

# Teleline Product Announcement

## 751329R2, 751329SP, 751228R2 and 751228SP Enhanced T1 Units

Positron is continuously evolving and expanding its product portfolio; new features and state of the art component and manufacturing techniques are incorporated to provide increased value and reliability.

Positron introduces the new enhanced Teleline T1 units. The new units encompass several design features, which provide broader capabilities in terms of circuit protection and add a new "Span Power" option, for providing power to the Station side span for a span powered Network Interface Unit (NIU).

### Key Enhancements

- Span power option using -48 Vdc at 60 mA
- Effective use of Surface Mount Technology (SMT) for increased reliability and Mean Time Between Failures (MTBF)

### Benefits of Span Power

- With span power provided from the plug-in card or standalone unit, the T1 circuit NIU can be located where required, without any consideration for providing local power to the NIU
- Having a centralized power source of -48 Vdc at the Teleline shelf or standalone unit to provide span power is a more reliable and robust powering solution for the NIU
- In locations with multiple T1 circuits and NIU's, a centralized power source is more cost effective than providing local power sources to each NIU

### T1 Plug-in Cards and Standalone Units

The T1 circuits provide high voltage isolation between an incoming 4-wire T1 or E1 carrier line and a data transmitting/receiving device located in the substation. The plug-in cards are designed for use with any of the Teleline multi-card shelves.

The 751329R2 plug-in card and 751228R2 standalone unit are direct replacements for the existing 751329 and 751228 models.

The 751329SP plug-in card and 751228SP standalone unit provide the option for powering the Station side NIU from the Teleline unit itself, eliminating the need for providing locally powered NIU's. To provide span power, the shelf or standalone unit requires a -48 Vdc power source.

### T1 Applications

- T1 Carrier (1.544 Mb/s)
- E1 Carrier (2.048 Mb/s)

### T1 Features

- Units are suitable for transmission at frequencies of up to 5 MHz, provided the data line is conditioned for operation
- Isolation of 50 kV<sub>rms</sub> (70 kV peak) while maintaining full communication between terminals
- Communication maintained across the gap by isolation transformers that provide low-loss low-distortion transmission
- High immunity to 50 Hz/60 Hz induced on the line during faults
- Units are passive and do not require power to operate (when span power not required)
- The Teleline shelf power can be maintained during the installation of the cards
- Jumper settings allow to configure all cards to provide a simplex sealing current or a loop sealing return path on the CO side. The current will not be transferred to the Station side



# Teleline Isolator

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The following units are replaced by the new enhanced T1 units, and have been manufacture discontinued. Positron will continue to support field deployments.

- 2-wire T1 plug-in card model 7501-06A
- 2-wire T1 plug-in card model 7501-06B, without filter
- 4-wire T1 plug-in card model 751329A, without filter
- 4-wire T1 standalone unit model 751228A, without filter

The following units are replaced by the new enhanced T1 units, and will be manufacture discontinued in the 2<sup>nd</sup> quarter of 2008. Positron will continue to support field deployments. Customers interested in last buy purchases should contact Positron Customer Service for availability.

- 4-wire T1 plug-in card model 751329
- 4-wire T1 standalone unit model 751228

**Table 1 Electrical Specifications for 751329R2 and 751228R2  
(measured at 77°F or 25°C, 50% R.H.)**

Parameter	Specifications
<b>Isolation Data</b>	
Isolation resistance	100 000 MΩ
Metallic surge	1.5 kV max
Insulation voltage	50 kV <sub>rms</sub> (70 kV peak)
<b>Input Voltage Requirement</b>	
	None
<b>Transmission Data</b>	
Longitudinal balance (CO side)	> 80 dB at 60 Hz
Return loss (at either side with opposite side terminated at 135 Ω)	> 25 dB, 2.5 kHz to 350 kHz
<b>Signal</b>	
Insertion loss (at 750 kHz)	< 1 dB
Frequency response	-1 dB, 5 kHz to 2.5 MHz -3 dB, 2.5 kHz to 5 MHz
Total harmonic distortion at 22 dBm, 10 kHz	< -70 dB
<b>Power:</b>	
Power dissipation	0.75 W

**Table 2 Electrical Specifications for 751329SP and 751228SP  
(measured at 77°F or 25°C, 50% R.H.)**

Parameter	Specifications
<b>Isolation Data</b>	
Isolation resistance	100 000 MΩ
Metallic surge	1.5 kV max
Insulation voltage	50 kV <sub>rms</sub> (70 kV peak)
<b>Input Voltage Requirement</b>	
	48 Vdc
<b>Transmission Data</b>	
Longitudinal balance (CO side)	> 80 dB at 60 Hz
Return loss (at either side with opposite side terminated at 135 Ω)	> 25 dB, 2.5 kHz to 350 kHz
<b>Signal</b>	
Insertion loss (at 750 kHz)	< 1 dB
Frequency response	-1 dB, 5 kHz to 2.5 MHz -3 dB, 2.5 kHz to 5 MHz
Total harmonic distortion at 22 dBm, 10 kHz	< -70 dB
<b>Power:</b>	
Power dissipation	5 W

**Table 3 Physical Specifications for 751329R2 and 751329SP**

Parameter	Specifications
Operating Temperature Range	-4°F to 149°F (-20°C to 65°C)
Height	12" (30.5 cm)
Width	2" (5.08 cm)
Depth	7-7/16" (18.9 cm)
Weight	3.5 lbs (1.6 kg)

**Table 4 Physical Specifications for 751228R2 and 751228SP**

Parameter	Specifications
Operating Temperature Range	-4°F to 149°F (-20°C to 65°C)
Height	13-1/2" (34.3 cm)
Width	11-5/16" (28.7 cm)
Depth	5-9/16" (14.1 cm)
Weight	9.0 lbs (4.1kg)

For more information on these products, or any other Positron products, please contact our Technical Customer Service at (888) 577-5254 or visit our website [www.positronpower.com](http://www.positronpower.com)

