

# EATON

# Powerware

## Powerware MSFi 1 & 3 Phase Series Surge Filters

Product Focus

Series Filter with Shunt surge diverter, 1 & 3  
Phase 40 A & 63A, 160kA



### Features

- Surge suppression and filtering in a single package
- 1 Mode, 2 Element Series Filter
- 3 Mode, 2 Stage Surge Diverter
- Modular design - 1 or 3 phase configuration
- Available in 40 and 63 Amp ratings
- Surge suppression rating of 160kA
- Power and Protection status indicators
- Protection Fail Alarm Relay
- Enclosed in IP24 painted steel cabinet
- 5 Year Warranty

### Typical applications:

- All Power Circuits including "Point-of-Entry"
- Telecommunications Systems and Rectifiers
- Process and Control Systems and UPS Systems
- Computer Systems and Medical Systems
- AV circuits for clubs and hotels
- All sensitive Electronic Equipment

The MSFi is designed to provide point-of-entry protection against power surges caused by external sources such as lightning strikes and substation switching as well as providing a measure of protection from surge events generated on the secondary side of the filter. An ideal device for Category B locations.

The MSFi is a 3-stage protection unit utilising primary and secondary MOV protection in conjunction with a Low-Q LC filter. The unit provides filtering of the line harmonics, noise and RF transmitters with a cut-off frequency of <math><10\text{kHz}</math> and a minimum attenuation of 40dB above 1MHz. Special care has been taken in the design of the filter to minimise ringing caused by light loads, surge diverter operation and inductive load back-EMF.



# Technical Specifications

## POWERWARE MSFi

Technical Specification	MSF401CCMi	MSF631CCMi	MSF403CCMi	MSF633CCMi
Input voltage	220 – 254VAC 1 Phase		380 - 440VAC 3 Phase	
Maximum continuous voltage - MCOV	300VAC			
Temporary overvoltage - TOV	320VAC, 15 mins			
Service type	TT, TN, TN C-S or any system with a grounded neutral. This unit must not be connected to an ungrounded system			
Energy Absorption rating- per mode (Joules)	Primary protection L-N = 2,400J/ph, Three Phase unit = 7,200J total Secondary protection L-N = 600J/ph, Three Phase unit = 1,800J total Common mode protection L-N & N-E = 1,420J, Three Phase unit = 4,260J total Aggregate rating 4,420J (single phase units), 13,260J (three phase units)			
Current rating - continuous	40A	63A	40A	63A
Recommended maximum over current protection	40A	63A	40A	63A
Short circuit withstand (1 sec)	29kA			
Protection modes	Line-Neutral, Line-Earth, Neutral-Earth			
In 8/20us (Line-Neutral) Nominal surge life	60kA x 20 hits		60kA x 20 hits per Phase	
In 8/20us (Line-Earth) Nominal surge life	15kA x 20 hits		15kA x 20 hits per Phase	
In 8/20us (Neutral-Earth) Nominal surge life	15kA x 20 hits		45kA x 20 hits	
I <sub>max</sub> 8/20us (Line-Neutral) Max surge level	160kA		160kA per Phase	
I <sub>max</sub> 8/20us (Line-Earth) Max surge level	40kA		40kA/Phase	
I <sub>max</sub> 8/20us (Neutral-Earth) Max surge level	40kA		120kA	
Filter attenuation	40dB nominal above 1MHz			
Initial clamp voltage (Line-Neutral)	560V (350Vac RMS)			
Initial clamp voltage (Line-Earth)	680V (420Vac RMS)			
Initial clamp voltage (Neutral-Earth)	680V (420Vac RMS)			
Internal protection (fusing)	All surge diverter connections are fused via HRC fuses to IEC269-2-1			
Alarms/indicators	2 LED display, dry contact alarm relay output – 250Vac/32Vdc, 10A, 4kV isolation, Alarm under-voltage cutoff 180Vac.			
Enclosure rating	IP24			
Design Standards:	IEC61643-1, IEC610006-1,2,3,4 ANSI/IEEE C62.41 Cat B,C,D,E AS1768-1991 Cat B,C,D,E AS3000,AS3100, CE mark			
Dimensions	210 x 160 x 560 mm (W x D x H)		370 x 160 x 560 mm (W x D x H)	
Weight	9kg		14Kg	
Environment	-10 to 65 C, 10 to 90%RH (non-condensing)			

Due to continuing product improvement programs, specifications are subject to change without notice.

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