

Bourns® Rail & Transportation Protection Solutions

SHORT FORM BROCHURE



BOURNS®

RAIL PROTECTION PRODUCTS

Introduction

Positive Train Control (PTC) is a sophisticated, predictive system that works to prevent accidents. The system must account for a number of factors to measure the appropriate train stopping distance, including train information (weight, length); track composition (curvature, terrain); train speed; and train authority (authorization to move across a stretch of track). The three main elements of a PTC system are:

- **Onboard or Locomotive System:** Monitors the train's position and speed and activates braking as necessary.
- **Wayside System:** Monitors railroad track signals, switches and track circuits to communicate authorization for movement to the locomotive.
- **Back Office Server:** The storehouse for all information related to the rail network and trains operating across it such as speed limits, track composition, speed of individual locomotives, train composition, etc.

Wayside Systems and Back Office Servers are particularly susceptible to damages due to lightning surges and power transients. Bourns is a leading manufacturer and expert in circuit protection assemblies, components and technologies designed to meet or exceed rail industry requirements and standards. Bourns offers a broad line of standard protection products and in addition can provide custom solutions and products based on specific customer requirements.

Rail Protection Technology Applications

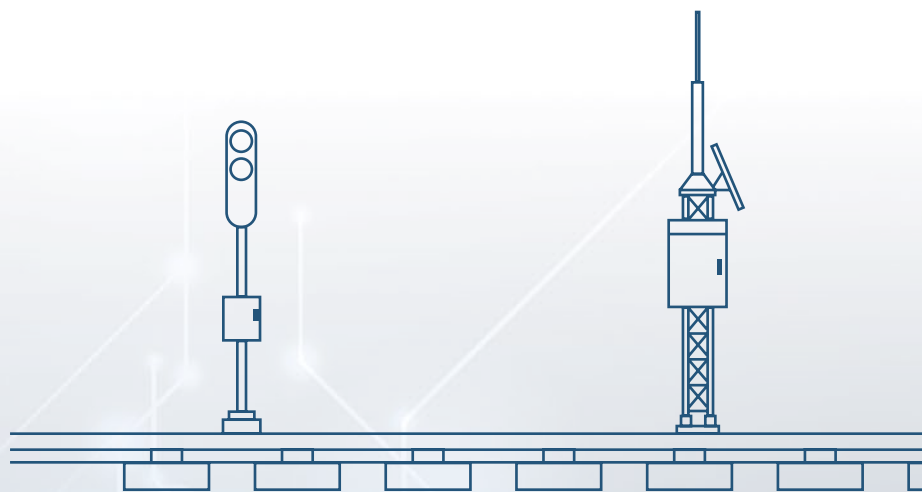
- Wayside equipment
- Signal controls
- Hot boxes
- Rail signaling
- Video cameras
- UHF/VHF antennas
- RF antennas
- GPS
- Wayside Interface Units (WIUs)
- Railroad bungalows
- Base stations



Models 1320 & 1250

AC & DC Surge Protective Devices

For Wayside Interface Units (WIUs), Bungalows, Signal Controls, Outside Distribution Panels and Control Center AC applications, Bourns offers AC and DC Surge Protection Devices (SPDs) in a wide range of voltages, surge current ratings and configurations. A general purpose series and a heavy duty series are available to meet the needs of a variety of installations. Single-phase and three-phase AC protectors are available with remote monitoring, visual status, and discharge ratings from 50-100 kA. These protectors are available in DIN Rail or NEMA box versions.



Wayside Signal Switches



Model 1675

The Bourns® Model 1675 Surge Protective Device (SPD) was designed specifically for railroad wayside applications. The Model 1675 is intended to protect signal and track circuits and other electrical circuits leaving the bungalow. The Model 1675 employs a heavy duty multi-technology protection design that shunts surge current to ground in the event of a lightning strike.

Base Stations



Model 1965

The Bourns® Model 1965 Series Coaxial Surge Protector is intended for use with low power VHF and UHF transmitters, 2-way base station transceivers, and receive-only systems. All models utilize GDT technology. The Model 1965 arrester is symmetric and bidirectional. Either end may be used for the input or output. Various power and voltage choices are available.

Signal & Data Line Surge Protective Devices

Bourns® data and signal line protectors incorporate many of Bourns core technologies such as MOV, GDT, SAD and the patented TBU® High-Speed Protection Technology. These key technologies make possible high performance surge protection devices that minimize levels of let-through voltage and current (energy) - a necessity when protecting sensitive electronic equipment. Multi-stage protection ensures fast reaction time, and some devices can resume normal operation without reset or replacement.

Bourns® signal and data line offering includes protection for Ethernet, Gigabit Ethernet, PoE, Gigabit PoE as well as RS-232/422/485, DeviceNet™, and general low voltage signaling.



Model 1800



Model 1530



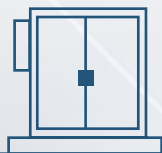
Model 1540



Model 1977

Coaxial Surge Protective Devices

Bourns offers coaxial surge protection in several configurations for RF applications that include UHF/VHF Antennas, RF Antennas, GPS, Wayside Interface Units, Bungalows and Base Stations. Utilizing GDT technology, these protectors offer a robust solution for RF applications up to 4 GHz.



Wayside Interface Units

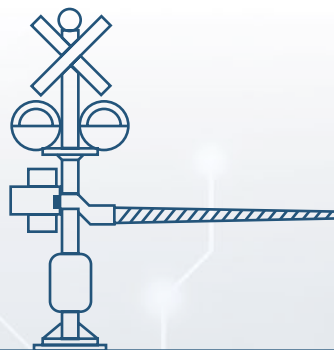


Model 1840



Model 1675

The Bourns® Model 1840 Series Signal and Dataline Protectors along with the Model 1675 are designed to protect sensitive electronic circuits and components from damaging surge voltages and currents. Their extremely fast response and low clamping voltages make them particularly suitable for the protection of sensitive signal and data lines.

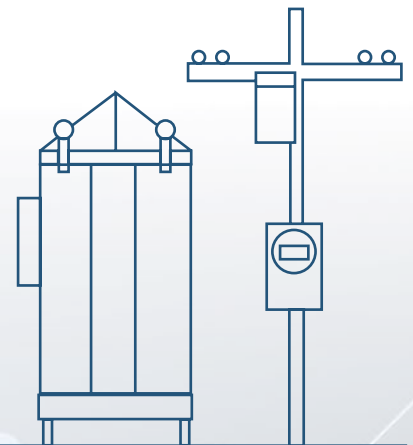


Signal Controls



Model 1250

The Bourns® Model 1250 is a general duty Surge Protective Device (SPD) designed to protect high risk electrical service entrance and branch panels. This SPD is intended to be installed at the front end of the installation, in the main switchboard, or close to sensitive equipment.



Railroad Bungalows



Model 1251/1252

The Bourns® Model 1251 and 1252 Series are Type 1 and Type 2 hardwired hybrid Surge Protective Devices targeted for AC infrastructure applications. They combine fast responding MOV technology with low leakage GDT technology resulting in reliable and long term performance. The Model 1252 Series also includes filtering circuitry for additional noise mitigation.

WORLDWIDE SALES OFFICES

Country/Region	Phone	Fax
Americas:	+1-951-781-5500	+1-951-781-5006
Brazil:	+55 11 5505 0601	+55 11 5505 4370
China:	+86 21 64821250	+86 21 64821249
Europe, Middle East, Africa:	+36 88 520 390	+36 88 520 211
Japan:	+81 49 269 3204	+81 49 269 3297
Korea:	+82 70 4036 7730	+886 2 25624116
Singapore:	+65 6348 7227	+65 6348 1272
Taiwan:	+886 2 25624117	+886 2 25624116
Other Asia-Pacific Countries:	+886 2 25624117	+886 2 25624116

Technical Assistance Region	Phone	Fax
Asia-Pacific:	+886 2 25624117	+886 2 25624116
Europe, Middle East, Africa:	+36 88 520 390	+36 88 520 211
Americas:	+1-951-781-5500	+1-951-781-5700

www.bourns.com

Bourns® products are available through an extensive network of manufacturer's representatives, agents and distributors. To obtain technical applications assistance, a quotation, or to place an order, contact a Bourns representative in your area.

Specifications subject to change without notice. Actual performance in specific customer applications may differ due to the influence of other variables. Customers should verify actual device performance in their specific applications.

BOURNS®

"Bourns" is a registered trademark of Bourns, Inc. in the U.S. and other countries.

"TBU" is a registered trademark of Bourns, Inc. in the U.S. and other countries, except Japan.

All references to TBU® in this document for use in Japan shall be deemed to be replaced by Bourns® TBU™.

"DeviceNet" is a trademark of ODVA

COPYRIGHT© 2016, BOURNS, INC. • LITHO IN U.S.A. • PSG • 1/16 • XX/SPD1517