



# HIGH VOLTAGE SURGE ARRESTER TYPE PROXAR-IIIN AC IN SILICONE HOUSING

## CATALOGUE CHART

### APPLICATION

Surge arresters type **PROXAR-IIIN AC** in silicone housing are intended for protection AC power engineering networks against multiple lightning and switching overvoltage's in HV substations, cables and transformers. This surge arrester is destined to all special technical requirements as well.

### OPERATING CONDITIONS

Surge arresters adapted for outdoor and indoor installation in temperate and tropical climate. The possibility to install in any working positions.

### ADVANTAGES

- 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

### 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 IEC 60099-4: 2014                     | SM (Station Medium) |
| Line discharge class according to IEC 60099-4: 2009                        | 3                   |
| System voltage (Us)                                                        | 3.6 – 245 kV        |
| Rated voltage (Ur)                                                         | 1.0 – 228 kV        |
| Nominal discharge current In 8/20 μs                                       | 10 kA               |
| High current impulse Ihc 4/10 μs                                           | 100 kA              |
| Rated repetitive charge transfer rating Qrs                                | 2.4 C               |
| Rated thermal Energy Wth                                                   | 11.0 kJ/kV Ur       |
| Single impulse energy absorption capability (impulse duration 2 ms – 4 ms) | 5.9 kJ/kV Ur        |
| Long duration current impulse resistance, 2000 μs                          | 1000 A              |
| Short circuit rating                                                       | 65 kA/0.2s          |
| Service conditions:                                                        |                     |
| - ambient temperature                                                      | -45 °C do +60 °C*   |
| - altitude up to                                                           | 1000 m*             |
| - frequency                                                                | 48-62 Hz            |
| Mechanical strength:                                                       |                     |
| - SLL long-term load                                                       | 2500 Nm             |
| - SSL short-term load                                                      | 4000 Nm             |
| - torque                                                                   | 200 Nm              |
| - tensile                                                                  | 5 kN                |
| Mechanical strength: <sup>1)</sup>                                         |                     |
| - SLL long-term load                                                       | 1200 Nm             |
| - SSL short-term load                                                      | 1800 Nm             |
| - torque                                                                   | 200 Nm              |
| - tensile                                                                  | 5 kN                |

\*) for other values please contact the manufacturer;

<sup>1)</sup> Only applies to drawing and housing No.1

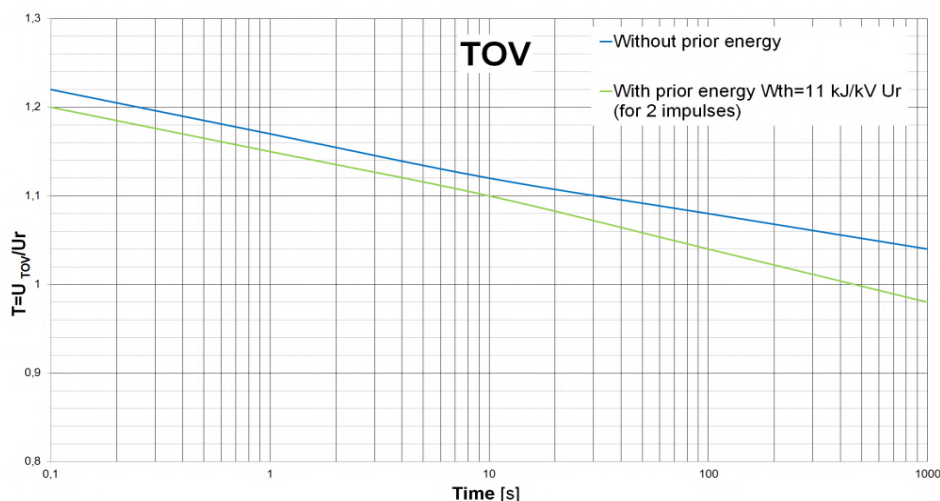
# ELECTRICAL DATA

| Type<br>PROXAR-<br>IIIN AC | Rated voltage | Maximum<br>continuous<br>operating<br>voltage<br>U <sub>c</sub> | TOV <sup>2)</sup> |       | Residual voltage in [kV] pk at a specified impulse current |              |       |       |       |               |        |       |
|----------------------------|---------------|-----------------------------------------------------------------|-------------------|-------|------------------------------------------------------------|--------------|-------|-------|-------|---------------|--------|-------|
|                            |               |                                                                 | rms               | rms   | Wave<br>1/... μs                                           | Wave 8/20 μs |       |       |       | Wave 30/60 μs |        |       |
|                            |               |                                                                 | 1 s               | 10 s  |                                                            | 10kA         | 2.5kA | 5kA   | 10kA  | 20kA          | 0.25kA | 0.5kA |
|                            | Ur            | kV                                                              | kV                | kV    | kV                                                         | kV           | kV    | kV    | kV    | kV            | kV     | kV    |
| 1.0                        | 1.0           | 0.8                                                             | 1.2               | 1.1   | 4.2                                                        | 2.2          | 2.3   | 2.4   | 2.6   | 1.9           | 2.0    | 2.0   |
| 1.2                        | 1.2           | 1.0                                                             | 1.4               | 1.3   | 4.7                                                        | 2.6          | 2.7   | 2.9   | 3.1   | 2.3           | 2.3    | 2.4   |
| 1.5                        | 1.5           | 1.2                                                             | 1.7               | 1.7   | 5.5                                                        | 3.2          | 3.4   | 3.6   | 3.9   | 2.8           | 2.9    | 3.0   |
| 1.7                        | 1.7           | 1.4                                                             | 2.0               | 1.9   | 6.0                                                        | 3.7          | 3.8   | 4.1   | 4.4   | 3.2           | 3.3    | 3.5   |
| 2.0                        | 2.0           | 1.6                                                             | 2.3               | 2.2   | 6.8                                                        | 4.3          | 4.5   | 4.8   | 5.2   | 3.8           | 3.9    | 4.1   |
| 2.2                        | 2.2           | 1.8                                                             | 2.5               | 2.4   | 7.3                                                        | 4.7          | 5.0   | 5.3   | 5.7   | 4.2           | 4.3    | 4.5   |
| 2.5                        | 2.5           | 2.0                                                             | 2.9               | 2.8   | 8.1                                                        | 5.4          | 5.6   | 6.0   | 6.5   | 4.7           | 4.9    | 5.1   |
| 2.7                        | 2.7           | 2.2                                                             | 3.1               | 3.0   | 8.6                                                        | 5.8          | 6.1   | 6.5   | 7.0   | 5.1           | 5.3    | 5.5   |
| 3.0                        | 3.0           | 2.4                                                             | 3.5               | 3.3   | 9.4                                                        | 6.5          | 6.8   | 7.2   | 7.8   | 5.7           | 5.9    | 6.1   |
| 3.2                        | 3.2           | 2.6                                                             | 3.7               | 3.5   | 9.9                                                        | 6.9          | 7.2   | 7.7   | 8.3   | 6.0           | 6.2    | 6.5   |
| 3.5                        | 3.5           | 2.8                                                             | 4.0               | 3.9   | 10.6                                                       | 7.5          | 7.9   | 8.4   | 9.1   | 6.6           | 6.8    | 7.1   |
| 3.7                        | 3.7           | 3.0                                                             | 4.3               | 4.1   | 11.2                                                       | 8.0          | 8.3   | 8.9   | 9.6   | 7.0           | 7.2    | 7.5   |
| 4.0                        | 4.0           | 3.2                                                             | 4.6               | 4.4   | 11.9                                                       | 8.6          | 9.0   | 9.6   | 10.4  | 7.6           | 7.8    | 8.1   |
| 4.5                        | 4.5           | 3.6                                                             | 5.2               | 5.0   | 13.2                                                       | 9.7          | 10.1  | 10.8  | 11.7  | 8.5           | 8.8    | 9.1   |
| 5                          | 5             | 4.0                                                             | 5.8               | 5.5   | 14.5                                                       | 10.8         | 11.3  | 12.0  | 13.0  | 9.5           | 9.8    | 10.2  |
| 6                          | 6             | 4.8                                                             | 6.9               | 6.6   | 17.1                                                       | 12.9         | 13.5  | 14.4  | 15.6  | 11.3          | 11.7   | 12.2  |
| 7                          | 7             | 5.6                                                             | 8.1               | 7.7   | 19.6                                                       | 15.1         | 15.8  | 16.8  | 18.2  | 13.2          | 13.7   | 14.2  |
| 8                          | 8             | 6.4                                                             | 9.2               | 8.8   | 22.2                                                       | 17.2         | 18.0  | 19.2  | 20.8  | 15.1          | 15.6   | 16.2  |
| 9                          | 9             | 7.2                                                             | 10.4              | 9.9   | 24.8                                                       | 19.4         | 20.3  | 21.6  | 23.4  | 17.0          | 17.6   | 18.3  |
| 10                         | 10            | 8.0                                                             | 11.5              | 11.0  | 27.4                                                       | 21.5         | 22.5  | 24.0  | 26.0  | 18.9          | 19.5   | 20.3  |
| 11                         | 11            | 8.8                                                             | 12.7              | 12.1  | 30.6                                                       | 23.7         | 24.8  | 26.4  | 28.6  | 20.8          | 21.5   | 22.3  |
| 12                         | 12            | 9.6                                                             | 13.8              | 13.2  | 33.2                                                       | 25.8         | 27.0  | 28.8  | 31.2  | 22.7          | 23.4   | 24.4  |
| 13                         | 13            | 10.4                                                            | 15.0              | 14.3  | 35.8                                                       | 28.0         | 29.3  | 31.2  | 33.8  | 24.6          | 25.4   | 26.4  |
| 14                         | 14            | 11.2                                                            | 16.1              | 15.4  | 38.3                                                       | 30.1         | 31.5  | 33.6  | 36.4  | 26.5          | 27.3   | 28.4  |
| 15                         | 15            | 12.0                                                            | 17.3              | 16.5  | 40.9                                                       | 32.3         | 33.8  | 36.0  | 39.0  | 28.4          | 29.3   | 30.5  |
| 16                         | 16            | 12.8                                                            | 18.4              | 17.6  | 44.0                                                       | 34.4         | 36.0  | 38.4  | 41.6  | 30.2          | 31.2   | 32.5  |
| 17                         | 17            | 13.6                                                            | 19.6              | 18.7  | 46.6                                                       | 36.6         | 38.3  | 40.8  | 44.2  | 32.1          | 33.2   | 34.5  |
| 18                         | 18            | 14.4                                                            | 20.7              | 19.8  | 49.2                                                       | 38.7         | 40.5  | 43.2  | 46.8  | 34.0          | 35.1   | 36.5  |
| 19                         | 19            | 15.2                                                            | 21.9              | 20.9  | 51.7                                                       | 40.9         | 42.8  | 45.6  | 49.4  | 35.9          | 37.1   | 38.6  |
| 20                         | 20            | 16.0                                                            | 23.0              | 22.0  | 54.3                                                       | 43.0         | 45.0  | 48.0  | 52.0  | 37.8          | 39.0   | 40.6  |
| 21                         | 21            | 16.8                                                            | 24.2              | 23.1  | 56.9                                                       | 45.2         | 47.3  | 50.4  | 54.6  | 39.7          | 41.0   | 42.6  |
| 22                         | 22            | 17.6                                                            | 25.3              | 24.2  | 59.5                                                       | 47.3         | 49.5  | 52.8  | 57.2  | 41.6          | 42.9   | 44.7  |
| 23                         | 23            | 18.4                                                            | 26.5              | 25.3  | 62.6                                                       | 49.5         | 51.8  | 55.2  | 59.8  | 43.5          | 44.9   | 46.7  |
| 24                         | 24            | 19.2                                                            | 27.6              | 26.4  | 65.2                                                       | 51.6         | 54.0  | 57.6  | 62.4  | 45.4          | 46.8   | 48.7  |
| 25                         | 25            | 20.0                                                            | 28.8              | 27.5  | 67.7                                                       | 53.8         | 56.3  | 60.0  | 65.0  | 47.3          | 48.8   | 50.8  |
| 26                         | 26            | 20.8                                                            | 29.9              | 28.6  | 70.3                                                       | 55.9         | 58.5  | 62.4  | 67.6  | 49.1          | 50.7   | 52.8  |
| 27                         | 27            | 21.6                                                            | 31.1              | 29.7  | 72.9                                                       | 58.1         | 60.8  | 64.8  | 70.2  | 51.0          | 52.7   | 54.8  |
| 28                         | 28            | 22.4                                                            | 32.2              | 30.8  | 75.4                                                       | 60.2         | 63.0  | 67.2  | 72.8  | 52.9          | 54.6   | 56.8  |
| 29                         | 29            | 23.2                                                            | 33.4              | 31.9  | 78.0                                                       | 62.4         | 65.3  | 69.6  | 75.4  | 54.8          | 56.6   | 58.9  |
| 30                         | 30            | 24.0                                                            | 34.5              | 33.0  | 80.6                                                       | 64.5         | 67.5  | 72.0  | 78.0  | 56.7          | 58.5   | 60.9  |
| 33                         | 33            | 26.4                                                            | 38.0              | 36.3  | 88.8                                                       | 71.0         | 74.3  | 79.2  | 85.8  | 62.4          | 64.4   | 67.0  |
| 36                         | 36            | 28.8                                                            | 41.4              | 39.6  | 96.6                                                       | 77.4         | 81.0  | 86.4  | 93.6  | 68.0          | 70.2   | 73.1  |
| 39                         | 39            | 31.2                                                            | 44.9              | 42.9  | 104.8                                                      | 83.9         | 87.8  | 93.6  | 101.4 | 73.7          | 76.1   | 79.2  |
| 42                         | 42            | 33.6                                                            | 48.3              | 46.2  | 112.5                                                      | 90.3         | 94.5  | 100.8 | 109.2 | 79.4          | 81.9   | 85.3  |
| 45                         | 45            | 36.0                                                            | 51.8              | 49.5  | 120.2                                                      | 96.8         | 101.3 | 108.0 | 117.0 | 85.1          | 87.8   | 91.4  |
| 48                         | 48            | 38.4                                                            | 55.2              | 52.8  | 128.5                                                      | 103.2        | 108.0 | 115.2 | 124.8 | 90.7          | 93.6   | 97.4  |
| 51                         | 51            | 41.0                                                            | 58.7              | 56.1  | 136.2                                                      | 109.7        | 114.8 | 122.4 | 132.6 | 96.4          | 99.5   | 103.5 |
| 54                         | 54            | 43.0                                                            | 62.1              | 59.4  | 144                                                        | 116          | 122   | 130   | 140   | 102           | 105    | 110   |
| 60                         | 60            | 48.0                                                            | 69.0              | 66.0  | 160                                                        | 129          | 135   | 144   | 156   | 113           | 117    | 122   |
| 66                         | 66            | 53.0                                                            | 75.9              | 72.6  | 176                                                        | 142          | 149   | 158   | 172   | 125           | 129    | 134   |
| 72                         | 72            | 58.0                                                            | 82.8              | 79.2  | 192                                                        | 155          | 162   | 173   | 187   | 136           | 140    | 146   |
| 84                         | 84            | 67.0                                                            | 96.6              | 92.4  | 224                                                        | 181          | 189   | 202   | 218   | 159           | 164    | 171   |
| 96                         | 96            | 77.0                                                            | 110.4             | 105.6 | 257                                                        | 206          | 216   | 230   | 250   | 181           | 187    | 195   |
| 102                        | 102           | 82.0                                                            | 117.3             | 112.2 | 273                                                        | 219          | 230   | 245   | 265   | 193           | 199    | 207   |
| 108                        | 108           | 86.0                                                            | 124.2             | 118.8 | 288                                                        | 232          | 243   | 259   | 281   | 204           | 211    | 219   |
| 120                        | 120           | 96.0                                                            | 138.0             | 132.0 | 321                                                        | 258          | 270   | 288   | 312   | 227           | 234    | 244   |
| 132                        | 132           | 106.0                                                           | 151.8             | 145.2 | 352                                                        | 284          | 297   | 317   | 343   | 249           | 257    | 268   |
| 138                        | 138           | 111.0                                                           | 158.7             | 151.8 | 367                                                        | 297          | 311   | 331   | 359   | 261           | 269    | 280   |
| 144                        | 144           | 115.0                                                           | 165.6             | 158.4 | 383                                                        | 310          | 324   | 346   | 374   | 272           | 281    | 292   |
| 150                        | 150           | 120.0                                                           | 172.5             | 165.0 | 405                                                        | 323          | 338   | 360   | 390   | 284           | 293    | 305   |
| 156                        | 156           | 125.0                                                           | 179.4             | 171.6 | 420                                                        | 335          | 351   | 374   | 406   | 295           | 304    | 317   |
| 162                        | 162           | 130.0                                                           | 186.3             | 178.2 | 436                                                        | 348          | 365   | 389   | 421   | 306           | 316    | 329   |
| 168                        | 168           | 134.0                                                           | 193.2             | 184.8 | 451                                                        | 361          | 378   | 403   | 437   | 318           | 328    | 341   |
| 192                        | 192           | 154.0                                                           | 220.8             | 211.2 | 515                                                        | 413          | 432   | 461   | 499   | 363           | 374    | 390   |
| 198                        | 198           | 158.0                                                           | 227.7             | 217.8 | 530                                                        | 426          | 446   | 475   | 515   | 374           | 386    | 402   |
| 204                        | 204           | 163.0                                                           | 234.6             | 224.4 | 546                                                        | 439          | 459   | 490   | 530   | 386           | 398    | 414   |
| 216                        | 216           | 173.0                                                           | 248.4             | 237.6 | 577                                                        | 464          | 486   | 518   | 562   | 408           | 421    | 438   |
| 228                        | 228           | 182.0                                                           | 262.2             | 250.8 | 607                                                        | 490          | 513   | 547   | 593   | 431           | 445    | 463   |

There is a possibility of manufacturing surge arresters for different voltages that are not listed in the table.

<sup>2)</sup>With prior energy 11 kJ/kV Ur

## TOV CHARACTERISTIC



IEC power frequency voltage versus time (U-t) characteristic TOV without prior energy

$U_{TOV}$  for  $t=1$  s    1.170  $U_r = 1.463 U_c$   
 $U_{TOV}$  for  $t=3$  s    1.145  $U_r = 1.431 U_c$   
 $U_{TOV}$  for  $t=10$  s   1.120  $U_r = 1.400 U_c$

IEC power frequency voltage versus time (U-t) characteristic TOV with prior energy 11 kJ/kV  $U_r$ ; 13.75 kJ/kV  $U_c$

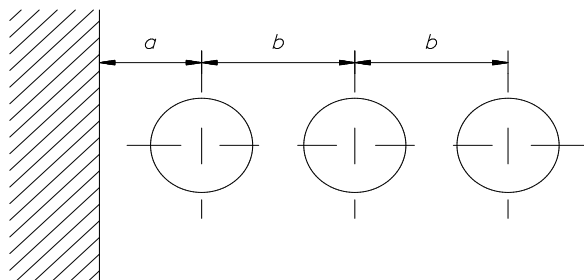
$U_{TOV}$  for  $t=1$  s    1.150  $U_r = 1.438 U_c$   
 $U_{TOV}$  for  $t=3$  s    1.125  $U_r = 1.406 U_c$   
 $U_{TOV}$  for  $t=10$  s   1.100  $U_r = 1.375 U_c$

## TECHNICAL DATA FOR HOUSING

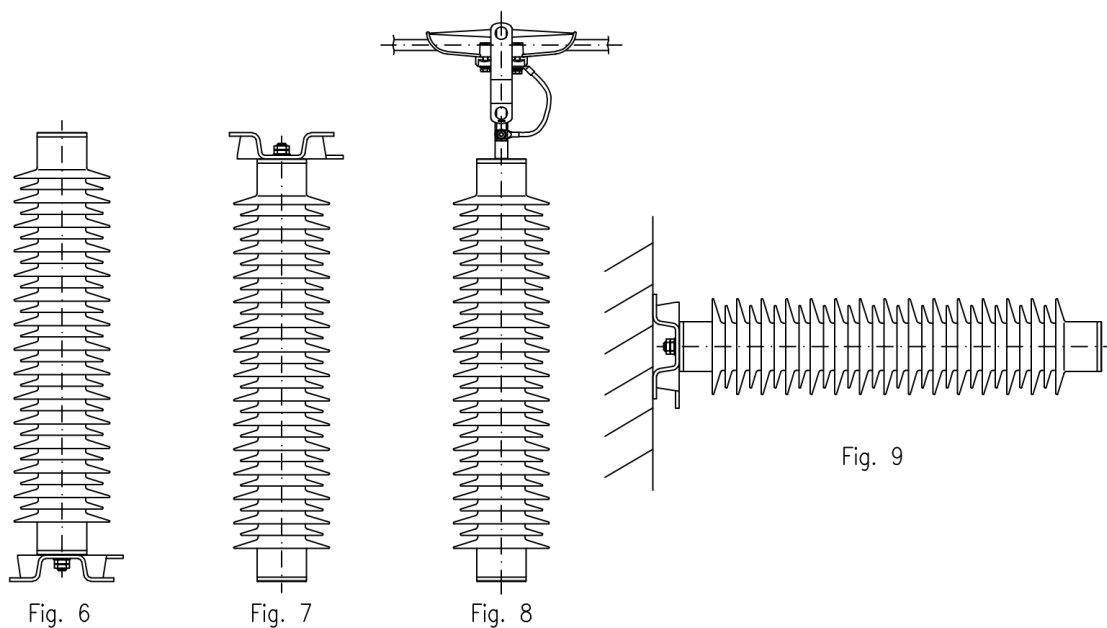
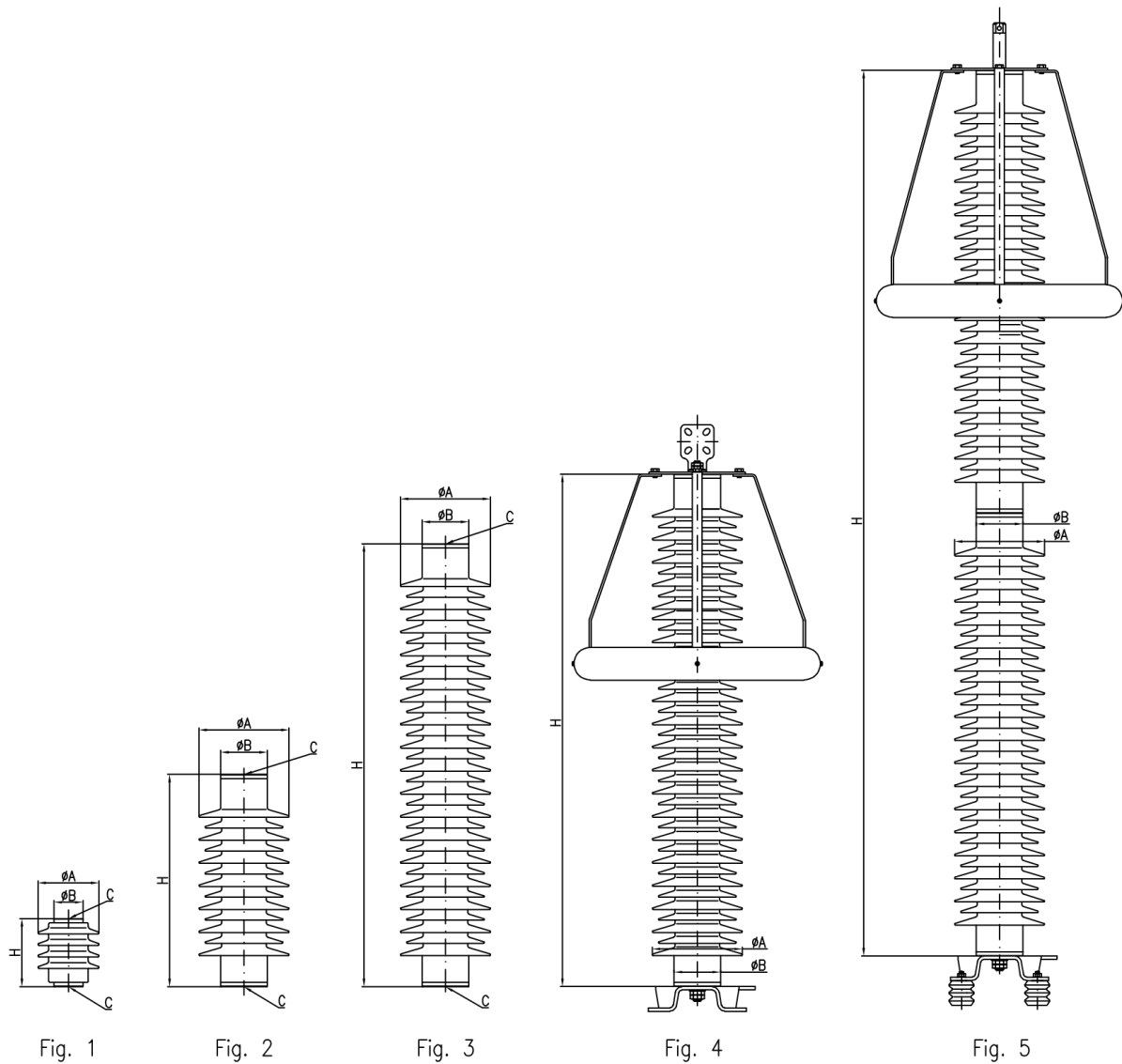
| Us   | Type<br>PROXAR<br>IIIN AC | External insulation   |                 | Minimal distances                |                                                                             | Dimensions |                      |                        |     |     |     | Variant of<br>drawing | Operating<br>position | Housing<br>number | Weight |
|------|---------------------------|-----------------------|-----------------|----------------------------------|-----------------------------------------------------------------------------|------------|----------------------|------------------------|-----|-----|-----|-----------------------|-----------------------|-------------------|--------|
|      |                           | 50 Hz<br>wet<br>(60s) | 1.2/50μs<br>dry | Distance<br>between<br>arresters | Distance<br>between<br>arrester and<br>the nearest<br>grounded<br>structure | H          | Creepage<br>distance | Flash-over<br>distance | A   | B   | C   |                       |                       |                   |        |
| kV   | kV                        | kV                    | kV              | mm                               | mm                                                                          | mm         | mm                   | mm                     | mm  | mm  | M   | Fig.                  | Fig.                  | No                | kg     |
|      | 1.0                       | 28                    | 75              | 150                              | 75                                                                          | 165        | 318                  | 165                    | 148 | 71  | M12 | 1                     | 6, 7, 9               | 01                | 2.4    |
|      | 1.2                       |                       |                 | 150                              | 75                                                                          |            |                      |                        |     |     |     |                       |                       |                   | 2.5    |
|      | 1.5                       |                       |                 | 150                              | 75                                                                          |            |                      |                        |     |     |     |                       |                       |                   | 2.6    |
|      | 1.7                       |                       |                 | 150                              | 75                                                                          |            |                      |                        |     |     |     |                       |                       |                   | 2.6    |
|      | 2.0                       |                       |                 | 150                              | 75                                                                          |            |                      |                        |     |     |     |                       |                       |                   | 2.7    |
|      | 2.2                       |                       |                 | 150                              | 75                                                                          |            |                      |                        |     |     |     |                       |                       |                   | 2.7    |
|      | 2.5                       |                       |                 | 150                              | 75                                                                          |            |                      |                        |     |     |     |                       |                       |                   | 2.8    |
|      | 2.7                       |                       |                 | 150                              | 75                                                                          |            |                      |                        |     |     |     |                       |                       |                   | 2.8    |
|      | 3.0                       |                       |                 | 150                              | 75                                                                          |            |                      |                        |     |     |     |                       |                       |                   | 2.9    |
|      | 3.2                       |                       |                 | 150                              | 75                                                                          |            |                      |                        |     |     |     |                       |                       |                   | 2.9    |
|      | 3.5                       |                       |                 | 150                              | 75                                                                          |            |                      |                        |     |     |     |                       |                       |                   | 3.0    |
|      | 3.7                       |                       |                 | 150                              | 75                                                                          |            |                      |                        |     |     |     |                       |                       |                   | 3.1    |
|      | 4.0                       |                       |                 | 150                              | 75                                                                          |            |                      |                        |     |     |     |                       |                       |                   | 3.2    |
| 3.6  | 4.5                       | 150                   | 75              | 150                              | 75                                                                          | 3.3        |                      |                        |     |     |     |                       |                       |                   |        |
|      | 5.0                       | 150                   | 85              | 150                              | 95                                                                          | 3.5        |                      |                        |     |     |     |                       |                       |                   |        |
|      | 6.0                       | 150                   | 95              | 150                              | 95                                                                          | 3.7        |                      |                        |     |     |     |                       |                       |                   |        |
|      | 7.0                       | 150                   | 95              | 150                              | 100                                                                         | 3.9        |                      |                        |     |     |     |                       |                       |                   |        |
|      | 8.0                       | 150                   | 100             | 150                              | 110                                                                         | 4.1        |                      |                        |     |     |     |                       |                       |                   |        |
| 7.2  | 9.0                       | 150                   | 110             | 150                              | 115                                                                         | 4.3        |                      |                        |     |     |     |                       |                       |                   |        |
|      | 10.0                      | 77                    | 141             | 150                              | 115                                                                         | 235        | 528                  | 247                    | 219 | 113 | M16 | 2                     | 6, 7, 9               | 02                | 4.5    |
|      | 11                        |                       |                 | 220                              | 165                                                                         |            |                      |                        |     |     |     |                       |                       |                   | 12.4   |
|      | 12                        |                       |                 | 230                              | 170                                                                         |            |                      |                        |     |     |     |                       |                       |                   | 12.5   |
|      | 13                        |                       |                 | 240                              | 180                                                                         |            |                      |                        |     |     |     |                       |                       |                   | 12.6   |
|      | 14                        |                       |                 | 240                              | 185                                                                         |            |                      |                        |     |     |     |                       |                       |                   | 12.7   |
| 12   | 15                        | 250                   | 195             | 250                              | 195                                                                         | 12.8       |                      |                        |     |     |     |                       |                       |                   |        |
|      | 16                        | 94                    | 173             | 270                              | 210                                                                         | 291        | 760                  | 303                    | 219 | 113 | M16 | 2                     | 6, 7, 9               | 03                | 13.6   |
|      | 17                        |                       | 280             | 215                              | 13.7                                                                        |            |                      |                        |     |     |     |                       |                       |                   |        |
|      | 18                        |                       | 280             | 225                              | 13.8                                                                        |            |                      |                        |     |     |     |                       |                       |                   |        |
|      | 19                        |                       | 290             | 235                              | 13.9                                                                        |            |                      |                        |     |     |     |                       |                       |                   |        |
|      | 20                        |                       | 300             | 240                              | 14.0                                                                        |            |                      |                        |     |     |     |                       |                       |                   |        |
|      | 21                        |                       | 310             | 250                              | 14.1                                                                        |            |                      |                        |     |     |     |                       |                       |                   |        |
| 17.5 | 22                        |                       |                 | 310                              | 255                                                                         |            |                      |                        |     |     |     |                       |                       | 14.2              |        |
|      | 23                        | 112                   | 205             | 330                              | 275                                                                         | 347        | 992                  | 359                    | 219 | 113 | M16 | 2                     | 6, 7, 9               | 04                | 15.0   |
|      | 24                        |                       |                 | 340                              | 280                                                                         |            |                      |                        |     |     |     |                       |                       |                   | 15.1   |
|      | 25                        |                       |                 | 350                              | 290                                                                         |            |                      |                        |     |     |     |                       |                       |                   | 15.2   |
|      | 26                        |                       |                 | 360                              | 295                                                                         |            |                      |                        |     |     |     |                       |                       |                   | 15.3   |
|      | 27                        |                       |                 | 360                              | 305                                                                         |            |                      |                        |     |     |     |                       |                       |                   | 15.4   |
|      | 28                        |                       |                 | 370                              | 310                                                                         |            |                      |                        |     |     |     |                       |                       |                   | 15.5   |
|      | 29                        |                       |                 | 380                              | 320                                                                         |            |                      |                        |     |     |     |                       |                       |                   | 15.6   |
| 24   | 30                        |                       |                 | 390                              | 325                                                                         |            |                      |                        |     |     |     |                       |                       | 15.7              |        |

| Us<br>kV | Type<br>PROXAR<br>IIIN AC | External insulation   |                 | Minimal distances                       |                                                                                    | Dimensions |                      |                        |     |     |     | Variant of<br>drawing | Operating<br>position | Housing<br>number | Weight |
|----------|---------------------------|-----------------------|-----------------|-----------------------------------------|------------------------------------------------------------------------------------|------------|----------------------|------------------------|-----|-----|-----|-----------------------|-----------------------|-------------------|--------|
|          |                           | 50 Hz<br>wet<br>(60s) | 1.2/50µs<br>dry | Distance<br>between<br>arresters<br>„b” | Distance<br>between<br>arrester and<br>the nearest<br>grounded<br>structure<br>„a” | H          | Creepage<br>distance | Flash-over<br>distance | A   | B   | C   |                       |                       |                   |        |
|          | kV                        | kV                    | kV              | mm                                      | mm                                                                                 | mm         | mm                   | mm                     | mm  | mm  | M   | Fig.                  | Fig.                  | No                | kg     |
|          | 33                        | 129                   | 237             | 430                                     | 370                                                                                | 403        | 1225                 | 415                    | 219 | 113 | M16 | 2                     | 6, 7, 9               | 05                | 16.4   |
|          | 36                        |                       |                 | 450                                     | 395                                                                                |            |                      |                        |     |     |     |                       |                       |                   | 16.6   |
|          | 39                        | 147                   | 269             | 470                                     | 415                                                                                | 459        | 1457                 | 471                    | 219 | 113 | M16 | 2                     | 6, 7, 9               | 06                | 17.1   |
|          | 42                        |                       |                 | 500                                     | 440                                                                                |            |                      |                        |     |     |     |                       |                       |                   | 17.4   |
| 36       | 45                        | 164                   | 301             | 520                                     | 460                                                                                | 515        | 1689                 | 527                    | 219 | 113 | M16 | 2                     | 6, 7, 9               | 07                | 17.7   |
| 52       | 48                        |                       |                 | 550                                     | 495                                                                                |            |                      |                        |     |     |     |                       |                       |                   | 18.0   |
|          | 51                        |                       |                 | 570                                     | 515                                                                                |            |                      |                        |     |     |     |                       |                       |                   | 18.5   |
| 72.5     | 54                        | 182                   | 334             | 620                                     | 555                                                                                | 571        | 1741                 | 583                    | 219 | 113 | M20 | 3                     | 6, 7, 8, 9            | 08                | 20.0   |
|          | 60                        |                       |                 | 660                                     | 600                                                                                |            |                      |                        |     |     |     |                       |                       |                   | 20.5   |
|          | 66                        | 217                   | 398             | 740                                     | 680                                                                                | 683        | 2208                 | 695                    | 219 | 113 | M20 | 3                     | 6, 7, 8, 9            | 09                | 21.5   |
|          | 72                        |                       |                 | 790                                     | 725                                                                                |            |                      |                        |     |     |     |                       |                       |                   | 22.0   |
|          | 84                        | 269                   | 494             | 920                                     | 865                                                                                | 851        | 2905                 | 863                    | 219 | 113 | M20 | 3                     | 6, 7, 8, 9            | 10                | 23.0   |
| 123      | 96                        | 304                   | 558             | 1050                                    | 995                                                                                | 963        | 3369                 | 975                    | 219 | 113 | M20 | 3                     | 6, 7, 8, 9            | 11                | 25.5   |
|          | 102                       |                       |                 | 1100                                    | 1040                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 26.0   |
|          | 108                       |                       |                 | 1140                                    | 1085                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 26.5   |
|          | 96                        | 339                   | 622             | 1050                                    | 995                                                                                | 1075       | 3834                 | 1087                   | 219 | 113 | M20 | 3                     | 6, 7, 8, 9            | 12                | 27.5   |
| 145      | 102                       |                       |                 | 1100                                    | 1040                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 29.5   |
|          | 108                       |                       |                 | 1140                                    | 1085                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 30.0   |
|          | 120                       |                       |                 | 1270                                    | 1215                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 30.5   |
|          | 132                       |                       |                 | 1360                                    | 1305                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 31.5   |
|          | 138                       |                       |                 | 1410                                    | 1350                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 32.0   |
|          | 120                       | 391                   | 718             | 1270                                    | 1215                                                                               | 1243       | 4530                 | 1255                   | 219 | 113 | M20 | 3                     | 6, 7, 8, 9            | 13                | 32.5   |
|          | 132                       |                       |                 | 1360                                    | 1305                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 35.0   |
|          | 138                       |                       |                 | 1410                                    | 1350                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 36.0   |
|          | 144                       |                       |                 | 1450                                    | 1395                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 36.5   |
| 170      | 138                       | 236                   | 516             | 1940                                    | 1635                                                                               | 1243       | 4530                 | 866                    | 219 | 113 | M20 | 4                     | 6, 7, 9               | 14                | 43.5   |
|          | 144                       |                       |                 | 1980                                    | 1680                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 44.0   |
|          | 150                       | 314                   | 698             | 2030                                    | 1725                                                                               | 1534       | 5110                 | 1153                   | 219 | 113 | M20 | 5                     | 6, 7, 9               | 15                | 44.5   |
|          | 156                       |                       |                 | 2070                                    | 1770                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 45.0   |
|          | 162                       |                       |                 | 2120                                    | 1820                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 45.5   |
|          | 168                       |                       |                 | 2170                                    | 1865                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 46.0   |
|          | 138                       | 344                   | 765             | 1940                                    | 1635                                                                               | 1646       | 5577                 | 1264                   | 219 | 113 | M20 | 5                     | 6, 7, 9               | 16                | 45.0   |
|          | 144                       |                       |                 | 1980                                    | 1680                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 45.5   |
|          | 150                       |                       |                 | 2030                                    | 1725                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 46.0   |
|          | 156                       |                       |                 | 2070                                    | 1770                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 46.5   |
|          | 162                       |                       |                 | 2120                                    | 1820                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 47.0   |
|          | 168                       |                       |                 | 2170                                    | 1865                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 47.5   |
| 245      | 192                       | 393                   | 874             | 2270                                    | 1970                                                                               | 1926       | 6738                 | 1433                   | 219 | 113 | M20 | 5                     | 6, 7, 9               | 17                | 54.5   |
|          | 198                       |                       |                 | 2320                                    | 2015                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 55.5   |
|          | 204                       |                       |                 | 2360                                    | 2060                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 56.5   |
|          | 216                       |                       |                 | 2460                                    | 2155                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 57.5   |
|          | 228                       |                       |                 | 2550                                    | 2245                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 59.5   |
|          | 192                       | 454                   | 1009            | 2270                                    | 1970                                                                               | 2150       | 7668                 | 1666                   | 219 | 113 | M20 | 5                     | 6, 7, 9               | 18                | 62.5   |
|          | 198                       |                       |                 | 2320                                    | 2015                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 63.5   |
|          | 204                       |                       |                 | 2360                                    | 2060                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 64.5   |
|          | 216                       |                       |                 | 2460                                    | 2155                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 65.5   |
|          | 228                       |                       |                 | 2550                                    | 2245                                                                               |            |                      |                        |     |     |     |                       |                       |                   | 67.5   |

Note: It is possible to make a surge arrester in a different housing than the catalogue version. Us – maximum system voltage



Minimal mounting distances for surge arresters.



The above figures show the configuration of the surge arresters housing (fig. 1; 2, 3, 4, 5). The drawings No 6 – 9 presents different system of assembling surge arresters. Drawings No 6 presents vertical system of assembling. Drawings No 7 presents reverse system of assembling surge arrester. Drawing No 8 presents suspension system of assembly line surge arrester. Drawings No 9 presents horizontal system of assembling. Below the figures are presenting different options line and earth accessories available for use in surge arrester type PROXAR-IIIN AC. For horizontal working configuration of surge arresters is this same option like for vertical working.

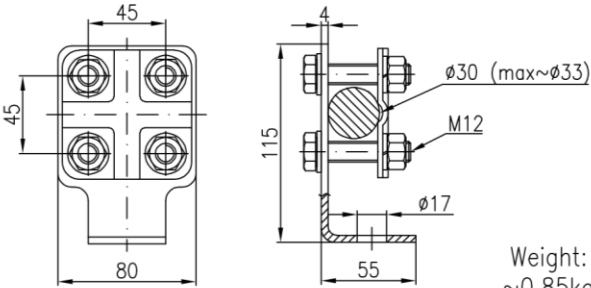
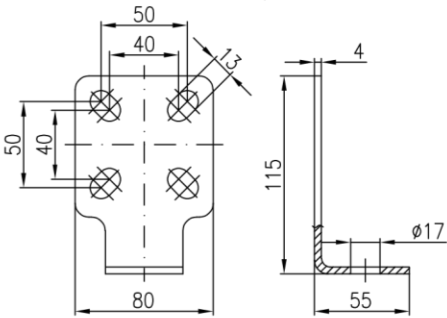
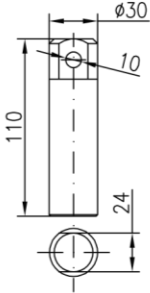
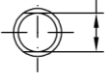
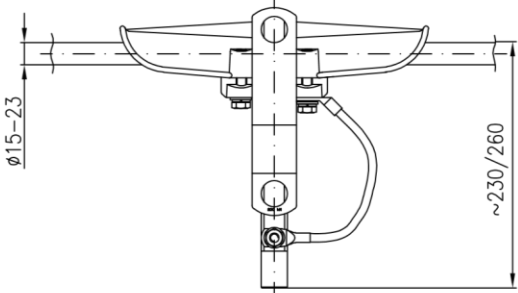
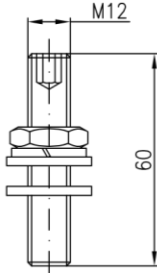
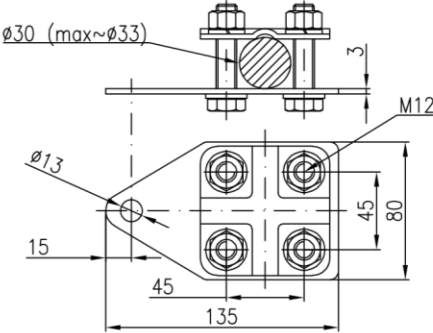
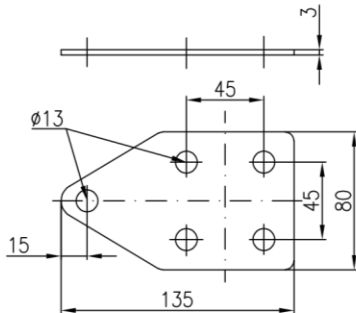
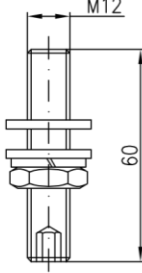
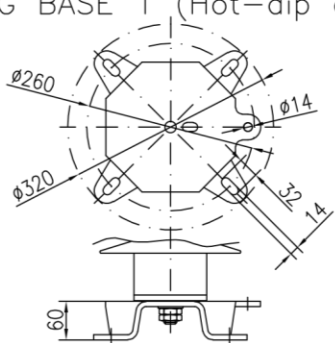
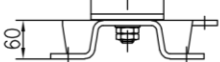
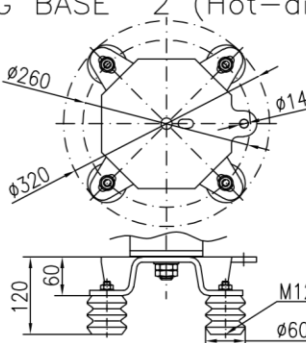
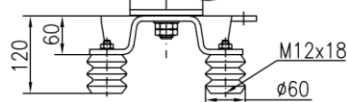
|                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LINE ACCESSORIES                                                                                                                                                                                                                                                                                                                                       | <div>LINE TERMINAL 1 (Stainless steel)</div> <div></div> <div>Weight:<br/>~0.85kg</div>                                                                                                                                                                    | LINE ACCESSORIES                                                                                                                                                                                                                                                                                                                                               | <div>LINE TERMINAL 2 (Stainless steel)</div> <div></div> <div>Weight:<br/>~0.42kg</div>                    |
| LINE ACCESSORIES                                                                                                                                                                                                                                                                                                                                       | <div>LINE TERMINAL 3 (Stainless steel)</div> <div></div> <div>Weight:<br/>~0.60kg</div> <div>LINE TERMINAL 4 (Aluminium)</div> <div></div> <div>Weight:<br/>~0.27kg</div> | LINE ACCESSORIES                                                                                                                                                                                                                                                                                                                                               | <div>LINE TERMINAL 5 (Hot-dip galvanized/Stainless steel)</div> <div></div> <div>Weight:<br/>~3.15kg</div> |
| LINE ACCESSORIES                                                                                                                                                                                                                                                                                                                                       | <div>LINE TERMINAL 6 (Stainless steel)</div> <div></div> <div>Weight:<br/>~0.06kg</div>                                                                                                                                                                   | EARTH ACCESSORIES                                                                                                                                                                                                                                                                                                                                              | <div>EARTH TERMINAL 1 (Stainless steel)</div> <div></div> <div>Weight:<br/>~0.68kg</div>                  |
| EARTH ACCESSORIES                                                                                                                                                                                                                                                                                                                                      | <div>EARTH TERMINAL 2 (Stainless steel)</div> <div></div> <div>Weight:<br/>~0.25kg</div>                                                                                                                                                                 | EARTH ACCESSORIES                                                                                                                                                                                                                                                                                                                                              | <div>EARTH TERMINAL 6 (Stainless steel)</div> <div></div> <div>Weight:<br/>~0.06kg</div>                |
| <div>MOUTING BASE 1 (Hot-dip galvanized)</div> <div></div> <div>Weight:<br/>~3.75kg</div> <div>MOUTING BASE 3 (Stainless steel)</div> <div></div> <div>Weight:<br/>~2.84kg</div> |                                                                                                                                                                                                                                                                                                                                             | <div>INSULATING BASE 2 (Hot-dip galvanized)</div> <div></div> <div>Weight:<br/>~4.98kg</div> <div>INSULATING BASE 4 (Stainless steel)</div> <div></div> <div>Weight:<br/>~4.08kg</div> |                                                                                                                                                                                              |

Fig.10. Equipment for surge arrester type PROXAR-IIIN AC

Order configurator\*\*:

\*\* Empty fields to be filled.

1. Type of product

**PROXAR-IIIN**

2. Rated voltage Ur

See table – ELECTRICAL DATA

**Ur**

3. Voltage type

Alternating voltage (48 – 62 Hz)

**AC**

4. Mounting (according fig. 6, 7, 8, 9)

– Vertical (fig. 6)

**1**

– Reversed (fig. 7)

**2**

– Suspended (fig. 8)

**3**

– Horizontal (fig. 9)

**4**

5. Base (according fig. 10)

– 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**

6. Line terminal (according fig. 10)

– without line terminal

**0**

– line terminal 1

**1**

– line terminal 2

**2**

– line terminal 3

**3**

– line terminal 4

**4**

– line terminal 5

**5**

– line terminal 6

**6**

7. Earth terminal (according fig. 10)

– without earth terminal

**0**

– earth terminal 1

**1**

– earth terminal 2

**2**

– earth terminal 6

**6**

8. Housing number

See table – TECHNICAL DATA FOR HOUSING

**Housing number**

9. Design

– standard

**0**

– non-standard (to be agreed with the manufacturer)

**X**

Order example:

| 1                  | 2         | 3         | 4        | 5        | 6        | 7        | 8         | 9        |
|--------------------|-----------|-----------|----------|----------|----------|----------|-----------|----------|
| <b>PROXAR-IIIN</b> | <b>96</b> | <b>AC</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>1</b> | <b>12</b> | <b>0</b> |

**PROXAR-IIIN 96 AC 1231120 – 3 pcs.**

Description: Surge arrester type **PROXAR-IIIN** with rated voltage Ur=**96**kV for **AC** system in vertical mounting version -**1** with insulating base (hot-dip galvanized) – **2**; line terminal – **3**; earth terminal – **1**; housing number – **12**; in standard design **0**.

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**www.protektel.pl**

**POLAND**



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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.