

# SP 4/ 1-R - Plug

3042816

<https://www.phoenixcontact.com/us/products/3042816>



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Plug, nom. voltage: 800 V, nominal current: 32 A, number of positions: 1, connection method: Spring-cage connection, Rated cross section: 4 mm<sup>2</sup>, cross section: 0.08 mm<sup>2</sup>- 6 mm<sup>2</sup>, color: gray

## Product description

Connector element right, left housing with engagement pin, right closed with cover

## Your advantages

- Cable housing can be snapped on to the plugs, see figure below
- The plug with spring-cage connection is assembled directly on site by snapping together single-position plug elements
- The ST-COMBI plugs for self-assembly provide solutions that users can implement themselves
- Tested for railway applications

## Commercial data

Item number	3042816
Packing unit	50 pc
Minimum order quantity	50 pc
Sales key	BE02
Product key	BE2144
GTIN	4017918956110
Weight per piece (including packing)	4.74 g
Weight per piece (excluding packing)	4.2 g
Customs tariff number	85366990
Country of origin	PL

## Technical data

### Notes

Notes on operation	COMBI connectors are connectors without switching power in accordance with IEC 61984 and can be connected or disconnected without load or voltage when used as intended
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### General

Note	With a free-hanging connection, an insulating foil has to be placed between the plug connection and electrically conductive surfaces.
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### Product properties

Product type	Terminal plug
Number of positions	1
Pitch	6.2 mm

### Insulation characteristics

Overvoltage category	III
Degree of pollution	3

### Electrical properties

Rated surge voltage	8 kV
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### Connection data

Nominal cross section	4 mm <sup>2</sup>
Connection method	Spring-cage connection
Stripping length	8 mm ... 10 mm
Internal cylindrical gage	A4
Connection in acc. with standard	IEC 61984
Conductor cross-section rigid	0.08 mm <sup>2</sup> ... 6 mm <sup>2</sup>
Cross section AWG	28 ... 10 (converted acc. to IEC)
Conductor cross-section flexible	0.08 mm <sup>2</sup> ... 4 mm <sup>2</sup>
Conductor cross-section, flexible [AWG]	28 ... 12 (converted acc. to IEC)
Conductor cross-section flexible (ferrule without plastic sleeve)	0.14 mm <sup>2</sup> ... 4 mm <sup>2</sup>
Flexible conductor cross-section (ferrule with plastic sleeve)	0.14 mm <sup>2</sup> ... 4 mm <sup>2</sup>
2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve	0.5 mm <sup>2</sup> ... 1 mm <sup>2</sup>
Nominal cross section	4 mm <sup>2</sup>
Nominal current	32 A
Maximum load current	32 A (with 6 mm <sup>2</sup> conductor cross-section)
Nominal voltage	800 V

### Dimensions

Width	6.2 mm
Height	21 mm

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Depth	41.5 mm
Length	21 mm
Pitch	6.2 mm

## Material specifications

Color	gray (RAL 7042)
Flammability rating according to UL 94	V0
Insulating material group	I
Insulating material	PA
Static insulating material application in cold	-60 °C
Temperature index of insulation material (DIN EN 60216-1 (VDE 0304-21))	130 °C
Relative insulation material temperature index (Elec., UL 746 B)	130 °C
Fire protection for rail vehicles (DIN EN 45545-2) R22	HL 1 - HL 3
Fire protection for rail vehicles (DIN EN 45545-2) R23	HL 1 - HL 3
Fire protection for rail vehicles (DIN EN 45545-2) R24	HL 1 - HL 3
Fire protection for rail vehicles (DIN EN 45545-2) R26	HL 1 - HL 3
Calorimetric heat release NFPA 130 (ASTM E 1354)	28 MJ/kg
Surface flammability NFPA 130 (ASTM E 162)	passed
Specific optical density of smoke NFPA 130 (ASTM E 662)	passed
Smoke gas toxicity NFPA 130 (SMP 800C)	passed

## Electrical tests

### Surge voltage test

Result	Test passed
Short-time withstand current 4 mm <sup>2</sup>	0.48 kA
Result	Test passed

### Power-frequency withstand voltage

Test voltage setpoint	2 kV
Result	Test passed

## Mechanical tests

### Attachment on the carrier

Result	Test passed
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## Environmental and real-life conditions

### Needle-flame test

Time of exposure	30 s
Result	Test passed

### Oscillation/broadband noise

Specification	DIN EN 50155 (VDE 0115-200):2018-05
Spectrum	Long life test category 1, class B, body mounted

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Frequency	$f_1 = 5 \text{ Hz}$ to $f_2 = 150 \text{ Hz}$
ASD level	$0.964 \text{ (m/s}^2\text{)}^2\text{/Hz}$
Acceleration	0.58g
Test duration per axis	5 h
Test directions	X-, Y- and Z-axis
Result	Test passed

## Shocks

Pulse shape	Half-sine
Acceleration	5g
Shock duration	30 ms
Number of shocks per direction	3
Test directions	X-, Y- and Z-axis (pos. and neg.)
Result	Test passed

## Ambient conditions

Ambient temperature (operation)	-60 °C (max. operating temperature see derating curve)
Ambient temperature (storage/transport)	-25 °C ... 60 °C (for a short time, not exceeding 24 h, -60 °C to +70 °C)
Ambient temperature (assembly)	-5 °C ... 70 °C
Ambient temperature (actuation)	-5 °C ... 70 °C
Permissible humidity (operation)	20 % ... 90 %
Permissible humidity (storage/transport)	30 % ... 70 %

## Standards and regulations

Connection in acc. with standard	IEC 61984
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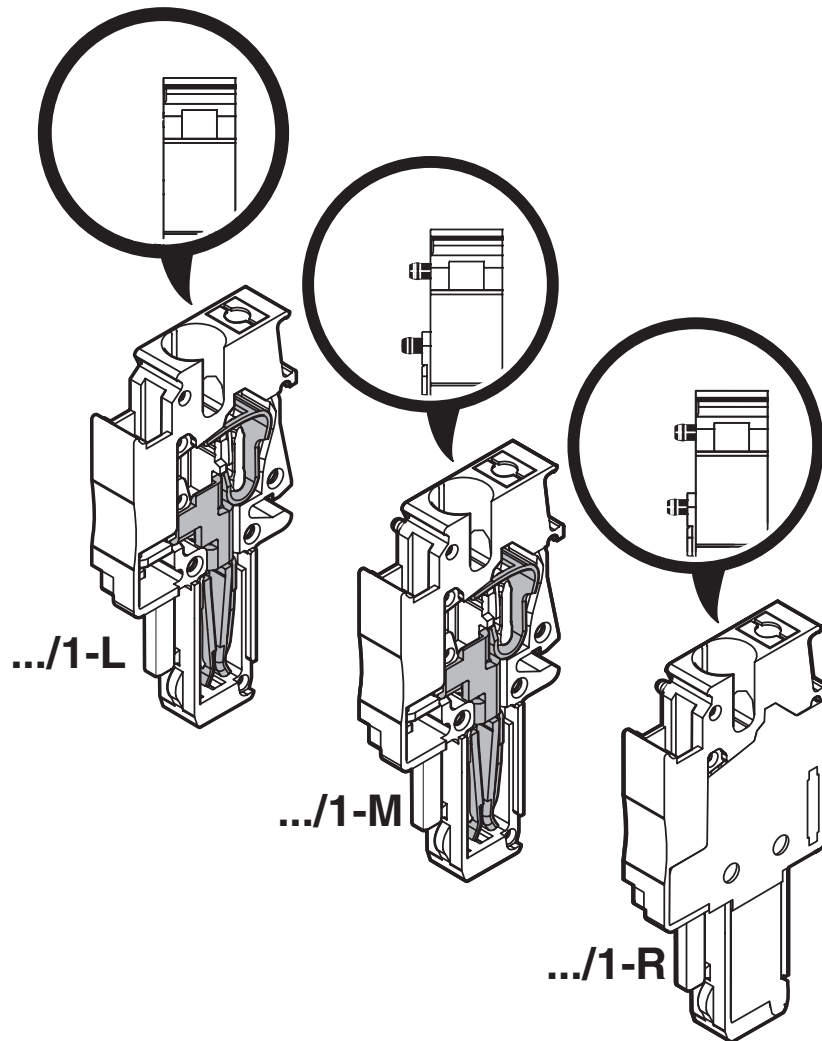
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## Drawings

Schematic diagram



# SP 4/ 1-R - Plug

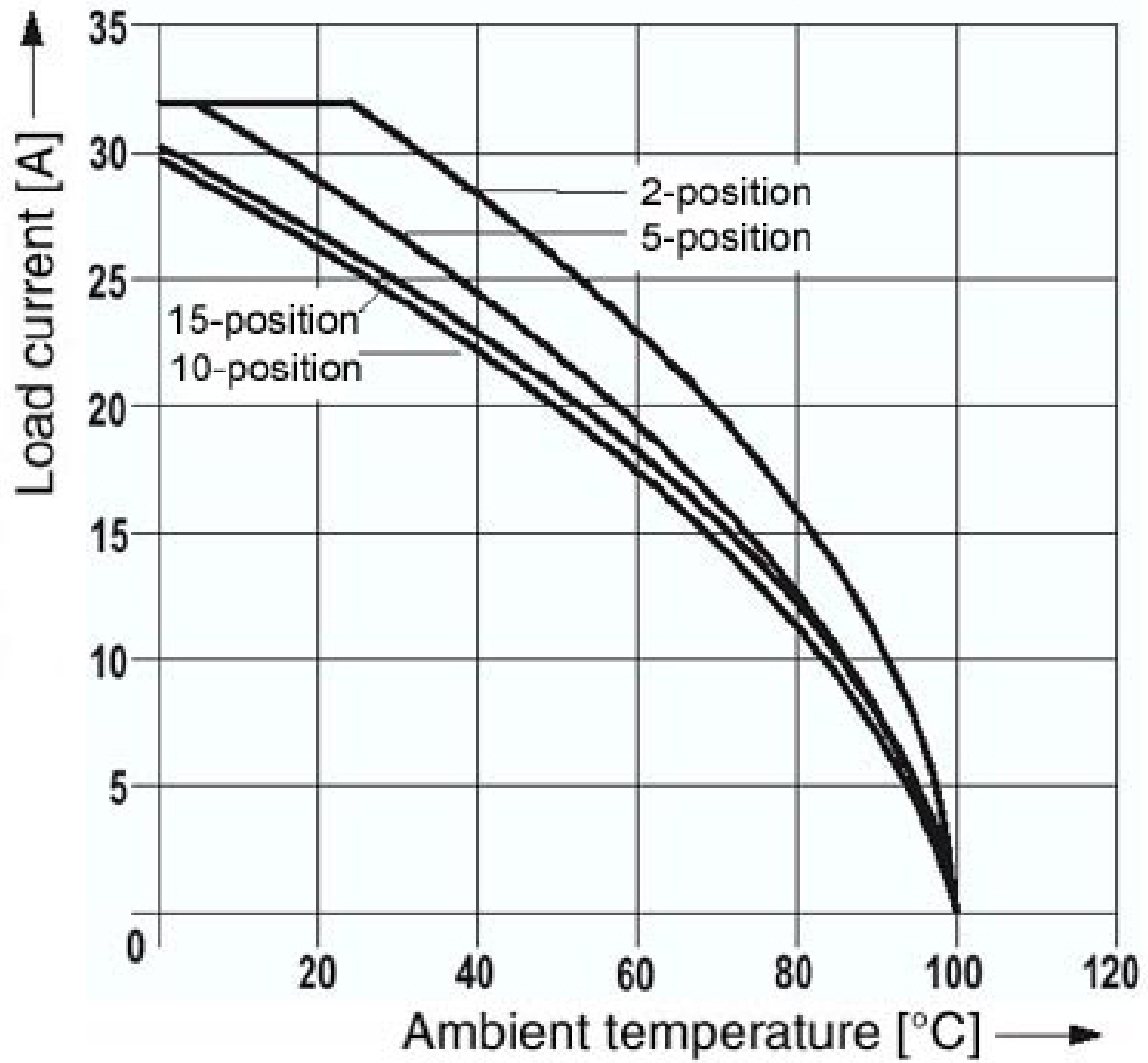
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Derating curve for spring-cage terminals ST 4/1P.. and ST 4/2P.. with all plug versions SP 4/... . The derating curves are determined by multiplying the values of the base curves by the factor 0.8.

Diagram



Derating curve for the spring-cage terminal with all plug versions SP 4/...

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Diagram



Derating curve for ST 4/ 1P and for all plug versions SP...

Circuit diagram



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## Approvals

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 <b>CSA</b> Approval ID: 13631				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $mm^2$
B	600 V	30 A	24 - 12	-
C	600 V	30 A	24 - 12	-

 <b>IECEE CB Scheme</b> Approval ID: DE1-62736/B1/B2				
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 <b>cULus Recognized</b> Approval ID: E60425				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $mm^2$
B	600 V	30 A	28 - 10	-
C	600 V	30 A	28 - 10	-

 <b>VDE Zeichengenehmigung</b> Approval ID: 40019518				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $mm^2$
keine				
Only flexible conductors	800 V	-	-	0.2 - 4
Only rigid conductors	800 V	-	-	0.2 - 6

 <b>EAC</b> Approval ID: KZ7500651131219505				
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## Classifications

### ECLASS

ECLASS-13.0	27250306
ECLASS-15.0	27250306

### ETIM

ETIM 10.0	EC002021
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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	0.032 kg CO2e
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