CERTIFICATE

Issued to:
Applicant:
WAGO GmbH & Co. KG
Hansastrasse 27
32423 Minden/westfalen, Germany

Licensee:
WAGO GmbH & Co. KG
Hansastrasse 27
32423 Minden/westfalen, Germany

Product	:	Terminal blocks for copper conductors
Trade name(s)	:	WAGO
Type(s)/model(s)	:	TOPJOB S 2002

The product and any acceptable variation thereto is specified in the Annex to this certificate and the documents therein referred to.

DEKRA hereby declares that the above-mentioned product has been certified on the basis of:
- a type test according to the standard(s) EN 60947-7-1:2009, EN 60947-7-2:2009 and EN 60947-7-3:2009
- an inspection of the factory location according to CENELEC Operational Document CIG 021
- a DEKRA certification agreement with the number 900220

DEKRA hereby grants the right to use the KEMA-KEUR certification mark.

The KEMA-KEUR certification mark may be applied to the product as specified in this certificate for the duration and under the conditions of the KEMA-KEUR certification agreement.

This certificate is issued on 27 July 2022 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 71-124163

DEKRA Certification B.V.

B.T.M. Holtus
Managing Director

R Zhou
Certification Manager

© Integral publication of this certificate is allowed

ACCREDITED BY THE DUTCH ACCREDITATION COUNCIL

PRODUCTS RvA C 001

KEMA KEUR

SPECIFICATION OF THE CERTIFIED PRODUCT

Product data

Product	:	Terminal blocks for copper conductors
Trade name(s)	:	WAGO
Type(s)/model(s)	:	TOPJOB S 2002
Material colours	:	thermoplastic material, all colours: .../000-001 green .../000-014 brown .../000-015 gentian blue
Stripping length	:	10 - 12 mm
Rated connecting capacity	:	2,5 mm² / 4 mm² rigid and flexible
Connectable conductors	:	0,25 mm² - 4 mm² rigid and flexible
Method of mounting	:	for mounting on top hat rail 35 mm
Conventional free air thermal current (Ith)	:	24 A (2,5 mm²) 32 A (4 mm²)
Rated voltage	:	800 V
Rated impulse withstand voltage	:	8 kV
Type	:	2002 with suffixes -6401, -6402, -6403, -6404, -6405, -6406, -6408, -6409
Description	:	four-conductor through terminal block, with screwless-type terminals, 1-pole, 35° angled
Type	:	2002-6407
Description	:	four-conductor earth terminal block, with screwless-type terminals, 1-pole, 35° angled
Type	:	2002 with suffixes -6301, -6302, -6303, -6304, -6305, -6306, -6308, -6309
Description	:	three-conductor through terminal block, with screwless-type terminals, 1-pole, 35° angled
Type	:	2002-6307
Description	:	three-conductor earth terminal block, with screwless-type terminals, 1-pole, 35° angled
Type	:	2002 with suffixes -1201, -1202, -1203, -1204, -1205, -1206, -1208, -1209
Description	:	two-conductor through terminal block, with screwless-type terminals, 1-pole
Type	:	2002-1207
Desciption	:	two conductor earth terminal block, with screwless-type terminals, 1-pole
Type	:	2002 with suffixes -1301, -1302, -1303, -1304, -1305, -1306, -1308, -1309
Description	:	three conductor through terminal block, with screwless-type terminals, 1-pole
Type	:	2002-1307
Description	:	three conductor earth terminal block, with screwless-type terminals, 1-pole

Type	:	2002 with suffixes -1401, -1402, -1403, -1404, -1405, -1406, -1408, -1409
Description	:	four conductor through terminal block, with screwless-type terminals, 1-pole
Type	:	2002-1407
Description	:	four conductor earth terminal block, with screwless-type terminals, 1-pole
Type	:	2002-1441
Description	:	four conductor double potential terminal block, with screwless-type terminals, 2-poles
Type	:	2002 with suffixes -2431, -2432, -2433, -2401, -2402, -2403, -2404, -2405, -2406, -2434, - 2435, -2436
Description	:	four conductor double deck terminal block, with screwless-type terminals, with or without marker carrier, 2 - poles
Type	:	2002 with suffixes -2438, -2408, -2408-0000-0005, -2409, -2439
Description	:	eight conductor double deck terminal block with screwless-type terminals, upper and lower levels are connected to each other, with or without marker carrier
Type	:	2002 with suffixes -2447, -2457, -2458, -2417, -2427, -2448, -2418, -2428
Description	:	four conductor double deck terminal block, with screwless-type terminals. 2 levels, lower level connected to ground, 2-poles with or without marker carrier
Type	:	2002 with suffixes -2437, -2407
Description	:	eight conductor ground double deck terminal block, with screwless-type terminals, upper and lower level are connected to each other
Type	:	2002 with suffixes -2407, -2437 with suffixes /0999-0950
Description	:	eight conductor ground double deck terminal block, with screwless-type terminals, upper and lower level are connected to each other, with indicating internal connection between lower and upper tiers
Conventional free air thermal current (Ith)	:	24 A
Rated voltage	:	500 V
Rated impulse withstand voltage	:	6 kV
Type	:	2002 with suffixes -2231, -2231/007-000, -2232, -2233, -2234, -2201, -2202, -2203, -2236, -2204, -2206
Description	:	two-conductor through terminal block , with screwless-type terminals, 2-poles
Type	:	2002 with suffixes -2231, -2232, 2233, -2234 with suffixes /0099-000
Description	:	two-conductor through terminal block , with screwless-type terminals, 2-poles, indicating integrated endplate

Type	:	2002 with suffixes -2201, -2231 with suffixes /0057-0000
Description	:	two-conductor through terminal block, with screwless-type terminals, 2-poles, without lower current bar
Type	:	2002 with suffixes -2201, -2202, -2203, -2204, -2207, -2208, -2209 with suffixes /0099-0000
Description	:	two-conductor through terminal block, with screwless type terminals, 2-poles, without lower bar, suffix indicating integrated endplate
Type	:	2002 with suffixes -2217, -2227, -2247, -2257, -2218, -2228, -2248, -2258
Description	:	two-conductor through terminal block with earth connection, and screwless-type terminals, 2-poles
Type	:	2002 with suffixes -2217, -2218, -2227, -2228, -2247, -2248, -2257, -2258, -2458 with suffixes /0099-00 00
Description	:	two-conductor through terminal block with earth connection and scewless-type terminals, 2-poles, integrated endplate
Type	:	2002 with suffixes -2238, -2239, -2208, -2209
Description	:	two-conductor through terminal block with screwless-type terminals, 2-poles. Upper and lower pole connected to each other
Type	:	2002 with suffixes -2207, -2237
Description	:	two-conductor earth terminal block, with screwless-type terminals, 2-poles. Upper and lower pole connected to each other
Type	:	2002 with suffixes -2237, -2238, -2239 with suffixes /0099-0000
Description	:	two-conductor earth terminal block, with screless-type terminals, 2-poles, upper and lower pole connected to each other, integrated endplate
Type	:	2002 with suffixes -2207, -2237 with suffixes /0999-0950
Description	:	two- conductor earth terminal block, with screwless-type terminals, 2-poles, upper and lower pole connected to each other, with indicating internal connection between lower and upper tiers
Type	:	2002 with suffixes -3231, -3231/007-000, -3233, -3201, -3203
Description	:	two-conductor through terminal block, with screwless-type terminals, 3 -poles, colored gray 2002-3204 blue 2002-3206 orange 2002-3208 violet 2002-3209 blue/violet 2002-3234 blue 2002-3236 orange 2002-3238 violet 2002-3239 blue/violet
Type	:	2002 with suffixes -3201, -3203, -3231 with suffixes/0402-0000
Description	:	two-conductor through terminal block, with screwless-type terminals, 3-poles,conductor entry colored violet /0350-0000 conductor entry colored brown blue
Type	:	2002 with suffixes -3247, -3257, -3217, -3227
Description	:	two-conductor through terminal block with earth connection and screwless-type terminals, 3-poles

Type	:	2002 with suffixes -3248, -3258, -3218, -3228
Description	:	two-conductor through terminal block with shield and screwless-type terminal, 3-poles
Type	:	2002 with suffixes -3228, -3258 with suffix /0403-0000
Description	:	two-conductor through terminal block with shield and screwless type-terminal, 3-poles, conductor entry colored white
Type	:	2002 with suffixes -3207, -3237
Description	:	two conductor earth terminal block, with screwless-type terminals, 3-poles, all poles con nected to each other 2002-3237 with marker carrier
Type	:	2002 with suffixes -3707, -3237 with suffixes /0999-0950
Description	:	two conductor earth terminal block, with screwless-type termeminals, 3-poles, all poles connected to each other, with indicating internal connection between lower and upper tiers
Conventional free air thermal current (Ith)	:	24 A
Rated voltage	:	1000 Vac / 1500 Vdc
Rated impulse withstand voltage	:	6 kV
Type	:	2002-2201/0097-000
Description	:	two-conductor through terminal block, with screwless-type terminals, 2-poles, without lower current bar, with end cover type 2002-2295 gray
Type	:	2002-2201/0098-000
Description	:	two-conductor through terminal block, with screwless-type terminals, 2-poles, without lower current bar, with end cover type 2002-2296 orange
Conventional free air thermal current (Ith)	:	16 A
Rated voltage	:	400 V
Rated impulse withstand voltage	:	6 kV
Type	:	2002 with suffixes -1671, -1674, -1672, -1673, -1675, -1676, -1679
Description	:	two-conductor disconnect terminal block for test and measurement, with screwless-type terminals, 1-pole
Type	:	2002 with suffixes -1661, -1662, -1663, -1664, -1665, -1666, -1669
Description	:	two-conductor carrier terminal block, with screwless-type terminals, 1-pole
Type	:	2002 with suffixes -1601, -1602, -1603, -1604, -1605, -1606, -1609
Description	:	two-conductor through terminal block, with screwless-type terminals, 1-pole
Type	:	2002 with suffixes -1771, -1774, -1775, -1776, -1779, -1871, -1872, -1873, -1874, -1875, -1876, -1879, -1971, -1974
Description	:	two, three or four conductor disconnect terminal block for test and measurement, with screwless-type terminals, 1-pole

Type	:	2002 with suffixes -1761, -1765, -1766, -1769, -1772, -1861, -1862, -1863, -1864, -1865, -1866, -1869, -1961, -1962,-1972, -1964
Description	:	two, three or four-conductor carrier terminal block, with screwless-type terminals, 1-pole
Type	:	2002 with suffixes -1671, -1672, -1674, -1771, -1772, -1774, -1871, -1872, -1874, -1971, -1972, -1974 with suffixes /0401-0000
Description	:	two, three or four conductor carrier terminal block, with mechanical interlock, with screw less type terminals, 1-pole
Type	:	2002 with suffixes -1701, -1702, -1703, -1704, -1705, -1706, -1707, -1709, -1801, -1802, -1803, -1804, -1805, -1806, -1807, -1809, -1901, -1902, -1903, -1904, -1907
Description	:	two, three or four-conductor through terminal block, with screwless type terminals, 1-pole
Type	:	2002 with suffixes -2951, -2952, -2953, -2954, -2956
Description	:	four-conductor double deck double disconnect terminal block, with screwless-type terminals, 2-poles
Type	:	2002-2901
Description	:	four-conductor double deck double disconnect terminal block, with screwless-type terminals, 2-poles, without movable knife disconnection
Type	:	2002 with suffixes -2951, -2952, -2953, -2954, -2956, -2958, -2959 with suffixes /0400-000
Description	:	four-conductor double deck double disconnect terminal block, with screwless type terminals, 2-poles, disconnect knife rotated by 180°
Type	:	2002 with suffixes -2941, -2944, -2948, -2949
Description	:	four-conductor double deck double disconnect terminal block, with screwless type terminals, 2-poles, without pivoting disconnect knife
Type	:	2002 with suffixes -2958, -2959
Description	:	four-conductor double deck double disconnect terminal block, upper and lower pole connected to each other on right side, with screwless-type terminals, 1-pole
Type	:	2002 with suffixes -2971, -2972, -2973, -2974, -2976, -2671, -2667, -2678, -2672, -2677, -2661, -2662
Description	:	four-conductor double deck disconnect terminal block, with disconnection on upper deck only, with screwless-type terminals 2-poles
Type	:	2002 with suffixes -2961, -2963
Description	:	four-conductor double deck disconnect terminal block, with disconnect on lower deck only

Conventional free air thermal current (Ith)	:	16 A
Rated voltage	:	600 V
Rated impulse withstand voltage	:	6 kV
Type	:	2002 with suffixes -1662/099-000 and 1664/099-000
Description	:	two-conductor carrier terminal block, with screwless-type terminals, 1-pole, with integrated endplate
Conventional free air thermal current (Ith)	:	10 A (separate with automotive fuse 80% of 10 A = 8 A) 5 A (compound with automotive fuse 80% of 5 A = 4 A)
Rated voltage	:	400 V determined by the fuselink max 32 V
Rated impulse withstand voltage	:	6 kV
Type	:	2002 with suffixes -1681, -1682, -1684
Description	:	two conductor fuse terminal block, with screwless-type terminals, 1-pole exclusive short circuit protection - separate arrangement: PVK with automotive fuse 10 A loaded with 80% of In - compound arrangement: PVK with automotive fuse 5 A loaded with 80% of In
Type	:	2002 with suffixes -1781, -1881,-1882, -1884, -1981, -1982, -1984
Description	:	two, three or four conducted fuse terminal block, with screwless-type terminals, 1-pole exclusive short circuit protection - separate arrangement: PVK with automotive fuse 10 A loaded with 80% of In - compound arrangement: PVK with automotive fuse 5 A loaded with 80% of In
Type	:	2002 with suffixes -1981/1000, -1982/1000, -1984/1000
Description	:	terminal blocks with blown fuse LED indication -0449 with LED 12 V, anode left -0434 with LED 24 V, anode left -0435 with LED 48 V, anode left -0429 with LED 12 V, anode right -0413 with LED 24 V, anode right -0414 with LED 48 V, anode right
Conventional free air thermal current (Ith)	:	24 A (2,5 mm²) 32 A (4 mm²)
Rated voltage	:	500 V 800 V (if provided with endplate .../0099-0000)
Rated impulse withstand voltage	:	6 kV
Type	:	2002-with suffixes -2601, -2602, -2603, -2604
Description	:	two-conductor through terminal block, with screwless-type terminals, 2-poles
Type	:	2002 with suffixes -2608, -2609
Description	:	two-conductor through terminal block,2-poles. upper and lower pole connected to each other

Type	:	2002-2607
Description	:	two-conductor earth terminal block, with screwless-type terminals, 2-poles. upper and lower pole connected to each other
Type	:	2002- with suffixes -2647, -2648, -2657, -2658
Description	:	two conductor through terminal block with earth connection, and screwless-type terminals, 2-poles
Conventional free air thermal current (Ith)	:	24 A (2,5 mm²) 32 A (4 mm²)
Rated voltage	:	250 V
Rated impulse withstand voltage	:	4 kV
Type	:	2002-7114
Description	:	one conductor N-disconnect terminal block, with screwless type terminals and 1 connection for busbar (10 x 3 mm), 1-pole
Type	:	2002-7111
Description	:	one conductor power distribution disconnect terminal block, with screwless type terminals and 1 connection for busbar (10 x 3 mm), 1-pole
Type	:	2002-7211
Description	:	2 conductor power distribution disconnect terminal block, with screwless type terminals and 1 connector for busbar (10 x 3 mm), 1-pole, grey
Type	:	2002-7214
Description	:	2 conductor N-disconnect terminal block, with screwless type terminals and 1 connector for busbar (10 x3 mm), 1-pole, blue
Conventional free air thermal current (Ith)	:	6,3 A
Rated voltage	:	250 V
Rated impulse withstand voltage	:	6 kV
Fuse link size	:	5 x 20 mm overload and short circuit protection - separate arrangement:Pv 1,6 W - compound arrangement:Pv 1,6 W - exclusive short circuit protection - separate arrangement:Pvk 2,5 W - compound arrangement:Pvk 2,5 W
Type	:	2002-with suffixes -1611, -1612, -1613, -1614, -1615, -1616, -1619
Description	:	two-conductor fuse terminal block with end plate, without blown fuse indicaton, with screwless type terminals, 1-pole
Type	:	2002 with suffixes -1611/1000-..., -1612/1000-..., -1613/1000-..., -1614/1000-..., -1615/1000-..., -1616/1000-..., -1619/1000-...

Description	:	two-conductor fuse terminal blocks with end plate, with blown fuse indication by LED with screwless type terminals,1-pole with suffixes -541 provided with LED 12-30 V -542 provided with LED 30-65 V -836 provided with LED 230 V -876 provided with LED 120 V
Type	:	2002 with suffixes -1711, -1715, -1716, -1719, -1811, -1812, -1815, -1816, -1819, -1911, -1912
Description	:	two, three or four-conductor fuse terminal block with end plate, without blown fuse indication, with screwless type terminals, 1-pole
Type	:	2002 with suffixes -1814,-1914
Description	:	two-conductor fuse terminal block with end plate, without blown fuse indication, with screwless-type terminals, 1-pole
Type	:	2002 with suffixes -1611, -1612, -1613, -1614, -1615, -1616, -1619, -1811, -1812, -1814, -1911, -1912, -1914
Description	:	with suffix 0281-0503, with dummy fuse to work as disconnect terminal block and endplate
Type	:	2002 with suffixes -1711/1000-..., -1712/1000-..., -1713/1000-..., -1714/1000-..., -1715/1000-..., -1716/1000-..., -1719/1000-..., -1811/1000..., -1812/1000-..., -1813/1000-..., -1814/1000-..., -1815/1000-..., -1816/1000-..., -1819/1000-..., -1911/1000-..., -1912/1000-..., -1914/1000-...
Description	:	four-conductor fuse terminal blocks with blown fuse indication by LED, with screwless type terminals, 1-pole, with suffixes -541 provided with LED 12-30 V -542 provided with LED 30-65 V -836 provided with LED 230 V -867 provided with LED 120 V
Type	:	2004 with suffixes -0911, -0912, -0914
Description	:	fuse plug for miniature metric fuses, for connection on terminal block
Type	:	2004 with suffixes -0911/1000-..., 0912/1000-..., -0914/1000-...
Description	:	fuse plug for miniature metric fuses with blown fuse indication by LED, for connection on terminal block 2002-1661 and 2002-1861 with suffixes -0541 provided with LED 12-30V -0542 provided with LED 30-65V -0836 provided with LED 230 V -0867 provided with LED 120 V
Conventional free air thermal current (Ith)	:	6,3 A (fuse) 28 A (4 mm²) lower level
Rated voltage	:	250 V
Rated impulse withstand voltage	:	6 kV

Fuse link size	:	5 x 20 mm overload and short circuit protection: - separate arrangement: Pv 1,6 W - compound arrangement: Pv 1,6 W exclusive short circuit protection: - separate arangement: Pvk 2,5 W - compound arrangement: Pvk 2,5 W
Type	:	2002- with suffixes -2611/1000-..., -2612/1000-..., 2614/1000-..., 2617/1000-...
Description	:	two-conductor fuse terminal block with end plate, with screwless type terminals, with fuse-holder on upper deck only. 2-poles. with blown fuse indicator by LED -0541 provided with LED 12-30V -0542 provided with LED 30-65V -0836 provided with LED 230 V -0867 provided with LED 120 V
Conventional free air thermal current (Ith)	:	20 A (2,5 mm²) 25 A (4 mm²)
Rated voltage	:	800 V
Rated impulse withstand voltage	:	8 kV
Type	:	2002 with suffixes -4127, -4157
Description	:	quadruple deck rail mounted terminal block, with screwless-type terminals, 4-poles (lower pole PE connection)
Type	:	2002 with suffixes -4111, -4141, -4116, -4146
Description	:	quadruple deck rail mounted terminal block, with screwless-type terminals, 2-poles
Type	:	2002 with suffixes -4101, -4131, -4136
Description	:	quadruple deck rail mounted terminal block, with screwless-type terminal, 3-poles 2002-4101 and -4131 housing grey 2002-4136 housing orange
Conventional free air thermal current (Ith)	:	16 A (2,5 mm²)
Rated voltage	:	400 V
Rated impulse withstand voltage	:	6 kV
Type	:	2002-1549
Description	:	two-conductor double disconnect terminal block, with screwless type terminals, 1-pole, left side disconnect ion which can be bridged with a jumper bar, right side knife disconnect
Type	:	2002-1568
Description	:	two-conductor double disconnect terminal block with mounting rail contact, with screwless type terminals, 1-pole, left side disconnection which can be bridge with a jumper bar, right side jumper bar set by factory

Conventional free air thermal current (Ith)	:	24 A (2,5 mm²) 28 A (4 mm²)
Rated voltage	:	800 V
Rated impuls withstand voltage	:	8 kV

Type	:	2002 with suffixes -2701, -2702, -2703, -2704
Description	:	two-conductor double deck through terminal block, difference is color of wire entrance

Type	:	2002 with suffixes -2708, -2709
Description	:	two-conductor double deck terminal block with internal commoning, difference is color of wire entrance

Type	:	2002-2707 with and without suffix /0999-0950
Description	:	two-conductor PE double deck terminal block with internal commoning between levels. Suffix represent two internal commoning

Type	:	2002 with suffixes -2717, -2727
Description	:	two-conductor through/PE double deck terminal block, upper level through, lower level PE, difference is color of wire entrance

Type	:	2002 with suffixes -2705, -2706
Description	:	two-conductor double deck through terminal block, difference is color of wire entrance

Type	:	2002 with suffixes -2731, -2732, -2733, -2734, -2735, -2736
Description	:	two-conductor double deck through terminal block with marker-carrier, difference is color of wire entrance

Type	:	2002 with suffies -2747, -2757
Description	:	two-conductor through/PE double deck terminal block with marker-carrier, upper level through, lower level PE, difference is color of wire entrance

Type	:	2002-2737
Description	:	two-conductor PE double deck terminal block with internal commoning between levels with marker-carrier

Type	:	2002 with suffixes -2738, -2739
Description	:	two-conductor double deck terminal block with internal commoning with marker-carrier, difference is color of wire entrance

TESTS

Test requirements
EN 60947-7-1:2009
EN 60947-7-2:2009
EN 60947-7-3:2009

Test result
The test results are laid down in DEKRA test file 226741300.

Additional information
- Through terminal blocks are tested according EN 60947-7-1.
- Earth/protective terminal blocks are tested according EN 60947-7-2.
- Fuse terminal blocks are tested according EN 60947-7-3.

Article numbers may be followed by optional suffix numbers e.g. 2002-xxxx/xxxx-xxxx/xxxx-xxxx (up to 40 digits) where "x" may be any number (including characters) to represent customer numbers, printing variants, colour variants and other mechanical
variations, given for a specific end-use purpose and not affecting the electrical properties.

This certificate replaces certificate No. 71-120369 which we hereby declare invalid.

Conclusion
The examination proved that all requirements were met.

Factory locations
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391243 Vadodara, India

ETICS OD ECS 040-1 January 2019	Responsible CB DEKRA

TEST REPORT SUMMARY

Report Number ..... :	**2267413.50**
Date of issue ..... :	**2022-07-14**
Tested by (name, function, signature):	**R.A.T. Fooy** **(Technician Industrial Safety)**
Witnessed by (name, function, signature):	
Approved by (name, function, signature):	**H.L. Schendstok** **(Project manager Industrial Safety)**
Supervised by (name, function, signature):	



Testing Laboratory ..... :	**DEKRA Certification B.V.**
Address ..... :	**Meander 1051, 6825 MJ Arnhem, The Netherlands**
Testing procedure ..... :	☐ ENEC ☒ CCA NTR
	☐ ENEC based on IECEE CBTC with number: …….
Customer Testing Procedure..... :	☐ TMP/CTF Stage 1 ☐ WMT/CTF Stage 2 ☐ SMT/CTF Stage 3
Applicant ..... :	**WAGO GmbH & Co. KG**
Address ..... :	**Hansastrasse 27, 32423 Minden/Westfalen, Germany**
Manufacturer ..... :	**WAGO GmbH & Co. KG**
Address ..... :	**Hansastrasse 27, 32423 Minden/Westfalen, Germany**
Product ..... :	**Terminal blocks for copper conductors**
Model/Type reference ..... :	**TOPJOB S 2002**
Trademark ..... :	WAGO
Ratings ..... :	**250 V, 400 V, 500 V, 600 V, 800 V, 1000 Vac / 1500 Vdc, 2,5 mm² / 4 mm², up to 32 A**
Certification Scheme ..... :	☐ ENEC ☒ CCA ☐ Other: _____
Standard(s) ..... :	**EN 60947-7-1:2009**

☒ The text of the a.m. European Standard was approved by CENELEC is equivalent with the corresponding IEC Publication.

☐ The text of the a.m. European Standard was approved by CENELEC with agreed common modifications and is not equivalent with the corresponding IEC Publication. An EU Deviation Addendum has to be issued.

This EN test report consists of the following parts:

☒ IEC Test Report Number..... :	**2267413.50**
☐ EU Deviation Addendum..... :	

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This ECS document together with the test report is only valid if signed by an approved ENEC or CCA Testing Laboratory and accompanied by the associated ENEC Licence or CCA Notification of Test Results, issued by a Certification Body member of ECS.

Test Report issued under the responsibility of:

TEST REPORT
IEC 60947-7-1
Low-voltage switchgear and controlgear
Part 7: Ancillary equipment
Section One: Terminal blocks for copper conductors

Report Number.....:	**2267413.50**
Date of issue .....:	**2022-07-14**
Total number of pages	**102**
Name of Testing Laboratory preparing the Report .....:	**DEKRA Certification B.V.** **Meander 1051, 6825 MJ Arnhem, The Netherlands**
Applicant's name.....:	**WAGO GmbH & Co. KG**
Address .....:	**Hansastrasse 27, 32423 Minden/Westfalen, Germany**
Test specification:	
Standard.....:	IEC 60947-7-1:2009 (Third Edition) in conjunction with IEC 60947-1 (Fifth Edition) + A1:2012 + A2:2014
Test procedure.....:	CB Scheme
Non-standard test method .....:	N/A
Test Report Form No. .....:	IEC60947_7_1B
Test Report Form(s) Originator ...:	DEKRA Certification B.V.
Master TRF .....:	Dated 2015-10

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This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description ..... :	**Terminal blocks for copper conductors**
Trade Mark..... :	
Manufacturer ..... :	**WAGO GmbH & Co. KG**
Model/Type reference..... :	**TOPJOB S 2002**
Ratings..... :	**2,5 mm² - 24 A or 4 mm² - 32 A, 800 V, 8 kV** **2,5 mm² - 24 A, 500 V, 6 kV** **2,5 mm² - 24 A, 1000 Vac/1500 Vdc, 6 kV** **2,5 mm² - 16 A, 400 V, 6 kV** **2,5 mm² - 16 A, 600 V, 6 kV** **2,5 mm² - 24 A or 4 mm² - 32 A, 500/800 V, 6 kV** **2,5 mm² - 24 A or 4 mm² - 32 A, 250 V, 4 kV** **2,5 mm² - 6,3 A, 250 V, 6 kV** **2,5 mm² - 6,3 / 28 A, 250 V, 6 kV** **2,5 mm² - 20 A or 4 mm² - 25 A, 800 V, 8 kV** **2,5 mm² - 16 A, 400 V, 6 kV** **2,5 mm² - 24 A or 4 mm² - 28 A, 800 V, 8 kV**

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CB Testing Laboratory:**	**DEKRA Certification B.V.**	
Testing location/ address .....:		**Meander 1051, 6825 MJ Arnhem, The Netherlands**	
☐	**Associated CB Testing Laboratory:**		
Testing location/ address .....:			
Tested by (name, function, signature) .....:		**R.A.T. Fooy** (Technician Industrial Safety)	
Approved by (name, function, signature) ..:		**H.L. Schendstok** (Project Manager Industrial Safety)	
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address .....:			
Tested by (name, function, signature) .....:			
Approved by (name, function, signature) ..:			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address .....:			
Tested by (name + signature) .....:			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature) ..:			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address .....:			
Tested by (name, function, signature) .....:			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature) ..:			
Supervised by (name, function, signature) .....:			

List of Attachments (including a total number of pages in each attachment): N/A	
Summary of testing:	
Tests performed (name of test and test clause):	**Testing location:**
Project 2173607.50 **All tests are carried out on type 2002-4101, and additionally test carried out on types 2002-1401, -1441,-1811/1000-0541, -2401, -2438, -2601, -2608, -3201, -3208, 4101,-2201/0098-0000 Unless otherwise stated.** **Project 2191639.50** **Additional types (2002-2201/….) are added. Dielectric test and clearances and creepage distances were carried out.** **Project 2193799.50** **Update to add new types (2002-7211, - 7214). Temperature rise and short-circuit tests were carried out** **Project 2217053.50** **Update to add new types.** **Additional test are carried out at types: 2002-2701, 2002-2708 and 2002-2717.** **Project 2235367.50** **Update to add new suffix /000.001, to indicate the color green.** **No tests were considered necessary.** **Project 2241683.50** **Update to add new type 2002-2408-0000-0005.** **No tests were considered necessary** **Project 2259248.50** **This Test report replaces Test report 2241683.50 issued on 2020-03-16, due to the fact that new types 2002-16xx, 2002-17xx und 2002-18xx are added.** **No tests were considered necessary**	**DEKRA Certification B.V.** **Meander 1051, 6825 MJ Arnhem** **The Netherlands**

Project 2267413.00 **This Test report replaces Test report 2259248.50 issued on 2021-09-07, due to the fact that new types 2002-270x, 2002-273x, 2002-274x and 2002-275x are added. Update on a factory location** **No tests were considered necessary.**	

Summary of compliance with National Differences (List of countries addressed): N/A

☒ **The product fulfils the requirements of EN 60947-7-1: 2009.**

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

TOP JOB S	**TOP JOB S**	**TOP JOB S**
IEC 60947-7-1	**IEC 60947-7-1**	**IEC 60947-7-1**
2002	**2002**	**2002**
800 V	**500 V**	**400 V**
2,5 mm², 20 A	**2,5 mm²**	**2,5 mm²**

Test item particulars ..... :	
Classification of installation and use ..... :	**For use in circuits of a rated voltage not exceeding 1000 Vac/1500 V dc**
Supply Connection ..... :	**N/A**
Particulars: test item vs. test requirements	
- method of fixing ..... :	**top hat rail 35 mm**
- number of poles ..... :	**1-2- 3- 4- poles**
- type of clamping units ..... :	**screwless- terminals**
- ability to receive conductors ..... :	**unprepared conductors, flexible or rigid**
- number of terminals on terminal assembly ..... :	**2, 3, 4, 6 or 7**
- rated cross-section (mm²) ..... :	**2,5 mm² or 4 mm²**
- rated connecting capacity (mm²) ..... :	**0,25 mm² - 4 mm² rigid and flexible**
- rated insulation voltage (U_i) ..... :	**250 V, 400 V, 500 V, 600 V, 800 V, 1000 Vac/1500 Vdc**
- rated impulse withstand voltage (U_{imp}) ..... :	**4 kV, 6 kV, 8 kV**
- Conventional free air thermal current (I_{th}) ..... :	**6,3 A, 16 A, 20 A, 24 A, 25 A, 28 A, 32 A**

Possible test case verdicts:	
- test case does not apply to the test object ..... :	N/A
- test object does meet the requirement..... :	P (Pass)
- test object does not meet the requirement ..... :	F (Fail)
Testing..... :	
Date of receipt of test item ..... :	**2018-02**
Date (s) of performance of tests..... :	**2018-05 to 09**

General remarks:
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. **Throughout this report a ☒ comma / ☐ point is used as the decimal separator.**
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☒ **Yes** ☐ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) .....:	**Wago Elwag sp.z.o.o.** **ul. Piekna 58 a** **50-506, Wroclaw, Poland** **Wago Elwag** **Innowacyjna 2** **55-330 Wroblowice, Poland** **WAGO Private Limited** **Block No. 94, National Highway-8** **Village Vadsala – Varnama, Vadodara,** **Gujarat-391243, India** **Wago Electronic (Tianjin) Co. Ltd.** **No. 5 Quanhui Road** **Wu Qing Development Area** **301700 Tianjin, China** **WAGO GmbH & Co. KG** **Hansastrasse 27, 32423 Minden/Westfalen** **Germany** **WAGO Kontakttechnik GmbH & Co. KG, Werk Sondershausen** **Waldstrasse 1, 99706, Sondershausen** **Germany** **WAGO Contact S.A.** **Route de l'Industrie 19, CP 168, 1564,** **Domdidier, Switzerland** **WAGO Kontakttechnik GmbH & Co. KG** **Cammer Str. 17,** **32423 Minden** **Germany**
General product information: **See pages 87 to 100.**	

IEC 60947-7-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.1	**MARKING**		
	Terminal block shall be marked with:		
	- manufacturer's name or trademark	***WAGO***	***P***
	- type designation	***TOP JOB S 2002***	***P***
5.2	The following information shall be stated by the manufacturer if applicable, e.g. in the manufacturer's data sheet, or his catalogue or on the packing unit:		
	- manufacturer's claim for compliance with IEC 60 947-7-1	***IEC 60947-7-1***	***P***
	- rated cross-section	***2,5 mm² or 4 mm²***	***P***
	- rated connecting capacity	***0,25 mm² - 4 mm² rigid and flexible***	***P***
	- rated insulation voltage (Ui)	***250V*** ***400 V*** ***500 V*** ***800 V*** ***1000 V***	***P***
	- rated impulse withstand voltage (Uimp)	***4 kV*** ***6 kV*** ***8 kV***	***P***
	- conventional free air thermal current (Ith)	***2,5 mm² 6,3 A, 16 A, 20 A, or 24 A*** ***4 mm² 25 A, 28 A or 32 A***	***P***
	- service conditions if different from those of Cl. 6.		***N/A***

7.	**CONSTRUCTION**		
7.1	Constructional requirements		
7.1.1	Clamping units		
7.1.7.1	All parts of clamping units which maintain contact and carry current shall be of metal having adequate mechanical strength		***P***
	Clamping units connections shall be such that necessary contact pressure is maintained		***P***

IEC 60947-7-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Clamping units shall be so constructed that the conductor is clamped between suitable surfaces without damage to the conductor and terminal		***P***
	Clamping units shall not allow the conductor to be displaced or to be displaced themselves in a manner detrimental to the operation of equipment and the insulation voltage shall not be reduced below the rated value		***P***
	Clamping units shall allow the conductor to be connected by means ensuring that a reliable mechanical linkage and electrical contact is properly maintained		***P***
	Clamping units shall be able to withstand the forces that can be applied through the connected conductors		***P***
	Contact pressure is not transmitted through insulation materials		***P***
7.1.2	Mounting		
	Terminal blocks shall be provided with means that allow them to be securely attached to a rail or a mounting surface (see 8.3.2)		***P***
7.1.3	Clearances and creepage distances		
	For clearances and creepage distances see 8.4.2		***P***
7.1.4	Terminal identification and marking:		
	- terminals intended exclusively for the neutral conductor		***N/A***
	- other terminals		***P***
	- terminal blocks shall have provision, or at least space, for identification marks or numbers for each terminal or terminal assembly to be related to the circuit of which it is to form a part		***P***
	- For the identification of the terminal block the colour combination green-yellow is not allowed		***P***
7.1.5	Resistance to abnormal heat and fire		

IEC 60947-7-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Needle flame test for insulation materials of terminal blocks (see 8.5)		***P***
7.1.6	Rated cross-section and rated connecting capacity		
	Terminal blocks are so designed that conductors of the rated cross-section and/or the rated connecting capacity can be accepted	***0,25 mm² - 4 mm² rigid and flexible***	***P***
8	**TESTS**		
8.3	Verification of mechanical characteristics		
8.3.2	Attachment of the terminal block on its support		
	mounting rail ..... :	***Top hat rail 35 mm***	—
	Tighting torque (Nm) ..... :	***-***	—
	steel pin diameter (mm) ..... :	***1 mm***	—
	force (N) ..... :	***1 N***	—
	During the test, no terminal block shall work free from its rail or support, nor suffer any other damage		***P***
8.3.2	Attachment of the terminal block on its support	**Type 2002-1549**	
	mounting rail ..... :	***Top hat rail 35 mm***	—
	Tighting torque (Nm) ..... :	***-***	—
	steel pin diameter (mm) ..... :	***1 mm***	—
	force (N) ..... :	***1 N***	—
	During the test, no terminal block shall work free from its rail or support, nor suffer any other damage		***P***
8.3.3	Mechanical properties of clamping units		
8.3.3.1	Test of mechanical strength of clamping units		
8.2.4.1	Mechanical strength of clamping units (IEC60947-1)		
	rated cross-section of a rigid conductor (mm²) ... :	***2,5 mm²***	—
	diameter of thread (mm) ..... :	***-***	—
	torque (Nm) ..... :	***-***	—

IEC 60947-7-1			
Clause	Requirement + Test	Result - Remark	Verdict
	5 times on 2 clamping units at the centre terminal block out of 5 terminal blocks		**P**
	Voltage drop before and after mechanical strength test		
	rated cross-section of a rigid conductor (mm²) ... :	***2,5 mm²***	—
	test current (A) d.c. ..... :	***2,4 A***	—
	voltage drop (mV) before mechanical strength test not exceeding 3,2 mV ..... :	***1,95 mV – 2,08 mV***	**P**
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		**N/A**
	voltage drop (mV) after mechanical strength test not exceeding 150% of the value measured before mechanical strength test :	***1,91 mV – 2,06 mV***	**P**
	rated cross-section of a rigid conductor (mm²) ... :	***4 mm²***	—
	diameter of thread (mm) ..... :	**-**	—
	torque (Nm) ..... :	**-**	—
	5 times on 2 clamping units at the centre terminal block out of 5 terminal blocks		**P**
	Voltage drop before and after mechanical strength test		
	rated cross-section of a rigid conductor (mm²) ... :	***4 mm²***	—
	test current (A) d.c. ..... :	***3,2 A***	—
	voltage drop (mV) before mechanical strength test not exceeding 3,2 mV ..... :	***1,08 mV – 1,20 mV***	**P**
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		**N/A**
	voltage drop (mV) after mechanical strength test not exceeding 150% of the value measured before mechanical strength test :	***0,96 mV – 1,11 mV***	**P**
	minimum cross-section of a flexible conductor (mm²) ..... :	***0,25 mm²***	—
	test current (A) d.c. ..... :	***0,5 A***	—

IEC 60947-7-1			
Clause	Requirement + Test	Result - Remark	Verdict
	voltage drop (mV) before mechanical strength test not exceeding 3,2 mV ..... :	***0,67 mV – 0,73 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N/A***
	voltage drop (mV) after mechanical strength test not exceeding 150% of the value measured before mechanical strength test ..... :	***0,58 mV – 0,59 mV***	***P***
8.3.3.2	Testing for damage to and accidental loosening of conductors of a terminal block (flexion test)		
	conductor of the smallest cross-section (mm²) ... :	***0,25 mm² rigid and flexible***	—
	number of conductors of the smallest cross-section ..... :	***1***	—
	torque (Nm) ..... :	***-***	—
	diameter of bushing hole (mm) ..... :	***6,5 mm***	—
	height between the equipment and the platen (mm) ..... :	***260 mm***	—
	mass at the conductor(s) (kg) ..... :	***0,2 kg***	—
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	Pull-out test		
	force (N) ..... :	***10 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	conductor of the rated cross-section (mm²) ..... :	***2,5 mm² rigid and flexible***	—
	number of conductors of the rated cross-section :	***1***	—
	torque (Nm) ..... :	***-***	—
	diameter of bushing hole (mm) ..... :	***9,5 mm***	—
	height between the equipment and the platen (mm) ..... :	***280 mm***	—
	mass at the conductor(s) (kg) ..... :	***0,7 kg***	—

IEC 60947-7-1			
Clause	Requirement + Test	Result - Remark	Verdict
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	Pull-out test		
	force (N) ..... :	***50 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	conductor of the largest cross-section (mm²) ..... :	***4 mm² rigid and flexible***	—
	number of conductors of the largest cross-section:	***1***	—
	torque (Nm) ..... :	***-***	—
	diameter of bushing hole (mm) ..... :	***9,5 mm***	—
	height between the equipment and the platen (mm) ..... :	***280 mm***	—
	mass at the conductor(s) (kg) ..... :	***0,9 kg***	—
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	Pull-out test		
	force (N) ..... :	***60 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	conductor of the largest or smallest cross-section (mm²) ..... :		—
	number of conductors of the largest or smallest cross-section ..... :		—
	torque (Nm) ..... :		—
	diameter of bushing hole (mm) ..... :		—
	height between the equipment and the platen (mm) ..... :		—
	mass at the conductor(s) (kg) ..... :		—
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***N/A***
	Pull-out test		

IEC 60947-7-1			
Clause	Requirement + Test	Result - Remark	Verdict
	force (N) ..... :		—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***N/A***
8.3.3.4	Verification of rated cross section and rated connecting capacity		
	One conductor of the two next smaller cross-sections can be unhindered and connected in each clamping unit of one terminal block (up to 35 mm²)	***0,25 mm² - 4 mm²***	***P***
8.4.2	Verification of clearances and creepage distances **type 2002-4101**		
	Conductor type and conductor cross-section	***4 mm² rigid***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***Top hat rail 35 mm***	—
8.4.2.2	Clearances		
	Case A (mm) .... : Case B (mm) ..... : Measured (mm) ..... :	***8,0 mm*** ***3,0 mm*** ***9,6 mm***	***P***
	Rated impulse withstand voltage Uimp (kV)	***8 kV***	
8.4.2.3	Creepage distances:		
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***800 V***	—
	- minimum creepage distances (mm) ..... :	***10,0 mm***	—
	- measured creepage distances (mm) ..... :	***10,7 mm***	—
8.4.2	Verification of clearances and creepage distances ***type 2002-2601***		
	Conductor type and conductor cross-section	***4 mm² rigid***	
	Conductor end length (mm)	***10 – 12 mm***	
	Type of support	***Top hat rail 35 mm***	—
8.4.2.2	Clearances		—
	Case A (mm) ..... : Case B (mm) ..... : Measured (mm) ..... :	***5,5 mm*** ***2,0 mm*** ***8,22 mm***	***P***
	Rated impulse withstand voltage Uimp (kV)	***6 kV***	

IEC 60947-7-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.4.2.3	Creepage distances: ***(*with integrated endplate /0099-0000)***		—
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	
	- rated insulation voltage Ui (V) ..... :	****800 V 500 V***	
	- minimum creepage distances (mm) ..... :	***10,0 mm 6,3 mm***	—
	- measured creepage distances (mm) ..... :	***> 15 mm 11,03 mm***	—
8.4.2	Verification of clearances and creepage distances ***type 2002-2608***		—
	Conductor type and conductor cross-section	***4 mm² rigid***	—
	Conductor end length (mm)	***10 – 12 mm***	
	Type of support	***Top hat rail 35 mm***	—
8.4.2.2	Clearances		
	Case A (mm) ..... : Case B (mm) ..... : Measured .... :	***5,5 mm*** ***2,0 mm*** ***9,75 mm***	***P***
	Rated impulse withstand voltage Uimp (kV)	***6 kV***	
8.4.2.3	Creepage distances: ***(*with integrated endplate -/0099-0000)***		
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	****800 V 500 V***	—
	- minimum creepage distances (mm) ..... :	***10,0 mm 6,3 mm***	—
	- measured creepage distances (mm) ..... :	***>12,8 mm 10,73 mm***	—
8.4.2	Verification of clearances and creepage distances ***type 2002-2647***		
	Conductor type and conductor cross-section	***4 mm² rigid***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***Top hat rail 35 mm***	—
8.4.2.2	Clearances		
	Case A (mm) .... : Case B (mm) .... : Measured (mm) ..... :	***5,5 mm*** ***2,0 mm*** ***9,73 mm***	***P***
	Rated impulse withstand voltage Uimp (kV)	***6 kV***	
8.4.2.3	Creepage distances: ***(*with integrated endplate- /0099-0000)***		

IEC 60947-7-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	****800 V 500 V***	—
	- minimum creepage distances (mm) ..... :	***10,0 mm 6,3 mm***	—
	- measured creepage distances (mm) ..... :	***10,73 mm >12,8 mm***	—
8.4.2	Verification of clearances and creepage distances	***type 2002-2671***	
	Conductor type and conductor cross-section	***4 mm² rigid***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***Top hat rail 35 mm (EN 50022)***	—
8.4.2.2	Clearances		
	Case A (mm) ..... : Case B (mm) ..... : Measured (mm) ..... :	***5,5 mm*** ***2,0 mm*** ***10,71 mm***	***P***
	Rated impulse withstand voltage Uimp (kV)	***6 kV***	
8.4.2.3	Creepage distances:		
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***400 V***	—
	- minimum creepage distances (mm) ..... :	***5,0 mm***	—
	- measured creepage distances (mm) ..... :	***10,71 mm***	—
8.4	Verification of electrical characteristics		
8.4.2	Verification of clearances and creepage distances	***type 2002-1401***	
	Conductor type and conductor cross-section	***4 mm² rigid***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***Top hat rail 35 mm***	—
8.4.2.2	Clearances		
	Case A (mm) ..... : Case B (mm) ..... : Measured (mm) ..... :	***8 mm*** ***3 mm*** ***11,8 mm***	***P***
	Rated impulse withstand voltage Uimp (kV)	***8 kV***	***P***
8.4.2.3	Creepage distances:		

IEC 60947-7-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***800 V***	—
	- minimum creepage distances (mm) ..... :	***10 mm***	—
	- measured creepage distances (mm) ..... :	***15,88 mm***	—
8.4.2	Verification of clearances and creepage distances	***type 2002-3201***	
	Conductor type and conductor cross-section	***4 mm² rigid***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***Top hat rail 35 mm***	—
8.4.2.2	Clearances		
	Case B (mm) ..... : Case A (mm) ..... : Measured (mm) ..... :	***2 mm*** ***5,5 mm*** ***9,66 mm***	***P***
	Rated impulse withstand voltage	***6 kV***	***P***
8.4.2.3	Creepage distances:		
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***500 V***	—
	- minimum creepage distances (mm) ..... :	***6,3 mm***	—
	- measured creepage distances (mm) ..... :	***>10 mm***	—
8.4	Verification of electrical characteristics		
8.4.2	Verification of clearances and creepage distances	***type 2002-6401***	
	Conductor type and conductor cross-section	***4 mm² rigid***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***Top hat rail 35 mm***	—
8.4.2.2	Clearances		
	Case B (mm) ..... : Case A) .... : Measured (mm) ..... :	***3 mm*** ***8 mm*** ***>10 mm***	***P***
	Rated impulse withstand voltage	***8 kV***	***P***
8.4.2.3	Creepage distances:		

IEC 60947-7-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***800 V***	—
	- minimum creepage distances (mm) ..... :	***10 mm***	—
	- measured creepage distances (mm) ..... :	***>10 mm***	—
8.4	Verification of electrical characteristics		
8.4.2	Verification of clearances and creepage distances ***type 2002-7114***		
	Conductor type and conductor cross-section	***4 mm² rigid***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***Top hat rail 35 mm***	—
8.4.2.2	Clearances		
	Case B (mm) ..... : Case A (mm) ..... : Measured (mm) ..... :	***1,2 mm*** ***3 mm*** ***>3,2 mm***	***P***
	Rated impulse withstand voltage	***4 kV***	***P***
8.4.2.3	Creepage distances:		
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***250 V***	—
	- minimum creepage distances (mm) ..... :	***3,2 mm***	—
	- measured creepage distances (mm) ..... :	***>3,2 mm***	—
8.4	Verification of electrical characteristics		
8.4.2	Verification of clearances and creepage distances ***type 2002-1441***		
	Conductor type and conductor cross-section	***4 mm² rigid***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***Top hat rail 35 mm***	—
8.4.2.2	Clearances		
	Case B (mm) ..... : Case A (mm) ..... : Measured (mm) ..... :	***3 mm*** ***8 mm*** ***>10 mm***	***P***
	Rated impulse withstand voltage	***8 kV***	***P***

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Clause	Requirement + Test	Result - Remark	Verdict
8.4.2.3	Creepage distances:		
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***800 V***	—
	- minimum creepage distances (mm) ..... :	***10 mm***	—
	- measured creepage distances (mm) ..... :	***>10 mm***	—
8.4.2	Verification of clearances and creepage distances	***type 2002-1871***	
	Conductor type and conductor cross-section	***4 mm² rigid***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***Top hat rail 35 mm***	—
8.4.2.2	Clearances		
	Case B (mm) ..... : Case A (mm) ..... : Measured m) ..... :	***2 mm*** ***5,5 mm*** ***>6 mm***	***P***
	Rated impulse withstand voltage	***6 kV***	***P***
8.4.2.3	Creepage distances:		
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***400 V***	—
	- minimum creepage distances (mm) ..... :	***5 mm***	—
	- measured creepage distances (mm) ..... :	***>6 mm***	—
8.4	Verification of electrical characteristics		
8.4.2	Verification of clearances and creepage distances	***type 2002-1441***	
	Conductor type and conductor cross-section	***4 mm² rigid***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***Top hat rail 35 mm***	—
8.4.2.2	Clearances		
	Case B (mm) ..... : Case A (mm) ..... : Measured (mm) ..... :	***3 mm*** ***8 mm*** ***>10 mm***	***P***
	Rated impulse withstand voltage	***8 kV***	***P***

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Clause	Requirement + Test	Result - Remark	Verdict
8.4.2.3	Creepage distances:		
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***800 V***	—
	- minimum creepage distances (mm) ..... :	***10 mm***	—
	- measured creepage distances (mm) ..... :	***>10 mm***	—
8.4.2	Verification of clearances and creepage distances	***type 2002-2401***	
	Conductor type and conductor cross-section	***4 mm² rigid***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***Top hat rail 35 mm***	—
8.4.2.2	Clearances		
	Case B (mm) ..... : Case A) .... : Measured (mm) ..... :	***3 mm*** ***8 mm*** ***>10 mm***	***P***
	Rated impulse withstand voltage	***8 kV***	***P***
8.4.2.3	Creepage distances:		
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***800 V***	—
	- minimum creepage distances (mm) ..... :	***10 mm***	—
	- measured creepage distances (mm) ..... :	***>10 mm***	—
8.4.2	Verification of clearances and creepage distances	***type 2002-2958***	
	Conductor type and conductor cross-section	***4 mm² rigid***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***Top hat rail 35 mm***	—
8.4.2.2	Clearances		
	Case B (mm) .... : Case A) .... : Measured (mm) ..... :	***2 mm*** ***5,5 mm*** ***>5,6 mm***	***P***
	Rated impulse withstand voltage	***6 kV***	***P***
8.4.2.3	Creepage distances:		

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Clause	Requirement + Test	Result - Remark	Verdict
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***400 V***	—
	- minimum creepage distances (mm) ..... :	***5 mm***	—
	- measured creepage distances (mm) ..... :	***>5,6 mm***	—
8.4.2	Verification of clearances and creepage distances	***type 2002-2201/0098-0000***	
	Conductor type and conductor cross-section	***4 mm² rigid***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***Top hat rail 35 mm***	—
8.4.2.2	Clearances		
	Case B (mm) .... : Case A m) ..... : Measured (mm) ..... :	***2 mm*** ***5,5 mm*** ***20 mm***	***P***
	Rated impulse withstand voltage	***6 kV***	***P***
8.4.2.3	Creepage distances:		
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***1000 Vac / 1500 Vdc***	—
	- minimum creepage distances (mm) ..... :	***12,5 mm / 20 mm***	—
	- measured creepage distances (mm) ..... :	***22 mm***	—
8.4.2	Verification of clearances and creepage distances	***type 2002-1549***	
	Conductor type and conductor cross-section	***4 mm² rigid***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***Top hat rail 35 mm***	—
8.4.2.2	Clearances		
	Case B (mm) ..... : Case A (mm) ..... : Measured (mm) ..... :	***2 mm*** ***5,5 mm*** ***9,28 mm***	***P***
	Rated impulse withstand voltage	***6 kV***	***P***
8.4.2.3	Creepage distances:		
	- pollution degree :	***3***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***400 V***	—
	- minimum creepage distances (mm) ..... :	***6,3 mm***	—
	- measured creepage distances (mm) ..... :	***9,28 mm***	—
8.4.2	Verification of clearances and creepage distances ***type 2002-1662/099-000, with integrated endplate***		
	Conductor type and conductor cross-section	***4 mm² rigid***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***Top hat rail 35 mm***	—
8.4.2.2	Clearances		
	Case B (mm) ..... : Case A (mm) ..... : Measured (mm) ..... :	***2 mm*** ***5,5 mm*** ***11,7 mm***	***P***
	Rated impulse withstand voltage	***6 kV***	***P***
8.4.2.3	Creepage distances:		
	- pollution degree :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***600 V***	—
	- minimum creepage distances (mm) ..... :	***8 mm***	—
	- measured creepage distances (mm) ..... :	***11,7 mm***	—
8.4.2	Verification of clearances and creepage distances ***type 2002-2701***		
	Conductor type and conductor cross-section	***4 mm² rigid***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***Top hat rail 35 mm***	—
8.4.2.2	Clearances		
	Case B (mm) ..... : Case A (mm) ..... : Measured (mm) ..... :	***3 mm*** ***8 mm*** ***11,7 mm***	***P***
	Rated impulse withstand voltage	***8 kV***	***P***
8.4.2.3	Creepage distances:		
	- pollution degree :	***3***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***800 V***	—
	- minimum creepage distances (mm) ..... :	***10 mm***	—
	- measured creepage distances (mm) ..... :	***> 12 mm***	—
8.4.2	Verification of clearances and creepage distances	***type 2002-2708***	
	Conductor type and conductor cross-section	***4 mm² rigid***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***Top hat rail 35 mm***	—
8.4.2.2	Clearances		
	Case B (mm) ..... : Case A (mm) ..... : Measured (mm) ..... :	***3 mm*** ***8 mm*** ***11,7 mm***	***P***
	Rated impulse withstand voltage	***8 kV***	***P***
8.4.2.3	Creepage distances:		
	- pollution degree :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***800 V***	—
	- minimum creepage distances (mm) ..... :	***10 mm***	—
	- measured creepage distances (mm) ..... :	***> 12 mm***	—
8.4.2	Verification of clearances and creepage distances	***type 2002-2717***	
	Conductor type and conductor cross-section	***4 mm² rigid***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***Top hat rail 35 mm***	—
8.4.2.2	Clearances		
	Case B (mm) ..... : Case A (mm) ..... : Measured (mm) ..... :	***3 mm*** ***8 mm*** ***17,98 mm***	***P***
	Rated impulse withstand voltage	***8 kV***	***P***
8.4.2.3	Creepage distances:		
	- pollution degree :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***800 V***	—
	- minimum creepage distances (mm) ..... :	***12,5 mm***	—
	- measured creepage distances (mm) ..... :	***17,98 mm***	—
8.4.3	Dielectric tests ***type 2002-4101,2002-2601 and 2002-2608***		
	Dielectric test, Uimp indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) / type / conductor end length (mm) ..... :	***4 mm², flexible, 10 – 12 mm***	—
	- rated impulse withstand voltage (kV) ..... :	***8 kV***	—
	- test Uimp main circuits (kV) ..... :	***9,8 kV***	***P***
	Dielectric test, Uimp not indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) / type / conductor end length (mm) :	***4 mm², flexible, 10 – 12 mm***	—
	- rated insulation voltage (V) ..... :	***800 V***	—
	- test voltage for 60 sec (V) ..... :	**2200 V tested for 5 s According to IEC 60947-1 A2:2014 re-testing according to 60 s is not necessary**	***P***
8.4.3	Dielectric tests ***types 2002-1401, 2002-6401, 2002-1441 and 2002-2401***		
	Dielectric test, Uimp indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) / type / conductor end length (mm) ..... :	***4 mm², rigid, 10 - 12 mm***	—
	- rated impulse withstand voltage (kV) ..... :	***8 kV***	—
	- test Uimp main circuits (kV) ..... :	***9,8 kV***	***P***
	Dielectric test, Uimp not indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) / type / conductor end length (mm) :	***4 mm², rigid, 10 - 12 mm***	—
	- rated insulation voltage (V) ..... :	***800 V***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- test voltage for 60 sec (V) ..... :	**2000 V tested for 5 s According to IEC 60947-1 A2:2014 re-testing according to 60 s is not necessary**	***P***
8.4.3	Dielectric test ***types 2002-2201 - 2002-2208 – 2002-3201***		
	Dielectric test, Uimp indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) ..... :	***4 mm², rigid, 10 - 12 mm***	—
	- rated impulse withstand voltage (kV) ..... :	***6 kV***	—
	- test Uimp main circuits (kV) ..... :	***7,3 kV***	***P***
	Dielectric test, Uimp not indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) :	***4 mm², rigid, 10 - 12 mm***	—
	- rated insulation voltage (V) ..... :	***500 V***	—
	- test voltage for 60 sec (V) ..... :	**1890 V tested for 5 s According to IEC 60947-1 A2:2014 re-testing according to 60 s is not necessary**	***P***
8.4.3	Dielectric test ***types 2002-1871***		
	Dielectric test, Uimp indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) ..... :	***4 mm², rigid, 10 - 12 mm***	—
	- rated impulse withstand voltage (kV) ..... :	***6 kV***	—
	- test Uimp main circuits (kV) ..... :	***7,3 kV***	***P***
	Dielectric test, Uimp not indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) :	***4 mm², rigid, 10 - 12 mm***	—
	- rated insulation voltage (V) ..... :	***400 V***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- test voltage for 60 sec (V) ..... :	**1890 V tested for 5 s According to IEC 60947-1 A2:2014 re-testing according to 60 s is not necessary**	***P***
8.4.3	Dielectric test ***types 2002-7114***		
	Dielectric test, Uimp indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) ..... :	***4 mm², rigid, 10 - 12 mm***	—
	- rated impulse withstand voltage (kV) ..... :	***4 kV***	—
	- test Uimp main circuits (kV) ..... :	***4,8 kV***	***P***
	Dielectric test, Uimp not indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) :	***4 mm², rigid, 10 - 12 mm***	—
	- rated insulation voltage (V) ..... :	***250 V***	—
	- test voltage for 60 sec (V) ..... :	**1500 V tested for 5 s According to IEC 60947-1 A2:2014 re-testing according to 60 s is not necessary**	***P***
8.4.3	Dielectric test ***types 2002-2958***		
	Dielectric test, Uimp indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) ..... :	***4 mm², rigid, 10 - 12 mm***	—
	- rated impulse withstand voltage (kV) ..... :	***6 kV***	—
	- test Uimp main circuits (kV) ..... :	***7,3 kV***	***P***
	Dielectric test, Uimp not indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) :	***4 mm², rigid, 10 - 12 mm***	—
	- rated insulation voltage (V) ..... :	***400 V***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- test voltage for 60 sec (V) ..... :	**1890 V tested for 5 s According to IEC 60947-1 A2:2014 re-testing according to 60 s is not necessary**	***P***
8.4.3	Dielectric test ***type 2002-2201/0098-0000***		
	Dielectric test, Uimp indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) ..... :	***4 mm², rigid, 10 - 12 mm***	—
	- rated impulse withstand voltage (kV) ..... :	***6 kV***	—
	- test Uimp main circuits (kV) ..... :	***7,3 kV***	***P***
	Dielectric test, Uimp not indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) :	***4 mm², rigid, 10 - 12 mm***	—
	- rated insulation voltage (V) ..... :	***1000 Vac / 1500 Vdc***	—
	- test voltage for 60 sec (V) ..... :	***2200 Vac / 3820 Vdc***	***P***
8.4.3	Dielectric test ***type 2002-1549***		
	Dielectric test, Uimp indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) ..... :	***4 mm², rigid, 10 - 12 mm***	—
	- rated impulse withstand voltage (kV) ..... :	***6 kV***	—
	- test Uimp main circuits (kV) ..... :	***7,3 kV***	***P***
	Dielectric test, Uimp not indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) :	***4 mm², rigid, 10 - 12 mm***	—
	- rated insulation voltage (V) ..... :	***400 V***	—
	- test voltage for 60 sec (V) ..... :	***1890 V***	***P***
8.4.3	Dielectric test ***type 2002-1662/099-000, with integrated endplate***		

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Clause	Requirement + Test	Result - Remark	Verdict
	Dielectric test, Uimp indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) ..... :	***4 mm², rigid, 10 - 12 mm***	—
	- rated impulse withstand voltage (kV) ..... :	***6 kV***	—
	- test Uimp main circuits (kV) ..... :	***7,3 kV***	***P***
	Dielectric test, Uimp not indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) :	***4 mm², rigid, 10 - 12 mm***	—
	- rated insulation voltage (V) ..... :	***600 V***	—
	- test voltage for 60 sec (V) ..... :	***1890 V***	***P***
8.4.3	Dielectric test ***type 2002-2701, 2002-2708 and 2002-2717***		
	Dielectric test, Uimp indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) ..... :	***4 mm², rigid, 10 - 12 mm***	—
	- rated impulse withstand voltage (kV) ..... :	***8 kV***	—
	- test Uimp main circuits (kV) ..... :	***9,8 kV***	***P***
	Dielectric test, Uimp not indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) :	***4 mm², rigid, 10 - 12 mm***	—
	- rated insulation voltage (V) ..... :	***800 V***	—
	- test voltage for 60 sec (V) ..... :	***2000 V***	***P***
8.4.5	Temperature-rise test ***type 2002-4101***		
	Temperature-rise conditions:		
	- test current (A) ..... :	***20 A***	—
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	***-***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- temperature-rise does not exceed 45 K	***Upper level: 40 K*** ***Middle level: 43 K*** ***Lower level: 39 K***	***P***
	Voltage drop before and after temperature-rise test:		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before temperature-rise test not exceeding 3,2 mV ..... :	***1,61 mV – 2,80 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N/A***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	***1,68mV – 2,88 mV***	***P***
	Temperature-rise conditions: ***type 2002-4101***		
	- test current (A) ..... :	***25 A***	—
	- cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- temperature-rise does not exceed 45 K	***Upper level: 38 K*** ***Middle level: 45 K*** ***Lower level: 41 K***	***P***
	Voltage drop before and after temperature-rise test:		
	- test current (A) d.c. ..... :	***3,2 A***	—
	- voltage drop (mV) before temperature-rise test not exceeding 3,2 mV ..... :	***1,82 mV – 2,38 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N/A***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	***1,87 mV – 2,43 mV***	***P***
8.4.5	Temperature-rise test ***type 2002-2601***		
	Temperature-rise conditions:		

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Clause	Requirement + Test	Result - Remark	Verdict
	- test current (A) ..... :	***24 A***	—
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- temperature-rise does not exceed 45 K	***upper level: 41 K*** ***lower level: 41 K***	***P***
	Voltage drop before and after temperature-rise test:		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before temperature-rise test not exceeding 3,2 mV ..... :	***upper level*** ***1,81 mV – 1,87 mV*** ***lower level*** ***2,18 mV – 2,41 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N/A***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	***upper level*** ***1,78 mV – 1,92 mV*** ***lower level*** ***2,24 mV – 2,48 mV***	***P***
8.4.5	Temperature rise test ***type 2002-2438***		
	Temperature rise conditions:		
	- test current (A) ..... :	***32 A***	—
	- cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- temperature rise does not exceed 45 K	***33 K – 44 K***	***P***
	Voltage drop before and after temperature rise test:		
	- test current (A) d.c. ..... :	***3,2 A***	—
	- voltage drop (mV) before temperature rise test not exceeding 3,2 mV ..... :		***N***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV	***left clamping unit*** ***0,69 mV – 1,12 mV*** ***right clamping unit*** ***0,73 mV – 0,89 mV***	***P***

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Clause	Requirement + Test	Result - Remark	Verdict
	- voltage drop (mV) after temperature rise test not exceeding 150% of the value measured before temperature rise test ..... :	***left clamping unit*** ***0,68 mV – 1,01 mV*** ***right clamping unit*** ***0,68 mV – 0,91 mV***	***P***
8.4.5	Temperature rise test ***type 2002-2401***		
	Temperature rise conditions:		
	- test current (A) ..... :	***24 A***	—
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- temperature rise does not exceed 45 K	***upper level*** ***28 K – 39 K*** ***lower level*** ***29 K – 36 K***	***P***
	Voltage drop before and after temperature rise test:		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before temperature rise test not exceeding 3,2 mV ..... :	***upper level*** ***1,68 mV – 2,01 mV*** ***lower level*** ***2,37 mV – 2,68 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after temperature rise test not exceeding 150% of the value measured before temperature rise test ..... :	***upper level*** ***1,69 mV – 1,98 mV*** ***lower level*** ***2,40 mV – 2,71 mV***	***P***
8.4.5	Temperature rise test ***type 2002-2401***		
	Temperature rise conditions:		
	- test current (A) ..... :	***32 A***	—
	- cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- torque (Nm) ..... :	***-***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- temperature rise does not exceed 45 K	***upper level*** ***36 K – 45 K*** ***lower level*** ***31 K – 45 K***	***P***
	Voltage drop before and after temperature rise test:		
	- test current (A) d.c. ..... :	***3,2 A***	—
	- voltage drop (mV) before temperature rise test not exceeding 3,2 mV ..... :	***upper level*** ***2,37 mV – 2,53 mV*** ***lower level*** ***2,54 mV – 2,94 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after temperature rise test not exceeding 150% of the value measured before temperature rise test ..... :	***upper level*** ***2,30 mV – 2,57 mV*** ***lower level*** ***2,47 mV – 3,01 mV***	***P***

	Temperature-rise conditions: ***type 2002-2601***		
	- test current (A) ..... :	***28 A***	—
	- cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- temperature-rise does not exceed 45 K	***upper level: 45 K*** ***lower level: 40 K***	***P***
	Voltage drop before and after temperature-rise test:		
	- test current (A) d.c. ..... :	***3,2 A***	—
	- voltage drop (mV) before temperature-rise test not exceeding 3,2 mV ..... :	***upper level*** ***2,21 mV – 2,46 mV*** ***lower level*** ***2,76 mV – 3,01 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N/A***

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Clause	Requirement + Test	Result - Remark	Verdict
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	***upper level*** ***2,18 mV – 2,41 mV*** ***lower level*** ***2,72 mV – 3,10 mV***	***P***
8.4.5	Temperature-rise test ***type 2002-2608***		
	Temperature-rise conditions:		
	- test current (A) ..... :	***24 A***	—
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- temperature-rise does not exceed 45 K	***41 K*** ***Connection bridge: 42 K***	***P***
	Voltage drop before and after temperature-rise test:		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before temperature-rise test not exceeding 3,2 mV ..... :	***2,78 mV – 3,01 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N/A***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	***2,78 mV – 2,98 mV***	***P***
8.4.5	Temperature rise test ***type 2002-1441***		
	Temperature rise conditions:		
	- test current (A) ..... :	***32 A***	—
	- cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- temperature rise does not exceed 45 K	***34 K – 42 K***	***P***
	Voltage drop before and after temperature rise test:		
	- test current (A) d.c. ..... :	***3,2 A***	—
	- voltage drop (mV) before temperature rise test not exceeding 3,2 mV ..... :	***left clamping unit*** ***0,45 mV – 0,81 mV*** ***right clamping unit*** ***0,57 mV – 0,72 mV***	***P***

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Clause	Requirement + Test	Result - Remark	Verdict
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after temperature rise test not exceeding 150% of the value measured before temperature rise test ..... :	***left clamping unit 0,47 mV – 0,76 mV right clamping unit 0,52 mV – 0,79 mV***	***P***
	Temperature-rise conditions: ***type 2002-2608***		
	- test current (A) ..... :	***28 A***	—
	- cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- temperature-rise does not exceed 45 K	***37 K Connection bridge: 42 K***	***P***
	Voltage drop before and after temperature-rise test:		
	- test current (A) d.c. ..... :	***3,2 A***	—
	- voltage drop (mV) before temperature-rise test not exceeding 3,2 mV ..... :		***N/A***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV	***left clamping unit 0,74 mV – 0,98 mV right clamping unit 0,74 mV – 1,04 mV***	***P***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	***left clamping unit 0,71 mV – 1,04 mV right clamping unit 0,69 mV – 0,94 mV***	***P***
8.4.5	Temperature rise test ***type 2002-1401***		
	Temperature rise conditions:		
	- test current (A) ..... :	***32 A***	—
	- cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- temperature rise does not exceed 45 K	***34 K – 42 K***	***P***
	Voltage drop before and after temperature rise test:		
	- test current (A) d.c. ..... :	***3,2 A***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- voltage drop (mV) before temperature rise test not exceeding 3,2 mV ..... :	***2,33 mV – 2,65 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after temperature rise test not exceeding 150% of the value measured before temperature rise test ..... :	***2,46 mV – 2,57 mV***	***P***
8.4.5	Temperature rise test ***type 2002-3201***		
	Temperature rise conditions:		
	- test current (A) ..... :	***32 A***	—
	- cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- temperature rise does not exceed 45 K	***Upper level 34 K – 43 K*** ***Middle level 43 K – 44 K*** ***Lower level 37 K – 45 K***	***P***
	Voltage drop before and after temperature rise test:		
	- test current (A) d.c. ..... :	***3,2A***	—
	- voltage drop (mV) before temperature rise test not exceeding 3,2 mV ..... :	***Upper level*** ***1,62 mV – 1,89 mV*** ***Middle level*** ***1,96 mV –2,27 mV*** ***Lower level*** ***2,67 mV – 3,05 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after temperature rise test not exceeding 150% of the value measured before temperature rise test ..... :	***Upper level*** ***1,58 mV – 1,78 mV*** ***Middle level*** ***2,04 mV – 2,32 mV*** ***Lower level*** ***2,51 mV – 2,99 mV***	***P***

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Clause	Requirement + Test	Result - Remark	Verdict
8.4.5	Temperature rise test ***type 2002-2208 through bridge between upper and lower pole***		
	Temperature rise conditions:		
	- test current (A) ..... :	***24 A***	—
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- temperature rise does not exceed 45 K	***Upper level 25 K – 38 K*** ***Lower level 24 K – 37 K***	***P***
	Voltage drop before and after temperature rise test:		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before temperature rise test not exceeding 3,2 mV ..... :	***2,48 mV – 3,14 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after temperature rise test not exceeding 150% of the value measured before temperature rise test ..... :	***2,37 mV – 3,02 mV***	***P***
8.4.5	Temperature rise test ***type 2002-3201***		
	Temperature rise conditions:		
	- test current (A) ..... :	***24 A***	—
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- temperature rise does not exceed 45 K	***Upper level 27 K – 41 K*** ***Middle level 29 K – 42 K*** ***Lower level 30 K – 39 K***	***P***
	Voltage drop before and after temperature rise test:		
	- test current (A) d.c. ..... :	***2,4 A***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- voltage drop (mV) before temperature rise test not exceeding 3,2 mV ..... :	***Upper level*** ***1,29 mV – 2,24 mV*** ***Middle level*** ***1,57 mV – 1,69 mV*** ***Lower level*** ***2,12 mV – 2,93 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after temperature rise test not exceeding 150% of the value measured before temperature rise test ..... :	***Upper level*** ***1,20 mV – 2,18 mV*** ***Middle level*** ***1,51 mV – 1,75 mV*** ***Lower level*** ***2,02 mV – 2,78 mV***	***P***
8.4.5	Temperature rise test ***type 2002-3208 through bridge between upper and lower pole***		
	Temperature rise conditions:		
	- test current (A) ..... :	***32 A***	—
	- cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- temperature rise does not exceed 45 K	***33 K – 42 K***	***P***
	Voltage drop before and after temperature rise test:		
	- test current (A) d.c. ..... :	***3,2A***	—
	- voltage drop (mV) before temperature rise test not exceeding 3,2 mV ..... :		***N***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV	***Upper clamping units*** ***0,40 mV – 0,56 mV*** ***lower clamping units*** ***0,41 mV – 0,66 mV*** ***connection busbar - bridge*** ***0,39 mV –0,48 mV***	***P***

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Clause	Requirement + Test	Result - Remark	Verdict
	- voltage drop (mV) after temperature rise test not exceeding 150% of the value measured before temperature rise test ..... :	***Upper clamping units 0,44 mV – 0,58 mV lower clamping units 0,44 mV – 0,65 mV connection busbar - bridge 0,41 mV –0,45 mV***	***P***
8.4.5	Temperature rise test ***type 2002-2438***		
	Temperature rise conditions:		
	- test current (A) ..... :	***24 A***	—
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- temperature rise does not exceed 45 K	***30 K – 40 K***	***P***
	Voltage drop before and after temperature rise test:		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before temperature rise test not exceeding 3,2 mV ..... :		***N***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV	***left clamping unit 0,63 mV – 0,83 mV right clamping unit 0,64 mV – 0,82 mV***	***P***
	- voltage drop (mV) after temperature rise test not exceeding 150% of the value measured before temperature rise test ..... :	***left clamping unit 0,64 mV – 0,85 mV right clamping unit 0,60 mV – 0,79 mV***	***P***
8.4.5	Temperature rise test ***type 2002-2701***		
	Temperature rise conditions:		
	- test current (A) ..... :	***24 A***	—
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- temperature rise does not exceed 45 K	***29 K – 43 K***	***P***
	Voltage drop before and after temperature rise test:		
	- test current (A) d.c. ..... :	***2,4 A***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- voltage drop (mV) before temperature rise test not exceeding 3,2 mV ..... :	***upper clamping unit 1,97 mV –2,41 mV lower clamping unit 2,42 mV – 2,70 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after temperature rise test not exceeding 150% of the value measured before temperature rise test ..... :	***upper clamping unit 1,80 mV – 2,43 mV lower clamping unit 2,64 mV – 3,34 mV***	***P***
8.4.5	Temperature rise test ***type 2002-2701***		
	Temperature rise conditions:		
	- test current (A) ..... :	***28 A***	—
	- cross-section of the conductor (mm²) ..... :	***4,0 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- temperature rise does not exceed 45 K	***31 K – 42 K***	***P***
	Voltage drop before and after temperature rise test:		
	- test current (A) d.c. ..... :	***3,2 A***	—
	- voltage drop (mV) before temperature rise test not exceeding 3,2 mV ..... :	***upper clamping unit 2,40 mV –2,69 mV lower clamping unit 2,73 mV – 2,83 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after temperature rise test not exceeding 150% of the value measured before temperature rise test ..... :	***upper clamping unit 2,55 mV –2,93 mV lower clamping unit 2,83 mV – 3,55 mV***	***P***
8.4.5	Temperature rise test ***type 2002-2708***		
	Temperature rise conditions:		
	- test current (A) ..... :	***24 A***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	**-**	—
	- temperature rise does not exceed 45 K	***32 K – 42 K***	***P***
	Voltage drop before and after temperature rise test:		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before temperature rise test not exceeding 3,2 mV ..... :	***2,96 mV –3,14 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after temperature rise test not exceeding 150% of the value measured before temperature rise test ..... :	***2,78 mV – 3,12 mV***	***P***
8.4.5	Temperature rise test ***type 2002-2708***		
	Temperature rise conditions:		
	- test current (A) ..... :	***28 A***	—
	- cross-section of the conductor (mm²) ..... :	***4,0 mm²***	—
	- torque (Nm) ..... :	**-**	—
	- temperature rise does not exceed 45 K	***27 K – 44 K***	***P***
	Voltage drop before and after temperature rise test:		
	- test current (A) d.c. ..... :	***3,2 A***	—
	- voltage drop (mV) before temperature rise test not exceeding 3,2 mV ..... :		***N***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV	***0,50 mV – 1,11 mV***	***P***
	- voltage drop (mV) after temperature rise test not exceeding 150% of the value measured before temperature rise test ..... :	***0,72 mV – 1,44 mV***	***P***
8.4.6	Short-time withstand current test ***type 2002-4101***		
	- rated cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- torque (Nm) ..... :	**-**	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- test current (A) ..... :	***480 A***	—
	- duration of the test current (s) ..... :	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. ..... :	***3,2 A***	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV ..... :	***2,18 mV – 2,79 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N/A***
	- voltage drop (mV) after short-time withstand current test not exceeding 150% of the value measured before short-time withstand current test ..... :	***1,93 mV – 2,73 mV***	***P***
8.4.6	Short-time withstand current test ***type 2002-1401***		
	- rated cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- test current (A) ..... :	***480 A***	—
	- duration of the test current (s) ..... :	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		**P**
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. ..... :	***3,2 A***	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV ..... :	***2,41 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***

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Clause	Requirement + Test	Result - Remark	Verdict
	- voltage drop (mV) after short-time withstand current test not exceeding 150% of the value measured before short-time withstand current test ..... :	***2,49 mV***	***P***
8.4.6	Short-time withstand current test ***type 2002-2601***		
	- rated cross-section of the conductor (mm²) .....:	***4 mm²***	—
	- torque (Nm) .....:	***-***	—
	- test current (A) .....:	***480 A***	—
	- duration of the test current (s) .....:	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. .....:	***3,2 A***	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV .....:	***2,88 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N/A***
	- voltage drop (mV) after short-time withstand current test not exceeding 150% of the value measured before short-time withstand current test .....:	***2,96 mV***	***P***
8.4.6	Short-time withstand current test ***type 2002-2608***		
	- rated cross-section of the conductor (mm²) .....:	***4 mm²***	—
	- torque (Nm) .....:	***-***	—
	- test current (A) .....:	***480 A***	—
	- duration of the test current (s) .....:	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***

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Clause	Requirement + Test	Result - Remark	Verdict

	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. .....:	***3,2 A***	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV .....:		***N/A***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV	***left clamping unit 0,67 mV right clamping unit 0,82 mV***	***P***
	- voltage drop (mV) after short-time withstand current test not exceeding 150% of the value measured before short-time withstand current test .....:	***left clamping unit 0,74 mV right clamping unit 0,86 mV***	***P***
8.4.6	Short-time withstand current test ***type2002-3201***		
	- rated cross-section of the conductor (mm²) .....:	***4 mm²***	—
	- torque (Nm) .....:	***-***	—
	- test current (A) .....:	***480 A***	—
	- duration of the test current (s) .....:	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		**P**
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. .....:	***3,2 A***	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV .....:	***2,74 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after short-time withstand current test not exceeding 150% of the value measured before short-time withstand current test .....:	***2,89 mV***	***P***
8.4.6	Short-time withstand current test ***type 2002-3208 through bridge between upper and lower pole***		

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Clause	Requirement + Test	Result - Remark	Verdict
	- rated cross-section of the conductor (mm²) .....:	***4 mm²***	—
	- torque (Nm) .....:	***-***	—
	- test current (A) .....:	***480 A***	—
	- duration of the test current (s) .....:	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		**P**
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. .....:	***3,2 A***	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV .....:		***N***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV	***Upper clamping unit 0,57 mV lower clamping unit 0,46 mV connection busbar - bridge 0,42 mV***	***P***
	- voltage drop (mV) after short-time withstand current test not exceeding 150% of the value measured before short-time withstand current test .....:	***Upper clamping unit 0,61 mV lower clamping unit 0,41 mV connection busbar - bridge 0,41 mV***	***P***
8.4.6	Short-time withstand current test ***type 2002-1401***		
	- rated cross-section of the conductor (mm²) .....:	***2,5 mm²***	—
	- torque (Nm) .....:	***-***	—
	- test current (A) .....:	***300 A***	—
	- duration of the test current (s) .....:	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. .....:	***2,4 A***	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV .....:	***2,11 mV***	***P***

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Clause	Requirement + Test	Result - Remark	Verdict
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after short-time withstand current test not exceeding 150% of the value measured before short-time withstand current test .....:	***2,01 mV***	***P***
8.4.6	Short-time withstand current test ***type 2002-2208 through bridge between upper and lower pole***		
	- rated cross-section of the conductor (mm²) .....:	***2,5 mm²***	—
	- torque (Nm) .....:	***-***	—
	- test current (A) .....:	***300 A***	—
	- duration of the test current (s) .....:	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		**P**
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. .....:	***2,4 A***	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV .....:	***3,11 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after short-time withstand current test not exceeding 150% of the value measured before short-time withstand current test .....:	***3,32 mV***	***P***
8.4.6	Short-time withstand current test ***type2002-3201***		
	- rated cross-section of the conductor (mm²) .....:	***2,5 mm²***	—
	- torque (Nm) .....:	***-***	—
	- test current (A) .....:	***300 A***	—
	- duration of the test current (s) .....:	***1 s***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		**P**
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. .....:	***2,4 A***	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV .....:	***2,71 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after short-time withstand current test not exceeding 150% of the value measured before short-time withstand current test .....:	***2,92 mV***	***P***
8.4.6	Short-time withstand current test ***type2002-6401***		
	- rated cross-section of the conductor (mm²) .....:	***4 mm²***	—
	- torque (Nm) .....:	***-***	—
	- test current (A) .....:	***480 A***	—
	- duration of the test current (s) .....:	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		**P**
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. .....:	***3,2 A***	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV .....:	***2,45 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***

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Clause	Requirement + Test	Result - Remark	Verdict
	- voltage drop (mV) after short-time withstand current test not exceeding 150% of the value measured before short-time withstand current test .....:	***2,51 mV***	***P***
8.4.6	Short-time withstand current test ***type2002-2438***		
	- rated cross-section of the conductor (mm²) .....:	***4 mm²***	—
	- torque (Nm) .....:	***-***	—
	- test current (A) .....:	***480 A***	—
	- duration of the test current (s) .....:	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		**P**
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. .....:	***3,2 A***	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV .....:		***N***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV	***left clamping unit lower 0,62 mV right clamping unit upper 0,65 mV***	***P***
	- voltage drop (mV) after short-time withstand current test not exceeding 150% of the value measured before short-time withstand current test .....:	***left clamping unit lower 0,69 mV right clamping unit upper 0,61 mV***	***P***
8.4.6	Short-time withstand current test ***type2002-2401***		
	- rated cross-section of the conductor (mm²) .....:	***2,5 mm²***	—
	- torque (Nm) .....:	***-***	—
	- test current (A) .....:	***300 A***	—
	- duration of the test current (s) .....:	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		**P**

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Clause	Requirement + Test	Result - Remark	Verdict
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. .....:	***2,4 A***	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV .....:	***2,54 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after short-time withstand current test not exceeding 150% of the value measured before short-time withstand current test :	***2,48 mV***	***P***
8.4.6	Short-time withstand current test ***type 2002-2401***		
	- rated cross-section of the conductor (mm²) .....:	***4 mm²***	—
	- torque (Nm) .....:	***-***	—
	- test current (A) .....:	***480 A***	—
	- duration of the test current (s) .....:	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		**P**
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. .....:	***3,2 A***	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV .....:	***2,97 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after short-time withstand current test not exceeding 150% of the value measured before short-time withstand current test .....:	***2,90 mV***	***P***
8.4.6	Short-time withstand current test ***type 2002-2701***		
	- rated cross-section of the conductor (mm²) .....:	***2,5 mm²***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- torque (Nm) .....:	**-**	—
	- test current (A) .....:	***300 A***	—
	- duration of the test current (s) .....:	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		**P**
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. .....:	***2,4 A***	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV .....:	***2,41 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after short-time withstand current test not exceeding 150% of the value measured before short-time withstand current test .....:	***2.82 mV***	***P***
8.4.6	Short-time withstand current test ***type 2002-2701***		
	- rated cross-section of the conductor (mm²) .....:	***4,0 mm²***	—
	- torque (Nm) .....:	**-**	—
	- test current (A) .....:	***480 A***	—
	- duration of the test current (s) .....:	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		**P**
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. .....:	***3,2 A***	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV .....:	***2,93 mV***	***P***

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Clause	Requirement + Test	Result - Remark	Verdict
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after short-time withstand current test not exceeding 150% of the value measured before short-time withstand current test .....:	***2.76 mV***	***P***
8.4.6	Short-time withstand current test ***type 2002-2708***		
	- rated cross-section of the conductor (mm²) .....:	***2,5 mm²***	—
	- torque (Nm) .....:	***-***	—
	- test current (A) .....:	***300 A***	—
	- duration of the test current (s) .....:	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		**P**
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. .....:	***2,4 A***	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV .....:	***2,90 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after short-time withstand current test not exceeding 150% of the value measured before short-time withstand current test .....:	***3,00 mV***	***P***
8.4.6	Short-time withstand current test ***type 2002-2708***		
	- rated cross-section of the conductor (mm²) .....:	***4,0 mm²***	—
	- torque (Nm) .....:	***-***	—
	- test current (A) .....:	***480 A***	—
	- duration of the test current (s) .....:	***1 s***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		**P**
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. .....:	***3,2 A***	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV .....:	***2,35 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after short-time withstand current test not exceeding 150% of the value measured before short-time withstand current test .....:	***2.12 mV***	***P***
8.4.7	Ageing test (for screwless-type terminal blocks only)		
	Maximum ambient temperature (°C) .....:	40 °C	—
	Rated cross-section rigid or stranded < 10 mm² solid, > 10 mm² stranded (mm²) .....:	***2,5 mm²***	—
	Test current (A) according 8.4.5 .....:	***20 A***	—
	Heating cabinet is increased, in each cycle to (°C) .....:	***40 °C***	—
	Test current (A) d.c. for measurement of the voltage drop .....:	***2,4 A***	—
	Voltage drop after 0 cycles:		
	- requirement: ≤ 3,2 mV (mV) .....:	***1 – 1,72 mV – 2,82 mV*** ***2 – 1,96 mV – 3,03 mV*** ***3 – 1,74 mV – 2,59 mV*** ***4 – 1,66 mV – 2,63 mV*** ***5 – 2,07 mV – 2,71 mV***	***P***

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Clause	Requirement + Test	Result - Remark	Verdict
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N/A***
	Voltage drop after the 24th cycle:		
	- requirement: 4,8 mV (mV) .....:	***1 – 1,83 mV – 3,11 mV*** ***2 – 2,05 mV – 2,71 mV*** ***3 – 1,81 mV – 2,57 mV*** ***4 – 1,68 mV – 2,45 mV*** ***5 – 1,99 mV - 2,57 mV***	***P***
	Voltage drop after the 48th cycle		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) .....:	***1 – 1,81 mV – 3,10 mV*** ***2 – 2,02 mV – 2,67 mV*** ***3 – 1,80 mV – 2,54 mV*** ***4 – 1,67 mV – 2,42 mV*** ***5 – 1,96 mV – 2,55 mV***	***P***
	Voltage drop after the 72th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) .....:	***1 – 1,81 mV – 3,14 mV*** ***2 – 2,04 mV – 2,70 mV*** ***3 – 1,81 mV – 2,57 mV*** ***4 – 1,69 mV – 2,45 mV*** ***5 – 1,97 mV – 2,57 mV***	***P***
	Voltage drop after the 96th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) .....:	***1 – 1,76 mV – 3,03 mV*** ***2 – 1,96 mV – 2,60 mV*** ***3 – 1,76 mV – 2,47 mV*** ***4 – 1,64 mV – 2,35 mV*** ***5 – 1,92 mV – 2,49 mV***	***P***
	Voltage drop after the 120th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) .....:	***1 – 1,80 mV – 2,71 mV*** ***2 – 2,00mV – 2,65 mV*** ***3 – 1,78mV – 2,52 mV*** ***4 – 1,66 mV – 2,40 mV*** ***5 – 1,93 mV – 2,54 mV***	***P***
	Voltage drop after the 144th cycle:		

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Clause	Requirement + Test	Result - Remark	Verdict
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) .....:	***1 – 1,78 mV – 3,04 mV*** ***2 – 1,97 mV – 2,62 mV*** ***3 – 1,75 mV – 2,49 mV*** ***4 – 1,64 mV – 2,37 mV*** ***5 – 1,91 mV – 2,52 mV***	***P***
	Voltage drop after the 168th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) .....:	***1 – 1,80 mV – 3,06 mV*** ***2 – 2,00 mV – 2,65 mV*** ***3 – 1,77 mV – 2,52 mV*** ***4 – 1,65 mV – 2,39 mV*** ***5 – 1,92 mV – 2,53 mV***	***P***
	Voltage drop after the 192th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) .....:	***1 – 1,80 mV – 3,06 mV*** ***2 – 2,00 mV – 2,64 mV*** ***3 – 1,78 mV – 2,52 mV*** ***4 – 1,67 mV – 2,39 mV*** ***5 – 1,93 mV – 2,53 mV***	***P***
	Pull-out test		
	force (N) .....:	***50 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
8.4.7	Ageing test (for screwless-type terminal blocks only)		
	Maximum ambient temperature (°C) .....:	40 °C /	—
	Rated cross-section rigid or stranded < 10 mm² solid, > 10 mm² stranded (mm²) .....:	***4 mm²***	—
	Test current (A) according 8.4.5 .....:	***25 A***	—
	Heating cabinet is increased, in each cycle to (°C) .....:	***40 °C***	—
	Test current (A) d.c. for measurement of the voltage drop .....:	***3,2 A***	—
	Voltage drop after 0 cycles:		

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Clause	Requirement + Test	Result - Remark	Verdict
	- requirement: ≤ 3,2 mV (mV) .....:	***1 – 2,04 mV – 2,95 mV*** ***2 – 2,10 mV – 3,01 mV*** ***3 – 2,14 mV – 2,96 mV*** ***4 – 2,13 mV – 2,92 mV*** ***5 – 1,98 mV – 3,04 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N/A***
	Voltage drop after the 24th cycle:		
	- requirement: 4,8 mV (mV) .....:	***1 – 2,01 mV – 2,92 mV*** ***2 – 2,11 mV – 2,96 mV*** ***3 – 2,11 mV – 2,93 mV*** ***4 – 2,13 mV – 2,96 mV*** ***5 – 1,98 mV – 3,05 mV***	***P***
	Voltage drop after the 48th cycle		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) .....:	***1 – 2,00 mV – 2,94 mV*** ***2 – 2,12 mV – 2,98 mV*** ***3 – 2,12 mV – 2,94 mV*** ***4 – 2,14 mV – 2,97 mV*** ***5 – 2,00 mV – 3,06 mV***	***P***
	Voltage drop after the 72th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) .....:	***1 – 2,02 mV – 2,94 mV*** ***2 – 2,13 mV – 2,96 mV*** ***3 – 2,11 mV – 2,96 mV*** ***4 – 2,15 mV – 2,99 mV*** ***5 – 2,00 mV – 3,07 mV***	***P***
	Voltage drop after the 96th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) .....:	***1 – 2,04 mV – 2,97 mV*** ***2 – 2,13 mV – 2,97 mV*** ***3 – 2,12 mV – 2,98 mV*** ***4 – 2,16 mV – 3,00 mV*** ***5 – 2,00 mV – 3,07 mV***	***P***
	Voltage drop after the 120th cycle:		

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Clause	Requirement + Test	Result - Remark	Verdict
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) .....:	***1 – 2,03mV – 2,91 mV*** ***2 – 2,11 mV – 2,93 mV*** ***3 – 2,10 mV – 2,94 mV*** ***4 – 2,14 mV – 2,96 mV*** ***5 – 2,00 mV – 3,05 mV***	***P***
	Voltage drop after the 144th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) .....:	***1 – 2,02 mV – 2,92 mV*** ***2 – 2,11 mV – 2,93 mV*** ***3 – 2,10 mV – 2,94 mV*** ***4 – 2,14 mV – 2,95 mV*** ***5 – 1,98 mV – 3,04 mV***	***P***
	Voltage drop after the 168th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) .....:	***1 – 1,99 mV – 2,99 mV*** ***2 – 2,12 mV – 2,94 mV*** ***3 – 2,09 mV – 2,93 mV*** ***4 – 2,13 mV – 2,95 mV*** ***5 – 1,99 mV – 3,03 mV***	***P***
	Voltage drop after the 192th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) .....:	***1 – 1,97 mV – 2,94 mV*** ***2 – 2,08 mV – 2,90 mV*** ***3 – 2,07 mV – 2,88 mV*** ***4 – 2,12 mV – 2,92 mV*** ***5 – 1,97 mV – 2,99 mV***	***P***
	Pull-out test		
	force (N) .....:	***60 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
8.5	Verification of thermal characteristics are checked by the needle flame test.		***P***
	Before the test, the terminal blocks are stored for 24 h in an atmosphere having a temperature between 15°C and 35°C and a relative humidity between 45% and 75%		***P***
	The flame is applied for 10 s.	***10 s***	***P***

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Clause	Requirement + Test	Result - Remark	Verdict
	for insulation walls <1 mm and / or an area < 100 mm², the flame is applied for 5 s.		
	The terminal blocks are considered to have passed the test if the duration of burning is < 30s in case of ignition. Moreover, the tissue paper on the pinewood board shall not ignite if burning or glowing particles fall from the terminal block.		***P***
8.4.7	Ageing test (for screwless-type terminal blocks only) ***type 2002 1401***		
	Maximum ambient temperature (°C) ..... :	40 °C /	—
	Rated cross-section rigid or stranded < 10 mm² solid, > 10 mm² stranded (mm²) ..... :	***4 mm²***	—
	Test current (A) according 8.4.5 ..... :	***32 A***	—
	Heating cabinet is increased, in each cycle to (°C) ..... :	***40 °C***	—
	Test current (A) d.c. for measurement of the voltage drop ..... :	***3,2 A***	—
	Voltage drop after 0 cycles:		
	- requirement: ≤ 3,2 mV (mV) ..... :	***2,29 mV – 2,54 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	Voltage drop after the 24th cycle:		
	- requirement: 4,8 mV (mV) ..... :	***2,35 mV – 2,49 mV***	***P***
	Voltage drop after the 48th cycle		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***2,35 mV – 2,47 mV***	***P***
	Voltage drop after the 72th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***2,21 mV – 2,47 mV***	***P***
	Voltage drop after the 96th cycle:		

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Clause	Requirement + Test	Result - Remark	Verdict
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***2,22 mV – 2,46 mV***	***P***
	Voltage drop after the 120th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***2,21 mV – 2,46 mV***	***P***
	Voltage drop after the 144th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***2,20 mV – 2,45 mV***	***P***
	Voltage drop after the 168th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***2,19 mV – 2,44 mV***	***P***
	Voltage drop after the 192th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***2,10 mV – 2,58 mV***	***P***
	Pull-out test		
	force (N) ..... :	***60 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
8.4.7	Ageing test (for screwless-type terminal blocks only)	***type 2002-3208***	
	Maximum ambient temperature (°C) ..... :	40 °C /	—
	Rated cross-section rigid or stranded < 10 mm² solid, > 10 mm² stranded (mm²) ..... :	***4 mm²***	—
	Test current (A) according 8.4.5 ..... :	***32 A***	—
	Heating cabinet is increased, in each cycle to (°C) ..... :	***40 °C***	—
	Test current (A) d.c. for measurement of the voltage drop ..... :	***3,2 A***	—
	Voltage drop after 0 cycles:		
	- requirement: ≤ 3,2 mV (mV) ..... :		***N***

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Clause	Requirement + Test	Result - Remark	Verdict
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV	***upper clamping unit 0,40 mV - 0,62 mV lower clamping unit 0,45 mV - 0,74 mV bridge 0,48 mV - 0,56 mV***	***P***
	Voltage drop after the 24th cycle:		
	- requirement: 4,8 mV (mV) ..... :	***upper clamping unit 0,43 mV - 0,63 mV lower clamping unit 0,45 mV - 0,77 mV bridge 0,49 mV - 0,56 mV***	***P***
	Voltage drop after the 48th cycle		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***upper clamping unit 0,43 mV - 0,63 mV lower clamping unit 0,42 mV - 0,76 mV bridge 0,49 mV - 0,56 mV***	***P***
	Voltage drop after the 72th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***upper clamping unit 0,43 mV - 0,62 mV lower clamping unit 0,43 mV - 0,76 mV bridge 0,49 mV - 0,56 mV***	***P***
	Voltage drop after the 96th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***upper clamping unit 0,43 mV - 0,62 mV lower clamping unit 0,45 mV - 0,76 mV bridge 0,49 mV - 0,56 mV***	***P***
	Voltage drop after the 120th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***upper clamping unit 0,43 mV - 0,62 mV lower clamping unit 0,48 mV - 0,76 mV bridge 0,49 mV - 0,56 mV***	***P***

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Clause	Requirement + Test	Result - Remark	Verdict
	Voltage drop after the 144th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***upper clamping unit 0,43 mV - 0,61 mV lower clamping unit 0,49 mV - 0,76 mV bridge 0,49 mV - 0,56 mV***	***P***
	Voltage drop after the 168th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***upper clamping unit 0,43 mV - 0,61 mV lower clamping unit 0,48 mV - 0,76 mV bridge 0,49 mV - 0,56 mV***	***P***
	Voltage drop after the 192th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***upper clamping unit 0,43 mV - 0,61 mV lower clamping unit 0,49 mV - 0,76 mV bridge 0,50 mV - 0,56 mV***	***P***
	Pull-out test		
	force (N) ..... :	***60 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
8.4.7	Ageing test (for screwless-type terminal blocks only) ***(type 2002 2438)***		
	Maximum ambient temperature (°C) ..... :	40 °C /	—
	Rated cross-section rigid or stranded < 10 mm² solid, > 10 mm² stranded (mm²) ..... :	***4mm²***	—
	Test current (A) according 8.4.5 ..... :	***32 A***	—
	Heating cabinet is increased, in each cycle to (°C) ..... :	***40 °C***	—
	Test current (A) d.c. for measurement of the voltage drop ..... :	***3,2 A***	—
	Voltage drop after 0 cycles:		
	- requirement: ≤ 3,2 mV (mV) ..... :		***N***

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Clause	Requirement + Test	Result - Remark	Verdict
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV	***left clamping unit*** ***0,61 mV – 1,0 mV*** ***right clamping unit*** ***0,73 mV – 1,15 mV***	***P***
	Voltage drop after the 24th cycle:		
	- requirement: 4,8 mV (mV) ..... :	***left clamping unit*** ***0,64 mV – 1,01 mV*** ***right clamping unit*** ***0,76 mV – 1,21 mV***	***P***
	Voltage drop after the 48th cycle		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***left clamping unit*** ***0,64 mV – 1,03 mV*** ***right clamping unit*** ***0,76 mV – 1,21 mV***	***P***
	Voltage drop after the 72th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***left clamping unit*** ***0,64 mV – 1,01 mV*** ***right clamping unit*** ***0,76 mV – 1,21 mV***	***P***
	Voltage drop after the 96th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***left clamping unit*** ***0,64 mV – 1,02 mV*** ***right clamping unit*** ***0,76 mV – 1,21 mV***	***P***
	Voltage drop after the 120th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***left clamping unit*** ***0,64 mV – 1,01 mV*** ***right clamping unit*** ***0,76 mV – 1,21 mV***	***P***
	Voltage drop after the 144th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***left clamping unit*** ***0,64 mV – 1,01 mV*** ***right clamping unit*** ***0,76 mV – 1,21 mV***	***P***
	Voltage drop after the 168th cycle:		

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Clause	Requirement + Test	Result - Remark	Verdict
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***left clamping unit*** ***0,64 mV – 1,01 mV*** ***right clamping unit*** ***0,76 mV – 1,21 mV***	***P***
	Voltage drop after the 192th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***left clamping unit*** ***0,64 mV – 1,0 mV*** ***right clamping unit*** ***0,76 mV – 1,21 mV***	***P***
	Pull-out test		
	force (N) ..... :	***60 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
8.5	Verification of thermal characteristics are checked by the needle flame test.		***P***
	Before the test, the terminal blocks are stored for 24 h in an atmosphere having a temperature between 15°C and 35°C and a relative humidity between 45% and 75%		***P***
	The flame is applied for 10 s. for insulation walls <1 mm and / or an area < 100 mm², the flame is applied for 5 s.	***10 s***	***P***
	The terminal blocks are considered to have passed the test if the duration of burning is < 30s in case of ignition. Moreover, the tissue paper on the pinewood board shall not ignite if burning or glowing particles fall from the terminal block.		***P***
8.6	Verification of EMC characteristics		
	Subclause 8.4 of EN 60947-1 applies with the following addition:		***N/A***
8.6.1	Immunity		

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Clause	Requirement + Test	Result - Remark	Verdict
	Terminal blocks within the scope of this standard are not sensitive of electromagnetic disturbances and therefore no immunity tests are necessary.		***N/A***
8.6.2	Emission		
	Terminal blocks within the scope of this standard do not generate electromagnetic disturbances and therefore no emission tests are necessary.		***N/A***

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Clause	Requirement + Test	Result - Remark	Verdict
Annex A	**vacant**		
Annex B	**informative**		
	Items subject to agreement between manufacturer and user		***N/A***
Annex C	**vacant**		
Annex D	**ADDITIONAL REQUIREMENTS FOR TEST DISCONNECT TERMINALBLOCKS**		
D5	Product information ***type 2002 – 2671***		
	- service life in number of cycles	***200 times***	***P***
D6.	Normal service, mounting and transport conditions		
	Clause 6 applies.		***N/A***
D7	Construction and performance conditions		
	Clause 7 applies with the following additions		
D7.1	Constructional requirements		
D7.1.3	Clearances and creepages are not required to be measured over the open disconnect contacts (Gap). However, the rated impulse withstand voltage (Uimp) stated by the manufacturer according to table 13 of IEC 60947-1, without using the altitude correction factor, shall be verified across the open disconnect contacts (gap) (see D.7.2.2)	***6 kV***	***P***
D7.1.7	Disconnect unit		
	For longitudinal and perpendicular disconnection, test disconnect terminal blocks may be equipped with disconnect units, for instance of the following type: - plug - knife - slide (with or without busbar)	***Plug***	***P***

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Clause	Requirement + Test	Result - Remark	Verdict
	the position of the disconnect unit shall be recognizable in normal use and shall not be changed unintentionally		***P***
D.7.2.2	Dielectric properties ***type 2002 – 2671***		
	Dielectric test, Uimp indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) / type / conductor end length tested over open disconnect contacts (gap) (mm) ..... :	***4 mm² / rigid / 10 – 12 mm***	—
	- rated impulse withstand voltage (kV) ..... :	***6 kV***	—
	- test Uimp without altitude correction factor (kV) :	***6 kV***	***P***
D.7.2.2	Dielectric properties ***type 2002-1871***		
	Dielectric test, Uimp indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) / type / conductor end length tested over open disconnect contacts (gap) (mm) ..... :	***4 mm², rigid, 10 - 12 mm***	—
	- rated impulse withstand voltage (kV) ..... :	***6 kV***	—
	- test Uimp without altitude correction factor (kV) :	***6 kV***	***P***
D.7.2.2	Dielectric properties ***type 2002-7114***		
	Dielectric test, Uimp indicated:		
	- five terminal blocks connected with unfavourable cross-section (mm²) / type / conductor end length tested over open disconnect contacts (gap) (mm) ..... :	***4 mm², rigid, 10 - 12 mm***	—
	- rated impulse withstand voltage (kV) ..... :	***4 kV***	—
	- test Uimp without altitude correction factor (kV) :	***4 kV***	***P***
D.7.2.2	Dielectric properties ***type 2002-1549***		
	Dielectric test, Uimp indicated:		

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Clause	Requirement + Test	Result - Remark	Verdict
	- five terminal blocks connected with unfavourable cross-section (mm²) / type / conductor end length tested over open disconnect contacts (gap) (mm) ..... :	***4 mm², rigid, 10 - 12 mm***	—
	- rated impulse withstand voltage (kV) ..... :	***6 kV***	—
	- test Uimp without altitude correction factor (kV) :	***6 kV***	***P***

D 8.4.5	Temperature rise test ***type 2002-7214***		
	Temperature rise conditions:		
	- test current (A) ..... :	***24 A***	—
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- temperature rise does not exceed 45 K	***35 K – 44 K***	***P***
	Voltage drop before and after temperature rise test:		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before temperature rise test not exceeding 3,2 mV ..... :	***Overall clamping unit and busbar clamping unit 1,68 mV – 2,68***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after temperature rise test not exceeding 150% of the value measured before temperature rise test ..... :	***Overall clamping unit and busbar clamping unit 0,83 mV – 1,14***	***P***

D 8.4.5	Temperature rise test ***type 2002-7214***		
	Temperature rise conditions:		
	- test current (A) ..... :	***32 A***	—
	- cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- temperature rise does not exceed 45 K	***36 K – 45K***	***P***
	Voltage drop before and after temperature rise test:		
	- test current (A) d.c. ..... :	***3,2 A***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- voltage drop (mV) before temperature rise test not exceeding 3,2 mV ..... :	***Overall clamping unit and busbar clamping unit 0,32 mV – 1,58***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after temperature rise test not exceeding 150% of the value measured before temperature rise test ..... :	***Overall clamping unit and busbar clamping unit 1,03 mV – 1,07***	***P***
D.8.4.5	Temperature-rise test ***type 2002 – 2671***		
	Temperature-rise conditions:		
	- test current (A) ..... :	***16 A***	—
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- torque disconnect unit (Nm) ..... :	***-***	—
	- temperature-rise does not exceed 45 K	***upper level 28 K lower level 38 K disconnect part 29 K***	***P***
	Voltage drop before and after temperature-rise test:		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before temperature-rise test not exceeding 1,6 mV times the total of conductor clamping unit and disconnect unit contact points ..... :		***N/A***
	If the measured value exceeds this calculated value, the voltage drop is measured on each individual conductor clamping unit and disconnect unit contact point. it shall not exceed 1,6 mV on any conductor clamping unit and disconnect unit contact point	***upper level 2,77 mV – 3,02 mV lower level 2,31 mV – 2,49 mV***	***P***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	***upper level 2,71 mV – 2,96 mV lower level 2,26 mV – 2,48 mV***	***P***

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Clause	Requirement + Test	Result - Remark	Verdict
D.8.4.5	Temperature-rise test ***type 2002-1871***		
	Temperature-rise conditions:		
	- test current (A) ..... :	***16 A***	—
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- torque disconnect unit (Nm) ..... :	***-***	—
	- temperature-rise does not exceed 45 K	***16 K – 23 K***	***P***
	Voltage drop before and after temperature-rise test:		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before temperature-rise test not exceeding 1,6 mV times the total of conductor clamping unit and disconnect unit contact points ..... :	***2,08 mV – 2,31 mV*** ***(3 contact points)***	***P***
	If the measured value exceeds this calculated value, the voltage drop is measured on each individual conductor clamping unit and disconnect unit contact point. it shall not exceed 1,6 mV on any conductor clamping unit and disconnect unit contact point		***N***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	***2,05 mV – 2,27 mV*** ***(3 contact points)***	***P***
D.8.4.5	Temperature-rise test ***type 2002-1871***		
	Temperature-rise conditions:		
	- test current (A) ..... :	***16 A***	—
	- cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- torque disconnect unit (Nm) ..... :	***-***	—
	- temperature-rise does not exceed 45 K	***7 K – 14 K***	***P***
	Voltage drop before and after temperature-rise test:		
	- test current (A) d.c. ..... :	***3,2 A***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- voltage drop (mV) before temperature-rise test not exceeding 1,6 mV times the total of conductor clamping unit and disconnect unit contact points ..... :	***2,69 mV – 3,01 mV (3 contact points)***	***P***
	If the measured value exceeds this calculated value, the voltage drop is measured on each individual conductor clamping unit and disconnect unit contact point. it shall not exceed 1,6 mV on any conductor clamping unit and disconnect unit contact point		***N***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	***2,75 mV – 2,91 mV (3 contact points)***	***P***
D.8.4.5	Temperature-rise test ***type 2002-2958***		
	Temperature-rise conditions:		
	- test current (A) ..... :	***16 A***	—
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- torque disconnect unit (Nm) ..... :	***-***	—
	- temperature-rise does not exceed 45 K	***Upper level 21 K – 31 K lower level 22 K – 29 K switch 39 K***	***P***
	Voltage drop before and after temperature-rise test:		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before temperature-rise test not exceeding 1,6 mV times the total of conductor clamping unit and disconnect unit contact points ..... :	***4,48 mV – 5,75 mV (4 contact points)***	***P***

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Clause	Requirement + Test	Result - Remark	Verdict
	If the measured value exceeds this calculated value, the voltage drop is measured on each individual conductor clamping unit and disconnect unit contact point. it shall not exceed 1,6 mV on any conductor clamping unit and disconnect unit contact point		***N***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	***4,23 mV – 5,51 mV (4 contact points)***	***P***
D.8.4.5	Temperature-rise test ***type 2002-7114***		
	Temperature-rise conditions:		
	- test current (A) ..... :	***24 A***	—
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- torque disconnect unit (Nm) ..... :	***-***	—
	- temperature-rise does not exceed 45 K	***31 K – 36 K***	***P***
	Voltage drop before and after temperature-rise test:		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before temperature-rise test not exceeding 1,6 mV times the total of conductor clamping unit and disconnect unit contact points ..... :	***1,44 mV – 1,68 mV (2 contact points)***	***P***
	If the measured value exceeds this calculated value, the voltage drop is measured on each individual conductor clamping unit and disconnect unit contact point. it shall not exceed 1,6 mV on any conductor clamping unit and disconnect unit contact point		***N***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	***1,41 mV – 1,71 mV (2 contact points)***	***P***
D.8.4.5	Temperature-rise test ***type 2002-7114***		
	Temperature-rise conditions:		
	- test current (A) ..... :	***32 A***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- torque (Nm) ..... :	**-**	—
	- torque disconnect unit (Nm) ..... :	**-**	—
	- temperature-rise does not exceed 45 K	***37 K – 44 K***	***P***
	Voltage drop before and after temperature-rise test:		
	- test current (A) d.c. ..... :	***3,2 A***	—
	- voltage drop (mV) before temperature-rise test not exceeding 1,6 mV times the total of conductor clamping unit and disconnect unit contact points ..... :	***1,80 mV – 2,62 mV*** ***(2 contact points)***	***P***
	If the measured value exceeds this calculated value, the voltage drop is measured on each individual conductor clamping unit and disconnect unit contact point. it shall not exceed 1,6 mV on any conductor clamping unit and disconnect unit contact point		***N***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	***1,74 mV – 2,68 mV*** ***(2 contact points)***	***P***
D.8.4.5	Temperature-rise test ***type 2002-1549***		
	Temperature-rise conditions:		
	- test current (A) ..... :	***16 A***	—
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	**-**	—
	- torque disconnect unit (Nm) ..... :	**-**	—
	- temperature-rise does not exceed 45 K	***20 K – 30 K***	***P***
	Voltage drop before and after temperature-rise test:		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before temperature-rise test not exceeding 1,6 mV times the total of conductor clamping unit and disconnect unit contact points ..... :	***2,54 mV – 3,16 mV*** ***(4 contact points)***	***P***

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Clause	Requirement + Test	Result - Remark	Verdict
	If the measured value exceeds this calculated value, the voltage drop is measured on each individual conductor clamping unit and disconnect unit contact point. it shall not exceed 1,6 mV on any conductor clamping unit and disconnect unit contact point		***N***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	***2,85 mV – 3,43 mV (4 contact points)***	***P***
D.8.4.6	Short-time withstand current test ***type 2002 – 2671***		
	- rated cross-section of the conductor (mm²) ..... :	***1,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- torque disconnect unit (Nm) ..... :	***-***	—
	- test current (A) ..... :	***180 A***	—
	- duration of the test current (s) ..... :	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. ..... :	***1,75 A***	—
	- voltage drop (mV) before temperature-rise test not exceeding 1,6 mV times the total of conductor clamping unit and disconnect unit contact points ..... :	***2,86 mV***	***P***
	If the measured value exceeds this calculated value, the voltage drop is measured on each individual conductor clamping unit and disconnect unit contact point. it shall not exceed 1,6 mV on any conductor clamping unit and disconnect unit contact point		***N/A***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	***2,78 mV***	***P***
D.8.4.6	Short-time withstand current test ***type 2002-1871***		

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Clause	Requirement + Test	Result - Remark	Verdict
	- rated cross-section of the conductor (mm²) ..... :	***1,5 mm²***	—
	- torque (Nm) ..... :	**-**	—
	- torque disconnect unit (Nm) ..... :	**-**	—
	- test current (A) ..... :	***180 A***	—
	- duration of the test current (s) ..... :	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. ..... :	***1,75***	—
	- voltage drop (mV) before temperature-rise test not exceeding 1,6 mV times the total of conductor clamping unit and disconnect unit contact points ..... :	***1,74 mV*** ***(3 contact points)***	***P***
	If the measured value exceeds this calculated value, the voltage drop is measured on each individual conductor clamping unit and disconnect unit contact point. it shall not exceed 1,6 mV on any conductor clamping unit and disconnect unit contact point		***N***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	***1,74 mV*** ***(3 contact points)***	***P***
D.8.4.6	Short-time withstand current test ***type 2002-7114***		
	- rated cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- torque (Nm) ..... :	**-**	—
	- torque disconnect unit (Nm) ..... :	**-**	—
	- test current (A) ..... :	***480 A***	—
	- duration of the test current (s) ..... :	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***

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Clause	Requirement + Test	Result - Remark	Verdict
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. ..... :	***3,2 A***	—
	- voltage drop (mV) before temperature-rise test not exceeding 1,6 mV times the total of conductor clamping unit and disconnect unit contact points ..... :	***1,96 mV*** ***(2 contact points)***	***P***
	If the measured value exceeds this calculated value, the voltage drop is measured on each individual conductor clamping unit and disconnect unit contact point. it shall not exceed 1,6 mV on any conductor clamping unit and disconnect unit contact point		***N***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	***2,08 mV*** ***(2 contact points)***	***P***
D.8.4.6	Short-time withstand current test ***type 2002-2958***		
	- rated cross-section of the conductor (mm²) ..... :	***1,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- torque disconnect unit (Nm) ..... :	***-***	—
	- test current (A) ..... :	***180 A***	—
	- duration of the test current (s) ..... :	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. ..... :	***1,75 A***	—
	- voltage drop (mV) before temperature-rise test not exceeding 1,6 mV times the total of conductor clamping unit and disconnect unit contact points ..... :	***2,08 mV*** ***(4 contact points)***	***P***

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Clause	Requirement + Test	Result - Remark	Verdict
	If the measured value exceeds this calculated value, the voltage drop is measured on each individual conductor clamping unit and disconnect unit contact point. it shall not exceed 1,6 mV on any conductor clamping unit and disconnect unit contact point		***N***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	***2,38 mV*** ***(4 contact points)***	***P***
D 8.4.6	Short-time withstand current test ***type 2002-7214***		
	- rated cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- test current (A) ..... :	***300A***	—
	- duration of the test current (s) ..... :	***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		**P**
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV ..... :	***Overall 2,17 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after short-time withstand current test not exceeding 150% of the value measured before short-time withstand current test ..... :	***Overall 2,43 mV***	***P***
D 8.4.6	Short-time withstand current test ***type 2002-1549***		
	- rated cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- test current (A) ..... :	***300A***	—
	- duration of the test current (s) ..... :	***1 s***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		**P**
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV ..... :	***Overall 5,41 mV (4 contact points)***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	- voltage drop (mV) after short-time withstand current test not exceeding 150% of the value measured before short-time withstand current test ..... :	***Overall 5,49 mV (4 contact points)***	***P***

D.8.4.7	Ageing test for test disconnect terminal blocks with screwless-type clamping units ***type 2002-1871***		
	Maximum ambient temperature (°C) ..... :	40 °C /	—
	Rated cross-section rigid or stranded < 10 mm² solid, > 10 mm² stranded (mm²) ..... :	***2,5 mm²***	—
	Test current (A) according D.8.4.5 ..... :	***16 A***	—
	Torque disconnect unit (Nm) ..... :	***-***	—
	Heating cabinet is increased, in each cycle to (°C) ..... :	***40 °C***	—
	Test current (A) d.c. for measurement of the voltage drop ..... :	***2,4 A***	—
	Voltage drop after 0 cycles:		
	- requirement: ≤ 1,6 mV (mV) ..... : the voltage drop is determined on each individual clamping unit separately	***left clamping unit 0,66 mV – 0,78 mV right clamping unit 0,58 mV – 0,89 mV***	***P***
	Voltage drop after the 24th cycle:		

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Clause	Requirement + Test	Result - Remark	Verdict
	- requirement: 2,4 mV (mV) ..... :	***left clamping unit*** ***0,68 mV – 0,94 mV*** ***right clamping unit*** ***0,60 mV – 0,94 mV***	***P***
	Voltage drop after the 48th cycle		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	***left clamping unit*** ***0,68 mV – 0,95 mV*** ***right clamping unit*** ***0,61 mV – 0,95 mV***	***P***
	Voltage drop after the 72th cycle:		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	***left clamping unit*** ***0,67 mV – 0,95 mV*** ***right clamping unit*** ***0,59 mV – 0,95 mV***	***P***
	Voltage drop after the 96th cycle:		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	***left clamping unit*** ***0,68 mV – 0,97 mV*** ***right clamping unit*** ***0,61 mV – 0,96 mV***	***P***
	Voltage drop after the 120th cycle:		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	***left clamping unit*** ***0,67 mV – 0,97 mV*** ***right clamping unit*** ***0,59 mV – 0,96 mV***	***P***
	Voltage drop after the 144th cycle:		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	***left clamping unit*** ***0,67 mV – 0,96 mV*** ***right clamping unit*** ***0,59 mV – 0,96 mV***	***P***
	Voltage drop after the 168th cycle:		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	***left clamping unit*** ***0,67 mV – 0,98 mV*** ***right clamping unit*** ***0,59 mV – 0,96 mV***	***P***
	Voltage drop after the 192th cycle:		

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Clause	Requirement + Test	Result - Remark	Verdict
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	***left clamping unit*** ***0,67 mV – 0,98 mV*** ***right clamping unit*** ***0,59 mV – 0,97 mV***	***P***
	Pull-out test		
	force (N) ..... :	***50 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
D.8.4.7	Ageing test for test disconnect terminal blocks with screwless-type clamping units ***type 2002-2958***		
	Maximum ambient temperature (°C) ..... :	40 °C /	—
	Rated cross-section rigid or stranded < 10 mm² solid, > 10 mm² stranded (mm²) ..... :	***2,5 mm²***	—
	Test current (A) according D.8.4.5 ..... :	***16 A***	—
	Torque disconnect unit (Nm) ..... :	***-***	—
	Heating cabinet is increased, in each cycle to (°C) ..... :	***40 °C***	—
	Test current (A) d.c. for measurement of the voltage drop ..... :	***2,4 A***	—
	Voltage drop after 0 cycles:		
	- requirement: ≤ 1,6 mV (mV) ..... : the voltage drop is determined on each individual clamping unit separately	***Lower 0,70 mV – 0,84 mV*** ***Upper 0,50 mV – 0,83 mV***	***P***
	Voltage drop after the 24th cycle:		
	- requirement: 2,4 mV (mV) ..... :	***Lower 0,68 mV – 0,87 mV*** ***Upper 0,54 mV – 0,86 mV***	***P***
	Voltage drop after the 48th cycle		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	***Lower 0,66 mV – 0,87 mV*** ***Upper 0,58 mV – 0,87 mV***	***P***
	Voltage drop after the 72th cycle:		

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Clause	Requirement + Test	Result - Remark	Verdict
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	***Lower 0,66 mV – 0,88 mV*** ***Upper 0,60 mV – 0,87 mV***	***P***
	Voltage drop after the 96th cycle:		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	***Lower 0,66 mV – 0,88 mV*** ***Upper 0,60 mV – 0,87 mV***	***P***
	Voltage drop after the 120th cycle:		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	***Lower 0,66 mV – 0,88 mV*** ***Upper 0,60 mV – 0,87 mV***	***P***
	Voltage drop after the 144th cycle:		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	***Lower 0,65 mV – 0,88 mV*** ***Upper 0,60 mV – 0,88 mV***	***P***
	Voltage drop after the 168th cycle:		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	***Lower 0,65 mV – 0,88 mV*** ***Upper 0,60 mV – 0,88 mV***	***P***
	Voltage drop after the 192th cycle:		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	***Lower 0,65 mV – 0,88 mV*** ***Upper 0,60 mV – 0,88 mV***	***P***
	Pull-out test		
	force (N) ..... :	***50 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
D.8.5.1	Service life		
	- rated cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- torque disconnect unit (Nm) ..... :	***-***	—
	- number of operating cycles ..... :	***200 x***	—
	Entire test apparatus is stored for 168 h in dry heat at a temperature of 85 °C		***P***

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Clause	Requirement + Test	Result - Remark	Verdict
	Voltage drop before and after service life		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before service life test not exceeding 1,6 mV times the total of conductor clamping unit and disconnect unit contact points :	***2,81 mV – 3,01 mV***	***P***
	If the measured value exceeds this calculated value, the voltage drop is measured on each individual conductor clamping unit and disconnect unit contact point. it shall not exceed 1,6 mV on any conductor clamping unit and disconnect unit contact point		***N/A***
	- voltage drop (mV) after service life test not exceeding 150% of the value measured before service life test ..... :	***2,76 mV – 2,97 mV***	***P***
D.8.4.5	Emission		
	Terminal blocks within the scope of this standard are not sensitive of electromagnetic disturbances and therefore no immunity tests are necessary.		***N/A***
8.6.2	Emission		
	Terminal blocks within the scope of this standard do not generate electromagnetic disturbances and therefore no emission tests are necessary.		***N/A***
D.8.5.1	Service life		
	- rated cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- torque disconnect unit (Nm) ..... :	***-***	—
	- number of operating cycles ..... :	***200 x***	—
	Entire test apparatus is stored for 168 h in dry heat at a temperature of 85 °C		***P***
	Voltage drop before and after service life		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before service life test not exceeding 1,6 mV times the total of conductor clamping unit and disconnect unit contact points :	***2,81 mV – 3,01 mV***	***P***

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Clause	Requirement + Test	Result - Remark	Verdict
	If the measured value exceeds this calculated value, the voltage drop is measured on each individual conductor clamping unit and disconnect unit contact point. it shall not exceed 1,6 mV on any conductor clamping unit and disconnect unit contact point		***N/A***
	- voltage drop (mV) after service life test not exceeding 150% of the value measured before service life test ..... :	***2,76 mV – 2,97 mV***	***P***
D.8.4.5	Emission		
	Terminal blocks within the scope of this standard are not sensitive of electromagnetic disturbances and therefore no immunity tests are necessary.		***N/A***
8.6.2	Emission		
	Terminal blocks within the scope of this standard do not generate electromagnetic disturbances and therefore no emission tests are necessary.		***N/A***

IEC 60947-7-1			
Clause	Requirement + Test	Result - Remark	Verdict
Annex D	**ADDITIONAL REQUIREMENTS FOR TEST DISCONNECT TERMINALBLOCKS**		
D5	Product information ***type 2002 – 1811/1000-541***		
	- service life in number of cycles	***200 times***	***P***
D6.	Normal service, mounting and transport conditions		
	Clause 6 applies.		***N/A***
D7	Construction and performance conditions		
	Clause 7 applies with the following additions		
D7.1	Constructional requirements		
D7.1.3	Clearances and creepages are not required to be measured over the open disconnect contacts (Gap). However, the rated impulse withstand voltage (Uimp) stated by the manufacturer according to table 13 of IEC 60947-1, without using the altitude correction factor, shall be verified across the open disconnect contacts (gap) (see D.7.2.2)	***8 kV***	***P***
D7.1.7	Disconnect unit		
	For longitudinal and perpendicular disconnection, test disconnect terminal blocks may be equipped with disconnect units, for instance of the following type: - plug - knife - slide (with or without busbar)	***Slide***	***P***
	the position of the disconnect unit shall be recognizable in normal use and shall not be changed unintentionally		***P***
D.7.2.2	Dielectric properties		
	Dielectric test, Uimp indicated:		

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Clause	Requirement + Test	Result - Remark	Verdict
	- five terminal blocks connected with unfavourable cross-section (mm²) / type / conductor end length tested over open disconnect contacts (gap) (mm) ..... :	***2,5 mm² / rigid / 10 – 12 mm***	—
	- rated impulse withstand voltage (kV) ..... :	***8 kV***	—
	- test Uimp without altitude correction factor (kV) :	***8 kV***	***P***
D.8.4.5	Temperature-rise test		
	Temperature-rise conditions:		
	- test current (A) ..... :	***16 A***	—
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- torque disconnect unit (Nm) ..... :	***-***	—
	- temperature-rise does not exceed 45 K	***27,2 K- 39,6 K***	***P***
	Voltage drop before and after temperature-rise test:		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before temperature-rise test not exceeding 1,6 mV times the total of conductor clamping unit and disconnect unit contact points ..... :	***6,62 – 7,54 mV*** ***(6 contact points)***	***P***
	If the measured value exceeds this calculated value, the voltage drop is measured on each individual conductor clamping unit and disconnect unit contact point. it shall not exceed 1,6 mV on any conductor clamping unit and disconnect unit contact point		***N/A***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	***6,79 – 7,24 mV*** ***(6 contact points)***	***P***
D.8.4.6	Short-time withstand current test		
	- rated cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	- torque disconnect unit (Nm) ..... :	***-***	—
	- test current (A) ..... :	***300A***	—
	- duration of the test current (s) ..... :	***1 s***	—

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Clause	Requirement + Test	Result - Remark	Verdict
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop before and after short-time withstand current test		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before temperature-rise test not exceeding 1,6 mV times the total of conductor clamping unit and disconnect unit contact points ..... :	***5,42 – 6,28 mV***	***P***
	If the measured value exceeds this calculated value, the voltage drop is measured on each individual conductor clamping unit and disconnect unit contact point. it shall not exceed 1,6 mV on any conductor clamping unit and disconnect unit contact point		***N/A***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	***5,22 – 5,93 mV***	***P***
D.8.4.7	Ageing test for test disconnect terminal blocks with screwless-type clamping units		N/A
	Maximum ambient temperature (°C) ..... :	40 °C	—
	Rated cross-section rigid or stranded < 10 mm² solid, > 10 mm² stranded (mm²) ..... :		—
	Test current (A) according D.8.4.5 ..... :		—
	Torque disconnect unit (Nm) ..... :		—
	Heating cabinet is increased, in each cycle to (°C) ..... :		—
	Test current (A) d.c. for measurement of the voltage drop ..... :		—
	Voltage drop after 0 cycles:		

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Clause	Requirement + Test	Result - Remark	Verdict
	- requirement: ≤ 1,6 mV (mV) ..... : the voltage drop is determined on each individual clamping unit separately	1 to 5 2 - 3 - 4 - 5 -	***N/A***
	Voltage drop after the 24th cycle:		
	- requirement: 2,4 mV (mV) ..... :	1 - 2 - 3 - 4 - 5 -	***N/A***
	Voltage drop after the 48th cycle		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	1 - 2 - 3 - 4 - 5 -	***N/A***
	Voltage drop after the 72th cycle:		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	1 - 2 - 3 - 4 - 5 -	***N/A***
	Voltage drop after the 96th cycle:		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	1 - 2 - 3 - 4 - 5 -	***N/A***
	Voltage drop after the 120th cycle:		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	1 - 2 - 3 - 4 - 5 -	***N/A***

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Clause	Requirement + Test	Result - Remark	Verdict
	Voltage drop after the 144th cycle:		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	1 - 2 - 3 - 4 - 5 -	***N/A***
	Voltage drop after the 168th cycle:		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	1 - 2 - 3 - 4 - 5 -	***N/A***
	Voltage drop after the 192th cycle:		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	1 - 2 - 3 - 4 - 5 -	***N/A***
	Pull-out test		
	force (N) ..... :		—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***N/A***
	Voltage drop after the 120th cycle:		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	1 - 2 - 3 - 4 - 5 -	
	Voltage drop after the 144th cycle:		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	1 - 2 - 3 - 4 - 5 -	
	Voltage drop after the 168th cycle:		

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Clause	Requirement + Test	Result - Remark	Verdict
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	1 - 2 - 3 - 4 - 5 -	
	Voltage drop after the 192nd cycle:		
	- requirement: ≤ 2,4 mV or 1,5 times the value measured after the 24th cycle, whichever is the lower (mV) ..... :	1 - 2 - 3 - 4 - 5 -	
	Pull-out test		
	force (N) ..... :		—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		
D.8.5.1	Service life		
	- rated cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) ..... :	**-**	—
	- torque disconnect unit (Nm) ..... :	**-**	—
	- number of operating cycles ..... :	***200 x***	—
	Entire test apparatus is stored for 168 h in dry heat at a temperature of 85 °C		***P***
	Voltage drop before and after service life		
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) before service life test not exceeding 1,6 mV times the total of conductor clamping unit and disconnect unit contact points :	***2,81 mV – 3,01 mV*** ***(6 contact points)***	***P***
	If the measured value exceeds this calculated value, the voltage drop is measured on each individual conductor clamping unit and disconnect unit contact point. it shall not exceed 1,6 mV on any conductor clamping unit and disconnect unit contact point		***N/A***

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Clause	Requirement + Test	Result - Remark	Verdict
	- voltage drop (mV) after service life test not exceeding 150% of the value measured before service life test ..... :	***2,76 mV – 2,97 mV (6 contact points***	***P***
D.8.4.5	Emission		
	Terminal blocks within the scope of this standard are not sensitive of electromagnetic disturbances and therefore no immunity tests are necessary.		***N/A***
8.6.2	Emission		
	Terminal blocks within the scope of this standard do not generate electromagnetic disturbances and therefore no emission tests are necessary.		***N/A***

product	:	Terminal blocks for copper conductors
trade name(s)	:	WAGO
type(s)	:	TOPJOB S 2002-....
material colours	:	thermoplastic material, all colours ..../000-001 green, .../000-014 brown, .../000-015 gentian blue
stripping length	:	10 - 12 mm
rated connecting capacity	:	2,5 mm² / 4 mm² rigid and flexible
connectable conductors	:	0,25 mm² - 4 mm² rigid and flexible
method of mounting	:	for mounting on top hat rail 35 mm
conventional free air thermal current (Ith)	:	24 A (2,5 mm²) 32 A (4 mm²)
rated voltage	:	800 V
rated impulse withstand voltage	:	8 kV
type	:	2002 with suffixes -6401, -6402, -6403, -6404, -6405, -6406, -6408, -6409
description	:	four-conductor through terminal block, with screwless-type terminals, 1-pole, 35° angled
type	:	2002-6407
description	:	four-conductor earth terminal block, with screwless-type terminals, 1-pole, 35° angled
type	:	2002 with suffixes -6301, -6302, -6303, -6304, -6305, -6306, -6308, -6309
description	:	three-conductor through terminal block, with screwless-type terminals, 1-pole, 35° angled
type	:	2002 with suffixes -1201, -1202, -1203, -1204, -1205, -1206, -1208, -1209
description	:	two-conductor through terminal block, with screwless-type terminals, 1-pole

type	:	2002 with suffixes -1301, -1302, -1303, -1304, -1305, -1306, -1308, -1309
description	:	three conductor through terminal block, with screwless-type terminals, 1-pole
type	:	2002 with suffixes -1401, -1402, -1403, -1404, -1405, -1406, -1408, -1409
description	:	four conductor through terminal block, with screwless-type terminals, 1-pole
type	:	2002-1441
description	:	four conductor double potential terminal block, with screwless -type terminals, 2-poles
type	:	2002 with suffixes -2431, -2432, -2433, -2401, -2402, -2403, -2404, -2405, -2406, -2434, - 2435, -2436
description	:	four conductor double deck terminal block, with screwless-type terminals, with or without marker carrier, 2 - poles
type	:	2002 with suffixes -2438,-2408, -2408-0000-0005
description	:	-2409, -2439 eight conductor double deck terminal block with screwless-type terminals, upper and lower levels are connected to each other, with or without marker carrier
type	:	2002 with suffixes -2447, -2457, -2458, -2417, -2427, -2448, -2418, -2428
description	:	four conductor double deck terminal block, with screwless-type terminals. 2 levels, lower level connected to ground, 2-poles with or without marker carrier

conventional free air thermal current (Ith)	:	24 A
rated voltage	:	500 V
rated impulse withstand voltage	:	6 kV
type	:	2002 with suffixes -2231, -2231/007-000, -2232, -2233, -2234, -2201, -2202, -2203, -2236, -2204, -2206
description	:	two-conductor through terminal block , with screwless-type terminals, 2-poles
type	:	2002 with suffixes -2231, -2232, 2233, -2234 with suffixes /0099-000
description	:	two-conductor through terminal block , with screwless-type terminals, 2-poles indicating integrated endplate
type	:	2002 with suffixes -2201, -2231 with suffixes /0057-0000
description	:	two-conductor through terminal block, with screwless-type terminals, 2-poles, without lower current bar
.	:	
type	:	2002 with suffixes -2201, -2202, -2203, -2204, -2207, -2208, -2209 with suffixes /0099-0000
description		two-conductor through terminal block, with screwless type terminals, 2-poles, without lower bar, suffix indicating integrated endplate
type	:	2002 with suffixes -2217, -2227, -2247, -2257, -2218, -2228, -2248, -2258
description	:	two-conductor through terminal block with earth connection and screwless-type terminals, 2-poles
type	:	2002 with suffixes -2217,-2218, -2227, -2228, -2247, -2248, -2257, -2258, -2458 with suffixes /0099-0000
description	:	two-conductor through terminal block with earth connection, and screwless-type terminals, 2-poles, integrated endplate
type	:	2002 with suffixes -2238, -2239, -2208, -2209
description	:	two-conductor through terminal block with screwless-type terminals, 2-poles. Upper and lower pole connected to each other

type	:	2002 with suffixes -3231, -3231/007-000, -3233, -3201, -3203
description	:	two-conductor through terminal block, with screwless-type terminals, 3 -poles, colored gray 2002-3204 blue 2002-3206 orange 2002-3208 violet 2002-3209 blue/violet 2002-3234 blue 2002-3236 orange 2002-3238 violet 2002-3239 blue/violet
type	:	2002 with suffixes -3201, -3203, -3231 with suffixes/0402-0000
description	:	two-conductor through terminal block, with screwless-type terminals, 3-poles,conductor entry colored violet /0350-0000 conductor entry colored brown blue
type	:	2002 with suffixes -3247, -3257, -3217, -3227
description	:	two-conductor through terminal block with earth connection and screwless-type terminals, 3-poles
type	:	2002 with suffixes -3248, -3258, -3218, -3228
description	:	two-conductor through terminal block with shield and screwless-type terminal, 3-poles
type	:	2002 with suffixes -3228, -3258 with suffix /0403-0000
description	:	two-conductor through terminal block with shield and screwless type-terminal, 3-poles, conductor entry colored white

conventional free air thermal current (Ith)	:	24 A
rated voltage	:	1000 Vac / 1500 Vdc
rated impulse withstand voltage	:	6 kV
type	:	2002-2201/0097-000
description	:	two-conductor through terminal block, with screwless-type terminals, 2-poles, without lower current bar, with end cover type 2002-2295 gray
type	:	2002-2201/0098-000
description	:	two-conductor through terminal block, with screwless-type terminals, 2-poles, without lower current bar, with end cover type 2002-2296 orange
conventional free air thermal current (Ith)	:	16 A
rated voltage	:	400 V
rated impulse withstand voltage	:	6 kV
type	:	2002 with suffixes -1671, -1674, -1672, -1673, -1675, -1676, -1679
description	:	two-conductor disconnect terminal block for test and measurement, with screwless-type terminals, 1-pole
type	:	2002 with suffixes -1661, -1662, -1663, -1664, -1665, -1666, -1669
description	:	two-conductor carrier terminal block, with screwless-type terminals, 1-pole
type	:	2002- with suffixes -1601, -1602, -1603, -1604, -1605, -1606, -1609
description	:	two-conductor through terminal block, with screwless-type terminals, 1-pole
type	:	2002 with suffixes -1771, -1774, -1775, -1776, -1779, -1871, -1872, -1873, -1874, -1875, -1876, -1879, -1971, -1974
description	:	two, three or four conductor disconnect terminal block for test and measurement, with screwless-type terminals, 1-pole
type	:	2002 with suffixes -1761, -1765, -1766, -1769, -1772, -1861, -1862, -1863, -1864, -1865, -1866, -1869, -1961, -1962, -1972, -1964
description	:	two, three or four-conductor carrier terminal block, with screwless-type terminals, 1-pole
type	:	2002 with suffixes -1671, -1672, -1674, -1771, -1772, -1774, -1871, -1872, -1874, -1971, -1972, -1974 with suffixes /0401-0000
description	:	two, three or four conductor carrier terminal block, with mechanical interlock, with screw less type terminals, 1-pole

type	:	2002 with suffixes -1701, -1702,-1703, -1704, -1705, -1706, -1707, -1709, -1801, -1802,-1803, -1804, -1805, -1806, -1807, -1809, -1901, -1902, -1903, -1904, -1907
description	:	two, three or four-conductor through terminal block, with screwless type terminals, 1-pole
type	:	2002 with suffixes -2951, -2954, -2952, -2953, -2956
description	:	four-conductor double deck double disconnect terminal block, with screwless-type terminals, 2-poles
type	:	2002-2901
description	:	four-conductor double deck double disconnect terminal block, with screwless-type terminals, 2-poles, without movable knife disconnection
type	:	2002 with suffixes -2951, -2952, -2953, -2954, -2956, -2958, -2959 with suffixes /0400-000
description	:	four-conductor double deck double disconnect terminal block, with screwless type terminals, 2-poles, disconnect knife rotated by 180°
type	:	2002 with suffixes -2941, -2944, -2948, -2949
description	:	four-conductor double deck double disconnect terminal block, with screwless type terminals, 2-poles, without pivoting disconnect knife
type	:	2002 with suffixes -2958, -2959
description	:	four-conductor double deck double disconnect terminal block, upper and lower pole connected to each other on right -side, with screwless-type terminals, 1-pole .
type	:	2002 with suffixes -2971, -2972, -2973, -2974, -2976, -2671, -2667, -2678, -2672, -2677, -2661, -2662
description	:	four-conductor double deck disconnect terminal block, with disconnection on upper deck only, with screwless-type terminals, 2-poles
type	:	2002 with suffixes -2961,-2963
description	:	four-conductor double deck disconnect terminal block, with disconnect on lower deck only
conventional free air thermal current (Ith)	:	16 A
rated voltage	:	600 V
rated impulse withstand voltage	:	6 kV
type	:	2002 with suffixes -1662/099-000 and 1664/099-000
description	:	two-conductor carrier terminal block, with screwless-type terminals, 1-pole, with integrated endplate

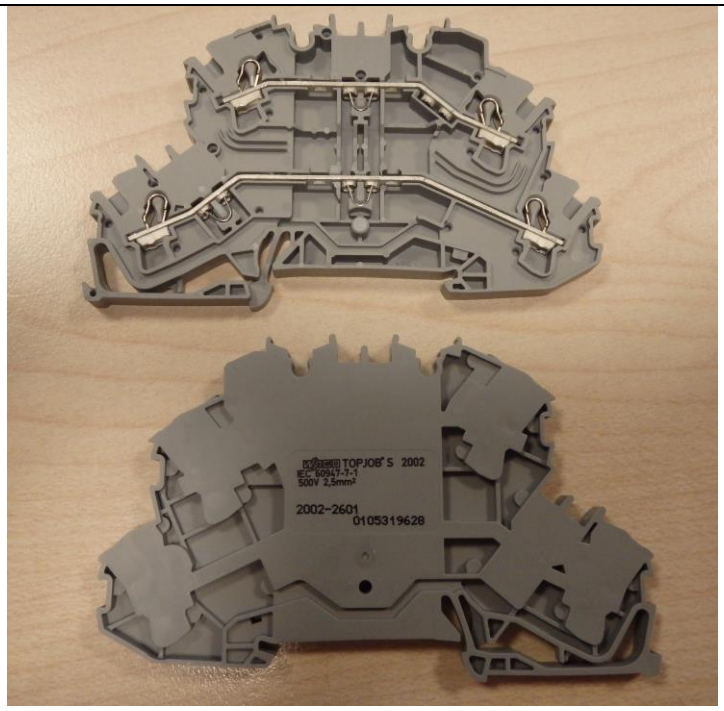
conventional free air thermal current (Ith)	:	24 A (2,5 mm²) 32 A (4 mm²)
rated voltage	:	500 V/800 V (if provided with endplate.../0099-0000)
rated impulse withstand voltage	:	6 kV
type	:	2002-with suffixes -2601, -2602, -2603, -2604 two-conductor through terminal
description	:	block, with screwless-type terminals, 2-poles
type	:	2002 with suffixes -2608, -2609
description	:	two-conductor through terminal block,2-poles, upper and lower pole connected to each other
type	:	2002- with suffixes -2647, -2648, -2657, -2658
description	:	two conductor through terminal block with earth connection, and screwless-type terminals, 2-poles

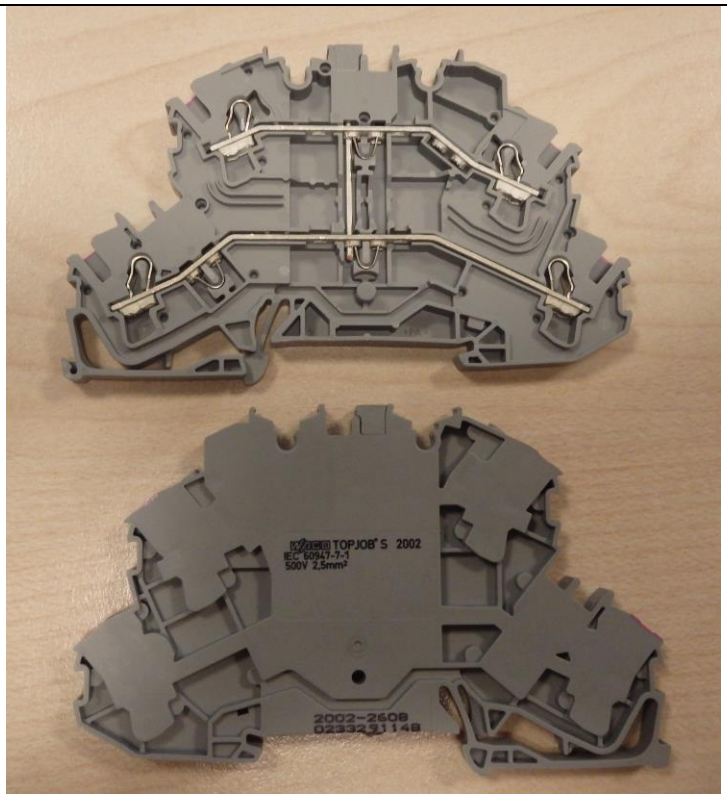
conventional free air thermal current (Ith)	:	24 A (2,5 mm²) 32 A (4 mm²)
rated voltage	:	250 V
rated impulse withstand voltage		4 kV
type	:	2002-7114
description		one conductor N-disconnect terminal block, with screwless type terminals and 1 connection for busbar (10 x 3 mm), 1-pole
type	:	2002-7111
description		one conductor power distribution disconnect terminal block, with screwless type terminals and 1 connection for busbar (10 x 3 mm), 1-pole
type	:	2002-7211
description		2 conductor power distribution disconnect terminal block, with screwless type terminals and 1 connector for busbar (10 x 3 mm), 1-pole, grey.
type	:	2002-7214 2 conductor N-disconnect terminal block,
description		with screwless type terminals and 1 connector for busbar (10 x 3 mm), 1-pole blue

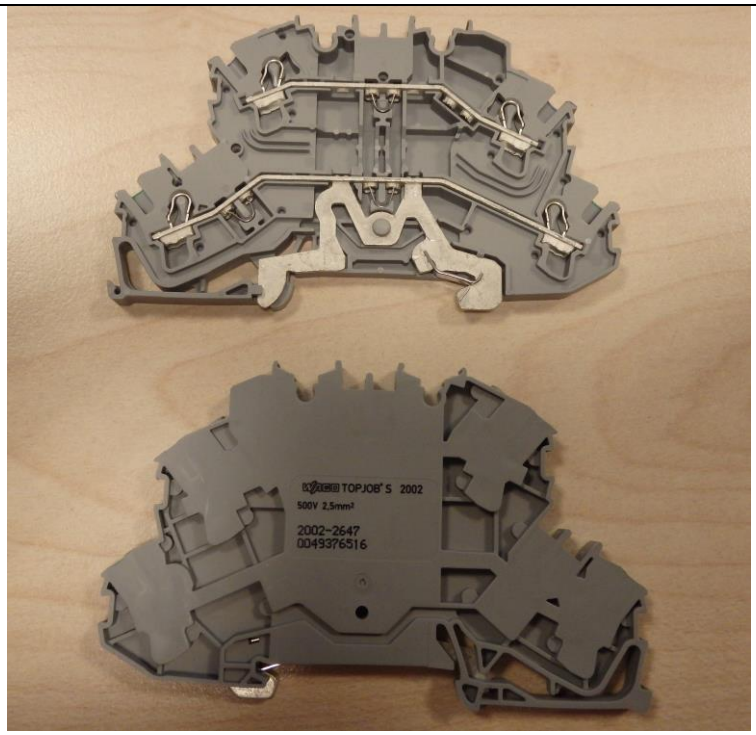
conventional free air thermal current (Ith)	:	20 A (2,5 mm²) 25 A (4 mm²)
rated voltage	:	800 V
rated impulse withstand voltage	:	8 kV
type	:	2002 with suffixes -4127, -4157
description	:	quadruple deck rail mounted terminal block, with screwless-type terminals, 4-poles (lower pole PE connection)
type	:	2002 with suffixes -4111, -4141, -4116, -4146
description	:	quadruple deck rail mounted terminal block, with screwless-type terminals, 2-poles
type	:	2002 with suffixes -4101, -4131, -4136
description	:	quadruple deck rail mounted terminal block, with screwless-type terminal, 3-poles 2002-4106 housing orange 2001-4131 housing orange
conventional free air thermal current (Ith)	:	16 A (2,5 mm²)
rated voltage	:	400 V
rated impulse withstand voltage		6 kV
type	:	2002-1549
description		two-conductor double disconnect terminal block, with screwless type terminals, 1-pole, left side disconnection which can be bridged with a jumper bar, right side knife disconnect
type	:	2002-1568
description		two-conductor double disconnect terminal block with mounting rail contact, with screwless type terminals, 1-pole, left side disconnection which can be bridge with a jumper bar, right side jumper bar set by factory

conventional free air thermal current (Ith)	:	24 A (2,5 mm²) 28 A (4 mm²)
rated voltage	:	800 V
rated impulse withstand voltage	:	8 kV
type	:	2002 with suffixes -2701, -2702, -2703, -2704
description	:	two-conductor double deck through terminal block, difference is color of wire entrance
type	:	2002 with suffixes -2708, -2709
description	:	two-conductor double deck terminal block with internal commoning, difference is colour of wire entrance
type	:	2002-2717, -2727
description	:	two-conductor through/PE double deck terminal block, upper level through, lower level PE, difference is colour of wire entrance
type	:	2002 with suffixes -2705, -2706
description	:	two-conductor double deck through terminal block, difference is colour of wire entrance
type	:	2002 with suffixes -2731, -2732, -2733, -2734, -2735, -2736
description	:	two-conductor double deck through terminal block with marker-carrier, difference is colour of wire entrance
type	:	2002-2747, -2757
description	:	two-conductor through/PE double deck terminal block with marker-carrier, upper level through, lower level PE, difference is colour of wire entrance
type	:	2002 with suffixes -2738, -2739
description	:	two-conductor double deck terminal block with internal communing with marker-carrier, difference is colour of wire entrance

Article numbers may be followed by optional suffix numbers e.g. 2002-xxxx/xxxx-xxxx/xxxx-xxxx (up to 40 digits) where "x" may be any number (including characters) to represent customer numbers, printing variants, colour variants and other mechanical
variations, given for a specific end-use purpose and not affecting the electrical properties.


TOPJOB S 2002
IEC 60947-7-1
500V 2,5mm²
2002-2601
0105319628

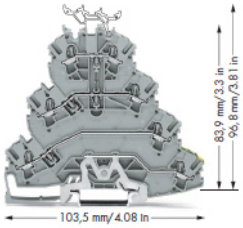
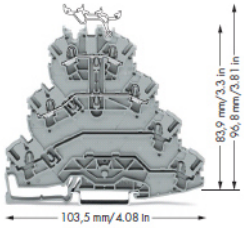
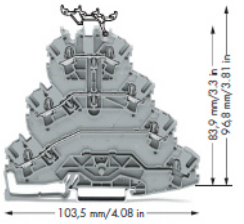

TOPJOB S 2002
IEC 60947-7-1
500V 2,5mm²
2002-2608


TOPJOB S 2002
500V 2,5mm²
2002-2647
0049376516


TOPJOB S 2002
400V 2,5mm² 16A
2002-2671
0287390950

1
80

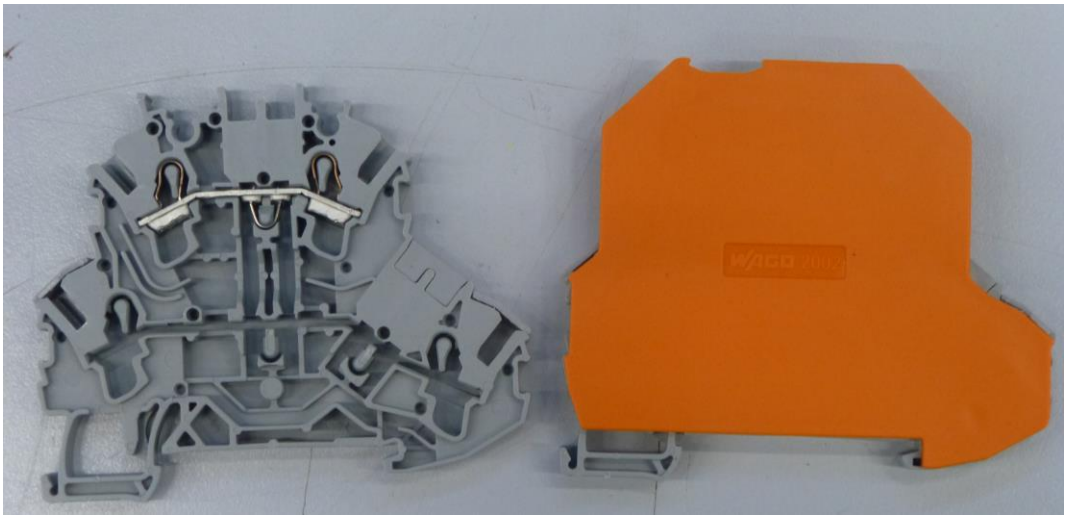
TOPJOB®S
Quadruple-Deck, Rail-Mounted Terminal Blocks or Rail-Mounted Terminal Blocks for Wiring of Electric Motors, 2002 Series

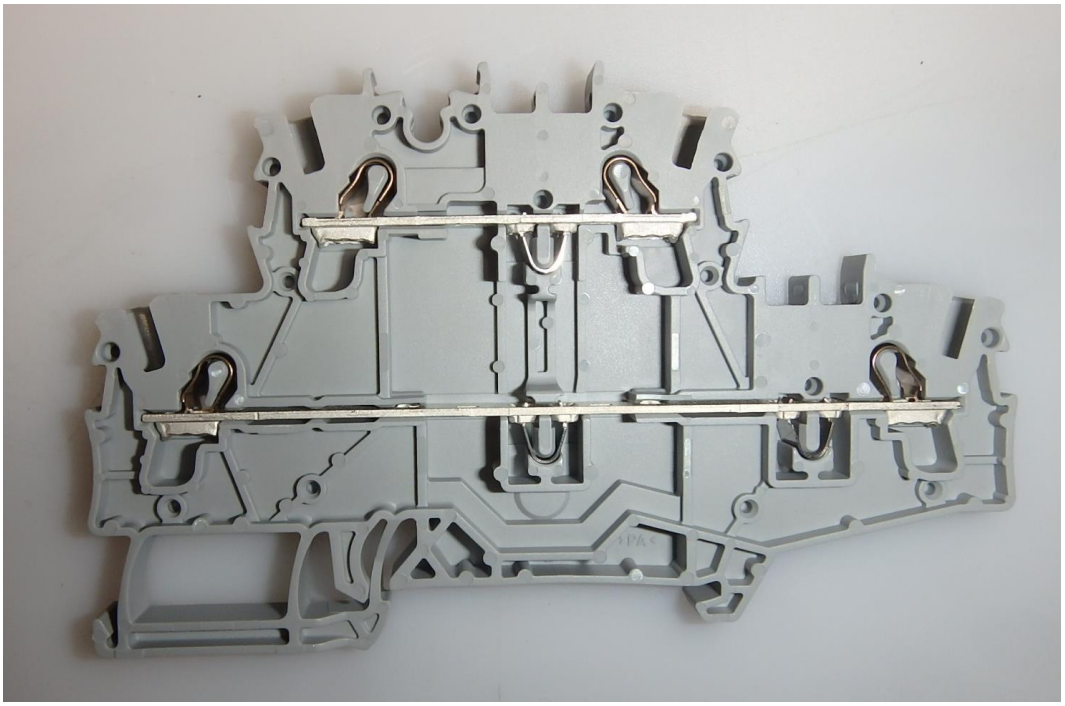
0.25 - 2.5 (4) mm² ❶ | AWG 22 - 12 800 V/8 kV/3 ❷ I_N 20 A (25 A) Terminal block width 5.2 mm / 0.205 in 10 - 12 mm / 0.43 in ❸	0.25 - 2.5 (4) mm² ❶ | AWG 22 - 12 800 V/8 kV/3 ❷ I_N 20 A (25 A) Terminal block width 5.2 mm / 0.205 in 10 - 12 mm / 0.43 in ❸	0.25 - 2.5 (4) mm² ❶ | AWG 22 - 12 800 V/8 kV/3 ❷ I_N 20 A (25 A) Terminal block width 5.2 mm / 0.205 in 10 - 12 mm / 0.43 in ❸
		

Item No.	Pack. Unit
Quadruple-deck, rail-mounted terminal block or Rail-mounted terminal block for wiring of electric motors, without marker carrier, gray	
◯ L1 - L2 - L3 - PE **2002-4127**	25
Quadruple-deck, rail-mounted terminal block or Rail-mounted terminal block for wiring of electric motors, with marker carrier, gray	
◯ L1 - L2 - L3 - PE **2002-4157**	25

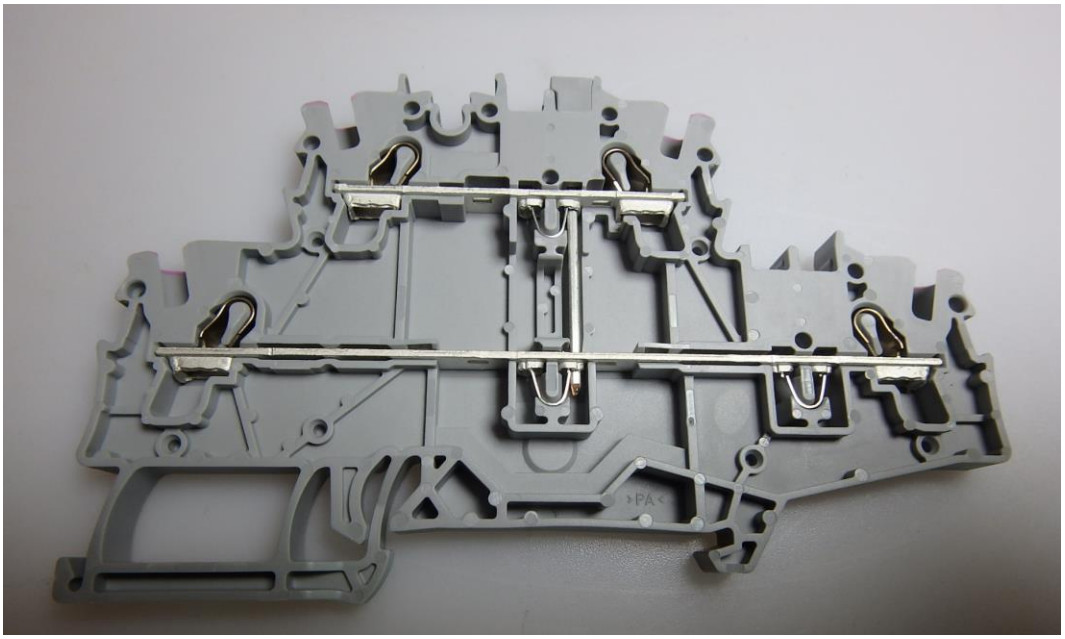
Item No.	Pack. Unit
Quadruple-deck, rail-mounted terminal block or Rail-mounted terminal block for wiring of electric motors, without marker carrier, gray	
◯ L1 - L2 **2002-4111**	25
Quadruple-deck, rail-mounted terminal block or Rail-mounted terminal block for wiring of electric motors, with marker carrier, gray	
◯ L1 - L2 **2002-4141**	25

Item No.	Pack. Unit
Quadruple-deck, rail-mounted terminal block or Rail-mounted terminal block for wiring of electric motors, without marker carrier, gray	
◯ L1 - L2 - L3 **2002-4101**	25
Quadruple-deck, rail-mounted terminal block or Rail-mounted terminal block for wiring of electric motors, with marker carrier, gray	
◯ L1 - L2 - L3 **2002-4131**	25

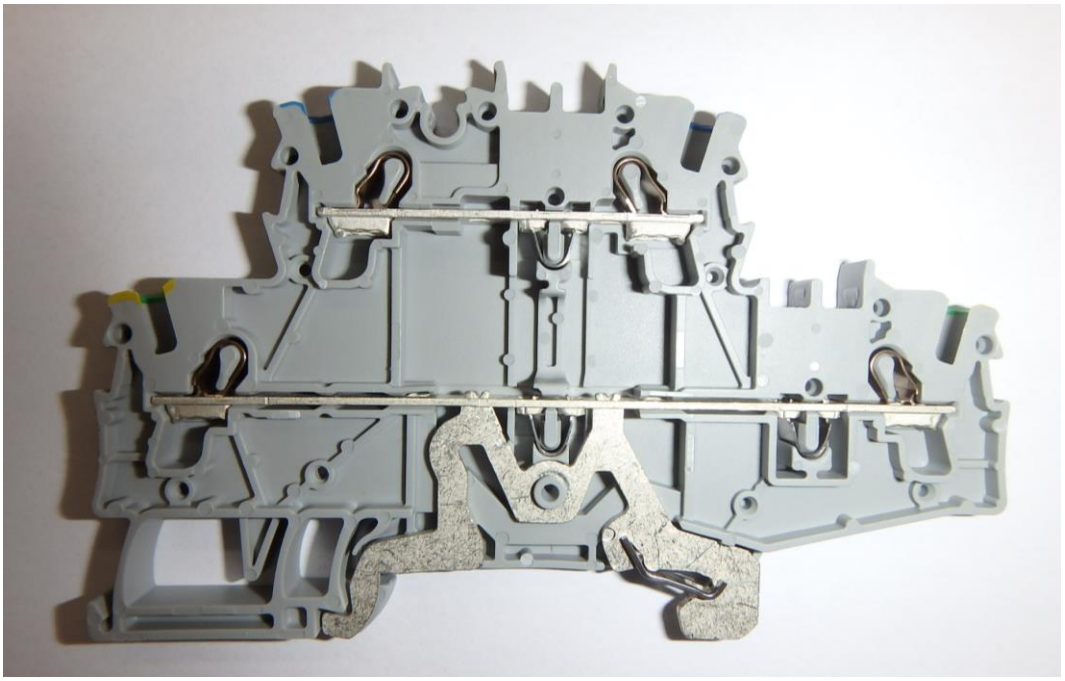


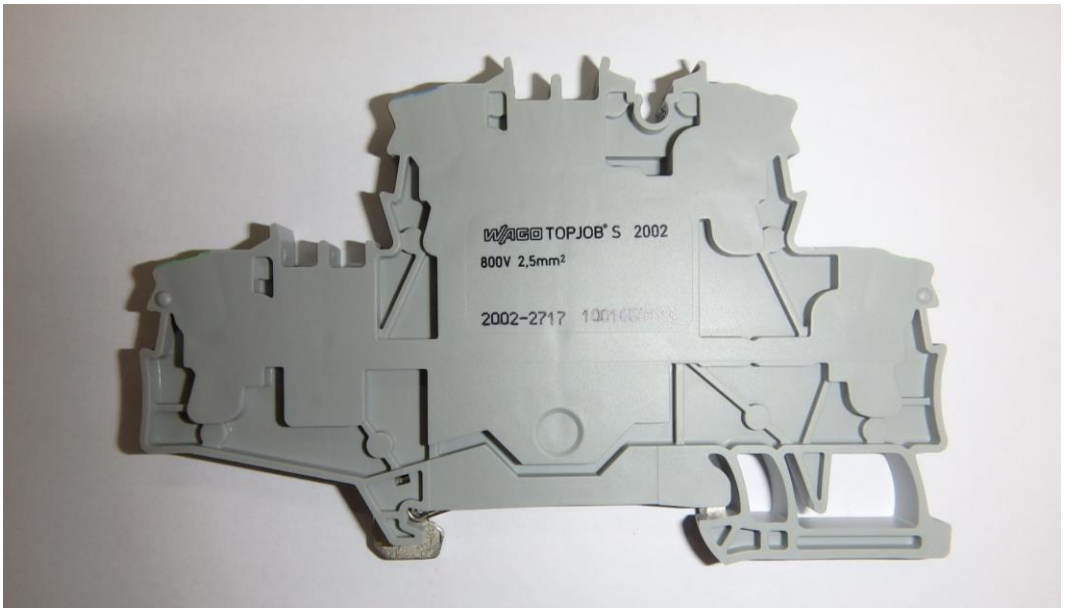


Type 2002-2701



Type 2002-2708





Type 2002-2717

ETICS OD ECS 040-1 January 2019	Responsible CB DEKRA

TEST REPORT SUMMARY

Report Number ..... :	**2267413.51**
Date of issue ..... :	**2022-07-14**
Tested by (name, function, signature):	**R.A.T. Fooy** **(Technician Industrial Safety)**
Witnessed by (name, function, signature):	
Approved by (name, function, signature):	**H.L. Schendstok** **(Project manager Industrial Safety)**
Supervised by (name, function, signature):	

Testing Laboratory ..... :	**DEKRA Certification B.V.**
Address ..... :	**Meander 1051, 6825 MJ Arnhem, The Netherlands**
Testing procedure ..... :	☐ ENEC ☒ CCA NTR
	☐ ENEC based on IECEE CBTC with number: …….
Customer Testing Procedure..... :	☐ TMP/CTF Stage 1 ☐ WMT/CTF Stage 2 ☐ SMT/CTF Stage 3
Applicant ..... :	**WAGO GmbH & Co. KG**
Address ..... :	**Hansastrasse 27, 32423 Minden/Westfalen, Germany**
Manufacturer ..... :	**WAGO GmbH & Co. KG**
Address ..... :	**Hansastrasse 27, 32423 Minden/Westfalen, Germany**
Product ..... :	**Protective terminal blocks for copper conductors**
Model/Type reference ..... :	**TOPJOB S 2002**
Trademark ..... :	WAGO
Ratings ..... :	**2,5 mm², 4 mm²**
Certification Scheme ..... :	☐ ENEC ☒ CCA ☐ Other: _____
Standard(s) ..... :	**EN 60947-7-2:2009**

☒ The text of the a.m. European Standard was approved by CENELEC is equivalent with the corresponding IEC Publication.

☐ The text of the a.m. European Standard was approved by CENELEC with agreed common modifications and is not equivalent with the corresponding IEC Publication. An EU Deviation Addendum has to be issued.

This EN test report consists of the following parts:

☒ IEC Test Report Number..... :	**2267413.51**
☐ EU Deviation Addendum..... :	

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This ECS document together with the test report is only valid if signed by an approved ENEC or CCA Testing Laboratory and accompanied by the associated ENEC Licence or CCA Notification of Test Results, issued by a Certification Body member of ECS.

Test Report issued under the responsibility of

DEKRA

TEST REPORT
IEC 60947-7-2
Low-voltage switchgear and controlgear
Part 7: Ancillary equipment
Section Two: Protective terminal blocks for copper conductors

Report Number ..... :	**2267413.51**
Date of issue ..... :	**2022-07-14**
Total number of pages ..... :	**41**
Name of Testing Laboratory preparing the Report ..... :	**DEKRA Certification B.V.** **Meander 1051, 6825 MJ Arnhem,** **The Netherlands**
Applicant's name ..... :	**WAGO GmbH & Co. KG**
Address ..... :	**Hansastrasse 27,** **32423 Minden/Westfalen, Germany**
Test specification:	
Standard ..... :	IEC 60947-7-2:2009 (Third Edition) in conjunction with IEC 60947-1 (Fifth Edition) + A1:2012 + A2:2014
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60947_7_2B
Test Report Form(s) Originator ..... :	DEKRA Certification B.V.
Master TRF ..... :	Dated 2016-01

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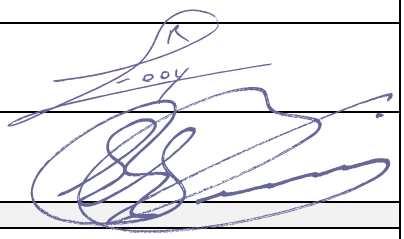
This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description ..... :	**Protective terminal blocks for copper conductors**
Trade Mark..... :	WAGO
Manufacturer ..... :	**WAGO GmbH & Co. KG**
Model/Type reference..... :	**TOPJOB S 2002**
Ratings..... :	**2,5 mm², 4 mm²**

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

☒	**CB Testing Laboratory:**	**DEKRA Certification B.V.**	
Testing location/ address .....:		**Meander 1051, 6825 MJ Arnhem, The Netherlands**	
☐	**Associated CB Testing Laboratory:**		
Testing location/ address .....:			
Tested by (name, function, signature) .....:		**R.A.T. Fooy** (Technician Industrial Safety)	
Approved by (name, function, signature) ..:		**H.L. Schendstok** (Project Manager Industrial Safety)	
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address .....:			
Tested by (name, function, signature) .....:			
Approved by (name, function, signature) ..:			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address .....:			
Tested by (name + signature).....:			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature) ..:			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address .....:			
Tested by (name, function, signature) .....:			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature) ..:			
Supervised by (name, function, signature) .....:			

List of Attachments (including a total number of pages in each attachment): N/A

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
Project 2198985.51 **Complete examination.** **All tests are carried out on 2002-4127 unless otherwise stated** **This Test Report replaces test Report 2173607.51 and 2191639.51 issued on 21 June 2016 and also replaces 2193799.51 issued on 28 October 2016, due to fact that types are added.** **Additional test are carried out at type: 2002-1568. This type is not a protective conductor terminal block. This terminal block has a connection to the mounting rail; therefore this standard is used as a guide.** **Project 2217053.51** **This report also replaces test report 218985.51 issued on 2017-01-24, due to fact that types are added** **Additional test are carried out at type: 2002-2717, 2002-2707 and 2002-2707-0999-0950** **Project 2235367.00** **Addition of new suffix /000-001, new color (green). No tests were necessary.** **Project 2241683.51** **Modified report, due to the fact that report 2241683.50 is updated** **Project 2267413.00** **This Test report replaces Test report 2241683.509 issued on 2020-03-16, due to the fact that new types 2002-2737, -2742, -2757 are added, colour (green/yellow).** **Update on factory locations.** **No tests were considered necessary.**	**DEKRA Certification B.V.** **Meander 1051, 6825 MJ Arnhem** **The Netherlands**

Summary of compliance with National Differences (List of countries addressed): N/A

☒ **The product fulfils the requirements of EN 60947-7-2: 2009.**

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

TOP JOB S

2002

2,5 mm²

Test item particulars..... :	
Classification of installation and use ..... :	***Ground (earth) conductor terminal blocks***
Supply Connection ..... :	***0,25 mm² - 4 mm²***
Particulars: test item vs. test requirements	
- method of fixing :	***mounting on top hat rail 35 mm***
- number of poles.....:	***2- 3- 4- poles***
- type of clamping unit .....:	***screwless terminals***
- ability to receive conductors .....:	***unprepared conductors, flexible or rigid***
- number of terminals on terminal assembly.....:	***4, 6 or 7***
- PE or PEN functions.....:	***PE***
- rated cross-section (mm²).....:	**2,5 mm² or 4 mm²**
- rated connecting capacity (mm²).....:	***0,25 mm² - 4 mm² rigid and flexible***
Possible test case verdicts:	
- test case does not apply to the test object .....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement .....:	F (Fail)
Testing .....:	
Date of receipt of test item .....:	***2018-02***
Date (s) of performance of tests .....:	***2018-05 to 09***

General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. **Throughout this report a ☒ comma / ☐ point is used as the decimal separator.**	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☒ **Yes** ☐ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies).....:	**Wago Elwag sp.z.o.o.** **ul. Piekna 58 a** **50-506, Wroclaw, Poland** **Wago Elwag** **Innowacyjna 2** **55-330 Wroblowice, Poland** **WAGO Private Limited** **Block No. 94, National Highway-8** **Village Vadsala – Varnama, Vadodara, Gujarat-391243, India** **Wago Electronic (Tianjin) Co. Ltd.** **No. 5 Quanhui Road** **Wu Qing Development Area** **301700 Tianjin, China** **WAGO GmbH & Co. KG** **Hansastrasse 27, 32423 Minden/Westfalen** **Germany** **WAGO Kontakttechnik GmbH & Co. KG, Werk Sondershausen** **Waldstrasse 1, 99706, Sondershausen** **Germany** **WAGO Contact S.A.** **Route de l'Industrie 19, CP 168, 1564,** **Domdidier, Switzerland** **WAGO Kontakttechnik GmbH & Co. KG** **Cammer Str. 17,** **32423 Minden** **Germany**

IEC60947-7-2			
Clause	Requirement – Test	Result - Remark	Verdict
5.1	**MARKING**		
	Terminal block shall be marked with:		
	- manufacturer's name or trademark	***WAGO***	***P***
	- type designation	***TOP JOB S 2002***	***P***
5.2	The following information shall be stated by the manufacturer if applicable, e.g. in the manufacturer's data sheet, or his catalogue or on the packing unit:		
	- manufacturer's claim for compliance with IEC60947-7-2	***IEC 60947-7-2***	***P***
	- rated cross-section	***2,5 mm² or 4 mm²***	***P***
	- rated connecting capacity	***0,25 mm² - 4 mm² rigid and flexible***	***P***
	- service conditions if different from those of Cl. 6.		***N/A***
	- PE function only if supplied with or intended for use only with steel in the current-carrying path		***P***
7.	**CONSTRUCTION**		
7.1	Constructional requirements		
7.1.1	Terminals		
	Terminals shall permit a reliable connection between the conductor clamping unit and the clamping unit to the support		***P***
7.1.7.1	All parts of terminals which maintain contact and carry current shall be of metal having adequate mechanical strength		***P***
	Clamping units connections shall be such that necessary contact pressure is maintained		***P***
	Clamping units shall be so constructed that the conductor is clamped between suitable surfaces without damage to the conductor and terminal		***P***

IEC60947-7-2			
Clause	Requirement – Test	Result - Remark	Verdict
	Clamping units shall not allow the conductor to be displaced or to be displaced themselves in a manner detrimental to the operation of equipment and the insulation voltage shall not be reduced below the rated value		***P***
	Clamping units shall allow the conductor to be connected by means ensuring that a reliable mechanical linkage and electrical contact is properly maintained		***P***
	Clamping units shall be able to withstand the forces that can be applied through the connected conductors		***P***
	Contact pressure is not transmitted through insulation materials		***P***
7.1.2	Connection of support		
	Protective conductor terminal blocks are provided with means that allow them to be securely attached to the corresponding support without risk of galvanic corrosion		***P***
	The design of the protective conductor terminal blocks shall clearly show how the fixation has to be made to ensure the correct conducting connection to appropriate support		***P***
	The clamping connection to the support shall only be released by means of tools		***P***
7.1.3	Clearances and creepage distances		
	Clearances and creepage distances do not apply to protective conductor terminal blocks		***P***

IEC60947-7-2			
Clause	Requirement – Test	Result - Remark	Verdict
7.1.4	Terminal identification and marking:		
	- terminal blocks shall have provision, or at least space, for identification marks or numbers for each terminal or terminal assembly to be related to the circuit of which it is to form a part		***P***
	- any partial insulated protective conductor terminal blocks shall be coloured green and yellow		***P***
7.1.5	Resistance to abnormal heat and fire		
	Needle flame test for insulation materials of terminal blocks (see 8.5)		***P***
7.1.6	Rated cross section and rated connecting capacity		
	Terminal blocks are so designed that conductors of the rated cross-section and/or the rated connecting capacity can be accepted	***0,25 mm² - 4 mm² rigid and flexible***	***P***
7.1.7	Protective conductor mounting rails		
	Type of mounting rails ..... :	***Top hat rail 35 mm***	***P***

8.	**TESTS**		
8.3	Verification of mechanical characteristics		
8.3.2	Attachment of the terminal block on its support		
	mounting rail ..... :	***Top hat rail 35 mm***	—
	torque (Nm) clamping to support ..... :	**-**	—
	steel pin diameter (mm) ..... :	***1 mm***	—
	tightening torque clamping units (Nm) ..... :	**-**	—
	force (N) ..... :	***1 N***	—
	During the test, no terminal block shall work free from its rail or support, nor suffer any other damage		***P***
8.3.2	Attachment of the terminal block on its support	**Type 2002-1568**	
	mounting rail ..... :	***Top hat rail 35 mm***	—
	torque (Nm) clamping to support ..... :	**-**	—
	steel pin diameter (mm) ..... :	***1 mm***	—

IEC60947-7-2			
Clause	Requirement – Test	Result - Remark	Verdict
	tightening torque clamping units (Nm) ..... :	**-**	—
	force (N) ..... :	***1 N***	—
	During the test, no terminal block shall work free from its rail or support, nor suffer any other damage		***P***
8.3.3.1	Test of mechanical strength of clamping units		
8.2.4.2	Mechanical strength of terminals (EN 60947-1)		
	rated cross-section of a rigid conductor (mm²) ... :	***4 mm²***	—
	diameter of thread (mm) ..... :	**-**	—
	torque (Nm) ..... :	**-**	—
	5 times on 2 separate clamping units		***P***
	Voltage drop before and after mechanical strength test		
	rated cross-section of a rigid conductor (mm²) ... :	***4 mm²***	—
	test current (A) d.c. ..... :	***3,2 A***	—
	voltage drop (mV) before mechanical strength test not exceeding 3,2 mV ..... :	***1,08 mV – 1,20 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N/A***
	voltage drop (mV) after mechanical strength test not exceeding 150% of the value measured before mechanical strength test ..... :	***0,96 mV – 1,11 mV***	***P***
	minimum cross-section of a flexible conductor (mm²) ..... :	***0,25 mm²***	—
	test current (A) d.c. ..... :	***0,5 A***	—
	voltage drop (mV) before mechanical strength test not exceeding 3,2 mV ..... :	***0,67 mV – 0,73 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N/A***

IEC60947-7-2			
Clause	Requirement – Test	Result - Remark	Verdict
	voltage drop (mV) after mechanical strength test not exceeding 150% of the value measured before mechanical strength test ..... :	***0,58 mV – 0,59 mV***	***P***
	Mechanical strength of the clamping to support		
	- rail profile ..... :	***Top hat rail 35 mm (EN 50022)***	—
	diameter of thread (mm) ..... :	**-**	—
	torque (Nm) ..... :	**-**	—
	5 times on 2 separate clamping units		***P***
	rated cross-section of a rigid conductor (mm²) ... :	***2,5 mm²***	—
	test current (A) d.c. ..... :	***2,4 A***	—
	voltage drop (mV) before mechanical strength test not exceeding 6,4 mV ..... :	***2,04 mV – 2,10 mV***	***P***
	If the measured value exceeds 6,4 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 4,8 mV		***N/A***
	voltage drop (mV) after mechanical strength test not exceeding 150% of the value measured before mechanical strength test ..... :	***1,95 mV – 2,17 mV***	***P***
8.2.4.2	Mechanical strength of terminals (EN 60947-1)	**Type 2002-1568**	
	rated cross-section of a rigid conductor (mm²) ... :	***2,5 mm²***	—
	diameter of thread (mm) ..... :	**-**	—
	torque (Nm) ..... :	**-**	—
	5 times on 2 separate clamping units		***P***
	Voltage drop before and after mechanical strength test		
	rated cross-section of a rigid conductor (mm²) ... :	***2,5 mm²***	—
	test current (A) d.c. ..... :	***2,4 A***	—
	voltage drop (mV) before mechanical strength test not exceeding 3,2 mV ..... :	***0,71 mV – 1,16 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N/A***

IEC60947-7-2			
Clause	Requirement – Test	Result - Remark	Verdict
	voltage drop (mV) after mechanical strength test not exceeding 150% of the value measured before mechanical strength test ..... :	***0,73 mV – 1,17 mV***	***P***
	minimum cross-section of a flexible conductor (mm²) ..... :	***0,25 mm²***	—
	test current (A) d.c. ..... :	***0,4 A***	—
	voltage drop (mV) before mechanical strength test not exceeding 3,2 mV ..... :	***0,38 mV – 0,42 mV***	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N/A***
	voltage drop (mV) after mechanical strength test not exceeding 150% of the value measured before mechanical strength test ..... :	***0,41 mV – 0,44 mV***	***P***
	Mechanical strength of the clamping to support		
	- rail profile ..... :	***Top hat rail 35 mm (EN 50022)***	—
	diameter of thread (mm) ..... :	***-***	—
	torque (Nm) ..... :	***-***	—
	5 times on 2 separate clamping units		***P***
	rated cross-section of a rigid conductor (mm²) ... :	***2,5 mm²***	—
	test current (A) d.c. ..... :	***2,4 A***	—
	voltage drop (mV) before mechanical strength test not exceeding 6,4 mV ..... :	***0,71 mV – 1.16 mV***	***P***
	If the measured value exceeds 6,4 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 4,8 mV		***N/A***
	voltage drop (mV) after mechanical strength test not exceeding 150% of the value measured before mechanical strength test ..... :	***0,73 mV – 1,17 mV***	***P***
8.3.4.2	Testing for damage to and accidental loosening of conductors of a terminal block (flexion test)		
	conductor of the smallest cross-section (mm²) ... :	***0,25 mm² rigid and flexible***	—

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Clause	Requirement – Test	Result - Remark	Verdict
	number of conductor of the smallest cross-section ..... :	***1***	—
	torque (Nm) ..... :	***-***	—
	diameter of bushing hole (mm) ..... :	***6,5 mm***	—
	height between the equipment and the platen (mm) ..... :	***260 mm***	—
	mass at the conductor(s) (kg) ..... :	***0,2 kg***	—
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	Pull-out test		
	force (N) ..... :	***10 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	conductor of the rated cross-section (mm²) ..... :	***2,5 mm² rigid and flexible***	—
	number of conductor of the rated cross-section . :	***1***	—
	torque (Nm) ..... :	***-***	—
	diameter of bushing hole (mm) ..... :	***9,5 mm***	—
	height between the equipment and the platen (mm) ..... :	***280 mm***	—
	mass at the conductor(s) (kg) ..... :	***0,7 kg***	—
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	Pull-out test		
	force (N) ..... :	***50 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	conductor of the largest cross-section (mm²) ..... :	***4 mm² rigid and flexible***	—
	number of conductor of the largest cross-section :	***1***	—
	torque (Nm) ..... :	***-***	—
	diameter of bushing hole (mm) ..... :	***9,5 mm***	—

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Clause	Requirement – Test	Result - Remark	Verdict
	height between the equipment and the platen (mm) ..... :	***280 mm***	—
	mass at the conductor(s) (kg) ..... :	***0,9 kg***	—
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	Pull-out test		
	force (N) ..... :	***60 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	conductor of the largest or smallest cross-section (mm²) ..... :		—
	number of conductor of the largest or smallest cross-section ..... :		—
	torque (Nm) ..... :		—
	diameter of bushing hole (mm) ..... :		—
	height between the equipment and the platen (mm) ..... :		—
	mass at the conductor(s) (kg) ..... :		—
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***N/A***
	Pull-out test		
	force (N) ..... :		—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***N/A***
8.3.4.4	Verification of rated cross section and rated connecting capacity		
	One conductor of the two next smaller cross-sections can be unhindered and connected in each clamping unit of one terminal block (up to 35 mm²)		***P***
8.4.3	Dielectric tests		
	Dielectric test, Uimp indicated: ***type 2002-2607 and 2002-2647***		

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Clause	Requirement – Test	Result - Remark	Verdict
	- The test is made on protective terminal blocks installed with terminal blocks of the same series and size according to the manufactures instructions rated cross-section (mm²) / type / conductor end length (mm) ..... :	***4 mm², flexible, 10 – 12 mm 2002-2608***	—
	- rated impulse withstand voltage (kV) ..... :	***8 kV***	—
	- test Uimp main circuits (kV) ..... :	***9,8 kV***	***P***
	Dielectric test, Uimp not indicated:		
	- The test is made on protective terminal blocks installed with terminal blocks of the same series and size according to the manufactures instructions rated cross-section (mm²) / type / conductor end length (mm) :	***4 mm², flexible, 10 – 12 mm***	—
	- rated insulation voltage (V) ..... :	***800 V***	—
	- test voltage for 60 sec (V) ..... :	**2200 V tested for 5 s According to IEC 60947-1 A2:2014 re-testing according to 60 s is not necessary**	***P***
8.4.3	Dielectric tests		
	Dielectric test, Uimp indicated***:***	***type 2002-4127***	
	- The test is made on protective terminal blocks installed with terminal blocks of the same series and size according to the manufactures instructions rated cross-section (mm²) / type / conductor end length (mm) ..... :	***4 mm², flexible, 10 – 12 mm***	—
	- rated impulse withstand voltage (kV) ..... :	***8 kV***	—
	- test Uimp main circuits (kV) ..... :	***9,8 kV***	***P***
	Dielectric test, Uimp not indicated:		
	- The test is made on protective terminal blocks installed with terminal blocks of the same series and size according to the manufactures instructions rated cross-section (mm²) / type / conductor end length (mm) :	***4 mm², flexible, 10 – 12 mm***	—

IEC60947-7-2			
Clause	Requirement – Test	Result - Remark	Verdict
	- rated insulation voltage (V) ..... :	***800 V***	—
	- test voltage for 60 sec (V) ..... :	**2200 V tested for 5 s According to IEC 60947-1 A2:2014 re-testing according to 60 s is not necessary**	***P***

IEC60947-7-2			
Clause	Requirement – Test	Result - Remark	Verdict
8.4.3	Dielectric tests		
	Dielectric test, Uimp indicated*:*	***type 2002-1568***	
	- The test is made on protective terminal blocks installed with terminal blocks of the same series and size according to the manufactures instructions rated cross-section (mm²) / type / conductor end length (mm) ..... :	***4 mm², flexible, 10 – 12 mm***	—
	- rated impulse withstand voltage (kV) ..... :	***6 kV***	—
	- test Uimp main circuits (kV) ..... :	***7,3 kV***	***P***
	Dielectric test, Uimp not indicated:		
	- The test is made on protective terminal blocks installed with terminal blocks of the same series and size according to the manufactures instructions rated cross-section (mm²) / type / conductor end length (mm) :	***4 mm², flexible, 10 – 12 mm***	—
	- rated insulation voltage (V) ..... :	***400 V***	—
	- test voltage for 60 sec (V) ..... :	***1890 V***	***P***
8.4.3	Dielectric tests		
	Dielectric test, Uimp indicated*:* ***type 2002-2707, 2002-2717, and 2002-2707/0999-0950***		
	- The test is made on protective terminal blocks installed with terminal blocks of the same series and size according to the manufactures instructions rated cross-section (mm²) / type / conductor end length (mm) ..... :	***4 mm², solid, 10 – 12 mm***	—
	- rated impulse withstand voltage (kV) ..... :	***8 kV***	—
	- test Uimp main circuits (kV) ..... :	***9,8 kV***	***P***
	Dielectric test, Uimp not indicated:		
	- The test is made on protective terminal blocks installed with terminal blocks of the same series and size according to the manufactures instructions rated cross-section (mm²) / type / conductor end length (mm) :	***4 mm², flexible, 10 – 12 mm***	—

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Clause	Requirement – Test	Result - Remark	Verdict
	- rated insulation voltage (V) ..... :	***800 V***	—
	- test voltage for 60 sec (V) ..... :	***2000 V***	***P***
8.4.5	Temperature-rise test		
	Temperature rise conditions:		
	- test current (A) ..... :		—
	- cross-section of the conductor (mm²) ..... :		—
	- torque (Nm) clamping unit ..... :		—
	- torque (Nm) clamping to support ..... :		—
	Temperature-rise without support		
	- temperature-rise does not exceed 45 K		***N/A***
	Voltage drop before and after temperature-rise test:		
	- test current (A) d.c. ..... :		—
	- voltage drop (mV) before temperature-rise test not exceeding 3,2 mV ..... :	1 - 2 - 3 - 4 - 5 -	***N/A***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N/A***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature rise test ..... :	1 - 2 - 3 - 4 - 5 -	***N/A***
	Temperature-rise with support		
	- rail profile and material ..... :		—
	- temperature-rise does not exceed 45 K ..... :	1 - 2 -	—
	Voltage drop before and after temperature-rise test:		
	- test current (A) d.c. ..... :		—

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Clause	Requirement – Test	Result - Remark	Verdict
	- voltage drop (mV) before temperature-rise test not exceeding 6,4 mV ..... :	1 - 2 -	***N/A***
	If the measured value exceeds 6,4 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 4,8 mV		***N/A***
	- voltage drop (mV) after temperature-rise test not exceeding 150% of the value measured before temperature-rise test ..... :	1 - 2 -	***N/A***
8.4.6	Short-time withstand current test	***type 2002-2607***	
	- cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- torque (Nm) clamping unit ..... :	***-***	—
	- rail profile and material ..... :	***Top hat rail 35 mm***	—
	- torque (Nm) clamping to support ..... :	***-***	—
	Test current from clamping unit to clamping unit (1-1)		***P***
	- test current (A) ..... :	1 – ***480 A*** 2 – ***480 A*** 3 – ***480 A***	—
	- duration of the test current (s) ..... :	1 – ***1 s*** 2 – ***1 s*** 3 – ***1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop after short-time withstand current test		***P***
	- cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- test current (A) d.c. ..... :	***3,2 A***	—
	- voltage drop (mV) after short-time withstand current test not exceeding 3,2 mV ..... :	1 - 2 -	***N/A***

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Clause	Requirement – Test	Result - Remark	Verdict
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV	***left clamping unit*** ***0,61 mV*** ***right clamping unit*** ***0,88 mV***	***P***
	Test current from clamping unit to support (2-2)		
	- test current (A) ..... :	***1 – 480 A*** ***2 – 480 A*** ***3 – 480 A***	—
	- duration of the test current (s) ..... :	***1 – 1 s*** ***2 – 1 s*** ***3 – 1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop after short-time withstand current test	***type 2002-4127***	
	- cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- test current (A) d.c. ..... :	***3,2 A***	—
	- voltage drop (mV) after short-time withstand current test not exceeding 6,4 mV ..... :	***2,88 mV***	***P***
	If the measured value exceeds 6,4 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 4,8 mV		***N/A***
8.4.6	Short-time withstand current test		
	- cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- torque (Nm) clamping unit ..... :	***-***	—
	- rail profile and material ..... :	***Top hat rail 35 mm (EN 50022)***	—
	- torque (Nm) clamping to support ..... :	***-***	—
	Test current from clamping unit to clamping unit (1-1)		***N/A***
	- test current (A) ..... :	1 - 2 - 3 -	—

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Clause	Requirement – Test	Result - Remark	Verdict
	- duration of the test current (s) ..... :	1 - 2 - 3 -	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***N/A***
	Voltage drop after short-time withstand current test		***N/A***
	- cross-section of the conductor (mm²) ..... :		—
	- test current (A) d.c. ..... :		—
	- voltage drop (mV) after short-time withstand current test not exceeding 3,2 mV ..... :	1 - 2 -	***N/A***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N/A***
	Test current from clamping unit to support (2-2)		
	- test current (A) ..... :	***1 – 480 A*** ***2 – 480 A*** ***3 – 480 A***	—
	- duration of the test current (s) ..... :	***1 – 1 s*** ***2 – 1 s*** ***3 – 1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop after short-time withstand current test		
	- cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- test current (A) d.c. ..... :	***3,2 A***	—
	- voltage drop (mV) after short-time withstand current test not exceeding 6,4 mV ..... :	***1 – 2,51 mV*** ***2 – 2,55 mV*** ***3 – 2,49 mV***	***P***

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Clause	Requirement – Test	Result - Remark	Verdict
	If the measured value exceeds 6,4 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 4,8 mV		***N/A***
8.4.6	Short-time withstand current test	***type 2002-1568***	
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) clamping unit ..... :	***-***	—
	- rail profile and material ..... :	***Top hat rail 35 mm***	—
	- torque (Nm) clamping to support ..... :	***-***	—
	Test current from clamping unit to clamping unit (1-1)		***P***
	- test current (A) ..... :	1 – **300 A** 2 – **300 A** 3 – **300 A**	—
	- duration of the test current (s) ..... :	1 – **1 s** 2 – **1 s** 3 – **1 s**	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop after short-time withstand current test		***P***
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) after short-time withstand current test not exceeding 3,2 mV ..... :		***N/A***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV	1 -**5,15 mV** 2 -**5,24 mV** **(4 contact points)**	***P***
	Test current from clamping unit to support (2-2)		
	- test current (A) ..... :	***1 – 300 A*** ***2 – 300 A*** ***3 – 300 A***	—

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Clause	Requirement – Test	Result - Remark	Verdict
	- duration of the test current (s) ..... :	***1 – 1 s*** ***2 – 1 s*** ***3 – 1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop after short-time withstand current test		
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) after short-time withstand current test not exceeding 6,4 mV ..... :	***6,32 mV***	***P***
	If the measured value exceeds 6,4 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 4,8 mV		***N/A***
8.4.6	Short-time withstand current test	***type 2002-2707***	
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) clamping unit ..... :	***-***	—
	- rail profile and material ..... :	***Top hat rail 35 mm***	—
	- torque (Nm) clamping to support ..... :	***-***	—
	Test current from clamping unit to clamping unit (1-1)		***P***
	- test current (A) ..... :	1 – **326 A** 2 – **322 A** 3 – **319 A**	—
	- duration of the test current (s) ..... :	1 – **1 s** 2 – **1 s** 3 – **1 s**	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop after short-time withstand current test		***P***
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—

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Clause	Requirement – Test	Result - Remark	Verdict
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) after short-time withstand current test not exceeding 3,2 mV ..... :	**2,48 mV**	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	Test current from clamping unit to support (2-2)		
	- test current (A) ..... :	***1 – 315 A*** ***2 – 311 A*** ***3 – 309 A***	—
	- duration of the test current (s) ..... :	***1 – 1 s*** ***2 – 1 s*** ***3 – 1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop after short-time withstand current test		
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) after short-time withstand current test not exceeding 6,4 mV ..... :	***2,20 mV***	***P***
	If the measured value exceeds 6,4 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 4,8 mV		***N/A***
8.4.6	Short-time withstand current test	***type 2002-2707***	
	- cross-section of the conductor (mm²) ..... :	***4,0 mm²***	—
	- torque (Nm) clamping unit ..... :	***-***	—
	- rail profile and material ..... :	***Top hat rail 35 mm***	—
	- torque (Nm) clamping to support ..... :	***-***	—
	Test current from clamping unit to clamping unit (1-1)		***P***

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Clause	Requirement – Test	Result - Remark	Verdict
	- test current (A) ..... :	1 – **489 A** 2 – **490 A** 3 – **491 A**	—
	- duration of the test current (s) ..... :	1 – **1 s** 2 – **1 s** 3 – **1 s**	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop after short-time withstand current test		***P***
	- cross-section of the conductor (mm²) ..... :	***4,0 mm²***	—
	- test current (A) d.c. ..... :	***3,2 A***	—
	- voltage drop (mV) after short-time withstand current test not exceeding 3,2 mV ..... :	**2,66 mV**	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	Test current from clamping unit to support (2-2)		
	- test current (A) ..... :	***1 – 315 A*** ***2 – 311 A*** ***3 – 309 A***	—
	- duration of the test current (s) ..... :	***1 – 1 s*** ***2 – 1 s*** ***3 – 1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop after short-time withstand current test		
	- cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- test current (A) d.c. ..... :	***3,2 A***	—

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Clause	Requirement – Test	Result - Remark	Verdict
	- voltage drop (mV) after short-time withstand current test not exceeding 6,4 mV ..... :	***2,36 mV***	***P***
	If the measured value exceeds 6,4 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 4,8 mV		***N/A***
8.4.6	Short-time withstand current test	***type 2002-2707/0999-0950***	
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- torque (Nm) clamping unit ..... :	**-**	—
	- rail profile and material ..... :	***Top hat rail 35 mm***	—
	- torque (Nm) clamping to support ..... :	**-**	—
	Test current from clamping unit to clamping unit (1-1)		***P***
	- test current (A) ..... :	1 – **324 A** 2 – **321 A** 3 – **320 A**	—
	- duration of the test current (s) ..... :	1 – **1 s** 2 – **1 s** 3 – **1 s**	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop after short-time withstand current test		***P***
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) after short-time withstand current test not exceeding 3,2 mV ..... :	**1,75 mV**	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	Test current from clamping unit to support (2-2)		

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Clause	Requirement – Test	Result - Remark	Verdict
	- test current (A) ..... :	***1 – 315 A*** ***2 – 311 A*** ***3 – 309 A***	—
	- duration of the test current (s) ..... :	***1 – 1 s*** ***2 – 1 s*** ***3 – 1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop after short-time withstand current test		
	- cross-section of the conductor (mm²) ..... :	***2,5 mm²***	—
	- test current (A) d.c. ..... :	***2,4 A***	—
	- voltage drop (mV) after short-time withstand current test not exceeding 6,4 mV ..... :	***1,56 mV***	***P***
	If the measured value exceeds 6,4 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 4,8 mV		***N/A***
8.4.6	Short-time withstand current test	***type 2002-2707/0999-0950***	
	- cross-section of the conductor (mm²) ..... :	***4,0 mm²***	—
	- torque (Nm) clamping unit ..... :	***-***	—
	- rail profile and material ..... :	***Top hat rail 35 mm***	—
	- torque (Nm) clamping to support ..... :	***-***	—
	Test current from clamping unit to clamping unit (1-1)		***P***
	- test current (A) ..... :	1 – **492 A** 2 – **490 A** 3 – **491 A**	—
	- duration of the test current (s) ..... :	1 – **1 s** 2 – **1 s** 3 – **1 s**	—

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Clause	Requirement – Test	Result - Remark	Verdict
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop after short-time withstand current test		***P***
	- cross-section of the conductor (mm²) ..... :	***4,0 mm²***	—
	- test current (A) d.c. ..... :	***3,2 A***	—
	- voltage drop (mV) after short-time withstand current test not exceeding 3,2 mV ..... :	**1,65 mV**	***P***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N***
	Test current from clamping unit to support (2-2)		
	- test current (A) ..... :	***1 – 486 A*** ***2 – 486 A*** ***3 – 488 A***	—
	- duration of the test current (s) ..... :	***1 – 1 s*** ***2 – 1 s*** ***3 – 1 s***	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		***P***
	Voltage drop after short-time withstand current test		
	- cross-section of the conductor (mm²) ..... :	***4 mm²***	—
	- test current (A) d.c. ..... :	***3,2 A***	—
	- voltage drop (mV) after short-time withstand current test not exceeding 6,4 mV ..... :	***1,84 mV***	***P***
	If the measured value exceeds 6,4 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 4,8 mV		***N/A***

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Clause	Requirement – Test	Result - Remark	Verdict
8.4.7	Ageing test (for screwless-type terminal blocks only)		
	Maximum ambient temperature (°C) ..... :	***40 °C***	—
	Rated cross-section solid or stranded (mm²) ..... :	***2,5 mm²***	—
	Heating cabinet is increased, in each cycle to (°C) ..... :	***85 °C***	—
	Test current (A) d.c. for measurement of the voltage drop ..... :	***2,4 A***	—
	Rail profile and material ..... :	***Top hat rail 35 mm (EN 50022)***	—
	Torque (Nm) clamping to support ..... :	***-***	—
	Voltage drop after 0 cycles:		
	- requirement for clamping unit to clamping unit: ≤ 3,2 mV (mV) ..... :		***N/A***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N/A***
	- requirement for clamping unit to support: ≤ 6,4 mV (mV) ..... :	***1 – 2,19 mV*** ***2 – 2,17 mV***	***P***
	If the measured value exceeds 6,4 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 4,8 mV		***N/A***
	Voltage drop after the 24th cycle:		
	- requirement for clamping unit to clamping unit: 4,8 mV (mV) ..... :		***N/A***
	- requirement for clamping unit to support: 9,6 mV (mV)	**1 - *2,14 mV*** **2 - *2,16 mV***	**P**
	Voltage drop after the 48th cycle		

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Clause	Requirement – Test	Result - Remark	Verdict
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***1 – 2,14 mV*** ***2 – 2,16 mV***	***P***
	Voltage drop after the 72th cycle:		
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***1 – 2,13 mV*** ***2 – 2,16 mV***	***P***
	Voltage drop after the 96th cycle:		
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***1 – 2,13 mV*** ***2 – 2,16 mV***	***P***
	Voltage drop after the 120th cycle:		
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***1 – 2,13 mV*** ***2 – 2,16 mV***	***P***
	Voltage drop after the 144th cycle:		
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***1 – 2,13 mV*** ***2 – 2,15 mV***	***P***

IEC60947-7-2			
Clause	Requirement – Test	Result - Remark	Verdict
	Voltage drop after the 168th cycle:		
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***1 – 2,13 mV*** ***2 – 2,15 mV***	***P***
	Voltage drop after the 192th cycle:		
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***1 – 2,13 mV*** ***2 – 2,15 mV***	***P***
	Pull-out test		
	force (N) ..... :	***50 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
8.4.7	Ageing test (for screwless-type terminal blocks only)		
	Maximum ambient temperature (°C) ..... :	***40 °C***	—
	Rated cross-section solid or stranded (mm²) ..... :	***4 mm²***	—
	Heating cabinet is increased, in each cycle to (°C) ..... :	***85 °C***	—
	Test current (A) d.c. for measurement of the voltage drop ..... :	***3,2 A***	—
	Rail profile and material ..... :	***Top hat rail 35 mm***	—
	Torque (Nm) clamping to support ..... :	***-***	—
	Voltage drop after 0 cycles:		
	- requirement for clamping unit to clamping unit: ≤ 3,2 mV (mV) ..... :		***N/A***

IEC60947-7-2			
Clause	Requirement – Test	Result - Remark	Verdict
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N/A***
	- requirement for clamping unit to support: ≤ 6,4 mV (mV) ..... :	***1 – 2,62 mV*** ***2 – 2,46 mV***	***P***
	If the measured value exceeds 6,4 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 4,8 mV		***N/A***
	Voltage drop after the 24th cycle:		
	- requirement for clamping unit to clamping unit: 4,8 mV (mV) ..... :		***N/A***
	- requirement for clamping unit to support: 9,6 mV (mV)	***1 - 2,62 mV*** ***2 - 2,47 mV***	**P**
	Voltage drop after the 48th cycle		
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***1 – 2,61 mV*** ***2 – 2,47 mV***	***P***
	Voltage drop after the 72th cycle:		
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***1 – 2,61 mV*** ***2 – 2,47 mV***	***P***
	Voltage drop after the 96th cycle:		

IEC60947-7-2			
Clause	Requirement – Test	Result - Remark	Verdict
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***1 – 2,61 mV*** ***2 – 2,47 mV***	***P***
	Voltage drop after the 120th cycle:		
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***1 – 2,61 mV*** ***2 – 2,47 mV***	***P***
	Voltage drop after the 144th cycle:		
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***1 – 2,61 mV*** ***2 – 2,47 mV***	***P***
	Voltage drop after the 168th cycle:		
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***1 – 2,61 mV*** ***2 – 2,47 mV***	***P***
	Voltage drop after the 192th cycle:		
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	***1 – 2,61 mV*** ***2 – 2,47 mV***	***P***

IEC60947-7-2			
Clause	Requirement – Test	Result - Remark	Verdict
	Pull-out test		
	force (N) ..... :	***60 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
8.5	Verification of thermal characteristics are checked by the needle flame test		***P***
	Before the test, the terminal blocks are stored for 24 h in an atmosphere having a temperature between 15°C and 35°C and a relative humidity between 45% and 75%		***P***
	The flame is applied for 10 s. for insulation walls <1 mm and / or an area < 100 mm², the flame is applied for 5 s.	***10 s***	***P***
	The terminal blocks are considered to have passed the test if the duration of burning is < 30 s in case of ignition. Moreover, the tissue paper on the pinewood board shall not ignite if burning or glowing particles fall from the terminal block.		***P***
8.6	Verification of EMC characteristics		***N/A***
	Subclause 8.4 of EN 60947-1 applies with the following addition		***N/A***
8.6.1	Immunity		
	Terminal blocks within the scope of this standard are not sensitive of electromagnetic disturbances and therefore no immunity tests are necessary.		***N/A***
8.6.2	Emission		
	Terminal blocks within the scope of this standard do not generate electromagnetic disturbances and therefore no emission tests are necessary.		***N/A***
8.4.7	Ageing test (for screwless-type terminal blocks only)	**type 2002-1568**	

IEC60947-7-2			
Clause	Requirement – Test	Result - Remark	Verdict
	Maximum ambient temperature (°C) ..... :	***40 °C***	—
	Rated cross-section solid or stranded (mm²) ..... :	***2,5 mm²***	—
	Heating cabinet is increased, in each cycle to (°C) ..... :	***85 °C***	—
	Test current (A) d.c. for measurement of the voltage drop ..... :	***2,4 A***	—
	Rail profile and material ..... :	***Top hat rail 35 mm***	—
	Torque (Nm) clamping to support ..... :	**-**	—
	Voltage drop after 0 cycles:		
	- requirement for clamping unit to clamping unit: ≤ 3,2 mV (mV) ..... :		***N/A***
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		***N/A***
	- requirement for clamping unit to support: ≤ 6,4 mV (mV) ..... :	**2,88 mV – 3,54 mV**	***P***
	If the measured value exceeds 6,4 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 4,8 mV		***N/A***
	Voltage drop after the 24th cycle:		
	- requirement for clamping unit to clamping unit: 4,8 mV (mV) ..... :		***N/A***
	- requirement for clamping unit to support: 9,6 mV (mV)	**2,89 mV – 3,43 mV**	**P**
	Voltage drop after the 48th cycle		
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***

IEC60947-7-2			
Clause	Requirement – Test	Result - Remark	Verdict
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	**2,88 mV – 3,39 mV**	***P***
	Voltage drop after the 72th cycle:		
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	**2,88 mV – 3,36 mV**	***P***
	Voltage drop after the 96th cycle:		
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	**2,88 mV – 3,33 mV**	***P***
	Voltage drop after the 120th cycle:		
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	**2,87 mV – 3,30 mV**	***P***
	Voltage drop after the 144th cycle:		
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	**2,87 mV – 3,29 mV**	***P***
	Voltage drop after the 168th cycle:		
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***

IEC60947-7-2			
Clause	Requirement – Test	Result - Remark	Verdict
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	**2,87 mV – 3,27 mV**	***P***
	Voltage drop after the 192th cycle:		
	- requirement for clamping unit to clamping unit: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :		***N/A***
	- requirement for clamping unit to support: ≤ 9,6 mV or 1,5 times the value measured after the 24th cycle (mV) ..... :	**2,87 mV – 3,26 mV**	***P***
	Pull-out test		
	force (N) ..... :	***50 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***

Remark:

product	:	Terminal blocks for copper conductors
trade name(s)	:	WAGO
type(s)	:	TOPJOB S 2002-....
material colours	:	thermoplastic material
stripping length	:	10 - 12 mm
rated connecting capacity	:	2,5 mm² / 4 mm² rigid and flexible
connectable conductors	:	0,25 mm² - 4 mm² rigid and flexible
method of mounting	:	for mounting on top hat rail 35 mm
type	:	2002-6407
description	:	four-conductor earth terminal block, with screwless-type terminals, 1-pole, 35° angled
type	:	2002-6307
description	:	three-conductor earth terminal block, with screwless-type terminals, 1-pole, 35° angled
type	:	2002-1207
description	:	two conductor earth terminal block, with screwless-type terminals, 1-pole
type	:	2002-1307
description	:	three conductor earth terminal block, with screwless-type terminals, 1-pole
type	:	2002-1407
description	:	four conductor earth terminal block, with screwless-type terminals, 1-pole
type	:	2002 with suffixes -2217, -2227, -2247, -2257, -2218, -2228, -2248, -2258
description	:	two-conductor through terminal block with earth connection and screwless-type terminals,2-poles
type	:	2002 with suffixes -2217,-2218, -2227, -2228, -2247, -2248, -2257, -2258, -2458 with suffixes /0099-0000
description	:	two-conductor through terminal block with earth connection, and screwless-type terminals, 2-poles, integrated endplate
type	:	2002 with suffixes -2207, -2237
description	:	two-conductor earth terminal block, with screwless-type terminals, 2-poles. Upper and lower pole connected to each other
type	:	2002 with suffixes -2237, -2238, -2239 with suffixes /0099-0000
description	:	two-conductor earth terminal block, with screwless-type terminals, 2-poles, upper and lower pole connected to each other, integrated endplate

Remark:

type : 2002 with suffixes -2207, -2237 with suffixes /0999-0950
description : two- conductor earth terminal block, with screwless-type terminals, 2-poles, upper and lower pole connected to each other, with indicating internal connection between lower and upper tiers

type : 2002 with suffixes -3207, -3237
description : two conductor earth terminal block, with screwless-type terminals, 3-poles, all poles connected to each other 2002-3237 with marker carrier

type : 2002 with suffixes -3707, -3237 with suffixes /0999-0950
description : two conductor earth terminal block, with screwless-type terminals, 3-poles, all poles connected to each other, with indicating internal connection between lower and upper tiers.

type : 2002-2607
description : two-conductor earth terminal block, with screwless-type terminals, 2-poles. upper and lower pole connected to each other

type : 2002- with suffixes -2647, -2648, -2657, -2658
description : two conductor through terminal block with earth connection, and screwless-type terminals, 2-poles

type : 2002 with suffixes -4127, -4157
description : quadruple deck rail mounted terminal block, with screwless-type terminals, 4-poles (lower pole PE connection)

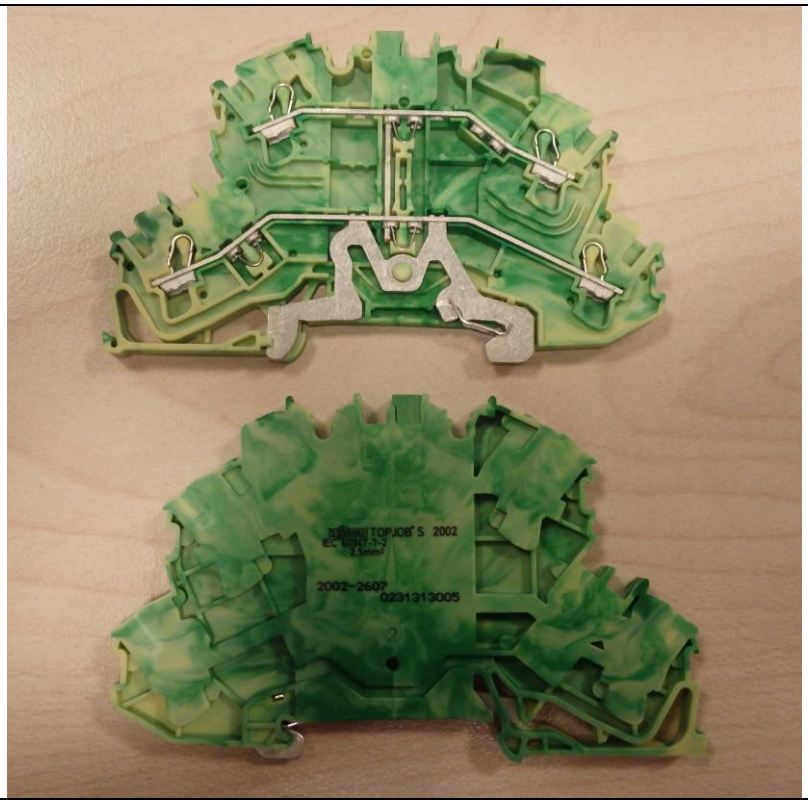
type : 2002-1568
description : two-conductor double disconnect terminal block with mounting rail contact, with screwless type terminals, 1-pole, left side disconnection which can be bridge with a jumper bar, right side jumper bar set by factory

Remark:

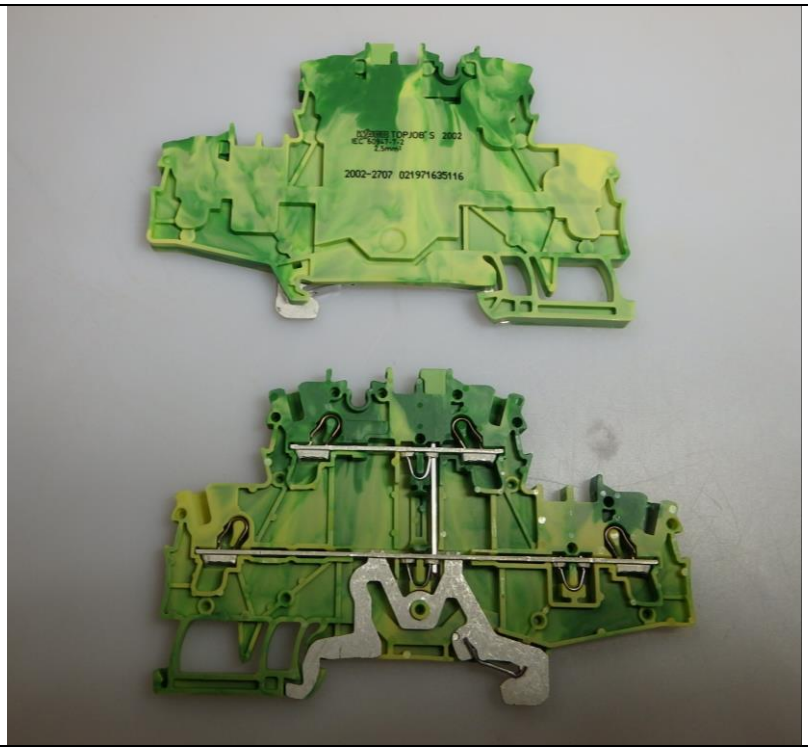
type	:	2002-2707 with and without suffix /0999-0950
description	:	two-conductor PE double deck terminal block with internal commoning between levels. Suffix represent two internal commoning
type	:	2002-2717, -2727
description	:	two-conductor through/PE double deck terminal block. Upper level through, lower level PE, difference is color of wire entrance
type	:	2002-2737
description	:	two-conductor PE double deck terminal block with internal commoning between levels with marker-carrier
type	:	2002-2747, -2757
description	:	two-conductor through/PE double deck terminal block with marker-carrier, upper level through, lower level PE, difference is colour of wire entrance

Article numbers may be followed by optional suffix numbers e.g. 2002-1201/xxxx-xxxx/xxxx-xxxx (up to 40 digits) where "x" may be any number (including characters) to represent customer numbers, printing variants, colour variants and other mechanical
variations, given for a specific end-use purpose and not affecting the electrical properties.

Remark:

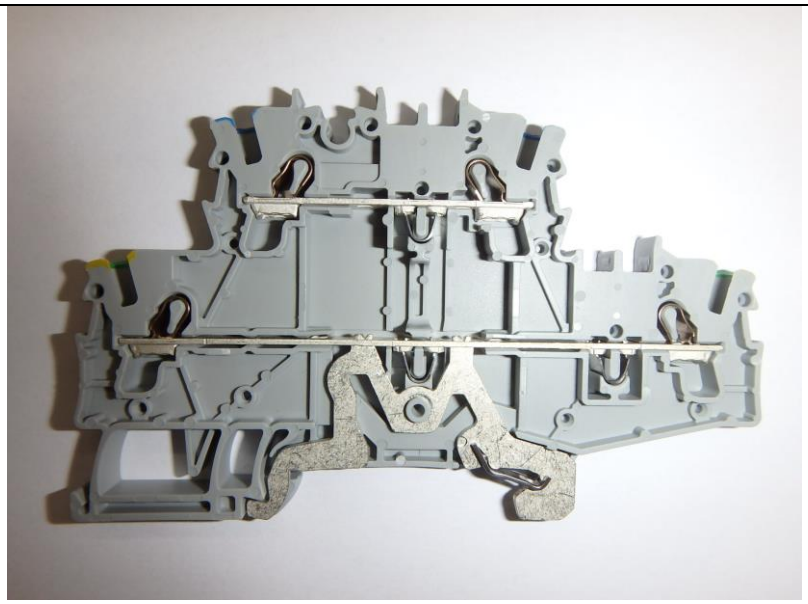


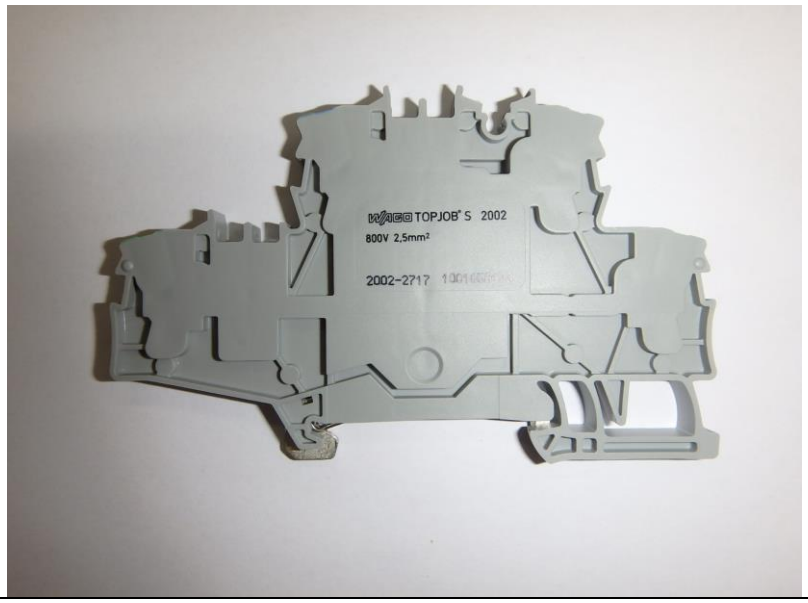
Type 2002-2607



Type 2002-2707

Remark:





Type 2002-2717

ETICS OD ECS 040-1 January 2019	Responsible CB DEKRA

TEST REPORT SUMMARY

Report Number ..... :	**2259248.51**
Date of issue ..... :	**2021-09-07**
Tested by (name, function, signature):	**H.L. Schendstok** **(Project manager Industrial Safety)**
Witnessed by (name, function, signature):	
Approved by (name, function, signature):	**F.S. Strikwerda** **(Project manager Industrial Safety)**
Supervised by (name, function, signature):	



Testing Laboratory ..... :	**DEKRA Certification B.V.**
Address ..... :	**Meander 1051, 6825 MJ Arnhem, The Netherlands**
Testing procedure ..... :	☐ ENEC ☒ CCA NTR
	☐ ENEC based on IECEE CBTC with number: …….
Customer Testing Procedure..... :	☐ TMP/CTF Stage 1 ☐ WMT/CTF Stage 2 ☐ SMT/CTF Stage 3
Applicant ..... :	**WAGO Kontakttechnik GmbH & Co. KG**
Address ..... :	**Hansastraße 27, 32423 Minden/Westfalen, Germany**
Manufacturer ..... :	**WAGO Kontakttechnik GmbH & Co. KG**
Address ..... :	**Hansastraße 27, 32423 Minden/Westfalen, Germany**
Product ..... :	**Fuse terminal blocks for copper conductors**
Model/Type reference ..... :	**TOPJOB S 2002**
Trademark ..... :	WAGO
Ratings ..... :	**250 V, 6,3 A**
Certification Scheme ..... :	☐ ENEC ☒ CCA ☐ Other: _____
Standard(s) ..... :	**EN 60947-7-3:2009**

☒ The text of the a.m. European Standard was approved by CENELEC is equivalent with the corresponding IEC Publication.

☐ The text of the a.m. European Standard was approved by CENELEC with agreed common modifications and is not equivalent with the corresponding IEC Publication. An EU Deviation Addendum has to be issued.

This EN test report consists of the following parts:

☒ IEC Test Report Number..... :	**2259248.51**
☐ EU Deviation Addendum..... :	

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Test Report issued under the responsibility of:

TEST REPORT
IEC 60947-7-3
Low-voltage switchgear and controlgear
Part 7: Ancillary equipment
Section Three: Safety requirements for fuse terminal blocks

Report Number. ..... :	**2259248.51**
Date of issue ..... :	**2021-09-07**
Total number of pages ..... :	**35**
Name of Testing Laboratory preparing the Report ..... :	**DEKRA Certification B.V.** **Meander 1051, 6825 MJ Arnhem, The Netherlands**
Applicant's name..... :	**WAGO Kontakttechnik GmbH & Co. KG**
Address..... :	**Hansastraße 27, 32423 Minden/Westfalen, Germany**
Test specification:	
Standard ..... :	IEC 60947-7-3:2009
Test procedure ..... :	CB scheme
Non-standard test method ..... :	N/A
TRF template used ..... :	IECEE OD-2020-F1:2020, Ed.1.3
Test Report Form No. ..... :	IEC60947_7_3C
Test Report Form(s) Originator.... :	DEKRA Certification B.V.
Master TRF..... :	Dated 2020-12-14

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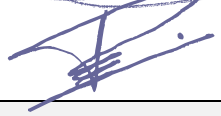
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Disclaimer: This document is controlled and has been released electronically.
Only the version on the IECEE Website is the current document version

Test item description..... :	**Fuse terminal blocks for copper conductors**
Trade Mark(s)..... :	WAGO
Manufacturer..... :	**WAGO Kontakttechnik GmbH & Co. KG**
Model/Type reference..... :	**TOPJOB S 2002**
Ratings..... :	**250 V, 6,3 A**

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

☒	**CB Testing Laboratory:**	**DEKRA Certification B.V.**	
Testing location/ address.....:		**Meander 1051, 6825 MJ Arnhem, The Netherlands**	
Tested by (name, function, signature).....:		**H.L. Schendstok** (Project Manager Industrial Safety)	
Approved by (name, function, signature)...:		**F.S. Strikwerda** (Project Manager Industrial Safety)	
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address.....:			
Tested by (name + signature) .....:			
Witnessed by (name, function, signature)..:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Witnessed by (name, function, signature)..:			
Approved by (name, function, signature)...:			
Supervised by (name, function, signature) :			

List of Attachments (including a total number of pages in each attachment): N/A	
Summary of testing:	
Tests performed (name of test and test clause): Complete examination All test carried out on type 2002-1811 unless otherwise stated. Type 2004-0911 is covered by type 2002-1811 2004-0911. Unless otherwise stated This Test Report replaces test Report 2191639.52 issued on 2016-06-28 and 2193799.52 issued on 2016-10-28, due to the fact that types (2002-1611, -1612, -1614, -1811, -1812, -1814, -1911, -1912, -1914, -1711, -0911, -0912, -0914, -2611, -2612, -2614/1000-867) are added. Temperature rise and short-circuit test were carried out at the LED unit 120 V. Project 2235367.52 Update to add new suffix /000.001, to indicate the color green. No tests were considered necessary. Project 2259248.51 This Test report replaces Test report 2235367.52 issued on 2019-03-22, due to the fact that new types 2002-16xx, 2002-17xx und 2002-18xx are added. No tests were considered necessary	Testing location: DEKRA Certification B.V. Meander 1051, 6825 MJ Arnhem, The Netherlands

Summary of compliance with National Differences (List of countries addressed): N/A

☒ **The product fulfils the requirements of EN 60947-7-3: 2009.**

Statement concerning the uncertainty of the measurement systems used for the tests
(may be required by the product standard or client)

☐ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**
Procedure number, issue date and title:

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

☒ **Statement not required by the standard used for type testing**

(Note: When IEC or ISO standard requires a statement concerning the uncertainty of the measurement systems used for tests, this should be reported above. The informative text in parenthesis should be delete in both cases after selecting the applicable option)

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



TOPJOB S 2002

400 V 2,5 mm²

Classification of installation and use.....:	
Supply Connection .....:	
Particulars: test item vs. test requirements	
- method of fixing ..... :	**mounting on top hat rail 35 mm**
- number of poles..... :	**1**
- type of clamping units..... :	**Screwless-type clamping units**
- ability to receive conductors..... :	**unprepared and prepared conductors**
- number of terminals on terminal assembly ..... :	**2 or 4**
- type of fuse-carrier ..... :	**plug-in type**
- rated power dissipation	
PV separate arrangement (W) ..……:	**1,6 W**
PV compound arrangement (W) ..……:	**1,6 W**
PVK separate arrangement (W) ……...:	**2,5 W**
PVK compound arrangement (W) ……...:	**2,5 W**
- rated cross-section (mm²)..... :	**2,5 mm² or 4 mm²**
- rated connecting capacity (mm²)..... :	**0,25 – 4 mm² rigid and flexible**
- rated insulation voltage (Ui) ..... :	**rated insulation voltage 800 V and working voltage determined by fuse-link or electronic components**
- rated impulse withstand voltage (Uimp)..... :	**4 kV (internal)** **6 kV (adjacent)**
Possible test case verdicts:	
- test case does not apply to the test object..... :	N/A
- test object does meet the requirement..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)
Testing ..... :	
Date of receipt of test item..... :	***2011-03 to 2014-11-2, 2014-1-25, 2016-04-25***
Date (s) of performance of tests ..... :	***2011-03 to 2013-11, 2014-11-25, 2015-01 and 2016-7***
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. **Throughout this report a ☐ comma / ☐ point is used as the decimal separator.**	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☒ **Yes** ☐ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies)..... :	**Wago Elwag sp.z.o.o.** **ul. Piekna 58 a** **50-506, Wroclaw, Poland** **Wago Elwag** **Innowacyjna 2** **55-330 Wroblowice, Poland** **Wago Pvt. Ltd.** **C-27, Sector-58, Phase III** **201301 Noida Uttar Pradesh, India** **Wago Electronic (Tianjin) Co. Ltd.** **No. 5 Quanhui Road** **Wu Qing Development Area** **301700 Tianjin, China** **WAGO Kontakttechnik GmbH & Co. KG** **Hansastraße 27, 32423 Minden/Westfalen** **Germany** **WAGO Kontakttechnik GmbH & Co. KG, Werk Sondershausen** **Waldstrasse 1, 99706, Sondershausen** **Germany** **WAGO Contact S.A.** **Route de l'Industrie 19, CP 168, 1564,** **Domdidier, Switzerland** **WAGO Kontakttechnik GmbH & Co. KG** **Cammer Str. 17,** **32423 Minden** **Germany**

General product information and other remarks:

See pages 32 to 35.

IEC 60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
5.1	**MARKING**		
	Fuse terminal block shall be marked with:		
	- manufacturer's name or trademark	***WAGO***	***P***
	- type designation	***TOPJOB S 2002***	***P***
	- energy flow direction (e.g. line-load or →)		***N***
5.2	The following information shall be stated by the manufacturer if applicable, e.g. in the manufacturer's data sheet, or his catalogue on the packing unit:		
	- manufacturer's claim for compliance with IEC 60 947-7-3	**IEC 60947-7-3**	***P***
	- rated cross-section	***2,5 mm² or 4 mm²***	***P***
	- rated connecting capacity	***0,25 mm² - 4 mm² rigid and flexible***	***P***
	rated insulation voltage (Ui) terminal block base rated insulation voltage (Ui) fuse carrier	***400 V*** ***250 V***	***P***
	- working voltage (range) determined by the fuselink	**or by electronic components**	***P***
	- rated impulse withstand voltage (Uimp)	***4 kV (internal)*** ***6 kV (adjacent)***	***P***
	- rated value of the power dissipation (Pv) and rated current of the fuse-link: separate arrangement compound arrangement	 ***1,6 W*** ***1,6 W***	***P***
	- rated value of the power dissipation (PvK) and rated current of the fuse-link: separate arrangement compound arrangement	 ***2,5 W*** ***2,5 W***	***P***
	- operating conditions, if different from clause 6.		
	- size of the fuse-link.	***5 x 20 mm***	***P***
5.3	Markíng on the packing unit		
	- No overload protection		***N***
	- No overload protection in compound arrangement		***N***

IEC 60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
7.	**CONSTRUCTION**		
7.1	Constructional requirements		
7.1.1	Clamping units		
7.1.7.1 60947-1	All parts of clamping units which maintain contact and carry current shall be of metal having adequate mechanical strength		***P***
	Clamping units connections shall be such that necessary contact pressure is maintained		***P***
	Clamping units shall be so constructed that the conductor is clamped between suitable surfaces without damage to the conductor and terminal		***P***
	Clamping units shall not allow the conductor to be displaced or to be displaced themselves in a manner detrimental to the operation of equipment and the insulation voltage shall not be reduced below the rated value		***P***
	Clamping units shall allow the conductor to be connected by means ensuring that a reliable mechanical linkage and electrical contact is properly maintained		***P***
	Clamping units shall be able to withstand the forces that can be applied through the connected conductors		***P***
	Contact pressure is not transmitted through insulation materials		***P***
7.1.2	Mounting		
	Terminal blocks shall be provided with means that allow them to be securely attached to a rail or a mounting surface (see 8.3.2)		***P***
7.1.3	Clearances and creepage distances		
	Clearances and creepage distances are designed for overvoltage category III and pollution degree 3		***P***

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Clause	Requirement – Test	Result - Remark	Verdict
	Clearances and creepage distances are checked when assembled for normal use, e.g. fuse carrier no.3 or no. 6 is inserted		***N***
	Conductor type and conductor cross-section	***rigid 4 mm²***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***35 mm***	—
	a) Functional insulation		
	- insulation between live parts with different potential		***P***
	- insulation between live parts of adjacent fuse terminal blocks of same series and size		***P***
	b) Basic insulation		
	- insulation between live parts and fixing support		***P***
	Clearances	***(internal)*** ***(adjacent)***	
	Case B (mm) ..... : Case A (mm) ..... : Measured (mm) ..... :	***1,2 mm*** ***2 mm*** ***3,0 mm*** ***5,5 mm*** ***>3,26 mm*** ***>10 mm***	***P***
	Rated impulse withstand voltage	***4 kV*** ***6 kV***	***P***
	Creepage distances: ***(internal)***		
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***250 V***	—
	- minimum creepage distances (mm) ..... :	***3,2 mm***	—
	- measured creepage distances (mm) ..... :	***> 3,26 mm***	—
	Creepage distances: ***(adjacent)***		
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***400 V***	—
	- minimum creepage distances (mm) ..... :	***5 mm***	—
	- measured creepage distances (mm) ..... :	***> 7,7 mm***	—
7.1.4	Terminal identification and marking:		

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Clause	Requirement – Test	Result - Remark	Verdict
	- terminal intended exclusively for the neutral conductor		***P***
	- other terminals		***P***
	- terminal blocks shall have provision, or at least space, for identification marks or numbers for each terminal or terminal assembly to be related to the circuit of which it is to form a part		***P***
7.1.5	Void		
7.1.6	Rated cross-section and rated connecting capacity		
	Terminal blocks are so designed that conductors of the rated cross-section and/or the rated connecting capacity can be accepted	***0,25 mm – 4 mm² rigid and flexible***	***P***
7.1.7	Void		
7.1.8	Actuating conditions		
	Live parts of a fuse terminal block are not accessible when it is assembled, installed and operated under normal conditions		***P***
	Safety from finger touch of live parts of the fuse-carrier is ensured during replacement of the fuse-link		***P***
8	**TESTS**		
8.3	Verification of mechanical characteristics		
8.3.2	Attachment of the terminal block on its support		
	mounting rail ..... :	***Top hat rail 35 mm***	—
	Tighting torque (Nm) ..... :	***-***	—
	steel pin diameter (mm) ..... :	***1 mm***	—
	force (N) ..... :	***1 N***	—
	During the test, no terminal block shall work free from its rail or support, nor suffer any other damage		***P***
8.3.3	Mechanical properties of clamping units of a fuse terminal block		
8.3.3.1	Testing of mechanical strength of clamping units		

IEC 60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
8.2.4.2 60947-1	Mechanical strength of clamping units		
	rated cross-section of a rigid conductor (mm²) ... :	***2,5 mm² and 4 mm²***	—
	diameter of thread (mm) ..... :	**-**	—
	torque (Nm) ..... :	**-**	—
	5 times on 2 clamping units at the centre terminal block out of 5 terminal blocks		***P***
8.3.3.2	Testing for damage to and accidental loosening of conductor (flexion test)		
8.3.3.3	Pull out test		
	conductor of the smallest cross-section (mm²) ... :	***0,25 mm² rigid and flexible***	—
	number of conductor of the smallest cross-section ..... :	***1***	—
	diameter of bushing hole (mm) ..... :	***6,4 mm***	—
	height between the equipment and the platen (mm) ..... :	***260 mm***	—
	mass at the conductor(s) (kg) ..... :	***0,3 kg***	—
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	Pull-out test		
	force (N) ..... :	***10 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	conductor of the rated cross-section (mm²) ..... :	***2,5 mm² rigid and flexible***	—
	number of conductor of the rated cross-section .. :	***1***	—
	diameter of bushing hole (mm) ..... :	***9,5 mm***	—
	height between the equipment and the platen (mm) ..... :	***280 mm***	—
	mass at the conductor(s) (kg) ..... :	***0,7 kg***	—
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	Pull-out test		
	force (N) ..... :	***50 N***	—

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Clause	Requirement – Test	Result - Remark	Verdict
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	conductor of the largest cross-section (mm²) ..... :	***4 mm² rigid and flexible***	—
	number of conductor of the largest cross-section :	***1***	—
	diameter of bushing hole (mm) ..... :	***9,5 mm***	—
	height between the equipment and the platen (mm) ..... :	***280 mm***	—
	mass at the conductor(s) (kg) ..... :	***0,9 kg***	—
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	Pull-out test		
	force (N) ..... :	***60 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	conductor of the largest or smallest cross-section (mm²) ..... :		—
	number of conductor of the largest or smallest cross-section ..... :		—
	diameter of bushing hole (mm) ..... :		—
	height between the equipment and the platen (mm) ..... :		—
	mass at the conductor(s) (kg) ..... :		—
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***N***
	Pull-out test		
	force (N) ..... :		—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***N***
8.3.3.4	Verification of rated cross section and rated connecting capacity		

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Clause	Requirement – Test	Result - Remark	Verdict
	One conductor of the two next smaller cross-sections can be unhindered and connected in each clamping unit of one terminal block (up to 35 mm²)	***1 mm²***	***P***
8.3.4	Compatibility between fuse terminal blocks and the fuse-link		
	The maximum gauge No. 1 or gauge No. 4 in accordance with table A.1 is inserted and withdrawn 10 times from the fuse-carrier	***1***	***P***
	Following each insertion of the gauge, the fuse-carrier is fitted to the terminal block base as in normal operation		***P***
	For fuse terminal blocks with screw-type fuse carrier, the fuse carrier is fitted with a torque of two-thirds of the value specified in table 1 (Nm)		***N***
	- No visible damage - No looseing of parts - In the most unfavourable position, the - minimum gauge No. 2 or gauge No. 5 will not fall from the fuse-carrier in the most unfavourable position.or fuse terminal blocks with srew-type fuse carrier, the fuse carrier is fitted with a torque of two-thirds of the value specified in table 1 (Nm)	***2***	***P***
8.4.4	Contact resistance:		
	Measurement carried out in direct or alternating current .....:	***0,1 A DC***.	—
	rated frequency (Hz) by alternating current .....:	***-***	—
	Gauge no.2 or no. 5 inserted .....:	***2***	—
	Screw-type fuse-carrier is tightened with a torque of two-thirds of the value in table 1: ..... (Nm)		***N***
	Plug-on type or hinged-type fuse-carrier is installed as in normal use		***P***
	measuring cycle with d.c.		
	a) insertion of gauge in the fuse-holder		***P***
	b) measurement with current flowing in one direction		***P***
	c) measurement with current flowing in opposite		***P***

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Clause	Requirement – Test	Result - Remark	Verdict
	direction		
	d) removal of the gauge from the fuse-holder		***P***
	Measuring cycle with a.c.		
	a) insertion of the gauge in the fuse-holder		***N***
	b) measurement		***N***
	c) removal of the gauge from the fuse-holder		***N***
	Measuring values	See table I	***N***
	The mean value of the contact resistance shall not exceed 10 mΩ .....:	***3,35 mΩ***	***P***
	The individual value of the contact resistance shall not exceed 15 mΩ .....:		***P***
8.3.5	Mechanical strength of the connection between the terminal block base and the fuse-carrier		
8.3.5.1	Torque test on screw-type fuse-carriers		
	The fuse-carrier is equipped with the maximum gauge no. 1 or no. 4.		***N***
	The fuse-carrier was screwed five times into the terminal block with torque: (Nm)*:*		***N***
	The fuse-carrier is securely kept in the terminal block base during and after the test and show no changes impairing its normal use		***N***
8.3.5.2	Pull-out test on screw-type and bayonet-type fuse-carrier		
	The fuse-is carrier equipped with the maximum gauge no. 1 or no. 4.		***N***
	Screw-type fuse-carrier is tightened with a torque of two-thirds of the value in table A.1: (Nm)		***N***
	Axial pulling force for 1 min. To the fuse-carrier (N)		***N***
	The fuse-carrier is securely kept in the terminal block base during and after the test and show no changes impairing its normal use		***N***

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Clause	Requirement – Test	Result - Remark	Verdict
8.3.5.3	Actuating forces on plug-on type or hinged-type fuse-carriers		
	The fuse-carrier together with the maximum gauge No. 1 or gauge No. 4 was inserted in and withdrawn from the fuse-base, 10 times	***1***	***P***
	Actuating forces assigned by the manufacturer	Insertion forces: ***18*** N to ***30*** N Withdrawal forces: ***12*** N to ***18*** N assigned by the manufacturer	***P***
	The value of any individual measurement was within the limits assigned by the manufacturer	Measured insertion forces: ***18,6*** N to ***26,1*** N Measured withdrawal forces: ***12,8*** N to ***16,7*** N	***P***
	The fuse-carrier is securely kept in the terminal block base during and after the test and show no changes impairing its normal use		***P***
8.4	Verification of electrical characteristics		
8.4.3	Dielectric tests		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) ..... :	***4 mm² rigid 10 – 12 mm***	—
	- type of most unfavourable support..... :	***Top hat rail 35 mm***	—
	Dielectric test, Uimp indicated:		
	Test A		
	- Gauge no.3 or no. 6 inserted..... :	***3***	—
	- rated impulse withstand voltage (V) ..... :	***4 kV***	—
	- test Uimp (kV) ..... :	***4,8 kV***	***P***
	- rated insulation voltage (V) ..... :	***250 V***	—
	- test voltage for 60 sec (V) ..... :	**1500 V tested for 5 s** According to IEC 60947-1 A2:2014 re-testing according to 60 s is not necessary	***P***
	Test B		
	- Gauge no.1 or no. 4 inserted..... :	***1***	—
	- rated impulse withstand voltage (V) ..... :	***6***	—

IEC 60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
	- test Uimp (kV) ..... :	***7,3 kV***	***P***
	- rated insulation voltage (V) ..... :	***400 V***	—
	- test voltage for 60 sec (V) ..... :	**1890 V tested for 5 s** According to IEC 60947-1 A2:2014 re-testing according to 60 s is not necessary	***P***
8.4.4	Contact resistance:		
	Measurement carried out in direct or alternating current .....:	***0,1 A DC***.	—
	rated frequency (Hz) by alternating current .....:	**-**	—
	Gauge no.2 or no. 5 inserted .....:	***2***	—
	Screw-type fuse-carrier is tightened with a torque of two-thirds of the value in table 1: ..... (Nm)		***N***
	Plug-on type or hinged-type fuse-carrier is installed as in normal use		***P***
	measuring cycle with d.c.		
	a) insertion of gauge in the fuse-holder		***P***
	b) measurement with current flowing in one direction		***P***
	c) measurement with current flowing in opposite direction		***P***
	d) removal of the gauge from the fuse-holder		***P***
	Measuring cycle with a.c.		
	a) insertion of the gauge in the fuse-holder		***N***
	b) measurement		***N***
	c) removal of the gauge from the fuse-holder		***N***
	Measuring values	See table II	***P***
	The mean value of the contact resistance shall not exceed 10 mΩ .....:	***3,30 mΩ***	***P***
	The individual value of the contact resistance shall not exceed 15 mΩ .....:		***P***
8.4.5	Temperature rise of clamping unit		

IEC 60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
	Five terminal blocks are installed side by side with gauge no.2 or no. 5	***2***	***P***
	- test current (A) ..... :	***6,3 A***	—
	- cross-section of the conductor (mm²) ..... :	***1 mm²***	—
	- insulation colour of conductor black	***black***	***P***
	- torque (Nm) ..... :	-	—
	- temperature rise of the conductor clamping unit does not exceed 45 K	***6 K – 7 K***	***P***
8.4.6	Void		
8.4.7	Ageing test (for screwless-type fuse terminal blocks only)		
	Five adjacent terminal blocks equipped with gauge no.2 or no. 5	***2***	***P***
	- cross-section of the conductor (mm²) ..... :	***1 mm²***	—
	Maximum ambient temperature (°C) ..... :	***40 °C***	—
	Contact resistance		
	Measurement carried out in direct or alternating current .....:	***0,1 A DC***.	—
	rated frequency (Hz) by alternating current .....:	**-**	—
	Screw-type fuse-carrier is tightened with a torque of two-thirds of the value in table 1: ..... (Nm)		***N***
	Plug-on type or hinged-type fuse-carrier is installed as in normal use		***P***
	measuring cycle with d.c.		
	a) insertion of gauge in the fuse-holder		***P***
	b) measurement with current flowing in one direction		***P***
	c) measurement with current flowing in opposite direction		***P***
	d) removal of the gauge from the fuse-holder		***P***
	Measuring cycle with a.c.		
	a) insertion of the gauge in the fuse-holder		***N***
	b) measurement		***N***
	c) removal of the gauge from the fuse-holder		***N***

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Clause	Requirement – Test	Result - Remark	Verdict
	Heating cabinet is increased, in each cycle to (°C) ..... :	***40 °C***	—
	Contact resistance after 0 cycles:		
	- requirement: ≤ 15 mΩ (mΩ) ..... :	***2,70 mΩ - 5,20 mΩ***	***P***
	Voltage drop after the 24th cycle:		
	- requirement: ≤ 15 mΩ (mΩ) ..... :	***2,80 mΩ - 5,30 mΩ***	***P***
	Voltage drop after the 48th cycle		
	- requirement: ≤ 15 mΩ or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,80 mΩ - 5,40 mΩ***	***P***
	Voltage drop after the 72th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,80 mΩ - 5,40 mΩ***	***P***
	Voltage drop after the 96th cycle:		
	- requirement: ≤ 15 mΩ or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,80 mΩ - 5,50 mΩ***	***P***
	Voltage drop after the 120th cycle:		
	- requirement: ≤ 15 mΩ or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,80 mΩ - 5,70 mΩ***	***P***
	Voltage drop after the 144th cycle:		
	- requirement: ≤ 15 mΩ or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,80 mΩ - 6,10 mΩ***	***P***
	Voltage drop after the 168th cycle:		
	- requirement: ≤ 15 mΩ or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,80 mΩ - 6,30 mΩ***	***P***
	Voltage drop after the 192th cycle:		
	- requirement: ≤ 15 mΩ or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,80 mΩ - 6,40 mΩ***	***P***

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Clause	Requirement – Test	Result - Remark	Verdict
	Visual inspection show no changes impairing further use such as cracks, deformations or the like		***P***
	Pull-out test		
	force (N) ..... :	***35 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
8.5	Verification of thermal characteristics		***P***
8.5.2	Rated power dissipation		***P***
8.5.2.2	Test arrangement for the overload and short-circuit protection		
8.5.2.2.1	Separate arrangement	For derating see graphic I	***P***
	Central terminal with dummy fuse-link of the power dissipation value Pv1 (W) ..... :	***Pv 1 1,6 W***	—
	- cross-section of the conductor (mm²) ..... :	***1 mm²***	—
	- torque (Nm) ..... :	***-***	—
	hottest point of the insulating part of the fuse terminal block (TS2) max ***102,9*** K (assigned by the manufacturer)	***66,9 K***	—
	Surface of actuating element (TS1) max ***62,9*** K	***21,6 K***	***P***
8.5.2.2.2	Compound arrangement	For derating see graphic II	***P***
	Five terminal blocks shall be installed on a support as in normal use.		***P***
	- cross-section of the conductor (mm²) :	***1 mm²***	—
	- torque (Nm) ..... :	***-***	—
	The fuse terminal blocks shall be equipped with dummy fuse-links of the maximum power dissipation value Pv2 and central terminal with dummy fuse-link of the power dissipation value Pv1 (W)……..:	***Pv1 1,6 W*** ***Pv2 0,7 W***	—
	hottest point of the insulating part of the fuse terminal block (TS2) max ***102,3*** K	***84,8 K***	—

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Clause	Requirement – Test	Result - Remark	Verdict
	(assigned by the manufacturer)		
	Surface of actuating element (TS1) max ***62,3*** K	***37,0 K***	***P***
8.5.2.3	Test arrangement for exclusive short-circuit protection		
8.5.2.3.1	Separate arrangement	For derating see graphic III	***P***
	Central terminal with dummy fuse-link of the power dissipation value Pv2 (W) ..... :	***Pv2 1 W***	—
	- cross-section of the conductor (mm²) ..... :	***1 mm²***	—
	- torque (Nm) ..... :	***-***	—
	hottest point of the insulating part of the fuse terminal block (TS2) max ***102,9*** K (assigned by the manufacturer)	***36,4 K***	—
	Surface of actuating element (TS1) max ***62,9*** K	***13,3 K***	***P***
8.5.2.3.2	Compound arrangement	For derating see graphic IV	***P***
	Five terminal blocks shall be installed on a support as in normal use.		
	- cross-section of the conductor (mm²).....:	***1 mm²***	—
	- torque (Nm)..... :	***-***	—
	The fuse terminal blocks shall be equipped with dummy fuse-links of the maximum power dissipation value Pv2 (W) ……..……:	***Pv2 1 W***	—
	hottest point of the insulating part of the fuse terminal block (TS2) max ***102,8*** K (assigned by the manufacturer)	***73,3 K***	—
	Surface of actuating element (TS1) max ***62,8*** K	***35,7 K***	***P***
8.5.3	Durability		

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Clause	Requirement – Test	Result - Remark	Verdict
	Fuse terminal blocks shall be resistant to heat and mechanical stresses which are liable to occur in normal use		***P***
	The fuse terminal block shall be subjected to the test for separate arrangement according to 8.5.2.2.1 or 8.5.2.3.1, as applicable.		***P***
	The test shall be carried out continuously over a period of 168 h.		***P***
8.4.3	Dielectric tests		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) ..... :	***4 mm² rigid 10 – 12 mm***	—
	- type of most unfavourable support..... :	***Top hat rail 35 mm***	—
	Dielectric test, Uimp indicated:		
	Test A		
	- Gauge no.3 or no. 6 inserted..... :	***3***	—
	- rated impulse withstand voltage (V) ..... :	***4 kV***	—
	- test Uimp (kV) ..... :	***4,8 kV***	***P***
	- rated insulation voltage (V) ..... :	***250 V***	—
	- test voltage for 5 sec (V) ..... :	***1500 V***	***P***
	Test B		
	- Gauge no.1 or no. 4 inserted..... :	***1***	—
	- rated impulse withstand voltage (V) ..... :	***6 kV***	—
	- test Uimp (kV) ..... :	***7,3 kV***	***P***
	- rated insulation voltage (V) ..... :	***400 V***	—
	- test voltage for 5 sec (V) ..... :	***1890 V***	***P***
8.4.4	Contact resistance:		
	Measurement carried out in direct or alternating current .....:	***0,1 A DC***	—
	rated frequency (Hz) by alternating current .....:	***-***	—
	Gauge no.2 or no. 5 inserted .....:	***2***	—

IEC 60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
	Screw-type fuse-carrier is tightened with a torque of two-thirds of the value in table 1: ..... (Nm)	-	P
	Plug-on type or hinged-type fuse-carrier is installed as in normal use		P
	measuring cycle with d.c.		
	a) insertion of gauge in the fuse-holder		P
	b) measurement with current flowing in one direction		P
	c) measurement with current flowing in opposite direction		P
	d) removal of the gauge from the fuse-holder		P
	Measuring cycle with a.c.		
	a) insertion of the gauge in the fuse-holder		N
	b) measurement		N
	c) removal of the gauge from the fuse-holder		N
	Measuring values	See table III	N
	The mean value of the contact resistance shall not exceed 10 mΩ .....:	*3,37 mΩ*	P
	The individual value of the contact resistance shall not exceed 15 mΩ .....:		P
8.3.4	Compatibility between fuse terminal blocks and the fuse-link		
	The maximum gauge No. 1 or gauge No. 4 in accordance with table A.1 is inserted and withdrawn 10 times from the fuse-carrier	*1*	P
	Following each insertion of the gauge, the fuse-carrier is fitted to the terminal block base as in normal position		P
	For fuse terminal blocks with screw-type fuse carrier, the fuse carrier is fitted with a torque of two-thirds of the value specified in table 1 (Nm)		P

IEC 60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
	- No visible damage - No looseing of parts - In the most unfavourable position, the - minimum gauge No. 2 or gauge No. 5 is not fall from the fuse-carrier in the most unfavourable position.or fuse terminal blocks with screw-type fuse carrier, the fuse carrier is fitted with a torque of two-thirds of the value specified in table 1 (Nm)	***2***	***P***
8.4.4	Contact resistance:		
	Measurement carried out in direct or alternating current .....:	***0,1 A DC***	—
	rated frequency (Hz) by alternating current .....:	***-***	—
	Gauge no.2 or no. 5 inserted .....:	***2***	—
	Screw-type fuse-carrier is tightened with a torque of two-thirds of the value in table 1: ..... (Nm)	***-***	***N***
	Plug-on type or hinged-type fuse-carrier is installed as in normal use		***P***
	measuring cycle with d.c.		
	a) insertion of gauge in the fuse-holder		
	b) measurement with current flowing in one direction		***P***
	c) measurement with current flowing in opposite direction		***P***
	d) removal of the gauge from the fuse-holder		***P***
	Measuring cycle with a.c.		***P***
	a) insertion of the gauge in the fuse-holder		***N***
	b) measurement		***N***
	c) removal of the gauge from the fuse-holder		***N***
	Measuring values	**See table IV**	***P***
	The mean value of the contact resistance shall not exceed 10 mΩ .....:	***3,40 mΩ***	***P***
	The individual value of the contact resistance shall not exceed 15 mΩ .....:		***P***
8.5.4	Needle flame test		

IEC 60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
	Before the test, the terminal blocks are stored for 24 h in an atmosphere having a temperature between 15°C and 35°C and a relative humidity between 45% and 75%		***P***
	The flame is applied for 10s. For insulation walls <1 mm and/or an area <100 mm², the flame is applied for 5 s.		***P***
	The terminal blocks are considered to have passed the test if the duration of burning is < 30s in case of ignition. Moreover, the tissue paper on the pinewood board shall not ignite if burning or glowing particles fall from the terminal block.		***P***
8.6	Verification of EMC characteristics		
	Subclause 8.4 of EN 60947-1 applies with the following addition		***N***
8.6.1	Immunity		
	Terminal blocks within the scope of this standard are not sensitive of electromagnetic disturbances and therefore no immunity tests are necessary.		***N***
8.6.2	Emission		
	Terminal blocks within the scope of this standard do not generate electromagnetic disturbances and therefore no emission tests are necessary.		***N***

Table I: contact resistance after compatibility between fuse terminal blocks and fuse-links, clause 8.3.4

cycle	sample 1		sample 2		sample 3		sample 4		sample 5	
	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mVΩ)
1	***3,51***	***3,32***	***3,34***	***3,39***	***3,28***	***3,35***	***3,17***	***3,21***	***3,41***	***3,37***
2	***3,57***	***3,56***	***3,39***	***3,25***	***3,35***	***3,38***	***3,24***	***3,28***	***3,28***	***3,40***
3	***3,48***	***3,52***	***3,26***	***3,30***	***3,29***	***3,30***	***3,32***	***3,39***	***3,37***	***3,38***
4	***3,37***	***3,42***	***3,35***	***3,37***	***3,42***	***3,41***	***3,31***	***3,38***	***3,42***	***3,48***
5	***3,41***	***3,40***	***3,39***	***3,38***	***3,46***	***3,49***	***3,26***	***3,25***	***3,46***	***3,49***

Table II: contact resistance, clause 8.4.4

cycle	sample 1		sample 2		sample 3		sample 4		sample 5	
	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)
1	***3,41***	***3,48***	***3,27***	***3,29***	***3,56***	***3,50***	***3,42***	***3,40***	***3,29***	***3,21***
2	***3,46***	***3,42***	***3,29***	***3,25***	***3,48***	***3,42***	***3,38***	***3,36***	***3,28***	***3,26***
3	***3,38***	***3,36***	***3,35***	***3,32***	***3,52***	***3,56***	***3,35***	***3,30***	***3,30***	***3,34***
4	***3,35***	***3,30***	***3,30***	***3,28***	***3,54***	***3,55***	***3,39***	***3,36***	***3,32***	***3,27***
5	***3,30***	***3,28***	***3,26***	***3,26***	***3,58***	***3,60***	***3,42***	***3,40***	***3,27***	***3,25***

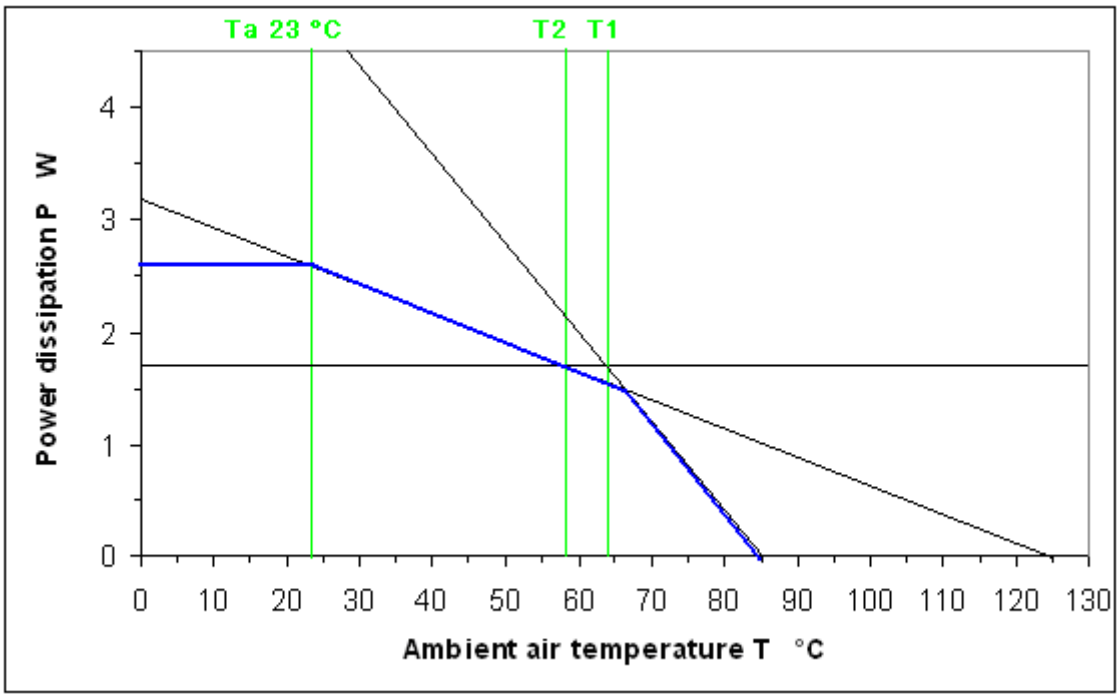
Table III: contact resistance after durability, clause 8.5.3

cycle	sample 1		sample 2		sample 3		sample 4		sample 5	
	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)
1	***3,18***	***3,20***	***3,37***	***3,35***	***3,41***	***3,38***	***3,40***	***3,38***	***3,32***	***3,36***
2	***3,28***	***3,26***	***3,42***	***3,40***	***3,48***	***3,36***	***3,42***	***3,40***	***3,32***	***3,34***
3	***3,24***	***3,25***	***3,48***	***3,46***	***3,46***	***3,42***	***3,46***	***3,44***	***3,36***	***3,39***
4	***3,26***	***3,24***	***3,39***	***3,36***	***3,40***	***4,42***	***3,50***	***3,52***	***3,30***	***3,28***
5	***3,32***	***3,30***	***3,40***	***3,42***	***3,40***	***3,48***	***3,52***	***3,54***	***3,28***	***3,26***

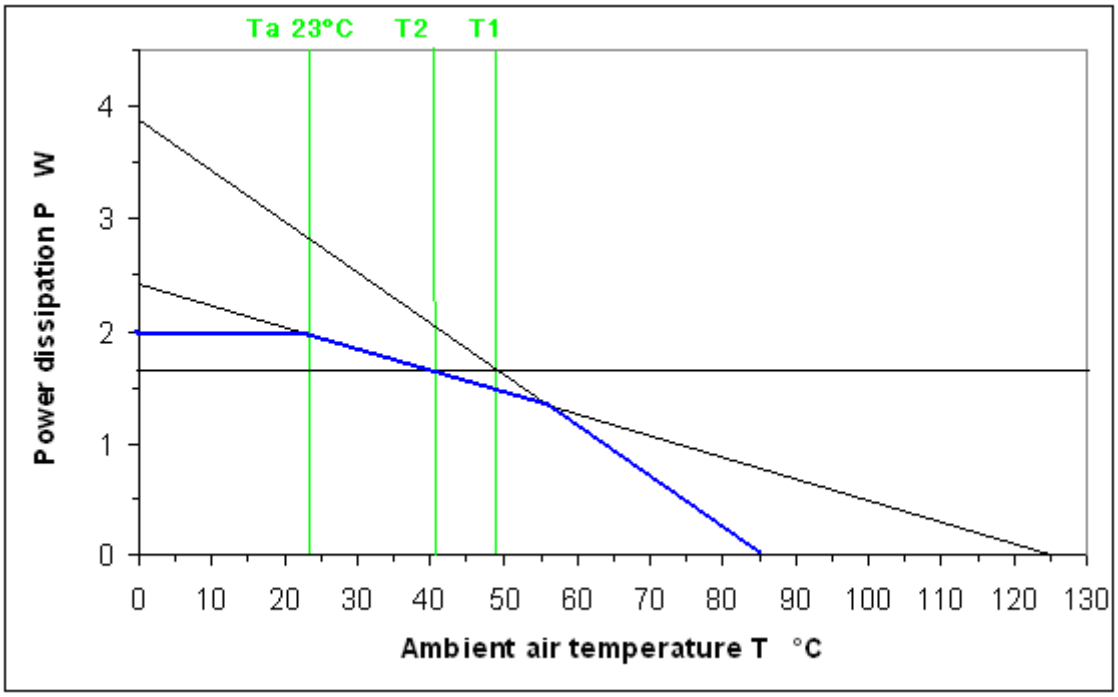
Table IV: compatibility between fuse terminal block and fuse link after durability, clause 8.5.3

cycle	sample 1		sample 2		sample 3		sample 4		sample 5	
	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)
1	***3,61***	***3,58***	***3,18***	***3,22***	***3,28***	***3,32***	***3,42***	***3,38***	***3,41***	***3,47***
2	***3,68***	***3,58***	***3,21***	***3,25***	***3,26***	***3,34***	***3,40***	***3,36***	***3,46***	***3,50***
3	***3,60***	***3,59***	***3,27***	***3,24***	***3,25***	***3,27***	***3,43***	***3,40***	***3,50***	***3,54***
4	***3,58***	***3,57***	***3,28***	***3,32***	***3,21***	***3,18***	***3,47***	***3,45***	***3,51***	***3,46***
5	***3,56***	***3,54***	***3,26***	***3,33***	***3,26***	***3,21***	***3,49***	***3,41***	***3,44***	***3,48***

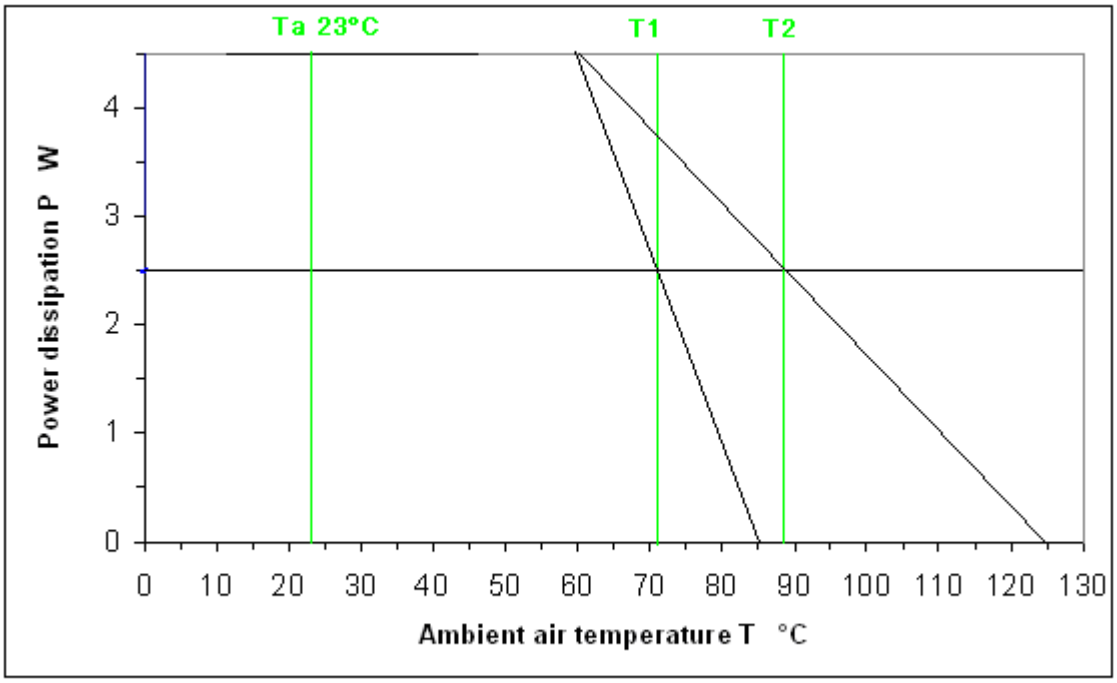
Graphic I overload and short-circuit protection



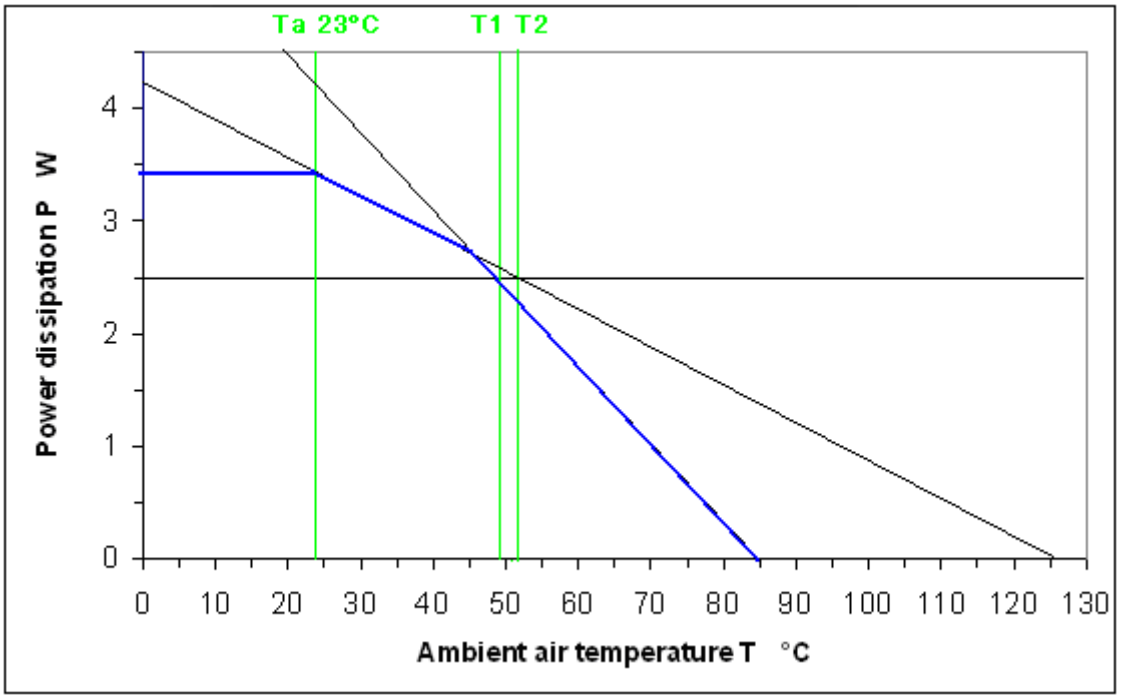
Graphic II overload and short-circuit protection



Graphic III for exclusive short-circuit protection



Graphic IV for exclusive short-circuit protection



Additional test for terminal blocks provided with indicator lights

Construction:
The indicator light (LED) is not removable.
The power dissipation in normal use in the series resistor exceed not the rated power dissipation, see table below.

Type	*Rated voltage (V)*	*Power dissipation (W)*	
		DC	*AC*
2004-0911/1000-0541	*24 V*	*0,005*	*-*
2004-0911/1000-0542	*48 V*	*0,090*	*-*
2004-0911/1000-0836	*230 V*	*-*	*0,57*
2002-1611/1000-867	*120 V*	*0,143*	*0,144*

Dielectric test
The indicator light-circuit was subjected, for 1 second, to an ac voltage equal to twice the rated voltage of the indicator light. No flashover or breakdown occurs, and neither the lamp nor its resistor was defective.

type	*Rated voltage (V)*	*Test voltage (V)*
2004-0911/1000-0541	*24 V*	*48 V*
2004-0911/1000-0542	*48 V*	*96 V*
2004-0911/1000-0836	*230 V*	*460 V*
2002-1611/1000-867	*120 V*	*240 V*

Temperature-rise test (normal)
The indicator light was connected to 1,06 times the rated voltage until steady temperature was reached. The maximal measured temperature-rise.

type	*Rated voltage (V)*	*Test voltage (V)*	*Temperature-rise (K)*
2004-0911/1000-0541	*24 V*	*25,44 V*	*11 K*
2004-0911/1000-0542	*48 V*	*50,88 V*	*25,9 K*
2004-0911/1000-0836	*230 V*	*243,8 V*	*58,3 K*
2002-1611/1000-867	*120 V*	*127,2 V*	*26,4 K*

Temperature-rise test (abnormal)
The indicator light was connected to the rated voltage until steady temperature was reached. The LED was short-circuit, because the clearances and creepage distances of the indicator light are smaller than the required distances in the EN 60947-1. The maximal measured temperature-rise.

type	*Rated voltage (V)*	*Test voltage (V)*	*Temperature-rise (K)*
2004-0911/1000-0541	*24 V*	*24 V*	*13,7 K*
2004-0911/1000-0542	*48 V*	*48 V*	*25,6 K*
2004-0911/1000-0836	*230 V*	*230 V*	*43,6 K*
2002-1611/1000-867	*120 V*	*120 V*	*23,8 K*

Additional test for terminal blocks provided with indicator lights

Construction:
The indicator light (LED) is not removable.
The power dissipation in normal use in the series resistor exceed not the rated power dissipation, see table below.

type	*Rated voltage (V)*	*Power dissipation (W)*	
		DC	*AC*
2002-1981/1000-0449	*12 Vdc*	*0,0547*	*-*
2002-1981/1000-0434	*24 Vdc*	*0,1131*	*-*
2002-1981/1000-0435	*48 Vdc*	*0,2220*	
2002-1981/1000-0541	*12-30 V ac/dc*	*0,0799*	*0,0825*
2002-1981/1000-00836	*230 V ac/dc*	*0,2313*	*0,2388*
2002-1611/1000-867	*120 V ac/dc*	*0,143*	*0,144*

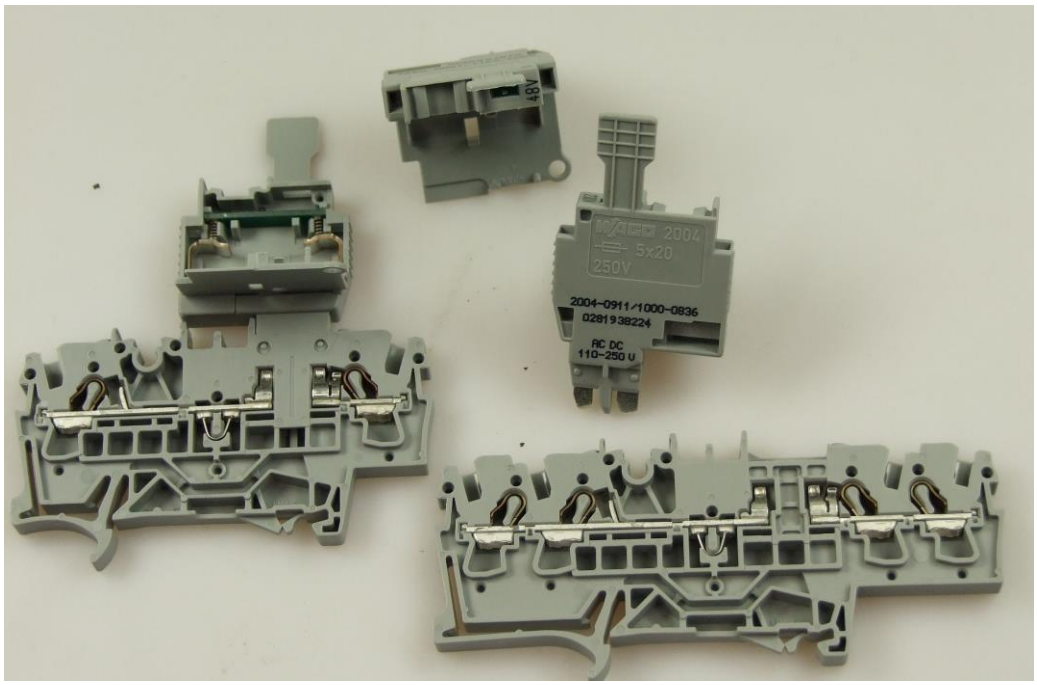
Product data: type-number overview of series 2002

product	:	terminal blocks
trade name(s)	:	WAGO
type(s)	:	TOPJOB S 2002-....
material colours	:	thermoplastic material ..../000-001 green, .../000-014 brown, .../000-015 gentian blue
stripping length	:	10 - 12 mm
rated connecting capacity	:	2,5 mm² / 4 mm² rigid and flexible
connectable conductors	:	0,25 mm² - 4 mm² rigid and flexible
method of mounting	:	for mounting on top hat rail 35 mm
conventional free air thermal current (Ith)	:	6,3 A
rated voltage	:	250 V
rated impulse withstand voltage	:	6 kV
fuse link size	:	5 x 20 mm overload and short circuit protection - separate arrangement: Pv 1,6 W - compound arrangement: Pv 1,6 W exclusive short circuit protection - separate arrangement: Pvk 2,5 W - compound arrangement: Pvk 2,5 W
type	:	2002-with suffixes -1611, -1612, -1613, -1614, -1615, -1616, -1619
description	:	two-conductor fuse terminal block with end plate, without blown fuse indication, with screwless type terminals, 1-pole
type	:	2002 with suffixes -1611/1000-..., -1612/1000-..., -1613/1000-…, -1614/1000-..., -1615/1000-…, -1616/1000-…, -1619/1000-…
description	:	two-conductor fuse terminal blocks with end plate, with blown fuse indication by LED with screwless type terminals,1-pole with suffixes -541 provided with LED 12-30 V -542 provided with LED 30-65 V -836 provided with LED 230 V -876 provided with LED 120 V

type	:	2002 with suffixes -1711, -1715, -1716, -1719, -1811, -1812, -1815, -1816, -1819, -1911, -1912
description	:	two, three or four-conductor fuse terminal block with end plate, without blown fuse indication, with screwless type terminals, 1-pole
type	:	1-pole 2002 with suffixes -1814, -1914
description	:	two-conductor fuse terminal block with end plate, without blown fuse indication, with screwless-type terminals, 1-pole
type	:	2002 with suffixes-1611, -1612, -1613, -1614, -1615, -1616, -1619, -1811, -1812, -1814, -1911, -1912, -1914
description		with suffix 0281-0503,with dummy fuse to work as disconnect terminal block and endplate
type	:	2002 with suffixes -1711/1000-..., -1712/1000-…, -1713/1000-…, -1714/1000-…, -1715/1000-…, -1716/1000-…, -1719/1000-…, -1811/1000..., -1812/1000-..., -1813/1000-…, -1814/1000-..., -1815/1000-…, -1816/1000-…, -1819/1000-…, -1911/1000-..., -1912/1000-..., -1914/1000
description	:	four-conductor fuse terminal blocks with blown fuse indication on by LED, with screwless type terminals, 1-pole with suffixes -541 provided with LED 12-30 V -542 provided with LED 30-65 V -836 provided with LED 230 V -867 provided with LED 120 V
type	:	2004 with suffixes -0911, -0912, -0914
description	:	fuse plug for miniature metric fuses, for connection on terminal block
type	:	2004 with suffixes -0911/1000-..., 0912/1000-..., -0914/1000-...
description	:	fuse plug for miniature metric fuses with blown fuse indication by LED, for connection on terminal block 2002-1661 and 2002-1861with suffixes -0541 provided with LED 12-30 V -0542 provided with LED 30-65 V -0836 provided with LED 230 V -0867 provided with LED 120 V
conventional free air thermal current (Ith)	:	6,3 A (fuse) 28 A (4 mm²) lower level
rated voltage	:	250 V
rated impulse withstand voltage		6 kV
fuse link size	:	5 x 20 mm overload and short circuit protection: -separate arrangement: Pv 1,6 W -compound arrangement: Pv 1,6 W exclusive short circuit protection: -separate arrangement: Pvk 2,5 W -compound arrangement: Pvk 2,5 W

type	:	2002- with suffixes -2611/1000-..., -2612/1000-..., -2614/1000-..., -2617/1000-...
description	:	two-conductor fuse terminal block with end plate, with screwless type terminals, with fuse-holder on upper deck only. 2-poles, with blown fuse indicator by LED -0541 provided with LED 12-30 V -0542 provided with LED 30-65 V -0836 provided with LED 230 V -0867 provided with LED 120 V

Article numbers may be followed by optional suffix numbers e.g. 2002-xxxx/xxxx-xxxx/xxxx-xxxx (up to 40 digits) where "x" may be any number (including characters) to represent customer numbers, printing variants, colour variants and other mechanical
variations, given for a specific end-use purpose and not affecting the electrical properties.


48V
2004
5x20
250V
2004-0911/1000-0836
0281938224
AC DC
110-250 V

ECS
European Certification System

OD ECS 040-1
ed. May 2013

Responsible CB:

DEKRA

TEST REPORT SUMMARY

Report Reference No. ..... :	**2235367.53**
Date of issue ..... :	**2019-03-22**
Tested by (name + signature) ..... :	**A.A.P.M. van Vught**
Witnessed by (name + signature) .... :	
Approved by (name + signature) ..... :	**C.C. Burger**
Supervised by (name + signature) ... :	
Testing Laboratory ..... :	**DEKRA Certification B.V.**
Address ..... :	**Meander 1051, 6825 MJ Arnhem, The Netherlands**
Testing procedure ..... :	☒ ENEC/CCA-TL ☐ IECEE-CBTL ☐ TMP ☐ WMT ☐ SMT
Testing location ..... :	**DEKRA Certification B.V.**
Address ..... :	**Meander 1051, 6825 MJ Arnhem, The Netherlands**
Applicant ..... :	**WAGO Kontakttechnik GmbH & Co. KG**
Address ..... :	**Hansastraße 27, 32423 Minden/Westfalen, Germany**
Manufacturer ..... :	**WAGO Kontakttechnik GmbH & Co. KG**
Address ..... :	**Hansastraße 27, 32423 Minden/Westfalen, Germany**
Product ..... :	**Fuse terminal blocks for copper conductors**
Model/Type reference ..... :	**TOPJOB S 2002-1681 with automotive fuse 5 A/32 V and 10 A/32 V**
Trademark ..... :	WAGO
Ratings ..... :	**2,5 mm² or 4 mm², 400 V, 6 kV**
Certification Scheme ..... :	☐ ENEC ☒ CCA ☐ Other: _____
Standard(s) ..... :	**EN 60947-7-3: 2009, in conjunction with EN 60947-1: 2007**

☒ The text of the a.m. European Standard was approved by CENELEC under the Unique Acceptance Procedure and is identical with the corresponding IEC Publication.

☐ The text of the a.m. European Standard was approved by CENELEC with agreed common modifications and is not identical with the corresponding IEC Publication.

This EN test report consists of the following parts:

☒ **IEC TRF No.: IEC60947-7-3** Report Reference No..... : **2235367.53**

☐ **CENELEC-Addendum Form No. _____** ..... **:** Report Reference No. or Annex No.. :

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Test Report issued under the responsibility of:

DEKRA

TEST REPORT
IEC 60947-7-3
Low-voltage switchgear and controlgear
Part 7: Ancillary equipment
Section Three: Safety requirements for fuse terminal blocks

Report Reference No. ..... :	**2235367.53**
Date of issue ..... :	**2019-03-22**
Total number of pages	**42**
CCA Testing Laboratory ..... :	DEKRA Certification B.V.
Address ..... :	Meander 1051, 6825 MJ, The Netherlands
Applicant's name ..... :	**WAGO Kontakttechnik GmbH & Co. KG**
Address ..... :	**Hansastraße 27, 32423 Minden/Westfalen, Germany**
Test specification:	
Standard ..... :	IEC60947-7-3:2009 (2nd Edition)
Test procedure ..... :	CB scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60947_7_3A
Test Report Form(s) Originator ..... :	DEKRA Certification B.V.
Master TRF ..... :	Dated 2009-07

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This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description ..... :	**Fuse terminal block for copper conductors**
Trade Mark ..... :	WAGO
Manufacturer ..... :	**WAGO Kontakttechnik GmbH & Co. KG**
Model/Type reference ..... :	**2002-1681 with automotive fuse 5 A/32 V and 10 A/32 V**
Ratings ..... :	**2,5 mm² or 4 mm²** **400 V, 6 kV**
Factory location ..... :	**WAGO Kontakttechnik GmbH & Co. KG** **Hansastraße, 32423 Minden/Westfalen, Germany** **See complete overview of factory locations: General product Information**

Testing procedure and testing location:	
☒ **CB Testing Laboratory**:	**DEKRA Certification B.V.**
Testing location/ address .....:	**Meander 1051, 6825 MJ, The Netherlands**
☐ **Associated CB Testing Laboratory:**	
Testing location/ address .....:	
Tested by (name + signature).....:	**A.A.P.M. van Vught**
Approved by (+ signature).....:	**C.C. Burger**
☐ Testing procedure: TMP	
Tested by (name + signature).....:	
Approved by (+ signature).....:	
Testing location/ address .....:	
☐ Testing procedure: WMT	
Tested by (name + signature).....:	
Witnessed by (+ signature).....:	
Approved by (+ signature).....:	
Testing location/ address .....:	
☐ Testing procedure: SMT	
Tested by (name + signature).....:	
Approved by (+ signature).....:	
Supervised by (+ signature) .....:	
Testing location/ address……..:	
☐ Testing procedure: RMT	
Tested by (name + signature).....:	
Approved by (+ signature).....:	
Supervised by (+ signature)…….:	
Testing location/ address .....:	

Summary of testing:	
Tests performed (name of test and test clause): **Complete examination** **All test carried out on type 2002-1681 with fuse 5 A/32 V and 10 A/32 V unless otherwise stated** **According to the manufacturers instruction the continuous current of these fuse types are 80% of the current a.e (80% 10A = 8 A)** **This TRF replaces TRF 2191639.53 dated 2016-6-21** **Project 2198985.00** **This update replaces test Report 2191639.53 issued on 2016-6-21 and 2193799.50 issued on 2016-10-28.** **Project 2235367.50** **Update to add new suffix /000.001, to indicate the color green.** **No tests were considered necessary.**	**Testing location:** **DEKRA Certification B.V.** **Meander 1051, 6825 MJ,** **The Netherlands**
Summary of compliance with National Differences: N/A	
Copy of marking plate WAGO ***2002-1681*** ***2,5 mm²*** ***400 V***	

Test item particulars..... :	**Fuse terminal block for copper conductors**
Classification of installation and use..... :	
Supply Connection..... :	
..... :	
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement .....:	P (Pass)
- test object does not meet the requirement .....:	F (Fail)
Testing .....:	
Date of receipt of test item.....:	***2009-06, 2013-02 and 2014-12-05***
Date (s) of performance of tests.....:	***2009-06, 2013-05 and 2015-01***

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a comma (point) is used as the decimal separator.

General product information: Factory locations:

Wago Elwag sp.z.o.o.
ul. Piekna 58 a
50-506, Wroclaw, Poland

Wago Elwag
Innowacyjna 2
55-330 Wroblowice, Poland

Wago Pvt. Ltd.
C-27, Sector-58, Phase III
201301 Noida Uttar Pradesh, India

Wago Electronic (Tianjin) Co. Ltd.
No. 5 Quanhui Road
Wu Qing Development Area
301700 Tianjin, China

WAGO Kontakttechnik GmbH & Co. KG
Hansastraße 27, 32423 Minden/Westfalen
Germany

WAGO Kontakttechnik GmbH & Co. KG, Werk Sondershausen
Waldstraße 1, 99706, Sondershausen
Germany

WAGO Contact S.A.
Route de l'Industrie 19, CP 168, 1564, Domdidier, Switzerland

Particulars: test item vs. test requirements	
- method of fixing.....:	**Mounting on top hat rail 35 mm**
- number of poles.....:	**1 pole**
- type of clamping units.....:	**screwless-type terminal**
- ability to receive conductors .....:	**unprepared and prepared conductors**
- number of terminals on terminal assembly.....:	**2 or 4**
- type of fuse-carrier.....:	**plug-in type**
- rated power dissipation PV separate arrangement (W) ....:	**W**
PV compound arrangement (W) .....:	**W**
PVK separate arrangement (W) .....:	**W (10 A fuse 32 V)**
PVK compound arrangement (W) .....:	**W (5 A fuse 32 V)**
- rated cross-section (mm²).....:	**2,5 mm² or 4 mm²**
- rated connecting capacity (mm²).....:	**0,25 – 4 mm² rigid and flexible**
- rated insulation voltage (Ui).....:	**rated insulation voltage 400 V** **working voltage determined by fuse-link max. 32 V**
- rated impulse withstand voltage (Uimp) .....:	**4 kV (internal)**
	6 kV (adjacent)

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Clause	Requirement – Test	Result - Remark	Verdict

5.1	**MARKING**		
	Fuse terminal block shall be marked with:		
	- manufacturer's name or trademark	***WAGO***	***P***
	- type designation	***2002-1681 with fuse 5 A/32 V and 10 A/32 V***	***P***
	- energy flow direction (e.g. line-load or →)		***N***
5.2	The following information shall be stated by the manufacturer if applicable, e.g. in the manufacturer's data sheet, or his catalogue on the packing unit:		
	- manufacturer's claim for compliance with EN 60 947-7-3	***EN 60 947-7-3***	***P***
	- rated cross-section	***2,5 mm² or 4 mm²***	***P***
	- rated connecting capacity	***0,08 mm² - 4 mm² rigid and flexible***	***P***
	rated insulation voltage (Ui) terminal block base rated insulation voltage (Ui) fuse carrier	***400 V***	***P***
	- working voltage (range) determined by the fuselink	***Max. 32 V fuselink***	***P***
	- rated impulse withstand voltage (Uimp)	***6 kV***	***P***
	- rated value of the power dissipation (Pv) and rated current of the fuse-link: separate arrangement compound arrangement		***N***
	- rated value of the power dissipation (PvK) and rated current of the fuse-link: separate arrangement compound arrangement	***Non standard dummy fuse-link***	***P***
	- operating conditions, if different from clause 6.		***N***
	- size of the fuse-link.	***automotive fuse***	***P***
5.3	Marking on the packing unit		
	- No overload protection		***P***

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Clause	Requirement – Test	Result - Remark	Verdict
	- No overload protection in compound arrangement		***N***
7.	**CONSTRUCTION**		
7.1	Constructional requirements		***P***
7.1.1	Clamping units		
7.1.7.1 60947-1	All parts of clamping units which maintain contact and carry current shall be of metal having adequate mechanical strength		***P***
	Clamping units connections shall be such that necessary contact pressure is maintained		***P***
	Clamping units shall be so constructed that the conductor is clamped between suitable surfaces without damage to the conductor and terminal		***P***
	Clamping units shall not allow the conductor to be displaced or to be displaced themselves in a manner detrimental to the operation of equipment and the insulation voltage shall not be reduced below the rated value		***P***
	Clamping units shall allow the conductor to be connected by means ensuring that a reliable mechanical linkage and electrical contact is properly maintained		***P***
	Clamping units shall be able to withstand the forces that can be applied through the connected conductors		***P***
	Contact pressure is not transmitted through insulation materials		***P***
7.1.2	Mounting		
	Terminal blocks shall be provided with means that allow them to be securely attached to a rail or a mounting surface (see 8.3.2)		***P***
7.1.3	Clearances and creepage distances		

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Clause	Requirement – Test	Result - Remark	Verdict
	Clearances and creepage distances are designed for overvoltage category III and pollution degree 3		***P***
	Clearances and creepage distances are checked when assembled for normal use, e.g. fuse carrier no.3 or no. 6 is inserted	***Non standard dummy fuse-link***	***P***
	Conductor type and conductor cross-section	***rigid 4 mm²***	—
	Conductor end length (mm)	***10 - 12 mm***	—
	Type of support	***Top hat rail 35 mm***	—
	a) Functional insulation		
	- insulation between live parts with different potential		***P***
	- insulation between live parts of adjacent fuse terminal blocks of same series and size		***P***
	b) Basic insulation		
	- insulation between live parts and fixing support		***P***
	Clearances	***(internal)*** ***(adjacent)***	
	Case B (mm) ..... : Case A (mm) ..... : Measured (mm) ..... :	***1,2 mm*** ***2 mm*** ***3,0 mm*** ***5,5 mm*** ***>3,88 mm*** ***>5,5 mm***	***P***
	Rated impulse withstand voltage	***4 kV*** ***6 kV***	***P***
	Creepage distances: ***(internal)***		
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***32 V***	—
	- minimum creepage distances (mm) ..... :	***1,3 mm***	—
	- measured creepage distances (mm) ..... :	***> 3,88 mm***	—
	Creepage distances: ***(adjacent)***		
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—

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Clause	Requirement – Test	Result - Remark	Verdict
	- rated insulation voltage Ui (V) ..... :	***400 V***	—
	- minimum creepage distances (mm) ..... :	***5 mm***	—
	- measured creepage distances (mm) ..... :	***> 5,5 mm***	—
7.1.4	Terminal identification and marking:		
	- terminal intended exclusively for the neutral conductor		***P***
	- other terminals		***P***
	- terminal blocks shall have provision, or at least space, for identification marks or numbers for each terminal or terminal assembly to be related to the circuit of which it is to form a part		***P***
7.1.5	Void		
7.1.6	Rated cross-section and rated connecting capacity		
	Terminal blocks are so designed that conductors of the rated cross-section and/or the rated connecting capacity can be accepted	***0,25 mm – 4 mm² rigid and flexible***	***P***
7.1.7	Void		
7.1.8	Actuating conditions		
	Live parts of a fuse terminal block are not accessible when it is assembled, installed and operated under normal conditions		***P***
	Safety from finger touch of live parts of the fuse-carriers ensured during replacement of the fuse-link		***P***
8	**TESTS**		
8.3	Verification of mechanical characteristics		
8.3.2	Attachment of the terminal block on its support		
	mounting rail ..... :	***Top hat rail 35 mm***	—
	Tighting torque (Nm) ..... :	***-***	—
	steel pin diameter (mm) ..... :	***1 mm***	—

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Clause	Requirement – Test	Result - Remark	Verdict
	force (N) ..... :	***1 N***	—
	During the test, no terminal block shall work free from its rail or support, nor suffer any other damage		***P***
8.3.3	Mechanical properties of clamping units of a fuse terminal block		
8.3.3.1	Testing of mechanical strength of clamping units		
8.2.4.2 60947-1	Mechanical strength of clamping units		
	rated cross-section of a rigid conductor (mm²) ... :	***2,5 mm² and 4 mm²***	—
	diameter of thread (mm) ..... :	***-***	—
	torque (Nm) ..... :	***-***	—
	5 times on 2 clamping units at the centre terminal block out of 5 terminal blocks		***P***
8.3.3.2	Testing for damage to and accidental loosening of conductor (flexion test)		
8.3.3.3	Pull out test		
	conductor of the smallest cross-section (mm²) ... :	***0,25 mm² rigid and flexible***	—
	number of conductor of the smallest cross-section ..... :	***1***	—
	diameter of bushing hole (mm) ..... :	***6,4 mm***	—
	height between the equipment and the platen (mm) ..... :	***260 mm***	—
	mass at the conductor(s) (kg) ..... :	***0,3 kg***	—
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	Pull-out test		
	force (N) ..... :	***10 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	conductor of the rated cross-section (mm²) ..... :	***2,5 mm² rigid and flexible***	—
	number of conductor of the rated cross-section . :	***1***	—
	diameter of bushing hole (mm) ..... :	***9,5 mm***	—

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Clause	Requirement – Test	Result - Remark	Verdict
	height between the equipment and the platen (mm) ..... :	***280 mm***	—
	mass at the conductor(s) (kg) ..... :	***0,7 kg***	—
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	Pull-out test		
	force (N) ..... :	***50 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	conductor of the largest cross-section (mm²) ..... :	***4 mm² rigid and flexible***	—
	number of conductor of the largest cross-section :	***1***	—
	diameter of bushing hole (mm) ..... :	***9,5 mm***	—
	height between the equipment and the platen (mm) ..... :	***280 mm***	—
	mass at the conductor(s) (kg) ..... :	***0,9 kg***	—
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	Pull-out test		
	force (N) ..... :	***60 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	conductor of the largest or smallest cross-section (mm²) ..... :		—
	number of conductor of the largest or smallest cross-section ..... :		—
	diameter of bushing hole (mm) ..... :		—
	height between the equipment and the platen (mm) ..... :		—
	mass at the conductor(s) (kg) ..... :		—

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Clause	Requirement – Test	Result - Remark	Verdict
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***N***
	Pull-out test		
	force (N) ..... :		—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***N***
8.3.3.4	Verification of rated cross section and rated connecting capacity		
	One conductor of the two next smaller cross-sections can be unhindered and connected in each clamping unit of one terminal block (up to 35 mm²)	***1 mm²***	***P***
8.3.4	Compatibility between fuse terminal blocks and the fuse-link		
	The maximum gauge No. 1 or gauge No. 4 in accordance with table A.1 is inserted and withdrawn 10 times from the fuse-carrier	***Non standard dummy fuse-link***	***P***
	Following each insertion of the gauge, the fuse-carrier is fitted to the terminal block base as in normal operation		***P***
	For fuse terminal blocks with screw-type fuse carrier, the fuse carrier is fitted with a torque of two-thirds of the value specified in table 1 (Nm)		***N***
	- No visible damage - No looseing of parts - In the most unfavourable position, the - minimum gauge No. 2 or gauge No. 5 will not fall from the fuse-carrier in the most unfavourable position.or fuse terminal blocks with srew-type fuse carrier, the fuse carrier is fitted with a torque of two-thirds of the value specified in table 1 (Nm)	***Non standard dummy fuse-link***	***P***
8.4.4	Contact resistance:		

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Clause	Requirement – Test	Result - Remark	Verdict
	Measurement carried out in direct or alternating current ..... :	***0,1 A DC***.	X
	rated frequency (Hz) by alternating current ... :	**-**	X
	Gauge no.2 or no. 5 inserted ..... :	***Non standard dummy fuse-link***	X
	Screw-type fuse-carrier is tightened with a torque of two-thirds of the value in table 1:..... (Nm)		***N***
	Plug-on type or hinged-type fuse-carrier is installed as in normal use		***P***
	measuring cycle with d.c.		
	a) insertion of gauge in the fuse-holder		***P***
	b) measurement with current flowing in one direction		***P***
	c) measurement with current flowing in opposite direction		***P***
	d) removal of the gauge from the fuse-holder		***P***
	Measuring cycle with a.c.		
	a) insertion of the gauge in the fuse-holder		***N***
	b) measurement		***N***
	c) removal of the gauge from the fuse-holder		***N***
	Measuring values	See table I	***N***
	The mean value of the contact resistance shall not exceed 10 mΩ ..... :	***2,78 mΩ***	***P***
	The individual value of the contact resistance shall not exceed 15 mΩ ..... :		***P***
8.3.5	Mechanical strength of the connection between the terminal block base and the fuse-carrier		
8.3.5.1	Torque test on screw-type fuse-carriers		
	The fuse-carrier is equipped with the maximum gauge no. 1 or no. 4.		***N***
	The fuse-carrier was screwed five times into the terminal block with torque: (Nm)*:*		***N***

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Clause	Requirement – Test	Result - Remark	Verdict
	The fuse-carrier is securely kept in the terminal block base during and after the test and show no changes impairing its normal use		***N***
8.3.5.2	Pull-out test on screw-type and bayonet-type fuse-carrier		
	The fuse-is carrier equipped with the maximum gauge no. 1 or no. 4.		***N***
	Screw-type fuse-carrier is tightened with a torque of two-thirds of the value in table A.1: (Nm)		***N***
	Axial pulling force for 1 min. to the fuse-carrier (N)		***N***
	The fuse-carrier is securely kept in the terminal block base during and after the test and show no changes impairing its normal use		***N***
8.3.5.3	Actuating forces on plug-on type or hinged-type fuse-carriers		
	The fuse-carrier together with the maximum gauge No. 1 or gauge No. 4 was inserted in and withdrawn from the fuse-base, 10 times	***Non standard dummy fuse-link***	***P***
	Actuating forces assigned by the manufacturer	Insertion forces: ***10*** N to ***25*** N Withdrawal forces: ***5*** N to ***15*** N assigned by the manufacturer	***P***
	The value of any individual measurement was within the limits assigned by the manufacturer	Measured insertion forces: ***13,8*** N to ***23,8*** N Measured withdrawal forces: ***8,3*** N to ***14,7*** N	***P***
	The fuse-carrier is securely kept in the terminal block base during and after the test and show no changes impairing its normal use		***P***
8.4	Verification of electrical characteristics		
8.4.3	Dielectric tests		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) ..... :	***4 mm² rigid 10 - 12 mm***	—

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Clause	Requirement – Test	Result - Remark	Verdict
	- type of most unfavourable support ..... :	***Top hat rail 35 mm***	—
	Dielectric test, Uimp indicated:		
	Test A ***(internal)***		
	- Gauge no.3 or no. 6 inserted..... :	***10 A fuse without melt wire***	—
	- rated impulse withstand voltage (V) ..... :	***4 kV***	—
	- test Uimp (kV) ..... :	***4,8 kV***	***P***
	- rated insulation voltage (V) ..... :	***32 V***	—
	- test voltage for 5 sec (V) ..... :	***1000 V***	***P***
	Test B ***(adjacent)***		
	- Gauge no.1 or no. 4 inserted..... :	***10 A fuse with melt wire***	—
	- rated impulse withstand voltage (V) ..... :	***6 kV***	—
	- test Uimp (kV) ..... :	***7,3 kV***	***P***
	- rated insulation voltage (V) ..... :	***400 V***	—
	- test voltage for 60 sec (V) ..... :	**1890 V tested for 5 s** According to IEC 60947-1 A2:2014 re-testing according to 60 s is not necessary	***P***
8.4.4	Contact resistance:		
	Measurement carried out in direct or alternating current ..... :	***0,1 A DC***.	X
	rated frequency (Hz) by alternating current ... :	**-**	X
	Gauge no.2 or no. 5 inserted ..... :	***Non standard dummy fuse-link***	X
	Screw-type fuse-carrier is tightened with a torque of two-thirds of the value in table 1:..... (Nm)		***N***
	Plug-on type or hinged-type fuse-carrier is installed as in normal use		***P***
	measuring cycle with d.c.		
	a) insertion of gauge in the fuse-holder		***P***
	b) measurement with current flowing in one direction		***P***
	c) measurement with current flowing in opposite		***P***

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Clause	Requirement – Test	Result - Remark	Verdict
	direction		
	d) removal of the gauge from the fuse-holder		***P***
	Measuring cycle with a.c.		
	a) insertion of the gauge in the fuse-holder		***N***
	b) measurement		***N***
	c) removal of the gauge from the fuse-holder		***N***
	Measuring values	See table II	***P***
	The mean value of the contact resistance shall not exceed 10 mΩ ..... :	***2,65 mΩ***	***P***
	The individual value of the contact resistance shall not exceed 15 mΩ ..... :		***P***
8.4.5	Temperature rise of clamping unit		
	Five terminal blocks are installed side by side with gauge no.2 or no. 5	***Non standard dummy fuse-link (80 % In)***	***P***
	- test current (A) ..... :	***8 A***	—
	- cross-section of the conductor (mm²) ..... :	***1,5 mm²***	—
	- insulation colour of conductor black	***black***	***P***
	- torque (Nm) ..... :	***-***	—
	- temperature rise of the conductor clamping unit does not exceed 45 K	***36 K***	***P***
8.4.6	Void		
8.4.7	Ageing test (for screwless-type fuse terminal blocks only)		
	Five adjacent terminal blocks equipped with gauge no.2 or no. 5	***Non standard dummy fuse-link (80 % In)***	***P***
	- cross-section of the conductor (mm²) ..... :	***1,5 mm²***	—
	Maximum ambient temperature (°C) ..... :	***40 °C***	—
	Contact resistance		
	Measurement carried out in direct or alternating current ..... :	***0,1 A DC***.	X
	rated frequency (Hz) by alternating current ... :	***-***	***X***
	Screw-type fuse-carrier is tightened with a torque of two-thirds of the value in table 1:..... (Nm)		***N***

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Clause	Requirement – Test	Result - Remark	Verdict
	Plug-on type or hinged-type fuse-carrier is installed as in normal use		***P***
	measuring cycle with d.c.		
	a) insertion of gauge in the fuse-holder		***P***
	b) measurement with current flowing in one direction		***P***
	c) measurement with current flowing in opposite direction		***P***
	d) removal of the gauge from the fuse-holder		***P***
	Measuring cycle with a.c.		
	a) insertion of the gauge in the fuse-holder		***N***
	b) measurement		***N***
	c) removal of the gauge from the fuse-holder		***N***
	Heating cabinet is increased, in each cycle to (°C) ..... :	***40 °C***	—
	Contact resistance after 0 cycles:		
	- requirement: ≤ 15 mΩ (mΩ) ..... :	***2,6 mΩ – 3,1 mΩ***	***P***
	Voltage drop after the 24th cycle:		
	- requirement: ≤ 15 mΩ (mΩ) ..... :	***2,6 mΩ – 3,1 mΩ***	***P***
	Voltage drop after the 48th cycle		
	- requirement: ≤ 15 mΩ or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,6 mΩ – 3,1 mΩ***	***P***
	Voltage drop after the 72th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,6 mΩ – 3,1 mΩ***	***P***
	Voltage drop after the 96th cycle:		
	- requirement: ≤ 15 mΩ or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,6 mΩ – 3,1 mΩ***	***P***
	Voltage drop after the 120th cycle:		

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Clause	Requirement – Test	Result - Remark	Verdict
	- requirement: ≤ 15 mΩ or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,6 mΩ – 3,1 mΩ***	***P***
	Voltage drop after the 144th cycle:		
	- requirement: ≤ 15 mΩ or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,6 mΩ – 3,0 mΩ***	***P***
	Voltage drop after the 168th cycle:		
	- requirement: ≤ 15 mΩ or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,6 mΩ – 3,1 mΩ***	***P***
	Voltage drop after the 192th cycle:		
	- requirement: ≤ 15 mΩ or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,6 mΩ – 3,0 mΩ***	***P***
	Visual inspection show no changes impairing further use such as cracks, deformations or the like		***P***
	Pull-out test		
	force (N) ..... :	***40 N***	***—***
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
8.5	Verification of thermal characteristics		***P***
8.5.2	Rated power dissipation		***P***
8.5.2.2	Test arrangement for the overload and short-circuit protection		
8.5.2.2.1	Separate arrangement	For derating see graphic I	***N***
	Central terminal with dummy fuse-link of the power dissipation value Pv1 (W) ..... :		—
	- cross-section of the conductor (mm²) ..... :		—
	- torque (Nm) ..... :		—
	hottest point of the insulating part of the fuse terminal block (TS2) max K (assigned by the manufacturer)		—
	Surface of actuating element (TS1) max 63 K		***N***

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Clause	Requirement – Test	Result - Remark	Verdict
8.5.2.2.2	Compound arrangement	For derating see graphic II	***N***
	Five terminal blocks shall be installed on a support as in normal use.		***N***
	- cross-section of the conductor (mm²) :		—
	- torque (Nm) ..... :		—
	The fuse terminal blocks shall be equipped with dummy fuse-links of the maximum power dissipation value Pv2 and central terminal with dummy fuse-link of the power dissipation value Pv1 (W)…… .:		—
	hottest point of the insulating part of the fuse terminal block (TS2) max K (assigned by the manufacturer)		—
	Surface of actuating element (TS1) max 63 K		***N***
8.5.2.3	Test arrangement for exclusive short-circuit protection		
8.5.2.3.1	Separate arrangement	For derating see graphic III	***P***
	Central terminal with dummy fuse-link of the power dissipation value Pv2 (W) ..... :	***Non standard dummy fuse-link 8 A (80% 10 A)***	—
	- cross-section of the conductor (mm²) ..... :	***1,5 mm²***	—
	- torque (Nm) ..... :	***-***	—
	hottest point of the insulating part of the fuse terminal block (TS2) max ***103*** K (assigned by the manufacturer)	***26 K***	—
	Surface of actuating element (TS1) max ***63*** K	***22,9 K***	***P***
8.5.2.3.2	Compound arrangement	For derating see graphic IV	***P***
	Five terminal blocks shall be installed on a		***P***

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Clause	Requirement – Test	Result - Remark	Verdict
	support as in normal use.		
	- cross-section of the conductor (mm²).....:	***1,5 mm²***	—
	- torque (Nm)..... :	***-***	—
	The fuse terminal blocks shall be equipped with dummy fuse-links of the maximum power dissipation value Pv2 (W) ……..……:	***Non standard dummy fuse-link 4 A (80% 5 A)***	—
	hottest point of the insulating part of the fuse terminal block (TS2) max ***103,1*** K (assigned by the manufacturer)	***33,6 K***	—
	Surface of actuating element (TS1) max ***63,9*** K	***26,7 K***	***P***
8.5.3	Durability		
	Fuse terminal blocks shall be resistant to heat and mechanical stresses which are liable to occur in normal use	***Non standard dummy fuse-link 10 A (80% 8 A)***	***P***
	The fuse terminal block shall be subjected to the test for separate arrangement according to 8.5.2.2.1 or 8.5.2.3.1, as applicable.		***P***
	The test shall be carried out continuously over a period of 168 h.		***P***
8.4.3	Dielectric tests		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) ..... :	***4 mm² rigid 10 - 12 mm***	—
	- type of most unfavourable support ..... :	***Top hat rail 35 mm***	—
	Dielectric test, Uimp indicated:		
	Test A ***(internal)***		
	- Gauge no.3 or no. 6 inserted..... :	***10 A fuse without melt-wire***	—

IEC60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
	- rated impulse withstand voltage (V) ..... :	***4 kV***	—
	- test Uimp (kV) ..... :	***4,8 kV***	***P***
	- rated insulation voltage (V) ..... :	***32 V***	—
	- test voltage for 5 sec (V) ..... :	***1000 V***	***P***
	Test B ***(adjacent)***		
	- Gauge no.1 or no. 4 inserted..... :	***10 fuse with melt-wire***	—
	- rated impulse withstand voltage (V) ..... :	***6 kV***	—
	- test Uimp (kV) ..... :	***7,3 kV***	***P***
	- rated insulation voltage (V) ..... :	***400 V***	—
	- test voltage for 5 sec (V) ..... :	***1890 V***	***P***
8.4.4	Contact resistance:		
	Measurement carried out in direct or alternating current ..... :	***0,1 A DC***	X
	rated frequency (Hz) by alternating current ... :	***-***	X
	Gauge no.2 or no. 5 inserted ..... :	***Non standard dummy fuse-link***	X
	Screw-type fuse-carrier is tightened with a torque of two-thirds of the value in table 1:..... (Nm)	***-***	***P***
	Plug-on type or hinged-type fuse-carrier is installed as in normal use		***P***
	measuring cycle with d.c.		
	a) insertion of gauge in the fuse-holder		***P***
	b) measurement with current flowing in one direction		***P***
	c) measurement with current flowing in opposite direction		***P***
	d) removal of the gauge from the fuse-holder		***P***
	Measuring cycle with a.c.		
	a) insertion of the gauge in the fuse-holder		***N***
	b) measurement		***N***
	c) removal of the gauge from the fuse-holder		***N***

IEC60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
	Measuring values	See table III	***N***
	The mean value of the contact resistance shall not exceed 10 mΩ ..... :	***2,70 mΩ***	***P***
	The individual value of the contact resistance shall not exceed 15 mΩ ..... :		***P***
8.3.4	Compatibility between fuse terminal blocks and the fuse-link		
	The maximum gauge No. 1 or gauge No. 4 in accordance with table A.1 is inserted and withdrawn 10 times from the fuse-carrier	***Non standard dummy fuse-link***	***P***
	Following each insertion of the gauge, the fuse-carrier is fitted to the terminal block base as in normal position		***P***
	For fuse terminal blocks with screw-type fuse carrier, the fuse carrier is fitted with a torque of two-thirds of the value specified in table 1 (Nm)		***P***
	- No visible damage - No looseing of parts - In the most unfavourable position, the - minimum gauge No. 2 or gauge No. 5 is not fall from the fuse-carrier in the most unfavourable position.or fuse terminal blocks with screw-type fuse carrier, the fuse carrier is fitted with a torque of two-thirds of the value specified in table 1 (Nm)	***Non standard dummy fuse-link***	***P***
8.4.4	Contact resistance:		
	Measurement carried out in direct or alternating current ..... :	***0,1 A DC***	X
	rated frequency (Hz) by alternating current ... :	***-***	X
	Gauge no.2 or no. 5 inserted ..... :	***Non standard dummy fuse-link***	X
	Screw-type fuse-carrier is tightened with a torque of two-thirds of the value in table 1:..... (Nm)	***-***	***N***
	Plug-on type or hinged-type fuse-carrier is installed as in normal use		***P***

IEC60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
	measuring cycle with d.c.		
	a) insertion of gauge in the fuse-holder		***P***
	b) measurement with current flowing in one direction		***P***
	c) measurement with current flowing in opposite direction		***P***
	d) removal of the gauge from the fuse-holder		***P***
	Measuring cycle with a.c.		
	a) insertion of the gauge in the fuse-holder		***N***
	b) measurement		***N***
	c) removal of the gauge from the fuse-holder		***N***
	Measuring values	See table IV	***P***
	The mean value of the contact resistance shall not exceed 10 mΩ ..... :	***2,56 mΩ***	***P***
	The individual value of the contact resistance shall not exceed 15 mΩ ..... :		***P***
8.5.4	Needle flame test		
	Before the test, the terminal blocks are stored for 24 h in an atmosphere having a temperature between 15°C and 35°C and a relative humidity between 45% and 75%		***P***
	The flame is applied for 10s. for insulation walls <1 mm and/or an area <100 mm², the flame is applied for 5 s.		***P***
	The terminal blocks are considered to have passed the test if the duration of burning is < 30s in case of ignition. Moreover, the tissue paper on the pinewood board shall not ignite if burning or glowing particles fall from the terminal block.		***p***
8.6	Verification of EMC characteristics		
	Subclause 8.4 of EN 60947-1 applies with the		***N***

IEC60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
	following addition		
8.6.1	Immunity		
	Terminal blocks within the scope of this standard are not sensitive of electromagnetic disturbances and therefore no immunity tests are necessary.		***N***
8.6.2	Emission		
	Terminal blocks within the scope of this standard do not generate electromagnetic disturbances and therefore no emission tests are necessary.		***N***

Remarks

Table I: contact resistance after compatibility between fuse terminal blocks and fuse-links, clause 8.3.4

cycle	sample 1		sample 2		sample 3		sample 4		sample 5	
	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mVΩ)
1	***3,11***	***3,02***	***2,51***	***2,59***	***2,71***	***2,78***	***2,35***	***2,38***	***2,81***	***2,89***
2	***3,18***	***3,21***	***2,68***	***2,79***	***2,84***	***2,81***	***2,41***	***2,48***	***2,78***	***2,81***
3	***3,25***	***3,27***	***2,73***	***2,84***	***2,69***	***2,73***	***2,40***	***2,45***	***2,94***	***3,05***
4	***3,17***	***3,28***	***2,81***	***2,80***	***2,58***	***2,62***	***2,28***	***2,35***	***3,01***	***3,08***
5	***3,08***	***3,09***	***2,74***	***2,76***	***2,51***	***2,52***	***2,26***	***2,38***	***3,12***	***3,15***

Table II: contact resistance, clause 8.4.4

cycle	sample 1		sample 2		sample 3		sample 4		sample 5	
	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)
1	***2,78***	***2,84***	***2,69***	***2,71***	***2,21***	***2,18***	***2,58***	***2,65***	***2,47***	***2,49***
2	***2,81***	***2,89***	***2,71***	***2,81***	***2,18***	***2,24***	***2,69***	***2,71***	***2,51***	***2,58***
3	***2,85***	***2,94***	***2,71***	***2,82***	***2,25***	***2,37***	***2,74***	***2,89***	***2,58***	***2,74***
4	***2,93***	***2,97***	***2,64***	***2,73***	***2,34***	***2,41***	***2,89***	***2,92***	***2,63***	***2,69***
5	***3,01***	***3,08***	***2,55***	***2,61***	***2,41***	***2,89***	***2,92***	***2,92***	***2,63***	***2,69***

Table III: contact resistance after durability, clause 8.5.3

cycle	sample 1		sample 2		sample 3		sample 4		sample 5	
	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)
1	***2,73***	***2,78***	***2,45***	***2,53***	***2,82***	***2,88***	***2,47***	***2,47***	***2,60***	***2,66***
2	***2,84***	***2,89***	***2,41***	***2,48***	***2,80***	***2,88***	***2,51***	***2,42***	***2,68***	***2,74***
3	***2,89***	***2,81***	***2,37***	***2,44***	***2,81***	***2,89***	***2,51***	***2,58***	***2,61***	***2,78***
4	***2,91***	***2,98***	***2,51***	***2,61***	***2,89***	***2,95***	***2,59***	***2,63***	***2,57***	***2,63***
5	***3,01***	***3,15***	***2,58***	***2,68***	***2,94***	***3,08***	***2,71***	***2,89***	***2,51***	***2,68***

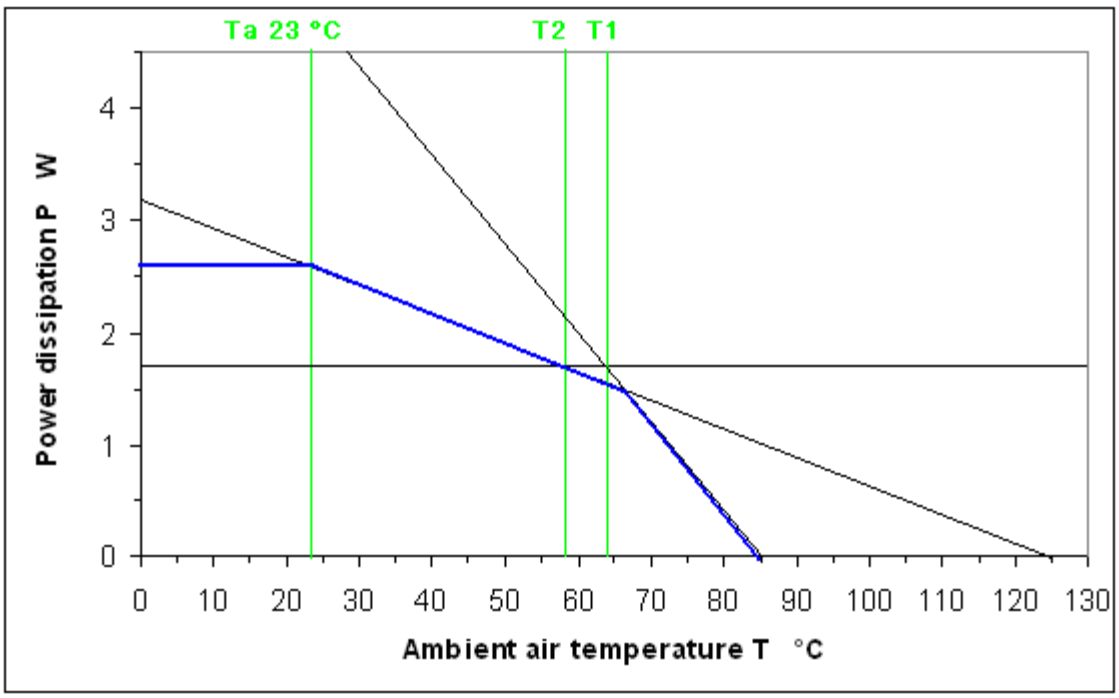
Remarks

Remarks

Table IV: compatibility between fuse terminal block and fuse link after durability, clause 8.5.3

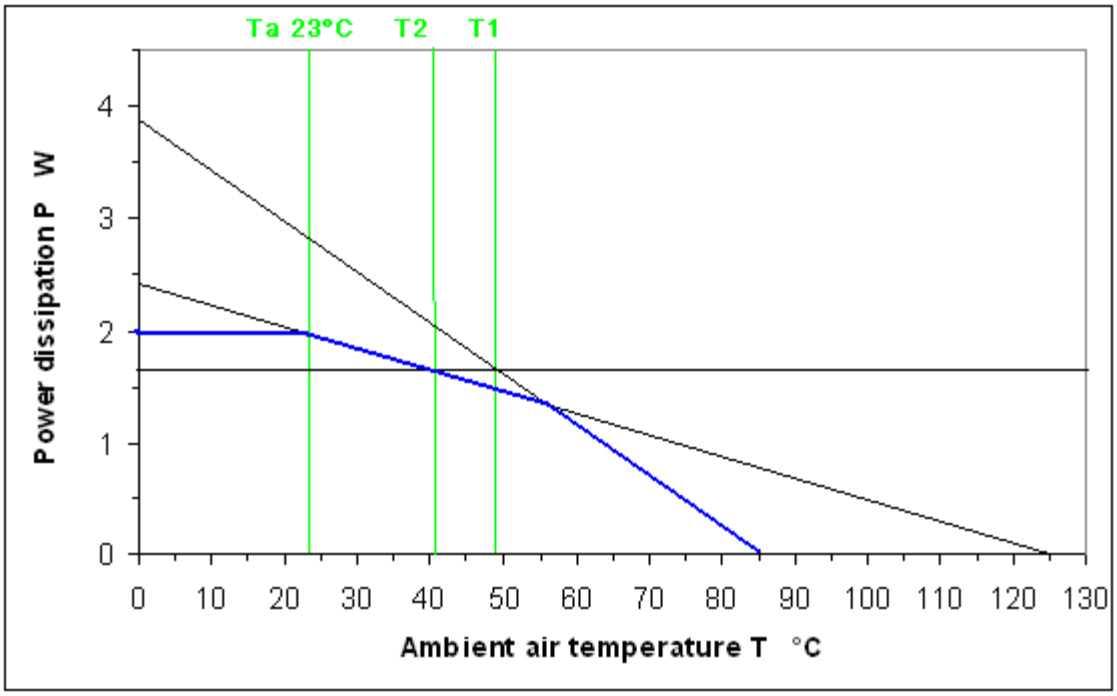
cycle	sample 1		sample 2		sample 3		sample 4		sample 5	
	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)
1	***2,23***	***2,28***	***2,48***	***2,53***	***2,69***	***2,68***	***2,51***	***2,57***	***2,34***	***2,38***
2	***2,28***	***2,34***	***2,40***	***2,48***	***2,72***	***2,75***	***2,58***	***2,68***	***2,38***	***2,36***
3	***2,31***	***2,36***	***2,47***	***2,51***	***2,81***	***2,84***	***2,63***	***2,69***	***2,48***	***2,52***
4	***2,41***	***2,48***	***2,40***	***2,57***	***2,88***	***2,86***	***2,68***	***2,74***	***2,57***	***2,63***
5	***2,52***	***2,61***	***2,51***	***2,56***	***2,91***	***2,85***	***2,71***	***2,78***	***2,63***	***2,68***

Graphic I overload and short-circuit protection

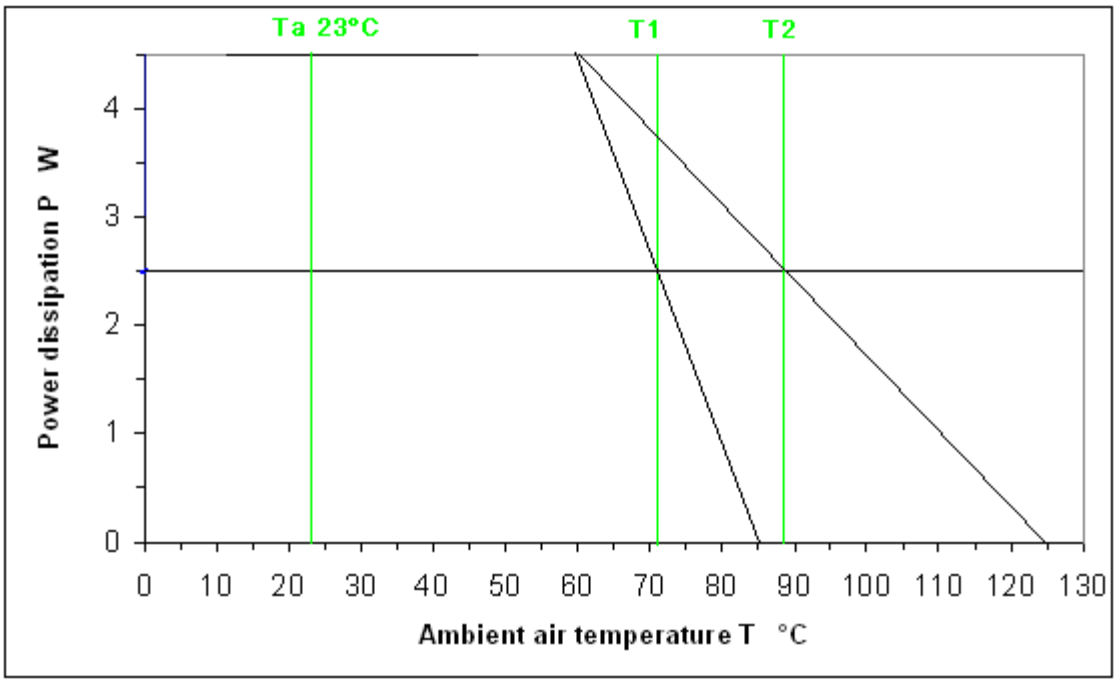


Remarks

Graphic II overload and short-circuit protection

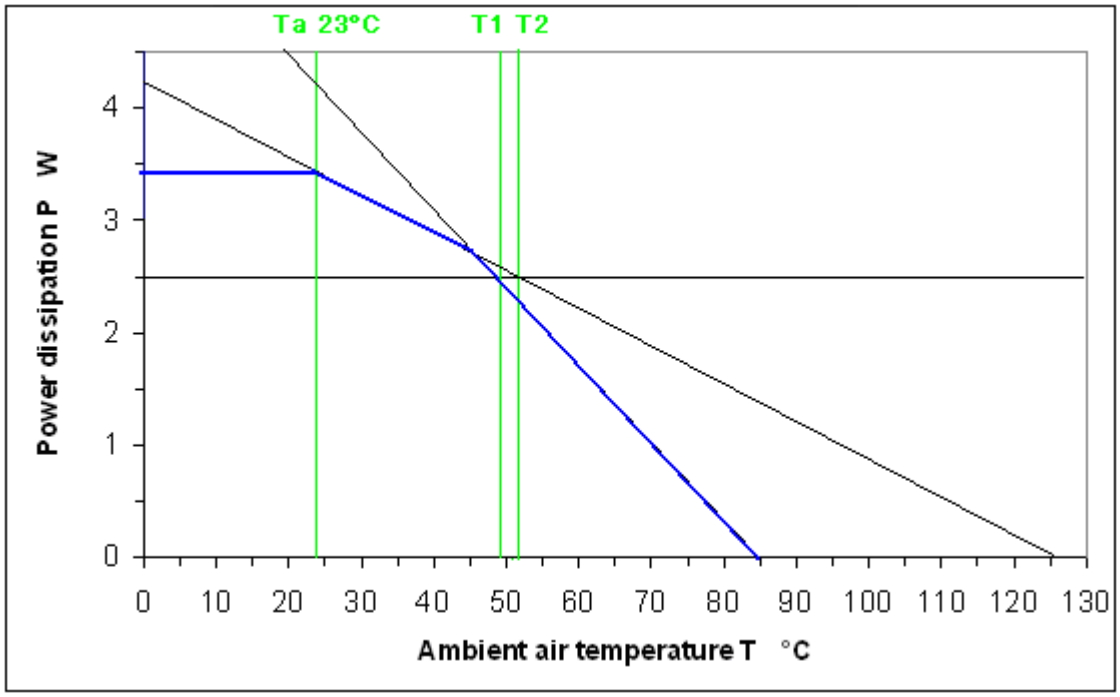


Graphic III for exclusive short-circuit protection



Remarks

Graphic IV for exclusive short-circuit protection



Remarks

Product data: type-number overview of series 2002

product	:	Fuse terminal blocks for copper conductors
trade name(s)	:	WAGO
type(s)	:	TOPJOB S 2002-....
material colours	:	thermoplastic material ..../000-001 green, .../000-014 brown, .../000-015 gentian blue
stripping length	:	10 - 12 mm
rated connecting capacity	:	2,5 mm² / 4 mm² rigid and flexible .
connectable conductors	:	0,25 mm² - 4 mm² rigid and flexible
method of mounting	:	for mounting on top hat rail 35 mm
conventional free air thermal current (Ith)	:	24 A (2,5 mm²) 32 A (4 mm²)
rated voltage	:	800 V
rated impulse withstand voltage	:	8 kV
type	:	2002 with suffixes -6401, -6402, -6403, -6404, -6405, -6406, -6408, -6409
description	:	four-conductor through terminal block, with screwless-type terminals, 1-pole, 35° angled
type	:	2002-6407
description	:	four-conductor earth terminal block, with screwless-type terminals, 1-pole, 35° angled
type	:	2002 with suffixes -6301, -6302, -6303, -6304, -6305, -6306, -6308, -6309
description	:	three-conductor through terminal block, with screwless-type terminals, 1-pole, 35° angled
type	:	2002-6307
description	:	three-conductor earth terminal block, with screwless-type terminals, 1-pole, 35° angled
type	:	2002 with suffixes -1201, -1202, -1203, -1204, -1205, -1206, -1208, -1209
description	:	two-conductor through terminal block, with screwless-type terminals, 1-pole
type	:	2002-1207
description	:	two conductor earth terminal block, with screwless-type terminals, 1-pole

Remarks

type : 2002 with suffixes -1301, -1302, -1303, -1304, -1305, -1306, -1308, -1309
description : three conductor through terminal block, with screwless-type terminals, 1-pole

type : 2002-1307
description : three conductor earth terminal block, with screwless-type terminals, 1-pole

type : 2002 with suffixes -1401, -1402, -1403, -1404, -1405, -1406, -1408, -1409
description : four conductor through terminal block, with screwless-type terminals, 1-pole

type : 2002-1407
description : four conductor earth terminal block, with screwless-type terminals, 1-pole

type : 2002-1441
description : four conductor double potential terminal block, with screwless -type terminals, 2-poles

type : 2002 with suffixes -2431, -2432, -2433, -2401, -2402, -2403, -2404, -2405, -2406, -2434, - 2435, -2436
description : four conductor double deck terminal block, with screwless-type terminals, with or without marker carrier, 2 - poles

type : 2002 with suffixes -2438,-2408
description : -2409, -2439 eight conductor double deck terminal block with screwless-type terminals, upper and lower levels are connected to each other, with or without marker carrier

type : 2002 with suffixes -2447, -2457, -2458, -2417, -2427, -2448, -2418, -2428
description : four conductor double deck terminal block, with screwless-type terminals. 2 levels, lower level connected to ground, 2-poles with or without marker carrier

type : 2002 with suffixes -2437, -2407
description : eight conductor ground double deck terminal block, with screwless-type terminals, upper and lower level are connected to each other

type : 2002 with suffixes -2407, -2437 with suffixes /0999-0950
description : eight conductor ground double deck terminal block, with screwless-type terminals, upper and lower level are connected to each other, with indicating internal connection between lower and upper tiers

Remarks

conventional free air thermal current (Ith)	:	24 A
rated voltage	:	500 V
rated impulse withstand voltage	:	6 kV
type	:	2002 with suffixes -2231, -2231/007-000, -2232, -2233, -2234, -2201, -2202, -2203, -2236, -2204, -2206
description	:	two-conductor through terminal block , with screwless-type terminals, 2-poles
type	:	2002 with suffixes -2231, -2232, 2233, -2234 with suffixes /0099-000
description	:	two-conductor through terminal block , with screwless-type terminals, 2-poles indicating integrated endplate
type	:	2002 with suffixes -2201, -2231 with suffixes /0057-0000
description	:	two-conductor through terminal block, with screwless-type terminals, 2-poles, without lower current bar
.	:	
type	:	2002 with suffixes -2201, -2202, -2203, -2204, -2207, -2208, -2209 with suffixes /0099-0000
description		two-conductor through terminal block, with screwless type terminals, 2-poles, without lower bar, suffix indicating integrated endplate
type	:	2002 with suffixes -2217, -2227, -2247, -2257, -2218, -2228, -2248, -2258
description	:	two-conductor through terminal block with earth connection and screwless-type terminals,2-poles
type	:	2002 with suffixes -2217,-2218, -2227, -2228, -2247, -2248, -2257, -2258, -2458 with suffixes /0099-0000
description	:	two-conductor through terminal block with earth connection, and screwless-type terminals, 2-poles, integrated endplate
type	:	2002 with suffixes -2238, -2239, -2208, -2209
description	:	two-conductor through terminal block with screwless-type terminals, 2-poles. Upper and lower pole connected to each other
type	:	2002 with suffixes -2207, -2237
description	:	two-conductor earth terminal block, with screwless-type terminals, 2-poles. Upper and lower pole connected to each other
type	:	2002 with suffixes -2237, -2238, -2239 with suffixes /0099-0000
description	:	two-conductor earth terminal block, with screwless-type terminals, 2-poles, upper and lower pole connected to each other, integrated endplate

Remarks

type : 2002 with suffixes -2207, -2237 with suffixes /0999-0950
description : two- conductor earth terminal block, with screwless-type terminals, 2-poles, upper and lower pole connected to each other, with indicating internal connection between lower and upper tiers

type : 2002 with suffixes 3231, -3231/007-000, -3233, -3201, -3203
description : two-conductor through terminal block, with screwless-type terminals, 3 -poles, colored gray
2002-3204 blue
2002-3206 orange
2002-3208 violet
2002-3209 blue/violet
2002-3234 blue
2002-3236 orange
2002-3238 violet
2002-3239 blue/violet

type : 2002 with suffixes -3201, -3203, -3231 with suffixes/0402-0000
description : two-conductor through terminal block, with screwless-type terminals, 3-poles,conductor entry colored violet
/0350-0000 conductor entry colored brown blue

type : 2002 with suffixes -3247, -3257, -3217, -3227
description : two-conductor through terminal block with earth connection and screwless-type terminals, 3-poles

type : 2002 with suffixes -3248, -3258, -3218, -3228
description : two-conductor through terminal block with shield and screwless-type terminal, 3-poles

type : 2002 with suffixes -3228, -3258 with suffix /0403-0000
description : two-conductor through terminal block with shield and screwless type-terminal, 3-poles, conductor entry colored white

type : 2002 with suffixes -3207, -3237
description : two conductor earth terminal
block, with screwless-type terminals, 3-poles, all poles connected to each other 2002-3237 with marker carrier

type : 2002 with suffixes -3707, -3237 with suffixes /0999-0950
description : two conductor earth terminal block, with screwless-type terminals, 3-poles, all poles connected to each other, with indicating internal connection between lower and upper tiers.

Remarks

conventional free air thermal current (Ith)	:	24 A
rated voltage	:	1000 Vac / 1500 Vdc
rated impulse withstand voltage	:	6 kV
type	:	2002-2201/0097-000
description	:	two-conductor through terminal block, with screwless-type terminals, 2-poles, without lower current bar, with end cover type 2002-2295 gray
type	:	2002-2201/0098-000
description	:	two-conductor through terminal block, with screwless-type terminals, 2-poles, without lower current bar, with end cover type 2002-2296 orange
conventional free air thermal current (Ith)	:	16 A
rated voltage	:	400 V
rated impulse withstand voltage	:	6 kV
type	:	2002 with suffixes -1671, -1674, -1672, -1673, -1675, -1676
description	:	two-conductor disconnect terminal block for test and measurement, with screwless-type terminals, 1-pole
type	:	2002 with suffixes -1661 up to and including -1666
description	:	two-conductor carrier terminal block, with screwless-type terminals, 1-pole
type	:	2002- with suffixes -1601, -1602, -1603, -1604
description	:	two-conductor through terminal block, with screwless-type terminals, 1-pole
type	:	2002 with suffixes -1771,-1774, -1871, -1872, -1873, -1874, -1875, -1876, -1971, -1974
description	:	two, three or four conductor disconnect terminal block for test and measurement, with screwless-type terminals, 1-pole
type	:	2002- with suffixes -1761, -1772, -1861, -1862, -1863, -1864, -1865, -1866, -1961, -1962, -1972, -1964
description	:	two, three or four-conductor carrier terminal block, with screwless-type terminals, 1-pole
type	:	2002 with suffixes -1671, -1672, -1674, -1771, -1772, -1774, -1871, -1872, -1874, -1971, -1972, -1974 with suffixes /0401-0000
description	:	two, three or four conductor carrier terminal block, with mechanical interlock, with screw less type terminals, 1-pole

Remarks

type	:	2002 with suffixes -1701, -1702,-1703, -1704, -1707, -1801, -1802, -1803, -1804, -1807, -1901, -1902, -1903, -1904, -1907
description	:	two, three or four-conductor through terminal block, with screwless type terminals, 1-pole
type	:	2002 with suffixes -2951, -2954, -2952, -2953, -2956
description	:	four-conductor double deck double disconnect terminal block, with screwless-type terminals, 2-poles
type	:	2002-2901
description	:	four-conductor double deck double disconnect terminal block, with screwless-type terminals, 2-poles, without movable knife disconnection
type	:	2002 with suffixes -2951, -2952, -2953, -2954, -2956, -2958, -2959 with suffixes /0400-000
description	:	four-conductor double deck double disconnect terminal block, with screwless type terminals, 2-poles, disconnect knife rotated by 180°
type	:	2002 with suffixes -2941, -2944, -2948, -2949
description	:	four-conductor double deck double disconnect terminal block, with screwless type terminals, 2-poles, without pivoting disconnect knife
type	:	2002 with suffixes -2958, -2959
description	:	four-conductor double deck double disconnect terminal block, upper and lower pole connected to each other on right -side, with screwless-type terminals, 1-pole .
type	:	2002 with suffixes -2971, -2972, -2973, -2974, -2976, -2671, -2667, -2678, -2672, -2677, -2661, -2662
description	:	four-conductor double deck disconnect terminal block, with disconnection on upper deck only, with screwless-type terminals, 2-poles
type	:	2002 with suffixes -2961,-2963
description	:	four-conductor double deck disconnect terminal block, with disconnect on lower deck only
conventional free air thermal current (Ith)	:	16 A
rated voltage	:	600 V
rated impulse withstand voltage	:	6 kV
type	:	2002 with suffixes -1662/099-000 and 1664/099-000
description	:	two-conductor carrier terminal block, with screwless-type terminals, 1-pole, with integrated endplate

Remarks

conventional free air thermal current (Ith)	:	10 A (separate with automotive fuse 80% of 10 A = 8 A) 5 A (compound with automotive fuse 80% of 5 A = 4 A)
rated voltage	:	400 V determined by the fuselink max. 32 V
rated impulse withstand voltage	:	6 kV
	:	
type	:	2002 with suffixes -1681, -1682, 1684
description	:	two conductor fuse terminal block, with screwless-type terminals, 1-pole, exclusive short circuit protection -separate arrangement: PVK with automotive fuse 10 A loaded with 80% of In -compound arrangement: PVK with automotive fuse 5 A loaded with 80% of In
type	:	2002-with suffixes -1781, -1881,-1882, -1884, -1981, -1982, -1984
description	:	two, three or four conducted fuse terminal block, with screw-less-type terminals, 1-pole exclusive short circuit protection - separate arrangement: PVK with automotive fuse 10 A loaded with 80% of In - compound arrangement: PVK with automotive fuse 5 A loaded with 80% of In .
type	:	2002 with suffixes -1981/1000, -1982/1000, -1984/1000 terminal blocks with blown fuse LED indication - 0449 with LED 12 V, anode left - 0434 with LED 24 V, anode left - 0435 with LED 48 V, anode left - 0429 with LED 12 V, anode right - 0413 with LED 24 V, anode right - 0414 with LED 48 V, anode right
conventional free air thermal current (Ith)	:	24 A (2,5 mm²) 32 A (4 mm²)
rated voltage	:	500 V/800 V (if provided with endplate.../0099-0000)
rated impulse withstand voltage	:	6 kV
type	:	2002-with suffixes -2601, -2602, -2603, -2604 two-conductor through terminal
description	:	block, with screwless-type terminals, 2-poles
type	:	2002 with suffixes -2608, -2609
description	:	two-conductor through terminal block,2-poles, upper and lower pole connected to each other
type	:	2002-2607
description	:	two-conductor earth terminal block, with screwless-type terminals, 2-poles. upper and lower pole connected to each other

Remarks

type	:	2002- with suffixes -2647, -2648, -2657, -2658
description	:	two conductor through terminal block with earth connection, and screwless-type terminals, 2-poles
conventional free air thermal current (Ith)	:	24 A (2,5 mm²) 32 A (4 mm²)
rated voltage	:	250 V
rated impulse withstand voltage	:	4 kV
type	:	2002-7114
description		one conductor N-disconnect terminal block, with screwless type terminals and 1 connection for busbar (10 x 3 mm), 1-pole
type	:	2002-7111
description		one conductor power distribution disconnect terminal block, with screwless type terminals and 1 connection for busbar (10 x 3 mm), 1-pole
type	:	2002-7211
description		2 conductor power distribution disconnect terminal block, with screwless type terminals and 1 connector for busbar (10 x 3 mm), 1-pole, grey.
type	:	2002-7214 2 conductor N-disconnect terminal block,
description		with screwless type terminals and 1 connector for busbar (10 x 3 mm), 1-pole blue
conventional free air thermal current (Ith)	:	6,3 A
rated voltage	:	250 V
rated impulse withstand voltage	:	6 kV
fuse link size	:	5 x 20 mm overload and short circuit protection - separate arrangement: Pv 1,6 W - compound arrangement: Pv 1,6 W exclusive short circuit protection - separate arrangement: Pvk 2,5 W - compound arrangement: Pvk 2,5 W
type	:	2002-with suffixes -1611, -1612, -1614
description	:	two-conductor fuse terminal block with end plate, without blown fuse indication, with screwless type terminals, 1-pole

Remarks

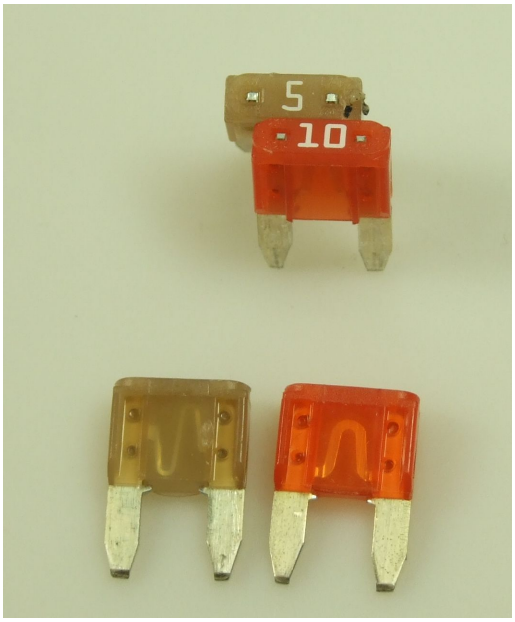
type	:	2002 with suffixes -1611/1000-..., -1612/1000-..., 1614/1000-...
description	:	two-conductor fuse terminal blocks with end plate, with blown fuse indication by LED with screwless type terminals,1-pole with suffixes -541 provided with LED 12-30 V -542 provided with LED 30-65 V -836 provided with LED 230 V -876 provided with LED 120 V
type	:	2002 with suffixes -1711, -1811, -1812, -1911, -1912
description	:	two, three or four-conductor fuse terminal block with end plate, without blown fuse indication, with screwless type terminals, 1-pole
type	:	1-pole 2002 with suffixes -1814, -1914
description	:	two-conductor fuse terminal block with end plate, without blown fuse indication, with screwless-type terminals, 1-pole
type	:	2002 with suffixes -1611, -1612, -1614, -1811, -1812, -1814, -1911, -1912, -1914
description		with suffix 0281-0503,with dummy fuse to work as disconnect terminal block and endplate
type	:	2002 with suffixes -1711/1000-..., -1811/1000..., -1812/1000-..., -1814/1000-..., -1911/1000-..., -1912/1000-..., -1914/1000
description	:	four-conductor fuse terminal blocks with blown fuse indication on by LED, with screwless type terminals, 1-pole with suffixes -541 provided with LED 12-30 V -542 provided with LED 30-65 V -836 provided with LED 230 V -867 provided with LED 120 V
type	:	2004 with suffixes -0911, -0912, -0914
description	:	fuse plug for miniature metric fuses, for connection on terminal block
type	:	2004 with suffixes -0911/1000-..., 0912/1000-..., -0914/1000-...
description	:	fuse plug for miniature metric fuses with blown fuse indication by LED, for connection on terminal block 2002-1661 and 2002-1861with suffixes -0541 provided with LED 12-30 V -0542 provided with LED 30-65 V -0836 provided with LED 230 V -0867 provided with LED 120 V
conventional free air thermal current (Ith)	:	6,3 A (fuse) 28 A (4 mm²) lower level

Remarks

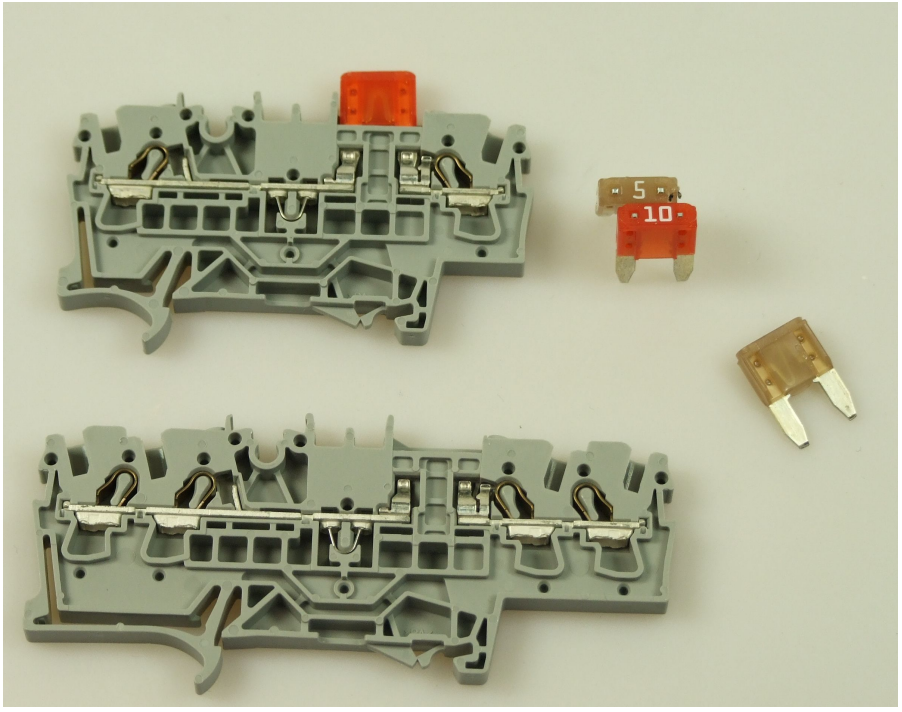
rated voltage	:	250 V
rated impulse withstand voltage		6 kV
fuse link size	:	5 x 20 mm overload and short circuit protection: -separate arrangement: Pv 1,6 W -compound arrangement: Pv 1,6 W exclusive short circuit protection: -separate arrangement: Pvk 2,5 W -compound arrangement: Pvk 2,5 W
type	:	2002- with suffixes -2611/1000-..., -2612/1000-..., -2614/1000-..., -2617/1000-...
description	:	two-conductor fuse terminal block with end plate, with screwless type terminals, with fuse-holder on upper deck only. 2-poles, with blown fuse indicator by LED -0541 provided with LED 12-30 V -0542 provided with LED 30-65 V -0836 provided with LED 230 V -0867 provided with LED 120 V
conventional free air thermal current (Ith)	:	20 A (2,5 mm²) 25 A (4 mm²)
rated voltage	:	800 V
rated impulse withstand voltage	:	8 kV
type	:	2002 with suffixes -4127, -4157
description	:	quadruple deck rail mounted terminal block, with screwless-type terminals, 4-poles (lower pole PE connection)
type	:	2002 with suffixes -4111, -4141, -4116, -4146
description	:	quadruple deck rail mounted terminal block, with screwless-type terminals, 2-poles

Remarks

type	:	2002 with suffixes -4101, -4131, -4136
description	:	quadruple deck rail mounted terminal block, with screwless-type terminal, 3-poles 2002-4106 housing orange 2001-4131 housing orange
conventional free air thermal current (Ith)	:	16 A (2,5 mm²)
rated voltage	:	400 V
rated impulse withstand voltage		6 kV
type	:	2002-1549
description		two-conductor double disconnect terminal block, with screwless type terminals, 1-pole, left side disconnection which can be bridged with a jumper bar, right side knife disconnect
type	:	2002-1568
description		two-conductor double disconnect terminal block with mounting rail contact, with screwless type terminals, 1-pole, left side disconnection which can be bridge with a jumper bar, right side jumper bar set by factory



Applied fuses



ECS European Certification System

OD ECS 040-1
ed. May 2013

Responsible CB:

DEKRA

TEST REPORT SUMMARY

Report Reference No. ..... :	**2235367.54**
Date of issue ..... :	**2019-03-22**
Tested by (name + signature) ..... :	**A.A.P.M. van Vught**
Witnessed by (name + signature) .... :	
Approved by (name + signature) ..... :	**C.C. Burger**
Supervised by (name + signature) ... :	
Testing Laboratory ..... :	**DEKRA Certification B.V.**
Address ..... :	**Meander 1051, 6825 MJ Arnhem, The Netherlands**
Testing procedure ..... :	☒ ENEC/CCA-TL ☐ IECEE-CBTL ☐ TMP ☐ WMT ☐ SMT
Testing location ..... :	**DEKRA Certification B.V.**
Address ..... :	**Meander 1051, 6825 MJ Arnhem, The Netherlands**
Applicant ..... :	**WAGO Kontakttechnik GmbH & Co. KG**
Address ..... :	**Hansastraße 27, 32423 Minden/Westfalen, Germany**
Manufacturer ..... :	**WAGO Kontakttechnik GmbH & Co. KG**
Address ..... :	**Hansastraße 27, 32423 Minden/Westfalen, Germany**
Product ..... :	**Fuse terminal block for copper conductors**
Model/Type reference ..... :	**TOPJOB S 2002-2611**
Trademark ..... :	WAGO
Ratings ..... :	**2,5 mm² or 4 mm², 250 V, 6,3 A**

Certification Scheme ..... : ☐ ENEC ☒ CCA ☐ Other: _____

Standard(s) ..... : **EN 60947-7-3: 2009, in conjunction with EN 60947-1: 2007**

☒ The text of the a.m. European Standard was approved by CENELEC under the Unique Acceptance Procedure and is identical with the corresponding IEC Publication.

☐ The text of the a.m. European Standard was approved by CENELEC with agreed common modifications and is not identical with the corresponding IEC Publication.

This EN test report consists of the following parts:

☒ **IEC TRF No.: IEC60947-7-3** Report Reference No ..... : **2235367.54**

☐ **CENELEC-Addendum Form No.** _____ ..... **:** Report Reference No. or Annex No.. :

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Test Report issued under the responsibility of:

DEKRA

TEST REPORT
IEC 60947-7-3
Low-voltage switchgear and controlgear
Part 7: Ancillary equipment
Section Three: Safety requirements for fuse terminal blocks

Report Reference No. ..... :	**2235367.54**
Date of issue ..... :	**2019-03-22**
Total number of pages	**42**
CCA Testing Laboratory ..... :	DEKRA Certification B.V.
Address ..... :	Meander 1051, 6825 MJ Arnhem, The Netherlands
Applicant's name ..... :	**WAGO Kontakttechnik GmbH & Co. KG**
Address ..... :	**Hansastraße 27, 32423 Minden/Westfalen, Germany**
Test specification:	
Standard ..... :	IEC 60947-7-3:2009 (Second Edition)
Test procedure ..... :	CB scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60947_7_3A
Test Report Form(s) Originator ..... :	DEKRA Certification B.V.
Master TRF ..... :	Dated 2009

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This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description ..... :	**Fuse terminal block for copper conductors**
Trade Mark ..... :	WAGO
Manufacturer ..... :	**WAGO Kontakttechnik GmbH & Co. KG**
Model/Type reference ..... :	**TOPJOB S 2002-2611**
Ratings ..... :	**250 V, 6,3 A**
Factory location ..... :	**WAGO Kontakttechnik GmbH & Co. KG** **Hansastraße 27, 32423 Minden/Westfalen, Germany** **See complete overview of factory locations: General product Information**

Testing procedure and testing location:	
☒ **CB Testing Laboratory**:	**DEKRA Certification B.V.**
Testing location/ address .....:	**Meander 1051, 6825 MJ Arnhem, The Netherlands**
☐ **Associated CB Testing Laboratory:**	
Testing location/ address .....:	
Tested by (name + signature).....:	**A.A.P.M. van Vught** 
Approved by (+ signature).....:	**C.C. Burger** 
☐ Testing procedure: TMP	
Tested by (name + signature).....:	
Approved by (+ signature).....:	
Testing location/ address .....:	
☐ Testing procedure: WMT	
Tested by (name + signature).....:	
Witnessed by (+ signature).....:	
Approved by (+ signature).....:	
Testing location/ address .....:	
☐ Testing procedure: SMT	
Tested by (name + signature).....:	
Approved by (+ signature).....:	
Supervised by (+ signature) .....:	
Testing location/ address .....:	
☐ Testing procedure: RMT	
Tested by (name + signature).....:	
Approved by (+ signature).....:	
Supervised by (+ signature) .....:	
Testing location/ address .....:	

Summary of testing:	
Tests performed (name of test and test clause): **Type test** **All test carried out on type 2002-2611 unless otherwise stated, and additionally test carried out on type 2002—0911 /1000-0541.** **Project 2198985.00** **Update test report 2191639.54 issued on 2016-6-21 and 2193799.54 issued on 2016-10-28.** **Project 2235367.00** **Update to add new suffix /000.001, to indicate the color green.** **No tests were considered necessary.**	**Testing location:** **DEKRA Certification B.V.** **Meander 1051, 6825 MJ Arnhem,** **The Netherlands**
Summary of compliance with National Differences: N/A	
Copy of marking plate ***TOPJOB S 2002-2611*** ***250 V 2,5 mm²***	

Test item particulars..... :	**Fuse terminal block for copper conductors**
Classification of installation and use..... :	
Supply Connection..... :	
..... :	
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement .....:	P (Pass)
- test object does not meet the requirement .....:	F (Fail)
Testing .....:	
Date of receipt of test item.....:	**2013-11, 2014-07 and 2014-12-05**
Date (s) of performance of tests.....:	**2013-11, 2014-11 and 2015-01**

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a comma (point) is used as the decimal separator.

General product information: Factory locations:

Wago Elwag sp.z.o.o.
ul. Piekna 58 a
50-506, Wroclaw, Poland

Wago Elwag
Innowacyjna 2
55-330 Wroblowice, Poland

Wago Pvt. Ltd.
C-27, Sector-58, Phase III
201301 Noida Uttar Pradesh, India

Wago Electronic (Tianjin) Co. Ltd.
No. 5 Quanhui Road
Wu Qing Development Area
301700 Tianjin, China

WAGO Kontakttechnik GmbH & Co. KG
Hansastraße 27, 32423 Minden/Westfalen
Germany

WAGO Kontakttechnik GmbH & Co. KG, Werk Sondershausen
Waldstraße 1, 99706, Sondershausen
Germany

WAGO Contact S.A.
Route de l'Industrie 19, CP 168, 1564, Domdidier, Switzerland

Particulars: test item vs. test requirements	
- method of fixing.....:	**mounting on top hat rail 35 mm**
- number of poles.....:	**1**
- type of clamping units.....:	**screwless terminals**
- ability to receive conductors .....:	**unprepared and prepared conductors**
- number of terminals on terminal assembly.....:	**2 or 4**
- type of fuse-carrier.....:	**plug-in type**
- rated power dissipation	
PV separate arrangement (W) ..……:	**1,6 W**
PV compound arrangement (W) ……... .:	**1,6 W**
PVK separate arrangement (W) ……... .:	**2,5 W**
PVK compound arrangement (W) ……... .:	**2,5 W**
- rated cross-section (mm²).....:	**rated insulation voltage 250 V and working voltage determined by fuse-link or electronic components**
- rated connecting capacity (mm²).....:	**2,5 mm² or 4 mm²**
- rated insulation voltage (Ui).....:	**0,25 – 4 mm² rigid and flexible**
- rated impulse withstand voltage (Uimp) .....:	**4 kV (internal)**
	6 kV (adjacent)

IEC60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict

5.1	**MARKING**		
	Fuse terminal block shall be marked with:		
	- manufacturer's name or trademark	***WAGO***	***P***
	- type designation	***TOPJOB S 2002***	***P***
	- energy flow direction (e.g. line-load or →)		***N***
5.2	The following information shall be stated by the manufacturer if applicable, e.g. in the manufacturer's data sheet, or his catalogue on the packing unit:		
	- manufacturer's claim for compliance with EN 60 947-7-3	***EN 60 947-7-3***	***P***
	- rated cross-section	***2,5 mm² or 4 mm²***	***P***
	- rated connecting capacity	***0,25 mm² - 4 mm² rigid and flexible***	***P***
	rated insulation voltage (Ui) terminal block base rated insulation voltage (Ui) fuse carrier	***250 V***	***P***
	- working voltage (range) determined by the fuselink	***or by electronic components***	***P***
	- rated impulse withstand voltage (Uimp)	***4 kV (internal)*** ***6 kV (adjacent)***	***P***
	- rated value of the power dissipation (Pv) and rated current of the fuse-link: separate arrangement compound arrangement	 ***1,6 W*** ***1,6 W***	***P***
	- rated value of the power dissipation (PvK) and rated current of the fuse-link: separate arrangement compound arrangement	 ***2,5 W*** ***2,5 W***	***P***
	- operating conditions, if different from clause 6.		
	- size of the fuse-link.	***5 x 20 mm***	***P***
5.3	Markíng on the packing unit		
	- No overload protection		***N***

IEC60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
	- No overload protection in compound arrangement		***N***
7.	**CONSTRUCTION**		
7.1	Constructional requirements		***P***
7.1.1	Clamping units		
7.1.7.1 60947-1	All parts of clamping units which maintain contact and carry current shall be of metal having adequate mechanical strength		***P***
	Clamping units connections shall be such that necessary contact pressure is maintained		***P***
	Clamping units shall be so constructed that the conductor is clamped between suitable surfaces without damage to the conductor and terminal		***P***
	Clamping units shall not allow the conductor to be displaced or to be displaced themselves in a manner detrimental to the operation of equipment and the insulation voltage shall not be reduced below the rated value		***P***
	Clamping units shall allow the conductor to be connected by means ensuring that a reliable mechanical linkage and electrical contact is properly maintained		***P***
	Clamping units shall be able to withstand the forces that can be applied through the connected conductors		***P***
	Contact pressure is not transmitted through insulation materials		***P***
7.1.2	Mounting		
	Terminal blocks shall be provided with means that allow them to be securely attached to a rail or a mounting surface (see 8.3.2)		***P***
7.1.3	Clearances and creepage distances		

IEC60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
	Clearances and creepage distances are designed for overvoltage category III and pollution degree 3		***P***
	Clearances and creepage distances are checked when assembled for normal use, e.g. fuse carrier no.3 or no. 6 is inserted		***N***
	Conductor type and conductor cross-section	***rigid 4 mm²***	—
	Conductor end length (mm)	***10 – 12 mm***	—
	Type of support	***Top hat rail 35 mm***	—
	a) Functional insulation		
	- insulation between live parts with different potential		***P***
	- insulation between live parts of adjacent fuse terminal blocks of same series and size		***P***
	b) Basic insulation		
	- insulation between live parts and fixing support		***P***
	Clearances ***(adjacent)***	***(internal)***	
	Case B (mm) ..... : Case A (mm) ..... : Measured (mm) ..... :	***1,2 mm 2 mm*** ***3,0 mm 5,5 mm*** ***3,33 mm 8,12 mm***	***P***
	Rated impulse withstand voltage	***4 kV 6 kV***	***P***
	Creepage distances: ***(internal)***		
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***250 V***	—
	- minimum creepage distances (mm) ..... :	***3,2 mm***	—
	- measured creepage distances (mm) ..... :	***3,33 mm***	—
	Creepage distances: ***(adjacent)***		

IEC60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
	- pollution degree ..... :	***3***	—
	- comparative tracking index (V) ..... :	***600 V***	—
	- material group ..... :	***I***	—
	- rated insulation voltage Ui (V) ..... :	***400 V***	—
	- minimum creepage distances (mm) ..... :	***5 mm***	—
	- measured creepage distances (mm) ..... :	***8,12 mm***	—
7.1.4	Terminal identification and marking:		
	- terminal intended exclusively for the neutral conductor		***P***
	- other terminals		***P***
	- terminal blocks shall have provision, or at least space, for identification marks or numbers for each terminal or terminal assembly to be related to the circuit of which it is to form a part		***P***
7.1.5	Void		
7.1.6	Rated cross-section and rated connecting capacity		
	Terminal blocks are so designed that conductors of the rated cross-section and/or the rated connecting capacity can be accepted	***0,25 mm – 4 mm² rigid and flexible***	***P***
7.1.7	Void		
7.1.8	Actuating conditions		
	Live parts of a fuse terminal block are not accessible when it is assembled, installed and operated under normal conditions		***P***
	Safety from finger touch of live parts of the fuse-carrier is ensured during replacement of the fuse-link		***P***
8	**TESTS**		
8.3	Verification of mechanical characteristics		
8.3.2	Attachment of the terminal block on its support		
	mounting rail ..... :	***Top hat rail 35 mm***	—

IEC60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
	Tighting torque (Nm) ..... :	**-**	—
	steel pin diameter (mm) ..... :	***1 mm***	—
	force (N) ..... :	***1 N***	—
	During the test, no terminal block shall work free from its rail or support, nor suffer any other damage		***P***
8.3.3	Mechanical properties of clamping units of a fuse terminal block		
8.3.3.1	Testing of mechanical strength of clamping units		
8.2.4.2 60947-1	Mechanical strength of clamping units		
	rated cross-section of a rigid conductor (mm²) ... :	***2,5 mm² and 4 mm²***	—
	diameter of thread (mm) ..... :	**-**	—
	torque (Nm) ..... :	**-**	—
	5 times on 2 clamping units at the centre terminal block out of 5 terminal blocks		***P***
8.3.3.2	Testing for damage to and accidental loosening of conductor (flexion test)		
8.3.3.3	Pull out test		
	conductor of the smallest cross-section (mm²) ... :	***0,25 mm² rigid and flexible***	—
	number of conductor of the smallest cross-section ..... :	***1***	—
	diameter of bushing hole (mm) ..... :	***6,4 mm***	—
	height between the equipment and the platen (mm) ..... :	***260 mm***	—
	mass at the conductor(s) (kg) ..... :	***0,3 kg***	—
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	Pull-out test		
	force (N) ..... :	***10 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***

IEC60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
	conductor of the rated cross-section (mm²) ..... :	***2,5 mm² rigid and flexible***	—
	number of conductor of the rated cross-section . :	***1***	—
	diameter of bushing hole (mm) ..... :	***9,5 mm***	—
	height between the equipment and the platen (mm) ..... :	***280 mm***	—
	mass at the conductor(s) (kg) ..... :	***0,7 kg***	—
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	Pull-out test		
	force (N) ..... :	***50 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	conductor of the largest cross-section (mm²) ..... :	***4 mm² rigid and flexible***	—
	number of conductor of the largest cross-section :	***1***	—
	diameter of bushing hole (mm) ..... :	***9,5 mm***	—
	height between the equipment and the platen (mm) ..... :	***280 mm***	—
	mass at the conductor(s) (kg) ..... :	***0,9 kg***	—
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	Pull-out test		
	force (N) ..... :	***60 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
	conductor of the largest or smallest cross-section (mm²) ..... :		—
	number of conductor of the largest or smallest cross-section ..... :		—
	diameter of bushing hole (mm) ..... :		—
	height between the equipment and the platen (mm) ..... :		—

IEC60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
	mass at the conductor(s) (kg) ..... :		—
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		***N***
	Pull-out test		
	force (N) ..... :		—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***N***
8.3.3.4	Verification of rated cross section and rated connecting capacity		
	One conductor of the two next smaller cross-sections can be unhindered and connected in each clamping unit of one terminal block (up to 35 mm²)	***1 mm²***	***P***
8.3.4	Compatibility between fuse terminal blocks and the fuse-link		
	The maximum gauge No. 1 or gauge No. 4 in accordance with table A.1 is inserted and withdrawn 10 times from the fuse-carrier	***1***	***P***
	Following each insertion of the gauge, the fuse-carrier is fitted to the terminal block base as in normal operation		***P***
	For fuse terminal blocks with screw-type fuse carrier, the fuse carrier is fitted with a torque of two-thirds of the value specified in table 1 (Nm)		***N***
	- No visible damage - No looseing of parts - In the most unfavourable position, the - minimum gauge No. 2 or gauge No. 5 will not fall from the fuse-carrier in the most unfavourable position.or fuse terminal blocks with srew-type fuse carrier, the fuse carrier is fitted with a torque of two-thirds of the value specified in table 1 (Nm)	***2***	***P***

IEC60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
8.4.4	Contact resistance:		
	Measurement carried out in direct or alternating current ..... :	***0,1 A DC***.	—
	rated frequency (Hz) by alternating current ... :	**-**	—
	Gauge no.2 or no. 5 inserted ..... :	***2***	—
	Screw-type fuse-carrier is tightened with a torque of two-thirds of the value in table 1:..... (Nm)		***N***
	Plug-on type or hinged-type fuse-carrier is installed as in normal use		***P***
	measuring cycle with d.c.		
	a) insertion of gauge in the fuse-holder		***P***
	b) measurement with current flowing in one direction		***P***
	c) measurement with current flowing in opposite direction		***P***
	d) removal of the gauge from the fuse-holder		***P***
	Measuring cycle with a.c.		
	a) insertion of the gauge in the fuse-holder		***N***
	b) measurement		***N***
	c) removal of the gauge from the fuse-holder		***N***
	Measuring values	See table I	***N***
	The mean value of the contact resistance shall not exceed 10 mΩ ..... :	***2,40 mΩ***	***P***
	The individual value of the contact resistance shall not exceed 15 mΩ ..... :		***P***
8.3.5	Mechanical strength of the connection between the terminal block base and the fuse-carrier		
8.3.5.1	Torque test on screw-type fuse-carriers		
	The fuse-carrier is equipped with the maximum gauge no. 1 or no. 4.		***N***
	The fuse-carrier was screwed five times into the terminal block with torque: (Nm)*:*		***N***

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Clause	Requirement – Test	Result - Remark	Verdict
	The fuse-carrier is securely kept in the terminal block base during and after the test and show no changes impairing its normal use		***N***
8.3.5.2	Pull-out test on screw-type and bayonet-type fuse-carrier		
	The fuse-is carrier equipped with the maximum gauge no. 1 or no. 4.		***N***
	Screw-type fuse-carrier is tightened with a torque of two-thirds of the value in table A.1: (Nm)		***N***
	Axial pulling force for 1 min. to the fuse-carrier (N)		***N***
	The fuse-carrier is securely kept in the terminal block base during and after the test and show no changes impairing its normal use		***N***
8.3.5.3	Actuating forces on plug-on type or hinged-type fuse-carriers		
	The fuse-carrier together with the maximum gauge No. 1 or gauge No. 4 was inserted in and withdrawn from the fuse-base, 10 times	***1***	***P***
	Actuating forces assigned by the manufacturer	Insertion forces: ***18*** N to ***30*** N Withdrawal forces: ***12*** N to ***18*** N assigned by the manufacturer	***P***
	The value of any individual measurement was within the limits assigned by the manufacturer	Measured insertion forces: ***18,6*** N to ***26,1*** N Measured withdrawal forces: ***12,8*** N to ***16,7*** N	***P***
	The fuse-carrier is securely kept in the terminal block base during and after the test and show no changes impairing its normal use		***P***

IEC60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
8.4	Verification of electrical characteristics		
8.4.3	Dielectric tests		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) ..... :	***4 mm² rigid 10 - 12 mm***	—
	- type of most unfavourable support ..... :	***Top hat rail 35 mm***	—
	Dielectric test, Uimp indicated:		
	Test A		
	- Gauge no.3 or no. 6 inserted..... :	***3***	—
	- rated impulse withstand voltage (V) ..... :	***4 kV***	—
	- test Uimp (kV) ..... :	***4,8 kV***	***P***
	- rated insulation voltage (V) ..... :	***250 V***	**—**
	- test voltage for 5 sec (V) ..... :	***1500 V***	***P***
	Test B		
	- Gauge no.1 or no. 4 inserted..... :	***1***	—
	- rated impulse withstand voltage (V) ..... :	***6***	—
	- test Uimp (kV) ..... :	***7,3 kV***	***P***
	- rated insulation voltage (V) ..... :	***250 V***	**—**
	- test voltage for 60 sec (V) ..... :	**1500 V tested for 5 s According to IEC 60947-1 A2:2014 re-testing according to 60 s is not necessary**	***P***
8.4.4	Contact resistance:		
	Measurement carried out in direct or alternating current ..... :	***0,1 A DC***.	—
	rated frequency (Hz) by alternating current ... :	**-**	—
	Gauge no.2 or no. 5 inserted ..... :	***2***	—
	Screw-type fuse-carrier is tightened with a torque of two-thirds of the value in table 1:..... (Nm)		***N***

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Clause	Requirement – Test	Result - Remark	Verdict
	Plug-on type or hinged-type fuse-carrier is installed as in normal use		***P***
	measuring cycle with d.c.		
	a) insertion of gauge in the fuse-holder		***P***
	b) measurement with current flowing in one direction		***P***
	c) measurement with current flowing in opposite direction		***P***
	d) removal of the gauge from the fuse-holder		***P***
	Measuring cycle with a.c.		
	a) insertion of the gauge in the fuse-holder		***N***
	b) measurement		***N***
	c) removal of the gauge from the fuse-holder		***N***
	Measuring values	See table II	***P***
	The mean value of the contact resistance shall not exceed 10 mΩ ..... :	***2,38 mΩ***	***P***
	The individual value of the contact resistance shall not exceed 15 mΩ ..... :		***P***
8.4.5	Temperature rise of clamping unit		
	Five terminal blocks are installed side by side with gauge no.2 or no. 5	***2***	***P***
	- test current (A) ..... :	***6,3 A (upper level)*** ***28 A (lower level)***	—
	- cross-section of the conductor (mm²) ..... :	***1 mm² (upper level)*** ***4 mm² (lower level)***	—
	- insulation colour of conductor black	***black***	***P***
	- torque (Nm) ..... :	***-***	—
	- temperature rise of the conductor clamping unit does not exceed 45 K	***9 K – 13 K (upper level)*** ***26 K – 34 K (lower level)***	***P***
8.4.6	Void		
8.4.7	Ageing test (for screwless-type fuse terminal blocks only)		

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Clause	Requirement – Test	Result - Remark	Verdict
	Five adjacent terminal blocks equipped with gauge no.2 or no. 5	***2***	***P***
	- cross-section of the conductor (mm²) ..... :	***1 mm²***	—
	Maximum ambient temperature (°C) ..... :	***40 °C***	—
	Contact resistance		
	Measurement carried out in direct or alternating current ..... :	***0,1 A DC***.	—
	rated frequency (Hz) by alternating current ... :	***-***	—
	Screw-type fuse-carrier is tightened with a torque of two-thirds of the value in table 1:..... (Nm)		***N***
	Plug-on type or hinged-type fuse-carrier is installed as in normal use		***P***
	measuring cycle with d.c.		
	a) insertion of gauge in the fuse-holder		***P***
	b) measurement with current flowing in one direction		***P***
	c) measurement with current flowing in opposite direction		***P***
	d) removal of the gauge from the fuse-holder		***P***
	Measuring cycle with a.c.		
	a) insertion of the gauge in the fuse-holder		***N***
	b) measurement		***N***
	c) removal of the gauge from the fuse-holder		***N***
	Heating cabinet is increased, in each cycle to (°C) ..... :	***40 °C***	—
	Contact resistance after 0 cycles:		
	- requirement: ≤ 15 mΩ (mΩ) ..... :	***2,70 mΩ - 5,20 mΩ***	***P***
	Voltage drop after the 24th cycle:		
	- requirement: ≤ 15 mΩ (mΩ) ..... :	***2,80 mΩ - 5,30 mΩ***	***P***
	Voltage drop after the 48th cycle		

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Clause	Requirement – Test	Result - Remark	Verdict
	- requirement: ≤ 15 mΩ or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,80 mΩ - 5,40 mΩ***	***P***
	Voltage drop after the 72th cycle:		
	- requirement: ≤ 4,8 mV or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,80 mΩ - 5,40 mΩ***	***P***
	Voltage drop after the 96th cycle:		
	- requirement: ≤ 15 mΩ or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,80 mΩ - 5,50 mΩ***	***P***
	Voltage drop after the 120th cycle:		
	- requirement: ≤ 15 mΩ or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,80 mΩ - 5,70 mΩ***	***P***
	Voltage drop after the 144th cycle:		
	- requirement: ≤ 15 mΩ or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,80 mΩ - 6,10 mΩ***	***P***
	Voltage drop after the 168th cycle:		
	- requirement: ≤ 15 mΩ or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,80 mΩ - 6,30 mΩ***	***P***
	Voltage drop after the 192th cycle:		
	- requirement: ≤ 15 mΩ or 1,5 times the value measured after the 24th cycle (mΩ) ..... :	***2,80 mΩ - 6,40 mΩ***	***P***
	Visual inspection show no changes impairing further use such as cracks, deformations or the like		***P***
	Pull-out test		
	force (N) ..... :	***35 N***	—
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		***P***
8.5	Verification of thermal characteristics		***P***
8.5.2	Rated power dissipation		***P***

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Clause	Requirement – Test	Result - Remark	Verdict
8.5.2.2	Test arrangement for the overload and short-circuit protection		
8.5.2.2.1	Separate arrangement	For derating see graphic I	***P***
	Central terminal with dummy fuse-link of the power dissipation value Pv1 (W) ..... :	***Pv 1 1,6 W***	—
	- cross-section of the conductor (mm²) ..... :	***1 mm²***	—
	- torque (Nm) ..... :	***-***	—
	hottest point of the insulating part of the fuse terminal block (TS2) max ***102*** K (assigned by the manufacturer)	***70,5 K***	—
	Surface of actuating element (TS1) max ***62*** K	***27,2 K***	***P***
8.5.2.2.2	Compound arrangement	For derating see graphic II	***P***
	Five terminal blocks shall be installed on a support as in normal use.		***P***
	- cross-section of the conductor (mm²) :	***1 mm²***	—
	- torque (Nm) ..... :	***-***	—
	The fuse terminal blocks shall be equipped with dummy fuse-links of the maximum power dissipation value Pv2 and central terminal with dummy fuse-link of the power dissipation value Pv1 (W)…… .:	***Pv1 1,6 W*** ***Pv2 0,7 W***	—
	hottest point of the insulating part of the fuse terminal block (TS2) max ***102*** K (assigned by the manufacturer)	***90,2 K***	—
	Surface of actuating element (TS1) max ***62*** K	***45,2 K***	***P***
8.5.2.3	Test arrangement for exclusive short-circuit protection		
8.5.2.3.1	Separate arrangement	For derating see graphic III	***P***
	Central terminal with dummy fuse-link of the	***Pv2 1 W***	—

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Clause	Requirement – Test	Result - Remark	Verdict
	power dissipation value Pv2 (W) ..... :		
	- cross-section of the conductor (mm²) ..... :	***1 mm²***	—
	- torque (Nm) ..... :	**-**	—
	hottest point of the insulating part of the fuse terminal block (TS2) max ***102*** K (assigned by the manufacturer)	***46,8 K***	—
	Surface of actuating element (TS1) max ***62*** K	***21,1 K***	***P***
8.5.2.3.2	Compound arrangement	**For derating see graphic IV**	***P***
	Five terminal blocks shall be installed on a support as in normal use.		
	- cross-section of the conductor (mm²).....:	***1 mm²***	—
	- torque (Nm)..... : 	**-**	—
	The fuse terminal blocks shall be equipped with dummy fuse-links of the maximum power dissipation value Pv2 (W) ……..……:	***Pv2 1 W***	—
	hottest point of the insulating part of the fuse terminal block (TS2) max ***102*** K (assigned by the manufacturer)	***73,3 K***	—
	Surface of actuating element (TS1) max ***62*** K	***40,4 K***	***P***
8.5.3	Durability		
	Fuse terminal blocks shall be resistant to heat and mechanical stresses which are liable to occur in normal use		***P***
	The fuse terminal block shall be subjected to the test for separate arrangement according to 8.5.2.2.1 or		***P***

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Clause	Requirement – Test	Result - Remark	Verdict
	8.5.2.3.1, as applicable.		
	The test shall be carried out continuously over a period of 168 h.		***P***
8.4.3	Dielectric tests		
	- five terminal blocks connected with unfavourable cross-section (mm²) /type/ conductor end length (mm) ..... :	***4 mm² rigid 10 - 12 mm***	—
	- type of most unfavourable support ..... :	***Top hat rail 35 mm***	—
	Dielectric test, Uimp indicated:		
	Test A		
	- Gauge no.3 or no. 6 inserted..... :	***3***	—
	- rated impulse withstand voltage (V) ..... :	***4 kV***	—
	- test Uimp (kV) ..... :	***4,8 kV***	***P***
	- rated insulation voltage (V) ..... :	***250 V***	—
	- test voltage for 5 sec (V) ..... :	***1500 V***	***P***
	Test B		
	- Gauge no.1 or no. 4 inserted..... :	***1***	—
	- rated impulse withstand voltage (V) ..... :	***6 kV***	—
	- test Uimp (kV) ..... :	***7,3 kV***	***P***
	- rated insulation voltage (V) ..... :	***250 V***	—
	- test voltage for 5 sec (V) ..... :	***1500 V***	***P***
8.4.4	Contact resistance:		
	Measurement carried out in direct or alternating current ..... :	***0,1 A DC***	—
	rated frequency (Hz) by alternating current ... :	***-***	—
	Gauge no.2 or no. 5 inserted ..... :	***2***	—
	Screw-type fuse-carrier is tightened with a torque of two-thirds of the value in table 1:..... (Nm)	***-***	***P***

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Clause	Requirement – Test	Result - Remark	Verdict
	Plug-on type or hinged-type fuse-carrier is installed as in normal use		***P***
	measuring cycle with d.c.		
	a) insertion of gauge in the fuse-holder		***P***
	b) measurement with current flowing in one direction		***P***
	c) measurement with current flowing in opposite direction		***P***
	d) removal of the gauge from the fuse-holder		***P***
	Measuring cycle with a.c.		
	a) insertion of the gauge in the fuse-holder		***N***
	b) measurement		***N***
	c) removal of the gauge from the fuse-holder		***N***
	Measuring values	***See table III***	***N***
	The mean value of the contact resistance shall not exceed 10 mΩ ..... :	***2,47 mΩ***	***P***
	The individual value of the contact resistance shall not exceed 15 mΩ ..... :		***P***
8.3.4	Compatibility between fuse terminal blocks and the fuse-link		
	The maximum gauge No. 1 or gauge No. 4 in accordance with table A.1 is inserted and withdrawn 10 times from the fuse-carrier	***1***	***P***
	Following each insertion of the gauge, the fuse-carrier is fitted to the terminal block base as in normal position		***P***
	For fuse terminal blocks with screw-type fuse carrier, the fuse carrier is fitted with a torque of two-thirds of the value specified in table 1 (Nm)		***P***

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Clause	Requirement – Test	Result - Remark	Verdict
	- No visible damage - No looseing of parts - In the most unfavourable position, the - minimum gauge No. 2 or gauge No. 5 is not fall from the fuse-carrier in the most unfavourable position.or fuse terminal blocks with screw-type fuse carrier, the fuse carrier is fitted with a torque of two-thirds of the value specified in table 1 (Nm)	***2***	***P***
8.4.4	Contact resistance:		
	Measurement carried out in direct or alternating current ..... :	***0,1 A DC***	—
	rated frequency (Hz) by alternating current ... :	***-***	—
	Gauge no.2 or no. 5 inserted ..... :	***2***	—
	Screw-type fuse-carrier is tightened with a torque of two-thirds of the value in table 1:..... (Nm)	***-***	***N***
	Plug-on type or hinged-type fuse-carrier is installed as in normal use		***P***
	measuring cycle with d.c.		
	a) insertion of gauge in the fuse-holder		***P***
	b) measurement with current flowing in one direction		***P***
	c) measurement with current flowing in opposite direction		***P***
	d) removal of the gauge from the fuse-holder		***P***
	Measuring cycle with a.c.		***P***
	a) insertion of the gauge in the fuse-holder		***N***
	b) measurement		***N***
	c) removal of the gauge from the fuse-holder		***N***
	Measuring values	See table IV	***P***
	The mean value of the contact resistance shall not exceed 10 mΩ ..... :	***2,38 mΩ***	***P***

IEC60947-7-3			
Clause	Requirement – Test	Result - Remark	Verdict
	The individual value of the contact resistance shall not exceed 15 mΩ ..... :		***P***
8.5.4	Needle flame test		
	Before the test, the terminal blocks are stored for 24 h in an atmosphere having a temperature between 15°C and 35°C and a relative humidity between 45% and 75%		***P***
	The flame is applied for 10s. for insulation walls <1 mm and/or an area <100 mm², the flame is applied for 5 s.		***P***
	The terminal blocks are considered to have passed the test if the duration of burning is < 30s in case of ignition. Moreover, the tissue paper on the pinewood board shall not ignite if burning or glowing particles fall from the terminal block.		***P***
8.6	Verification of EMC characteristics		
	Subclause 8.4 of EN 60947-1 applies with the following addition		***N***
8.6.1	Immunity		
	Terminal blocks within the scope of this standard are not sensitive of electromagnetic disturbances and therefore no immunity tests are necessary.		***N***
8.6.2	Emission		
	Terminal blocks within the scope of this standard do not generate electromagnetic disturbances and therefore no emission tests are necessary.		***N***

Remarks

Table I: contact resistance after compatibility between fuse terminal blocks and fuse-links, clause 8.3.4

cycle	sample 1		sample 2		sample 3		sample 4		sample 5	
	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mVΩ)
1	***2,43***	***2,47***	***2,39***	***2,36***	***2,36***	***2,38***	***2,48***	***2,54***	***2,39***	***2,42***
2	***2,46***	***2,50***	***2,34***	***2,33***	***2,34***	***2,35***	***2,51***	***2,56***	***2,41***	***2,41***
3	***2,38***	***2,39***	***2,35***	***2,30***	***2,32***	***2,34***	***2,50***	***2,54***	***2,37***	***2,39***
4	***2,43***	***2,36***	***2,42***	***2,43***	***2,34***	***2,30***	***2,46***	***2,49***	***2,35***	***2,37***
5	***2,40***	***2,37***	***2,44***	***2,50***	***2,35***	***2,32***	***2,44***	***2,45***	***2,36***	***2,35***

Table II: contact resistance, clause 8.4.4

cycle	sample 1		sample 2		sample 3		sample 4		sample 5	
	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)
1	***2,28***	***2,30***	***2,42***	***2,37***	***2,38***	***2,46***	***2,21***	***2,25***	***2,40***	***2,38***
2	***2,34***	***2,35***	***2,47***	***2,41***	***2,41***	***2,45***	***2,20***	***2,27***	***2,44***	***2,36***
3	***2,36***	***2,38***	***2,51***	***2,52***	***2,37***	***2,39***	***2,22***	***2,26***	***2,46***	***2,40***
4	***2,35***	***2,39***	***2,54***	***2,50***	***2,35***	***2,34***	***2,26***	***2,31***	***2,50***	***2,41***
5	***2,36***	***2,40***	***2,52***	***2,47***	***2,30***	***2,31***	***2,27***	***2,34***	***2,51***	***2,41***

Table III: contact resistance after durability, clause 8.5.3

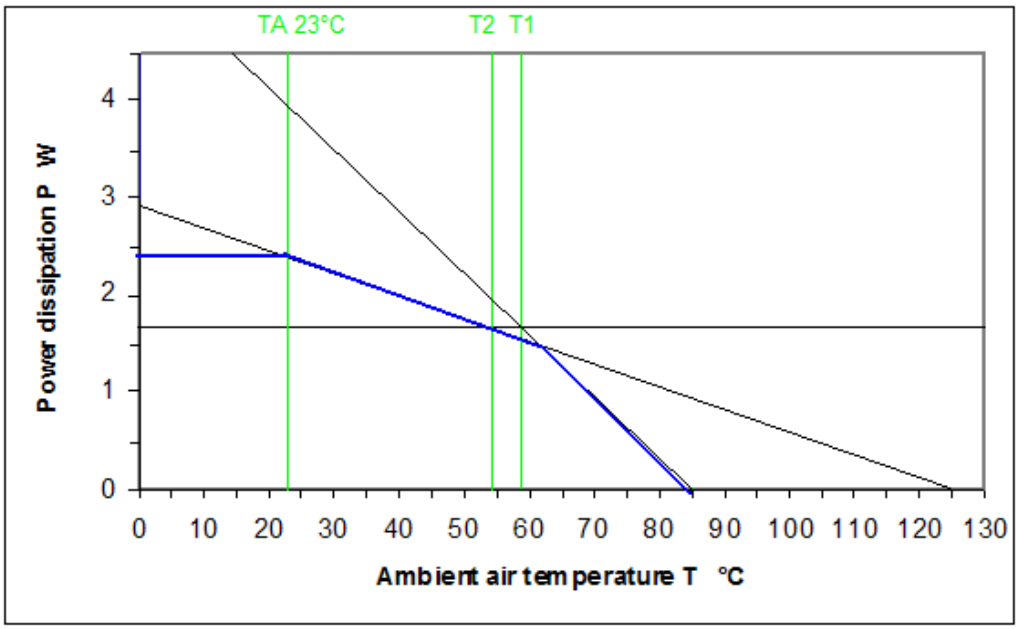
cycle	sample 1		sample 2		sample 3		sample 4		sample 5	
	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)
1	***2,42***	***2,36***	***2,47***	***2,51***	***2,31***	***2,32***	***2,51***	***2,47***	***2,40***	***2,44***
2	***2,41***	***2,39***	***2,50***	***2,52***	***2,28***	***2,30***	***2,54***	***2,48***	***2,40***	***2,48***
3	***2,38***	***2,36***	***2,46***	***2,48***	***2,34***	***2,35***	***2,55***	***2,46***	***2,44***	***2,47***
4	***2,37***	***2,35***	***2,44***	***2,46***	***2,36***	***2,37***	***2,52***	***2,44***	***2,46***	***2,49***
5	***2,35***	***2,31***	***2,43***	***2,44***	***2,40***	***2,40***	***2,50***	***2,41***	***2,49***	***2,51***

Remarks

Table IV: compatibility between fuse terminal block and fuse link after durability, clause 8.5.3

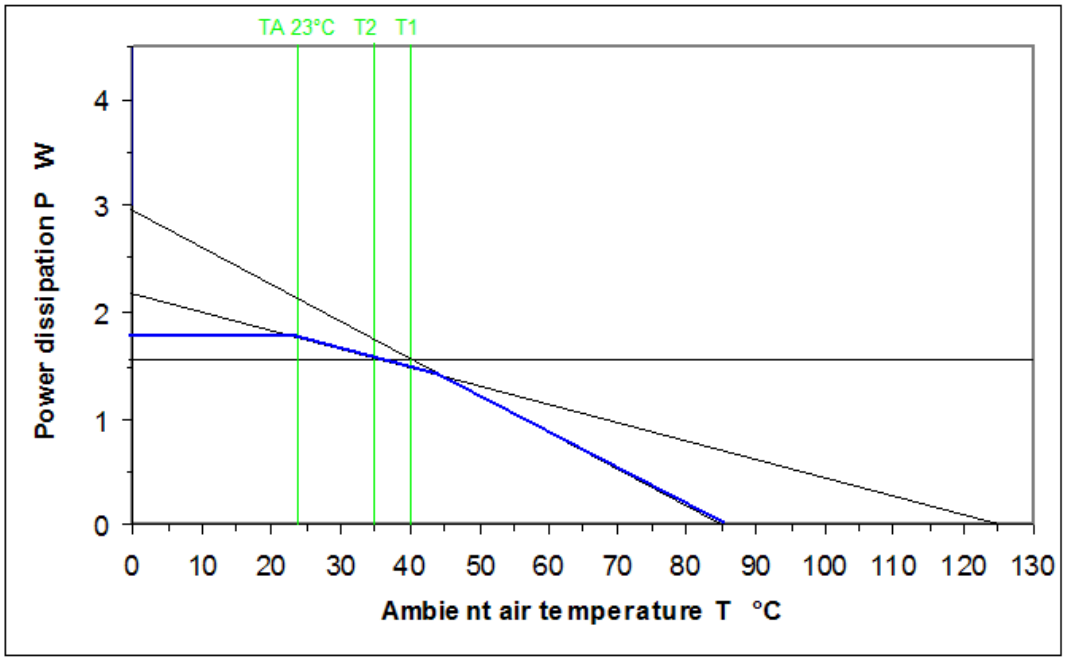
cycle	sample 1		sample 2		sample 3		sample 4		sample 5	
	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)	one direction for d.c. or a.c. (mΩ)	other direction for d.c. only (mΩ)
1	***2,51***	***2,48***	***2,26***	***2,30***	***2,39***	***2,36***	***2,40***	***2,39***	***2,31***	***2,30***
2	***2,56***	***2,48***	***2,28***	***2,34***	***2,41***	***2,37***	***2,36***	***2,35***	***2,31***	***2,29***
3	***2,54***	***2,49***	***2,31***	***2,36***	***2,42***	***2,36***	***2,34***	***2,36***	***2,34***	***2,31***
4	***2,56***	***2,51***	***2,38***	***2,37***	***2,46***	***2,41***	***2,34***	***2,35***	***2,36***	***2,32***
5	***2,57***	***2,52***	***2,41***	***2,36***	***2,44***	***2,41***	***2,32***	***2,33***	***2,35***	***2,31***

Graphic I overload and short-circuit protection

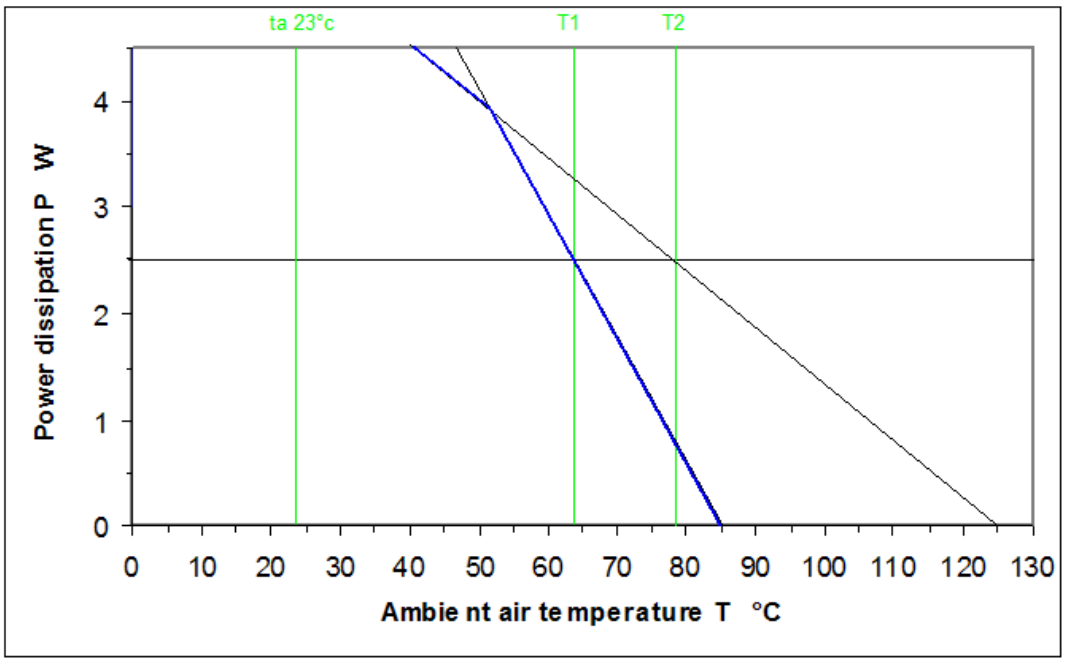


Remarks

Graphic II overload and short-circuit protection

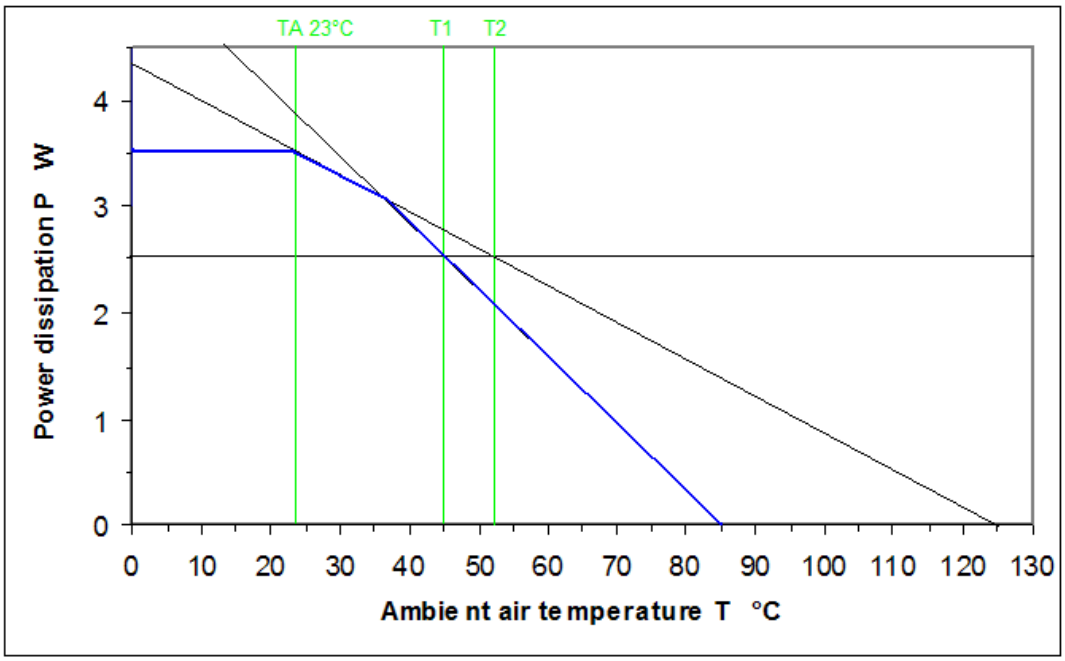


Graphic III for exclusive short-circuit protection



Remarks

Graphic IV for exclusive short-circuit protection



Remarks

Additional test for terminal blocks provided with indicator lights

Construction:
The indicator light (LED) is not removable.
The power dissipation in normal use in the series resistor exceed not the rated power dissipation, see table below.

Type	*Rated voltage (V)*	*Power dissipation (W)*	
		DC	*AC*
2002-0911/1000-0541	*24 V*	*0,005*	*-*
2002-0911/1000-0542	*48 V*	*0,090*	*-*
2002-0911/1000-0836	*230 V*	*-*	*0,57*

Dielectric test
The indicator light-circuit was subjected, for 1 second, to an ac voltage equal to twice the rated voltage of the indicator light. No flashover or breakdown occurs, and neither the lamp nor its resistor was defective.

Type	*Rated voltage (V)*	*Test voltage (V)*
2002-0911/1000-0541	*24 V*	*48 V*
2002-0911/1000-0542	*48 V*	*96 V*
2002-0911/1000-0836	*230 V*	*460 V*

Temperature-rise test (normal)
The indicator light was connected to 1,06 times the rated voltage until steady temperature was reached. The maximum measured temperature-rise.

Type	*Rated voltage (V)*	*Test voltage (V)*	*Temperature-rise (K)*
2002-0911/1000-0541	*24 V*	*25,44 V*	*11 K*
2002-0911/1000-0542	*48 V*	*50,88 V*	*25,9 K*
2002-0911/1000-0836	*230 V*	*243,8 V*	*58,3 K*

Remarks

Temperature-rise test (abnormal)
The indicator light was connected to the rated voltage until steady temperature was reached. The LED was short-circuit, because the clearances and creepage distances of the indicator light are smaller than the required distances in the EN 60947-1. The maximal measured temperature-rise.

Type	*Rated voltage (V)*	*Test voltage (V)*	*Temperature-rise (K)*
2002-0911/1000-0541	*24 V*	*24 V*	*13,7 K*
2002-0911/1000-0542	*48 V*	*48 V*	*25,6 K*
2002-0911/1000-0836	*230 V*	*230 V*	*43,6 K*

Additional test for terminal blocks provided with indicator lights

Construction:
The indicator light (LED) is not removable.
The power dissipation in normal use in the series resistor exceed not the rated power dissipation, see table below.

Type	*Rated voltage (V)*	*Power dissipation (W)*	
		DC	*AC*
2002-1981/1000-0449	*12 Vdc*	*0,0547*	*-*
2002-1981/1000-0434	*24 Vdc*	*0,1131*	*-*
2002-1981/1000-0435	*48 Vdc*	*0,2220*	
2002-1981/1000-0541	*12-30 V ac/dc*	*0,0799*	*0,0825*
2002-1981/1000-00836	*230 V ac/dc*	*0,2313*	*0,2388*

Dielectric test
The indicator light-circuit was subjected, for 1 second, to an ac voltage equal to twice the rated voltage of the indicator light. No flashover or breakdown occurs, and neither the lamp nor its resistor was defective.

Type	*Rated voltage (V)*	*Test voltage (V)*
2002-1981/1000-0449	*12 Vdc*	*24*
2002-1981/1000-0434	*24 Vdc*	*48*
2002-1981/1000-0435	*48 Vdc*	*96*
2002-1981/1000-0541	*12-30 V ac/dc*	*60*
2002-1981/1000-00836	*230 V ac/dc*	*460*

Remarks

Temperature-rise test (normal)
The indicator light was connected to 1,06 times the rated voltage until steady temperature was reached. The maximum measured temperature-rise.

Type	*Rated voltage (V)*	*Test voltage (V)*	*Temperature-rise (K)*
2002-1981/1000-0449	*12 Vdc*	*12,72*	*6*
2002-1981/1000-0434	*24 Vdc*	*25,44*	*13*
2002-1981/1000-0435	*48 Vdc*	*50,88*	*25*
2002-1981/1000-0541	*12-30 V ac/dc*	*31,8*	*16*
2002-1981/1000-00836	*230 V ac/dc*	*243,8*	*40*

Temperature-rise test (abnormal)
The indicator light was connected to the rated voltage until steady temperature was reached. The LED was short-circuit, because the clearances and creepage distances of the indicator light are smaller than the required distances in the EN 60947-1. The maximum measured temperature-rise.

Type	*Rated voltage (V)*	*Test voltage (V)*	*Temperature-rise (K)*
2002-1981/1000-0449	*12 Vdc*	*12,03*	*14*
2002-1981/1000-0434	*24 Vdc*	*24,0*	*14*
2002-1981/1000-0435	*48 Vdc*	*48,05*	*19*
2002-1981/1000-0541	*12-30 V ac/dc*	*30,0*	*26*
2002-1981/1000-0836	*230 V ac/dc*	*230,05*	*27*

Remarks

Product data: type-number overview of series 2002

product	:	Terminal blocks for copper conductors
trade name(s)	:	WAGO
type(s)	:	TOPJOB S 2002-....
material colours	:	thermoplastic material …./000-001 green ..../000-014 brown, .../000-015 gentian blue
stripping length	:	10 - 12 mm
rated connecting capacity	:	2,5 mm² / 4 mm² rigid and flexible
connectable conductors	:	0,25 mm² - 4 mm² rigid and flexible
method of mounting	:	for mounting on top hat rail 35 mm
conventional free air thermal current (Ith)	:	24 A (2,5 mm²) 32 A (4 mm²)
rated voltage	:	800 V
rated impulse withstand voltage	:	8 kV
type	:	2002 with suffixes -6401, -6402, -6403, -6404, -6405, -6406, -6408, -6409
description	:	four-conductor through terminal block, with screwless-type terminals, 1-pole, 35° angled
type	:	2002-6407
description	:	four-conductor earth terminal block, with screwless-type terminals, 1-pole, 35° angled
type	:	2002 with suffixes -6301, -6302, -6303, -6304, -6305, -6306, -6308, -6309
description	:	three-conductor through terminal block, with screwless-type terminals, 1-pole, 35° angled
type	:	2002-6307
description	:	three-conductor earth terminal block, with screwless-type terminals, 1-pole, 35° angled
type	:	2002 with suffixes -1201, -1202, -1203, -1204, -1205, -1206, -1208, -1209
description	:	two-conductor through terminal block, with screwless-type terminals, 1-pole
type	:	2002-1207
description	:	two conductor earth terminal block, with screwless-type terminals, 1-pole

Remarks

type	:	2002 with suffixes -1301, -1302, -1303, -1304, -1305, -1306, -1308, -1309
description	:	three conductor through terminal block, with screwless-type terminals, 1-pole
type	:	2002-1307
description	:	three conductor earth terminal block, with screwless-type terminals, 1-pole
type	:	2002 with suffixes -1401, -1402, -1403, -1404, -1405, -1406, -1408, -1409
description	:	four conductor through terminal block, with screwless-type terminals, 1-pole
type	:	2002-1407
description	:	four conductor earth terminal block, with screwless-type terminals, 1-pole
type	:	2002-1441
description	:	four conductor double potential terminal block, with screwless -type terminals, 2-poles
type	:	2002 with suffixes -2431, -2432, -2433, -2401, -2402, -2403, -2404, -2405, -2406, -2434, - 2435, -2436
description	:	four conductor double deck terminal block, with screwless-type terminals, with or without marker carrier, 2 - poles
type	:	2002 with suffixes -2438,-2408
description	:	-2409, -2439 eight conductor double deck terminal block with screwless-type terminals, upper and lower levels are connected to each other, with or without marker carrier
type	:	2002 with suffixes -2447, -2457, -2458, -2417, -2427, -2448, -2418, -2428
description	:	four conductor double deck terminal block, with screwless-type terminals. 2 levels, lower level connected to ground, 2-poles with or without marker carrier
type	:	2002 with suffixes -2437, -2407
description	:	eight conductor ground double deck terminal block, with screwless-type terminals, upper and lower level are connected to each other
type	:	2002 with suffixes -2407, -2437 with suffixes /0999-0950
description	:	eight conductor ground double deck terminal block, with screwless-type terminals, upper and lower level are connected to each other, with indicating internal connection between lower and upper tiers

Remarks

conventional free air thermal current (Ith)	:	24 A
rated voltage	:	500 V
rated impulse withstand voltage	:	6 kV
type	:	2002 with suffixes -2231, -2231/007-000, -2232, -2233, -2234, -2201, -2202, -2203, -2236, -2204, -2206
description	:	two-conductor through terminal block , with screwless-type terminals, 2-poles
type	:	2002 with suffixes -2231, -2232, 2233, -2234 with suffixes /0099-000
description	:	two-conductor through terminal block , with screwless-type terminals, 2-poles indicating integrated endplate
type	:	2002 with suffixes -2201, -2231 with suffixes /0057-0000
description	:	two-conductor through terminal block, with screwless-type terminals, 2-poles, without lower current bar
.	:	
type	:	2002 with suffixes -2201, -2202, -2203, -2204, -2207, -2208, -2209 with suffixes /0099-0000
description		two-conductor through terminal block, with screwless type terminals, 2-poles, without lower bar, suffix indicating integrated endplate
type	:	2002 with suffixes -2217, -2227, -2247, -2257, -2218, -2228, -2248, -2258
description	:	two-conductor through terminal block with earth connection and screwless-type terminals,2-poles
type	:	2002 with suffixes -2217,-2218, -2227, -2228, -2247, -2248, -2257, -2258, -2458 with suffixes /0099-0000
description	:	two-conductor through terminal block with earth connection, and screwless-type terminals, 2-poles, integrated endplate
type	:	2002 with suffixes -2238, -2239, -2208, -2209
description	:	two-conductor through terminal block with screwless-type terminals, 2-poles. Upper and lower pole connected to each other
type	:	2002 with suffixes -2207, -2237
description	:	two-conductor earth terminal block, with screwless-type terminals, 2-poles. Upper and lower pole connected to each other
type	:	2002 with suffixes -2237, -2238, -2239 with suffixes /0099-0000
description	:	two-conductor earth terminal block, with screwless-type terminals, 2-poles, upper and lower pole connected to each other, integrated endplate

Remarks

type : 2002 with suffixes -2207, -2237 with suffixes /0999-0950
description : two- conductor earth terminal block, with screwless-type terminals, 2-poles, upper and lower pole connected to each other, with indicating internal connection between lower and upper tiers

type : 2002 with suffixes 3231, -3231/007-000, -3233, -3201, -3203
description : two-conductor through terminal block, with screwless-type terminals, 3 -poles, colored gray
2002-3204 blue
2002-3206 orange
2002-3208 violet
2002-3209 blue/violet
2002-3234 blue
2002-3236 orange
2002-3238 violet
2002-3239 blue/violet

type : 2002 with suffixes -3201, -3203, -3231 with suffixes /0402-0000
description : two-conductor through terminal block, with screwless-type terminals, 3-poles,conductor entry colored violet
/0350-0000 conductor entry colored brown blue

type : 2002 with suffixes -3247, -3257, -3217, -3227
description : two-conductor through terminal block with earth connection and screwless-type terminals, 3-poles

type : 2002 with suffixes -3248, -3258, -3218, -3228
description : two-conductor through terminal block with shield and screwless-type terminal, 3-poles

type : 2002 with suffixes -3228, -3258 with suffix /0403-0000
description : two-conductor through terminal block with shield and screwless type-terminal, 3-poles, conductor entry colored white

type : 2002 with suffixes -3207, -3237
description : two conductor earth terminal
block, with screwless-type terminals, 3-poles, all poles connected to each other 2002-3237 with marker carrier

type : 2002 with suffixes -3707, -3237 with suffixes /0999-0950
description : two conductor earth terminal block, with screwless-type terminals, 3-poles, all poles connected to each other, with indicating internal connection between lower and upper tiers.

Remarks

conventional free air thermal current (Ith)	:	24 A
rated voltage	:	1000 Vac / 1500 Vdc
rated impulse withstand voltage	:	6 kV
type	:	2002-2201/0097-000
description	:	two-conductor through terminal block, with screwless-type terminals, 2-poles, without lower current bar, with end cover type 2002-2295 gray
type	:	2002-2201/0098-000
description	:	two-conductor through terminal block, with screwless-type terminals, 2-poles, without lower current bar, with end cover type 2002-2296 orange
conventional free air thermal current (Ith)	:	16 A
rated voltage	:	400 V
rated impulse withstand voltage	:	6 kV
type	:	2002 with suffixes -1671, -1674, -1672, -1673, -1675, -1676
description	:	two-conductor disconnect terminal block for test and measurement, with screwless-type terminals, 1-pole
type	:	2002 with suffixes -1661 up to and including -1666
description	:	two-conductor carrier terminal block, with screwless-type terminals, 1-pole
type	:	2002- with suffixes -1601, -1602, -1603, -1604
description	:	two-conductor through terminal block, with screwless-type terminals, 1-pole
type	:	2002 with suffixes -1771,-1774, -1871, -1872, -1873, -1874, -1875, -1876, -1971, -1974
description	:	two, three or four conductor disconnect terminal block for test and measurement, with screwless-type terminals, 1-pole
type	:	2002- with suffixes -1761, -1772, -1861, -1862, -1863, -1864, -1865, -1866, -1961, -1962, -1972, -1964
description	:	two, three or four-conductor carrier terminal block, with screwless-type terminals, 1-pole
type	:	2002 with suffixes -1671, -1672, -1674, -1771, -1772, -1774, -1871, -1872, -1874, -1971, -1972, -1974 with suffixes /0401-0000
description	:	two, three or four conductor carrier terminal block, with mechanical interlock, with screw less type terminals, 1-pole

Remarks

type	:	2002 with suffixes -1701, -1702,-1703, -1704, -1707, -1801, -1802, -1803, -1804, -1807, -1901, -1902, -1903, -1904, -1907
description	:	two, three or four-conductor through terminal block, with screwless type terminals, 1-pole
type	:	2002 with suffixes -2951, -2954, -2952, -2953, -2956
description	:	four-conductor double deck double disconnect terminal block, with screwless-type terminals, 2-poles
type	:	2002-2901
description	:	four-conductor double deck double disconnect terminal block, with screwless-type terminals, 2-poles, without movable knife disconnection
type	:	2002 with suffixes -2951, -2952, -2953, -2954, -2956, -2958, -2959 with suffixes /0400-000
description	:	four-conductor double deck double disconnect terminal block, with screwless type terminals, 2-poles, disconnect knife rotated by 180°
type	:	2002 with suffixes -2941, -2944, -2948, -2949
description	:	four-conductor double deck double disconnect terminal block, with screwless type terminals, 2-poles, without pivoting disconnect knife
type	:	2002 with suffixes -2958, -2959
description	:	four-conductor double deck double disconnect terminal block, upper and lower pole connected to each other on right -side, with screwless-type terminals, 1-pole .
type	:	2002 with suffixes -2971, -2972, -2973, -2974, -2976, -2671, -2667, -2678, -2672, -2677, -2661, -2662
description	:	four-conductor double deck disconnect terminal block, with disconnection on upper deck only, with screwless-type terminals, 2-poles
type	:	2002 with suffixes -2961,-2963
description	:	four-conductor double deck disconnect terminal block, with disconnect on lower deck only
conventional free air thermal current (Ith)	:	16 A
rated voltage	:	600 V
rated impulse withstand voltage	:	6 kV
type	:	2002 with suffixes -1662/099-000 and 1664/099-000
description	:	two-conductor carrier terminal block, with screwless-type terminals, 1-pole, with integrated endplate
conventional free air thermal	:	10 A (separate with automotive fuse 80% of 10 A = 8 A)
current (Ith)	:	5 A (compound with automotive fuse 80% of 5 A = 4 A)
rated voltage	:	400 V determined by the fuselink max. 32 V
rated impulse withstand voltage	:	6 kV

Remarks

:

type : 2002 with suffixes -1681, -1682, 1684
description : two conductor fuse terminal block, with screwless-type terminals, 1-pole, exclusive short circuit protection

-separate arrangement: PVK with automotive fuse 10 A loaded with 80% of In
-compound arrangement: PVK with automotive fuse 5 A loaded with 80% of In

type : 2002-with suffixes -1781, -1881,-1882, -1884, -1981, -1982, -1984
description : two, three or four conducted fuse terminal block, with screw-less-type terminals, 1-pole exclusive short circuit protection
- separate arrangement: PVK with automotive fuse 10 A loaded with 80% of In
- compound arrangement:
PVK with automotive fuse 5 A loaded with 80% of In
.

type : 2002 with suffixes -1981/1000, -1982/1000, -1984/1000
terminal blocks with blown fuse LED indication

-0449 with LED 12 V, anode left
-0434 with LED 24 V, anode left
-0435 with LED 48 V, anode left
: -0429 with LED 12 V, anode right
-0413 with LED 24 V, anode right
- 0414 with LED 48 V, anode right

conventional free air thermal current (Ith) : 24 A (2,5 mm²)
32 A (4 mm²)
rated voltage : 500 V/800 V (if provided with endplate .../0099-0000)
rated impulse withstand voltage : 6 kV

type : 2002-with suffixes -2601, -2602, -2603, -2604 two-conductor through terminal
description : block, with screwless-type terminals, 2-poles

type : 2002 with suffixes -2608, -2609
description : two-conductor through terminal block,2-poles, upper and lower pole
connected to each other

type : 2002-2607
description : two-conductor earth terminal block, with screwless-type terminals, 2-poles. upper and lower pole connected to each other

type : 2002- with suffixes -2647, -2648, -2657, -2658
description : two conductor through terminal block with earth connection, and screwless-type terminals, 2-poles

conventional free air thermal current (Ith) : 24 A (2,5 mm²)
32 A (4 mm²)
rated voltage : 250 V
rated impulse withstand voltage 4 kV

Remarks

:

type : 2002-7114
description one conductor N-disconnect terminal block, with screwless type terminals and 1 connection for busbar (10 x 3 mm), 1-pole

type : 2002-7111
description one conductor power distribution disconnect terminal block, with screwless type terminals and 1 connection for busbar (10 x 3 mm), 1-pole

type : 2002-7211
description 2 conductor power distribution disconnect terminal block, with screwless type terminals and 1 connector for busbar (10 x 3 mm), 1-pole, grey.

type : 2002-7214 2 conductor N-disconnect terminal block,
description with screwless type terminals and 1 connector for busbar (10 x 3 mm), 1-pole blue

conventional free air thermal current (Ith) : 6,3 A
rated voltage : 250 V
rated impulse withstand voltage : 6 kV
fuse link size : 5 x 20 mm
overload and short circuit protection
- separate arrangement: Pv 1,6 W
- compound arrangement: Pv 1,6 W
exclusive short circuit protection
- separate arrangement: Pvk 2,5 W
- compound arrangement: Pvk 2,5 W

type : 2002-with suffixes -1611, -1612, -1614
description : two-conductor fuse terminal block with end plate, without blown fuse indication, with screwless type terminals, 1-pole

type : 2002 with suffixes
-1611/1000-..., -1612/1000-..., 1614/1000-...
description : two-conductor fuse terminal blocks with end plate, with blown fuse indication by LED with screwless type terminals,1-pole with suffixes
-541 provided with LED 12-30 V
-542 provided with LED 30-65 V
-836 provided with LED 230 V
-876 provided with LED 120 V

type : 2002 with suffixes -1711, -1811, -1812, -1911, -1912
description : two, three or four-conductor fuse terminal block with end plate, without blown fuse indication, with screwless type terminals, 1-pole

type : 1-pole 2002 with suffixes -1814, -1914
description : two-conductor fuse terminal block with end plate, without blown fuse indication, with screwless-type terminals, 1-pole

Remarks

type	:	2002 with suffixes -1611, -1612, -1614, -1811, -1812, -1814, -1911, -1912, -1914
description		with suffix 0281-0503,with dummy fuse to work as disconnect terminal block and endplate
type	:	2002 with suffixes -1711/1000-..., -1811/1000..., -1812/1000-..., -1814/1000-..., -1911/1000-..., -1912/1000-..., -1914/1000
description	:	four-conductor fuse terminal blocks with blown fuse indication on by LED, with screwless type terminals, 1-pole with suffixes -541 provided with LED 12-30 V -542 provided with LED 30-65 V -836 provided with LED 230 V -867 provided with LED 120 V
type	:	2004 with suffixes -0911, -0912, -0914
description	:	fuse plug for miniature metric fuses, for connection on terminal block
type	:	2004 with suffixes -0911/1000-..., 0912/1000-..., -0914/1000-...
description	:	fuse plug for miniature metric fuses with blown fuse indication by LED, for connection on terminal block 2002-1661 and 2002-1861with suffixes -0541 provided with LED 12-30 V -0542 provided with LED 30-65 V -0836 provided with LED 230 V -0867 provided with LED 120 V
conventional free air thermal current (Ith)	:	6,3 A (fuse) 28 A (4 mm²) lower level
rated voltage	:	250 V
rated impulse withstand voltage		6 kV
fuse link size	:	5 x 20 mm overload and short circuit protection: -separate arrangement: Pv 1,6 W -compound arrangement: Pv 1,6 W exclusive short circuit protection: -separate arrangement: Pvk 2,5 W -compound arrangement: Pvk 2,5 W
type	:	2002- with suffixes -2611/1000-..., -2612/1000-..., -2614/1000-..., -2617/1000-...
description	:	two-conductor fuse terminal block with end plate, with screwless type terminals, with fuse-holder on upper deck only. 2-poles, with blown fuse indicator by LED -0541 provided with LED 12-30 V -0542 provided with LED 30-65 V -0836 provided with LED 230 V -0867 provided with LED 120 V
conventional free air thermal current (Ith)	:	20 A (2,5 mm²) 25 A (4 mm²)
rated voltage	:	800 V
rated impulse withstand voltage	:	8 kV

Remarks

type	:	2002 with suffixes -4127, -4157
description	:	quadruple deck rail mounted terminal block, with screwless-type terminals, 4-poles (lower pole PE connection)
type	:	2002 with suffixes -4111, -4141, -4116, -4146
description	:	quadruple deck rail mounted terminal block, with screwless-type terminals, 2-poles
type	:	2002 with suffixes -4101, -4131, -4136
description	:	quadruple deck rail mounted terminal block, with screwless-type terminal, 3-poles 2002-4106 housing orange 2001-4131 housing orange
conventional free air thermal current (Ith)	:	16 A (2,5 mm²)
rated voltage	:	400 V
rated impulse withstand voltage		6 kV
type	:	2002-1549
description		two-conductor double disconnect terminal block, with screwless type terminals, 1-pole, left side disconnection which can be bridged with a jumper bar, right side knife disconnect
type	:	2002-1568
description		two-conductor double disconnect terminal block with mounting rail contact, with screwless type terminals, 1-pole, left side disconnection which can be bridge with a jumper bar, right side jumper bar set by factory

Remarks

