

RADIODETECTION RD8100 PDL

PRECISION LOCATORS

RD8100 is our most advanced range of high-precision cable locators, and builds on over 40 years of pedigree to deliver performance, quality and durability. Containing a unique arrangement of 5 custom-manufactured, precision-ground antennas, it allows you to choose the best method to locate specific pipes and cables.

With utility infrastructures becoming more complex, locate professionals require more powerful, flexible tools. Features such as Current Direction and iLOC on the cable locator combine with the versatile Tx Transmitter range to deliver high-precision locates even in tough conditions

Integrated GPS and usage-logging options automatically generate data for customer reports, or in-house quality and safety audits to promote best working practices.

- Automatic usage logging with GPS positioning
- Current Direction (CD)
- Combine accuracy with speed – Peak+ mode
- Trace high impedance utilities with 4 kHz (supports CD)
- Quickly follow lines with Guidance Mode
- Customize the locator to your network frequencies
- Fault Find



SPECIFICATIONS

PERFORMANCE	
Sensitivity	6E-15 Tesla 5µA at 1 meter (33kHz)
Dynamic range	140dB rms/√Hz
Selectivity	120dB/Hz
Depth measurement precision ¹	± 3%
Locate accuracy	± 5% of depth
Active Locate filter bandwidth	± 3Hz, 0 < 1kHz ± 10Hz, ≥ 1kHz
Start-up time	Less than 1 second
Maximum depth readout ²	Metric: Cable / Pipe: 30m Sonde: 19.5m Imperial: Cable / Pipe: 98' Sonde: 64'
LOCATE FUNKTIONS	
Active Locate Modes	• Peak • Peak+™ (choice of combined Peak & Guidance or Peak & Null) • Guidance • Broad Peak™ • Null
Gain control Guidance Mode	Automatic Other modes: Manual gain using "+" or "-" with one touch to return to center (50% of Full Scale)
Custom locate frequencies	Up to 5 additional frequencies in the range 50Hz to 1kHz at 1Hz resolution
Active locate frequencies	ELF (98/128Hz) 512Hz, 570Hz, 577 Hz, 640 Hz, 760 Hz, 870 Hz, 940 Hz, 8kHz, 9.8kHz, 33kHz, 65kHz, 83kHz, 131kHz, 200kHz.
Sonde Frequencies	512Hz, 640Hz, 8kHz, 33kHz
Fault Find	Locate insulation sheath faults on pipes and cables to 10cm / 4" accuracy using the accessory A-Frame and a compatible transmitter: 8 kHz Fault Find CD Fault Find
Current Direction (CD) Signal Pairs	256Hz/512Hz 285Hz/570Hz 320Hz/640Hz 380Hz/760Hz 460Hz/920Hz 4096Hz/8192Hz 4kCD

Passive Locate Modes	Power, Radio, CPS (Cathodic Protection System), CATV, Passive Avoidance (Combined Power + Radio)
Information displayed	• Signal strength - moving bar graph and numeric value • Mode indication (Peak, Null, Guidance, Broad Peak, Peak+ with option of Guidance arrows or Null arrows) • Line or Sonde locate type • Proportional left/right indication • Compass: full 360° line direction indicator • Accessories in use indication • Accessory specific custom screen • Depth and current readout (Line location) • Depth readout (Sonde location) • Gain level (in dB) • Frequency selected • Battery condition • Speaker volume • Operating frequency • Bluetooth status • GPS satellites in view (where fitted) • GPS status (where fitted) • Configuration menu and submenus • Software version • Last calibration date • Survey measurement counter • Current Direction mode indicator • Current Direction arrows • Fault Find mode indicator • Transmitter communication status • Transmitter standby status • StrikeAlert™ warning • Overload warning
Audio output tones	Power / Passive Avoidance / Radio modes: Real Sound™ derived from detected electromagnetic signal Peak / Peak+ modes and CPS / CATV modes: Synthesized audio tone proportional to signal strength Guidance mode: Continuous tone when locator is to the left of target, intermittent tone when to the right of target Null mode: Synthesized Audio tone proportional to signal strength. Low pitch to left of target, high pitch to right of target StrikeAlert audio warning: Audio feedback for menu navigation
Accessory locate functions	Locator clamps: Used to identify individual target cable(s) in a bundle or cabinet using signal strength read-out Stethoscopes: Used to identify individual target cable(s) in a bundle or confined space such as a cabinet using signal strength read-out CD / CM clamp: Used to measure locate current and to confirm target cable using Current Direction
LOCATE FUNCTION ENHANCEMENTS	
StrikeAlert	Audio and visual warning when a cable or pipe less than 30cm deep is detected. Operates in Active and Passive locating modes
Dynamic Overload Protection	40dB, automatic • Automatically manages the system gain to compensate for strong signals e.g. from mains power or substations, to enable accurate locating
Current Direction (CD)	• Measures the direction of current flowing in buried pipes or cables to ensure that an operator is able to identify and follow the target utility • Provides operator with arrows indicating the direction of current flowing in the located pipe or cable to confirm that they are following the target utility
iLOC	Metric: Remote transmitter control from up to 450m away3 Imperial: Remote transmitter control from up to 1400' away3 Control transmitter frequency, power level and SideStep
SideStep	Enables locating where other signals are interfering, and without compromising the optimum locate frequency. Remotely shifts the locate and transmitter frequency by several Hz, out of the bandwidth of other locate signals that may be interfering with the locate.
Simultaneous depth and current readout	Both utility depth and locate signal current are displayed simultaneously, giving the operator more information to help them to follow the target utility
Survey Measurements	Store up to 1,000 survey points within the locator, and append GPS data from internal GPS (if fitted) or external GNSS sources over Bluetooth®. Export data immediately or as a batch over Bluetooth.
Fault Find	Apply a Fault Find signal with a Tx-5 and Tx-10 transmitter, then use an accessory A-Frame to detect and pinpoint insulation faults. Fault find accuracy:

	Metric: 100mm Imperial: 4"
4kHz locate frequency and 4kHz CD	Designed for tracing higher impedance lines such as twisted pair telecoms or street lighting over distance. Combine with Current Direction to help trace the target utility through dense or complex infrastructure.
Peak+ mode	Use the accurate Peak bargraph, and add either proportional Guidance arrows for faster locating, or Null arrows to check for the presence of distortion
Integrated GPS option	Faster surveying using integrated GPS – no need for a separate hand-held device
CONFIGURABILITY	
Option selection	All options can be enabled or disabled on the locator or using the RD Manager PC software
Languages supported	Fourteen: English, French, German, Dutch, Polish, Czech, Slovakian, Spanish, Portuguese, Swedish, Italian, Turkish, Russian, Hungarian
Mains power network options	50 Hz or 60 Hz
Mode selection	All locate modes with the exception of Peak Mode can be individually enabled or disabled
Active frequency selection	All active frequencies available can be individually enabled or disabled
Passive mode selection	All passive modes can be individually enabled or disabled
StrikeAlert	Enable / disable
Peak+ arrow selection	Guidance arrows or Null arrows Selected using the locator menu or with a long press of the antenna key
GNSS ('GPS') settings	Internal / External (connect over Bluetooth) / Off / Reset SBAS On / Off
Bluetooth	On / Off
Data export protocols supported	PPP / choice of 3 ASCII formats. Optionally append positional data
Time / date setting	Correct or update locator real-time clock using the RD Manager PC software or GNSS signals
CD Reset	Reset CD phase analysis with a single long press of the frequency key
CONNECTIVITY	
Wireless connections	Bluetooth class 1
iLOC™ remote transmitter control range ³	Metric: Up to 450m Imperial: Up to 1400'
iLOC remote transmitter control functions	Set transmitter frequency Set transmitter power output level Transmitter standby SideStep
Wired connections Mini-USB	Connect to a PC to configure and update locator, and to retrieve usage log and survey measurement data 3.5mm Stereo jack: Connect wired headphones Accessory port: Connect Radiodetection accessories
POWER OPTIONS	
Alkaline battery options	2 × D-Cell (MN1300 / LR20) alkaline batteries (standard)
Rechargeable battery options	Custom Lithium-Ion (Li-Ion) battery pack 2 × D-Cell (MN1300 / LR20) Nickel Metal Hydride (NiMH) batteries
Battery run-time (continuous) ⁴	Li-Ion pack: 35 hours 2 × Alkaline D-Cells 13 hours
Battery chemistry identification	Lithium-Ion pack: Automatic sensing NiMH / Alkaline: Software switchable
Charging options (Li-Ion pack)	Mains charger: 100-250 Volts AC, 50/60 Hz Automotive charger: 12-24V DC
Charging time (Li-Ion pack)	3 hours to 80% from empty with maintenance trickle charging thereafter

PHYSICAL CHARACTERISTICS	
Design	Ergonomic, balanced and lightweight design for comfortable use during extended surveys
Construction	Injection Molded ABS Plastic
Weight	With Lithium-Ion battery pack fitted: Metric: 1.8kg Imperial: 4.0lb With D-cell alkaline batteries fitted: Metric: 1.9kg Imperial: 4.2lb
Ingress Protection rating:	IP65 Protected against dust ingress and jets of water ⁵ applied from any direction
Display type	High contrast custom made monochrome LCD
Audio options	Built-in waterproofed speaker 3.5mm headphone socket
Operating temperature ⁶	Metric: -20°C to 50°C Imperial: -4°F to 122°F
Storage temperature	Metric: -20°C to 70°C Imperial: -4°F to 158°F
Unit dimensions	Metric: 648mm × 286mm × 125mm Imperial: 25.5" × 11.3" × 4.9"
Shipping dimensions	Metric: 700mm × 260mm × 330mm Imperial: 27.6" × 10.2" × 13"
Shipping weight (with batteries fitted):	Metric: 2.6kg Imperial: 5.7lb

All specification are measured in test conditions, at 21°C / 70°F, and fitted with 2 × good quality alkaline batteries unless otherwise noted.

1 Based on volumetric testing at a known fixed depth. True depth accuracy depends on factors such as ground composition, utility characteristics and the locate frequency / signal strength employed. Always follow local safe digging guidelines.

2 The RD8100 will locate to greater depths in the right conditions, but depth accuracy will be compromised. Depth measurement will not be displayed beyond these depths.

3 Tested with clear line-of-sight. Range is dependent on electrical environment and weather conditions. For optimum range, face the locator toward the transmitter and raise the transmitter 2' / 60cm from the ground.

4 To provide repeatable measurements, run-time is measured with GPS and Bluetooth functions switched to 'off'.

5 Water projected by a nozzle at a pressure of 30kPa / 0.3 bar / 4.4 psi in accordance with BS EN 60529 1992 A2 2013.

6 At very low temperatures, battery life will be degraded, LCD performance may slow and measurement precision may reduce.