

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



3031160

<https://www.phoenixcontact.com/gb/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

- Simple wiring of very small, flexible conductors
- Enables one-handed wiring
- No restriction on cross-sections when using conductors with ferrules
- Reliable vibration resistance thanks to spring-loaded contact elements
- High space savings thanks to the compact integration of two separate circuits in a single terminal block
- Full flexibility thanks to the standardized CLIPLINE complete bridging, marking, and testing accessories

## Commercial data

Item number	3031160
Packing unit	50 pc
Minimum order quantity	50 pc
Sales key	BE2114
Product key	BE2114
GTIN	4017918186715
Weight per piece (including packing)	8.6 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
Product family	ST
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

Connection method	Spring-cage connection
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 cross section	1.5 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

### Ex data

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## Rated data (ATEX/IECEX)

Identification	⊕ II 2 GD Ex eb IIC Gb
Operating temperature range	-60 °C ... 85 °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> )
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 voltage	440 V
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
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End cover width	2.2 mm
Height	67.5 mm
Depth on NS 35/7,5	47.5 mm
Depth on NS 35/15	55 mm

## Material specifications

Color	blue (RAL 5015)
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
Result	Test passed

## Test for conductor damage and slackening

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	Long 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

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

Permissible humidity (operation)	20 % ... 90 %
Permissible humidity (storage/transport)	30 % ... 70 %

## 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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## Drawings

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	300 V	15 A	26 - 14	-
C	300 V	15 A	26 - 14	-

 <b>IECEE CB Scheme</b> Approval ID: DE1-63027_A1				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $mm^2$
keine	500 V	17.5 A	-	0.2 - 1.5

 <b>KR</b> Approval ID: HMB17372-EL002				
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 <b>NK</b> Approval ID: 09 ME 140				
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 <b>VDE Zeichengenehmigung</b> Approval ID: 40009031				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $mm^2$
keine	500 V	17.5 A	-	0.2 - 1.5

 <b>cULus Recognized</b> Approval ID: E60425				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $mm^2$
B	300 V	15 A	26 - 14	-
C	300 V	15 A	26 - 14	-
D	600 V	5 A	26 - 14	-

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## DNV

Approval ID: TAE00001CS



## ATEX

Approval ID: KEMA01ATEX2129U

	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
keine				
Type examination certificate	440 V	15.5 A	-	0.08 - 1.5



## IECEx

Approval ID: IECEx KEM 06.0043U

	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
keine				
	440 V	15.5 A	-	0.08 - 1.5



## CCC

Approval ID: 2020322313000621



## EAC Ex

Approval ID: KZ 7500525010101950

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## Classifications

### ECLASS

ECLASS-13.0	27250102
ECLASS-15.0	27250102

### ETIM

ETIM 10.0	EC000897
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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	0.037 kg CO2e
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