

Accessories

Versions and types



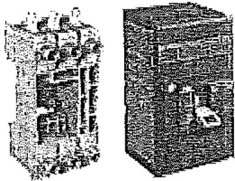
Fixed circuit-breaker

Tmax XT automatic circuit-breakers are available in the following versions:

- **FIXED.** Fixed circuit-breakers consist of a current-interrupting part connected to the trip unit, to be installed on the back plate of the cubicle or on a DIN rail;
- **PLUG-IN.** Plug-in circuit-breakers consist of a fixed part that must be installed on the back plate of the cubicle, and of a moving part, obtained from the fixed circuit-breaker plus the relative kit that converts it from the fixed version into the moving part of the plug-in version;
- **WITHDRAWABLE.** Withdrawable circuit-breakers consist of a fixed part that must be installed on the back plate of the cubicle equipped with side runners to allow the moving part to be easily racked out and in, which is obtained from the fixed circuit-breaker plus the relative kit that converts it from the fixed version into the withdrawable moving part. To obtain the withdrawable version, a front accessory to be applied onto the front of the circuit-breaker must be ordered so as to maintain the IP40 degree of protection over the entire isolation run of the circuit-breaker.

If the plug-in circuit-breaker is fitted with electrical accessories, the appropriate connectors for isolation of the relative auxiliary circuits must also be ordered on the other hand, for the withdrawable version there are dedicated accessories, fitted with connectors which allow automatic disconnection in the case of racking-out (consult the "connection of electrical accessories" section in the Accessories chapter).

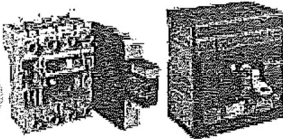
Starting from the fixed version, SACE Tmax XT circuit-breakers can easily be converted into the plug-in and withdrawable versions using the relative conversion kits. The moving part can always be obtained in the required version, fully pre-engineered in the factory, by ordering the fixed circuit-breaker and the conversion kit at the same time.



Plug-in circuit-breaker

	Version		
	Fixed	Plug-in	Withdrawable
XT1	■	■	
XT2	■	■	■
XT3	■	■	
XT4	■	■	■

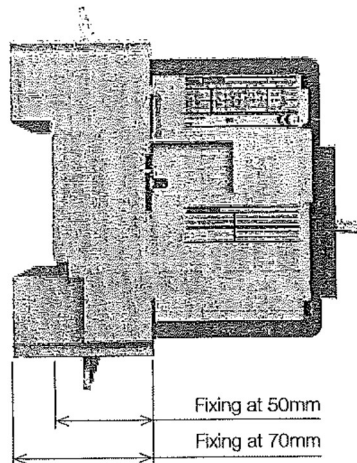
Fixed part of plug-in and withdrawable versions



Withdrawable circuit-breaker

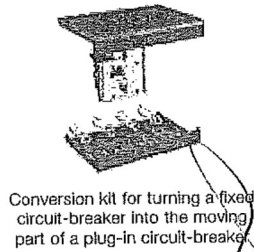
The fixed parts of the plug-in/withdrawable versions are available with front terminals (F) or with horizontal or vertical rear terminals (HR/VR). The terminals are factory-mounted in the horizontal position. In case of need, the Customer can easily rotate the terminals into the vertical position. These fixed parts can be equipped with the same terminal, terminal-cover and phase separator kits used for the fixed circuit-breakers, using the proper adapter.

The fixed parts of a plug-in/withdrawable circuit-breaker can be installed at a distance of 50mm from the back of the panel or at 70mm as shown in the picture. Installation at 50mm is only compulsory in the case where rear vertical or horizontal terminals (HR/VR) are used.

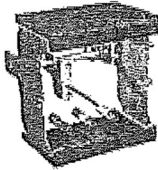


Conversion kits

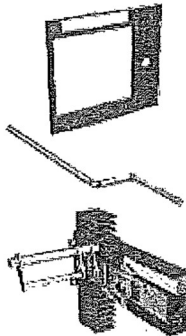
The following conversion kits can be obtained in order to create the different versions:



Conversion kit for turning a fixed circuit-breaker into the moving part of a plug-in circuit-breaker



Conversion kit for turning a fixed circuit-breaker into the moving part of a withdrawable circuit-breaker



Conversion kit for turning a fixed part of plug-in version into the fixed part of a withdrawable version

- Kit for converting the fixed circuit-breaker into the moving part of plug-in/withdrawable versions. The conversion kit converts the fixed circuit-breaker into the moving part of plug-in/withdrawable versions. Only when withdrawable versions are made is it essential to order an accessory to apply to the front of the circuit-breaker so as to maintain the IP40 degree of protection over the entire isolation run. This accessory can be chosen from:

- front for lever operating mechanism (FLD);
- motor operator (MOE);
- direct or transmitted rotary handle operating mechanisms (RHD or RHE).

In the case where no accessory to be applied onto the front is indicated, the front for lever operating mechanism (FLD) is automatically included in the order.

- Kit for converting the fixed part of plug-in versions into the fixed part of withdrawable versions. The kit comprises:

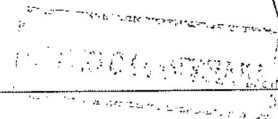
- a guide for turning the fixed part of the plug-in circuit-breaker into the fixed part of the withdrawable circuit-breaker;
- a racking-out rotary handle that allows the moving part to be inserted and withdrawn. The mechanism allows the circuit-breaker to be set to the isolated position (with the power and auxiliary circuits disconnected) with the compartment door closed, all to the advantage of operator safety. The rotary handle can only be inserted when the circuit-breaker is open. Once it has been removed or withdrawn, the circuit-breaker can be set to the open/closed position;
- a flange for the compartment door, which replaces the one supplied with the fixed version of the circuit-breaker.

- Kit for converting fixed type into the plug-in version for RC Sel residual current devices for XT2-XT4. RC Sel four-pole residual current devices for XT2 e XT4 can be converted from the fixed version into the plug-in version using the special kit.

- Kit for converting plug-in types into the withdrawable version for RC Sel residual current devices for XT2-XT4. RC Sel four-pole residual current devices for XT2 and XT4 can be converted from the plug-in version to the withdrawable version using the special kit, which comprises a bellows to apply to the front of the residual current device so as to allow it and the residual current part to be withdrawn when the panel door is closed. This kit can also be assembled on fixed circuit-breakers fitted with the front part for locks or the direct rotary handle, thus adding to the range of uses for residual current devices.

In the plug-in to withdrawable conversion kit, there is also a 6 pin connector to be applied onto the right side of the circuit-breaker to facilitate disconnection of the auxiliary circuits connected to the residual current device.

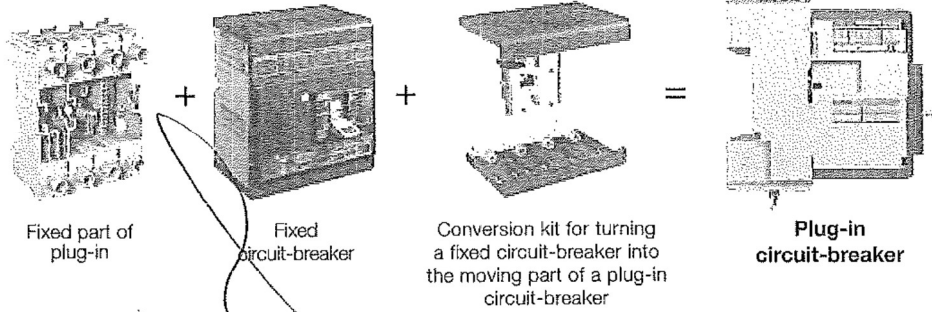
This kit contains also the shunt opening release of the residual current device dedicated to the withdrawable version, which is fitted with a connector for the fixed part and the moving part.



Accessories

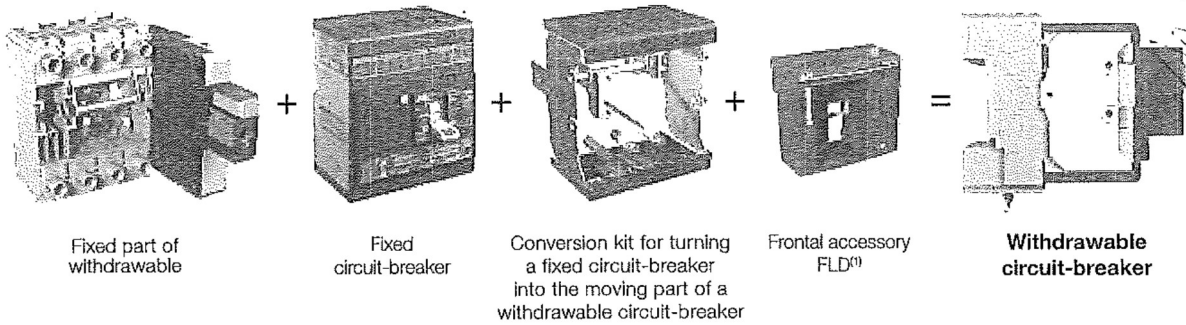
Versions and types

Plug-in version

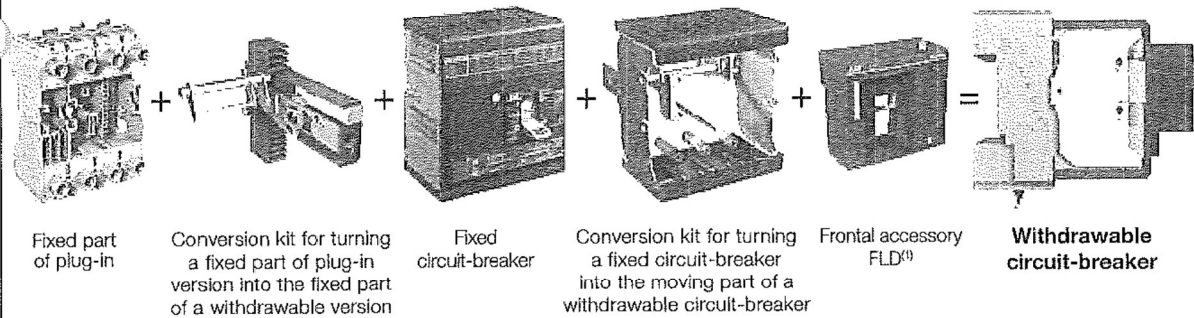


Withdrawable version

1st solution



2nd solution



⁽¹⁾ Frontal accessory mandatory. If not specified in the order, the FLD is supplied automatically



Accessories

Mechanical Accessories

Mechanical Accessories		XT1	XT2	XT3	XT4
Terminals	F - Front	☑	☑	☑	☑
	EF - Front extended	☑	☑	☑	☑
	ES - Front extended spread	☑	☑	☑	☑
	FCCu - Front for copper cables	☑	☑	☑	☑
	FCuAl - Front for copper/aluminium cables	☑	☑	☑	☑
	FB - For flexible busbars	☑	☑	☑	☑
	MC - Multi-cable	☑	☑	☑	☑
	R - Rear orientated	☑	☑	☑	☑
	EF - Extended front for the fixed part	☑	☑	☑	☑
	HR/VR - Horizontal rear / Vertical rear for fixed part	☑	☑	☑	☑
Rotary handle operating mechanism	HR for RC - for residual current release	☑	—	☑	☑
	RHD - Direct rotary handle	☑	☑	☑	☑
	RHE - Transmitted rotary handle	☑	☑	☑	☑
	RHE-LH - Wide transmitted rotary handle	☑	☑	☑	☑
Front for lever operating mechanism	RHS - Side rotary handle	☑	☑	☑	☑
	FLD - Front for locks	—	☑	—	☑
Locks on CB	Padlock device	☑	☑	☑	☑
	Key lock	☑	☑	☑	☑
Locks on handle	Key lock	☑	☑	☑	☑
Locks on FLD	Key lock	—	☑	—	☑
Locks on Motor Operator	Key lock	☑	☑	☑	☑
	Key lock against manual operation	—	☑	—	☑
Lock for fixed part	Key lock	—	☑	—	☑
Rear interlock	Interlock	☑	☑	☑	☑
Bracket for DIN rail	Bracket	☑	☑	☑	☑

Consult the relative section for more details.

Connection terminals

Connection terminals allow the circuit-breaker to be connected to the system in the way most suited to the installation requirements. By and large they consist of:

- ☑ front terminals: for connecting cables or busbars directly from the front of the circuit-breaker;
- ☑ rear terminals: for installing circuit-breakers in segregated panels with rear access.

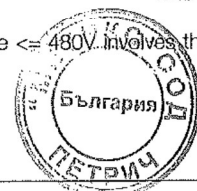
Where possible, the terminals have laser marking on the surface indicating the tightening torques for the correct isolation of cables and bars.

Fixed version

The part of the standard equipment, fixed version SACE Tmax XT circuit-breakers are supplied with front terminals (F). However, they can be fitted with the following types of terminals as accessories thanks to the special kits:

- ☑ extended front (EF);
- ☑ extended spread front (ES);
- ☑ front for copper/aluminium cables (FCCuAl). A pitch adapter must be applied to the terminal zone of the circuit-breaker to ensure that copper and aluminium cables with sections of up to 240mm² can be connected to all the circuit-breakers. The pitch adapter is automatically supplied when it is necessary (see table page 3/9);
- ☑ front for copper cables (FCCu);
- ☑ for flexible busbars (FB);
- ☑ multicable (MC);
- ☑ rear orientated (R).

For XT 1 and XT3 sizes, the use of not insulated busbar with $U_e \leq 480V$ involves the mandatory assembly of terminal covers HTC.



Accessories

Mechanical Accessories

Plug-in and withdrawable versions

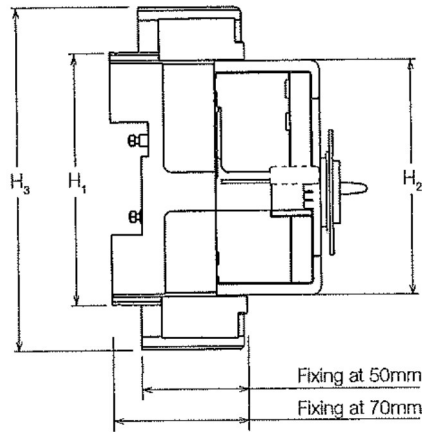
Fixed part of plug-in and withdrawable version circuit-breakers are normally supplied with extended front terminals (EF) or horizontal/vertical rear terminals (HR/VR).

The terminals are factory-mounted in the horizontal position. In case of need, the Customer can easily rotate the terminals into the vertical position.

A fixed part with front terminals (EF) can be converted into a fixed part with rear terminals (HR/VR) by ordering the appropriate terminal kit. The fixed parts can also be fitted with the same types of terminals available on the fixed circuit-breaker after an adapter has been installed on the terminal zone of the fixed part itself. Consequently, the following types of connection terminals are also available for the fixed part:

- extended spread front (ES);
- for copper-aluminium cables (FCCuAl);
- for copper cables (FCCu);
- for flexible busbars (FB);
- multi-cable (MC).

The adapter reproduces the terminal zone of the fixed circuit-breaker. This means that fixed parts can also be equipped with the same terminal covers and phase separators as those used for fixed circuit-breakers.



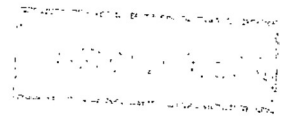
Handwritten signature



Fixed part adapter

Fixed part adapter			
Circuit- breakers	H ₁ fixed part [mm]	H ₂ circuit-breaker [mm]	H ₃ fixed part with two adapters [mm]
XT1	146	134	181
XT2	153	134	188
XT3	166	154	225
XT4	182	164	228

Handwritten signature



Handwritten signature

Front terminals - F

CB.	Vers.	Busbar dimensions [mm]						Cable terminals [mm]		Tightening		H Terminal covers [mm]			H Separators [mm]		
		W min	W max	H	Ø	D min	D max	W	Ø	Cable or busbar /Terminal		2	50	60	25	100	200
XT1	F	13	16	7.5	6.5	3.5	5	16	6.5	M6	6Nm	-	R	-	S	R	R
XT2	F	13	20	7.5	6.5	2.5	5	20	6.5	M6	6Nm	-	R	-	S	R	R
XT3	F	17	24	9.5	8.5	5	8	24	8.5	M8	8Nm	-	-	R	S	R	R
XT4	F	17	25	10	8.5	5	8	25	8.5	M8	8Nm	-	-	R	S	R	R

Front terminal - F

F terminal with cable lug

F terminal with busbar

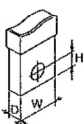
Front extended terminals - EF

CB	Vers.	Busbar dimensions MAX [mm]			Cable terminals [mm]		Tightening				H Terminal covers [mm]			H Separators [mm]		
		W	D	Ø	W	Ø	Terminal /CB		Cable or busbar /Terminal		2	50	60	25	100	200
XT1	F	20	4	8.5	20	8.5	M6	6Nm	M8	9Nm	-	R	-	-	S	R
XT2	F	20	4	8.5	20	8.5	M6	6Nm	M8	9Nm	-	S	-	-	S	R
XT3	F	20	6	10	20	10	M8	8Nm	M10	18Nm	-	-	R	-	S	R
XT4	F	20	10	10	20	10	M8	8Nm	M10	18Nm	-	-	S	-	S	R

Front extended terminal - EF

EF terminal with cable lug

EF terminal with busbar



W Width
H Hole Height
D Depth

F Fixed
P Plug-in
W Withdrawably
Ø Diameter
S Standard
R On Request



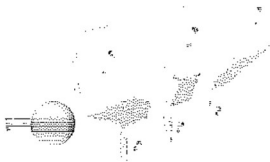
Handwritten signature

Accessories

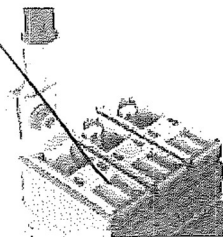
Mechanical Accessories

Front extended spread terminals - ES

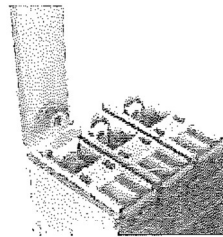
CB	Vers.	Busbar dimensions MAX [mm]			Cable terminals [mm]		Tightening				H Terminal covers [mm]			H Separators [mm]		
		W	D	Ø	W	Ø	Terminal /CB	Cable or busbar /Terminal	2	50	60	25	100	200		
XT1	F-P	25	4	8.5	25	8.5	M6	6Nm	M8	9Nm	-	-	-	-	-	S
XT2	F-P-W	30	4	10.5	30	10.5	M6	6Nm	M10	18Nm	-	-	-	-	-	S
XT3	F-P	30	4	10.5	30	10.5	M8	8Nm	M10	18Nm	-	-	-	-	-	S
XT4	F-P-W	30	6	10.5	30	10.5	M8	8Nm	M10	18Nm	-	-	-	-	-	S



Front extended spread terminal - ES



ES terminal with cable lug



ES terminal with busbar

Handwritten signature

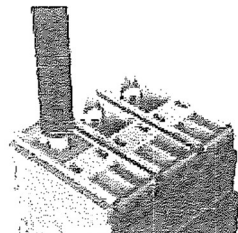
Terminals for copper cables - FCCu

CB	Type of terminal	Vers.	Cable [mm ²]		Tightening		L cable stripping [mm]	H Terminal covers [mm]			H Separators [mm]		
			Rigid	Flexible	Cable or busbar /Terminal					25	100	200	
XT1	internal	F-P	1x2.5...70	1x2.5...50	12x12mm	7Nm	12	-	R	-	S ⁽¹⁾	R	R
	internal	F-P	-	2x2.5...35				-	R	-	S ⁽¹⁾	R	R
XT2	internal	F-P-W	1x1...95	1x4...70	14x14mm	≤ 50mm ² : 7Nm >50mm ² : 8,5Nm	14	-	R	-	S ⁽¹⁾	R	R
	internal	F-P-W	-	2x2.5...50				-	R	-	S ⁽¹⁾	R	R
XT3	internal	F-P	1x6...185	1x6...150	20x18mm	14Nm	20	-	-	R	S ⁽¹⁾	R	R
	internal	F-P	-	2x6...70				-	-	R	S ⁽¹⁾	R	R
XT4	internal	F-P-W	1x6...185	1x6...150	20x18mm	14Nm	20	-	-	R	S ⁽¹⁾	R	R
	internal	F-P-W	-	2x6...70				-	-	R	S ⁽¹⁾	R	R

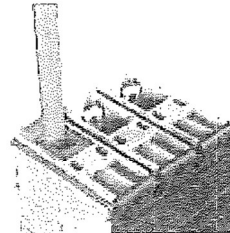
⁽¹⁾ Phase separators supplied as standard with basic version circuit-breaker



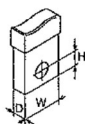
FCCu terminal



FCCu terminal with cable



FCCu terminal with busbar



W Width
H Hole Height
D Depth

F Fixed
P Plug-in
W Withdrawable
Ø Diameter
S Standard
R On Request

Handwritten signature



Handwritten signature

Terminals for copper/aluminium cables - FC CuAl

CB	Type of terminal	Vers.	Cable [mm ²]		Tightening				L cable stripping [mm]	H Terminal covers [mm]			H Separators [mm]		
			Rigid	Flexible	Terminal /CB	Cable or busbar /Terminal		2		50	60	25	100	200	
XT1	internal	F-P	1x1.5...70	1x 1.5...50	M5	3Nm	Ø 9.5mm	≤10mm ² 2,5 Nm >10mm ² 5 Nm	16	-	R	-	S	R	R
	external	F-P	1x35...95	NO	M6	6Nm	Ø 14mm	13.5Nm	16	-	S	-	-	-	-
	external ⁽¹⁾	F-P	1x120...240	NO	M6	6Nm	Ø 24mm	31Nm	24	ADAPTER					
XT2	internal	F-P-W	1x1...95	1x2.5...70	-	-	Ø 14mm	≤ 25mm ² 4 Nm >25mm ² 6 Nm	14	-	R	-	S	R	R
	external ⁽¹⁾	F-P-W	1x120...240	NO	M6	6Nm	Ø 24mm	31Nm	24	ADAPTER					
	external ⁽¹⁾	F-P-W	1x70...185	NO	M6	6Nm	Ø 18mm	31Nm	20	-	S	-	-	-	-
	external ⁽¹⁾	F-P-W	2x35...70	NO	M6	6Nm	Ø 16mm	12Nm	18/33	-	-	S	-	-	-
XT3	internal ⁽¹⁾	F-P-W	1x35...150	NO	M9	9Nm	Ø 17mm	22.6Nm	20	-	-	R	S	R	R
	internal	F-P	1x95...185	NO	-	-	Ø 17mm	16Nm	20	-	-	R	S	R	R
	external ⁽¹⁾	F-P	1x120...240	NO	M8	8Nm	Ø 24mm	31Nm	24	ADAPTER					
	external ⁽¹⁾	F-P	2x35...120	NO	M8	8Nm	Ø 18mm	16Nm	22/42	-	-	S	-	-	-
XT4	internal	F-P-W	1x1...150	NO	-	-	Ø 17mm	10Nm	20	-	-	R	S	R	R
	external ⁽¹⁾	F-P-W	1x120...240	NO	M8	8Nm	Ø 24mm	31Nm	24	ADAPTER					
	external ⁽¹⁾	F-P-W	2x35...120	NO	M8	8Nm	Ø 18mm	16Nm	22/42	-	-	S	-	-	-

⁽¹⁾ Take-up auxiliary voltage device included

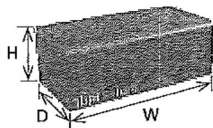
Internal FCCuAl terminal for copper/aluminium cables

Internal FCCuAl terminal for copper and aluminium cable with take-up of auxiliary voltage

External FCCuAl terminal for copper/aluminium cables

FCCuAl internal terminal with cable

FCCuAl external terminal with cables

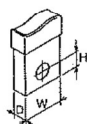


Pitch adapter

Adaptor for FCCuAl terminals up to 240mm²

Circuit-breaker	Poles	Dimensions [mm] [WxHxD]
XT1	3	105x50x68
	4	140x50x68
XT2	3	105x50x68
	4	140x50x68
XT3	3	105x50x68
	4	140x50x68
XT4	3	105x50x68
	4	140x50x68

Note: With XT1 and XT2 the adaptor increases the width of the circuit-breaker



W Width
H Hole Height
D Depth

F Fixed
P Plug-in
W Withdrawable
Ø Diameter
S Standard
R On Request



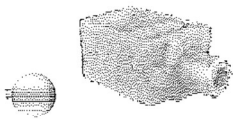
Accessories

Mechanical Accessories

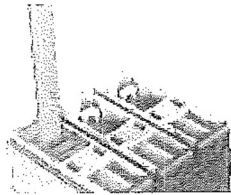
Terminals for flexible busbars - FB

CB	Type of terminal	Vers.	Busbar dimensions MIN [mm]			Busbar dimensions MAX [mm]			Tightening [Nm]	H Terminal covers [mm]			H Separators [mm]		
			W	D	Nr	W	D	Nr		2	50	60	25	100	200
XT1	Internal	F-P	10	0.8	2	10	0.8	9	7Nm	-	R	-	S ⁽¹⁾	R	R
XT2	Internal	F-P-W	10	0.8	2	10	0.8	9	7Nm	-	R	-	S ⁽¹⁾	R	R
XT3	Internal	F-P	16	0.8	2	16	0.8	10	14Nm	-	-	R	S ⁽¹⁾	R	R
XT4	Internal	F-P-W	16	0.8	2	16	0.8	10	14Nm	-	-	R	S ⁽¹⁾	R	R

⁽¹⁾ Phase separators supplied as standard with basic version circuit-breaker



Terminal for flexible busbars (FB)



FB terminal with flexible busbars

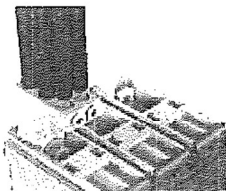
Multi-cable terminals - MC

CB	Vers.	Cable [mm ²]		Tightening			L cable stripping [mm]	H Terminal covers [mm]			H Separators [mm]				
		Rigid	Flexible	Terminal /CB	Cable or busbar /terminal	2		50	60	25	100	200			
XT1	F-P	6x2.5...35	6x2.5...35	M6	6Nm	Ø 8	≤10mm ² 2.5 Nm >10mm ² 4 Nm	10, 20, 30	-	S	-	-	-	-	-
XT2	F-P-W	6x2.5...35	6x2.5...35	M6	6Nm	Ø 8	≤10mm ² 2.5 Nm >10mm ² 4 Nm	10, 20, 30	-	S	-	-	-	-	-
XT3 ⁽¹⁾	F-P	6x2.5...35	6x2.5...25	M8	8Nm	Ø 8	7Nm	15, 30	-	-	S	-	-	-	-
XT4 ⁽¹⁾	F-P-W	6x2.5...35	6x2.5...25	M8	8Nm	Ø 8	7Nm	15, 30	-	-	S	-	-	-	-

⁽¹⁾ Take up auxiliary voltage device included



Multi-cable terminals (MC)



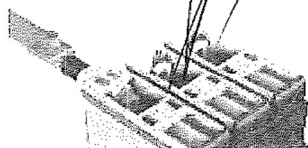
Multi-cable terminals with cables

Rear horizontal terminals - R

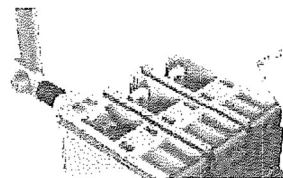
CB	Vers.	Busbar dimensions MAX [mm]				Tightening				H Terminal covers [mm]			H Separators [mm]		
		W	H	D	Ø	Terminal /CB	Cable or busbar /terminal	2	50	60	25	100	200		
XT1	F	15	7.5	5	6.5	M5	5Nm	M6	6Nm	S	-	-	-	-	-
XT2	F	20	9	4	8.5	M6	6Nm	M8	6Nm	S	-	-	-	-	-
XT3	F	20	9	6	8.5	M8	8Nm	M8	8Nm	S	-	-	-	-	-
XT4	F	20	9	6	8.5	M8	8Nm	M8	8Nm	S	-	-	-	-	-



Rear horizontal terminals (R)



R terminal with horizontal busbar



R terminal with vertical busbar

Handwritten signature and stamp.

Extended front terminals for fixed part - EF

CB	Vers.	Busbar dimensions MAX [mm]			Cable terminals [mm]		Tightening				Rear Separators [mm]	
		W	D	Ø	W	Ø	Terminal /CB		Cable or busbar /Terminal		100	200
XT1	P	20	5	6.5	21	6.5	M6	6Nm	M6	9Nm	S	R
XT2	P-W	20	5	6.5	21	6.5	M6	6Nm	M6	9Nm	S	R
XT3	P	25	8	8.5	30	8.5	M6	6Nm	M8	18Nm	S	R
XT4	P-W	25	8	8.5	30	8.5	M6	6Nm	M8	18Nm	S	R

EF terminals for fixed part

Rear flat horizontal terminals for fixed part - HR

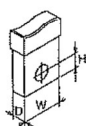
CB	Vers.	Busbar dimensions MAX [mm]			Cable terminals [mm]		Tightening		Rear Separators [mm]
		W	D	Ø	W	Ø	Terminal /CB	Cable or busbar /Terminal	90
XT1	P	20	4	8.5	20	8.5	6Nm	9Nm	R
XT2	P-W	20	4	8.5	20	8.5	6Nm	9Nm	R
XT3	P	25	6	8.5	25	8.5	8Nm	9Nm	R
XT4	P-W	25	10	8.5	25	8.5	8Nm	9Nm	R

HR terminals for fixed part

Rear flat vertical terminals for fixed part - VR

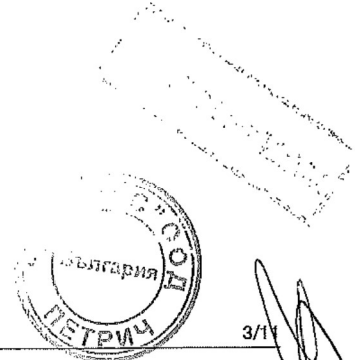
CB	Vers.	Busbar dimensions MAX [mm]			Cable terminals [mm]		Tightening		Rear Separators [mm]
		W	D	Ø	W	Ø	Terminal /CB	Cable or busbar /Terminal	90
XT1	P	20	4	8.5	20	8.5	6Nm	9Nm	R
XT2	P-W	20	4	8.5	20	8.5	6Nm	9Nm	R
XT3	P	25	6	8.5	25	8.5	8Nm	9Nm	R
XT4	P-W	25	10	8.5	25	8.5	8Nm	9Nm	R

VR terminals for fixed part



W Width
H Hole Height
D Depth

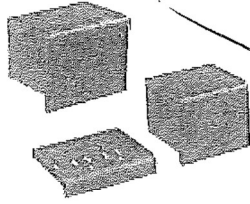
F Fixed
P Plug-in
W Withdrawable
Ø Diameter
S Standard
R On Request



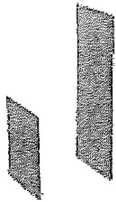
Accessories

Mechanical Accessories

Terminal covers, phase separators and sealable screws for terminal covers



Terminal covers



Phase separators



Sealable screws

Terminal covers are applied to the circuit-breaker to prevent accidental contact with live parts, thus providing protection against direct contacts. The terminal covers are pre-punched for knock-out on the front to facilitate installation of busbars and/or cables, guaranteeing correct insulation. The phase separator partitions increase the insulation characteristics between the phases on a level with the connections. They are mounted from the front, even when the circuit-breaker has already been installed, by inserting them into the corresponding slots.

The table lists the various different terminal covers and phase separators available for each SAQE Tmax XT circuit-breaker. The terminal covers/phase separators able to guarantee adequate circuit-breaker installation and correct insulation are listed in the "Connection Terminals" section of the Accessories Chapter alongside each terminal.

The lead sealing kit consists of screws which, when applied to the terminal covers, prevent their removal, providing protection against direct contacts and tampering. The screws can be locked with wire and lead seals.

Each sealing kit consists of two screws. The maximum number of sealable screws that can be used for each circuit-breaker is given in the table below.

		XT1		XT2		XT3		XT4	
		3p	4p	3p	4p	3p	4p	3p	4p
HTC - High terminal covers	[mm]	50	50	50	50	60	60	60	60
LTC - Low terminal covers	[mm]	2	2	2	2	2	2	2	2
Max number sealable screws for each terminal cover	[No.]	1	1	1	1	1	2	1	1
Phase separator - low	[mm]	25	25	25	25	25	25	25	25
Phase separator - medium	[mm]	100	100	100	100	100	100	100	100
Phase separator - high	[mm]	200	200	200	200	200	200	200	200
Rear phase separator for FP	[mm]	90		90		90		90	

Rotary handle operating mechanism

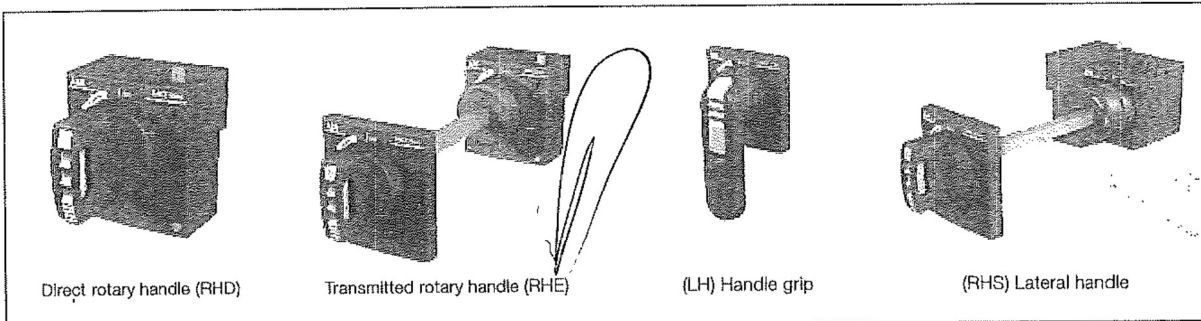
Operating device that allows the circuit-breaker to be operated by means of a rotary handle, which makes the circuit-breaker easier to open and close thanks to its ergonomic handgrip.

Different types of handles are available:

- direct (RHD): installed directly on the front of the circuit-breaker. Allows it to be operated frontally;
- transmitted (RHE): installed on the panel door. Allows the circuit-breaker to be operated by means of a rod which acts on a base installed on the front of the circuit-breaker;
- lateral left (RHS-L) and lateral right (RHS-R): installed directly on the front of the circuit-breaker. Allows it to be operated from the side.

The wide handle grip (LH) only is also available, which can be combined with the transmitted handle (RHE) and with the lateral handle (RHS).

All rotary handle operating mechanisms allow the opening of the switchboard door only with the circuit-breaker in open position.



Direct rotary handle (RHD)

Transmitted rotary handle (RHE)

(LH) Handle grip

(RHS) Lateral handle

All rotary handles are available in two versions:

- standard: grey colour;
- emergency: red on a yellow background. Suitable for operating machine tools.

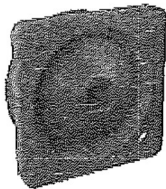
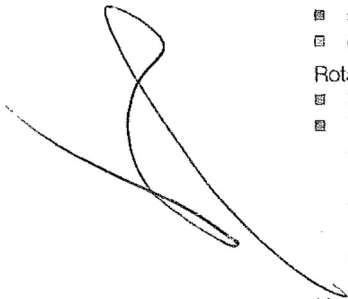
Rotary handles can be ordered:

- by specifying one single sales code (for RHD, RHE, RHS L/R);
- by indicating the following three devices (only for RHE):
 - rotary handle on compartment door with normal standard handgrip (RHE_H, RHE_H LH) or emergency handgrip (RHE_H_EM, RHE_H_EM LH);
 - 500mm transmission rod (RHE_S). The minimum and maximum distances between the fixing plate and the door are 60.5mm and 470.5mm;
 - base on the circuit-breaker to fix to the circuit-breaker (RHE_B).

Use of the rotary handle is an alternative to the motor operator and to all accessories of the front type.

The rotary handles can be locked by means of a vast range of key locks and padlocks (consult the "locks" section of the Accessories chapter).

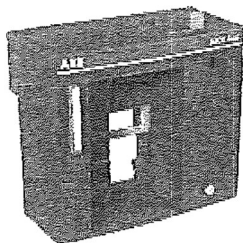
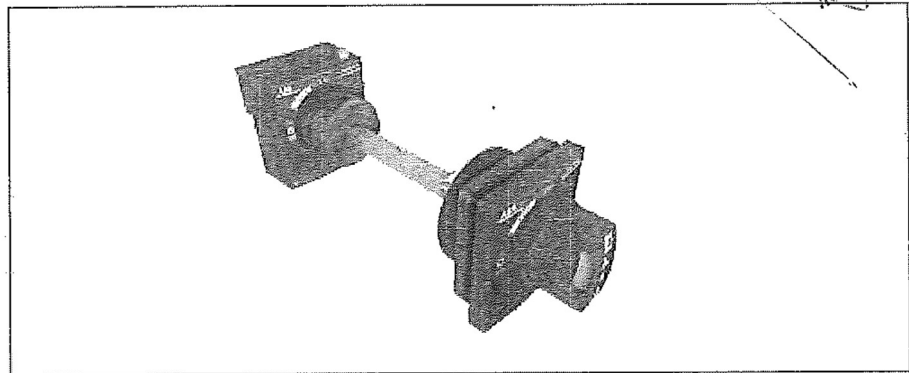
The direct and transmitted rotary operating mechanisms allow early contacts to be used on closing so as to supply the undervoltage release in advance of circuit-breaker closing (consult the "early auxiliary contacts" section of the Accessories chapter).



IP54 protection

IP54 Protection

Device which can be applied onto the transmitted rotary and lateral handle allowing IP54 degree of protection^(G.1.1.1) to be achieved.

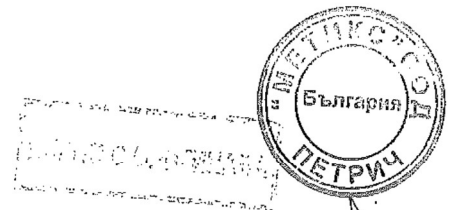


Front for locks

Front for operating lever mechanism

This device can be installed on the front of the circuit-breaker and allows it to be locked with key locks and padlocks.

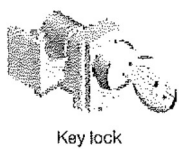
The front for lever operating mechanism can only be installed on XT2 and XT4 three-pole and four-pole circuit-breakers. The front for lever operating mechanism can be fitted with a vast range of key locks and padlocks (see the "locks" section of the Accessories chapter).



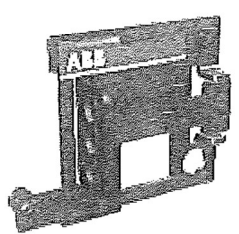
Accessories

Mechanical Accessories

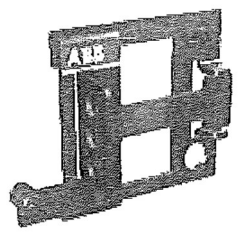
Locks



Key lock



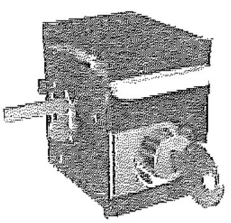
Fixed padlock in open position



Fixed padlock in open/closed position



Removable padlock in open position

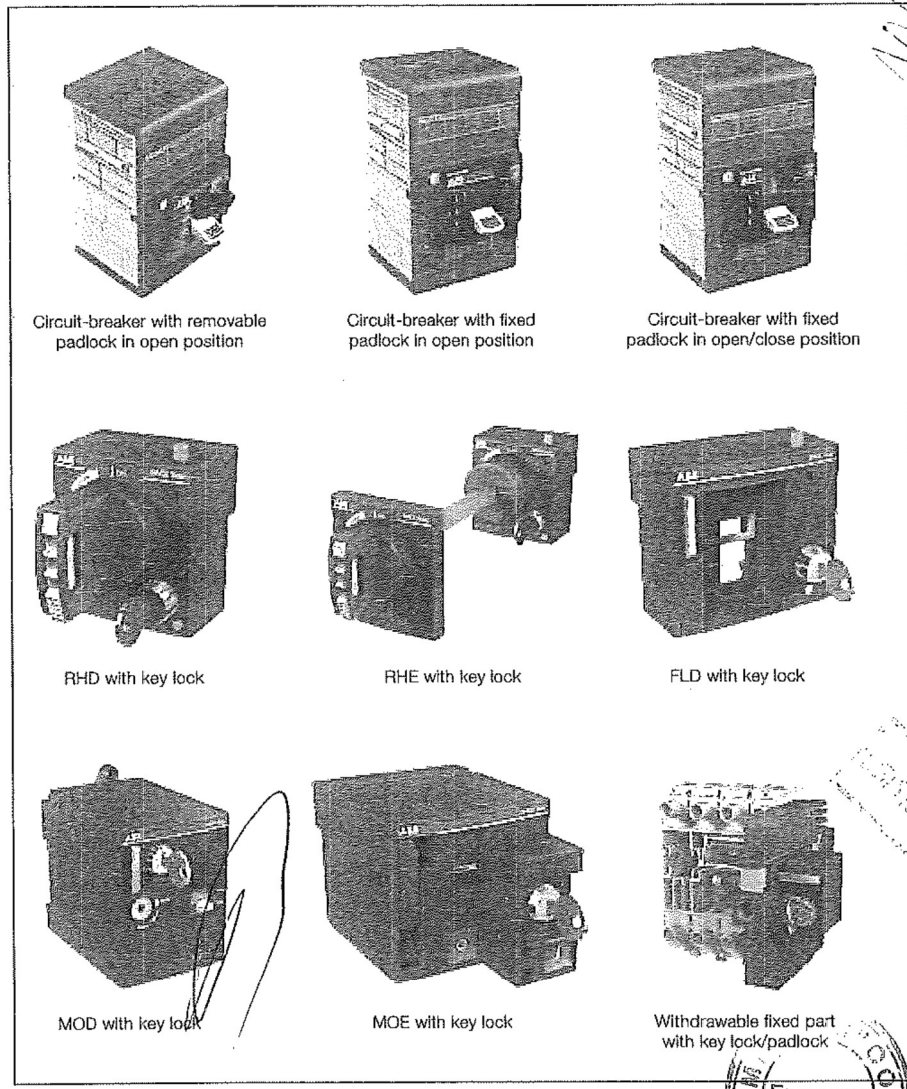


Key lock/padlock for withdrawable fixed part

Padlocks or key locks that prevent the circuit-breaker from being closed and/or opened. They can be fitted:

- ▣ directly on the front of the circuit-breaker;
- ▣ on the rotary handle operating mechanism;
- ▣ on the front for lever operating mechanism;
- ▣ on the motor;
- ▣ to the fixed and withdrawable part, to prevent the moving part from being inserted;
- ▣ on the front of the thermomagnetic trip unit, to prevent the adjuster of the thermal part from being tampered with.

All locks that hold the circuit-breaker in the open position ensure circuit isolation in accordance with the IEC 60947-2 Standard. In the closed position, the locks do not prevent the mechanism from releasing after a fault or remote control.



Circuit-breaker with removable padlock in open position

Circuit-breaker with fixed padlock in open position

Circuit-breaker with fixed padlock in open/close position

RHD with key lock

RHE with key lock

FLD with key lock

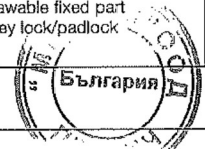
MOD with key lock

MOE with key lock

Withdrawable fixed part with key lock/padlock

Handwritten signature

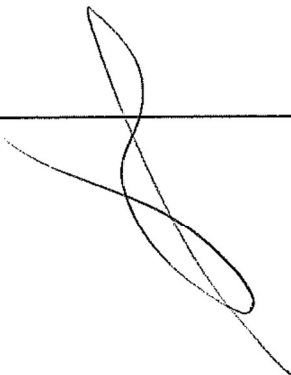
Handwritten signature



Handwritten signature



Characteristic Curves and Technical Information



Index

Characteristic Curves

Examples of Curve reading4/2

Trip curves with thermomagnetic trip unit

Trip curves for distribution4/4

Trip curves for motor protection4/5

Trip curves for generator protection4/8

Trip curves with electronic trip unit

Trip curves for distribution4/9

Trip curves for motor protection4/13

Trip curves for generator protection4/16

Trip curves for oversized neutral protection4/17

Specific let-through energy curves

240V4/18

415V4/19

440V4/20

500V4/21

690V4/22

Limiting curves

240V4/23

415V4/24

440V4/25

500V4/26

690V4/27

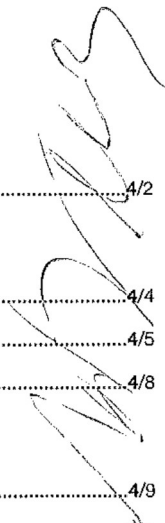
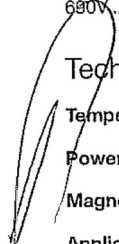
Technical Information

Temperature performances4/28

Power losses4/34

Magnetic trip values4/35

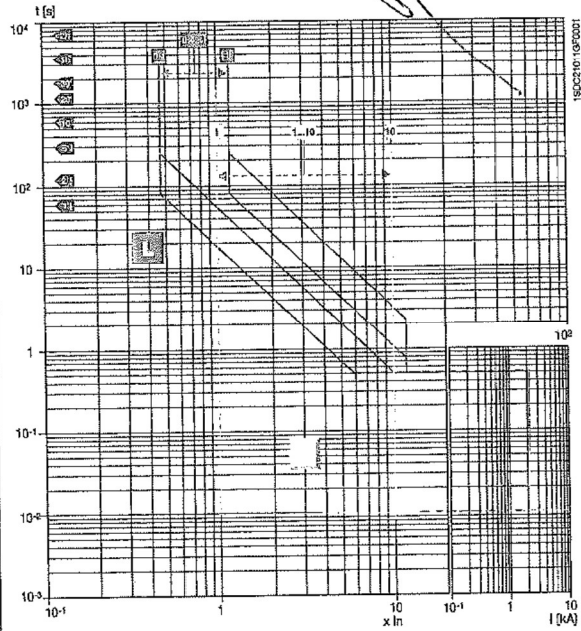
Applications at 440 Hz4/36



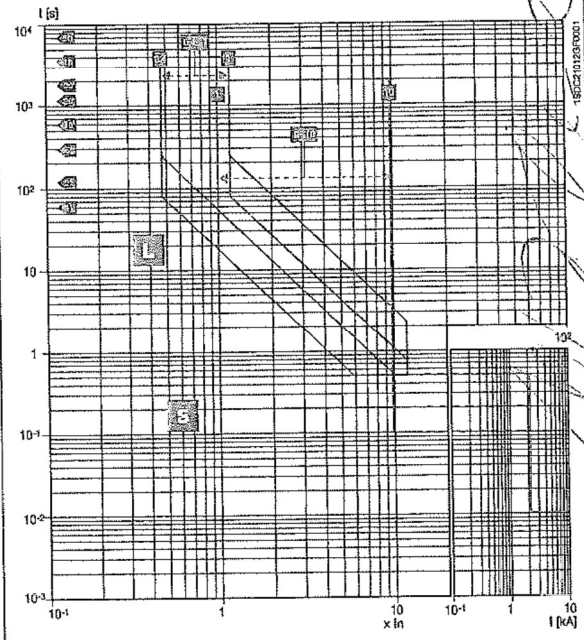
Trip curves with electronic trip unit

Trip curves for distribution

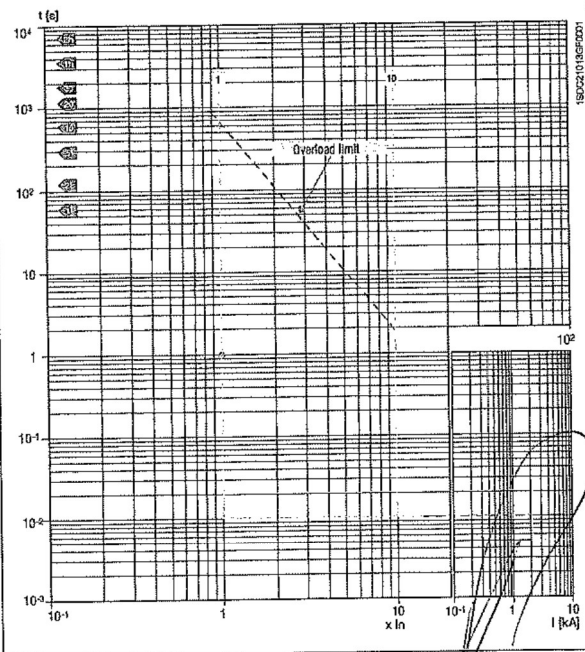
XT2 Ekip LS/I
L-I functions



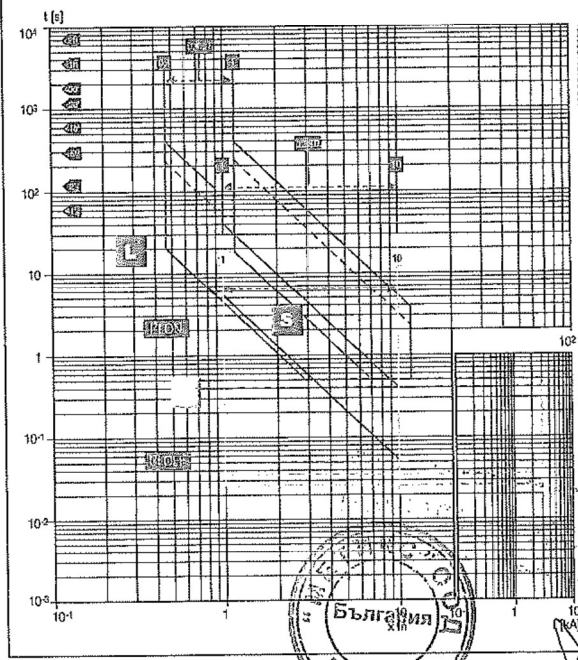
XT2 Ekip LS/I
L-S functions



XT2 Ekip I
I function

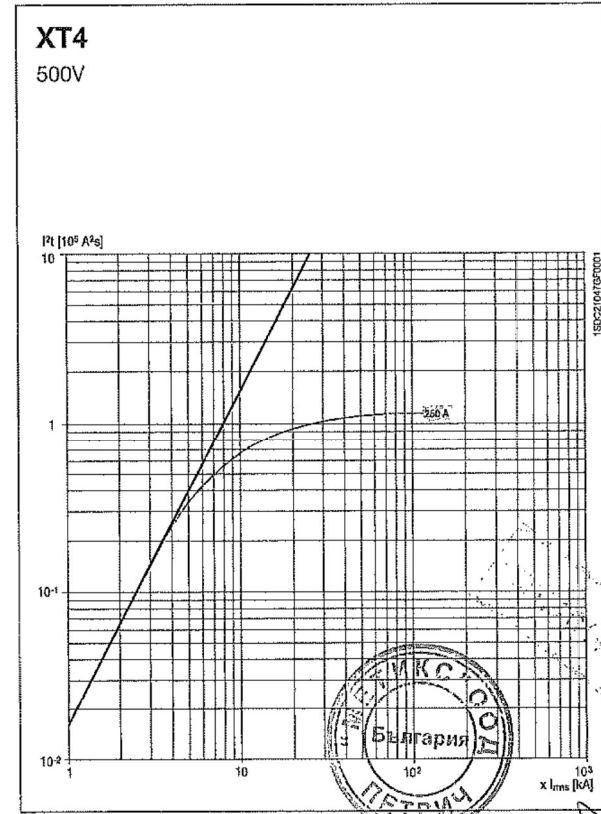
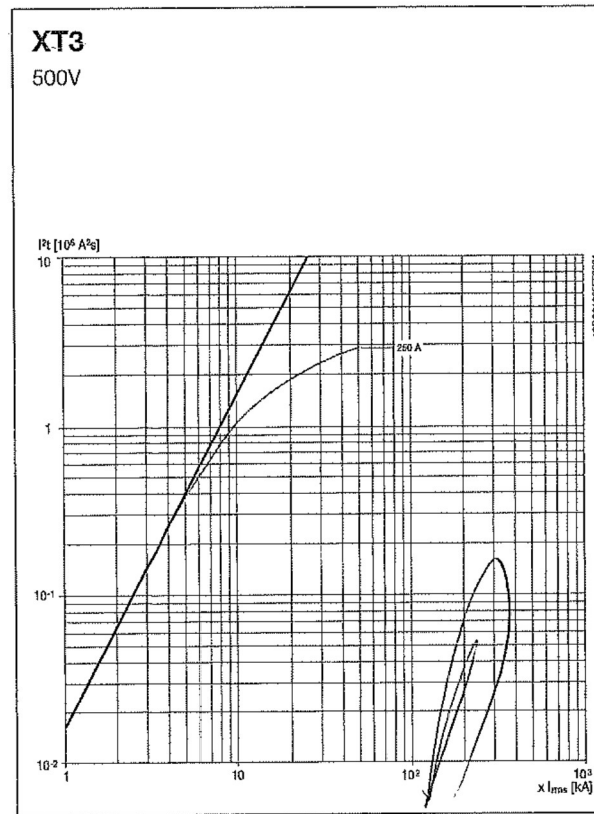
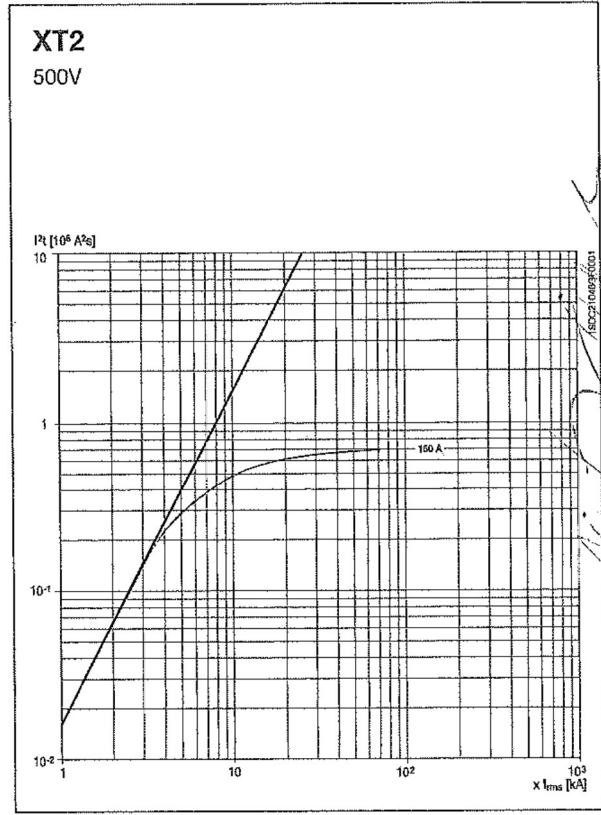
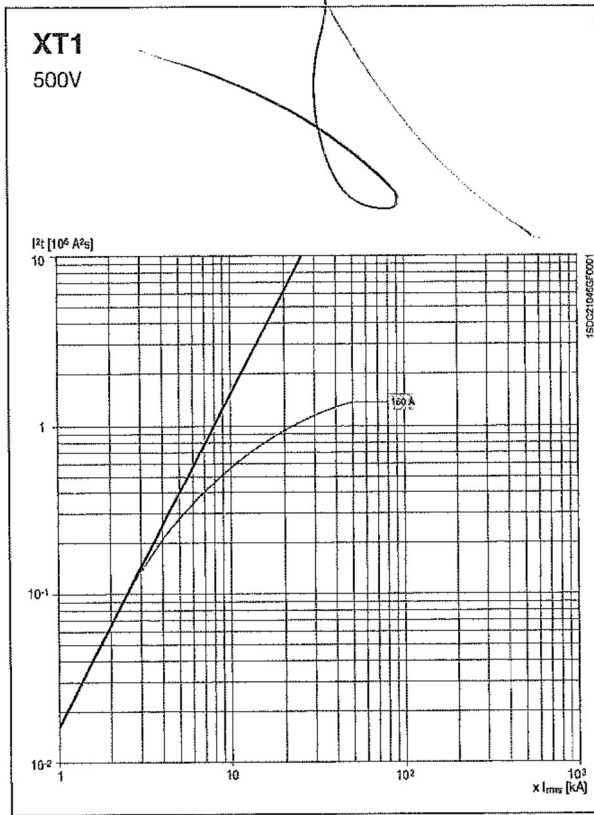


XT2 Ekip LSI
L-S-I functions



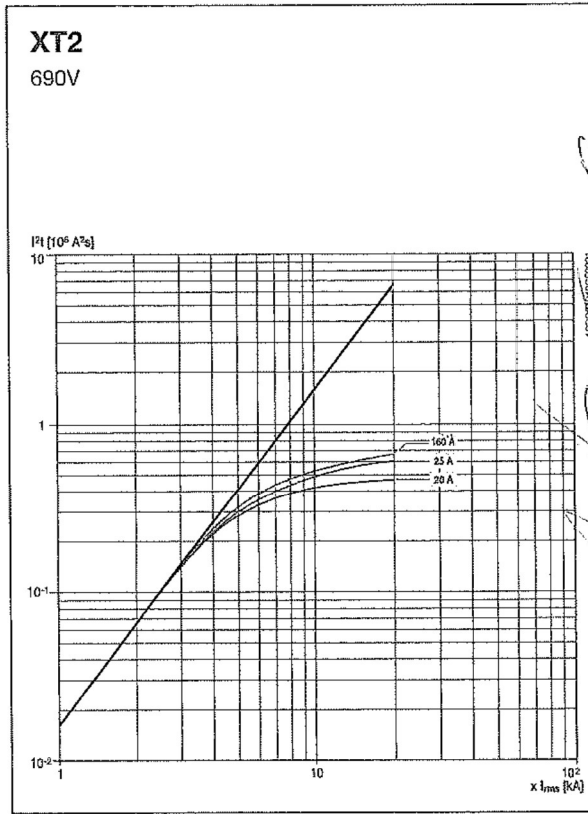
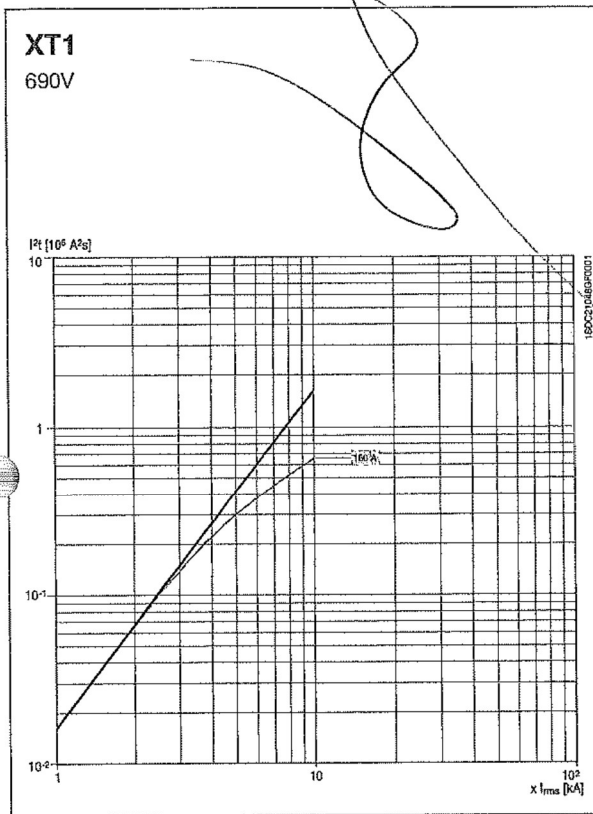
Specific let-through energy curves

500V

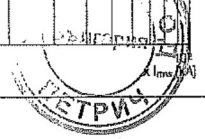
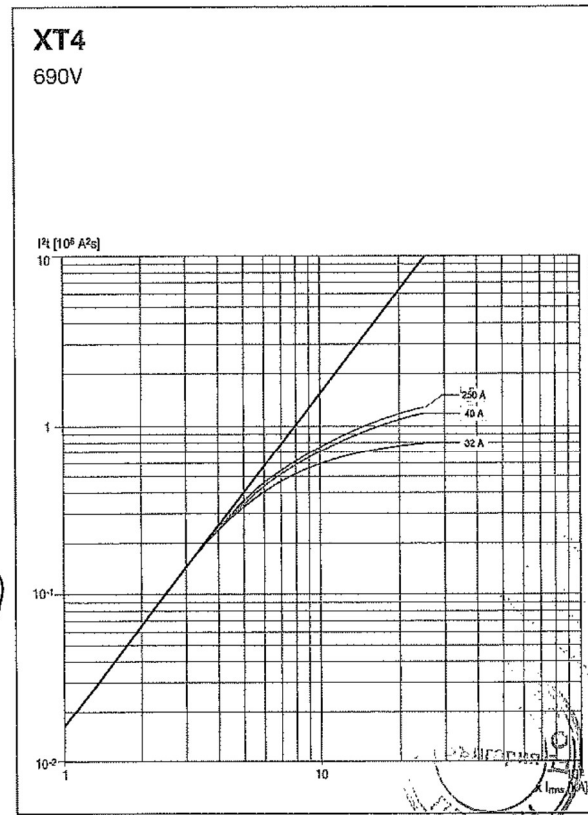
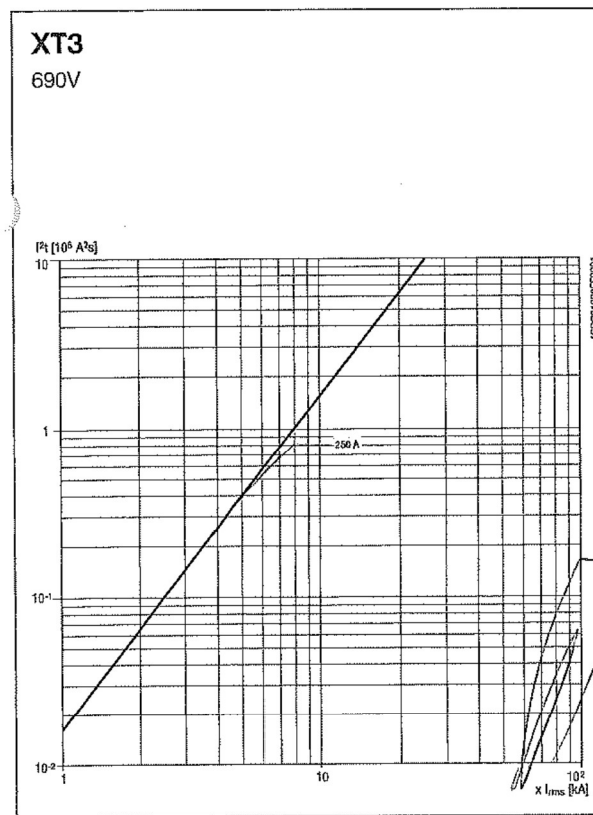


Specific let-through energy curves

690V



Handwritten signature

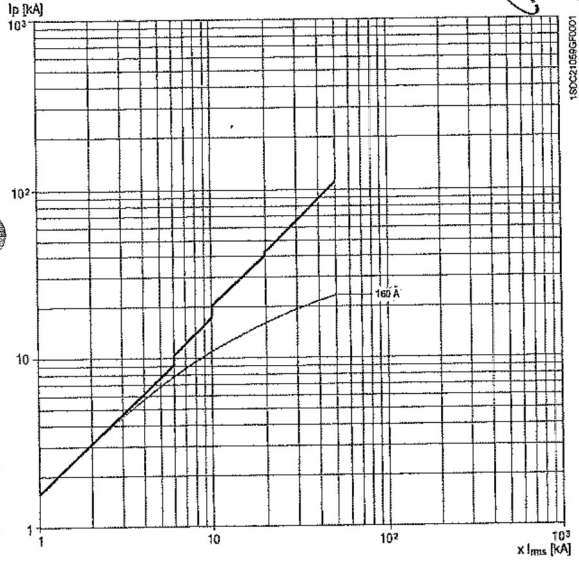


Handwritten signature

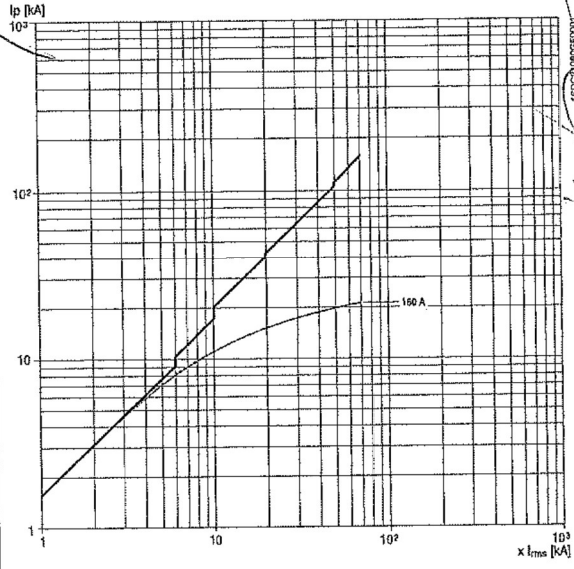
Limiting curves

500V

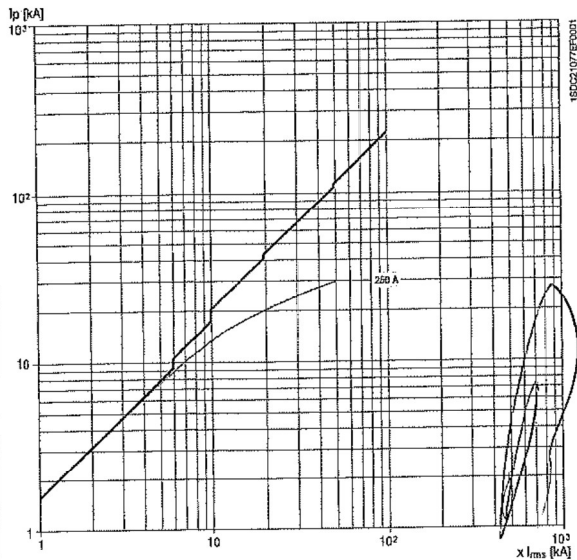
XT1
500V



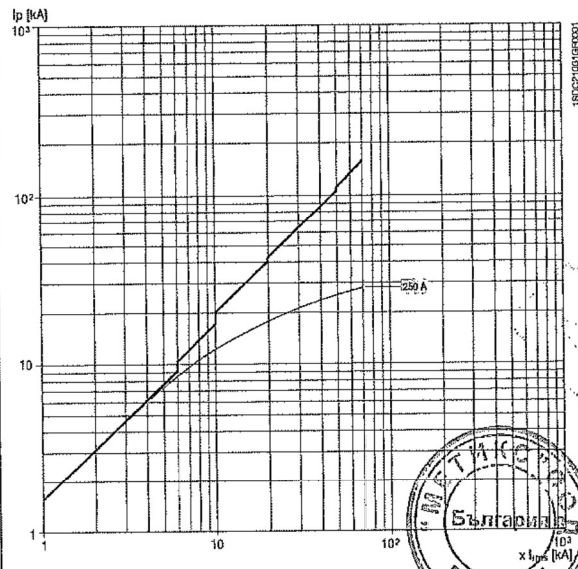
XT2
500V



XT3
500V



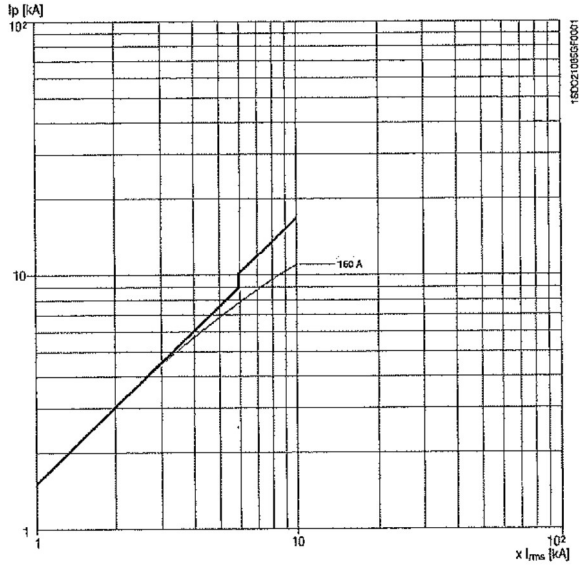
XT4
500V



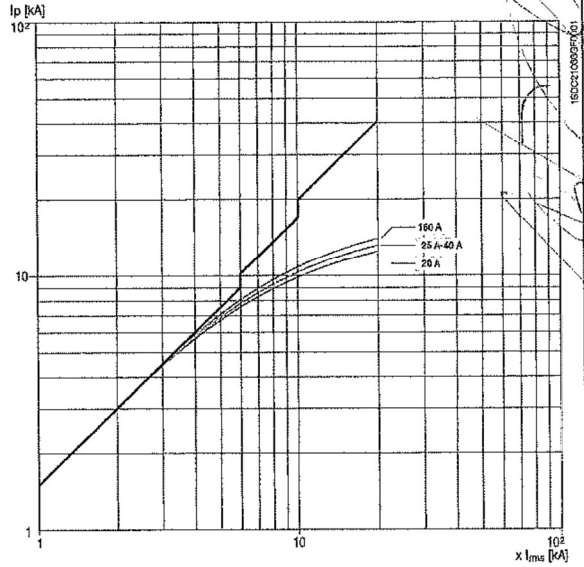
Limiting curves

690V

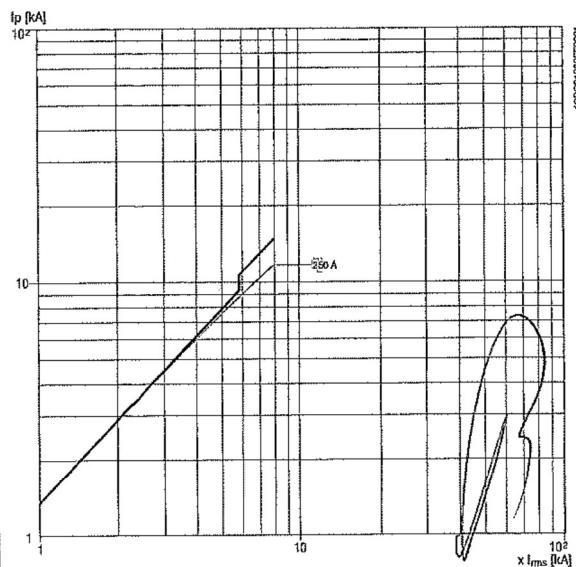
XT1
690V



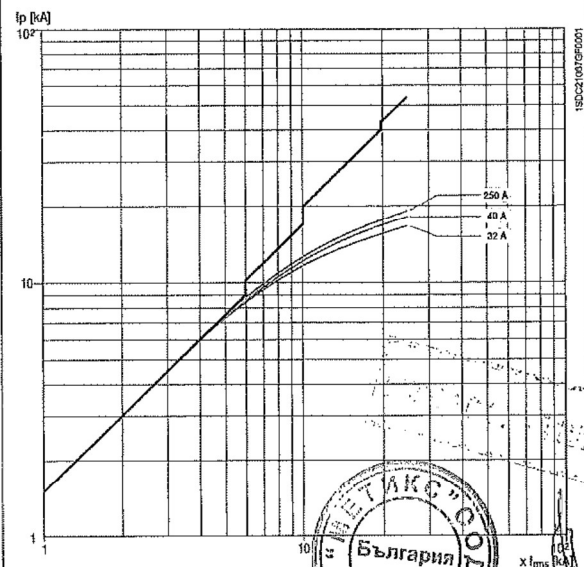
XT2
690V



XT3
690V



XT4
690V





ЕЛЕКТРИЧЕСКИ ТАБЛА, КОМПЛЕКТНИ ТРАНСФОРМАТОРНИ ПОСТОВЕ, ЕЛЕКТРОПАРАТУРА-НН и СрН

гр.Петрич 2850, Промислена зона
ул. "Свобода" 49
тел.: 00359 745 60743; факс: 00359 745 60742
e-mail: metix@metix.bg
гр.София 1000 ул. "Ракодар Вакарцини" б/в.5
тел.: 00359 2 869 0686; факс: 00359 2 958 9334
e-mail: sales@metix.bg



Management System
ISO 9001:2015
ISO 14001:2015
OHSAS 18001:2007
www.tuv.com
ID: 9105026855

ПРИЛОЖЕНИЕ 9.2.2

Техническо описание и чертежи с нанесени на тях размери

Триполюсните автоматични прекъсвачи НН с лят корпус представляват механични комутационни апарати от фиксиран тип с предно свързване на шинната система. Автоматичните прекъсвачи са способни да провеждат и да включват/изключват ръчно електрически токове във вериги при нормални условия и да включват, да провеждат за определено време и да изключват автоматично посредством защита от електронен тип токове във вериги при условията на претоварване и късо съединение.

Тялото (корпусът) на автоматичните прекъсвачи НН е изработено чрез формоване на устойчив на нагряване, на огън и на механични удари изолационен материал.

Управлението се осъществява ръчно посредством лост.

Включването/изключването на контактите на трите полюса се осъществява едновременно с висока скорост, която не зависи от действието на оператора. Автоматичния прекъсвач изпълнява разединяваща функция, която е обозначена с предвидения от стардартата символ. На челния панел на прекъсвача е разположен тест-бутон за проверка на изключвателния механизъм. Лостът за управление при вертикално монтиране на автоматичните прекъсвачи се движи в направление „нагоре-надолу“, при което контактите се затварят при движение нагоре. Лостът има три ясно индикирани положения, съответстващи на позицията на контактната система: „Включено“, „Изключено“ и „Автоматично изключено от свръх токове/Тест“.

Конструкцията осигурява защита срещу проникване на твърди тела и вода до степен най малко IP 20 за клемните съединения и IP 40 за челната повърхност на прекъсвача.

*Настоящото приложение се прилага във връзка с участието ми в:
търга с предмет:*

“Доставка и монтаж на комплектни метални трансформаторни постове”

РЕФ. № PPD 19-102

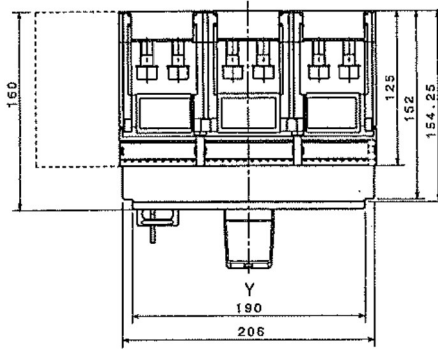
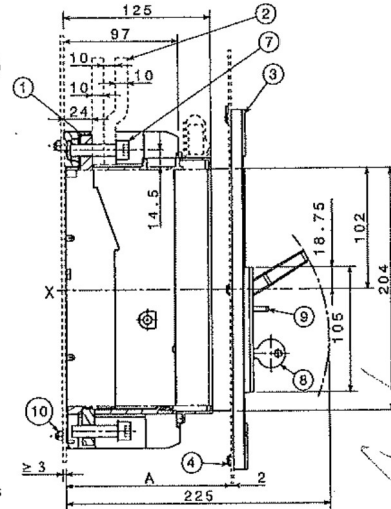
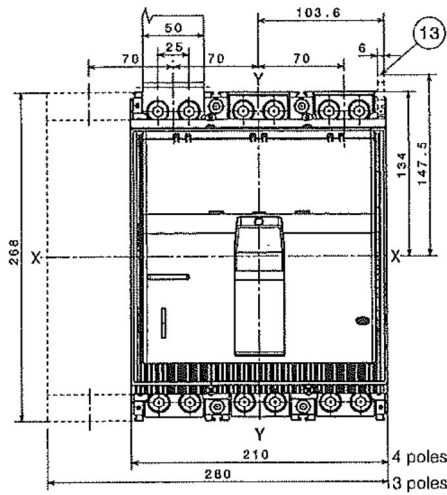
организиран от “ЧЕЗ Разпределение България” АД

Overall dimensions Tmax T7

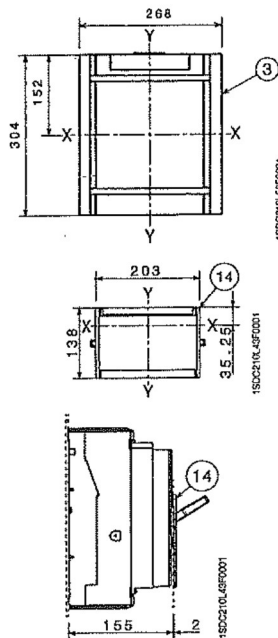
Fixed circuit-breaker Front - F

Caption

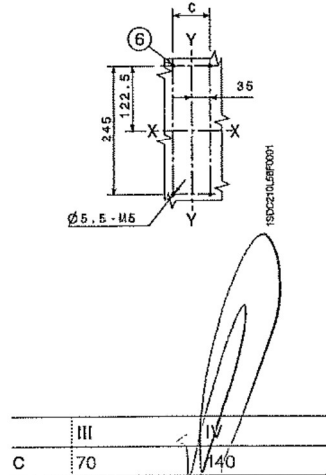
- ① Front terminals for flat connection
- ② Busbars
- ③ Flange for the compartment door
- ④ Flange fixing screws
- ⑥ Drilling template for fixing onto support sheet
- ⑦ Tightening torque: 18 Nm
- ⑧ Key lock (optional)
- ⑨ Padlock (optional)
- ⑩ Tightening torque: 2.5 Nm
- ⑪ Sheet drilling for compartment door with flange
- ⑫ Sheet drilling for compartment door for front 206 x 204
- ⑬ Terminal for auxiliary contacts
- ⑭ Reduce flange for the compartment door (optional)
- ⑮ Sheet drilling for compartment door with reduced flange
- ⑯ Sheet drilling for compartment door for front 190 x 105



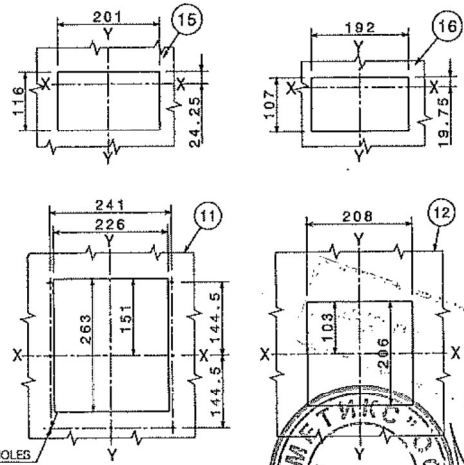
Flange for the compartment door (supplied as standard)



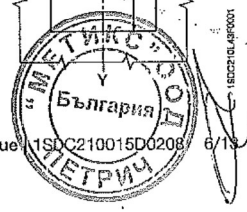
Drilling templates for support sheet



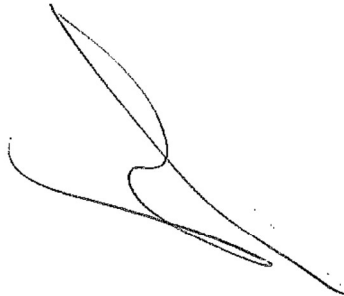
Drilling templates of the compartment door



	With flange	Without flange
A	125...141	147



Overall dimensions Tmax T7

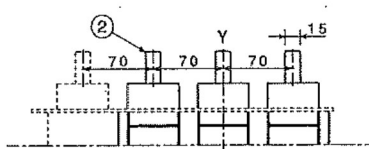
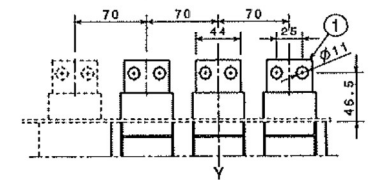
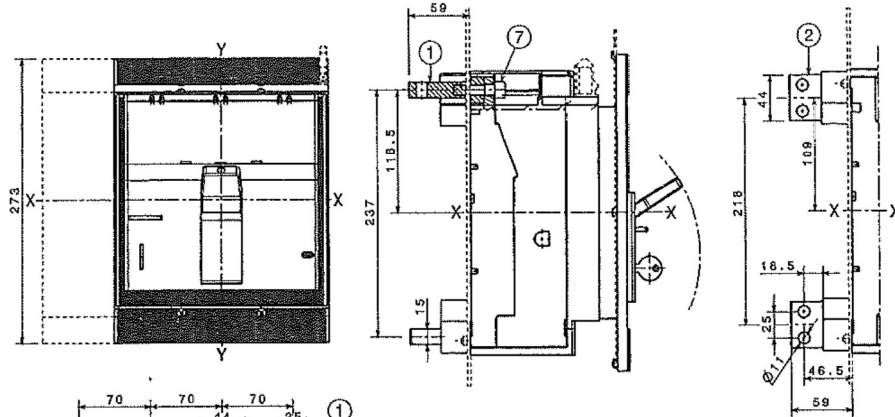


Terminals

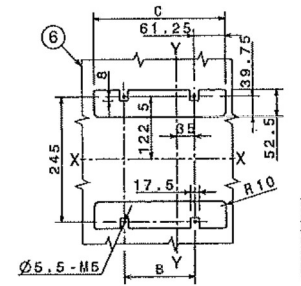
Rear flat horizontal or vertical - HRVR

Caption

- ① Rear horizontal terminals
- ② Rear vertical terminals
- ⑥ Support sheet drilling template
- ⑦ Tightening torque: 20 Nm



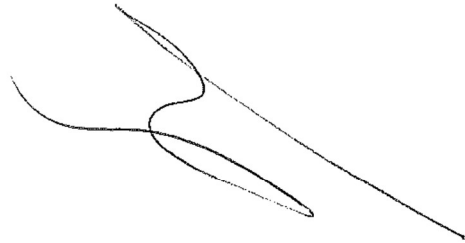
Drilling templates for support sheet



	III	IV
B	70	140
C	192.5	262.5

Handwritten signature



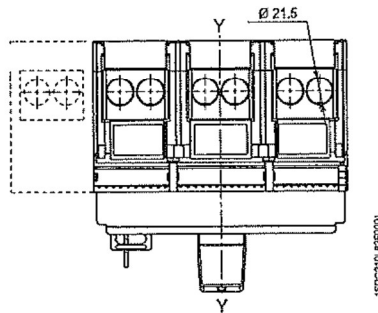
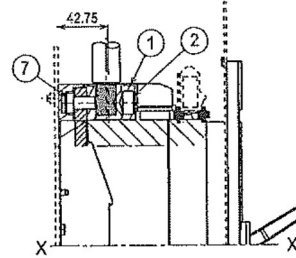
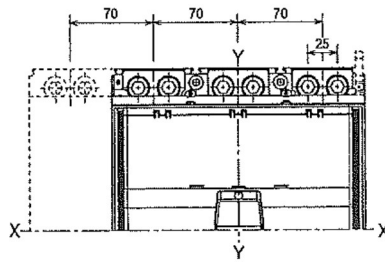


Terminals

Front for copper/aluminium cables - FC CuAl 2x240 mm²

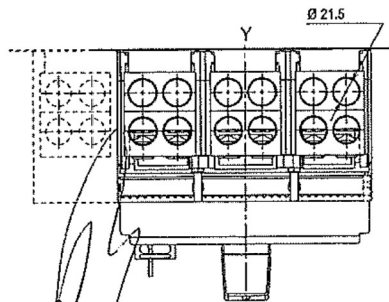
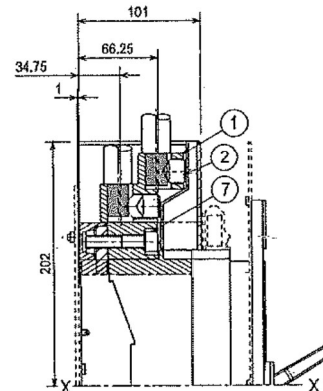
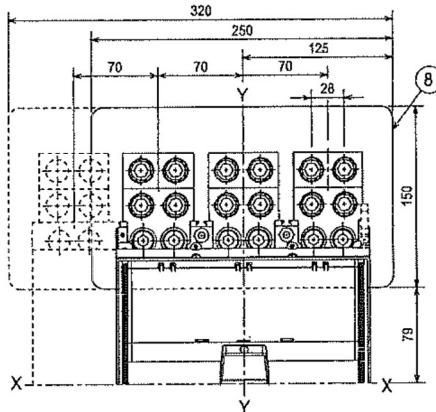
Caption

- ① Front terminals for cables FC CuAl
- ② Tightening torque: 43 Nm
- ⑥ Drilling template for fixing onto support sheet
- ⑦ Tightening torque: 18 Nm
- ⑧ Protection plate



18DC210LJF0201

Front for copper/aluminium cables - FC CuAl 4x240 mm²



18DC210LJF0201

Handwritten signature

6



Handwritten signature



Vertical text or markings along the right edge of the page, possibly bleed-through or a scanning artifact.

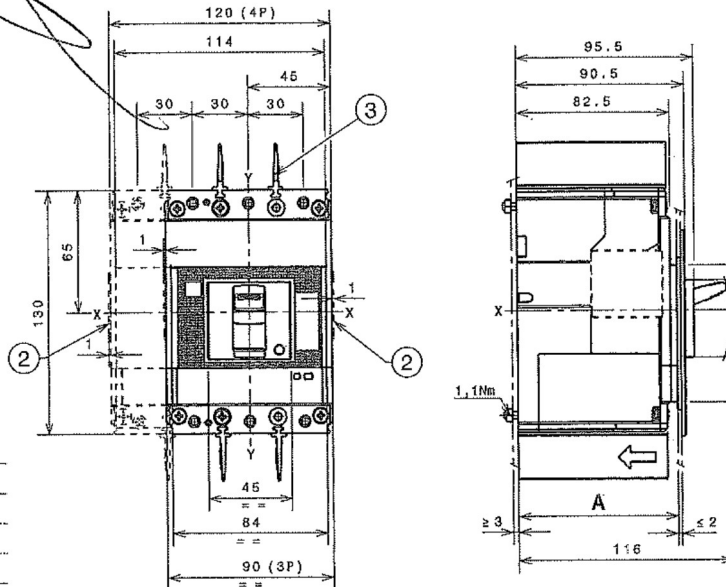
Overall dimensions

Tmax XT2 - Installation for fixed circuit-breaker

Fixed circuit-breaker fixing on sheet

Caption

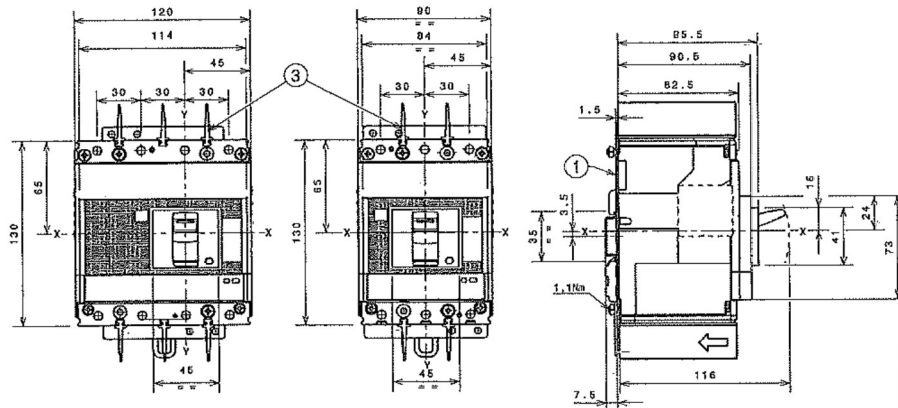
- ② Optional wiring ducts
- ③ 25mm insulating barriers between phases (compulsory) provided



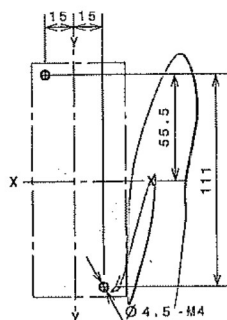
Fixed circuit-breaker fixing on DIN EN 50022 rail

Caption

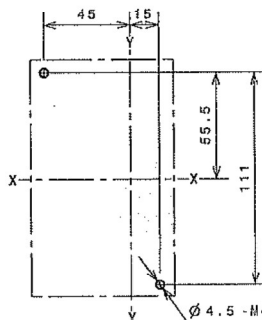
- ① Bracket for fixing
- ③ 25mm insulating barriers between phases (compulsory) provided



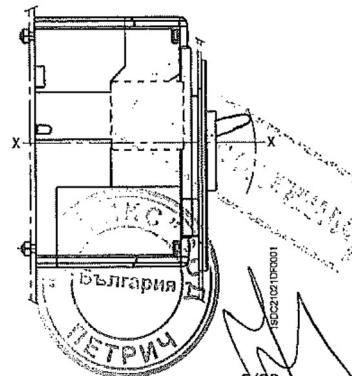
Drilling templates and support sheet



3 POLES



4 POLES



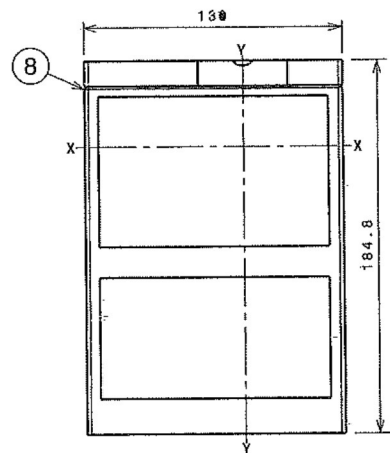
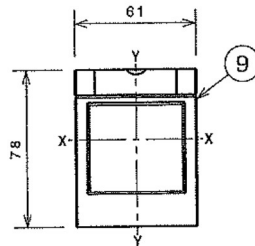
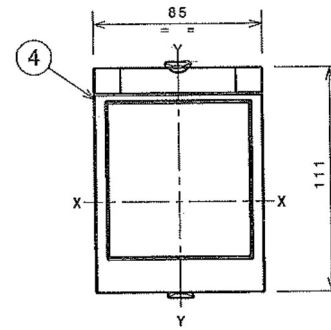
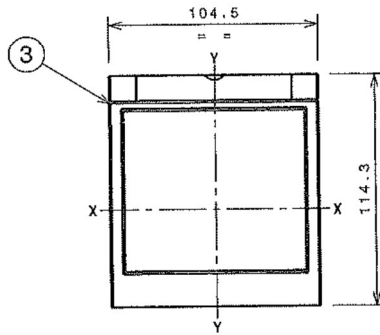
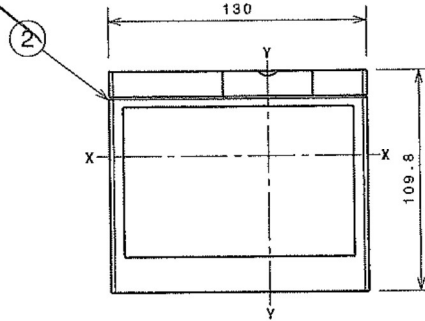
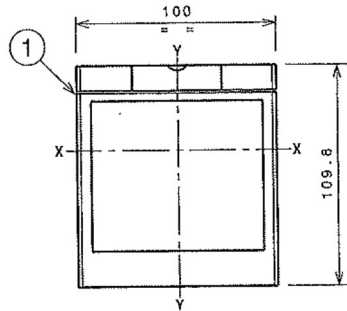
Overall dimensions

Tmax XT2 - Installation for fixed circuit-breaker

Flanges

Caption

- ① Flange for fixed circuit-breaker III
- ② Flange for fixed circuit-breaker IV
- ③ Flange for fixed circuit-breaker III-IV with MOE and FLD
- ④ Flange for circuit-breaker III-IV with direct rotary handle RHD
- ⑧ Flange for circuit-breaker IV with fixed residual current and front terminals
- ⑨ Optional flange



Handwritten signature

1SD21044CF001

1SD21044CF001

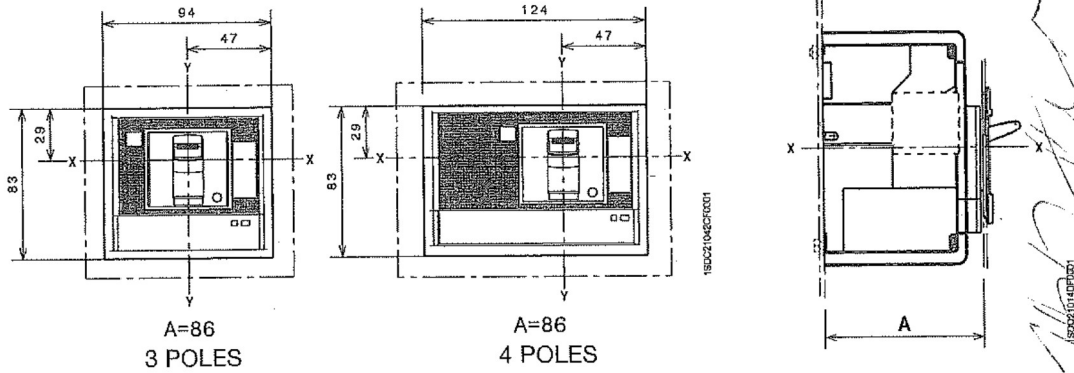
Handwritten scribble



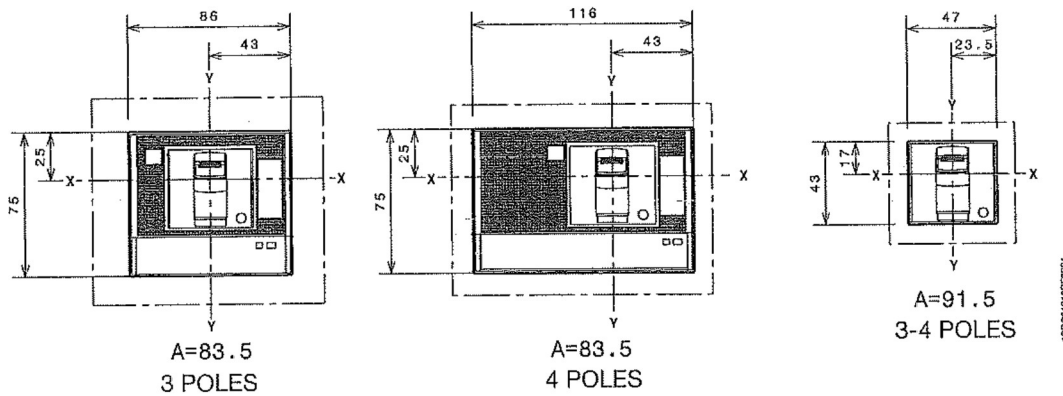
Handwritten signature

Drilling templates compartment door

With standard flange



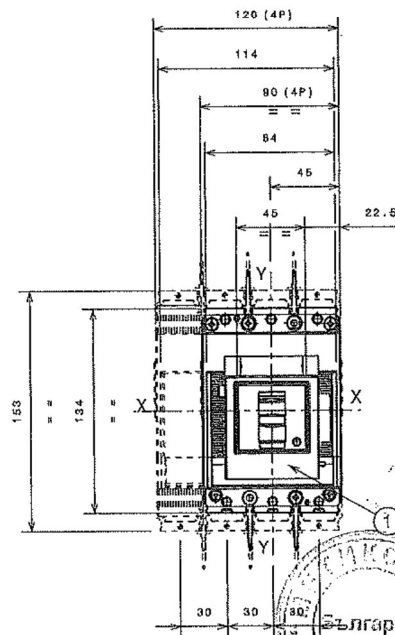
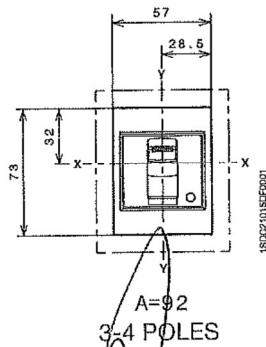
Without flange



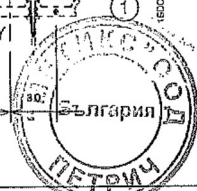
With optional flange

Caption

① Optional flange



Execution		A	B	C
With optional flange	fixed	92		3-4 poles
	plug-in, fixing at 60mm		142	3-4 poles
	plug-in, fixing at 70mm			162 3-4 poles



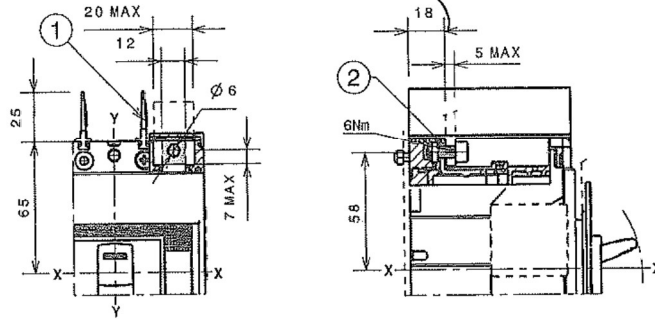
Overall dimensions

TmaxXT2 - Terminals for fixed circuit-breaker

Terminals F

Caption

- ① 25mm insulating barriers between phases (compulsory) not provided
- ② Front terminals for busbars connection

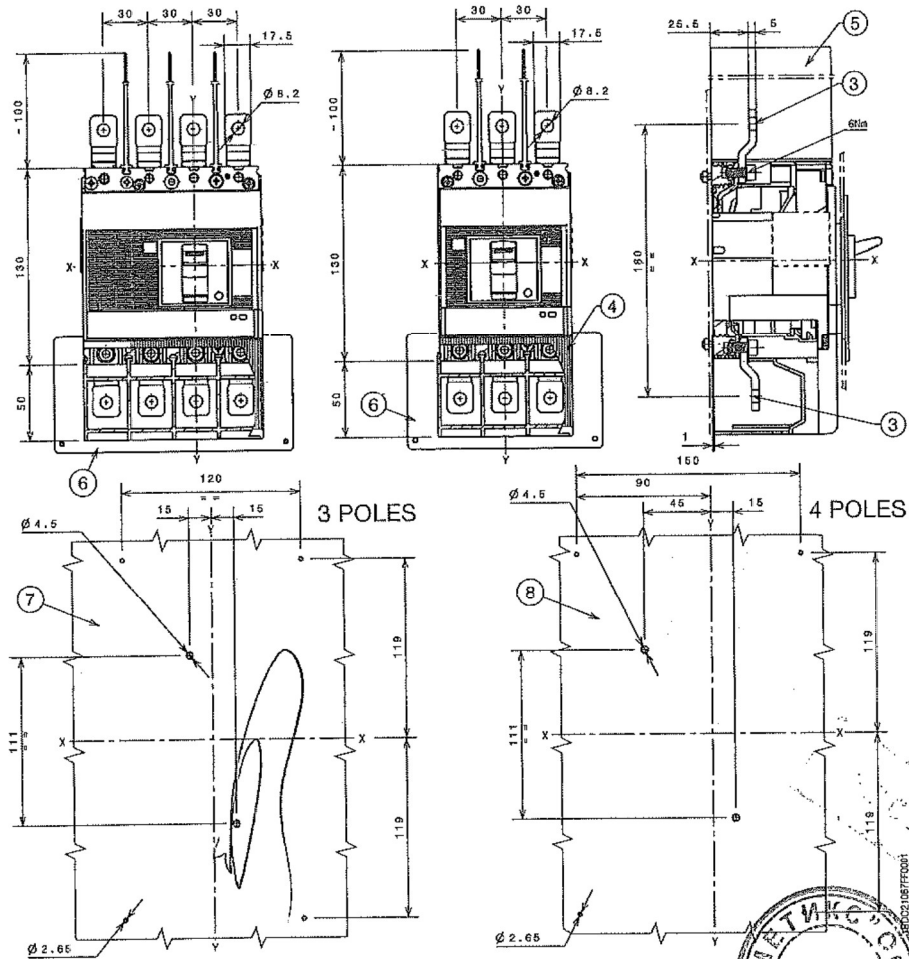


Handwritten signature

Terminals EF

Caption

- ③ Front extended terminals
- ④ Terminal covers with degree of protection IP40 (optional) not provided
- ⑤ 100mm insulating barriers between phases (compulsory) provided
- ⑥ Insulated plate (compulsory) provided for XT2 Ue>440V
- ⑦ Drilling template for 3p circuit-breaker Ue>440V (compulsory)
- ⑧ Drilling template for 4p circuit-breaker Ue>440V (compulsory)

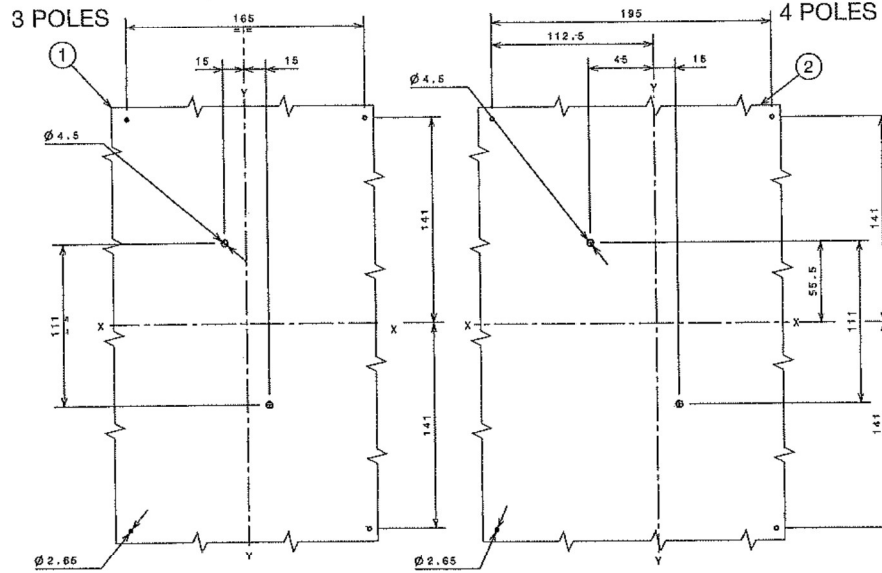
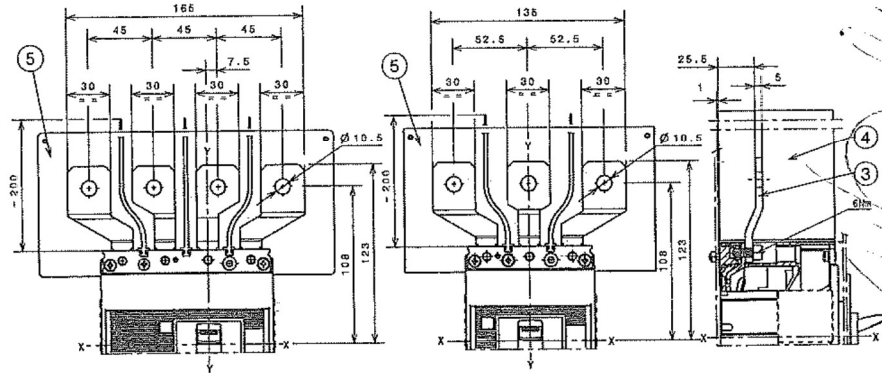


Handwritten signature

Terminals ES

Caption

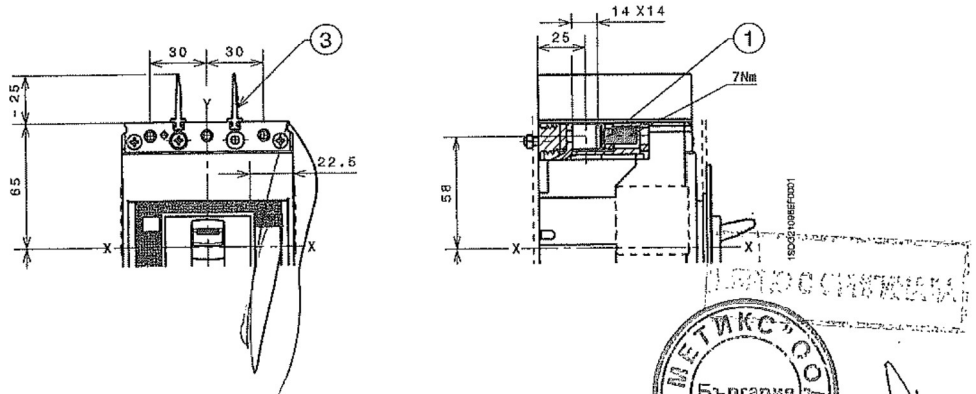
- ① Drilling template for 3p circuit-breaker $U_e > 440V$ (compulsory)
- ② Drilling template for 4p circuit-breaker $U_e > 440V$ (compulsory)
- ③ Front extended spread terminals
- ④ 200mm insulating barriers between phases (compulsory) provided for $U_e > 440V$
- ⑤ Insulated plate (compulsory) provided for XT2 $U_e > 440V$



1x1...95mm² terminals FCCuAl

Caption

- ① 1x1...95mm² terminals FCCuAl
- ③ 25mm insulating barriers between phases (compulsory) provided





ЕЛЕКТРИЧЕСКИ ТАБЛА, КОМПЛЕКТНИ ТРАНСФОРМАТОРНИ ПОСТОВЕ, ЕЛЕКТРОПАРАТУРА-НИ и СрН

гр.Позряч 2850. Промислена зона
ул."Свобода"49
тел.:00359 745 60743; факс:00359 745 60742
e-mail: metix@metix.bg
гр.София 1000 ул."Генерал Вазарини" б/к.5
тел.:00359 2 869 0686; факс:00359 2 858 9334
e-mail: sales@metix.bg



Management
System
ISO 9001:2015
ISO 14001:2015
OHSAS 18001:2007
www.tuv.com
ID 9105026855

Handwritten signature

ПРИЛОЖЕНИЕ 9.2.3

ЕО декларация за съответствие

*Настоящото приложение се прилага във връзка с участието ми в:
търг с предмет:*

“Доставка и монтаж на комплектни метални трансформаторни постове”

РЕФ. № PPD 19-102

организиран от "ЧЕЗ Разпределение България" АД

Handwritten signature

Handwritten signature



EU Declaration of Conformity
EU Konformitätserklärung
UE Déclaration de conformité
Dichiarazione di conformità UE

This declaration of conformity is issued under the sole responsibility of the manufacturer
 Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller /
 La présente déclaration de conformité est établie sous la seule responsabilité du fabricant /
 La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante

ABB SPA – ABB SACE DIVISION
via Pescaria 5
I 24123 Bergamo

Object of declaration

Gegenstand der Erklärung / Objet de la déclaration / Oggetto della dichiarazione

Circuit Breaker / Leistungsschalter / Disjoncteur / Interruttore /
Switch disconnecter / Sezionatore

Type / Typ / Type / Tipo

Tmax I7; T7-M

(and relative accessories)

The object of the declaration described above is in conformity with the relevant Community harmonisation legislation

Der oben beschriebene Gegenstand der Erklärung erfüllt die einschlägigen / Harmonisierungsrechtsvorschriften der Gemeinschaft /

L'objet de la déclaration décrit ci-dessus est conforme à la législation communautaire d'harmonisation applicable /
 L'oggetto della dichiarazione di cui sopra è conforme alla pertinente normativa comunitaria di armonizzazione

Low voltage Directive / Niederspannungsrichtlinie / Directive basse tension / Direttiva Bassa Tensione

No. 2006/95/EC (valid until 19 April 2016) / **No. 2014/35/EC** (valid from 19 April 2016)

Electromagnetic compatibility / EMV-Richtlinie / Directive CEM / Direttiva EMC

No. 2004/108/EC (valid until 19 April 2016) / **No. 2014/30/EC** (valid from 19 April 2016)

and are in conformity with the following harmonized standards or other normative documents

nachgewiesen durch die Einhaltung der nachstehend aufgeführten Normen oder anderen normativen Dokumenten /
 et justifié par le respect des Normes mentionnées ci-dessous ou autres documents normatifs /
 e sono stati applicati le norme o altri documenti normativi indicati di seguito

EN 60947-1: 2007/A1:2011

EN 60947-2: 2006/A2:2013

EN 60947-3: 2009/A1:2012

Year of CE-marking

Jahr der CE-Kennzeichnung / Année d'apposition du marquage CE / Anno in cui è stata affissa la marcatura

2006

Signed for and on behalf of

Unterzeichnet für und im Namen von / Signé par et au nom de / Firmato in vece e per conto di

ABB SpA – ABB Sace Division
Bergamo, April 10th 2016

На основание чл.36а ал.3 от
 ЗОП


Document No.: 1SDL000165R0007 Rev: 2

ABB SpA – ABB Sace Division





СЪЮЗНАТА РЕПУБЛИКА БЪЛГАРИЯ
МИНИСТЕРСТВО НА ИКОНОМИКАТА
И ПРЕДПРИЕМАТСТВОТО


ДИРЕКТОР
БЪЛГАРИЯ
СТЕТИЧ



EU Declaration of Conformity
EU Konformitätserklärung
UE Déclaration de conformité
Dichiarazione di conformità UE

This declaration of conformity is issued under the sole responsibility of the manufacturer
 Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller /
 La présente déclaration de conformité est établie sous la seule responsabilité du fabricant /
 La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante

ABB SPA – ABB SACE DIVISION
via Pescaria 5
I 24123 Bergamo

Object of declaration
 Gegenstand der Erklärung / Objet de la déclaration / Oggetto della dichiarazione

Circuit Breaker / Leistungsschalter / Disjoncteur / Interruttore /
Switch disconnecter / Sezionatore

Type / Typ / Type / Tipo
Tmax XT2
 (and relative accessories)

The object of the declaration described above is in conformity with the relevant Community harmonisation legislation

Der oben beschriebene Gegenstand der Erklärung erfüllt die einschlägigen / Harmonisierungsrechtsvorschriften der Gemeinschaft /

L'objet de la déclaration décrit ci-dessus est conforme à la législation communautaire d'harmonisation applicable /
 L'oggetto della dichiarazione di cui sopra è conforme alla pertinente normativa comunitaria di armonizzazione

Low voltage Directive / Niederspannungsrichtlinie / Directive basse tension / Direttiva Bassa Tensione

No. 2014/35/EC

Electromagnetic compatibility / EMV-Richtlinie / Directive CEM / Direttiva EMC

No. 2014/30/EC

and are in conformity with the following harmonized standards or other normative documents
 nachgewiesen durch die Einhaltung der nachstehend aufgeführten Normen oder anderen normativen Dokumenten /
 et justifié par le respect des Normes mentionnées ci-dessous ou autres documents normatifs /
 e sono stati applicati le norme o altri documenti normativi indicati di seguito

EN 60947-1: 2007/A1:2011+A2:2014

EN 60947-2: 2006/A1:2009+A2:2013

EN 60947-3: 2009/A1:2012+A2:2015

Year of CE-marking

Jahr der CE-Kennzeichnung / Année d'apposition du marquage CE / Anno in cui è stata affissa la marcatura

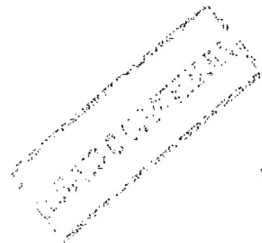
2009

Signed for and on behalf of

Unterzeichnet für und im Namen von / Signé par et au nom de / Firmato in vece e per conto di

ABB SpA – ABB Sace Division
Bergamo, April 10th, 2016

На основание чл.36а ал.3 от
 ЗОП



Document No.: **1SD1000165R0010** Rev: 3

ABB SpA – ABB Sace Division



гр. Петрич 2850, Промислена зона
ул. "Свобода" №49
тел.: 00359 745 60743; факс: 00359 745 60742
e-mail: metix@metix.bg
гр. София 1600 ул. "Ракица-Викингини" бл. 5
тел.: 00359 2 869 0696; факс: 00359 2 958 9334
e-mail: kralov@metix.bg



Management
System
ISO 9001:2015
ISO 14001:2015
OHSAS 18001:2007
www.tuv.com
ID 9105026855

ЕЛЕКТРИЧЕСКИ ТАБЛА, КОМПЛЕКТНИ ТРАНСФОРМАТОРНИ ПОСТОВЕ, ЕЛЕКТРОПАРАТУРА-НИ И СРЪН

ПРИЛОЖЕНИЕ 9.2.4

Протоколи от типови изпитвания на английски или български език, проведени от независима изпитвателна лаборатория – заверени копия, с приложен списък на отделните изпитвания на български език

*Настоящото приложение се прилага във връзка с участието ми в:
търг с предмет:*

“Доставка и монтаж на комплектни метални трансформаторни постове”

РЕФ. № PPD 19-102

организиран от "ЧЕЗ Разпределение България" АД

TYPE APPROVAL CERTIFICATE

DNV-GL

This is to certify that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the DNV GL Type Approval System.

Certificate No. **11 661 - 10 HH**

Company **ABB SACE S.p.A**
Via Baioni 35
24123 Bergamo, ITALY

Product Description **Moulded Case Circuit Breaker**

Type **Tmax T7H 800/ 1000/ 1250/ 1600**

Environmental Category **C**

Technical Data /
Range of Application **Rated current In (40°C) : up to 1600 A**
Rated operational voltage Ue: 690 V AC
Rated insulation voltage Ui/Uimp: 1000 V/ 8 kV
Rated frequency : 50/60 Hz
Rated short-time withstand current Icw: 20 kA
Rated individual pole short-circuit Iit: 19,2 kA
Utilization category: B

Ratings	230VAC	400VAC	440VAC	500VAC	690VAC
Icu[kA]	100	70	65	50	42
Ics[kA]	100	70	65	50	32
Icm[kA]	220	154	143	105	88,2

Release system: Electronic trip units SACE PR231/P, PR232/P, PR331/P, PR332/P. Communication port for monitoring purposes only

Test Standard **GL Guidelines for the Performance of Type Approvals, Chapter 2 - Test Requirements for Electrical / Electronic Equipment and Systems (VI-7-2), Edition 2012, IEC 60947-2 (2006)**

Documents **ABB Sace LBRP 8013/00, LBRP 7876/01, CESI A7027438, Intertek E133S2207G5_25a, E133S2207G5_25b, E133S2207G5_25aR, E133S2207G5_25bR, 706688 dated 2009-02-06, 706686 dated 2009-02-04 LOVAG IT 07.008 - IT 08.020, LOVAG 06.071 - 08.010, ABB Sace 1SDC210015D0202**

Remarks **This certificate is issued on the basis of GL Guidelines for the Performance of Type Approvals, Chapter 1 - Procedure (VI-7-1), Edition 2007.**

Valid until **2020-08-24**

Page **1 of 1**

File No. **I.K.01**

Hamburg, **2015-06-16**

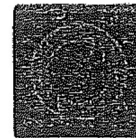
DNV GL

Type Approval Symbol



На основание чл.36а ал.3 от ЗОП





TYPE APPROVAL CERTIFICATE

N. ELE291714CS02

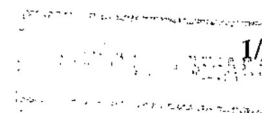
This is to certify that the product below is found to be in compliance with the applicable requirements of the RINA type approval system.

<i>Description</i>	Moulded-case circuit breaker
<i>Type</i>	T7 and T7M Series with electronic release type PR331/P; PR332/P; PR231/P; PR232/P
<i>Applicant</i>	ABB SpA - ABB SACE Division Via Pescaria, 5 24123 Bergamo Italy
<i>Manufacturer</i>	ABB SpA - ABB SACE Division Via Pescaria, 5 24123 Bergamo Italy
<i>Testing Standards</i>	Rules for the Classification of Ships – Part C – Machinery, System and Fire Protection – Ch.3, Sect. 6, Table 1.

Issued in Genova on October 08, 2014

This certificate is valid until October 08, 2019

На основании чл.36а ал.3 от ЗОП





TYPE APPROVAL CERTIFICATE

N. ELE291714CS02

Circuit-breakers type T7 & T7M

with electronic releases type PR331/P; PR332/P; PR231/P; PR232/P

- Manual operating mechanism or motorized stored energy operating mechanism (series M)

Technical datas:

Rated operational voltage (Ue); Rated current (In); Rated frequency: 50 /60Hz; Poles: 3, 4

Utilization Category: B, Ambient temperature: 40°C (**)

Rated service short circuit breaking capacity (Ics);

Rated ultimate short circuit breaking capacity (Icu)

Rated short circuit making capacity (Icm);

Rated short-time withstand current (Icw)

T7S 800 / T7S 1000 / T7S 1250 / T7S 1600

T7S 800 M / T7S 1000 M / T7S 1250 M / T7S 1600 M In 800, 1000, 1250, 1600A

Ue (V)	Ics (kA)	Icu (kA)	Icm (kA)	Icw (kA)
230	85	85	187	20
415	50	50	105	20
440	50	50	105	20
500	40	40	84	20
690	30	30	63	20

T7H 800 / T7H 1000 / T7H 1250 / T7H 1600

T7H 800 M / T7H 1000 M / T7H 1250 M / T7H 1600 M In 800, 1000, 1250, 1600A

Ue (V)	Ics (kA)	Icu (kA)	Icm (kA)	Icw (kA)
230	100	100	220	20
415	70	70	154	20
440	65	65	143	20
500	50	50	105	20
690	31.5	42	88.2	20

T7L 800 / T7L 1000 / T7L 1250 / T7L 1600

T7L 800 M / T7L 1000 M / T7L 1250 M / T7L 1600 M In 800, 1000, 1250, 1600A

Ue (V)	Ics (kA)	Icu (kA)	Icm (kA)	Icw (kA)
230	200	200	440	20
415	120	120	264	20
440	100	100	220	20
500	63.7	85	187	20
690	37.5	50	105	20

T7V 800 / T7V 1000 / T7V 1250

T7V 800 M / T7V 1000 M / T7V 1250 M In 800, 1000, 1250, 1600A

Ue (V)	Ics (kA)	Icu (kA)	Icm (kA)	Icw (kA)
230	200	200	440	15
415	150	150	330	15
440	130	130	286	15
500	100	100	220	15
690	45	60	132	15





TYPE APPROVAL CERTIFICATE

N. ELE291714CS02

Rated operational voltage (Ue); Rated current (In); Rated frequency: 50 /60Hz; Poles: 3 , 4
Utilization Category: A, Ambient temperature: 45°C

Rated service short circuit breaking capacity (Ics); Rated ultimate short circuit breaking capacity (Icu)
Rated short circuit making capacity (Icm)

Ue (V)	In 800A	Icu (kA)	Icm (kA)
230	170	170	374
415	170	170	374
440	170	170	374
500	75	75	165
690	75	75	165

Documents

CESI Test report n° A07027438 issued on 26/02/2008.
 CESI Test report n° A9027593 issued on 30/09/2009.
 ABB SACE Test report n° LBRP 7876/01 issued on 20.12.2007.
 ABB SACE Test report n° LBRP 10210/00 & LBRP 10210/01 issued on 01.06.2010.
 ABB SACE Test report n° LBRP 8013/00 issued on 08.09.2008 & LBRS 8014/00 Rev.1 issued on 11.05.2009.
 INTERTEK Test report n° E133S2207/G5_25bR issued on 25/06/2007, n° E133S2207G5_25aR issued on 28/06/2007,
 n° E133S2207G5_25a issued on 28/06/2007 & n° E133S2207G5_25b issued on 28/06/2007.
 LOVAG Test reports n° IT 07.002, IT 07.005, IT 07007, IT 07.008, IT 07.009, IT 07.013, IT 07.012, IT 07.003,
 IT 07.011, IT 07.006, IT 07.014, IT 07.010, IT 07.040, IT 07.062, IT 07.077, IT 07.078, IT 07.075, IT 07.076,
 IT 08.019, IT 08.010, IT 08.018, IT 08.020, IT 08.009, IT 08.051, IT 08.052, IT 08.053, IT 08.054, IT 08.079,
 IT 08.074, IT 08.075, IT 08.078.
 LOVAG Test reports n° IT 10.050, IT 10.049 issued on 07.04.2010 and n° IT 11.003 issued on 01.12.2010,
 INTERTEK Test report n° 706686 issued on 04.02.2009.
 INTERTEK Test report n° 706688 issued on 06.02.2009.

Remarks

- (*) Circuit breakers type T7S, T7S M, T7H, T7H M, T7L, T7L M, T7V, T7V M are type approved according to IEC 60947-2:2003.
Circuit breakers type T7X are type approved according to IEC 60947-2:2006; they are suitable for use in an IT system.
- (**) A derating of the rated current is to be considered with an ambient temperature of 45 °C according to ABB Catalogue n° 1SDC210015D0903 Ed.2008.

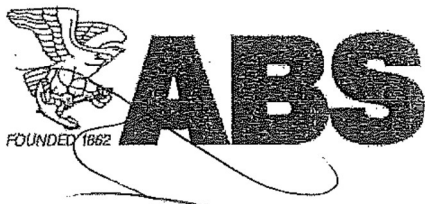


Handwritten signature

Handwritten signature



3/3
Handwritten signature



CERTIFICATE NUMBER DATE
16-GE1500148-PDA 31 Mar 2016

ABS TECHNICAL OFFICE
Genoa Engineering Department

CERTIFICATE OF DESIGN ASSESSMENT

This is to certify that a representative of this Bureau did, at the request of
ABB S.P.A. - ABB SACE DIVISION

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: **Circuit Breaker**

Model: **Tmax T1, T2, T3, T4, T5, T6 and T7**

This Product Design Assessment (PDA) Certificate 16-GE1500148-PDA, dated 31/Mar/2016 remains valid until 30/Mar/2021 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

На основание чл.36а ал.3 от ЗОП



NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by the terms and conditions as contained in ABS Rules 1-1/2/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010).

TERMS & CONDITIONS OF ABS DESIGN ASSESSMENT

1. AGREEMENT

Unless otherwise agreed in writing, all services rendered and certificates issued are governed by the terms and conditions of the "Request for Product Type Approval and Agreement" (the "Agreement") which are hereby incorporated by reference.

2. REPRESENTATIONS AS TO DESIGN ASSESSMENT

A certificate of design assessment represents that the product design meets the ABS, statutory, industrial or manufacturer's standard described on the reverse hereof and that the manufacturer has established a systematic quality monitoring system sufficient to show its capacity to consistently manufacture a product which meets the designated standards. ABS is not a substitute for the independent judgment of professional designers or engineers nor a substitute for the quality control procedures of constructors, steel makers, suppliers, manufacturers and vendors of marine structures, materials, machinery or equipment. ABS represents solely to the manufacturer or other client of ABS that it will use due diligence in developing Rules, Guides and standards and in surveying the plant as called for by ABS criteria for type approval.

3. SUSPENSION OF CERTIFICATION

Any of the following events will cause immediate suspension of the certificate of design assessment unless the change is submitted to ABS for a new review and audit.

- a) Redesign of the product or products covered by this certificate;
- b) Change in production methods;
- c) Substantial change in management organization;
- d) Substantial change in frequency or curriculum for personnel training;
- e) Refusing access to ABS personnel for periodic or annual audits;
- f) Failure to correct a non-compliance identified during an audit or in service;
- g) Failure to pay ABS fees.

4. VALIDITY

The validity, applicability and interpretation of a certificate issued under the terms of or in contemplation of ABS Type Approval are governed by the Rules, Guides and standards of American Bureau of Shipping which shall remain the sole judge thereof. Nothing contained in this certificate or in

any report issued in contemplation of this certificate shall be deemed to relieve any designer, builder, owner, manufacturer, seller, supplier, repairer, operator or other entity of any warranty express or implied, nor create any interest, right, claim or benefit in any third party. It is understood and agreed that nothing expressed herein is intended or shall be construed to give any person, firm or corporation other than the parties hereto, any right, remedy, or claim hereunder or under any of the provisions herein contained; all of the provisions hereof are for the sole and exclusive benefit of the parties hereto.

5. LIMITATION

ABS makes no representations beyond those contained herein and in the provisions of the Agreement regarding its reports, statements, plan review, surveys, certificates or other services.

6. HOLD HARMLESS

The party to whom this certificate is issued, and his assignee and successor in interest, agree to indemnify and hold harmless ABS from and against any and all claims, demands, lawsuits, or actions for damages, including legal fees, to persons or other legal entities and property, tangible, intangible, or otherwise which may be brought against ABS incidental to, arising out of or in connection with the work done, services performed or material to be furnished under this certificate, except for those claims caused solely and completely by the negligence of ABS, its agents, employees, officers, directors or subcontractors.

7. ARBITRATION

Any and all differences and disputes of whatsoever nature arising out of this agreement shall be put to arbitration in the City of New York pursuant to the laws relating to the arbitration there in force, before a board of three persons, consisting of one arbitrator to be appointed by ABS, one by Client, and one by the two so chosen. The decision of any two of the three on any point or points shall be final. Until such time as the arbitrators finally close the hearings either party shall have the right by written notice served on the arbitrators and on an officer of the other party to specify further disputes or difference under this Agreement for hearing and determination. The arbitration is to be conducted in accordance with the rules of the Society of Maritime Arbitrators, Inc. The arbitrators may grant any relief, other than punitive damages,

which they, or a majority of them, deem just and equitable and within the scope of the agreement of the parties, including, but not limited to, specific performance. Awards made in pursuance to this clause may include costs including a reasonable allowance for attorney's fees and judgment may be entered upon any award made hereunder in any court having jurisdiction. ABS and client hereby mutually waive any and all claims to punitive damages in any forum.

Client shall be required to notify ABS within thirty (30) days of the commencement of any arbitration between it and third parties which may concern ABS's work in connection with this Agreement and shall afford ABS an opportunity, at ABS's sole option, to participate in the arbitration.

8. TIME BAR TO LEGAL ACTION

Any statutes of limitation notwithstanding, Client expressly agrees for itself and its affiliated companies that its right to bring or to assert against ABS any and all claims, demands or proceedings whether in arbitration or otherwise shall be waived unless (a) notice is received by ABS within thirty (30) days after Client or its affiliates had notice of or should reasonably have been expected to have had notice of the basis for such claims; and (b) arbitration or legal proceedings, if any, based on such claims or demands of whatever nature are commenced within one (1) year of the date of such notice to ABS.

9. LIMITATION OF LIABILITY

The combined liability of American Bureau of Shipping, its officers, employees, agents or subcontractors for any loss, claim, or damage arising from negligent performance or non-performance of any services under this Agreement, of from breach of any implied or express warranty of workmanlike performance in connection with the services, or from any other reason, to any person, corporation, partnership, business entity, sovereign, country or nation, shall be limited to the greater of a) \$100,000 or b) an amount equal to ten times the sum actually paid for the services alleged to be deficient.

The limitation of liability may be increased up to an amount twenty-five times that sum paid for services upon receipt of Client's written request at or before the time of performance of service and upon payment by Client of an additional fee of \$10.00 for every \$1,000.00 increase in the limitation.

ABB S.P.A. - ABB SACE DIVISION
ACCOUNTING SERVICES
VIA L. LAMA, 33
SESTO S. GIOVANNI (MI)
Italy 20099
Telephone: +39-035-395111
Fax: +39-035-395306
Email: antonio.pizzoti@it.abb.com
Web: www.bol.it.abb.com



Tier: 2 - PDA Issued

Product: Circuit Breaker
Model: Tmax T1, T2, T3, T4, T5, T6 and T7
Intended Service:
Electrical Installation Protection for Marine and Offshore Equipment

Description:
Low voltage circuit breakers of moulded case construction, with microprocessor-based overcurrent release and thermal magnetic release.

Rating:
Rated Voltage: 240-690VAC / 125-500-750VDC
Rated Current: 160-250-320-400-630-800-1000-1250-1600A
See attachment for further details.

Service Restriction:
Unit Certification is not required for this product.
If the manufacturer or purchaser requests an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments:
The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes/Drawing/Documentation:
Drawing No. ISDC210015D0207 Ed. January 2013 Technical Catalogue Tmax
ABB Sace ISO 9001 Certificate No.8337/00/S
Declaration No.LB-DT 013-16D
Declaration No.LB-DT 015-16D
Declaration No.LB-DT/LA AG 018-14D
EMC Test Report No.TR 21747 - PR222
EMC Test Report No.TR 21828 - PR122
EMC Test Report No.TR 21920 - PR332
EMC Test Report No.TR 21966 - PR331
EMC Test Report No.TR 21967 - PR121
EMC Test Report No.TR 21975 - PR221
Routine Test Report No.10155072
Routine Test Report No.10155086
Routine Test Report No.10155145

Terms of Validity:
This Product Design Assessment (PDA) Certificate 16-GE1500148-PDA, dated 31/Mar/2016 remains valid until 30/Mar/2021 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the

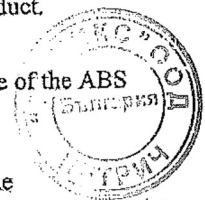


ABB S.P.A. - ABB SACE DIVISION
ACCOUNTING SERVICES
VIA L. LAMA, 33
SESTO S. GIOVANNI (MI)
Italy 20099
Telephone: +39-035-395111
Fax: +39-035-395306
Email: antonio.pizzotti@it.abb.com
Web: www.bol.it/abb.com



Handwritten signature

Tier: 2 - PDA Issued

manufacturer and intended client.

STANDARDS

ABS Rules:

- 2016 Rules for Conditions of Classification, Part 1 – Offshore Units and Structures 1-1-4/9.7, 1-1 Appendix 2 and 3
- 2016 Mobile Offshore Drilling Unit Rules 1-1-4/9.7, 1-1 Appendix 2 and 3, 6-1-7/13.1
- 2016 Facilities on Offshore Installations 1-1-4/9.7, 1-1-Appendix 2 and 3
- 2016 Steel Vessel Rules 1-1-4/7.7, 1-1 Appendix 3 and 4, 4-8-3/5.3.3
- 2016 Steel Vessels Under 90 Meters (295 Feet) in Length 1-1-4/7.7, 1-1-Appendix 3 and 4, 4-6-4/11.1
- 2016 Offshore Support Vessels 1-1-4/7.7, 1-1-Appendix 3 and 4, 4-8-3/5.3.3

National:
NA

International:
IEC 60947-2 Ed.4.0 (2006) + A1 (2009) + A2 (2013)

Government:
NA

EUMED:
NA

OTHERS:
NA



Handwritten signature



ATTACHMENT TO CERTIFICATE No.15-GEI500148-PDA dated 31 March 2016

remaining valid until 30 March 2021 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

Rated uninterrupted current, Iu No. Poles Rated service voltage, Ue (AC) 50-60Hz (OC)	T1			T2			T3			T4			T5			T6			T7				
	B	C	N	S	H	L	N	S	H	L	V	N	S	H	L	V	N	S	H	L	V		
[A] 160 I 240 125 B	160 3-4 690 500	160 3-4 890 500	250 3-4 690 500	250 3-4 690 500	250 3-4 690 500	250 3-4 690 500	250 3-4 690 500	250 3-4 690 500	250 3-4 690 500	250 3-4 690 500	250 3-4 690 500	250 3-4 690 500	250 3-4 690 500	250 3-4 690 500	250 3-4 690 500	250 3-4 690 500	250 3-4 690 500	250 3-4 690 500	250 3-4 690 500	250 3-4 690 500	250 3-4 690 500	250 3-4 690 500	250 3-4 690 500
Rated ultimate short-circuit breaking capacity, Icu	25***																						
Icu AC 50-60 Hz 220/230 V	25																						
Icu AC 50-60 Hz 380/415 V	25																						
Icu AC 50-60 Hz 440 V	25																						
Icu AC 50-60 Hz 500 V	25																						
Icu AC 50-60 Hz 690 V	25																						
Icu DC 500 V	25																						
Rated service short-circuit breaking capacity, Ics %	75																						
Ics AC 50-60 Hz 220/230 V	75																						
Ics AC 50-60 Hz 380/415 V	75																						
Ics AC 50-60 Hz 440 V	75																						
Ics AC 50-60 Hz 500 V	75																						
Ics AC 50-60 Hz 690 V	75																						
Rated short-circuit making capacity, Icm	52.5 (220 V AC)																						
Icm AC 50-60 Hz 380/415 V	52.5																						
Utilization category (IEC 60947-2)	A																						
Electronic trip unit	PR21 PR22																						

***The breaking capacity for settings In=16 A and In=20 A is 16 kA

^ 65 @ 480 V

* 75 for 630
** 50 for 630

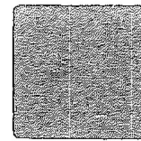
.... Only for T7 600/1000/1250 A

Electronically published by ABS Genoa.
Reference T1500148, dated 31-MAR-2016.

Handwritten signature



11



TYPE APPROVAL CERTIFICATE
N. ELE389411CS

[Handwritten signature]

[Handwritten signature]

This is to certify that the product below is found to be in compliance with the applicable requirements of the RINA type approval system.

<i>Description</i>	Circuit breaker
<i>Type</i>	Tmax XT Series: XT1, XT2, XT3, XT4
<i>Applicant</i>	ABB SpA – ABB Sace Division Via Baioni , 35 24123 Bergamo Italy
<i>Manufacturer</i>	ABB SpA – ABB Sace Division Via Enrico Fermi, 14 03100 Frosinone Italy
<i>Testing Standards</i>	IEC 60947-2 RINA Rules for Classification of Ships Part C_ Machinery System and Fire protection Ch.3, Sect.6. Table1


Issued in Genova on May 24, 2012.

This certificate is valid until May 23, 2017

На основание чл.36а ал.3 от ЗОП

Genova, May 24, 2012

RINA
Via Corsica, 12 – 16128 Genova

[Handwritten signature]

 1/3
[Handwritten signature]



TYPE APPROVAL CERTIFICATE N. ELE389411CS

Tmax XT

Product Description

- **Circuit Breaker type Tmax XT1**

Version	XT1B			XT1C			XT1N			XT1S			XT1H		
Rated current In [A]	160			160			160			160			160		
Release type	TMD R50+R160														
Voltage [V]	240	440	690	240	440	690	240	440	690	240	440	690	240	440	690
Icu [kA]	25	15	3	40	25	4	65	36	6	85	50	8	100	65	10
Ics [kA]	25	12	3	40	13	4	50	18	4	64	25	4	75	33	5
Icm [kA]	52.5	30	4.5	84	52.5	6	143	75.6	9	187	105	13.6	220	143	17
Frequency [Hz]	50-60			50-60			50-60			50-60			50-60		
T amb [°C]	40			40			40			40			40		

- **Circuit Breaker type Tmax XT2**

Version	XT2N			XT2S			XT2H			XT2L			XT2V		
Rated current In [A]	160			160			160			160			160		
Release type	TMA, TMD, MF, MA Ekip LS/I, Ekip I, Ekip LSI, Ekip LSIG, Ekip G LS/I, Ekip N LS/I, Ekip M-LIU R20+R160														
Voltage [V]	240	440	690	240	440	690	240	440	690	240	440	690	240	440	690
Icu [kA]	65	36	10	85	50	12	100	65	15	150	100	18	200	150	20
Ics [kA]	65	36	10	85	50	12	100	65	15	150	100	18	200	150	20
Icm [kA]	143	75.6	17	187	105	24	220	143	30	330	220	36	440	330	40
Frequency [Hz]	50-60			50-60			50-60			50-60			50-60		
T amb [°C]	40			40			40			40			40		

- **Circuit Breaker type Tmax XT3**

Version	XT3N			XT3S		
Rated current In [A]	250			250		
Release type	TMD, MA R63+R250					
Voltage [V]	240	440	690	240	440	690
Icu [kA]	50	25	5	85	40	8
Ics [kA]	38	19	5	20	10	8
Icm [kA]	105	52.5	8.5	187	84	13.5
Frequency [Hz]	50-60			50-60		
T amb [°C]	40			40		

Genova, May 24, 2012

RINA
Via Corsica, 12 - 16128 Genova





TYPE APPROVAL CERTIFICATE N. ELE389411CS

Tmax XT

Circuit Breaker type Tmax XT4

Version	XT4N			XT4S			XT4H			XT4L			XT4V		
Rated current In [A]	160/250			160/250			160/250			160/250			160/250		
Release type	TMA, TMD, MA Ekip LS/I, Ekip I, Ekip LSI, Ekip LSIG, Ekip G LS/I, Ekip N LS/I, Ekip M-LIU R25+R250														
Voltage [V]	240	440	690	240	440	690	240	690	690	240	440	690	240	440	
Icu [kA]	65	36	10	85	50	12	100	65	15	150	100	20	200	150	25
Ics [kA]	65	36	10	85	50	12	100	65	15	150	100	20	200	150	20
Icm [kA]	143	75.6	17	187	105	24	220	143	30	330	220	40	440	330	52.5
Frequency [Hz]	50-60			50-60			50-60			50-60			50-60		
T amb [°C]	40			40			40			40			40		

For T ambient = 45°C, thermal – magnetic release must be derated in accordance with following table:

XT1			XT2			XT3			XT4		
In [A]	MIN [A]	MAX [A]	In [A]	MIN [A]	MAX [A]	In [A]	MIN [A]	MAX [A]	In [A]	MIN [A]	MAX [A]
50	33,9	48,4	20	13,5	19,3	63	43	61	25		24
63	42,7	61	25	16,8	24,0	80	54	77	32	22	
80	54,2	77	32	21,6	30,8	100	68	97	40	27	39
100	67,8	97	40	27,0	38,5	125	85	121	50	34	48
125	84,7	121	50	33,7	48,2	160	108	155	63	43	61
160	108,4	155	63	42,5	60,7	200	136	194	80	54	77
			80	54,0	77,1	250	169	242	100	68	97
			100	67,5	96,4				125	85	121
			125	84,3	120,5				160	108	155
			160	107,9	154,2				200	136	194
									225	152	
									250	169	242

Reference document:

SACE Tmax XT Technical catalogue: doc. n. 1SDC210033D0202

Notes:

- Rated service short circuit breaking capacity (Ics)
- Rated ultimate short circuit breaking capacity (Icu)
- Rated short circuit making capacity (Icm)

Genova, May 24, 2012

RINA
Via Corsica, 12 – 16128 Genova



3/30



ЕЛЕКТРИЧЕСКИ ТАБЛА, КОМПЛЕКТНИ ТРАНСФОРМАТОРНИ ПОСТОВЕ, ЕЛЕКТРОПАРАТУРА-ИВИ и СрН

гр.Петрич 2850, Промислена зона
ул."Свобода"49
тел.:00359 745 60743; факс:00359 745 60742
e-mail: metix@metix.bg
гр.София 1000 ул."Регардо Вакарни"бл.5
тел.:00359 2 859 0686; факс:00359 2 859 0334
e-mail:sales@metix.bg



Management
System
ISO 9001:2015
ISO 14001:2015
OHSAS 18001:2007
www.tuv.com
ID 9105026856

ПРИЛОЖЕНИЕ 9.2.5

Сертификат/акредитация на независимата изпитвателна лаборатория, провела типовите изпитвания по т. 4 – заверено копие

*Настоящото приложение се прилага във връзка с участието ми в:
търг с предмет:*

“Доставка и монтаж на комплектни метални трансформаторни постове”

РЕФ. № PPD 19-102

организиран от “ЧЕЗ Разпределение България” АД



Certificate of Accreditation

certification against voluntary sustainability standards

ASI - Accreditation Services International GmbH hereby affirms that

Rina Services S.p.A.

Via Corsica, 12
Genova 16128 Italy

meets the ASI accreditation program requirements and those set forth in the accreditation standards listed in the annex to this certificate, for the following programs:

Forest Stewardship Council® (FSC®)
Marine Stewardship Council (MSC)

Accreditation Code ASI-ACC-048

На основание чл.36а ал.3 от ЗОП



ASI - Accreditation Services International GmbH
Friedrich-Ebert-Allee 69
53113 Bonn, Germany

Please see the scope and validity of accreditation in the certificate annex on the ASI website: www.accreditation-services.com

This certificate is the property of ASI and must be immediately returned on request. Reproduction is prohibited except with written approval of ASI. ASI-Accreditation Services International GmbH © 2007



ASI Certificate of Accreditation - Annex

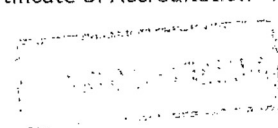
CAB Name Rina Services S.p.A.
CAB Shortcode RINA
Accreditation Code ASI-ACC-048
Accredited Activities Certification against voluntary-sustainability standards - as indicated below
Last updated on 02 October 2017

[Handwritten signature]

Forest Stewardship Council® (FSC®) Accreditation	
Date of original accreditation	24 September 2012
Current accreditation granted on	29 September 2017
Current accreditation valid until	24 September 2022
Technical Scope(s)	FSC COC
Geographical Scope(s)	Worldwide (excluding China).
Standard(s) to which CAB is accredited:	FSC-STD-20-001 v4-0 FSC-STD-20-011 V2-0 FSC-STD-40-003 V2-1
Standard(s) which CAB can certify against:	FSC-STD-40-004 V3-0 FSC-STD-40-005 V2-1 FSC-STD-40-006 V1-0 FSC-STD-40-007 V2-0

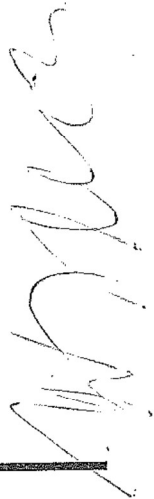
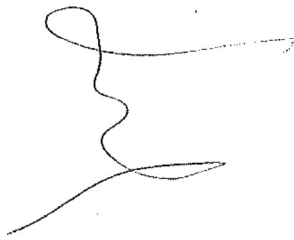
Rina Services S.p.A.
Accreditation Code ASI-ACC-048

[Handwritten signature]



[Handwritten signature]





Certificate of Accreditation

certification against voluntary sustainability standards

ASI-ACC-048

ASI - Accreditation Services International GmbH hereby affirms that

Rina Services S.p.A.

Via Corsica, 12
Genova 16128 Italy

meets the ASI accreditation program requirements and those set forth in the accreditation standards listed in the annex to this certificate, for the following programs:

Forest Stewardship Council® (FSC®)
Marine Stewardship Council (MSC)

Accreditation Code ASI-ACC-048

На основание чл.36а ал.3 от ЗОП



ASI - Accreditation Services International GmbH
Friedrich-Ebert-Allee 69
53113 Bonn, Germany

Please see the scope and validity
of accreditation in the certificate
annex on the ASI website:
www.accreditation-services.com

This certificate is the property of ASI and must be immediately returned on request. Reproduction is prohibited except with written approval of ASI.
ASI Accreditation Services International GmbH © 2007

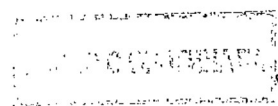




ASI Certificate of Accreditation - Annex

CAB Name Rina Services S.p.A.
CAB Shortcode RINA
Accreditation Code ASI-ACC-048
Accredited Activities Certification against voluntary sustainability standards - as indicated below
Last updated on 02 October 2017

Forest Stewardship Council® (FSC®) Accreditation	
Date of original accreditation	24 September 2012
Current accreditation granted on	29 September 2017
Current accreditation valid until	24 September 2022
Technical Scope(s)	FSC COC
Geographical Scope(s)	Worldwide (excluding China).
Standard(s) to which CAB is accredited:	FSC-STD-20-001 v4-0
	FSC-STD-20-011 V2-0
	FSC-STD-40-003 V2-1
Standard(s) which CAB can certify against:	FSC-STD-40-004 V3-0
	FSC-STD-40-005 V2-1
	FSC-STD-40-006 V1-0
	FSC-STD-40-007 V2-0





гр.Потрач 2850, Промислена зона
ул. "Свобода" 49
тел.: 00359 745 63743; факс: 00359 745 60762
e-mail: metix@metix.bg
гр.София 1000 ул. "Ракодро Виларини" бл. 5
тел.: 00359 2 869 0696; факс: 00359 2 958 9334
e-mail: sales@metix.bg



Management System
ISO 9001:2015
ISO 14001:2015
OHSAS 18001:2007
www.tuv.com
ID: 9105026855

Handwritten signature/initials

Handwritten signature

ПРИЛОЖЕНИЕ 9.2.6

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

Автоматичните прекъсвачи НН с лят корпус трябва да се транспортират опаковани в оригинална опаковка.

Автоматичните прекъсвачи НН с лят корпус трябва да се съхраняват в сухи, закрити помещения опаковани в оригинална опаковка

Автоматичните прекъсвачи НН с лят корпус да бъдат монтирани на монтажна проча, сила на затягане 2,5 Nm.

Настоящото приложение се прилага във връзка с участието ми в:
търг с предмет:

“Доставка и монтаж на комплектни метални трансформаторни постове”

РЕФ. № PPD 19-102

организиран от "ЧЕЗ Разпределение България" АД

Handwritten signature

Handwritten signature

Наименование на материала: Вертикален предпазител-разединител НН 400 А, с триполюсно управление

Съкратено наименование на материала: ВПР НН, 400 А, 3-полюсно управление

Област: Н – Трансформаторни постове

Категория: 16 - Предпазители, основи за предпазители и предпазител-разединители

Мерна единица: Брой

Аварийни запаси: Да

Характеристика на материала:

Триполюсен предпазител-разединител с вертикална конструкция, с обявен работен ток 400 А, с общо управление на полюсите, за директен монтаж върху събирателни шини с междуосово разстояние 185 mm, за високомощни предпазители със стопяема вложка НН, система А (НН система), с характеристика gG, размер 2, съответстващи на БДС EN 60269-1 и БДС HD 60269-2 или еквивалентно/и.

Използване:

Вертикалният предпазител-разединител е предназначен за включване, изключване, разединяване и защита на кабелни линии НН.

Съответствие на предлаганото изпълнение с нормативно-техническите документи:

Триполюсният вертикален предпазител-разединител за 400 А, с общо управление на полюсите трябва да отговаря на приложимите български и международни стандарти или еквиваленти и на техните валидни изменения и поправки:

- БДС EN 60947-1:2007 „Комутационни апарати за ниско напрежение. Част 1: Общи правила (IEC 60947-1:2007)“ или еквивалентно/и; и
- БДС EN 60947-3:2009 „Комутационни апарати за ниско напрежение. Част 3: Товари прекъсвачи, разединители, товари прекъсвач-разединители и апарати комбинирани със стопяеми предпазители (IEC 60947-3:2008)“ или еквивалентно/и;
- БДС EN 60269-1:2007 „Стопяеми предпазители за ниско напрежение. Част 1: Общи изисквания (IEC 60269-1:2006)“ или еквивалентно/и;
- БДС HD 60269-2:2013 „Стопяеми предпазители за ниско напрежение. Част 2: Допълнителни изисквания за стопяеми предпазители, предназначени за използване от квалифицирани лица (стопяеми предпазители предимно за промишлено приложение). Примери за стандартизирани системи за стопяеми предпазители от А до К (IEC 60269-2:2013, с промени)“ или еквивалентно/и;
- БДС EN 60664-1:2007 „Координация на изолацията за съоръжения в електроразпределителни мрежи за ниско напрежение. Част 1: Правила, изисквания и изпитвания (IEC 60664-1:2007)“ или еквивалентно/и;
- БДС EN 60529+A1:2004 „Степени на защита, осигурени от обвивката (IP код) (IEC 60529:1989 + A1:1999)“ или еквивалентно/и

и да бъде оценен положително по реда и при условията на Наредбата за съществените изисквания и оценяване на съответствието на електрически съоръжения, предназначени за използване в определени граници на напрежението, приета с ПМС № 47 от 15.03.2016 г., обн., ДВ, бр. 23 от 25 Март 2016г.

Изисквания към документацията и изпитванията

№ по ред	Документ	Приложение № или текст
1.	Точно означение на типа, производителя и страната на производство (произход) и последно издание на каталога на производителя	ZLBM, ABB, България Приложение 9.3.1
2.	Техническо описание и чертежи с нанесени на тях размери	Приложение 9.3.2

№ по ред	Документ	Приложение № или текст
3.	Протоколи от типови изпитвания на английски или български език, проведени от независима изпитвателна лаборатория – заверени копия, с приложен списък на отделните изпитвания на български език	Приложение 9.3.3
4.	Сертификат/акредитация на независимата изпитвателна лаборатория, провела типовите изпитвания по т. 3 – заверено копие	Приложение 9.3.4
5.	ЕО декларация за съответствие	Приложение 9.3.5
6.	Декларация за съответствие на предлаганото изпълнение с изискванията на техническата спецификация на този стандарт за материал, вкл. на параграфи „Характеристика на материала“ и „Съответствие на предложеното изпълнение с нормативно-техническите документи“ по-горе	Приложение 9.3.6
7.	Инструкции за поддържане и експлоатация	Приложение 9.3.7

Забележка: Всички оригинални документи трябва да бъдат на български език или с превод на български език. (Каталозите и протоколите от проверките и изпитванията могат да бъдат и само на английски език.)

Технически данни:

1. Характеристики на работната среда

№ по ред	Наименование	Стойност
1.1	Място на монтиране	На закрито
1.2	Максимална температура на въздуха в околната среда	+ 40°C
1.3	Минимална температура на въздуха в околната среда	Минус 5°C
1.4	Максимална средна температура на въздуха в околната среда за период от 24 ч.	+ 35°C
1.5	Относителна влажност (при 20°C)	До 90 %
1.6	Степен на замърсяване	3
1.7	Надморска височина	До 2000 m

2. Параметри на електроразпределителната мрежата НН

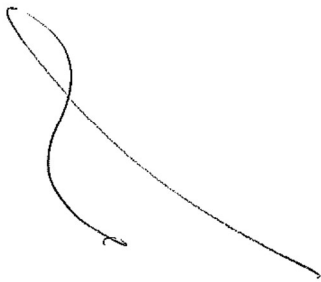
№ по ред	Наименование	Стойност
2.1	Номинално напрежение	400 / 230 V
2.2	Максимално напрежение	440 / 253 V
2.3	Номинална честота	50 Hz
2.4	Електроразпределителна мрежа	4 проводна мрежа (L ₁ , L ₂ , L ₃ , PEN)
2.5	Схема на електроразпределителната мрежа	TN-C

3. Технически параметри и други данни

№ по ред	Технически характеристики	Изискване	Гарантирано предложение
3.1	Обявено работно напрежение, U _e	min 690 (500) V AC	690 V AC
3.2	Брой на полусите	3	3

№ по ред	Технически характеристики	Изискване	Гарантирано предложение
3.3	Обявена честота	50 Hz	50 Hz
3.4	Категория по пренапрежение съгласно БДС EN 60664-1 или еквивалентно/и	IV	IV
3.5	Обявено издържано импулсно напрежение, U_{imp}	8 kV	8 kV
3.6	Обявено напрежение на изолацията, U_i AC	min 800 V	1000 V
3.7	Обявен работен ток, I_e	400 A	400 A
3.8	Термичен ток със стопяема вложка, I_{th}	400 A	400 A
3.9	Условен ток на късо съединение (ефективна стойност) при 400 V AC	min 50 kA	50 kA
3.10	Размер на стопяемите вложки (съгласно серията БДС EN 60269 или еквивалентно/и)	2	2
3.11	Максимален обявен ток на стопяемите вложки, I_n	400 A	400 A
3.12	Категория на приложение (при 400 V AC)	AC 22 В или по висока	AC 23 В
3.13	Механична износоустойчивост, брой на комутационните цикли	min 800	800
3.14	Електрическа износоустойчивост, брой на комутационните цикли	min 200	200
3.15	Управление	Триполюсно (едновременно включване и изключване на трите полюса)	ДА
3.16	Основни размери:	-	-
3.16a	широчина	max 100 mm	99 mm
3.16b	височина (измерена от края на клемните съединения)	680 mm - информативно	662 mm
3.17	Разстояние между осите на събирателните шини	185 mm	185 mm
3.18	Присъединяване към събирателните шини	Клеми за свързване без необходимост от пробиване на шините	ДА
3.19	Степен на защита срещу проникване на твърди тела и вода във вътрешността и допир до части под напрежение от лицевата страна съгласно БДС EN 60529+A1 или еквивалентно/и.	min IP20	IP20
3.20	Клемови съединения за токопроводимите жила на присъединяваните кабелни линии	Вертикалните предпазител-разединители трябва да бъдат съоръжени с V-съединителна арматура за свързване на токопроводими кабелни жила в диапазона най-малко от 35 mm ² ge до 185 mm ² sm.	ДА

№ по ред	Технически характеристики	Изискване	Гарантирано предложение
3.21	Маркировка	Вертикалните предпазител-разединители трябва да бъдат маркирани с информацията съгласно т. 5.2 от БДС EN 60947-3 или еквивалентно/и и инициалите „СЕ”.	ДА, Вертикалните предпазител-разединители са маркирани с информацията съгласно т. 5.2 от БДС EN 60947-3 или еквивалентно/и и инициалите „СЕ”.
3.22	Тегло, kg	Да се посочи	4,8





ЕЛЕКТРИЧЕСКИ ТАБЛА, КОМПЛЕКТНИ ТРАНСФОРМАТОРНИ ПОСТОВЕ, ЕЛЕКТРОАПАРАТУРА ИЛИ И СРЪ

гр.Петрич 2850, Промислена зона
ул. "Свобода" 49
тел.: 00359 745 60743; факс: 00359 745 60742
e-mail: metix@metix.bg
гр.София 1000 ул. "Рикардо Вакерин" бл.5
тел.: 00359 2 869 0586; факс: 00359 2 958 9334
e-mail: sales@metix.bg



Management
System
ISO 9001:2015
ISO 14001:2015
OHSAS 18001:2007
www.tuv.com
ID 9105026856

ПРИЛОЖЕНИЕ 9.3.1

Точно означение на типа, производителя и страната на производство
(Произход) и последно издание на каталога на производителя

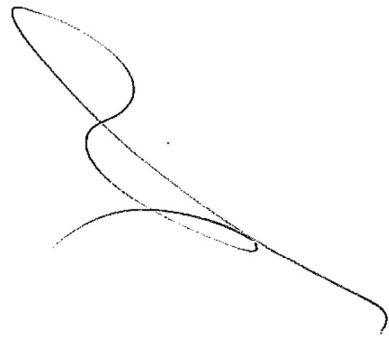
Настоящото приложение се прилага във връзка с участието ми в:

търг с предмет:

“Доставка и монтаж на комплектни метални трансформаторни постове”

РЕФ. № PPD 19-102

организиран от “ЧЕЗ Разпределение България” АД



Синдров

CATALOG

InLine II

ZUBM/ZLBM/ZHBM/BZL/BZH

Fuse switch disconnectors



Contents

S. M. (1991)

[Handwritten scribble]

4-11	InLine II Designed for the future
12-33	Ordering information
34-39	Quick selection of cable terminations and cable shrouds
40-45	Technical data
46-72	Dimension drawings

ВЯРНО С ОРИГИНАЛА

[Handwritten signature]



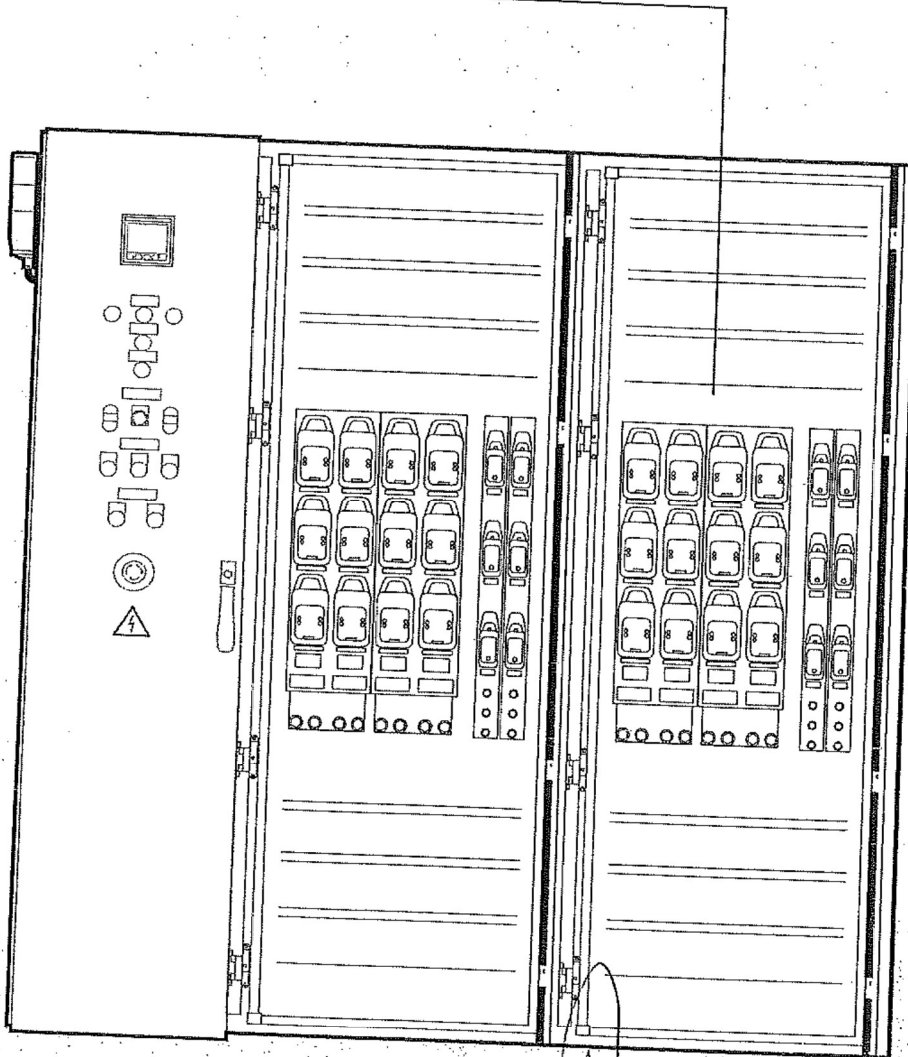
[Handwritten signature]

InLine II

Designed for the future

InLine II covers a wide range of distribution applications from single panels to industrial, residential and commercial buildings.

Easy to install – flexible installation
and possibility to customize
the product according to needs.



ВЯРНО С ОРИГИНАЛА

InLine II

Safety and protection

InLine II is designed to be as safe as possible. Special features cover voltage measurement, replacement of fuses and padlocking and sealing to ensure personal safety and to avoid unadmitted operation.

Easy access for voltage measurement

The front windows can be slid up to give access for voltage measurement at the fuse contacts. This enables fast and safe solution for voltage measurement with standard equipment.

Safe and efficient replacement of fuses

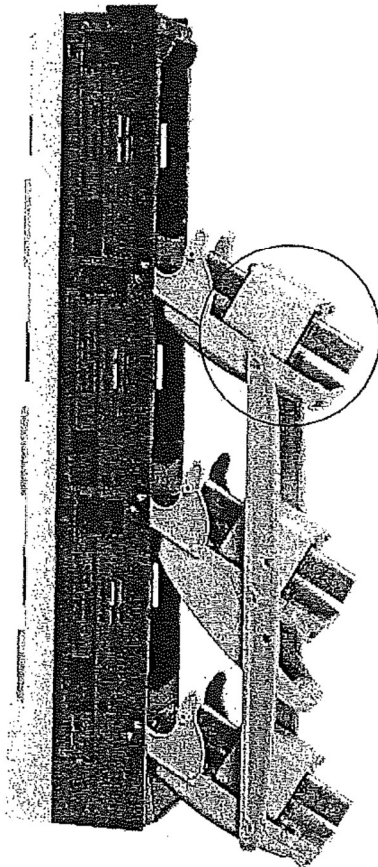
The cover has a separate 'Replacement of fuses' position. This position brings the fuses out safely from parts under live voltage to give space and safety.

Padlocking and sealing

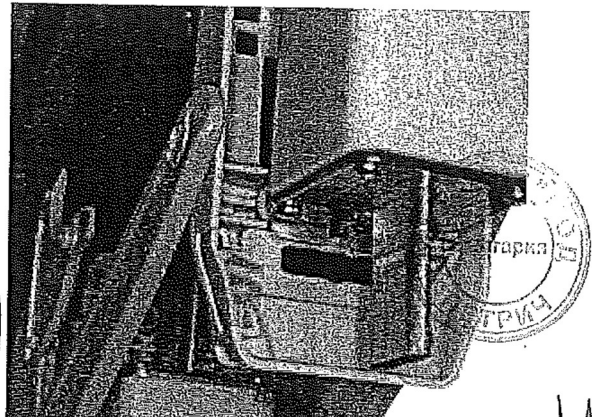
To avoid unadmitted operation, each front cover can be padlocked with up to 2 padlocks per phase, or up to 3 padlocks per phase by using the padlock hasp. The front covers of the 1-pole variants can be placed in park position with the possibility to be padlocked.

Degree of protection IP30

InLine II fuse switch disconnectors have a degree of protection IP30 from the front.



Release button



Handwritten signature or scribble in the top right corner.

Handwritten scribble or signature in the bottom left corner.

Handwritten signature or scribble in the bottom right corner.

InLine II

Easy to install with space saving features

InLine II offers a wide variety of accessories and cable terminals which guarantees flexible installation and possibility to customize the product according to needs.

Space saving

InLine II has two different body sizes which makes it adaptable according to features needed and the space available. The reduced depth of 121 mm is suitable for Cable Distribution Cabinets and the version of 154 mm enables easy integration of current transformers at the back.

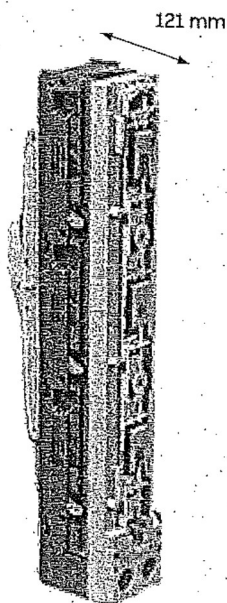
Universal terminal bolts or V-clamps

Variants with integrated V-clamps and universal terminal bolts make the connection easy for all types of cables. The ZLBM/ZHBM 123 are delivered with standing M12 bolts at the cable terminals as standard. The nut and the bolt can easily be exchanged if there is a need to insert the M12 bolt from the front. The ZLBM/ZHBM 00/123 can be delivered with integrated V-clamps.

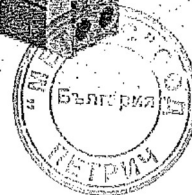
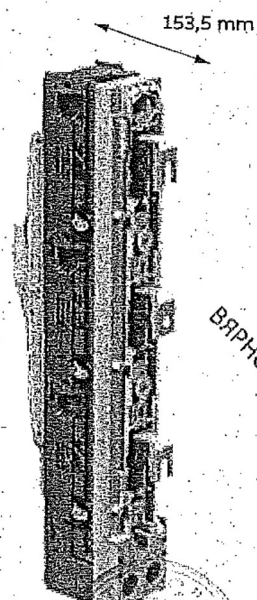
Designed for different busbar systems

The variant 00-100 is suitable for 100 mm busbar systems. The rest of the variants are suitable for installation at busbars with 185 mm distance.

ZLBM with reduced depth



ZHBM depth, +132,5mm

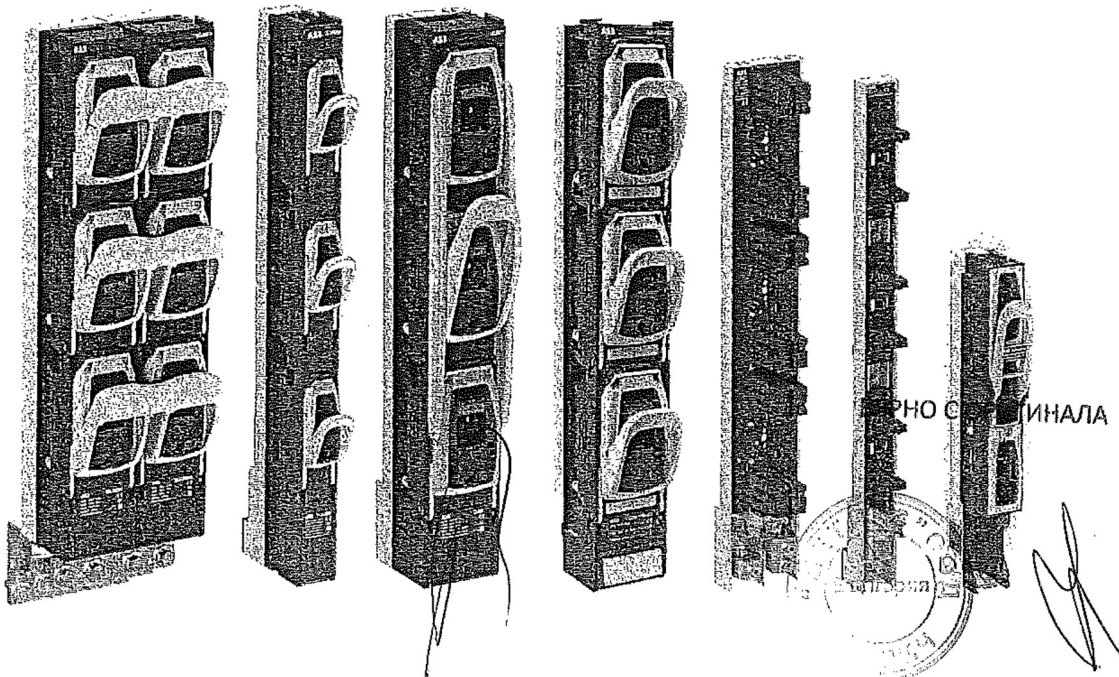


Fuse switch disconnectors and Rails ZLBM/ZHBM/ZUBM

InLine II offers a wide variety of accessories and cable terminals which guarantees flexible installation and possibility to customize the product according to needs.

- NH00-3 / 160A-630A 1 and 3-pole switch disconnectors
- Double NH2-3 / 800-1250A 1 and 3-pole switch disconnectors

- NH00-3 / 160A-630A fuse rails
- 1250-2000A switch disconnectors
- 910A fuse switch disconnectors
- Buscouplers



PHO C ИНАЛА

Ordering information

Fuse switch disconnectors

ZLBM - 1-pole, Depth 121 mm

Type	Ie [A]	Description	Order code	Weight [kg]
Basic versions				
ZLBM00-1P-M8	160	3 x M8 Bolts	1SEP620010R1000	1,75
ZLBM00-1P-V	160	3 x V-Clamps	1SEP620010R1020	1,9
ZLBM1-1P-M12	250	3 x M12 Universal Bolts	1SEP620011R1000	3,56
ZLBM1-1P-V	250	3 x V-Clamps	1SEP620011R1020	3,56
ZLBM2-1P-M12	400	3 x M12 Universal Bolts	1SEP620012R1000	4,04
ZLBM2-1P-V	400	3 x V-Clamps	1SEP620012R1020	4,02
ZLBM3-1P-M12	630	3 x M12 Universal Bolts	1SEP620013R1000	4,65
ZLBM3-1P-V	630	3 x V-Clamps	1SEP620013R1020	4,65
ZLBM800A-1P-M12	800	12 x M12 Universal Bolts	1SEP620014R1000	11,2
ZLBM910A-1P-M12	910	2 x 3 M12 bolts	1SEP620053R1000	9,3
ZLBM910A-1P-M12-MB	910	2 x 3 M12 bolts, connection on rear side	1SEP620053R1050	7
Long terminal cover, 3U shaped busbar versions				
ZLBM00-1P-3U-M8	160	3 x M8 Bolts	1SEP620170R1200	1,75
ZLBM1-L-1P-3U-M12	250	3 x M12 Universal Bolts	1SEP620171R1200	3,56
ZLBM2-L-1P-3U-M12	400	3 x M12 Universal Bolts	1SEP620172R1200	4,04
ZLBM3-L-1P-3U-M12	630	3 x M12 Universal Bolts	1SEP620173R1200	4,65



ZLBM00-1P



ZLBM123-1P



ZLBM800A-1P



ZLBM910A-1P

ВЯРНО С ОРИГИНАЛА



Ordering information

ZLBM Fuse switch disconnectors

ZLBM - 3-pole, Depth 121 mm

Type	Ie [A]	Description	Order code	Weight [kg]
ZLBM00 3-pole, 100 mm busbar distance. Cable shroud included.				
ZLBM00-100-3P-M8	160	3 x M8 Bolt	1SEP620150R3000	1,04
Basic versions				
ZLBM00-3P-M8	160	3 x M8 Bolts	1SEP620010R3000	1,82
ZLBM00-3P-V	160	3 x V-Clamps	1SEP620010R3020	1,97
ZLBM1-3P-M12	250	3 x M12 Universal Bolt	1SEP620011R3000	3,63
ZLBM1-3P-V	250	3 x V-Clamps	1SEP620011R3020	3,64
ZLBM2-3P-M12	400	3 x M12 Universal Bolt	1SEP620012R3000	4,13
ZLBM2-3P-V	400	3 x V-Clamps	1SEP620012R3020	4,12
ZLBM3-3P-M12	630	3 x M12 Universal Bolt	1SEP620013R3000	4,73
ZLBM3-3P-V	630	3 x V-Clamps	1SEP620013R3020	4,72
ZLBM800A-3P-M12	800	12 x M12 Universal Bolts	1SEP620014R3000	11,1
ZLBM800A-3P-V	800	12 x V-Clamps	1SEP620014R3020	11,3
ZLBM910A-3P-M12	910	2 x 3 M12 bolts	1SEP620053R3000	9,5
ZLBM910A-3P-M12-MB	910	2 x 3 M12 bolts, connection on rear side	1SEP620053R3050	7,3
ZLBM1250A-3P-M12	1250	12 x M12 Universal Bolt	1SEP620015R3000	12,25
ZLBM1250A-3P-V	1250	12 x V-Clamps	1SEP620015R3020	12,5
Without V-Clamps				
ZLBM00-3P-NOV	160	Without V-Clamps	1SEP620010R3010	1,97
ZLBM1-3P-NOV	250	Without V-Clamps	1SEP620011R3010	3,63
ZLBM2-3P-NOV	400	Without V-Clamps	1SEP620012R3010	4,12
ZLBM3-3P-NOV	630	Without V-Clamps	1SEP620013R3010	4,72
Long terminal cover, 3U shaped busbar versions				
ZLBM00-3P-3U-M8	160	3 x M8 Bolts	1SEP620170R3200	1,82
ZLBM1-L-3P-3U-M12	250	3 x M12 Universal Bolts	1SEP620171R3200	3,63
ZLBM2-L-3P-3U-M12	400	3 x M12 Universal Bolts	1SEP620172R3200	4,13
ZLBM3-L-3P-3U-M12	630	3 x M12 Universal Bolts	1SEP620173R3200	4,73



ZLBM00-100



ZLBM00-3P



ZLBM123-3P



ZLBM910A-3P



ZLBM910A-3P-M12-MB

ВЯРИТЕ СЕ НА ОРИГИНАЛА





ЕЛЕКТРИЧЕСКИ ТАБЛА, КОМПЛЕКТНИ ТРАНСФОРМАТОРНИ ПОСТОВЕ, ЕЛЕКТРОАПАРАТУРА-НИИ И СРЪ

гр.Петрич 2850, Промислена зона
ул."Свобода"49
тел.:00359 745 60743; факс:00359 745 60742
e-mail: metix@metix.bg
гр.София 1000 ул."Рикардо Вакерман"бл.5
тел.:00359 2 889 0698; факс:00359 2 958 9334
e-mail:sofia@metix.bg



Management
System
ISO 9001:2015
ISO 14001:2015
OHSAS 18001:2007
www.tuv.com
ID 9105026855

ПРИЛОЖЕНИЕ 9.3.2

Техническо описание и чертежи с нанесени на тях размери

Настоящото приложение се прилага във връзка с участието ми в:

търг с предмет:

“Доставка и монтаж на комплектни метални трансформаторни постове”

РЕФ. № PPD 19-102

организиран от “ЧЕЗ Разпределение България” АД

Technical data

ZLBM/ZHBM Fuse Switch Disconnectors

ZLBM/ZHBM 00/123 - Type tested according to EN/IEC 60947-3*

	ZLBM00-100	ZLBM/ZHBM 00	ZLBM/ZHBM 1	ZLBM/ZHBM 2	ZLBM/ZHBM 3
For NH fuse links acc. to IEC60269-2-1	00	00	1	1/2	3
Rated operational voltage Ue (V)	500 / 690	400 / 500 / 690	400 / 500 / 690	400 / 500 / 690	400 / 500 / 690
Rated operational current Ie (A)	160 / 125	160 / 160 / 125	250	400	630
Rated insulation voltage Ui (V)	1000	1000	1000	1000	1000
Rated impulse withstand voltage Uimp (kV)	8	8	8	8	8
Fuse protected short circuit withstand current (kArms)	100	100	100	100	100
Fuse protected short circuit making current (kArms)	100	100	100	100	100
	400 V	AC 23B	AC 23B	AC 23B	AC 23B
	500 V	AC 23B	AC 22B	AC 22B	AC 22B
Utilization category	690 V	AC 22B	AC 21B	AC 21B	AC 21B
Rated frequency (Hz)	50/60	50/60	50/60	50/60	50/60
Total power loss at Ith (W)	33,4	30,8 / 33,6	36,20 / 37,8	52,20 / 55,50	91,30 / 97,20
Max permis. power loss per fuse link Pv (W)	12	12	18 / 23 / 32	28 / 34 / 45	40 / 48 / 60
Degree of protection from the front	Open	IP 20	IP 20	IP 20	IP 20
	Closed	IP 30	IP 30	IP 30	IP 30

Z_BM/BZ_ 800-2000A - Type tested according to EN/IEC 60947-3*

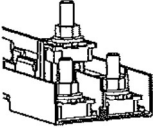

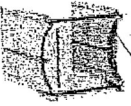
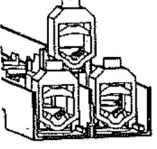



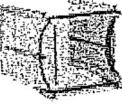










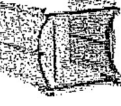







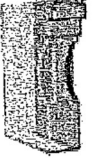


	ZLBM/ZHBM800	ZLBM/ZHBM1250	ZLBM910A	BZL/ BZH1250A	BZL/ BZH2000A
For NH fuse links acc. to IEC60269-2-1	2	3	3	Fitted solid link ¹⁾	Fitted solid link ¹⁾
Rated operational voltage Ue (V)	500	500	400	690/500	690/500
Rated operational current Ie (A)	800	1250	910	1250	2000
Rated insulation voltage Ui (V)	1000	1000	1000	1000	1000
Rated impulse withstand voltage Uimp (kV)	8	8	8	8	8
Fuse protected short circuit withstand current (kArms)	100	100	25	-	-
Fuse protected short circuit making current (kArms)	100	100	25	-	-
Short-time withstand current – 1sec (rms) (kA)	-	-	-	20kA 1s 3poles 15kA 1s 1pole	30kA 1s
Short-circuit making capacity (peak) (kA)	-	-	-	20	30
Utilization category	AC 21B	AC 21B	AC 22B	AC 21B, AC 22B	AC 21B, AC 22B
Rated frequency (Hz)	50/60	50/60	50/60	50/60	50/60
Total power loss Ith (W)	139,7	270	179,4	292,2	-
Max permis. power loss per fuse link Pv (W)	34	48	69	-	-
	Open	IP 20	IP 20	IP 20	IP 20
Degree of protection from the front	Closed	IP 30	IP 30	IP 30	IP 30

*The performances of fuse switch disconnectors do not change if installed horizontally.
More information about derating in switchboard is available in the declaration referring to IEC61439.
Note: 1) The solid links are included in the product.

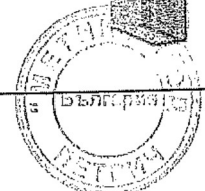
ВЯРНО С ОРИГИНАЛА



Quick selection of cable terminations and shrouds ZLBM123/ZHBM123

Type of clamp/bolt	Conductor cross section min-max		Torque [Nm]	Type of cable shroud (can be used for both, top and bottom)	
	Rm/Sm [mm ²]	Re/Se [mm ²]		1SEP619210R0001	1SEP619211R0001
Bolt M12x40 (Standard) 	Max 240	Max 240	25		
Integrated V-clamp 	Rm: 16-35 	Re: 16-70 	25		
	50-185 	70-150 			
	Sm: 35-50 	Se: 35-70 			
	70-240 	95-300 			
V-clamp kit 1SEP304446R0001 (for M12 variant) 	Rm: 16-35 	Re: 16-70 	25		
	50-185 	70-150 			
	Sm: 35-50 	Se: 35-70 			
	70-240 	95-300 			
Steel V-clamp kit 300mm 1SEP621779R0001	Rm: 120-240	Re: 120-240	Size 1: 25 Size 2 and 3: 40		
V-clamp kit 300 STS kit w/copperbars (for M12 variant) 1SEP621558R0001	Rm: 120-240	Re: 120-240	Size 1: 25 Size 2 and 3: 40		
	Sm: 120-300	Se: 120-300			

ВЪРНО С ОРИГИНАЛА

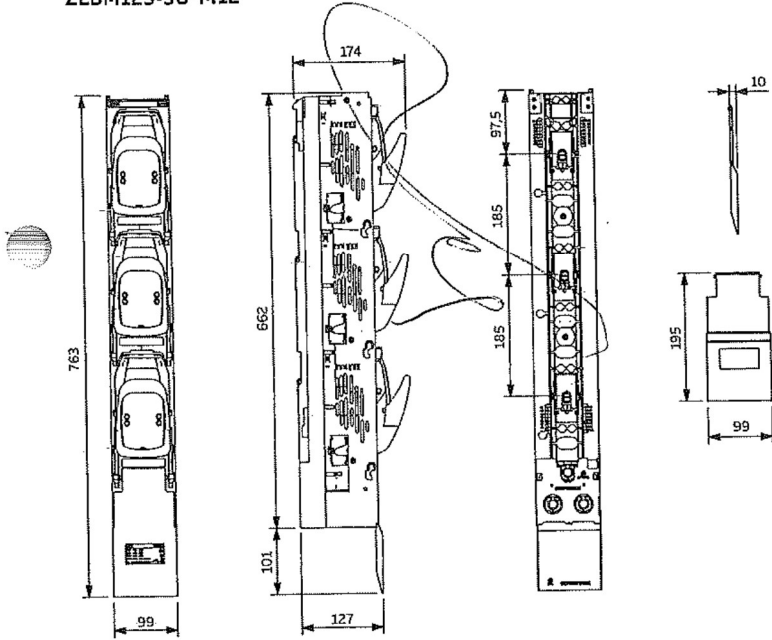


[Handwritten signature]

[Handwritten signature]

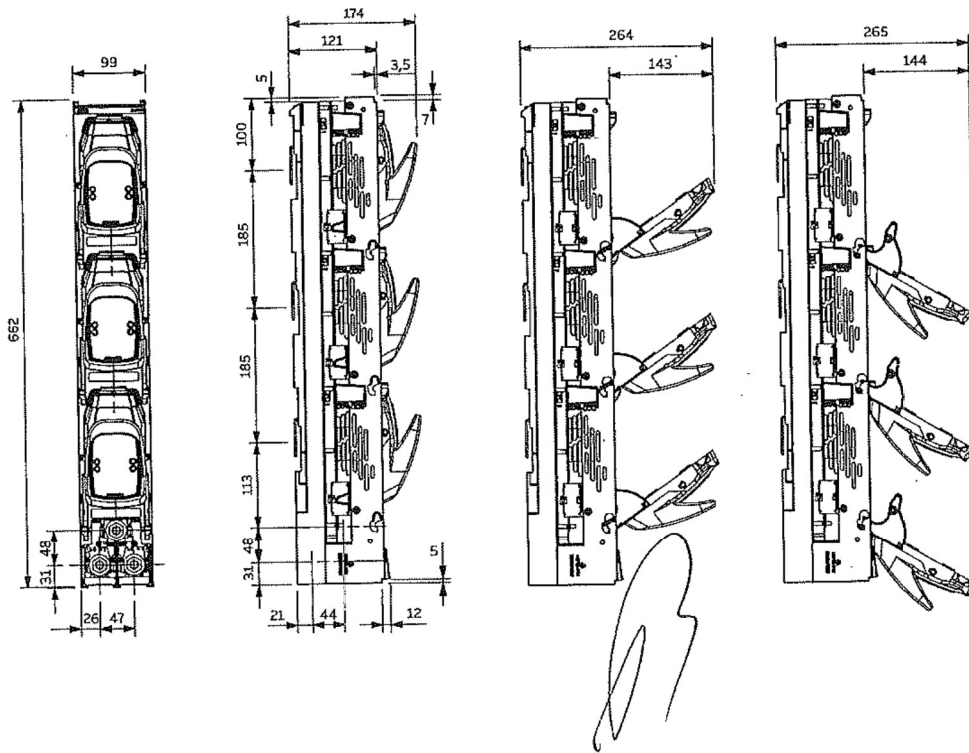
Dimension drawings ZLBM123

ZLBM123-3U-M12



Handwritten signature

ZLBM123-1P
(1SEB000325)



ВЯРНО С ОРИГИНАЛА

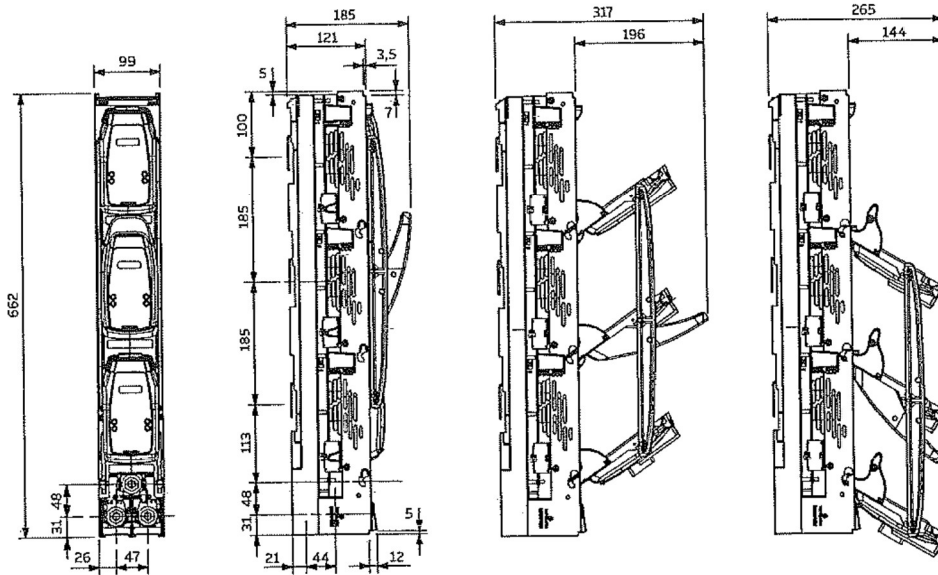


Handwritten signature

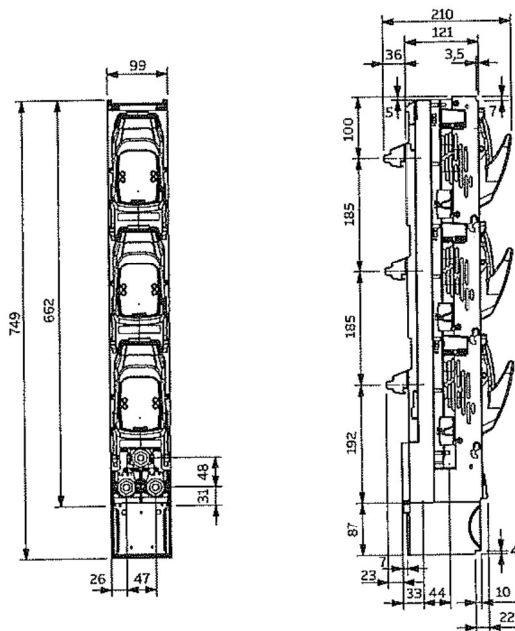
Dimension drawings

ZLBM123

ZLBM123-3P
(1SEB000328)



ZLBM2-1P-Z-M12
(1SEB000437)



Handwritten signature



ВЕРНО С ОРИГИНАЛА

Handwritten signature

Handwritten signature

ПРИЛОЖЕНИЕ 9.3.3

**Протоколи от типови изпитвания на английски или български език,
проведени от независима изпитвателна лаборатория – заверени копия, с
приложен списък на отделните изпитвания на български език**

Настоящото приложение се прилага във връзка с участието ми в:

търг с предмет:

“Доставка и монтаж на комплектни метални трансформаторни постове”

РЕФ. № PPD 19-102

организиран от “ЧЕЗ Разпределение България” АД



ВЯРНО С ОРИГИНАЛА

IEC

IECEE
CB
SCHEME

Ref. Certif. No.

CN31569-M1

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST
CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE)
CB SCHEME

SYSTEME CBI D'ACCEPTATION MUTUELLE DE
CERTIFICATS D'ESSAIS DES EQUIPEMENTS
ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE

Product
Produit

Fuse switch disconnecter

Name and address of the applicant
Nom et adresse du demandeur

ABB AS
Amtm.Aallsgt. 97,P.O. Box 100 ,Sentrum NO-3701 Skien, Norway

Name and address of the manufacturer
Nom et adresse du fabricant

ABB AS
Amtm.Aallsgt. 97,P.O. Box 100 ,Sentrum NO-3701 Skien, Norway

Name and address of the factory
Nom et adresse de l'usine

ABB Bulgaria EOOD - Rakovski branch
Industrial Zone, Plovdiv District, Rakovski Municipality, 4150
RAKOVSKI, BULGARIA

Note: When more than one factory, please report on page 2
Note: Lorsqu'il y a plus d'une usine, veuillez utiliser la 2^{ème} page

Ratings and principal characteristics
Valeurs nominales et caractéristiques principales

Ui:1000V;Ith=400A; Uc/Ie:AC-21B:AC690V/400A;AC-
22B:AC500V/400A;AC-23B:AC400V/400A; Iq=100kA;3P

Trademark (if any)
Marque de fabrique (si elle existe)

ABB

Model / Type Ref.
Ref. De type

ZLBM2,ZHBM2

Additional information (if necessary may also be reported
on page 2)
Les informations complémentaires (si nécessaire, peuvent être
indiqués sur la 2^{ème} page)

PUBLICATION EDITION

A sample of the product was tested and found
to be in conformity with
Un échantillon de ce produit a été essayé et a été
considéré conforme à la

IEC 60947-3:2008(Third edition)+A1:2012 in conjunction
with IEC 60947-1:2007(Fifth edition)+A1:2010

As shown in the Test Report Ref. No, which forms part
of this Certificate
Comme indiqué dans le Rapport d'essais numéro de
référence qui constitue partie de ce Certificat

00901-CB2014CQC-060737-M1

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification



CHINA QUALITY CERTIFICATION

На основание чл.36а ал.3 от ЗОП

КОРИГИРАЛА

Date: 2014-12-12

Issued 2003-05
China Quality Certification Centre
Section 9, No.188, Nansihuan Xilu, Beijing 100070 P.R.China

Tel: +86-10-83886666
Fax: +86-10-83886282



CB 0028038



ЕЛЕКТРИЧЕСКИ ТАБЛА, КОМПЛЕКТНИ ТРАНСФОРМАТОРНИ ПОСТОВЕ, ЕЛЕКТРОПАРАТУРА-НИ И СРЪИ

гр.Потряч 2850, Промислова зона
ул."Свобода"49
тел.:00359 745 60743; факс:00359 745 60742
e-mail: metix@metix.bg
гр.София 1000 ул."Ризардо Виларини"бл.5
тел.:00359 2 868 0686; факс:00359 2 958 9334
e-mail:salos@metix.bg




Management
System
ISO 9001:2015
ISO 14001:2015
OHSAS 18001:2007

www.tuv.com
ID 9105026855



ПРИЛОЖЕНИЕ 9.3.4

Сертификат/акредитация на независимата изпитвателна лаборатория,
провела типовите изпитвания по т.3 – заверено копие





Настоящото приложение се прилага във връзка с участието ми в:

търг с предмет:

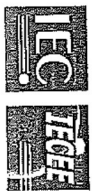
“Доставка и монтаж на комплектни метални трансформаторни постове”

РЕФ. № PPD 19-102

организиран от “ЧЕЗ Разпределение България” АД



International Electrotechnical
Commission

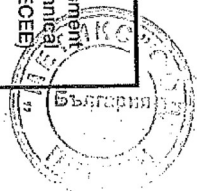


IEC System of Conformity Assessment
Schemes for Electrotechnical
Equipment and Components (IECEE)

Handwritten signature

С ОРИГИНАЛА

Handwritten signature



CERTIFICATE OF ACCEPTANCE

TO PARTICIPATE IN THE IECEE CB-SCHEME

STIEE – Shanghai Testing & Inspection Institute for Electrical Equipment

No. 505 Wu Ning Road, 200063 Shanghai, China

has been assessed and determined to fully comply with the requirements of ISO/IEC 17025: 2005-05, The Basic Rules, IECEE 01: 2012-06 and Rules of Procedure IECEE 02: 2012-06, and the relevant IECEE CB-Scheme Operational Documents

STIEE – Shanghai Testing & Inspection Institute for Electrical Equipment

is therefore entitled to operate as a Chinese CB Testing Laboratory under the responsibility of CQC as National Certification Body and to carry out testing within the IECEE CB Scheme for the Scope (Product Category(ies) and Standard(s)) as listed in the relevant part of the IECEE Web Site at www.iecee.org, and is subject to all other terms as set forth in the IECEE Basic Rules and Rules of Procedure

This certificate remains valid until December 5th 2016 at which time it will be reissued by the IECEE Executive Secretary upon successful completion of the normally scheduled 3-year Reassessment Programme administered by the IECEE CB Scheme.

Date of Issue: 2014-02-05
TL030

На основание чл.36а ал.3 от
ЗОН



ЕЛЕКТРИЧЕСКИ ТАБЛА, КОМПЛЕКТНИ ТРАНСФОРМАТОРНИ ПОСТОВЕ, ЕЛЕКТРОАПАРАТУРА-НИ И СРЪ

гр.Петряч 2850, Промислена зона
ул."Свобода"49
тел.:00359 745 60743; факс:00359 745 60742
e-mail: metix@metix.bg
гр.София 1000 ул."Рикардо Вакарини" бл.5
тел.:00359 2 869 0696; факс:00359 2 959 9334
e-mail:sales@metix.bg



Management
System
ISO 9001:2015
ISO 14001:2015
OHSAS 18001:2007
www.tuv.com
ID 9105026855

ПРИЛОЖЕНИЕ 9.3.5

ЕО Декларация за съответствие

Настоящото приложение се прилага във връзка с участието ми в:

търг с предмет:

“Доставка и монтаж на комплектни метални трансформаторни постове”

РЕФ. № PPD 19-102

организиран от “ЧЕЗ Разпределение България” АД



Samsvarserklæring Declaration of Conformity

Vi : ABB AS , Low Voltage Products
We : ABB AS , Low Voltage Products
(Fabrikantens navn / name of the manufacturer)

Adresse : Postboks 100, N 3702 SKIEN, Norway
Address : Postbox 100, N 3702 SKIEN, Norway

erklærer herved som eneansvarlig at produktet: / declare under our sole responsibility that the product:

Type/Betegnelse : Sikringslastskillebryter/Fuse Switch Disconnecter
Type/Designation : ZLBM00, ZLBM1, ZLBM2, ZLBM3
ZHBM00, ZHBM1, ZHBM2, ZHBM3

Denne samsvarserklæring er i overensstemmelse med europeisk standard EN 45014: "Generelle kriterier for samsvarserklæring". Basis for innholdet er å finne i internasjonal dokumentasjon, hovedsakelig ISO/IEC veiledning 22, 1982: «Informasjon om samsvarserklæring med standarder eller andre tekniske spesifikasjoner».

This Declaration of Conformity is in accordance with the European Standard EN 45014 «General criteria for declarations of Conformity». The basis for the contents has been found in international documentation, particularly in: ISO/IEC Guide 22, 1982, «Informations on manufacturer's declaration of conformity with standards or other technical specifications».

Er konstruert og produsert i h.h.t. relevante europeiske standarder:/ are designed and manufactured according to relevant European Standards:

- IEC 60947-1 Ed. 5.0 (2007 and later)
- IEC 60947-3 Ed. 3.0 (2008 and later)

og europeiske direktiv såsom / and European Directives like:

LVD 2006/95/EC publisert i Offentlig Journal (OJ) 2006/12/27
published in Official Journal (OJ) 2006/12/27

EMC 2004/108/EC publisert i Offentlig Journal (OJ) 2004/12/31
published in Official Journal (OJ) 2004/12/31

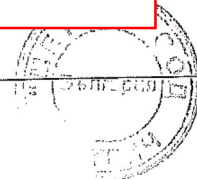
År for CE-merking:/
Year of CE-marking: 2014

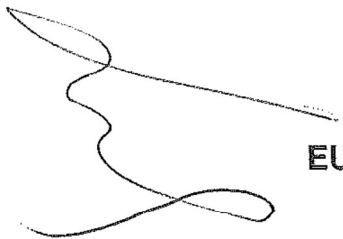
Skien, 27.- Nov - 2014
(Sted, dato og år for utstedelse/
Place, date and year of issue)

Erklæringsidentnr.
Declarationidentno. 1 SEP 500046P0001

На основании чл.36а ал.3 от ЗОП

С ОРИГИНАЛА





EU Declaration of Conformity
EU Konformitätserklärung
Déclaration UE de conformité
Dichiarazione di conformità UE

This declaration of conformity is issued under the sole responsibility of the manufacturer

Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller /
La présente déclaration de conformité est établie sous la seule responsabilité du fabricant /
La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante

ABB Oy, Protection and Connection
P.O.Box 622, Muottitie 2A
FI-65101 Vaasa
Finland

Object of declaration

Gegenstand der Erklärung / Objet de la déclaration / Oggetto della dichiarazione

**Fuse Switch Disconnecter / Sicherungslastschaltleiste / Interrupteur-sectionneur à fusibles /
Sezionatori con fusibili**

**Type / Typ / Type / Tipo ZLBM00-100, ZLBM00, ZLBM1, ZLBM2, ZLBM3, ZLBM800A,
ZLBM910A, ZLBM1250A, ZHBM00, ZHBM1, ZHBM2, ZHBM3, ZHBM800A, ZHBM910A,
ZHBM1250A**

The object of this declaration is in conformity with the relevant Community harmonisation legislation

Der oben beschriebene Gegenstand der Erklärung erfüllt die einschlägigen / Harmonisierungsrechtsvorschriften der Gemeinschaft /
L'objet de la déclaration décrit ci-dessus est conforme à la législation communautaire d'harmonisation applicable /
L'oggetto della dichiarazione di cui sopra è conforme alla pertinente normativa comunitaria di armonizzazione

**Low Voltage Directive / Niederspannungsrichtlinie / Directive basse tension / Direttiva Bassa Tensione
No. 2014/35/EU**

**EMC Directive / EMV-Richtlinie / Directive CEM / Direttiva EMC
No. 2014/30/EU**

and are in conformity with the following harmonized standards or other normative documents

nachgewiesen durch die Einhaltung der nachstehend aufgeführten Normen oder anderen normativen Dokumenten /
et justifié par le respect des Normes mentionnées ci-dessous ou autres documents normatifs /
e sono stati applicati le norme o altri documenti normativi indicati di seguito

**IEC60947-1:2007/A1:2010/A2:2014
IEC60947-3:2008/A1:2012**

**EN60947-1:2007/A1:2011/A2:2014
EN60947-3:2009/A1:2012**

Year of CE-marking: 2014

Jahr der CE-Kennzeichnung / Année d'apposition du marquage CE / Anno in cui è stata affissa la marcatura.

Signed for and on behalf of

Unterzeichnet für und im Namen von / Signé par et au nom de / Firmato in vece e per conto di

ABB Oy, Protection and Connection, Vaasa, 17 November 2016

На основание чл.36а ал.3 от
ЗОП

На основание чл.36а ал.3 от ЗОП

ВЯРНО С ОРИГИНАЛА

Document No.: 1SEP500046P0001 Rev: C (2016-11)

ABB Oy



ПРИЛОЖЕНИЕ 9.3.6

Декларация за съответствие на предлаганото изпълнение с изискванията на техническата спецификация на този стандарт за материал, вкл. на параграфи "Характеристика на материала" и "Съответствие на предложеното изпълнение с нормативно-техническите документи"

Триполосен предпазител-разединител с вертикална конструкция, с обявен работен ток 400 А, с общо управление на полюсите, за директен монтаж върху събирателни шини с междусово разстояние 185 mm, за високомощни предпазители със стопяема вложка NH, система A (NH система), с характеристика gG, размер 2, съответстващи на стандарт БДС EN 60269-1:2007 и БДС HD 60269-2:2007.

Вертикалният предпазител-разединител за 400 А, с общо управление на полюсите отговаря на приложимите български и международни стандарти и на техните валидни изменения и поправки:

БДС EN 60947-1:2007 "Комутационни апарати за ниско напрежение. Част 1: Общи правила (IEC 60947-1:2007)" и

БДС EN 60947-3:2002 "Комутационни апарати за ниско напрежение. Част 3: Товарови прекъсвачи, разединители, товаров прекъсвач-разединители и апарати, комбинирани с предпазители (IEC 60947-3:199+поправка юли 1999)"

и оценен положително по реда и при условията на Наредбата за съществените изисквания и оценяване на съответствието на електрическите съоръжения, предназначени за използване в определени граници на напрежението, приета с ПМС № 182 от 6.07.2001 г., обн., в ДВ, бр. 62 от 13.07.2001 г.

С настоящето декларираме съответствието на предлаганото изпълнение с изискванията на техническата спецификация

На основание чл.36а ал.3 от ЗОП

гр. Петрич

Дата: 10.01.2020г.

Настоящото приложение се прилага във връзка с участието ми в:

търг с предмет:

"Доставка и монтаж на комплектни метални трансформаторни постове"

РЕФ. № PPD 19-102

организиран от "ЧЕЗ Разпределение България" АД

ПРИЛОЖЕНИЕ 9.3.7

Инструкции за транспортиране, складиране, монтиране, поддържане и експлоатация

ВГР 400 А, триполюсно управление не трябва да се складира в среда с висока влажност, с наличие на корозивни вещества или кондензирани изпарения.

Да се съхраняват в температурния интервал -20°C $+55^{\circ}\text{C}$.

ВГР се опаковат и транспортират в картонени кутии, да се избягва изпускането на кутиите по време на транспортирането и товаро-разтоварните работи

Настоящото приложение се прилага във връзка с участието ми в:

търг с предмет:

“Доставка и монтаж на комплектни метални трансформаторни постове”

РЕФ. № PPD 19-102

организиран от “ЧЕЗ Разпределение България” АД



Наименование на материала: Вертикален разединител НН 1000 А, с триполюсно управление

Съкратено наименование на материала: ВР НН, 1000 А, 3-полюсно управление

Област: Н – Трансформаторни постове

Категория: 16 - Предпазители, основи за предпазители и предпазител-разединители

Мерна единица: Брой

Аварийни запаси: Да

Характеристика на материала:

Триполюсен разединител с вертикална конструкция, с обявен работен ток 1000 А, с общо управление на полюсите, за директен монтаж върху събирателни шини с междуосово разстояние 185 mm, съоръжен с твърди връзки (тоководещи шини), система А (NH система), размер 3, съответстващи на БДС EN 60269-1и БДС HD 60269-2 или еквивалентно/и.

Използване:

Вертикалният предпазител-разединител е предназначен за свързване на шинните системи на разпределителните табла посредством едножилни кабели НН.

Съответствие на предлаганото изпълнение с нормативно-техническите документи:

Триполюсният вертикален разединител за 1000 А, с общо управление на полюсите трябва да отговаря най-малко на посочените по-долу стандарти или еквиваленти и на техните валидни изменения и допълнения:

- БДС EN 60947-1:2007 „Комутационни апарати за ниско напрежение. Част 1: Общи правила (IEC 60947-1:2007)“ или еквивалентно/и; и
- БДС EN 60947-3:2009 „Комутационни апарати за ниско напрежение. Част 3: Товарови прекъсвачи, разединители, товарови прекъсвач-разединители и апарати комбинирани със стопяеми предпазители (IEC 60947-3:2008)“ или еквивалентно/и;
- БДС EN 60269-1:2007 „Стопяеми предпазители за ниско напрежение. Част 1: Общи изисквания. (IEC 60269-1:2006)“ или еквивалентно/и;
- БДС HD 60269-2:2013 „Стопяеми предпазители за ниско напрежение. Част 2: Допълнителни изисквания за стопяеми предпазители, предназначени за използване от квалифицирани лица (стопяеми предпазители предимно за промишлено приложение). Примери за стандартизирани системи за стопяеми предпазители от А до К (IEC 60269-2:2013, с промени)“ или еквивалентно/и;
- БДС EN 60664-1:2007 „Координация на изолацията за съоръжения в електроразпределителни мрежи за ниско напрежение. Част 1: Правила, изисквания и изпитвания (IEC 60664-1:2007)“ или еквивалентно/и;
- БДС EN 60529+A1:2004 „Степени на защита, осигурени от обвивката (IP код) (IEC 60529:1989 + A1:1999) или еквивалентно/и“

и

да бъде оценен положително по реда и при условията на Наредбата за съществените изисквания и оценяване на съответствието на електрически съоръжения, предназначени за използване в определени граници на напрежението, приета с ПМС № 47 от 15.03.2016 г., обн., ДВ, бр. 23 от 25 Март 2016г.

Изисквания към документацията и изпитванията

№ по ред	Документ	Приложение № или текст
1.	Точно означение на типа, производителя и страната на производство (произход) и последно издание на каталога на производителя	SLT3-3SR/3X3/1000 Jean Muller, Германия, Приложение 9.4.1
2.	Техническо описание и чертежи с нанесени на тях размери	Приложение 9.4.2
3.	Протоколи от типови изпитвания на английски или български език, проведени от независима изпитвателна лаборатория – заверени копия, с приложен списък на отделните изпитвания на български език	Приложение 9.4.3
4.	Сертификат/акредитация на независимата изпитвателна лаборатория, провела типовите изпитвания по т. 3 – заверено копие	Приложение 9.4.4
5.	ЕО декларация за съответствие	Приложение 9.4.5

№ по ред	Документ	Приложение № или текст
6.	Декларация за съответствие на предлаганото изпълнение с изискванията на техническата спецификация на този стандарт за материал, вкл. на параграфи „Характеристика на материала“ и „Съответствие на предложеното изпълнение с нормативно-техническите документи“ по-горе	Приложение 9.4.6

Забележка: Всички оригинални документи трябва да бъдат на български език или с превод на български език. (Каталозите и протоколите от проверките и изпитванията могат да бъдат и само на английски език.)

Технически данни:

1. Характеристики на работната среда

№ по ред	Наименование	Стойност
1.1	Място на монтиране	На закрито
1.2	Максимална температура на въздуха в околната среда	+ 40°C
1.3	Минимална температура на въздуха в околната среда	Минус 5°C
1.4	Максимална средна температура на въздуха в околната среда за период от 24 ч.	+ 35°C
1.5	Относителна влажност (при 20°C)	До 90 %
1.6	Степен на замърсяване	3
1.7	Надморска височина	До 2000 m

2. Параметри на електроразпределителната мрежата НН

№ по ред	Наименование	Стойност
2.1	Номинално напрежение	400 / 230 V
2.2	Максимално напрежение	440 / 253 V
2.3	Номинална честота	50 Hz
2.4	Електроразпределителна мрежа	4 проводна мрежа (L ₁ , L ₂ , L ₃ , PEN)
2.5	Схема на електроразпределителната мрежа	TN-C

3. Технически параметри и други данни

№ по ред	Технически характеристики	Изискване	Гарантирано предложение
3.1	Обявено работно напрежение, U _e	690 (500) V AC	690 V AC
3.2	Брой на полюсите	3	3
3.3	Обявена честота	50 Hz	50 Hz
3.4	Категория по пренапрежение съгласно БДС EN 60664-1 или еквивалентно/и	IV	IV
3.5	Обявено издържано импулсно напрежение, U _{imp}	8 kV	12 kV
3.6	Обявено напрежение на изолацията, U _i AC	min 800 V	1000 V AC
3.7	Обявен работен ток, I _e	1000 A	1000 A
3.8	Термичен ток със стопяема вложка, I _{th}	1000 A	1000 A
3.9	Условен ток на късо съединение (ефективна стойност) при 400 V AC	min 50 kA	120 kA

№ по ред	Технически характеристики	Изискване	Гарантирано предложение
3.10	Размер на твърдите връзки/тоководещи шини (съгласно серията БДС EN 60269 или еквивалентно/и)	3	3
3.11	Максимален обявен ток на стопяемите вложки, I_n	1000 A	1000 A
3.12	Категория на приложение (при 400 V AC)	AC 20 В или по-висока	AC 22 В
3.13	Механична износоустойчивост, брой на комутационните цикли	min 500	800
3.14	Електрическа износоустойчивост, брой на комутационните цикли	min 100	100
3.15	Управление	Триполюсно (едновременно включване и изключване на трите полюса)	Триполюсно (едновременно включване и изключване на трите полюса)
3.16	Основни размери:	-	-
3.16a	широчина	max 100 mm	99 mm
3.16b	височина (измерена от края на клемните съединения)	680 mm - информативно	662 mm
3.17	Разстояние между осите на събирателните шини	185 mm	185 mm
3.18	Присъединяване към събирателните шини	Клеми за свързване без необходимост от пробиване на шините	Клеми за свързване без необходимост от пробиване на шините
3.19	Степен на защита срещу проникване на твърди тела и вода във вътрешността и допир до части под напрежение от лицевата страна съгласно БДС EN 60529+A1 или еквивалентно.	min IP20	IP30
3.20	Клемови съединения за токопроводимите жила на присъединяваните кабелни линии	Вертикалните разединители трябва да бъдат съоръжени с V-съединителна арматура за свързване на токопроводими кабелни жила в диапазона най-малко от 185 mm ² ге до 240 mm ² sm.	Присъединяването не се осъществява чрез V-съединителна арматура. Макс. сечение на присъединяваните кабели до 2x300 (3x120) mm ²
3.21	Маркировка	Вертикалните разединители трябва да бъде маркирани с информацията съгласно т. 5.2 от БДС EN 60947-3 или еквивалентно и инициалите „СЕ“.	Вертикалните разединители са маркирани с информацията съгласно т. 5.2 от БДС EN 60947-3 или еквивалентно и инициалите „СЕ“.
3.22	Тегло, kg	Да се посочи	8,5 kg



гр.Петрич 2850. Промышлена зона
ул."Свобода"49
тел.:00359 745 60743; факс:00359 745 60742
e-mail: metix@metix.bg
гр.София 1000 ул."Рикардо Ваярини"бл.5
тел.:00359 2 869 0696; факс:00359 2 958 6334
e-mail:kaiaa@metix.bg



Management System
ISO 9001:2015
ISO 14001:2015
OHSAS 18001:2007
www.tuv.com
ID 9105026855

ПРИЛОЖЕНИЕ 9.4.1

**Точно означение на типа, производителя и страната на производство
(Произход) и последно издание на каталога на производителя**

Настоящото приложение се прилага във връзка с участието ми в:

търг с предмет:

“Доставка и монтаж на комплектни метални трансформаторни постове”

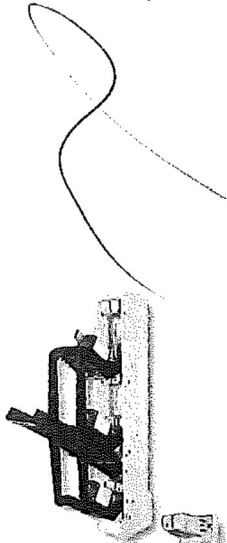
РЕФ. № PPD 19-102

организиран от “ЧЕЗ Разпределение България” АД

NH-Sicherungslastschaltleisten

NH strip-type fuse-switch-disconnectors

NH-Sicherungslastschaltleisten Größe 1-3 für 185mm Sammelschienensysteme NH strip-type fuse-switch-disconnectors size 1 to 3 for 185mm busbar systems



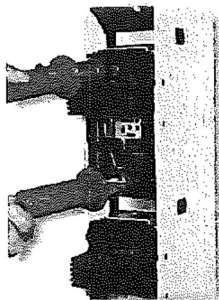
Vorteile, die überzeugen

Schalthebel

- Langer Schalthebel für sicheres und schnelles Schalten
- Abschließbar mit bis zu 3 Vorhängeschlössern in EIN- und AUS-Stellung

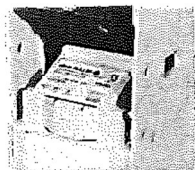
Montage

- Sichere Montage unter Spannung durch stets berührgeschütztes Kontaktsystem
- Nachrüstbare Montagehaken



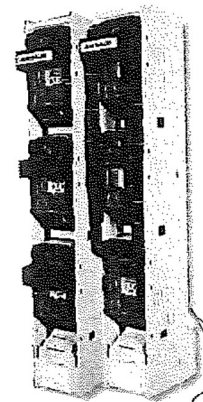
Messung und Überwachung

- Sichere Spannungsmessung durch Prüflöcher über den Sicherungsaufnahmekontakten
- Elektronische Sicherungsüberwachung oder Sicherungsüberwachung durch Motorschutzschalter
- Einsatz von Wandlersicherungen für temporäre Strommessungen



Anschlussraumabdeckung

- Anschlussraumabdeckung im Gerät integriert
- Typenschild auch im eingebauten Zustand jederzeit lesbar



Convincing advantages

Operating lever

- Long operating lever for safe and reliable switching
- Lockable with up to 3 padlocks in both ON and OFF position

Installation

- Safe installation on live busbars due to always touch proof contacts
- Retrofittable mounting hooks

Measuring and monitoring

- Safe voltage testing through test holes leading to blade-contacts
- Electronic fuse monitoring or fuse-monitoring by means of motor circuit-breaker
- Current-transformer (c.t.) fuse-links for temporary current measurements

ВЯРНО С ОРИГИНАЛА

Terminal cover

- Integrated in NH strip-type fuse-switch-disconnector
- Markings always readable before and after installation



Größe 1-2 > 185mm Sammelschienensystem > Kabelabgang oben oder unten > OMEGA Kontaktsystem > 1-polig schaltbar
Size 1-2 > 185mm busbar system > Terminal at top or bottom side > OMEGA contact system > 1-pole switchable

Größe Size	Anschlussart Terminal version	Anschluss Connection [mm²]	I [A]	VE PU	Typ Type	Artikel-Nr. Article-No.
1	Flachanschluss M10 Flat terminal M10	25-150			SL1H-3X/3A	L193100103
	V-Stahl-Rahmenklemme KM2G-F Steel-frame clamp KM2G-F	25-240	250		SL1H-3X/9/KM2G-F	L199600403
	V-Stahl-Rahmenklemme KM2G Steel-frame clamp KM2G	25-300			SL1H-3X/9/KM2G	L199602903
	Flachanschluss M12 Flat terminal M12	25-240			SL2H-3X/3A	L293100103
2	Stehbolzenanschluss M12x35 Stud bolt terminal M12x35	25-240		1	SL2H-3X/4A	L294100203
	Stehbolzenanschluss M12x60 Stud bolt terminal M12x60	25-240	400		SL2H-3X/4A-60	L294100303
	V-Stahl-Rahmenklemme KM2G-F Steel-frame clamp KM2G-F	25-240			SL2H-3X/9/KM2G-F	L299600403
	V-Stahl-Rahmenklemme KM2G Steel-frame clamp KM2G	25-300			SL2H-3X/9/KM2G	L299600503

Handwritten signature

NH-Sicherungs-
leisten
NH strip-
fuseways

NH-Sicherungs-
lastschaltleisten
NH strip-
type fuse-switch-
disconnectors

Größe 2 > 185mm Sammelschienensystem > Kabelabgang oben oder unten > OMEGA Kontaktsystem
> 1-polig schaltbar > Versenkbarer Griff
Size 2 > 185mm busbar system > Terminal at top or bottom side > OMEGA contact system
> 1-pole switchable > Retractable handle

2	Flachanschluss M12 Flat terminal M12	25-240			SL2H-3X/3A/GV	L293100603
	V-Stahl-Rahmenklemme KM2G-F Steel-frame clamp KM2G-F	25-240	400	1	SL2H-3X/9/KM2G-F/GV	L299600903
	V-Stahl-Rahmenklemme KM2G Steel-frame clamp KM2G	25-300			SL2H-3X/9/KM2G/GV	L299601003

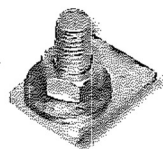
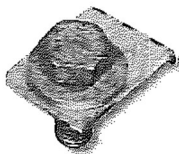
NH-Sicherungs-
lasttrenn-
schalter
NH fuse-switch-
disconnectors

CJOISIMIO®
CIOISIMIO®

Klemmen
Terminals

Anschlussarten/Terminal versions

Flachanschluss Flat terminal M...	Stehbolzenanschluss Stud bolt terminal	V-Stahl-Rahmenklemme KM2G-F Steel-frame clamp KM2G-F	V-Stahl-Rahmenklemme KM2G Steel-frame clamp KM2G
--------------------------------------	---	---	---



Anhang
Appendix

ВЯРНО С ОРИГИНАЛА

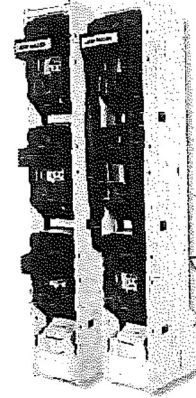


Handwritten signature

NH-Sicherungslastschaltleisten

NH strip-type fuse-switch-disconnectors

NH-Sicherungsleisten Größe 1-3 DELTA und OMEGA Kontaktsystem NH strip-fuseways size 1-3 DELTA and OMEGA contact system



Vorteile, die überzeugen

OMEGA Kontaktsystem

- Maximale Sicherheit dank hohem Kurzschluss einschaltvermögen (120kA/500V)
- Gefahrloser Betrieb durch hohe Schaltleistung bis zu AC-23B (400V/400A)
- Korrosionsfreie Edelstahl-Fremdfederung
- Robustes und alterungsbeständiges Kontaktsystem mit hohen Rückstelleigenschaften



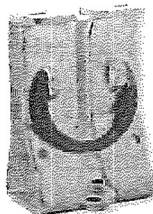
DELTA Kontaktsystem

- Gezielte Lichtbogenführung und geringer Kontaktverschleiß durch Opferelektroden
- Gefahrloser Betrieb durch hohe Schaltleistung bis zu AC-23B (400V/630A)
- Hohe Alterungsbeständigkeit durch zwei voneinander unabhängige Fremdfedererente
- Optimale Kontaktierung und niedrige Verlustleistung durch 2fach-Linienkontaktsystem
- Hohe Kurzschlussfestigkeit bis zu 120kA durch integrierte Kurzschlussblockade



Einsatz

- Das OMEGA Kontaktsystem bietet für die typischen Anwendungen im Bereich der Versorgungsnetzbetreiber für Geräte der Größe 1 und 2 ein ideal angepasstes Leistungsprofil
- Das DELTA Kontaktsystem sorgt mit seiner Stromtragfähigkeit von bis zu 1000A Dauerstrom insbesondere in industriellen Anwendungen sowie in Geräten mit einem Bemessungsstrom von > 400A für hervorragende Lastschalteigenschaften



Convincing advantages

OMEGA contact system

- Maximum safety thanks to high short-circuit making capacity (120kA/500V)
- Riskless operation due to high switching capacity up to AC-23B (400V/400A)
- Corrosion-resistant external spring elements made by stainless steel
- Robust and age-resistant contact system with high restoring properties

DELTA contact system

- Defined arc initiation and low contact wear due to sacrificial electrodes
- Riskless operation due to high switching capacity up to AC-23B (400V/630A)
- High age resistance by two independent spring elements
- Optimal contacting and low power loss by dual line contact system
- High short-circuit strength up to 120kA by integrated short circuit pinch-stop

Application

- The OMEGA contact system offers an optimum performance profile for size 1 and 2 devices to be installed in power utility networks

- The DELTA contact system, having a current carrying capability up to 1000A, provides excellent load-break capability in industrial applications and in switching devices having rated currents above 400A





Größe 1-3 > 185mm Sammelschienenensystem > Kabelabgang oben oder unten > DELTA Kontaktsystem > 1-polig schaltbar
Size 1-3 > 185mm busbar system > Terminal at top or bottom side > DELTA contact system > 1-pole switchable

Größe Size	Anschlussart Terminal version	Anschluss Connection [mm ²]	I _n [A]	VE PU	Typ Type	Artikel-Nr. Article-No.
1	Flachanschluss M10 Flat terminal M10	25-150			SL1-3X/3A	L1931001
	V-Stahl-Rahmenklemme KM2G-F Steel-frame clamp KM2G-F	25-240	250		SL1-3X/9/KM2G-F	L1996004
	V-Stahl-Rahmenklemme KM2G Steel-frame clamp KM2G	25-300			SL1-3X/9/KM2G	L1996029
2	Flachanschluss M12 Flat terminal M12	25-240			SL2-3X/3A	L2931001
	Stehbolzenanschluss M12x35 Stud bolt terminal M12x35	25-240			SL2-3X/4A	L2941002
	Stehbolzenanschluss M12x60 Stud bolt terminal M12x60	25-240	400		SL2-3X/4A-60	L2941003
3	V-Stahl-Rahmenklemme KM2G-F Steel-frame clamp KM2G-F	25-240		1	SL2-3X/9/KM2G-F	L2996004
	V-Stahl-Rahmenklemme KM2G Steel-frame clamp KM2G	25-300			SL2-3X/9/KM2G	L2996005
	Flachanschluss M12 Flat terminal M12	25-300			SL3-3X/3A	L3931001
2 x 3	Stehbolzenanschluss M12x35 Stud bolt terminal M12x35	25-300			SL3-3X/4A	L3941002
	Stehbolzenanschluss M12x60 Stud bolt terminal M12x60	25-300	630		SL3-3X/4A-60	L3941003
	V-Stahl-Rahmenklemme KM2G-F Steel-frame clamp KM2G-F	25-240			SL3-3X/9/KM2G-F	L3996018
2 x 3	V-Stahl-Rahmenklemme KM2G Steel-frame clamp KM2G	25-300			SL3-3X/9/KM2G	L3996004
	Flachanschluss 3 x M12 Flat terminal 3 x M12	3 x 300, 4 x 185	1250		SL3-3X2/1250/HA	L3921400

NH-Sicherungs-
leisten
NH strip-
fuseways

NH-Sicherungs-
lastschaltleisten
NH strip-
type fuse-switch-
disconnectors

NH-Sicherungs-
lasttrenn-
schalter
NH fuse-switch-
disconnectors

CJOISMJO®
CIOISMJO®

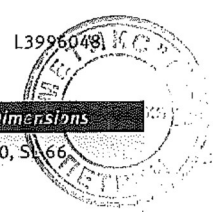
Größe 2-3 > 185mm Sammelschienenensystem > Kabelabgang oben oder unten > DELTA Kontaktsystem
> 1-polig schaltbar > Versenkbarer Griff
Size 2-3 > 185mm busbar system > Terminal at top or bottom side > DELTA contact system
> 1-pole switchable > Retractable handle

Klemmen
Terminals

2	Flachanschluss M12 Flat terminal M12	25-240			SL2-3X/3A/GV	L2931006
	V-Stahl-Rahmenklemme KM2G-F Steel-frame clamp KM2G-F	25-240	400		SL2-3X/9/KM2G-F/GV	L2996009
3	V-Stahl-Rahmenklemme KM2G Steel-frame clamp KM2G	25-300		1	SL2-3X/9/KM2G/GV	L2996010
	Flachanschluss M12 Flat terminal M12	25-300			SL3-3X/3A/GV	L3931005
	V-Stahl-Rahmenklemme KM2G-F Steel-frame clamp KM2G-F	25-240	630		SL3-3X/9/KM2G-F/GV	L3996048

ВЯРНО С ОРИГИНАЛА

Anhang
Appendix



Handwritten signature

NH-Sicherungslastschaltleisten

NH strip-type fuse-switch-disconnectors

Größe 1-3 > 185mm-Sammelschienen-System > Kabelabgang oben oder unten > DELTA Kontaktsystem > 3-polig schaltbar
 Size 1-3 > 185mm busbar system > Terminal at top or bottom side > DELTA contact system > 3-pole switchable

Größe Size	Anschlussart Terminal version	Anschluss Connection [mm ²]	I [A]	VE PU	Typ Type	Artikel-Nr. Article-No.
1	Flachanschluss M10 Flat terminal M10	25-150	250		SL1-3X3/3A	L1031001
	V-Stahl-Rahmenklemme KM2G-F Steel-frame clamp KM2G-F	25-240	250		SL1-3X3/9/KM2G-F	L1096004
	V-Stahl-Rahmenklemme KM2G Steel-frame clamp KM2G	25-300	250		SL1-3X3/9/KM2G	L1096026
2	Flachanschluss M12 Flat terminal M12	25-240	400		SL2-3X3/3A	L2031001
	Stehbolzenanschluss M12x35 Stud bolt terminal M12x35	25-240	400		SL2-3X3/4A	L2041002
	Stehbolzenanschluss M12x60 Stud bolt terminal M12x60	25-240	400		SL2-3X3/4A-60	L2041003
	V-Stahl-Rahmenklemme KM2G-F Steel-frame clamp KM2G-F	25-240	400	1	SL2-3X3/9/KM2G-F	L2096015
	V-Stahl-Rahmenklemme KM2G Steel-frame clamp KM2G	25-300	400		SL2-3X3/9/KM2G	L2096005
	Flachanschluss M12 Flat terminal M12	25-300	630		SL3-3X3/3A	L3031001
3	Stehbolzenanschluss M12x35 Stud bolt terminal M12x35	25-300	630		SL3-3X3/4A	L3041002
	Stehbolzenanschluss M12x60 Stud bolt terminal M12x60	25-300	630		SL3-3X3/4A-60	L3041003
	V-Stahl-Rahmenklemme KM2G-F Steel-frame clamp KM2G-F	25-240	630		SL3-3X3/9/KM2G-F	L3096012
	V-Stahl-Rahmenklemme KM2G Steel-frame clamp KM2G	25-300	630		SL3-3X3/9/KM2G	L3096004
2 x 3	Flachanschluss 3 x M12 Flat terminal 3 x M12	3 x 300, 4 x 185	1250		SL3-3X6/1250/HA	L3021400

Größe 1-3 > 185mm-Sammelschienen-System > Kabelabgang oben oder unten > DELTA Kontaktsystem > 3-polig schaltbar >
 Elektronische Sicherungsüberwachung ES00
 Size 1-3 > 185mm busbar system > Terminal at top or bottom side > DELTA contact system > 3-pole switchable >
 Electronic fuse-monitoring unit ES00

Größe Size	Anschlussart Terminal version	Anschluss Connection [mm ²]	I [A]	VE PU	Typ Type	Artikel-Nr. Article-No.
1	Flachanschluss M10 Flat terminal M10	25-150	250		SL1-3X3/3A/ES00	L1031720
2	Flachanschluss M12 Flat terminal M12	25-240	400	1	SL2-3X3/3A/ES00	L2031720
3	Flachanschluss M12 Flat terminal M12	25-300	630		SL3-3X3/3A/ES00	L3031720



Größe 3 > 185mm Sammelschienensystem > Kabelabgang oben oder unten > DELTA Kontaktsystem > 1-polig schaltbar
Size 3 > 185mm busbar system > Terminal at top or bottom side > DELTA contact system > 1-pole switchable

Größe Size	Anschlussart Terminal version	Anschluss Connection [mm ²]	I [A]	VE PU	Typ Type	Artikel-Nr. Article-No.
3	Flachanschluss 2 x M12 Flat terminal 2 x M12	2 x 300, 3 x 120	1000		SL3-3X/1000/HA/TM3 ¹⁾	L3921300
	Flachanschluss 3 x M12 Flat terminal 3 x M12	3 x 300, 4 x 185	1600	1	SL3-3X2/1600/HA/TM3 ¹⁾	L3921402
2 x 3	Flachanschluss 4 x M12 Flat terminal 4 x M12	4 x 300	2000		SL3-3X2/2000/HA	L3921507

Größe 3 > 185mm Sammelschienensystem > Kabelabgang oben oder unten > DELTA Kontaktsystem > 3-polig schaltbar
Size 3 > 185mm busbar system > Terminal at top or bottom side > DELTA contact system > 3-pole switchable

3	Flachanschluss 2 x M12 Flat terminal 2 x M12	2 x 300, 3 x 120	1000		SL3-3X3/1000/HA/TM3 ¹⁾	L3021300
	Flachanschluss 3 x M12 Flat terminal 3 x M12	3 x 300, 4 x 185	1600	1	SL3-3X6/1600/HA/TM3 ¹⁾	L3021401
2 x 3	Flachanschluss 4 x M12 Flat terminal 4 x M12	4 x 300	2000		SL3-3X6/2000/HA	L3021501

¹⁾ Einschließlich Trennmesser 1250A/Including solid link 1250A

Größe 3 > 185mm Sammelschienensystem > Einspeisung rückseitig auf Sammelschienensystem > DELTA Kontaktsystem
Size 3 > 185mm busbar system > Supply at rear side to busbar system > DELTA contact system

Größe Size	Anschlussart Terminal version	Anschluss Connection [mm ²]	I [A]	VE PU	Typ Type	Artikel-Nr. Article-No.
3	1-polig/1-pole	2 x 300	1000	1	SL3-3X/1000/ARO/TM3 ¹⁾	L3920303
	3-polig/3-pole				SL3-3X3/1000/ARO/TM3 ¹⁾	L3020303

¹⁾ Einschließlich Trennmesser 1250A/Including solid link 1250A

NH-Sicherungs-
leisten
NH strip-
fuseways

NH-Sicherungs-
lastschaltleisten
NH strip-
type fuse-switch-
disconnectors

NH-Sicherungs-
lasttrenn-
schalter
NH fuse-switch-
disconnectors

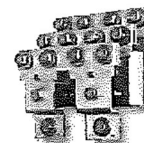
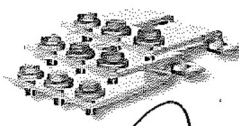
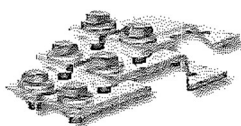
CIO/SIMIO*
CIO/SIMIO*

Klemmen
Terminals

Anhang
Appendix

Anschlussarten/Terminal versions

Flachanschluss 2 x M12 Flat terminal 2 x M12	Flachanschluss 3 x M12 Flat terminal 3 x M12	Flachanschluss 4 x M12 Flat terminal 4 x M12
---	---	---



ВЯРНО С ОРИГИНАЛА

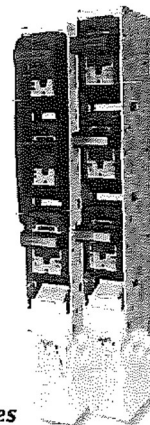


Handwritten signature

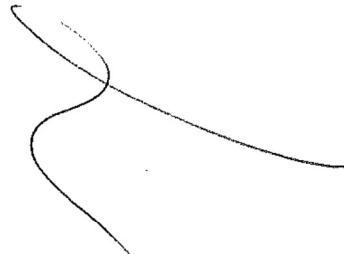
NH-Sicherungslastschaltleisten

NH strip-type fuse-switch-disconnectors

NH-Sicherungslastschaltleiste SL3/910A und SL3/910Aplus NH strip-type fuse-switch-disconnector SL3/910A and SL3/910Aplus



SL3/910A



Vorteile, die überzeugen

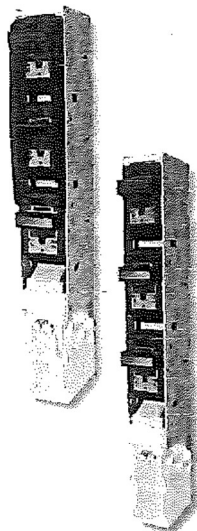
Großzügige Dimensionierung

- Geringe Verlustleistung dank 480mm² Querschnitt bei Einspeisewinkeln und Abgangsschienen
- Niedrige Kontakttemperaturen durch gute Wärmeabführung

Convincing advantages

Generously dimensioned

- Low power loss thanks to 480mm² cross section of feeding contacts and terminal bars
- Low contact temperature-rise due to excellent heat dissipation

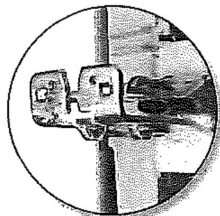


Gute Anschlussbedingungen

- Spezielle Anschlusselemente ermöglichen 2-Leiteranschluss bis 2x300mm² oder 3-Leiteranschluss bis 3x185mm²
- Einfache Montage auf Sammelschienen-system durch 100mm Baubreite

Fast and easy connecting

- Special connectors enable the connection of two conductors up to 2x300mm² or three conductors up to 3x185mm² cross section
- Easy installation on busbars due to uniform 100mm width

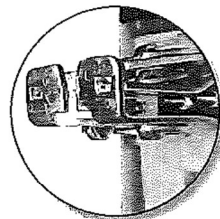


SL3/910A

- Standardgerät für übliche Anwendungen der Versorgungsnetzbetreiber
- DELTA Kontaktsystem für hohe Schaltleistung

SL3/910A

- Standard Product for regular power utility applications
- DELTA contacts for superior breaking capacity



SL3/910Aplus

- Kontaktsystem DELTAplus für erschwerte Einsatzbedingungen
- Sechs unabhängig befederte Linienkontakte pro Sicherungsaufnahmekontakt für beste Kontaktierung

SL3/910Aplus

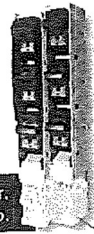
- DELTAplus contacts for severe operating conditions
- Six independent spring loaded linear contacts corresponding to each blade contact provide optimum contact performance



ВАЖНО ОРИГИНАЛА

[Handwritten signature]

[Handwritten signature]



Handwritten signature

Größe 3/910A > 185mm Sammelschienensystem > Sekundärschutz von 630kVA-Transformatoren > DELTA Kontaktsystem
Size 3/910A > 185mm busbar system > Secondary protection of 630kVA transformers > DELTA contact system

Schaltbarkeit Switching mode	Einspeisung Supply	Anschlussart Terminal version	I _n [A]	VE PU	Typ Type	Artikel-Nr. Article-No.
1-polig/1-pole		2 x M12	910	1	SL3-3X/910/HA	L3921200
	Oben oder unten Top or bottom side	1 x M16			SL3-3X/910/AO/AU-100	L3920208
		1 x M16			SL3-3X/910/AO/AU-75	L3920210
		2 x M12			SL3-3X/910/AO/AU-65	L3920214
		1 x M12			SL3-3X/910/ARO	L3920203
	Rückseitig From rear side	1 x M16			SL3-3X/910/ARO/110	L3920206
		1 x M16			SL3-3X/910/ARUS	L3920204
	Oben/Top side	1 x M16			SL3-3X/910/AORL	L3920220
		2 x M12			SL3-3X3/910/HA	L3021200
		1 x M16			SL3-3X3/910/AO/AU-100	L3020208
3-polig/3-pole	Oben oder unten Top or bottom side	1 x M16	910	1	SL3-3X3/910/AO/AU-75	L3020210
		2 x M12			SL3-3x3/910/AO/AU-65	L3020214
	Oben/Top side	1 x M12			SL3-3X3/910/AO-102	L3021229
		1 x M12			SL3-3X3/910/ARO	L3020203
	Rückseitig From rear side	1 x M16			SL3-3X3/910/ARO/110	L3020218
		1 x M16			SL3-3X3/910/ARUS	L3020204
		1 x M16			SL3-3X3/910/AORL	L3020216
	Oben/Top side	1 x M16			SL3-3x3/910/AORK	L3020221



NH-Sicherungs-
leisten
NH strip-
fuseways

NH-Sicherungs-
lastschaltleisten
NH strip-
type fuse-switch-
disconnectors

NH-Sicherungs-
lasttrenn-
schalter
NH fuse-switch-
disconnectors

Größe 3/910Aplus > 185mm Sammelschienensystem > Sekundärschutz von 630kVA-Transformatoren > DELTA Kontaktsystem
Size 3/910Aplus > 185mm busbar system > Secondary protection of 630kVA transformers > DELTA contact system

Schaltbarkeit Switching mode	Einspeisung Supply	Anschlussart Terminal version	I _n [A]	VE PU	Typ Type	Artikel-Nr. Article-No.
1-polig/1-pole	Oben oder unten Top or bottom side	2 x M12	910	1	SL3-3X/910+/HA	L392120099
	Rückseitig From rear side	1 x M12			SL3-3X/910+/ARO	L392020399
3-polig/3-pole	Oben oder unten Top or bottom side	2 x M12			SL3-3X3/910+/HA	L302120099
	Rückseitig From rear side	1 x M12			SL3-3X3/910+ARO	L302020399

CIO|S|MO®
CIO|S|MO®

Klemmen
Terminals

Anhang
Appendix

Weitere Ausführungen auf Anfrage/Further versions on request

ВЪРНО С ОРИГИНАЛА

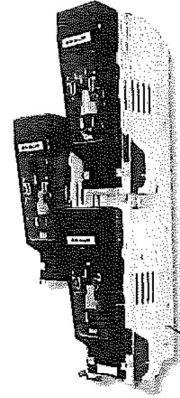


Handwritten signature

NH-Sicherungslastschaltleisten

NH strip-type fuse-switch-disconnectors

NH-Sicherungslastschaltleisten Größe 4a NH strip-type fuse-switch-disconnectors size 4a

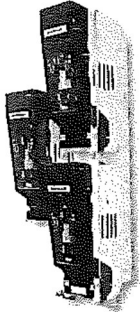


Handwritten signature

Vorteile, die überzeugen

Kompatibilität

- Reduzierte Einbauhöhe bei 248mm Baubreite
- Verschiedene Berührungsschutzabdeckungen als Zubehör
- Nachrüstbar mit Mikroschaltern zur Sicherungsüberwachung (Schlagmelderausführung)
- Schaltstellungsanzeige nachrüstbar



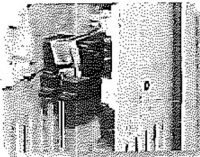
Convincing advantages

Compatibility

- Reduced installation height at 248mm width
- Various protective covers available
- Retrofit microswitch for fuse monitoring (striker fuse-links)
- Retrofit switch position monitoring

LYRA-Kontaktsystem

- LYRA-Kontaktsystem mit Q-Einschaltilfe für hohes Schaltvermögen
- 4 unabhängig befederte Kontaktschenkel für niedrige Verlustleistung

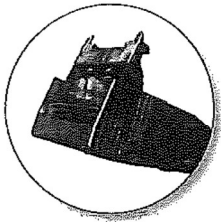


LYRA contact system

- LYRA contact system with Q-making feature
- Four independently spring loaded contact fingers ensure low power loss

Hohe Sicherheit

- Sichere Deckelverriegelung für hohe Kurzschlussfestigkeit bis 80kA



High safety level

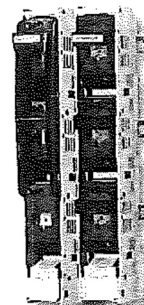
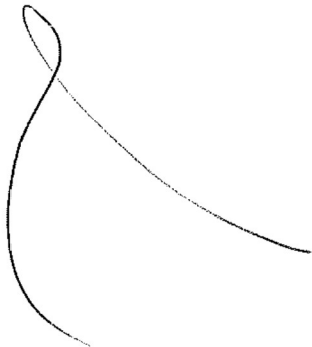
- Reliable fuse carrier latch for high short-circuit current withstand up to 80kA

ВЯРНО С ОРИГИНАЛА

Handwritten signature



Handwritten signature



Größe 3 > 185mm Sammelschienensystem > Sammelschienenlängsttrennung > DELTA Kontaktsystem
Size 3 > 185mm busbar system > Busbar disconnection > DELTA contact system

Größe Size	Schaltbarkeit Switching mode	Sammelschientrennung Busbar disconnection	I _n [A]	VE PU	Typ Type	Artikel-Nr. Article-No.
3	3-polig/3-pole	Linksseitig/Left side	630	1	SLT3-3SL/3X3	L3000001
		Rechtsseitig/Right side	630		SLT3-3SR/3X3	L3000002
		Linksseitig/Left side	1000		SLT3-3SL/3X3/1000/TM3 ¹⁾	L3000003
		Rechtsseitig/Right side	1000		SLT3-3SR/3X3/1000/TM3 ¹⁾	L3000004
2 x 3		Rechtsseitig/Right side	910	SLT3-3SR/3X3/910	L3000201	
		Rechtsseitig/Right side	2000	SLT3-3SR/3X6/2000/TM3 ¹⁾	L3000501	
3	1-polig/1-pole	Linksseitig/Left side	630	SLT3-3SL/3X	L3900001	
		Rechtsseitig/Right side	630	SLT3-3SR/3X	L3900002	
		Linksseitig/Left side	1000	SLT3-3SL/3X/1000/TM3 ¹⁾	L3900003	
		Rechtsseitig/Right side	1000	SLT3-3SR/3X/1000/TM3 ¹⁾	L3900004	
2 x 3		Rechtsseitig/Right side	910	SLT3-3SR/3X/910	L3900201	
		Rechtsseitig/Right side	2000	SLT3-3SR/3X2/2000/TM3 ¹⁾	L3900501	

1) Einschließlich Trennmesser 1250A/Including solid link 1250A

NH-Sicherungs-
leisten
NH strip-
fuseways

NH-Sicherungs-
lastschaltleisten
NH strip-
type fuse-switch-
disconnectors

NH-Sicherungs-
lasttrenn-
schalter
NH fuse-switch-
disconnectors

CIO/SIMIO®
CIO/SIMIO®

Klemmen
Terminals

Anhang
Appendix

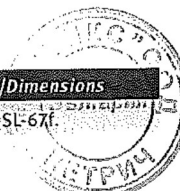


Größe 4a > 185mm Sammelschienensystem > 1-polig schaltbar
Size 4a > 185mm busbar system > 1-pole switchable

Baubreite Width	Anschlussart Terminal version	Kabelabgang Terminal	I _n [A]	VE PU	Typ Type	Artikel-Nr. Article-No.
248mm	1 x M16	Unten/Bottom side	1250	1	SLTL4A-3AS/3X/4	L4941000
		Oben/Top side	1250	1	SLTL4A-3AS/3X/4/AO	L4941001



ВЯРНО С ОРИГИНАЛА



NH-Sicherungslastschaltleisten

NH strip-type fuse-switch-disconnectors

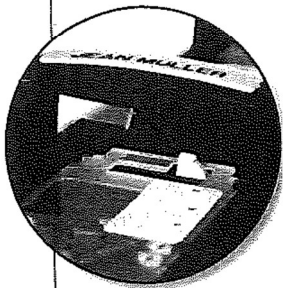
Kompetenz Competence

Sonderbauformen/Special versions

Die unterschiedlichen Anwendungsfälle unserer Kunden erfordern besondere Lösungen. Diese zu entwickeln, ist eine Herausforderung, der sich JEAN MÜLLER seit mehr als 115 Jahren erfolgreich stellt. Die Anpassung der Bauformen oder die Ergänzung mit Spezialteilen generiert Kundennutzen. In enger Abstimmung mit unseren Partnern werden solche individuellen technischen Lösungen für besondere Einbausituationen und Anforderungen geschaffen.

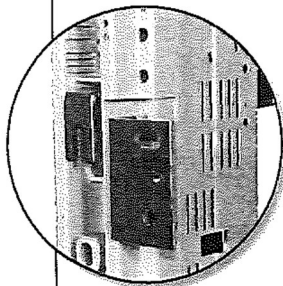
The different applications of our customers require special solutions. JEAN MÜLLER has successfully met the challenge of the development of those extraordinary solutions for more than 115 years. The adaptation of product versions and the completion with special accessories generates customer's benefit. Individual technical solutions for special built-in applications and requirements are designed in close coordination with our partners.

Sie haben keine Lösung für Ihre Anwendung gefunden?/You haven't found any solution for your application?
Kontaktieren Sie uns!/Please contact us!



Eine zusätzliche Verriegelung sorgt bei Trennschaltleisten für eine Bemessungskurzzeitstromfestigkeit von 25kA/1s und ermöglicht damit einen Einsatz als Trennschalter auf der Sekundärseite von 630kVA-Transformatoren ($I_k = 22,75\text{kA}$ bei $u_k = 4\%$)

An additional interlock at switch-disconnectors makes sure a rated short-time withstand current of 25kA/1s and enables therewith an usage as switch-disconnector on the secondary side of 630kVA-transformers ($I_k = 22,75\text{kA}$ at $u_k = 4\%$)



Geschlitzte Einspeisewinkel ermöglichen das Einhängen des Schaltgerätes auf die vormontierten Befestigungsbolzen am Sammelschienensystem

Slotted feeding contacts allow to hook the disconnector into pre-assembled bolts on busbar system

ВАРНО С ОРИГИНАЛА



NH-Sicherungslastschaltleisten

NH strip-type fuse-switch-disconnectors

Typ/Type		SL3	SL3/910A	SL3/910A+	
	Nach Norm/According to standard	DIN EN 60947-3			
	Für NH-Sicherungen nach DIN VDE 0636-2 For NH fuse-links acc. to DIN VDE 0636-2	Größe Size	3	3	
	Bemessungsbetriebsspannung Rated operational voltage	U_e V	AC690	AC400	
	Bemessungsbetriebsstrom ¹⁾ Rated operational current ¹⁾	I_e A	630	910	
	Konv. therm. Strom frei in Luft mit Sicherungen Conv. free air thermal current with fuse-links	I_{th} A	630	910	1000
	Konv. therm. Strom frei in Luft mit Trennmessern Conv. free air thermal current with solid-links	I_{th} A	800	1250	
	Bemessungsfrequenz Rated frequency	- Hz	40-60	40-60	
Elektrische Kenngrößen Electrical characteristics	Bemessungsisolationsspannung Rated insulation voltage	U_i V	AC1000	AC690	
	Gesamtverlustleistung bei I_{th} (ohne Sicherungen) Total power loss at I_{th} (without fuse-links)	P_v W	115	155	140
	Verlustleistung bei 80% I_{th} (ohne Sicherungen) ²⁾ Power loss at 80% I_{th} (without fuse-links) ²⁾	P_v W	73,6	99,2	89,6
	Bemessungsstoßspannung Rated impulse withstand voltage	U_{imp} kV	12	8	
	Gebrauchskategorie Utilization category	-	AC-23B (630A/400V) AC-22B (630A/500V) AC-21B (630A/690V)	AC-22B (1250A/400V) AC-22B (910A/400V)	
	Bedingter Bemessungskurzschlussstrom Rated conditional short-circuit current	I_{cc} kA	120 ^{3a)}	50 ^{3b)}	
	Bemessungskurzzeitstromfestigkeit Rated short-time withstand current	I_{cw} kA	10/15kA ⁴⁾	10/15kA ⁴⁾	
	Max. zul. Verlustleistung pro Sicherungseinsatz Max. permis. power loss per fuse-link	P_a W	48	61	

- 1) Bei Einbau von mehreren Geräten in Niederspannungs-Schaltgerätekombinationen sind Bemessungsbelastungsfaktoren nach DIN EN 61439 zu beachten.
In case of mounting of several units in low voltage switchgear-combinations, please consider rated diversity factors acc. to DIN EN 61439.
- 2) Bezugsgröße für Austausch von Geräten nach DIN EN 61439-1 Abs. 10.10.4.2.
Reference value for replacement of devices acc. to DIN EN 61439-1 clause 10.10.4.2.
- 3a) Typgeprüft bei AC420V mit NH-Sicherungseinsätzen 630A/500V Betriebsklasse gG, bei AC725V mit NH-Sicherungseinsätzen 500A/690V Betriebsklasse gG.
Type tested at AC420V with NH fuse-links 630A/500V characteristic gG, at AC725V with NH fuse-links 500A/690V characteristic gG.
- 3b) Typgeprüft mit NH-Sicherungseinsätzen 400V/910A Betriebsklasse gTr. / Type tested with NH fuse-links 400V/910A characteristic gTr.
- 4) 1-polig/3-polig schaltbar. / 1-pole/3-pole switchable.

ВАРНО С ОРИГИНАЛА



Typ/Type				SL3	SL3/910A	SL3/910A+		
Kabel- anschluss Cable terminal	Bolzendurchmesser Bolt diameter	-	-	M12		2 x M12		
	Flachanschluss Flat terminal	Kabelschuh Cable lug	-	mm ²	1 x 25- 300	Breite max 43mm Width max. 43mm	2 x 300, 3 x 185	
		Flachschiene Flat bar	-	mm	30 x 10		80 x 10	
		Anzugsdrehmoment Tightening torque	M _a	Nm	35-40		35-40	
	Klemme Clamp	Klemmquerschnitt Clamping cross-section	-	mm ²		25-150/ 185-300		
		Anzugsdrehmoment Tightening torque	-	Nm		32		
		Klemmquerschnitt Clamping cross-section	-	mm ²		25-240 32		
	Anzugsdrehmoment Tightening torque	-	Nm					
Schutzart Degree of protection	Frontseitig, Gerät eingebaut mit Klemmen- und Seitenabdeckung Front side, device fitted with clamp and lateral covers	Betriebszustand Operating condition	-	-	IP30		IP30	NH-Sicherungs- leisten NH strip- fuseways
		Schaldeckel geöffnet Switching element open	-	-	IP10		IP10	NH-Sicherungs- lastschaltleisten NH strip- type fuse-switch- disconnectors
Betriebs- bedingungen Operating conditions	Umgebungstemperatur ⁵⁾ /Ambient temperature ⁵⁾	T _{amb}	°C			-25 bis/to +55		CJO[S]MJO* CJOISIMJO*
	Bemessungsbetriebsart/Rated operating mode	-	-			Dauerbetrieb/Uninterrupted duty		
	Betätigung/Actuation	-	-			Abhängige Handbetätigung Dependent manual operation		
	Einbauart/Mounting position	-	-			Senkrecht, waagrecht Vertical, horizontal		Klemmen Terminals
	Höhenlage/Altitude	-	m			Bis zu 2000/Up to 2000		
	Verschmutzungsgrad/Pollution degree	-	-			3		
Überspannungskategorie/Overvoltage category	-	-			IV			

5) 35°C Normaltemperatur, bei 55°C mit reduziertem Betriebsstrom./35°C Normal temperature, at 55°C with reduced operating current.

Handwritten signature

NH-Sicherungs-
leisten
NH strip-
fuseways

NH-Sicherungs-
lastschaltleisten
NH strip-
type fuse-switch-
disconnectors

NH-Sicherungs-
lasttrenn-
schalter
NH fuse-switch-
disconnectors

CJO[S]MJO*
CJOISIMJO*

Klemmen
Terminals

Anhang
Appendix

ВЯРНО С ОРИГИНАЛА

Handwritten signature



Handwritten signature

NH-Sicherungslastschaltleisten

NH strip-type fuse-switch-disconnectors

Typ/type		SL3/1000-TM	SL3/1250	
Nach Norm/According to standard		DIN EN 60947-3		
Für NH-Sicherungen nach DIN VDE 0636-2 For NH fuse-links acc. to DIN VDE 0636-2	Größe Size	3	3	
Bemessungsbetriebsspannung Rated operational voltage	U_e V	AC690	AC690	
Bemessungsbetriebsstrom ¹⁾ Rated operational current ¹⁾	I_e A	1000	1250	
Konv. therm. Strom frei in Luft mit Sicherungen Conv. free air thermal current with fuse-links	I_{th} A	630	1250	
Konv. therm. Strom frei in Luft mit Trennmessern Conv. free air thermal current with solid-links	I_{th} A	1000	1600	
Bemessungsfrequenz Rated frequency	- Hz	40-60	40-60	
Bemessungsisolationsspannung Rated insulation voltage	U_i V	AC1000	AC1000	
Elektrische Kenngrößen Electrical characteristics	Gesamtverlustleistung bei I_n (ohne Sicherungen) Total power loss at I_n (without fuse-links)	P_v W	275	215
	Verlustleistung bei 80% I_n (ohne Sicherungen) ²⁾ Power loss at 80% I_n (without fuse-links) ²⁾	P_v W	176	138
	Bemessungsstoßspannung Rated impulse withstand voltage	U_{imp} kV	12	12
Gebrauchskategorie Utilization category	-	AC-22B (1000A/400V) AC-22B (800A/500V) AC-21B (630A/690V)	AC-22B (1250A/400V) AC-22B (1250A/500V) AC-21B (1250A/690V)	
Bedingter Bemessungs Kurzschlussstrom Rated conditional short-circuit current	I_{cc} kA	120 ³⁾	80	
Bemessungskurzzeitstromfestigkeit Rated short-time withstand current	I_{cw} kA	10/15/25 ⁴⁾	20/25/46 ⁴⁾	
Max. zul. Verlustleistung pro Sicherungseinsatz Max. permis. power loss per fuse-link	P_a W	51	48	

- 1) Bei Einbau von mehreren Geräten in Niederspannungs-Schaltgerätekombinationen sind Bemessungsbelastungsfaktoren nach DIN EN 61439 zu beachten.
In case of mounting of several units in low voltage switchgear-combinations, please consider rated diversity factors acc. to DIN EN 61439.
- 2) Bezugsgröße für Austausch von Geräten nach DIN EN 61439-1 Abs. 10.10.4.2.
Reference value for replacement of devices acc. to DIN EN 61439-1 clause 10.10.4.2.
- 3) Typgeprüft bei AC420V mit NH-Sicherungseinsätzen 630A/500V Betriebsklasse gG, bei AC725V mit NH-Sicherungseinsätzen 500A/690V Betriebsklasse gG.
Type tested at AC420V with NH fuse-links 630A/500V characteristic gG, at AC725V with NH fuse-links 500A/690V characteristic gG.
- 4) 1-polig/3-polig schaltbar./1-pole/3-pole switchable.

ВЯРНО С ОРИГИНАЛА



[Handwritten signature]

Typ/Type		SL3/1000-TM	SL3/1250		
Kabelanschluss Cable terminal	Flachanschluss Flat terminal	Bolzendurchmesser Bolt diameter	2 x M12	3 x M12	
		Kabelschuh Cable lug	2 x 300, 3 x 120	3 x 300, 4 x 185	
		Flachschiene Flat bar	80 x 10	-	
	Klemme Clamp	Anzugsdrehmoment Tightening torque	M _a Nm	35-40	35-40
		Klemmquerschnitt Clamping cross-section	mm ²	-	-
		Anzugsdrehmoment Tightening torque	Nm	-	-
		Klemmquerschnitt Clamping cross-section	mm ²	-	-
Schutzart Degree of protection	Frontseitig, Gerät eingebaut mit Klemmen- und Seitenabdeckung Front side, device fitted with clamp and lateral covers	Betriebszustand Operating condition	IP30	IP30	
	Schaltdeckel geöffnet Switching element open		IP10	IP10	
Betriebsbedingungen Operating conditions	Umgebungstemperatur ⁵⁾ /Ambient temperature ⁵⁾	T _{amb} °C	-25 bis/to +55		
	Bemessungsbetriebsart/Rated operating mode		Dauerbetrieb/Uninterrupted duty		
	Betätigung/Actuation		Abhängige Handbetätigung Dependent manual operation		
	Einbaulage/Mounting position		Senkrecht, waagrecht Vertical, horizontal		
	Höhenlage/Altitude	m	Bis zu 2000/Up to 2000		
Verschmutzungsgrad/Pollution degree		3			
Überspannungskategorie/Overtoltage category		IV			

Handwritten signature

NH-Sicherungs-
leisten
NH strip-
fuseways

NH-Sicherungs-
lastschaltleisten
NH Strip-
type fuse-switch-
disconnectors

NH-Sicherungs-
lasttrenn-
schalter
NH fuse-switch-
disconnectors

CIO|SIM|O®
CIO|SIMO®

Klemmen
Terminals

5) 35°C Normaltemperatur, bei 55°C mit reduziertem Betriebsstrom./35°C Normal temperature, at 55°C with reduced operating current.

Handwritten signature

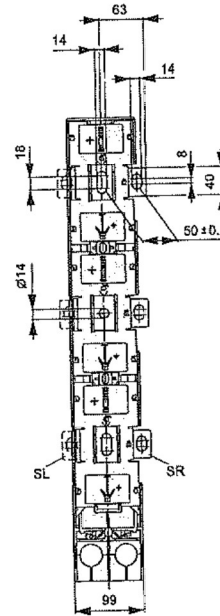
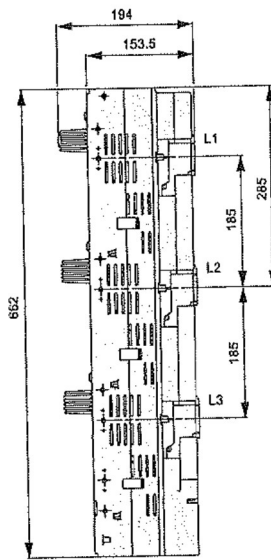
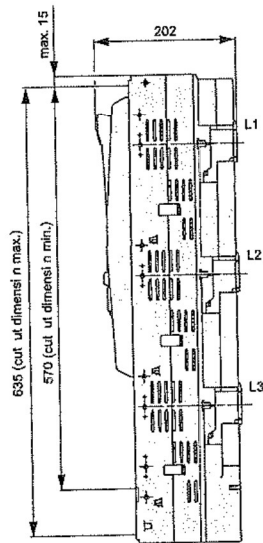


Handwritten signature

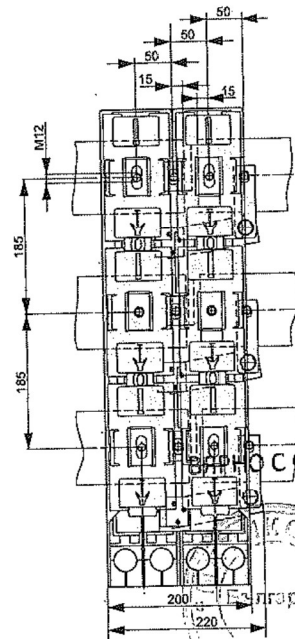
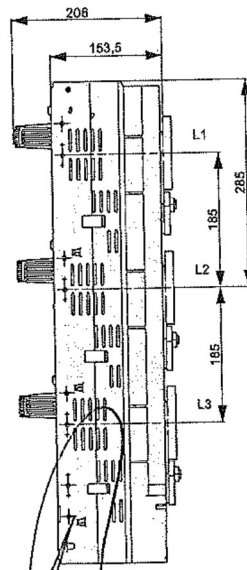
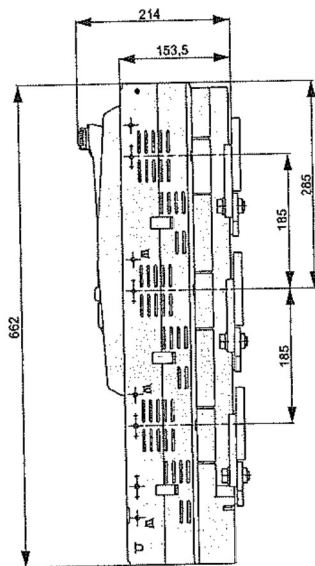
NH-Sicherungslastschaltleisten

NH strip-type fuse-switch-disconnectors

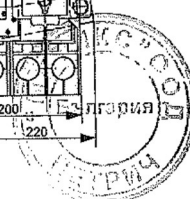
Typ/Type	Artikel-Nr./Article No.	Seite/Page	Beschreibung/Description	Artikel-Nr./Article No.	Seite/Page
SLT3-3SL/3X...	L390000..	SL-25	SLT3-3SL/3X3...	L300000...	SL-25
SLT3-3SR/3X...	L390000..	SL-25	SLT3-3SR/3X3...	L300000...	SL-25



Typ/Type	Artikel-Nr./Article No.	Seite/Page	Typ/Type	Artikel-Nr./Article No.	Seite/Page
SLT3-3SR/3X6/2000/TM3	L3000501	SL-25	SLT3-3SR/3X2/2000/TM3	L3900501	SL-25



СООБЩЕНИЕ С ОРИГИНАЛА



Handwritten signature

Handwritten signature



ЕЛЕКТРИЧЕСКИ ТАБЛА, КОМПЛЕКТНИ ТРАНСФОРМАТОРНИ ПОСТОВЕ, ЕЛЕКТРОАПАРАТУРА-НИИ и СРН

гр.Петрич 2850, Промислена зона
ул."Свобода"49
тел.:00359 745 60743; факс:00359 745 60742
e-mail: metix@metix.bg
гр.София 1000 ул."Рикардо Ванкенин"бл.5
тел.:00359 2 869 0998; факс:00359 2 958 9334
e-mail:kaal@metix.bg



Management
System
ISO 9001:2015
ISO 14001:2015
OHSAS 18001:2007

www.tuv.com
ID 9105026855

ПРИЛОЖЕНИЕ 9.4.2

Техническо описание и чертежи с нанесени на тях размери

Настоящото приложение се прилага във връзка с участието ми в:

търг с предмет:

“Доставка и монтаж на комплектни метални трансформаторни постове”

РЕФ. № PPD 19-102

организиран от “ЧЕЗ Разпределение България” АД

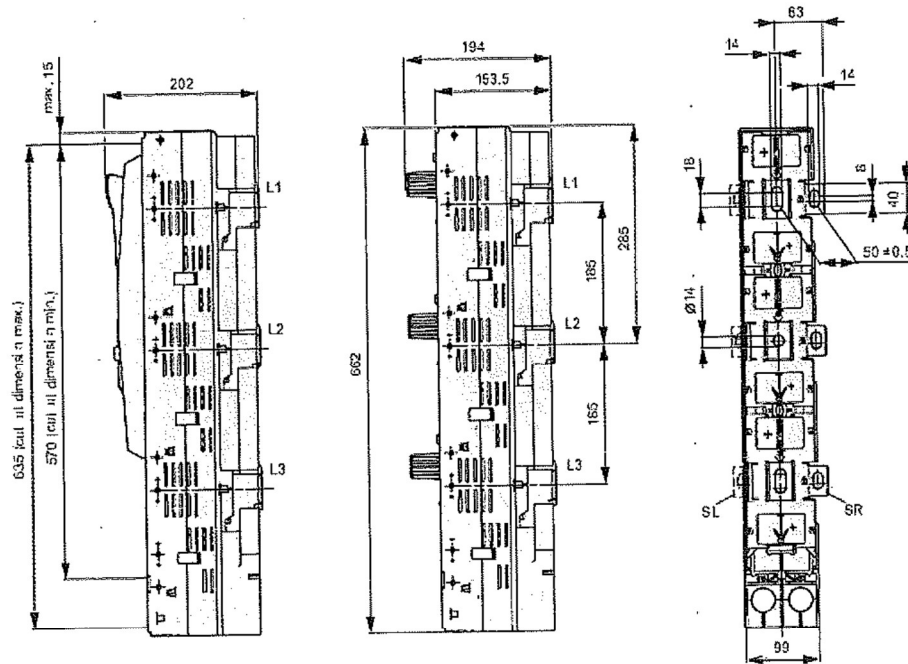
ТЕХНИЧЕСКО ОПИСАНИЕ
 на
Вертикален разединител НН 1000А с триполюсно управление

I. Описание

Триполюсните разединители серия SLT-3S са произведени от фирма Jean Muller и са предназначени за включване, изключване, разединяване на шинни системи. Те комбинират три еднополюсни разединителя в един корпус. SLT-3S са с вертикална конструкция с общо управление на полюсите и могат да бъдат включвани и изключвани под товар. Те са за директен монтаж върху събирателни шини с междуосово разстояние 185 mm.

Корпусът на SLT-3S е изработен от високоякостна стъклонапълнена пластмаса. Контактната система със сребърно покритие осигурява малки загуби, оптимални термични характеристики и висока комутационна способност. Тоководещите части остават недостъпни и след премахване на горната част, благодарение на защитните капаци с вградени дъгогасителни камери оставащи в основата.

II. Размери



ВЯРНО С ОРИГИНАЛА





гр.Петрич 2850, Промислена зона
ул. "Свобода" 49
тел.: 00359 745 60743; факс: 00359 745 60742
e-mail: metix@metix.bg
гр.София 1000 ул. "Рикордо Вакарини" бл.5
тел.: 00359 2 869 0688; факс: 00359 2 958 9334
e-mail: sales@metix.bg



Management
System
ISO 9001:2015
ISO 14001:2015
OHSAS 18001:2007
www.tuv.com
ID 9105026855

ЕЛЕКТРИЧЕСКИ ТАБЛА, КОМПАКТНИ ТРАНСФОРМАТОРНИ ПОСТОВЕ, ЕЛЕКТРОПАРАТУРА НИИ и СРИ

ПРИЛОЖЕНИЕ 9.4.3

Протоколи от типови изпитвания на английски или български език,
проведени от независима изпитвателна лаборатория – заверени копия, с
приложен списък на отделните изпитвания на български език

Настоящото приложение се прилага във връзка с участието ми в:

търг с предмет:

“Доставка и монтаж на комплектни метални трансформаторни постове”

РЕФ. № PPD 19-102

организиран от “ЧЕЗ Разпределение България” АД

ВАРНО С ОРИГИНАЛА



СПИСЪК

на типовите изпитвания, проведени от независима изпитвателна лаборатория, за предлаганите вертикални разединители, както следва:

Марка: Jean Muller
Продукт: вертикален предпазител-разединители
Серия: SL3

- 5.2 Маркировка
- 7.1 Конструкция
- 8.3.3 Основни характеристики
 - 8.3.3.1 Повишаване на температурата
 - 8.3.3.2 Диелектрични свойства
 - 8.3.3.3 Работна и гранична изключвателна възможност при късо съединение
 - 8.3.3.4 Проверка на диелектричните свойства
 - 8.3.3.5 Ток на утечка
 - 8.3.3.6 Проверка при повишаване на температурата
 - 8.3.3.7 Експлоатационна възможност на задвижващия механизъм
- 8.3.4 Работни характеристики
 - 8.3.4.1 Изпитване на експлоатационната възможност
 - 8.3.4.2 Проверка на диелектричните свойства на прекъсвач-разединителя
 - 8.3.4.3 Ток на утечка
 - 8.3.4.4 Проверка при повишаване на температурата
- 8.3.5 Характеристики при късо съединение
 - 8.3.5.1 Издържан импулсен ток
 - 8.3.5.2 Работна изключвателна възможност при късо съединение
 - 8.3.5.3 Проверка на диелектричните свойства
 - 8.3.5.4 Ток на утечка
 - 8.3.5.5 Проверка при повишаване на температурата
- 8.3.6 Условен ток на късо съединение
 - 8.3.6.2 Издържан ток на късо съединение със стояем предпазител
 - 8.3.6.3 Проверка на диелектричните свойства
 - 8.3.6.4 Ток на утечка
 - 8.3.6.5 Проверка при повишаване на температурата
- 8.3.7 Характеристики при претоварване
 - 8.3.7.1 Изпитване на претоварване
 - 8.3.7.2 Проверка на диелектричните свойства
 - 8.3.7.3 Ток на утечка
 - 8.3.7.4 Проверка при повишаване на температурата

ВЯРНО С ОРИГИНАЛА



NOTIFICATION OF TEST RESULTS

Product fuse-switch-disconnectors

Tested by request of Jean Müller GmbH, Friedrichstrasse 21,
D-65343 Eltville am Rhein, Germany

Manufactured at (name and place) Jean Müller GmbH, Friedrichstrasse 21,
D-65343 Eltville am Rhein, Germany

Rating and principal characteristics Ui 1000V, Ith 722 A/1000 A

Pre-licence factory inspection carried out by VDE

Trade mark (if any) JEAN MÜLLER

Model/Type Ref. SL 3-3x/1000 and SL 3-3x3/1000

Additional information (if any) _____

A sample of product has been tested and found to be in conformity with the current HD/EN and equivalent national standard, (number and edition) EN 60947-3:1999

as shown in the Test Report (ref.No.) 2001980.54 (36 pages)

This Notification of Test Results is the result of testing a sample of the product submitted, in accordance with the provisions of the relevant specific standard.

This Notification of Test Results has been established by a body which participates in the CENELEC Certification Agreement (CCA) of 11th September 1973 as amended on 29th March 1983. Any other body participating in the CCA will take this Notification as a basis for granting a national mark of conformity or a national approval as specified in the CCA, as long as the standard referred to above is still in force in the country of that body.

N.V. KEMA

Arnhem

Date: December 6, 2000

Internal ref: HLS/Sco

Signature

На основании чл.36а ал.3 от ЗОП

N.V. KEMA
Utrechtseweg 31
P.O. Box 9035,
The Netherlands
Telephone +31
Telefax +31 26

На основании чл.36а ал.3 от ЗОП

TEST REPORT EN 60 947-3

Low-voltage switchgear and controlgear Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units

Report

Reference No. : 2001980.54
 Tested by (+ signature) : *H.L. Schendstok*
 Approved by (+ signature) : *L.J.W. van Meegen*
 Date of issue : 2000-11-30
 Contents : 36 pages

На основание чл.36а ал.3 от ЗОП

This report is based on a blank test report that was prepared by KEMA using information obtained from the TRF originator (see below).

Testing laboratory

Name : KEMA Registered Quality B.V.
 Address : Utrechtseweg 310, 6812 AR Arnhem, The Netherlands
 Testing location : as above *and*
 : *Holec Laagspanning B.V., Hengelo, The Netherlands*
 : *All tests were observed by compiler*

Client

Name : *Jean Müller GmbH*
 Address : *Friedrichstrasse 21*
 : *D-65343 ELTVILLE am Rhein, Germany*

Test specification

Standard : EN 60 947-3:99
 Test procedure : CCA-scheme
 Procedure deviation : N.A.
 Non-standard test method : N.A.

Test Report Form/blank test report

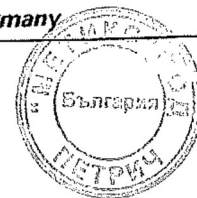
Test Report Form No. : 60947-3B/98-09
 TRF originator. : KEMA
 Master TRF : dated 98-05

Copyright reserved to the bodies participating in the Committee of Certification Bodies (CCB) and/or the bodies participating in the CENELEC Certification Agreement (CCA).

Test item

Description : *fuse-switch-disconnector*
 Trademark : *Jean Müller*
 Model and/or type reference : *SL 3-3x/1000 and SL 3-3x3/1000*
 Manufacturer : *Jean Müller GmbH, Eltville am Rhein, Germany*

ВЪРНО С ОРИГИНАЛА



Rating(s) : *Ui 1000 V, Ith 722 A / 1000 A*

Particulars: test item vs. test requirements

- method of operation : *dependent manual operation*
- switching positions : *2 (on and off)*
- number of poles : *3-poles*
- kind of current : *AC*
- number of phases : *3*
- rated frequency (Hz) : *50 Hz*
- number of positions of the main contacts : *2 (on and off)*

Rated and limiting values, main circuit

- rated operational voltage U_e (V) : *400 V, 500 V and 690 V*
- rated insulation voltage U_i (V) : *1000 V*
- rated impulse withstand voltage U_{imp} (kV) : *12 kV*
- conventional free air thermal current I_{th} (A) : *fuse: 722 A*
disconnect knife: 1000 A
- conventional enclosed thermal current I_{the} (A)
- rated operational current I_e (A) : *fuse: 722 A*
disconnect knife: 1000 A
- rated uninterrupted current I_u (A) : *fuse: 722 A*
disconnect knife: 1000 A
- utilization category : *with disconnect knife:*
AC-21B 630 A 690 V
AC-22B 1000 A 400 V
AC-22B 800 A 500 V

Short-circuit characteristic

- rated short-time withstand current I_{cw} (kA) : -
- rated short-time making capacity I_{cm} (kA) : -
- rated conditional short-circuit current : *50 kA at 400 V*

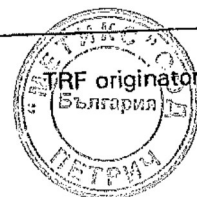
Rated and limiting values, auxiliary circuits : *N*

- rated operational voltage (V)
- rated frequency (Hz)

[Handwritten signature]

ВЯРНО С ОРИГИНАЛА

TRF No.: 60947-3B



TRF originator: KEMA

[Handwritten signature]

- number of circuits	:	
- number and kind of contact elements	:	
Co-ordination of short-circuit protective devices	:	
- kind of protective device	:	<i>fuse-link, M3gTr722 NH3 500 kVA (722 A)</i>
Test case verdicts		
Test case does not apply to the test object	:	N(.A.)
Test item does meet the requirement	:	P(ass)
Test item does not meet the requirement	:	F(ail)

Testing	
Date of receipt of test item	: <i>2000-02-24</i>
Date(s) of performance of test	: <i>2000-03 and 2000-05</i>

[Handwritten signature]

TRF No.: 60947-3B

[Handwritten signature]

ВЯРНО С ОРИГИНАЛА



TRF originator: KEMA

[Handwritten signature]

General remarks

This test report shall not be reproduced except in full without the written approval of the testing laboratory.

The test results presented in this report relate only to the item tested.

"(see remark #)" refers to a remark appended to the report.

"(see appended table)" refers to a table appended to the report.

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

The making and breaking tests and short-circuit tests were carried out with a metallic screen placed at 165 mm at the top and 150 mm from the side of the fuse-switch-disconnector, with the cable terminals at the top.

The fuse-switch-disconnector type SL 3-3x/1000 were tested as follows:

Test sequence I and II: tests were done on phase L2, the load circuit was connected to phase L2, phases L1 and L3 were connected to the supply.

Test sequence IV: tests were done with a 3-phase supply, in the 'O-test' the load circuit was connected to all phases, in the 'CO-test' the load circuit was connected to L1 and L2.

Handwritten signature and scribbles on the right side of the page.



Handwritten signature or scribble at the bottom left.



ВЯРНО С ОРИГИНАЛА



Handwritten signature or scribble at the bottom right.

Copy of marking plate

JEAN MULLER  **CE**
 IEC/EN 60947-3 50Hz
 400V -1000A - AC-22B

 max. 1000A 51W
 SL3-3X3/1000 L3021300
 TM3-1000A NH3-722A

JEAN MULLER  **CE**
 IEC/EN 60947-3 50Hz
 400V -1000A - AC-22B

 max. 1000A 51W
 SL3-3X3/1000 L3921300
 TM3-1000A NH3-722A

Handwritten signature

С ОРИГИНАЛА

TRF No.: 60947-3B



Handwritten signature