

Feed-through terminal block - BTO 2,0 - 3281107

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Feed-through terminal block, with an open screw shaft, nom. voltage: 690 V, nominal current: 24 A, connection method: Ring cable lug, number of connections: 2, width: 8 mm, color: black, mounting type: NS 35/7,5, NS 35/15

Your advantages

- Maximum overview thanks to extensive marking and labeling of every terminal point
- Convenient ring cable lug connection thanks to the screw connection principle with spring-guided screw; maintenance-free with integrated screw locking
- Easy potential distribution with time-saving jumper system
- Safety for users thanks to integrated shock protection
- Reduction in logistics costs with the uniform CLIPLINE complete system accessories

Key Commercial Data

Packing unit	50 pc
Minimum order quantity	50 pc
GTIN	
GTIN	4055626118079

Technical data

General

Number of levels	1
Number of connections	2
Potentials	1
Nominal cross section	2.5 mm ²
Color	black
Insulating material	PC
Flammability rating according to UL 94	V0
Rated surge voltage	6 kV
Degree of pollution	3
Overvoltage category	III

Feed-through terminal block - BTO 2,0 - 3281107

Technical data

General

Insulating material group	IIIa
Maximum power dissipation for nominal condition	0.77 W
Maximum load current	24 A
Nominal current I_N	24 A
Nominal voltage U_N	690 V
Open side panel	Yes
Ambient temperature (operation)	-60 °C ... 85 °C
Ambient temperature (storage/transport)	-25 °C ... 55 °C (For a short time, not exceeding 24 h, -60 to +70 °C)
Permissible humidity (storage/transport)	30 % ... 70 %
Ambient temperature (assembly)	-5 °C ... 70 °C
Ambient temperature (actuation)	-5 °C ... 70 °C
Shock protection test specification	DIN EN 50274 (VDE 0660-514):2002-11
Back of the hand protection	guaranteed
Note regarding shock protection	Finger safety is only guaranteed with cover profile.
Result of surge voltage test	Test passed
Surge voltage test setpoint	9.8 kV
Result of power-frequency withstand voltage test	Test passed
Power frequency withstand voltage setpoint	1.89 kV
Result of the test for mechanical stability of terminal points (5 x conductor connection)	Test passed
Result of bending test	Test passed
Bending test rotation speed	10 rpm
Bending test turns	135
Bending test conductor cross section/weight	2.5 mm ² / 0.7 kg
Tensile test result	Test passed
Conductor cross section tensile test	2.5 mm ²
Tractive force setpoint	50 N
Conductor cross section tensile test	2 mm ²
Tractive force setpoint	50 N
Result of tight fit on support	Test passed
Tight fit on carrier	NS 35
Setpoint	1 N
Result of voltage-drop test	Test passed
Requirements, voltage drop	≤ 3.2 mV
Result of temperature-rise test	Test passed
Short circuit stability result	Test passed
Conductor cross section short circuit testing	2.5 mm ²
Short-time current	0.3 kA
Conductor cross section short circuit testing	2 mm ²
Short-time current	0.24 kA
Result of thermal test	Test passed

Feed-through terminal block - BTO 2,0 - 3281107

Technical data

General

Proof of thermal characteristics (needle flame) effective duration	30 s
Oscillation, broadband noise test result	Test passed
Test specification, oscillation, broadband noise	DIN EN 50155 (VDE 0115-200):2008-03
Test spectrum	Service life test category 2, bogie-mounted
Test frequency	$f_1 = 5 \text{ Hz}$ to $f_2 = 250 \text{ Hz}$
ASD level	$6.12 \text{ (m/s}^2\text{)}/\text{Hz}$
Acceleration	3.12 g
Test duration per axis	5 h
Test directions	X-, Y- and Z-axis
Shock test result	Test passed
Test specification, shock test	DIN EN 50155 (VDE 0115-200):2008-03
Shock form	Half-sine
Acceleration	30g
Shock duration	18 ms
Number of shocks per direction	3
Test directions	X-, Y- and Z-axis (pos. and neg.)
Relative insulation material temperature index (Elec., UL 746 B)	130 °C

Dimensions

Width	8 mm
Length	42 mm
Height NS 35/7,5	33.5 mm
Height NS 35/15	41 mm

Connection data

Connection method	Ring cable lug
Stripping length	The stripping length depends on the specification provided by the cable lug manufacturer.
Connection in acc. with standard	IEC 60947-7-1
Cable lug connection according to standard	DIN 46234:1980-03
Min. cross section for cable lug connection	0.14 mm ²
Max. cross section for cable lug connection	2.5 mm ²
AWG min	26
AWG max	16
Hole diameter, min.	3.7 mm
Cable lug width, max.	6.8 mm
Bolt diameter	3.5 mm
Screw thread	M3,5
Tightening torque, min	1 Nm
Tightening torque max	1.3 Nm
Connection in acc. with standard	JIS 8207-7-1
Cable lug connection according to standard	JIS 8207-7-1

Feed-through terminal block - BTO 2,0 - 3281107

Technical data

Connection data

Min. cross section for cable lug connection	0.5 mm ²
Max. cross section for cable lug connection	2 mm ²
Hole diameter, min.	3.7 mm
Cable lug width, max.	6.8 mm
Bolt diameter	3.5 mm
Screw thread	M3,5
Tightening torque, min	1 Nm
Tightening torque max	1.3 Nm

Standards and Regulations

Connection in acc. with standard	IEC 60947-7-1
Flammability rating according to UL 94	V0

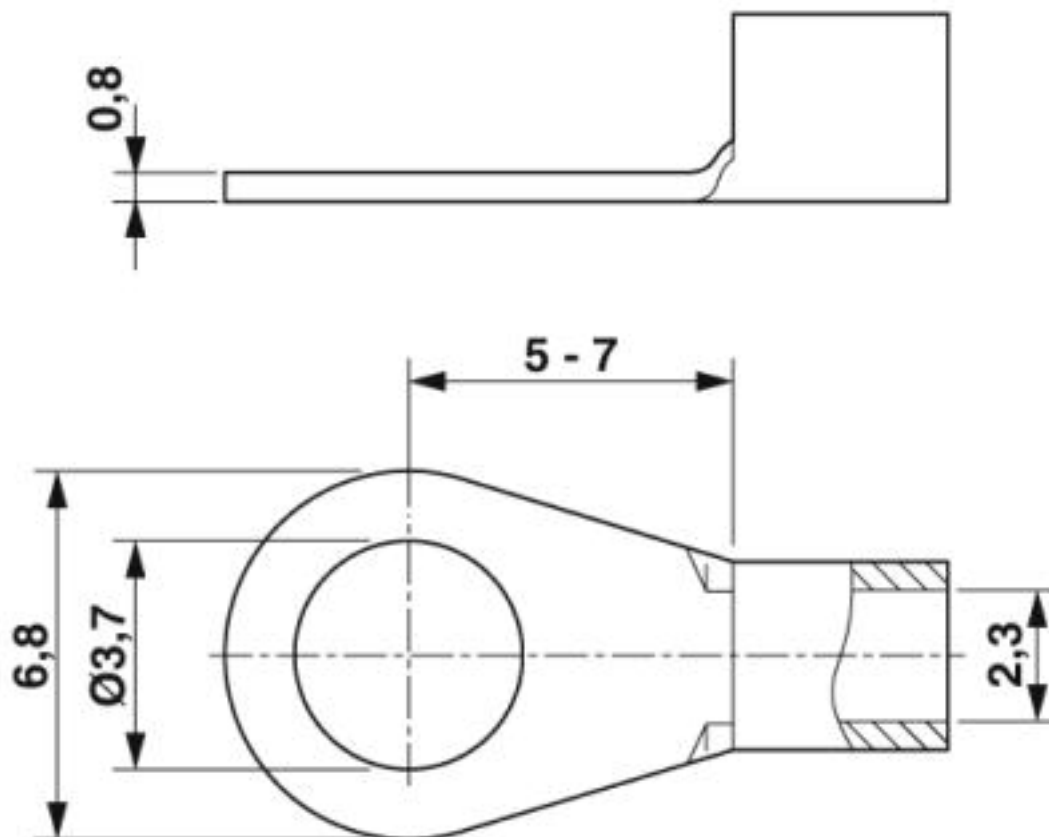
Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

Drawings

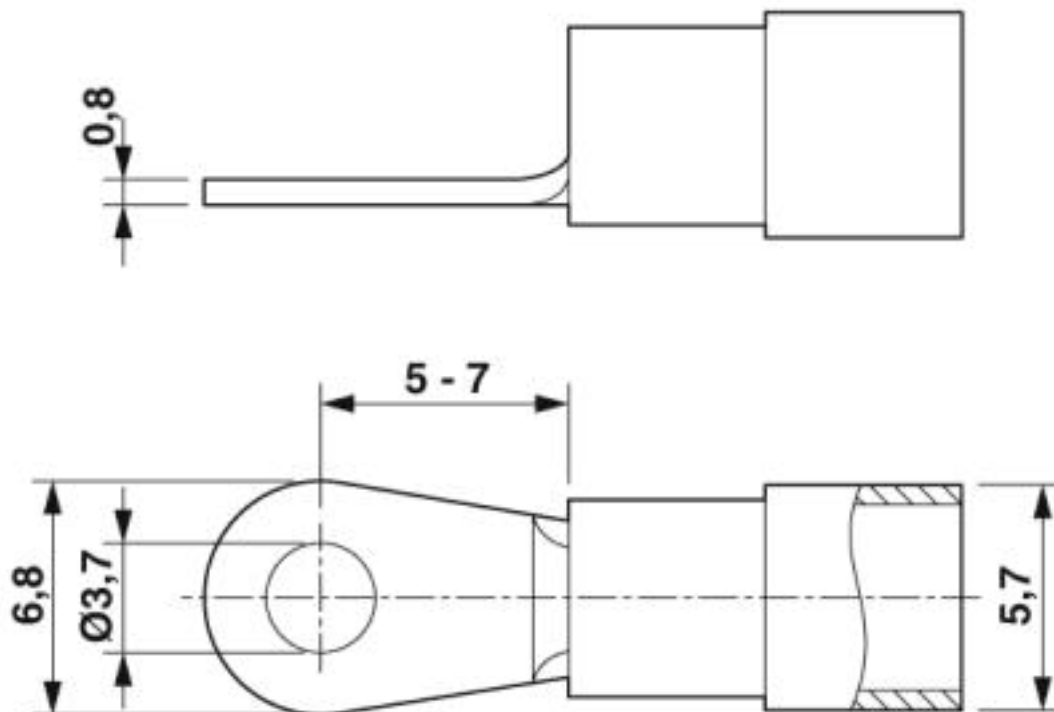
Feed-through terminal block - BTO 2,0 - 3281107

Dimensional drawing



Feed-through terminal block - BTO 2,0 - 3281107

Dimensional drawing



Circuit diagram



Classifications

eCl@ss

eCl@ss 10.0.1	27141120
eCl@ss 4.0	27141100
eCl@ss 4.1	27141100
eCl@ss 5.0	27141100
eCl@ss 5.1	27141100
eCl@ss 6.0	27141100
eCl@ss 7.0	27141120
eCl@ss 8.0	27141120
eCl@ss 9.0	27141120

ETIM

ETIM 2.0	EC000897
ETIM 3.0	EC000897
ETIM 4.0	EC000897

Feed-through terminal block - BTO 2,0 - 3281107

Classifications

ETIM

ETIM 5.0	EC000897
ETIM 6.0	EC000897
ETIM 7.0	EC000897

UNSPSC

UNSPSC 6.01	30211811
UNSPSC 7.0901	39121410
UNSPSC 11	39121410
UNSPSC 12.01	39121410
UNSPSC 13.2	39121410
UNSPSC 18.0	39121410
UNSPSC 19.0	39121410
UNSPSC 20.0	39121410
UNSPSC 21.0	39121410

Approvals

Approvals


Approvals

DNV GL / CSA / UL Recognized / cUL Recognized / EAC / cULus Recognized

Ex Approvals

Approval details

DNV GL		https://approvalfinder.dnvgl.com/	TAE00001S2
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CSA		http://www.csagroup.org/services-industries/product-listing/	13631
	B	C	
Nominal voltage UN	600 V	600 V	
Nominal current IN	15 A	15 A	
mm ² /AWG/kcmil	26-14	26-14	

Feed-through terminal block - BTO 2,0 - 3281107

Approvals

UL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 60425
	B	C	
Nominal voltage UN	600 V	600 V	
Nominal current IN	15 A	15 A	
mm ² /AWG/kcmil	26-14	26-14	

cUL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 60425
	B	C	
Nominal voltage UN	600 V	600 V	
Nominal current IN	15 A	15 A	
mm ² /AWG/kcmil	26-14	26-14	

EAC		RU C- DE.BL08.B.00541
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cULus Recognized	
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Accessories

Accessories

Cover profile

Cover profile - AP-BTO 1,25 - 3281125



Cover profile, length: 46 mm, width: 1000 mm, height: 9.8 mm, color: transparent

DIN rail

Feed-through terminal block - BTO 2,0 - 3281107

Accessories

DIN rail perforated - NS 35/ 7,5 PERF 2000MM - 0801733



DIN rail perforated, Standard profile, width: 35 mm, height: 7.5 mm, acc. to EN 60715, material: Steel, galvanized, passivated with a thick layer, length: 2000 mm, color: silver

DIN rail, unperforated - NS 35/ 7,5 UNPERF 2000MM - 0801681



DIN rail, unperforated, Standard profile, width: 35 mm, height: 7.5 mm, acc. to EN 60715, material: Steel, galvanized, passivated with a thick layer, length: 2000 mm, color: silver

DIN rail perforated - NS 35/ 7,5 WH PERF 2000MM - 1204119



DIN rail perforated, Standard profile, width: 35 mm, height: 7.5 mm, acc. to EN 60715, material: Steel, Galvanized, white passivated, length: 2000 mm, color: silver

DIN rail, unperforated - NS 35/ 7,5 WH UNPERF 2000MM - 1204122



DIN rail, unperforated, Standard profile, width: 35 mm, height: 7.5 mm, acc. to EN 60715, material: Steel, Galvanized, white passivated, length: 2000 mm, color: silver

DIN rail, unperforated - NS 35/ 7,5 AL UNPERF 2000MM - 0801704



DIN rail, unperforated, Standard profile, width: 35 mm, height: 7.5 mm, acc. to EN 60715, material: Aluminum, uncoated, length: 2000 mm, color: silver

Feed-through terminal block - BTO 2,0 - 3281107

Accessories

DIN rail perforated - NS 35/ 7,5 ZN PERF 2000MM - 1206421



DIN rail perforated, Standard profile, width: 35 mm, height: 7.5 mm, acc. to EN 60715, material: Steel, galvanized, length: 2000 mm, color: silver

DIN rail, unperforated - NS 35/ 7,5 ZN UNPERF 2000MM - 1206434



DIN rail, unperforated, Standard profile, width: 35 mm, height: 7.5 mm, acc. to EN 60715, material: Steel, galvanized, length: 2000 mm, color: silver

DIN rail, unperforated - NS 35/ 7,5 CU UNPERF 2000MM - 0801762



DIN rail, unperforated, Standard profile, width: 35 mm, height: 7.5 mm, acc. to EN 60715, material: Copper, uncoated, length: 2000 mm, color: copper-colored

End cap - NS 35/ 7,5 CAP - 1206560



DIN rail end piece, for DIN rail NS 35/7.5

DIN rail perforated - NS 35/15 PERF 2000MM - 1201730



DIN rail perforated, Standard profile, width: 35 mm, height: 15 mm, similar to EN 60715, material: Steel, galvanized, passivated with a thick layer, length: 2000 mm, color: silver

Feed-through terminal block - BTO 2,0 - 3281107

Accessories

DIN rail, unperforated - NS 35/15 UNPERF 2000MM - 1201714



DIN rail, unperforated, Standard profile, width: 35 mm, height: 15 mm, similar to EN 60715, material: Steel, galvanized, passivated with a thick layer, length: 2000 mm, color: silver

DIN rail perforated - NS 35/15 WH PERF 2000MM - 0806602



DIN rail perforated, Standard profile, width: 35 mm, height: 15 mm, similar to EN 60715, material: Steel, Galvanized, white passivated, length: 2000 mm, color: silver

DIN rail, unperforated - NS 35/15 WH UNPERF 2000MM - 1204135



DIN rail, unperforated, Standard profile, width: 35 mm, height: 15 mm, similar to EN 60715, material: Steel, Galvanized, white passivated, length: 2000 mm, color: silver

DIN rail, unperforated - NS 35/15 AL UNPERF 2000MM - 1201756



DIN rail, unperforated, Standard profile, width: 35 mm, height: 15 mm, similar to EN 60715, material: Aluminum, uncoated, length: 2000 mm, color: silver

DIN rail perforated - NS 35/15 ZN PERF 2000MM - 1206599



DIN rail perforated, Standard profile, width: 35 mm, height: 15 mm, similar to EN 60715, material: Steel, galvanized, length: 2000 mm, color: silver

Feed-through terminal block - BTO 2,0 - 3281107

Accessories

DIN rail, unperforated - NS 35/15 ZN UNPERF 2000MM - 1206586



DIN rail, unperforated, Standard profile, width: 35 mm, height: 15 mm, similar to EN 60715, material: Steel, galvanized, length: 2000 mm, color: silver

DIN rail, unperforated - NS 35/15 CU UNPERF 2000MM - 1201895



DIN rail, unperforated, Standard profile, width: 35 mm, height: 15 mm, similar to EN 60715, material: Copper, uncoated, length: 2000 mm, color: copper-colored

End cap - NS 35/15 CAP - 1206573



DIN rail end piece, for DIN rail NS 35/15

End block

End clamp - E/NS 35 N BK - 0804271



End clamp, width: 9.5 mm, height: 32.8 mm, material: PA, length: 48.6 mm, color: black

End cover

End cover - D-BT 1,25 - 3281120



End cover, length: 42 mm, width: 3.5 mm, height: 26 mm, color: black

Insulating sleeve

Feed-through terminal block - BTO 2,0 - 3281107

Accessories

Insulating sleeve - MPS-IH WH - 0201663

Insulating sleeve, color: white



Insulating sleeve - MPS-IH RD - 0201676

Insulating sleeve, color: red



Insulating sleeve - MPS-IH BU - 0201689

Insulating sleeve, color: blue



Insulating sleeve - MPS-IH YE - 0201692

Insulating sleeve, color: yellow



Insulating sleeve - MPS-IH GN - 0201702

Insulating sleeve, color: green



Feed-through terminal block - BTO 2,0 - 3281107

Accessories

Insulating sleeve - MPS-IH GY - 0201728

Insulating sleeve, color: gray



Insulating sleeve - MPS-IH BK - 0201731

Insulating sleeve, color: black



Jumper

Plug-in bridge - FBS 2-3,5 - 3213014



Plug-in bridge, pitch: 3.5 mm, number of positions: 2, color: red

Plug-in bridge - FBS 2-3,5 BU - 3213086



Plug-in bridge, pitch: 3.5 mm, number of positions: 2, color: blue

Plug-in bridge - FBS 2-3,5 GY - 3213153



Plug-in bridge, pitch: 3.5 mm, number of positions: 2, color: gray

Labeled terminal marker

Feed-through terminal block - BTO 2,0 - 3281107

Accessories

Marker for terminal blocks - TMT 6 R CUS - 0824488



Marker for terminal blocks, can be ordered: by line, white, labeled according to customer specifications, mounting type: snap into universal marker groove, snap into flat marker groove, for terminal block width: 6.2 mm, lettering field size: 6.35 x 6.15 mm

Partition plate

Spacer plate - DP PS-3,5 - 3031011



Spacer plate, length: 15.9 mm, width: 3.5 mm, height: 33.5 mm, number of positions: 1, color: red

Planning and marking software

Software - CLIP-PROJECT ADVANCED - 5146040



Multilingual software for convenient configuration of Phoenix Contact products on standard DIN rails.

Software - CLIP-PROJECT PROFESSIONAL - 5146053



Multilingual software for terminal strip configuration. A marking module enables the professional marking of markers and labels for identifying terminal blocks, conductors and cables, and devices.

Screwdriver tools

Philips screwdriver - SF-PH 2-100 - 1212560



Screwdriver, PH crosshead (lasered), uninsulated, size: PH 2 x 100, 2-component grip, with non-slip grip

Feed-through terminal block - BTO 2,0 - 3281107

Accessories

Philips screwdriver - SF-PH 2-100 S-VDE - 1212694



Screwdriver, crosshead PH (lasered), insulated, size: PH 2 x 100, 2-component handle, with non-slip grip

Terminal marking

Marker for terminal blocks - TMT 6 R - 0816498



Marker for terminal blocks, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK S1.1, perforated, mounting type: snap into universal marker groove, snap into flat marker groove, for terminal block width: 6.2 mm, lettering field size: 6.35 x 6.15 mm, Number of individual labels: 16000

Marker for terminal blocks - TMT (EX9,5)R - 0828295



Marker for terminal blocks, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, mounting type: snap into universal marker groove, snap into tall marker groove, for terminal block width: 50000 mm, lettering field size: 9.5 x 50000 mm, Number of individual labels: 1

Marker for terminal blocks - US-TM 100 - 0829255



Marker for terminal blocks, Card, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: snap into universal marker groove, lettering field size: 104 x 9.8 mm, Number of individual labels: 13

Test plug terminal block

Test plugs - PS-3,5 - 3031010



Test plugs, Modular test plug, color: red

Feed-through terminal block - BTO 2,0 - 3281107

Accessories

Test plugs - PS-3,5/E - 3031012



Test plugs, Individual test plug, color: red

Test plugs - MPS-MT - 0201744



Test plugs, with solder connection up to 1 mm² conductor cross section, color: gray

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PHOENIX CONTACT GmbH & Co. KG
Flachsmarktstr. 8
32825 Blomberg
Germany
Tel. +49 5235 300
Fax +49 5235 3 41200
<http://www.phoenixcontact.com>