RADIODETECTION

SPX

RD7200™ locator specification

Precision locators

RD7200 Locator Specification

1. Product Summary

1.1 Product Descriptions	Precision Buried Utility Locator Precision Cable and Pipe Locator Locate System Receiver Utility Specific Precision Locator
1.2 Intended Use	Locating the position / path of buried pipes and cables Detecting and pinpointing insulation faults on buried pipes and cables
1.3 Standard Equipment	Locator Quickstart guide Type C to USB A data cable

2. Performance

2.1 Sensitivity	6E-15 Tesla 5µA at 1 meter (33kHz)
2.2 Dynamic range	140dB rms/√Hz
2.3 Selectivity	120dB/Hz
2.4 Depth measurement precision[1]	± 3%
2.5 Locate accuracy	± 5% of depth
2.6 Active Locate filter bandwidth	± 3Hz, 0 < 1kHz ± 10Hz, ≥ 1kHz
2.7 Start-up time	Less than 1 second
2.8 Maximum depth readout[2]	Metric: Cable / Pipe: 30m Sonde: 19.5m Imperial: Cable / Pipe: 98' Sonde: 64'

3. Locate Functions

3.1 Active Locate Modes	▪ Peak ▪ Peak+™ (choice of combined Peak & Guidance or Peak & Null) ▪ Guidance ▪ Null
3.2 Gain control	Guidance Mode: Automatic Other modes: Manual gain using "+" or "-" with one touch to return to center (50% of Full Scale)
3.3 Active locate frequencies	8 Frequencies: 512Hz, 640Hz, 8kHz, 33kHz, 65kHz, 83kHz, 131kHz and 200kHz
3.4 Sonde Frequencies	4 Frequencies: 512Hz, 640Hz, 8kHz and 33kHz
3.5 Fault Find	8KFF Locate insulation sheath faults on pipes and cables to 10cm / 4" accuracy using the accessory A-Frame and a compatible transmitter
3.6 Passive Locate Modes	Power, Radio and CPS (Cathodic Protection System)

3.7 Power Filters™ function

Switch out of Radiodetection's sensitive Power Mode to locate on any of 5 individual mains harmonic frequencies.

HARMONIC	50 Hz regions	60 Hz regions
Primary	50 Hz	60 Hz
3rd	150 Hz	180 Hz
5th	250 Hz	300 Hz
7th	350 Hz	420 Hz
9th	450 Hz	540 Hz

3.8 Information displayed

- Signal strength - moving bar graph and numeric value
- Mode indication (Peak, Null, Guidance, 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
- Simultaneous depth and current readout (Line location)
- Depth readout (Sonde location)
- Gain level (in dB)
- Frequency selected
- Battery condition
- Speaker volume
- Operating frequency
- Configuration menu and submenus
- Software version
- Last calibration date
- Fault Find mode indicator
- Strike*Alert*™ warning
- Overload warning
- Swing warning

3.9 Audio output tones

Volume level:
Vol0, Vol1, Vol2, Vol3, Vol4 and Vol5

Audio Pitch:
Low and High

Audio feedback for menu navigation

Strike*Alert* audio warning

Swing audio warning

Power / Radio modes:
Real Sound™ derived from detected electromagnetic signal

Peak / Peak+ 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

3.10 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

Please refer to Section 12 Compatible Accessories – for a complete list of locator accessories

4. Locate Function Enhancements

4.1 Strike*Alert*™	Audio and visual warning when a cable or pipe less than 12" / 30cm deep is detected. Operates in Active and Passive locating modes
4.2 Haptic Vibration	Handle vibrates when StrikeAlert, Swing and Overload warnings activated
4.3 Swing Warning	Audio and visual warning when the user is swinging the locator excessively
4.4 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
4.5 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
4.6 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"
4.5 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

5. Configurability

5.1 Option selection	All options can be enabled or disabled on the locator or using the RD Manager PC software
5.2 Languages supported	Fourteen: English, French, German, Dutch, Polish, Czech, Slovakian, Spanish, Portuguese, Swedish, Italian, Turkish, Russian, Hungarian
5.3 Mains power network options	50 Hz or 60 Hz
5.4 Mode selection	All locate modes can be individually enabled or disabled
5.5 Active frequency selection	All active frequencies available can be individually enabled or disabled
5.6 Passive mode selection	All passive modes can be individually enabled or disabled
5.7 Strike*Alert*	Enable / disable
5.8 Swing warning	Enable / disable
5.9 Haptic vibration	Enable / disable
5.10 Peak+ arrow selection	Guidance arrows or Null arrows Selected using the locator menu or with a long press of the antenna key

6. Connectivity

6.1 Wired connections	**Mini USB:** Connect to a PC to configure and update locator, and to retrieve usage log **3.5mm Stereo jack:** Connect wired headphones **Accessory port:** Connect Radiodetection accessories
6.2 Wireless connections	BLE 5.0

7. Power options

7.1 Alkaline	2 × D-Cell (MN1300 / LR20) alkaline batteries (standard)
7.2 Rechargeable	Custom Lithium-Ion (Li-Ion) battery pack 2 × D-Cell (MN1300 / LR20) Nickel Metal Hydride (NiMH) batteries
7.3 Battery run-time (continuous)[3]	Li-Ion pack: 35 hours 2 × Alkaline D-Cells 13 hours
7.4 Battery chemistry identification	Lithium-Ion pack: Automatic sensing NiMH / Alkaline: Software switchable
7.5 Charging options (Li-Ion pack)	Mains charger: 100-250 Volts AC, 50/60 Hz Automotive charger: 12-24V DC
7.6 Charging time (Li-Ion pack)	3 hours to 80% from empty with maintenance trickle charging thereafter

8. Physical Characteristics

8.1 Design	Ergonomic, balanced and lightweight design for comfortable use during extended surveys
8.2 Construction	Injection Molded ABS Plastic
8.3 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
8.4 Ingress Protection rating	IP65 Protected against dust ingress and jets of water[4] applied from any direction
8.5 Display type	High contrast custom made monochrome LCD
8.6 Audio options	Built-in waterproofed speaker 3.5mm headphone socket
8.7 Operating temperature[5]	Metric: -20 to 50°C Imperial: 14 to 122°F
8.8 Storage temperature	Metric: -20 to 70°C Imperial: 14 to 158°F
8.9 Unit dimensions	Metric: 648mm × 286mm × 125mm Imperial: 25.5" × 11.3" × 4.9"
8.10 Shipping dimensions	Metric: 700mm x 260mm × 330mm Imperial: 27.6" x 10.2" x 13"
8.11 Shipping weight (with batteries fitted)	Metric: 2.6kg Imperial: 5.7lb

9. RD Manager™ Online Supporting PC Software

9.1 Operating System Compatibility	Microsoft® Windows® 10 64-bit versions
9.2 Locator system compatibility	Radiodetection RD7200 and RD8200 Precision Locators
9.3 Functions	▪ Locator configuration ▪ eCert™ remote calibration certification ▪ Factory calibration certificate retrieval ▪ User account management ▪ CALSafe™ maintenance schedule enforcement ▪ Locator software update

10. Warranty and Maintenance

10.1 Manufacturer's warranty duration	**3 years standard, on registration**
10.2 Recommended calibration and maintenance schedule	**Annual, or at the beginning / end of a lease period if earlier**
10.3 eCert remote calibration	▪ Remote calibration certification using an internet connection to Radiodetection ▪ Recommended schedule: annual, or at the beginning / end of a lease period
10.4 CALSafe™	▪ Can be enabled to prevent the locator operating when beyond a defined calibration / maintenance schedule ▪ Disabled by default ▪ 30-day countdown to calibration due date
10.5 Enhanced Self-Test	On-unit Applies test signals to locate circuitry to confirm correct operation, as well as the typical tests for screen and DSP functions. Recommended schedule: weekly, or before each use.
10.6 Storage recommendation	Store in a clean and dry environment. Ensure all terminals and connection sockets are clean, free of debris and corrosion and are undamaged
10.7 Cleaning	Clean with a soft, moistened cloth. Do not use ▪ Abrasive materials or chemicals ▪ High pressure jets of water If using this equipment in foul water systems or other areas where biological hazards may be present, use an appropriate disinfectant.

11. Certification and Compliance

11.1 Standards	
Safety:	**EN 61010-1:2010**
EMC:	**EN 61326-1:2013** **EN 300 330-2 (V1.5.1)** **EN 300 440-2 (V1.4.1)** **EN 301 489-3 (V1.6.1)** **EN 301 489-17 (V2.2.1)**
Environmental:	**EN 60529 1992 A2 2013** **EN 60068-2-64:2008 Test Fh** **ESTI EN 300 019-2-2:1999 (per table 6)** **EN 60068-2-27:2009 (Test Ea)** **ESTI EN 300 019-2-2:1999 (per table 6)**
11.2 European directives	**Radio Equipment Directive – 2014/53/EU** **Low Voltage Directive – 2014/35/EU** **EMC Directive – 2014/30/EU** **RoHS – Restriction of Hazardous Substances – Directive – 2011/65/EU** **Declaration of conformity is available from www.radiodetection.com**
11.3 Environmental	**WEEE compliant** **ROHS compliant**
11.4 Manufacturing	**ISO 9001:2015**

12. Compatible Accessories

	Accessory	Part description						Part number
12.1	Lithium-Ion battery packs	Li-Ion rechargeable battery mains kit (Includes mains charger) Li-Ion rechargeable battery pack (no charger)						10/RX-MBATPACK-LION-K 10/RX-BATPACK-LION
12.2	Lithium-Ion battery chargers	Li-Ion automotive charger Li-Ion mains charger						10/RX-ACHARGER-LION 10/RX-MCHARGER-LION
12.3	Alkaline battery trays	2 × D Cell battery tray (MN1300 / LR20)						10/RX-2DCELL-TRAY
12.4	Transportation and storage accessories – *For combined locator and transmitter*	Soft Carry Bag Wheeled Flight Case Hard Case						10/LOCATORBAG 10/RD7K8KCASE 10/RD7K8KCASE-USA
12.5	Locator signal clamps *– For identification and location of utilities*	Metric: 50mm Locator Clamp Imperial: 2" Locator Clamp Metric: 100mm Locator Clamp Imperial: 2" Locator Clamp Metric: 130mm Locator Clamp Imperial: 5" Locator Clamp						10/RX-CLAMP-50 10/RX-CLAMP-2 10/RX-CLAMP-100 10/RX-CLAMP-4 10/RX-CLAMP-130 10/RX-CLAMP-5
12.6	Signal stethoscopes *– To locate and identify individual utilities e.g. within walls, congested areas or when cables/utilities are in close proximity to each other*	High Gain Stethoscope Large Stethoscope Small Stethoscope						10/RX-STETHOSCOPE-HG 10/RX-STETHOSCOPE-L 10/RX-STETHOSCOPE-S
12.7	Sondes *Battery powered signal transmitters for tracing or locating non-conductive utilities*		Diameter		Range		Freq (Hz)	
			mm	In	m	Ft		
		S6 Microsonde	6	¼	2	6½	33k	10/SONDE-MICRO-33
		S9 Minisonde	9	3/8	4	13	33k	10/SONDE-MINI-33
		S13 Super Small Sonde	13	½	2	6½	33k	10/SONDE-S13-33
		S18 Small Sonde	18	¾	4	14	33k	10/SONDE-S18A-33
		Standard C-Sonde	39	1½	5	16½	33k	10/SONDE-STD-33
							8	10/SONDE-STD-8
							512	10/SONDE-STD-512
		Sewer Sonde	64	2½	8	26	33k	10/SONDE-SEWER-33
		Super Sonde	64	2½	15	50	33k	10/SONDE-SUPER-33
		Flexi Sonde	23	7/8	6	20	512	10/SONDE-BENDI-512
12.8	Submersible antennas	512Hz Submersible DD Antenna 640Hz Submersible DD Antenna 8kHz Submersible DD Antenna						10/RX-SUBANTENNA-512 10/RX-SUBANTENNA-640 10/RX-SUBANTENNA-8K
12.9	FlexiTrace™ *– Use with a transmitter to trace small diameter pipes*	FlexiTrace 50m / 165' FlexiTrace 80m / 260'						10/TRACE50-GB 10/TRACE80-GB

Accessory	Part description				Part number
12.10 Flexrods – *Fibreglass rod used for propelling Radiodetection sondes through pipes to trace the path and locate blockages*	Length		Diameter		
	m	Ft	mm	In	
	50	160	4.5	3/16	10/FLEXRODF50-4.5
	80	260	4.5	3/16	10/FLEXRODF80-4.5
	50	160	7	¼	10/FLEXRODF50-7
	100	320	7	¼	10/FLEXRODF100-7
	150	485	7	¼	10/FLEXRODF150-7
	60	195	9	3/8	10/FLEXRODF60-9
	120	390	9	3/8	10/FLEXRODF120-9
12.11 A-Frame – *Used for locating sheath faults on cables and coating defects on pipelines*	A-Frame (includes A-Frame Lead) A-Frame Bag				10/RX-AFRAME 10/RX-AFRAME-BAG
12.12 Headphones	Recommended for use in noisy environments				10/RX-HEADPHONES
12.13 Calibration Certificates	Locator Calibration Certificate, per unit (request with initial locator order) eCert™ Calibration Credit				97/RX-CALCERT 10/RX-ECERT

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 RD7200 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 To provide repeatable measurements volume level is set to VOL0.

4 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.

5 At very low temperatures, battery life will be degraded and measurement precision may be reduced.

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