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Installation terminal block, Push-in connection, cross section: 0.5 mm² - 25 mm², AWG: 20 - 4, width: 12.2 mm, color: blue, mounting type: NS 35/7,5, NS 35/15



Key Commercial Data

Packing unit	10 pc
Minimum order quantity	10 pc
GTIN	4 055626 532479
GTIN	4055626532479
Weight per Piece (excluding packing)	31.830 g
Custom tariff number	85369010
Country of origin	Poland

Technical data

General

Number of levels	1
Number of connections	1
Potentials	1
Nominal cross section	16 mm ²
Color	blue
Insulating material	PA
Flammability rating according to UL 94	V0
Rated surge voltage	6 kV
Degree of pollution	3
Overvoltage category	III
Insulating material group	I
Maximum power dissipation for nominal condition	2.43 W
Ambient temperature (operation)	-60 85 ()



Technical data

General

Ambient temperature (assembly) Ambient temperature (assembly) Amountal current 76 A 77 A 78 A 78 A 79 A (for 16 mm² conductor cross section) Nominal voltage Un 1000 V Open side panel No Shock protection test specification DIN EN 50274 (VDE 0660-514)-2002-11 Back of the hard protection Guaranteed Finger protection Result of surge voltage test set point Result of surge voltage test set point Result of power-frequency withstand voltage test Fost passed Power frequency withstand voltage set point Result of be bed for mechanical stability of terminal points (5 x conductor connection) Result of be bed for mechanical stability of terminal points (5 x conductor connection) Bending test trotation speed 10 rpm Bending test trotation speed 10 rpm Bending test trotation speed 10 rpm Bending test conductor cross section/weight 0.5 mm² / 0.3 kg Tensile test result Test passed Conductor cross section tensile test 10 mm² / 2.9 kg 25 mm² / 4.5 kg Tractive force setpoint 20 N Conductor cross section tensile test 10 mm² Tractive force setpoint 10 mm² Tractive force setpo	Ambient temperature (storage/transport)	-25 55
Nominal current I _N Nominal voltage U _N 1000 V Open side panel No Shock protection test specification DIN EN 50274 (VDE 0860-514):2002-11 Back of the hand protection protection by a section from the fact of the protection pr	Ambient temperature (assembly)	-5 70
Nominal voltage U _N Open side panel No Shock protection test specification DIN EN 50274 (VDE 0660-514):2002-11 Back of the hand protection Back of the hand protection Guaranteed Finger protection Guaranteed Finger protection Result of surge voltage test Fest passed Guaranteed Result of surge voltage test Formula voltage test Result of power-frequency withstand voltage test Power frequency withstand voltage setpoint Result of power-frequency withstand voltage setpoint Result of the test for mechanical stability of terminal points (5 x conductor connection) Result of bending test Fest passed Dending test for mechanical stability of terminal points (5 x conductor connection) Result of bending test Fest passed Dending test truns Bending test truns Bending test conductor cross section/weight Dending test conductor cross section/weight Dending test conductor cross section tensile test Test passed Conductor cross section tensile test Test passed Conductor cross section tensile test Dendicator cross section tensile test Tractive force setpoint Dendicator cross section tensile test Tractive force setpoint Tractive force setp	Maximum load current	76 A
Open side panel Shock protection test specification DIN EN 50274 (VDE 0680-514):2002-11 Back of the hand protection Back of the hand protection Guaranteed Result of surge voltage test Test passed Surge voltage test setpoint Result of power-frequency withstand voltage test Power frequency withstand voltage setpoint Result of the test for mechanical stability of terminal points (5 x conductor connection) Result of the test for mechanical stability of terminal points (6 x conductor connection) Result of bending test Bending test rotation speed Bending test rotation speed Bending test conductor cross section/weight Dismar* / 0.3 kg 16 mm² / 29 kg 25 mm² / 4.5 kg Tensile test result Test passed Conductor cross section tensile test Tractive force setpoint Tractive force setpoint Conductor cross section tensile test Tractive force setpoint Tractive f	Nominal current I _N	70 A (for 16 mm² conductor cross section)
Shock protection test specification DIN EN 50274 (VDE 060-514):2002-11 Back of the hand protection guaranteed Finger protection guaranteed Result of surge voltage test Surge voltage test setpoint Result of power-frequency withstand voltage test Power frequency withstand voltage setpoint Result of bendring test for mechanical stability of terminal points (5 x conductor connection) Result of bendring test Bendring test trotation speed Bendring test trotation speed Bendring test trotation speed Bendring test trotation speed Bendring test conductor cross section/weight 135 Bendring test conductor cross section/weight 15 mm² / 2.9 kg 25 mm² / 4.5 kg Tensile test result Test passed Conductor cross section tensile test 0.5 mm² Tractive force setpoint 20 N Conductor cross section tensile test 100 N Conductor cross section tensile test 15 mm² Tractive force setpoint 100 N Conductor cross section tensile test 25 mm² Tractive force setpoint 100 N Conductor cross section tensile test 15 m² Tractive force setpoint 15 N Result of light fift on carrier NS 35 Setpoint Test passed Requirements, voltage drop 3.2 mV Result of voltage-drop test Requirements, voltage drop 3.2 mV Result of temperature-rise test Test passed Conductor cross section short circuit testing 16 mm² Short-time current 1.96 kA Conductor cross section short circuit testing Short-time current 1.96 kA Conductor cross section short circuit testing Short-time current Test passed	Nominal voltage U _N	1000 V
Back of the hand protection Finger protection Result of surge voltage test Result of surge voltage test setpoint Result of power-frequency withstand voltage test Test passed Power frequency withstand voltage setpoint Result of power-frequency withstand voltage setpoint Result of the test for mechanical stability of terminal points (5 x conductor connection) Result of bending test Bending test rotation speed Bending test rotation speed Bending test conductor cross section/weight 10 rpm 135 Bending test conductor cross section/weight 0.5 mm² / 0.3 kg 25 mm² / 4.5 kg Tensile test result Test passed Conductor cross section tensile test 0.5 mm² Tractive force setpoint Conductor cross section tensile test 16 mm² Tractive force setpoint 100 N Conductor cross section tensile test 25 mm² Tractive force setpoint 135 N Result of light fit on support Test passed Setpoint 5 N Result of voltage-drop test Requirements, voltage drop 3.2 mV Result of temperature-rise test Test passed Conductor cross section short circuit testing 16 mm² Test passed Short circuit stability result Test passed Conductor cross section short circuit testing 16 mm² Test passed Short-time current 1.96 kA Conductor cross section short circuit testing 18 m² Short-time current 1.96 kA Result of thermal test Test passed	Open side panel	No
Finger protection guaranteed Result of surge voltage test explorit Result of power-frequency withstand voltage test Fower frequency withstand voltage setpoint Result of power-frequency withstand voltage setpoint Result of power-frequency withstand voltage setpoint Result of the test for mechanical stability of terminal points (5 x conductor connection) Result of working test Fower frequency withstand voltage setpoint Result of bending test Test passed Test passed Bending test trotation speed Bending test turns Bending test conductor cross section/weight 10 rpm Bending test conductor cross section/weight 10 fmm² / 2.9 kg 25 mm² / 4.5 kg Tensile test result Test passed Conductor cross section tensile test Test passed Conductor cross section tensile test 10 fmm² Tractive force setpoint 100 N Conductor cross section tensile test Tractive force setpoint 100 N Conductor cross section tensile test Tractive force setpoint Tractive fo	Shock protection test specification	DIN EN 50274 (VDE 0660-514):2002-11
Result of surge voltage test Surge voltage test setpoint Surge voltage test voltage setpoint Surge voltage test voltage setpoint Surge voltage test voltage drop Surge voltage test voltage drop Surge voltage drop Surge voltage test voltage drop Surge voltage drop Surge voltage test voltage drop Surge voltage test voltage drop Surge voltage test voltage test voltage drop Surge voltage voltage test Surge voltage voltage drop Surge voltage drop	Back of the hand protection	guaranteed
Surge voltage test setpoint Result of power-frequency withstand voltage test Power frequency withstand voltage setpoint 2.2 kV Result of the test for mechanical stability of terminal points (5 x conductor connection) Result of bending test Test passed Bending test rotation speed Bending test trotation speed Bending test trotation speed Bending test conductor cross section/weight 0.5 mm² / 0.3 kg 16 mm² / 2.9 kg 25 mm² / 4.5 kg Test passed Conductor cross section tensile test 0.5 mm² Tractive force setpoint 20 N Conductor cross section tensile test 16 mm² Tractive force setpoint 20 N Conductor cross section tensile test 16 mm² Tractive force setpoint 100 N Conductor cross section tensile test 15 mm² Tractive force setpoint 100 N Conductor cross section tensile test 15 mm² Tractive force setpoint 15 N Result of tight fit on support Test passed Tight fit on carrier NS 35 Setpoint 5 N Result of voltage-drop test Test passed Short circuit stability result Test passed Short circuit stability result Test passed Short-time current 1.96 kA Conductor cross section short circuit testing Short-time current Test passed Test passed	Finger protection	guaranteed
Result of power-frequency withstand voltage test Power frequency withstand voltage setpoint Result of the test for mechanical stability of terminal points (5 x Test passed Result of the test for mechanical stability of terminal points (5 x Test passed Result of bending test Result of bending test Test passed 10 rpm Bending test turns 135 Bending test conductor cross section/weight 0.5 mm² / 0.3 kg 16 mm² / 2.9 kg 25 mm² / 4.5 kg Tensile test result Test passed Conductor cross section tensile test 0.5 mm² Tractive force setpoint 20 N Conductor cross section tensile test 16 mm² Tractive force setpoint 100 N Conductor cross section tensile test 25 mm² Tractive force setpoint 135 N Result of tight fit on support Test passed Tight fit on carrier Setpoint Result of voltage-drop test Requirements, voltage drop 2 3.2 mV Result of temperature-rise test Test passed Conductor cross section short circuit testing 1.96 kA Conductor cross section short circuit testing 25 mm² Short-time current 3 kA Result of thermal test Test passed	Result of surge voltage test	Test passed
Power frequency withstand voltage setpoint Result of the test for mechanical stability of terminal points (5 x conductor connection) Result of bending test Bending test rotation speed Bending test turns Bending test conductor cross section/weight 135 Bending test conductor cross section/weight 16 mm² / 2.9 kg 25 mm² / 4.5 kg Tensile test result Test passed Conductor cross section tensile test 0.5 mm² Tractive force setpoint Conductor cross section tensile test 100 N Conductor cross section tensile test Tractive force setpoint 100 N Result of tight fit on support Test passed Setpoint Sepoint Sepoint Sepoint Sepoint Sepoint Sepoint Sepoint Sepoint Sepoint Result of voltage-drop test Requirements, voltage drop Sepoint Test passed Conductor cross section short circuit testing Hom² Test passed Test passed Conductor cross section short circuit testing Test passed Test passed Test passed Conductor cross section short circuit testing Short-time current 1.96 kA Result of thermal test Test passed Short-time current Test passed Test passed	Surge voltage test setpoint	9.8 kV
Result of the test for mechanical stability of terminal points (5 x conductor connection) Result of bending test Result of bending test tration speed Bending test rotation speed Bending test conductor cross section/weight 135 Bending test conductor cross section/weight 16 mm² / 2.9 kg 25 mm² / 4.5 kg Tensile test result Conductor cross section tensile test 7 set passed Conductor cross section tensile test 16 mm² Tractive force setpoint Conductor cross section tensile test 100 N Conductor cross section tensile test Tractive force setpoint 100 N Conductor cross section tensile test Tractive force setpoint 135 N Result of tight fit on support Test passed Test passed Requirements, voltage drop 2.3.2 mV Result of remperature-rise test Test passed Short-time current 1.96 kA Result of themal test Test passed Fet passed Fet passed Short-time current 3 kA Result of themal test Test passed	Result of power-frequency withstand voltage test	Test passed
Result of bending test Result of bending test turns Result of bending test turns Result of temperature-rise test Result of temperature-rise	Power frequency withstand voltage setpoint	2.2 kV
Bending test rotation speed Bending test turns 135 Bending test conductor cross section/weight 0.5 mm² / 0.3 kg 16 mm² / 2.9 kg 25 mm² / 4.5 kg Tensile test result Test passed Conductor cross section tensile test 0.5 mm² Tractive force setpoint Conductor cross section tensile test 100 N Conductor cross section tensile test 25 mm² Tractive force setpoint 100 N Conductor cross section tensile test 25 mm² Tractive force setpoint 135 N Result of tight fit on support Test passed Tight fit on carrier NS 35 Setpoint 5 N Result of voltage-drop test Requirements, voltage drop ≤ 3.2 mV Result of temperature-rise test Test passed Conductor cross section short circuit testing 196 kA Conductor cross section short circuit testing 25 mm² Short-time current 1.96 kA Result of termal test Test passed		Test passed
Bending test turns 135 Bending test conductor cross section/weight 0.5 mm² / 0.3 kg 16 mm² / 2.9 kg 25 mm² / 4.5 kg Tensile test result Test passed Conductor cross section tensile test 0.5 mm² Tractive force setpoint 20 N Conductor cross section tensile test 16 mm² Tractive force setpoint 100 N Conductor cross section tensile test 25 mm² Tractive force setpoint 135 N Result of tight fit on support Test passed Tight fit on carrier NS 35 Setpoint 5 N Result of voltage-drop test Requirements, voltage drop \$\leq 3.2 \text{ mV}\$ Result of temperature-rise test Test passed Tonductor cross section short circuit testing 16 mm² Short-time current 1.96 kA Result of termal test Test passed Stopt-time current 3 kA Result of termal test Test passed	Result of bending test	Test passed
Bending test conductor cross section/weight 0.5 mm² / 0.3 kg 16 mm² / 2.9 kg 25 mm² / 4.5 kg Tensile test result Test passed Conductor cross section tensile test 0.5 mm² Tractive force setpoint 20 N Conductor cross section tensile test 16 mm² Tractive force setpoint 100 N Conductor cross section tensile test 25 mm² Tractive force setpoint 135 N Result of tight fit on support Test passed Tight fit on carrier NS 35 Setpoint Result of voltage-drop test Requirements, voltage drop Result of temperature-rise test Test passed Short circuit stability result Test passed Conductor cross section short circuit testing 1.96 kA Conductor cross section short circuit testing Short-time current 1.96 kA Result of thermal test Test passed	Bending test rotation speed	10 rpm
16 mm² / 2.9 kg 25 mm² / 4.5 kg Tensile test result Test passed Conductor cross section tensile test 0.5 mm² Tractive force setpoint 20 N Conductor cross section tensile test 16 mm² Tractive force setpoint 100 N Conductor cross section tensile test 25 mm² Tractive force setpoint 135 N Result of tight fit on support Test passed Tight fit on carrier NS 35 Setpoint Result of voltage-drop test Result of voltage-drop test Result of temperature-rise test Test passed Short circuit stability result Test passed Conductor cross section short circuit testing 16 mm² Short-time current 1,96 kA Conductor cross section short circuit testing Short-time current Test passed Test passed	Bending test turns	135
Tensile test result Test passed Conductor cross section tensile test 0.5 mm² Tractive force setpoint 20 N Conductor cross section tensile test 16 mm² Tractive force setpoint 100 N Conductor cross section tensile test 25 mm² Tractive force setpoint 135 N Result of tight fit on support Test passed Tight fit on carrier NS 35 Setpoint Sepoint Test passed Requirements, voltage-drop test Result of temperature-rise test Test passed Short circuit stability result Conductor cross section short circuit testing Short-time current 1 96 kA Result of thermal test Test passed Test passed	Bending test conductor cross section/weight	0.5 mm² / 0.3 kg
Tensile test result Conductor cross section tensile test 0.5 mm² Tractive force setpoint 20 N Conductor cross section tensile test 16 mm² Tractive force setpoint 100 N Conductor cross section tensile test 25 mm² Tractive force setpoint 135 N Result of tight fit on support Test passed Tight fit on carrier NS 35 Setpoint 5 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 196 kA Conductor cross section short circuit testing 25 mm² Short-time current 1.96 kA Conductor cross section short circuit testing 25 mm² Short-time current 3 kA Result of thermal test Test passed		16 mm² / 2.9 kg
Conductor cross section tensile test 0.5 mm² Tractive force setpoint 20 N Conductor cross section tensile test 16 mm² Tractive force setpoint 100 N Conductor cross section tensile test 25 mm² Tractive force setpoint 135 N Result of tight fit on support Test passed 15 N Result of tight fit on carrier NS 35 Setpoint 5 N Result of voltage-drop test Test passed 7 Test passed 7 Requirements, voltage drop ≤ 3.2 mV Result of temperature-rise test Test passed 7 Test passed 7 Short circuit stability result 7 Test passed 7 Test passed 7 Test passed 7 Short circuit stability result 7 Test passed 7		25 mm² / 4.5 kg
Tractive force setpoint Conductor cross section tensile test 16 mm² Tractive force setpoint Conductor cross section tensile test 25 mm² Tractive force setpoint 135 N Result of tight fit on support Test passed Tight fit on carrier NS 35 Setpoint Sepoint Test passed Test passed Requirements, voltage drop Result of temperature-rise test Test passed Short circuit stability result Test passed Conductor cross section short circuit testing Short-time current 1.96 kA Result of thermal test Test passed Requirement sets Test passed	Tensile test result	Test passed
Tractive force setpoint Conductor cross section tensile test 100 N Conductor cross section tensile test 25 mm² Tractive force setpoint 135 N Result of tight fit on support Test passed Tight fit on carrier NS 35 Setpoint Sepoint Result of voltage-drop test Requirements, voltage drop Result of temperature-rise test Test passed Short circuit stability result Test passed Conductor cross section short circuit testing Short-time current 1.96 kA Result of thermal test Test passed	Conductor cross section tensile test	0.5 mm²
Tractive force setpoint Conductor cross section tensile test 25 mm² Tractive force setpoint 135 N Result of tight fit on support Test passed Tight fit on carrier NS 35 Setpoint 5 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 Short-time current 1.96 kA Conductor cross section short circuit testing Short-time current 3 kA Result of thermal test Test passed	Tractive force setpoint	20 N
Conductor cross section tensile test 25 mm² Tractive force setpoint Result of tight fit on support Test passed Tight fit on carrier NS 35 Setpoint Result of voltage-drop test Requirements, voltage drop Result of temperature-rise test Test passed Short circuit stability result Conductor cross section short circuit testing Short-time current Short-time current Short-time current Test passed 25 mm² Test passed 16 mm² Short-time current 1.96 kA Conductor cross section short circuit testing Short-time current 3 kA Result of thermal test Test passed	Conductor cross section tensile test	16 mm²
Tractive force setpoint Result of tight fit on support Test passed Tight fit on carrier NS 35 Setpoint Setpoint Result of voltage-drop test Requirements, voltage drop Result of temperature-rise test Test passed Short circuit stability result Test passed Conductor cross section short circuit testing Short-time current 1.96 kA Conductor cross section short circuit testing Short-time current 3 kA Result of thermal test Test passed	Tractive force setpoint	100 N
Result of tight fit on support Test passed Tight fit on carrier NS 35 Setpoint 5 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 16 mm² Short-time current 1.96 kA Conductor cross section short circuit testing 25 mm² Short-time current 3 kA Result of thermal test Test passed	Conductor cross section tensile test	25 mm²
Tight fit on carrier Setpoint Setpoint Fesult of voltage-drop test Requirements, voltage drop Result of temperature-rise test Test passed Short circuit stability result Conductor cross section short circuit testing Short-time current 1.96 kA Conductor cross section short circuit testing Short-time current 3 kA Result of thermal test Test passed	Tractive force setpoint	135 N
Setpoint 5 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 16 mm² Short-time current 1.96 kA Conductor cross section short circuit testing 25 mm² Short-time current 3 kA Result of thermal test Test passed	Result of tight fit on support	Test passed
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 16 mm² Short-time current 1.96 kA Conductor cross section short circuit testing 25 mm² Short-time current 3 kA Result of thermal test Test passed	Tight fit on carrier	NS 35
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 16 mm² Short-time current 1.96 kA Conductor cross section short circuit testing 25 mm² Short-time current 3 kA Result of thermal test Test passed	Setpoint	5 N
Result of temperature-rise test Test passed Short circuit stability result Test passed Conductor cross section short circuit testing 16 mm² Short-time current 1.96 kA Conductor cross section short circuit testing 25 mm² Short-time current 3 kA Result of thermal test Test passed	Result of voltage-drop test	Test passed
Short circuit stability result Conductor cross section short circuit testing 16 mm² Short-time current 1.96 kA Conductor cross section short circuit testing 25 mm² Short-time current 3 kA Result of thermal test Test passed	Requirements, voltage drop	≤ 3.2 mV
Conductor cross section short circuit testing Short-time current 1.96 kA Conductor cross section short circuit testing 25 mm² Short-time current 3 kA Result of thermal test Test passed	Result of temperature-rise test	Test passed
Short-time current 1.96 kA Conductor cross section short circuit testing 25 mm² Short-time current 3 kA Result of thermal test Test passed	Short circuit stability result	Test passed
Conductor cross section short circuit testing 25 mm² Short-time current 3 kA Result of thermal test Test passed	Conductor cross section short circuit testing	16 mm²
Short-time current 3 kA Result of thermal test Test passed	Short-time current	1.96 kA
Result of thermal test Test passed	Conductor cross section short circuit testing	25 mm²
·	Short-time current	3 kA
Ageing test for screwless modular terminal block temperature cycles 192	Result of thermal test	Test passed
	Ageing test for screwless modular terminal block temperature cycles	192



Technical data

General

Result of aging test Test passed Oscillation, broadband noise test result Test passed Test specification, oscillation, broadband noise DIN EN 50155 (VDE 0115-200):2008-03 Test specification, oscillation, broadband noise DIN EN 50155 (VDE 0115-200):2008-03 Test specification, specification 3 revice life test category 2, bogie-mounted ASD leval 6.12 (m/s²)²/Hz Acceleration 3.12 g Test duration per axis 5 h 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 Relative insulation material temperature index (Elec., UL 746 B) 130 °C Test directions X., Y and Z-axis (pos. and neg.) Relative insulation material temperature index (Elec., UL 746 B) 130 °C Static insulating material application in coid -60 °C Behavior in fire for rail vehicles (DIN EN 6095-11-10)	Proof of thermal characteristics (needle flame) effective duration	30 s
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, = 5 Hz to f, = 250 Hz ASD level 6.12 (m/s³)²/Hz Asceleration 3.12 g Test duration per axis 5 h Test directions X-, Y- and Z-axis Shock test result Test specification, shock test DIN EN 50155 (VDE 0115-200);2008-03 Shock form Half-sine Acceleration 30 g Shock duration Acceleration 30 g 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) Temperature index of insulation material (DIN EN 60216-1 (VDE 0304-21)) Static insulating material application in cold Behavior in fire for rail vehicles (DIN 5510-2) Flame test method (DIN EN 60895-11-10) Oxygen index (DIN EN 150 4589-2) NF F16-101, NF F10-102 Class F Surface filammability NFPA 130 (ASTM E 162) Specific optical density of smoke NFPA 130 (ASTM E 162) Specific optical density of smoke NFPA 130 (ASTM E 1634) Fire protection for rail vehicles (DIN EN 45545-2) R22 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) R24 HL 1 - HL 3	Result of aging test	Test passed
Test spectrum Service life test category 2, bogie-mounted Test frequency f₁ = 5 Hz to f₂ = 250 Hz ASD level 6.12 (m/s²)²/Hz Acceleration 3.12 g Test duration per axis 5 h Test directions X-, Y- and Z-axis Shock test result Test spassed 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 Temperature index of insulation material (DIN EN 60216-1 (VDE 3030-21) 130 °C Static insulating material application in cold -60 °C Behavior in fire for rail vehicles (DIN 5510-2) Test passed Flame test method (DIN EN 60895-11-10) V0 Oxygen index (DIN EN 160895-11-10) V0 Oxygen index (DIN EN 160895-11-10) 2 Surface flammability NFPA 130 (ASTM E 162) passed Specific optical density OFPA 130	Oscillation, broadband noise test result	Test passed
Test frequency f, = 5 Hz to f₂ = 250 Hz ASD level 6.12 (m/s²)²/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 Temperature index of insulation material (DIN EN 60216-1 (VDE 0304-21)) 130 °C Static insulating material application in cold -60 °C Behavior in fire for rail vehicles (DIN 5510-2) Test passed Flame test method (DIN EN 60695-11-10) V0 Oxygen index (DIN EN 160695-11-10) V0 Oxygen index (DIN EN 160898-2) >32 % NF F16-101, NF F10-102 Class I 2 Surface flammability, NFPA 130 (ASTM E 162) passed Specific optical density of smoke NFPA 130 (ASTM E 162) <td>Test specification, oscillation, broadband noise</td> <td>DIN EN 50155 (VDE 0115-200):2008-03</td>	Test specification, oscillation, broadband noise	DIN EN 50155 (VDE 0115-200):2008-03
ASD level 6.12 (m/s²)²/Hz Acceleration 3.12 g Test duration per axis 5 h Test directions X-, Y- and Z-axis Shock test result Test spassed Test spassed 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 Temperature index of insulation material (DIN EN 60216-1 (VDE 0304-21)) Static insulating material application in cold -60 °C Behavior in fire for rail vehicles (DIN 5510-2) Test passed Flame test method (DIN EN 6095-11-10) V0 Oxygen index (DIN EN 160459-2) 32 % NF F16-101, NF F10-102 Class I 2 Surface flammability NFPA 130 (ASTM E 162) passed Smoke gas toxicity NFPA 130 (ASTM E 162) passed Fine protection for rail vehicles (DIN EN 45545-2) R22 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) R24 HL 1- HL 3	Test spectrum	Service life test category 2, bogie-mounted
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 Temperature index of insulation material (DIN EN 60216-1 (VDE 0304-21)) 130 °C Static insulating material application in cold -60 °C Behavior in fire for rail vehicles (DIN 5510-2) Test passed Flame test method (DIN EN 60695-11-10) V0 Oxygen index (DIN EN ISO 4589-2) >32 % NF F16-101, NF F10-102 Class I 2 Surface flammability NFPA 130 (ASTM E 162) passed Specific optical density of smoke NFPA 130 (ASTM E 662) passed Specific optical density of smoke NFPA 130 (ASTM E 1354) 28 MJ/kg Fire protection for rail vehicles (DIN EN 45545-2) R22 HL 1 - HL 3 </td <td>Test frequency</td> <td>$f_1 = 5 \text{ Hz to } f_2 = 250 \text{ Hz}$</td>	Test frequency	$f_1 = 5 \text{ Hz to } f_2 = 250 \text{ Hz}$
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 Temperature index of insulation material (DIN EN 60216-1 (VDE 0304-21)) 130 °C Static insulating material application in cold -60 °C Behavior in fire for rail vehicles (DIN 5510-2) Test passed Flame test method (DIN EN 60695-11-10) V0 Oxygen index (DIN EN ISO 4589-2) >32 % NF F16-101, NF F10-102 Class I 2 NF F16-101, NF F10-102 Class F 2 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 Calorimetric heat release NFPA 130 (ASTM E 1354) 28 MJ/kg	ASD level	6.12 (m/s²)²/Hz
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 Temperature index of insulation material (DIN EN 60216-1 (VDE 0304-21)) 130 °C Static insulating material application in cold 40 °C Behavior in fire for rail vehicles (DIN 5510-2) Test passed Flame test method (DIN EN 60695-11-10) V0 Oxygen index (DIN EN ISO 4589-2) >32 % NF F16-101, NF F10-102 Class I 2 NF F16-101, NF F10-102 Class I 2 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 Calorimetric heat release NFPA 130 (ASTM E 1354) 28 MJ/kg Fire protection for rail vehicles (DIN EN 45545-2) R22	Acceleration	3.12 g
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 Temperature index of insulation material (DIN EN 60216-1 (VDE 0304-21)) 130 °C Static insulating material application in cold -60 °C Behavior in fire for rail vehicles (DIN 5510-2) Test passed Flame test method (DIN EN 1608-11-10) V0 Oxygen index (DIN EN 160 4589-2) >32 % NF F16-101, NF F10-102 Class I 2 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 Calorimetric heat release NFPA 130 (ASTM E 1354) 28 MJ/kg Fire protection for rail vehicles (DIN EN 45545-2) R22 HL 1 - HL 3 Fire protection for rail vehicles (DIN EN 45545-2) R24 HL 1 - HL 3	Test duration per axis	5 h
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 Temperature index of insulation material (DIN EN 60216-1 (VDE 3004-21)) 130 °C Static insulating material application in cold 60 °C Behavior in fire for rail vehicles (DIN 5510-2) Test passed Flame test method (DIN EN 60695-11-10) V0 Oxygen index (DIN EN ISO 4589-2) >32 % NF F16-101, NF F10-102 Class I 2 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 Calorimetric heat release NFPA 130 (ASTM E 1354) 28 MJ/kg 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 -	Test directions	X-, Y- and Z-axis
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 Temperature index of insulation material (DIN EN 60216-1 (VDE 303-421)) 130 °C Static insulating material application in cold -60 °C Behavior in fire for rail vehicles (DIN 5510-2) Test passed Flame test method (DIN EN 60695-11-10) V0 Oxygen index (DIN EN ISO 4589-2) >32 % NF F16-101, NF F10-102 Class I 2 NF F16-101, NF F10-102 Class F 2 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 Calorimetric heat release NFPA 130 (ASTM E 1354) 28 MJ/kg Fire protection for rail vehicles (DIN EN 45545-2) R22 HL 1 - HL 3 Fire protection for rail vehicles (DIN EN 45545-2) R24 HL 1 - HL 3	Shock test result	Test passed
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 Temperature index of insulation material (DIN EN 60216-1 (VDE 0304-21)) 130 °C Static insulating material application in cold 60 °C Behavior in fire for rail vehicles (DIN 5510-2) Test passed Flame test method (DIN EN 60695-11-10) V0 Oxygen index (DIN EN ISO 4589-2) 732 % NF F16-101, NF F10-102 Class I 2 NF F16-101, NF F10-102 Class F 2 Surface flammability NFPA 130 (ASTM E 162) passed Specific optical density of smoke NFPA 130 (ASTM E 662) passed Smoke gas toxicity NFPA 130 (ASTM E 1354) 28 MJ/kg Fire protection for rail vehicles (DIN EN 45545-2) R22 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) R24 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) R24 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) R24 HL 1 - HL 3	Test specification, shock test	DIN EN 50155 (VDE 0115-200):2008-03
Shock duration Number of shocks per direction Test directions Relative insulation material temperature index (Elec., UL 746 B) Temperature index of insulation material (DIN EN 60216-1 (VDE 0304-21)) Static insulating material application in cold Fenerature index of insulation in cold Temperature index of insulation in cold Test passed Flame test method (DIN EN 60695-11-10) Vo Oxygen index (DIN EN 1SO 4589-2) NF F16-101, NF F10-102 Class I FIF-10-101, NF F10-102 Class F Surface flammability NFPA 130 (ASTM E 162) Specific optical density of smoke NFPA 130 (ASTM E 662) Specific optical density of smoke NFPA 130 (ASTM E 662) Smoke gas toxicity NFPA 130 (SMP 800C) Calorimetric heat release NFPA 130 (ASTM E 1354) Fire protection for rail vehicles (DIN EN 45545-2) R22 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) R24 HL 1 - HL 3	Shock form	Half-sine
Number of shocks per direction 7. Y- and Z-axis (pos. and neg.) Relative insulation material temperature index (Elec., UL 746 B) 7. Temperature index of insulation material (DIN EN 60216-1 (VDE 0304-21)) 8. Static insulating material application in cold 8. How one of the formal vehicles (DIN 5510-2) 8. How one of the formal vehicles (DIN 5510-2) 8. How one of the formal vehicles (DIN 5510-2) 8. How one of the formal vehicles (DIN 5510-2) 8. How one of the formal vehicles (DIN EN 60695-11-10) 9. Vo 9. Coxygen index (DIN EN ISO 4589-2) 9. Say one of the formal vehicles (DIN EN 60695-11-10) 9. The formal vehicles (DIN EN 60695-11-10) 10. The formal vehicles (DIN EN 60695-11-10) 10. The formal vehicles (DIN EN 60695-11-10) 10. The formal vehicles (DIN EN 45545-2) R23 10. The formal vehicles (DIN EN 45545-2) R24 10. The formal v	Acceleration	30g
Test directions X-, Y- and Z-axis (pos. and neg.) Relative insulation material temperature index (Elec., UL 746 B) 130 °C Temperature index of insulation material (DIN EN 60216-1 (VDE 0304-21)) Static insulating material application in cold -60 °C Behavior in fire for rail vehicles (DIN 5510-2) Test passed Flame test method (DIN EN 60695-11-10) V0 Oxygen index (DIN EN ISO 4589-2) >32 % NF F16-101, NF F10-102 Class I 2 NF F16-101, NF F10-102 Class F 2 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 Calorimetric heat release NFPA 130 (ASTM E 1354) 28 MJ/kg 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	Shock duration	18 ms
Relative insulation material temperature index (Elec., UL 746 B) Temperature index of insulation material (DIN EN 60216-1 (VDE 0304-21)) Static insulating material application in cold -60 °C Behavior in fire for rail vehicles (DIN 5510-2) Test passed Flame test method (DIN EN 60695-11-10) Vo Oxygen index (DIN EN ISO 4589-2) NF F16-101, NF F10-102 Class I Surface flammability NFPA 130 (ASTM E 162) Specific optical density of smoke NFPA 130 (ASTM E 662) Smoke gas toxicity NFPA 130 (SMP 800C) Calorimetric heat release NFPA 130 (ASTM E 1354) Fire protection for rail vehicles (DIN EN 45545-2) R22 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) R24 HL 1 - HL 3	Number of shocks per direction	3
Temperature index of insulation material (DIN EN 60216-1 (VDE 0304-21)) Static insulating material application in cold -60 °C Behavior in fire for rail vehicles (DIN 5510-2) Test passed Flame test method (DIN EN 60695-11-10) V0 Oxygen index (DIN EN ISO 4589-2) NF F16-101, NF F10-102 Class I Surface flammability NFPA 130 (ASTM E 162) Specific optical density of smoke NFPA 130 (ASTM E 662) Smoke gas toxicity NFPA 130 (SMP 800C) Calorimetric heat release NFPA 130 (ASTM E 1354) Fire protection for rail vehicles (DIN EN 45545-2) R22 Fire protection for rail vehicles (DIN EN 45545-2) R23 Fire protection for rail vehicles (DIN EN 45545-2) R24 HL 1 - HL 3 Fire protection for rail vehicles (DIN EN 45545-2) R24 HL 1 - HL 3	Test directions	X-, Y- and Z-axis (pos. and neg.)
Static insulating material application in cold Behavior in fire for rail vehicles (DIN 5510-2) Flame test method (DIN EN 60695-11-10) Oxygen index (DIN EN ISO 4589-2) NF F16-101, NF F10-102 Class I NF F16-101, NF F10-102 Class F Surface flammability NFPA 130 (ASTM E 162) Specific optical density of smoke NFPA 130 (ASTM E 662) Smoke gas toxicity NFPA 130 (SMP 800C) Calorimetric heat release NFPA 130 (ASTM E 1354) Fire protection for rail vehicles (DIN EN 45545-2) R22 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) R24 HL 1 - HL 3	Relative insulation material temperature index (Elec., UL 746 B)	130 °C
Behavior in fire for rail vehicles (DIN 5510-2) Flame test method (DIN EN 60695-11-10) Oxygen index (DIN EN ISO 4589-2) NF F16-101, NF F10-102 Class I NF F16-101, NF F10-102 Class F 2 Surface flammability NFPA 130 (ASTM E 162) Specific optical density of smoke NFPA 130 (ASTM E 662) Smoke gas toxicity NFPA 130 (SMP 800C) Calorimetric heat release NFPA 130 (ASTM E 1354) Fire protection for rail vehicles (DIN EN 45545-2) R22 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) R24 HL 1 - HL 3	, ,	130 °C
Flame test method (DIN EN 60695-11-10) V0 Oxygen index (DIN EN ISO 4589-2) >32 % NF F16-101, NF F10-102 Class I 2 NF F16-101, NF F10-102 Class F 2 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 Calorimetric heat release NFPA 130 (ASTM E 1354) 28 MJ/kg 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	Static insulating material application in cold	-60 °C
Oxygen index (DIN EN ISO 4589-2) NF F16-101, NF F10-102 Class I 2 NF F16-101, NF F10-102 Class F 2 Surface flammability NFPA 130 (ASTM E 162) Specific optical density of smoke NFPA 130 (ASTM E 662) Smoke gas toxicity NFPA 130 (SMP 800C) Calorimetric heat release NFPA 130 (ASTM E 1354) Fire protection for rail vehicles (DIN EN 45545-2) R22 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) R24 HL 1 - HL 3	Behavior in fire for rail vehicles (DIN 5510-2)	Test passed
NF F16-101, NF F10-102 Class I NF F16-101, NF F10-102 Class F 2 Surface flammability NFPA 130 (ASTM E 162) Specific optical density of smoke NFPA 130 (ASTM E 662) Smoke gas toxicity NFPA 130 (SMP 800C) Calorimetric heat release NFPA 130 (ASTM E 1354) Fire protection for rail vehicles (DIN EN 45545-2) R22 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) R24 HL 1 - HL 3	Flame test method (DIN EN 60695-11-10)	V0
NF F16-101, NF F10-102 Class F Surface flammability NFPA 130 (ASTM E 162) Specific optical density of smoke NFPA 130 (ASTM E 662) Smoke gas toxicity NFPA 130 (SMP 800C) Calorimetric heat release NFPA 130 (ASTM E 1354) Fire protection for rail vehicles (DIN EN 45545-2) R22 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) R24 HL 1 - HL 3	Oxygen index (DIN EN ISO 4589-2)	>32 %
Surface flammability NFPA 130 (ASTM E 162) Specific optical density of smoke NFPA 130 (ASTM E 662) Smoke gas toxicity NFPA 130 (SMP 800C) Calorimetric heat release NFPA 130 (ASTM E 1354) 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	NF F16-101, NF F10-102 Class I	2
Specific optical density of smoke NFPA 130 (ASTM E 662) Smoke gas toxicity NFPA 130 (SMP 800C) Calorimetric heat release NFPA 130 (ASTM E 1354) 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	NF F16-101, NF F10-102 Class F	2
Smoke gas toxicity NFPA 130 (SMP 800C) Calorimetric heat release NFPA 130 (ASTM E 1354) 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	Surface flammability NFPA 130 (ASTM E 162)	passed
Calorimetric heat release NFPA 130 (ASTM E 1354) 28 MJ/kg 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	Specific optical density of smoke NFPA 130 (ASTM E 662)	passed
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	Smoke gas toxicity NFPA 130 (SMP 800C)	passed
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	Calorimetric heat release NFPA 130 (ASTM E 1354)	28 MJ/kg
Fire protection for rail vehicles (DIN EN 45545-2) R24 HL 1 - HL 3	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) R26 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

Dimensions

Width	12.2 mm
Length	81.9 mm
Height	46.8 mm
Height NS 35/7,5	48.5 mm
Height NS 35/15	56 mm



Technical data

Connection data

Connection	1 level
Connection method	Push-in connection
Stripping length	18 mm 20 mm
Connection in acc. with standard	IEC 60947-7-1
Conductor cross section solid min.	0.5 mm²
Conductor cross section solid max.	25 mm ²
Conductor cross section AWG min.	20
Conductor cross section AWG max.	4
Conductor cross section flexible min.	0.5 mm²
Conductor cross section flexible max.	16 mm²
Min. AWG conductor cross section, flexible	24
Max. AWG conductor cross section, flexible	4
Conductor cross section flexible, with ferrule without plastic sleeve min.	0.5 mm²
Conductor cross section flexible, with ferrule without plastic sleeve max.	16 mm²
Conductor cross section flexible, with ferrule with plastic sleeve min.	0.5 mm²
Conductor cross section flexible, with ferrule with plastic sleeve max.	16 mm²
Two conductors with the same cross section, flexible, with TWIN ferrules, with plastic sleeve, minimum	1.5 mm²
Two conductors with the same cross section, flexible, with TWIN ferrules, with plastic sleeve, maximum	4 mm²
Internal cylindrical gage	A7

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

Circuit diagram



Classifications

eCl@ss

eCl@ss 4.0	27141100
eCl@ss 4.1	27141100



Classifications

eCl@ss

eCl@ss 5.0	27141100
eCl@ss 5.1	27141100
eCl@ss 6.0	27141100
eCl@ss 7.0	27141125
eCl@ss 8.0	27141125
eCl@ss 9.0	27141125

ETIM

ETIM 3.0	EC001329
ETIM 4.0	EC000902
ETIM 5.0	EC001329
ETIM 6.0	EC001329
ETIM 7.0	EC001329

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

EAC / CSA / IECEE CB Scheme / VDE Zeichengenehmigung / UL Recognized / cUL Recognized / EAC / cULus Recognized

Ex Approvals

Approval details

EAC RU C-DE.Al30.B.01102



Approvals

CSA (3)	http://www.csagroup.org/services-industries/product-listing/ 13631	
	В	С
Nominal voltage UN	600 V	600 V
Nominal current IN	70 A	70 A
mm²/AWG/kcmil	20-4	20-4

IECEE CB Scheme	CB scheme	http://www.iecee.org/	DE1-62270
Nominal voltage UN		1000 V	
Nominal current IN		70 A	
mm²/AWG/kcmil		0.5-16	

VDE Zeichengenehmigung	DYE	http://www2.vde.com/de/Institut/Online-Service/ VDE-gepruefteProdukte/Seiten/Online-Suche.aspx 40050357		
Nominal voltage UN			1000 V	
Nominal current IN			70 A	
mm²/AWG/kcmil			0.5-16	

UL Recognized	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm FILE E 60425	
	В	С
Nominal voltage UN	600 V	600 V
Nominal current IN	70 A	70 A
mm²/AWG/kcmil	20-4	20-4

cUL Recognized	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm FILE E 60425	
	В	С
Nominal voltage UN	600 V	600 V
Nominal current IN	70 A	70 A
mm²/AWG/kcmil	20-4	20-4



Approvals

EAC

EHE

RU C-DE.BL08.B.00644

cULus Recognized



Accessories

Accessories

Cover profile

Cover profile - AP-NLS N - 1013634



Cover profile, length: 300 mm, color: transparent

Crimping tool

Crimping pliers - CRIMPFOX CENTRUS 6S - 1213144



Crimping pliers, for uninsulated and insulated ferrules, DIN 46228 Part 1 and 4, from 0.14 mm 2 ... 6 mm 2 , also for TWIN ferrules up to 2 x 4 mm 2 , automatic cross section adjustment, lateral insertion, equipped with fall protection

Crimping pliers - CRIMPFOX CENTRUS 10S - 1213154



Crimping pliers, for uninsulated and insulated ferrules, DIN 46228 Part 1 and 4, from 0.14 mm² ... 10 mm², also for TWIN ferrules up to 2 x 4 mm², automatic cross section adjustment, lateral insertion, equipped with fall protection

Crimping pliers - CRIMPFOX CENTRUS 6H - 1213146



Crimping pliers, for uninsulated and insulated ferrules, DIN 46228 Part 1 and 4, from 0.14 mm² ... 6 mm², also for TWIN ferrules up to 2 x 4 mm², automatic cross section adjustment, lateral insertion, equipped with fall protection



Accessories

Crimping pliers - CRIMPFOX CENTRUS 10H - 1213156



Crimping pliers, for uninsulated and insulated ferrules, DIN 46228 Part 1 and 4, from 0.14 mm² ... 10 mm², also for TWIN ferrules up to 2 x 4 mm², automatic cross section adjustment, lateral insertion, equipped with fall protection

Crimping pliers - CRIMPFOX 10S - 1212045



Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.14 mm² ... 10 mm², unlockable pressure lock, lateral entry

Crimping pliers - CRIMPFOX 6H - 1212046



Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.14 mm² ... 6 mm², unlockable pressure lock, lateral entry

Crimping pliers - CRIMPFOX 2,5-M - 1212719



Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 mm² ... 2.5 mm², lateral entry, trapezoidal crimp

Crimping pliers - CRIMPFOX 6-M - 1212720



Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 mm² ... 6.0 mm², lateral entry, trapezoidal crimp



Accessories

Crimping pliers - CRIMPFOX 6 - 1212034



Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 mm² ... 6.0 mm², lateral entry, trapezoidal crimp

Crimping pliers - CRIMPFOX 6T - 1212037



Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 mm² ... 6 mm², lateral entry, trapezoidal crimp

Crimping pliers - CRIMPFOX 6T-F - 1212038



Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 mm² ... 6 mm², front entry, trapezoidal crimp

Crimping pliers - CRIMPFOX 6S-F - 1212043



Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, $0.5 \text{ mm}^2 \dots 6 \text{ mm}^2$, front entry, square crimp

Crimping pliers - CRIMPFOX 10 - 1212721



Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 4 mm² ... 10 mm², lateral entry, trapezoidal crimp



Accessories

Crimping pliers - CRIMPFOX 25R - 1212039



Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 10 mm² ... 25 mm², lateral entry, WM crimp

Crimping pliers - CRIMPFOX-M - 1212072



Basic pliers, for accommodating dies for a wide range of type of contacts

DIN rail

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



Accessories

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

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



Accessories

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

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



Accessories

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

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



Accessories

DIN rail, unperforated - NS 35/15-2,3 UNPERF 2000MM - 1201798



DIN rail, unperforated, Standard profile 2.3 mm, width: 35 mm, height: 15 mm, acc. to EN 60715, material: Steel, galvanized, passivated with a thick layer, length: 2000 mm, color: silver

Documentation

Mounting material - PT-IL - 3208090



Operating decal for the push-in Technology

End block

End clamp - CLIPFIX 35 - 3022218



Quick mounting end clamp for NS 35/7,5 DIN rail or NS 35/15 DIN rail, with marking option, width: 9.5 mm, color: gray

End clamp - CLIPFIX 35-5 - 3022276



Quick mounting end clamp for NS 35/7,5 DIN rail or NS 35/15 DIN rail, with marking option, with parking option for FBS...5, FBS...6, KSS 5, KSS 6, width: 5.15 mm, color: gray

End clamp - E/NS 35 N - 0800886



End clamp, width: 9.5 mm, color: gray

Installation terminal block



Accessories

Connection terminal block - AKG 4 BU - 0421016



Connection terminal block, connection method: Screw connection, load current: 41 A, cross section: 0.5 mm^2 - 6 mm^2 , width: 7 mm, color: blue

Connection terminal block - AKG 16 BU - 0423014



Connection terminal block, connection method: Screw connection, load current: 76 A, cross section: 1.5 mm² - 16 mm², width: 9.8 mm, color: blue

Insulating sleeve

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





Accessories

Insulating sleeve - MPS-IH YE - 0201692

Insulating sleeve, color: yellow



Insulating sleeve - MPS-IH GN - 0201702

Insulating sleeve, color: green



Insulating sleeve - MPS-IH GY - 0201728

Insulating sleeve, color: gray



Insulating sleeve - MPS-IH BK - 0201731

Insulating sleeve, color: black



Labeled terminal marker

Zack Marker strip, flat - ZBF10 CUS - 0825031



Zack Marker strip, flat, can be ordered: Strip, white, labeled according to customer specifications, mounting type: snap into flat marker groove, for terminal block width: 10 mm, lettering field size: 5.15 x 10 mm, Number of individual labels: 10



Accessories

Zack Marker strip, flat - ZBF10,LGS:FORTL.ZAHLEN - 0810009



Zack Marker strip, flat, Strip, white, labeled, printed horizontally: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... 100, mounting type: snap into flat marker groove, for terminal block width: 10 mm, lettering field size: 5.15 x 10 mm, Number of individual labels: 10

Zack Marker strip, flat - ZBF10,QR:FORTL.ZAHLEN - 0810025



Zack Marker strip, flat, Strip, white, labeled, Printed vertically: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... 100, mounting type: snap into flat marker groove, for terminal block width: 10 mm, lettering field size: 5.15 x 10 mm, Number of individual labels: 10

Marker for terminal blocks - UC-TMF 10 CUS - 0824662



Marker for terminal blocks, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: snap into flat marker groove, for terminal block width: 10.2 mm, lettering field size: 9.6 x 5.1 mm, Number of individual labels: 48

Marker for terminal blocks - UCT-TMF 10 CUS - 0829679



Marker for terminal blocks, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: snap into flat marker groove, for terminal block width: 10.2 mm, lettering field size: 9.4 x 4.7 mm, Number of individual labels: 36

Marker for terminal blocks - TMT 10 R CUS - 0824500



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: 10.2 mm, lettering field size: 6.35 x 10.15 mm

Neutral conductor rail



Accessories

Neutral busbar - NLS-CU 3/10 SN 1000MM - 0402174



Neutral busbar, width: 10 mm, height: 3 mm, DIN VDE 0611-4: 1991-02, material: Copper, tin-plated, length: 1000 mm, color: silver

Pick-off terminal block

Power terminal block - EK 116 - 0401010



Power terminal block, connection method: Screw connection, load current: 76 A, cross section: 0.5 mm² - 16 mm², width: 8 mm, color: aluminum color

Power terminal block - EK 135 - 0401023



Power terminal block, connection method: Screw connection, load current: 125 A, cross section: 0.75 mm² - 35 mm², width: 12 mm, color: aluminum color

Connection terminal block - AK 4 - 0404017



Connection terminal block, connection method: Screw connection, load current: 41 A, cross section: 0.5 mm^2 - 6 mm^2 , width: 7 mm, color: silver

Connection terminal block - AK 16 - 0404033



Connection terminal block, connection method: Screw connection, load current: 76 A, cross section: 1.5 mm² - 16 mm², width: 9.8 mm, color: silver



Accessories

Connection terminal block - AK 35 - 0404046



Connection terminal block, connection method: Screw connection, load current: 125 A, cross section: 2.5 mm² - 35 mm², width: 14.3 mm, color: silver

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

Screwdriver - SZF 2-0,8X4,0 - 1204520



Actuation tool, for ST terminal blocks, also suitable for use as a bladed screwdriver, size: $0.8 \times 4.0 \times 100$ mm, 2-component grip, with non-slip grip

Actuation tool - ST-BW - 1207608



Actuation tool, for all 2.5 mm² - 4.0 mm² spring-cages

Shield connection clamp



Accessories

Shield connection clamp - SK 8 - 3025163



Shield connection clamp, for shield on busbars, contact resistance < 1 $m\Omega$

Shield connection clamp - SK 14 - 3025176



Shield connection clamp, for shield on busbars, contact resistance < 1 $m\Omega$

Shield connection clamp - SK 20 - 3025189



Shield connection clamp, for shield on busbars, contact resistance < 1 $m\Omega$

Shield connection clamp - SK 5 - 3025338



Shield connection clamp, for shield on busbars, contact resistance < 1 $\mbox{m}\Omega$

Support

Support bracket - AB-PTI 16-NLS BU - 1030138



Support bracket, length: 81.9 mm, width: 12.2 mm, height: 46.8 mm, color: blue

Terminal marking



Accessories

Zack Marker strip, flat - ZBF10:UNBEDRUCKT - 0809997



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snap into flat marker groove, for terminal block width: 10 mm, lettering field size: 5.15 x 10 mm, Number of individual labels: 10

Marker for terminal blocks - UC-TMF 10 - 0818124



Marker for terminal blocks, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into flat marker groove, for terminal block width: 10.2 mm, lettering field size: 9.6 x 5.1 mm, Number of individual labels: 48

Marker for terminal blocks - UCT-TMF 10 - 0829204



Marker for terminal blocks, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: snap into flat marker groove, for terminal block width: 10.2 mm, lettering field size: 9.4 x 4.7 mm, Number of individual labels: 36

Marker for terminal blocks - TMT 10 R - 0816210



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: 10.2 mm, lettering field size: 6.35 x 10.15 mm, Number of individual labels: 10000

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, 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



Accessories

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 - MPS-MT - 0201744



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

Warning label printed

Warning label - WS PT 10 - 1029030



Warning label, yellow/black, labeled: Lightning flash, mounting type: plug in, for terminal block width: 10.2 mm

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