



**VIVAX**  
**METROTECH**

**indepth**<sup>TM</sup>  
UTILITY SOLUTIONS  
281-969-8530

# VM-850

## Technical Specifications V2.2



## A. Description and Typical Applications

Item	Parameter	
Model Number	VM-850 Receiver	VM-850 Transmitter
	VX216-01	VX216-02
Description	Single low-frequency locator receiver and transmitter	
Uses	Locating & pinpointing the position of buried pipes and cables	

## B. Receiver Characteristics

Item	Parameter	
Construction	<ul style="list-style-type: none"> <li>- High impact thermoplastic (ABS) injection molded housing</li> <li>- Retractable aluminum antenna tube</li> </ul>	
Weight	3.1lbs (1.4kg)	
Dimensions	Collapsed: 22in(L) x 8.3in(W) x 11in(H) (560mm x 210mm x 280mm) Extended: 31.1in(L) x 8.3in(W) x 11in(H) (790mm x 210mm x 280mm)	
Display Type	Black & white TFT 2.7" LCD WQVGA display (400 x 240 pixel)	
Receiver Antennas	3 x Peak antennas, 1 x compass antenna	
Batteries	2 x D-Cell alkaline batteries	
Battery Life	Alkaline – typically 65 hours continuous use at 70°F (21°C)	
Environmental	IP54 and NEMA 4	
Manufacturing	Designed and manufactured per ISO 9001:2015	
External Connectors	<ul style="list-style-type: none"> <li style="width: 50%;">- 1 x 3.5mm Headphone jack</li> <li style="width: 50%;">- 1 x 4pin Accessories jack</li> <li style="width: 50%;">- 1 x Mini USB socket for software update</li> </ul>	
Temperature Range	- Operating: -4°F to 122°F (-20°C to 50°C)	
Compliance and Approvals	<ul style="list-style-type: none"> <li>- Complies with European standard CE (Directive 99/5/EC)               <ul style="list-style-type: none"> <li>• EN 55011</li> <li>• EN 61000-4-2</li> <li>• EN 61000-4-3</li> <li>• EN 61000-4-8</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- Complies with FCC Rules Part 15               <ul style="list-style-type: none"> <li>• CFR 47 Part 15: 2006</li> </ul> </li> </ul>
What's In the Box	<ul style="list-style-type: none"> <li style="width: 33%;">- VM-850 Receiver</li> <li style="width: 33%;">- Mini-USB cable</li> <li style="width: 33%;">- User handbook</li> <li style="width: 33%;">- Hard case</li> <li style="width: 33%;">- 2 x Alkaline D-Cell batteries</li> </ul>	

<b>Compatible Accessory Options</b>	<ul style="list-style-type: none"> <li>- D22 Sonde, 8ft/2.4m depth range – 9.82kHz</li> <li>- D38 Sonde, 16.3ft/5m depth range – 9.82kHz</li> <li>- D64 Sonde, 26ft/8m depth range – 9.82kHz</li> <li>- Headphones with 3.5mm jack</li> </ul>
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## C. Receiver Operational

Item	Parameter								
<b>Information Displayed</b>	<ul style="list-style-type: none"> <li>- Signal strength: Numeric value</li> <li>- Distance sensitive Left/Right Centerline offset needle indicator</li> <li>- Compass: +/- 90° line direction indicator</li> <li>- Battery indicator</li> <li>- Depth and current reading</li> </ul>								
<b>Audio Indication</b>	<ul style="list-style-type: none"> <li>- Tones for Left or Right</li> <li>- Fading when close to centerline</li> <li>- Silence when centered or signal is too weak</li> </ul>								
<b>Configuration</b>	Easy One-button operation: <ul style="list-style-type: none"> <li>- Automatic backlight control</li> <li>- Short press – On</li> <li>- Long press – Off</li> <li>- Short press when the unit is switched on – Depth and Current reading</li> </ul>								
<b>Operating Frequencies</b>	9.8kHz (9,820 Hz)								
<b>Operating Modes</b>	<ul style="list-style-type: none"> <li>- Peak locate</li> <li>- Sonde</li> </ul>								
<b>Gain / Scaling Control</b>	Automatic Gain control								
<b>Performance Using Single Undistorted Signal Source</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Trace accuracy:</td> <td>- Distance Sensitive Left/Right Guidance™</td> </tr> <tr> <td>Current measurement accuracy:</td> <td> <ul style="list-style-type: none"> <li>- 5% of actual current – up to 10ft (3m)</li> <li>- 10% of actual current – up to 20ft (6m)</li> </ul> </td> </tr> <tr> <td>Depth measurement accuracy:</td> <td> <ul style="list-style-type: none"> <li>- 10 feet (3m): +/-5%</li> <li>- 20 feet (10m): +/-10%</li> </ul> </td> </tr> <tr> <td colspan="2">Depth range: Dependent on the strength of signal radiating to the locator</td> </tr> </table>	Trace accuracy:	- Distance Sensitive Left/Right Guidance™	Current measurement accuracy:	<ul style="list-style-type: none"> <li>- 5% of actual current – up to 10ft (3m)</li> <li>- 10% of actual current – up to 20ft (6m)</li> </ul>	Depth measurement accuracy:	<ul style="list-style-type: none"> <li>- 10 feet (3m): +/-5%</li> <li>- 20 feet (10m): +/-10%</li> </ul>	Depth range: Dependent on the strength of signal radiating to the locator	
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Depth range: Dependent on the strength of signal radiating to the locator									
<b>Compatible with Transmitter</b>	VM-850, 850 classic								

## A. Transmitter Characteristics

Item	Parameter
Construction	High impact thermoplastic (ABS) injection molded housing
Weight	4.1lbs (1.86kg)
Dimensions	14.6in(L) x 4.5in(W) x 3.3in(H) (370mm x 115mm x 85 mm)
Power Options	Internal rechargeable Lithium-ion battery
Battery Life	Lithium-ion – typically 40 hours intermittent use at 70°F (21°C) (with full backlight turned on). Re-charging cycles approx. 500 times the life cycle. Battery life varies with temperature.
Environmental	IP54 and NEMA 4
Manufacturing	Designed and manufactured per ISO 9001:2015
External Connectors	<ul style="list-style-type: none"> <li>- 3-pin XLR connection socket</li> <li>- Fuse compartment</li> </ul>
Temperature Range	Operating: -4°F to 122°F (-20°C to 50°C), Storage: -40°F to 140°F (-40°C to 60°C)
Compliance/Approvals	<ul style="list-style-type: none"> <li>- Complies with European standard CE (Directive 99/5/EC) <ul style="list-style-type: none"> <li>• EN 55011</li> <li>• EN 61000-4-2</li> <li>• EN 61000-4-3</li> <li>• EN 61000-4-8</li> </ul> </li> <li>- Complies with FCC Rules Part 15 <ul style="list-style-type: none"> <li>• CFR 47 Part 15: 2006</li> </ul> </li> </ul>
What's In the Box	<ul style="list-style-type: none"> <li>- VM-850 Transmitter</li> <li>- 1 x direct connection lead (XLR plug with two cables each 10ft (3.5m) long with crocodile clips)</li> <li>- 1 x T shaped ground stake</li> <li>- Battery charger</li> <li>- 1 x 3.15A Fuse</li> <li>- Transmitter shoulder strap</li> </ul>
Compatible Accessories Options	<ul style="list-style-type: none"> <li>- 2in (50mm) transmitter clamp</li> <li>- 4in (100mm) transmitter clamp</li> <li>- 5in (125mm) transmitter clamp</li> <li>- Live Plug Connector</li> <li>- Live Cable Connector</li> <li>- Ground Extension Spool</li> <li>- Telco Clip Connection Lead</li> </ul>

## B. Transmitter Operational

Item	Parameter
Location Modes	<ul style="list-style-type: none"> <li>- Induction mode – applies signal inductively using the internal antenna</li> <li>- Direct connection mode - applies signal directly to the cable by clipping one output lead to the cable, the other to an independent ground</li> </ul>

	<ul style="list-style-type: none"> <li>- Clamp mode – applies signal using an inductive clamp (toroid) that is placed around the target cable</li> <li>* Modes are selected automatically when accessories are plugged in.</li> <li>* Default mode (no accessories) is induction.</li> </ul>
<b>Transmitting Frequency by Mode</b>	<ul style="list-style-type: none"> <li>- Induction mode / Direct connection mode / Clamp mode: 9.82kHz (9,820Hz)</li> </ul>
<b>Transmitting Mode Power output</b>	<p>In accordance with FCC part 15:</p> <ul style="list-style-type: none"> <li><i>2 watt – in High output level</i></li> <li><i>1/2watt – in Low output level</i></li> </ul>
<b>Maximum Output Voltage</b>	Maximum output voltage = 60V RMS
<b>Maximum Output Current</b>	Maximum output current = 400mA RMS constant power
<b>Output Protection</b>	Output protected against accidental connection to up to 240V AC (50/60Hz)
<b>Audio indication</b>	<ul style="list-style-type: none"> <li>- Connection quality – Fast beep sound showing the better signal applied</li> <li>- Low battery warning</li> </ul>
<b>Controls</b>	<p>Use pushbuttons to select:</p> <ul style="list-style-type: none"> <li>- Power button: On / Off</li> <li>- Output level button: Low / High</li> <li>- Audio button: Off / Low / High</li> </ul>
<b>Compatible Receivers</b>	VM-850, 850 Classic

## C. Shipping and Packaging (Full Kit)

Item	Parameter
<b>Shipping Weight</b>	18.7lbs (8.5kg) (Full Kit)
<b>Shipping Dimension</b>	22.7in(L) x 13.8in(W) x 4.3in(H) (577mm x 350mm x 109mm)

## D. Warranty

Item	Parameter
<b>Warranty</b>	12 months (Limited warranty)

Disclaimer: Product and accessory specification and availability information are subject to change without prior notice.



4310 FM 2218 Rd  
Richmond, TX 77469

**Corp: (281) 969-8530**

info@indepthUS.com

**www.indepthUS.com**