IPN 450

SA694700



Series of feed-through insulators suitable for use as electrical connection elements between the internal and external parts of equipment. Available in red and black, they differ according to the terminal element used for the electrical connection of conductors, which is a nut.

The insulator consists of two insulating parts, easily interlocked with each other, made of polyester resin or polyamide reinforced with glass fibres and secured by a threaded rod, which also acts as the conductive element between the parts by means of two nuts.

For models up to 80 A, one of the nuts is integral with the threaded rod and is made of brass. For higher currents, the threaded rod and nuts are made of galvanised steel.

The special construction of the insulating parts and the threaded rod allows the conductors (tightened to the rod by means of zinc-plated steel nuts) to be connected and disconnected from either side of the feed-through insulator without the insulator rotating or loosening.

Technical specifications

Measure	
AC current range	450 A
Functional characteristics	
Arc resistance	> 180 s - ASTM D-495
Tracking resistance	3 W/min - ASTM D-2302
Operating voltage	2000 AC / DC (V)
Rated withstand voltage at 50 Hz for 1 min	8 kV
Operating conditions	
Operating temperature range	-40 ÷ 130 °C
Mechanical features	
Water absorption	< 0,2% - ASTM D-570
Physical features	
Color	Red RAL-3002
Material class	Self-extinguishing, class V0 (1.6 mm) according to UL-94 standard
Material	Galvanized steel
Overall dimensions	
Height (A)	155 mm
Other dimensions	
Dimension - D	25 mm
Dimension - E	44 mm
Dimension - F	8 mm

Vemer S.p.A. declines all responsibility for the use of the products for purposes other than those for which they are intended, as indicated in the technical documentation. Vemer S.p.A. reserves the right to make, without prior notice, such changes as may, in its sole discretion, improve the technical and functional characteristics of the products and the related production logic. The technical characteristics and images of the products indicated are given for information only and are not binding in any way, since they may be modified without prior notice.

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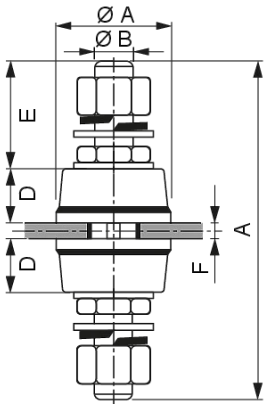
Diameter dimension	
Dimension Ø - A	54 mm
Dimension Ø - B	M20 mm
Dimension Ø - C	6 mm
Dimension Ø - D	30.5 mm

Dimensions

Total View



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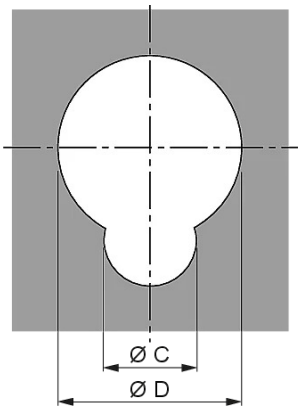

Product variants

IPN 025
SA688900

IPN 050
SA689700

IPN 080
SA690500

IPN 120
SA691300

IPN 200
SA692100

IPN 300
SA693900

Reference standards

Compliance with Community Directives:

• 2014/35/UE (LVD) • 2011/65/UE e 2015/863/UE (ROHS)

is declared with reference to the following Standards:

• EN IEC 61439-1 • EN IEC 63000

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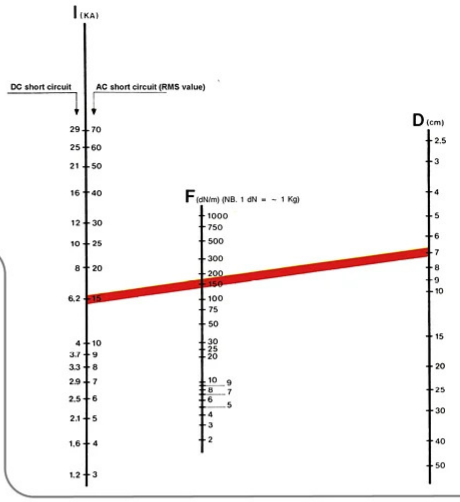
TECHNICAL GUIDE

ELECTRODYNAMIC FORCES BETWEEN CONDUCTORS

Nomogram 1

Determination of force **F** per unit length

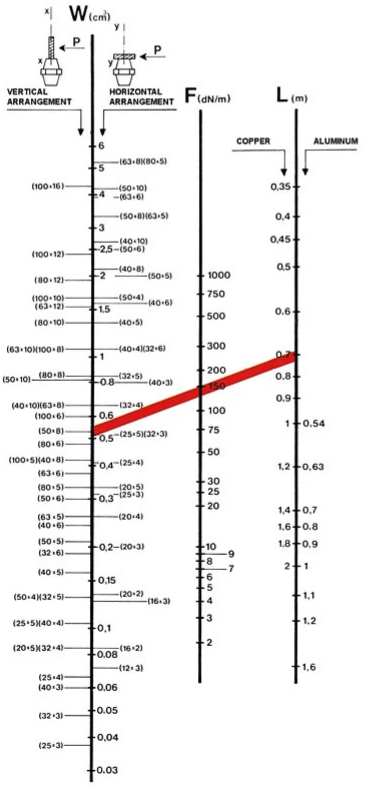
Required data: I = short-circuit current
D = distance between phases
Example: Isc = 15 kA (AC) D = 7 cm
result obtained from the nomogram: F ≅ 150 daN/m



Nomogram 2

Determinaton of distance **L** between supports

Required data: F = force per unit length
(obtained from the previous nomogram)
W = longitudinal and transverse section modulus of the busbars according to X-X oppure Y-Y respectively
(obtainable based on the dimensions and arrangement of the busbar, whether horizontal or vertical)
Example: F ≅ 150 daN/m W = 0,5 cm³
(50 x 8 vertical arrangement)
result obtained deducibile dal nomogramma: L ≅ 0,7 m



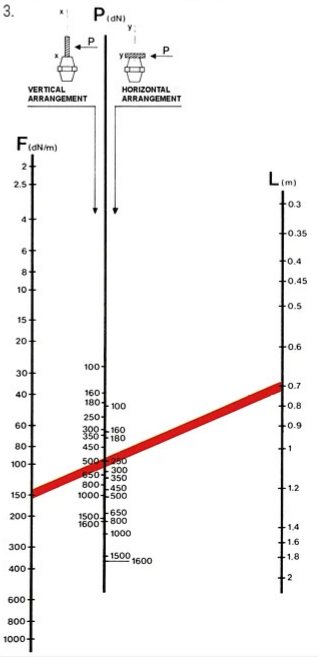
Nomogram 3

Determination of the minimum cantilever breaking load **P**

Required data: F = force per unit length
L = distance between supports (obtained from the previous nomogram)

Esempio: F ≅ 150 daN/m L ≅ 0,7 m (vertical arrangement)
result obtained from the nomogram:
P ≅ 500 daN
(for vertically arranged busbar system)

Once the value of load P is determined, the suitable insulator can be identified by checking the specific tables for each item (cantilever breaking load columns) for a value greater than or equal to the one obtained from Nomogram 3.



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