

## TECHNICAL SPECIFICATION

### PPF SERIES SURGE FILTERS

(3 Phase, 100A- 400A, 80kA-240kA / Phase Primary)

#### APPLICATIONS

- All Power Circuits including "Point-of-Entry"
- Telecommunication Systems / Rectifiers
- Process and Control Systems / UPS's up to 160kVA
- Computer and Medical Systems / AV circuits for clubs & hotels
- All sensitive Electronic Equipment

#### FEATURES

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|---|---|
| ✓ Surge suppression and filtering in a single package | ✓ Enclosed in IP24 painted metal cabinet  |
| ✓ Replaceable modular components                      | ✓ Mimic display and remote alarm contacts |
| ✓ 2 mode protection (L-N, N-E)                        | ✓ 3 stage protection (MOV, Inductor, MOV) |
| ✓ Surge suppression ratings up to 240kA (L-N)         | ✓ 5 year warranty                         |
| ✓ EN certified EMI/RFI filter                         | ✓ IEC Class II device                     |



#### FUNCTIONAL DESCRIPTION

The PPF series filters are 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. The unit has been designed in accordance with AS3100, AS1768, IEC61643-1, IEC61000-6-1, 2, 3, 4 and other standards and codes as applicable.

The PPF filter 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 <10kHz and an attenuation of 70dB above 1MHz using a fully certified EN compliant EMI/RFI filter. 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.

#### OPERATION

**Indicators** – All PPF enclosed series units are provided with front panel indicators showing power and protection status. The full mimic display gives a graphical indication of the status of the PPF with indicators showing correct functions in green and faults in red. The alarm function provides a summary alarm output for protection failure and power failure. The alarm provides a dry-contact relay output and is self-clearing. The power failure alarm will operate if power fails to any one phase. In all models, supply failure is considered to have occurred when the mains voltage falls below 180VAC per phase.

**Enclosures** – All models in the PPF E series are fully enclosed. Enclosures are manufactured in powder-coated mild steel for exposure category IP24. The Enclosure includes 63mm and 16mm access on opposing sides for cable entry and exit and is supplied with mounting brackets.

#### WARRANTY

Eaton Power Quality warrants the PPF series against faulty parts and workmanship for a period of 5 years from the date of purchase. For further information, refer to EATON Powerware warranty statement.



## PHYSICAL AND ELECTRICAL SPECIFICATIONS

Models	PPF1003CEI, PPF1003DEI, PPF1003EEI PPF1603CEI, PPF1603DEI, PPF1603EEI PPF2003CEI, PPF2003DEI, PPF2003EEI PPF3003CEI, PPF3003DEI, PPF3003EEI PPF4003CEI, PPF4003DEI, PPF4003EEI	
Number of ports	2 Port series connected	
Number of phases	3 phase, Neutral & Earth	
Method of mounting	Fixed. Brackets supplied.	
Input voltage – Uc	380 - 440VAC 3Ø	
Maximum continuous voltage – MCOV	320VAC L-N per phase	
Temporary overvoltage - TOV	350VAC L-N, 15 mins per phase	
Service type	TT, TN, TN C-S or any 3-phase system with a grounded neutral. This unit must not be connected to an ungrounded system	
Test classification	IEC Class II	
Energy Absorption rating - per mode (Joules)	CEI variant Primary L-N 1200J/ph, 3600 J total Secondary L-N 600J/ph, 1600 J total Common mode protection N-E 2130 J Aggregate rating 7,350 J DEI variant Primary L-N 1800J/ph, 5400 J total Secondary L-N 600J/ph, 1800 J total Common mode protection N-E 710 J Aggregate rating 7,910 J EEI variant Primary L-N 3600J/ph, 10800 J total Secondary L-N 600J/ph, 1800 J total Common mode protection N-E 710 J Aggregate rating 13,310 J	
Current rating - continuous	1003 series 100A, 2003 series, 200A, 1603 series 160A, 3003 series 300A, 4003 series 400A.	
Recommended maximum over current protection	Match to current rating of unit.	
Residual current	<1 mA	
Short circuit withstand (1 sec)	29kA	
Protection modes	Line-Neutral, Neutral-Earth	
In 8/20us (Line-Neutral). Nominal surge life.	30kA CEI variant, 45kA DEI variant, 90kA EEI variant	
In 8/20us (Neutral-Earth). Nominal surge life.	45kA CEI variant, 45kA DEI variant, 45kA EEI variant	
Ismax 8/20us (Line-Neutral). Maximum surge level.	80kA CEI variant, 120kA DEI variant, 240kA EEI variant	
Ismax 8/20us (Neutral-Earth). Maximum surge level.	120kA CEI variant, 40kA DEI variant, 40kA EEI variant	
Filter attenuation	> 70dB nominal above 1MHz	
Initial clamp voltage (Line-Neutral)	560V	
Initial clamp voltage (Neutral-Earth)	680V	
Residual voltage (Vpl) (Line-Neutral). (Let through voltage)	<800Vac (3kA, 8/20uS )	
Residual voltage (Vpl) (Neutral-Earth). (Let through voltage)	<900Vac (3kA, 8/20uS )	
Internal protection (fusing)	All surge diverter connections are fused via HRC fuses to IEC269-2-1	
External disconnecter requirements	Line side:	3 pole, HRC or GL fuse, 500v, >25KAIC matched to supply.
	Load side:	As above if required
Terminations	Bolted lug. 8mm bolts for phase and neutral connections. 8mm PE (earth) stud provided on geartray. All connections identified on unit.	
Alarms/indicators	Mimic panel display via LED (2 colour) OK – Green, Protection Fault – Red Dry contact alarm relay output – Rating: 250Vac/32Vdc, 5A, 4kV isolation. Alarm under-voltage cutoff at 180Vac. Alarm test function.	
Location Category	Indoor	
Enclosure rating	IP24 enclosed	
Standards. Designed in accordance with :	IEC61643-1, IEC610006-1,2,3,4 ANSI/IEEE C62.41 Cat B,C,D AS1768-1991 Cat B,C,D, AS3000,AS3100, CE mark	
Installation instructions	Supplied with unit.	
Dimensions	600 x 200 x 800 mm (W x D x H) 100A to 200A 800 x 400 x 1000 mm (W x D x H) 300A to 400A	
Weight	50kg 100A to 200A, 70kg 300A to 400A	
Environment	-10 to 65°C, 10 to 90%RH (non-condensing)	
Warranty	5 years, workmanship and materials	
<b>Gear tray variants available on request.</b>		

NOTE:- Installation must be carried out by suitably qualified personnel. Please refer to installation instructions for details.

MIMIC  
PANEL  
DISPLAY

