VIVAX METROTECH

# vLoc3-Pro System

## Technical Specifications V1.9




VIVAX METROTECH

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## A. Description and Typical Applications

| Item | Parameter |
|---|---|
| **Model Name** | vLoc3-Pro |
| **Model Number** | VX219-01 |
| **Description** | Multi-purpose precision buried utility locator receiver |
| **Intended Use** | - Locating & pinpointing the position of buried pipes, cables, and sondes<br>- Fault-finding of damaged cables or pipe defects |

## B. Characteristics

| Item | Parameter |
|---|---|
| **Construction** | High-impact thermoplastic (ABS) injection molded housing |
| **Weight** | 4.6lbs (*2.1kg*) |
| **Dimensions** | 12.6in(L) x 4.9in(W) x 26.6in(H) (*321mm x 124mm x 676mm*) |
| **Display Type** | High-Visibility Color Display, 4.3''/10cm with 480 x 272 resolution and automatic backlight |
| **Receiver Antennas** | Two sets of Omnidirectional Antennas, each comprising:<br>• Two Compass Antennas<br>• Two Horizontal Antennas<br>• Two Vertical Antennas |
| **Batteries** | - Rechargeable custom Lithium-ion batteries with 100-240V AC mains charger (Standard)<br>- Six x AA Alkaline batteries |
| **Battery Life**[1] | - Lithium-ion – typically 30 hours of continuous use at 70ºF *(21ºC)*<br>- Alkaline – typically 10 hours of intermittent use at 70ºF *(21ºC)* |
| **Environmental** | - IP65 |
| **External Connectors** | - Accessory Socket – to charge the internal batteries and attach accessories<br>- Mini USB socket for data transfer and programming |
| **Temperature Range** | - Operating: -4ºF to 122ºF *(-20ºC to 50ºC)*<br>- Storage: -40ºF to 140ºF *(-40ºC to 60ºC)*<br>- Recommended storage temperature for lithium-ion batteries is typically:<br>• Long-term storage: 59°F to 77°F *(15°C to 25°C)*<br>• Short-term storage: 104°F *(Up to 40°C)*<br>• Avoid: Temperatures below -4°F *(-20°C)* or above 140°F *(60°C)* |

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| | • Storing batteries in a cool, dry place and at around 50% charge helps preserve battery health over time. |
| **Compliance and Approvals** | - Complies with European standard CE (Directive 99/5/EC)<br>• EN 55011<br>• EN 61000-4-2: A1 & A2<br>• EN 61000-4-3<br>• EN 61000-4-8: A1<br>• ETSI EN 300 330-2<br>• ETSI EN 301 489-1<br>• ETSI EN 301 489-3<br>- Complies with FCC Rules Part 15<br>• CFR 47 part 2<br>• CFR 47 Part 15 |
| **Manufacturing** | Designed and manufactured per ISO 9001:2015 |
| **What's In the Box** | - vLoc3-Pro Receiver<br>- USB data transfer cable<br>- Custom lithium-ion battery pack<br>- 100-240V AC mains charger<br>- Alkaline battery holder<br>- User handbook<br>- Soft carry bag<br>- Combination Bluetooth & Wi-Fi module (factory embedded not accessible) |
| **Network & Wireless Interfaces** | - Wi-Fi: IEEE 802.11b/g/n (2.4 GHz)<br>- ASCII password entry support<br>- Bluetooth: Version 4.2 (BR/EDR and Low Energy)<br>- Dual-mode operation: Supports simultaneous Wi-Fi and Bluetooth connections |
| **Compatible Accessories** | - MLA (Marker Locator Adapter) to locate buried EMS Markers<br>- A-frame Fault Locator<br>- Remote Antenna (Stethoscope)<br>- Vehicle Charging DC Lead<br>- Range of Sondes (waterproof, self-contained transmitters for use in nonmetallic pipes & ducts)<br>- Tall Adapter<br>- Receiver clamp |

## C. Operational

| Item | Parameter |
|---|---|
| **Information Displayed** | **Information screen:**<br>- Real-time horizontal accuracy<br>- Altitude<br>- SD Reset |

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| | - GPS coordinates available in DD, DDM, DMS format<br>- Measured signal current in mA or Amps<br>- Measured estimated depth of signal in Ft. and inches, Inches, Meter<br>- Data logging storage options store or discard<br>- Incremental data log count per survey<br>**Status Bar Information:**<br>- Antenna configuration: Peak, Peak with arrows, Null, Broad, Broad with arrows, Delta Null, Omni Directional Peak, Omni Directional Broad<br>- Continuous depth estimation<br>- Continuous current measurement<br>- Battery charge level condition and battery type (Li-Ion / Alkaline)<br>- Speaker volume<br>- Bluetooth status<br>- GNSS Fix type status<br>- Wi-Fi connection status<br>**Locate screen (Classic display):**<br>- Signal strength moving bar graph & numeric value from 0% to 99.9%<br>- Bar graph color-coded indicating distortion level<br>- Peak level indicator<br>- Proportional left/right null indication<br>- Compass with full 360°-line direction indicator<br>- Gain level 0dB to 140dB<br>- Frequency selected<br>- Warnings when triggered<br>- Plug and play automatic recognition of accessories<br>- Accessory specific custom screens<br>**Customer definable start-up screen** |
| **Locate Perspectives** | - **Classic Locate** – moving bar graph with numeric value showing signal strength<br>- **Vector Locate Screen** – fully automatic gain control with information display<br>• Offset distance measurement to signal<br>• Directional left or right arrow to offset location<br>• Continuous depth estimation<br>• Locate signal uncertainty with scaled circle indicator<br>• Mini plan view for line orientation<br>• Scale adjustment for deep utilities<br>- **Transverse Graph Screen** - visual assessment of locate quality and distortion |

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| | • Visual peak indicator<br>• Visual null indicator<br>• Comparison of peak and null signal simultaneously<br>- **Plan View Screen** – fully automatic gain graphical representation of the cable position independent of cable direction,<br>• Directional guidance arrow<br>• Line orientation<br>• Locate uncertainty represented with dash lines<br>• Locate Uncertainty Line – Color Change Indicator<br>- **Sonde Locate Screen** – directing arrow to move to the Sonde position along the polar axis<br>• Directional guidance arrow<br>• Null point indicator<br>• Bar graph with peak signal response<br>• Magnetic field alignment indicator |
| **Configuration** | The intuitive setup menu enables the user to configure:<br>- Display Backlight (Low, Medium, High, Auto)<br>- Frequency menu<br>- Pipe diameter<br>- Locate Perspective (Classic, Vector, Transverse Graph, Plan View, Sonde)<br>- Measurement units (Feet, Inches, Metres)<br>- Speaker Volume (Low, Medium, High, Off)<br>- Continuous information (Depth, Signal current, Depth & Current, Off)<br>- Warnings (Overhead cable, Swing alert, Shallow depth, Signal overload)<br>- Sound configuration (AM, FM)<br>- Antenna configuration (Peak, Peak with arrows, Null, Broad, Broad with arrows, Delta Null, Omni Directional Peak, Omni Directional Broad)<br>- Auto Power off (5 mins, 10 mins, Never)<br>- Coordinate Format (DMS, DDM, DD)<br>- Language (31 different languages available)<br>- Survey type (Electric, Gas, Communications, Potable Water, Reclaimed Water, Sewer, Temporary Survey, Proposed Excavation, Oil)<br>- Adapter (Tall, Survey, Long Survey, Not attached)<br>- Marker type (when MLA is connected: Power, Water, Sanitary, Telephone, Gas, CATV, Non-Potable Water, Power-Europe)<br>- Bluetooth/WiFi Connection Enable/Disable/Auto Connect<br>- Bluetooth Pairing<br>- WiFi Network connection |

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| | - Set up frequency selection to toggle by “f” pushbutton<br>- Change antenna mode by toggling “Enter” pushbutton<br>- Change screen views selection to toggle by long press “***Enter***” pushbutton | |
| **Data Logging** | - 50 million records of internal storage<br>- Data can also be transferred via Bluetooth to the VMMap Mobile App and VMMap Cloud<br>- All parameters stored at each location, including depth, current, date, time, mode, gain setting, frequency, longitude, latitude, and more | |
| **Data Transfer** | Via the Vivax-Metrotech “MyLocator3” software application available free of charge from www.vivax-metrotech.com. Data can be saved in csv, kml, shp, dxf, txt, xls and xlsx formats. The transfer is via a USB cable connection from the locator to the host computer.<br>**Or**<br>Via Bluetooth from the locator to the VMMap App and also into the VMMap Cloud (Vivax-Metrotech Cloud) | |
| **Operating Frequencies** | - Configurable frequencies from 98Hz to 200kHz<br>• Dedicated Power 50Hz and 60Hz<br>• Radio 10.0kHz - 22.7kHz bandwidth<br>• Power harmonics for 50Hz or 60Hz regions<br>• SD-USA: 256Hz/512Hz, SD-EUROPE: 320Hz/640Hz | |
| **Operating Antenna Modes** | - Peak, Peak with arrows, Broad Peak<br>- Broad with arrows<br>- Null, Delta Null<br>- Omni Directional Peak, Omni Directional Broad | |
| **Integrity Test** | - Calibration Self-test<br>• Uses direct signal injection to test antenna transfer function (TRF)<br>- Distorted Frequency Test (DFT)<br>• Aids in selecting optimal locate frequencies in noisy environments | |
| **Gain Control** | - Manual gain using “+” or “-” keys<br>- One-touch of “+” or “-” keys rescales to 60% of the bar graph scale<br>- In Vector Screen automatic gain control is used, “+” and “-” keys act as zoom feature to keep target utility in view<br>- In the Transverse Graph screen, “+” key saves the screen graph, “-” key clears the screen | |
| **Accuracy** | Locate pinpointing accuracy: | - Up to 9ft *(3m)* – +/- 3% of the depth<br>- Over 9ft *(3m)* – +/- 5% of the depth |
| | Depth measurement accuracy: | +/- 3% |
| | Current measurement accuracy: | - +/- 3% of actual current – up to 9ft *(3m)* |

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| | | - +/- 5% of actual current – over 9ft *(3m)* |
| | Depth range: | - Dependent on the strength of the signal radiating to the locator<br>- Maximum depth displayed 98ft *(30m)* |
| **Sensitivity** | 5 uA rms @ 1m depth, 32768Hz to yield +20dB SNR referred to a <10Hz> bandwidth | |
| **Compatible Transmitters** | Loc3 series and any Vivax-Metrotech transmitter with matching frequencies | |

## D. Communications

| Item | Parameter |
|---|---|
| **Bluetooth & Wi-Fi** | Internal Bluetooth for communicating with:<br>- External GPS, data logging devices or Apps<br>- Apple® devices<br>- Android™ devices<br>- Windows® devices<br>Internal Wi-Fi for Over the air updates and future applications |

## E. Shipping and Packaging

| Item | Parameter |
|---|---|
| **Shipping Weight** | 16lbs. *(7.3kg)* |
| **Shipping Dimension** | 30in(L) x 11in(W) x 14in(H) *(800mm x 280mm x 380mm)* |

## F. Warranty

| Item | Parameter |
|---|---|
| **Warranty** | - 24 months<br>- Extended warranty available |

## G. Software Updates

| Item | Parameter |
|---|---|
| **Software** | - The software can be upgraded using a PC with a USB port. Program updates and locator software updates are available via the free MyLocator3 app.<br>- Software updates provided over the air (OTA) when connected to Wi-Fi hotspot. |

1) Battery life varies with usage conditions such as backlight, brightness, speaker volume, and Wi-Fi/BT connectivity; continuous operation may reduce the runtime compared to typical intermittent use. Lithium-ion battery performance will gradually degrade over time and with repeated charge cycles, leading to reduced operating duration under continuous use. Re-charging cycles are approximately 500 times the life cycle.
2) Locate and depth accuracy are quoted for 20°C and average soil conductivity. It is also assumed the return current localisation is deep compared to the target cable.

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

***Performance Disclaimer***

*Actual performance may vary depending on environmental conditions, user technique, and signal interference.*

***Software & Firmware Disclaimer***

*Functionality described may depend on the software or firmware version installed. Features are subject to modification through future updates.*

***Battery & Power Disclaimer***

*Battery life is estimated and may vary based on settings, usage, temperature, and battery age.*

***Calibration Disclaimer***

*Self-Test results confirm system consistency with factory calibration but do not replace periodic professional calibration if required by company policy or regulation.*

***Compliance Disclaimer***

*Compliance with regional standards may vary by country. Users are responsible for ensuring the product is used in accordance with local laws and regulations.*

***Use Case Disclaimer***

*The system is intended for professional utility locating and should not be used for purposes outside the manufacturer's defined scope.*

***Third-Party Services Disclaimer***

*Use of GNSS correction services or cloud platforms may require third-party subscriptions and are subject to their terms and availability.*

***Feature Availability Disclaimer***

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