VIVAX METROTECH

vLoc3-ML

Technical Specifications V1.2

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A. Typical Applications

Item	Parameter
Description	• Multi-purpose precision locator receiver • Electronic marker-ball detection
Intended Use	• Locating & pinpointing the position of buried pipes and cables • Detection of any one of nine marker balls types buried to a depth of 2m (6ft)

B. Characteristics

Item	Parameter	
Construction	High impact thermoplastic (ABS) injection molded housing	
Weight	5.7lbs (*2.6kg*)	
Dimensions	12.2in(L) x 6.3in(W) x 28.4in(H) (*310mm x 159mm x 721mm*)	
Display Type	High-Visibility Color Display 4.3''/10cm with 480 x 272 resolution	
Receiver Antennas	Two sets of Omnidirectional Antennas, each comprising: • Two Compass antennas • Two Horizontal antennas • Two Vertical antennas One set of EMS transmit/receive antennas	
Batteries	• Six x AA Alkaline batteries • Rechargeable custom Lithium-ion batteries with 100-240V AC mains charger	
Battery Life	• Alkaline – typically 12 hours intermittent use at 70ºF (21ºC) • Lithium-ion – typically 27 hours intermittent use at 70ºF (21ºC) * With backlight activated, battery life varies with temperature, re-charging cycles are approximately 500 times the life cycle	
Environmental	IP65 and NEMA 4	
External Connectors	• Accessory Socket – to charge the internal batteries and attach accessories • Mini-USB socket for data transfer and programming	
Temperature Range	• Operating: -4ºF to 122ºF (-20ºC to 50ºC) • Storage: -40ºF to 140ºF (-40ºC to 60ºC)	

Compliance and Approvals	• Complies with European standard CE (Directive 99/5/EC)
	  - EN 55011
	  - EN 61000-4-2: A1 & A2
		- ETSI EN 301 489-1
		- ETSI EN 301 489-3
		- Complies with FCC Rules Part 15

	- EN 61000-4-3	- CFR 47 part 2
	- EN 61000-4-8: A1	• CFR 47 Part 15
	- ETSI EN 300 330-2	
Manufacturing	ISO 9001:2015	
Standard Equipment (Comes with the receiver)	• Custom Li-ion receiver battery • 100-240V AC mains charger • Six x AA Alkaline battery holder • Mini-USB data cable • Soft carry bag • User handbook	
Compatible Accessories	• A-frame fault locator • Remote Antenna (Stethoscope) • Bluetooth Module • Vehicle Charging DC Lead • TX-Link – Factory installed, for remote operation of the Loc3 series transmitter • Range of Sondes (waterproof, self-contained transmitters for use in nonmetallic pipes & ducts)	

C. Marker Frequencies

Item	Parameter	
Marker Frequencies		

Ref #	Utility	Frequency (Hz)
1	Power (Red)	169,800
2	Water (Blue)	145,700
3	Sanitary (Green)	121,600
4	Telephone (Orange)	101,400
5	Gas (Yellow)	83,000
6	CATV (Orange/Black)	77,000
7	Non-potable Water (Purple)	66,350
8	EDF (French Power) (natural)	40,000
9*	Power Europe (Blue/Red)	134,000

* Not available in all markets

D. Operational

Item	Parameter
Information Displayed	**Dedicated Marker Screen:** • Marker type icon • Marker signal strength bar graph (marker color coded) with numeric value and peak level indicator

- Circular bar graph to indicating marker signal strength

Dual - Marker and Locate Screen: (In addition to the Classic Locate screen)

- Marker type icon

- Marker signal strength bar graph (marker color-coded) with numeric value and peak level indicator

- Circular bar graph to indicating marker signal strength

Status Bar Information:

- Line locate icon

- Marker detection icon

- Antenna configuration: Peak, Peak with arrows, Broad Peak, Null, Delta Null, Omni Directional Peak, Omni Directional Broad, Marker mode

- Line location - depth & current measurement

- Battery condition

- Speaker volume

- Bluetooth and GNSS status (If installed)

- Radio link to transmitter status (if installed)

Locate screen (Classic display):

- Signal strength - moving bar graph & numeric value

- Bar graph color-coded indicating distortion level

- Peak level indicator

- Proportional left/right indication

- Compass: full 360°-line direction indicator

- Gain level (in dB)

- Frequency selected

- Configuration menus including GNSS status and data logging transfer status

- Depth and current

- Warnings (if activated)

- Plug and play automatic recognition of accessories

- Accessory specific custom screens

Information screen:

- GPS coordinates

- Signal current and depth value of line or sonde

- Log number

- Logging options

- Depth to marker

Customer definable start-up screen

Locate Perspectives	- **Classic Locate** – moving bar graph with a value showing signal strength
	- **Vector Locate Screen** – fully automatic locate including offset, depth and locate uncertainty
	- **Transverse Graph Screen** - visual assessment of locate quality and distortion
	- **Plan View Screen** – fully automatic graphical representation of the cable position independent of cable direction, including depth/current and locate uncertainty.
	- **Sonde Locate Screen** – directing arrow to move to the Sonde position along the polar axis
Configuration	The Intuitive setup menu enables the user to configure:
	- Set up frequency selection to toggle by "f" pushbutton
	- Setup location mode selection to toggle by "m" pushbutton
	- Setup screen views selection to toggle by long press "m" pushbutton
	- Units of measure (feet/meters)
	- Sound (Pitch) – normal or modulated
	- Language
	- Continuous depth and current options
	- Loudspeaker level
	- Backlight
	- Bluetooth pairing if installed
	- Transmitter Radio Link if installed
	- Warnings (Excessive Tilt, Overhead Signal, Shallow Cable, Signal Overload)
	- Auto shut down – configurable to power down at five minutes, ten minutes, or never
Data Logging	- 50 million record internal storage
	- Data can also be transferred for storage, via cellular connectivity, into the cloud using the Vivax-Metrotech application, VMMAP
	- All parameters stored at each location including depth, current, date, time, mode, gain setting, frequency, locate uncertainty, longitude, latitude, and height above sea-level
Data Transfer	- Via the Vivax-Metrotech "MyLocator3" software application available free of charge from www.vivax-metrotech.com. Data can be saved in csv, klm, shp, txt, xls and xlsx formats. The transfer is via a USB cable connection from the locator to the host computer.
	Or
	- Cellular transfer to the VMMap Cloud (Vivax-Metrotech Cloud) via the VMMap mobile app
Operating Frequencies	- Configurable frequencies from 98Hz to 200 kHz
	- Power 50Hz and 60Hz
	- Radio 10.0kHz - 22.7kHz bandwidth
	- Signal Direction (SD) - enhanced frequency identifies which direction the signal is flowing. SD-USA: 256Hz/512Hz, SD-Europe: 320Hz/640Hz

Operating Modes	- Peak, Peak with arrows, Broad Peak - Null, Delta Null - Omni Directional Peak, Omni Directional Broad - Marker locate - Marker and line locate
Gain Control	- Manual gain using "+" or "-" keys - One-touch of "+" or "-" keys rescales to 60% of the bar graph scale - In Vector Screen, "+" and "–" keys act as zoom feature to keep target utility in view - In the Transverse Graph screen, "**+**" key saves the screen graph, "**–**" key clears the screen

Accuracy		
	Locate pinpointing accuracy:	- Over 9ft *(3m)* – 5% of the depth - Up to 9ft *(3m)* – 3% of the depth
	Depth measurement accuracy:	+/- 5% of depth
	Current measurement accuracy:	- 5% of actual current – over 9ft *(3m)* - 3% of actual current – up to 9ft *(3m)*
	Depth range:	Dependent on the strength of the signal radiating to the locator
	Marker Depth Accuracy:	- 4% of depth – up to 4ft *(1.2m)* - 10% of depth – up to 5ft *(1.5m)* Typical *accuracy with ball markers*
	* Performance rated using a single undistorted signal source	

Compatible Transmitters	Loc series, Loc3 series, VM-550FF, VM-560FF, FLS series

E. Shipping and Packaging

Item	Parameter
Shipping Weight	14.9lbs (*6.76kg*)
Shipping Dimension	16.5in(L) x 11in(W) x 27.6in(H) (*420mm x 280mm x 700mm*)

F. Warranty

Item	Parameter
Warranty	- Two years - Optional extended warranty available

G. Software Updates

Item	Parameter
Software	The software can be upgraded using a PC with a USB port. Program updates & locator software updates are available via the free MyLocator3 app.

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