

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



1835953

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

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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

## 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	1835953
Packing unit	48 pc
Minimum order quantity	384 pc
Product key	ABRCDX
GTIN	4067923477490
Weight per piece (including packing)	29.99 g
Weight per piece (excluding packing)	29.99 g
Country of origin	DE

## 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	Contact insert
Series	SH
Application	Hybrid
Number of positions	11
Connection profile	4+2+4+PE / 3+N+PE
Thread type	M23

## Electrical properties

### Contact: Power contacts

Contact diameter	2 mm
Nominal current $I_N$	30 A (for max. connection cross section)
Nominal voltage $U_N$	630 V AC (Overvoltage category III/3) 850 V DC (Overvoltage category II/3)
Overvoltage category	III
Degree of pollution	3
Rated surge voltage	6 kV

### Contact: Data contacts

Contact diameter	0.8 mm
Nominal current $I_N$	3.6 A (for max. connection cross section)
Nominal voltage $U_N$	50 V (Contact 5 ... 8)
Overvoltage category	II, III
Degree of pollution	3
Rated surge voltage	1.5 kV

### Contact: Signal contacts

Contact diameter	1 mm
Nominal current $I_N$	8 A (for max. connection cross section)
Nominal voltage $U_N$	50 V (Contact 1 and 2)
Overvoltage category	III
Degree of pollution	3
Rated surge voltage	1.5 kV

## Connection data

Connection method	Wave soldering
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## Material specifications

Material Insulating body	PA
Material Contact	CuZn
Material Contact surface	Au
Flammability rating according to UL 94	V0

## Connector

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Type	straight
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## Mechanical properties

### Mechanical data

Insertion/withdrawal cycles	100
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## Environmental and real-life conditions

### Ambient conditions

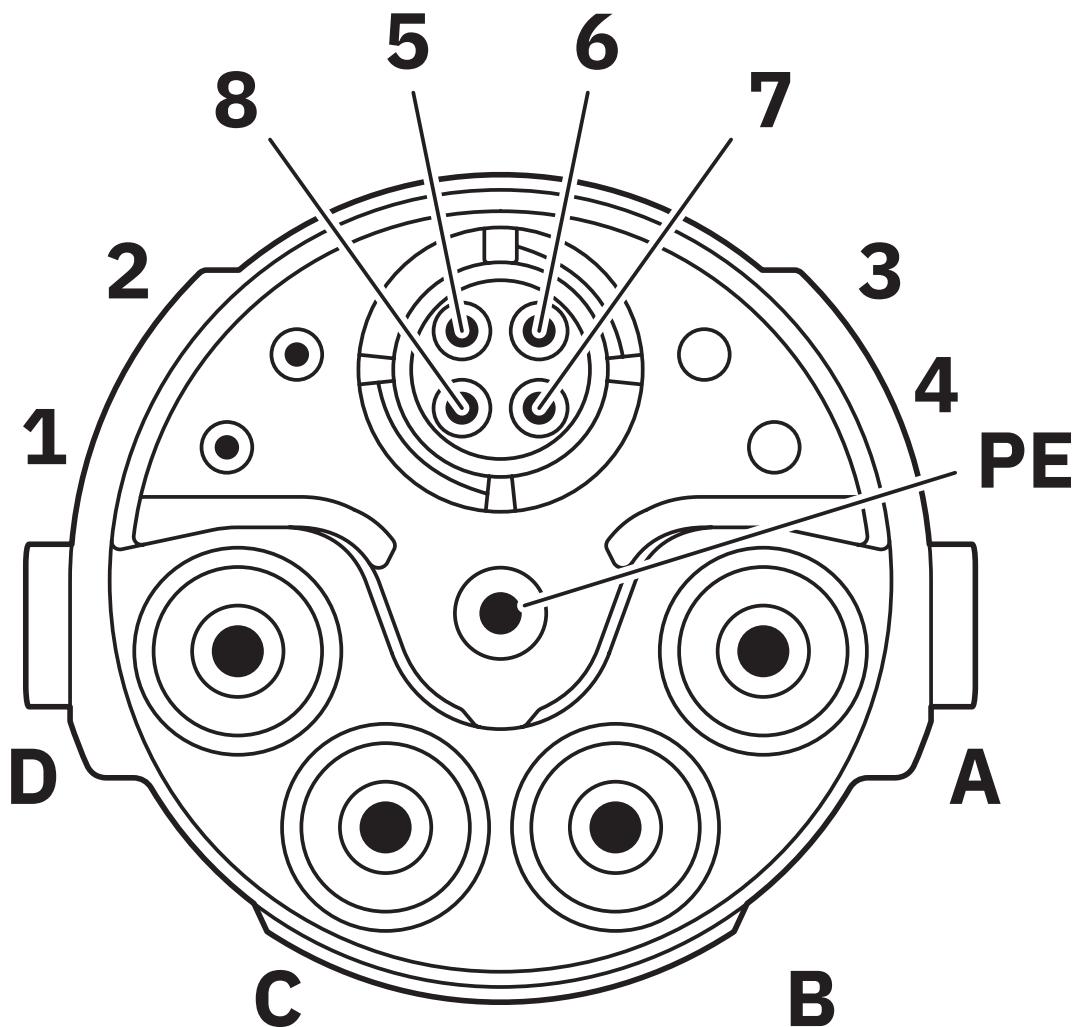
Ambient temperature (operation)	-40 °C ... 115 °C (see derating curve)
Altitude	2000 m (4000 m at 300 V system voltage in accordance with DIN EN 606664-1)
Permissible humidity (storage/transport)	50 % ... 65 %

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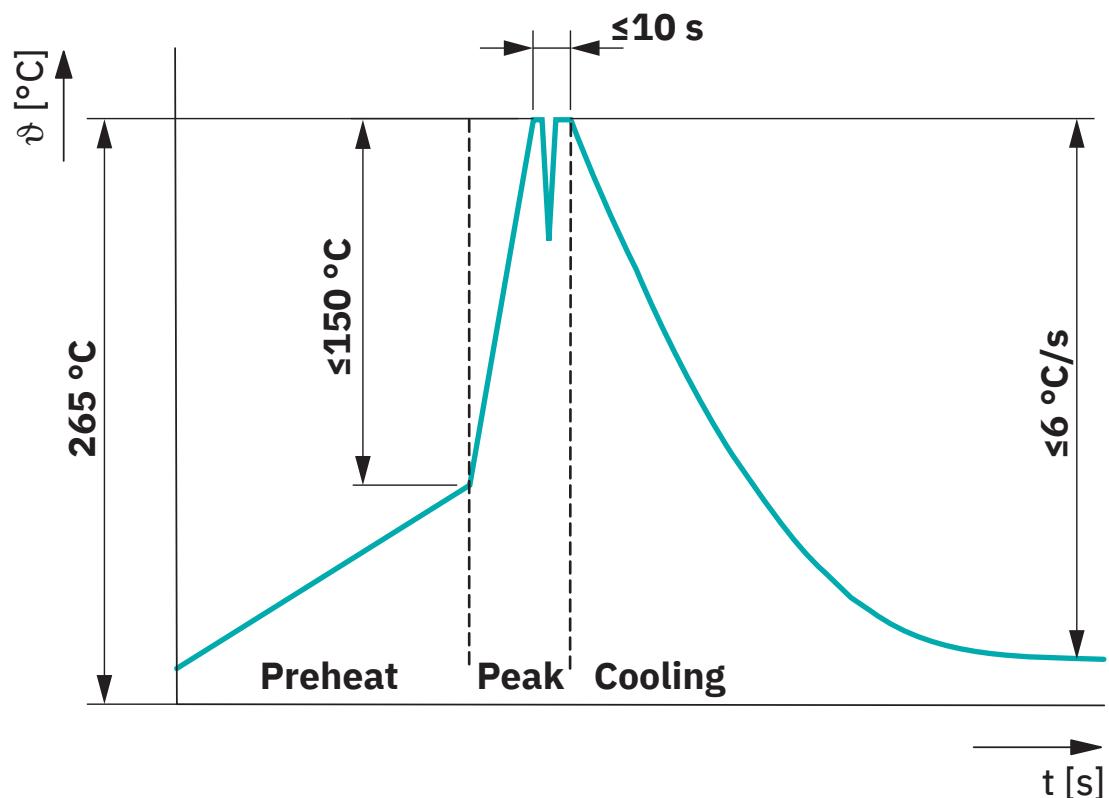
## Drawings

Schematic diagram



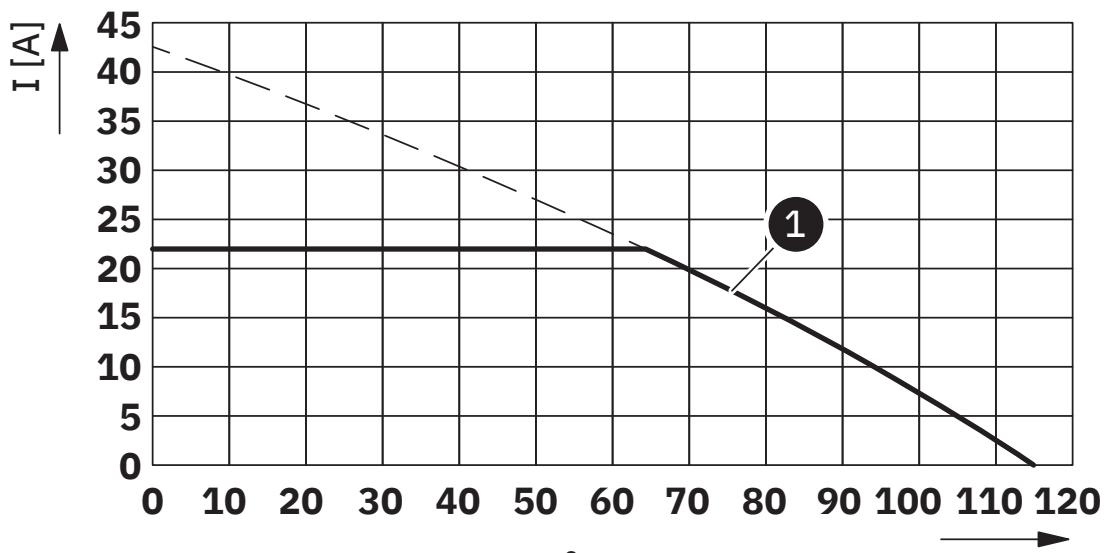
Pin assignment CAT5 pin, partially assembled

Diagram



Classification wave soldering profile

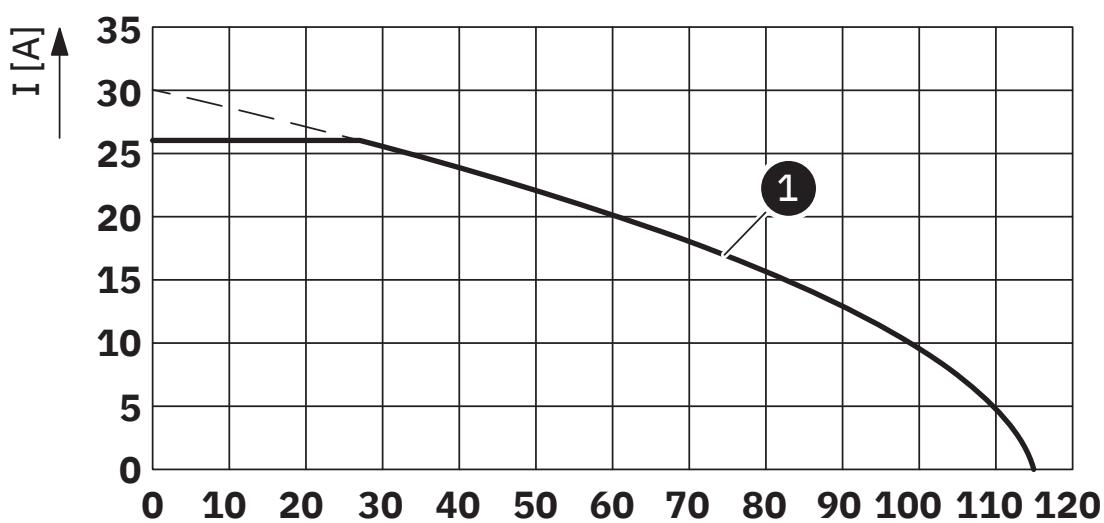
Diagram



- ① = Power: A-B,  $2.5 \text{ mm}^2$ ,  $2 \times 22 \text{ A}$
- = Power: C-D,  $2.5 \text{ mm}^2$ ,  $2 \times 13 \text{ A}$  (constant)
- = Signal: 1-4,  $0.5 \text{ mm}^2$ ,  $4 \times 2 \text{ A}$  (constant)
- = Data: 5-8, AWG22,  $4 \times 1 \text{ A}$  (constant)

$I$  = 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)

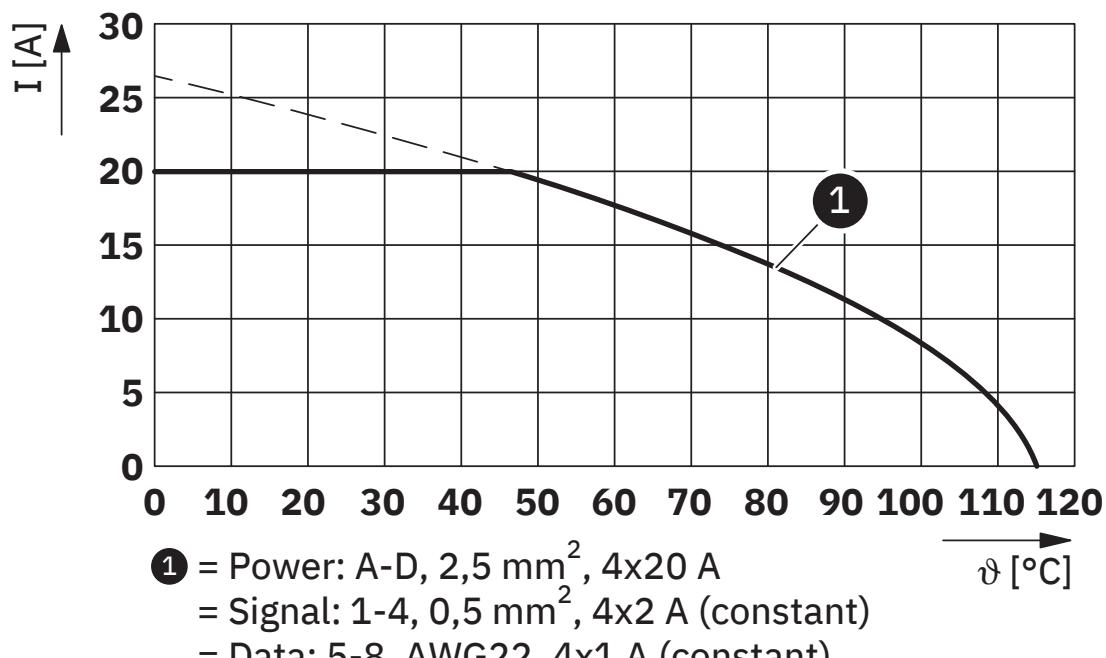
Diagram



- ① = Power: A-C,  $2.5 \text{ mm}^2$ ,  $3 \times 26 \text{ A}$
- = Signal: 1-4,  $0.5 \text{ mm}^2$ ,  $4 \times 2 \text{ A}$  (constant)
- = Data: 5-8, AWG22,  $4 \times 1 \text{ A}$  (constant)

$I$  = 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:  $2.5 \text{ mm}^2$ ,  $4 \times 20 \text{ A}$ , 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)

## Classifications

### ECLASS

ECLASS-13.0	27440223
ECLASS-15.0	27440223

### ETIM

ETIM 9.0	EC003557
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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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