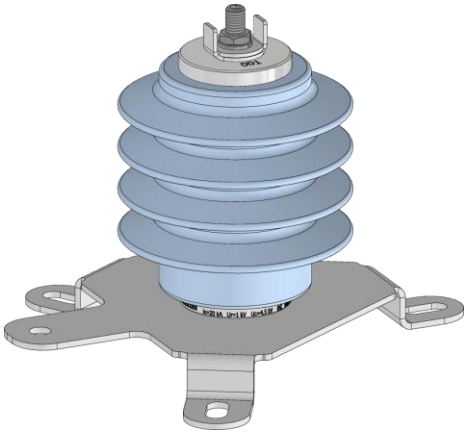


SURGE ARRESTER
FOR DC SYSTEM VOLTAGE
TYPE PROXAR–IVN DC
IN SILICONE HOUSING

CATALOGUE CHART

APPLICATION
PROXAR-IVN DC surge arresters in silicone housing are designed to protect DC traction networks against multiple lightning, switching and temporary overvoltage's in power supply stations, locomotives, trams, and DC cables.

OPERATING CONDITIONS
Surge arresters adapted for outdoor and indoor installation in temperate and tropical climate. Possibility of installation in any working position. Dimension of surge arresters enable installation in switchgear in minimum pole distances 150 mm.

ADVANTAGE
- Low residual voltage
- High energy input capacity
- Stable U-I characteristics even after absorbing multiple surges
- Housing resistant to rough handling
- Explosion and shatter – resistant design
- Pollution resistant and UV
- Ability to install in any position (vertically or horizontally)
- Maintenance free
- Low weight, easy transportation and storage
- Ability to work in horizontal position
- Stable against shock and vibration

ADDITIONAL EQUIPMENT
Additional accessories include a base for mounting surge arresters, as well as line and grounding accessories (see: accessories for surge arresters).

ELECTRICAL DETAILS

Arrester classification according to EN 50526-1: 2012	DC-B	
Line discharge class according to IEC 60099-4: 2009	4	
System voltage (Un_{DC})	0.6 - 3 kV	
Continuous operating voltage (Uc_{DC})	1.0 – 4.7 kV	
Nominal discharge current In 8/20 μs	20 kA	
High current impulse Ihc 4/10 μs	200 kA	
Long duration current impulse resistance	1350 A	2000 μs
	1000 A	2800 μs
Long duration impulse current at operating duty test	1600 A	2800 μs
Energy absorption capability, 2 impulses	13.5 kJ/kV of Uc dc	
Energy absorption capability in operating duty test	10,5 kJ.kV of Uc dc	
Short circuit rating	40 kA dc for 0.2s*	
Service conditions:		
- temperature	-40 °C do +60 °C**	
- altitude up to	1000 m**	
Mechanical strength:		
- SLL specified long-term load	1200 Nm	
- SSL specified short-term load	1800 Nm	
- torque	650 Nm	
- tensile	20 kN	

Mechanical shock resistance and vibration:

- according to PN-EN 60068-2-6:2008 — 3 g 10 ÷ 500 Hz
- according to PN-EN 60068-2-27:2009 — 30 g
- according to PN-EN 661373:2011 — category 1, class B

** structure of surge arrester is resistant on 50 kA short circuit current according to Report no 8060/NBR/10 IEL*

**)for higher parameters please contact with manufacturer

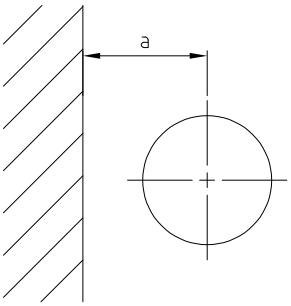
ELECTRICAL DATA

Type PROXAR-IVN DC	Continuous operating voltage Uc(DC)	Residual voltage in kV pk at a specified impulse current							
		Wave 1/… μs	Wave 8/20 μs				Wave 30/60 μs		
		20kA	5kA	10kA	20kA	40kA	500A	1kA	2kA
	kV	kV	kV	kV	kV	kV	kV	kV	kV
1.0	1.0	2.97	2.30	2.42	2.60	2.87	1.99	2.03	2.10
1.5	1.5	4.57	3.53	3.74	4.01	4.39	3.06	3.15	3.24
2.0	2.0	5.95	4.63	4.90	5.28	5.80	3.98	4.06	4.23
2.5	2.5	7.51	5.81	6.14	6.59	7.22	5.03	5.18	5.33
3.0	3.0	8.92	6.95	7.38	7.91	8.65	5.99	6.12	6.37
4.2	4.2	12.10	9.40	10.00	10.90	12.00	8.10	8.40	8.70
4.5	4.5	13.09	10.17	10.82	11.80	12.98	8.76	9.08	9.41
4.7	4.7	13.64	10.60	11.28	12.30	13.53	9.13	9.47	9.81

Note: It is possible to make PROXAR-IVN DC surge arrester with a different range of continuous operating voltage.

TECHNICAL DATA FOR HOUSING

Type PROXAR-IVN DC	External insulation		Minimal distances	H	Creepage distance	Flash-over distanse	Weight
	DC voltage wet (60s)	1.2/50 μs dry	Distance between arrester and the nearest return path structure „a”				
kV	kV	kV	mm	mm	mm	mm	kg
1.0	29.5	75	100	165	318	165	2.3
1.5			100				2.5
2.0			100				2.7
2.5			100				3.0
3.0			100				3.2
4.2			100				3.5
4.5			100				3.6
4.7			100				3.6



Minimal mounting distances for surge arresters

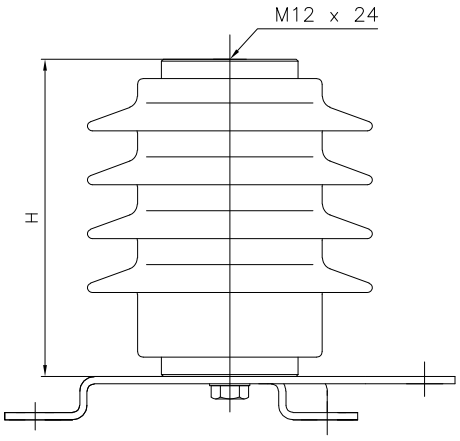


Fig.1

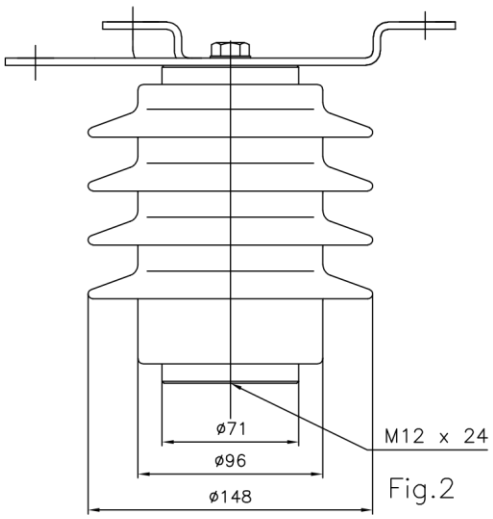


Fig.2

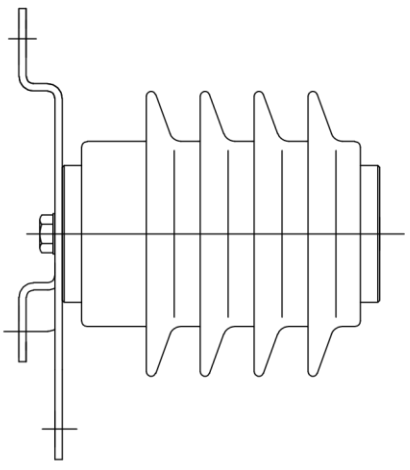


Fig.3

The above drawings show the configuration of the surge arresters in operation. Drawings No 1 presents vertical system of assembling. Drawings No 2 presents reverse system of assembling surge arrester. Drawings No 3 presents horizontal system of assembling. Below the figures are presenting different options line and earth accessories available for use in surge arrester type PROXAR-IVN DC For horizontal working configuration of surge arresters is this same option like for vertical working.

ATTENTION: The maximum bending moment for the insulating bracket is 50 Nm.

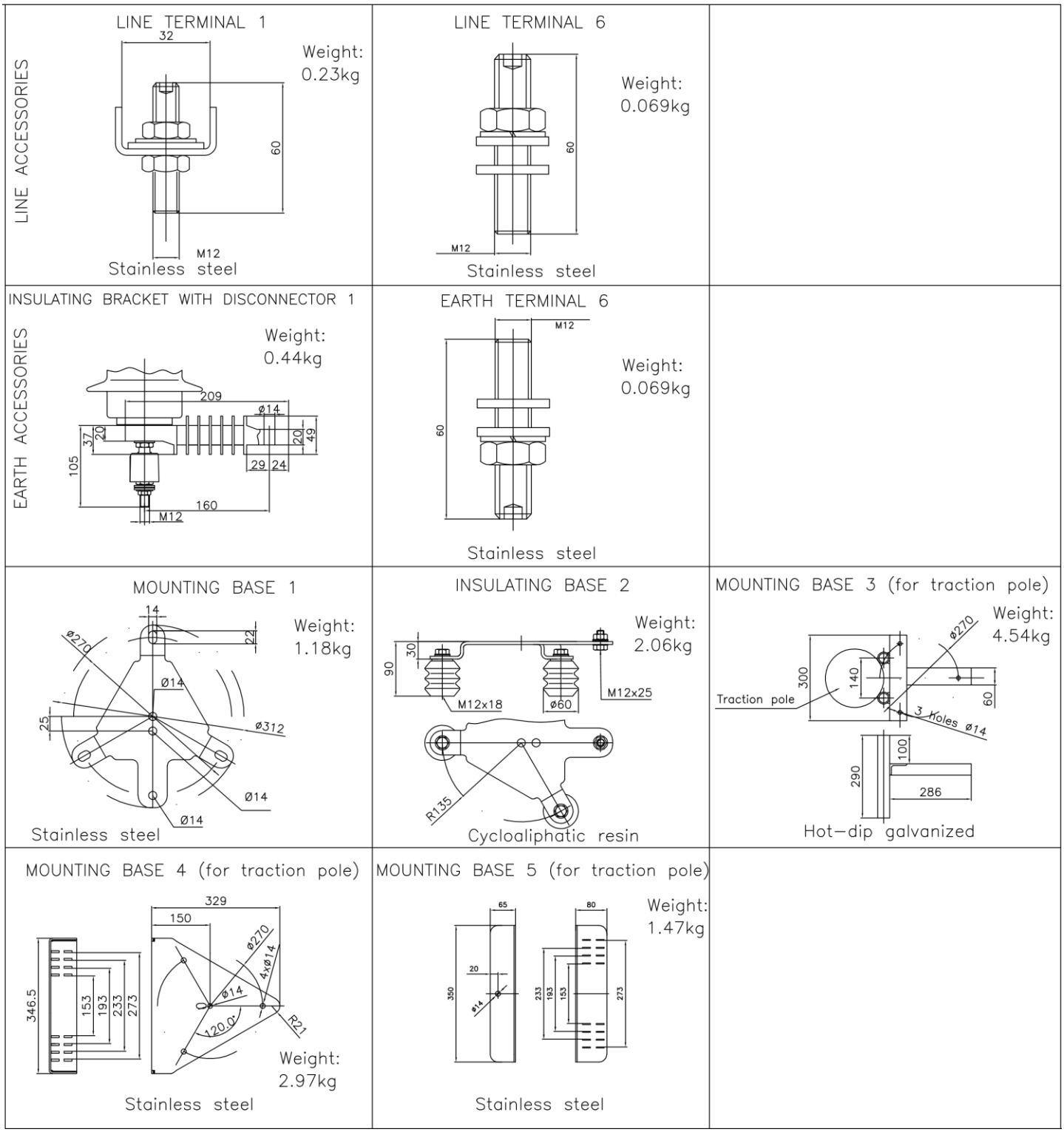


Fig.4. Equipment for surge arresters type PROXAR-IVN DC

Order configurator***:

1	2	3	4	5	6	7	8
PROXAR-IVN		**DC**					

***) Empty fields to fill.

1. Type of product
PROXAR-IVN

2. Continuous operating voltage Uc
See table – ELECTRICAL DATA — **Uc**

3. Voltage type
Direct voltage — **DC**

4. Mounting (according fig. 1; 2; 3)
Vertical 1 (Fig. 1) — **1**
Reversed installation (Fig. 2) — **2**
Horizontal (Fig. 3) — **3**

5. Base (according fig. 4)
Without base — **0**
Mounting base 1 — **1**
Insulating base 2 — **2**

6. Line terminal (according fig. 4)
Without line terminal — **0**
Line terminal 1 — **1**
Line terminal 6 — **6**

7. Earth terminal (according fig. 4)
Without earth terminal — **0**
Insulating bracket with disconnector 1**** — **1**
Earth terminal 6 — **6**

8. Mounting base for traction pole (according fig. 4)
Without mounting base for traction pole — **0**
Mounting base 3 — **3**
Mounting base 4 — **4**
Mounting base 5 — **5**

****) Before sending the order please contact with manufacturer

Order example:

1	2	3	4	5	6	7	8
PROXAR-IVN	**4.5**	**DC**	**1**	**1**	**1**	**0**	**0**

PROXAR-IVN 4.5 DC 11100 – 3 pcs.

Description: Surge arrester type **PROXAR-IVN** with continuous operating voltage Uc=**4.5** kV for **DC** system in vertical mounting version **-1;** with mounting base – **1**; line terminal – **1**; without earth terminal – **0;** without mounting base – **0**.

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Poland

Check out our MV DC surge arresters

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ATTENTION
Note: The manufacturer reserves the right to change technical data or designee without prior notice.
PROXAR® is a registered trademark of the latest family of surge arresters made by Protektel.