



Energy Division

Bowthorpe EMP SSI Power Supply Lightning Protection

RTM Series

RTM surge protection devices provide protection of equipment connected to AC power supplies against the damaging effects of lightning strikes or voltage surges. The RTM series offers single phase devices with MOV or SAD component technology, which help reduce the failure rate of TFMs during lightning storms, and therefore can improve SSI performance and prolong the service life of protected equipment. They are employed on the incoming power supplies or tail cables providing protection to the 110V, 140V and 650V power supplies in the SSI equipment cases and rooms. These highly innovative protection devices provide the ideal protection solution for signals, points, level crossings etc at each, and in between, every station.

Component Technology

The RTM series of surge protection devices provides protection of critical assets through carefully matched high energy absorbing elements.

SAD Surge Protection Modules

Silicon avalanche diode (SAD) models conduct maximum current without any increase in clamping voltage. They offer extremely low clamping of <500 volts and an exceptionally fast response time of <5 nano seconds. The robust nature of this component technology offers long product life expectancy, ideally suited for mission critical applications.

MOV Surge Protection Modules

Metal oxide varistor (MOV) models provide excellent clamping of transients within <10 nano seconds and are ideally suited for high/medium/low risk applications, as detailed in EN 61643-11:2002.

Features

- Protection of equipment connected to AC power supplies against the damaging effects of lightning strikes or voltage surges
- Fitment to nominal 110V, 140V and 650V SSI AC power supplies in line side equipment housings
- MOV and SAD component technology
- Compact design
- Resilient design with long service life
- Simple installation

Benefits

- Protection for signals, points, level crossings etc, at each, and in between, stations
- Service life of protected equipment extended
- Reduced failure rate of TFMs during lightning storms improves system performance
- Cost of surge protection devices far outweighs safety issues, downtime and equipment replacement

Approvals

Network Rail Certificate of Acceptance
PA05/00602

Compliant with

EN 60950
BS 5733
BS6651:1999 Annex C

Specifications

	RTM12/110	RTM12/140	RTM150/650
Voltage Rating:	110V rms	140V rms	650V rms
Operating Voltage Range:	121V rms Max.	154V rms Max.	650-800V rms
Maximum Current Rating:	Unlimited (Parallel Connection)		
Maximum Surge Current Handling (8/20µs):	12kA		75kA
Response Time:	<5 ns		<10 ns
Power Consumption:	Negligible		
No system impairments auto reset after surge has occurred:	√		
Terminals:	35mm ² max. 2.5mm ² max – Remote Signalling		
Operating Temperature:	-40° to +70°C		
Light Emitting Diodes:	Green – Full Protection. No Green – No Protection		
Case Material:	Light Grey FR ABS		
Compliant With:	BS6651: 1999 Annex C Location Category C		
Dimensions:	100mm Long x 35mm Wide x 78mm Deep		
Weight:	160g		
Let through voltage	RTM12/110	RTM12/140	RTM150/650
6kA 8/20µs	260V	370V	<1.9kV

Ordering Codes

MODEL	NETWORK RAIL CODE	BOWTHORPE CODE
75kA Single Phase 650V MOV Module	PADS No: 086/047165	RTM150/650
12kA Single Phase 140V SAD Module	PADS No. 086/047166	RTM12/140
12kA Single Phase 110V SAD Module	PADS No. 086/047167	RTM12/110