Model 6000DSL

Multi-Function Telephone Network Analyzer

FEATURES/KEY BENEFITS

- **Diagnostic and fault location functions in one instrument** – Integrated testing system enables the technician to diagnose and locate faults in POTS and DSL service with one easy to use, high quality instrument.

- **Diagnostic Test Package** – Identify conditions on the line that can adversely affect POTS and/or DSL service using the following diagnostic tools:

  Multi-Meter – Measure AC volts, DC volts, foreign battery, resistance and insulation resistance.

  Pair Quality Tests – Measure loop current, noise metallic, power influence and longitudinal balance.

  Power Spectral Density – Find signals causing interference on active/inactive DSL lines.

  Insertion Loss – Measure voice frequency and wideband signal loss using tones generated by the Model 6000DSL's remote device.

  Crosstalk Tests – Measure both NEXT and FEXT Crosstalk, selecting either a single frequency to test or a sweep of voice or wideband frequencies.

- **Fault Location Test Package** – Restore existing service quicker or reclaim unused lines for new service with accurate fault location tools:

  Time Domain Reflectometer (TDR) – Accurately locate opens, shorts, water in cable, bad splices and cable damage with the same full-function TDR found in Riser Bond's stand-alone instruments.

  Resistance Fault Locator (RFL) – Three test modes. Locate resistance faults on a pair or on a single conductor.

  Stress TDR – This exclusive feature enhances the instrument's ability to locate faults due to moisture in the cable.

  Open/Capacitance Meter – Measure capacitance to the end of the pair or locate fault caused by an open circuit.

- **Ease-of-Use Features** – The soft-key menu's intuitive left-to-right operation guides the technician through logical testing steps to diagnose and locate faults. Most tests are performed using the same connection to the line.

- **Auto-Test and Fault Analysis Functions** – Press the Auto-Test key to perform a series of basic diagnostic tests. The Fault Analysis function will then suggest the appropriate fault location tool to use to most effectively locate the problem.

- **SUPER-STORE Waveform Data Storage** – Analyze TDR waveforms in a more convenient time or place. The instrument also stores Auto-Test and Power Spectral Density records.

- **WAVE-VIEW Software –** View, manipulate, print and archive TDR waveforms on your computer. Document plant, certify new builds, and store waveforms for later comparisons.

- **Remote Device –** One unassisted technician working at a distance from the exchange can disconnect a customer's service, identify the cable pair, open and close the circuit, and reconnect the customer after desired tests are complete. Use up to three remotes simultaneously to test different sections of a line.

- **Large LCD Display –** Test results and interpretive information are presented in an easy to read format on a screen that is larger than those found on many competitive units.

Riser Bond
AN SPX BRAND

Product Specifications

Physical Dimensions
Main instrument without carrying case & accessories:

Height:	6.30 inches (160 mm)
Width:	9.45 inches (240 mm)
Depth:	2.36 inches (60 mm)
Weight:	3 pounds (1.3 kg)

Main instrument with carrying case and accessories:

Height:	7.80 inches (198 mm)
Width:	11.0 inches (279 mm)
Depth:	6.50 inches (165 mm)
Weight:	6 pounds (2.6 kg)

Remote Device

Height:	8.50 inches (216 mm)
Width:	3.94 inches (100 mm)
Depth:	1.58 inches (40 mm)
Weight:	1 pound (0.4 kg)

Oscillator/Far End Unit

Height:	9.06 inches (230 mm)
Width:	1.38 inches (35 mm)
Depth:	0.98 inches (25 mm)
Weight:	7.41 ounces (210 g)

Power
Internal:	Rechargeable, 7.2 V Nickel metal hydride battery pack
External:	12 VAC or VDC, 1250mA power supply
Operating Time:	4.75 hours, continuous without backlight

Environment
Operating temperature:	0° C (+32° F) to +50° C (+122° F)
Storage temperature:	-20° C (-4° F) to +60° C (+140° F)
Humidity:	95% maximum relative humidity, non-condensing IEC 68-2-3
Vibration:	IEC 68-2-6
Shock (Bump):	IEC 68-2-29, 40g, 6ms, 1000 shocks in each axis
Drop:	IEC 68-2-27, 1m free fall, packaged in carry case
Moisture rating:	IP 54

Display
320 x 240 dot-matrix, liquid crystal display (LCD) with CCFL backlighting

Multi-Meter
DC Voltage:	0 to 400V
Resolution:	0.1V
Accuracy:	1%±0.1V
AC Voltage:	0 to 400V
Resolution:	0.1V
Accuracy:	2%±0.1V
Foreign Battery:	2 to 400V
Resolution:	0.1V
Accuracy:	1%±0.1V
Resistance:	
0 to 1999.9Ω	
Resolution:	0.1Ω
Accuracy:	0.2%±0.2Ω
2kΩ to 10kΩ	
Resolution:	1Ω
Accuracy:	0.2%±1Ω

Insulation Resistance
Voltages:	50V/100V/250V/500V
0Ω to 49.99MΩ	
Resolution:	0.01MΩ
Accuracy:	2%±0.01MΩ

50MΩ to 99.9MΩ	
Resolution:	0.1MΩ
Accuracy:	4%
100MΩ to 999MΩ	
Resolution:	1MΩ
Accuracy:	10%

Open/Capacitance Meter
0 to 1000 ft (0 to 100 m)	
Resolution:	1 ft (0.1 m)
Accuracy:	2% ±3 ft (1 m)
1000 ft to 10,000 ft (100 m to 1,000 m)	
Resolution:	10 ft (1 m)
Accuracy:	±3%
10,000 ft to 100,000 ft (1000 m to 10,000 m)	
Resolution:	100 ft (10 m)
Accuracy:	±5%
100,000 ft to 150,000 ft (10,000 m to 50,000 m)	
Resolution:	1000 ft (100 m)
Accuracy:	±8%

Pair Quality
Loop Current:	0 to 120mA
Resolution:	0.1mA
Accuracy:	5% ±0.2mA
Noise Metallic (POTS):	0 to 50 dBmC
Resolution:	1 dB
Accuracy:	±2 dB
Power Influence (POTS):	40 to 100dBmC
Resolution:	1 dB
Accuracy:	±2 dB
Longitudinal Balance (POTS):	40 to 62dB
Resolution:	1 dB
Accuracy:	±2 dB
Insertion Loss:	0 to 60 dB
Frequency Range:	50 Hz to 2 MHz
Resolution:	1 dB
Output Level:	0 and -10 dBm
Crosstalk (NEXT and FEXT):	0 dB to -40dB
Frequency Range:	50 Hz to 2 MHz
Resolution:	1 dB
Output Level:	0 and -10 dBm
Impedance:	100, 120, 135, 600, 900 Ω and TN12

Power Spectral Density
Wideband Dynamic Range	-20 dB/Hz to -140 dB/Hz
Frequency Range:	20 kHz to 2 MHz
Resolution:	10 kHz
Impedance:	100Ω,120Ω and 135Ω

Time Domain Reflectometer (TDR)
loaded and non-loaded cable
Maximum Ranges:
Live waveform:
63,700 feet (19,400 meters) at 99.0% VOP
38,600 feet (11,700 meters at 60.0% VOP
Range varies with VOP. Maximum testable cable length varies with pulse width and cable type.
Stored waveform:
11,900 ft (3,600.0 m) at 99.0% VOP
7,200 ft (2,200.0 m) at 60.0% VOP
Range varies with VOP.
Horizontal Resolution:

Up to 2,000 ft (610 m):	<.25 ft (.07 m) at 99.0% VOP
	<.07 ft (.02 m) at 30.0% VOP
Over 2,000 ft (610 m)	1 ft (.1 m) at any VOP
Vertical Resolution:	14 bits with 137 dots displayed
Vertical Sensitivity:	Greater than 65 dB
Output Signal:	Pulse widths of 2ns, 25ns, 100ns, 500ns, 1.5µs, 4.4µs and 330µs
Output Balance:	Variable, from 80Ω to 120Ω

Velocity of Propagation:
Two user-selectable display formats.

VOP (%):	Non-loaded cable: 30.0% to 99.0%.
	Loaded cable: 0.8% to 20.0%
V/2:	Non-loaded cable: 147.5 to 486.9 ft/µs
	(45.0 to 148.4 m/µs)
	Loaded cable: 3.9 to 98.4 ft/µs
	(1.2 to 30.0 m/µs)
Input Protection:	400 VAC or VDC up to 60 Hz

Distance Accuracy: Accuracy will vary with cable VOP and cable type. +/- .5 ft (.15 m) plus +/- .01% of reading
Software Noise Filters

Standard:	8x, 50/60 Hz
Optional:	4x, 8x, 16x, 32x, 64x, 128x, 50/60 Hz

Resistance Fault Locator (RFL)
Location Range:	0 to 150 kft (0 to 45 km)
Resistance fault range:	0 to 50MΩ
Accuracy	
3-Wire Test:	±0.25% of DTS plus ±0.4Ω
4-Wire Test:	±0.25% of DTS plus ±0.25Ω
Kupfmuller Test:	±1.0% of DTS plus ±1Ω
Storage	
Standard:	8 Auto Test, Power Spectral Density, and TDR waveform records
Optional:	32 Auto Test, Power Spectral Density, and TDR waveform records

Riser Bond Remote and Optional Oscillator
Remote Device
Communications for: short pair, open pair, exchange connect, disconnect, send loss/crosstalk signals, set terminations, pair identification tone
Oscillator/Far End Unit
Communications for: short pair, open pair, exchange connect, disconnect, pair identification tone

Accessories:
Standard: Operator's Manual, 110V or 220V charger, nylon carry / accessory bag, shoulder strap, 2 sets telco connection leads plus ground lead, pair shorting strap, VOP card. Optional: Extended waveform storage, extended TDR noise filters, Extended Warranty.

Technological advances allow changes in specifications and/or components. Changes may be made without notification.

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Radiodetection is a proud member of the SPX group of companies, which provide technical products and service solutions worldwide.

Radiodetection and its associated companies specialize in the design and manufacture of products for the location and maintenance of underground pipes and cables. Our aim is to be viewed as the supplier of choice of 'high performance' quality equipment using advanced product technologies. We are also committed to both design innovation and customer support.

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