,  $4 \times 2 \text{ A}$  (constant), data contacts 5-8: AWG22,  $4 \times 1 \text{ A}$  (constant)

Diagram



$I$  = current strength,  $\vartheta$  = ambient temperature, power contacts A-C:  $2.5 \text{ mm}^2$ ,  $3 \times 36 \text{ A}$ , signal contacts 1-4:  $0.5 \text{ mm}^2$ ,  $4 \times 2 \text{ A}$  (constant), data contacts 5-8: AWG22,  $4 \times 1 \text{ A}$  (constant)

Diagram



I = current strength,  $\vartheta$  = ambient temperature, power contacts A-D:  $2.5 \text{ mm}^2$ , 4 x 20 A, signal contacts 1-4:  $0.5 \text{ mm}^2$ , 4 x 2 A (constant), data contacts 5-8: AWG22, 4 x 1 A (constant)

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## Classifications

### ECLASS

ECLASS-13.0	27440110
ECLASS-15.0	27440110

### ETIM

ETIM 9.0	EC003568
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# SH-8EPC5-PCB-H2-L4-S-V3 - PCB hybrid connector

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## Environmental product compliance

### EU RoHS

Fulfils 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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