



**EPS**  
ENERGIE GMBH



# MEDIUM VOLTAGE

OVERHEAD LINES

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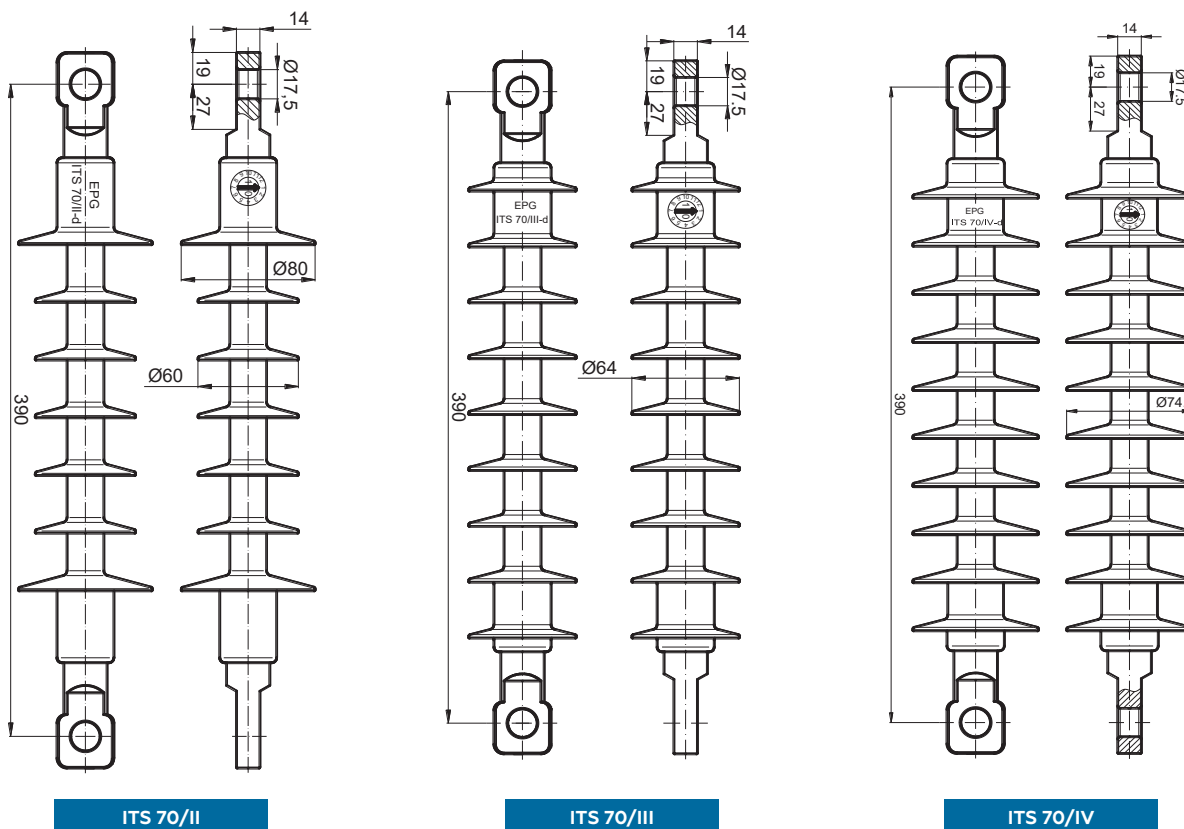
Equipment for medium voltage  
overhead lines and installations

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# ITS 70

## 20 kV SUSPENSION / DEAD-END COMPOSITE INSULATORS

<b>SYMBOL</b>	<b>ITS 70/II (III, IV)</b>	<b>70</b>	Specified Mechanical Load
<b>ITS</b>	Suspension composite insulator	<b>II, III, IV</b>	Pollution level (according to RS IEC 60815)



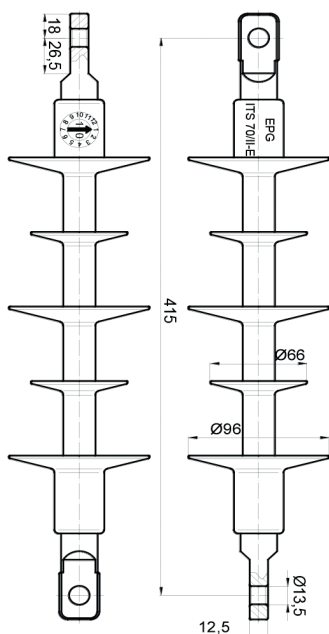
TECHNICAL DATA	M.U.	VALUE		
		ITS 70/II	ITS 70/III	ITS 70/IV
Maximum system voltage	kV		24	
Section length	mm		390	
Creepage distance	mm	572	611	753
Pollution level		II	III	IV
Dry lightning impulse withstand voltage (1,2/50 μs)	kV		145	
Wet power-frequency withstand (1 min.)	kV		50	
Specified mechanical load (SML)	kN		70	
Routine test load (RTL)	kN		35	
Ambient temperature	°C		-40...+45	
Weight	kg	0,856	0,865	0,916
Lifetime	years		40	

# DJ 511 | ITS 70/II(IV)-E

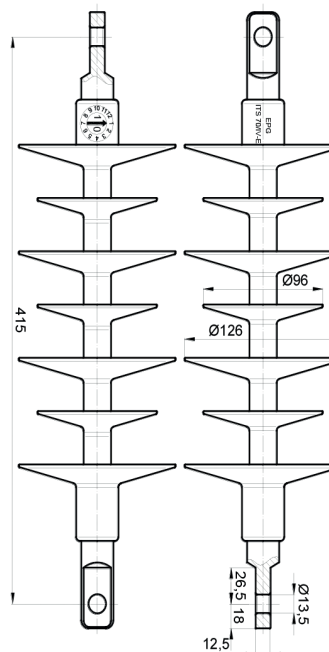
## SUSPENSION / DEAD-END COMPOSITE INSULATORS FOR ENEL

<b>SYMBOL</b>	<b>ITS 70/II (IV) - E</b>
<b>ITS</b>	Suspension composite insulator
<b>70</b>	Specified Mechanical Load

<b>II, IV</b>	Pollution level (acc. to RS IEC 60815)
<b>E</b>	Enel TYPE



**ITS 70/II-E**  
type 301873



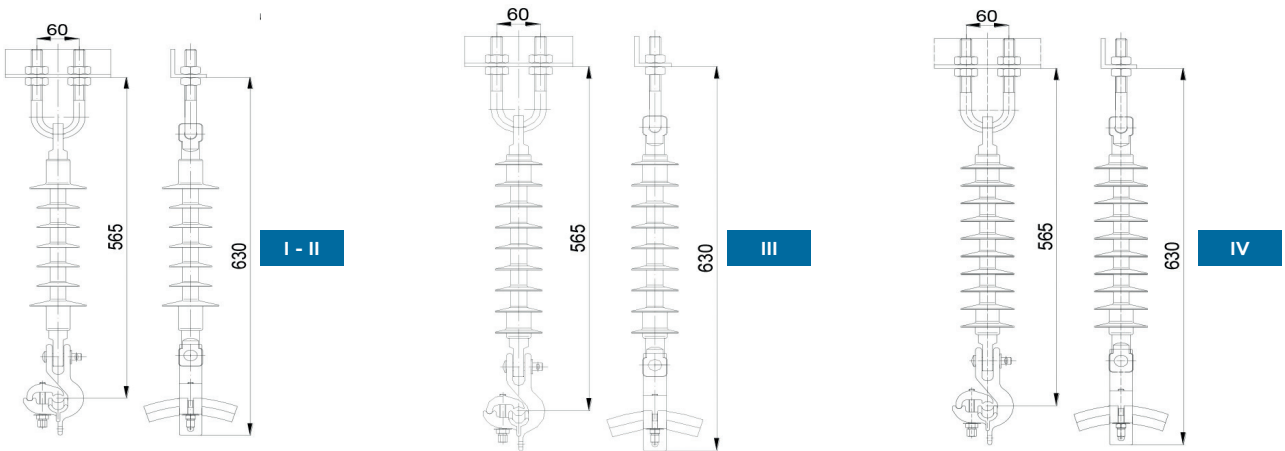
**ITS 70/IV-E**  
type 301874

TECHNICAL DATA	Unit	VALUE	
Insulator type		normal	salinity
Type code		30 18 73	30 18 74
Maximum system voltage	kV	24	
Section length	mm	415	
Creepage distance	mm	603	912
Pollution level		II	IV
Dry lighting impulse withstand voltage (1,2/50 µs)	kV	125	
Wet power-frequency withstand (1 min.)	kV	50	
The salinity of withstanding at test voltage $U_p=18$ kV	kg/m <sup>3</sup>	80	220
Specified mechanical load (SML)	kN	70	
Routine test load (RTL)	kN	35	
Ambient temperature	°C	-40...+45	
Weight	kg	0,856	1,090
Lifetime	years	40	

# LSS – S

## SINGLE SUSPENSION STRING WITH COMPOSITE INSULATOR

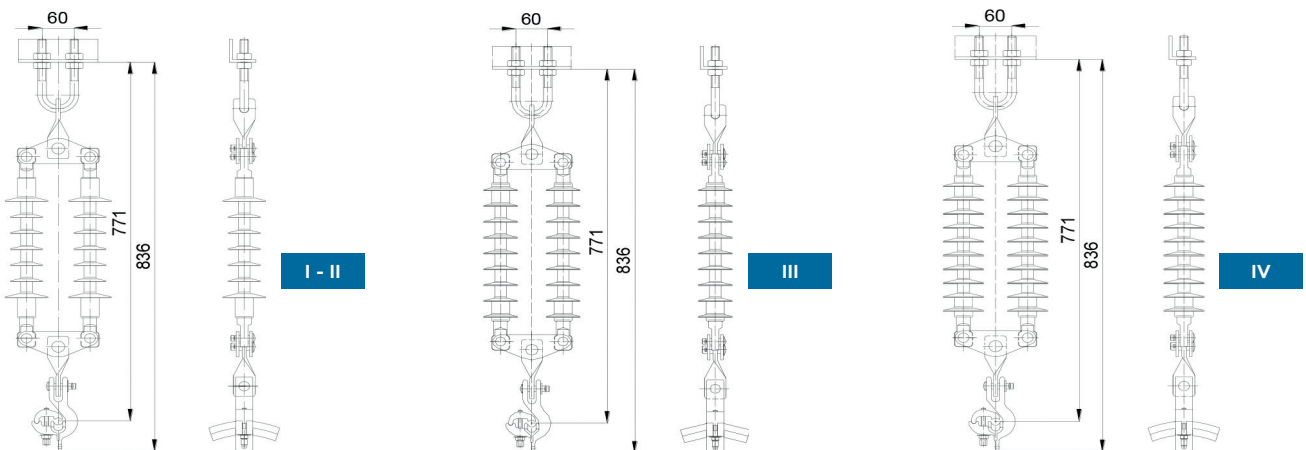
<b>SYMBOL</b>	<b>LSS-S / II(III,IV) / 50-70 (95-120)</b>	<b>Weight</b>	<b>Pollution level</b>			
<b>LSS</b>	Single suspension string		kg	I - II	III	IV
<b>S</b>	Composite insulator			2,1	2,2	2,3
<b>II, III, IV</b>	Pollution level (according to IEC 60815)					
<b>50-70 (95-120)</b>	Conductor's section range (mm <sup>2</sup> )					



# LDS – S

## DOUBLE SUSPENSION STRING WITH COMPOSITE INSULATORS

<b>SYMBOL</b>	<b>LDS-S / II(III,IV) / 50-70 (95-120)</b>	<b>Weight</b>	<b>Pollution level</b>			
<b>LDS</b>	Double suspension string		kg	I - II	III	IV
<b>S</b>	Composite insulator			4,8	4,9	5,0
<b>II, III, IV</b>	Pollution level (according to IEC 60815)					
<b>50-70 (95-120)</b>	Conductor's section range (mm <sup>2</sup> )					

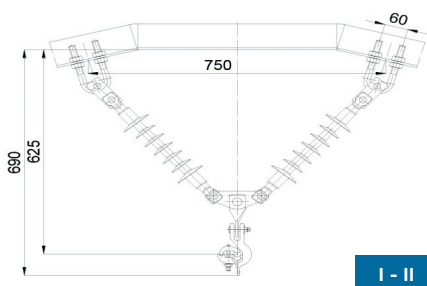


# LSV – S

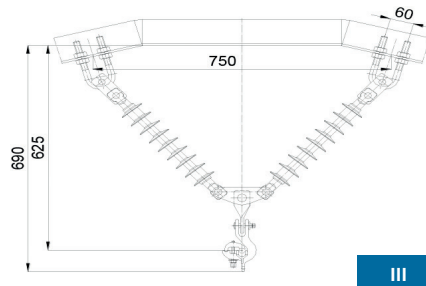
## “V” TYPE SUSPENSION STRING WITH COMPOSITE INSULATORS

<b>SYMBOL</b>	<b>LSV-S / II(III,IV) / 50-70 (95-120)</b>
<b>LSV</b>	«V» type suspension string
<b>S</b>	Composite insulator
<b>II, III, IV</b>	Pollution level (according to RS IEC 60815)
<b>50-70 (95-120)</b>	Conductor's section range (mm <sup>2</sup> )

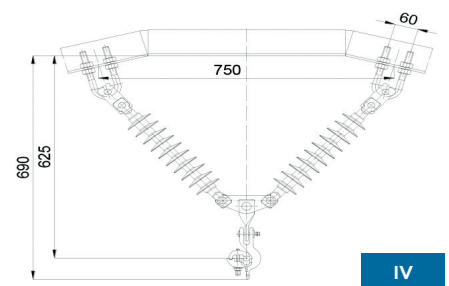
<b>Weight</b>	kg	Pollution level		
		I - II	III	IV
		5,1	5,2	5,3



I - II



III



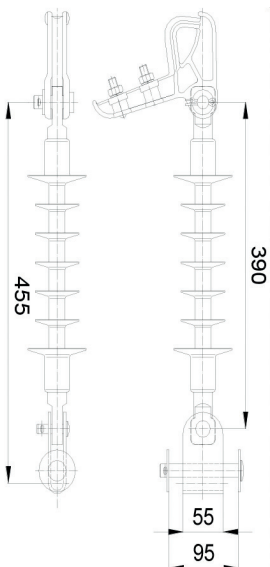
IV

# LSI – S

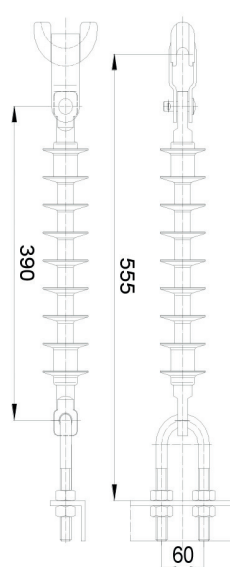
## SINGLE TENSION STRING WITH COMPOSITE INSULATOR

<b>SYMBOL</b>	<b>LSI-S /II(III,IV) / L (M) (CLAMI) (CTPF)</b>
<b>LSI</b>	Double suspension string
<b>S</b>	Composite insulator
<b>II, III, IV</b>	Pollution level (according to IEC 60815)
<b>L(M)</b>	Side phase (middle phase)

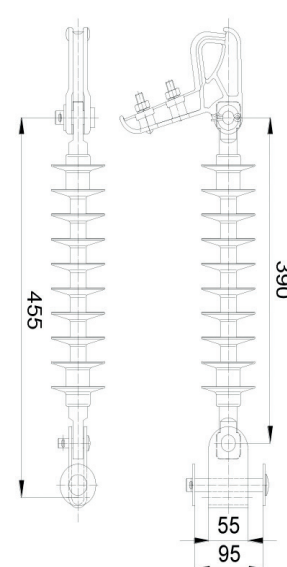
<b>Weight</b>	kg	Pollution level		
		I - II	III	IV
		2,2	2,3	2,4



LSI-S/II/M-Clami  
35-50



LSI-S/III/L-CTPF



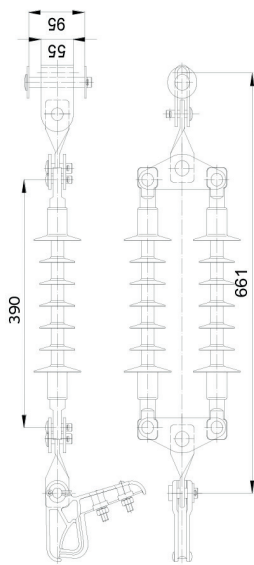
LSI-S/IV/M-Clami  
35-50

# LDI – S

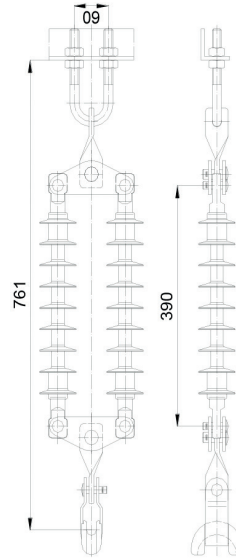
## DOUBLE TENSION STRING WITH COMPOSITE INSULATORS

<b>SYMBOL</b>	<b>LDI-S / II(III,IV) / L (M) (CLAMI) (CTPF)</b>
<b>LDI</b>	Double tension string
<b>S</b>	Composite insulator
<b>II, III, IV</b>	Pollution level (according to IEC 60815)
<b>L(M)</b>	Side phase (middle phase)

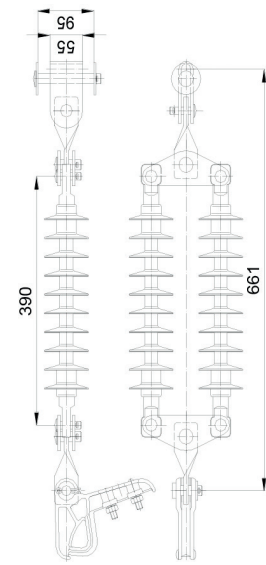
<b>Weight</b>	kg	Pollution level		
		I - II	III	IV
		5,1	5,2	5,3



LDI-S/II/M-Clami 35-50



LDI-S/III/L-CTPF



LDI-S/IV/M-Clami 35-50

# DI 24/II-d-S

## INTERPHASE SPACER FOR M.V. OVERHEAD LINES

<b>SYMBOL</b>	<b>DI Um /Z-d-S</b>
<b>DI</b>	Interphase spacer
<b>Um</b>	Maximum system voltage
<b>z</b>	Pollution level
<b>d</b>	Distance between conductors of the OHL
<b>s</b>	Section range of the conductor

Technical data	Unit	Value
Maximum system voltage	kV	24
Phase to phase distance	mm	min 1000 max 3000
Conductor's section range	mm	35-120
Pollution level		I ÷ IV
Maximum mechanical load	kN	30
Phase to phase distance	Nm	55



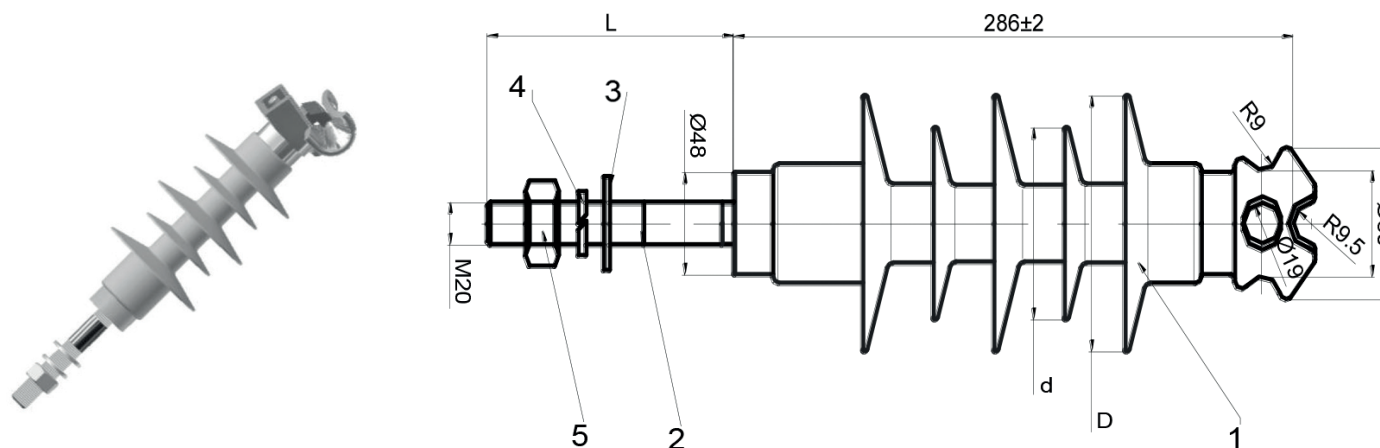
# CS 24/II(III,IV) C - L

## COMPOSITE LINE POST INSULATOR WITH BUILT - IN «C» CLAMP

SYMBOL	ICS 24/II(III, IV) C - L
ICS	Composite line post insulator
24	Maximum system voltage (kV)
II, III, IV	Pollution level
C	With built-in "C" clamp
L	Mounting bolt's length

Item	Description	Quantity
1	Insulator ICS 24 C	1 pc
2	M 20 mounting bolt	1 pc
3	A 20 washer	1 pc
4	Spring washer N 20	1 pc
5	M 20 nut	1 pc

TECHNICAL DATA	Unit	VALUE			
Pollution level		II	III	IV	
Maximum system voltage	kV	24			
Creepage distance	mm	536	605	745	
Section range of the steel-aluminum conductors	mm <sup>2</sup>	35 ÷120			
Dry lightning impulse withstand voltage (1,2/50 µs)	kV		125		
Wet power-frequency withstand (1 min.)	kV		50		
Specified tensile load (STL)	kN		10		
Specified cantilever load (SCL)	kN		10		
Maximum design cantilever load (MDCL)	kN		5		
Dimensions	D	mm	120	134	134
	d	mm	90	104	106
Mounting bolt's length (included)	mm	40, 80, 120, 160, 180, 200, 210, 240, 360			
Weight	kg	2,15÷2,95	2,25÷3,05	2,25÷3,05	
Packing in cardboard boxes	pcs/box		3		
Lifetime	years		40		



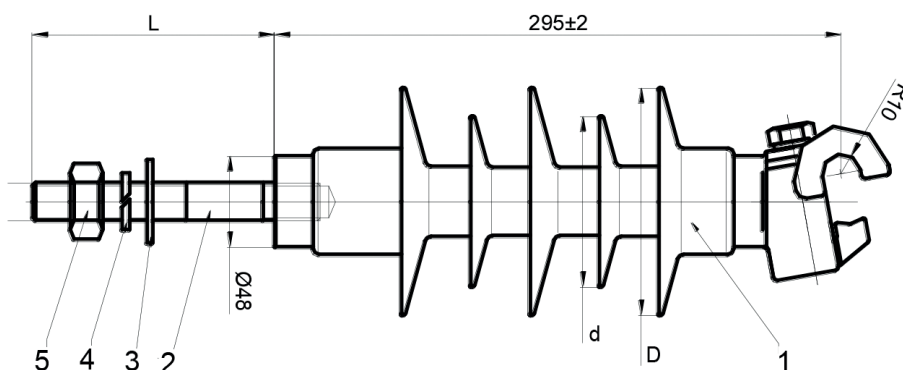
# ICS 24/II(III,IV) BS - L

## CRADLE-CLAMP LINE POST COMPOSITE INSULATOR WITH CONTROLLED SLIPPING FORCE OF THE CONDUCTOR

SYMBOL	ICS 24/II (III, IV) BS - L
ICS	Composite line post insulator
24	Maximum system voltage (kV)
II, III, IV	Pollution level
B	Cradle-clamp
S	Cross-section of the conductor
L	Mounting bolt's length

Item	Description	Quantity
1	Insulator ICS 24 C	1 pc
2	M 20 mounting bolt	1 pc
3	A 20 washer	1 pc
4	Spring washer N 20	1 pc
5	M 20 nut	1 pc
6	Cradle-clamp	1 pc

TECHNICAL DATA	Unit	VALUE		
		II	III	IV
Pollution level		II	III	IV
Maximum system voltage	kV	24		
Creepage distance	mm	536	605	745
Section range of the steel-aluminum conductors	mm <sup>2</sup>	35 ÷120		
Dry lighting impulse withstand voltage (1,2/50 μs)	kV	125		
Wet power-frequency withstand (1 min.)	kV	50		
Specified tensile load (STL)	kN	10		
Specified cantilever load (SCL)	kN	10		
Maximum design cantilever load (MDCL)	kN	5		
Dimensions	D	120	134	134
	d	90	104	106
Mounting bolt's length (included)	mm	40, 80, 120, 160, 180, 200, 210, 240, 360		
Weight	kg	2,15÷2,95	2,25÷3,05	2,35÷3,15
Packing in cardboard boxes	pcs/box	3		
Lifetime	years	40		





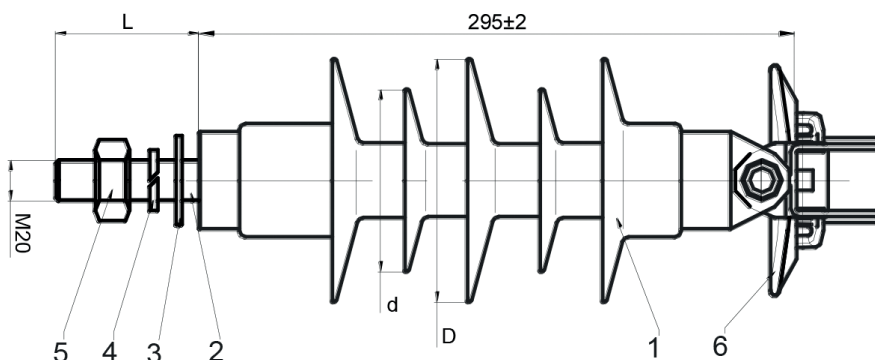
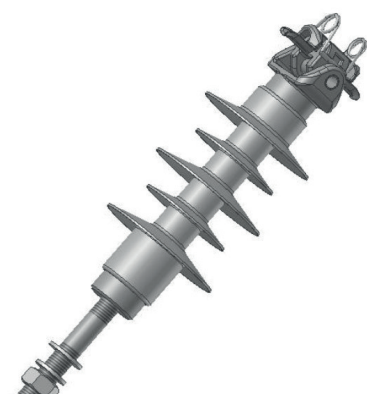
# ICS 24/II(III,IV) BS - L

## CRADLE-CLAMP LINE POST COMPOSITE INSULATOR WITH CONTROLLED SLIPPING FORCE OF THE CONDUCTOR

SYMBOL	ICS 24/II (III, IV) BS - L
ICS	Composite line post insulator
24	Maximum system voltage (kV)
II, III, IV	Pollution level
B	Cradle-clamp
S	Cross-section of the conductor
L	Mounting bolt's length

Item	Description	Quantity
1	Insulator ICS 24 BS	1 pc
2	M 20 mounting bolt	1 pc
3	A 20 washer	1 pc
4	Spring washer N 20	1 pc
5	M 20 nut	1 pc
6	Cradle-clamp	1 pc

TECHNICAL DATA	Unit	VALUE		
		II	III	IV
Pollution level		II	III	IV
Maximum system voltage	kV	24		
Creepage distance	mm	536	605	745
Section range of the steel-aluminum conductors	mm <sup>2</sup>	35 ÷120		
Dry lightning impulse withstand voltage (1,2/50 μs)	kV	125		
Wet power-frequency withstand (1 min.)	kV	50		
Specified tensile load (STL)	kN	10		
Specified cantilever load (SCL)	kN	10		
Maximum design cantilever load (MDCL)	kN	5		
Dimensions	D	120	134	134
	d	90	104	106
Mounting bolt's length (included)	mm	40, 80, 120, 160, 180, 200, 210, 240, 360		
Weight	kg	2,1÷3,1	2,2÷3,2	2,3÷3,3
Packing in cardboard boxes	pcs/box	3		
Lifetime	years	40		



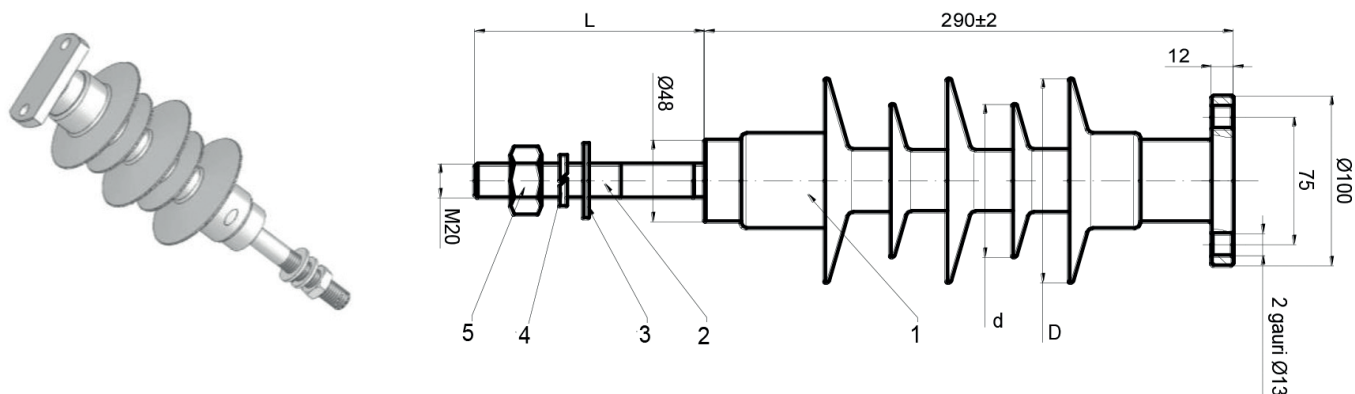
# ICS 24/II(III,IV) A - L

## COMPOSITE STATION POST INSULATOR

SYMBOL	CS 24/II(III,IV) A - L
ICS	Composite line post insulator
24	Maximum system voltage (kV)
II, III, IV	Pollution level
A	For electrical equipment
L	Mounting bolt's length

Item	Description	Quantity
1	Insulator ICS 24 A	1 pc
2	M 20 mounting bolt	1 pc
3	A 20 washer	1 pc
4	Spring washer N 20	1 pc
5	M 20 nut	1 pc

TECHNICAL DATA	Unit	VALUE		
		II	III	IV
Pollution level		II	III	IV
Maximum system voltage	kV	24		
Creepage distance	mm	536	605	745
Section range of the steel-aluminum conductors	mm <sup>2</sup>	35 ÷ 120		
Dry lighting impulse withstand voltage (1,2/50 μs)	kV	125		
Wet power-frequency withstand (1 min.)	kV	50		
Specified tensile load (STL)	kN	10		
Specified cantilever load (SCL)	kN	10		
Maximum design cantilever load (MDCL)	kN	5		
Dimensions	D	120	134	134
	d	90	104	106
Mounting bolt's length (included)	mm	40, 80, 120, 160, 180, 200, 210, 240, 360		
Weight	kg	2,05÷2,85	2,15÷2,95	2,25÷3,05
Packing in cardboard boxes	pcs/box	3		
Lifetime	years	40		



## ICS 24 ASB

### STATION POST INSULATOR FOR FLAT BUSBARS

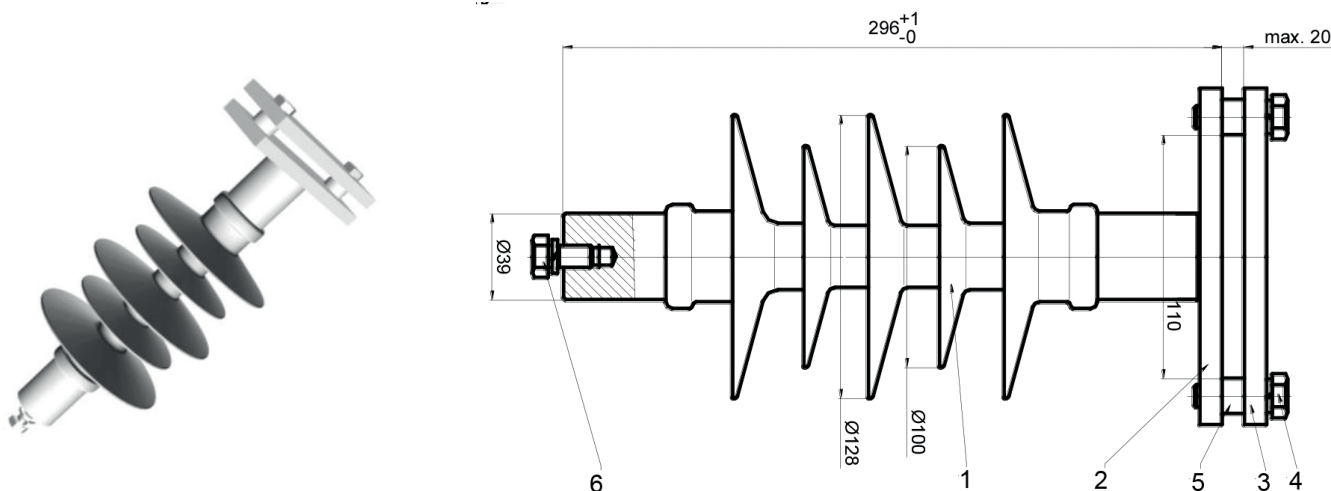
SYMBOL	ICS 24 ASB
ICS	Composite line post insulator
24	Maximum system voltage (kV)
A	For apparatus
SB	For busbars

Item	Description	Quantity
1	Insulator ICS 24/3 A	1 pc
2	Bottom plate	1 pc
3	Top plate	1 pc
4	Threader bolt	2 pcs
5	Spacer	2 pcs
6	Mounting bolt M10x20	1 pc

TECHNICAL DATA	Unit	VALUE
Maximum system voltage	kV	24
Creepage distance	mm	605
Crosssection of the busbar	mm	20x100
Dry lighting impulse withstand voltage (1,2/50 $\mu$ s)	kV	125
Wet power-frequency withstand (1 min.)	kV	50
Specified tensile load (STL)	kN	40
Specified cantilever load (SCL)	kN	4
Maximum design cantilever load (MDCL)	kN	2
Weight	kg	2,77
Packing in cardboard boxes	pcs/box	3
Lifetime	years	40

#### Note:

- The order shall specify the actual thickness of the flat bar, the intensity of the current flowing through the bar flat and flat bar material
- At the request of the beneficiary, the fixing screw, item 6, can be replaced with M20xL stud



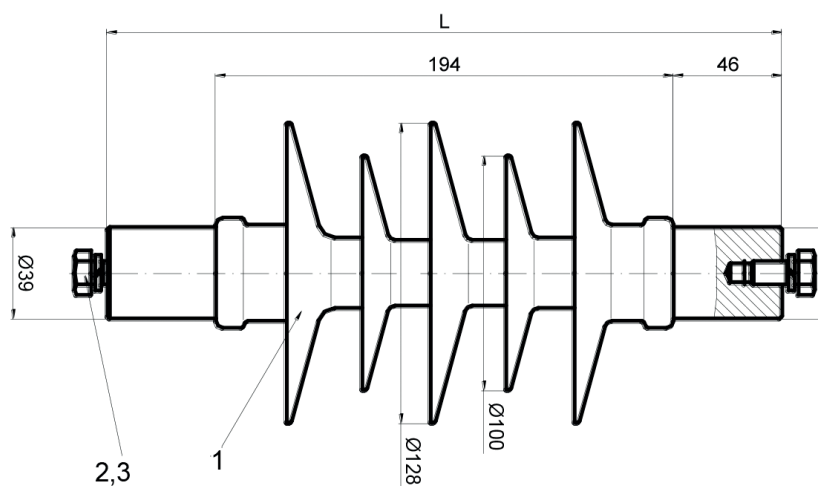
# ICS 24 AS(D)

## STATION POST COMPOSITE INSULATOR

SYMBOL	ICS 24 ASB
ICS	Composite line post insulator
24	Maximum system voltage (kV)
A	For apparatus
S(D)	For fuse bases built-in with surge arresters

Item	Description	Quantity
1	Insulator ICS 24 AS	1 pcs
2	Spring washer N 10	2 pcs
3	M 10 mounting bolt	2 pcs

TECHNICAL DATA	Unit	VALUE
Maximum system voltage	kV	24
Creepage distance	mm	605
Crosssection of the busbar	mm	20x100
Dry lighting impulse withstand voltage (1,2/50 $\mu$ s)	kV	125
Wet power-frequency withstand (1 min.)	kV	50
Specified tensile load (STL)	kN	40
Specified cantilever load (SCL)	kN	4
Maximum design cantilever load (MDCL)	kN	2
Lenght	type AS	286
	type ASD	300
Weight	kg	1,6
Packing in cardboard boxes	pcs/box	3
Lifetime	years	40



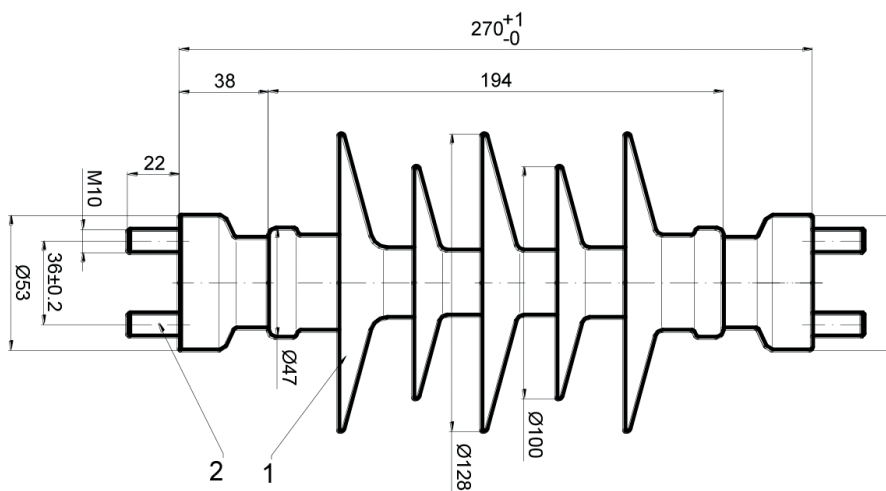
# ICS 24 AH

## STATION POST INSULATOR

SYMBOL	ICS 24 ASB
ICS	Composite line post insulator
24	Maximum system voltage (kV)
A	For apparatus
H	For disconnectors

Item	Description	Quantity
1	Insulator ICS 24 AH	1 pcs
2	Threaded bolt M 10	4 pcs

TECHNICAL DATA	Unit	VALUE
Maximum system voltage	kV	24
Creepage distance	mm	605
Dry lightning impulse withstand voltage (1,2/50 μs)	kV	125
Wet power-frequency withstand (1 min.)	kV	50
Specified tensile load (STL)	kN	40
Specified cantilever load (SCL)	kN	4
Maximum design cantilever load (MDCL)	kN	2
Weight	kg	1,95
Packing in cardboard boxes	pcs/box	3
Lifetime	years	40



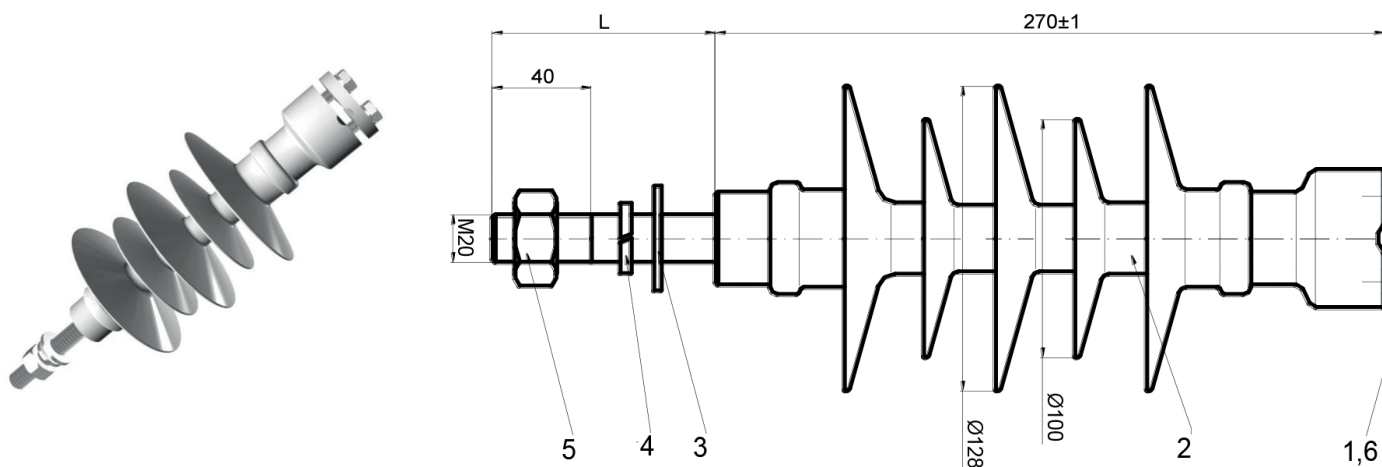
# ICS 24 AV

## LINE POST COMPOSITE INSULATOR

SYMBOL	ICS 24 AV
ICS	Composite line post insulator
24	Maximum system voltage (kV)
A	For apparatus
V	Destination top pole

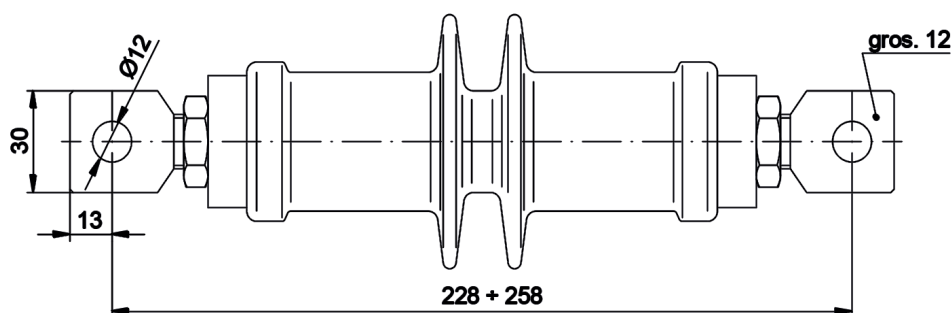
Item	Description	Quantity
1	Clamping element	1 pcs
2	Insulator ICS 24 AV	1 pcs
3	A 20 washer	2 pcs
4	Spring washer N 20	1 pcs
5	M 20 nut	1 pcs
6	10 mounting bolt	2 pcs

TECHNICAL DATA	Unit	VALUE
Maximum system voltage	kV	24
Creepage distance	mm	605
Section range of the steel-aluminum conductors	mm <sup>2</sup>	35-120
Dry lighting impulse withstand voltage (1,2/50 μs)	kV	125
Wet power-frequency withstand (1 min.)	kV	50
Specified tensile load (STL)	kN	40
Specified cantilever load (SCL)	kN	4
Maximum design cantilever load (MDCL)	kN	2
Weight	kg	2,3
Packing in cardboard boxes	pcs/box	3
Lifetime	years	40

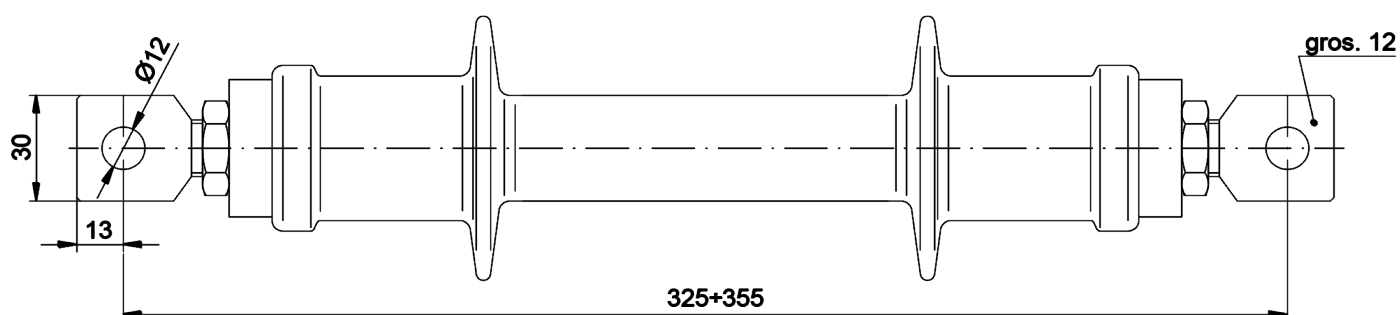


## ACTUATING COMPOSITE INSULATOR FOR INDOOR SURGE ARRESTER

TECHNICAL DATA	M.U.	VALUE	
		6 kV	20 kV
Maximum system voltage	kV	7,2	24
Section length	mm	228 ÷ 258	325 ÷ 355
Creepage distance	mm	213	310
Dry lightning impulse withstand voltage (1,2/50 $\mu$ s)	kV <sub>max</sub>	60	125
Wet power-frequency withstand (1 min.)	kV <sub>ef</sub>	20	50
Specified mechanical load (SML)	kN	5	
Ambient temperature	°C	-40...+45	
Weight	kg	1,250	1,370
Lifetime	years	40	



composite 6 kV



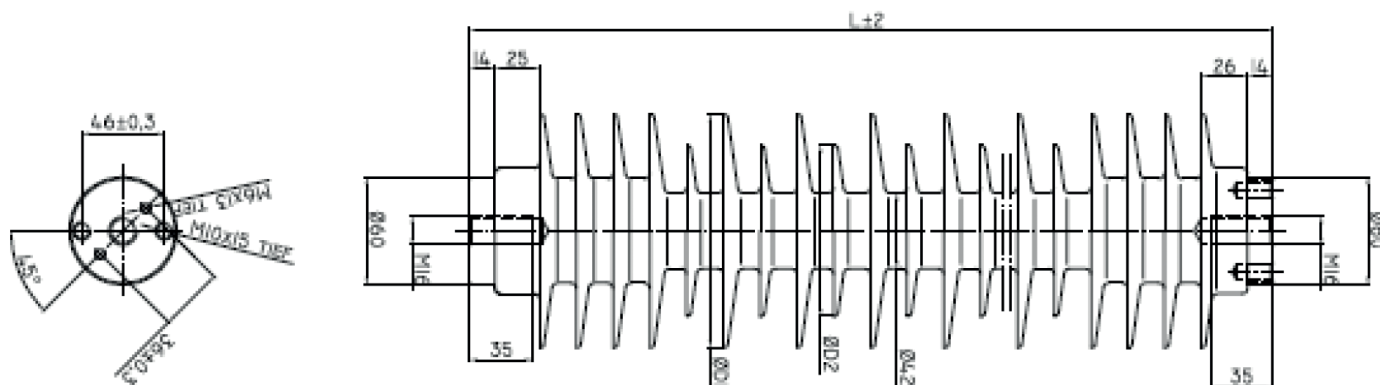
composite 20 kV

# ICS - L/C

## COMPOSITE POST INSULATOR FOR DISCONNECTORS

<b>SYMBOL</b>	<b>ICS - L/C</b>	<b>L</b>	Insulator length (mm)
<b>ICS</b>	Composite post insulator	<b>C</b>	Creepage distance

TECHNICAL DATA		M.U.	VALUE			
Design type		mm	284/840	366/1123	448/1620	489/1568
Maximum system voltage		kV	24	24	36	36
Creepage distance		mm	840	1123	1620	1568
Pollution level			II	III	IV	
Dry lighting impulse withstand voltage (1,2/50 µs)		kV	125	205	250	270
Wet power-frequency withstand (1 min.)		kV	50	85	110	120
Specified mechanical load (STL)		kN	100	100	100	100
Maximum design cantilever load (MDCL)		kN	4	3,5	3	2,5
Dimensions	D1		120	120	130	120
	D2	mm	85	85	95	85
	L		284	366	448	489
Weight		kg	3,7	4	4,5	4,5
Packing in cardboard boxes		pcs/box	3			
Lifetime		years	40			



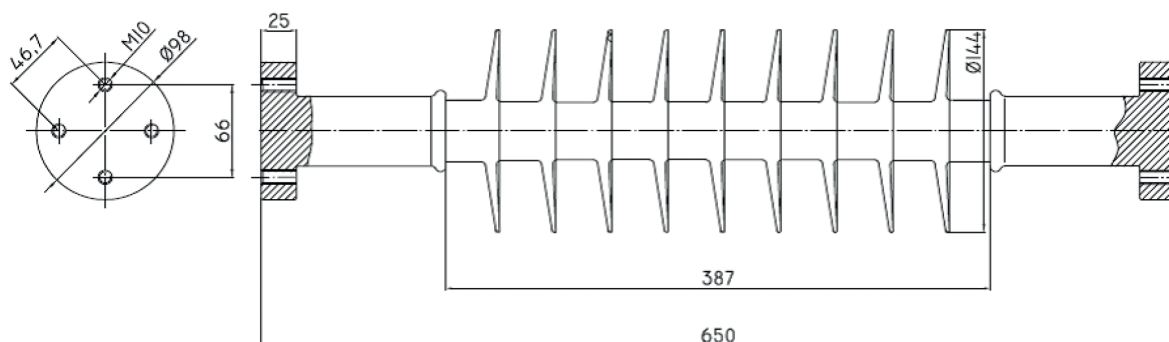


# ICS 45

## LONG ROD COMPOSITE INSULATOR FOR 45 kV DISCONNECTORS

<b>SYMBOL</b>	<b>ICS 45</b>
<b>ICS</b>	Composite line post insulator
<b>48</b>	Maximum system voltage (kV)

Technical data	Unit	Value
Maximum system voltage (kV)	kV	45
Section length	mm	650
Creepage distance	mm	1207
Specified mechanical load (SML)	kN	100
Specifiad cantilever load (scl)	kN	6
Maximum design cantilever load (mdcl)	kN	3
Routine test load (RTL)	kN	50
Weight	kg	7,2
Dry lighting impulse voltage (1,2/50 $\mu$ s)	kV <sub>max</sub>	6
Wet power-frequency withstand (1 min.)	kV <sub>ef</sub>	125



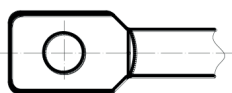
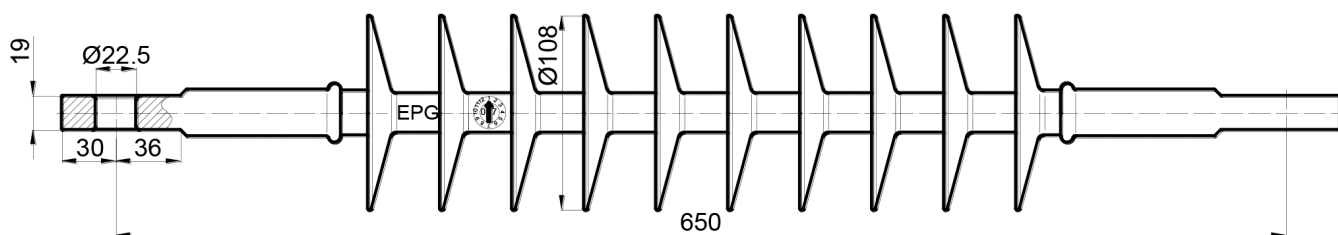
# ITS-CF

## DEAD-END RAILWAYS COMPOSITE INSULATOR

<b>SYMBOL</b>	<b>TS-CF x-x</b>
<b>ITS</b>	Suspension composite insulator
<b>CF</b>	For railway overhead lines

<b>X</b>	End-fitting type: l - tongue; n - socket r - ball; f - clevis
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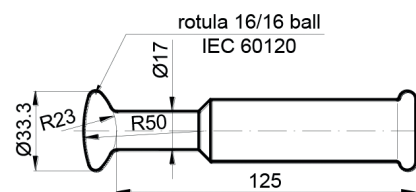
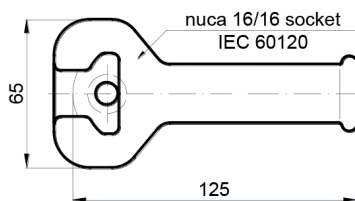
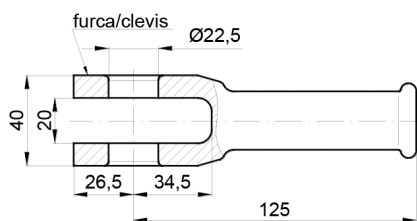
Technical data	Unit	Value
Rated voltage	kV	25
Section length	mm	650
Creepage distance	mm	1206
Dry lightning impulse withstand voltage (1,2/50 μs)	kV	250
Wet power-frequency withstand (1 min.)	kV	120
Specified mechanical load (SML)	kN	120
Routine test load (RTL)	kN	60
Ambient temperature	°C	-40...+45
Weight	kg	1,855
Lifetime	years	40



tongue

ITS-CF L-L

The insulator can be fitted with different types of end-fittings.

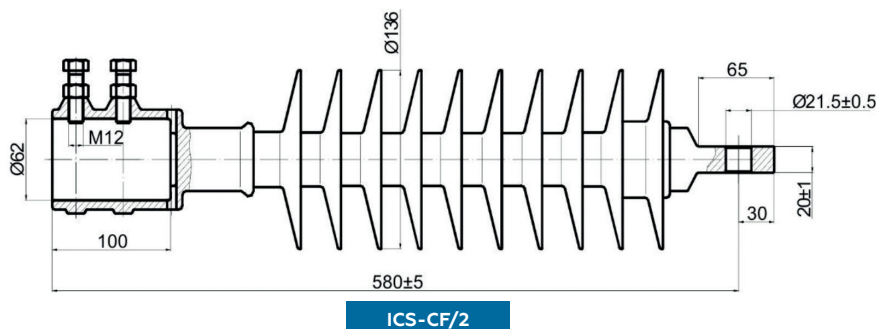
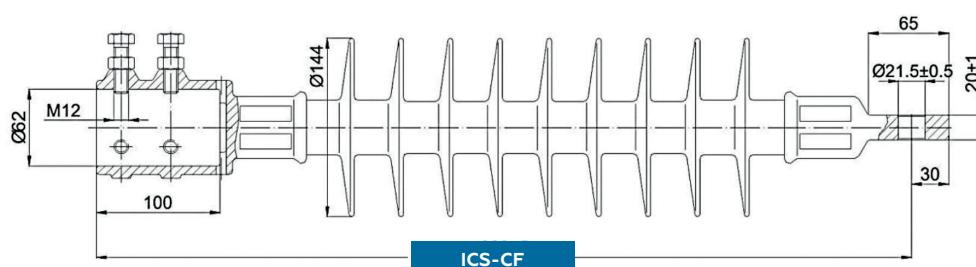


# ICS – CF | ICS – CF/2

## LONG ROD COMPOSITE INSULATOR FOR ELECTRICAL RAILWAYS

<b>SYMBOL</b>	<b>ICS – CF (CF/2)</b>	<b>CF</b>	For electrical railways
<b>ITS</b>	Long rod composite insulator	<b>2</b>	2nd type

Technical data	Unit	Value	
Type		CF	CF/2
Rated system voltage	kV	25	
Section length	mm	660	580
Creepage distance	mm	1207	1230
Specified mechanical load (SML)	kN	100	
Specifiad cantilever load (scl)	kN	6	
Maximum design cantilever load (mdcl)	kN	3	
Routine test load (RTL)	kN	50	
Number of sheds	Pcs.	9	10
Weight	kg	5,6	
Dry lighting impulse voltage (1,2/50 $\mu$ s)	kV <sub>max</sub>	250	
Wet power-frequency withstand (1 min.)	kV <sub>ef</sub>	95	



### Note:

For a complete range of products and equipment for railways, please refer to the special catalog available on our site, [www.epsenergie.de](http://www.epsenergie.de).

# ST(B)E 2(3)A(M)Pn(o) 24kV / 400A ; (25 ; 31,5 ; 50A)

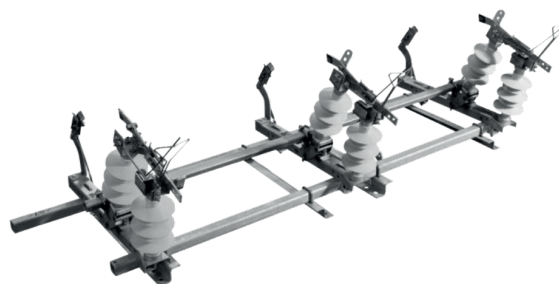
## OUTDOOR LINE SWITCH DISCONNECTORS

SYMBOL	
<b>S</b>	Disconnecter
<b>T</b>	Triphase or
<b>(B)</b>	Two-phase
<b>E</b>	Outdoor
<b>2 (3)</b>	No of insulator per phase (3 only for 95 mm <sup>2</sup> cross-section line)
<b>no</b>	Horizontal mounting
<b>(n)</b>	Vertical mounting

SYMBOL	
<b>AP</b>	Optional, automatic earthing (single operating device)
<b>(MP)</b>	Optional, manually earthing (double operating device)
<b>24 kV</b>	Rated voltage
<b>400A</b>	Rated current
<b>abA (25; 31,5; 50A)</b>	Breaking capacity under active load

### ADVANTAGES:

- Under load disconnector switch up to 25A (630 kVA), 31,5A (1000 kVA), 50A (1600 kVA).
- Composite isolation
- Extended mechanical endurance (over 1000 switching operations)
- Light maintenance (modular construction having one element per phase)
- Possibility of upgrading to electrical operation and remote control
- Possibility of extending breaking capacity up to 250 A or 400 A with arc-quenching chambers



Constructive types	Variants					Symbol
	With ES	No ES	25A	31,5A	50A	
Constructive type of three-phase disconnector	●		●			STE 2APno 24kV/400A/25A
	●			●		STE 2(3)APno24kV/400A/31,5A
	●				●	STE 2(3)APno24kV/400A/50A
		●	●			STE 2no24kV/400A/25A
			●	●		STE 2no24kV/400A/31,5A
Horizontal mounting		●		●		STE 2no24kV/400A/50A
	●				●	STE 2(3)MPno24kV/400A/50A

Constructive types	Variants					Symbol
	With ES	No ES	25A	31,5A	50A	
Constructive type of three-phase disconnecter	●		●			STE 2APno 24kV/400A/25A
	●			●		STE 2(3)APno24kV/400A/31,5A
	●				●	STE 2(3)APno24kV/400A/50A
Vertical mounting		●	●			STE 2no24kV/400A/25A
		●		●		STE 2no24kV/400A/31,5A
		●			●	STE 2no24kV/400A/50A
	●				●	STE 2(3)MPno24kV/400A/50A

#### Main technical characteristics:

Rated voltage		24kV
Rated frequency		50Hz
Rated current		400A
Lightning impulse withstand voltage:	To earth/between phases	125kV
	Between open contacts	145kV
Power frequency withstand voltage (1 min. dry)	To earth/between phases	50kV
	Between open contacts	60kV
Power frequency withstand voltage (10 sec. wet):	To earth/between phases	50kV
	Between open contacts	60kV
Rated short-time withstand current (thermal)		16kA <sub>ef</sub> - 1s
Peak value of the withstand current (dynamic)		40kA <sub>max</sub>
Mechanical endurance		1000 cycles
1000 cycles		25 A ; 31,5 A ; 50 A

#### Note:

Full kit for disconnecter mounting is delivered separately by us and comprise:

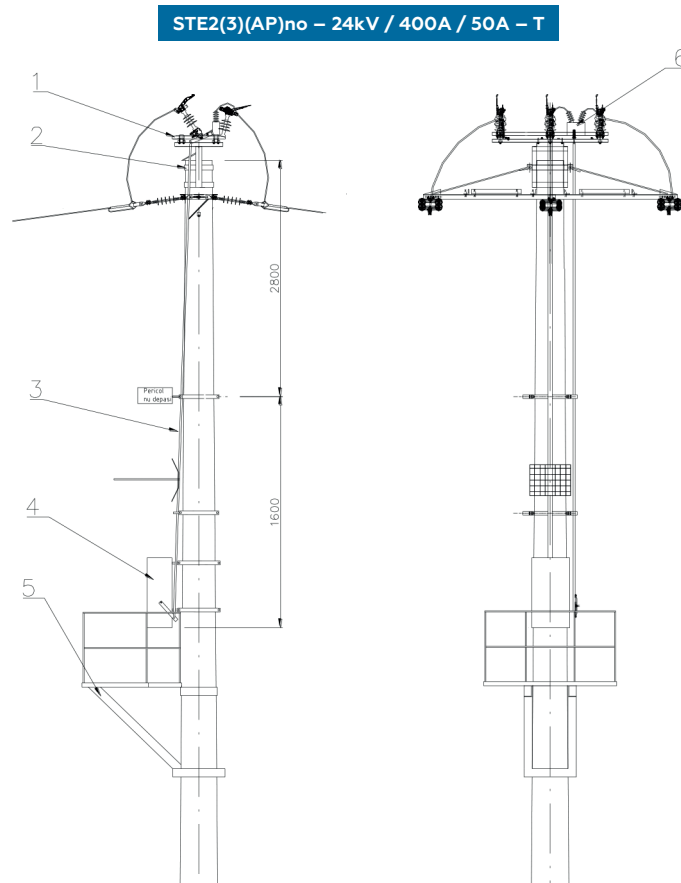
- Disconnector chassis
- Accessories for mounting of operating device;
- Operating rods;
- Manual operation device

# E2(3)(AP)no-24kV/400A/abA-T

## REMOTE CONTROLLED OUTDOOR SWITCH DISCONNECTORS

<b>SYMBOL</b>	<b>STE2(3)(AP)no-24kV/400A /abA-T</b>	<b>24 kV</b>	Rated voltage
<b>STE</b>	Remote controlled outdoor switch disconnectors	<b>400A</b>	Rated current
<b>2(3)</b>	No of insulator per phase (3 only for 95 mm <sup>2</sup> cross-section line)	<b>ab A (*)</b>	Breaking capacity under active load: (25; 31,5; 50; 250; 400A)
<b>AP</b>	Automatic earthing (single operating device)	<b>T</b>	Remotely controlled
<b>no</b>	Horizontal mounting		

(\*) – specify when ordering



STRUCTURE	
Pos	Description
1	Outdoor three-phase disconnector, horizontal mounting, type STE 2(3)no-24kV/400A/50A
2	Column mounting bracket
3	Operating rod
4	DA-xy: operation type ; x and y identifies the type
5	Operation platform (optional)
6	Voltage transformer

## PERFORMANCE AND CHARACTERISTICS:

The ones noted in chapter outdoor disconnectors.

## OPERATION CABINET:

DA-xy operation type ensures the electric operation of the equipment and by installing the remote system it allows the operator to remotely control the disconnector STE – T.

## VOLTAGE SUPPLY

Comes from a two-phase voltage transformer that also ensures continuous charging for the batteries. By request, instead of the transformer, a low voltage connection may be used when possible

## COLUMN BRACKET ASSEMBLY

Ensures good fixing for the disconnector elements on the overhead line column but also the local operation of the equipment.

## PROTECTION AND METERING

The remote-controlled disconnector may be equipped on request with:

- Fault detection;
- Electric values metering.

## COMMUNICATION

The operation cabinet has a special place for communication systems and it's compatible with a remote control that works in:

- radio trunking;
- conventional radio;
- GSM network;
- Wired command;

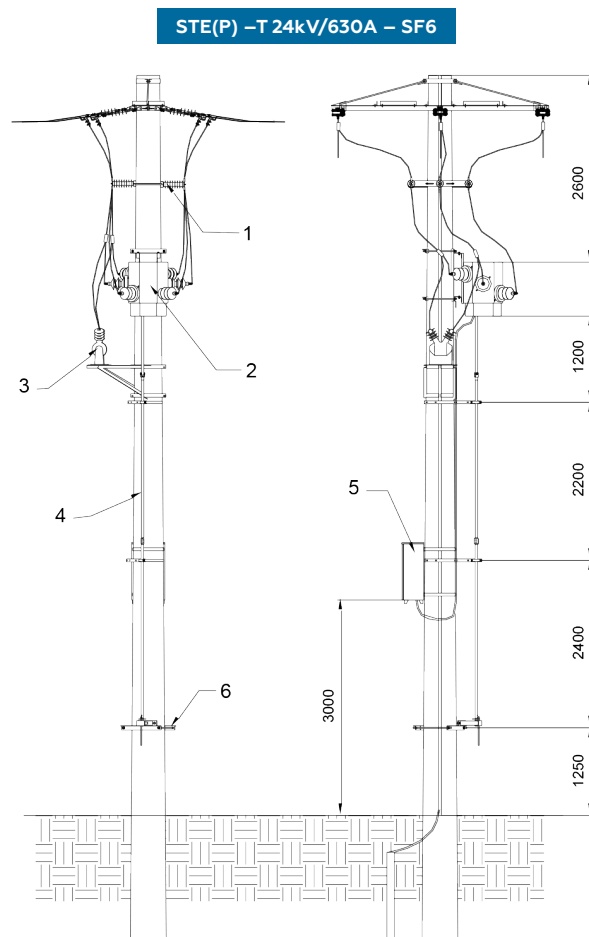
EPS Energie also offers the required hardware and software for the main command center and the integration in the existi system. This communication system can easily adapt to future optional elements like instrument transformers, sensors, etc.



## STE(P)-T 24kV/630A – SF6

### REMOTE CONTROLLED OUTDOOR SWITCH DISCONNECTORS IN SF6 INSULATION

<b>SYMBOL</b>	<b>STE(P)-T 24kV/630A – SF6</b>
<b>STE</b>	Outdoor switch disconnectors
<b>P</b>	Earthing
<b>T</b>	Remote Controlled
<b>24kV</b>	Rated voltage
<b>630A</b>	Rated current/breaking capacity under active load
<b>SF6</b>	SF6 insulation



STRUCTURE	
Pos	Description
1	Outdoor three-phase disconnector with SF6 insulation 24kV/630A
2	Line extent console type CIT 140
3	Three-phase mounting device STPS-DOMS 24, equipped with ZnO 24 kV arrester
4	Voltage transformer, including pole mounting bracket
5	Manually operated rods
6	Operation cabinet
7	Cable
8	Ground operation
9	Grounding
10	Drive rod guide accessories
11	Platform (optional)



## PERFORMANCE AND CHARACTERISTICS:

**Poles number:** 3

**Standards:** IEC 60265-1; 60298; 62271-1

**Ambient temperature (max.):** 50°C

**Altitude:** max.1000 m

**Rated voltage:** 24 kV

**Rated current:** 630 A

**Permissible peak current:** 40 kA peak

**Frequency:** 50/60 Hz

**Whitstand voltage at lighting impulse:** 1,2/50µs: 125 kVvarf

**Permissible rated current:** 12,5 kAef - 1 sec.

**Supply voltage drive mechanism:** 24 Vc.c.

## DISCONNECTOR:

The remote-controlled outdoor switch disconnectors in SF6 insulation is an It's an encapsulated assembly of many equipment with double rotary contacts, with SF6 as arc quenching medium.

## OPERATION CABINET:

Operation cabinet contains electrical, electronic, telecommunication and software subassemblies required for remote control and remote monitoring of the load separator.

## VOLTAGE SUPPLY

Comes from a two-phase voltage transformer that also ensures continuous charging for the batteries. By request, instead of the transformer, a low voltage connection may be used when possible.

## COLUMN BRACKET ASSEMBLY

Ensures good fixing for the disconnector elements on the overhead line column but also the local operation of the equipment.

## PROTECTION AND METERING

The remote-controlled disconnector may be equipped on request with:

- Fault detection;
- Electric values metering.

## COMMUNICATION

The operation cabinet has a special place for communication systems and it's compatible with a remote control that works in:

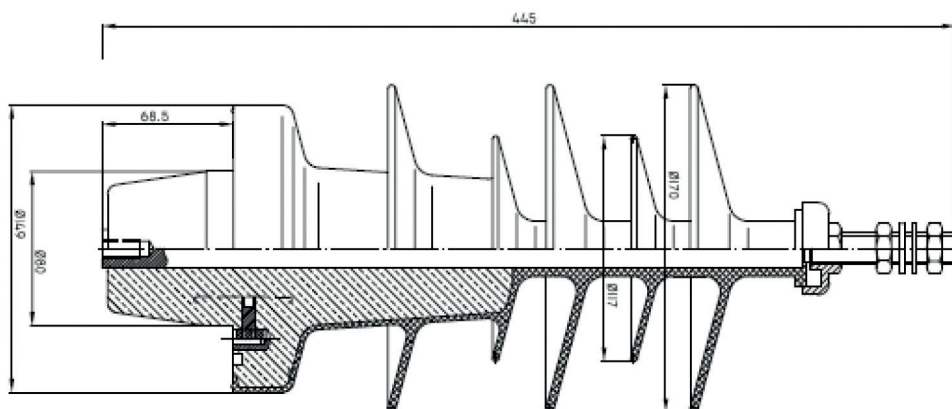
- radio trunking;
- conventional radio;
- GSM network;
- Wired command;

EPS Energie also offers the required hardware and software for the main command center and the integration in the existi system. This communication system can easily adapt to future optional elements like instrument transformers, sensors, etc.

## BI-24-630-SF6

### BUSHING INSULATOR FOR SF6 DISCONNECTORS

<b>SYMBOL</b>	<b>BI-24-630-SF6</b>
<b>BI</b>	Bushing Insulator
<b>24</b>	Maximum system voltage, kV
<b>630</b>	Rated current, A
<b>SF<sub>6</sub></b>	For SF <sub>6</sub> disconnectors



Technical data	Unit	Value
Maximum system voltage, U <sub>m</sub>	kV	24
Rated current	A	630
Creepage distance	mm	816
Dry lightning impulse withstand voltage	kV	125
Wet power-frequency withstand voltage	kV	50
Maximum discharge quantity at 1,05 U <sub>m</sub> /√3	pC	5
Maximum discharge quantity at 1,5 U <sub>m</sub> /√3	pC	10
According to standard		IEC 60137
Weight	kg	4,5
Lifetime	years	40

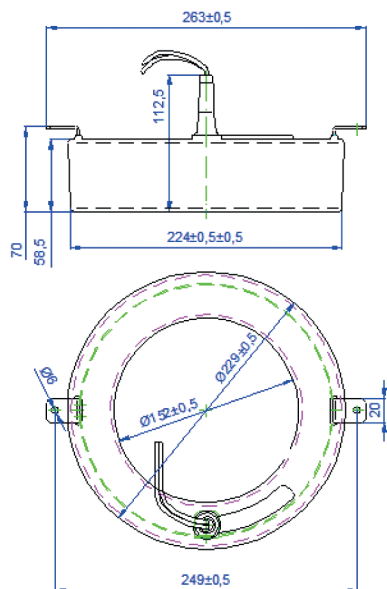
## VOLTAGE TRANSFORMER IN SILICONE RUBBER class: 5P ALF5 CTP 0,72; 100/1A, 150/1A; 5VA;

Technical data	Value
Maximum operating voltage	0,72 kV
Rated frequency	50 Hz
Rated current on secondary	1A
Rated ratio In1/In2	100/1; 150/1
Rated power on secondary	5VA
Precision class	5P
Accuracy limit factor	5

Technical data	Value
Operating mode	Continuum (RC)
Neutral of power grid	According to SR EN 60044-1
Insulation class	A
Thermal current of 1 sec (Ith)	30 kA
Dynamic current	75 kA <sub>max</sub> , (2,5 x Ith)

### Minimum operational conditions

Climatic zone	N   According to SR HD   478.2.1 S1:2002
Operating class	1, According to SR HD   478.2.1 S1:2002
Ambient temperature	-45 ÷ +40 °C
Storage temperature	-50 ÷ +55 °C
Medium value of ambient temperature on 24h	Maximum 35 °C
Maximum humidity at 20 °C	100%
Maximum altitude	1000 m, over sea level
Atmospheric pressure	760 ± 30 mmHg
Solar radiation	1000 w/m <sup>2</sup>
Maximum ice layer thickness	20 mm
Maximum wind pressure	700 PA



Voltage transformer type CTP-0,72 is a toroidal transformer for 0,72 kV, with silicone rubber housing, designed to be mounted on insulator bushings of switch pole disconnecter in SF<sub>6</sub> insulation, STE-T 24kV/630A/630A, together with protection parts.

#### Notă:

For mounting details, please contact EPS Energie GmbH team.

# DOMS(2)-24(D)

## METAL OXIDE POLYMER HOUSED SURGE ARRESTERS

<b>SYMBOL</b>	<b>DOMS(2) 24(D)</b>
<b>D</b>	SURGE ARRESTER
<b>O</b>	Oxide
<b>M</b>	Metal
<b>S</b>	Silicone
<b>2</b>	Line discharge class
<b>24</b>	Continuous voltage $U_c$ , in kV
<b>D</b>	Disconnector



DOMS(2) 24



DOMS(2) 24D

Technical data	Unit	Value			
		Surge arrester type			
		DOMS 24 DOMS 24D	DOMS2 24 DOMS2 24D	PDV 100	PDV 100
Highest voltage of the network, $U_m$	kV	24		12	7,2
Maximum continuous operating voltage, $U_c$	kV	24		12,7	7,65
Rated voltage, $U_r$	kV	30		15	9
Line discharge class (acc. to IEC 60099-4)		1	2		1
Energy capability, $E/U_c$	kJ/kV	3,5			
Temporary overvoltages capabilities postenergizing					
at 1 second	kV	35,38		16,5	9,9
at 10 seconds		33,47		15,75	9,45
Nominal discharge current, 8/20 $\mu$ s wave	kA <sub>peak</sub>	10			
Permissible impulse current, 4/10 $\mu$ s wave	kA <sub>peak</sub>	100			
Permissible impulse current, 2 000 $\mu$ s	kA <sub>peak</sub>	250			
Pressure relief class	kA	20			
Residual voltage at 10 kA <sub>peak</sub>	kA <sub>peak</sub>	87	78,4	42,8	27
Partial discharge level at 1,05 $U_c$	pC	$\leq 10$			
Specific creepage distance	cm/kV	2,5		4.4	4.34

### Note:

For other types please contact our team.

# EPS 12/05.0 | EPS 18/05.0 | EPS 18/10.1D | EPS 24/10.1D

## METAL OXIDE POLYMER HOUSED SURGE ARRESTERS ACCORDING TO ENEL SPECIFICATIONS

SYMBOL	
<b>EPS</b>	EPS Energie GmbH
<b>12 (18, 24)</b>	Nominal System Voltage $U_r$ (kV)
<b>05 (10)</b>	Nominal discharge current, (kA) 8/20 $\mu$ s wave
<b>0</b>	Normal duty
<b>1</b>	Line discharge class
<b>D</b>	With disconnector

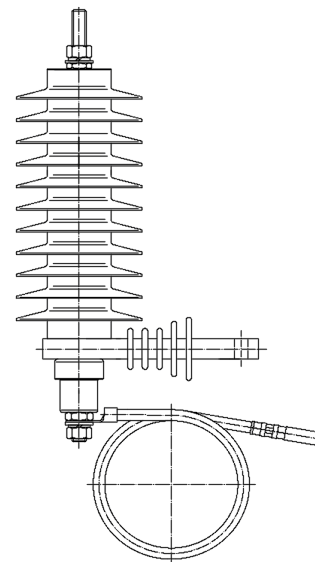
Type ENEL DY 555 și DY 557

Type EPS 12/05.0: DY 555/1, Type 170060

Type EPS 18/05.0: DY 552/2, Type 170061

Type EPS 18/10.1D: DY 557/4, Type 170012

Type EPS 24/10.1D: DY 557/6, Type 170013



Technical data	Units	Value			
		EPS 12/05.0 170060	EPS 18/05.0 170061	EPS 18/10.1D 170012	EPS 24/10.1D 170013
Type / ENEL type		EPS 12/05.0 170060	EPS 18/05.0 170061	EPS 18/10.1D 170012	EPS 24/10.1D 170013
Maximum continuous operating voltage, $U_c$	kV	10,2	15,3	15,3	19,5
Rated voltage, $U_r$	kV	12	18	18	24
Line discharge class (acc. to IEC 60099-4)		normal duty		1	1
Nominal discharge current $I_n$ , wave 8/20 $\mu$ s	kA <sub>peak</sub>	5		10	
Permissible impulse current, wave 4/10 $\mu$ s	kA <sub>peak</sub>	65		100	
Maximum residual voltage at a nominal discharge current $I_n$	kA <sub>peak</sub>	38	54	58	75
Maximum residual voltage at steep current impulse (10 kA, 1 $\mu$ s)		41	62	63	81
Maximum disconnector time	ms	400			
Partial discharge level at 1,05 $U_c$	pC	$\leq 10$			
Creepage distance	mm	511	649	649	787
Equipping with disconnector				yes	yes
Equipping with flexible earthing conductor				yes	yes
Minimum reference voltage at reference current $I_{ref} = 1 \text{ mA}_{peak}$	kV <sub>peak</sub> /√2	12	18	18	24

### Note:

For other types please contact our team.

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