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Clause	Requirement + Test	Result - Remark	Verdict
5.2	MARKING		P
	Marking on equipment itself or on nameplate or nameplates attached to the equipment and legible from the front after mounting		P
	- indication of the open and closed position	Visible isolating distance between open contacts	P
	- suitability for isolation		P
	- disconnectors AC-20 and DC-20 only: marked "Do not operate under load"		N/A
	Marking on equipment not needed to be visible after mounting:		P
	- manufacturer's name or trademark	APATOR	P
	- type designation or serial number	ARS 3	P
	- rated operational current	See copies of marking plates	P
	- rated operational voltage	690 V - AC	P
	- utilization category	AC-22B, AC-21B	P
	- rated frequency	40 – 60 Hz	P
	- manufacturer's claim for compliance with IEC/EN 60947-3	EN 60947-3	P
	- degree of protection		N/A
	Marking on fuse-combination units:		P
	- fuse type	3 gG	P
	- maximum rated current	630 A	P
	- power loss of the fuse-link	60 W	P
	Identification of terminals:		P
	- line terminals		P
	- load terminals	L1, L2, L3	P
	- neutral pole terminal		N/A
	- protective earth terminal		N/A
	Data in the manufacturer's published information:		P
	- rated insulation voltage	1000 V	P
	- rated impulse withstand voltage for equipment suitable for isolation or when determined	12 kV	P
	- pollution degree, if different from 3	3	P
	- rated duty	Uninterrupted duty	P
	- rated short-time withstand current and duration		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- rated short-circuit making capacity		N/A
	- rated conditional short-circuit current	100 kA (500V AC)	P
7.1	CONSTRUCTION		P
7.1.1	Materials		P
7.1.1.1	Resistance to abnormal heat and fire		P
	Glow-wire test according to IEC 60695-2-10 and IEC 60695-2-11		—
	Parts made of insulating material necessary to retain current-carrying parts in position: test temperature 960 °C		P
	No visible flame and no sustained glowing	see appended table 7.1.1.1	P
	Flames and glowing extinguish within 30 s	see appended table 7.1.1.1	P
	No ignition of the tissue paper	see appended table 7.1.1.1	P
	Parts of insulating material not necessary to retain current-carrying parts in position, even though in contact with them: test temperature 650 °C		P
	No visible flame and no sustained glowing	see appended table 7.1.1.1	P
	Flames and glowing extinguish within 30 s	see appended table 7.1.1.1	P
	No ignition of the tissue paper	see appended table 7.1.1.1	P
7.1.2	Current-carrying parts and their connection		P
7.1.3	Clearances..... :	see appended table 7.1.3	P
	Creepage distances ..... :	see appended table 7.1.3	P
	Pollution degree ..... :	3	—
	Comparative tracking index (V) ..... :	500 V	—
	Material group ..... :	II	—
7.1.4	Actuator		P
7.1.4.1	Insulation		—
	Actuator insulated from live parts for		—
	- rated insulation voltage	1000 V	P
	- rated impulse withstand voltage	12 kV	P
	Actuator made of metal		—
	- connected to a protective conductor or provided with an additional insulation		N/A
	Actuator made of or covered by insulating material :	—	—
	- internal metal parts, which might become accessible in the event of an insulation failure, are also insulated from live parts for the rated insulation voltage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
7.1.4.2	Direction of movement		P
	The direction of operation for actuators shall where applicable conform to IEC 60447		P
	There is no doubt of the "I" and "O" position and the direction of operation		P
7.1.5 of Part 1	Indication of contact position		P
7.1.5.1	Indicating means	Visible isolating distance between open contacts in the open position	P
7.1.5.2	Indication by the actuator		P
7.1.6	Additional safety requirements for equipment suitable for isolation		P
7.1.6.1	Additional constructional requirements for equipment suitable for isolation (Ue > 50 V):		P
	- marking according to 5.2.1b		P
	- indication of the position of the contacts		P
	- construction of the actuating mechanism		P
	- minimum clearances across open contacts (see Table XIII, Part 1) (mm) ..... :	14 mm	—
	- measured clearances (mm) ..... :	33 mm	P
	- test Uimp across gap (kV) ..... :	18,1 kV	P
7.1.6.2	Supplementary requirements for equipment with provision for electrical interlocking with contactors or circuit-breakers:		N/A
	Auxiliary switch is rated according to IEC 60947-5-1 (unless the equipment is rated AC-23)		N/A
	Time interval between opening of the contacts of the auxiliary contact and the contacts of the main poles: ≥20 ms ..... :	—	—
	Measured time interval (ms) ..... :	—	N/A
	During the closing operation the contacts of the auxiliary switch closes after or simultaneously with the contacts of the main poles		N/A
7.1.6.3	Supplementary requirements for equipment provided with means for padlocking the open position:		N/A
	The locking means is so designed that it cannot be removed with the appropriate padlock(s) installed		N/A
	Test force F applied to the actuator in an attempt to operate to the closed position (N) ..... :	—	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Rated impulse withstand voltage (kV) ..... :	—	
	Test Uimp on open main contacts at the test force		N/A
7.1.7 of Part 1	Terminals		P
7.1.7.1	All parts of terminals which maintain contact and carry current are of metal having adequate mechanical strength	(see 8.2.4 below)	P
	Terminal connections are such that necessary contact pressure is maintained	(see 8.2.4 below)	P
	Terminals are so constructed that the conductor is clamped between suitable surfaces without damage to the conductor and terminal	(see 8.2.4 below)	P
	Terminals do not allow the conductor to be displaced or to be displaced themselves in a manner detrimental to the operator of equipment and the insulation voltage is not reduced below the rated value	(see 8.2.4 below)	P
8.2.4	Mechanical properties of terminals	Terminals of type V	P
	Mechanical strength of terminals	Sample No A3/11	P
	Maximum cross-sectional area of conductor (mm^2) ..... :	300 mm^2 (rigid)	
	Diameter of thread (mm) ..... :	13,8 mm	
	Torque (Nm) ..... :	1,1 x 40 Nm = 44 Nm	
	5 times on 2 separate clamping units		P
	Testing for damage to and accidental loosening of conductor (flexion test)		P
	Conductor of the smallest cross-sectional area (mm^2) ..... :	70 mm^2 (flexible)	
	Number of conductor of the smallest cross section:	1	
	Diameter of bushing hole (mm) ..... :	19,1 mm	
	Height between the equipment and the platen .... :	368 mm	
	Mass at the conductor(s) (kg) ..... :	10,4 kg	
	135 continuous revolutions: the conductor neither slips out of the terminal nor breaks near the clamping unit		P
	Pull-out test		P
	Force (N), applied for 1 min. ..... :	285 N	
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Conductor of the largest cross-sectional area (mm²) ..... :	300 mm² (rigid)	
	Number of conductor of the largest cross section :	1	
	Diameter of bushing hole (mm) ..... :	28,6 mm	
	Height between the equipment and the platen .... :	464 mm	
	Mass at the conductor(s) (kg) ..... :	22,7 kg	
	135 continuous revolutions: the conductor neither slips out of the terminal nor breaks near the clamping unit		P
	Pull-out test		P
	Force (N), applied for 1 min. ..... :	578 N	
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		P
	Conductor of the largest and smallest cross-sectional area (mm²) ..... :		
	Number of conductor of the smallest cross section, number of conductor of the largest cross section :		
	Diameter of bushing hole (mm) ..... :		
	Height between the equipment and the platen .... :		
	Mass at the conductor(s) (kg) ..... :		
	135 continuous revolutions: the conductor neither slips out of the terminal nor breaks near the clamping unit		N/A
	Pull-out test		N/A
	Force (N), applied for 1 min. ..... :		
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		N/A
7.1.7.2	Connection capacity		P
	Type of conductors ..... :	Rigid/flexible	
	Minimum cross-sectional area of conductor (mm²) :	70 mm²	
	Maximum cross-sectional area of conductor (mm²) ..... :	300 mm²	
	Number of conductors simultaneously connectable to the terminal ..... :	1	

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Clause	Requirement + Test	Result - Remark	Verdict
8.2.4	Mechanical properties of terminals	Terminals of type 2V	P
	Mechanical strength of terminals	Sample No. A3/15	P
	Maximum cross-sectional area of conductor (mm²) ..... :	2x240 mm^2 (rigid)	
	Diameter of thread (mm) ..... :	11,8 mm	
	Torque (Nm) ..... :	1,1 x 40 Nm = 44 Nm	
	5 times on 2 separate clamping units		P
	Testing for damage to and accidental loosening of conductor (flexion test)		P
	Conductor of the smallest cross-sectional area (mm²) ..... :	50 mm^2 (flexible)	
	Number of conductor of the smallest cross section:	2	
	Diameter of bushing hole (mm) ..... :	15,9 mm	
	Height between the equipment and the platen .... :	343 mm	
	Mass at the conductor(s) (kg) ..... :	9,5 kg	
	135 continuous revolutions: the conductor neither slips out of the terminal nor breaks near the clamping unit		P
	Pull-out test		P
	Force (N), applied for 1 min. ..... :	236 N	
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		P
	Conductor of the largest cross-sectional area (mm²) ..... :	240 mm^2 (rigid)	
	Number of conductor of the largest cross section :	2	
	Diameter of bushing hole (mm) ..... :	28,6 mm	
	Height between the equipment and the platen .... :	464 mm	
	Mass at the conductor(s) (kg) ..... :	20 kg	
	135 continuous revolutions: the conductor neither slips out of the terminal nor breaks near the clamping unit		P
	Pull-out test		P
	Force (N), applied for 1 min. ..... :	578 N	
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		P
	Conductor of the largest and smallest cross-sectional area (mm²) ..... :	240 mm^2 + *50 mm^2*	

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Clause	Requirement + Test	Result - Remark	Verdict
	Number of conductor of the smallest cross section, number of conductor of the largest cross section :	1 1	
	Diameter of bushing hole (mm) ..... :	28,6 mm	
	Height between the equipment and the platen .... :	464 mm	
	Mass at the conductor(s) (kg) ..... :	20 kg	
	135 continuous revolutions: the conductor neither slips out of the terminal nor breaks near the clamping unit	.....	P
	Pull-out test		P
	Force (N), applied for 1 min. ..... :	578 N	
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		P
	Conductor of the largest and smallest cross-sectional area (mm²) ..... :	50 mm^2 + *240 mm^2*	
	Number of conductor of the smallest cross section, number of conductor of the largest cross section :	1 1	
	Diameter of bushing hole (mm) ..... :	15,9 mm	
	Height between the equipment and the platen .... :	343 mm	
	Mass at the conductor(s) (kg) ..... :	9,5 kg	
	135 continuous revolutions: the conductor neither slips out of the terminal nor breaks near the clamping unit		P
	Pull-out test		P
	Force (N), applied for 1 min. ..... :	236 N	
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		P
7.1.7.2	Connection capacity		P
	Type of conductors ..... :	Rigid/flexible	
	Minimum cross-sectional area of conductor (mm²) :	50 mm^2	
	Maximum cross-sectional area of conductor (mm²) ..... :	240 mm^2	
	Number of conductors simultaneously connectable to the terminal ..... :	2	
7.1.7.3	Connection		P
	Terminals for connection to external conductors are readily accessible during installation		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Clamping screws and nuts do not serve to fix any other component		P
7.1.7.4	Terminal identification and marking		P
	Terminal intended exclusively for the neutral conductor		N/A
	Protective earth terminal		N/A
	Other terminals	L1, L2, L3	P
7.1.8	Additional requirements for equipment provided with a neutral pole		N/A
	Equipment provided with a pole intended for the connection of neutral, this pole shall be clearly marked by the letter "N"		N/A
	The switched neutral pole does not break before and does not make after the other poles except		N/A
	- a pole having the appropriate short-circuit breaking and making capacity is used as neutral pole, all poles may operate together		N/A
	Conventional thermal current of neutral pole		N/A
7.1.9	Provisions for protective earthing		N/A
7.1.9.1	The exposed conductive parts are electrically interconnected and connected to a protective earth terminal		N/A
7.1.9.2	Protective earth terminal is readily accessible		N/A
	Protective earth terminal is suitably protected against corrosion		N/A
	Electrical continuity between the exposed conductive parts of the protective earth terminal and the metal sheathing of connecting conductors		N/A
	Protective earth terminal has no other functions		N/A
7.1.9.3	Protective earth terminal marking and identification		N/A
7.1.10	Enclosure for equipment		P
7.1.10.1	Design		P
	When the enclosure is opened, all parts requiring access for installation and maintenance are readily accessible	Integral enclosure	P
	Sufficient space is provided inside the enclosure		P

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Clause	Requirement + Test	Result - Remark	Verdict
	The fixed parts of a metal enclosure are electrically connected to the other exposed conductive parts of the equipment and connected to a terminal which enables them to be earthed or connected to a protective conductor		N/A
	Under no circumstances a removable metal part of the enclosure is insulated from the part carrying the earth terminal when the removable part is in place		N/A
	The removable parts of the enclosure are firmly secured to the fixed parts by a device such that they cannot be accidentally loosened or detached owing to the effects of operation of the equipment or vibrations		N/A
	When an enclosure is so designed as to allow the covers to be opened without the use of tools, means is provided to prevent loss of the fastening devices		N/A
	If the enclosure is used for mounting push-buttons, it is not possible to remove the buttons from the outside of the enclosure		N/A
7.1.10.2	Insulation		N/A
	If, in order to prevent accidental contact between a metallic enclosure and live parts, the enclosure is partly or completely lined with insulating material, then this lining is securely fixed to the enclosure		N/A
7.1.11	Degree of protection of enclosed equipment		N/A
	Degree of protection ..... :	—	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3	TEST SEQUENCE I: GENERAL PERFORMANCE CHARACTERISTICS		P
8.3.3.1	Temperature-rise	Samples Nos. A3/10, A3/11 and A3/15	P
	ambient temperature 10-40 °C ..... :	See appended tables 8.3.3.1	
	test enclosure W x H x D (mm x mm x mm) ..... :	—	
	material of enclosure ..... :	—	
	Main circuits, test conditions:		
	- conventional thermal current Ith (A) ..... :	630 A	
	- conventional enclosed thermal current Ithe (A) . :	—	
	- cable/busbar cross-section (mm²) / length (mm) :	2x185 mm²	
	Fuse-link details (fuse-combination units only):		
	- manufacturer's name, trademark or identification mark ..... :	APATOR	
	- manufacturer's model or type reference ..... :	WTNH gG	
	- rated current (A) ..... :	630 A	
	- power loss (W) ..... :	43 W	
	- rated breaking capacity (kA) ..... :	120 kA	
	Measured temperature-rise..... :	See appended tables 8.3.3.1	P
	Auxiliary circuits, test conditions:		N/A
	- rated operation current (A) ..... :	—	
	- cable cross-section (mm²) ..... :	—	
	Measured temperature-rise..... :	—	N/A
8.3.3.2	Test of dielectric properties	Samples Nos. A3/10, A3/11 and A3/15	P
	Rated impulse withstand voltage (kV) ..... :	12 kV	
	- test Uimp main circuits (kV) ..... :	14,5 kV	P
	- test Uimp auxiliary circuits (kV) ..... :	—	N/A
	- test Uimp on open main contacts (equipment suitable for isolation) (kV) ..... :	18,1 kV	P
	Power-frequency withstand voltage (V) ..... :	2200 V	
	- main circuits, test voltage for 5 sec. (V) ..... :	5 s	P
	- control and auxiliary circuits, test voltage for 5 sec. (V) ..... :	—	N/A
	Devices, which have been disconnected for the power-frequency withstand voltage test..... .	—	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Equipment suitable for isolation, leakage current not exceed 0,5 mA		
	Test voltage 1,1 Ue (V) ..... :	759 V	
	Measured leakage current (mA) ..... :	0,010 mA	P
8.3.3.3	Making and breaking capacity	Sample No.: A3/1	P
	- utilization category ..... :	AC-22B	
	- rated operational voltage Ue (V) ..... :	690 V	
	- rated operational current Ie (A) or power (kW) .. :	630 A	
	Conditions for make/break operations or make operation, AC-22B:		P
	- test voltage, U = 1,05 Ue.....(V):	L1: 725 V L2: 726 V L3: 725 V	
	- test current, I = 3 .....x Ie (A):	L1: 1916 A L2: 1929 A L3: 1926 A	
	- power factor..... :	L1: 0,69 L2: 0,68 L3: 0,68	
	Conditions for break operation, AC-22B		P
	- test voltage, U = 1,05 Ue.....(V):	L1: 725 V L2: 726 V L3: 725 V	
	- test current, I = 3 .....x Ie (A):	L1: 1916 A L2: 1929 A L3: 1926 A	
	- power factor ..... :	L1: 0,69 L2: 0,68 L3: 0,68	
	Number of make/break or make and break operations ..... :	5 make 5 break	P
	- recovery voltage duration (≥ 50 ms)	725 V	P
	- current duration (ms) ..... :	425 ms	
	- time interval between operations ..... :	35 s	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only		P
	- oscillatory frequency (kHz) ..... :	48,44 kHz	
	- measured oscillatory frequency (kHz) ..... :	L1: 47,90 kHz L2: 48,90 kHz L3: 48,30 kHz	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- factor γ ..... :	L1: 1,09 L2: 1,11 L3: 1,10	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		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
8.3.3.3.6	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	150 N (before the test 130 N)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~..... :	1380 V	—
	No flashover or breakdown		P
8.3.3.5	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) ..... :	0,091 mA	P
8.3.3.6	Temperature-rise verification		P
	- conductor cross-section (mm²) ..... :	2x185 mm²	—
	- test current Ie (A) ..... :	630 A	—
	Measured temperature-rise..... :	See appended tables 8.3.3.6	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.3	Making and breaking capacity	Sample No.: A3/4	P
	- utilization category ..... :	AC-22B	—
	- rated operational voltage Ue (V) ..... :	400 V	—
	- rated operational current Ie (A) or power (kW) .. :	630 A	—
	Conditions for make/break operations or make operation, AC-22B:		P
	- test voltage, U = 1,05 Ue.....(V):	L1: 420 V L2: 420 V L3: 421 V	—
	- test current, I = 3 .....x Ie (A):	L1: 1910 A L2: 1900 A L3: 1912 A	—
	- power factor..... :	L1: 0,65 L2: 0,66 L3: 0,66	—
	Conditions for break operation, AC-22B		P
	- test voltage, U = 1,05 Ue.....(V):	L1: 420 V L2: 420 V L3: 421 V	—
	- test current, I = 3 .....x Ie (A):	L1: 1910 A L2: 1900 A L3: 1912 A	—
	- power factor ..... :	L1: 0,65 L2: 0,66 L3: 0,66	—
	Number of make/break or make and break operations ..... :	5 make 5 break	P
	- recovery voltage duration (≥ 50 ms)	420 V	P
	- current duration (ms) ..... :	410 ms	—
	- time interval between operations ..... :	35 s	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only		P
	- oscillatory frequency (kHz) ..... :	74,93 kHz	—
	- measured oscillatory frequency (kHz) ..... :	L1: 72,95 Hz L2: 73,80 kHz L3: 73,30 kHz	P
	- factor γ ..... :	L1: 1,13 L2: 1,08 L3: 1,10	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P

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Clause	Requirement + Test	Result - Remark	Verdict
	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
8.3.3.3.6	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	150 N (before the test 110 N)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~..... :	1380 V	—
	No flashover or breakdown		P
8.3.3.5	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) ..... :	0,009 mA	P
8.3.3.6	Temperature-rise verification		P
	- conductor cross-section (mm²) ..... :	2 x 185 mm²	—
	- test current Ie (A) ..... :	630 A	—
	Measured temperature-rise..... :	see appended tables 8.3.3.6	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.3	Making and breaking capacity	Sample No.: A3/6	P
	- utilization category ..... :	AC-21B	—
	- rated operational voltage Ue (V) ..... :	690 V	—
	- rated operational current Ie (A) or power (kW) .. :	630 A	—
	Conditions for make/break operations or make operation, AC-21B:		P
	- test voltage, U = 1,05 Ue.....(V):	L1: 725 V L2: 725 V L3: 725 V	—
	- test current, I = 1,5 .....x Ie (A):	L1: 968 A L2: 975 A L3: 956 A	—
	- power factor..... :	L1: 0,95 L2: 0,94 L3: 0,94	—
	Conditions for break operation, AC-21B		P
	- test voltage, U = 1,05 Ue.....(V):	L1: 725 V L2: 725 V L3: 725 V	—
	- test current, I = 1,5 .....x Ie (A):	L1: 968 A L2: 975 A L3: 956 A	—
	- power factor ..... :	L1: 0,95 L2: 0,94 L3: 0,94	—
	Number of make/break or make and break operations ..... :	5 make 5 break	P
	- recovery voltage duration (≥ 50 ms)	725 V	P
	- current duration (ms) ..... :	400 ms	—
	- time interval between operations ..... :	35 s	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only		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		P

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Clause	Requirement + Test	Result - Remark	Verdict
	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
8.3.3.3.6	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	150 N (before the test 130 N)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~..... :	1380 V	—
	No flashover or breakdown		P
8.3.3.5	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) ..... :	0,010 mA	P
8.3.3.6	Temperature-rise verification		P
	- conductor cross-section (mm²) ..... :	2x185 mm²	—
	- test current Ie (A) ..... :	630 A	—
	Measured temperature-rise..... :	see appended tables 8.3.3.6	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.3	Making and breaking capacity	Sample No.: A3/5	P
	- utilization category ..... :	AC-21B	—
	- rated operational voltage Ue (V) ..... :	400 V	—
	- rated operational current Ie (A) or power (kW) .. :	630 A	—
	Conditions for make/break operations or make operation, AC-21B:		P
	- test voltage, U = 1,05 Ue.....(V):	L1: 420 V L2: 420 V L3: 421 V	—
	- test current, I = 1,5 .....x Ie (A):	L1: 950 A L2: 951 A L3: 953 A	—
	- power factor..... :	L1: 0,95 L2: 0,95 L3: 0,95	—
	Conditions for break operation, AC-21B		P
	- test voltage, U = 1,05 Ue.....(V):	L1: 420 V L2: 420 V L3: 421 V	—
	- test current, I = 1,5 .....x Ie (A):	L1: 950 A L2: 951 A L3: 953 A	—
	- power factor ..... :	L1: 0,95 L2: 0,95 L3: 0,95	—
	Number of make/break or make and break operations ..... :	5 make 5 break	P
	- recovery voltage duration (≥ 50 ms)	420 V	P
	- current duration (ms) ..... :	410 ms	—
	- time interval between operations ..... :	35 s	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only		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		P

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Clause	Requirement + Test	Result - Remark	Verdict
	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
8.3.3.3.6	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	140 N (before the test 110 N)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~..... :	1380 V	—
	No flashover or breakdown		P
8.3.3.5	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) ..... :	0,010 mA	P
8.3.3.6	Temperature-rise verification		P
	- conductor cross-section (mm²) ..... :	2x185 mm²	—
	- test current Ie (A) ..... :	630 A	—
	Measured temperature-rise..... :	see appended tables 8.3.3.6	P

8.3.3.7	Strength of actuator mechanism		N/A
8.2.5	Verification of the strength of actuator mechanism and position indicating device		N/A
	- actuator type (fig.) ..... :	1e	—
8.2.5.2.1	Dependent and independent manual operation	—	N/A
	- actuating force for opening (N) ..... :	90 N	—
	- test force with blocked main contacts (N) ..... :	—	—
	- used method to keep the contact closed ..... :	—	—

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Clause	Requirement + Test	Result - Remark	Verdict
	During and after the test, open position not indicated..... :	The main contacts position is visible in the open position – test not applicable	N/A
	Equipment with locking mean, no locking in the open position while test force is applied..... :	—	N/A
8.2.5.2.2	Dependent power operation	—	N/A
	- main contacts fixed together in the closed position:	—	N/A
	- used method to keep the contact closed..... :	—	N/A
	- 110% of the rated supply voltage applied to the equipment (3 times)..... :	—	N/A
	During and after the test, open position not indicated..... :	—	N/A
	Equipment show no damage impairing its normal operation..... :	—	N/A
	Equipment with locking mean, no locking in the open position while test force is applied..... :	—	N/A
8.2.5.2.3	Independent power operation		N/A
	- main contacts fixed together in the closed position:	—	N/A
	- used method to keep the contact closed..... :	—	N/A
	- stored energy of the power operator released (3 times)..... :	—	N/A
	During and after the test, open position not indicated..... :	—	N/A
	Equipment show no damage impairing its normal operation..... :	—	N/A
	Equipment with locking mean, no locking in the open position while test force is applied..... :	—	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4	TEST SEQUENCE II: OPERATIONAL PERFORMANCE CAPABILITY		P
8.3.4.1	Operational performance test	Sample No A3/3	P
	- utilization category ..... :	AC-22B	
	- rated operational voltage (V) ..... :	690 V	
	- rated operational current (A) ..... :	630 A	
	Test conditions for electrical operation cycles:		
	- test voltage (V) ..... :	L1: 691 V L2: 692 V L3: 691 V	
	- test current (A) ..... :	L1: 644 A L2: 643 A L3: 641 A	
	- power factor/time constant ..... :	L1: 0,80 L2: 0,80 L3: 0,80	
	Number of cycles with current ..... :	200	P
	Number of cycles without current ..... :	800	P
	First test sequence (with/without current) ..... :	without current	
	Second test sequence (with/without current) ..... :	with current	
	- time interval between first and second test sequence ..... :	8000 s	
8.3.4.1.5	Behaviour of the equipment during the operational performance 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
8.3.4.1.6	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	120 N (before the test 110 N)	P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark	Verdict
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 ..... :	0,011 mA	P
8.3.4.4	Temperature-rise verification		P
	- conductor cross-section (mm²) ..... :	2x185 mm^2	
	- test current Ie (A) ..... :	630 A	
	Measured temperature-rise..... :	see appended tables 8.3.4.4	P
8.3.4.1	Operational performance test	Sample No A3/8	P
	- utilization category ..... :	AC-22B	
	- rated operational voltage (V) ..... :	400 V	
	- rated operational current (A) ..... :	630 A	
	Test conditions for electrical operation cycles:		
	- test voltage (V) ..... :	L1: 400 V L2: 400 V L3: 401 V	
	- test current (A) ..... :	L1: 638 A L2: 640 A L3: 635 A	
	- power factor/time constant ..... :	L1: 0,80 L2: 0,80 L3: 0,80	
	Number of cycles with current ..... :	200	P
	Number of cycles without current ..... :	800	P
	First test sequence (with/without current) ..... :	without current	
	Second test sequence (with/without current) ..... :	with current	
	- time interval between first and second test sequence ..... :	4000 s	
8.3.4.1.5	Behaviour of the equipment during the operational performance test	:	P
	Test performed without:		

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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
8.3.4.1.6	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	150 N (before the test 110 N)	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 ..... :	0,010 mA	P
8.3.4.4	Temperature-rise verification		P
	- conductor cross-section (mm²) ..... :	2x185 mm^2	
	- test current Ie (A) ..... :	630 A	
	Measured temperature-rise..... :	see appended tables 8.3.4.4	P
8.3.4.1	Operational performance test	Sample No A3/7	P
	- utilization category ..... :	AC-21B	
	- rated operational voltage (V) ..... :	690 V	
	- rated operational current (A) ..... :	630 A	
	Test conditions for electrical operation cycles:		
	- test voltage (V) ..... :	L1: 691 V L2: 691 V L3: 691 V	

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Clause	Requirement + Test	Result - Remark	Verdict
	- test current (A) ..... :	L1: 650 A L2: 636 A L3: 634 A	—
	- power factor/time constant ..... :	L1: 0,95 L2: 0,94 L3: 0,95	—
	Number of cycles with current ..... :	200	P
	Number of cycles without current ..... :	800	P
	First test sequence (with/without current) ..... :	without current	—
	Second test sequence (with/without current) ..... :	with current	—
	- time interval between first and second test sequence ..... :	2600 s	—
8.3.4.1.5	Behaviour of the equipment during the operational performance 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
8.3.4.1.6	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	130 N (before the test 110 N)	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 ..... :	0,011 mA	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.4	Temperature-rise verification		P
	- conductor cross-section (mm²) ..... :	2x185 mm^2	
	- test current Ie (A) ..... :	630 A	
	Measured temperature-rise..... :	see appended tables 8.3.4.4	P
8.3.4.1	Operational performance test	Sample No A3/9	P
	- utilization category ..... :	AC-21B	
	- rated operational voltage (V) ..... :	400 V	
	- rated operational current (A) ..... :	630 A	
	Test conditions for electrical operation cycles:		
	- test voltage (V) ..... :	L1: 401 V L2: 401 V L3: 402 V	
	- test current (A) ..... :	L1: 636 A L2: 639 A L3: 635 A	
	- power factor/time constant ..... :	L1: 0,96 L2: 0,96 L3: 0,96	
	Number of cycles with current ..... :	200	P
	Number of cycles without current ..... :	800	P
	First test sequence (with/without current) ..... :	without current	
	Second test sequence (with/without current) ..... :	with current	
	- time interval between first and second test sequence ..... :	3000 s	
8.3.4.1.5	Behaviour of the equipment during the operational performance 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
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- required opening force not greater than the test force of 8.2.5.2 and table 8	160 N (before the test 110 N)	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 ..... :	0,010 mA	P
8.3.4.4	Temperature-rise verification		P
	- conductor cross-section (mm²) ..... :	2x185 mm^2	—
	- test current Ie (A) ..... :	630 A	—
	Measured temperature-rise..... :	see appended tables 8.3.4.4	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.5	TEST SEQUENCE III: SHORT-CIRCUIT PERFORMANCE CAPABILITY		N/A
	Requirements of this clause not applicable to the tested products		

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT		P
	Short-circuit breaking capacity test was carried out at Laboratorium Badawcze Aparatury Rozdzielczej of Instytut Elektrotechniki in Warsaw. The particular results of the test are given in test report No. 7670/NBR/08		—
	Protective device details:	Sample No. 2W	P
	- manufacturer's name, trademark or identification mark ..... :	APATOR	—
	- manufacturer's model or type reference ..... :	WTNH 3 gG	—
	- rated voltage (V) ..... :	500 V	—
	- rated current (A) ..... :	630 A	—
	- rated breaking capacity (kA) ..... :	120 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) ..... :	420 V	—
	test current (kA) ..... :	100 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: 21,86 kA L2: 33,99 kA L3: 60,02 kA	—
	- Joule integral I^2dt (A^2s) ..... :	L1: 1280 kA^2s L2: 2390 kA^2s L3: 4510 kA^2s	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) ..... :	1 m/s	—
	- point at which the measurement is made ..... :	Actuator	—
	- test speed during the fuse protected short-circuit making (m/s) ..... :	1 m/s	—
	- max. let-through current (kA) ..... :	L1: 1,31 kA L2: 34,98 kA L3: 35,32 kA	—
	- Joule integral I^2dt (A^2s) ..... :	L1: — kA^2s L2: 1860 kA^2s L3: 1840 kA^2s	—
8.3.6.2.5	Behaviour of the equipment during the test		P

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Clause	Requirement + Test	Result - Remark	Verdict
	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	150 N (before the test 110 N)	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 ..... :	0,010 mA	P
8.3.6.5	Temperature-rise verification		P
	- conductor cross-section (mm²) ..... :	2x185 mm^2	
	- test current Ie (A) ..... :	630 A	
	Measured temperature-rise..... :	see appended table 8.3.6.5	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.7	TEST SEQUENCE V: OVERLOAD PERFORMANCE CAPABILITY		P
8.3.7.1	Overload test	Sample No. A3/10	P
	ambient temperature 10-40 ..... :	24 °C	
	test enclosure W x H x D (mm x mm x mm) ..... :	—	
	material of enclosure ..... :	—	
	test current 1,6xIthe or 1,6xIth (A) ..... :	1008 A	
	cable/busbar cross-section (mm²) / length (mm) . :	2x185 mm²	
	Fuse-link details:		P
	- manufacturer's name, trademark or identification mark ..... :	**APATOR** WTNH 3	
	- rated current (A) ..... :	630 A	
	- power loss (W) ..... :	44 W	
	- rated breaking capacity (kA) ..... :	120 kA	
	- time duration of the overload test (s) ..... :	1624 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	5 min open and close	P
	Required opening force not greater than the test force of 8.2.5.2 and table 8	110 N	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 N	
	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 ..... :	0,011 mA	P
8.3.7.4	Temperature-rise verification		P
	Fuse links aged during the overload test are replaced by new fuse-links ..... :		P
	- conductor cross-section (mm²) ..... :	630 A	
	- test current Ie (A) ..... :	2x185 mm²	
	Measured temperature-rise..... :	see appended table 8.3.7.4	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.4	ELECTROMAGNETIC COMPATIBILITY TESTS		P
8.4.1	Immunity		P
8.4.1.1	Equipment not incorporating electronic circuits: no tests necessary		P
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		P
8.4.2.1	Equipment not incorporating electronic circuits: no tests necessary		P
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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	Annex A (normative)		N/A
A	Equipment for direct switching of a single motor		N/A
	Requirements of this clause not applicable to the tested products		

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Clause	Requirement + Test	Result - Remark	Verdict

7.1.3	TABLE: Clearance and creepage distance measurements						P
Type of fuse-switch disconnector	clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	required cl (mm) case A / B	cl (mm)	required dcr (mm)	dcr (mm)
ARS 3-6-M	L-L	12 kV	1000	14 / 4,5	20,9	14	55,6
	L-A				9,1		15,0
ARS 3-1-V	L-L				18,1		55,6
	L-A				9,1		15,0
ARS 3-1-2V	L-L				13,6		55,6
	L-A				9,1		15,0
supplementary information: —							

7.1.1.1	TABLE: resistance to heat and fire. Glow-wire flammability test.		P
	Conditioning time ..... :	24 h	
	Ambient temperature ..... :	20 °C	
	Relative humidity ..... :	50 %	
	Time of glow-wire tip application (t_a) ..... :	(30 ±1) s	

Tested part / material / market name / color	Thickness of material	Wire tempera ture	Duration from tip application to ignition	Duration from tip application to flames extinguish ing	Height of flame	Specified layer ignition	Verdict
	mm	°C	t(i) s	t(e) s	mm	no / yes	
Viewer I, Viewer II, terminals housing / policarbonate / Lexan 9945A / transparent	2	650	0	0	0	no	P
Enclosure, actuator, cover, conductor / poliamid / Starflam RX06082 / grey or black	3	650	0	0	0	no	P
Base, arc chamber, terminals cover, blocking plate / poliamid / Starflam RF0057E/ grey	2	960	5	31	3	no	P
supplementary information:							
Test carried out on parts from equipment. Criteria of acceptance: $t_e \leq t_a + 30$ s.							

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

8.3.3.1	TABLE: Temperature-rise (measurements)		Sample No A3/10	P
Temperature rise dT of part:			dT (K) measured	dT (K) required
Terminals		L1	60	70
		L2	69	
		L3	68	
		U	57	
		V	59	
		W	60	
Manual operating means: metallic / non-metallic			—/12	15/25
Parts intended to be touched but not hand-held: metallic / non-metallic			—/39	30/40
Parts which need not be touched during normal operation: metallic / non-metallic			—/42	40/50
supplementary information: ambient temperature 25 °C				

8.3.3.1	TABLE: Temperature-rise (measurements)		Sample No A3/11	P
Temperature rise dT of part:			dT (K) measured	dT (K) required
Terminals		L1	63	70
		L2	68	
		L3	65	
		U	49	
		V	52	
		W	51	
Manual operating means: metallic / non-metallic			—/11	15/25
Parts intended to be touched but not hand-held: metallic / non-metallic			—/38	30/40
Parts which need not be touched during normal operation: metallic / non-metallic			—/46	40/50
supplementary information: ambient temperature 25 °C				

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

8.3.3.1	TABLE: Temperature-rise (measurements)		Sample No A3/15	P
Temperature rise dT of part:			dT (K) measured	dT (K) required
Terminals		L1	67	70
		L2	69	
		L3	68	
		U	59	
		V	60	
		W	61	
Manual operating means: metallic / non-metallic			—/12	15/25
Parts intended to be touched but not hand-held: metallic / non-metallic			—/39	30/40
Parts which need not be touched during normal operation: metallic / non-metallic			—/48	40/50
supplementary information: ambient temperature 25 °C				

8.3.3.6	TABLE: Temperature-rise (measurements)		Sample No A3/1	
Temperature rise dT of part:			dT (K) measured	dT (K) required
Terminals		L1	60	80
		L2	74	
		L3	66	
		U	51	
		V	53	
		W	57	
Manual operating means: metallic / non-metallic			—/7	25/35
Parts intended to be touched but not hand-held: metallic / non-metallic			—/27	40/50
Parts which need not be touched during normal operation: metallic / non-metallic			—/45	50/60
supplementary information: ambient temperature 24 °C				

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

8.3.3.6	TABLE: Temperature-rise (measurements)		Sample No A3/4	P
Temperature rise dT of part:			dT (K) measured	dT (K) required
Terminals		L1	60	80
		L2	49	
		L3	52	
		U	47	
		V	42	
		W	46	
Manual operating means: metallic / non-metallic			—/12	25/35
Parts intended to be touched but not hand-held: metallic / non-metallic			—/30	40/50
Parts which need not be touched during normal operation: metallic / non-metallic			—/39	50/60
supplementary information: ambient temperature 24 °C				

8.3.3.6	TABLE: Temperature-rise (measurements)		Sample No A3/5	P
Temperature rise dT of part:			dT (K) measured	dT (K) required
Terminals		L1	60	80
		L2	62	
		L3	56	
		U	45	
		V	49	
		W	40	
Manual operating means: metallic / non-metallic			—/13	25/35
Parts intended to be touched but not hand-held: metallic / non-metallic			—/32	40/50
Parts which need not be touched during normal operation: metallic / non-metallic			—/40	50/60
supplementary information: ambient temperature 24 °C				

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

8.3.3.6	TABLE: Temperature-rise (measurements)		Sample No A3/6	P
Temperature rise dT of part:			dT (K) measured	dT (K) required
Terminals		L1	70	80
		L2	79	
		L3	66	
		U	77	
		V	78	
		W	76	
Manual operating means: metallic / non-metallic			—/14	25/35
Parts intended to be touched but not hand-held: metallic / non-metallic			—/44	40/50
Parts which need not be touched during normal operation: metallic / non-metallic			—/47	50/60
supplementary information: ambient temperature 24 °C				

8.3.4.4	TABLE: Temperature-rise (measurements)		Sample No A3/3	P
Temperature rise dT of part:			dT (K) measured	dT (K) required
Terminals		L1	62	80
		L2	75	
		L3	74	
		U	79	
		V	74	
		W	80	
Manual operating means: metallic / non-metallic			—/15	25/35
Parts intended to be touched but not hand-held: metallic / non-metallic			—/45	40/50
Parts which need not be touched during normal operation: metallic / non-metallic			—/59	50/60
supplementary information: ambient temperature 24 °C				

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

8.3.4.4	TABLE: Temperature-rise (measurements)	Sample No A3/7	P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals	L1	52	80
	L2	67	
	L3	50	
	U	79	
	V	78	
	W	77	
Manual operating means: metallic / non-metallic		—/13	25/35
Parts intended to be touched but not hand-held: metallic / non-metallic		—/48	40/50
Parts which need not be touched during normal operation: metallic / non-metallic		—/53	50/60
supplementary information: ambient temperature 25 °C			

8.3.4.4	TABLE: Temperature-rise (measurements)	Sample No A3/8	P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals	L1	48	80
	L2	47	
	L3	46	
	U	52	
	V	54	
	W	54	
Manual operating means: metallic / non-metallic		—/10	25/35
Parts intended to be touched but not hand-held: metallic / non-metallic		—/26	40/50
Parts which need not be touched during normal operation: metallic / non-metallic		—/31	50/60
supplementary information: ambient temperature 24 °C			

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

8.3.4.4	TABLE: Temperature-rise (measurements)		Sample No A3/9	P
Temperature rise dT of part:			dT (K) measured	dT (K) required
Terminals		L1	45	80
		L2	44	
		L3	43	
		U	56	
		V	53	
		W	52	
Manual operating means: metallic / non-metallic			—/10	25/35
Parts intended to be touched but not hand-held: metallic / non-metallic			—/28	40/50
Parts which need not be touched during normal operation: metallic / non-metallic			—/35	50/60
supplementary information: ambient temperature 25 °C				

8.3.6.5	TABLE: Temperature-rise (measurements)		Sample No. 2 W	P
Temperature rise dT of part:			dT (K) measured	dT (K) required
Terminals		L1	53	80
		L2	54	
		L3	50	
		U	52	
		V	54	
		W	56	
Manual operating means: metallic / non-metallic			—/11	25/35
Parts intended to be touched but not hand-held: metallic / non-metallic			—/37	40/50
Parts which need not be touched during normal operation: metallic / non-metallic			—41	50/60
supplementary information: ambient temperature 23 °C				

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

8.3.7.4	TABLE: Temperature-rise (measurements)		Sample No. A3/10	P
Temperature rise dT of part:			dT (K) measured	dT (K) required
Terminals		L1	57	80
		L2	66	
		L3	60	
		U	54	
		V	50	
		W	49	
Manual operating means: metallic / non-metallic			—/10	25/35
Parts intended to be touched but not hand-held: metallic / non-metallic			—/36	40/50
Parts which need not be touched during normal operation: metallic / non-metallic			—/42	50/60
supplementary information: ambient temperature 24 °C				

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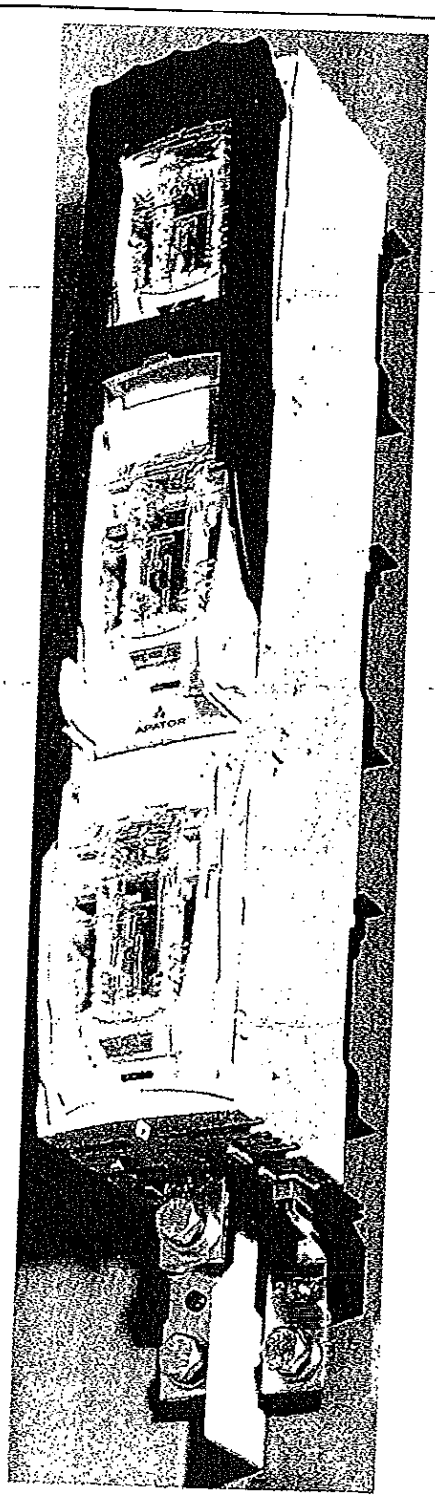
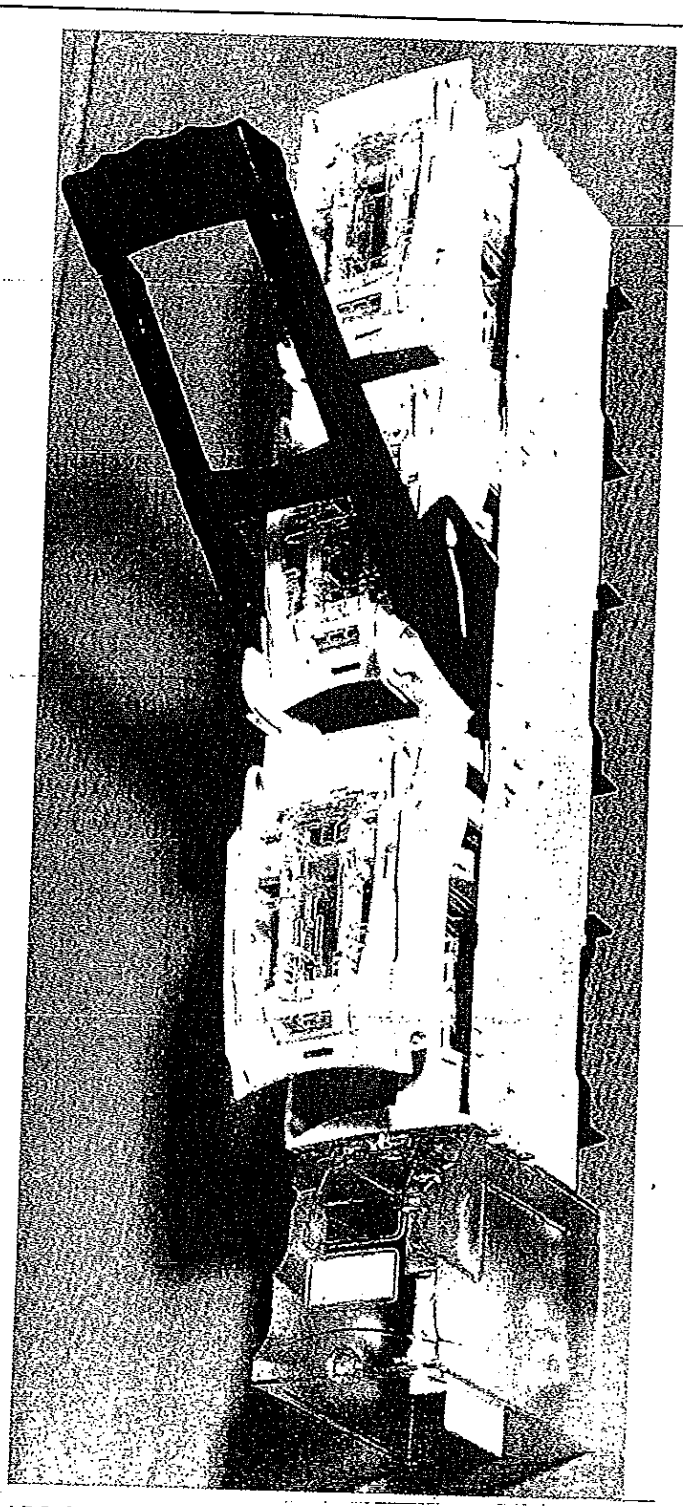
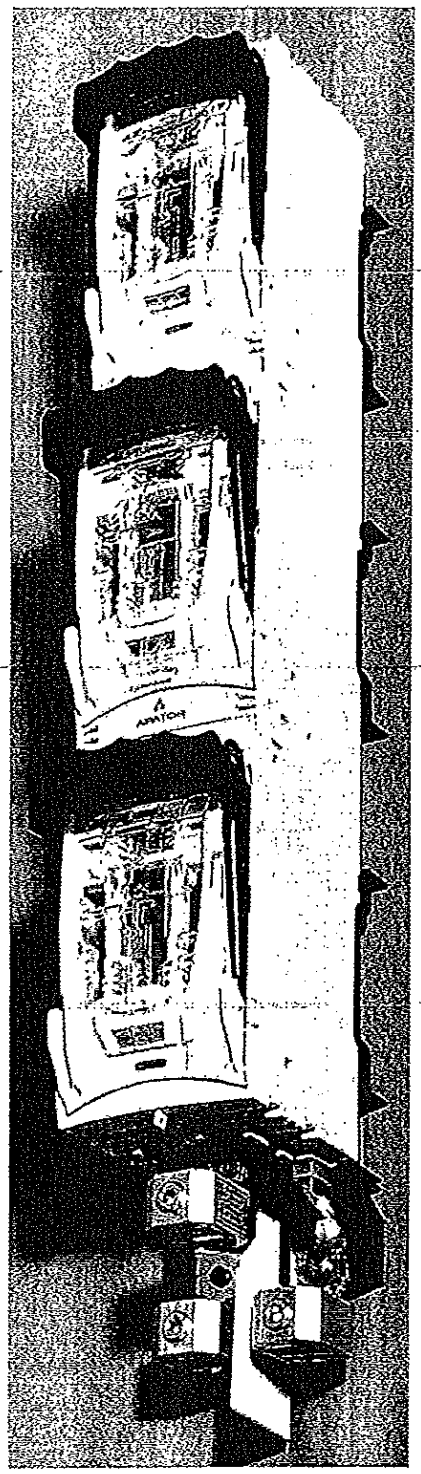
Photos of ARS 3

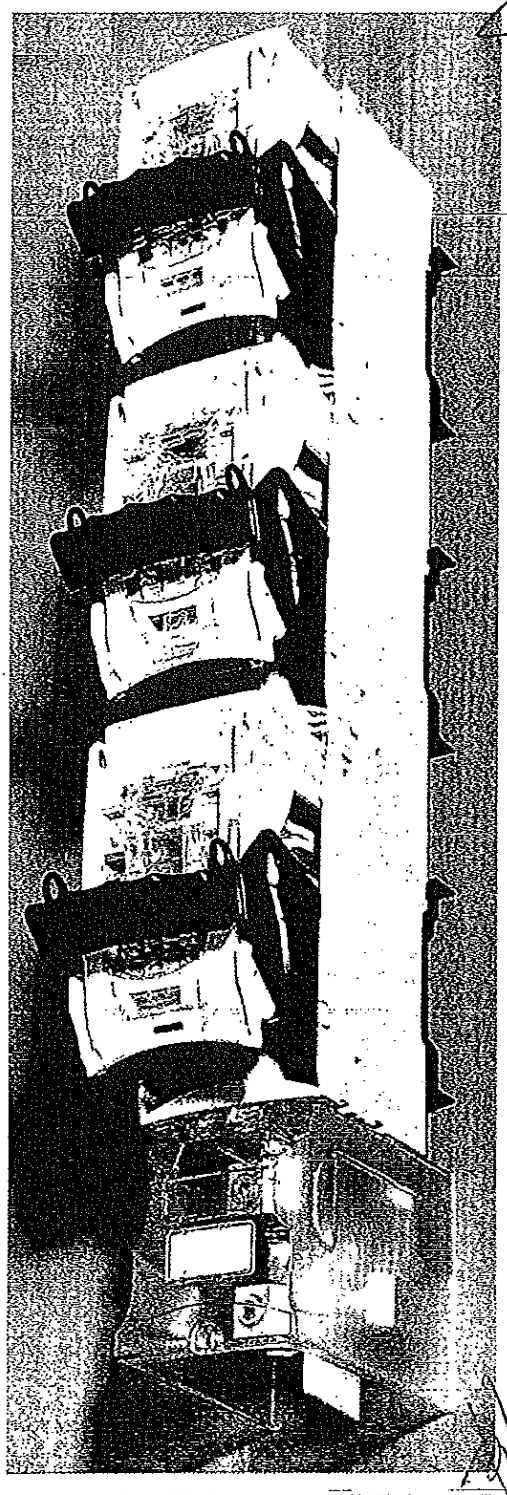




ARS 3- 6 – M

Photos of ARS 3





ARS 3- 1 – V

STOWARZYSZENIE ELEKTRYKÓW POLSKICH
BIURO BADAWCZE DS JAKOŚCI OBUDÓW
ZAKŁAD APARATÓW NISKIEGO NAPIĘCIA
20-150 Lublin, ul. Racławickiego 13/15

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Photos of ARS 3

ARS 3- 1 - 2V

Приложение ТС - Р4
за обособена позиция 2

превод от полски език:
Обхват на акредитацията на
ИЗПИТВАТЕЛНА ЛАБОРАТОРИЯ
номер AB 007,
издаден от
Полския център по акредитация
01-382 Варшава, ул.Шчоткарска 42
издание номер 8, дата на издаване 11 април 2011

Полски център по акредитация AB 007	Наименование и адрес ИНСТИТУТ ПО ЕЛЕКТРОТЕХНИКА ФИЛИАЛ В ГДАНСК ИЗПИТВАТЕЛНА ЛАБОРАТОРИЯ Ул. Нарвицка 1 80-557 Гданск
Индентификационен код Област/изпитван обект	Област/изпитван обект
E/6; F/6; G/6	Ел.изпитвания на изделията и електрическото и електронно оборудване Изпитване на електромагнитна съвместимост на изделията и електрическото и електронно оборудване Изпитване на въздействито на околната среда и климата на изделията и електрическото и електронно оборудване

НАЧАЛНИК

ОТДЕЛ АКРЕДИТАЦИЯ

НА ИЗПИТВАТЕЛНИТЕ ЛАБОРАТОРИИ

ТАДЕУШ МАТРАС

ВЯРНО С ОРИГИНАЛА
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ИЗПИТВАТЕЛНА ЛАБОРАТОРИЯ Ул. Нарвицка 1, 80-557 Гданск		
Лица, оторизиращи протоколите от изпитванията: Маг.инж.Даниел Сташевски – началник на Изпитвателната лаборатория		
Изпитвани обекти/група обекти	Изпитвани свойства и методи на изпитване	Стандарти и/или документирани изпитвателни процедури
Комутационна апаратура и апаратура за управление		
1. Автоматични регулатори за уреди за масова употреба	Пълни изпитвания съгласно: PN-EN 60730-1:2002/A1:2008/ A2:2009/A12:2004/A13:2005/A14:2006/ A15:2009/A16:2009/Ap1:2007 PN-EN 60730-2-1:2002/A11:2005 PN-EN 60730-2-6:2009 PN-EN 60730-2-7:2005 PN-EN 60730-2-8:2005 PN-EN 60730-2-9:2006 с изключение на тип 2.P PN-EN 60730-2-12:2008/A11:2009	PN-EN 60730-1:2002/A1:2008 /A2:2009/A12:2004/A13:2005/A14:2006/ A15:2009/A16:2009/Ap1:2007 PN-EN 60730-2-1:2002/A11:2005 PN-EN 60730-2-6:2009 PN-EN 60730-2-7:2005 PN-EN 60730-2-8:2005 PN-EN 60730-2-9:2006 PN-EN 60730-2-12:2008/A11:2009
2. Предпазители стопяеми за ниско напрежение	Пълни изпитвания съгласно: PN-EN 60269-1:2010/A1:2010 PN-EN 60269-4:2010 PN-EN 60269-2:2010 PN-EN 60269-3:2010	PN-EN 60269-1:2010/A1:2010 PN-EN 60269-4:2010 PN-EN 60269-2:2010 PN-EN 60269-3:2010
3. Вертикални основи за предпазители	Пълни изпитвания съгласно: PN-EN 60947-1:2010 PN-EN 60947-7-1:2010 PN-EN 60947-7-2:2010	PN-EN 60947-1:2010 PN-EN 60947-7-1:2010 PN-EN 60947-7-2:2010
4. Певключвател и за уреди	Пълни изпитвания съгласно: PN-EN 61058-1:2005/A2:2008	PN-EN 61058-1:2005/A2:2008

ВЕРНО С ОРИГИНАЛА

5. Управляеми превключватели и светлинни индикатори	Пълни изпитвания съгласно: PN-EN 60947-1:2010 PN-EN 60947-5-1:2010/A1:2009	 PN-EN 60947-1:2010 PN-EN 60947-5-1:2010/A1:2009
6. Многофункционални превключватели. Автоматични превключватели	Пълни изпитвания съгласно: PN-EN 60947-1:2010 PN-EN 60947-6-1:2009 PN-EN 60947-6-2:2005	 PN-EN 60947-1:2010 PN-EN 60947-6-1:2009 PN-EN 60947-6-2:2005/A1:2010
7. Електронни превключватели	Пълни изпитвания съгласно: PN-EN 60669-1:2006/A2:2008 /Ap1:2009/IS1:2009 PN-EN 60669-2-1:2007/A1:2009 т.7; 8; 15.3; 16; 17; 18; 19 /A12:2010	 PN-EN 60669-1:2006/A2:2008 /Ap1:2009/IS1:2009 PN-EN 60669-2-1:2007 /A1:2009 /A12:2010
8.		
9. Релета енергоелектрични	Пълни изпитвания съгласно: PN-EN 116000-3:2002	 PN-EN 116000-3:2002
10. Инсталационни кутии	Пълни изпитвания съгласно: PN-EN 93208:1997	 PN-EN 93208:1997
11. Разединители, изключватели, изолационни разединители и комплекти разединители с предпазители	Пълни изпитвания съгласно: PN-EN 60947-1:2010 PN-EN 60947-3:2009	 PN-EN 60947-1:2010 PN-EN 60947-3:2009
Апаратура за разединяване, превключване и управление		
12. Разединители ниско напрежение	Пълни изпитвания съгласно: PN-EN 60439-1:2003/A1:2006 PN-EN 60439-2:2004/A1:2007 PN-EN 60439-3:2004 PN-EN 60439-4:2008	 PN-EN 60439-1:2003/A1:2006 PN-EN 60439-2:2004/A1:2007 PN-EN 60439-3:2004 PN-EN 60439-4:2008

ВЕРНО С ОРИГИНАЛА

13.		
14. Контактори и стартери за двигатели	Пълни изпитвания съгласно: PN-EN 60947-1:2010 PN-EN 60947-4-1:2001/A1:2004 /A2:2007/Ap1:2004/Ap2:2007	PN-EN 60947-1:2010 PN-EN 60947-4-1:2001/A1:2004 /A2:2007/Ap1:2004/Ap2:2007
15. Трансформатори силови, захранващи съоръжения и др. подобни – трансформатор отделящ, защитен, за самобръсначки, звънци със захранващо напрежение до 760V; 50 Hz	PN-EN 60947-1:2010 PN-EN 60947-2:2009/A1:2010-1:2009/A1:2009 PN-EN 61558-2-1:2010 PN-EN 61558-2-4:2009 PN-EN 61558-2-6:2009 PN-EN 61558-2-7:2010 PN-EN 61558-2-5:2010 PN-EN 61558-2-8:2010	PN-EN 61558-1:2009/A1:2009 PN-EN 61558-2-1:2010 PN-EN 61558-2-4:2009 PN-EN 61558-2-6:2009 PN-EN 61558-2-7:2010 PN-EN 61558-2-5:2010 PN-EN 61558-2-8:2010
16. Изключватели за свръхток за битови инсталации и др.подобни	Пълни изпитвания съгласно: PN-EN 60898:2002	PN-EN 60898:2002
17. Изключватели за ниско напрежение за постоянен и променлив ток	Пълни изпитвания съгласно: PN-EN 60947-1:2010 PN-EN 60947-2:2009/A1:2010	PN-EN 60947-1:2010 PN-EN 60947-2:2009/A1:2010
18. Изключватели за разлика на тока без / с вградена свръхтокова защита	Пълни изпитвания съгласно: PN-EN 61008-1:2007/A11:2007 /A12:2009/IS:2008 PN-EN 61009-1:2008/A11:2008 A12:2009/A13:2009	PN-EN 61008-1:2007/A11:2007 /A12:2009/IS:2008 PN-EN 61008-2:2007 PN-EN 61009-1:2008/A11:2008 A12:2009/A13:2009
19. Изключватели за съоръжения (СВЕ)	Пълни изпитвания съгласно: PN-EN 60934:2004/A1:2007 т.5; 7.3; 7.4; 7.5.2; 8.2; 8.3; 8.7.1; 8.7.2; 8.7.3; 8.10.1; 8.10.3	PN-EN 60934:2004/A1:2007

20. Клеми винтови и безвинтови	Пълни изпитвания съгласно: PN-EN 60998-1:2006	PN-EN 60998-1:2006 PN-EN 60998-2-1:2006 PN-EN 60998-2-2:2006 PN-EN 60998-2-5:2006
Лабораторни съоръжение, автоматика и апаратура за измерване и защита		
23.Електрически измервателни уреди на автоматиката и лабораторни съоръжения	Пълни изпитвания съгласно: PN-EN 61010-1:2004 с изключение на т. 7.4; 12; 13.3	PN-EN 61010-1:2004
Съоръжения за масова употреба и др.подобни		
24.Фритюрници и тигани		
25.Нагреватели за аквариуми		
26.Потопяеми нагреватели		
27.		

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ZAKRES AKREDYTACJI LABORATORIUM BADAWCZEGO Nr AB 007

wydany przez
POLSKIE CENTRUM AKREDYTACJI
01-382 Warszawa, ul. Szczotkarska 42

Wydanie nr 8, Data wydania: 11 kwietnia 2011 r.

PCA Polskie Centrum Akredytacji BADANIA AB 007	Nazwa i adres **INSTYTUT ELEKTROTECHNIKI** **ODDZIAŁ W GDAŃSKU** **LABORATORIUM BADAWCZE** **ul. Narwicka 1** **80-557 Gdańsk**
Kod identyfikacji dziedziny/obiektu badań:	Dziedzina/obiekt badań:
E/6; F/6; G/6;	Badania elektryczne wyrobów i wyposażenia elektrycznego i elektronicznego Badania kompatybilności elektromagnetycznej wyrobów i wyposażenia elektrycznego i elektronicznego Badania środowiskowe i klimatyczne wyrobów i wyposażenia elektrycznego i elektronicznego

Wersja strony: A

KIEROWNIK
DZIAŁU AKREDYTACJI
LABORATORIÓW BADAWCZYCH

TADEUSZ MATRAS

Laboratorium Badawcze
ul. Narwicka 1
80-557 Gdańsk

Osoby autoryzujące sprawozdania z badań:
mgr inż. Daniel Staniszewski – Kierownik Laboratorium Badawczego

Badane obiekty / Grupa obiektów	Badane cechy i metody badawcze	Normy i/lub udokumentowane procedury badawcze
Aparatura rozdzielcza, łączeniowa i sterownicza		
1. Automatyczne regulatory do przyrządów powszechnego użytku	Badania pełne wg: PN-EN 60730-1:2002/A1:2008 /A2:2009/A12:2004/A13:2005 /A14:2006/A15:2009/A16:2009/Ap1:2007 PN-EN-60730-2-1:2002/A11:2005 PN-EN-60730-2-6:2009 PN-EN-60730-2-7:2005 PN-EN-60730-2-8:2005 PN-EN 60730-2-9:2006 z wyłączeniem typu 2.P PN-EN-60730-2-12:2008 /A11:2009	PN-EN 60730-1:2002/A1:2008 /A2:2009/A12:2004/A13:2005 /A14:2006/A15:2009/A16:2009/Ap 1:2007 PN-EN-60730-2-1:2002/A11:2005 PN-EN-60730-2-6:2009 PN-EN-60730-2-7:2005 PN-EN-60730-2-8:2005 PN-EN 60730-2-9:2006 PN-EN-60730-2-12:2008 /A11:2009
2. Bezpieczniki topikowe niskonapięciowe	Badania pełne wg: PN-EN 60269-1:2010/A1:2010 PN-EN 60269-4:2010 PN-HD 60269-2:2010 PN-HD 60269-3:2010	PN-EN 60269-1:2010/A1:2010 PN-EN 60269-4:2010 PN-HD 60269-2:2010 PN-HD 60269-3:2010
3. Listwy zaciskowe	Badania pełne wg: PN-EN 60947-1:2010 PN-EN 60947-7-1:2010 PN-EN 60947-7-2:2010	PN-EN 60947-1:2010 PN-EN 60947-7-1:2010 PN-EN 60947-7-2:2010
4. Łączniki do przyrządów	Badania pełne wg: PN-EN 61058-1:2005/A2:2008	PN-EN 61058 1:2005/A2:2008
5. Łączniki sterownicze i wskaźniki świetlne	Badania pełne wg: PN-EN 60947-1:2010 PN-EN 60947-5-1:2006 /A1:2009	PN-EN 60947-1:2010 PN-EN 60947-5-1:2006 /A1:2009
6. Łączniki wielozadaniowe. Automatyczne urządzenia. przełączające	Badania pełne wg: PN-EN 60947-1:2010 PN-EN 60947-6-1:2009 PN-EN 60947-6-2:2005	PN-EN 60947-1:2010 PN-EN 60947-6-1:2009 PN-EN 60947-6-2:2005 /A1:2010
7. Łączniki elektroniczne	Badania wg: PN-EN 60669-1:2006/A2:2008 /Ap1:2009/IS1:2009 PN-EN 60669-2-1:2007/A1:2009 pp. 7; 8; 15.3; 16; 17; 18; 19. /A12:2010	PN-EN 60669-1:2006/A2:2008 /Ap1:2009/IS1:2009 PN-EN 60669-2-1:2007 /A1:2009 /A12:2010
9. Przekaźniki energoelektryczne	Badania pełne wg: PN-EN 116000-3:2002	PN-EN 116000-3:2002
10. Puszki instalacyjne	Badania pełne wg: PN-E-93208:1997	PN-E-93208:1997

Wersja strony: A

Badane obiekty / Grupa obiektów	Badane cechy i metody badawcze	Normy i/lub udokumentowane procedury badawcze
11. Rozłączniki, odłączniki, rozłączniki izolacyjne i zestawy łączników z bezpiecznikami	Badania pełne wg: PN-EN 60947-1:2010 PN-EN-60947-3:2009	 PN-EN 60947-1:2010 PN-EN-60947-3:2009
Aparatura rozdzielcza, łączeniowa i sterownicza		
12. Rozdzielnice niskonapięciowe	Badania pełne wg: PN-EN 60439-1:2003/A1:2006; PN-EN 60439-2:2004/A1:2007; PN-EN 60439-3:2004; PN-EN 60439-4:2008	 PN-EN 60439-1:2003/A1:2006; PN-EN 60439-2:2004/A1:2007; PN-EN 60439-3:2004; PN-EN 60439-4:2008
14. Styczniki i rozruszniki do silników	Badania pełne wg: PN-EN 60947-1:2010 PN-EN 60947-4-1:2001/A1:2004 /A2:2007/Ap1:2004/Ap2:2007	 PN-EN 60947-1:2010 PN-EN 60947-4-1:2001/A1:2004 /A2:2007/Ap1:2004/Ap2:2007
15. Transformatory mocy, jednostki zasilające i podobne - transform. oddzielające, separacyjne, bezpieczeństwa, do zabawek, do golarek, do dzwonków i gongów, o napięciu zasilania do 760V; 50 Hz	Bezpieczeństwo użytkowania wg: PN-EN 61558-1:2009/A1:2009 PN-EN 61558-2-1:2010 PN-EN 61558-2-4:2009 PN-EN 61558-2-6:2009 PN-EN 61558-2-7:2010 PN-EN 61558-2-5:2010 PN-EN 61558-2-8:2010	 PN-EN 61558-1:2009/A1:2009 PN-EN 61558-2-1:2010 PN-EN 61558-2-4:2009 PN-EN 61558-2-6:2009 PN-EN 61558-2-7:2010 PN-EN 61558-2-5:2010 PN-EN 61558-2-8:2010
16. Wyłączniki nadprądowe do instalacji domowych i podobnych	Badania pełne wg: PN-EN 60898:2002	 PN-EN 60898:2002
17. Wyłączniki niskiego napięcia prądu stałego i przemiennego	Badania pełne wg: PN-EN 60947-1:2010 PN-EN 60947-2:2009 /A1:2010	 PN-EN 60947-1:2010 PN-EN 60947-2:2009 /A1:2010
18. Wyłączniki różnicowoprądowe bez wbudowanego zabezpieczenia nadprądowego z wbudowanym zabezpieczeniem nadprądowym	Badania pełne wg: PN-EN 61008-1:2007/A11:2007 /A12:2009 /IS:2008 PN-EN 61009-1:2008 /A11:2008 /A12:2009 /A13:2009	PN-EN 61008-1:2007/A11:2007 /A12:2009 /IS:2008; PN-EN 61008-2-1:2007; PN-EN 61009-1:2008 /A11:2008 /A12:2009 /A13:2009 PN-EN 61009-2-1:2008
19. Wyłączniki do urządzeń (CBE)	Badania wg: PN-EN 60934:2004/A1:2007 pp. 5; 7.3; 7.4; 7.5.2 8.2; 8.3; 8.7.1; 8.7.2; 8.7.3; 8.10.1; 8.10.3	PN-EN 60934:2004/A1:2007

Wersja strony: A

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Badane obiekty / Grupa obiektów	Badane cechy i metody badawcze	Normy i/lub udokumentowane procedury badawcze
20. Złączki z zaciskami gwintowymi i bezgwintowymi	Badania pełne wg: PN-EN 60998-1:2006	PN-EN 60998-1:2006 PN-EN 60998-2-1:2006 PN-EN 60998-2-2:2006 PN-EN 60998-2-5:2001
Urządzenia laboratoryjne, automatyki i aparatura do pomiarów i zabezpieczeń		
23. Elektryczne przyrządy pomiarowe automatyki i urządzenia laboratoryjne	Badania pełne wg: PN-EN 61010-1:2004 z wyłączeniem p. 7.4, 12, 13.3.	PN-EN 61010-1:2004
Sprzęt powszechnego użytku i podobny		
24. Frytkownice i patelnie	Bezpieczeństwo użytkowania wg: PN-EN 60335-2-13:2009 PN-EN 60335-2-13:2010	PN-EN 60335-1:2004/A1:2005 /A2:2008/A12:2008 /A13:2009 /Ap1:2005/Ap2:2006 /A14:2010 PN-EN 60335-2-13:2009 PN-EN 60335-2-13:2010
25. Grzałki do akwariów	Bezpieczeństwo użytkowania wg: PN-EN 60335-2-55:2008 /A1:2008	PN-EN 60335-1: 2004/A1:2005 /A2:2008/A12:2008 /A13:2009 /Ap1:2005/Ap2:2006 /A14:2010 PN-EN 60335-2-55:2008 /A1:2008
26. Grzałki nurkowe	Bezpieczeństwo użytkowania wg: PN-EN 60335-2-74:2008 /A2:2010	PN-EN 60335-1:2004/A1:2005 /A2:2008/A12:2008 /A13:2009 /Ap1:2005/Ap2:2006 /A14:2010 PN-EN 60335-2-74:2008 /A2:2010
27. Klimatyzatory powietrza	Bezpieczeństwo użytkowania wg: PN-EN 60335-2-40:2004 /A1:2006 /A2:2009 /A11:2005 /A12:2005 /AC:2006 /AC:2010	PN-EN 60335-1:2004/A1:2005 /A2:2008/A12:2008 /A13 :2009 /Ap1:2005/Ap2:2006 /A14:2010 PN-EN 60335-2-40:2004 /A1:2006 /A2:2009 /A11:2005 /A12:2005 /AC:2006 /AC:2010
28. Ładowarki do akumulatorów	Bezpieczeństwo użytkowania wg: PN-EN 60335-2-29:2005 /A2:2010	PN-EN 60335-1:2004/A1:2005 /A2:2008/A12:2008 /A13 :2009 /Ap1:2005/Ap2:2006 /A14:2010 PN-EN 60335-2-29:2005/A2:2010
29. Młynki do kawy i do ziarna.	Bezpieczeństwo użytkowania wg: PN-EN 60335-2-14:2009 /A1:2009	PN-EN 60335-1:2004/A1:2005 /A2:2008/A12:2008 /A13 :2009 /Ap1:2005/Ap2:2006 /A14:2010 PN-EN 60335-2-14:2009 /A1:2009
30. Naczynia do ogrzewania cieczy i potraw	Bezpieczeństwo użytkowania wg: PN-EN 60335-2-15:2007/AC:2007 /A2:2009	PN-EN 60335-1: 2004/A1:2005 /A2:2008/A12:2008 /A13 :2009 /Ap1:2005/Ap2:2006 /A14:2010 PN-EN 60335-2-15:2007/AC:2007 /A2:2009

Wersja strony: A

Badane obiekty / Grupa obiektów	Badane cechy i metody badawcze	Normy i/lub udokumentowane procedury badawcze
31. Nawilżacze powietrza	Bezpieczeństwo użytkowania wg: PN-EN 60335-2 98:2009/A2:2009	PN-EN 60335-1:2004/A1:2005 /A2:2008/A12:2008 /A13 :2009 /Ap1:2005/Ap2:2006 /A14:2010 PN-EN 60335-298:2009/A2:2009
32. Odkurzacze i przyrządy czyszczące zasysające wodę (z wyjątkiem odkurzaczy z wężami zawierającymi przewody)	Bezpieczeństwo użytkowania wg: PN-EN 60335-2-2:2009 PN-EN 60335-2-2:2010	PN-EN 60335-1:2004/A1:2005 /A2:2008/A12:2008 /A13 :2009 /Ap1:2005/Ap2:2006 /A14:2010 PN-EN 60335-2-2:2009 PN-EN 60335-2-2:2010
33. Ogrzewacze pomieszczeń	Bezpieczeństwo użytkowania wg: PN-EN 60335-2-30:2007 /A2:2007 PN-EN 60335-2-30:2010 /AC:2010	PN-EN 60335-1:2004/A1:2005 /A2:2008/A12:2008 /A13 :2009 /Ap1:2005/Ap2:2006 /A14:2010 PN-EN 60335-2-30:2007/A2:2007 PN-EN 60335-2-30:2010/AC:2010
34. Opiekacze	Bezpieczeństwo użytkowania wg: PN-EN 60335-2-9:2007 /A1:2008	PN-EN 60335-1:2004/A1:2005 /A2:2008/A12:2008 /A13 :2009 /Ap1:2005/Ap2:2006 /A14:2010 PN-EN 60335-2-9:2007/A1:2008
35. Przenośne narzędzia grzejne i podobne przyrządy.	Bezpieczeństwo użytkowania wg: PN-EN 60335-2-45:2007 /A1:2008	PN-EN 60335-1:2004/A1:2005 /A2:2008/A12:2008 /A13 :2009 /Ap1:2005/Ap2:2006 /A14:2010 PN-EN 60335-2-45:2007 /A1:2008
36. Przyrządy do pielęgnacji skóry i włosów	Bezpieczeństwo użytkowania wg: PN-EN 60335-2-23:2006/Ap1:2007 /A1:2008 /A11:2010	PN-EN 60335-1: 2004/A1:2005 /A2:2008/A12:2008 /A13 :2009 /Ap1:2005/Ap2:2006 /A14:2010 PN-EN 60335-2-23:2006/Ap1:2007 /A1:2008 /A11:2010
37. Sprzęt chłodniczy i wytwornice lodu (z niepalnym czynnikiem chłodniczym).	Bezpieczeństwo użytkowania wg: PN-EN 60335-2-24:2005 /A1:2008/A2:2007 PN-EN 60335-2-24:2010 Zużycie energii elektrycznej wg: PN-EN 153:2009	PN-EN 60335-1: 2004/A1:2005 /A2:2008/A12:2008 /A13 :2009 /Ap1:2005/Ap2:2006 /A14:2010 PN-EN 60335-2-24:2005 /A1:2008/A2:2007 PN-EN 60335-2-24:2010 PN-EN 153:2009
38. Urządzenia automatyczne w lokalach usługowo-handlowych i rozrywkowych (z wyjątkiem urządzeń zawierających lasery).	Bezpieczeństwo użytkowania wg: PN-EN 60335-2-82:2004 /A1:2008	PN-EN 60335-1: 2004/A1:2005 /A2:2008/A12:2008 /A13 :2009 /Ap1:2005/Ap2:2006 /A14:2010 PN-EN 60335-2-82: 2004 /A1:2008
39. Wentylatory	Bezpieczeństwo użytkowania wg: PN-EN 60335-2-80:2007 /A2:2009	PN-EN 60335-1: 2004/A1:2005 /A2:2008/A12:2008 /A13 :2009 /Ap1:2005/Ap2:2006 /A14:2010 PN-EN 60335-2-80:2007 /A2:2009

Wersja strony: A

Приложение ТС-Р5
за обособена позиция 2

ЕТ "АДИС - 9 - Анелия Митева"

АГЕНЦИЯ ЗА ПРЕВОДИ

Адрес на управление: 4023 Пловдив, ж.р.Тракия, бл.20, ет.9, ап.53, тел: 032/ 826632; 266292

Превод от полски език

APATOR SA

Декларация CE за съответствие

№	0023/04
Производител:	APATOR SA
Адрес:	ул. Золкиевскиего 13/29; 87-100 Торун Полша
Обозначение на продукта (име, тип):	Вертикални разединители с ножови предпазители тип ARS 2-
Декларираме, че посочения продукт съответства на следните изисквания:	
Европейски директиви:	73/23/EEC + 93/68/EEC Директива за ниско напрежение, касаеща хармонизирането на правните предписанията на държавите членки, които се отнасят за електрическата техника, предназначена за използване в определени граници на напрежение.
Съгласувани стандарти и/или стандарти на IEC:	PN-EN 60947-1 Комутационна и контролна апаратура ниско напрежение Част 1: Общи решения PN-EN 60947-3 Комутационна и контролна апаратура ниско напрежение Част 3: Превключватели, разединители, превключващи разединители и комбинирани устройства със стопяеми предпазители
Държавни норми и/или техническа документация:	Техническа документация и комплект от чертежи 63-811216-*; 63-811217-*; 63-811463-*
Документи идентифициращи стоката:	Каталожна карта "Ножови включватели серия ARS, PBS" №1/2003/1.
Град, дата:	Торун, 30.04.2004г.
Име, фамилия, длъжност, подпис:	Генерален Директор Януш Ниеджвидзки Подпис: не се чете

В случай на въвеждане на изменения на продукта, несъгласувани с производителя или ако използването не е съгласно предназначението, тази декларация става невалидна.

Подписаната Анелия Иванова Митева удостоверявам верността на извършения от мен превод от полски език на български език на приложения документ – " Декларация CE за съответствие". Преводът се състои от 1 (една) страница.

Преводач:

Анелия Иванова Митева

на основание чл. 2 от ЗЗЛД

на основание чл. 2 от ЗЗЛД

ПЪРВИ РЕГИОНАЛЕН СЪД ПЛОВДИВ

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F-1103/K

APATOR® SA

DEKLARACJA CE ZGODNOŚCI
EC Declaration of conformity

ISO 14001 APATOR - SPÓŁKA AKCYJNA

CERTYFIKATY SYSTEMU JAKOŚCI ISO 9001 APATOR - SPÓŁKA AKCYJNA

Nr No	**0023/04**
Producent Manufacturer	**APATOR SA**
Adres Address	**ul. Żółkiewskiego 13/29; 87-100 Toruń PL**
Oznaczenie produktu (nazwa, typ) Product designation (name, type)	**Rozłączniki izolacyjne bezpiecznikowe listwowe typu ARS 2-**

Deklarujemy, że oznaczony wyrób jest zgodny z następującymi wymaganiami:
It is declared that the designed product is in conformity with the provisions of the following requirements:

Dyrektyw europejskich: European Directives:	**73/23/EEC + 93/68/EEC** **Dyrektywa niskonapięciowa dotycząca harmonizacji przepisów prawnych państw członkowskich odnoszących się do sprzętu elektrycznego przeznaczonego do użytkowania w określonych zakresach napięć.**
Norm zharmonizowanych i/lub norm IEC: Harmonised standards and/or IEC standars:	**PN-EN 60947-1** **Aparatura rozdzielcza i sterownicza niskonapięciowa** **Część 1: Postanowienia ogólne** **PN-EN 60947-3** **Aparatura rozdzielcza i sterownicza niskonapięciowa** **Część 3: Rozłączniki, odłączniki, rozłączniki izolacyjne i zestawy łączników z bezpiecznikami topikowymi**
Norm krajowych i/lub dokumentacji technicznych: National standards and/or technical specification:	**Dokumentacja techniczna rysunki zestawcze:** **63-811216-*; 63-811217-*; 63-811463-***
Dokumenty identyfikujące wyrób: Product identification documents:	**Karta katalogowa „Łączniki listwowe serii ARS, PBS" Nr 1/2003/1 .**
Miejscowość, data Place, date	**Toruń, 2004.04.30**
Imię nazwisko stanowisko podpis Name, surname, function, signature	**Janusz Niedźwiecki, Dyrektor Generalny**

на основание чл. 2 от ЗЗЛД

W przypadku wprowadzenia nieuzgodnionych z producentem zmian w wyrobie lub zastosowania go niezgodnie z przeznaczeniem niniejsza deklaracja traci ważność.
If any changes of the product are not agreed with the manufacturer or the product is inappropriately used, this declaration becomes null and void.

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лого APATOR

F-1103/KII/ 1.20017

Превод от полски език

ЕО ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ

номер	0100/08
Производител	АПАТОР СА
Адрес	Жулковскиего 21/29; 87-100ТорунPL
Обозначение на продукта (наименование, тип)	Вертикални разединители с ножови предпазители тип ARS 3
Декларираме, че посоченият продукт съответства на следните изисквания:	
Европейски директиви	2006/95/WE Директива за ниско напрежение касаеща хармонизирането на правните предписания на държавите членки , които се отнасят до експлоатацията при определени напрежения
Съгласувани стандарти и/или стандарти на IEC	PN-EN 60947-1 PN-EN 60947-3 Комутационна и контролна апаратура ниско напражение Част I: Общи положения Част 3: Превключватели, разединители, прекъсвач- разединители и комбинирани устройства с предпазители със стопяеми вложки
Държавни стандарти и/или техническаи документации	Техническа документация и монтажни чертежи : 63-811706, 63-811707
Документи индентифициращи изделието	Каталожна карта „Радединители с ножови предпазители тип ARS номер 1/2008/1
Град, дата	Торун, 30.04.2004
Име, фамилия, длъжност, подпис:	Томаш Пиасецки, Директор по технически въпроси и развойна дейност

Печат, подпис нечетлив

В случай на въвеждане на изменения на продукта, несъгласувани с производителя или ако използването не е съгласно предназначението, тази декларация става невалидна

Инегрирана система за управление

ISO 9001:2000 ISO 14001:1996 PN-N 18001:1999

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APATOR

DEKLARACJA CE ZGODNOŚCI
EC Declaration of conformity

Nr No	**0100/08**
Producent Manufacturer	**APATOR SA**
Adres Address	**ul. Żółkiewskiego 21/29; 87-100 Toruń PL**
Oznaczenie produktu (nazwa, typ) Product designation (name, type)	**Rozłącznik izolacyjny bezpiecznikowy typu: ARS 3**

Deklarujemy, że oznaczony wyrób jest zgodny z następującymi wymaganiami:
It is declared that the designed product is in conformity with the provisions of the following requirements:

Dyrektyw europejskich: European Directives:	**2006/95/WE** **Dyrektywa niskonapięciowa dotycząca harmonizacji przepisów prawnych państw członkowskich odnoszących się do sprzętu elektrycznego przeznaczonego do użytkowania w określonych zakresach napięć.**
Norm zharmonizowanych i/lub norm IEC: Harmonised standards and/or IEC standars:	**PN-EN 60947-1 PN-EN 60947-3** **Aparatura rozdzielcza i sterownicza niskonapięciowa** **Część 1: Postanowienia ogólne** **Część 3: Rozłączniki, odłączniki, rozłączniki izolacyjne i zestawy łączników z bezpiecznikami topikowymi**
Norm krajowych i/lub dokumentacji technicznych: National standards and/or technical specification:	**Dokumentacja techniczna rysunki zestawcze: 63-811706-*; 63-811707-*.**
Dokumenty identyfikujące wyrób: Product identification documents:	**Karta katalogowa "Rozłączniki izolacyjne bezpiecznikowe typu ARS" Nr 1/2008/1**
Miejscowość, data Place, date	**Toruń, 2008.09.05**
Imię nazwisko stanowisko podpis Name, surname, function, signature	**Tomasz Piasecki,** **Dyrektor ds. Techniki i Rozwoj**

на основание чл. 2 от ЗЗЛД

W przypadku wprowadzenia niezgodnych z producentem zmian w wyrobie lub zastosowania go niezgodnie z przeznaczeniem niniejsza deklaracja traci ważność.
If any changes of the product are not agreed with the manufacturer or the product is inappropriately used, this declaration becomes null and void.

APATOR
APATOR S.A., 87-100 Toruń
ul. Żółkiewskiego 21/29

Zintegrowany System Zarządzania
Integrated Management System

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Intercomplex Ltd.®
4002 Пловдив, бул. "Пещерско шосе" № 201, тел. (032) 241 415, тел./факс: (032) 241 414, e-mail: office@intercomplex.bg
1113 София, ул. "Акад. Г. Бончев" № 20, тел. (02) 971 70 41, факс: (02) 971 71 41, e-mail: office.sf@intercomplex.bg

Приложение ТС-Р 6
към Технически спецификации
по процедура PPD 17-152

Обособена позиция 2: Кабелни разпределителни шкафове НН, полиестерни, ниски

ДЕКЛАРАЦИЯ

за съответствие на предлаганото изпълнение

Долуп[на основание чл. 2 от ЗЗЛД]ян, с л. к. [на основание чл. 2 от ЗЗЛД] г. от МВР, [на основание чл. 2 от ЗЗЛД], в качест[на основание чл. 2 от ЗЗЛД]ЕКС" ООД, [на основание чл. 2 от ЗЗЛД]мет: **„Доставка на кабелни разпределителни шкафове" реф. № PPD 17 – 152**, с възложител „ЧЕЗ Разпределение България" ЕАД

ДЕКЛАРИРАМ:

1. Доставяните от фирма „Интеркомплекс" ООД като част от окомплектовката на кабелни разпределителни шкафове (касети), вертикални предпазител-разединители (ВПР), типове ARS2-6-V/400A и ARS3-6-V/630A, производство на "АПАТОР" – Полша, отговарят напълно на изискванията на техническата спецификация на този стандарт за материал, вкл. на параграфи „Характеристика на материала" и „Съответствие на предложеното изпълнение със стандартизационните документи".

2. Правя настоящата декларация на основание декларация на производителя.

Известно ми е, че при деклариране на неверни данни, нося наказателна отговорност по чл. 313 от НК.

19.03.2018 г.

Участник: ИНТЕРКОМПЛЕКС ООД
[на основание чл. 2 от ЗЗЛД]
Ехиязар Узунян - управител

436

Intercomplex Ltd.®
4002 Пловдив, бул. "Пещерско шосе" № 201, тел. (032) 241 415, тел./факс: (032) 241 414, e-mail: office@intercomplex.bg
1113 София, ул. "Акад. Г. Бончев" № 20, тел. (02) 971 70 41, факс: (02) 971 71 41, e-mail: office.sf@intercomplex.bg

Приложение ТС-Р 7
към Технически спецификации
по процедура PPD 17-152

Обособена позиция 2: Кабелни разпределителни шкафове НН, полиестерни, ниски

ИНСТРУКЦИЯ ЗА ТРАНСПОРТИРАНЕ,СЪХРАНЕНИЕ, МОНТАЖ И ЕКСПЛОАТАЦИЯ НА ВЕРТИКАЛНИ ТРИПОЛЮСНИ ПРЕДПАЗИТЕЛ-РАЗЕДИНИТЕЛИ (ВПР)

Транспорт и съхранение

Вертикалните триполюсни предпазител-разединители се доставят монтирани в кабелните разпределителни шкафове (КРШ), съгласно Техническите спецификации на Възложителя.

Тъй като не се транспортират и съхраняват отделно, за тях важат инструкциите за транспорт и съхранение, отнасящи се за КРШ.

Монтаж и експлоатация

Вертикалните предпазител-разединители са монтирани в касетата посредством специални контактни скоби (куки), без пробиване на тоководещите шини.

За присъединяване на захранващите кабели, ВПР са съоръжени с V-съединителна арматура. **ДА СЕ СПАЗВА ВЪРТЯЩИЯТ МОМЕНТ НА ЗАТЯГАНЕ НА КЛЕМИТЕ!**

Отварянето и затварянето на ВПР да се извършва с резки движения, без да се удря затварящия лост.

Работата с предпазители трябва да се извършва единствено и само от квалифициран и упълномощен за това персонал. Снемането и поставянето на предпазителите от гнездата на разединителите да се извършва **САМО** в положение "отворено/заключено", чрез движение на лоста надолу по неговата дължина. Отключва се в обратна посока.

При необходимост от подмяна на ВПР се действа в следния ред:

- сваля се предпазния капак на клемния блок
- развива се затягащия болт на V-клемите и се отстраняват кабелите,
- отваря се ВПР,
- изважда се изцяло капакът с предпазителите,
- свалят се капачките на ревизионните отвори,
- разхлабват се болтовете (3 бр.) на контактните скоби,
- с движение нагоре и напред се отстранява корпусът на ВПР.

Монтажът на новия разединител се извършва в обратен ред. При провеждане на такива дейности, разединителите и предпазителите да се поставят върху чисти и сухи повърхности, по възможност, във фабричната им опаковка.

Подмяната на изгорял предпазител се извършва, като се отвори блокът с носачите на ВП, изважда се изгорелият и се поставя нов. Разединителят се затваря с рязко движение, но без удар. При това, за да се осигури безопасна работа, блокът с предпазителите се "заключва" в извадено положение чрез движение на лоста надолу по неговата дължина. Отключва се в обратна посока.

Задължително се взимат мерки за безопасност съгласно утвърдените наредби и правилници и осигуряване на изискваните лични предпазни средства при работа по електрически мрежи.

Да не се правят опити за ремонт или модификация на ВПР!

Поддръжка

ВПР не изискват специална поддръжка. Веднъж на 6 месеца да се прави инспекция на контактната система и при необходимост да се нанася контактна смазка.

19.03.2018 г.

Участник: ИНТЕРКОМПЛЕКС ООД

на основание чл. 2 от ЗЗЛД

.....

Ехиязар Узунян - управител

438

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1113 София, ул. "Акад. Г. Бончев" № 20, тел. (02) 971 70 41, факс: (02) 971 71 41, e-mail: office.sf@intercomplex.bg

Приложение ТС-П2
към Технически спецификации
по процедура PPD 15-112

Обособена позиция 2: Кабелни разпределителни шкафове НН, полиестерни, ниски

ТЕХНИЧЕСКО ОПИСАНИЕ НА ВИСОКОМОЩНИ ПРЕДПАЗИТЕЛИ СЪС СТОПЯЕМА ВЛОЖКА НН, КЛАС Gg/Gl

Високомощните предпазители са предназначени за защита на въздушни и кабелни линии, и друго електрическо оборудване от токове на претоварване и късо съединение. Те имат голяма изключвателна възможност и токоограничаващо действие, изразяващо се в прекъсване на електрическата верига при възникване на късо съединение , преди токът да е достигнал максималната си стойност.

Високомощните еднополюсни предпазители се състоят от порцеланов патрон, една или повече стопяеми вложки и ножови контакти. Те имат два индикатора, служещи за сигнализация при изгоряла вложка. Единият индикатор е отгере на затварящата планка, а другият – челно на порцелановото тяло.

Предпазителите работят на закрито при температурен диапазон от - 5 °C до + 40 °C, относителна влажност (при 20 °C), при до 90 %, степен на замърсяване – 3 и надморска височина до 2000 метра., при параметри на мрежата, както следва:

1. Номинално напрежение - 400 / 230 V
2. Максимално напрежение - 440 / 254 V
3. Номинален ток – от 2A до 1250A
4. Номинална честота - 50 Hz
5. Вид схема на разпределителната мрежа - TN – C

Останалите характеристики са дадени в таблиците от Техническите спецификации, а габаритните размери – в приложения каталог.

19.03.2018 г.

Участник: ИНТЕРКОМПЛЕКС ООД
на основание чл. 2 от ЗЗЛД
.....
Ехиязар Узунян - управител

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Приложение ТС-14
за обособена позиция 2

ЕТ "АДИС - 9 - Анелия Митева"

АГЕНЦИЯ ЗА ПРЕВОДИ

Адрес на управление: 4023 Пловдив, ж.р. Тракия, бл. 20, ет. 9, ап. 53, тел: 032/ 826632; 266292

Превод от английски език

ETI d.d.
Obrezija 5, 1411 Izlake
Словения
тел. +386 (0) 3 56 57 570
факс + 386 (0) 3 56 74 007
e-mail: eti@eti.si, www.eti.si

CE – ДЕКЛАРАЦИЯ ЗА КАЧЕСТВО И СЪОТВЕТСТВИЕ

Продукт: NH ножови предпазители със стопяема вложка ниско напрежение

Предприятие: ***ETI Elektroelement d.d.***
1411 Izlake, Obrezija 5

СЛОВЕНИЯ

Модел/Тип: Предпазители със стопяема вложка ниско напрежение, тип NH/NV

Номинално напрежение/Номинален ток:

NV/NH 00C 2A to 100A
NV/NH 00 6A to 160A
NV/NH 0 6A to 160A
NV/NH 1 25A to 250A
NV/NH 2 63A to 400A
NV/NH 3 250A to 630A
NV/NH 4 630A to 1250A
NV/NH 4a 630A to 1600A

Продуктите са в съответствие със следните стандарти и други нормативни документи

IEC 60269-1 Ed.3.0:1998+Corr.1+A1:2005
EN 60269-1:1998+A1:2005
IEC 60269-2 Ed.2.0:1986+Corr.1:1996+A1:1995+A2:2001
EN 60269-2:1995+A1:1998+A2:2002
IEC 60269-2-1 Ed.4.0:2004
HD 630.2.1 S6:2003
DIN43620
VDE 0636/201

Дата и място: Izlake, 25.05.2006

Подпис на представителя на производителя:

на основание чл. 2 от ЗЗЛД

440

дипл. ел. инж. Victor Martincic, Продуктов Мениджър
/подпис нечетлив/
/печат ETI Elektroelement d.d./

Подписаната Анелия Иванова Митева удостоверявам верността на извършения от мен превод от английски на български език на приложения документ – CE Декларация за съответствие от 25.05.2006. Преводът се състои от 1 (една) страница.
Преводач:
Анелия Иванова Митева

на основание чл. 2 от ЗЗЛД

ПЛОВДИВ

441

ETI d.d.
Obrezija 5, 1411 Izlake
Slovenija
tel: +386 (0)3 56 [illegible]
fax: +386 (0)3 56 74 [illegible]
[illegible]@eti.si www.eti.si

CE – DECLARATION OF CONFORMITY

Product: ***Low Voltage NH knife-blade fuse-links***

Company: ***ETI Elektroelement d.d.***
1411 Izlake, Obrezija 5

SLOVENIA

Model/Type: ***Low voltage fuse-links, type NH/NV***

Rated voltage/Rated currents:
NV/NH 00C 2A to 100A
NV/NH 00 6A to 160A
NV/NH 0 6A to 160A
NV/NH 1 25A to 250A
NV/NH 2 63A to 400A
NV/NH 3 250A to 630A
NV/NH 4 630A to 1250A
NV/NH 4a 630A to 1600A

The products are in conformity with the following standards or other normative documents
IEC 60269-1 Ed.3.0:1998+Corr.1+A1:2005
EN 60269-1:1998+A1:2005
IEC 60269-2 Ed.2.0:1986+Corr.1:1996+A1:1995+A2:2001
EN 60269-2:1995+A1:1998+A2:2002
IEC 60269-2-1 Ed.4.0:2004
HD 630.2.1 S6:2003
DIN43620
VDE 0636/201

Place and date: *Izlake, 25.05.2006*

Manufacture representative signature:

Victor Martinčič, univ. dipl. ing. el. Product Manc

на основание чл. 2 от ЗЗЛД

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ЕТ "АДИС - 9 -
Анелия Митева"

АГЕНЦИЯ ЗА ПРЕВОДИ

Адрес на управление: 4023 Пловдив, ж.р. Тракия, бл. 20, ет. 9, ап. 53, тел: 032/ 826632; 266292

Превод от английски език

arsenal research
Център за изследвания и изпитания Арсенал Австрия

Доклад от изпитания

Обозначение на проекта

ТИПОВИ ИЗПИТАНИЯ
НА ПРЕДПАЗИТЕЛИ СЪС СТОПЯЕМА ВЛОЖКА HRC
С УСТРОЙСТВО КОМБИНИРАН ИНДИКАТОР
ТИП NH2 - 500VAC / gG

Клиент ETI Elektroelement d.d.
1411 Izlake, Obrezija 5
Словения

Поръчка от / No 01/2005/ —

Номер на проекта 2.03.00516.1.0/NH2/COMBI/500/gG Изпиващ инженер инж..J.Ainetter

Дата на издаване	09.08.2005
Total number of issues / No	1/1
Номер на страниците	5
Анекс	CB/CCA-Доклад от изпитания 2.03.00516.1.0/NH2/COMBI/500/gG/CB/CCA (54 страници)

Резултатите са изключително свързани с изпитните условия.
Този доклад може да бъде разпространяван или публикуван само цялостно, без изключения, промени или допълнения.
Размножаването или публикуването на извадки от този доклад изисква писмено разрешение от изследователския център.

на основание чл. 2 от ЗЗЛД

443

Точки на изпитанието

Идентифициране:
Предпазител със стопяема вложка ниско напрежение HRC тип NH2 с комбиниран индикатор
Производител: ETI Elektroelement d.d.
Търговска марка: ETI
Размер: 2
Индикатор: В средата на керамичния корпус и на върха на покривната планка
Номинално напрежение: 500VAC
Номинален ток: 315A, 400A
Изключвателна способност: 120kA
Обхват на изключване и категория на използване: gL/gG

Техническа информация и описание:
Виж страница 4

Място на изпитанията, период на изпитанията

Място на изпитанията:
OFPZ Arsenal Ges.m.b.H.,

Служба за контролни изпитания, Силови и технологии за механизми,
Център за силови изпитания

Период на изпитанията:
01...05/2005

Изпитание/я

Стандарт(и) на изпитване:
IEC 60269-1 Ed. 3.0:1998+Corr.1:2000+A1:2005 / EN 60269-1:1998+A1:2005
IEC 60269-2 Ed. 2.0:1986+Corr. 1:1996+A1:1995+A2:2001 / EN 60269-2:1995+A1:1998+A2:2002
IEC 60269-2-1 Ed. 4.0:2004 / HD 630.2.1 S6:2003

Процедура/и на изпитване:
CB-схема / CCA-схема

Извършен(и) изпитания:
Типово изпитание

Резултат
Предпазителите със стопяема вложка ниско напрежение HRC тип NH2 с комбиниран индикатор успешно преминаха типовото изпитание.

Инженер провел изпитанието
инж.J.Ainetter
/подпис нечетлив/
/печат Център за изследвания и изпитания Арсенал Австрия/

Инженер по проекта
Техническа отговорност
инж. K.Farthofe
/подпис нечетлив/

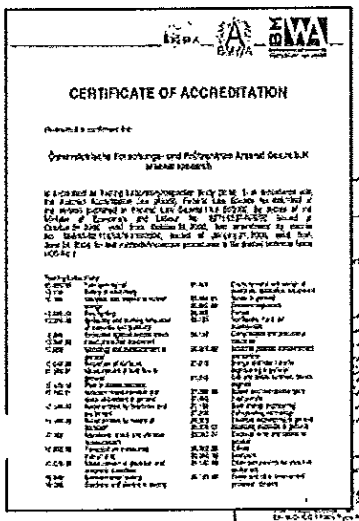
на основание чл. 2 от ЗЗЛД

444

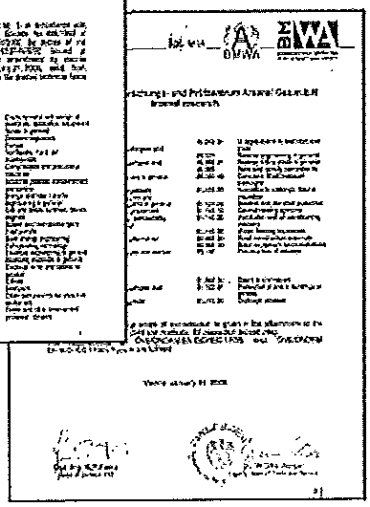
arsenal research

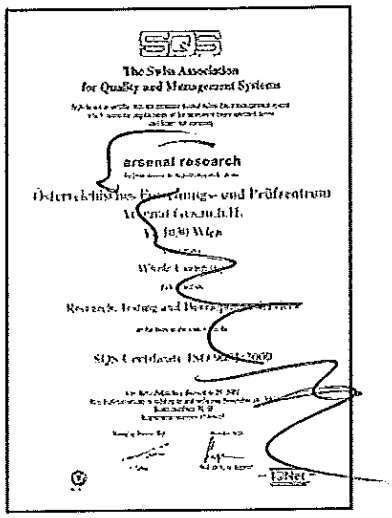
Център за изследвания и изпитания Арсенал Австрия

Изпитваща лаборатория


CERTIFICATE OF ACCREDITATION

АКРЕДИТИРАНИ
съгласно
EN ISO/I EC 17025
No. BMWA-92.714/5379-1/12/2004

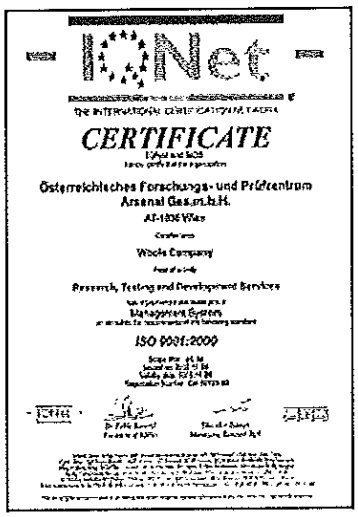



The Swiss Association for Quality and Management Systems

arsenal research

АКРЕДИТИРАНА
съгласно
ISO 9001
Reg. No. 12769-03


CERTIFICATE OF ACCEPTANCE


CERTIFICATE

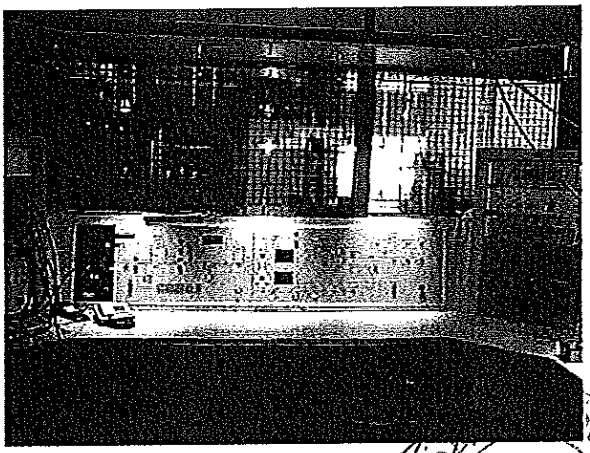
Österreichisches Forschungs- und Prüfzentrum Arsenal Ges.m.b.H.

ISO 9001:2000

ОБЩОПРИЗНАТА
СВ ИЗПИТВАЩА ЛАБОРАТОРИЯ
под отговорността на OVE като
национален орган за сертифициране

PSC – Център за силови изпитания:

Контролна станция за изпитания до 10кА



Контролна станция за изпитания над 10кА

на основание чл. 2 от ЗЗЛД

Технически данни и описание на изпитвания обект

Изпитван обект	Предпазител със стопяема вложка ниско напрежение тип HRC с комбиниран индикатор
Модел/Типова обозначение	NH2
Обозначение за идентификация	315A: 004185222 400A: 004185224
Стандарт	IEC 60269-1 Ed. 3.0:1998+Corr.1:2000+A1:2005 / EN 60269-1:1998+A1:2005 IEC 60269-2 Ed. 2.0:1986+Corr.1:1996+A1:1995+A2:2001 / EN 60269-2:1995+A1:1998+A2:2002 IEC 60269-2-1 Ed. 4.0:2004 / HD 630.2.1 S6:2003
Процедура на изпитване	CB-схема / CCA-схема
Производител	ETI Elektroelement d.d.
Място на производство	Obrezija 5,1411 Izlake, СЛОВЕНИЯ
Източник на захранване	AC
Размер	2
Категория на използване	gL/gG
Номинален ток	315A, 400A
Номинално напрежение	500V
Номинална честота	45Hz to 62Hz
Изключвателна способност	120kA
Съизмерима серия	315Ato400A
Устройство за индикация	В средата на керамичната корпус и на защитната планка
Захващащи съединителни планки	Под напрежение
Вид на контактите	Ножови контакти
Материал на контактите	CuZn gal. Ag
Материал на корпуса на предпазителя със стопяема вложка	Steatit C221
Материал на покриващи планки	Al
Токово гасене	Кварцов пясък

на основание чл. 2 от ЗЗЛД

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Измервани стойности	Устроиство	Производител	Код
Напрежение (изпитване до 10kA)	Напреженов делител 1:2000 Усилвател AM 502 T Запис време SMR II	OFPZ Arsenal Tektronix W&W	AM502/1...3 SMRII32
Ток(изпитване до 10kA)	Lin. токов трансформатор LGSSO Burden 1Q Запис време SMR II	Ritz OFPZ Arsenal W&W	WLIN5000/1...3 SMRII32
Напрежение (изпитване над 10kA)	3-канален усилвател за измерване на изолацията Transient recorder SMR II	Rohrer W&W	T908D SMRII64/1
Напрежение (изпитване над 10kA)	Lin. токов трансформатор LGSSO Burden 0,7mQ Запис време SMR II	Ritz OFPZ Arsenal W&W	WLIN6000.HVF/1...3 SMRII64/1
Ток (изпитания при намаляващо напрежение)	Токов трансформатор GE 4461 Токов трансформатор AETtiO True-RMS амперметър Kl. 0,5	Goerz Siemens Norma	WI600/1...3 WI4000/1...3 A0.5/1...3
Временно възстановяване на напрежението	Настроеваемо оборудване TRV Осцилоскоп G 801.1	OFPZ Arsenal Tektronix	G801.1
Пад на напрежението	Дигитален мултимер Fluke 185	Fluke	FLUKE185/1
Диелектрични свойства	Оборудване за високо напрежение 90-1F	Elabo	HSG5KV
Вътрешно съпротивление	Измерване на съпротивлението microhm 300/0	Stetter	MICROHM
Време	Време записващо устройство SMR II Хронометър	W&W Junghans	SMRII32,SMRII64/1 938-2
Температура	24-канално записващо устройство POLYCOMP SK 30 Измерване на температурата TESTO 901	H & B Testoterm	SK30 TESTO
Топлина	Нагревателна камера UT 6060	Heraeus	-
Механично въздействие	Impact test apparatus	PTL	-
Устойчивост на ръжда	Изпитателна камераC330	Liebich	77
Размери	Дигитален шублер CD-20D	Mitutoyo	SCHUB

ДОКЛАД ОТ ИЗПИТАНИЯ

IEC 60269-1 / EN 60269-1

Високомощни предпазители ниско напрежение
Част първа: Основни изисквания

Доклад:

Референция No.:	2.03.00516.1.0/NH2/COMBI/500/gG/CB/CCA
Compiled by (+ signature):	инж. J.Alnetter /подпис нечетлив/
Approved by (+ signature):	инж. K.Farthofer /подпис нечетлив/
Date of issue:	09.08.2005
Number of pages:	54 страници за пълен доклад от изпитания

Изпитваща лаборатория:

Име:	OFPZ Arsenal Ges.m.b.H.
Адрес:	1030 Виена Faradaygasse 3, АВСТРИЯ
Място на изпитване:	Както по-горе

Кандидат:

Име:	ETI Elektroelement d.d.
Адрес:	1411 Izlake, Obrezija 5, СЛОВЕНИЯ

Test specification:

Стандарт:	IEC 60269-1 Ed. 3.0:1998+Corr.1:2000+A1:2005 EN 60269-1:1998+A1:2005
Изпитвателна процедура:	CB-схема / CCA-схема
Отклонения:	N.A.
Не стандартен метод за изпитания:	N.A.

Test report form:

Доклад от изпитания от No.:	12691 A/96-07, извършено от OFPZ Arsenal 2005
TRF автор:	EZU
Притежател TRF:	от 91-10
Запазено право на формата на доклада от изпитания:	Институциите участващи в Общността на органите за сертифициране (CB) и CENELEC споразумение за сертифициране (CCA). Този доклад се основава на форма за доклад от изпитания подготвена от KEMA използвана е информация получена от притежателя на TRF.

Изпитван обект:

Тип на изпитвания обект:	Предпазител със стопяема вложка ниско напрежение HRC тип NH2 с комбиниран индикатор
Модел/Тип референция:	NH2
Референция за индентификация:	Виж стр. 2
Търговска марка:	ETI
Производител:	ETI Elektroelement d.d.
Място на производство:	SI-1411 Izlake, Obrezija 5
Техническа информация и показатели:	Виж стр. 2
Копие на използва:	Виж стр. 3

Подписаната Анелия Иванова Митева удостоверявам верността на извършения от мен превод от английски на български език на приложения документ – Доклад от изпитания от 09.08.2005. Преводът се състои от (шест) страници.
Преводач: Анелия Иванова Митева

на основание чл. 2 от ЗЗЛД

448

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Ein Unternehmen der Austrian Research Centers.

1
Accredited by BMWA, number BMWA-92.714/5379-I/12/2004

Test Report

Project Designation

TYPE TEST
AT LOW-VOLTAGE HRC FUSE-LINKS
WITH COMBINED INDICATING DEVICES
TYPE NH2 – 500VAC / gG

Client

ETI Elektroelement d.d.
1411 Izlake, Obrezija 5
SLOVENIA

Order from / No 01/2005 / ---

Project number 2.03.00516.1.0/NH2/COMBI/500/gG Test Engineer Ing.J.Ainetter

Date of issue	09.08.2005
Total number of Issues / No	1 / 1
Number of pages	5
Annex	CB/CCA – Test Report 2.03.00516.1.0/NH2/COMBI/500/gG/CB/CCA (54 pages)

The results relate exclusively to the terms tested.

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Test item

Identification:

Low-voltage HRC fuse-links type NH2 with combined indicating devices
Manufacturer: ETI Elektroelement d.d.
Trademark: ETI
Size: 2
Indicating device: In the middle of ceramic body and on cover plate
Rated voltage: 500VAC
Rated current: 315A, 400A
Rated breaking capacity: 120kA
Breaking range and utilization category: gL/gG

Technical data and description:

See page 4

Testing location, Period of testing

Testing location:

ÖFPZ Arsenal Ges.m.b.H.,
Business Unit Monitoring, Energy and Drive Technologies,
Power Service Center

Period of testing:

01...05/2005

Test(s)

Test standard(s):

IEC 60269-1 Ed. 3.0:1998+Corr.1:2000+A1:2005 / EN 60269-1:1998+A1:2005
IEC 60269-2 Ed. 2.0:1986+Corr.1:1996+A1:1995+A2:2001 / EN 60269-2:1995+A1:1998+A2:2002
IEC 60269-2-1 Ed. 4.0:2004 / HD 630.2.1 S6:2003

Test procedure(s):

CB-scheme / CCA-scheme

Test(s) performed:

Type test

Result

The low-voltage HRC fuse-links type NH2 with combined indicating devices have passed the type test successfully.

на основание чл. 2 от ЗЗЛД

Test engineer

на основание чл. 2 от ЗЗЛД

.....

Ing.J.Ainetter

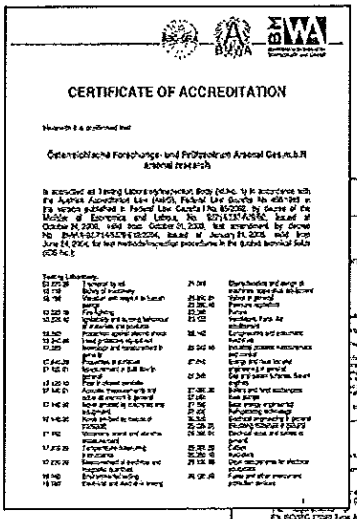
Project Engineer,

на основание чл. 2 от ЗЗЛД

Ing.K.Farthofer

450

Testing laboratory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according to
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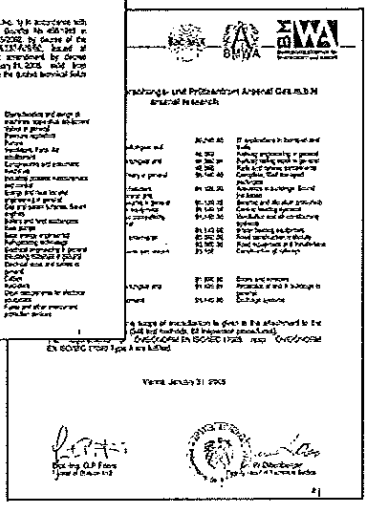
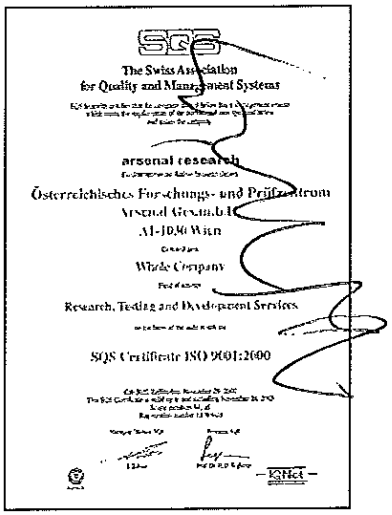
No. BMWA-92.714/5379-I/12/2004

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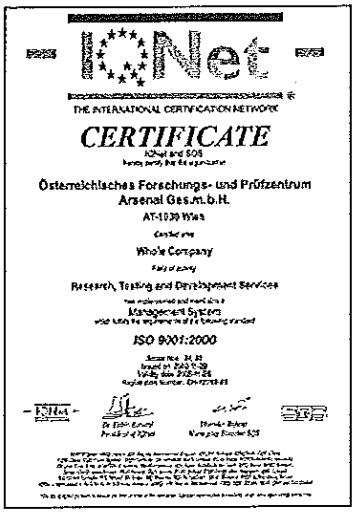
under the responsibility of OVE
as National Certification Body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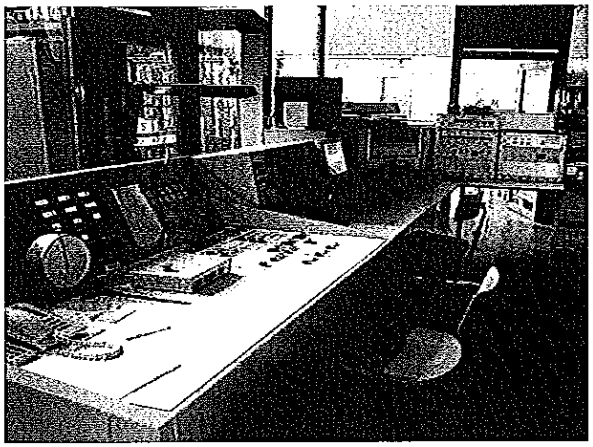
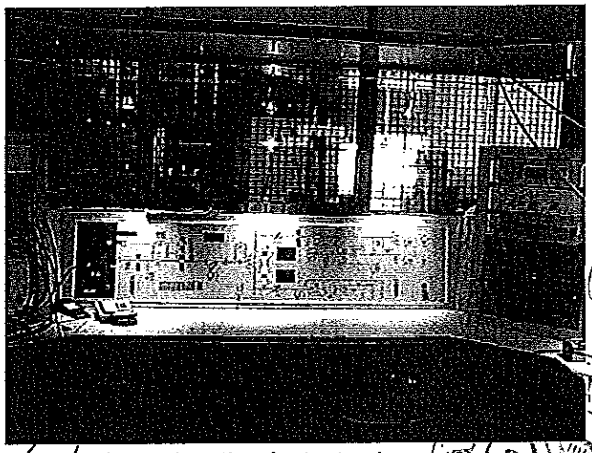
Management System
ISO 9001:2000

PSC – Power Service Center:


Control station for tests up to 10kA


Control station for tests above 10kA

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Technical data and description of test item

Test item	Low-voltage HRC fuse-link with combined indicating devices
Model/Type reference	NH2
Identification reference	315A: 004185222 400A: 004185224
Standard	IEC 60269-1 Ed. 3.0:1998+Corr.1:2000+A1:2005 / EN 60269-1:1998+A1:2005 IEC 60269-2 Ed. 2.0:1986+Corr.1:1996+A1:1995+A2:2001 / EN 60269-2:1995+A1:1998+A2:2002 IEC 60269-2-1 Ed. 4.0:2004 / HD 630.2.1 S6:2003
Test procedure	CB-scheme / CCA-scheme
Manufacturer	ETI Elektroelement d.d.
Place of manufacture	Obrezija 5, 1411 Izlake, SLOVENIA
Nature of supply	AC
Size	2
Utilization category	gL/gG
Rated current	315A, 400A
Rated voltage	500V
Rated frequency	45Hz to 62Hz
Rated breaking capacity	120kA
Homogeneous series	315A to 400A
Indicating device	In the middle of ceramic body and on cover plate
Gripping-lugs	Energized
Type of contacts	Blade contacts
Material of contacts	CuZn gal. Ag
Material of fuse-link body	Steatit C221
Material of cover plates	Al
Extinguishing means	Quartzsand

Measuring equipment

Measured quantity	Device	Manufacturer	Code
Voltage (tests up to 10kA)	Voltage divider 1:2000 Difference amplifier AM 502 Transient recorder SMR II	ÖFPZ Arsenal Tektronix W&W	- AM 502/1...3 SMRII32
Current (tests up to 10kA)	Lin. current transformer LGSSO Burden 1Ω Transient recorder SMR II	Ritz ÖFPZ Arsenal W&W	WLIN5000/1...3 - SMRII32
Voltage (tests above 10kA)	3-channel insulating measuring amplifier Transient recorder SMR II	Rohrer W&W	T908D SMRII64/1
Current (tests above 10kA)	Lin. current transformer LGSSO Burden 0,7mΩ Transient recorder SMR II	Ritz ÖFPZ Arsenal W&W	WLIN6000.HVF/1...3 - SMRII64/1
Current (tests at reduced voltage)	Current transformer GE 4461 Current transformer AETt10 True-RMS amperemeter Kl. 0,5	Goerz Siemens Norma	WI600/1...3 WI4000/1...3 A0,5/1...3
Transient recovery voltage	Adjustment equipment for TRV Oscilloscope G 801.1	ÖFPZ Arsenal Tektronix	- G801.1
Voltage drop	Digital multimeter Fluke 185	Fluke	FLUKE185/1
Dielectric properties	High-voltage test equipment 90-1F	Elabo	HSG5KV
Internal resistance	Resistance meter microhm 300/0	Stetter	MICROHM
Time	Transient recorder SMR II Stopwatch	W&W Junghans	SMRII32, SMRII64/1 938-2
Temperature	24-channel recorder POLYCOMP SK 30 Temperature meter TESTO 901	H & B Testoterm	SK 30 TESTO
Heat	Heating cabinet UT 6060	Heraeus	-
Mechanical impact	Impact test apparatus	PTL	-
Resistance to rusting	Test chamber C330	Liebich	77
Dimensions	Digital slide gauge CD-20D	Mitutoyo	SCHUB

TEST REPORT

IEC 60269-1 / EN 60269-1

Low-voltage fuses
Part 1: General requirements

Report:

Reference No. ..... : **2.03.00516.1.0/NH2/COMBI/500/gG/CB/**

Compiled by (+ signature) ..... : **Ing.J.Ainetter**

Approved by (+ signature) ..... : **Ing.K.Farthofer**

Date of issue ..... : **09.08.2005**

Number of pages ..... : **54 pages for complete test report**

на основание чл. 2 от ЗЗЛД

Testing laboratory:

Name ..... : **ÖFPZ Arsenal Ges.m.b.H.**

Address ..... : **1030 Wien, Faradaygasse 3, AUSTRIA**

Testing location ..... : **As above**

Applicant:

Name ..... : **ETI Elektroelement d.d.**

Address ..... : **1411 Izlake, Obrezija 5, SLOVENIA**

Test specification:

Standard ..... : **IEC 60269-1 Ed. 3.0:1998+Corr.1:2000+A1:2005**
EN 60269-1:1998+A1:2005

Test procedure ..... : **CB-scheme / CCA-scheme**

Procedure deviation ..... : **N.A.**

Non-standard test method ..... : **N.A.**

Test report form:

Test Report Form No. ..... : **I2691__A/96-07, completed by ÖFPZ Arsenal 2005**

TRF originator ..... : **EZU**

Master TRF ..... : **Dated 91-10**

Copyright blank test report ..... : **The bodies participating in the Committee of Certification Bodies (CB) and the CENELEC Certification Agreement (CCA). This report is based on a blank test report that was prepared by KEMA using information obtained from the TRF originator.**

Test item:

Type of test object ..... : **Low-voltage HRC fuse-link with combined indicating devices**

Model/Type reference ..... : **NH2**

Identification reference ..... : **See page 2**

Trademark ..... : **ETI**

Manufacturer ..... : **ETI Elektroelement d.d.**

Place of manufacture ..... : **SI-1411 Izlake, Obrezija 5**

Technical data and ratings ..... : **See page 2**

Copy of marking plate ..... : **See page 3**

ЕТ "АДИС - 9 -
Анелия Митева"

АГЕНЦИЯ ЗА ПРЕВОДИ

Адрес на управление: 4023 Пловдив, ж.р. Тракия, бл. 20, ет. 9, ап. 53, тел: 032/ 826632; 266292

Превод от английски език

arsenal research
Център за изследвания и изпитания Арсенал Австрия

Протокол от изпитания

Обозначение на проекта

ТИПОВИ ИЗПИТАНИЯ
НА ПРЕДПАЗИТЕЛИ СЪС СТОПЯЕМА ВЛОЖКА HRC
С УСТРОЙСТВО КОМБИНИРАН ИНДИКАТОР
ТИП NH3
(500VAC / gG)

Клиент ETI Elektroelement d.d.
1411 Izlake, Obrezija 5
Словения

Поръчка от / No 10/2006/ ---

Номер на проекта 2.03.00938.1.0/NH3/Combi/500/gG Изпиващ инженер инж..J.Ainetter

Дата на издаване	20.08.2008
Total number of issues / No	1/1
Номер на страниците	5
Анекс	CB/CCA-Доклад от изпитания 2.03.00938.1.0/NH2/COMBI/500/gG/CB/CCA (41 страници)

Резултатите са изключително свързани с изпитните условия.
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Размножаването или публикуването на извадки от този доклад изисква писмено разрешение от изследователския център.

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Точки на изпитанието

Идентифициране:
Предпазител със стопяема вложка ниско напрежение HRC тип NH3 с комбиниран индикатор
Производител: ETI Elektroelement d.d.
Търговска марка: ETI
Номинално напрежение: 500VAC
Номинален ток: 425A, 500A, 560A и 630A
Категория на използване: gG

Техническа информация и описание:
Виж страница 4

Място на изпитанията, период на изпитанията

Място на изпитанията:
OFPZ Arsenal Ges.m.b.H.,
Служба за контролни изпитания, Силови и технологии за механизми,
Център за силови изпитания
1210 Виена, Гифингасе 2
Австрия

Период на изпитанията:
03/2007 до 10/2007

Изпитание/я

Стандарт(и) на изпитване:
IEC 60269-1 Ed. 4.0:2006 и EN 60269-1:2007
IEC 60269-2 Ed. 3.0:2006 и EN 60269-2:2007

Процедура/и на изпитване:
CB-схема / CCA-схема

Резултат
Предпазителите със стопяема вложка ниско напрежение HRC тип NH3 с комбиниран индикатор успешно преминаха типовото изпитание.

Инженер провел изпитанието
инж.J.Ainetter
/подпис нечетлив/
/печат Център за изследвания и изпитания Арсенал/

на основание чл. 2 от ЗЗЛД

Инженер по проекта
Техническа отговорност
инж. K.Farthofe
/подпис нечетлив/

ИНТЕРКОМПЛЕКС ООД

на основание чл. 2 от ЗЗЛД

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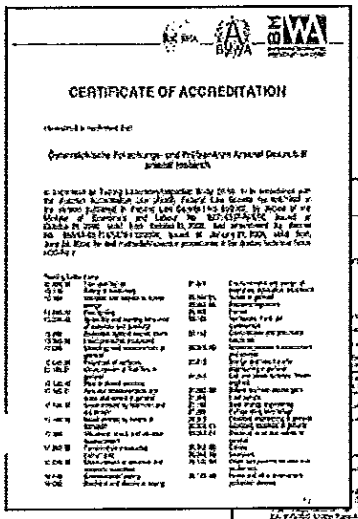
Изпитваща лаборатория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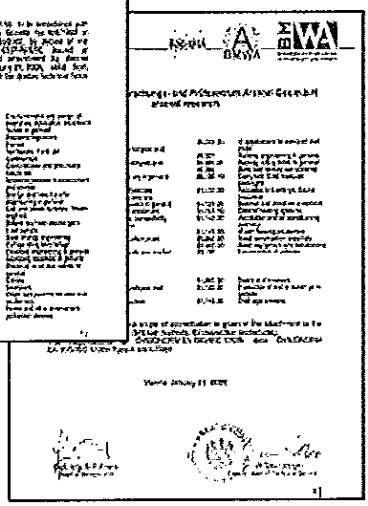
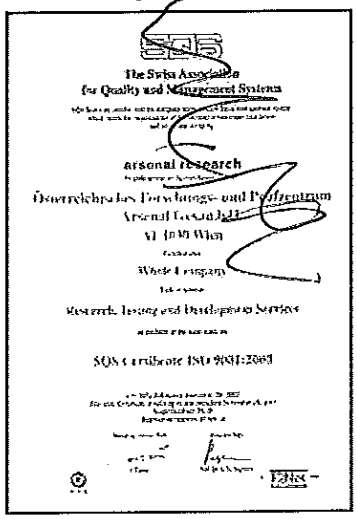
No. BMWA-92.714/0532-I/12/2006

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Reg. No. 12769-03


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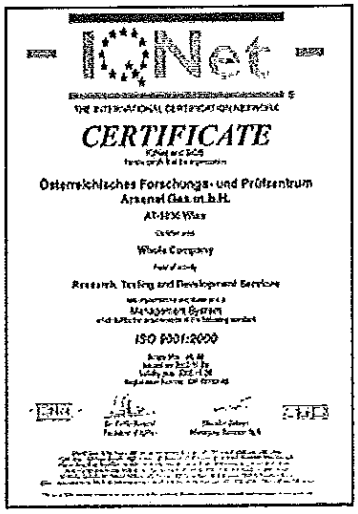
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ОБЩОПРИЗНАТА
СВ ИЗПИТВАЩА ЛАБОРАТОРИЯ
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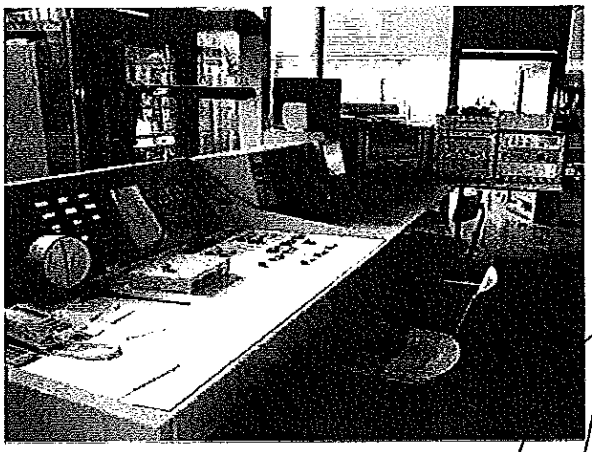
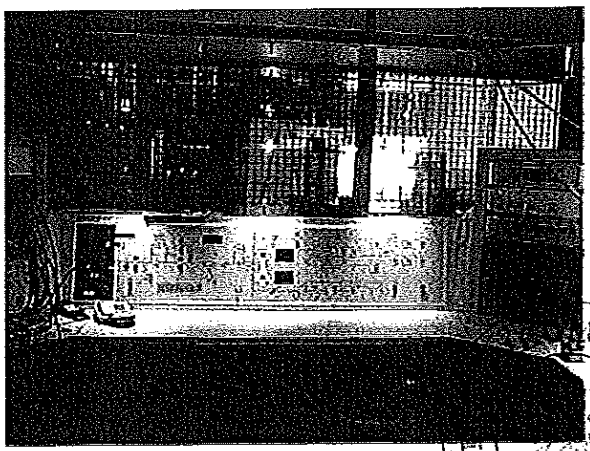
национален орган за сертифициране

PSC – Център за силови изпитания:



Контролна станция за изпитания до 15кА



Контролна станция за изпитания над 15kA

Проект No. 2.03.009381.0/NH3/

на основание чл. 2 от ЗЗЛД

Технически данни и описание на изпитвания обект

Изпитван обект	Предпазител със стопяема вложка ниско напрежение тип HRC с комбиниран индикатор
Модел/Типова обозначение	NH3
Обозначение за идентификация	425A: 004186230 500A: 004186231 560A: 004186232 630A: 004186233
Производител	ETI Elektroelement d.d.
Място на производство	Obrezija 5,1411 Izlake, СЛОВЕНИЯ
Източник на захранване	AC
Размер	3
Категория на използване	gG
Номинален ток	425A, 500A, 560A, 630A
Номинална честота	45Hz to 62Hz
Изключвателна способност	120kA
Съизмерима серия	425A до 630A
Устройство за индикация	В средата на керамичната корпус и на защитната планка
Захващащи съединителни планки	Под напрежение
Вид на контактите	Ножови контакти
Материал на контактите	CuZn gal. Ag
Материал на корпуса на предпазителя със стопяема вложка	Steatit C221
Материал на покриващи планки	Al
Токово гасене	Кварцов пясък

на основание чл. 2 от ЗЗЛД

Измервани стойности	Устройство	Производител	Код
Напрежение (изпитване до 10kA)	Напреженов делител 1:2000 Усилвател AM 502 T Запис време SMR II	OFPZ Arsenal Tektronix W&W	AM 502/1...3 SMRII32
Ток(изпитване до 10kA)	Lin. токов трансформатор LGSSO Burden 1Q Запис време SMR II	Ritz OFPZ Arsenal W&W	WLIN5000/1...3 SMRII32
Напрежение (изпитване над 10kA)	3-канален усилвател за измерване на изолацията Transient recorder SMR II	Rohrer W&W	T908D SMRII64/1
Напрежение (изпитване над 10kA)	Lin. токов трансформатор LGSSO Burden 0,7mQ Запис време SMR II	Ritz OFPZ Arsenal W&W	WLIN6000.HVF/1... 3 SMRII64/1
Ток (изпитания при намаляващо напрежение)	Токов трансформатор GE 4461 Токов трансформатор AETtiO True-RMS амперметър Kl. 0,5	Goerz Siemens Norma	WI600/1...3 WI4000/1...3 A0.5/1...3
Временно възстановяване на напрежението	Настроеваемо оборудване TRV Осцилоскоп G 801.1	OFPZ Arsenal Tektronix	G801.1
Пад на напрежението	Дигитален мултимер Fluke 185	Fluke	FLUKE185/1
Диелектрични свойства	Оборудване за високо напрежение 90-1F	Elabo	HSG5KV
Вътрешно съпротивление	Измерване на съпротивлението microhm 300/0	Stetter	MICROHM
Време	Време записващо устройство SMR II Хронометър	W&W Junghans	SMRII32,SMRII64/ 1 938-2
Температура	24-канално записващо устройство POLYCOMP SK 30 Измерване на температурата TESTO 901	H & B Testoterm	SK30 TESTO
Топлина	Нагревателна камера UT 6060	Heraeus	-
Механично въздействие	Impact test apparatus	PTL	-
Устойчивост на ръжда	Изпитателна камераC330	Liebich	77
Размери	Дигитален шублер CD-20D	Mitutoyo	SCHUB

Подписаната Анелия Иванова Митева удостоверявам верността на извършения от мен превод от английски на български език на приложения документ – Доклад от изпитания от 20.08.2008. Преводът е с общ от 5 (пет) страници.
Преводач: Анелия Иванова Митева

на основание чл. 2 от ЗЗЛД

461

PÜZ
1

Accredited by BMWA, No. BMWA-92.714/0532-I/12/2006 as test- and inspection body and according to BGBl. II, No. 244/2005 as certification body for personnel

arsenal research
Ein Unternehmen der Austrian Research Centers.

Test Report

Project Designation

TYPE TEST
AT LOW-VOLTAGE HRC FUSE-LINKS
WITH COMBINED INDICATING DEVICES
TYPE NH3
(500VAC / gG)

Client

ETI Elektroelement d.d.
1411 Izlake, Obrezija 5
SLOVENIA

Order from / No. 10/2006 / ---

Project Number 2.03.00938.1.0/NH3/Combi/500/gG Test Engineer Ing.J.Ainetter

Date of issue	20.08.2008
Total number of issues / No.	1 / 1
Number of pages	5
Annex	CB/CCA - Test Report No. 2.03.00938.1.0/NH3/Combi/500/gG/CB/CCA (41 pages)

The results relate exclusively to the terms tested.

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Test item

Identification:
Low-voltage HRC fuse-links with combined indicating devices type
- NH3 (with energized gripping-lugs)
  Manufacturer: ETI Elektroelement d.d.
  Trademark: ETI
  Rated operational voltage(s): 500VAC
  Rated operational current(s): 425A, 500A, 560A and 630A
  Rated frequency: 45Hz to 62Hz
  Utilization category: gG

Technical data and description:
See page 4

Testing location, Period of testing

Testing location:
Österreichisches Forschungs- und Prüfzentrum Arsenal Ges.m.b.H.
Business Unit Monitoring, Energy and Drive Technologies
Power Service Center
1210 Wien, Giefinggasse 2
AUSTRIA

Period of testing:
03/2007 to 10/2007

Test(s)

Test(s) performed:
Type test

Test standard(s):
IEC 60269-1 Ed. 4.0:2006 and EN 60269-1:2007
IEC 60269-2 Ed. 3.0:2006 and HD 60269-2:2007

Test procedure(s):
CB-Scheme and CCA-Scheme

Result

The low-voltage HRC fuse-links with combined indicating devices type NH3 have passed the type test successfully.

на основание чл. 2 от ЗЗЛД

Test Engineer

на основание чл. 2 от ЗЗЛД

Ing.J.Ainetter

Project Engineer,
technical responsibility

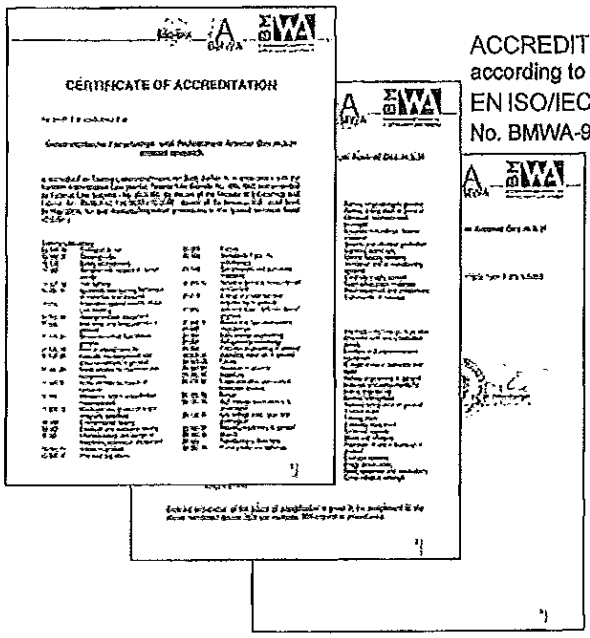
на основание чл. 2 от ЗЗЛД

Ing.K.Farthofer

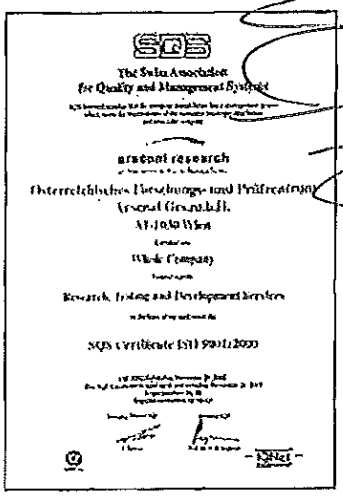
463

arsenal research
Ein Unternehmen der Austrian Research Centers.

Testing laboratory



ACCREDITED
according to
EN ISO/IEC 17025
No. BMWA-92.714/0532-I/12/2006



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according to
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Reg. No. 12769-03

RECOGNIZED
CB TESTING LABORATORY
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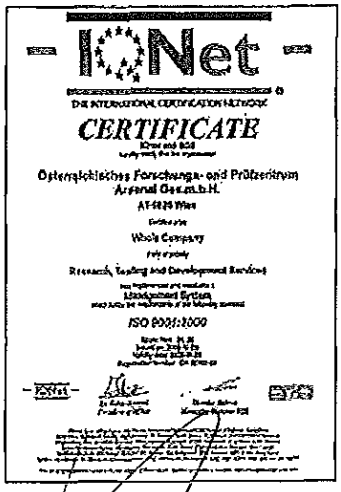
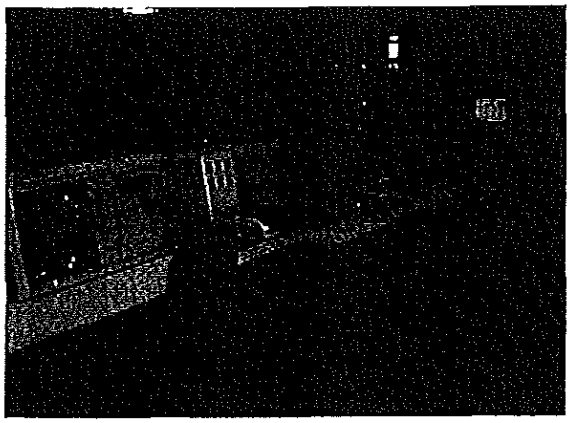
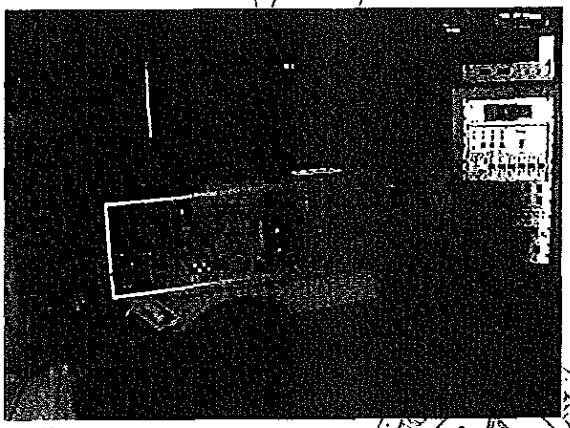
as the National Certification Body



POWER SERVICE CENTER:



Control station for tests up to 15kA



Control station for tests above 15kA

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Technical data and description

Test item	Low-voltage HRC fuse-links with combined indicating devices
Model/Type reference	NH3
Identification reference	425A: 004186230 500A: 004186231 560A: 004186232 630A: 004186233
Manufacturer	ETI Elektroelement d.d.
Place of manufacture	Obrezija 5, 1411 Izlake, SLOVENIA
Size	3
Nature of supply	AC
Utilization category	gG
Rated voltage	500V
Rated current	425A, 500A, 560A, 630A
Rated frequency	45Hz to 62Hz
Rated breaking capacity	120kA
Homogeneous series	425A to 630A
Indicating device	In the middle of ceramic body and on cover plate
Type of contacts	Blade contacts
Material of fuse-link contacts	CuZn gal. Ag
Material of fuse-link body	Steatit C221
Material of cover plates	Al
Extinguishing means	Quartzsand

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Measuring equipment

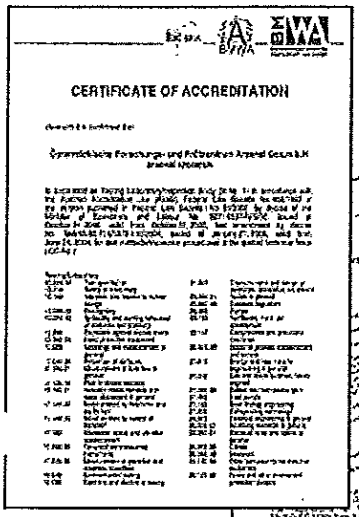
Measured quantity	Device	Manufacturer	Code
Voltage (up to 15kA)	Voltage divider 1:2000 Difference amplifier AM 502 Signal memory recorder TA 800	ÖFPZ Arsenal Tektronix W&W	- AM 502/1 TRA800
Current (up to 15kA)	Lin. current transformer LGSSO Burden 1Ω Signal memory recorder TA 800	Ritz ÖFPZ Arsenal W&W	WLIN5000/1 - TRA800
Voltage (above 15kA)	3-channel insulating measuring amplifier Signal memory recorder SMR II	Rohrer W&W	T908D SMRII64/1
Current (above 15kA)	Lin. current transformer LGSSO Burden 0,7mΩ Signal memory recorder SMR II	Ritz ÖFPZ Arsenal W&W	WLIN6000/1 - SMRII64/1
Current (tests at reduced voltage)	Current transformer GE 4461 Current transformer AETt10 True-RMS amperemeter Kl. 0,5	Goerz Siemens Norma	WI600/1 WI4000/1 A0,5/1
Voltage drop	Digital multimeter Fluke 185	Fluke	FLUKE185/1
Internal resistance	Resistance microhm meter 300/0	Stetter	MICROHM
Dielectric properties	High-voltage test equipment 90-1F	Elabo	HSG5KV
Time	Signal memory recorders Stopwatch	W&W Junghans	TRA800, SMRII64/1 938-2
Temperature	Temp. recorder Polycomp SK 30 Temperature meter TESTO 901	H & B Testoterm	SK 30 TESTO
Heat	Heating cabinet UT 6060	Heraeus	-
Mechanical strength	Test apparatus	ÖFPZ Arsenal	-
Resistance to rusting	Test chamber C330	Liebich	77
Torque	Torque meter	Rahsol	-
Clearances, creepage distances	Digital slide gauge CD-20D	Mitutoyo	SCHUB
Dimensions	Digital slide gauge CD-20D	Mitutoyo	SCHUB

Приложение ТС-175
за обособена позиция 2

arsenal research

Център за изследвания и изпитания Арсенал Австрия

Изпитваща лаборатория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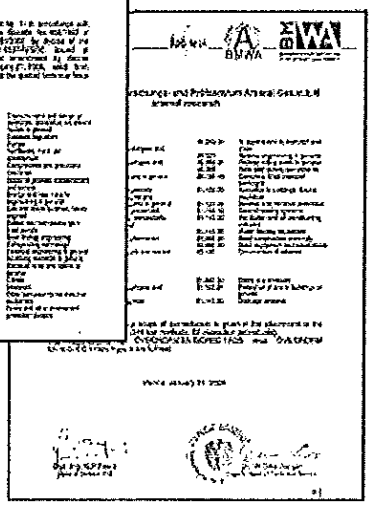
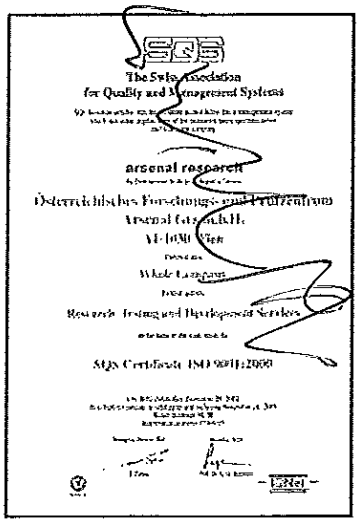
АКРЕДИТИРАНИ
съгласно
EN ISO/I EC 17025
No. BMWA-92.714/5379-1/12/2004




The Swiss Association for Quality and Management Systems

arsenal research

АКРЕДИТИРАНА
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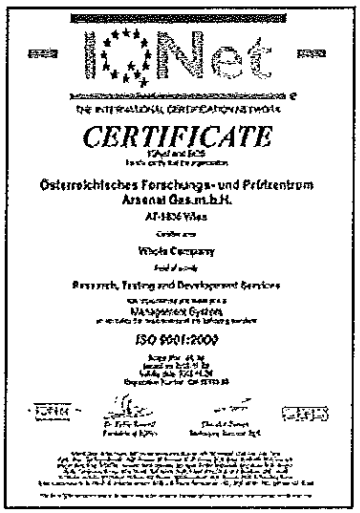
ISO 9001
Reg. No. 12769-03


CERTIFICATE

Österreichisches Forschungs- und Prüfzentrum Arsenal Ges.m.b.H.

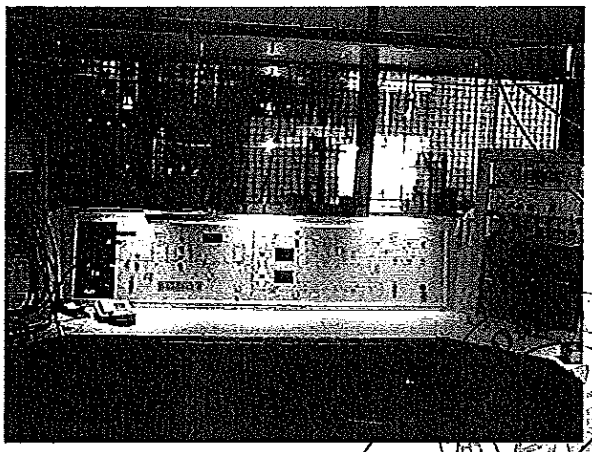
ISO 9001:2000


CERTIFICATE OF ACCEPTANCE

ОБЩОПРИЗНАТА
СВ ИЗПИТВАЩА ЛАБОРАТОРИЯ
под отговорността на OVE като
национален орган за сертифициране

PSC – Център за силови изпитания:


Контролна станция за изпитания до 10kA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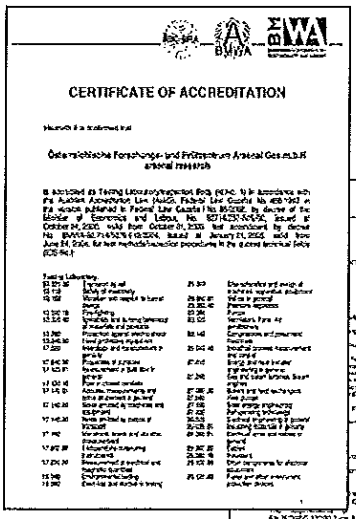
Testing laboratory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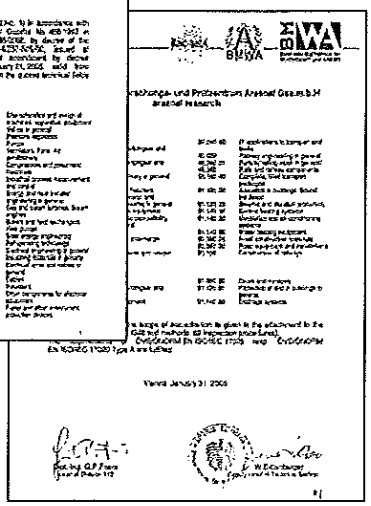

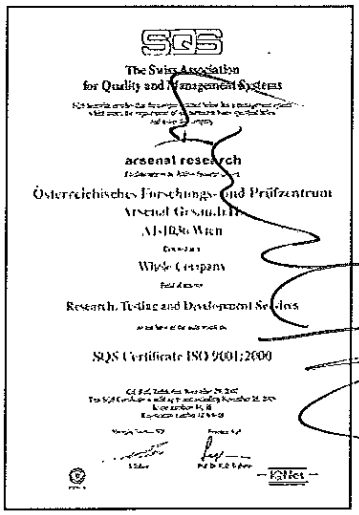
SQS
The Swiss Association for Quality and Management Systems
arsenal research
Österreichisches Forschungs- und Prüfzentrum Arsenal Ges.m.b.H.
AT-1030 Wien
Whole Company
Research, Testing and Development Services
SQS Certificate ISO 9001:2000

CERTIFICATED
according to
ISO 9001
Reg. No. 12769-03


CERTIFICATE OF ACCEPTANCE
TO PARTICIPATE IN THE IECEE CB-SCHEME
ÖFPZ/ETI - Elektrotechnisches Institut des Österreichischen Forschungs- und Prüfzentrums Arsenal
Arsenal, Faradaygasse 3, A-1030 Vienna, Austria
ÖFPZ/ETI - Elektrotechnisches Institut des Österreichischen Forschungs- und Prüfzentrums Arsenal

ACCEPTED
CB TESTING LABORATORY
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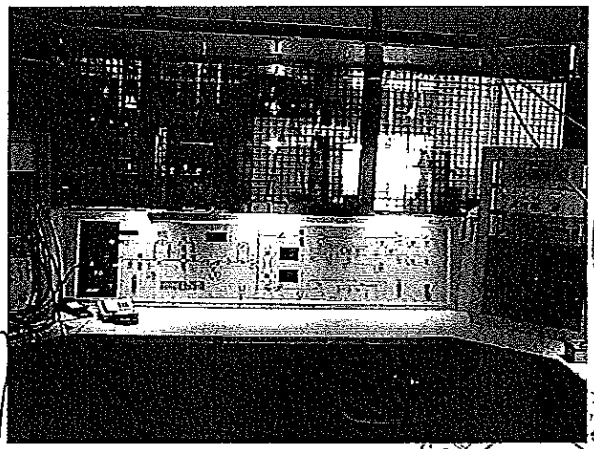
as National Certification Body


IQNet
THE INTERNATIONAL CERTIFICATION NETWORK
CERTIFICATE
Österreichisches Forschungs- und Prüfzentrum Arsenal Ges.m.b.H.
AT-1030 Wien
Whole Company
Research, Testing and Development Services
Management System
ISO 9001:2000

PSC – Power Service Center:


Control station for tests up to 10kA


Control station for tests above 10kA

4002 Пловдив, бул. "Пещерско шосе" № 201, тел. (032) 241 415, тел./факс: (032) 241 414, e-mail: office@intercomplex.bg
1113 София, ул. "Акад. Г. Бончев" № 20, тел. (02) 971 70 41, факс: (02) 971 71 41, e-mail: office.sf@intercomplex.bg

Приложение ТС-П 6
към Техническо предложение
по процедура PPD 17-152

Обособена позиция 2: Кабелни разпределителни шкафове НН, полиестерни, ниски

СПИСЪК НА ПРОВЕЖДАНИТЕ РУТИННИ (КОНТРОЛНИ) ИЗПИТВАНИЯ

Предпазители със стопяема вложка ниско напрежение, тип NH/NV:

NV/NH 00C 2A до 100A; NV/NH 00 6A до 160A
NV/NH 0 6A до 160A; NV/NH 1 25A до 250A
NV/NH 2 63A до 400A; NV/NH 3 250A до 630A
NV/NH 4 630A до 1250A; NV/NH 4a 630A до 1600A

Основи за високомощни предпазители:

PK0 160A, PK1 250A, PK2 400A, PK3 630A, PK4 1250A

Производство на: ETI D.D.
Улица: Obrezija 5, Пощенски код: 1411, Населено място: Izlake, Страна: Словения
Телефонен номер: +386 3 56 57 570
Номер на телефакса: +386 3 56 74 077
e-mail: info@eti.si; Homepage: www.eti.si

Рутинни (контролни) изпитвания се провеждат на представителна извадка от проведените количества съгласно изискванията на стандарти:

БДС EN 60269-1:2007 - Стопяеми предпазители за ниско напрежение. Част 1: Общи изисквания
БДС HD 60269-2:2007 - Стопяеми предпазители за ниско напрежение. Част 2: Допълнителни изисквания за стопяеми предпазители, предназначени да се използват от квалифицирани лица (стопяеми предпазители предимно за индустриално приложение).

Посочените изделия преминават през контролни изпитвания, както следва:

1. Визуална проверка и контрол на продуктите, част от непрекъснатата система за следене на качеството;
2. Електрически контролни изпитвания и сравнение на измерените стойности с нормативно указаните. Маркиране на всеки предпазител и основа с идентификационен и сериен номер, запазване в архивен масив;
3. Механични рутинни изпитвания съгласно предписанията на горепосочените стандарти;
4. Проверка на проектните и фактически размери, контактни повърхности на изделията.

19.03.2018 г.

Участник: ИНТЕРКОМПЛЕКС ООД

на основание чл. 2 от ЗЗЛД

.....

Ехиязар Узунян - управител

intercomplex Ltd.®
4002 Пловдив, бул. "Пещерско шосе" № 201, тел. (032) 241 415, тел./факс: (032) 241 414, e-mail: office@intercomplex.bg
1113 София, ул. "Акад. Г. Бончев" № 20, тел. (02) 971 70 41, факс: (02) 971 71 41, e-mail: office.sf@intercomplex.bg

Приложение ТС-П 7
към Технически спецификации
по процедура PPD 17-152

Обособена позиция 2: Кабелни разпределителни шкафове НН, полиестерни, ниски

ИНСТРУКЦИЯ

ЗА ТРАНСПОРТИРАНЕ,СЪХРАНЕНИЕ, МОНТАЖ И ЕКСПЛОАТАЦИЯ НА ВИСОКОМОЩНИ ПРЕДПАЗИТЕЛИ СЪС СТОПЯЕМА ВЛОЖКА НН, КЛАС Gg/Gl

Общи изисквания

Високомощният предпазител отговаря на посочените стандарти и/или еквивалентни за тях стандартизационни документи, включително на съответните последни изменения и поправки:

БДС EN 60269-1:2007+A1+A2 и БДС HD 60269-2:2007 - Стопяеми предпазители за ниско напрежение. Част 1: Общи изисквания

БДС HD 60269-2:2007- Стопяеми предпазители за ниско напрежение. Част 2: Допълнителни изисквания за стопяемите предпазители, предназначени да се използват от квалифицирани лица (предпазители предимно за промишлено приложение

Опаковка и транспорт

Предпазителите се доставят монтирани във вертикалните триполюсни предпазител-разединители (ВПР), по 3 броя във всеки ВПР, съгласно Техническите спецификации на Възложителя.

Съхранение и складиране

Тъй като не се транспортират и съхраняват отделно, за тях важат инструкциите за транспорт и съхранение, отнасящи се за КРШ.

Монтаж

Работата с предпазители трябва да се извършва единствено и само от квалифициран и упълномощен за това персонал. Снемането и поставянето на предпазителите от гнездата на разединителите да се извършва **САМО** в положение "отворено/заключено", чрез движение на лоста надолу по неговата дължина. Отключва се в обратна посока.

Подмяната на изгорял предпазител се извършва, като се отвори блокът с носачите на ВП, изважда се изгорелият и се поставя нов. Разединителят се затваря с рязко движение, но без удар. При това, за да се осигури безопасна работа, блокът с предпазителите се "заключва" в извадено положение чрез движение на лоста надолу по неговата дължина. Отключва се в обратна посока.

Задължително се взимат мерки за безопасност съгласно утвърдените наредби и правилници и осигуряване на изискваните лични предпазни средства при работа по електрически мрежи.

Да не се правят опити за ремонт или модификация на предпазителите!

Поддръжка

Предпазителите не изискват специална поддръжка.

19.03.2018 г.

Участник: ИНТЕРКОМПЛЕКС ООД

на основание чл. 2 от ЗЗЛД

....

Ехилзар Узунян - управител

4002 Пловдив, бул. "Пещерско шосе" № 201, тел. (032) 241 415, тел./факс: (032) 241 414, e-mail: office@intercomplex.bg
1113 София, ул. "Акад. Г. Бончев" № 20, тел. (02) 971 70 41, факс: (02) 971 71 41, e-mail: office.sf@intercomplex.bg

Приложение 3
към Техническо предложение
по процедура реф.№ PPD 17-152

За Обособена позиция 2 - **„Доставка на кабелни разпределителни шкафове НН, полиестерни, ниски".**

СРОКОВЕ ЗА ДОСТАВКА

№	Наименование	Мярка	Количество със срок на доставка до 7 кал. дни	Количество със срок на доставка до 30 кал. дни
1	2	3	4	5
1	КРШ НН-4, нисък, полиестерен	бр.	5	10
2	КРШ НН-5, нисък, полиестерен	бр.	5	10
3	КРШ НН-6, нисък, полиестерен	бр.	10	20
4	КРШ НН-7, нисък, полиестерен	бр.	2	5
5	КРШ НН-4PL, нисък, полиестерен	бр.	1	3
6	КРШ НН-5PL, нисък, полиестерен	бр.	1	3
7	КРШ НН-6PL, нисък, полиестерен	бр.	1	3
8	КРШ НН-7PL, нисък, полиестерен	бр.	1	3

Забележки:

1/ Срокът на доставките започва да тече от датата на изпращане на поръчката.

2/ Количествата в колона 4, със срок на доставка до 7 /седем/ календарни дни, се доставят след SAP поръчка до посочените в обявлението складове на Възложителя за покриване на спешни нужди на Възложителя. Възложителят може до поръчва посоченото спешно количество веднъж месечно.

3/ 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.

4/ 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.

5/ Възложителят може да поръча количества по-малки от посочените в колони 4 и 5.

6/ Възложителят може да поръчва количества по-високи от посочените в колони 4 и 5, 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 колони 4 и 5.

7/ Количествата за доставка в колони 4 и 5 са отделни и независими едно от друго.

8/ Количествата за доставка в колона 5 не включват в себе си количествата за доставка в колона 4.

9/ Възложителят има право да направи едновременно поръчки за доставка на количества от колони 4 и 5.

16.03.2018 г.

Участник: ИНТЕРКОМПЛЕКС ООД
[redacted] на основание чл. 2 от ЗЗЛД
Ехиязар Узунян - управител

intercomplex Ltd.®
4002 Пловдив, бул. "Пещерско шосе" № 201, тел. (032) 241 415, тел./факс: (032) 241 414, e-mail: office@intercomplex.bg
1113 София, ул. "Акад. Г. Бончев" № 20, тел. (02) 971 70 41, факс: (02) 971 71 41, e-mail: office.sf@intercomplex.bg

ДЕКЛАРАЦИЯ

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

Долуподписаният ***Ехиязар Гарабед Узунян***, притежаващ лич на основание чл. 2 от ЗЗЛД
издадена на на основание чл. 2 от ЗЗЛД ***в,*** на основание чл. 2 от ЗЗЛД ***пловдив, ул Елин Пелин" 26,*** в ***и*** лище и адрес на управление: ***гр. Пловдив, бул. Пещерско шосе № 201,*** вписано в търговския регистър към Агенцията по вписванията с ЕИК ***115096057***, участник в процедура за възлагане на обществена поръчка с реф. **№ PPD17-152** и предмет: **" Доставка на кабелни разпределителни шкафове",**

Обособена позиция 2 **- „Доставка на кабелни разпределителни шкафове НН, полиестерни, ниски".**

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.

19.03.2018 г.

Декларатор: на основание чл. 2 от ЗЗЛД

Ехиязар Гарабед Узунян

433

Intercomplex Ltd.®
4002 Пловдив, бул. "Пещерско шосе" № 201, тел. (032) 241 415, тел./факс: (032) 241 414, e-mail: office@intercomplex.bg
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ДЕКЛАРАЦИЯ

за срока на валидност на офертата

Долуподписаният **Ехиязар Гарабед Узунян**
Притежаващ лична карта № на основание чл. 2 от ЗЗЛД
Адрес: **гр. Пловдив, ул. Елин П**
в качеството ми на **управител** на **„ИНТЕРКОМПЛЕКС" ООД,**
участник в процедура за възлагане на обществена поръчка с реф. **№ PPD 17-152** и предмет: **„Доставка на кабелни разпределителни шкафове",**

***Обособена позиция 2* - „Доставка на кабелни разпределителни шкафове НН, полиестерни, ниски"**

ДЕКЛАРИРАМ, ЧЕ:

С подаване на настоящата оферта, направените от нас предложения и поети ангажименти за ***Обособена позиция 2* - „Доставка на кабелни разпределителни шкафове НН, полиестерни, ниски"**, са валидни за срока, посочен в обявлението, считано от крайния срок за подаване на офертите.

19.03.2018 г.

Декл на основание чл. 2 от ЗЗЛД ....

Ехиязар Гарабед Узунян

КАТАЛОЗИ

за участие в „открита" по вид процедура за сключване на рамково споразумение с предмет:

„Доставка на кабелни разпределителни шкафове"

реф. № PPD 17-152

Обособена позиция № 1:
Кабелни разпределителни шкафове, полиестерни, високи

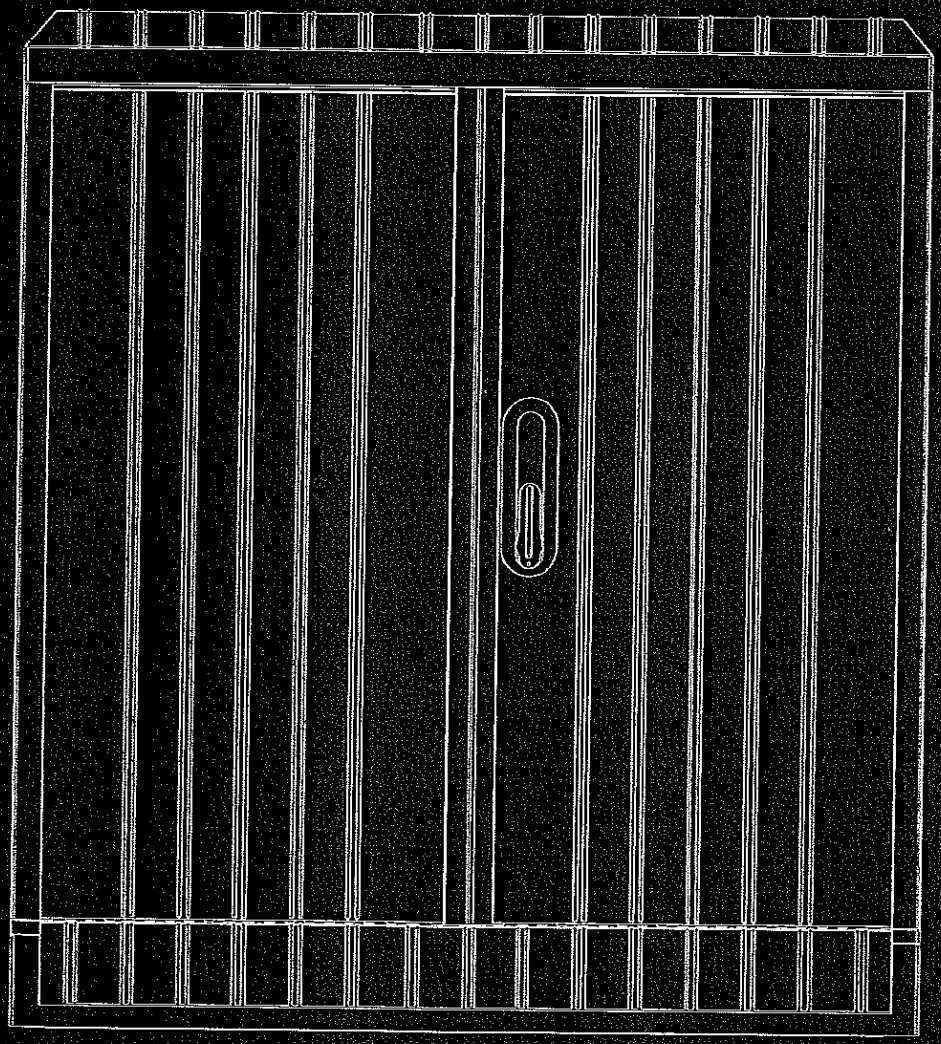
Обособена позиция № 2:
Кабелни разпределителни шкафове, полиестерни, ниски

Кандидат: **"ИНТЕРКОМПЛЕКС ООД"**

*KABELVERTEILERSCHRANKE NACH **DIN***

***DIN** CABINETS*

DCE



NEW

We - EMITER - are highly developed and successful private enterprise on the Polish market. Offer ofproducts is broadening permanently and new channels of distribution are still developing. The newest family of cabinets according to DIN standard is the best example of our activity. The products we offer meet the highest expectations of our clients.

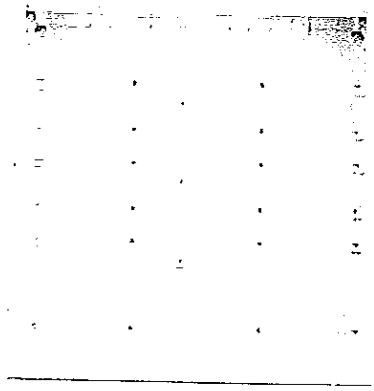
Wir- EMITER- sind auf dem polnischen Markt ein hoch entwickeltes und erfolgreiches Familienunternehmen. Die Palette unserer Produkte wird stetig erweitert, neue Vertriebswege werden erschlossen. Das beste Beispiel ist unsere neue Baureihe von Kabelverteilerschränke nach DIN. Unsere Schränke werden höchsten Ansprüchen gerecht.

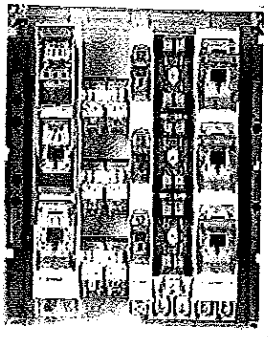
DCE cabinets, 320 mm deep, are widely applied in the industry, energy and telecommunication sectors thanks to their universal qualities. Made of insulating, slow-burning and self-extinguishing composite: (polyester + glass fibre, characterized with resistance to atmospheric agents UV). The ventilation system (page 15) minimizes the gathering of damp. Parts of the pedestals are removable without the need to use tools, which allows an easy introduction of cables into the installed junction. Specially designed construction of the cabinet in connection with additional elements ensure fast and comfortable assembly of equipment.

Schränke Baureihe DCE, Tiefe 320 mm. Verwendung universal für Industrie Bedarf, Energetik und Telekommunikation. Hergestellt aus isoliertem, schwerbrennbarem und selbsterlöschendem Werkstoff Polyester + Glasfase, Wetter und UV- beständig. Die Belüftung des Kanalsystems (Seite 15), minimiert die Kondenswasserbildung. Die Sockeldeckel sind Werkzeugfrei montierbar und ermöglichen bei stehenden Kabelverteilerschränken einen bequeme Kabelmontage. Eine speziell ausgedachte Gehäusekonstruktion in Verbindung mit zusätzlichen Bauelementen garantiert eine schnelle und bequeme Montage.

Basic parameters: / Eigenschaften:

protection grades / IP, IK - Schutzart	IK-10, IP-44
depth / Tiefe	320 mm
flammbility category / Flammfestigkeit	FH2-7mm
colour / Farbe	RAL 7035
protection class / Schutzart	II ⧈
tracking resistance / Kriechstromfestigkeit	CTI 600
dielectric strength / Durchschlagfestigkeit	240 kV/cm
compliant with / Der Norm Entsprechend	DIN 43 629 -1 DIN 43 629 -2 DIN 43 629 -3 EN 60 439 -1 EN 60 439 - 3 EN 60 439 - 5 EN 50 298

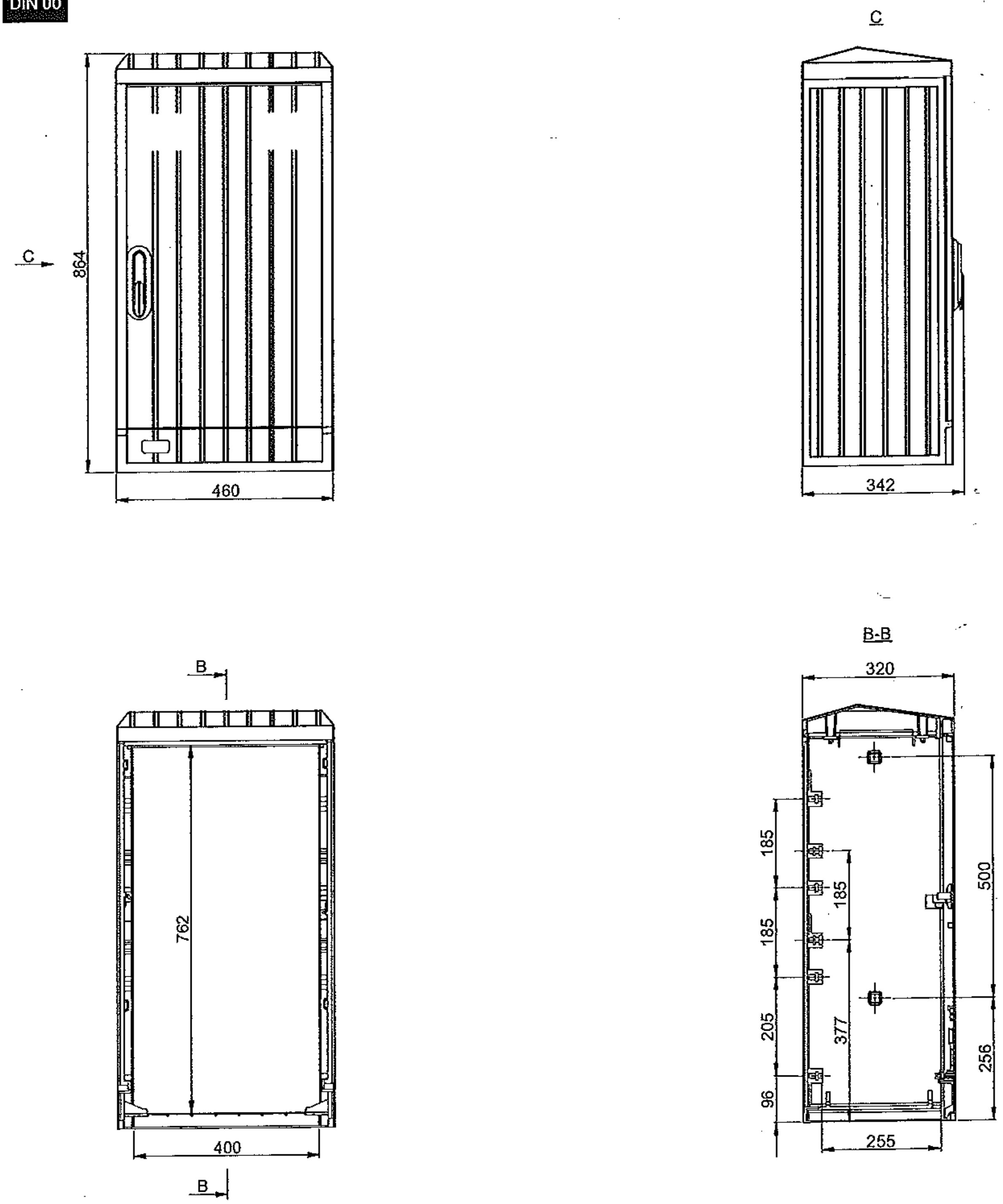




emiter

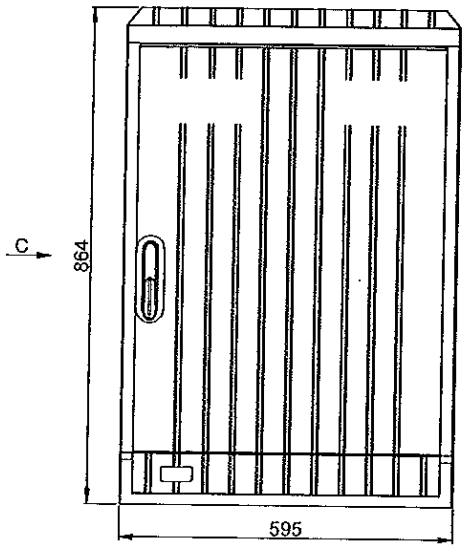
Cabinet / Kabelverteilerschrank

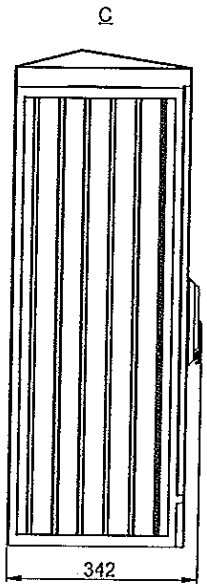
DIN 00

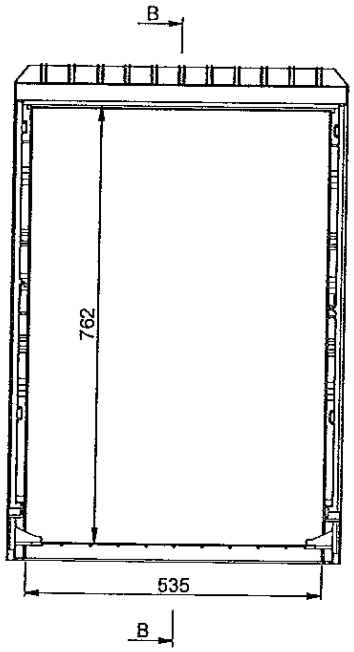


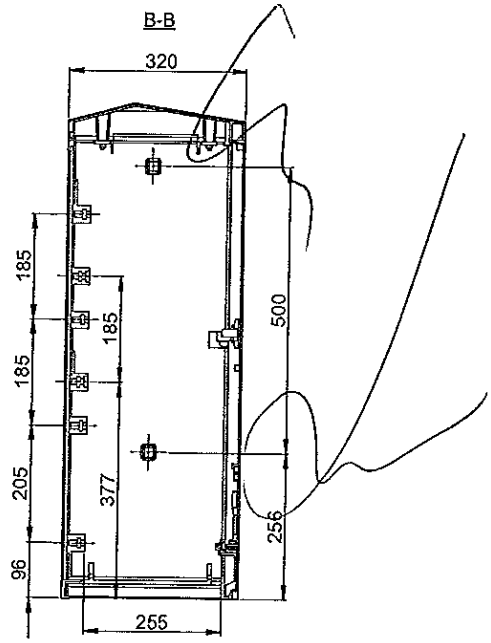
Type / Bauart	Art. No.
DCE 00	DE 348 00

DIN 0







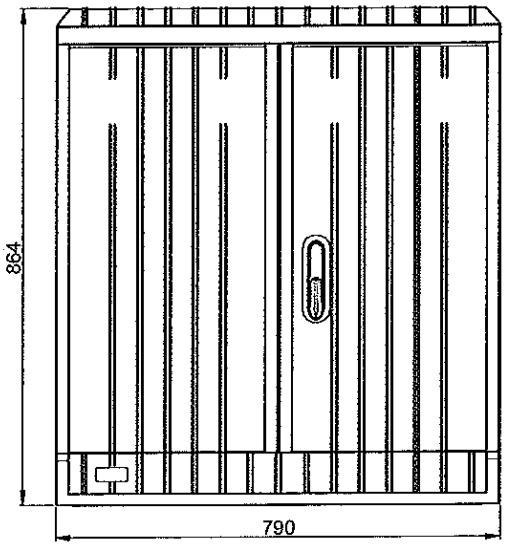


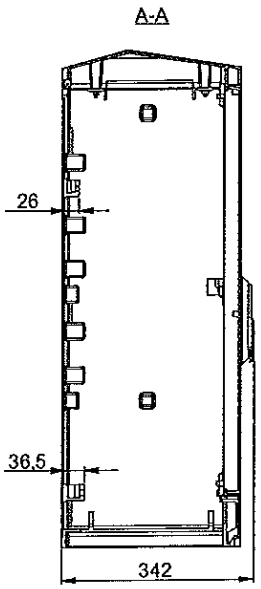
Type / Bauart	Art. No.
DCE 0	DE 358 00

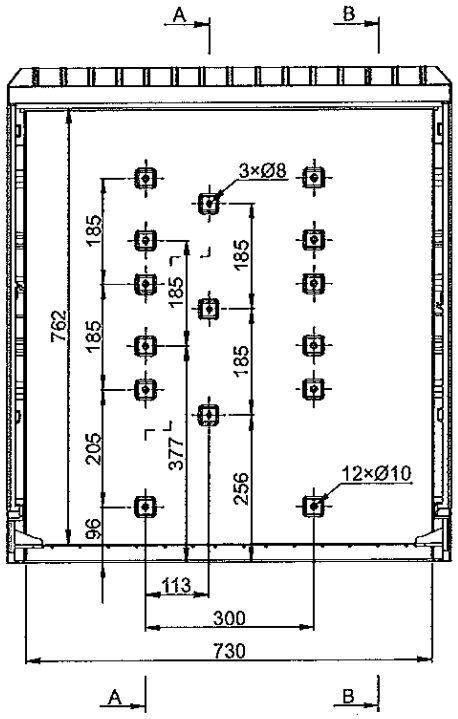
DIN 1

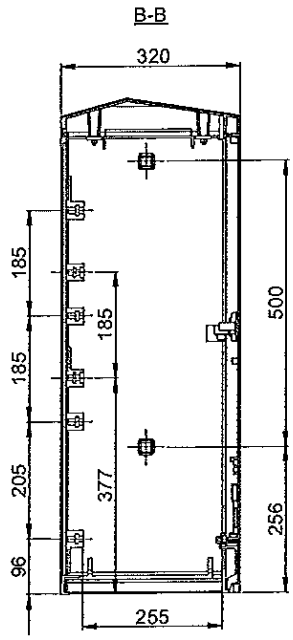
Cabinet / Kabelverteilerschrank

DIN 1



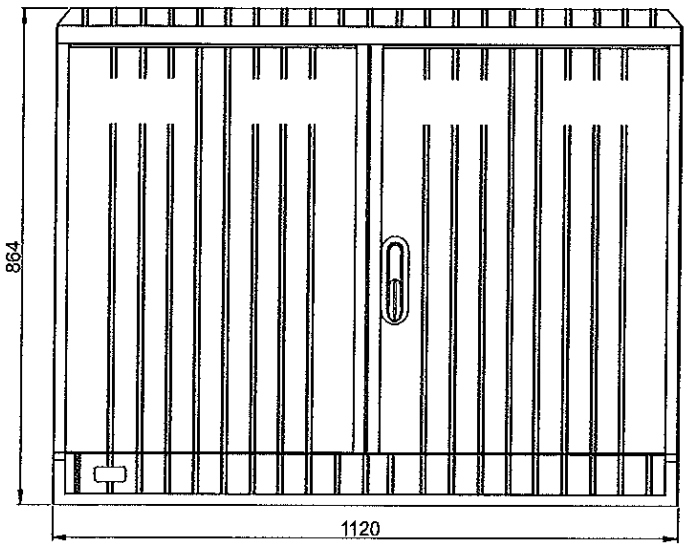


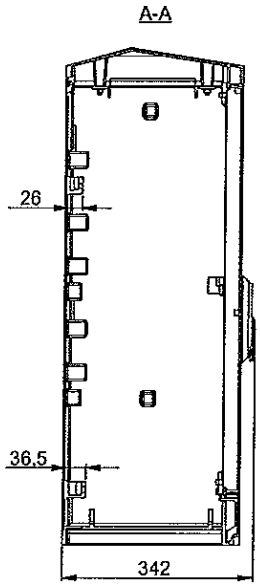


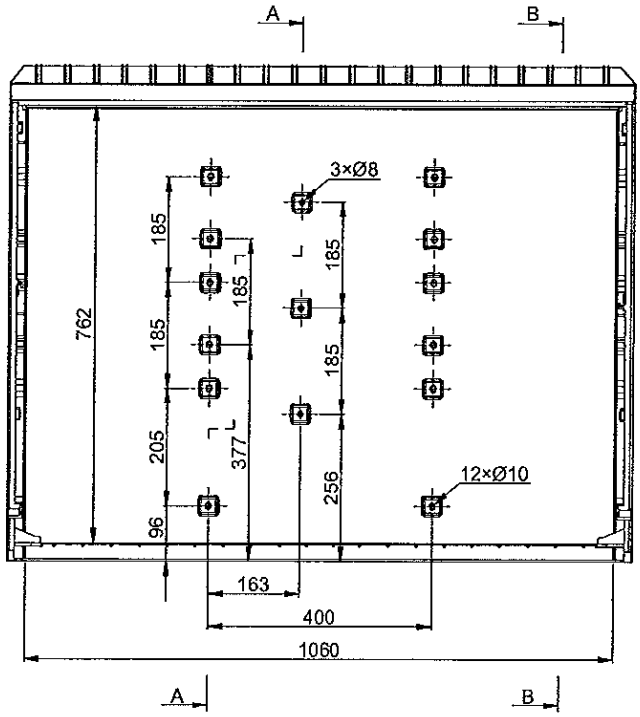


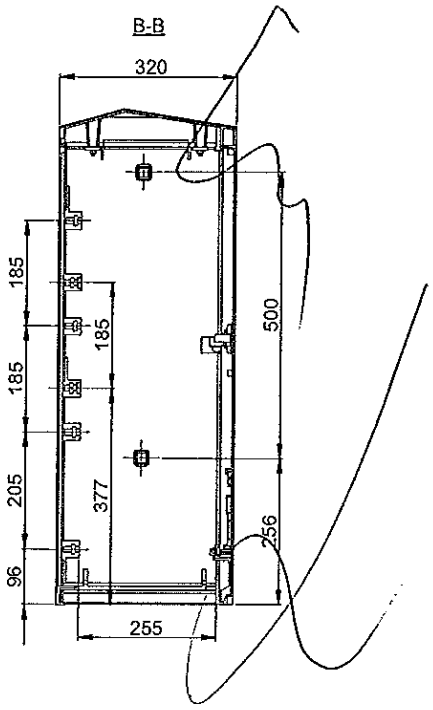
Type / Bauart	Art. No.
DCE 1	DE 378 00

DIN 2



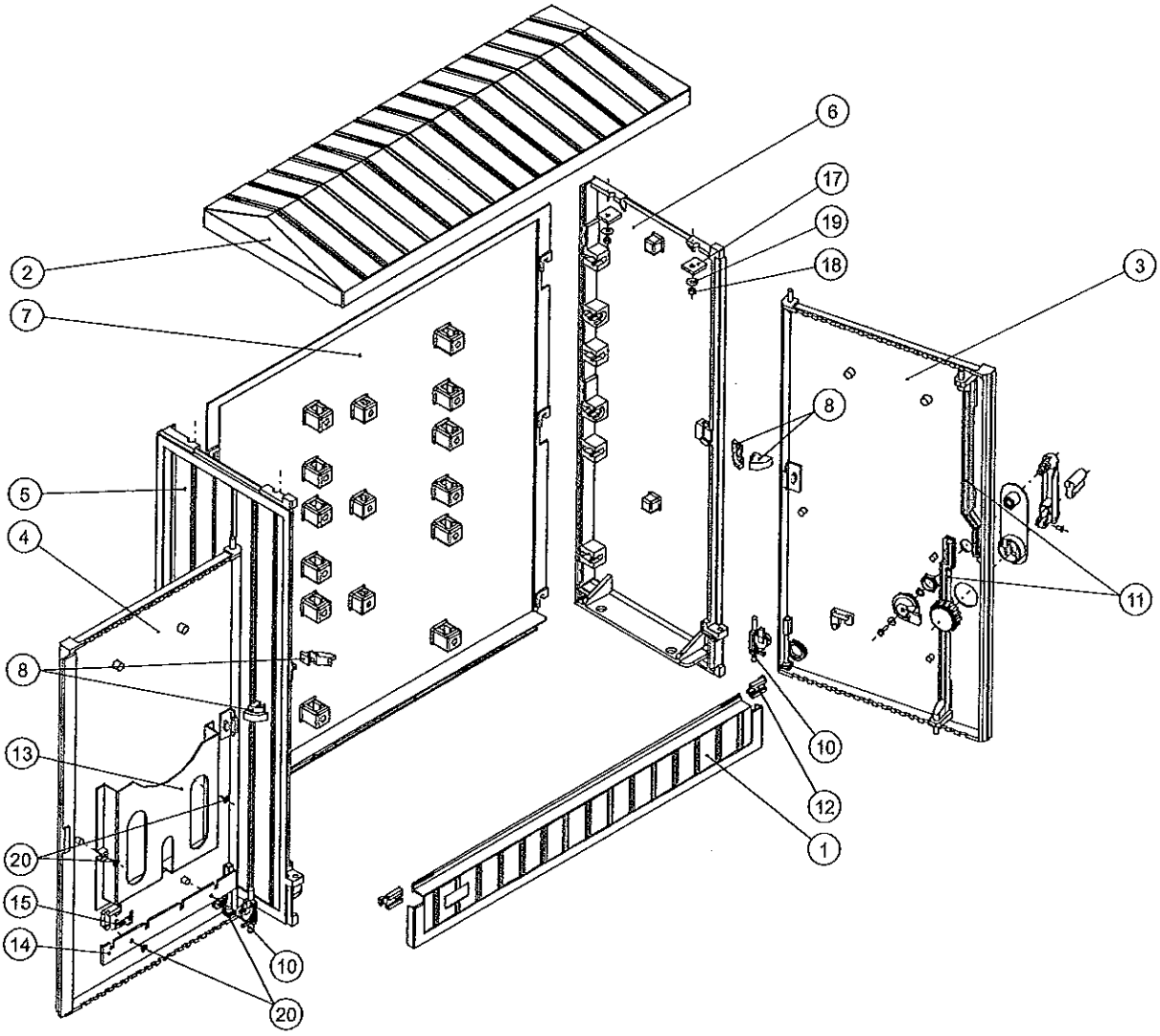


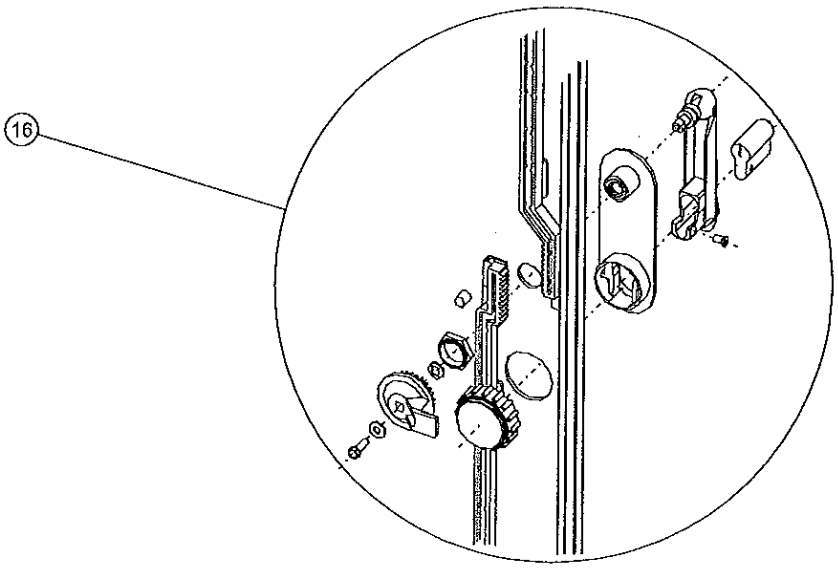




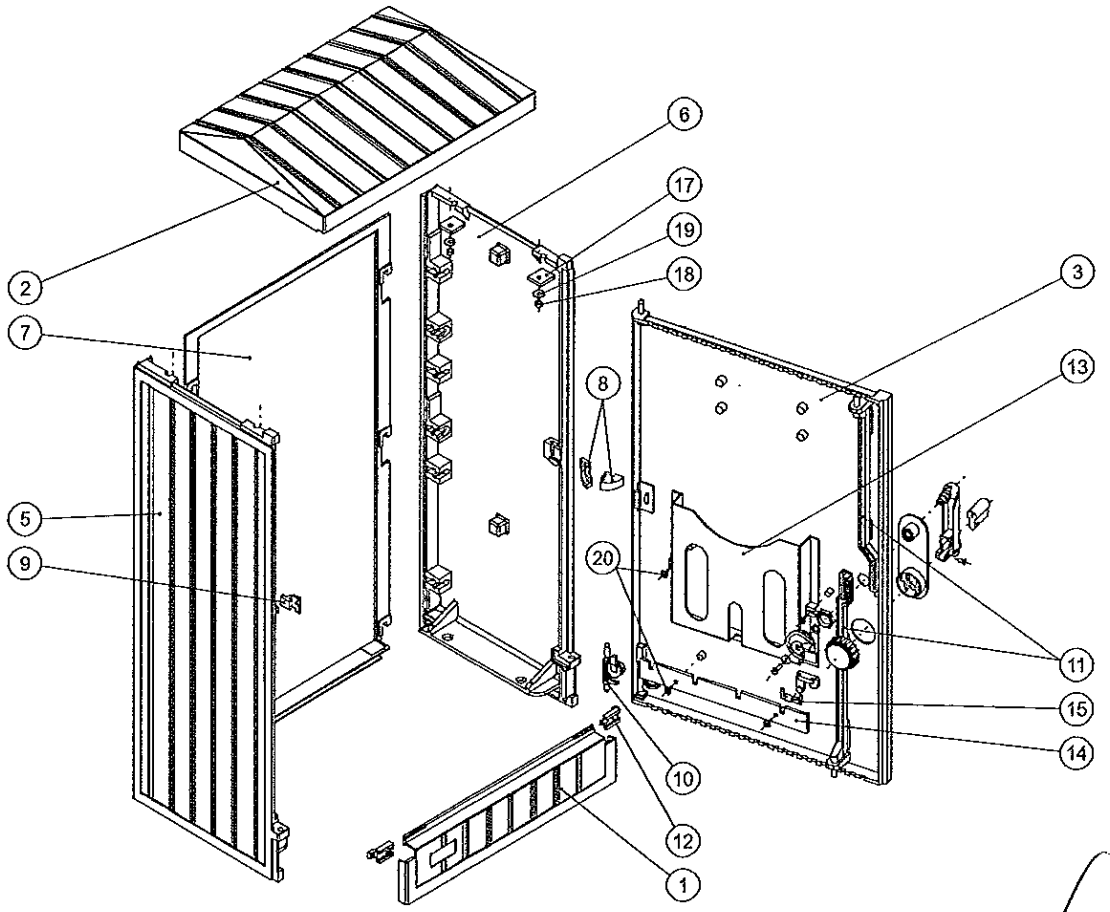
Type / Bauart	Art. No.
DCE 2	DE 398 00

Cabinet construction / Schrank Konstruktion





Cabinet construction / Schrank Konstruktion

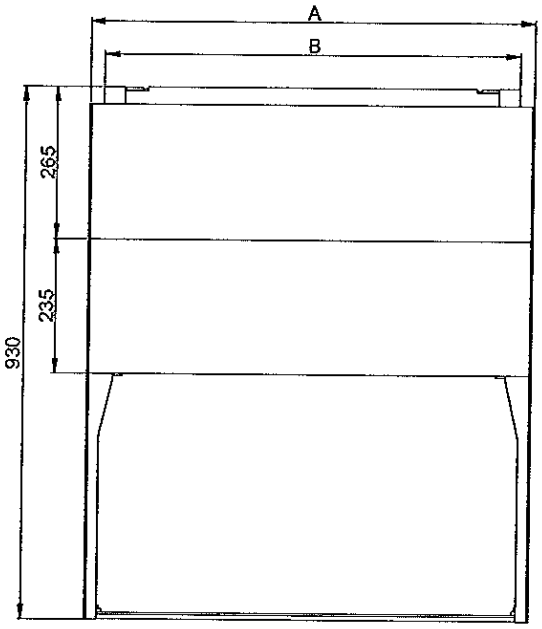


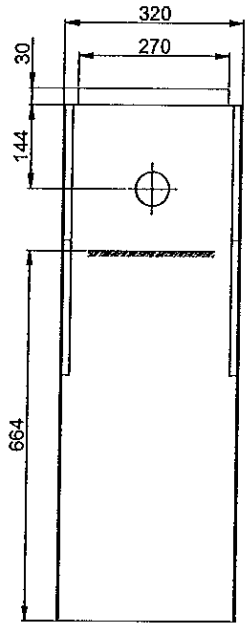
			Art. No.	
1	Front segment	Unterer Verschluss-Deckel	DIN 00	013 4609 00
			DIN 0	013 5909 00
			DIN 1	013 7909 00
			DIN 2	013 9209 00
2	Roof	Schräge	DIN 00	002 4632 02
			DIN 0	002 5932 02
			DIN 1	002 7932 02
			DIN 2	002 9232 02
3	Right door	Rechte Türe	DIN 00	004 4671 00
			DIN 0	004 5971 00
			DIN 1	004 3971 00
			DIN 2	004 5671 00
4	Left door	Linke Türe	DIN 1	004 3971 02
			DIN 2	004 5671 02
5	Left side	Linke Seitewand		001 8632 01
6	Right side	Rechte Seitewand		001 8632 00
7	Back wall	Hinter Wand	DIN 00	007 4686 01
			DIN 0	007 5986 01
			DIN 1	007 7986 01
			DIN 2	007 9286 01
8	Middle hinge	Mittleren Scharnier		919 0002
9	Limiter	Begrenzer		919 0004
10	Lower hinge	Unterer Scharnier		919 0001
11	Strings	Verrieglungsleisten		906 7101
12	Slide dumper	Sperrschieber		920 0000
13	Pocket for documents*	Schaltplantasche*		See page 17 / Sehe b. s. 17
14	Holder for fuses*	Sicherungshalterung*		919 3035
15	Catch for fuse handle*	Sicherungsgriffanzapfung*		919 3916
16	Locker	Schloß		See page 17 / Sehe b. s. 17
17	Ø8 flat washer	Ø8 Kunststoff Unterlage		902 0002
18	M8 nut	M6 Mutter		
19	Ø8 washer	Ø8 Unterlage		
20	4×16 self-tapping screw*	4×16 Blechschraube*		

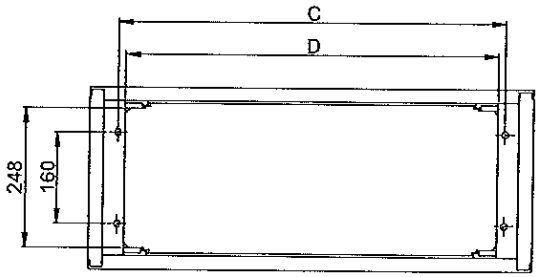
* Optional element / Optionalelement

emiter

Pedestals / Sockeln

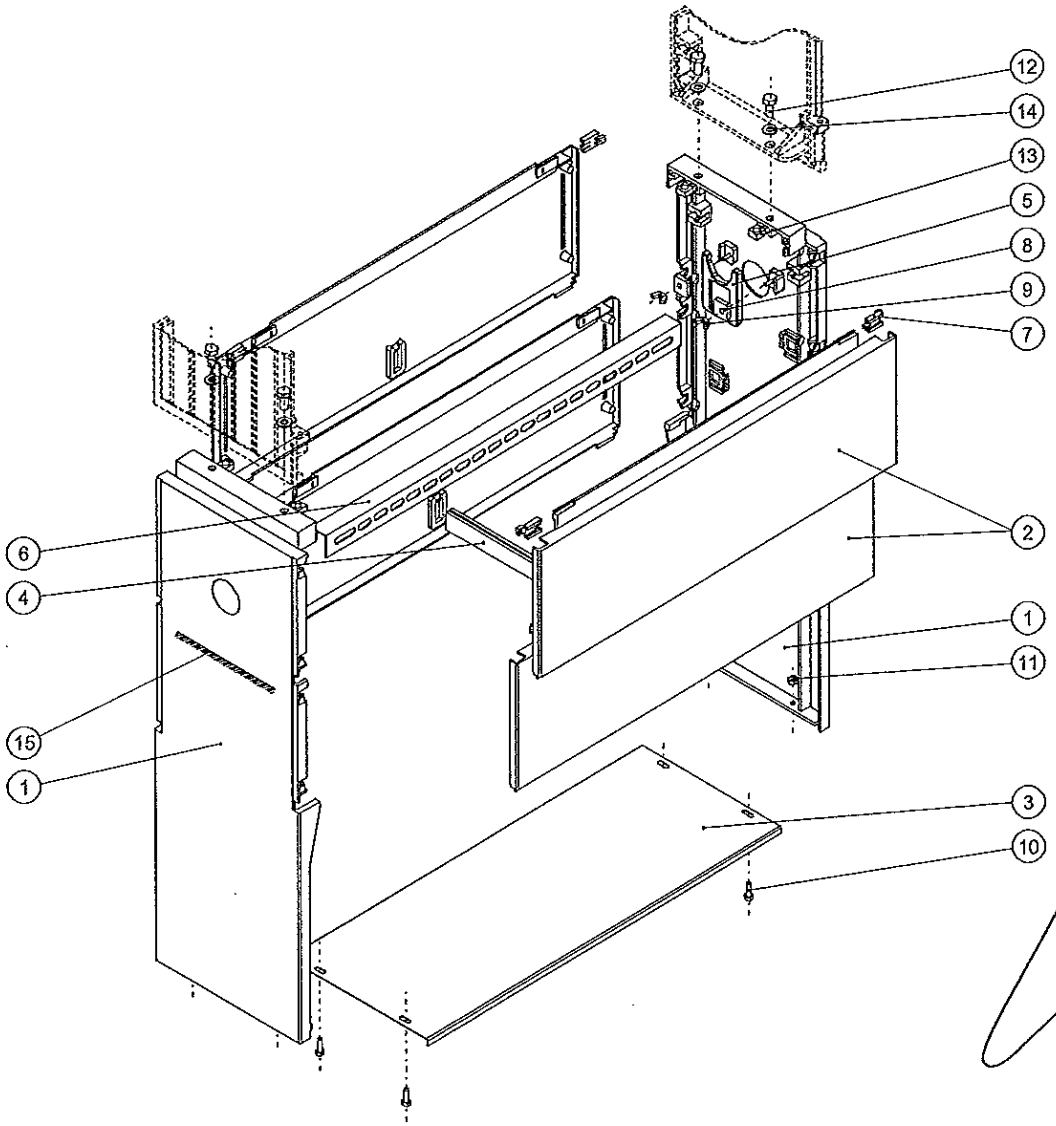






	Type / Bauart	A	B	C	D	Art. No.
DIN 00	*FD 00*	460	410	360	334	FD 348 00
DIN 0	*FD 0*	595	545	495	469	FD 358 00
DIN 1	*FD 1*	790	740	690	714	FD 378 00
DIN 2	*FD 2*	1120	1070	1020	994	FD 398 00

Pedestal construction / Sockel Konstruktion

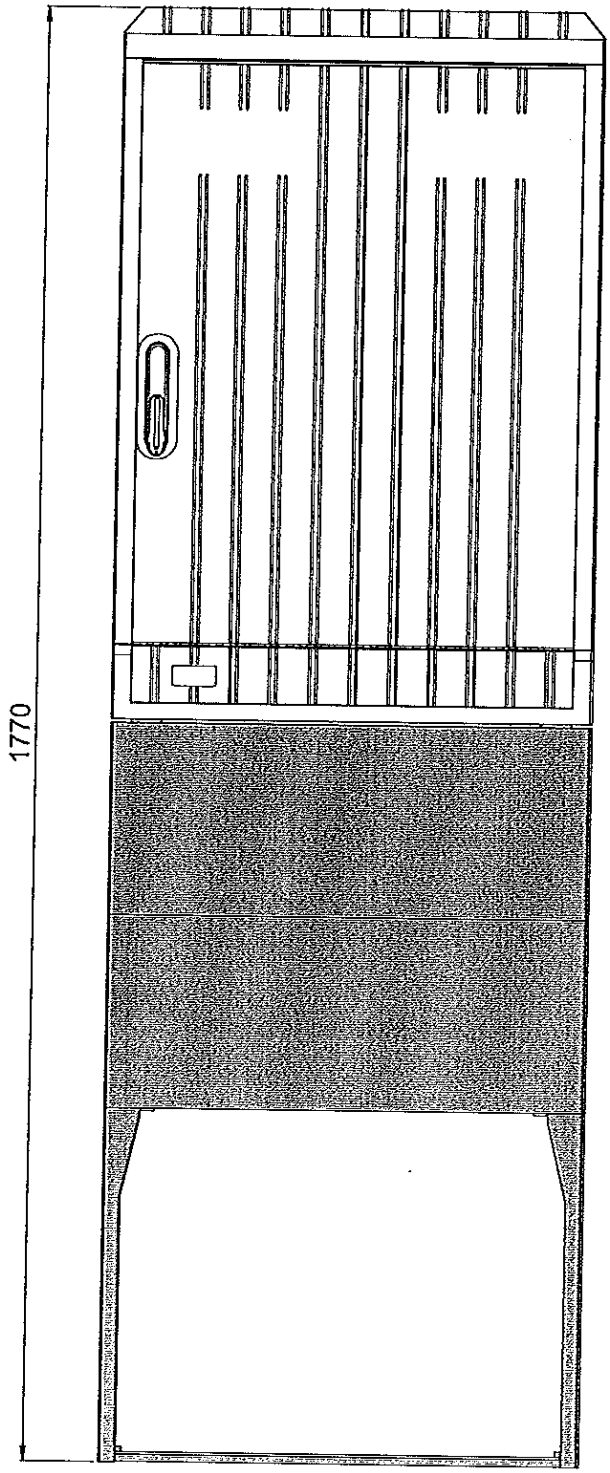


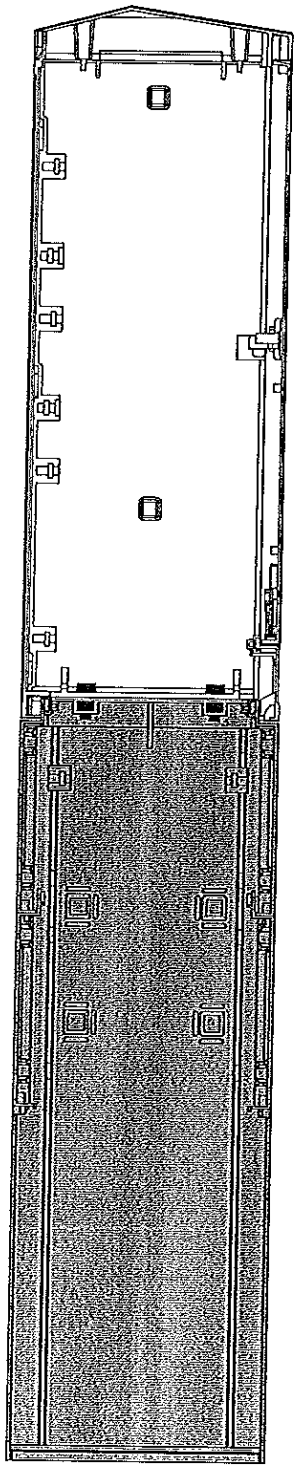
			Art. No.	
1	Pedestal leg	Seiten Teile		106 9332 00
			DIN 00	105 4623 00
			DIN 0	105 5923 00
2	Segment	Front-Ruck Deckel	DIN 1	105 7923 00
			DIN 2	105 9232 00
			DIN 00	901 4631
			DIN 0	901 5931
3	Pedestal steel sheet	Blechprofilbinder	DIN 1	901 7931
			DIN 2	901 9231
4	Pedestal spacing bar*	Abstandshalter*		920 3203
5	Outlet for temporary supply**	Baustromeinführung**		911 6000
6	Perforated angle bar**	Kabelmontage Profil**		See page 19 / Sehe b. s. 19
7	Slide dumper	Sperrschieber		920 0000
8	Ø6 flat washer	Ø6 Kunststoff Unterlage		902 0002
9	M6 wing nut	Flügelmutter M6		
10	M8×20 screw	M8×20 Schraube		
11	M8 nut	M8 Mutter		
12	M12×30 screw	M12×30 Schraube		
13	M12 square nut	M12 Vierkantmutter		
14	Ø12 washer	Ø12 Unterlage		
15	Ground level marker	Erdefühlung-Niveaubezeichnung		

* Only for DIN 1 and DIN 2
** Optional element

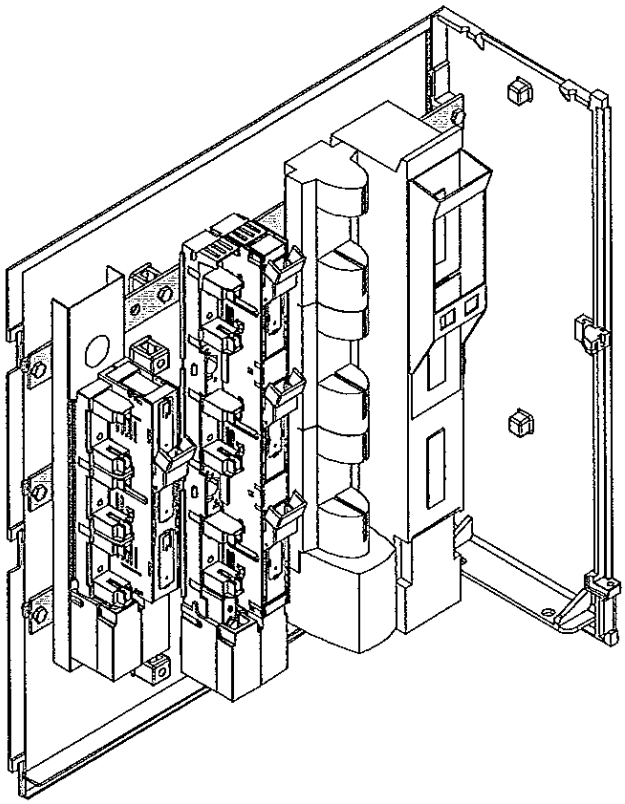
* Nur für DIN 1 und DIN 2
** Optionalelement

emiter

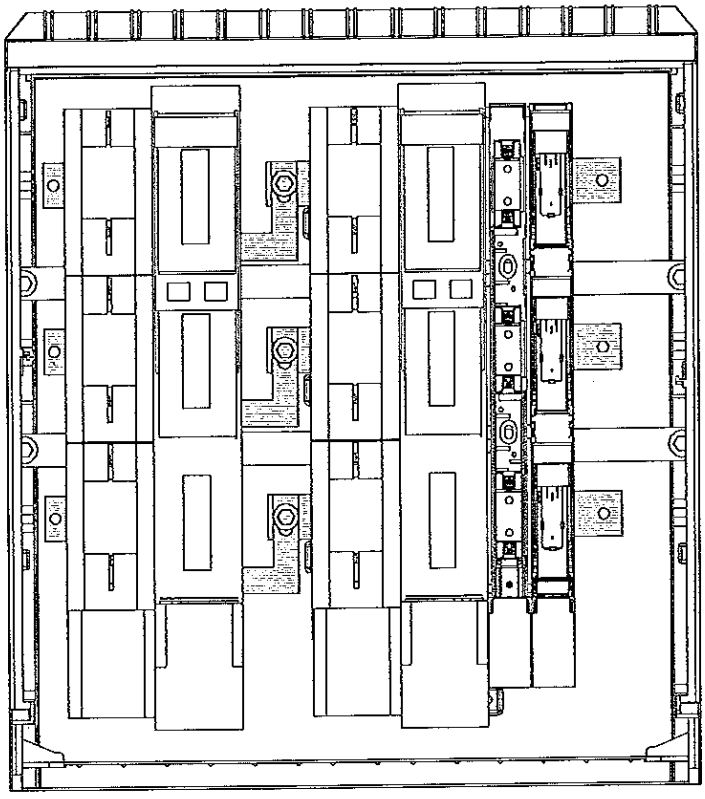




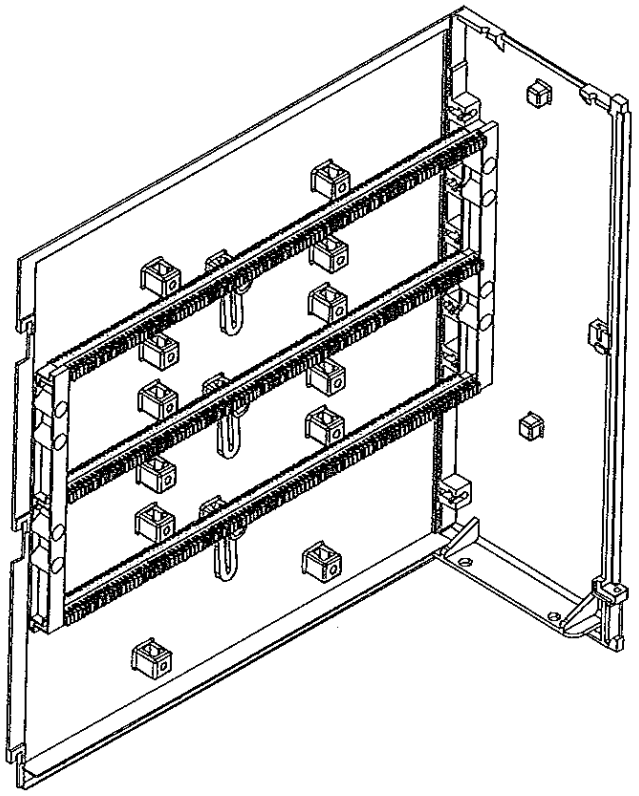
Standard



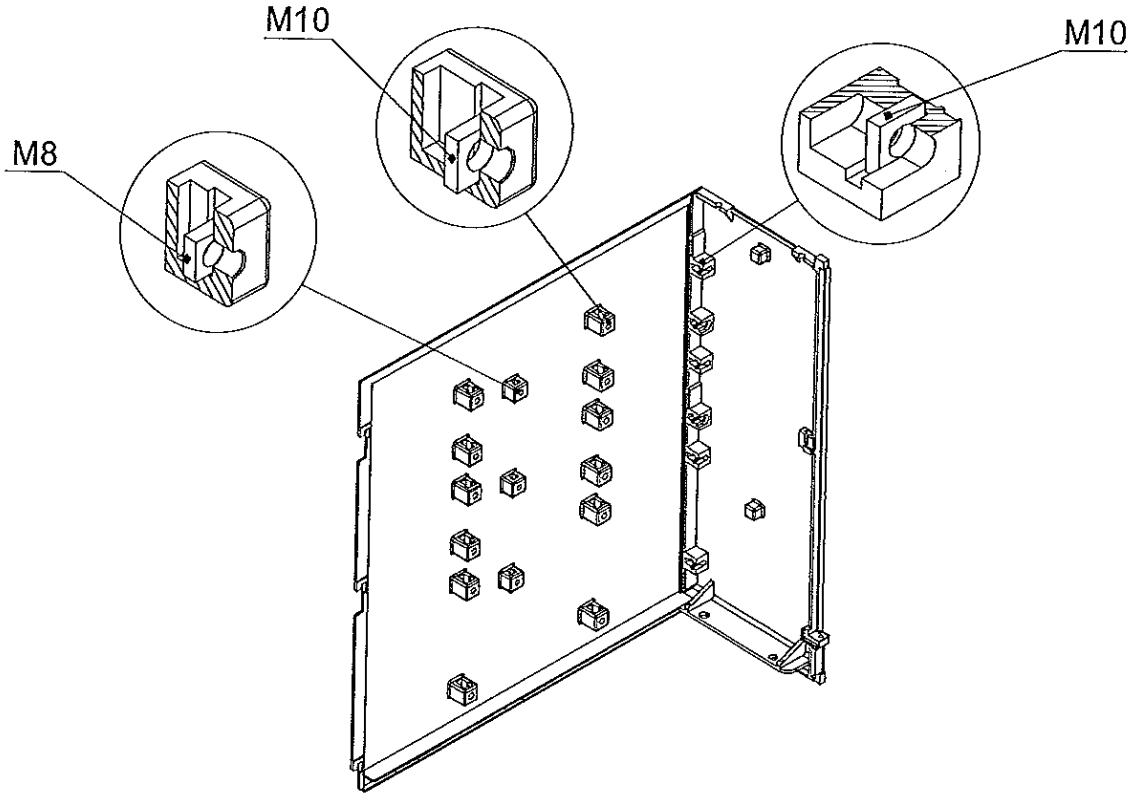
Carrying bars / Trägerschinen

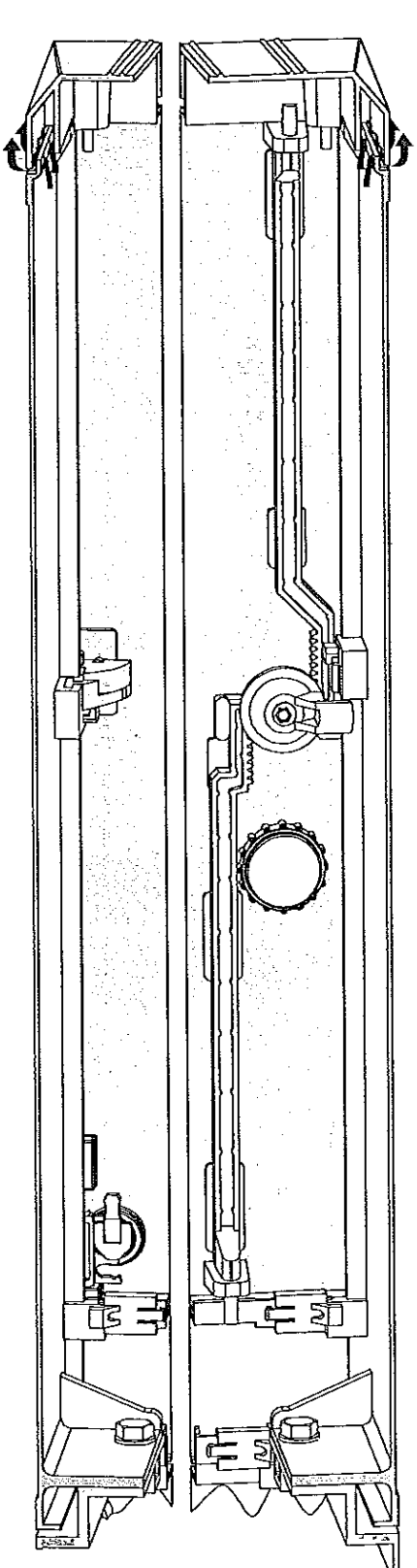


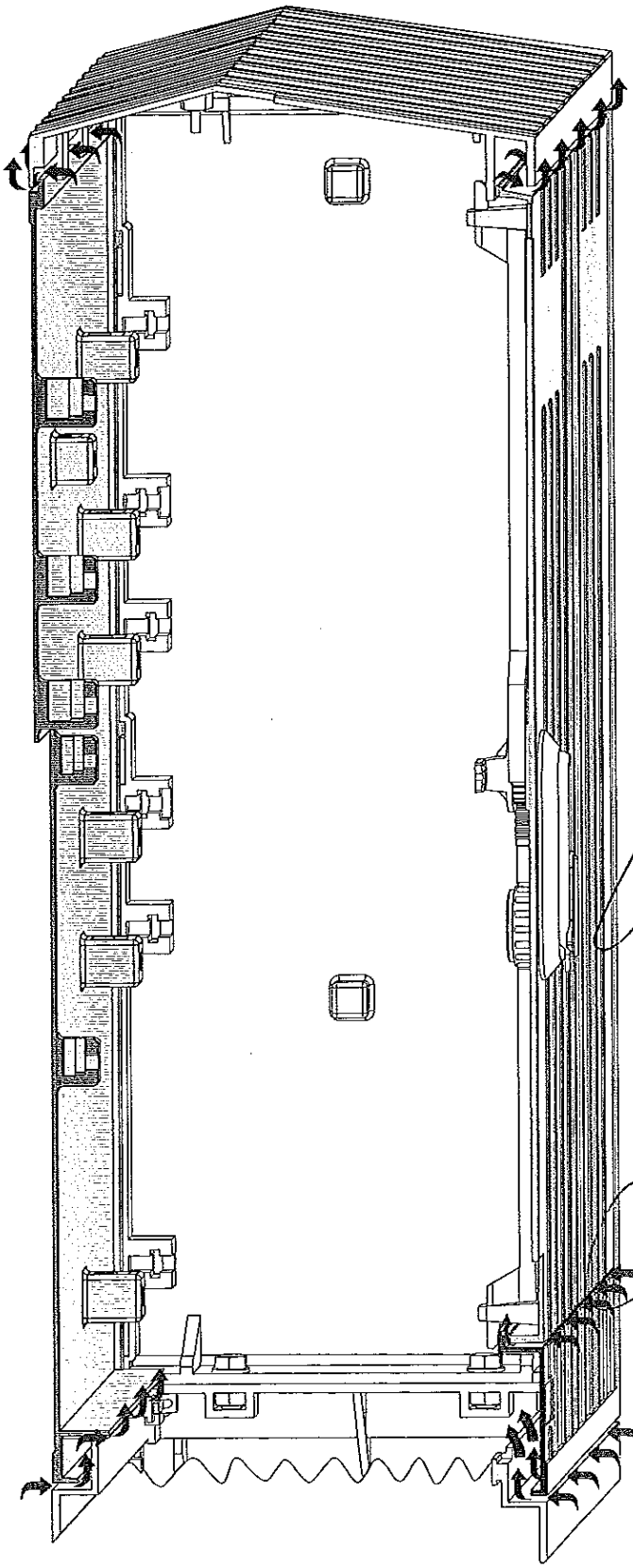
Z - System



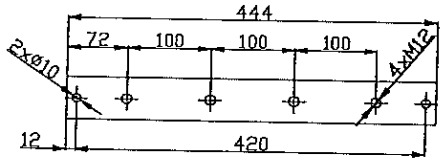
Insulators / Isolatorstütze







SZN Copper bars with pressed nuts / Kupferrschinne mit eingepressten Muttern



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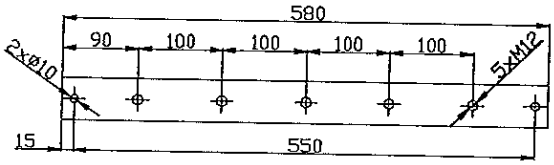
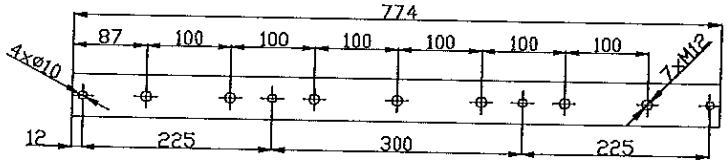
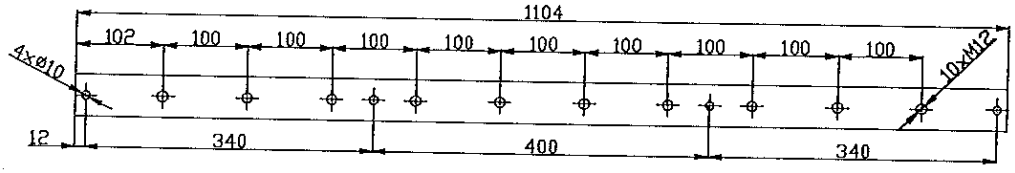


SZN 59

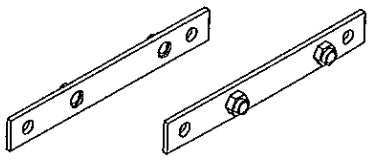


SZN 79

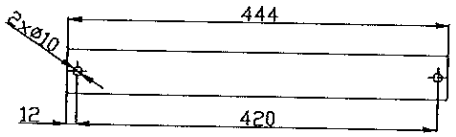


SZN 92

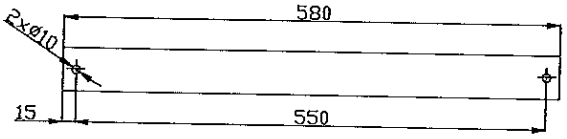
Type / Bauart	Cross-section / Querschnitt	Art. No.
SZN 46	30 x 5	924 4635
	40 x 5	924 4645
SZN 59	30 x 5	924 5935
	40 x 5	924 5945
SZN 79	40 x 5	924 7945
	40 x 10	924 7949
	60 x 10	924 7969
SZN 92	40 x 5	924 9245
	40 x 10	924 9249
	60 x 10	924 9269



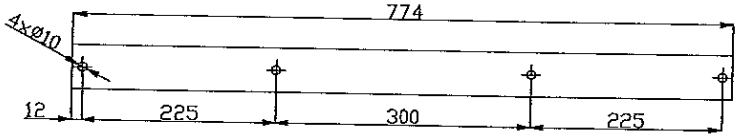
SZB Copper bars without nuts / Kupferrschinne ohne Muttern



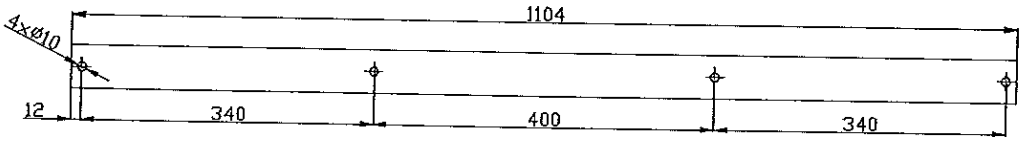
SZB 46



SZB 59



SZB 79



SZB 92

Type / Bauart	Cross-section / Querschnitt	Art. No.
SZB 46	30 x 5	925 4635
	40 x 5	925 4645
SZB 59	30 x 5	925 5935
	40 x 5	925 5945
SZB 79	40 x 5	925 7945
	40 x 10	925 7949
	60 x 10	925 7969
SZB 92	40 x 5	925 9245
	40 x 10	925 9249
	60 x 10	925 9269

Locker / Schloß

RS
RW

RS 400

RS 400U

RS 420

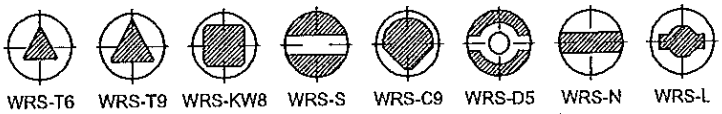
RS 420U

RW 300

Type / Bauart	Art. No.
RS 400	905 0001
RS 400U	905 0002
RS 420	905 0003
RS 420U	905 0004
RW 300	905 0005

Locking system / Zylinderschlosse

WRS
WRH



WRS-T6 WRS-T9 WRS-KW8 WRS-S WRS-C9 WRS-D5 WRS-N WRS-L

WRH-T

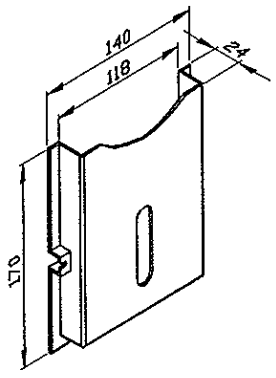
WRH-KW6

WRS-K

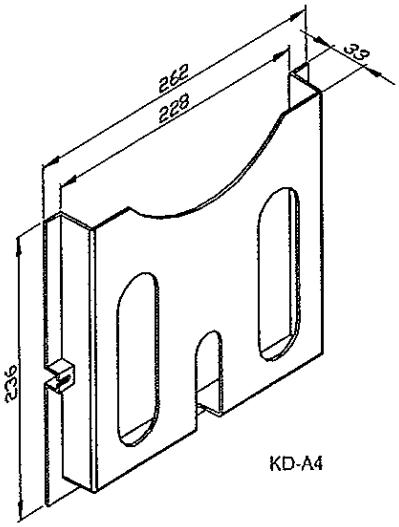
Type / Bauart	Art. No.
WRS-K	918 0001
WRS-T6	918 0002
WRS-T9	918 0003
WRS-KW8	918 0004
WRS-S	918 0005
WRS-C9	918 0006
WRS-D5	918 0007
WRS-N	918 0008
WRS-L	918 0009
WRH-T	918 0010
WRH-KW6	918 0011

Pockets for documents / Schaltplantasche

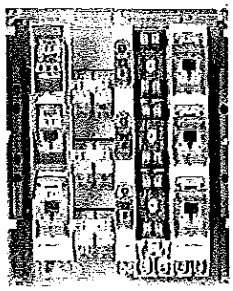
KD

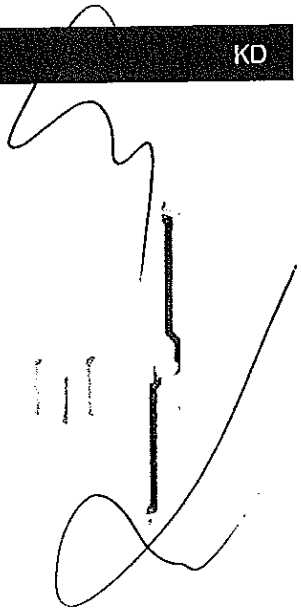


KD-A6



KD-A4

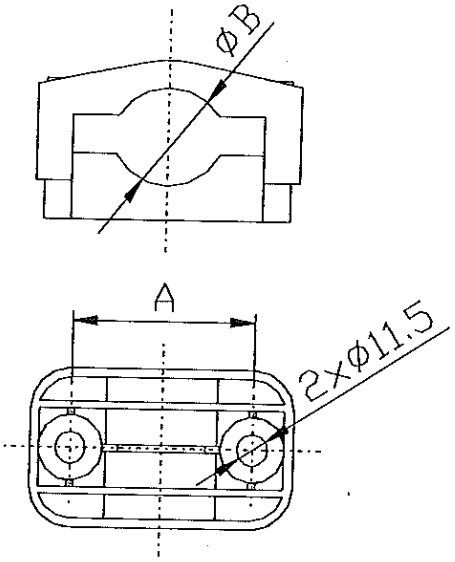


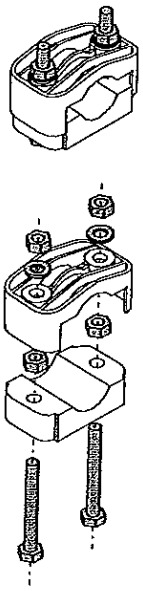


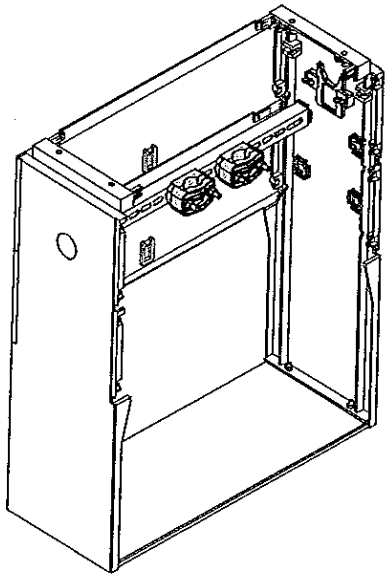
Type / Bauart	Art. No.
KD-A6	919 1417
KD-A4	919 2624

emiter

PUK — Cable holder / Kabelhalterung



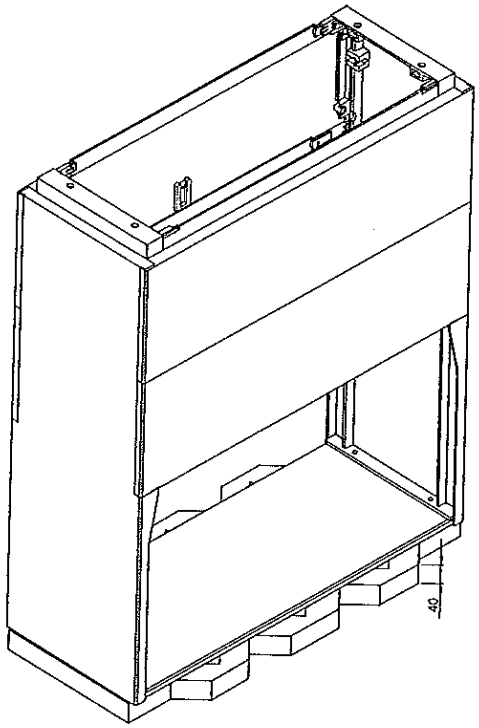


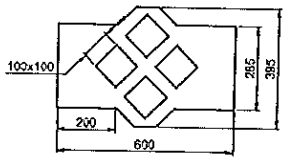


Type / Bauart	A	ØB*	Art. No.
PUK 24	220	24 - 45	920 2445
PUK 45	355	45 - 70	920 4570

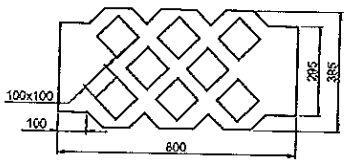
* Diameter range (mm)
* Messbereich (mm)

KSR — Stabilizing grids / Sockelträger

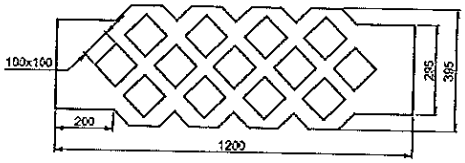




KSR 600



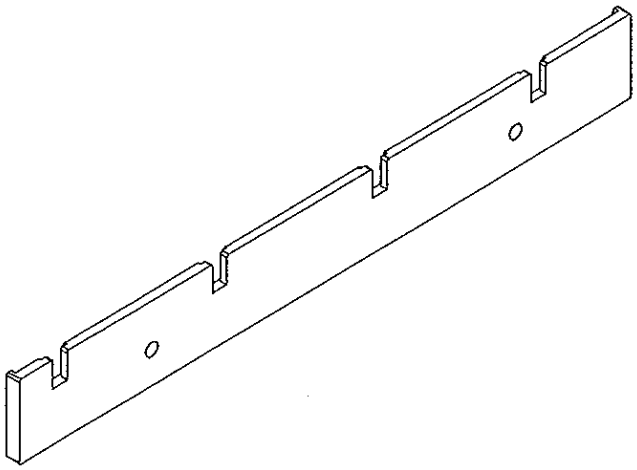
KSR 800



KSR 1200

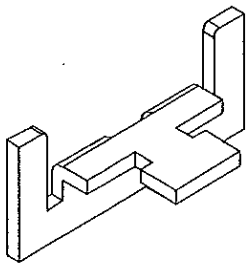
Type / Bauart	Art. No.
KSR 600	921 0264
KSR 800	921 0284
KSR 1200	921 0294

Holder for fuses / Sicherungshalterung — LMA



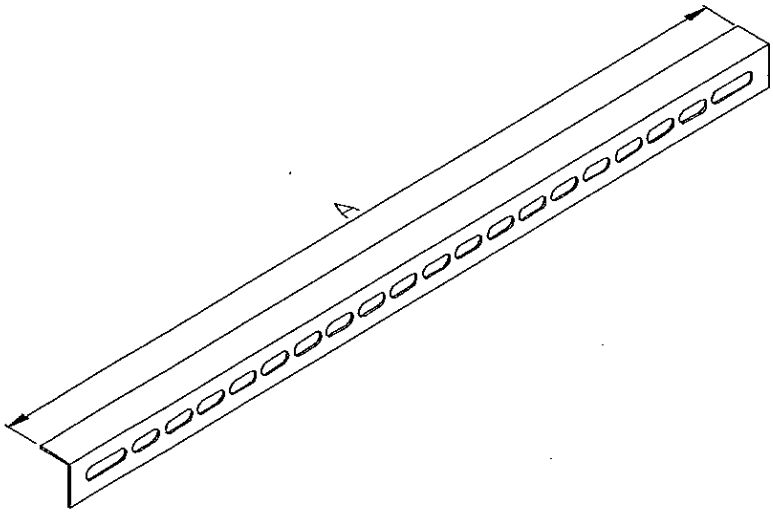
Type / Bauart	Art. No.
LMA	919 3035

Catch for fuse handle / Sicherungsgriffanzapfung — UHU



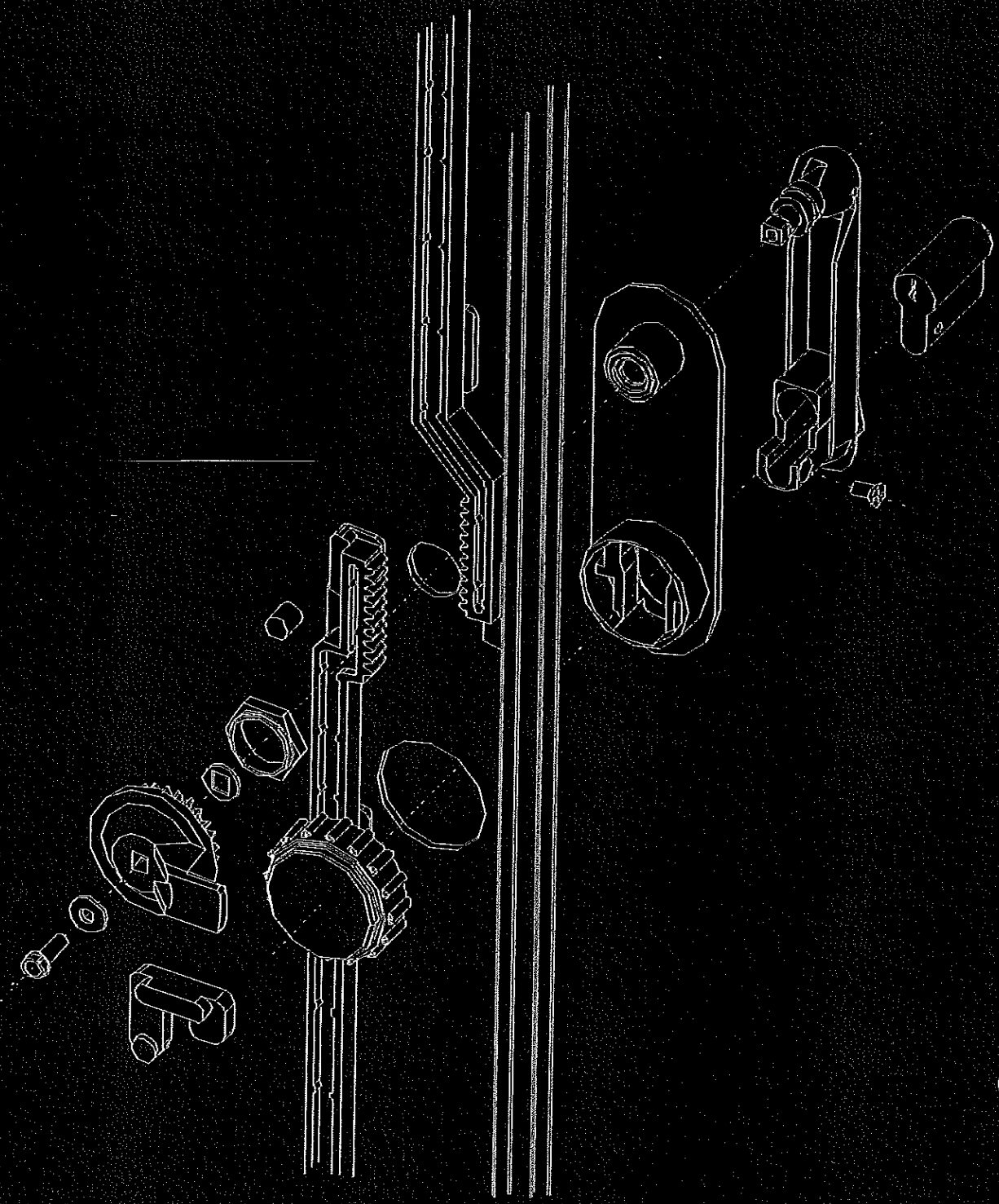
Type / Bauart	Art. No.
UHU	919 3916

Perforated angle bar / Kabelmontage Profil — DKP



Typ / Bauart	A	Art. No.
DKP 46	450	920 4600
DKP 59	585	920 5900
DKP 79	785	920 7900
DKP 92	1110	920 9200

emiter



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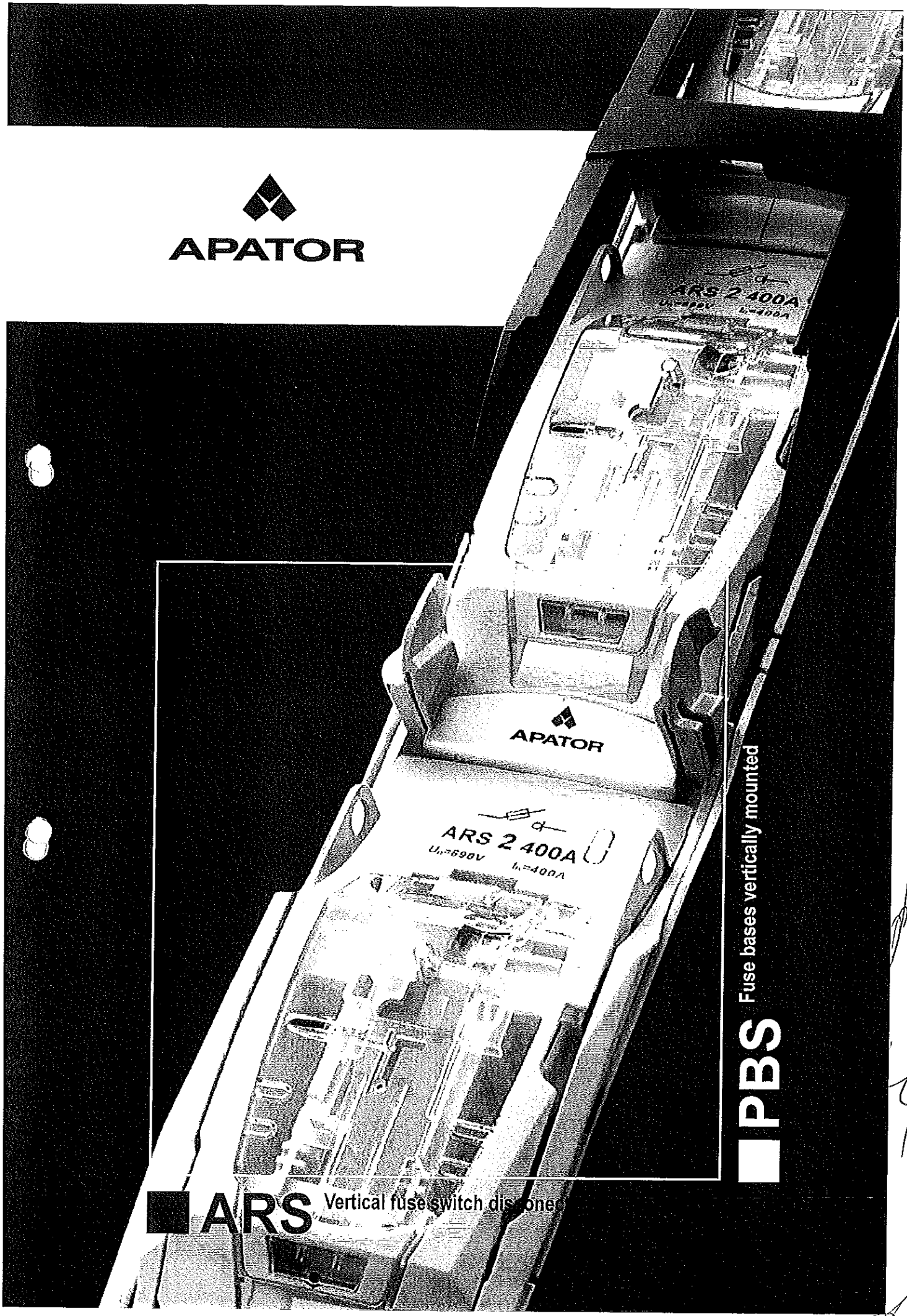
POLAND

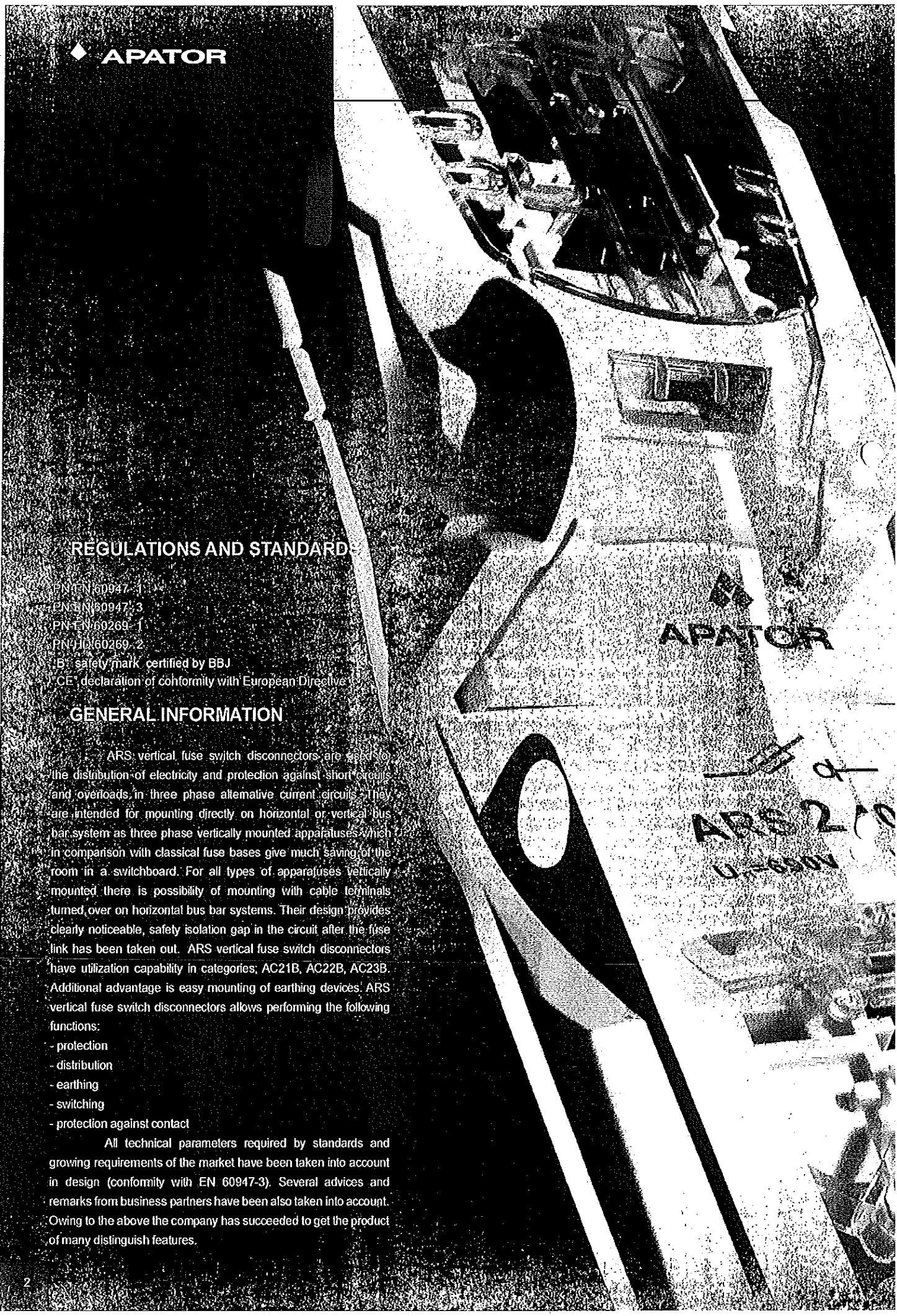
DOE - rok 2005 wydanie 1 ANG/GER

APATOR



PBS Fuse bases vertically mounted

ARS Vertical fuse switch disconnector



REGULATIONS AND STANDARDS

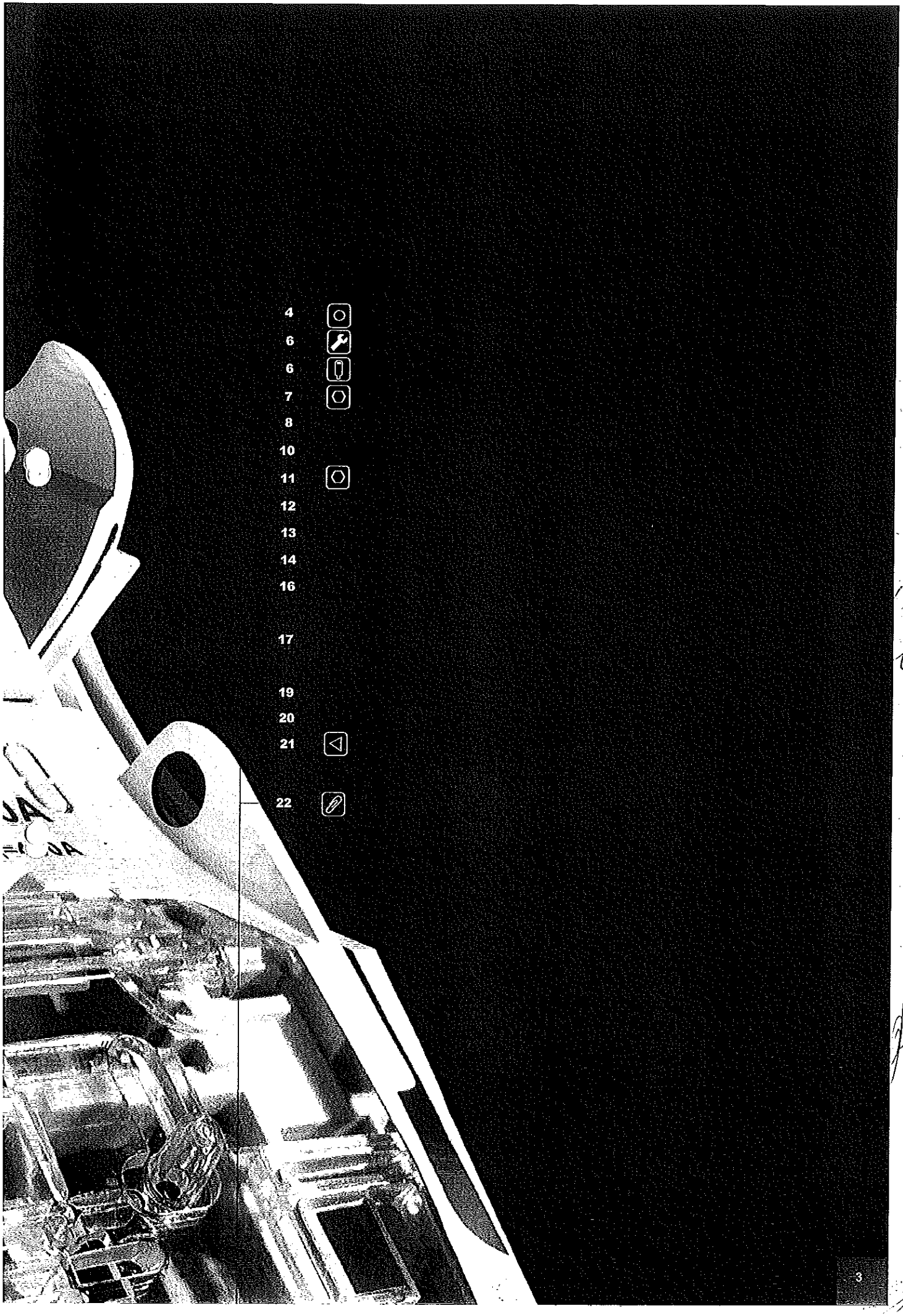
- PN-EN 60947-1
- PN-EN 60947-3
- PN-EN 60269-1
- PN-HD 60269-2
- „B" safety mark certified by BBJ
- „CE" declaration of conformity with European Directive

GENERAL INFORMATION

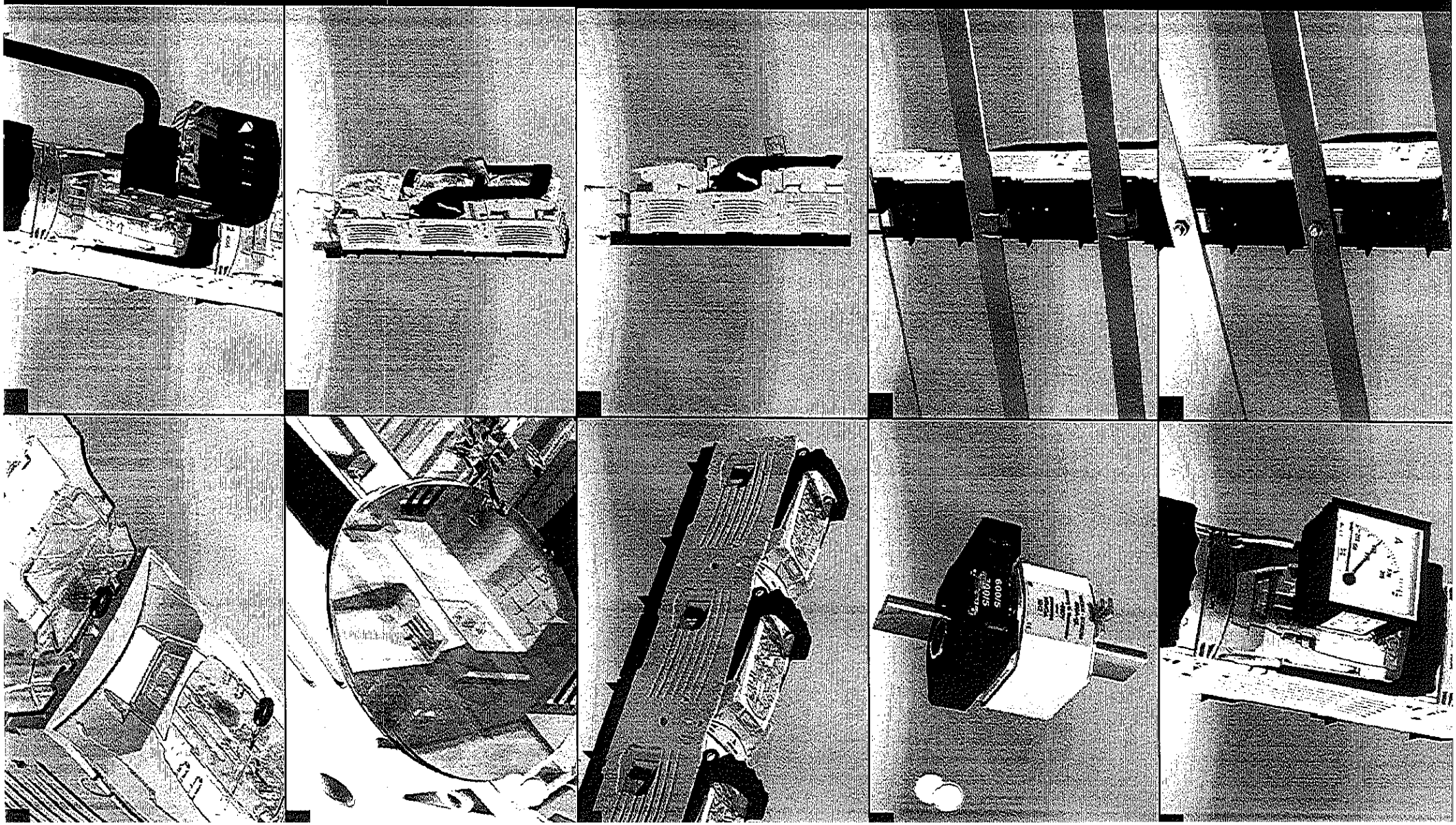
ARS vertical fuse switch disconnectors are used to the distribution of electricity and protection against short circuits and overloads in three phase alternative current circuits. They are intended for mounting directly on horizontal or vertical bus bar system as three phase vertically mounted apparatuses which in comparison with classical fuse bases give much saving of the room in a switchboard. For all types of apparatuses vertically mounted there is possibility of mounting with cable terminals turned over on horizontal bus bar systems. Their design provides clearly noticeable, safety isolation gap in the circuit after the fuse link has been taken out. ARS vertical fuse switch disconnectors have utilization capability in categories; AC21B, AC22B, AC23B. Additional advantage is easy mounting of earthing devices. ARS vertical fuse switch disconnectors allows performing the following functions:

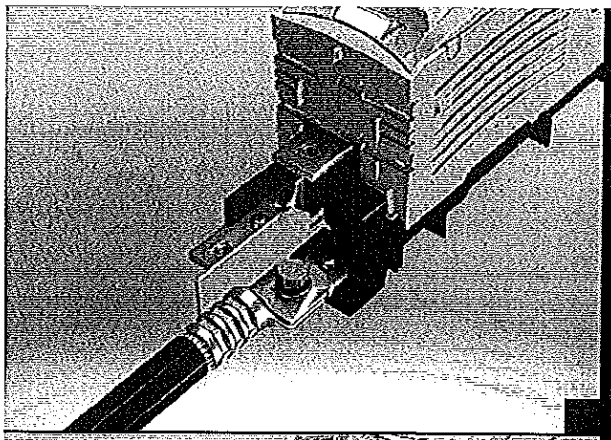
- protection
- distribution
- earthing
- switching
- protection against contact

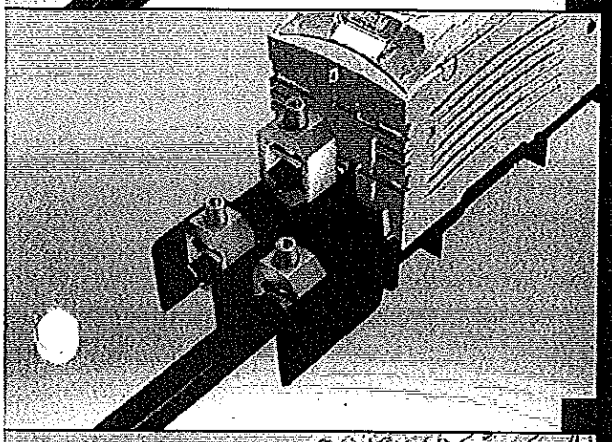
All technical parameters required by standards and growing requirements of the market have been taken into account in design (conformity with EN 60947-3). Several advices and remarks from business partners have been also taken into account. Owing to the above the company has succeeded to get the product of many distinguish features.

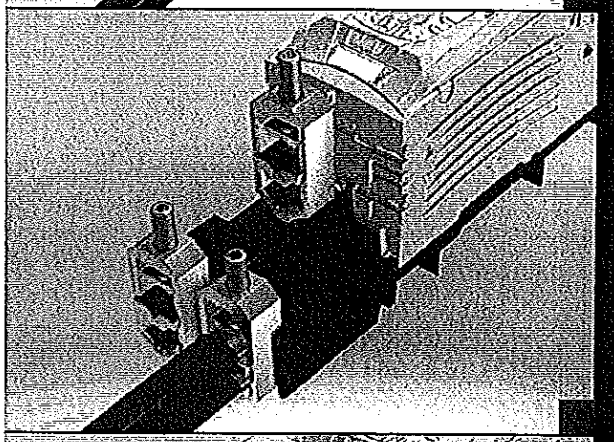


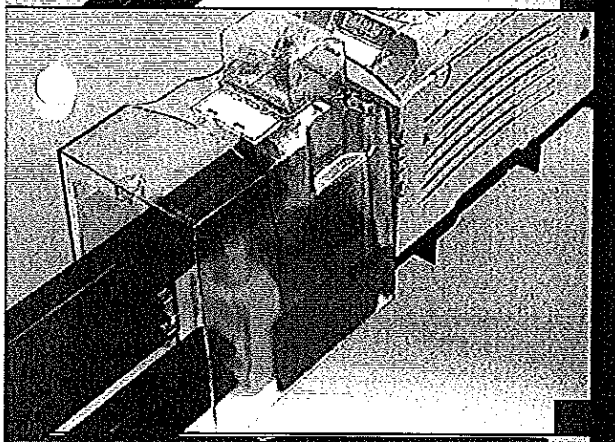
ARS Vertical fuse switch disconnectors

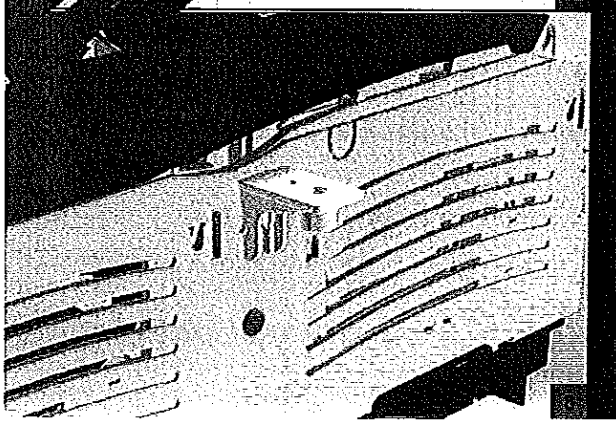












- **Protection degree IP 30 from the front of the apparatuses**
- **Flame retardant plastics in VO flammability**
- **Mounting depth 130 mm and in parking position 230 mm**
- **Double contact clearance in contact system**
- **Arc extinction chambers with deionization plates on every contact**
- **Possibility to change the direction of outgoing feeder up-down**
- **Plastic material of fuse switch disconnectors is recyclable**

1 The mounting of all ARS type apparatuses on bus bars is possible by use either bolts or hook clamps

2 ARS type apparatus can be locked in "parking" position or "switch on" position by use of padlock or by sealing

3 ARS 1,2,3 type apparatuses enable to connect on "temporary basis" for temporary power supply of additional electrical equipment. Optionally.

4 ARS 1,2,3 type apparatuses enable to measure of the current owing to special current transformers built in fuse links. Optionally.

5 ARS 1,2,3 type apparatuses can be equipped with micro switches (auxiliary contacts) indicating the position of the cover with fuse link (positions on-off). Bum out of fuse links can be optionally indicated by neon lamp. Lighting is clearly visible in every condition

6 ARS 1,2,3 type apparatuses enable to seal covers and cover for cable terminal. It is possible to make some descriptions on covers and the cover for cable terminal

7 ARS 1,2,3 type apparatuses are equipped with bolt clamps of V or 2V types. It is possible to connect round or sector conductors with diameters up to 240 mm^2 or up to 300 mm^2 (on special request)

8 Using the brackets it is possible to mount equalizing covers

APATOR

CONSTRUCTION

Vertical fuse switch disconnectors are manufactured in two versions:
– single pole switching (separately each pole)
– three pole switching (three poles at the same time)
They have manual control device therefore making and breaking operations should be done by firm turn. ARS type disconnectors are being offered in the following sizes: 00-160A; 1-250A; 2-400A; 3-630A. The width of ARS type disconnectors in size 00 is 50 mm and sizes of 1-250A;2-400A; and 3-630A is 100 mm. ARS type apparatuses are adapted to be mounted on 185 mm bus bar system. The apparatuses of 00 size are manufactured in two versions:
ARS 00 –(160A) type disconnector for mounting on 185 mm bus bar system.
ARS 00/100 mm – (160A) type disconnector for mounting on 100 mm bus bar system.
The core base of fuse switch disconnectors is made of self extinguishing polyamide reinforced by glass fibre. Silver plated contacts provide low power loss. Clamps in ARS apparatuses enable to connect directly both bare ends of cables and cables with pressed cable terminals. Enclosure of ARS apparatuses (front part of fuse switch disconnector) with arc chambers is made of self extinguishing polyamide reinforced with glass fibre. In standard version there are control holes to measure voltage.
ARS type apparatuses enable to use current transformers and ammeters. Disconnectors provide protection degree of IP 30 (IP 20 with signalling elements). Additionally offered accessories enable to mount ARS apparatuses of different sizes on common bus bar system and they make their operation easier.
Special versions are also available among others:
– ARS of sizes 2/400A and 3/630A with possibility to connect directly two cables with diameter of 240 mm² for each clamp
– 2 x ARS 3-6-M – double disconnector 2x 630A with width of 200 mm² enabling to make and break currents up to 1250A
All sizes of vertical fuse switch disconnectors are provided complete with clamps (i.e. bolt, bridge, V type) and covers for connecting clamps.

TABLE 1. TECHNICAL DATA

ITEM OF ARS	Rated thermal current $I_{th}=I_e$	Rated operational voltage U_n	Utilization category	Switching voltage U_e	Rated making and breaking current I_e	Rated short-circuit making current	Rated short-circuit withstand current	Rated insulation voltage U_i	Rated impulse withstand voltage U_{imp}	Rated making short circuit current I_{cm}	Prospective withstand rated current I_{cw}	Rated frequency	Mechanical life	Electrical life	Protection degree IP	Size of fuse links
	A	V		V	A	kA	kA	V	kV	kA	kA	Hz	cm	cs	IP	
ARS 00/100mm	160	690	AC-22B AC-23B	690 400	160	25	100	1000	8	-	-	50-60	1600	200	30	00
ARS 00-SM	160	690	AC-21B AC-22B	690 500	160	22	100	1000	12	-	-	50-60	1600	200	20	00
ARS 1	250	690	AC-22B	690	250	100	100	1000	12	-	-	50-60	1600	200	30	1
ARS 2	400	690	AC-22B	690	400	100	100	1000	12	-	-	50-60	1000	200	30	2
ARS 3	630	690	AC-22B	690	630	100	100	1000	12	-	-	50-60	1000	200	30	3
2ARS 3	(2 x 630 A) 1260	690	AC-21B	690	(2 x 630 A) 1260	100	100	1000	12	-	-	50-60	600	100	30	3
ARS 910-6-M	910	400	AC-21B	400	910	50	100	1000	12	-	-	50-60	600	100	30	gTr 630 kVA[1]
ARS 1000	1000	400	AC-21B	400	1000	-	-	1000	12	16	12	50-60	600	100	30	solid links

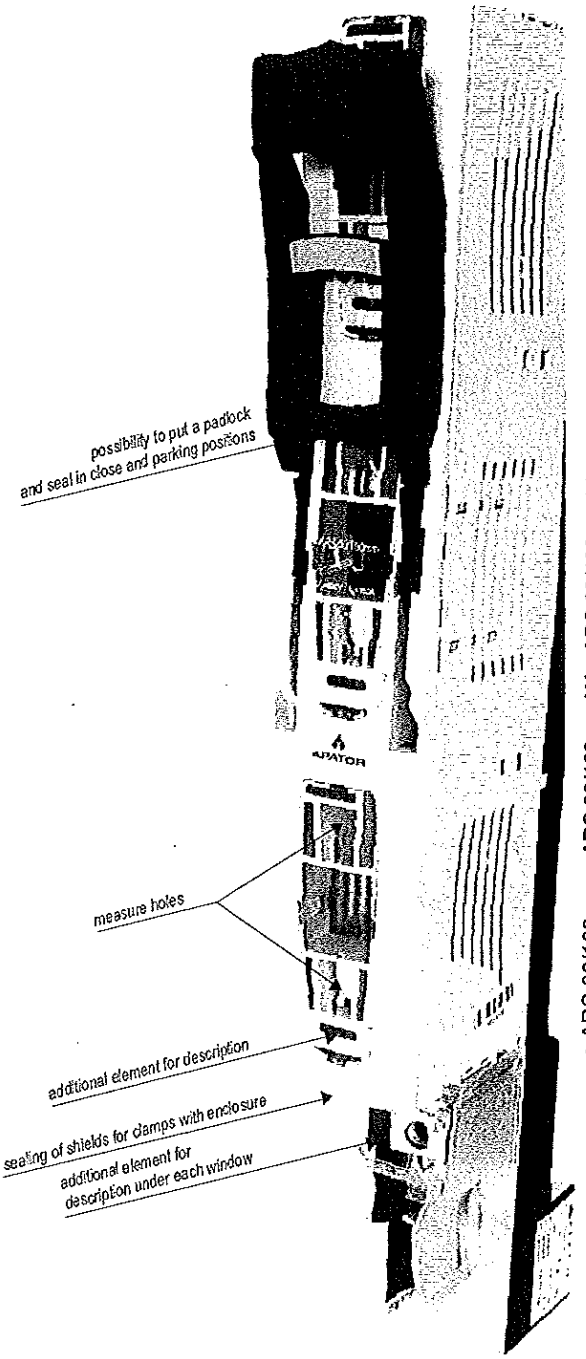
[1] fuse link gTr630kVA, DIN 43620, VDE 0636/2011

OPERATING CONDITIONS

– to be installed in the room free of any dust, aggressive or explosive gases
– altitude up to 2000 meters above sea level
– outdoor – in cabinets with protection degree > IP 34
– ambient temperature from -25°C to +55°C – but in case of use of disconnectors in temperature from +41°C to +45°C current value I_{th} should be reduced by 5% and within temperature range of +46°C to +55°C current value I_{th} should be reduced by 10% ,
– relative humidity of the air should not be higher than 50% at temperature of +40°C

Vertical fuse switch disconnector ARS 00/100 mm 160 A 690 V

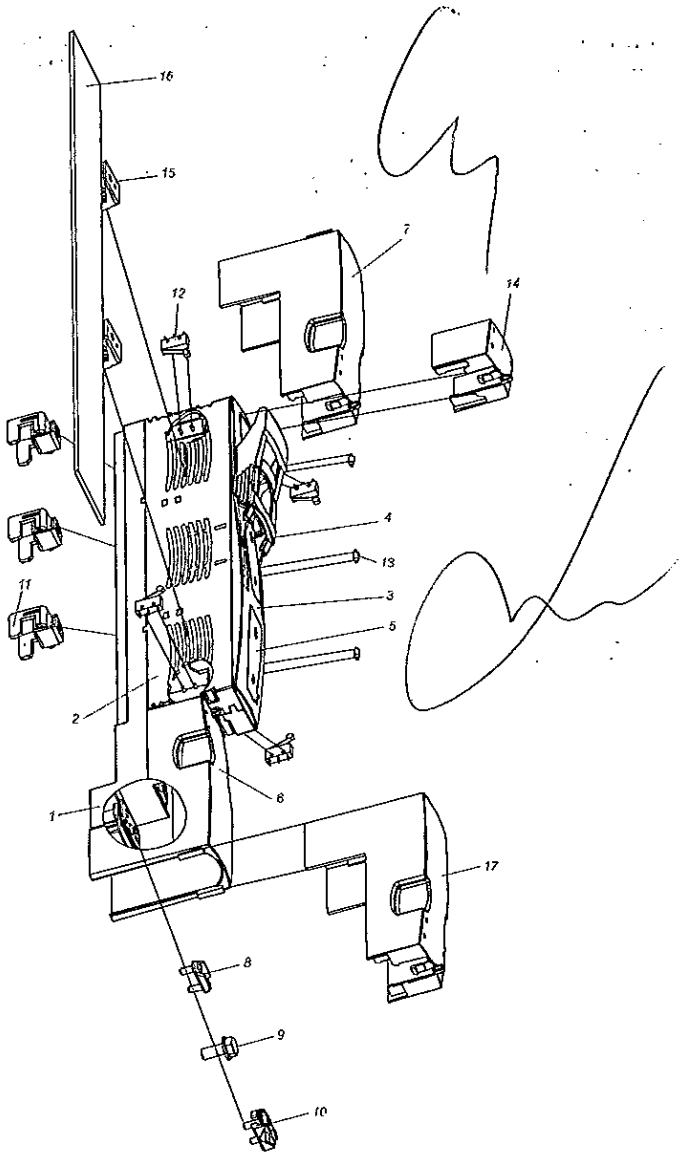
100 mm bus bar system



• ARS 00/100mm • ARS 00/100mm-W • ARS 00/100mm-V •

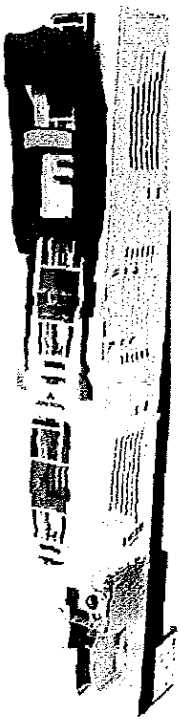
SCHEME 1

1. *Core base*
2. *Enclosure*
3. *Cover*
4. *Handle*
5. *Window*
6. *Cover for calmps*
7. *Upper cover to level the front line*
8. *00-S Bridge clamp*
9. *00-M Bolt clamp*
10. *00-SV clamp for sector shape conductor*
11. *Hook clamp*
12. *Micro switch for the control of cover position*
13. *Signalling element indicating a fuse link burned out*
14. *Description plate*
15. *Supporter for cover of spare place*
16. *Cover for reserve place*
17. *Lower cover to level the front line*



ARS 00/100mm

160 A 690 V



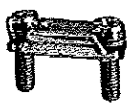
• ARS 00/100mm • ARS 00/100mm-W • ARS 00/100mm-V •

TABLE 2. TECHNICAL DATA			
Item		ARS 00/100mm	
Rated thermal current $I_{th}=I_n$	A	160	
Rated operational voltage U_e	V	690	
Utilization category		AC-22B	AC-23B
Switching voltage U_e	V	690	400
Rated making and breaking current I_e	A	160	
Rated short circuit making current	kA	25	
Rated short circuit withstand current	kA	100	
Rated insulation voltage U_i	V	1000	
Rated impulse withstand voltage U_{imp}	kV	8	
Rated frequency	Hz	50-60	
Mechanical life	cm	1600	
Electrical life	c.s.	200	
Protection degree IP		30	
Weight	kg	1,2	
Size of fuse links		00	
Accessories on pages 22,23			

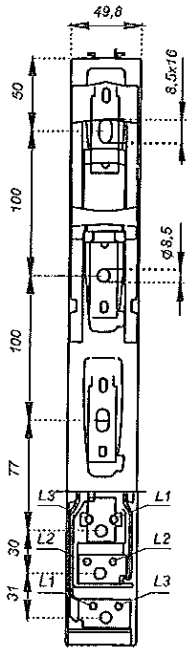
TABLE 3.

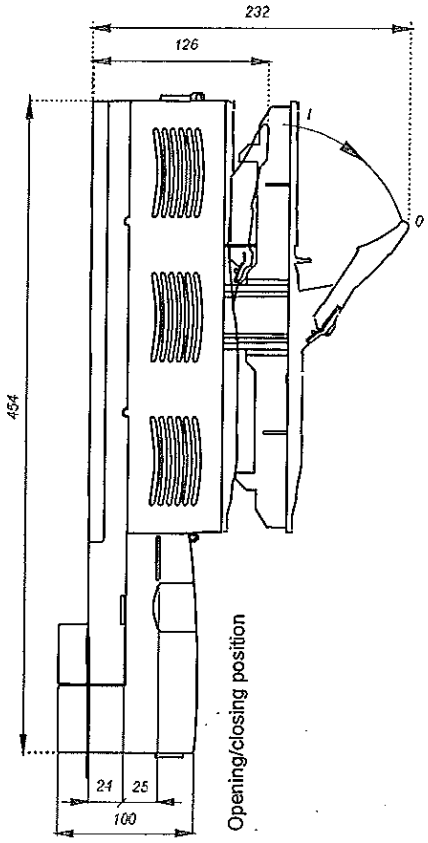
Version		Designation	Part number
ARS 00 / 160 A	Making: 3 phases at the same time by one handle (100 mm bus bar system) + cover,S-bridge clamps [4-70 mm² + M-bolt clamps (M8)]	ARS 00/100mm	63-811628-011
ARS 00 / 160 A	Making: 3 phases at the same time by on handle (100 mm bus bar system), bridge and bolt clamps (4-70 mm²) + signaling of fuse link burn out	ARS 00/100mm-W	63-811628-021
ARS 00 / 160 A	Making: 3 phases at the same time by one handle (100 mm bus bar system) + cover, V --type sector clamps (1,5-95 mm²)	ARS 00/100mm-V	63-811628-031

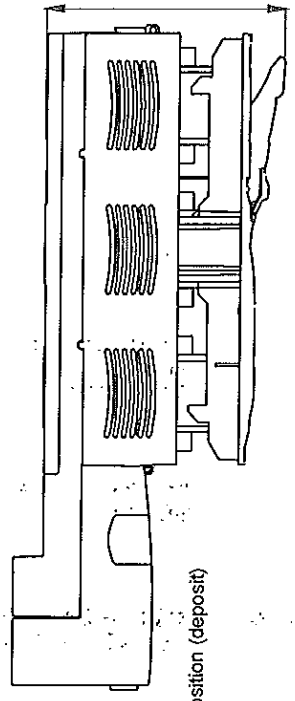
TABLE 4. Designations of ARS 00/100 mm according to type of terminal clamps

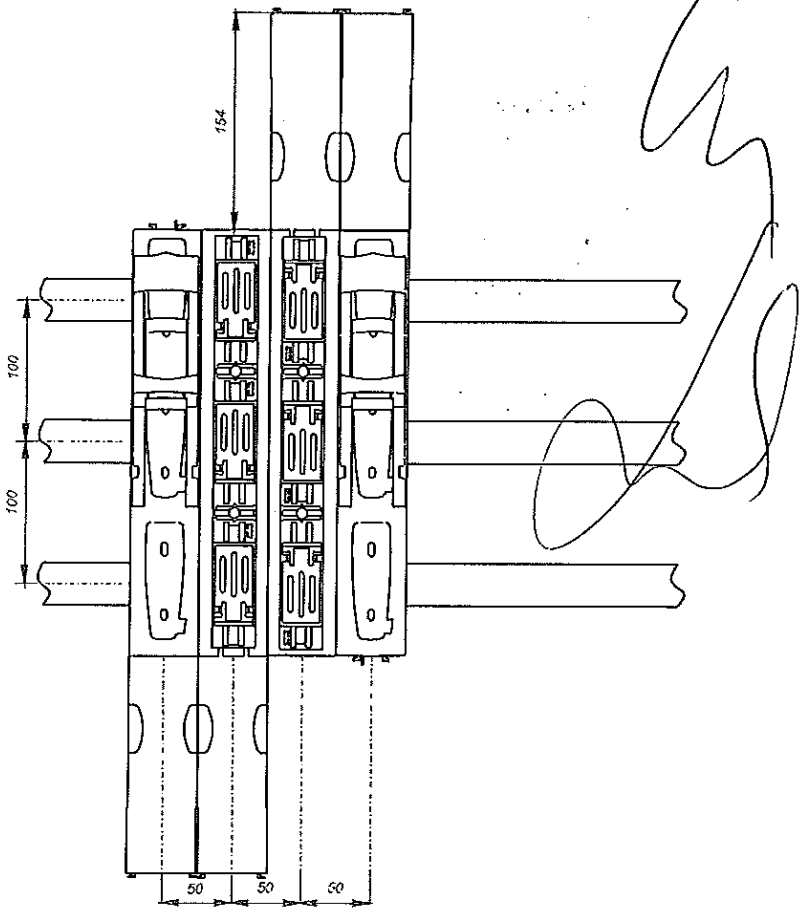
Designation of apparatus	ARS 00/100mm (160 A)		
Clamp	S-bridge clamp (2 x M5)	M-bolt clamp M8	V-shaped clamp (2 x M5)
Picture of clamp			
Cross - section of cable conductors	4-70 mm²	Cable terminal max 185 mm²	1,5 -- 70 mm² 
			1,5- 95 mm² 
Torque moment	3 Nm	12 Nm	3 Nm

Bus bars of maximum width of 20 mm and maximum thickness of 5 mm can be fixed to M type clamps.


49,8
8,5x16
50
100
100
77
30
31
ø8,5
L3
L1
L2
L2
L1
L3


232
126
454
0
21
25
100
Opening/closing position


170
Park position (deposit)


154
100
100
50
50
50

Vertical fuse switch disconnector ARS 00 - SM 160 A 690 V

185 mm bus bar system

• ARS 00-SM • ARS 00-V •

TABLE 5. TECHNICAL DATA

Item		ARS 00-SM	
Rated thermal current $I_{th}=I_n$	A	160	
Rated operational voltage U_e	V	690	
Utilization category		AC-21B	AC-22B
Switching voltage U_e	V	690	500
Rated making and breaking current I_e	A	160	
Rated short circuit making current	kA	22	
Rated short circuit withstand current	kA	100	
Rated insulation voltage U_i	V	1000	
Rated impulse withstand voltage U_{imp}	kV	12	
Rated frequency	Hz	50-60	
Mechanical life	cm	1600	
Electrical life	c.s	200	
Protection degree IP		20	
Weight	kg	2,6	
Size of fuse links		00	
Accessories on pages 22,23			

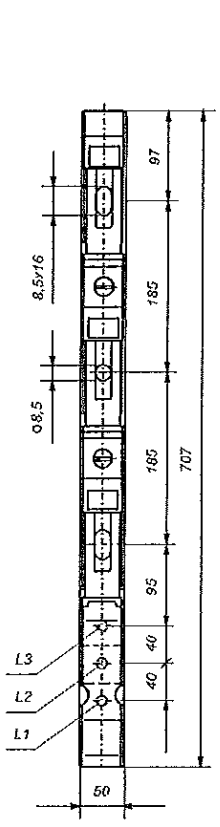
TABLE 6.

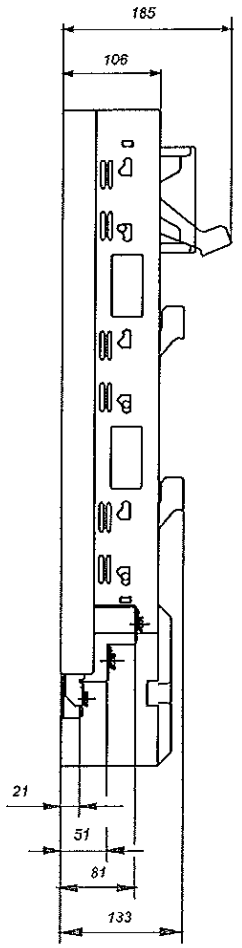
Version		Designation	Part number
ARS 00 / 160 A	Switching - single, cable termination: S-bridge clamps - conductor 4-70 mm², cover	ARS 00-SM	63-811410-011
ARS 00 / 160 A	Switching -single, cable termination : sector clamps -conductor 1,5-95 mm²	ARS 00-V	63-811410-03

TABLE 7. Designations of ARS 00- SM according to type of terminal clamps

Designation of apparatus	ARS 00-SM (160 A)		ARS 00-V (160 A)
Clamp	S-bridge clamp (2 x M5)	M-bolt clamp M8	V-shaped clamp (2 x M5)
Picture of clamp			
Cross-section of cable conductors	4-70 mm²	Cable terminal max 185 mm²	1,5 – 70 mm²  1,5- 95 mm²
Torque moment	3 Nm	12 Nm	3 Nm

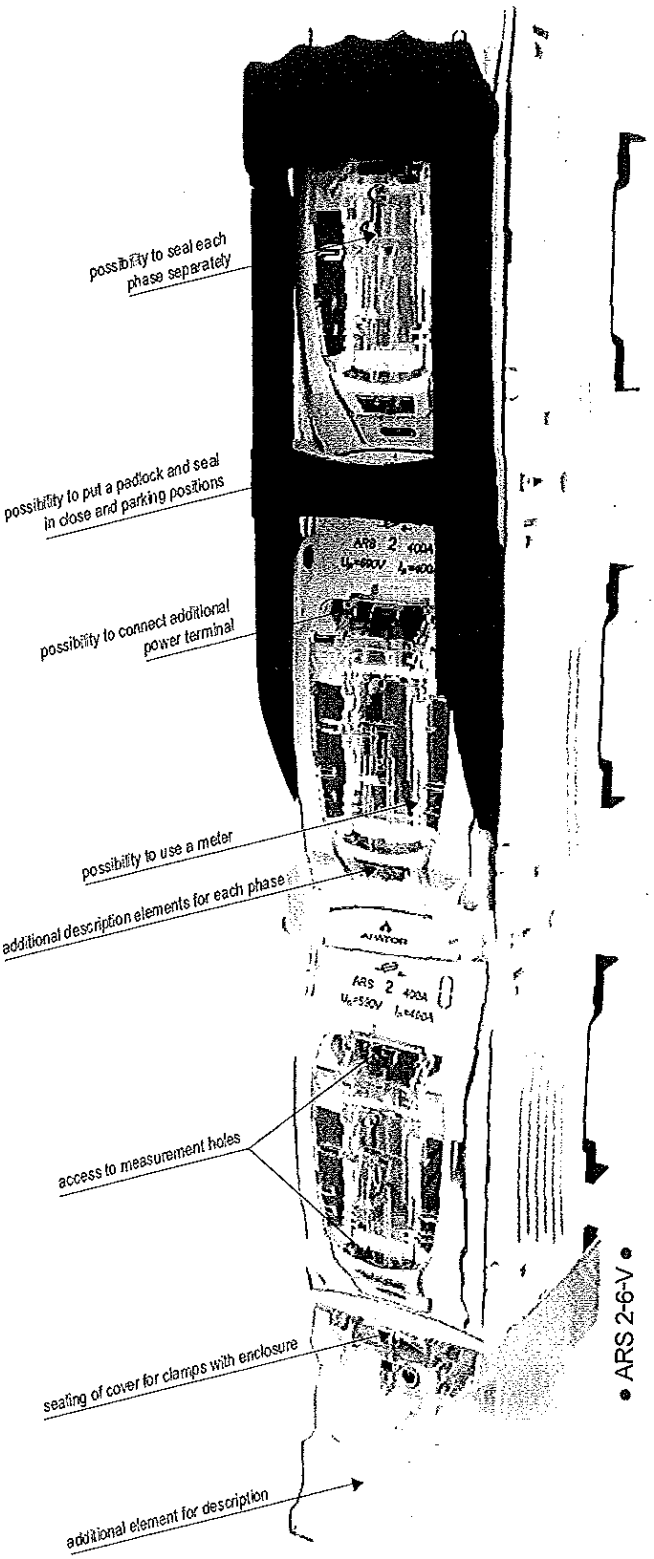
Bus bars of maximum width of 20 mm and maximum thickness of 5 mm can be fixed to M type clamps.





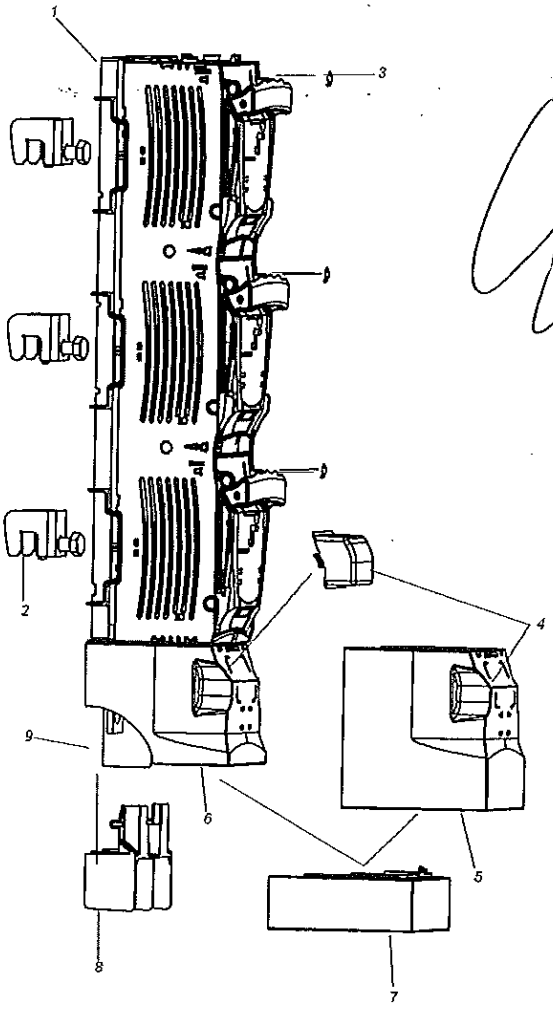
Vertical fuse switch disconnector

ARS 1	250 A	690 V
ARS 2	400 A	690 V
ARS 3	630 A	690 V



SCHEME 1

1. Core base
2. Hook clamp
3. Signalling element indicating a fuse link burn out
4. Cover for clamp 2x 240 mm²
5. Cover for clamps
6. Cover for calmps
7. Cover to level the front line
8. Inlet cover
9. Partition



ARS 1

250 A 690 V

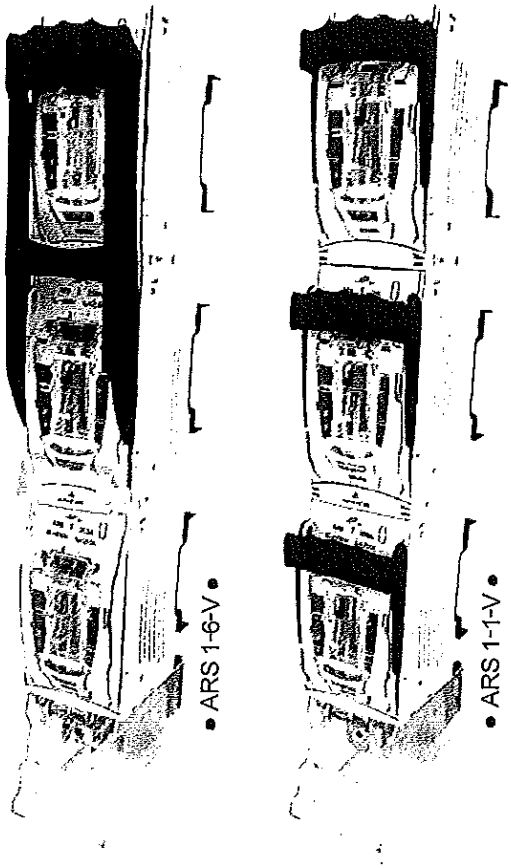
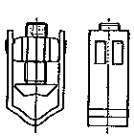


TABLE 8. TECHNICAL DATA		
Item		ARS 1
Rated thermal current $I_{th}=I_n$	A	250
Rated operational voltage U_e	V	690
Utilization category		AC-22B
Switching voltage U_e	V	690
Rated making and breaking current I_e	A	250
Rated short circuit making current	kA	100
Rated short circuit withstand current	kA	100
Rated insulation voltage U_i	V	1000
Rated impulse withstand voltage U_{imp}	kV	12
Rated frequency	Hz	50-60
Mechanical life	cm	1600
Electrical life	cs	200
Protection degree IP		30
Size of fuse links		1
Accessories on pages 22,23		

TABLE 9.

Version		Weight	Designation	Part number
ARS 1 / 250 A	Switching of phases - single, cable terminal: M10 pressed nuts, cover for clamps	4,6 kg	ARS 1-1-M	63-811706-081
ARS 1 / 250 A	Switching of 3 phases at the same time by handle, cable terminal, M10 pressed nuts, cover for clamps	4,6 kg	ARS 1-6-M	63-811707-081
ARS 1 / 250 A	Switching of phases --single , V-shaped cable terminal, V-shaped clamping ring 240 mm², cover for clamps	4,9 kg	ARS 1-1-V	63-811706-071
ARS 1 / 250 A	Switching: 3 phases at the same time by one handle, V-shaped cable terminal, V-shaped clamping ring 240 mm², cover for clamps	4,9 kg	ARS 1-6-V	63-811707-071

TABLE 10. Designations of ARS 1 according to type of terminal clamps

Designation of apparatus	ARS 1-x-V (250 A)		ARS 1-x-M (250 A)	
Clamp	V-shaped steel HS 50-240		M- bolt clamp M10 (pressed nut)	
Drawing of clamp		Cross-section of cable conductors: V-shaped steel to direct fixing of conductor with bare end with cross-section: 35-120 mm² ⊗ 35-150 mm² ● 50-185 mm² ◈ 50 -240 mm² ◆		Cross-section of cable conductors: Cable terminal
Torque moment	40 Nm		32 Nm	

Bus bars of maximum width of 40 mm and maximum thickness of 8 mm can be fixed to M type clamps when isolating partition between phases is applied.

400 A 690 V

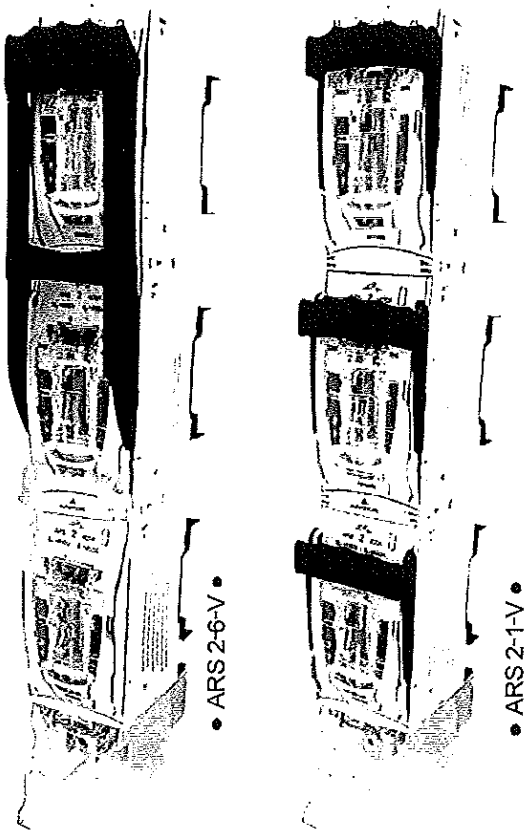
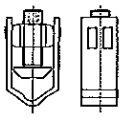


TABLE 11. TECHNICAL DATA		
Item		ARS 2
Rated thermal current $I_0=I_e$	A	400
Rated operational voltage U_e	V	690
Utilization category		AC-22B
Switching voltage U_e	V	690
Rated making and breaking current I_e	A	400
Rated short circuit making current	kA	100
Rated short circuit withstand current	kA	100
Rated insulation voltage U_i	V	1000
Rated impulse withstand voltage U_{imp}	kV	12
Rated frequency	Hz	50-60
Mechanical life	c/h	1000
Electrical life	c/s	200
Protection degree IP		30
Size of fuse links		2
Accessories on pages 22,23		

TABLE 12.

Version		Weight	Designation	Part number
ARS 2 / 400 A	Switching of phases - single, cable terminal: M10 pressed nuts, cover for clamps	4,9 kg	ARS 2-1-M	63-811706-031
ARS 2 / 400 A	Switching of 3 phases at the same time by handle, cable terminal, M10 pressed nuts, cover for clamps	4,9 kg	ARS 2-6-M	63-811707-031
ARS 2 / 400 A	Switching of phases -single , V-shaped cable terminal, V- shaped cable, V-shaped terminal ring 240 mm², cover for clamps	5,2 kg	ARS 2-1-V	63-811706-011
ARS 2 / 400 A	Switching: 3 phases at the same time by one handle, V-shaped cable terminal, V-shaped clamping ring 240 mm², cover for clamps	5,2 kg	ARS 2-6-V	63-811707-011

TABLE 13. Designations of ARS 2 according to type of terminal clamps

Designation of apparatus	ARS 2-x-V (400 A)		ARS 2-x-M (400 A)	
Clamp	V-shaped steel HS 50-240		M- bolt clamp M10 (pressed nut)	
Drawing of clamp		Cross-section of cable conductors: V-shaped steel to direct fixing of conductor with bare end with cross-section: 35-120 mm² ⊗ 35-150 mm² ● 50-185 mm² ◈ 50-240 mm² ◆		Cross-section of cable conductors: Cable terminal
Torque moment	40 Nm		32 Nm	

Bus bars of maximum width of 40 mm and maximum thickness of 8 mm can be fixed to cable clamps when isolating partition between phases is applied.

Vertical fuse switch disconnector with clamps of V shaped - 2 x 240 mm²

(There is possibility to mount 2 conductors with cross section of 240 mm² in each clamp)

ARS 2 400 A 690 V
ARS 3 630 A 690 V

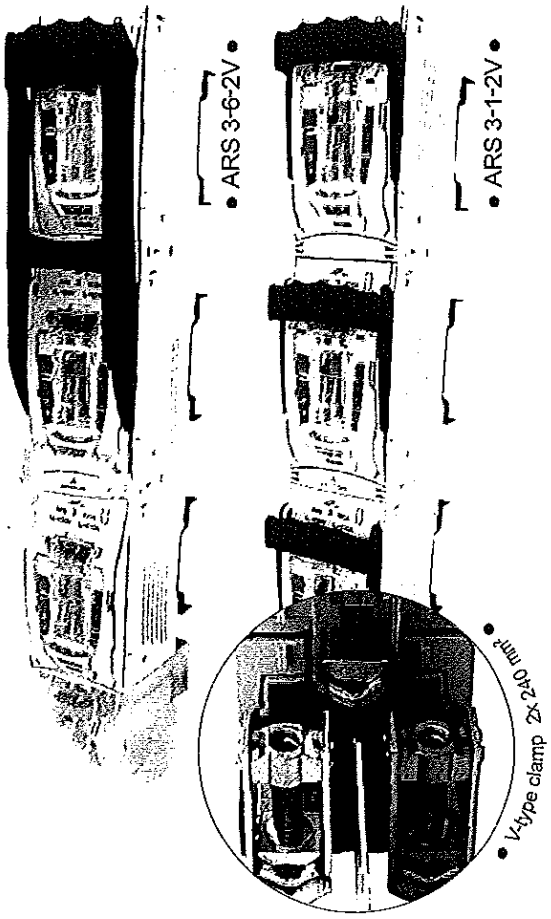


TABLE 17. TECHNICAL DATA

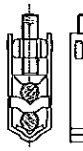
Item		ARS 2	ARS 3
Rated thermal current $I_{th}=I_e$	A	400	630
Rated operational voltage U_e	V	690	690
Utilization category		AC-22B	AC-22B
Switching voltage U_e	V	690	690
Rated making and breaking current I_e	A	400	630
Rated short circuit making current	kA	100	100
Rated short circuit withstand current	kA	100	100
Rated insulation voltage U_i	V	1000	1000
Rated impulse withstand voltage U_{imp}	kV	12	12
Rated frequency	Hz	50-60	50-60
Mechanical life	cms	1000	1000
Electrical life	c.s.	200	200
Protection degree IP		30	30
Size of fuse links		2	3

Accessories on pages 22,23

TABLE 18.

Version		Weight	Designation	Part number
ARS 2 / 400 A	Switching of phases - single, 2V shaped cable terminal + V shaped clamping rings 2 x35-240 mm² + cover for clamps	5,8 kg	ARS 2-1-2V	63-811706-051
ARS 2 / 400 A	Switching of 3 phases at the same time by handle, 2V shaped cable terminal + V- shaped clamping rings 2x 35-35-240 mm² + cover for clamps	5,8 kg	ARS 2-6-2V	63-811707-051
ARS 3 / 630 A	Switching of phases –single , 2V-shaped cable terminal, V- shaped cable, V-shaped terminal rings 2x35-240 mm² + cover for clamps	6,4 kg	ARS 3-1-2V	63-811706-061
ARS 3 / 630 A	Switching: 3 phases at the same time by one handle, 2V-shaped cable terminal, V-shaped clamping rings 2x35-240 mm² + cover for clamps	6,4 kg	ARS 3-6-2V	63-811707-061

TABLE 19. Designations of ARS 2 x 240 mm² according to type of terminal clamps

Designation of apparatus	ARS 2- x- 2V (400A), ARS 3-x-2V (630A)	
Clamp	V- shaped clamp HS 2/50-240	
Drawing of clamp		Cross-section of cable conductors: V-shaped clamp to direct fixing of two conductors with bare ends with cross-sections: 35- 150 mm² ▩ 35- 185 mm² ● 50- 185 mm² ◆ 50 - 240 mm² ◆
Torque moment	40 Nm	

Vertical fuse switch disconnector with side cable terminal

(separation, coupling of bus bar system)

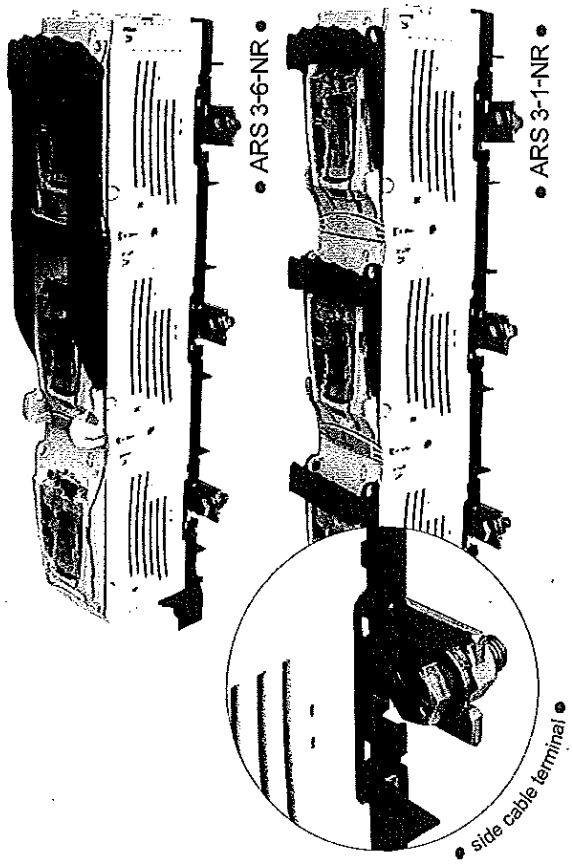


TABLE 20. TECHNICAL DATA

Item		ARS 2	ARS 3
Rated thermal current $I_{th}=I_n$	A	400	630
Rated operational voltage U_e	V	690	690
Utilization category		AC-22B	AC-22B
Switching voltage U_e	V	690	690
Rated making and breaking current I_e	A	400	630
Rated short circuit making current	kA	100	100
Rated short circuit withstand current	kA	100	100
Rated insulation voltage U_i	V	1000	1000
Rated impulse withstand voltage U_{imp}	kV	12	12
Rated frequency	Hz	50-60	50-60
Mechanical life	c/h	1000	1000
Electrical life	c.s.	200	200
Protection degree IP		30	30
Weight	kg	4,6	5,5
Size of fuse links		2	3

Accessories on pages 22,23

TABLE 21.

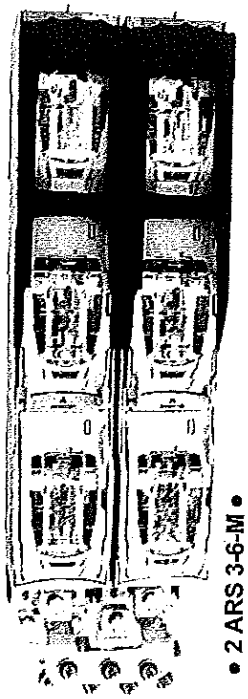
Version		Designation	Part number
ARS 2 / 400 A	Switching of phases - single, with cable terminal bus bars on the left side, cable clamps- bolt M12	ARS 2-1-NL	Non-standard
ARS 2 / 400 A	Switching of phases - single, with cable terminal bus bars on the right side, cable clamps – bolt M12	ARS 2-1-NR	Non-standard
ARS 2 / 400 A	Switching of phases – at the same time by on handle, with cable terminal bus bars on the left side, cable clamps – bolt M12	ARS 2-6-NL	Non-standard
ARS 2 / 400 A	Switching of phases at the same time by one handle, with cable terminal bus bars on the right side, cable clamps – bolt M12	ARS 2-6-NR	Non-standard
ARS 3 / 630 A	Switching of phases - single, with cable terminal bus bars on the left side, cable clamps- bolt M12	ARS 3-1-NL	Non-standard
ARS 3 / 630 A	Switching of phases - single, with cable terminal bus bars on the right side, cable clamps – bolt M12	ARS 3-1-NR	Non-standard
ARS 3 / 630 A	Switching of phases – at the same time by on handle, with cable terminal bus bars on the left side, cable clamps – bolt M12	ARS 3-6-NL	Non-standard
ARS 3 / 630 A	Switching of phases at the same time by one handle, with cable terminal bus bars on the right side, cable clamps – bolt M12	ARS 3-6-NR	Non-standard

TABLE 22. Designations of ARS 2 and ARS 3 with side cable terminal of bus bars according to type of terminal clamps

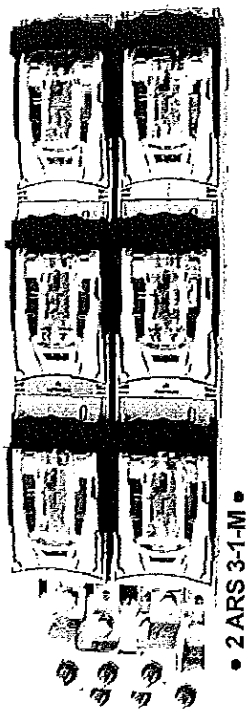
Designation of apparatus	ARS 2-x-NL (400 A)	ARS 2-x-NR (400 A)	ARS 3-x-NL (630 A)	ARS 3-x-NR (630 A)
Clamp	Bolt M12	Bolt M12	Bolt M12	Bolt M12
Drawing of clamp				
Cable terminal	Left side	Right side	Left side	Right side
Torque moment	56 Nm	56 Nm	56 Nm	56 Nm

Vertical fuse switch disconnector (double) 2ARS 3 2 x 630 A

Width of the module – 200 mm



• 2 ARS 3-6-M •



• 2 ARS 3-1-M •

TABLE 23 TECHNICAL DATA

Item		2ARS 3 [1]
Rated thermal current $I_n = I_e$	A	(2 x 630 A) 1260
Rated operational voltage U_e	V	690
Utilization category		AC-21B
Switching voltage U_s	V	690
Rated making and breaking current I_c	A	(2 x 630 A) 1260
Rated short circuit making current	kA	100
Rated short circuit withstand current	kA	100
Rated insulation voltage U_i	V	1000
Rated impulse withstand voltage U_{imp}	kV	12
Rated frequency	Hz	50-60
Mechanical life	cm	600
Electrical life	c.s.	100
Protection degree IP		30
Weight	kg	14
Size of fuse links		3
Accessories on pages 22,23		

[1] apparatus under testing, technical parameters can be changed

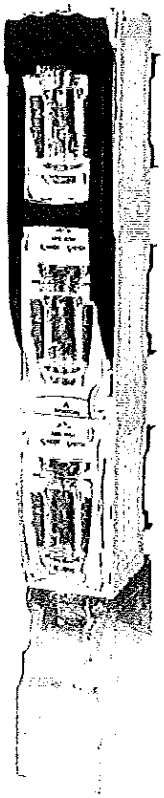
TABLE 24.

Version	Designation	Part number
Switching: 3 phases at the same time by one handle, mechanically and electrically coupled two ARS 3 type disconnectors	2ARS 3-6 M	Non-standard
Switching of phases - single, mechanically and electrically coupled two ARS 3 type disconnectors	2ARS 3-1 M	Non-standard

TABLE 25. Designations of 2ARS 3 according to type of terminal clamps

Designation of apparatus	2ARS 3-x-M (2 x 630 A)
Clamp	Pressed bolt M12
Cross-section of conductor	Cable terminals maximum 300 mm²
Torque moment	56 Nm

Vertical fuse switch disconnector ARS 910-6-M, ARS 1000



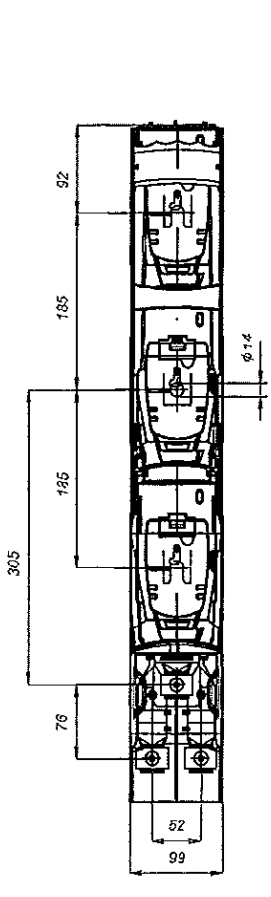
• ARS 910-6-M •

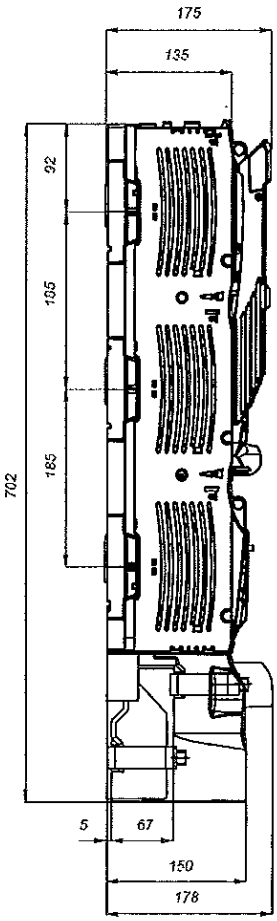
TABLE 26. TECHNICAL DATA

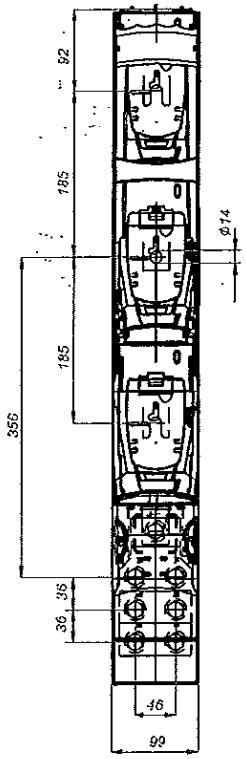
Item		ARS 910-6-M	ARS 1000
Rated thermal current $I_{th}=I_n$	A	910	1000
Rated operational voltage U_n	V	400	400
Utilization category		AC-21B	AC-21B
Switching voltage U_e	V	400	400
Rated making and breaking current I_e	A	910	-
Rated short circuit making current	kA	50	-
Rated short circuit withstand current	kA	100	-
Rated insulation voltage U_i	V	1000	1000
Rated impulse withstand voltage U_{imp}	kV	12	12
Rated making short circuit current I_{cm}	kA	-	16
Prospective withstand rated current I_{cw}	kA	-	12
Rated frequency	Hz	50-60	50-60
Mechanical life	cm	600	600
Electrical life	c.s.	100	100
Protection degree IP	-	30	30
Weight	kg	8,7	8,7
Size of fuse links		gTr 630kVA[1]	solid links

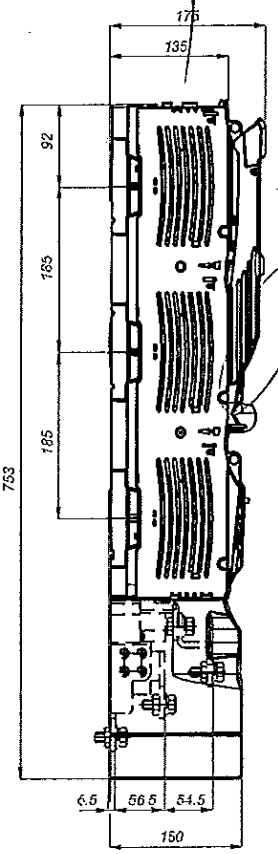
[1] fuse link gTr 630kVA,DIN 43620,VDE 0636/2011

Accessories on pages 22,23

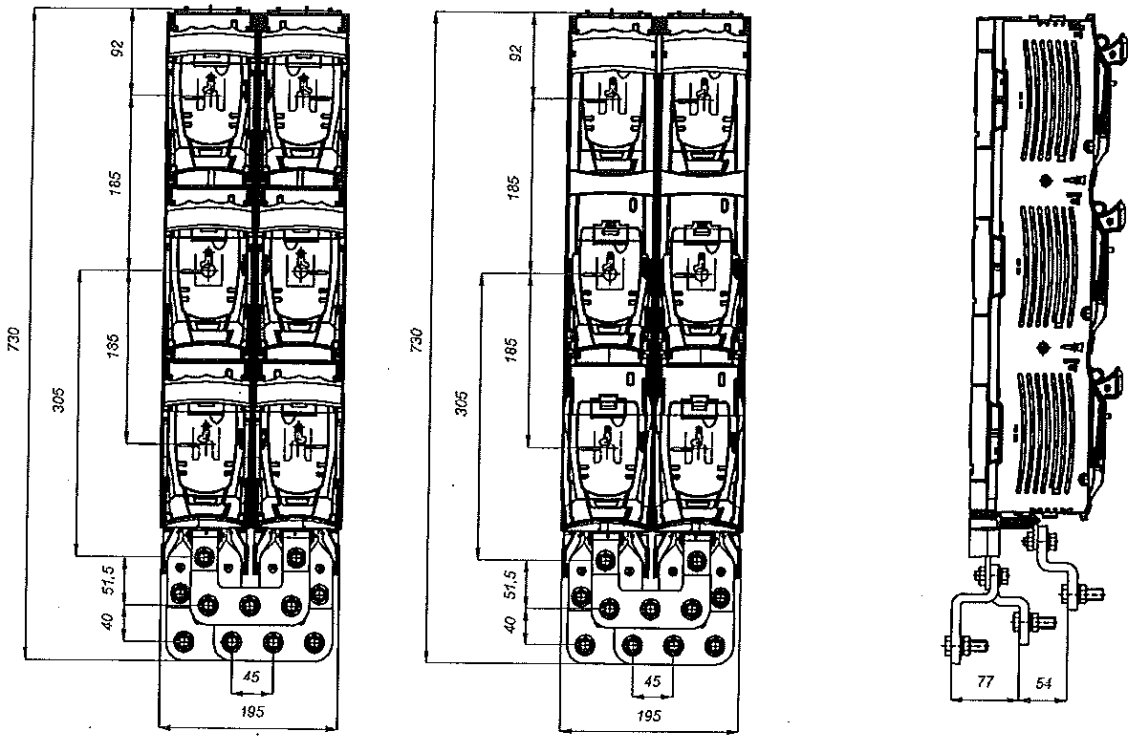




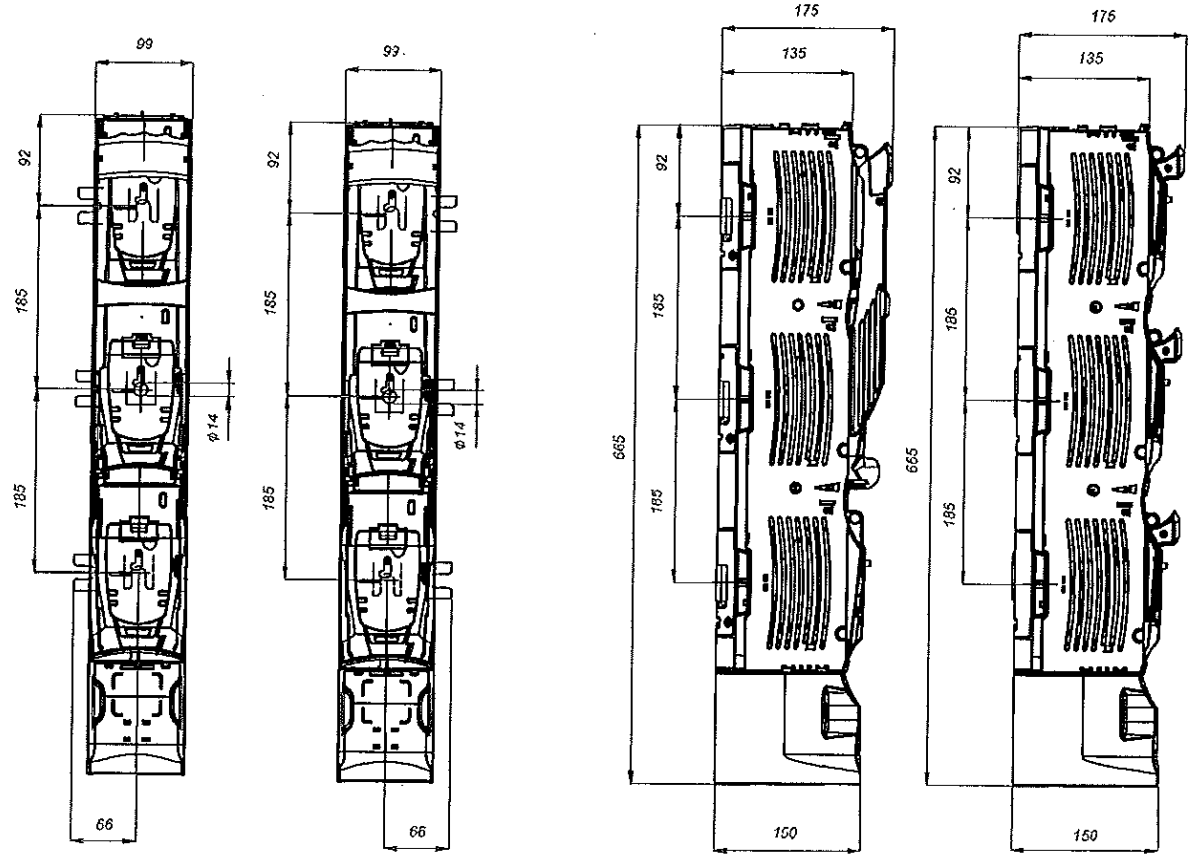




2ARS 3



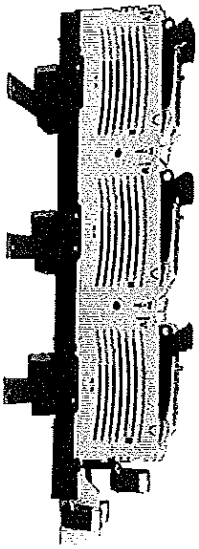
ARS with side cable terminal

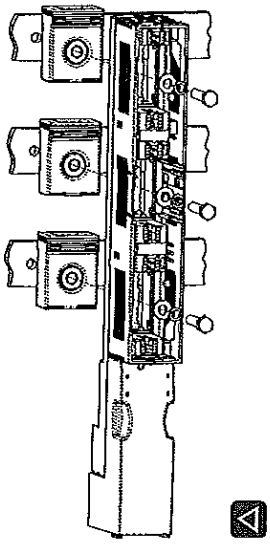


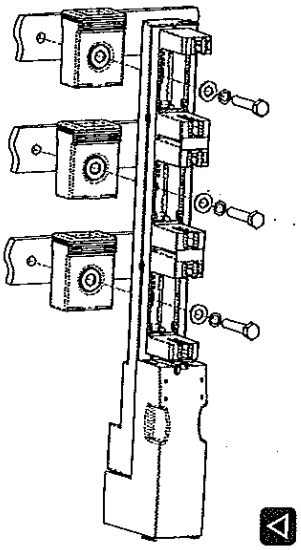
CURRENT MEASUREMENT OF THREE PHASES

ARS vertical fuse switch disconnector

PBS type fuse base



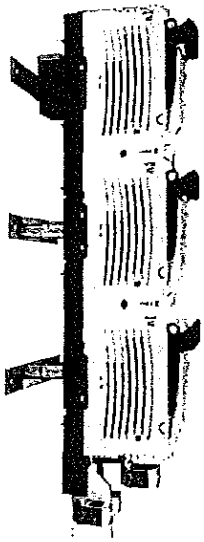


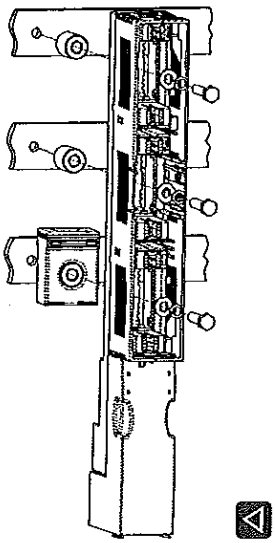


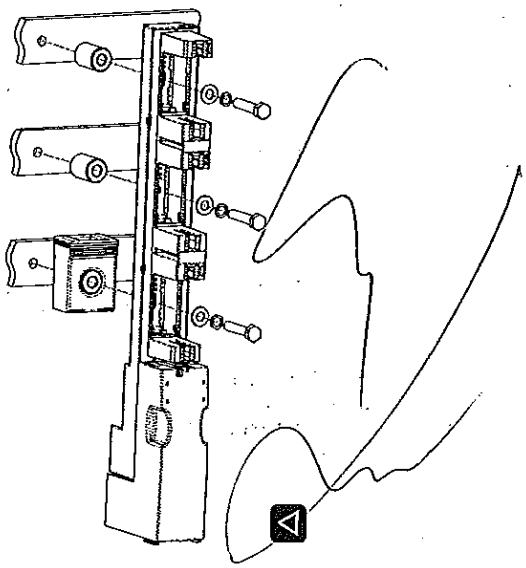
CURRENT MEASUREMENT OF SINGLE PHASE

ARS vertical fuse switch disconnector

PBS type fuse base







ARS 1/250A,ARS2/400A,ARS3/630A,

ASR22.3 CURRENT TRANSFORMER

ratios:
50 A/5 A 100 A/5 A 150 A/5 A 200 A/5 A
250 A/5 A 300 A/5 A 400 A/5 A 500 A/5 A 600 A/5 A
dimensions:
a = 61 mm, b = 35 mm, c = 78,5 mm

Sleeve

Length 36 mm
Inner diameter = 12,5 mm, outer diameter = 22,5 mm
Accuracy class = 1

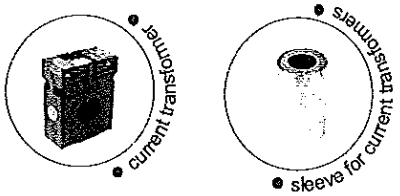
ARS 00/160A

ASR21.3 CURRENT TRANSFORMER

ratios:
100 A/5 A
150 A/5 A
dimensions:
a = 48,5 mm, b = 35 mm, c= 65 mm

Sleeve

Length 36 mm
Inner diameter = 12,5, outer diameter = 22,5
Accuracy class= 1



ACCESSORIES

ARS 00-SM / ARS 00/100mm

00 – M	Bolt clamp – M8 to connect conductors with cable terminal (set 3 pieces)	
1361400006T	Cover for spare place on bus bars system 185 mm Width: 50 mm, length 562 mm, thickness 3 mm	
1361400001T	Isolating pin for fixing the cover with width 50 mm M8 (set 2 pieces)	
1115718002T	ASR21.3 type current transformer, accuracy class: 1, ratios: from 50/5A to 150/5A	
1115718010T	Isolating sleeve for ASR21.3 type current transformers Length 36 mm, outer diameter 22,5 mm, inner diameter 12,5 mm	
00 – S	Bridge clamp – strip to be fixed to apparatus by two M5 bolts in order to fixed conductor with bare end and with cross-section from 4 mm² to 70 mm² (set – 3 pieces)	
00 – SV 1115281034	Clamp for sector conductor – strip + 'V' shaped washer, to be fixed to apparatus by two M5 bolts in order to fix sector cable with bare end and with cross-section from 1,5 mm to 70 mm² in case of homogeneous conductor up to 95 mm² (set – 3 pieces)	
1115281041T	Universal earthing device for sizes 00,1,2,3	

ARS 00/100mm

51-823166-011	Cover for clamps	
53-945361-011	Hook clamp enabling to mount ARS 00/100 mm on non perforated bus bars (set – 3 pieces)	

ACCESSORIES

ARS 00/100mm

1115296049	Micro switch for the control of cover position (0-1) of ARS 00/100 mm type disconnector	
konfigurator	Bracket under the cover for spare place	
53-945333-011	Plate for description	
53-945924-011	Cover for clamps. Cover put on from the top or bottom equalizes the length and depth of en- closure of ARS 1,2,3	
51-823244-011	Lengthen cover for clamps. Together with two covers for clamps 53-945924-011 it equalizes the length and depth of enclosure of new ARS 1,2,3 with the cover for clamps	
51-945857-011	Lengthen cover for clamps. It lengthens the cover 53-945924-011. It makes easier to equalize enclosure of new ARS 1,2,3 where equalizing plates for description 53-945924-011 were used. It allows the apparatus to apply to Prisma enclosure	
51-930493-021	Lengthen shield for clamps, fixed to standard shield for clamps 53-945924-011. It equalizes the lenght and depth of new ARS 1,2,3 with the cover for clamps	
63-930547-011	Single adaptor 100/185 (for one unit of ARS 00/100 mm) enabling to mount the apparatus on bus bars system 185 mm	
63-930549-011	Double adaptor 100/185 (for two units of ARS 00/100 mm enabling to mount the apparatus on bus bars system 185 mm and to perforated holes in bus bars every 100 mm	
51-945160-011 (Nr dot. 1 szt.)	Single distance adaptor 185/185 for one unit of ARS 00 enabling to equalize the front line of enclosure of ARS 1,2,3 (set 3 pieces)	

ACCESSORIES

ARS 00/-SM

52-945158-011 (Nr dot. 1 szt.)	Distance double adaptor 185/185 for two units of ARS 00 enabling equalization the front line of enclosure of ARS 1,2,3 with perforated holes every 100 mm in bus bars (set – 3 pieces)	
51-837437-011	Cover for cable clamps	

ARS 1 250 A 690 V ● ARS 2 400 A 690 V ● 630 A 690 V

M	Bolt clamp – M10 for ARS1 and ARS 2, M12 for ARS 3 to connect cables with cable terminal (set: 3pieces)	
50-240SW 1119510001T	V-clamp to direct fixing conductor with bare end with cross-section: 35 - 95 mm² 35 - 120 mm² 50 - 120 mm² 50 - 240 mm²	
70-300SW 1119510013T	V-clamp to direct fixing conductor with bare end with cross-section: 50 - 120 mm² 70 - 150 mm² 70 - 240 mm² 95 - 300 mm²	
250-240SW 1119510007T	V-clamp to direct fixing of two conductors with bare ends with cross-sections: 35 - 120 mm² 35 - 150 mm² 50 - 185 mm² 50 - 240 mm²	
1119510015T HS 50-240	V-type HS (steel) clamping steel to direct fixing of conductor with bare end with cross-sections: 35-120 mm² 35-150 mm² 50-185 mm² 50-240 mm²	
1119510016T HS 250-240	V-steel clamp to direct fixing of two conductors with bare ends with cross-sections: 35-150 mm² 35-185 mm² 50-185 mm² 50-240 mm²	
VL240/ 1119510002T	Line connection for V- strip and V-clamp to fix cables with cross-section from 35 mm² to 240 mm²	

ACCESSORIES

ARS 1 250 A 690 V ● ARS 2 400 A 690 V ● ARS 3 630 A 690 V

konfigurator	Hook clamp enabling to mount ARS 1,2,3 type disconnector on bus bars not perforated	
1361400006T	Cover for spare place on bus bars system 185 mm – width 50 mm, length 562 mm, thickness 3 mm	
1361400001T	Isolating pin to fix the cover with width of 50 mm M8 (set: 2 pieces)	
1361400007T	Cover for reserve place on bus bars system 185 mm – width 100 mm, length 562 mm, thickness 3 mm	
1361400002T	Isolating pin to fix the cover with width of 100 mm M12 (set: 2 pieces)	
51-930313-01	Additional insulating shield enabling to lengthen the cover for cable clamps	
51-930272-011	Cover for 3 terminal separation in cable terminal	
51-930271-021	Cover for cable clamps	
1157180061	ASR22.3 type current transformer Accuracy class 1 Ratios: from 50/5A to 600/5A	
1157180107	Distance sleeve for ASR22.3 type current transformers Length 36 mm, outer diameter=22,5 mm, inner diameter =12,5 mm	
1115281041T	Universal earthing device for sizes 00,1,2,3	
53-945826-01	Equalizing plate for description	

APATOR

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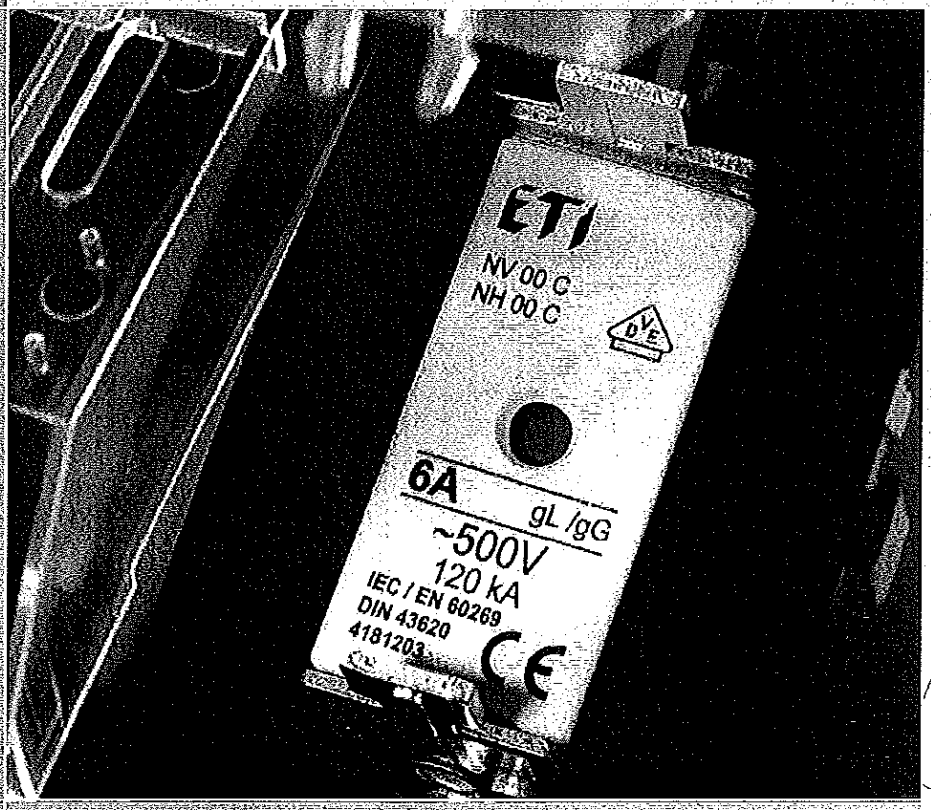
e-mail: trade@apator.com.pl
www.apator.eu

NV/NH

HR

ВИСОКОМОЩНИ ПРЕДПАЗИТЕЛИ ТИП ВПНН



ETI ЕНЕРГИЯТА ПОД КОНТРОЛ

Високомощни предпазители тип ВПНН

Предимства на ВПНН предпазителите КОМВІ

ETI представя новата серия високомощни предпазители NV/NH, която ще замести съществуващите досега серии. Най-значимото преимущество на новата серия е двойната индикация, наречена КОМВІ (комбинирана), която много надеждно обединява така наречената 'челна индикация' (традиционно разположение на индикатора на горната пластина) и 'централна индикация' (разположение на индикатора в центъра на керамичния корпус). Използваната версия на механизма за индикация е високотехнологична и осигурява добра видимост на индикатора при всички приложения на предпазителя – основи за предпазители (ОВП), товарови основи и прекъсвач-предпазители.

Основните предимства на високомощни предпазители NV/NH КОМВІ са следните:

- Размери в съответствие със стандарт DIN 43620 Част 1 – 4
- Висока изключвателна способност
- Предлагат се в три варианта с номинално напрежение: 400V a.c., 500V a.c. и 690V a.c.
- Две версии на покриваща плоча: алуминиева, при която щифтът е под напрежение, и пластмасова, при която изолираният метален щифт е вграден в пластмасовата повърхност
- Комбиниран индикатор, осигуряващ двойна индикация: на горната част на покриващата плоча и в центъра на керамичния корпус

Високомощни предпазители ВПнн

Предпазителите със стопяеми вложки ETI NV осигуряват възможно най-надеждната и икономична защита на въздушни и кабелни линии срещу малки пренапрежения и високи токове на късо съединение. Размерите им са съобразени с изискванията по стандарт DIN 43620, а останалите технически характеристики съответстват на следните стандарти:

- Номинално напрежение 400/500/690V/gG: IEC 60269-1:2005 / EN 60269-1:1998+A1:2005 IEC 60269-2:1986+Corr.1: 1996+A1:1995+A2:2001 / EN 60269-2:1995+A1:1998+A2:2002 IEC 60269-2-1:2004 / HD 60269-2-1:2005
- Номинално напрежение 690V/aM: VDE 0636-2011
- Номинално напрежение 400V/gF: PN-IEC 60269-2
- Номинално напрежение 400V / gTr: VDE0636-2011

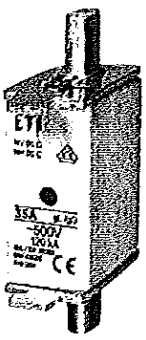
Кратко описание на съставните елементи на високомощни предпазители NV

Корпусът на предпазителя е произведен от качествен стеатит, високо устойчив на температурно претоварване. Във вътрешността на стеатитното тяло е поставен стопяем меден елемент, запоен на специално пригодено за целта място от вътрешната страна на контактния нож. Благодарение на прецизното оформяне на тази част, при монтаж предпазителният елемент попада точно в нейната среда. Вътрешността на керамичното тяло се запълва с кварцов пясък с прецизно определени гранули и състав. Всички контактни ножове с размер до NV 2 C са произведени от мед, а останалите – от месинг. Всички те са допълнително защитени с пласт сребърно покритие или при специална поръчка с никелово покритие. Изключителната стабилност на характеристиките на предпазителя е доказана с цикъл от проведени изпитания. Осигурена е селективност в съответствие с пропорцията на номиналния ток 1:1,6 в областите с опасност от пренапрежение, както и в тези с опасност от късо съединение.

NV/NH

Високомощни предпазители NV/NH с gG характеристика

Номинален ток **16 - 1600 A** | Изключвателна способност **120 kA** | Номинално напрежение **400, 500, 690 V**



ном. ток [A]	NV/NH 00 C KOMBI gG кат. No. ~ 400V	~ 500V	~ 690V	NV/NH 00 C I KOMBI gG* кат. No. ~ 400V	~ 500V	~ 690V	тегло [гр.]	опаковка [бр.]
2	004181101	004181201	004181301	004191101	004191201	004191301	125	3/120
4	004181102	004181202	004181302	004191102	004191202	004191302	125	3/120
6	004181103	004181203	004181303	004191103	004191203	004191303	125	3/120
10	004181104	004181204	004181304	004191104	004191204	004191304	125	3/120
16	004181105	004181205	004181305	004191105	004191205	004191305	125	3/120
20	004181106	004181206	004181306	004191106	004191206	004191306	125	3/120
25	004181107	004181207	004181307	004191107	004191207	004191307	125	3/120
32	004181108	004181208	004181308	004191108	004191208	004191308	125	3/120
35	004181109	004181209	004181309	004191109	004191209	004191309	125	3/120
40	004181110	004181210	004181310	004191110	004191210	004191310	125	3/120
50	004181111	004181211	004181311	004191111	004191211	004191311	125	3/120
63	004181112	004181212		004191112	004191212		125	3/120
80	004181113	004181213		004191113	004191213		125	3/120
100	004181114	004181214		004191114	004191214		125	3/120

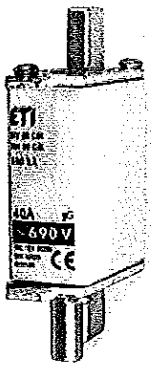
*изолиран

технически данни на стр. 381

Високомощни предпазители тип ВПНН

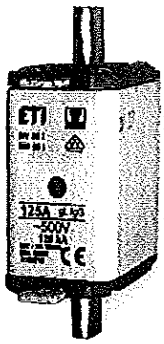
NV/NH 00 C gG с индикатор – "ударна игла" НОВО!

ном. ток [A]	кат. No. ~ 690 V	тегло [гр.]	опаковка [бр.]
2	004111172	135	3
4	004111173	135	3
6	004111174	135	3
10	004111175	135	3
16	004111176	135	3
20	004111177	135	3
25	004111178	135	3
32	004111179	135	3
35	004111180	135	3
40	004111181	135	3



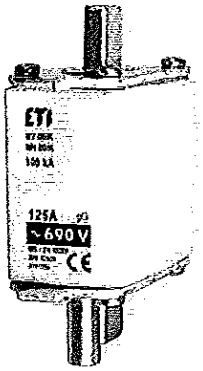
ном. ток [A]	NV/NH 00 KOMBI gG кат. No. ~ 400 V	~ 500 V	~ 690 V	NV/NH 00 I KOMBI gG* ~ 400 V	~ 500 V	~ 690 V	тегло [гр.]	опаковка [бр.]
63			004182312			004192312	173	3/90
80			004182313			004192313	173	3/90
100			004182314			004192314	173	3/90
125	004182115	004182215	004182315	004192115	004192215	004192315	173	3/90
160	004182116	004182216		004192116	004192216		173	3/90

*изолиран



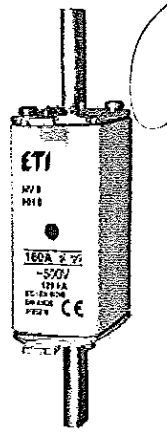
NV/NH 00 gG с индикатор – "ударна игла" НОВО!

ном. ток [A]	кат. No. ~ 690 V	тегло [гр.]	опаковка [бр.]
50	004111182	205	3
63	004111183	205	3
80	004111184	205	3
100	004111185	205	3
125	004111186	205	3



NV/NH 0 KOMBI gG

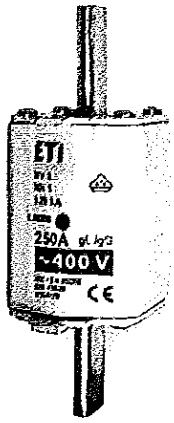
ном. ток [A]	кат. No. ~ 500 V	~ 690 V	тегло [гр.]	опаковка [бр.]
6	004183203	004183303	226	3/45
10	004183204	004183304	226	3/45
16	004183205	004183305	226	3/45
20	004183206	004183306	226	3/45
25	004183207	004183307	226	3/45
32	004183208	004183308	226	3/45
35	004183209	004183309	226	3/45
40	004183210	004183310	226	3/45
50	004183211	004183311	226	3/45
63	004183212	004183312	226	3/45
80	004183213	004183313	226	3/45
100	004183214	004183314	226	3/45
125	004183215	004183315	226	3/45
160	004183216		226	3/45



технически данни на стр. 381

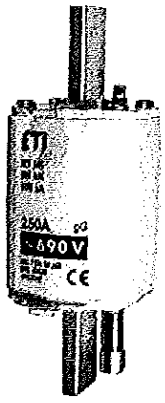
ном. ток [A]	NV/NH 1 C KOMBI gG кат. No. ~400V	~500V	~690V	NV/NH 1 C KOMBI gG* кат. No. ~400V	~500V	~690V	тегло [гр.]	опаковка [бр.]
25	004184107	004184207	004184307	004194107	004194207	004194307	233	3/45
32	004184108	004184208	004184308	004194108	004194208	004194308	233	3/45
35	004184109	004184209	004184309	004194109	004194209	004194309	233	3/45
40	004184110	004184210	004184310	004194110	004194210	004194310	233	3/45
50	004184111	004184211	004184311	004194111	004194211	004194311	233	3/45
63	004184112	004184212	004184312	004194112	004194212	004194312	233	3/45
80	004184113	004184213	004184313	004194113	004194213	004194313	233	3/45
100	004184114	004184214	004184314	004194114	004194214	004194314	233	3/45
125	004184115	004184215	004184315	004194115	004194215	004194315	233	3/45
160	004184116	004184216		004194116	004194216		233	3/45

*изолиран



ном. ток [A]	NV/NH 1 KOMBI gG кат. No. ~400 V	~500 V	~690 V	NV/NH 1 I KOMBI gG* кат. No. ~400 V	~500 V	~690 V	тегло [гр.]	опаковка [бр.]
63	004184120	004184220	004184320	004194120	004194220	004194320	430	3/24
80	004184121	004184221	004184321	004194121	004194221	004194321	430	3/24
100	004184122	004184222	004184322	004194122	004194222	004194322	430	3/24
125	004184123	004184223	004184323	004194123	004194223	004194323	430	3/24
160	004184124	004184224	004184324	004194124	004194224	004194324	430	3/24
200	004184117	004184217	004184317	004194117	004194217	004194317	430	3/24
224	004184118	004184218	004184318	004194118	004194218	004194318	430	3/24
250	004184119	004184219	004184319	004194119	004194219	004194319	430	3/24

*изолиран



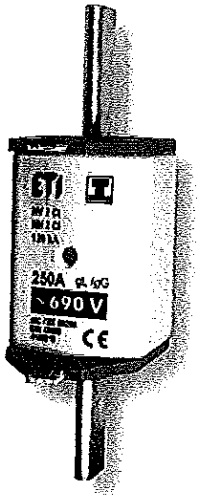
НОВО!

NV/NH 1 gG с индикатор – "ударна игла" ном. ток [A]	кат. No. ~690 V	тегло [гр.]	опаковка [бр.]
63	004113340	452	3
80	004113341	452	3
100	004113342	452	3
125	004113343	452	3
160	004113344	452	3
200	004113345	452	3
224	004113346	452	3
250	004113347	452	3

Високомощни предпазители тип ВПНН

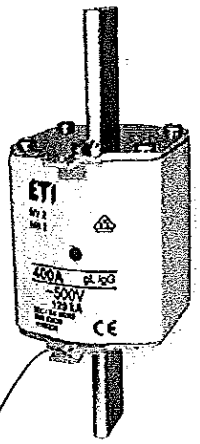
Ном. ток [A]	NV/NH 2 C KOMBI gG Кат. No. ~ 400 V	~ 500 V	~ 690 V	NV/NH 2 CI KOMBI gG* Кат. No. ~ 400 V	~ 500 V	~ 690 V	Тегло [гр.]	Опаковка [бр.]
63	004185112	004185212	004185312	004195112	004195212	004195312	430	3/15
80	004185113	004185213	004185313	004195113	004195213	004195313	430	3/15
100	004185114	004185214	004185314	004195114	004195214	004195314	430	3/15
125	004185115	004185215	004185315	004195115	004195215	004195315	430	3/15
160	004185116	004185216	004185316	004195116	004195216	004195316	430	3/15
200	004185117	004185217	004185317	004195117	004195217	004195317	430	3/15
224	004185118	004185218	004185318	004195118	004195218	004195318	430	3/15
250	004185119	004185219	004185319	004195119	004195219	004195319	430	3/15

*изолиран



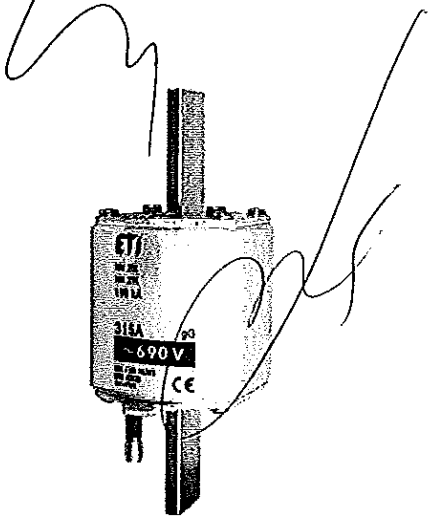
Ном. ток [A]	NV/NH 2 KOMBI gG Кат. No. ~ 400 V	~ 500 V	~ 690 V	NV/NH 2 I KOMBI gG* Кат. No. ~ 400 V	~ 500 V	~ 690 V	Тегло [гр.]	Опаковка [бр.]
280	004185120	004185220	004185320	004195120	004195220	004195320	500	3/15
300	004185121	004185221	004185321	004195121	004195221	004195321	500	3/15
315	004185122	004185222	004185322	004195122	004195222	004195322	500	3/15
355	004185123	004185223		004195123	004195223		500	3/15
400	004185124	004185224		004195124	004195224		500	3/15

*изолиран



НОВО!

NV/NH 2 gG с индикатор – "ударна игла" Ном. ток [A]	Кат. No. ~ 690 V	Тегло [гр.]	Опаковка [бр.]
160	004114345	593	3
200	004114346	593	3
224	004114347	593	3
250	004114348	593	3
300	004114349	593	3
315	004114350	593	3



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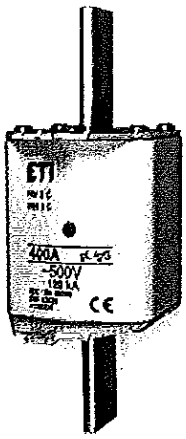
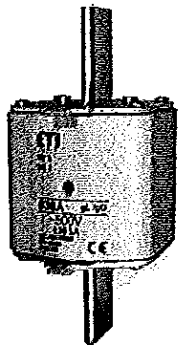
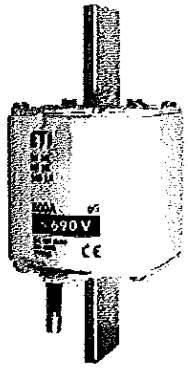


ном. ток [A]	NV/NH 3 C KOMBI gG кат. No. ~400 V	~500 V	~690 V	тегло [гр.]	опаковка [бр.]
250	004186119	004186219	004186319	510	3/12
280	004186120	004186220	004186320	510	3/12
300	004186121	004186221	004186321	510	3/12
315	004186122	004186222	004186322	510	3/12
355	004186123	004186223		510	3/12
400	004186124	004186224		510	3/12



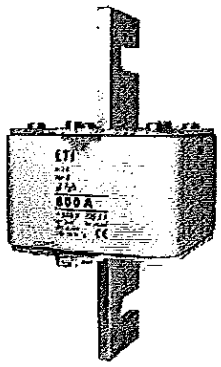
ном. ток [A]	NV/NH 3 KOMBI gG кат. No. ~400 V	~500 V	~690 V	NV/NH 3 I KOMBI gG* кат. No. ~400 V	~500 V	~690 V	тегло [гр.]	опаковка [бр.]
200				004196123	004196223	004196323	923	3/12
225				004196124	004196224	004196324	923	3/12
250				004196125	004196225	004196325	923	3/12
300				004196126	004196226	004196326	923	3/12
315				004196127	004196227	004196327	923	3/12
355			004186328	004196128	004196228	004196328	923	3/12
400			004186329	004196129	004196229	004196329	923	3/12
425	004186130	004186230	004186330	004196130	004196230	004196330	923	3/12
500	004186131	004186231	004186331	004196131	004196231	004196331	923	3/12
560	004186132	004186232		004196132	004196232		923	3/12
630	004186133	004186233		004196133	004196233		923	3/12

*изолиран



НОВО!

NV/NH 3 gG с индикатор – "ударна игла" ном. ток [A]	кат. No. ~690 V	тегло [гр.]	опаковка [бр.]
250	004115120	895	3
300	004115121	895	3
315	004115122	895	3
400	004115123	895	3
425	004115124	895	3
500	004115125	895	3



NV/NH 4 gG ном. ток [A]	кат. No. 500 V	тегло [гр.]	опаковка [бр.]
630	004116101	2130	1/12
710	004116102	2130	1/12
800	004116103	2130	1/12
900	004116105	2130	1/12
1000	004116104	2130	1/12
1250	004116106	2130	1/12

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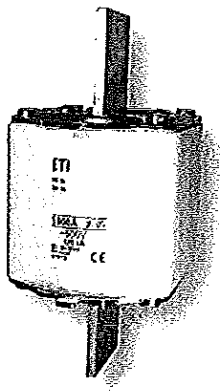
Високомощни предпазители тип ВПНН

NV/NH 4a gG

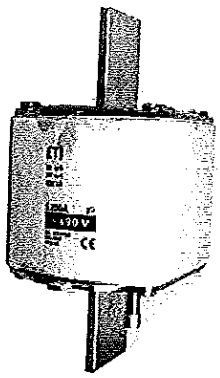
ном. ток [A]	кат. No. 500 V	SI	690 V	тегло [гр.]	опаковка [бр.]
630	004116108	004176026	004176105	2170	1/12
710	004116109	004176027	004176106	2170	1/12
800	004116110	004176028	004176107	2170	1/12
900	004116111	004176029	004176108	2170	1/12
1000	004116112	004176030	004176109	2170	1/12
1250	004116113	004176031	004176110	2170	1/12
1500	004116119	004176032		2170	1/12
1600	004116120	004176033		2170	1/12



NV/NH 4a gG с индикатор – "ударна игла"

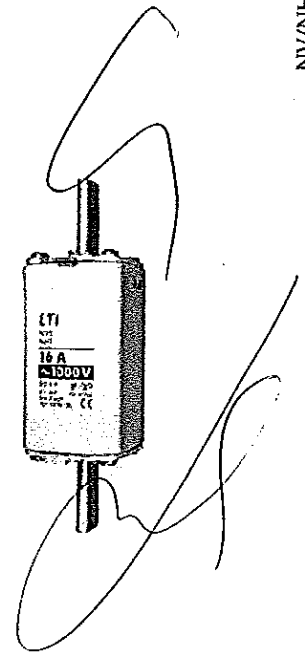
НОВО!

ном. ток [A]	кат. No. ~ 690 V	тегло [гр.]	опаковка [бр.]
500	004116186	2835	1
630	004116187	2835	1
800	004116188	2835	1
1000	004116189	2835	1
1250	004116190	2835	1



NV/NH 1 1000 V a.c. gG

ном. ток [A]	кат. No.	тегло [гр.]	опаковка [бр.]
10	004113703	487	3/24
16	004113704	487	3/24
20	004113705	487	3/24
25	004113706	487	3/24
32	004113707	487	3/24
35	004113708	487	3/24
40	004113710	487	3/24
50	004113711	487	3/24
63	004113712	487	3/24
80	004113713	487	3/24
100	004113714	487	3/24
125	004113715	487	3/24
160	004113716	487	3/24
200	004113717	487	3/24



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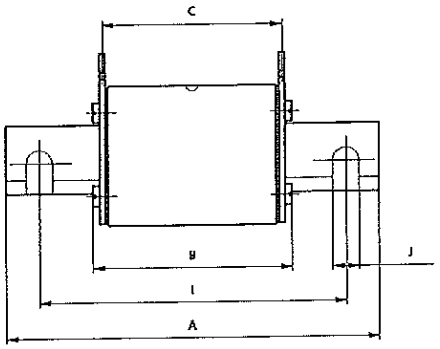
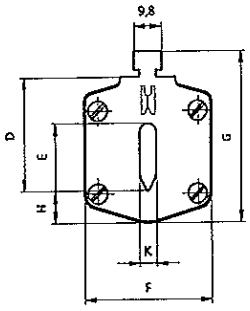
Високомощни NV/NH стопяеми предпазители

Електрически характеристики	
Ном. напрежение U_n	400 Va.c., 500 Va.c, 690 V a.c.
Ном. ток I_n	2 - 1600 A
Комутационна способност U_n	120 kA
Характеристика	gG, aM, gF, gTr
В съответствие с	IEC 60269-1:2005 / EN 60269-1:1998+A1:2005 IEC 60269-2:1986+Corr.1:1996+A11995+A2:2001 / EN 60269-2:1995+A1:1998+A2:2002 IEC 60269-2-1:2004 / HD 60269-2-1:2005
Размери в съответствие със стандарт	DIN43620 Parts 1 to 4
Две версии на покриваща плоча	алуминиева и пластмасова

Стопяеми предпазители NV/NH с gG характеристика

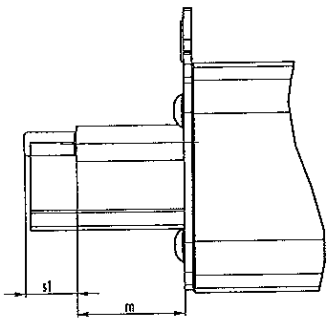
тип	размери											
	A	B	C	D	E	F	G	H	I	J	K	
NV00 C	79	53	47	35	15	21	52	7,5			6	kombi
NV00 CI	79	53	47	35	15	21	52	7,5			6	kombi
NV00	79	53	47	35	15	28	56	12			6	kombi
NV00I	79	53	47	35	15	28	56	12			6	kombi
NV0	125	68	65	35	15	28	56	12			6	kombi
NV1 C	135	68	65	40	15	28	61	12			6	kombi
NV1 CI	135	68	65	40	15	28	61	12			6	kombi
NV1	135	72	65	40	20	46	65	14			6	kombi
NV1 I	135	72	65	40	20	46	65	14			6	kombi
NV2 C	150	72	65	48	20	46	73	14			6	kombi
NV2 CI	150	72	65	48	20	46	73	14			6	kombi
NV2	150	72	65	48	26	54	73	14			6	kombi
NV2 I	150	72	65	48	26	54	73	14			6	kombi
NV3 C	150	72	65	60	26	54	84	14			6	kombi
NV3	150	72	65	60	33	65	84	14			6	kombi
NV4	200	75	66	87	50	100	121	24	150	16	8	
NV4a	200	99	87	85	50	95	121	27			6	
NV4a SI*	200	99	87	85	50	95	121	27			6	
NV1/1000V	155	90	87	40	20	45	59	9			6	

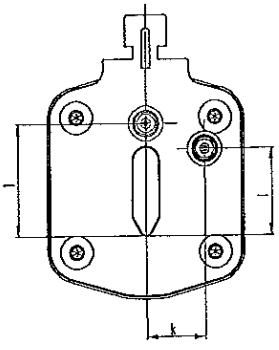




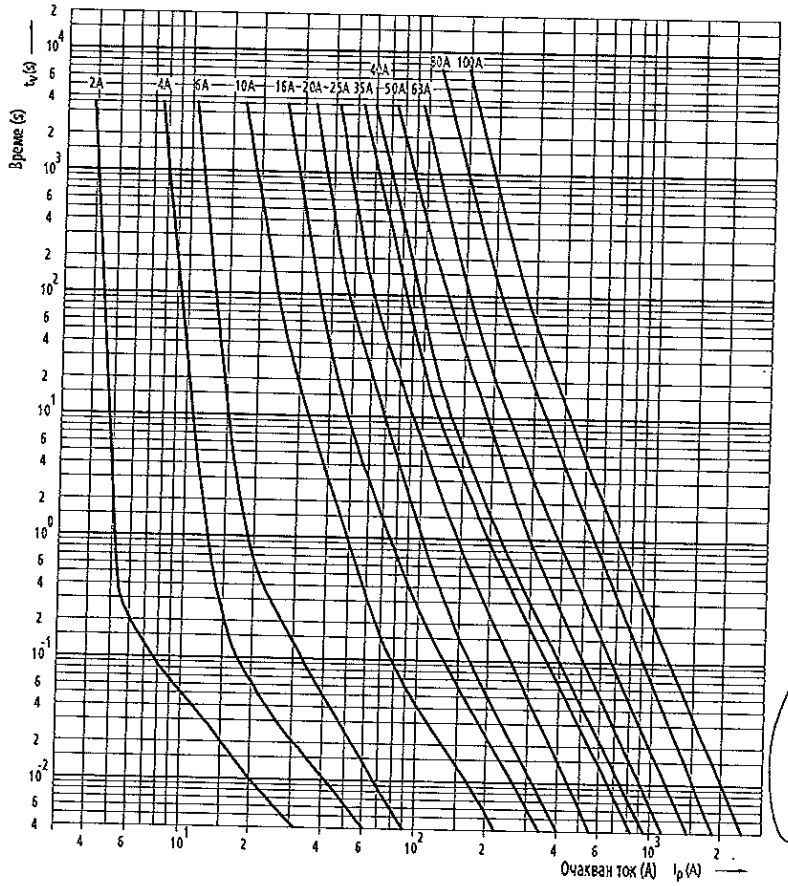
Стопяеми предпазители NV/NH gG с ударна игла

тип	размери			
	k	l	m	sl
00C	0	20.7	16.7	7.5
00	0	20.7	16.7	7.5
1	13.7	19.7	25	12
2	16.2	27.4	25	12
3	17	35.6	25	12
4a	24	49	25	12

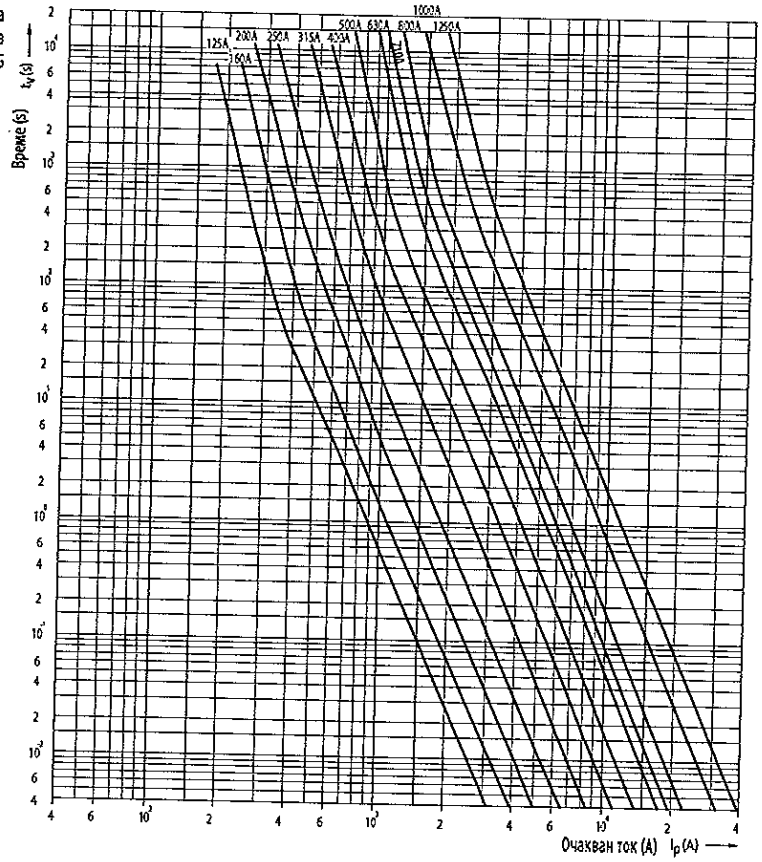




Време-токова характеристика I/t, gG

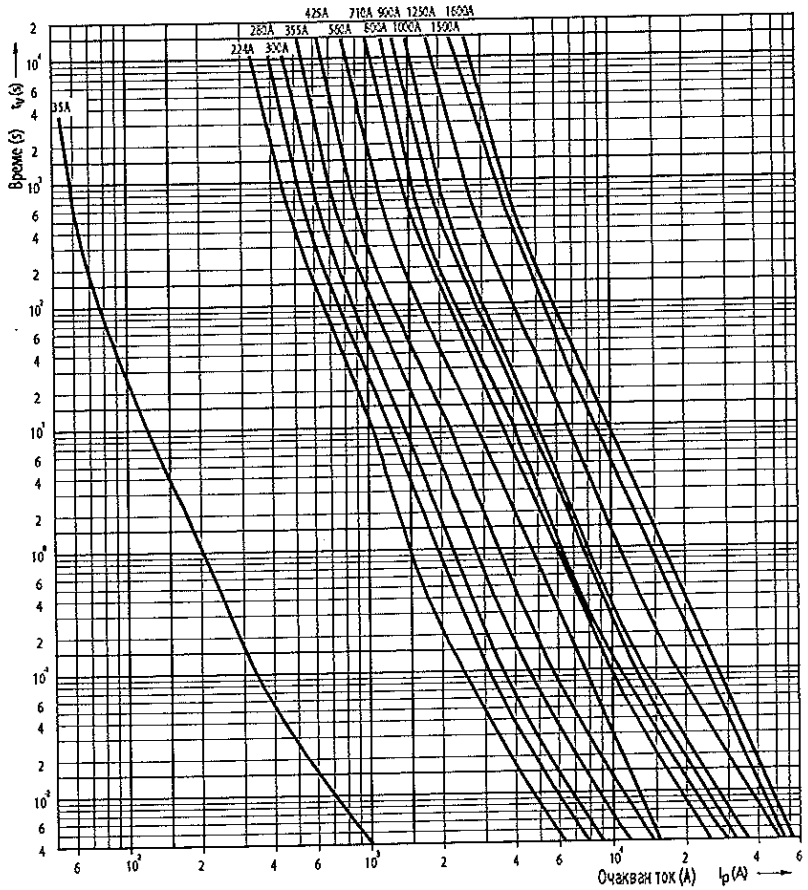


Време-токова характеристика I/t, gG



Технически данни - NV/NH

Време-токова характеристика I/t, gG



Характеристика ток на изключване