IMPROVED
RD4000

Best in class advanced pipe and cable location
The Radiodetection RD4000 cable and pipe locator is widely seen as the industry standard, with the highest locate performance, multiple locate modes and simplicity of use. Whether locating utilities and marking for construction, mapping or fault finding. The RD4000 series is the product against which all others are measured.

RD4000 delivers best in class location:
- Highest performance digital Receiver even in the presence of interference
- Fast, clear, positive response even in congested areas
- Multiple active frequencies and modes provides sophisticated location tools
- Peak, null and single antenna modes
- Location and depth measurement
- Current measurement to identify individual networks
- Real Sound; helps distinguish the signal from random background noise
- High output Transmitters to locate deep utilities, long lengths and handle complex locates
- Fault finding and cable and pipe integrity measurement
- Current direction – RD patented
- MRx option for simultaneous locate of utility marker balls
- Extended warranty

Properly locating buried utilities can avoid costly outages and avoid major hazards associated with inadvertent contact during excavation. While it is important to utilize the best products available, it is equally as important to adhere to the best and safest practices to assure a safe and productive job site. Radiodetection, the world leader in the design and manufacture of underground locating equipment, provides equipment and practices needed to assure optimum accuracy and safety for every locate scenario.

Highest performance
The RD4000 utilizes a powerful, advanced digital measurement and processing system that is far ahead of any others. The patented signal-processing algorithm provides improved performance and accurate results, even in the most congested of areas. Users will quickly discover that the RD4000 always delivers repeatable accurate locates, even in the most difficult of circumstances.

Multiple modes
RD4000 models are available to address the specific needs of various sectors. Increasingly, companies are outsourcing mark before dig and utility mapping. Recognizing that there is no single location mode or frequency guaranteed to locate a given pipe or cable, RD4000 has options to optimize the location task. Whatever the location requirement there is an RD4000 solution.

Ease of use
Repeatability and ease of use is delivered through the ergonomic design and features of the RD4000. A large, clear, automatically back-lit LCD display and a highly responsive gain paddle give users of all levels an unmatched confidence in their RD4000 locator. It is through attention to detail that Radiodetection have delivered a powerful and sophisticated tool that is simple to use.

Extended capabilities
The RD4000 family of locators is supported by a wide range of plug-and-play accessories, such as fault locating A-Frames for locating cable sheath faults or pipe coating defects, receiver clamps and stethoscopes for cable identification. RD4000 receivers provide seamless integration with most GPS receivers and data recording devices, making the RD4000 perfect for both novice and advanced users.
**RD4000 TECHNICAL SPECIFICATION**

<table>
<thead>
<tr>
<th>FREQUENCY</th>
<th>SENSITIVITY @ 1m</th>
<th>GOOD CONDITIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>50Hz or 60Hz</td>
<td>2 mA</td>
<td>3 m (10ft)</td>
</tr>
<tr>
<td>15 - 30kHz</td>
<td>25 µA</td>
<td>3 m (10ft)</td>
</tr>
<tr>
<td>512Hz or 640Hz</td>
<td>50 µA</td>
<td>5 m (16ft)</td>
</tr>
<tr>
<td>8kHz</td>
<td>5 µA</td>
<td>5 m (16ft)</td>
</tr>
<tr>
<td>33kHz</td>
<td>5 µA</td>
<td>5 m (16ft)</td>
</tr>
<tr>
<td>65kHz</td>
<td>6 µA</td>
<td>5 m (16ft)</td>
</tr>
<tr>
<td>131kHz</td>
<td>6 µA</td>
<td>5 m (16ft)</td>
</tr>
<tr>
<td>200kHz</td>
<td>8 µA</td>
<td>5 m (16ft)</td>
</tr>
<tr>
<td>CD pairs</td>
<td>50 µA</td>
<td>5 m (16ft)</td>
</tr>
</tbody>
</table>

**CURRENT READING** ± 5% Active signal bw limited

**FAULT FINDING** Diagnose faults from s/c to 2M ohm

**LOCATE QUALITY**
- Dynamic Range: 140dB@10Hz bandwidth
- Selectivity: 120dB/Hz up to 200kHz
- Sensitivity: 5E-15 Tesla (32,768Hz, 1Hz b/w)

**LOCATE ACCURACY** ±5% of depth, good condition
Depth achievable dependent upon signal current on line
Note greater depth means broader peak response

**DEPTH ACCURACY** on undistorted signal
- Line ± 2.5% 0.1 m to 3 m (4in to 10 ft)
- Sonde ± 2.5% 0.1 m to 7 m (4in to 16 ft)

**BATTERIES**
- 4 x LR20 (D) 1.5 V alkaline. 40 hours life, nominal @ 20ºC (68ºF), intermittent use
- Compatible with D type NiMH rechargeable batteries

**WARRANTY**
- 12 months as standard
- Further 12 months at no extra charge on return of warranty card
- Additional 12 months warranty - chargeable option

**EMS Tranceiver MRx option**
- Range to standard marker balls to 2m (6ft); 5m (16ft) on deep marker disks
- Dual mode line locate and marker locate

**External data logging**
- For report generation and support

**ANTENNA MODES**
- **PEAK**
  - Standard locate mode - all purpose locate
- **NULL**
  - L and R arrows for simple locate
- **SINGLE**
  - Highest sensitivity - for location of deep targets

**FAULT FINDING ON PDL**
- With the A frame accessory and three fault finding methods, RD4000PDL accurately locates cable sheath and pipe coating faults typically up to 2M ohm impedance
- **8kFF**
  - Ideal for cable sheath faults. High voltage to locate high impedance. 8kHz locate signal
- **LFFF**
  - 4Hz/8Hz good for finding coating faults on pipelines
- **CDFF**
  - 640Hz/320Hz (512Hz/256Hz) good distance locate of pipeline coating faults 640Hz (512Hz) simultaneous locate signal
### TRANSMITTERS

<table>
<thead>
<tr>
<th>Transmitter</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RD4000 T1</strong></td>
<td>1 watt entry-level transmitter, 3 locate and 2 induction frequencies</td>
</tr>
<tr>
<td><strong>RD4000 T3</strong></td>
<td>Cost effective 3 watt transmitter, 3 locate frequencies, 1 induction frequency</td>
</tr>
<tr>
<td><strong>RD4000 T3F</strong></td>
<td>All features of T3 (above), 8kHz fault find codes</td>
</tr>
<tr>
<td><strong>RD T10</strong></td>
<td>10 watts output power, Multi-meter functions for checking cable/pipe integrity, Up to 16 locate frequencies, 2 induction frequencies, Fault find signals, Current direction signals, Pipeline integrity signals</td>
</tr>
</tbody>
</table>

- Rechargeable option and external 12v dc supply available for T3/T10 transmitters
- Various clamp and connectors available as accessories

### RECEIVERS

<table>
<thead>
<tr>
<th>Receiver</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RD4000SL - Standard Locate</strong></td>
<td>Power, Radio &amp; 1 active frequency</td>
</tr>
<tr>
<td><strong>RD4000DL - Drain Locator</strong></td>
<td>Power, Radio &amp; active locate of sondes</td>
</tr>
<tr>
<td><strong>RD4000PXL - Multi f locator</strong></td>
<td>Multi-utility location, Additional frequencies including CPS and high f, Enhanced location accessories, Current display</td>
</tr>
<tr>
<td><strong>RD4000PDL - Multi-frequency, Fault find &amp; CD</strong></td>
<td>Highest locate performance with multi-frequency incl. CPS, Advanced fault find, Enhanced location accessories, Additional frequencies available, Current display, Current direction</td>
</tr>
</tbody>
</table>

### AUTO BACKLIGHT FOR LOW LIGHT OPERATION

- Auto Backlight
- Enhanced location accessories
- Additional frequencies available
- Current display
- Current direction

### ERGONOMIC

- Ergonomic, robust and all weather housing
- RS232 earphone and accessory ports for data logging and software upgrades

### EFFICIENT INDUCTION

- High Resolution
- Signal strength meter for pin-point precision
- Instantaneous 1 touch gain control

### EXTERNAL 12V D.C. SUPPLY

- Direct connection output protected against inadvertent connection to AC voltages up to 250v
## TRANSMITTER TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>T1</th>
<th>T3</th>
<th>T3F</th>
<th>T10</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVE FREQUENCIES - direct connect &amp; clamp</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>INDUCTION FREQUENCIES</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
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<tr>
<td>POWER OUTPUT</td>
<td>1 watt</td>
<td>3 watts</td>
<td>3 watts</td>
<td>10 watts</td>
</tr>
<tr>
<td>CURRENT DIRECTION OUTPUT</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>FAULT FIND MODE</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>BATTERIES</td>
<td>4 x LR20 (D) alkaline</td>
<td>12 x LR20 (D) 1.5V alkaline</td>
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<tr>
<td>12 hours nominal life standard operation at 20°C (68°F). Continuous Hi power output will reduce battery life below this.</td>
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<tr>
<td>RECHARGEABLE OPTION</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>EXTERNAL 12V SUPPLY</td>
<td>✓</td>
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<tr>
<td>DISPLAY</td>
<td>LED</td>
<td>LED</td>
<td>LED</td>
<td>LCD auto backlit</td>
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<tr>
<td>MULTI-METER FUNCTION (V, I, Mega to gnd)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</tr>
<tr>
<td>WARRANTY</td>
<td>12 Months as standard</td>
<td>Further 12 months at no extra charge on return of warranty card Additional 12 months warranty - chargeable option</td>
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<td></td>
</tr>
<tr>
<td>O/p VOLTAGE MAX (rms)</td>
<td>+/- 24v</td>
<td>+/- 80v</td>
<td>+/- 80v</td>
<td>+/- 80v</td>
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<td>CHARGER CIRCUIT, GALVANICALLY ISOLATED</td>
<td>✓</td>
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<tr>
<td>DIRECT CONNECT TO 240V; LIVE TRANSFORMER AVAILABLE AS ACCESSORY</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>S/C PROTECTED</td>
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<tr>
<td>SELF TEST - BUILT IN ERROR REPORTING</td>
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<td>✓</td>
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<tr>
<td>APPROVALS</td>
<td>EN 300 330-2-V1.1.1, EN 301 489-3-V1.2.1, BS EN 61010-1 1993/A2:1995</td>
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## RX CONFIGURATION OPTIONS

<table>
<thead>
<tr>
<th>POWER</th>
<th>RADIO</th>
<th>CPS</th>
<th>LF</th>
<th>8kHz</th>
<th>33kHz</th>
<th>65kHz</th>
<th>83kHz</th>
<th>130kHz</th>
<th>200kHz</th>
<th>CD</th>
<th>8kHzL</th>
<th>LFFF</th>
<th>CDFF</th>
<th>Peak</th>
<th>Null</th>
<th>Single</th>
<th>Current Display</th>
<th>EMS</th>
<th>Simple acc</th>
<th>Stereo acc</th>
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<tbody>
<tr>
<td>SL8</td>
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<td>SL33</td>
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<td>PXL</td>
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<tr>
<td>PDL</td>
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</table>

PXL and PDL additional frequencies available on request

MRx - EMS option, for locating utility marker balls

WARRANTY - 12 Month standard. Additional year by registration (FOC). Option to purchase extended warranty

New options in blue
S = Sondes
Faster, more accurate, more repeatable location for mark and map.

By using the Transmitter and Receiver together or with Radiodetection sondes (as the chart shows), the widest range of pipes and cables can be located and mapped. By following best practice and using Radiodetection location tools, you can dramatically reduce the risks of hitting buried utilities. Expert fault find and mapping service companies can increase efficiency and service levels.

<table>
<thead>
<tr>
<th>INDUSTRY/APPLICATION</th>
<th>SIGNAL</th>
<th>GAS</th>
<th>OIL</th>
<th>WATER SUPPLY</th>
<th>WATER WASTE</th>
<th>POWER</th>
<th>TELECOMS/ CATV</th>
<th>RAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Best practice</strong></td>
<td></td>
<td>Metal, plastic pipes</td>
<td>Metal pipes</td>
<td>Metal, clay, plastic pipes</td>
<td>Clay, concrete &amp; plastic pipes, Some metal pipes</td>
<td>Cables</td>
<td>Coax, twisted or wires</td>
<td>Power &amp; signal wires</td>
</tr>
</tbody>
</table>

**PASSIVE sweep**

DETECTION OF UTILITIES IN GENERAL AREA (POWER OR METALLIC PIPES.) SWEEP BEFORE PRECISION LOCATE.

POWER: 50Hz/60Hz (USA).
All mains conductors & pick up from these.

RF: 15kHz to 30kHz
Pick up/return signals from High Power transmitters.
Long conductors.

PASSIVE sweep

**ACTIVE recommended best practice**

PRECISION LOCATE. RECOMMENDED BEST PRACTICE FOR OPTIMIZED LOCATION.

CPS (Cathodic Protection System)
- 100Hz/120Hz (USA). Protection signal on metallic pipes.

Sondes (generates signal in pipe/conduit) Non-metallic and some cast iron

LF: 512Hz
For cast iron pipes

MID F: 8kHz
Non-metallic pipes. Doesn’t jump to other conductors

HIGH F: 33kHz
Non-metallic pipes, cleaner signal, transmits further, jumps conductors.

ACTIVE LINE. METALLIC PIPE AND CONDUCTORS. CONNECT VIA DIRECT, SIGNAL CLAMP OR INDUCED.

LF: 640Hz/512Hz (USA)
Steel pipes, not mechanically jointed, provides good distance.
No coupling to other conductors. DIRECT ONLY

MID F: 8kHz
General purpose, resonable distance, doesn’t couple much to other conductors.
DIRECT/CLAMP/INDUCE

HI F: 33kHz
Jumps joints in cast iron. Does couple to other conductors, Good inductive coupling.
DIRECT/CLAMP/INDUCE

SH F: 65/86/131kHz
Great inductive coupling.
DIRECT/CLAMP/INDUCE
Plug connectors - for signal application to house wiring via a conventional wall socket

Live cable connectors - for applying the transmitter signal to a live cable, the most certain method of locating a power distribution system in the street

Transmitter clamps - for safe signal application to live cables

Receiver clamps - for cable identification in ducts, etc

Flexrods - for pushing sondes down non-metallic and cast iron pipes

A range of Sonde transmitters for locating non-conductive pipe and cast iron duct structures

Accessory A-Frame - for sheath to ground type faults - improved sensitivity

Stethoscopes for identifying individual cables within cable bundles

Submersible antennas - for pin-pointing submerged cables, submersible to 100 metres

Hard Case - Rugged hard case to protect the equipment from damage and the elements

GPS Compatible
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.

Radiodetection equipment users have easy access to technical support. A call to your regional representative, or the Radiodetection head office, will put you in contact with our team of field-experienced technical experts.

Radiodetection has a team of factory-trained service technicians and a dedicated service facility accredited to ISO 9000. Turnaround is fast, and costs are very competitive. All repairs carry a six month warranty.

To see the full range of products and services provided by Radiodetection visit:

www.radiodetection.com

Radiodetection products are under continuous development and are subject to change, we reserve the right to alter or amend any published specification without notice.

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