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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	44,6 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.4.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1380 V	—
	No breakdown or flashover		P
8.3.4.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2 mA/pole .....:	0,01 mA	P
8.3.4.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	6 mm²	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.4.4 on page 110	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.5	TEST SEQUENCE III: SHORT-CIRCUIT PERFORMANCE CAPABILITY		N/A
8.3.5.1	Short-time withstand current test		N/A
	Rated short-time withstand current Icw (A) (>12.Ie max) .....:		N/A
	test voltage (V) .....:	L1: L2: L3:	—
	r.m.s. test current (A) .....:	L1: L2: L3:	—
	peak test current (A) .....:	L1: L2: L3:	—
	power factor/time constant .....:	L1: L2: L3:	—
	test duration (s) .....:		—
8.3.5.1.5	Behaviour of the equipment during the test		N/A
	Test performed without:		—
	- endanger to the operator		N/A
	- cause damage to adjacent equipment		N/A
	No permanent arcing		N/A
	No flash over between poles and poles and frame		N/A
	No melting of the fuse in the detection circuit		N/A
8.3.5.1.6	Condition of the equipment after making and breaking capacity tests		N/A
	Immediately after the test equipment must work satisfactorily		N/A
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N/A
	- equipment is able to carry its rated current after normal closing operation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.2	Short-circuit making capacity		N/A
	Rated short-circuit making capacity Icm (A) ....:		N/A
	test voltage (1.05xUe) .... (V):	L1: L2: L3:	—
	r.m.s. test current (A) ....:	L1: L2: L3:	—
	maximum peak test current (factor n)		N/A
	power factor/time constant ....:	L1: L2: L3:	N/A
	current duration (s) ....:		—
	Time interval between the cycles		—
8.3.5.2.5	Behaviour of the equipment during the test		N/A
	Test performed without:		—
	- endanger to the operator		N/A
	-cause damage to adjacent equipment		N/A
	No permanent arcing		N/A
	No flash over between poles and poles and frame		N/A
	No melting of the fuse in the detection circuit		N/A
8.3.5.2.6	Condition of the equipment after making and breaking capacity tests		N/A
	Immediately after the test equipment must work satisfactorily		N/A
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N/A
	- equipment is able to carry its rated current after normal closing operation		N/A
8.3.5.3	Dielectric verification		N/A
	test voltage: 2*Ue with a minimum of 1000V~ ....:		—
	No flashover or breakdown		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.4	Leakage current		N/A
	test voltage (1,1 Ue) (V) ..... :		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole ..... :		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole ..... :		N/A
8.3.5.5	Temperature-rise verification		N/A
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark ..... :		—
	- manufacturer's model or type reference ..... :		—
	- rated current (A) ..... :		—
	- power loss (W) ..... :		—
	- rated breaking capacity (kA) ..... :		—
	- conductor cross-section (mm²) ..... :		—
	- test current Ie (A) ..... :		—
	Measured temperature-rise ..... :	see appended table 8.3.5.5 on page __	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 15: 400 V, 32 A, 1-pole)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated voltage (V) .....:	400 V	—
	- rated current (A) .....:	32 A (gG)	—
	- rated breaking capacity (kA) .....:	120 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) .....:	L1: 420 V L2: — L3: —	—
	test current (kA) .....:	L1: 101 kA L2: — L3: —	—
	rated frequency (Hz) .....:	50 Hz	—
	power factor .....:	0,19	—
	Time constant (ms) .....:	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) .....:	L1: 6,5 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 7000 A^2s L2: — L3: —	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	1,6 m/s	—
	- point at which the measurement is made .....:	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	1,5 m/s	—
	- max. let-through current (kA) .....:	L1: 4,94 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 5000 A^2s L2: — L3: —	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	8,7 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1000 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	440 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,008 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	6 mm²	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 110	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 16: 400 V, 32 A, 1-pole+N)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated voltage (V) .....:	400 V	—
	- rated current (A) .....:	32 A (gG)	—
	- rated breaking capacity (kA) .....:	120 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) .....:	L1: 420 V L2: — L3: —	—
	test current (kA) .....:	L1: 101 kA L2: — L3: —	—
	rated frequency (Hz) .....:	50 Hz	—
	power factor .....:	0,19	—
	Time constant (ms) .....:	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) .....:	L1: 6,54 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 7000 A^2s L2: — L3: —	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	1,6 m/s	—
	- point at which the measurement is made .....:	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	1,5 m/s	—
	- max. let-through current (kA) .....:	L1: 3,7 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 4000 A^2s L2: — L3: —	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	24,8 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1000 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	440 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,002 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	6 mm²	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 111	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 17: 400 V, 32 A, 2-poles)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark ..... :	Bussmann	—
	- manufacturer's model or type reference ..... :	C10G32	—
	- rated voltage (V) ..... :	400 V	—
	- rated current (A) ..... :	32 A (gG)	—
	- rated breaking capacity (kA) ..... :	120 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) ..... :	L1: 420 V (242,5 V x √3) L2: 420 V (242,5 V x √3) L3: —	—
	test current (kA) ..... :	L1: 101 kA L2: 101 kA L3: —	—
	rated frequency (Hz) ..... :	50 Hz	—
	power factor ..... :	0,19	—
	Time constant (ms) ..... :	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) ..... :	L1: 6,35 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) ..... :	L1: 5000 A^2s L2: — L3: —	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) ..... :	1,6 m/s	—
	- point at which the measurement is made ..... :	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) ..... :	1,5 m/s	—
	- max. let-through current (kA) ..... :	L1: 6,15 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) ..... :	L1: 5000 A^2s L2: — L3: —	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	22 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1000 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	440 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,001 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	6 mm²	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 111	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 18: 400 V, 32 A, 3-poles+N)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated voltage (V) .....:	400 V	—
	- rated current (A) .....:	32 A (gG)	—
	- rated breaking capacity (kA) .....:	120 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) .....:	L1: 420 V (242,5 V x √3) L2: 420 V (242,5 V x √3) L3: 420 V (242,5 V x √3)	—
	test current (kA) .....:	L1: 103 kA L2: 100 kA L3: 101 kA	—
	rated frequency (Hz) .....:	50 Hz	—
	power factor .....:	0,19	—
	Time constant (ms).....:	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) .....:	L1: 0,4 kA L2: 4,8 kA L3: 4,8 kA	—
	- Joule integral I^2dt (A^2s) .....:	L1: 0 A^2s L2: 4000 A^2s L3: 4000 A^2s	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	1,6 m/s	—
	- point at which the measurement is made .....:	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	1,5 m/s	—
	- max. let-through current (kA) .....:	L1: 1,6 kA L2: 4,2 kA L3: 4,4 kA	—
	- Joule integral I^2dt (A^2s) .....:	L1: 0 A^2s L2: 4000 A^2s L3: 4000 A^2s	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	49,1 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ ....:	1000 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) ....:	440 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole ......:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole ....:	0,001 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark ....:	Bussmann	—
	- manufacturer's model or type reference ....:	C10G32	—
	- rated current (A) ....:	32 A (gG)	—
	- power loss (W) ....:	2,9 W	—
	- rated breaking capacity (kA) ....:	120 kA	—
	- conductor cross-section (mm²) ....:	6 mm²	—
	- test current Ie (A) ....:	32 A	—
	Measured temperature-rise ....:	see appended table 8.3.6.5 on page 111	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 19: 500 V, 25 A, 1-pole)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G25	—
	- rated voltage (V) .....:	500 V	—
	- rated current (A) .....:	25 A (gG)	—
	- rated breaking capacity (kA) .....:	120 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) .....:	L1: 537 V L2: — L3: —	—
	test current (kA) .....:	L1: 107 kA L2: — L3: —	—
	rated frequency (Hz) .....:	50 Hz	—
	power factor .....:	0,2	—
	Time constant (ms) .....:	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) .....:	L1: 2,59 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 1000 A^2s L2: — L3: —	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	1,6 m/s	—
	- point at which the measurement is made .....:	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	1,5 m/s	—
	- max. let-through current (kA) .....:	L1: 3,56 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 2000 A^2s L2: — L3: —	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	11,4 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1000 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	550 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,001 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G25	—
	- rated current (A) .....:	25 A (gG)	—
	- power loss (W) .....:	2,6 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	4 mm²	—
	- test current Ie (A) .....:	25 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 112	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 20: 500 V, 25 A, 1-pole+N)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G25	—
	- rated voltage (V) .....:	500 V	—
	- rated current (A) .....:	25 A (gG)	—
	- rated breaking capacity (kA) .....:	120 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) .....:	L1: 537 V L2: — L3: —	—
	test current (kA) .....:	L1: 107 kA L2: — L3: —	—
	rated frequency (Hz) .....:	50 Hz	—
	power factor .....:	0,2	—
	Time constant (ms) .....:	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) .....:	L1: 3,8 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 2000 A^2s L2: — L3: —	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	1,6 m/s	—
	- point at which the measurement is made .....:	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	1,5 m/s	—
	- max. let-through current (kA) .....:	L1: 2,22 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 1000 A^2s L2: — L3: —	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	20,6 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1000 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	550 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,001 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G25	—
	- rated current (A) .....:	25 A (gG)	—
	- power loss (W) .....:	2,6 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	4 mm²	—
	- test current Ie (A) .....:	25 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 112	P

ВЯРНО С ОРИГИНАЛА

СОФИЯ

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IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 21: 500 V, 25 A, 2-poles)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark ....:	Bussmann	—
	- manufacturer's model or type reference ....:	C10G25	—
	- rated voltage (V) ....:	500 V	—
	- rated current (A) ....:	25 A (gG)	—
	- rated breaking capacity (kA) ....:	120 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) ....:	L1: 537 V (310 V x √3) L2: 537 V (310 V x √3) L3: —	—
	test current (kA) ....:	L1: 107 kA L2: 107 kA L3: —	—
	rated frequency (Hz) ....:	50 Hz	—
	power factor ....:	0,2	—
	Time constant (ms)..:	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) ....:	L1: 3,71 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) ....:	L1: 1000 A^2s L2: — L3: —	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) ....:	1,6 m/s	—
	- point at which the measurement is made ....:	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) ....:	1,5 m/s	—
	- max. let-through current (kA) ....:	L1: 3,64 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) ....:	L1: 1000 A^2s L2: — L3: —	—

ВЯРНО С ОРИГИНАЛА

МИГ 23 ЕООД СОФИЯ

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	31,2 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1000 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	550 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,005 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G25	—
	- rated current (A) .....:	25 A (gG)	—
	- power loss (W) .....:	2,6 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	4 mm²	—
	- test current Ie (A) .....:	25 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 112	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 22: 500 V, 25 A, 3-poles+N)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G25	—
	- rated voltage (V) .....:	500 V	—
	- rated current (A) .....:	25 A (gG)	—
	- rated breaking capacity (kA) .....:	120 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) .....:	L1: 730 V (421,5 V x √3) L2: 730 V (421,5 V x √3) L3: 730 V (421,5 V x √3)	—
	test current (kA) .....:	L1: 102 kA L2: 102 kA L3: 101 kA	—
	rated frequency (Hz) .....:	50 Hz	—
	power factor .....:	0,2	—
	Time constant (ms) .....:	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) .....:	L1: 1,9 kA L2: 3,8 kA L3: 2,0 kA	—
	- Joule integral I^2dt (A^2s) .....:	L1: 1000 A^2s L2: 2000 A^2s L3: 1000 A^2s	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	1,6 m/s	—
	- point at which the measurement is made .....:	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	1,4 m/s	—
	- max. let-through current (kA) .....:	L1: 0 kA L2: 3,16 kA L3: 3,16 kA	—
	- Joule integral I^2dt (A^2s) .....:	L1: 0 A^2s L2: 1000 A^2s L3: 1000 A^2s	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	46,4 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1000 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	550 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,002 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G25	—
	- rated current (A) .....:	25 A (gG)	—
	- power loss (W) .....:	2,6 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	4 mm²	—
	- test current Ie (A) .....:	25 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 113	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 23: 690 V, 10 A, 1-pole)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark ..... :	SIBA	—
	- manufacturer's model or type reference ..... :	50 179 06.10	—
	- rated voltage (V) ..... :	690 V	—
	- rated current (A) ..... :	10 A (gR)	—
	- rated breaking capacity (kA) ..... :	200 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) ..... :	L1: 725 V L2: — L3: —	—
	test current (kA) ..... :	L1: 52,7 kA L2: — L3: —	—
	rated frequency (Hz) ..... :	50 Hz	—
	power factor ..... :	0,13	—
	Time constant (ms) ..... :	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) ..... :	L1: 2,0 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) ..... :	L1: 0 A^2s L2: — L3: —	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) ..... :	1,6 m/s	—
	- point at which the measurement is made ..... :	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) ..... :	1,5 m/s	—
	- max. let-through current (kA) ..... :	L1: 0,77 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) ..... :	L1: 0 A^2s L2: — L3: —	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	18,8 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1380 V	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,002 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	SIBA	—
	- manufacturer's model or type reference .....:	50 179 06.10	—
	- rated current (A) .....:	10 A (gR)	—
	- power loss (W) .....:	2,3 W	—
	- rated breaking capacity (kA) .....:	200 kA	—
	- conductor cross-section (mm²) .....:	1,5 mm²	—
	- test current Ie (A) .....:	10 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 113	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 24: 690 V, 10 A, 1-pole+N)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	SIBA	—
	- manufacturer's model or type reference .....:	50 179 06.10	—
	- rated voltage (V) .....:	690 V	—
	- rated current (A) .....:	10 A (gR)	—
	- rated breaking capacity (kA) .....:	200 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) .....:	L1: 726 V L2: — L3: —	—
	test current (kA) .....:	L1: 52,7 kA L2: — L3: —	—
	rated frequency (Hz) .....:	50 Hz	—
	power factor .....:	0,13	—
	Time constant (ms).....:	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) .....:	L1: 1,02 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 0 A^2s L2: — L3: —	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	1,6 m/s	—
	- point at which the measurement is made .....:	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	1,5 m/s	—
	- max. let-through current (kA) .....:	L1: 0,78 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 0 A^2s L2: — L3: —	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	25,4 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1380 V	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,001 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	SIBA	—
	- manufacturer's model or type reference .....:	50 179 06.10	—
	- rated current (A) .....:	10 A (gR)	—
	- power loss (W) .....:	2,3 W	—
	- rated breaking capacity (kA) .....:	200 kA	—
	- conductor cross-section (mm²) .....:	1,5 mm²	—
	- test current Ie (A) .....:	10 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 113	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 25: 690 V, 10 A, 2-poles)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark ..... :	SIBA	—
	- manufacturer's model or type reference ..... :	50 179 06.10	—
	- rated voltage (V) ..... :	690 V	—
	- rated current (A) ..... :	10 A (gR)	—
	- rated breaking capacity (kA) ..... :	200 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) ..... :	L1: 726 V (419,16 V x √3) L2: 726 V (419,16 V x √3) L3: —	—
	test current (kA) ..... :	L1: 52,7 kA L2: 52,7 kA L3: —	—
	rated frequency (Hz) ..... :	50 Hz	—
	power factor ..... :	0,13	—
	Time constant (ms) ..... :	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) ..... :	L1: 0,61 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) ..... :	L1: 0 A^2s L2: — L3: —	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) ..... :	1,6 m/s	—
	- point at which the measurement is made ..... :	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) ..... :	1,5 m/s	—
	- max. let-through current (kA) ..... :	L1: 0,55 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) ..... :	L1: 0 A^2s L2: — L3: —	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	34,2 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1380 V	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,003 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	SIBA	—
	- manufacturer's model or type reference .....:	50 179 06.10	—
	- rated current (A) .....:	10 A (gR)	—
	- power loss (W) .....:	2,3 W	—
	- rated breaking capacity (kA) .....:	200 kA	—
	- conductor cross-section (mm²) .....:	1,5 mm²	—
	- test current Ie (A) .....:	10 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 114	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 26: 690 V, 32 A, 3-poles+N)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated voltage (V) .....:	400 V	—
	- rated current (A) .....:	32 A (gG)	—
	- rated breaking capacity (kA) .....:	120 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) .....:	L1: 726 V (419,16 V x √3) L2: 726 V (419,16 V x √3) L3: 726 V (419,16 V x √3)	—
	test current (kA) .....:	L1: 50,9 kA L2: 52,2 kA L3: 51,0 kA	—
	rated frequency (Hz) .....:	50 Hz	—
	power factor .....:	0,23	—
	Time constant (ms) .....:	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) .....:	L1: 0,9 kA L2: 5,6 kA L3: 5,6 kA	—
	- Joule integral I^2dt (A^2s) .....:	L1: 2000 A^2s L2: 8000 A^2s L3: 6000 A^2s	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	1,6 m/s	—
	- point at which the measurement is made .....:	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	1,4 m/s	—
	- max. let-through current (kA) .....:	L1: 5,3 kA L2: 5,3 kA L3: 0 kA	—
	- Joule integral I^2dt (A^2s) .....:	L1: 5000 A^2s L2: 5000 A^2s L3: 0 A^2s	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	51,6 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1380 V	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,002 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	6 mm²	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 114	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.7	TEST SEQUENCE V: OVERLOAD PERFORMANCE CAPABILITY (Sample No. 27: 690 V, 32 A, 1-pole)		P
8.3.7.1	Overload test		P
	ambient temperature 10-40 °C ....:	25,6 °C	—
	test enclosure W x H x D (mm x mm x mm) ....:	—	—
	material of enclosure ....:	—	—
	test current 1,6xIthe or 1,6xIth (A) ....:	52	—
	cable/busbar cross-section (mm²) / length (mm) ...:	6 mm² cable / 1000 mm long	—
	Fuse-link details:		P
	- manufacturer's name, trademark or identification mark ....:	Bussmann	—
	- rated current (A) ....:	32 A (gG)	—
	- power loss (W) ....:	2,9 W	—
	- rated breaking capacity (kA) ....:	120 kA	—
	- time duration of the overload test (s) ....:	824 s	—
	Within 3 to 5 min after the fuse(s) has(have) operated (or 1 h), the equipment has been operated once, i.e. opened and closed		P
	Required opening force not greater than the test force of 8.2.5.2 and table 8	14 N (required opening force) 150 N (test force acc. tab. 8)	P
	The equipment has not undergone any impairment hindering such operation		P
8.3.7.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ ....:	1380 V	—
	No flashover or breakdown		P
8.3.7.3	Leakage current		P
	test voltage (1,1 Ue) (V) ....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole ......:		N/A
	Leakage current (other utilization categories) ≤ 2 mA)/pole ....:	0,002 mA	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.7.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	Fuse links aged during the overload test are replaced by new fuse-links .....:		P
	- conductor cross-section (mm²) .....:	6 mm²	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.7.4 on page 114	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.7	TEST SEQUENCE V: OVERLOAD PERFORMANCE CAPABILITY (Sample No. 28: 690 V, 32 A, 2-poles)		P
8.3.7.1	Overload test		P
	ambient temperature 10-40 °C ....:	23,6 °C	—
	test enclosure W x H x D (mm x mm x mm) ....:	—	—
	material of enclosure ....:	—	—
	test current 1,6xIthe or 1,6xIth (A) ....:	52	—
	cable/busbar cross-section (mm²) / length (mm) ...:	6 mm² cable / 1000 mm long	—
	Fuse-link details:		P
	- manufacturer's name, trademark or identification mark ....:	Bussmann	—
	- rated current (A) ....:	32 A (gG)	—
	- power loss (W) ....:	2,9 W	—
	- rated breaking capacity (kA) ....:	120 kA	—
	- time duration of the overload test (s) ....:	573 s	—
	Within 3 to 5 min after the fuse(s) has(have) operated (or 1 h), the equipment has been operated once, i.e. opened and closed		P
	Required opening force not greater than the test force of 8.2.5.2 and table 8	17,2 N (required opening force) 150 N (test force acc. tab. 8)	P
	The equipment has not undergone any impairment hindering such operation		P
8.3.7.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ ....:	1380 V	—
	No flashover or breakdown		P
8.3.7.3	Leakage current		P
	test voltage (1,1 Ue) (V) ....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole ......:		N/A
	Leakage current (other utilization categories) ≤ 2 mA)/pole ....:	0,001 mA	P

ВЯРНО С ОРИГИНАЛА

МИГ 23 ЕООД СОФИЯ MIG 23 LTD

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.7.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	Fuse links aged during the overload test are replaced by new fuse-links .....:		P
	- conductor cross-section (mm²) .....:	6 mm²	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.7.4 on page 115	P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.7	TEST SEQUENCE V: OVERLOAD PERFORMANCE CAPABILITY (Sample No. 29: 690 V, 32 A, 3-poles+N)		P
8.3.7.1	Overload test		P
	ambient temperature 10-40 °C .....:	23,6 °C	—
	test enclosure W x H x D (mm x mm x mm) .....:	—	—
	material of enclosure .....:	—	—
	test current 1,6xIthe or 1,6xIth (A) .....:	52	—
	cable/busbar cross-section (mm²) / length (mm) ...:	6 mm² cable / 1000 mm long	—
	Fuse-link details:		P
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- time duration of the overload test (s) .....:	540 s	—
	Within 3 to 5 min after the fuse(s) has(have) operated (or 1 h), the equipment has been operated once, i.e. opened and closed		P
	Required opening force not greater than the test force of 8.2.5.2 and table 8	35,2 N (required opening force) 150 N (test force acc. tab. 8)	P
	The equipment has not undergone any impairment hindering such operation		P
8.3.7.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1380 V	—
	No flashover or breakdown		P
8.3.7.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2 mA)/pole .....:	0,001 mA	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.7.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	Fuse links aged during the overload test are replaced by new fuse-links .....:		P
	- conductor cross-section (mm²) .....:	6 mm²	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.7.4 on page 115	P
8.4	ELECTROMAGNETIC COMPATIBILITY TESTS		N/A
8.4.1	Immunity		N/A
8.4.1.1	Equipment not incorporating electronic circuits: no tests necessary		N/A
8.4.1.2	Equipment incorporating electronic circuits:		N/A
	Equipment utilizing circuits in which all components are passive are not required to be tested		N/A
	All other equipment, requirements according to 7.3.3.2 and limits according table 6 apply		N/A
	Performed tests.....:	see _____	N/A
	No unintentional separation or closing of contacts has occurred during these tests .....:		N/A
8.4.2	Emission		N/A
8.4.2.1	Equipment not incorporating electronic circuits: no tests necessary		N/A
8.4.2.2	Equipment incorporating electronic circuits:		N/A
	Equipment utilizing circuits in which all components are passive are not required to be tested		N/A
	All other equipment, requirements according to 7.3.3.2 and limits according table 7 apply		N/A
	Performed tests.....:	see _____	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

Annex A (normative)			N/A
A	Equipment for direct switching of a single motor		N/A
A.1	Additional rated duties...:		N/A
A.1.1	- intermittent periodic duty		N/A
	- intermittent duty		N/A
A.1.1.1	Classes of intermittent duty ....:		N/A
	-class 1: up to 1 operating cycle per hour		N/A
	-class 3: up to 3 operating cycle per hour		N/A
	-class 12: up to 12 operating cycles per hour		N/A
	-class 30: up to 30 operating cycles per hour		N/A
	-class 120: up to 120 operating cycles per hour		N/A
A.1.2	Temporary duty...:		N/A
A.5	Mechanical durability:		N/A
	Equipment mounted according to manufacturer's instruction		N/A
	Preferred number of no-load operating cycles expressed in millions...:		N/A
	0,001 – 0,003 – 0,01 – 0,03 – 0,1 – 0,3 - 1		N/A
	If no mechanical endurance is stated by the manufacturer, a minimum mechanical endurance according to the class of intermittent duty shall be tested.	Class of intermittent duty:	N/A
	Number of no-load operating cycles performed......:	______	N/A
A.6	Electrical durability:		N/A
	- test according to manufacturer's instruction		N/A
A.7	Verification of making and breaking capacities:		N/A
	- utilization category ....:		—
	- rated operational voltage Ue (V) ....:		—
	- rated operational current Ie (A) or power (kW) ....:		—
	Conditions for make/break operations or make operations:		—
	- test voltage, U = 1,05 Ue .... (V):	L1: L2: L3:	—
	- test current, I = ... x Ie (A):	L1: L2: L3:	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- power factor .....:	L1: L2: L3:	—
	Conditions for make/break operations:		N/A
	- test voltage, U = 1,05 Ue ..... (V):	L1: L2: L3:	—
	- test current, I = ... x Ie (A):	L1: L2: L3:	—
	- power factor/ time constant .....:	L1: L2: L3:	—
	Number of make/break or make and break operations .....:		N/A
	- recovery voltage duration (≥ 50 ms)		N/A
	- current duration (ms) .....:		—
	- time interval between operations .....:		N/A
	Characteristic of transient recovery voltage if necessary:		N/A
	- oscillatory frequency (kHz) .....:		—
	- measured oscillatory frequency (kHz) .....:	L1: L2: L3:	N/A
	- factor γ .....:	L1: L2: L3:	N/A
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		N/A
	Test performed without:		—
	- endanger to the operator		N/A
	- cause damage to adjacent equipment		N/A
	No permanent arcing		N/A
	No flash over between poles and poles and frame		N/A
	No melting of the fuse in the detection circuit		N/A

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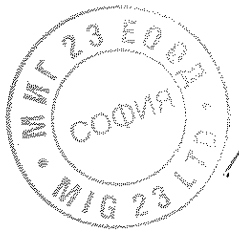
Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		N/A
	Immediately after the test equipment must work satisfactorily		N/A
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N/A
	- equipment is able to carry its rated current after normal closing operation		N/A
8.3.3.4	Dielectric verification		N/A
	test voltage: 2*Ue with a minimum of 1000V~ .....:		—
	No flashover or breakdown		N/A
8.3.3.5	Leakage current		N/A
	test voltage (1,1 Ue) (V) .....:		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories): ≤ 2 mA/pole) .....:		N/A
8.3.3.6	Temperature-rise verification		N/A
	- conductor cross-section (mm²) .....:		—
	- test current Ie (A) .....:		—
	Measured temperature-rise .....:	see __	N/A
A.8	Operational performance test:		N/A
	- utilization category .....:		—
	- rated operational voltage (V) .....:		—
	- rated operational current (A) .....:		—
	Test conditions for electrical operation cycles:		N/A
	- test voltage (V) .....:	L1: L2: L3:	—
	- test current (A) .....:	L1: L2: L3:	—
	- power factor/time constant .....:	L1: L2: L3:	—
	Number of cycles with current .....:		N/A
	Number of cycles without current .....:		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	First test sequence (with/without current) .....:		—
	Second test sequence (with/without current) .....:		—
	- time interval between first and second test sequence .....:		—
8.3.4.1.5	Behaviour of the equipment during the operational performance test		N/A
	Test performed without:		—
	- endanger to the operator		N/A
	-cause damage to adjacent equipment		N/A
	No permanent arcing		N/A
	No flash over between poles and poles and frame		N/A
	No melting of the fuse in the detection circuit		N/A
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		N/A
	Immediately after the test equipment must work satisfactorily		N/A
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N/A
	- equipment is able to carry its rated current after normal closing operation		N/A
8.3.4.2	Dielectric verification		N/A
	test voltage: 2*Ue with a minimum of 1000V~ .....:		—
	No breakdown or flashover		N/A
8.3.4.3	Leakage current		N/A
	test voltage (1,1 Ue) (V) .....:		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2 mA/pole .....:		N/A
8.3.4.4	Temperature-rise verification		N/A
	- conductor cross-section (mm²) .....:		—
	- test current Ie (A) .....:		—
	Measured temperature-rise .....:	see __	N/A
A.9	Special tests:	see __	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

Annex C (normative)			N/A
C	Single pole operated three pole switches		N/A
C.1	Three pole operated switches of fundamentally the same design, already successfully tested are deemed to satisfy the requirements of individually operated three pole devices.		N/A
C.2	Additional-tests to be performed on single pole operated three pole switches		N/A
	Test "8.3.3.3 Making and breaking capacities" according to test sequence I with following modifications		N/A
	L1 and L2 are closed, L3 is subjected to the required make-break operation cycle .....:		N/A
	L2 closed and L3 opened, L1 is subjected to the required make-break operation cycle .....:		N/A
	Test performed in a three phase circuit		N/A
	Test "8.3.4.1 Operational performance" according to test sequence II with following modifications		N/A
	L1 and L2 are closed, L3 is subjected to the required make-break operation cycle .....:		N/A
	L2 closed and L3 opened, L1 is subjected to the required make-break operation cycle .....:		N/A
	Test performed in a three phase circuit		N/A
	Test "8.3.6.2 Fuse protected short circuit test" according to test sequence IV with following modifications		N/A
	For the making test L1 shall be open and L2 closed, L3 is subjected to the required make operation cycle .....:		N/A
	L2 closed and L3 opened, L1 is subjected to the required make-break operation cycle .....:		N/A
	Test performed in a three phase circuit		N/A
C.5	Instruction for use		N/A
	The product literature includes following statement :		N/A
	These devices are intended for power distribution systems where switching and/or isolating of an individual phase may be necessary and shall not be used for the switching of the primary circuit of three-phase equipment.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

7.1.4	**TABLE: Clearance and creepage distance measurements**					
clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
Between active parts and parts intended to be touched	7300	800	2	>5,5	11	>11
Between active parts and enclosure	7300	800	2	>5,5	11	>11
Between active parts and fuse-link with the contacts in open position	9800	800	2	>5,5	11	>11
supplementary information:						

8.3.3.1	**TABLE: Temperature-rise (measurements) (Sample No. 1: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Above terminals (cable connection)		39,3	70
Below terminals (cable connection)		35,3	70
Manual operating means: ~~metallic~~ / non-metallic		4,3	25
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		8,5	40
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		12,8	50
supplementary information:	Ambient temperature:	22,7 °C	

8.3.3.6	**TABLE: Temperature-rise (measurements) (Sample No. 1: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		37,2	80
Manual operating means: ~~metallic~~ / non-metallic		4,6	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		6,1	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		17,0	60
supplementary information:	Ambient temperature:	22,9 °C	

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.1	**TABLE: Temperature-rise (measurements) (Sample No. 2: I_e = 10 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Above terminals (cable connection)		31,7	70
Below terminals (cable connection)		29,8	70
Manual operating means: ~~metallic~~ / non-metallic		5,0	25
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		8,8	40
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		15,3	50
supplementary information:	Ambient temperature:	22,7 °C	

8.3.3.6	**TABLE: Temperature-rise (measurements) (Sample No. 2: I_e = 10 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		32,9	80
Manual operating means: ~~metallic~~ / non-metallic		3,7	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		5,4	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		19,4	60
supplementary information:	Ambient temperature:	23,8 °C	

8.3.3.1	**TABLE: Temperature-rise (measurements) (Sample No. 3: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Above terminals (cable connection)		45,0	70
Below terminals (cable connection)		37,5	70
Manual operating means: ~~metallic~~ / non-metallic		5,5	25
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		13,8	40
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		12,0	50
supplementary information:	Ambient temperature:	22,7 °C	

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.6	**TABLE: Temperature-rise (measurements) (Sample No. 3: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		39,0	80
Manual operating means: ~~metallic~~ / non-metallic		4,8	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		5,4	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		21,1	60
supplementary information:	Ambient temperature:	24,3 °C	

8.3.3.1	**TABLE: Temperature-rise (measurements) (Sample No. 4: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Above terminals (cable connection)		48,5	70
Below terminals (cable connection)		47,3	70
Manual operating means: ~~metallic~~ / non-metallic		7,8	25
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		21,8	40
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		14,5	50
supplementary information:	Ambient temperature:	22,7 °C	

8.3.3.6	**TABLE: Temperature-rise (measurements) (Sample No. 4: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		49,0	80
Manual operating means: ~~metallic~~ / non-metallic		8,8	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		12,9	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		26,9	60
supplementary information:	Ambient temperature:	24,4 °C	

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.1	**TABLE: Temperature-rise (measurements) (Sample No. 5: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Above terminals (cable connection)		44,3	70
Below terminals (cable connection)		42,9	70
Manual operating means: ~~metallic~~ / non-metallic		10,6	25
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		13,3	40
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		15,2	50
supplementary information:	Ambient temperature:	22,7 °C	

8.3.3.6	**TABLE: Temperature-rise (measurements) (Sample No. 5: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		47,5	80
Manual operating means: ~~metallic~~ / non-metallic		8,9	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		16,2	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		22,8	60
supplementary information:	Ambient temperature:	22,9 °C	

8.3.3.1	**TABLE: Temperature-rise (measurements) (Sample No. 6: I_e = 10 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Above terminals (cable connection)		44,5	70
Below terminals (cable connection)		40,8	70
Manual operating means: ~~metallic~~ / non-metallic		9,3	25
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		19,5	40
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		14,8	50
supplementary information:	Ambient temperature:	22,7 °C	

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.6	**TABLE: Temperature-rise (measurements) (Sample No. 6: I_e = 10 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		50,4	80
Manual operating means: ~~metallic~~ / non-metallic		6,3	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		13,8	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		27,0	60
supplementary information:	Ambient temperature:	23,8 °C	

8.3.3.1	**TABLE: Temperature-rise (measurements) (Sample No. 7: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Above terminals (cable connection)		63,8	70
Below terminals (cable connection)		63,9	70
Manual operating means: ~~metallic~~ / non-metallic		16,9	25
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		32,8	40
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		22,3	50
supplementary information:	Ambient temperature:	22,7 °C	

8.3.3.6	**TABLE: Temperature-rise (measurements) (Sample No. 7: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		59,9	80
Manual operating means: ~~metallic~~ / non-metallic		11,2	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		23,7	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		27,6	60
supplementary information:	Ambient temperature:	24,4 °C	

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.4.4	**TABLE: Temperature-rise (measurements) (Sample No. 8: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		39,6	80
Manual operating means: ~~metallic~~ / non-metallic		5,5	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		17,6	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		25,9	60
supplementary information:	Ambient temperature:	25,3 °C	

8.3.4.4	**TABLE: Temperature-rise (measurements) (Sample No. 9: I_e = 10 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		43,1	80
Manual operating means: ~~metallic~~ / non-metallic		3,3	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		14,0	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		20,3	60
supplementary information:	Ambient temperature:	25,3 °C	

8.3.4.4	**TABLE: Temperature-rise (measurements) (Sample No. 10: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		47,5	80
Manual operating means: ~~metallic~~ / non-metallic		10,8	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		24,4	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		26,1	60
supplementary information:	Ambient temperature:	25,3 °C	

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МИГ 23 ЕООД СОФИЯ MIG 23 LTD

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.4.4	**TABLE: Temperature-rise (measurements) (Sample No. 11: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		42,5	80
Manual operating means: ~~metallic~~ / non-metallic		9,2	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		22,1	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		22,5	60
supplementary information:	Ambient temperature:	25,3 °C	

8.3.4.4	**TABLE: Temperature-rise (measurements) (Sample No. 12: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		48,9	80
Manual operating means: ~~metallic~~ / non-metallic		8,4	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		28,8	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		30,4	60
supplementary information:	Ambient temperature:	25,3 °C	

8.3.4.4	**TABLE: Temperature-rise (measurements) (Sample No. 13: I_e = 10 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		43,8	80
Manual operating means: ~~metallic~~ / non-metallic		9,3	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		28,5	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		28,7	60
supplementary information:	Ambient temperature:	25,3 °C	

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.4.4	**TABLE: Temperature-rise (measurements) (Sample No. 14: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		44,1	80
Manual operating means: ~~metallic~~ / non-metallic		14,5	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		34,0	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		23,3	60
supplementary information:	Ambient temperature:	25,3 °C	

8.3.5.5	**TABLE: Temperature-rise (measurements)**		N/A
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals			
Manual operating means: metallic / non-metallic			
Parts intended to be touched but not hand-held: metallic / non-metallic			
Parts which need not be touched during normal operation: metallic / non-metallic			
supplementary information:			

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 15: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		53,5	80
Manual operating means: ~~metallic~~ / non-metallic		6,0	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		16,8	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		26,3	60
supplementary information:	Ambient temperature:	23,5 °C	

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 16: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		58,5	80
Manual operating means: ~~metallic~~ / non-metallic		10,2	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		21,8	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		40,5	60
supplementary information:	Ambient temperature:	24,9 °C	

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 17: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		65,9	80
Manual operating means: ~~metallic~~ / non-metallic		14,1	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		28,4	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		44,7	60
supplementary information:	Ambient temperature:	24,6 °C	

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 18: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		60,3	80
Manual operating means: ~~metallic~~ / non-metallic		16,6	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		35,0	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		33,5	60
supplementary information:	Ambient temperature:	24,2 °C	

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 19: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		35,6	80
Manual operating means: ~~metallic~~ / non-metallic		6,5	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		15,7	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		22,0	60
supplementary information:	Ambient temperature:	24,6 °C	

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 20: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		42,1	80
Manual operating means: ~~metallic~~ / non-metallic		8,6	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		19,1	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		24,3	60
supplementary information:	Ambient temperature:	24,6 °C	

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 21: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		46,6	80
Manual operating means: ~~metallic~~ / non-metallic		12,9	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		26,5	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		28,2	60
supplementary information:	Ambient temperature:	24,6 °C	

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 22: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		57,7	80
Manual operating means: ~~metallic~~ / non-metallic		16,8	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		33,8	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		30,6	60
supplementary information:	Ambient temperature:	24,6 °C	

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 23: I_e = 10 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		33,5	80
Manual operating means: ~~metallic~~ / non-metallic		3,5	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		13,0	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		19,0	60
supplementary information:	Ambient temperature:	23,3 °C	

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 24: I_e = 10 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		31,9	80
Manual operating means: ~~metallic~~ / non-metallic		6,1	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		17,1	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		19,3	60
supplementary information:	Ambient temperature:	23,3 °C	

TRF No. IEC60947_3B

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IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 25: I_e = 10 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		45,7	80
Manual operating means: ~~metallic~~ / non-metallic		8,4	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		24,1	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		25,3	60
supplementary information:	Ambient temperature:	23,3 °C	

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 26: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		56,8	80
Manual operating means: ~~metallic~~ / non-metallic		13,5	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		33,0	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		30,8	60
supplementary information:	Ambient temperature:	24,6 °C	

8.3.7.4	**TABLE: Temperature-rise (measurements) (Sample No. 27: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		42,5	80
Manual operating means: ~~metallic~~ / non-metallic		2,8	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		14,0	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		21,6	60
supplementary information:	Ambient temperature:	22,6 °C	

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.7.4	**TABLE: Temperature-rise (measurements) (Sample No. 28: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		46,8	80
Manual operating means: ~~metallic~~ / non-metallic		11,7	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		31,8	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		35,4	60
supplementary information:	Ambient temperature:	23,4 °C	

8.3.7.4	**TABLE: Temperature-rise (measurements) (Sample No. 29: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		53,6	80
Manual operating means: ~~metallic~~ / non-metallic		17,5	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		33,4	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		41,5	60
supplementary information:	Ambient temperature:	23,8 °C	

List of test equipment used:
(Note: This is an example of the required attachment. Other forms with a different layout but containing similar information are also acceptable.)

Clause	Measurement / testing	Testing / measuring equipment / material used	Range used	Calibration date
		Not applicable,		
		only required for the MT programs		

wöhner
ALLES MIT SPANNUNG

Herstellererklärung

zur Baumusterkonformität der Sicherungshalter für zylindrische Sicherungen in den Bauartausführungen der Hersteller
Wöhner GmbH & Co. KG und OEZ, s.r.o.,.

Wöhner GmbH & Co. KG	OEZ s.r.o.	
Wöhner Nr.	ID code	ITEM
31.971.062	41003	OPVF10-1
31.974.062	41004	OPVF10-2
31.110.162	41005	OPVA10-1
31.130.162	41006	OPVA10-1-S
31.111.162	41007	OPVA10-1N
31.112.162	41008	OPVA10-2
31.132.162	41009	OPVA10-2-S
31.113.162	41010	OPVA10-3
31.133.162	41011	OPVA10-3-S
31.114.162	41012	OPVA10-3N
31.275.062	41013	OPVP10-1
31.276.062	41014	OPVP10-2
31.277.062	41015	OPVP10-3
31.115.162	41016	OPVA14-1
31.135.162	41017	OPVA14-1-S
31.116.162	41018	OPVA14-1N
31.117.162	41019	OPVA14-2
31.137.162	41020	OPVA14-2-S
31.118.162	41021	OPVA14-3
31.138.162	41022	OPVA14-3-S
31.119.162	41023	OPVA14-3N
31.278.062	41024	OPVP14-1
31.279.062	41025	OPVP14-2
31.280.062	41026	OPVP14-3
31.120.162	41027	OPVA22-1
31.140.162	41028	OPVA22-1-S
31.121.162	41029	OPVA22-1N
31.122.162	41030	OPVA22-2

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МИГ 23 ЕООД СОФИЯ МИГ 23 LTD

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31.142.162	41031	OPVA22-2-S
31.123.162	41032	OPVA22-3
31.143.162	41033	OPVA22-3-S
31.124.162	41034	OPVA22-3N
31.281.062	41035	OPVP22-1
31.282.062	41036	OPVP22-2
31.283.062	41037	OPVP22-3

Fertigungsstätte für die oben genannten Sicherungshalter:

Wöhner GmbH & Co. KG
Mönchrödener Strasse 10
D - 96472 Rödental

VDE-Aktenzeichen

DE1-29569 249800-4402-0705/26504 (14x51)
DE1-50312 249800-4402-0708/158641 (22x58)

Zurzeit noch in Bearbeitung (10x38 PV)

Hiermit erklären wir, dass die oben genannten Sicherungshalter der Hersteller Wöhner GmbH & Co. KG und OEZ, s.r.o. in der angegebenen Fertigungsstätte nach denselben Zeichnungen gefertigt werden.

Wir bestätigen, dass die Sicherungshalter auch unter dem Firmennamen OEZ, s.r.o. vertrieben werden können.

Beide Geräteausführungen besitzen einen identischen Aufbau bezüglich der Konstruktion und des verwendeten Materials und unterscheiden sich nur im äußeren Design und in den Aufschriften.

Rödental, den 28.06.2012
на основание чл. 2 от ЗЗЛД

Alex Büttner
(Geschäftsleitung)

ВЯРНО С ОРИГИНАЛА

MIG 23 LTD. София

Laboratory Report

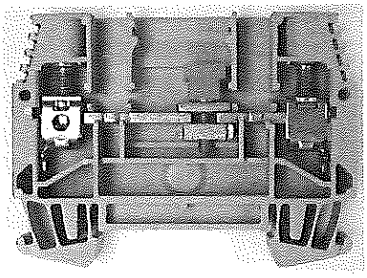
Weidmüller

Deutscher Akkreditierungs Rat
DAR
DAT-P-008/91-02

LAB 12138
Page 1 (26)
Date 17th of October 2003

Task: WTL 6/1 - Type test taken pattern from DIN EN 60947-7-1 and LPP1129

Test objects:



WTL 6/1 Cat.-no. 10167000000

Materials:

housing:	Wemid beige
current bar:	Cu-ETP gal. Sn
clamping yoke:	steel gal. ZnC
clamping screw:	M3,5 steel gal. ZnC
leading plate of discon.:	steel gal. ZnC
contact element of discon.:	E-CU57 gal. Sn
insulation of disconnector:	PA 66 orange
screw of disconnector:	M3 steel gal. ZnC

Manufacturer: Weidmüller Interface

Date of manufacture: Q 03-00009030-030221-00

Receipt of test objects: 51st week 2002

Period of test performance: 14th and 38th – 39th week 2003

Conclusion of result: The type test has been passed.

de

EMail:
DGS
Hr.Roß

MEEK
Hr.Strate

copy:

O. Despang
(tester)

F. Maris
(approved)

W 041.00

ВЯРНО С ОРИГИНАЛА

Weidmüller Interface GmbH & Co. KG
Ohmstraße 9
D-32 758 Detmold
Telefon (05231) 14-0
Telefax (05231) 14-1689
Rechtsform: Kommanditgesellschaft
Sitz: Detmold
Registergericht: Detmold HRA 246
Komplementärin: Weidmüller Interface Führungsgesellschaft mbH
Sitz: Detmold
Registergericht: Detmold HRB 1677
Geschäftsführer: Thomas H. Hagen, Dr. Wilfried Pesch

Summary: The following technical data apply to WTL 6/1:

Rated voltage:	630 V using as measuring disconnecting terminal 500 V using as disconnecting terminal (disconnect-function in conditions without load resp. voltage)
Rated impulse voltage:	6 kV using as measuring disconnecting terminal 8 kV using as disconnecting terminal
Pollution degree:	3
Overvoltage category:	III
Rated current:	41 A
Clampable cross sections:	solid 0,5 -10 mm² stranded 1,5 - 10 mm² flexible 0,5 - 10 mm² flexible with ferrule 0,5 - 6 mm² AWG 20 - AWG 8
Gauge size:	A 5
Length of insulation stripping:	12 mm
Test torques:	1,0 Nm for the fixing screw in clamping yoke as manufacturer's data 0,5 Nm for the fixing screw of disconnector

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Table of content:

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MIG 23 LTD. СОФИЯ

1 Electrical tests
1.1.1 Clearance and creepage distance with closed disconnector (in assembly)
1.1.2 Length of insulation stripping

Standard: IEC 60947-1 section 8.3.3.4 / 12.01
DIN VDE 0110-1 / 04.97
LPV 2005

Test performance: Clearance and creepage distances have been measured on 5 new specimen, taking into account the worst case of connected conductors. Screws are tightened with IEC-torque. Clearance and creepage distances are measured between two adjacent terminal blocks and between a terminal block and the metal support to which the terminal block is attached.

Test equipment 215134 gauge CD-15CP Mitutoyo

Test	Unit	Req.	Results	
clearance and creepage distance between adjacent terminal blocks				
with H07V-U10			path:	
shortest clearance	mm	≥ 5,5*	11	conductor - conductor
shortest creepage dist.	mm	≥ 8*	11	conductor - conductor
with H07V-K6+ferrule				
shortest clearance	mm	≥ 5,5*	9,5	conductor - conductor
shortest creepage dist.	mm	≥ 8*	9,5	conductor - conductor
with H07V-U6				
shortest clearance	mm	≥ 5,5*	12,6	conductor - conductor
shortest creepage dist.	mm	≥ 8*	14,0	conductor - conductor
clearance and creepage distance between terminal blocks and their support				
with H07V-U10			path:	
shortest clearance	mm	≥ 5,5*	15,5	clamping yoke - mounting rail
shortest creepage dist.	mm	≥ 8*	17,2	conductor - mounting rail
with H07V-K6+ferrule				
shortest clearance	mm	≥ 5,5*	15,5	clamping yoke - mounting rail
shortest creepage dist.	mm	≥ 8*	17,2	conductor - mounting rail
			* Req. for 630V/ 6kV/3	
comparative tracking index	CTI	600	600 für Wemid	
length of insulation stripping	mm	-	12 ± 0,5	

Evaluation: The test objects met the requirements.

Note: Taking into accout a limited range of clampable cross sections, 0,5 to 6mm² solid, an insulation voltage of 800V is leadable using as measuring disconnecting terminal.

ВЯРНО С ОРИГИНАЛА

1.1.3 **Clearance and creepage distance with opened disconnector (in assembly) additional test**

Standard: IEC 60947-1 section 8.3.3.4 / 12.01
DIN VDE 0110-1 / 04.97
LPV 2005

Test performance: Clearance and creepage distances are measured with opened disconnctor across the separating-distance.

Test equipment 215134 gauge CD-15CP Mitutoyo

Test	Unit	Req.	Results	
clearance and creepage distance across the separating distance				path:
shortest clearance	mm	--	4,5	current bar - current bar
shortest creepage dist.	mm	--	4,5	current bar - current bar

Evaluation: Data only for information.

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MIG 23 LTD. СОФИЯ

1.2.1 **Dielectric strength with closed disconnector**

Standard: IEC 60947-1 section 8.3.3.4.1 / 12.01
IEC 60947-7-1 section 8.4.3 / 07.02
LPV 2203

1.2.1.1 **Breakthrough or flashover voltage with closed disconnector (additional test)**

Standard: LPV 2204

Test performance: Five new terminal blocks are mounted on a rail and wired with the most unfavourable type(s) and cross-section(s) of conductors. Screws are tightened with IEC-torque. The sinusoidal test voltage (50 Hz) is according to IEC 60947-1 table 12A and is applied first between adjacent terminal blocks and then between all terminal blocks connected together and the mounting rail. The test voltage increases with a slew rate of not more than 200V/s and then keeps constant for at least 5s. The voltage then is increased with the same slew rate until breakdown or flashover.

Test equipment:

E197	High-voltage test automat RMG500	Sefelec
M035	Torque driver	Stahlwille

Test	Unit	Req.	Results
dielectric strength with H07V-U10	kV	2	test passed
breakdown or flashover voltage - closed disconnector	kV	> 2	7,9 flash over plug socket – plug socket

Evaluation: The test objects met the requirements.

ВЯРНО С ОРИГИНАЛА

MIG 23 LTD. СОФИЯ

1.2.2 **1.2.2 Dielectric strength with opened disconnector (within the terminals)**

Standard: IEC 60947-1 section 8.3.3.4.1 / 12.01
IEC 60947-7-1 section 8.4.3 / 07.02
LPV 2203

1.2.2.1 **Breakthrough or flashover voltage with opened disconnector (within the terminals)**
(additional test)

Standard: LPV 2204

Test performance: Five new terminal blocks are mounted on a rail and wired with the most unfavourable type(s) and cross-section(s) of conductors. Screws are tightened with IEC-torque. The sinusoidal test voltage (50 Hz) is according to IEC 60947-1 table 12A and is applied first between adjacent terminal blocks and then between all terminal blocks connected together and the mounting rail. The test voltage increases with a slew rate of not more than 200V/s and then keeps constant for at least 5s. The voltage then is increased with the same slew rate until breakdown or flashover.

Test equipment:

E197	High-voltage test automat RMG500	Sefelec
M035	Torque driver	Stahlwille

Test	Unit	Req.	Results
dielectric strength with H07V-U10	kV	2	test passed
breakdown or flashover voltage - opened disconnector	kV	> 2	4,3 flashover: current bar – current bar within the terminal

Evaluation: The test objects met the requirements.

ВЯРНО С ОРИГИНАЛА

MIG 23 EOOД СОФИЯ MIG 23 LTD

1.3.1 **Rated impulse voltage with closed disconnector**

Standard: IEC 60947-7-1 section 8.4.3 / 07.02
LPV 2226

Test performance: Five new terminal blocks are mounted on a rail and wired with the most unfavourable type(s) and cross-section(s) of conductors. Screws are tightened with IEC-torque. The test voltage is applied first between adjacent terminal blocks and then between all terminal blocks connected together and the mounting rail. The test is performed with a waveform 1.2/50µs with at least 1s pause between the pulses and each 10 pulses with alternating polarity.

Test equipment: E119 Transient voltage generator PU12 Haefely

Test	Unit	Req.	Results
rated impulse voltage with H07V-U10 - closed disconnector	kV	7,25	test passed with 7,5

Evaluation: The test objects met the requirements.

ВЯРНО С ОРИГИНАЛА

1.3.2 **Rated impulse voltagewith opened disconnector (within the terminals)**

Standard: IEC 60947-7-1 section 8.4.3 / 07.02
LPV 2226

Test performance: Five new terminal blocks are mounted on a rail and wired with the most unfavourable type(s) and cross-section(s) of conductors. Screws are tightened with IEC-torque. The test voltage is applied first between adjacent terminal blocks and then between all terminal blocks connected together and the mounting rail. The test is performed with a waveform 1.2/50µs with at least 1s pause between the pulses and each 10 pulses with alternating polarity.

Test equipment: E119 Transient voltage generator PU12 Haefely

Test	Unit	Req.	Results
rated impulse voltage with H07V-U10 across seperating distance			
- function as measuring disconnecting terminal	kV	6*	test passed
- function as disconnecting terminal	kV	8**	test passed

* on the basis of 630 V rated voltage
* * on the basis of 500 V rated voltage

Evaluation: The test objects met the requirements.

ВЯРНО С ОРИГИНАЛА

1.4 **Temperature rise test**
1.4.1 **Temperature rise with the rated cross-section**
1.4.2 **Temperature rise with the largest cross-section**
(additional test)

Standard: IEC 60947-7-1 section 7.2.1 / 07.02
LPV 2040

Test performance: Each five terminal blocks are mounted on a rail and wired in series with the rated resp. the largest cross-section. The minimum length of each conductor is 1m up to 10mm² cross-section resp. 2m for larger cross-sections. Screws are tightened with IEC-torque or with a higher value specified by the manufacturer. Temperatures are measured with Ni-CrNi thermocouples at the 3 centre terminals. A load current acc. to table 4 or table 5 of IEC 60947-7-1 is applied until steadily temperature is reached.

Test equipment:

E042	Current transformer TIL05 600/6	H & B
E087	Thermometer Comark 2001	Testem
E017	DMM Typ 169	Keithley
M104	Torque meter TM 2001 A	Holger Clasen
E166	Voltage drop measuring device	self construction

Test	Unit	Req.	Results			
temperature rise test with rated cross-section H07V-U6						
torque used	Nm	-	clamping units: 0,8 disconnector: 0,5			
voltage drop conductor - conductor at I = 4,1 A			X_{avg}	X_{min}	X_{max}	s
before test	mV	≤ 3,2	0,99	0,92	1,13	0,089
after test	mV	-	1,00	0,87	1,30	0,179
max. change	%	≤ 50	+15,0			
of one terminal	mV	-	+0,17 (1,13 → 1,30)			
temperature rise at I_N = 41 A	K	≤ 45	44			
visual examination	-	-	no damages visible			

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Test	Unit	Req.	Results			
temperature rise test with largest cross-section H07V-U10						
voltage drop conductor - conductor at I = 5,7 A						
			X_{avg}	X_{min}	X_{max}	s
before test	mV	≤ 3,2	1,09	0,97	1,32	0,149
after test	mV	-	1,05	0,95	1,25	0,124
max. change	%	≤ 50	-6,9			
of one terminal	mV	-	-0,08	(1,16 → 1,08)		
temperature rise at I_N = 57 A	K	≤ 45	37			
visual examination	-	-	no damages visible			

Evaluation: The test objects met the requirements.

1.5 **Short-time withstand current**
1.5.1 **Short-time withstand current with the rated cross-section**
1.5.2 **Short-time withstand current with the largest cross-section**
(additional test)

Standard: IEC 60947-7-1 section 7.2.3 / 07.02

Test performance: Each five terminal blocks are mounted on a rail and wired in series with the rated resp. the largest cross-section. Screws are tightened with IEC-torque or with a higher value specified by the manufacturer. Specimens are loaded with a current pulse of 120 A/mm² corresponding to the connected cross-section for 1s.

Test equipment:

E078	High current transformer 20kA/4kA	Ruhstrat
E149	Current transformer GSA 200/50	KWK
E166	Voltage drop measuring device	self construction
E160	4-Channel-Oscilloscope Kombigraf 4	Gould
E017	DMM Typ 169	Keithley
M104	Torque meter TM 2001 A	Holger Clasen

Test	Unit	Req.	Results			
short-time withstand current with rated cross-section H07V-U6						
torque used	Nm	-	clamping units: 0,8 disconnector: 0,5			
applied test current	A	≥ 720	735			
voltage drop conductor - conductor at I = 4,1 A			X_{avg}	X_{min}	X_{max}	s
before test	mV	≤ 3,2	1,07	0,92	1,35	0,192
after test	mV	-	1,23	0,91	1,88	0,436
max. change	%	≤ 50	+39,2			
of one terminal	mV	-	+0,53 (1,35 → 1,88)			
visual examination	-	-	no damages visible			
short-time withstand current with largest cross-section H07V-U10						
applied test current	A	≥ 1200	1330			
voltage drop conductor - conductor at I = 5,7 A			X_{avg}	X_{min}	X_{max}	s
before test	mV	≤ 3,2	0,93	0,90	0,97	0,029
after test	mV	-	0,92	0,89	0,96	0,030
max. change	%	≤ 50	-5,3			
of one terminal	mV	-	-0,05 (0,94 → 0,89)			
visual examination	-	-	no damages visible			

Evaluation: The test objects met the requirements.

ВЯРНО С ОРИГИНАЛА

МИГ 23 ЕООД СОФИЯ МИГ 23 LTD

1.6 **Life time test (additional test)**

Standard: ---

Test performance: Each five terminal blocks are mounted on a rail and wired in series with the rated cross-section. Screws are tightened with IEC-torque. After measuring the voltage drops, the disconnectors were actuated 50 cycles in conditions without load and voltage. Then the complete test assembly was storaged for 168h in 130°C dry heat.
Finally the test samples have to pass the voltage drop test, after cooling to ambient temperature. The voltage drop was measured with the help of the plug sockets.

Test equipment:

E166	Voltage drop-Messplatz	Eigenbau
M104	Torque meter TM 2001 A	Holger Clasen

Test	Unit	Req.	Results			
Life time test 130°C / 168h with rated cross-section H07V-U6						
torque used	Nm	-	clamping units: 0,8 disconnector: 0,5			
actuating cycles disconnector	-	50	50 test passed			
voltage drop left clamping unit conductor – plug-socket at I = 4,1 A			X_{avg}	X_{min}	X_{max}	s
before test	mV	≤ 1,6	0,24	0,21	0,25	0,015
after test	mV	-	0,20	0,18	0,20	0,009
max. change	%	≤ 50	-20,0			
of one terminal	mV	-	-0,05 (0,25 → 0,20)			
voltage drop right clamping unit conductor – plug-socket at I = 4,1 A			X_{avg}	X_{min}	X_{max}	s
before test	mV	≤ 1,6	0,24	0,21	0,27	0,022
after test	mV	-	0,21	0,19	0,24	0,018
max. change	%	≤ 50	-22,2			
of one terminal	mV	-	-0,06 (0,27 → 0,21)			

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Test	Unit	Req.	Results			
Life time test 130°C / 168h with rated cross-section H07V-U6						
torque used	Nm	-	clamping units: 0,8 disconnector: 0,5			
actuating cycles disconnector	-	50	50 test passed			
voltage drop disconnector plug-socket - plug-socket at I = 4,1 A			X_{avg}	X_{min}	X_{max}	s
before test	mV	≤ 3,2	0,30	0,28	0,33	0,019
after test	mV	-	0,30	0,28	0,31	0,013
max. change	%	≤ 50	+3,3			
of one terminal	mV	-	+0,01 (0,30 →0,31)			
visual examination	-	-	no damages visible			

Evaluation: The test objects met the requirements.

2 Mechanical tests
2.1 Attachment of the terminal block on its support

Standard: IEC 60947-7-1 section 8.3.2 / 07.02

Test performance: Five new terminal blocks are mounted on a test rail with min. dimensions. A steel pin with a diameter acc. to table 3 of IEC 60947-7-1 is clamped successively in each clamping unit. Screws are tightened with IEC-torque resp. 110% of the torque stated by the manufacturer. In a distance of 100 mm to the clamping point a force acc. to table 3 of IEC 60947-7-1 is applied to the pin regularly and without shocks in both vertical directions. During the test, no terminal block shall work free from its rail or support, nor suffer any other damage.

Test equipment:

M123	Push-/pull-force meter	Erichsen
695805/2	Test rail mounting rail 35/7,5 min	Weidmüller
M029	Torque driver	Stahlwille

Test	Unit	Req.	Results
torque used	Nm	-	0,8
fixing of the terminal block on its support	N	≥ 5	test passed
visual examination	-	-	no damages visible

Evaluation: The test objects met the requirements.

ВЯРНО С ОРИГИНАЛА MIG 23 LTD. СОФИЯ

2.2 Mechanical strength of clamping units
2.2.1 Test with nominal torque

Standard: IEC 60947-7-1 section 8.3.3.1 / 07.02
LPV 2201

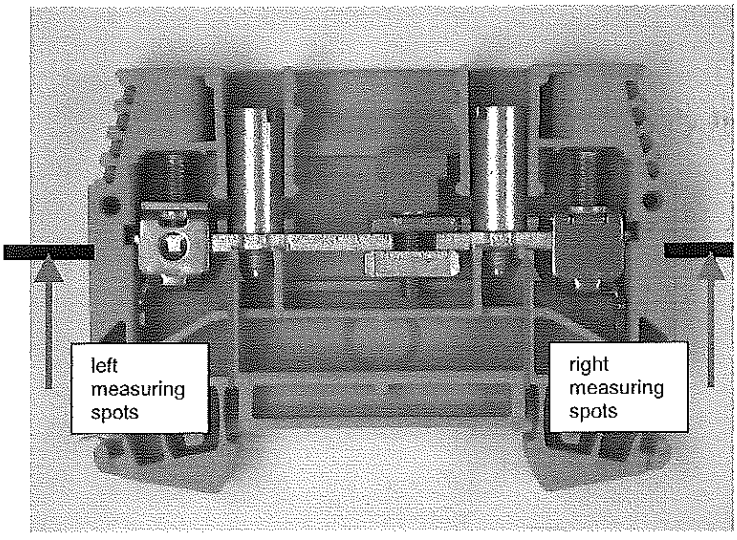
Test performance: Five new terminal blocks are mounted on a rail. Conductors of the rated cross-section are connected and disconnected five times. Screws are tightened with IEC-torque resp. 110% of the torque stated by the manufacturer. After every loosening a new conductor will be used.
Voltage drop is measured before and after the test with the smallest flexible and the rated rigid cross-section.

size of thread:	**M 3,5**
IEC- torque clamping screw:	0,8 Nm
torque acc. manufacturer clamping screw:	1,0 Nm
test torque + 10%:	1,1 Nm
size of thread:	**M 3**
IEC- torque disconnector screw:	0,5 Nm
smallest cross-section, flexible:	H05V-K0,5
test conductor, rigid:	H07V-U10

Test equipment:

E166	Voltage drop-Messplatz	self construction
M104	Torque meter TM 2001	Clasen

Measuring spots:



Note: Voltage drops are measured with the help of the plug-sockets.

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Test	Unit	Req.	Results			
voltage drop conductor - current bar, left with						
H05V-K0,5 at I= 0,6A			X_{avg}	X_{min}	X_{max}	s
before test	mV	≤ 1,6	0,24	0,23	0,25	0,009
after test	mV	-	0,26	0,24	0,28	0,016
max. change	%	≤ 50	+17,3			
of one terminal	mV	-	+0,04	(0,23 → 0,27)		
H07V-U10 at I = 5,7 A			X_{avg}	X_{min}	X_{max}	s
before test	mV	≤ 1,6	0,28	0,25	0,31	0,022
after test	mV	-	0,28	0,27	0,30	0,011
max. change	%	≤ 50	+8,0			
of one terminal	mV	-	+0,02	(0,25 → 0,27)		
five connections and disconnections	-	-	test passed			
visual examination	-	-	no damages visible			

Test	Unit	Req.	Results			
voltage drop conductor - current bar, right with						
H05V-K0,5 at I= 0,6A			X_{avg}	X_{min}	X_{max}	s
before test	mV	≤ 1,6	0,26	0,23	0,29	0,026
after test	mV	-	0,24	0,23	0,25	0,008
max. change	%	≤ 50	+8,6			
of one terminal	mV	-	+0,02	(0,23 → 0,25)		
H07V-U10 at I = 5,7 A			X_{avg}	X_{min}	X_{max}	s
before test	mV	≤ 1,6	0,30	0,28	0,35	0,029
after test	mV	-	0,28	0,27	0,31	0,018
max. change	%	≤ 50	+10,7			
of one terminal	mV	-	+0,03	(0,28 → 0,31)		
five connections and disconnections	-	-	test passed			
visual examination	-	-	no damages visible			

Evaluation: The test objects met the requirements.

ВЯРНО С ОРИГИНАЛА

MIG 23 LTD. СОФИЯ

2.2.2 **Test with twice the nominal torque**
(additional test)

Standard: taken pattern from IEC 60947-7-1 section 8.3.3.1 / 07.02
LPV 2201

Test performance: Five new terminal blocks are mounted on a rail. Conductors of the largest cross section are connected and disconnected five times. Screws are tightened with twice the nominal torque acc. to A 1040. After every loosening a new conductor will be used.
After the test the torque with no load shall not be more than 0,05Nm for threads up to size M 3.5 resp. 0,1Nm for larger sizes.

thread of clamping screw: **M 3,5**
thread of disconnector screw: **M 3**
2x nominal torque acc. to A 1040
clamping screw: **1,6 Nm**
max. torque of
screw of disconnector: **0,8 Nm**

Test equipment: M104 Torque meter TM 2001 Clasen

Test	Unit	Req.	Results			
Five connections and disconnections						
- clamping screw	Nm	1,6	test passed			
- screw of disconnector	Nm	0,8	test passed			
torque with no load after the test			X_{avg}	X_{min}	X_{max}	s
- clamping screw	Nm	≤ 0,05	0,03	0,02	0,05	0,01
- screw of disconnector	Nm	≤ 0,05	0,01	0,01	0,01	0

Evaluation: The test objects met the requirements.

ВЯРНО С ОРИГИНАЛА
МИГ 23 ЕООД СОФИЯ MIG 23 LTD

2.3 **Test for damage to and accidental loosening of conductors (flexion test)**
2.4 **Pull-out test**
2.5 **Pull-out force**

Standard: IEC 60947-7-1 section 8.3.3.2 / 07.02
LPV 2202

Test performance: The test is performed on each five new clamping units with every clampable type of conductor and
- with the smallest clampable cross-section,
- with the rated cross-section,

and, if applicable
- with the largest clampable cross-section, if larger than the rated cross-section,
- with the maximum number of conductors of the smallest cross-section simultaneously connectable,
- with the maximum number of conductors of the largest cross-section simultaneously connectable,
- with the maximum number of conductors of the smallest and largest cross-section simultaneously connectable.

Screws are tightened with IEC-torque. Each conductor is subjected to circular motions with a mass suspended from its end.
After the flexion test a static pull-force is applied to every conductor for 1 min. Then the pull-out force is determined at a speed of 30mm/min.
Ferrules of the following type have been crimped with PZ 6/5:

conductor H05V-K0,5:	H 0,5/10	Cat.-no.	9004050000
conductor H05V-K0,75:	H 0,75/10	Cat.-no.	0542500000
conductor H05V-K1:	H 1,0/10	Cat.-no.	0282800000
conductor H07V-K 1,5	H 1,5/12	Cat.-no.	9004060000
conductor H07V-K 2,5	H 2,5/12	Cat.-no.	0186100000
conductor H07V-K 6	H 6/12	Cat.-no.	0191900000

Test equipment:

M104	Torque meter TM 2001	Clasen
M093	Universal test machine 1445	Zwick

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МИГ 23 ЕООД СОФИЯ MIG 23 LTD

Test	Unit	Req.	Results
flexion test			
1 × H05V-U0,5	kg	0,3	test passed
1 × H05V-K0,5	kg	0,3	test passed
1 × H07V-K10 (*)	kg	2,0	test passed
1 × H07V-U10	kg	2,0	test passed
1 × H07V-R10 (*)	kg	2,0	test passed
1 × H07V-K6 + ferrule	kg	1,4	test passed
1 × AWG 20/1	kg	0,3	test passed
1 × AWG 20/7	kg	0,3	test passed
1 × AWG 20/19	kg	0,3	test passed
1 × AWG 8/7 (*)	kg	2,0	test passed
2 × H05V-U0,5	kg	0,3	test passed
2 × H05V-K0,5	kg	0,3	test passed
2 × H05V-K0,5 + ferrule	kg	0,3	test passed
2 × H05V-U0,75	kg	0,4	test passed
2 × H05V-K0,75	kg	0,4	test passed
2 × H05V-K0,75 + ferrule	kg	0,4	test passed
2 × H05V-U1,0	kg	0,4	test passed
2 × H05V-K1,0	kg	0,4	test passed
2 × H05V-K1,0 + ferrule	kg	0,4	test passed
2 × H07V-U1,5	kg	0,4	test passed
2 × H07V-K1,5	kg	0,4	test passed
2 × H07V-K1,5 + ferrule	kg	0,4	test passed
2 × H07V-U 2,5	kg	0,7	test passed
2 × H07V-K2,5	kg	0,7	test passed
2 × H07V-K2,5 + ferrule	kg	0,7	test passed

(*) torque raised up to 1,0 Nm

ВЯРНО С ОРИГИНАЛА

МИГ 23 ЕООД СОФИЯ MIG 23 LTD.

Test	Unit	Req.	Results
pull-out test			
1 × H05V-U0,5	N	30	test passed
1 × H05V-K0,5	N	30	test passed
1 × H07V-U10	N	90	test passed
1 × H07V-R10 (*)	N	90	test passed
1 × H07V-K10 (*)	N	90	test passed
1 × H07V-K6 + ferrule	N	80	test passed
1 × AWG 20/1	N	30	test passed
1 × AWG 20/7	N	30	test passed
1 × AWG 20/19	N	30	test passed
1 × AWG 8/7 (*)	N	90	test passed
2 × H05V-U0,5	N	30	test passed
2 × H05V-K0,5	N	30	test passed
2 × H05V-K0,5 + ferrule	N	30	test passed
2 × H05V-U0,75	N	30	test passed
2 × H05V-K0,75	N	30	test passed
2 × H05V-K0,75 + ferrule	N	30	test passed
2 × H05V-U1,0	N	35	test passed
2 × H05V-K1,0	N	35	test passed
2 × H05V-K1,0 + ferrule	N	35	test passed
2 × H07V-U1,5	N	40	test passed
2 × H07V-K1,5	N	40	test passed
2 × H07V-K1,5 + ferrule	N	40	test passed
2 × H07V-U2,5	N	50	test passed
2 × H07V-K2,5	N	50	test passed
2 × H07V-K2,5 + ferrule	N	50	test passed

(*) torque raised up to 1,0 Nm

ВЯРНО С ОРИГИНАЛА

МИГ 23 ЕООД СОФИЯ MIG 23 LTD

Test	Unit	Req.	Results			
pull-out force						
			X_{avg}	X_{min}	X_{max}	s
1 × H05V-U0,5	N	> 30	115	100	121	8,9
1 × H05V-K0,5	N	> 30	84	71	100	10,8
1 × H07V-U10	N	> 90	240	202	306	41,6
1 × H07V-R10 (*)	N	> 90	357	262	466	85,7
1 × H07V-K10 (*)	N	> 90	397	248	589	139,4
1 × H07V-K 6 + ferrule	N	> 80	268	198	462	110
1 × AWG 20/1	N	> 30	133	131,8	134	0,89
1 × AWG 20/7	N	> 30	121	94	138	20,3
1 × AWG 20/19	N	> 30	140	129	146	7,3
1 × AWG 8/7 (*)	N	> 90	377	190	505	129,3
2 × H05V-U0,5	N	> 30	92	57	126	31,9
2 × H05V-K0,5	N	> 30	80	57	105	18,5
2 × H05V-K0,5 + ferrule	N	> 30	105	84	117	84,1
2 × H05V-U0,75	N	> 30	182	167	191	12,2
2 × H05V-K0,75	N	> 30	127	88	145	23,3
2 × H05V-K0,75 + ferrule	N	> 30	120	92	141	25,2
2 × H05V-U1,0	N	> 35	178	122	201	31,9
2 × H05V-K1,0	N	> 35	131	110	149	19,8
2 × H05V-K1,0 + ferrule	N	> 35	184	126	218	40,3
2 × H07V-U1,5	N	> 40	231	206	258	21,6
2 × H07V-K1,5	N	> 40	278	200	327	52,8
2 × H07V-K1,5 + ferrule	N	> 40	274	242	299	21,5
2 × H07V-U2,5	N	> 50	351	293	406	45,5
2 × H07V-K2,5	N	> 50	299	247	339	36,3
2 × H07V-K2,5 + ferrule	N	> 50	214	147	221	56,0

(*) torque raised up to 1,0 Nm

Evaluation: The test objects met the requirements.

ВЯРНО С ОРИГИНАЛА

МИГ 23 ЕООД СОФИЯ MIG 23 LTD

2.6 **Connecting capacity**
2.7 **Rated cross-section (gauge size)**

Standard: IEC 60947-7-1 section 7.1.6 / 07.02

Test performance: The appropriate gauge shall be inserted by its inherent weight.

Test	Req.	Results
connecting capacity		
gauge size	A5	insertable

Evaluation: The test objects met the requirements.

2.8 **Type identification and marking**

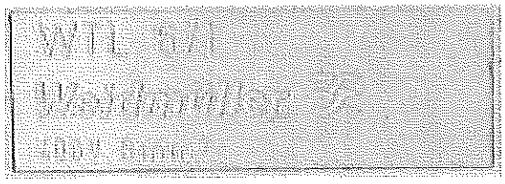
Standard: IEC 60947-7-1 section 5 und 7.1.4 / 07.02

Test performance: A terminal block shall be marked in a durable and legible manner with
- the name of the manufacturer or a trade mark by which the manufacturer can be readily identified
- a type reference permitting its identification in order to obtain relevant information from the manufacturer or his catalogue.

A terminal block shall have provision, or at least space, for identification marks or numbers for each clamping unit or terminal assembly related to the circuit of which it forms a part.

Test	Req.	Results
inscriptions		
mark of origin	necessary	Weidmüller
type identification	necessary	WTL 6/1
relevant standard	-	---
rated cross-section	-	6 mm²
rated insulation voltage	-	400V (caused by the results of the insulation tests, a changing to 500V is possible)
marking		
area for inscriptions or grooves and the like to fix labels	present	present

Inscriptions:



Evaluation: The test objects met the requirements.

ВЯРНО С ОРИГИНАЛА

МИГ 23 ЕООД СОФИЯ MIG 23 LTD

3 Thermal characteristics
3.1 Needle flame test

Standard: IEC 60947-7-1 section 7.1.5 / 07.02
IEC 60695-2-2 / 04.91

Test performance: The test flame is applied for 10s. For insulation walls <1mm and/or area <100mm² the flame is applied for 5s. After flame is removed, the duration of burning in the case of ignition is measured. The test is passed if duration of burning is <30s and if burning or glowing particles falling down cause no ignition of the tissue paper.

Test equipment: E177 Thermometer T202KC Digitron

Test	Unit	Req.	Results
flame application time	s	10	10
duration of burning	s	< 0	0
ignition of tissue paper	-	none	none

Evaluation: The test objects met the requirements.

ВЯРНО С ОРИГИНАЛА

МИГ 23 ЕООД СОФИЯ МИГ 23 LTD

4 Miscellaneous tests
4.1 General function
4.1.1 Handling (additional test)
4.1.2 Function of accessory

Standard: Taking pattern from LPV 2224

Test performance: The general function, handling and function of accessory are criticised subjectively.

Test	Results
General function	no complaints
Handling	
mounting and dismounting	no complaints
connection and disconnection of conductors	no complaints with screw driver SD 0,8 × 4
	no complaints with screw driver DIN 5264-A 0,8 × 4
Function of accessory	
screw driver	SD 0,8 × 4 usable (cat.-no. 9024030000)
	DIN 5264-A 0,6 × 3,5 usable (cat.-no. 9008340000)
cross connector	QL 2 - 10
cover	WAP/WTL
labels	DEK8 and WS 12/6,5
end brackets	WEW 35/2

ВЯРНО С ОРИГИНАЛА
МИГ 23 ЕООД СОФИЯ MIG 23 LTD

MIG 23 Ltd
www.mig23-bg.com
mv@mig23-bg.com

С П И С Ъ К
на приложените лабораторни изпитания

1. Типово изпитание на клема WTL6/1, съгласно DIN EN 60947-7-1 и LPP1129;
2. Изпитване на вибрации на клема WTL6/1, съгласно DIN EN 50155;
3. Изпитване на клема WTL6/1 за работа в агресивна среда SO2.
4. Лабораторни изпитания на материала Wemid за електрически, механични, термични и други свойства.
5. Типово изпитание на разединител с цилиндрични стопяеми вложки OPV10/3, съгласно EN60947-1 и EN60947-3.

на основание чл. 2 от ЗЗЛД

Дата: 08.08.2018

DAkkS
Deutsche
Akkreditierungsstelle

Deutsche Akkreditierungsstelle GmbH

Entrusted according to Section 8 subsection 1 AkkStelleG in connection with Section 1 subsection 1 AkkStelleGBV
Signatory to the Multilateral Agreements of
EA, ILAC and IAF for Mutual Recognition

Accreditation

The Deutsche Akkreditierungsstelle GmbH attests that the testing laboratory

VDE Prüf- und Zertifizierungsinstitut GmbH

at the following locations:

Merianstraße 28, 63069 Offenbach
Goethering 43, 63067 Offenbach
Landsberger Allee 378a, 12681 Berlin

is competent under the terms of DIN EN ISO/IEC 17025:2005 to carry out tests in the following fields:

Verification of technical documentation and investigation of airborne acoustical noise of equipment and machines listed in this annex according to article 12 of Directive 2000/14/EG; Measurement of sound power level for equipment and machines according to article 13 of Directive 2000/14/EG; Safety of machines as defined by Directive 2006/42/EG for products listed in the annex;
Type testing covered by the authorization for granting the GS Mark according to the German Product Safety Act (ProdSG) for products listed in the annex;
Safety of electrical equipment and their components; Electronic components; Industrial low-voltage switchgear and controlgear and installations; Electric tools and power drive systems; Cables and cords; Laboratory equipment; Photometry; Optics; Energy efficiency; Environmental tests and methods for performance measuring; Accumulators and batteries; Electromagnetic Compatibility (EMC) and radio; Acoustics and noise emission; Electric bicycles (Pedelec);
Analytic chemistry; Functional safety; Energy Star Program (EPA) for the products listed in the annex;
Technical Directive for power generation units and power installations - Part 3: Determination of electric characteristics of power generation units for medium-voltage power grid, high-voltage grid and supergrid;
Construction products;
Testing of construction products (system for evaluation and inspection of performance reliability 3) according to Regulation (EU) No. 305/2011 for determination of harmonised conditions for marketing of construction products (Constructional Products Regulation CPR)

The accreditation certificate shall only apply in connection with the notice of accreditation of 23.03.2018 with the accreditation number D-PL-12061-01 and is valid until 16.06.2021. It comprises the cover sheet, the reverse side of the cover sheet and the following annex with a total of 197 p

на основание чл. 2 от ЗЗЛД

Registration number of the certificate: **D-PL-12061-01-01**

Frankfurt am Main, 23.03.2018	Dipl.-Ing. (FH) Ralf Egner Head of Division	Translation issued: 23.03.2018

This document is a translation. The definitive version is the original German accreditation certificate.
See notes overleaf.

ВЯРНО С ОРИГИНАЛА

MIG 23 LTD

1218

Deutsche Akkreditierungsstelle GmbH

Office Berlin
Spittelmarkt 10
10117 Berlin

Office Frankfurt am Main
Europa-Allee 52
60327 Frankfurt am Main

Office Braunschweig
Bundesallee 100
38116 Braunschweig

The accreditation was granted pursuant to the Act on the Accreditation Body (AkkStelleG) of 31 July 2009 (Federal Law Gazette I p. 2625) and the Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products (Official Journal of the European Union L 218 of 9 July 2008, p. 30). DAkkS is a signatory to the Multilateral Agreements for Mutual Recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Cooperation (ILAC). The signatories to these agreements recognise each other's accreditations.

The up-to-date state of membership can be retrieved from the following websites:
EA: www.european-accreditation.org
ILAC: www.ilac.org
IAF: www.iaf.nu

АМО 90

АМО 90 ЕООД
БЮРО ЗА ПРЕВОДИ
1000 София
ул. Г.С.Раковски 127, офис 336
тел. 0889 319 040
0878 314 090

3200 Бяла Слатина
ул. Климент Охридски 63
тел. 0915 827 48
E-mail: amo90@abv.bg
www.amo90.com

Превод от немски език

DAkkS
Deutsche
Akkreditierungsstelle

Немска акредитираща служба

Немска акредитираща служба ГмбХ

Съгласно параграф 8, ал. 1 от AkkStelleG във връзка с параграф 1, ал. 1 от AkkStelleGBV
е подписала многостранното споразумение на EA, ILAC и IAF за взаимно признаване

АКРЕДИТАЦИЯ

Немска акредитираща служба ГмбХ с настоящето потвърждава, че изпитателната лаборатория

Weidmüllerinterface GmbH&Co. KG
Централна Лаборатория
ул. Орбкер 48, 32758 Детмолд

е компетентна да извършва изпитания по DIN EN ISO/I EC 17025:2005 в следните области:

Безопасност на електрически средства за производство, индустриални уреди за ниско напрежение, куплунги, изпитания на околната среда и електромагнитна съвместимост.

Сертификатът за акредитация е валиден само за периода от 16.07.2015 до 06.03.2019 с акредитационен номер D-PL-12095-01. Той се състои от настоящата заглавна страница, задната страница и приложението, обхващащо общо 10 страници.

Регистрационен номер на сертификата: **D-PL-12095-01-00**

Франкфурт на Майн, 16.07.2015 г.

инж. Р. Егнер подпис не се чете
Ръководител отдел

Виж забележките отзад.

Подписаната, Аксиния Асенова Ганева, удостоверявам верността на превода направен от мен от английски и немски на български език на приложения документ – Акредитация. Преводът се състои от 1 страница.

Преводач: Аксиния Асенова Ганева

на основание чл. 2 от ЗЗЛД

ВЯРНО С ОРИГИНАЛА

1220

DAkkS
Deutsche
Akkreditierungsstelle

Deutsche Akkreditierungsstelle GmbH

Beliehene gemäß § 8 Absatz 1 AkkStelleG i.V.m. § 1 Absatz 1 AkkStelleGBV
Unterzeichnerin der Multilateralen Abkommen
von EA, ILAC und IAF zur gegenseitigen Anerkennung

Akkreditierung

Die Deutsche Akkreditierungsstelle GmbH bestätigt hiermit, dass das Prüflaboratorium

Weidmüller Interface GmbH & Co. KG
Zentrallabor
Orbker Straße 48, 32758 Detmold

die Kompetenz nach DIN EN ISO/IEC 17025:2005 besitzt, Prüfungen in folgenden Bereichen durchzuführen:

Sicherheit elektrischer Betriebsmittel, Industrielle Niederspannungsgeräte, Steckverbinder, Umweltprüfungen, Elektromagnetische Verträglichkeit (EMV)

Die Akkreditierungsurkunde gilt nur in Verbindung mit dem Bescheid vom 16.07.2015 mit der Akkreditierungsnummer D-PL-12095-01 und ist gültig bis 06.03.2019. Sie besteht aus diesem Deckblatt, der Rückseite des Deckblatts und der folgenden Anlage mit insgesamt 10 Seiten.

Registrierungsnummer der Urkunde: **D-PL-12095-01-00**

на основание чл. 2 от ЗЗЛД

Frankfurt am Main, 16.07.2015

Im Auftrag Dipl.-Ing. (FH) Karl Egner
Abteilungsleiter

Siehe Hinweise auf der Rückseite

ВЯРНО С ОРИГИНАЛА

АМО 90

АМО 90 ЕООД
БЮРО ЗА ПРЕВОДИ
1000 София
ул. Г.С.Раковски 127, офис 336
тел. 0889 319 040
0878 314 090

3200 Бяла Слатина
ул. Климент Охридски 63
тел. 0915 827 48
E-mail: amo90@abv.bg
www.amo90.com

Превод от немски език

Уведомление на орган в рамките на директивата *за* техническа хармонизация

от : Централен орган на провинциите за безопасностік (ZLS)
Розенкавалиерплац 2
D-8 1925 Мюнхен
Германия

до: **Европейска комисия**
Генерална дирекция РАСТЕЖ
200 Rue де ла Loi,
B-1049 Брюксел.
Други държави-членки

референция : Законодателство: 2000/1 4 / ЕО Емисии на шум в околната среда на съоръжения за използване на открито

Име на органа, адрес, телефон, факс, имейл, уебсайт :

Институт за изпитване и сертифициране VDE /VDE - Prüf- und Zertifizierungsinstitut GmbH/
Мерианщрасе 28
63069 Офенбах
Германия
Тел : +49 (0) 69 8306 0
факс : +49 (0) 69 8306 555
Email : vde-institut@vde.com
Website : www.vde.com

Орган : **NB 0366**

Създаден: неизвестно (Уведомления до 2006 не са включени в тези списъци) | последна актуализация : 15/08/2016

Органът официално е акредитиран по:

EN 45012 - EN ISO/IEC 17021

EN 45001 - EN ISO/IEC 17025

EN 45011 - EN ISO/IEC 17065

Наименование на Националния орган по акредитация (NAB): DAkkS (Deutsche Akkreditierungsstelle GmbH)

Акредитацията обхваща категориите продукти и процедурите за оценка на съответствието, засегнатите от това уведомление : Да

ВЯРНО С ОРИГИНАЛА

Задачи, изпълнени от органа :

Създаден : 03/05/2016 |последна актуализация **:** 03/05/2016

Продуктова линия, продукт /използване по предназначение/продуктова гама	Процедура/модули	Анекси или членове на директиви
Оборудване, обект на ограничение на шума - уплътнителни машини (само вибрационни и не-вибрационни валяци, вибрационни плочи и трамбовки) - компресори (<350 кВт) - бетонни къртачи и къртачни чукове, ръчни - хидравлични агрегати - Косачки за трева (с изключение на земеделска и горска техника и многоцелеви устройства, чийто основен моторизиран елемент има инсталирана мощност над 20 кВт) - тример за трева / тример за тревата в краищата на лехи - Мотокултиватори (<3 кВт) - Електрически генератори (<400 кВт) - заваръчни генератори	Пълно гарантиране на качеството Вътрешен контрол на продукцията с оценка на техническата документация и периодичен контрол Верификация на модула	Annex VIII Annex VI Annex VII

Подписаната, Аксиния Асенова Ганева, удостоверявам верността на превода направен от мен от английски и немски на български език на приложения документ – Уведомление на орган в рамките на директивата за техническа хармонизация. Преводът се състои от 2 страници.

Превода[redacted] *Аксиния Асенова Ганева*

на основание чл. 2 от ЗЗЛД

ВЯРНО С ОРИГИНАЛА

Notification of a Body in the framework of a technical harmonization directive

From : Zentralstelle der Länder für Sicherheitstechnik (ZLS)
Rosenkavalierplatz 2
D-81925 München
Germany

To : **European Commission**
GROWTH Directorate-General
200 Rue de la Loi,
B-1049 Brussels.

Other Member States

Reference : Legislation : 2000/14/EC Noise emission in the environment by equipment for use outdoors

Body name, address, telephone, fax, email, website :

VDE - Prüf- und Zertifizierungsinstitut GmbH
Merianstraße 28
63069 Offenbach
Germany
Phone : +49 (0) 69 8306 0
Fax : +49 (0) 69 8306 555
Email : vde-institut@vde.com
Website : www.vde.com

Body : **NB 0366**

Created : Unknown (Notifications pre-dating 2006 are not available in these lists) | **Last update :** 15/08/2016

The body is formally accredited against :

EN 45012 - EN ISO/IEC 17021

EN 45001 - EN ISO/IEC 17025

EN 45011 - EN ISO/IEC 17065

Name of National Accreditation Body (NAB) : DAkkS (Deutsche Akkreditierungsstelle GmbH)

The accreditation covers the product categories and conformity assessment procedures concerned by this notification : Yes

Tasks performed by the Body :

Created : 03/05/2016 | **Last update :** 03/05/2016

Product family, product /Intended use/Product range	Procedure/Modules	Annexes or articles of the directives
Equipment subject to noise limits - compaction machines (only vibrating and non-vibrating rollers, vibratory plates and vibratory rammers) - compressors (< 350 kW) - concrete-breakers and picks, hand-held - hydraulic power packs - lawnmowers (excluding agricultural and forestry equipment, and multi-purpose devices, the main motorised component of which has an installed power of more than 20 kW) - lawn trimmers/lawn edge trimmers - motor hoes (< 3 kW) - power generators (< 400 kW) - welding generators	Full quality assurance Internal control of production with assessment of technical documentation and periodical checking Unit verification	Annex VIII Annex VI Annex VII

Вайд-Бул ЕООД

Weid-Bul

гр. София 1756, бул. Св. Климент Охридски" №13 тел. 02/963 25 60 факс. 02/963 10 98
www.weidbul.com

Инструкции за транспортиране, складиране, монтиране, вкл. въртящия момент на затягане на клемовите съединения, обслужване и поддържане

I. Материалите се доставят пакетирани в кутии и кашони. Всяка опаковка е удобна за транспортиране и съхранение. За запазване цялостта на опаковките не се изискват специални условия на транспорт и складиране.

II. При транспорт:

II. Да не се подлагат на преки атмосферни влияния – дъжд, сняг.
III. Товаро-разтоварните работи да се извършват в сухо време.
IV. Да се транспортират внимателно в стандартната си опаковка и да не се хвърлят или притискат силно.

III. Правилно складиране:

Редът и начинът за приемане, съхранение на материалите е съгласно Наредба №7 за проучване и доставка на машини и съоръжение към Правилника за капитално строителство и съгласно стандартизационните документи.

1. Материалите да се съхраняват в закрити, сухи помещения, годни за складиране на електрически материали.
2. Да не се подлагат на преки атмосферни влияния – дъжд, сняг.
3. В отворена кутия трябва да се вземат мерки за отстраняване на възможността за попадане на прах, пепел и др.
4. Температурен диапазон в помещението - (-5°C до +40°C)
5. Относителна влажност в помещението – до 50% при 40°C, 90% при 20°C
6. Чистота на средата – чиста от химически активни или агресивни компоненти, действащи разрушаващо на електрическата изолация и тоководещите части

IV. Монтаж

Монтажът на оборудването се осъществява върху стандартна DIN-шина.
Монтажът, демонтажът и работата с предпазител-прекъсвачи със стопяеми цилиндрични вложки трябва да се извършва единствено и само от квалифициран и опълномощен за това персонал. Задължително е да се вземат мерки за безопасност съгласно утвърдените наредби и правилници и да се осигуряват изискваните лични предпазни средства при работа по електрически мрежи. Не се допуска да се прави опит за ремонт или модификация на оборудването.
Въртящият момент на затягане на клемовите съединения е 2Nm.

V. Обслужване и поддържане

Предпазител-прекъсвачи със стопяеми цилиндрични вложки не изискват специална поддръжка. Необходимо е периодично да се проверява целостта на вложката и при необходимост тя да бъде подменена.

на основание чл. 2 от ЗЗЛД

гр. София

17.01.2017г.

Съставил: .....

инж. Петър Ценов

ВЯРНО С ОРИГИНАЛА

MIG 23 ЕООД · MIG 23 LTD · СОФИЯ

Приложение 3 към Техническо предложение

За Обособена позиция 1

СРОКОВЕ ЗА ДОСТАВКА И МОНТАЖ

№	Наименование	Мярка	Количество със срок на доставка и монтаж до 30 кал. дни
1	2	3	4
1	БКТП(К)-20/800/2, Д – отпр. и отстр., TS1 (KKT)	бр.	1
2	БКТП(К)-20/800/3, Д – отпр. и отстр., TS1 (KKKT)	бр.	1
3	БКТП(К)-20/800/2, Д – отпред и отстрани, тесен, TS9 (KKT)	бр.	1
4	БКТП(К)-20/800/3, Д – отпред и отстрани, тесен, TS9 (KKKT)	бр.	1
5	БКТП (К)-20/800/2,Д-отпр., TS2 (KKT)	бр.	1
6	БКТП (К)-20/800/3,Д-отпр., TS2 (KKKT)	бр.	1

Забележки:

1/ Срокът на доставката и монтажа започва да тече от датата на изпращане на поръчката.

2/ В случай, че крайният срок на доставката съвпада с празничен или неработен ден, то доставката се извършва не по-късно от първия работен ден след изтичането на срока.

3/ При поръчки на Възложителя на количества в рамките на потвърдените от Изпълнителя и недоставени в посочените срокове, ще бъдат налагани неустойки, съгласно условията на договора.

4/ Възложителят може да поръчва количество по-високо от посоченото в колона 4, като това обстоятелство ще бъде посочено текстово в съответната поръчка изпратена към Изпълнителя. С потвърждението на поръчката, Изпълнителят вписва в същата очаквана дата за доставка на количествата надвишаващи посочените в колона 4.

на основание чл. 2 от ЗЗЛД

Дата **10.08.2018** г.

ПОДПИС и ПЕЧАТ:

Антон Илиев
(име и фамилия)
Управител
(длъжност на представляващия участника)

Референтен № PPD 18-063

Приложение № 4
поставя се в комплекта
на техническото
предложение
ОБРАЗЕЦ!

Д Е К Л А Р А Ц И Я

за приемане на условията в проекта на рамково споразумение и проекта на конкретен договор, неразделна част от рамковото споразумение

Долуподписаният/-ната/ **Антон Иванов Илиев**, в качеството ми на **Управител**, представляващ **„МИГ 23“ ЕООД с ЕИК 131490350**, участник в процедура от вида „договаряне без предварителна покана за участие“, за сключване на рамково споразумениес реф. № PPD 18-063 и предмет: **„Доставка и монтаж на бетонови комплектни трансформаторни постове (БКТП)“**, обособена/и позиция/и №№: **Обособена позиция 1** – "Доставка и монтаж на бетонови комплектни трансформаторни постове (БКТП) - обслужвани отвън".

ДЕКЛАРИРАМ, ЧЕ:

1. Приемам условията в проекта на рамково споразумение, приложен в документацията за участие.

2. Приемам условията в проекта на конкретен договор, неразделна част от рамковото споразумение, приложен в документацията за участие.

Информирани сме, че Възложителят (включително чрез неговия помощен орган, а именно назначената за провеждане на поръчката оценителна комисия) ще обработва и съхранява личните ми данни, посочени в настоящата декларация, за целите на провеждане на обществената поръчка, като за целта ще предприеме всички необходими според действащата нормативна уредба мерки за защита на личните ми данни.

МИГ 23 ЕООД * МИГ 23 LTD * СОФИЯ

на основание чл. 2 от ЗЗЛД

Дата 10.08.2018 г.

Декларатор:

Антон Илиев

/име, подпис и печат /

Забележка:
Декларацията се подписва от законния представител на участника или от надлежно упълномощено лице, което подава офертата.
Когато участник подава оферта за повече от една обособена позиция, може да бъде изготвена, подписана и подадена само една декларация (според настоящия образец), но на съответното място в декларацията задължително се отбелязват номерата на всички обособени позиции, за които участникът участва. Възможно е по преценка на участника, когато същият участва за повече от една обособена позиция, да изготви и подпише отделни декларации (съобразно настоящия образец) за всяка отделна обособена позиция, за която участва.

Референтен № PPD 18-063

Приложение № 5
поставя се в комплекта
на техническото
предложение
ОБРАЗЕЦ!

Д Е К Л А Р А Ц И Я
за срока на валидност на офертата

Долуподписаният **Антон Иванов Илиев**,
(собствено, бащино, фамилно име)

притежаващ лична карта № на основание чл. 2 от ЗЗЛД адрес: на основание чл. 2 от ЗЗЛД

в качеството ми на **Управител**
(посочва се длъжността)

на **„МИГ 23“ ЕООД, с ЕИК 131490350**
(посочете наименованието на участника)

участник в процедура от вида „договаряне без предварителна покана за участие“, за сключване на рамково споразумение, с реф. № PPD 18-063 и предмет: **„Доставка и монтаж на бетонови комплектни трансформаторни постове (БКТП)“**, обособена/и позиция/и №№: **Обособена позиция 1 – "Доставка и монтаж на бетонови комплектни трансформаторни постове (БКТП) - обслужвани отвън".**
(наименование на поръчката)

ДЕКЛАРИРАМ, ЧЕ:

С подаване на настоящата оферта, направените от нас предложения и поети ангажименти за обособена/и позиция/и №№: **Обособена позиция 1** – "Доставка и монтаж на бетонови комплектни трансформаторни постове (БКТП) - обслужвани отвън", са валидни за срок от 6 (шест) месеца, считано от крайния срок за подаване на офертите.

Информирани сме, че Възложителят (включително чрез неговия помощен орган, а именно назначената за провеждане на поръчката оценителна комисия) ще обработва и съхранява личните ми данни, посочени в настоящата декларация, за целите на провеждане на обществената поръчка, като за целта ще предприеме всички необходими според действащата нормативна уредба мерки за защита на личните ми данни.

Дата **10.08.2018** г.

Декларатор: на основание чл. 2 от ЗЗЛД

Антон Илиев
/име, подпис и печат/

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Референтен № PPD 18-063