



**VIVAX**  
**METROTECH**



# VM-850

## Technical Specifications V2.4



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## 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 and 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)<br>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 pixels)                                                                                                                                                                                                    |                                                                                                                                                                             |
| Receiver Antennas        | 3 x Peak antennas, 1 x compass antenna                                                                                                                                                                                                                         |                                                                                                                                                                             |
| Batteries                | 2 x D-Cell alkaline batteries                                                                                                                                                                                                                                  |                                                                                                                                                                             |
| Battery Life             | Alkaline – typically 65 hours of 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>- 1 x 3.5mm Headphone jack</li> <li>- 1 x 4pin Accessories jack</li> <li>- 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>- VM-850 Receiver</li> <li>- Mini-USB cable</li> <li>- User handbook</li> <li>- Hard case</li> <li>- 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> |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 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 the centerline</li> <li>- Silence when centered or the 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> | 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 the signal radiating to the locator                                                                                                                                                                                                         |                                                                                                                                               |
| <b>Compatible with Transmitter</b>                        | 850 Classic, VM-850                                                                                                                                                                                                                                                                   |                                                                                                                                               |

## A. Transmitter Characteristics

| Item                           | Parameter                                                                                                                                                                                                                                                                                                 |                                                                                                                                                               |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Construction                   | High-impact thermoplastic (ABS) injection molded housing                                                                                                                                                                                                                                                  |                                                                                                                                                               |
| Weight                         | 4.1lbs (1.86kg)                                                                                                                                                                                                                                                                                           |                                                                                                                                                               |
| Dimensions                     | 9.4in(L) x 4.6in(W) x 7.2in(H) (239mm x 117mm x 182 mm)                                                                                                                                                                                                                                                   |                                                                                                                                                               |
| Power Options                  | Internal rechargeable Lithium-ion battery                                                                                                                                                                                                                                                                 |                                                                                                                                                               |
| Battery Life                   | Lithium-ion – typically 40 hours of 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> </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>- VM-850 Transmitter</li> <li>- 1 x direct connection lead (XLR plug on two 10ft (3.5m) cables each with crocodile clips)</li> <li>- 1 x 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>- 2 watt – <i>in High output level</i></li> <li>- 1/2watt – <i>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>           | 850 Classic, VM-850                                                                                                                                                                                                                                                                          |

## C. Shipping and Packaging (Full Kit)

| Item                      | Parameter                                                            |
|---------------------------|----------------------------------------------------------------------|
| <b>Shipping Weight</b>    | 18.7lbs (8.5kg) (Full Kit)                                           |
| <b>Shipping Dimension</b> | 26in(L) x 12.2in(W) x 18.1in(H) (660mm x 310mm x 460mm) (estimation) |

## 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.