

# Riser Bond 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.

## PRODUCT SPECIFICATIONS

### PHYSICAL DIMENSIONS

#### Main instrument without carrying case & accessories

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

#### Main instrument with carrying case & accessories

Width:	11.0 inches (279mm)
Height:	7.80 inches (198mm)
Depth:	6.5 inches (165mm)
Weight:	6 pounds (2.6kg)

#### Remote Device

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

#### Oscillator/Far End Unit

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

### POWER

Internal:	Rechargeable, 7.2V Nickel metal hydride battery pack
External:	12VAC 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:	IP54

### 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 1000ft (0 to 305m)	
Resolution:	1ft (0.3m)
Accuracy:	2% ±3ft (1m)
1000ft to 10,000ft (305m to 3,050m)	
Resolution:	10ft (3m)
Accuracy:	±3%
10,000ft to 100,000ft (3,050m to 30,500m)	
Resolution:	100ft (30m)
Accuracy:	±5%
100,000ft to 150,000ft (30,500m to 45,700m)	
Resolution:	1000ft (300m)
Accuracy:	±8%

### PAIR QUALITY

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

### POWER SPECTRAL DENSITY

Wideband Dynamic Range:	-20dB/Hz to -140dB/Hz
Frequency Range:	20kHz to 2MHz
Resolution:	10kHz
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:

11,900ft (3,600.0m) at 99.0% VOP

7,200ft (2,200.0m) at 60.0% VOP

Range varies with VOP.

#### Horizontal Resolution:

Up to 2,000ft (610m): <0.25ft (0.07m) at 99.0% VOP

<0.07ft (0.02m) at 30.0% VOP

Over 2,000ft (610m) 1ft. (0.3m) at any VOP

#### Vertical Resolution:

14 bits with 137 dots displayed

#### Vertical Sensitivity:

Greater than 65dB

#### Output Signal:

Pulse widths of 2ns, 25ns, 100ns, 500ns, 1.5 $\mu$ s, 4.4 $\mu$ s and 330 $\mu$ s

#### Output Balance:

Variable, from 80 $\Omega$  to 120 $\Omega$

#### 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 486.9ft/ $\mu$ s  
(45.0 to 148.4m/ $\mu$ s)

Loaded cable: 3.9 to 98.4ft/ $\mu$ s  
(1.2 to 30.0m/ $\mu$ s)

Input Protection: 400 VAC or VDC up to 60Hz

#### Distance Accuracy:

Accuracy will vary with cable VOP and cable type:  $\pm 0.5$ ft (0.15m) plus  $\pm 0.1\%$  of reading

## SOFTWARE NOISE FILTERS

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

## RESISTANCE FAULT LOCATOR (RFL)

#### Location Range:

0 to 150kft (0 to 45km)

#### Resistance fault range:

0 to 50M $\Omega$

#### Accuracy:

3-Wire Test:  $\pm 0.25\%$  of DTS plus  $\pm 0.4\Omega$

4-Wire Test:  $\pm 0.25\%$  of DTS plus  $\pm 0.25\Omega$

Kupfmuller Test:  $\pm 1.0\%$  of DTS plus  $\pm 1\Omega$

#### Waveform Storage

All with full vertical resolution: 32 waveforms

## 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.

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

