# RD8000


Centros™ Enabled


## Universal **precision** cable and pipe **locator**

Radiodetection
AN SPX COMPANY

**Ergonomic design**
Light weight, with high contrast LCD display providing clear information in any light condition.

**iLOC™**
Save time by remotely controlling the transmitter using an advanced long range *Bluetooth*® link.

**SurveyCERT™**
Share RD8000 data with PC or PDA applications for reporting, audit and analysis.

**Centros™**
Improves the accuracy and repeatability of measurements and delivers unprecedented responsiveness in the field.

# RD8000

## Delivering fast, accurate, reliable and repeatable locate data.

**The RD8000PDL and PXL are powerful successors to the industry standard RD4000PDL and PXL pipe and cable locators. The RD8000 improves on speed, accuracy and reliability yet remains a cost-effective solution for any application delivering unique user features. Designed with the latest, patented digital firmware, RD8000 delivers a highly controllable and reliable locate solution to service any industry, anywhere in the world.**

### Ergonomics

The RD8000 is ergonomically designed to deliver a superior performing locator that provides the user with a light weight, energy efficient and exceptionally well balanced tool. The RD8000 is 28% lighter than the industry standard RD4000, which encourages extended use. Despite its weight and form, the RD8000 retains the environmental durability associated with an IP54 rating, meaning you can operate it in almost any environment. The receiver and transmitter feature a large, high contrast, backlit LCD screen that provides the user with clear information in any light conditions. The intuitive and responsive interface is designed so the operator can access any feature with ease. The keypad uses a self explanatory icon set that is consistent on both the transmitter and the receiver.

### Centros™

For 30 years Radiodetection has revolutionized cable locator design with over 50 software and hardware patents as part of our commitment to product improvement. This research has developed into a single entity called Centros™. Centros™ combines new and innovative algorithms with established software on a high-performance processor core. Centros™ improves the accuracy and repeatability of measurements and delivers unprecedented responsiveness in the field. Centros™ delivers powerful signal filtering and analysis allowing continued operation even in the most electrically noisy environments. Centros™ provides our customers with the most powerful measurement engine of any cable and pipe locator.

### iLOC™

iLOC™ is an advanced long range *Bluetooth*® link between the RD8000 locator and transmitter that helps save the operator time and effort. iLOC allows the operator to control the transmitter remotely using a number of unique features. With iLOC you can spend less time walking and more time locating. iLOC™ operates at distances up to 800 meters (875 yards) line of sight providing an operator with a fast and unique means of conducting a survey.

**iLOC applications supported are:**

- **SideStep™** – enables an operator to move the transmitter frequency slightly above the selected frequency enabling locates in areas prone to interference or where multiple operators are locating.
- **Frequency Select** – choose an active frequency on the RD8000 and synchronously change the transmitter frequency to match.
- **Power Management** – an operator can adjust the output power of the transmitter to optimize output signal, leading to efficient use of transmitter batteries.
- **Transmitter remote sleep/wake** – enter standby mode to prolong battery life. Conveniently wake the transmitter with a simple key press on the receiver. Transmitter can be set to standby mode each time passive location is carried out.

## eCAL™
Validate your RD8000 against its original factory calibration using Centros™ Manager on your own PC

## TruDepth™
Indicates depth when the locator is oriented correctly above the target for the most accurate reading.

## Dynamic overload protection
Allows use of locator in areas where excessive signals are present.

## Peak/Null Mode
Simultaneous screen view with proportional arrows enables swift identification of magnetic field distortion due to ground effects or nearby utilities.

### SurveyCERT™

SurveyCERT™ gives the operator the tools to pass survey information to third-party applications for audit, analysis and reporting. With the RD8000, the operator can store and review up to 1000 locate records. Upload this information to a PDA or PC using the RD8000 Bluetooth connection and you can instantly view the data using the SurveyCERT™ graph program. If the PC/PDA has a GPS receiver, SurveyCERT™ will automatically add the timestamp and position to the record. Built for interoperability, SurveyCERT™ data is compatible with commercial Geographical Information System (GIS) package.

### eCAL™

eCAL™ is a novel Radiodetection technique that allows the operator to validate the original factory calibration of the RD8000. This means the operator has confidence that the locator continues to meet its factory calibration. eCAL can issue and print a validation certificate without needing to return the RD8000 to a service center.

**TruDepth™:** gives the operator the confidence that the depth reading is accurate by only indicating a locate depth when the locator is correctly oriented directly above the pipe/cable.

**Dynamic Overload Protection:** extends the RD8000 operation into areas where other products fail. In electrically noisy environments, particularly in areas where very large signals are present, it automatically filters out unwanted signals allowing the operator to work effectively in areas such as power substations and overhead railway HV cables.

**Peak/Null mode:** is a tool to identify the effects of field distortion due to ground conditions or nearby utilities. Simultaneous display of Peak bar graph response and proportional Null arrows allow a quick assessment of locate conditions.

**Strike*Alert*™:** reduces the risk of accidents by detecting shallow power cables and alerting the operator with an audio warning.

**Passive Avoidance:** allows the operator to survey the ground quickly using simultaneous detection of Power and Radio signals carried on underground pipes or cables. The RD8000 provides real audio to differentiate the relative proportions of Power and Radio signals present.

**Compass:** Provides the operator with a visual indication of the target cable or pipes direction. With this feature, the operator can easily follow the target line and then position the locator correctly to maximize depth accuracy.

**Fault Find:** is a patented technique that enables an operator to locate a cable fault using an A frame attached to the Locator. On-screen arrows help show the fault's direction and help the operator locate the fault accurately to within 1 meter (39 inches).

**CD (Current Direction):** A patented method of identifying a target cable amongst a number of parallel cables using CD direction arrows. With CD the operator can locate a target quickly and eliminate wasted time following faulty trails.

The RD8000 represents the latest in electromagnetic locator technology. Designed to meet our customers' needs, the RD8000 provides a highly controllable, intuitive, cost-effective and reliable solution for any application, building on the reputation that Radiodetection has for supplying highly accurate, reliable and robust location products.

### Additional features

- Power, Radio, CATV and CPS passive modes
- 50Hz to 200kHz active frequency bandwidth
- Single antenna mode
- Peak Mode
- Null Mode
- Peak/Null Mode
- TruDEPTH™
- Current Measurement
- Real sound

### User configurable features

- Selectable 50/60Hz
- Selectable metric/imperial
- Selectable language
- Selectable battery type
- Selectable frequency and function set
- Selectable antennae modes
- Settings saved on power down

### Support Features

- USB port for upgrades using Centros™ Manager
- Online warranty registration for firmware and feature upgrades
- Compatible with RD4000 accessories
- High visibility reflective labels

High contrast LCD with auto-backlight operates from -20 to +60° Celsius (-4 to 140° F)

Splash-proof keypad

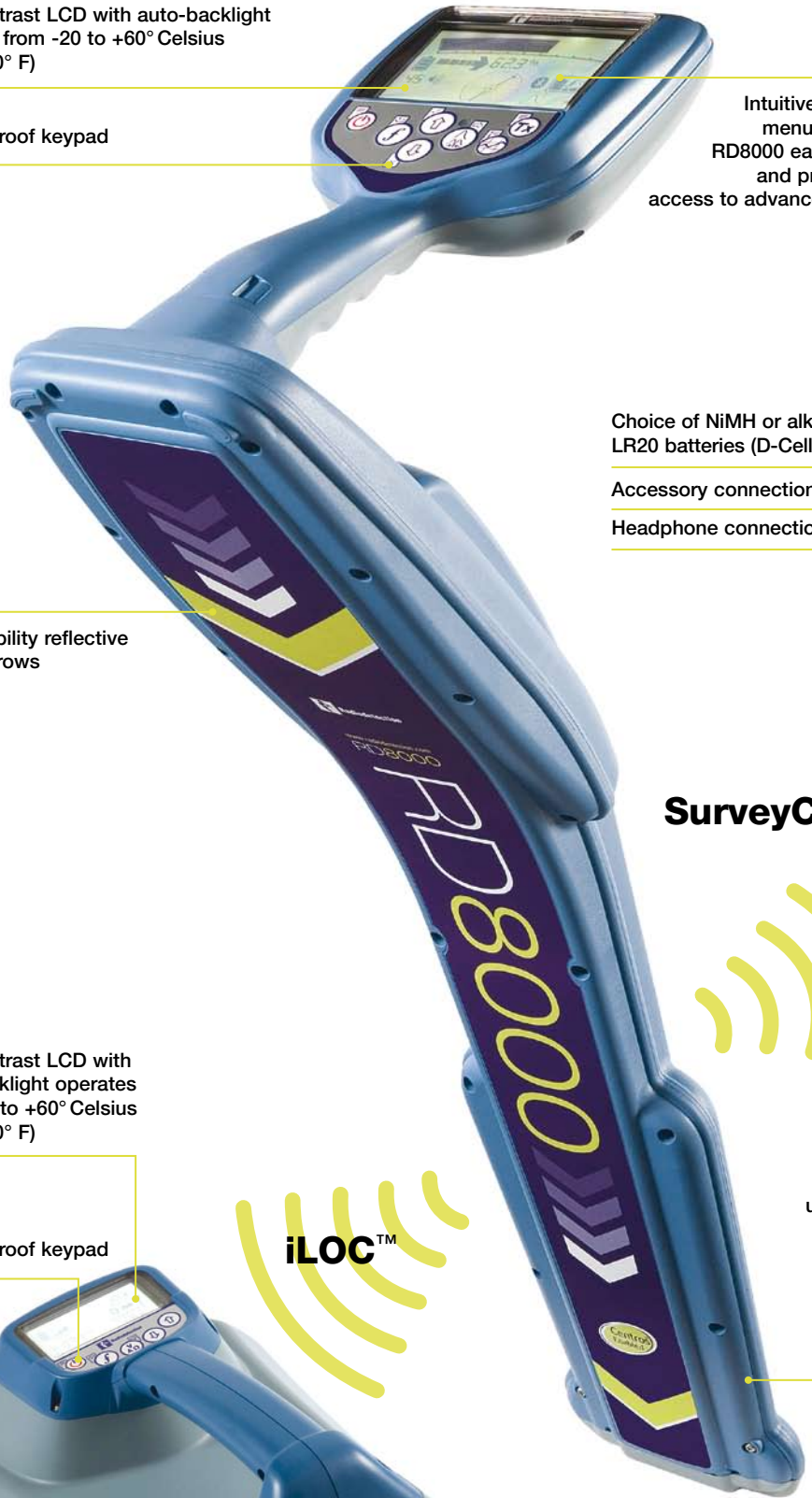
Intuitive on-screen menus make the RD8000 easy to setup and provide easy access to advanced features

Choice of NiMH or alkaline LR20 batteries (D-Cells)

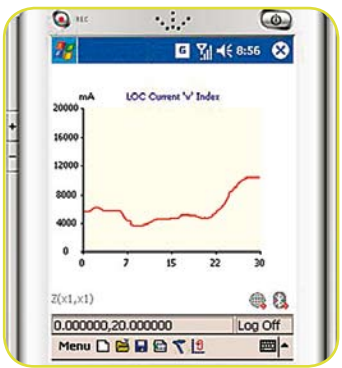
Accessory connections

Headphone connection

High visibility reflective safety arrows




**SurveyCERT™**



Stored data from RD8000 transferred by Bluetooth® may be displayed on a PC or PDA using Radiodetection's SurveyCERT™ application

High contrast LCD with auto-backlight operates from -20 to +60° Celsius (-4 to 140° F)

Splash-proof keypad

**iLOC™**


Ergonomic, robust ABS shock resistant and water resistant plastic case ensures reliable use in hostile environments

Ergonomic robust ABS case

Base tray for accessories

## Passive avoidance
Rapidly survey an area using power and radio signals simultaneously.

## Compass
Visually follow the target cable or pipe orientation with the dynamic line indicator.

## SideStep™
Lets the operator adjust the transmitter frequency to avoid unwanted interference.

## CD
Patented current direction arrows allow identification of target utility, eliminating faulty trails on parallel conductors.

# RD8000PXL

The RD8000PXL is the industry standard high performance cable and pipe locator. It has a broad range of active, passive and sonde frequencies as well as a number of unique user features supplied as standard.

# RD8000PDL

Radiodetection's most advanced cable and pipe locator delivers a broader range of frequencies and sophisticated fault-finding capabilities. It has all the features of the RD8000PXL and a larger range of active and passive frequencies (including CATV and CPS) plus Current Direction (CD), and Fault Find (FF) modes.


**RD8000 product features comparison table**

| Model No. | RD8000**PXL** | **RD8000PDL** |
|---|---|---|
| Passive frequencies: | | |
| Power/Radio | ✔ | ✔ |
| CATV / CPS | | ✔ |
| Active frequencies: | | |
| ELF (98/128Hz) | | ✔ |
| 570Hz | | ✔ |
| 577Hz | ✔ | ✔ |
| 512Hz | ✔ | ✔ |
| 640Hz | ✔ | ✔ |
| 760Hz | | ✔ |
| 870Hz | ✔ | ✔ |
| 920Hz | | ✔ |
| 940Hz | ✔ | ✔ |
| 8kHz | ✔ | ✔ |
| 9.8kHz | | ✔ |
| 33kHz | ✔ | ✔ |
| 65kHz | ✔ | ✔ |
| 83kHz | ✔ | ✔ |
| 131kHz | ✔ | ✔ |
| 200kHz | ✔ | ✔ |
| CD pairs: | | |
| 256Hz | | ✔ |
| 285Hz | | ✔ |
| 320Hz | | ✔ |
| 380Hz | | ✔ |
| 460Hz | | ✔ |
| Sonde frequencies: | | |
| 512Hz | ✔ | ✔ |
| 640Hz | ✔ | ✔ |
| 8kHz | ✔ | ✔ |
| 33kHz | ✔ | ✔ |
| Peak Mode | ✔ | ✔ |
| Null Mode | ✔ | ✔ |
| Peak/Null Mode | ✔ | ✔ |
| Single Mode | ✔ | ✔ |
| Fault Find CD & 8K | | ✔ |
| Current Direction (CD) | | ✔ |
| Centros™ | ✔ | ✔ |
| Compass | ✔ | ✔ |
| SurveyCERT™ | ✔ | ✔ |
| TruDepth™ | ✔ | ✔ |
| Dynamic overload protection | ✔ | ✔ |
| Strike*Alert*™ | ✔ | ✔ |
| Passive Avoidance | | ✔ |
| Depth on Power | | ✔ |
| eCAL™ | ✔ | ✔ |
| iLOC™ | RD8000**PXLB** | **RD8000PDLB** |

## Fully digital platform

Patented Triband ΔΣ design provides the transmitters with unparalleled flexibility of power, frequency and control.

## Robust

Constant current delivered from 200Hz to 200kHz meets the highest demands of reliability and performance.

## Power management

The operator can control transmitter output power remotely using iLOC™.

## Range of transmitters

1 Watt, 3 Watt and 10 Watt power ratings and features suitable for a broad range of applications.

# RD Transmitters

**Based on a fully digital platform, the new family of Radiodetection transmitters support the entire range of Radiodetection RD7000 and RD8000 cable and pipe locators.**

The Tx-1 is a low power transmitter. The Tx-3 has a higher current and induction capability as well as Fault Find. The Tx-10 has the highest current capability with both Fault Find and CD modes as standard.

All models feature a patented three-stage phase sensitive amplifier that delivers a ground-impedance compensated, constant current across its entire bandwidth in either direct connect, clamp or inductive mode. The transmitters use less power and are ergonomically designed to deliver superior performance in a new light-weight, well-balanced case.

The transmitters are 10% lighter than the industry standard T10 yet each is IP54 rated to cope with demanding environmental conditions. Each model has a removable accessory tray and a weatherproof battery compartment. A large, high contrast, backlit LCD screen provides the user with clear information. The interface is intuitive and responsive, allowing the operator to access any feature with ease.

**SideStep*auto*™:** allows the transmitter to calculate the optimum frequency based on ground impedance. The transmitter uses this information to optimize the active frequency. SideStep*auto*™ helps to improve locate accuracy and extends battery life.

All models are compatible with the complete range of RD7000 and RD8000 frequencies in both inductive and direct connect modes. The transmitters use 8 D-cell batteries and can be powered from a vehicle using a 12V cable plug (it is recommended that an approved Radiodetection isolation transformer is used).

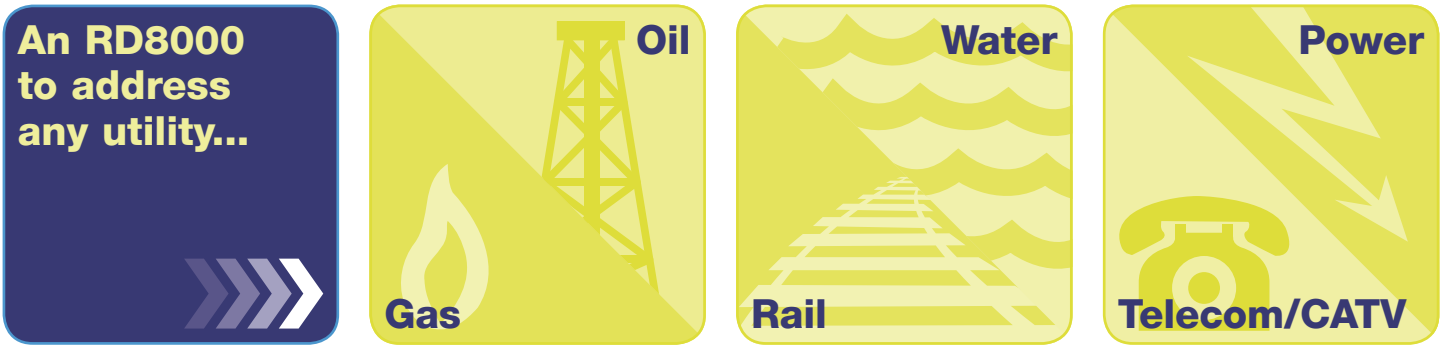
As an additional feature, each model has a multimeter function providing measurement of output voltage, line voltage, current, impedance and power.

To support the extended RD8000 iLOC feature set, the TX-3 and Tx-10 can be ordered with integrated iLOC.

## Transmitter features

- Three power versions 1 Watt, 3 Watt and 10 Watt
- 8KFF – locates faults from short circuit up to 2MΩ
- CDFF – for long distance fault finding
- 5 CD paired low frequencies
- Current delivered at 30V or high voltage mode (90V for high impedance operation)
- The transmitters have 200Hz to 200kHz active frequency range
- Selectable modes support RD7000 and RD8000 specific model locator frequency ranges
- 8 inductive frequencies
- iLOC™ (on Tx-3B and Tx-10B only)
- SideStep*auto*™
- Transient overvoltage protection
- Multimeter function
- 8 D-cell battery cassette (rechargeable battery pack option available)
- Accessory tray (for ground stake, direct connect leads and earth reel)
- Plug and play accessories (compatible with RD4000 transmitter accessories)
- External 12V DC operation (using Radiodetection isolation transformer)
- Click-touch splash-proof sealed keypad
- High contrast LCD

| Model No. | Power (Watt) | iLOC™ | Active frequencies | Induction frequencies | Induction field strength | 8KFF | CD | Frequency mode | Standby power mode |
|---|---|---|---|---|---|---|---|---|---|
| 10/RDTX1 | 1 | | 15 | 8 | 0.7 | | | Manual | |
| 10/RDTX3 | 3 | | 15 | 8 | 0.8 | ✔ | | Manual | |
| 10/RDTX3B | 3 | ✔ | 15 | 8 | 0.8 | ✔ | | iLOC™ | ✔ |
| 10/RDTX10 | 10 | | 15 | 8 | 1 | ✔ | ✔ | Manual | |
| 10/RDTX10B | 10 | ✔ | 15 | 8 | 1 | ✔ | ✔ | iLOC™ | ✔ |




| TECHNICAL SPECIFICATIONS FOR RECEIVER AND TRANSMITTER | |
|---|---|
| Sensitivity | 6E$^{-15}$ Tesla, 5µA at 1 meter (33kHz) |
| Dynamic range | 140dB rms/√Hz |
| Selectivity | 120dB/Hz |
| Depth accuracy | Line: ± 2.5% tolerance 0.1m (4") to 3m (10ft)<br>Sonde: ± 2.5% tolerance 0.1m (4") to 7m (23ft) |
| Maximum Depth* | Line 6m (20ft), Sonde 15m (50ft) |
| Locate accuracy | ± 2.5% |
| CD Fault-Finding (CDFF) | 220Hz to 4kHz |
| Fault-Finding (FF) | Diagnose cable sheath faults from short circuit to 2MΩ using the A-frame |
| Batteries | Rx: 2 x D-cells (LR20)<br>Tx: 8 x D-cells (LR20) |
| Battery life | Rx: 30 hours intermittent<br>Tx: use dependent on signal conditions typically 15 hours |
| Warranty | 36 Months upon registration |
| Dynamic overload protection | 30dB (automatic) |
| Compliance | FCC, RSS 310 RoHS, WEEE |
| Approvals | CE, Bluetooth® |
| Weight | Tx: = 2.84kg (6lbs) (including batteries)<br>4.2kg (9lbs) (including accessories)<br>Rx: =1.87kg (4lbs) (including batteries) |
| Environment | IP54 |

*RD8000 will locate to greater depths but with reduced accuracy.

**Patents, Trademarks and Notices.**

Our products are covered by the following intellectual property rights:

Patents:

US 4,896,117 US 5,260,659 US 5,210,497 US 6,642,796
US 5,576,973 US 6,268,731 US 7,184,951 US 6,777,923
US 6,977,508 US 6,968,296 US 7,235,980 US 6,717,392
US 6,717,392 US 6,836,231 US 6,777,923 EP 1,321,779
US 2007/ 0,290,672 US 2007/ 0,018,632 US 7,304,480
GB 2,363,010 GB 2,382,735 US 6,836,231 EP 1,474,734
GB0803871.3 GB0803992.7 GB0803990.1 GB0803873.9
GB0803874.7 GB0803875.4 GB0803991.9

The following trademarks are owned by Radiodetection:
iLOC™, TruDepth™, SideStep™, SideStep*auto*™, SurveyCERT™, RD7000™, RD8000™, Centros™, eCAL.™

The Design of the RD7000, RD8000 and transmitters has been registered.

The Design of the 4 chevrons has been registered.

The Bluetooth word mark and logos are owned by the Bluetooth SIG, Inc. and any use of such marks by Radiodetection is under licence.

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## Accessories:





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 dedicated service facilities. Turnaround is fast, and costs are very competitive.


Product training for your operators and training personnel is available on your site, or at Radiodetection's headquarters. Training is with qualified instructors and each trainee receives a certificate to confirm they have received the training.

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