RADIODETECTION

Test Equipment tmg

Sondes

USER GUIDE 90/NUG012ENG/07 ISSUE 7 03/2016

SPX

This user guide covers Radiodetection's range of sondes and associated accessories,

including Flexrods and FlexiTraces, which can be used in tracing the paths of pipes, ducts, sewers and drains, and in the precise location of blockages or collapses.

Specifications are provided together with sales part numbers. All depths stated refer to maximum reliable working depth – in some situations, the sondes will function at a greater depth.

Radiodetection supplies a comprehensive range of sondes, some locatable to depths of up to 15m (49') and with diameters ranging from 6.4mm (0.25") to 64mm (2.52"), to suit a wide variety of applications.

Radiodetection sondes can be fitted to a flexible rod for insertion or pushing through pipes etc. and the smaller sondes can be used with jetting machines and 'blown' through pipes or ducts to trace or locate blockages or collapses. An optional plain end cap with eyelet can be purchased for some sondes and is particularly useful when pulling a sonde through a duct on the end of a string, or when 'blown' through ducts.

S6 Microsonde

A micro sized sonde designed for use in very small diameter applications – particularly microducts. Can be fitted to a flexible rod using M5 female thread or jetted through duct.

Size:	**Length 83mm (3.27"), Diameter 6.4mm (0.25")**
Location Depth: 2m (6.5')	
Battery:	**CR425 – providing 8 hours continuous use**
Signal:	**33kHz continuous**
Order codes:	**10/SONDE-MICRO-33, comprising sonde, flexible adaptor, 2 batteries, case and user guide**
	10/SONDE-MICRO-BATPACK – 10 CR425 batteries in case

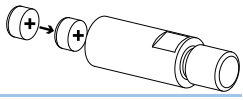
S9 Minisonde

A mini sized sonde designed for use in small diameter applications where diameter restricts the use of larger sondes. Can be fitted to a flexible rod using M6 female thread.

Size:	**Length 138mm (5.4"), Diameter 9mm (0.35")**
Location Depth: 4m (13')	
Battery:	**CR535 – providing 8 hours continuous use**
Signal:	**33kHz continuous**
Order codes:	**10/SONDE-MINI-33, comprising sonde, 2 batteries, case and user guide**
	10/SONDE-MINI-BATPACK – 10 CR535 batteries in case

Super Small Sonde (S13)

A very small sonde designed for use in small conduits and ducts, and capable of passing around tighter bends. Used with flexible rods or blown/pulled through pipe or duct. Supplied as a kit.

Size:	**Diameter 12.7mm (0.5")**
	Length with plain end cap 70mm (2.75") with M10 male end cap 87mm (3.43")
Location Depth:	**2m (6.6')**
Battery:	**2 x V393 silver oxide providing 8 hours continuous use** 
Signal:	**33kHz continuous**
Pressure:	**2 bar – 20m (65') of water**
Order codes:	**10/SONDE-S13-33, comprising sonde body, M10 male threaded end cap, plain end cap, 2 batteries and case**
	10/SONDE-S13-BATPACK, pack of 10 V393 batteries

Small Sonde (S18)

A small sonde particularly useful in small diameter applications. Used with flexible rods or

blown/pulled through pipe or duct. Available as a complete kit.

Size:	**Diameter 18mm (0.7")**
	Length with plain end cap 82mm (3.2") with M10 male end cap 97mm (3.8")
Location Depth:	**4m (13')**
Battery:	**2 x CR1/3N or 1 x D1/3N providing 8 hours continuous use**
Signal:	**33kHz continuous**
Pressure:	**2 bar – 20m (65') of water**
Order codes:	**10/S18-33-KIT, comprising sonde body, M10 end cap, plain end cap and 2 batteries**
	10/SONDE-S18A-33, sonde body, M10 end cap and 1 battery
	10/S18-PLAINENDCAP
	10/S18-BATTERYPACK, pack of 5 D1/3N type batteries

Standard Sonde

The standard sonde combines compact size and strong signal. Supplied with M10 male threaded end cap and available in 512Hz, 8kHz or 33kHz options.

The 512Hz version is particularly useful for use in cast iron pipes.

Size:	**Length 105mm (4.1"), Diameter 39mm (1.5")**
Location Depth:	**5m (16')**
Battery:	**1 x AA providing 8 hours continuous use**
Signal:	**512Hz, 8kHz or 33kHz continuous**
Pressure:	**2 bar – 20m (65') of water**
Order codes:	**10/SONDE-STD-512, 512Hz version**
	10/SONDE-STD-8, 8kHz version
	10/SONDE-STD-33, 33kHz version
	10/AABATTERYPACK, pack of 5 AA batteries

Slim Sonde

Slim sonde used for locating duct structures.

Size:	**Length 198mm (7.8"), Diameter 22mm (0.9")**
Location Depth:	**3.5m (11.5')**
Battery:	**1 x AA providing 12 hours continuous use**
Signal:	**33kHz continuous**

Pressure:	**2 bar – 20m (65') of water**
Order codes:	**10/SONDE-SLIM-33**
	10/AABATTERYPACK, pack of 5 AA batteries
	10/SONDE-SLIM-ENDCAP, Slim Sonde plain end cap

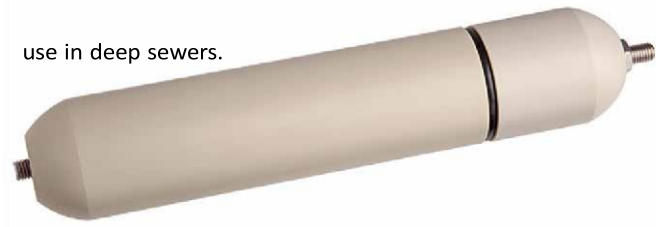
Sewer Sonde

Robust sonde with a very strong enclosure, suitable for abrasive applications such as for use in sewers.

Size:	**Length 168mm (6.6"), Diameter 64mm (2.5")**
Location Depth:	**8m (26')**
Battery:	**1 x PP3 providing 15 hours continuous use**
Signal:	**33kHz continuous or pulsed (Reverse battery to change signal)**
Pressure:	**0.2 bar – 2m (6.6') of water**
Order codes:	**10/SONDE-SEWER-33**
	10/PP3BATTERYPACK, pack of 5 PP3 batteries
	10/SONDE-SEWER-SHELL, external shell for heavy-duty applications

Super Sonde

Robust sonde with a very strong enclosure, suitable for abrasive applications and for use in deep sewers.



Size:	**Length 318mm (12.5"), Diameter 64mm (2.5")**
Location Depth:	**15m (49')**
Battery:	**1 x PP3 providing 5 hours continuous use**
Signal:	**33kHz continuous or pulsed (Reverse battery to change signal)**
Pressure:	**0.2 bar – 2m (6.6') of water**
Order codes:	**10/SONDE-SUPER-33**
	10/PP3BATTERYPACK, pack of 5 PP3 batteries

BendiSonde

A 3-section sonde that is particularly useful in cast iron pipes and applications where flexibility is required.

Size:	**Length 475mm (18.8"), Diameter 23mm (0.9")**
Location Depth:	**6m (20')**
Battery life:	**1 x AA providing 15 hours continuous use**
Signal:	**512Hz continuous**
Pressure:	**2 bar – 20m (65') of water**
Order codes:	**10/SONDE-BENDI-512 – sonde with M10 male end cap**
	10/AABATTERYPACK, pack of 5 AA batteries

Notes:

Sondes are intended to be used for location purposes only and should be used in this way. Failure to do so may result in damage to the sonde and may invalidate the warranty.

Sondes are not classified as 'intrinsically safe' for use in applications where hazardous gases are present.

The majority of Radiodetection sondes transmit on 33kHz and as such can be used with a wide range of Radiodetection locators. For 512Hz and 8kHz sondes, please check with the specific locator user guide for compatibility.

Test Equipment tmg

CONTRACTOR ESSENTIALS

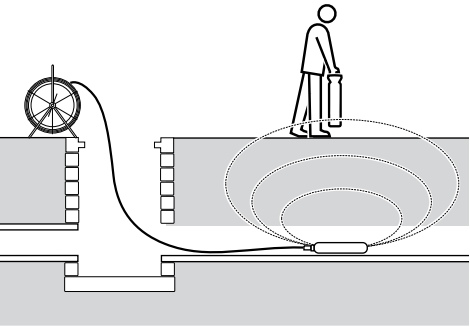
ContractorEssentials.com.au

contractoressentials.com.au/sondes

LocatiNg a SoNde

A new battery or a freshly recharged battery should be used at the beginning of each day and preferably at the start of a job. Check that the sonde and locator are operating at the same frequency and working correctly.

A quick test for both sonde and locator is to position the sonde at a distance equal to its rated depth range from the locator. Point the locator at the sonde with its blade in-line with the sonde, and check that the bar graph on the locator displays more than 50% with the sensitivity of the locator set to maximum.

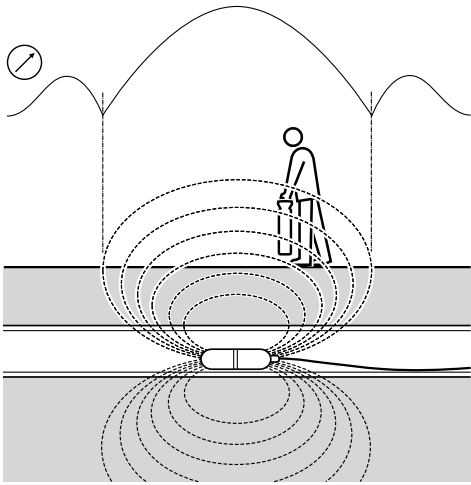


Note: The blade of the locator must be in line with the sonde, the opposite to cable locating.

With the sonde attached to the flexible rod, insert it into the drain or duct to be located, keeping the sonde just in view. Hold the locator vertically and directly over the sonde, with the blade in-line with the sonde.

Adjust the sensitivity of the locator to give a bar graph display reading between 60% and 80%.

A sonde radiates a peak field from the centre of its axis with ghost signals at each side of the peak. Move the locator a little way to one side and then along the axis of the sonde forwards and backwards to detect the ghost signals.



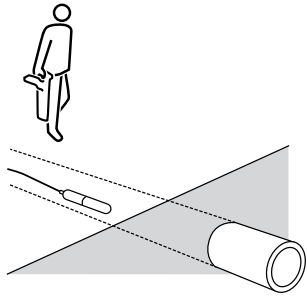
It is a good idea to locate the ghosts as finding them positively confirms the position of the main peak. To lose the ghosts subsequently, reduce the sensitivity of the locator a little to leave only the main peak detectable.

With the locator sensitivity set as desired, propel the sonde along three to four paces and stop. Place the locator over the estimated position of the sonde and:

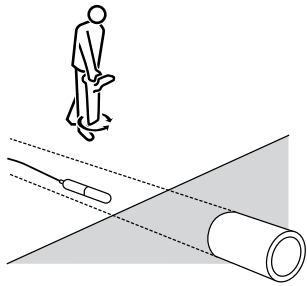
(a) Move the locator backwards and forwards with the blade in line with the sonde and stop when the locator display indicates a clear peak response.

(b) Rotate the locator as if the blade were a pivot, stop when the display indicates a clear peak response.

(c) Move the locator from side to side until the display indicates a clear peak response.

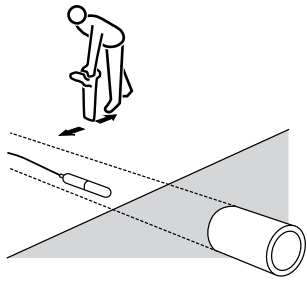


(a)



(b)

Repeat (a), (b) and (c) in smaller increments with the locator blade resting on or near the ground. The locator should now be directly above the sonde with the blade in line with the sonde. Now mark the position.



(c)

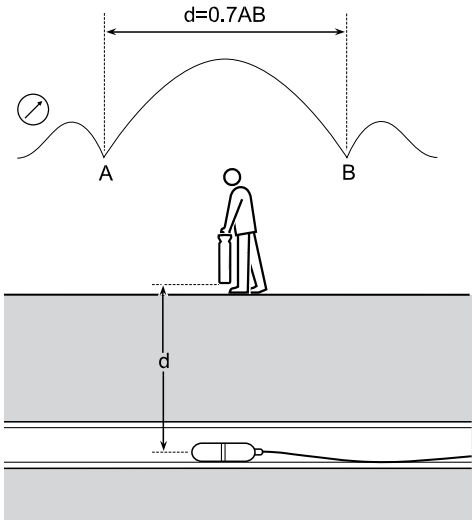
Propel the sonde a further three to four paces along the drain or duct and pinpoint and mark. Repeat this procedure along the route at similar intervals. It should only be necessary to change the locator sensitivity while tracing the sonde if there is a change in the depth of the drain or duct, or the distance between locator and sonde.

MeaSuriNg depth to a SoNde

Pinpoint the sonde as previously described and rest the locator on the ground and in-line with the sonde. Adjust the sensitivity to provide a bar graph deflection between 60% and 80%. Refer to the specific locator user guide on how to obtain a sonde depth measurement.

If the locator does not provide depth measurements or the sonde is too deep for the locator to display or calculate a depth measurement but can still be located, the following method may be used to calculate the sonde's depth.

Pinpoint the sonde. Move the locator in front of the sonde and while in line with the sonde, increase the sensitivity of the locator slightly to find the ghost signal. Between the main peak and the ghost there is a Null or minimum signal. Now move behind the sonde and repeat, find the Null between the ghost and main peak. See points 'A' and 'B' on the diagram. The



higher the sensitivity of the locator the sharper the nulls appear. Measure the distance between point 'A' and 'B' and multiply by 0.7 to give an approximate depth measurement.