

# STTB 1,5 BU - Double-level spring-cage terminal block



3031160

<https://www.phoenixcontact.com/us/products/3031160>

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Double-level spring-cage terminal block, nom. voltage: 500 V, nominal current: 17.5 A, connection method: Spring-cage connection, 1st and 2nd level, Rated cross section: 1.5 mm<sup>2</sup>, cross section: 0.08 mm<sup>2</sup> - 1.5 mm<sup>2</sup>, mounting type: NS 35/7,5, NS 35/15, color: blue

## Your advantages

- Compact design for maximum space savings
- Tested for railway applications
- Connect the levels using FBS ...-PV bridges

## Commercial data

Item number	3031160
Packing unit	50 pc
Minimum order quantity	50 pc
Sales key	BE02
Product key	BE2114
Catalog page	Page 208 (C-1-2019)
GTIN	4017918186715
Weight per piece (including packing)	8.84 g
Weight per piece (excluding packing)	7.905 g
Customs tariff number	85369010
Country of origin	DE

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## Technical data

### Product properties

Product type	Multi-level terminal block
Area of application	Railway industry
	Machine building
	Plant engineering
	Process industry
Number of connections	4
Number of rows	2
Potentials	2

### Insulation characteristics

Overvoltage category	III
Degree of pollution	3

### Electrical properties

Rated surge voltage	6 kV
Maximum power dissipation for nominal condition	0.56 W

### Connection data

Number of connections per level	2
Nominal cross section	1.5 mm <sup>2</sup>

### 1st and 2nd level

Stripping length	10 mm
Internal cylindrical gage	A1
Connection in acc. with standard	IEC 60947-7-1
Conductor cross section rigid	0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Cross section AWG	28 ... 16 (converted acc. to IEC)
Conductor cross section flexible	0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section, flexible [AWG]	28 ... 16 (converted acc. to IEC)
Conductor cross-section flexible (ferrule without plastic sleeve)	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Flexible conductor cross section (ferrule with plastic sleeve)	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve	0.5 mm <sup>2</sup>
Nominal current	17.5 A
Maximum load current	17.5 A (with 1.5 mm <sup>2</sup> conductor cross section)
Nominal voltage	500 V
Nominal cross section	1.5 mm <sup>2</sup>

### Ex data

#### Rated data (ATEX/IECEx)

Identification	⊕ II 2 GD Ex eb IIC Gb
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Operating temperature range	-60 °C ... 110 °C
Ex-certified accessories	3030459 D-STTB 2,5
	3030747 ATP-STTB 4
	1204504 SZF 0-0,4X2,5
	3022276 CLIPFIX 35-5
	3022218 CLIPFIX 35
List of bridges	Plug-in bridge / FBS 2-4 / 3030116
	Plug-in bridge / FBS 3-4 / 3030129
	Plug-in bridge / FBS 4-4 / 3030132
	Plug-in bridge / FBS 5-4 / 3030145
	Plug-in bridge / FBS 10-4 / 3030158
	Plug-in bridge / FBS 20-4 / 3030352
Bridge data	13.5 A / 1.5 mm <sup>2</sup>
Ex temperature increase	40 K (17.3 A/1.5 mm <sup>2</sup> )
Rated voltage	440 V
for bridging with bridge	440 V
- At bridging between non-adjacent terminal blocks	352 V
- At bridging between non-adjacent terminal blocks via PE terminal block	352 V
Rated insulation voltage	400 V
output	(Permanent)

## Ex level General

Rated current	15.5 A
Maximum load current	15.5 A

## Ex connection data General

Nominal cross section	1.5 mm <sup>2</sup>
Rated cross section AWG	16
Connection capacity rigid	0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Connection capacity AWG	28 ... 16
Connection capacity flexible	0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Connection capacity AWG	28 ... 16
output	(Permanent)

## Ex level Level 1

Contact resistance	1.04 mΩ
output	(Permanent)

## Ex level Level 2

Contact resistance	0.96 mΩ
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## Dimensions

Width	4.2 mm
End cover width	2.2 mm
Height	67.5 mm

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Depth on NS 35/7,5	47.5 mm
Depth on NS 35/15	55 mm

## Material specifications

Color	blue
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))	125 °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)	27,5 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
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### Temperature-rise test

Requirement temperature-rise test	Increase in temperature $\leq$ 45 K
Result	Test passed
Short-time withstand current 1.5 mm <sup>2</sup>	0.18 kA
Result	Test passed

### Power-frequency withstand voltage

Test voltage setpoint	1.89 kV
Result	Test passed

## Mechanical properties

### Mechanical data

Open side panel	Yes
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## Mechanical tests

### Mechanical strength

Result	Test passed
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### Attachment on the carrier

Test force setpoint	1 N
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Result	Test passed
Test for conductor damage and slacking	
Rotation speed	10 rpm
Revolutions	135
Conductor cross section/weight	0.08 mm <sup>2</sup> / 0.1 kg
	1.5 mm <sup>2</sup> / 0.4 kg
Result	Test passed

## Environmental and real-life conditions

### Aging

Temperature cycles	192
Result	Test passed

### Needle-flame test

Time of exposure	30 s
Result	Test passed

### Oscillation/broadband noise

Specification	DIN EN 50155 (VDE 0115-200):2008-03
Spectrum	Service life test category 2, bogie-mounted
Frequency	$f_1 = 5 \text{ Hz}$ to $f_2 = 250 \text{ Hz}$
ASD level	6.12 (m/s <sup>2</sup> ) <sup>2</sup> /Hz
Acceleration	3.12g
Test duration per axis	5 h
Test directions	X-, Y- and Z-axis
Result	Test passed

### Shocks

Specification	DIN EN 50155 (VDE 0115-200):2008-03
Pulse shape	Half-sine
Acceleration	30g
Shock duration	18 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 ... 110 °C (Operating temperature range incl. self-heating; for max. short-term operating temperature, see RTI Elec.)
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 %

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## Standards and regulations

Connection in acc. with standard	IEC 60947-7-1
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## Mounting

Mounting type	NS 35/7,5
	NS 35/15

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## Classifications

### ECLASS

ECLASS-11.0	27141120
ECLASS-13.0	27250102

### ETIM

ETIM 9.0	EC000897
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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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