

# Rail Transient Barrier Products

## for Data and Signal Line Protection

### Features

- Efficient clamping circuit technology helps ensure the lowest possible residual let-through voltage
- Offers over-voltage and self-resetting over-current protection
- 20 kA 8/20  $\mu$ s maximum surge rating helps ensure high level protection and long service life
- Protection module and base design allow for easy replacement of module at end of life
- Available in various operating voltages to suit most common signaling system voltages
- 5-year limited warranty



Rail trackside electrical environments are prone to dangerous and damaging voltage surge and transients, which can be induced onto low-voltage signal and control circuits. These transients can cause erroneous system operation or failure, leading to capital loss, reduced train speeds or stoppages resulting in loss of revenues and profits.

ERICO offers a line of Rail Transient Barrier products designed to help provide transient protection for signaling equipment from surges induced onto track circuits. These products are specially designed to help ensure they do not pose a safety threat in the event of failure.

Rail Transient Barrier products are available with varying stages of clamping circuitry. The three-stage model helps ensure the best possible protection to sensitive electronic equipment while maintaining a minimum of line interference and insertion losses.

The convenient plug-in protection module and separate base design facilitates replacement of the protection module at end of life without requiring the user to undo installation wiring. Please contact ERICO for advice on end of life conditions and preventative maintenance.

**ERICO**<sup>®</sup>

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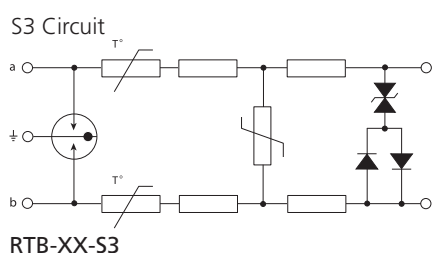
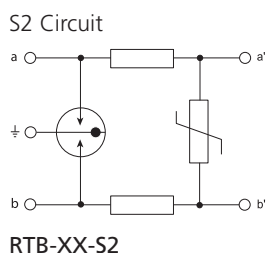
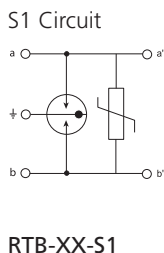
## for Data and Signal Line Protection

Model	RTB12S2	RTB12S3	RTB30S2	RTB30S3	RTB50S2	RTB60S1	RTB130S2
Nominal System Voltage $U_n$	12VDC 9VAC	12VDC 9VAC	30VDC 21VAC	30VDC 21VAC	50VDC 35VAC	60VDC 43VAC	130VDC 110VAC
Max. Continuous Operating Voltage $U_c$	18VDC 12VAC	18VDC 12VAC	33VDC 23VAC	33VDC 23VAC	65VDC 50VAC	85VDC 60VAC	170VDC 130VAC
Voltage Protection Rating, VPR @ 3kA 8/20 $\mu$ s, L-L	25V	15V	120V	40V	200V	240V	400V
Max. Line Current $I_L$	3.0A	1.5A	1.5A	1.5A	3.0A	10.0A	3.0A
Loop Resistance (both lines)	0.4 OHM	.8 OHM	0.4 OHM	.8 OHM	0.4 OHM	0.1 OHM	0.4 OHM
Loop Inductance (both lines)	40uH	188uH	40uH	188uH	40uH	-	40uH
Bandwidth @ 3dB	< 1 MHz	< 2 MHz	< 2 MHz	< 2 MHz	< 2 MHz	< 3 MHz	< 3 MHz
Nominal Discharge Current, $I_n$	10kA 8/20 $\mu$ s (L+L)-G						
Max Discharge Current, $I_{max}$	20kA 8/20 $\mu$ s (L+L)-G						
Protection Modes	Common mode, differential mode						
Dimensions H x D x W: mm (in)	90 x 68 x 18 (3.54 x 2.68 x 0.71)						
Weight	0.1kg (0.24lb)						
Enclosure	DIN 43 880, UL94V-0 thermoplastic, IP 20 (NEMA-1)						
Connections	1 mm <sup>2</sup> to 6 mm <sup>2</sup> (#18AWG to #10AWG). Grounding via terminal and through grounded DIN rail for lower ground impedance						
Mounting	35 mm top hat DIN rail						
Temperature	-40°C to 80°C (-40°F to 176°F)						
Surge Rated to Meet	ANSI/IEEE C62.41-2002 Cat A, Cat B, Cat C, AREMA Part 21.1.4						
Replacement Module	RTB12S2M	RTB12S3M	RTB30S2M	RTB30S3M	RTB50S2M	RTB60S1M	RTB130S2M
Warranty	5 years						
Color	Red	Green	Yellow	Black	Orange	Purple	Blue

- Protection module inserts in series to the line and equipment terminals in the base. When protection module is not installed, line and equipment terminals will be isolated.

Unit	Circuit Application
S1	High Load Current: < 10A
S2	Medium Load Current: < 3A
S3	Low Load Current: < 1.5A

\* Note: When selecting the RTB for your application, please select the RTB with the nearest voltage, current and frequency bandwidth over your intended application.



#### WARNING

ERICO products shall be installed and used only as indicated in ERICO product instruction sheets and training materials. Instruction sheets are available at [www.erico.com](http://www.erico.com) and from your ERICO customer service representative. Improper installation, misuse, misapplication or other failure to completely follow ERICO's instructions and warnings may cause product malfunction, property damage, serious bodily injury and death.

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