

TECHNICAL SPECIFICATION

MSDi SURGE DIVERTER

(3-phase, 200kA / Phase)

APPLICATIONS

- All Power Circuits including "Point-of-Entry"
- Telecommunication Systems / Rectifiers
- Process and Control Systems / UPS systems
- Computer and Medical Systems / Multi-storey buildings
- All sensitive Electronic Equipment

FEATURES

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| ✓ Very high surge suppression rating 200kA/ phase | ✓ Enclosed in IP24 painted metal cabinet |
| ✓ Small mounting footprint / Modular design | ✓ LED bargraph display on each phase |
| ✓ 3 mode protection (L-N, L-E, N-E) | ✓ 2 stage protection (primary & secondary MOV) |
| ✓ Protection fail alarm relay | ✓ 5 year warranty |



FUNCTIONAL DESCRIPTION

The MSDi surge diverter is designed to provide point-of-entry protection against power surges caused by external sources such as lightning strikes, motors and substation switching. Common-mode protection is available for sites remote from the M.E.N. point including industrial sites and rooftops in multi-storey buildings. 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 MSDi surge diverters utilise MOV protection for both differential and common-mode protection. Multiple MOV devices are used in parallel for primary circuit redundancy. The status of protective devices is continuously monitored and displayed using LED bargraph indicators. All MOV devices are thermally fused and isolated by ceramic fuses.

OPERATION

Indicators - MSDi is are provided with an alarm relay. The alarm function provides a summary alarm output for protection degradation as well as power failure when mains supply falls below 180VAC. The alarm may be configured to indicate either partial or total protection failure. The level of protection remaining is indicated by LED bargraph indicators on the front panel. The alarm relay contacts provide remote signalling to other equipment.

Enclosures – MSDi is 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 MSDi 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

Model	MSD200CM60i
Number of ports	1 Port
Method of mounting	Fixed. Brackets supplied.
Input voltage – Uc	200 - 250VAC (380 - 440VAC 3Ø)
Maximum continuous voltage – MCOV	285VAC L-N
Temporary overvoltage - TOV	300VAC L-N, 15 mins
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 (according to IEC61643-1)	Class II
Energy Absorption rating - per mode (Joules)	Primary protection L-N = 3,000J/ph, 9,000J total. Common mode protection L-E = 710J/ph, 2,130J total. Common mode protection N-E = 2,130J total. Aggregate rating 13,260J.
Recommended maximum over current protection	100A GL HRC fuse
Residual current	<1 mA
Protection modes	Line-Neutral, Line-Earth, Neutral-Earth
In 8/20us (Line-Neutral). Nominal surge lifetime.	75kA per phase x 20 hits
In 8/20us (Line-Earth). Nominal surge lifetime.	15kA per phase x 20 hits
In 8/20us (Neutral-Earth). Nominal surge lifetime.	45kA x 20 hits
I _{max} 8/20us (Line-Neutral). Maximum surge level.	200kA per phase
I _{max} 8/20us (Line-Earth). Maximum surge level.	40kA per phase
I _{max} 8/20us (Neutral-Earth). Maximum surge level.	120kA
Initial clamp voltage (Line-Neutral)	560V
Initial clamp voltage (Line-Earth)	1240V
Initial clamp voltage (Neutral-Earth)	680V
Residual voltage (V _{pl}) (Line-Neutral). (Let through voltage)	<900Vac (3kA, 8/20uS)
Residual voltage (V _{pl}) (Line-Earth). (Let through voltage)	<1100Vac (3kA, 8/20uS)
Residual voltage (V _{pl}) (Neutral-Earth). (Let through voltage)	<1000Vac (3kA, 8/20uS)
Internal protection (fusing)	All surge diverter connections are fused via HRC fuses to IEC269-2-1
Thermal Fusing	On all MOV elements, 126°C
External disconnecter requirements	3 pole, HRC or GL 100A fuse, 500v, >25KAIC <i>If supply is <100A, fuse rating is one step below supply. E.G. 80A supply= 63A fuse, 63A supply = 50A fuse.</i>
Terminations	Bolted lug. 8mm bolts for phase and neutral connections. 8mm PE (earth) stud provided on geartray. All connections identified on unit.
Alarms/indicators	LED Bargraph display for protection remaining, dry contact alarm relay output – 250VAC/32VDC, 10A, 4kV isolation. Alarm under-voltage cutoff 180VAC.
Location Category	Indoor
Enclosure rating	IP24
Standards. Designed in accordance with :	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
Installation instructions	Supplied with unit.
Dimensions	370 x 160 x 560 mm (W x D x H)
Weight	14Kg
Environment	-10 to 65°C, 10 to 90%RH (non-condensing)
Warranty	5 years, workmanship and materials

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



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Technical Specification – MSDi