AC SURGE ARRESTER TYPE PROXAR-IVN AC IN SILICONE HOUSING FOR PROTECTION OF AC OUTDOOR POWER SUPPLY LINES AND POWER INSTALLATIONS

CATALOGUE CARD

APPLICATION

Surge arresters type **PROXAR-IVN AC** in silicone housing are intended for surge protection of AC outdoor power supply lines and rolling stock against multiple lightning, switching and temporary overvoltages. They are also designed for all special requirements.

OPERATING CONDITIONS

The surge arresters are adapted for outdoor and indoor installations in temperate and tropical climate up to 1000 m above sea level. The dimensions of surge arresters enable their installation in MV switchgears in the minimum cubicle width 150 mm.

ADVANTAGES

- Efficient protection characteristics
- High energy input capacity
- Stable U-I characteristics even after multiple strokes
- Housing resistant to rough handling
- High resistance to damage under atmospheric conditions
- Very high short circuit capability
- High durability and operating reliability under various environmental conditions
- Highly stable against shock and vibrations
- Suitable for mounting on high-speed traction vehicles
- Easy mounting and maintenance free

ADDITIONAL EQUIPMENT

For request of customer, manufacturer can deliver accessories according customer requirements.

ELECTRICAL DATA

System voltage (Um)	1 – 52 kV
Rated voltage (Ur)	1 – 60 kV
Rated discharge current In 8/20 μs	20 kA
High current impulse Ihc 4/10 μs	100 kA
Long duration current impulse 2000 μs	1350 A
Line discharge class according to IEC 60099-4: 2009	4
Line discharge class according to EN 60099-4: 2014	SH(Station High)
Energy capability, 2 impulses	13.5 kJ/kV Uc
Short circuit rating	65 kA/0.2s
Working conditions:	
- ambient temperature	-40 °C do +60* °C
- altitude up to	1000* m
Mechanical data:	
- short bending moment	1800 Nm
- long bending moment	1200 Nm
- torsional moment	300 Nm
- tensile strength	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

*) for other values please contact with the manufacturer

ELECTRICAL DATA

TYPE PROXAR-IVN AC	Rated voltage Ur	Maximum continious operating voltage Uc	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	kV
1.0	1.0	0.72	2.97	2.30	2.42	2.60	2.87	1.99	2.03	2.10
1.5	1.5	1.10	4.57	3.53	3.74	4.01	4.39	3.06	3.15	3.24
2.0	2.0	1.50	5.95	4.63	4.90	5.28	5.80	3.98	4.06	4.23
2.5	2.5	1.80	7.51	5.81	6.14	6.59	7.22	5.03	5.18	5.33
3.0	3.0	2.20	8.92	6.95	7.38	7.91	8.65	5.99	6.12	6.37
3.5	3.5	2.80	10.52	8.16	8.64	9.29	10.19	7.04	7.21	7.47
4.2	4.2	3.00	12.10	9.40	10.00	10.90	12.00	8.10	8.40	8.70
4.5	4.5	3.30	13.09	10.17	10.82	11.80	12.98	8.76	9.08	9.41
4.7	4.7	3.40	13.64	10.60	11.28	12.30	13.53	9.13	9.47	9.81
5.0	5.0	3.60	14.20	11.03	11.74	12.80	14.00	9.50	9.86	10.20
6.0	6.0	4.80	16.37	13.18	13,94	14.94	16.29	11.33	11.92	12.09
7.0	7.0	5.60	19.11	15.39	16.27	17.45	19.01	13.23	13.92	14.11
8.0	8.0	6.40	21.83	17.58	18.59	19.93	21.72	15.12	15.90	16.12
9.0	9.0	7.20	24.57	19.79	20.92	22.43	24.45	17.01	17.90	18.15
10.0	10.0	8.0	27.2	22.1	23.4	25.1	27.4	19.0	20.0	20.3
11.3	11.3	9.0	30.8	25.0	26.4	28.4	30.9	21.5	22.6	22.9
12.5	12.5	10.0	34.0	27.7	29.3	31.4	34.2	23.8	25.0	25.4
15.0	15.0	12.0	40.8	33.2	35.1	37.6	41.0	28.6	30.0	30.5
16.3	16.3	13.0	44.4	36.1	38.2	40.9	44.6	31.0	32.6	33.1
18.8	18.8	15.0	51.2	41.6	44.0	47.2	51.4	35.8	37.6	38.2
20.0	20.0	16.0	54.4	44.3	46.8	50.2	54.7	38.1	40.0	40.6
21.3	21.3	17.0	58.0	47.2	49.9	53.5	58.3	40.5	42.6	43.2
22.5	22.5	18.0	61.2	49.8	52.7	56.5	61.5	42.8	45.0	45.7
23.8	23.8	19.0	64.8	52.7	55.7	59.7	65.1	45.3	47.7	48.3
25.0	25.0	20.0	68.0	55.3	58.5	62.7	68.4	47.6	50.1	50.8
30.0	30.0	24.0	81.6	66.4	70.2	75.3	82.1	57.1	60.1	60.9
36.3	36.3	29.0	98.8	80.4	85.0	91.1	99.3	69.1	72.7	73.7
41.3	41.3	33.0	112.3	91.3	96.5	103.5	112.8	78.5	82.6	83.8
60.0	60.0	48.0	171.4	139.5	147.5	158.1	172.3	119.9	126.1	127.9

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

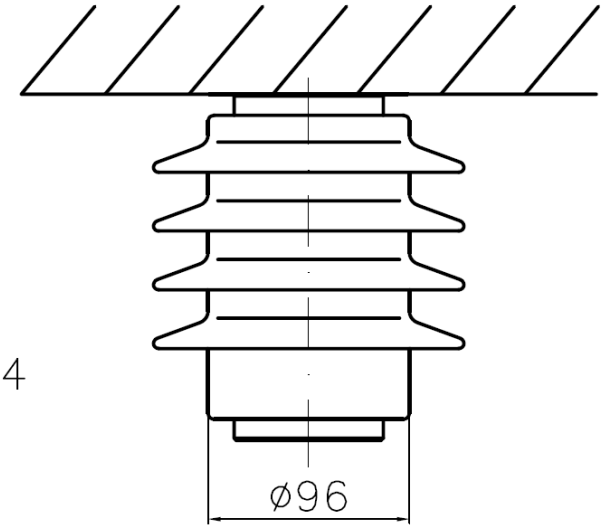

Fig.4

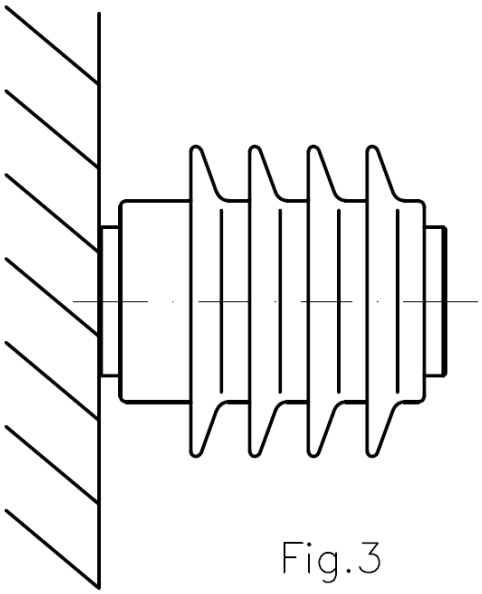

Fig.3

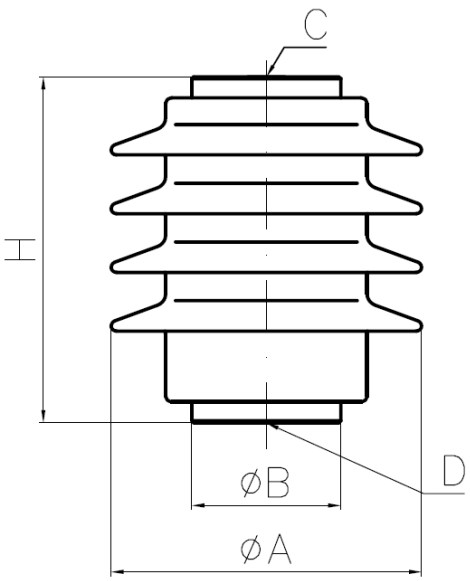

Fig.1

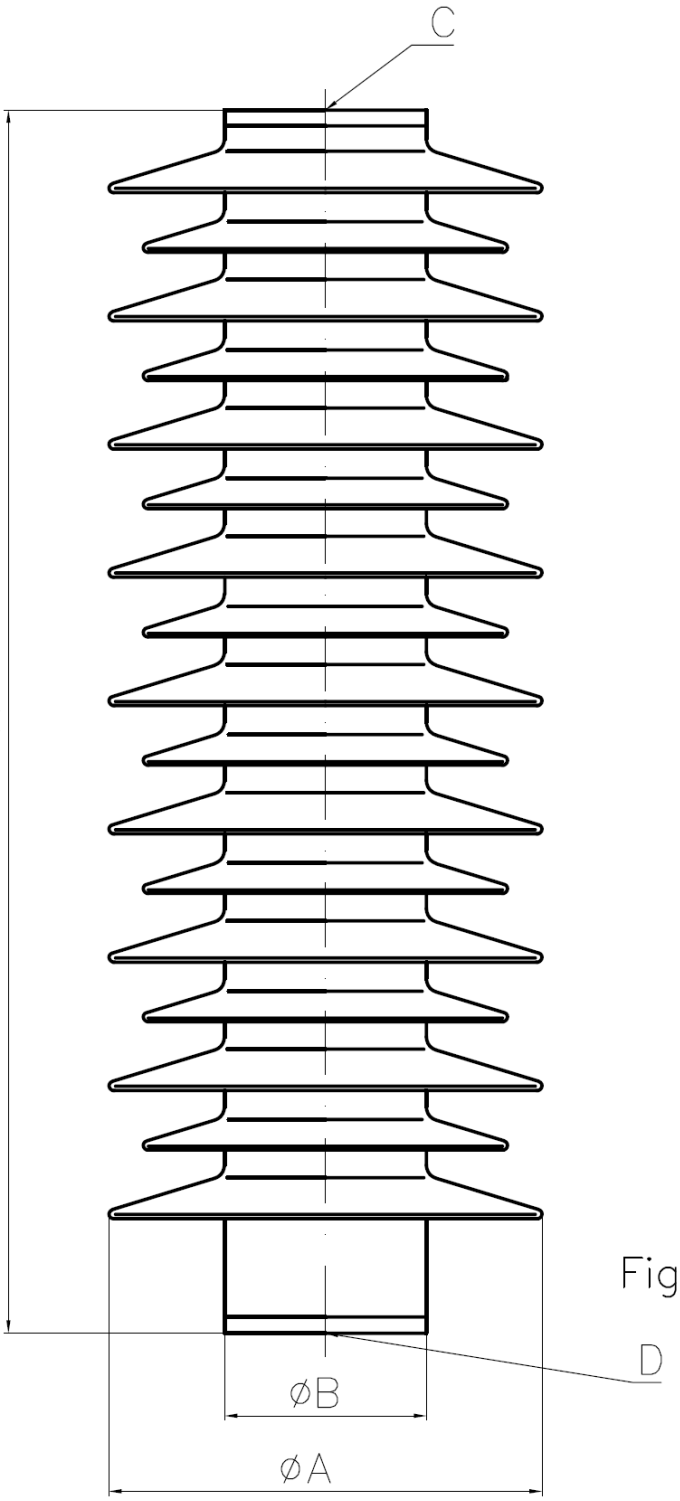

Fig.2

The figure shows the installation of surge arresters type PROXAR-IVN AC. Figure 1 and 2 shows a vertical installation. There is also a possibility to work / install surge arresters in a horizontal position fig. 3, fig. 4 presents reverse system of assembling surge arrester.. Completion of surge arresters to work in horizontal position is the same as for vertical installation.

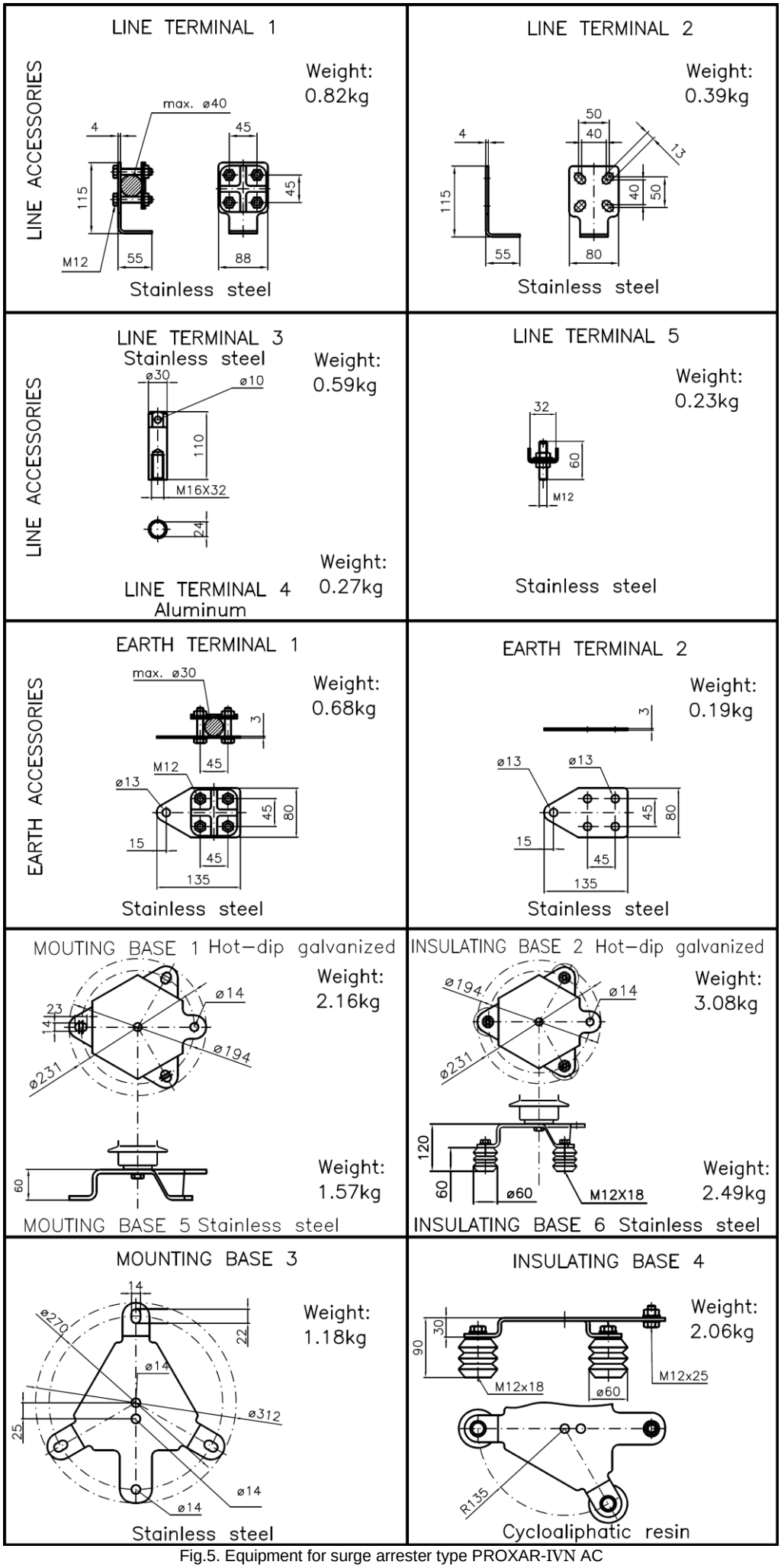

Fig.5. Equipment for surge arrester type PROXAR-IVN AC

TECHNICAL DATA

Type PROXAR-IVN AC	Insulation withstand voltage of empty housing		Minimal distances		Dimensions						Accessories		Housing number	Weight
	50 Hz wet (60s)	1.2/50μs dry	Distance between arresters „b”	Distance between arrester and the nearest grounded structure „a”	Height H	Creepage distance L	A	B	C, D	Fig.	Line	Earth		
kV	kV rms	kV	mm	mm	mm	mm	mm	mm		No.				kg
1.0	28	75	150	75	165	318	148	71	M12	1	5		01	2.3
1.5			150	75										2.5
2.0			150	75										2.7
2.5			150	75										3.0
3.0			150	75										3.2
3.5			150	85										3.3
4.2			150	98										3.5
4.5			151	103										3.6
4.7			156	108										3.6
5.0			161	113										3.7
6.0			166	118										4.5
7.0			171	123										5.0
8.0			176	128										5.5
9.0			181	133										6.0
10.0	47	98	185	136	204	700	175	110	M12	2	5		02	8.3
11.3			191	142										8.5
12.5			205	149										8.7
15.0			225	168										6.1
16.3	76	159	235	178	332	1220	175	110	M16	2	1, 2, 3, 4	1, 2	03	7.4
18.8			255	198										7.8
20.0			260	208										8.2
21.3			265	210										8.6
22.5			270	215										9.1
23.8	91	189	305	264	437	1670	175	110	M16	2	1, 2, 3, 4	1, 2	04	13.0
25.0			310	269										13.5
30.0			330	289										14.0
36.3	106	219	375	333	475	1640	188	98	M16	2	1, 2, 3, 4	1, 2	05	15.0
41.3			395	353										16.0
60.0	150	310	650	608	575	2010	188	98	M16	2	1, 2, 3, 4	1, 2	06	21.0

Note: It is possible to make a surge arrester in a different housing than the catalog version.

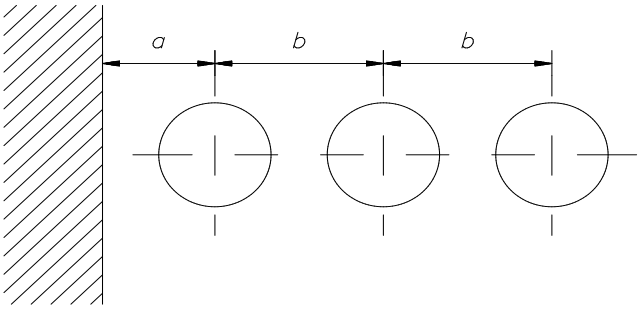

Fig. 6. Minimal mounting distances of surge arresters.

Order configurator**:

I	II	III	IV	V	VI	VII	VIII	
PROXAR-IVN		**AC**						

**) Empty fields to fill.

I. Type of product
PROXAR-IVN

II. Rated voltage Ur

See table – ELECTRICAL DATA	**Ur**

III. Voltage type

Alternating voltage (48 – 62 Hz)	**AC**

IV. Assembly (according fig. on page 3)

Vertical 1 (Fig. 1 or 2)	**1**
Horizontal 2 (Fig. 3)	**2**
Reverse 3 (Fig. 4)	**3**

V. Base (according fig. on page 4)

- Without base	**0**
- Mounting base 1(Hot-dip galvanized)	**1**
- Insulating base 2 (Hot-dip galvanized)	**2**
- Mounting base 3 (Stainless steel)	**3**
- Insulating base 4 (Stainless steel)	**4**
- Mountin base 5 (Stainless steel)	**5**
- Insulating base 6 (Stainless steel)	**6**

VI. Line terminal (according fig. on page 4)

Without line terminal	**0**
Line terminal 1	**1**
Line terminal 2	**2**
Line terminal 3	**3**
Line terminal 4	**4**
Line terminal 5	**5**

VII. Earth terminal (according fig. on page 4)

Without earth terminal	**0**
Earth terminal 1	**1**
Earth terminal 2	**2**

VIII. Housing number

See table – TECHNICAL DATA FOR HOUSING	**Housing number**

Order example:

I	II	III	IV	V	VI	VII	VIII	
PROXAR-IVN	**15**	**AC**	**1**	**3**	**5**	**0**	**0**	**2**

PROXAR-IVN 15 AC 1350 – 3 pcs.

Description: Surge arrester type **PROXAR-IVN** of rated voltage Ur=**15** kV for **AC** system in vertical mounting version - **1** with mounting base - **3**, line terminal - **5**, earth terminal – **0**, in housing number – **02**.

PROTEKTEL Sp. z o.o.
Piłsudskiego 92 str.
PL 06-300 Przasnysz
Poland
Tel./Fax +48 029 7525784
E-mail: protektel@protektel.pl
www.protektel.pl