

# AIR CORED LOW VOLTAGE FAULT LIMITING REACTOR FROM MPE

## General Description

A passive 3Ø air cored reactor designed for in-line operation in LV circuits, and typically installed where fault levels are found to be excessive due to reduced source impedance (eg cogeneration). The Inductance of the reactor is designed to reduce the downstream fault level to suit the fault level rating of connected equipment, and will remain constant at any current up to and including the rated short time current. The reactance value will cause a significant voltage drop across the reactor, but due to the very high Q factor, the phase angle of this voltage drop will be such that voltage drop at the load equipment generally will be negligible

## Design & Construction

Three coils are wound on a common vertical axis. Winding former is high temperature fibreglass, and conductors are high conductivity class H enamel covered copper, with additional Nomex insulation.

Coils are braced with polyester filled fibreglass blocks and clamped firmly together by means of stainless-steel tie rods and aluminium structural members. The entire structure is designed to withstand the forces associated with operation at the rated short time current. This construction also assures very low audible noise and vibration.

Ducts are distributed throughout each winding to allow vertical air flow through the winding by convection. By this means, average winding and hot-spot temperature rise is maintained well within limits under all rated site conditions.

MPE fault limiting reactors are designed specifically for this application and are therefore entirely suitable. Iron-cored designs, or air-cored designs adapted from HV designs, are not suitable for this application.

## Enclosure and Construction

Enclosures are available with virtually any required IP rating, and are manufactured from powder coated aluminium sheet, and substantial section aluminium channel. All fixings are Austenitic stainless steel or brass. This provides a strong, rigid, and totally non-ferrous structure, typically IP21 for indoor applications and IP65 for outdoor applications.

## Handling

This equipment is normally designed to be lifted by forklift or slings.

## Connections

The reactor is of symmetrical construction designed for in-line connection. Busbar terminals with adequate provision for multiple cable connection per phase are provided. Termination design is normally made by agreement between the customer and MPE. One or more clearly marked earth terminals are provided internally, and provision for connection of neutral conductors may be provided upon request. During installation, all fixings used must be non-ferrous, preferably brass or 3 series (Austenitic) stainless steel.

### Parameters required with enquiry – typical values shown ( )

System Volts	(415)
Supply Frequency	(50)Hz
Phases	(3)
Current	(1000)A
Nominal Inductance	(0.2310)mH
Fault level at input terminals	(25)kA
Degree of Protection IPXX	(IP65)
Rated Ambient Temperature	(35.0)°C

### Other parameters with typical values shown ( )

Reactor kVAr	(217.7)
Total Losses at rated ambient	(4800)W
Temperature Rise $\Delta T$	(85)°C
Temperature class	H
Applicable standards	IEC 60289, AS 1028



