

## Polymeric surge arrester

### ADVANTAGES:

The "INZP" arrester offers all the advantages of a metal oxide distribution arrester in light-weight, low profile polymeric housing designed for either indoor or outdoor overhead applications. The polymeric housing eliminates the problem of chipped or cracked porcelain that can occur with rough handling or shipping.

The failure mode of the "INZP" arrester is less severe than that of porcelain housed units. When violent failure mode of porcelain housed arresters occurs, it does so when the internal arc from excessive fault current causes thermal fracture of porcelain housing and the hot gases created by the arc explodes the porcelain fragments in all directions. The "INZP" with its polymer housing will split open during failure conditions to relieve the internal pressure.

### DURABILITY

The "INZP" is tested in accordance with the latest industry standard ANSI/IEEE C62.11-1993 for metal oxide arresters, and also with IEC 60099-4 for class line discharge 1. The "INZP" consistently withstands the following minimum design tests:

- Low Current-Long Duration: 18 current surges of 250 A magnitude and 2000  $\mu$ s duration.
- Duty cycle: 20 discharges with a current surge of 10 kA magnitude and 8/20  $\mu$ s wave shape, followed by 2 discharges with a current surge of 100 kA magnitude.

Following each of these test, the "INZP" arrester remains thermally stable and the discharge voltage increase at rated current is less than 10%.

### 5000 HOURS CLIMATIC AGEING TEST

The "INZP" arrester have overcome the 5000 hours of accelerated ageing test of the polymer, carried out according to the annex C of IEC 61109 standard.

### MODELS - TYPES

It is possible to order overvoltage arresters in two variants: INZP\_\_ - overvoltage arresters with ground lead disconnecter and insulating bracket (support) and without that features – INZP\_\_S.

Rated discharged current is 10kA for all types.



### LINE TERMINAL

The line connections accept terminals with suitable diameter of 12.5 mm in the slice. They also allow the connection of aluminium or copper conductors of 70 mm<sup>2</sup> of maximum cross section. If a rod is used to make the connection, its diameter must be less than 8 mm.

### INSULATING BRACKET

The "INZP" arrester is assembled complete with a high strength, molded glass reinforced polyester insulating bracket. The insulating bracket provides insulation between the arrester and ground after the ground lead disconnecter has operated, in the unlikely event of arrester failure.

### GROUND LEAD DISCONNECTOR

Helps prevent line lockout by disconnecting a failed arrester from the system and serves as an indicating device that shows the failed arrester needs replacement. Ground terminal clamp will accept the same cross section of conductors as on line terminals.

### RATINGS FOR VARIOUS VOLTAGES

Prior to installation of arrester, check the arrester's voltage rating ( $U_r$ ) and continuous operating voltage ( $U_c$ ) to verify these are proper for the system. The continuous operating voltage ( $U_c$ ) of arrester shall not be less than maximum line-to-ground voltage system.

In the case of short circuit between a phase and earth, in a system with ungrounded or impedance neutral circuits, the maximum voltage across the arresters placed on the two phases without fault may reach, during the operating time of the protective breaker, the maximum L-L value.

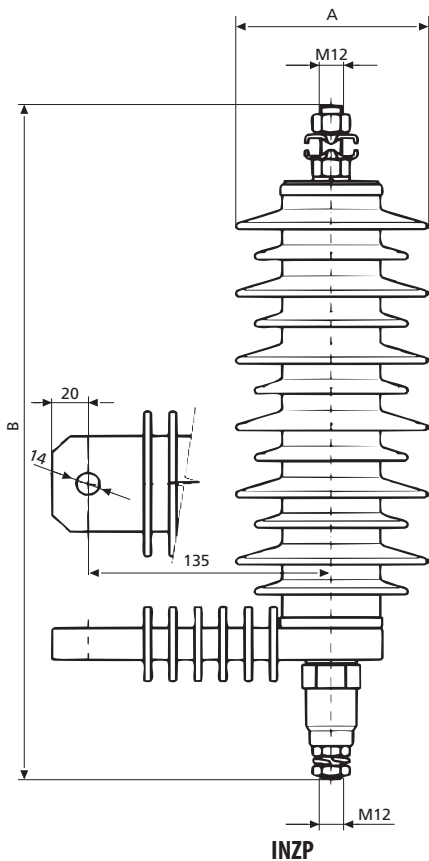
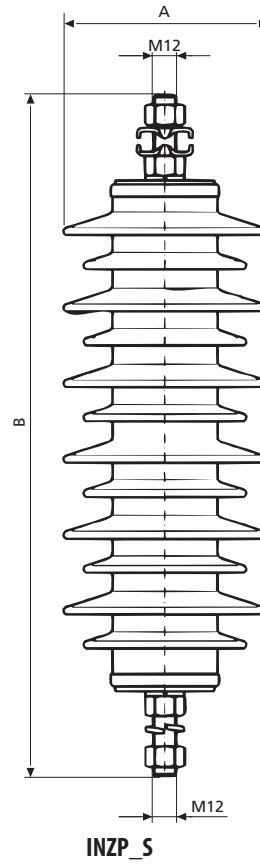
In order to correctly choose arrester, it is necessary to take into account the duration of an eventual overvoltage. By inspection of the TOV characteristics of the metal oxide arresters, a model should be chosen which supports the prospective overvoltage for its whole duration.

**INZP and INZP\_S protective characteristics**

type	rated voltage [kV rms]	rated discharge current I <sub>r</sub> [kA]	MCOV [kV-rms]	max. equivalent F.O.W* [kV Crest]	maximum discharge voltage [kV Crest] using an 8/20 μs current wave					
					1,5kA	3,0kA	5,0kA	10kA	20kA	40kA
INZP 09 10	9	10	7,65	31,8	24,9	26,1	27,6	29,7	33,3	39,3
INZP 10 10	10	10	8,4	35,3	27,7	29,0	30,7	33,0	37,0	43,7
INZP 12 10	12	10	10,2	42,4	33,2	34,8	36,8	39,6	44,4	52,4
INZP 18 10	18	10	15,3	63,6	49,6	52,2	55,2	59,4	66,6	78,6
INZP 21 10	21	10	17,0	74,2	58,1	60,9	64,4	69,3	77,7	91,7
INZP 24 10	24	10	19,5	84,8	66,4	69,6	73,6	79,2	88,8	104,8
INZP 33 10	33	10	27,0	116,4	91,4	95,7	101,3	108,9	122,1	144,2
INZP 36 10	36	10	29,0	127,0	99,7	104,4	110,4	118,8	133,2	157,3

**INZP and INZP\_S physical data**

type	voltage rating [kV rms]	dimensions			nominal creepage [mm]
		A INZP INZP_S [mm]	B INZP [mm]	B INZP_S [mm]	
INZP 09 10	9	106	327	277	462
INZP 10 10	10	106	327	277	462
INZP 12 10	12	106	327	277	462
INZP 18 10	18	106	365	310	603
INZP 21 10	21	115	425	370	795
INZP 24 10	24	115	425	370	795
INZP 33 10	33	106	572	520	1135
INZP 36 10	36	106	572	520	1135



**INZP ARRESTERS TEMPORARY OVERVOLTAGE CAPABILITY DIAGRAM**

