

VPx Sensor User Manual

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Contents

1.0	Figures.....	3
2.0	Introduction	4
2.1	FCC NOTICE	5
2.2	Industry Canada	6
3.0	Features	7
3.1	Buttons.....	7
3.2	Audio Visual Alarm.....	7
3.3	Input Types.....	8
4.0	Menus	9
4.1	Home.....	9
4.2	Min Max	9
4.3	Clear Min Max.....	10
4.4	Diagnostics Menu.....	10
5.0	New Battery	12
5.1	Battery Replacement	12
6.0	Specs	14
6.1	RTD.....	14
6.2	Temperature and Humidity	14
6.3	Power	14
7.0	LCD Icon Legend.....	15
8.0	VPx Sensor without LCD.....	17
8.1	Alarm.....	17
8.2	Battery Replacement	17
8.2.1	Resetting Battery Usage.....	18
9.0	Probe List	18

1.0 Figures


2-1 VPx Sensor with LCD	7
2-2 VPx Sensor with LCD Buttons.....	7
Table 2-1 Input Types.....	8
3-1 Home Screen.....	9
Table 3-1 Access Min Max Menu Procedure	9
3-2 Min Max Screen	10
Table 3-2 Clear Min Max Procedure	10
Table 3-3 Access Diagnostics Screen Procedure	10
3-3 900 MHz Diagnostics Screen.....	11
3-4 Wi-Fi Diagnostics Screen.....	11
4-1 VPx Sensor Top and Back View	12
4-2 VPx Sensor Internal View (Back Cover Removed)	13
Table 4-1 Reset Battery Level Display Procedure (LCD).....	13
Table 6-1 LCD Icon Legend	16
7-1 VPx Sensor Top and Back View	17
Table 8-1 Input and Accessory Type Part Numbers	18



2.0 Introduction

The VPx sensor integrates with Mesa's ViewPoint 1.1 or above software solution. The VPx 900 MHz sensor operates in a 902 to 928 MHz range

This device complies with Part 15 of the FCC Rules. Sensor operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ex.

VP_x sensor **LCD - 900MHz**
Serial # 52000000 
Part Number : CM-000272
FCC ID: UUYVPX900 IC: 6891A-VPX900
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

 **ViewPoint**  **MesaLabs**
monitoring.mesalabs.com

Warning: This unit is not explosion proof and is not rated for intrinsically safe installations.

2.1 FCC NOTICE

WARNING

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- * Reorient or relocate the receiving antenna.

- * Increase the separation between the equipment and receiver.

- * Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- * Consult the dealer or an experienced radio/TV technician for help.

In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

RF Exposure Notice: To satisfy RF exposure requirements, this device and its antennas must operate with a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

2.2 Industry Canada

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.





Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

3.0 Features

3.1 Buttons



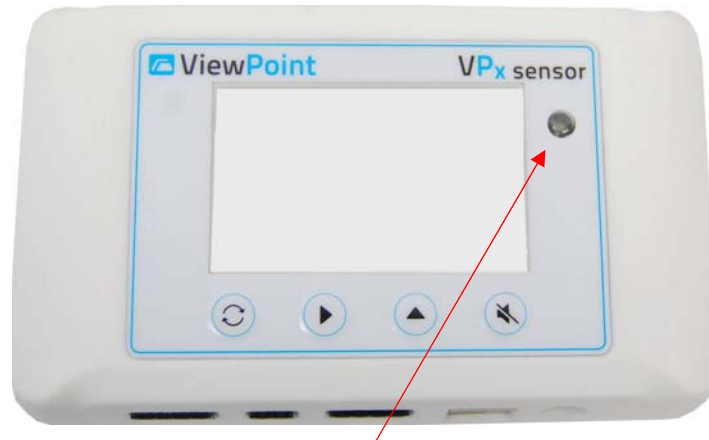
3-1 VPx Sensor with LCD

	Cycle	Used for cycling through screens or menu options
	Select	Select menu option
	Previous / Next	Return to previous screen or Next option
	Mute	Mute local Audio Visual Alarms


3-2 VPx Sensor with LCD Buttons

3.2 Audio Visual Alarm


VPx Sensor has local Audible Visual alarms to notify individuals of sensor alarm states even with no access to the Viewpoint software.



LED for Visual Alarm

To mute local Audible and/or visual alarms, press the  button to silence the local alarm **ONLY**. * To perform corrective action for alarm states, do so in the ViewPoint software.

***Note:** This is only possible when the sensor is in an alarm state. It cannot be used to mute future alarms.

Muting the sensor with the  button on the device will only mute that alarm. If, after muting the local alarm, the sensor comes back into and then goes back out of range again, then the local alarm will be triggered again and will need to be muted again if desired.

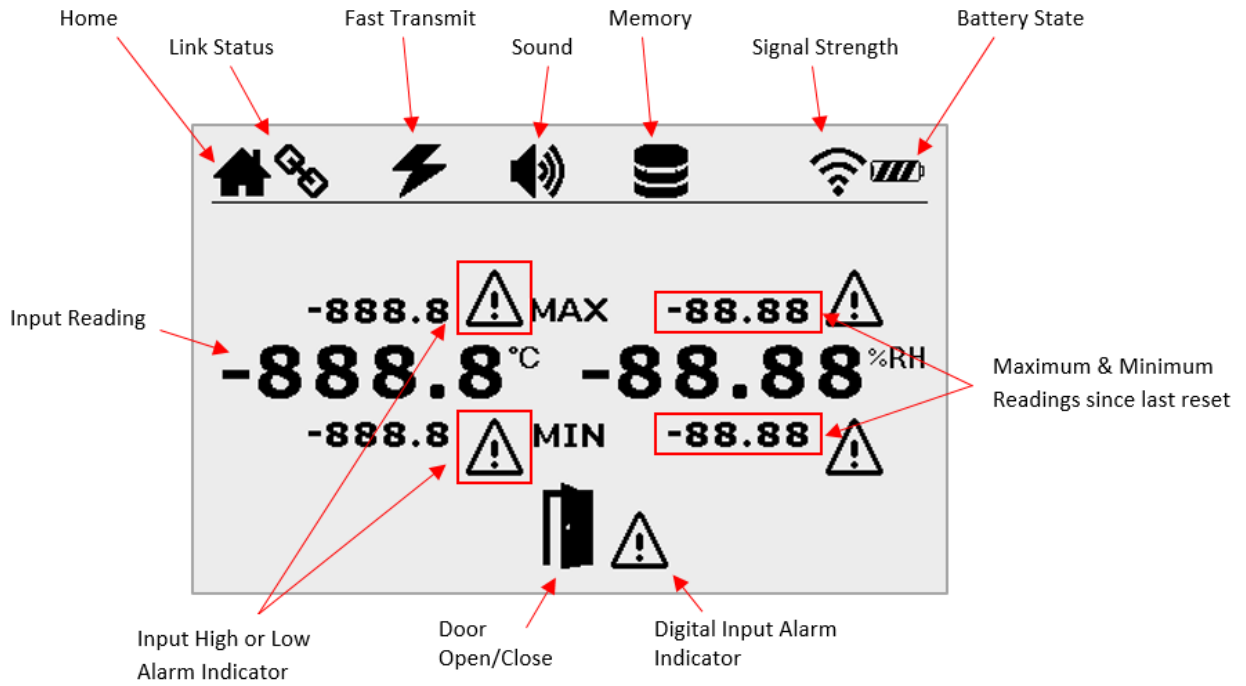
3.3 Input Types

Parameter	Application
Temperature	-200 °C to + 250 °C (Type K thermocouple, up to +538 °C)
Humidity	0% to 100% (Temp 5 °C to +40 °C)
CO ₂	0% to 20%
O ₂	0% to 25% (use 4-20 mA sensor and third-party sensor)
Door Status	Open / Closed Door
Horizontal Motion	Platelet Incubator
Dry Contact	Normal v. Alarm State (Normally Closed or Open)
Power	100 to 240 V (Detect Power Outages)
DC Voltage	0 to 5 V, 0 to 10 V, 0 to 20 V, 0 to 30 V
4-20 mA	Various sensors with powered 4-20 mA interface
Differential Pressure	-1.0 to + 1.0 inches H ₂ O /-.25 to +.25 / -.5 to +.5
Particle Count	Utilizes 4-20 mA Sensor Output
Leak Detection	Detect water in critical areas

Table 3-1 Input Types

4.0 Menus

4.1 Home



4-1 Home Screen

4.2 Min Max

To get to the Min-Max screen, start at the Home screen,


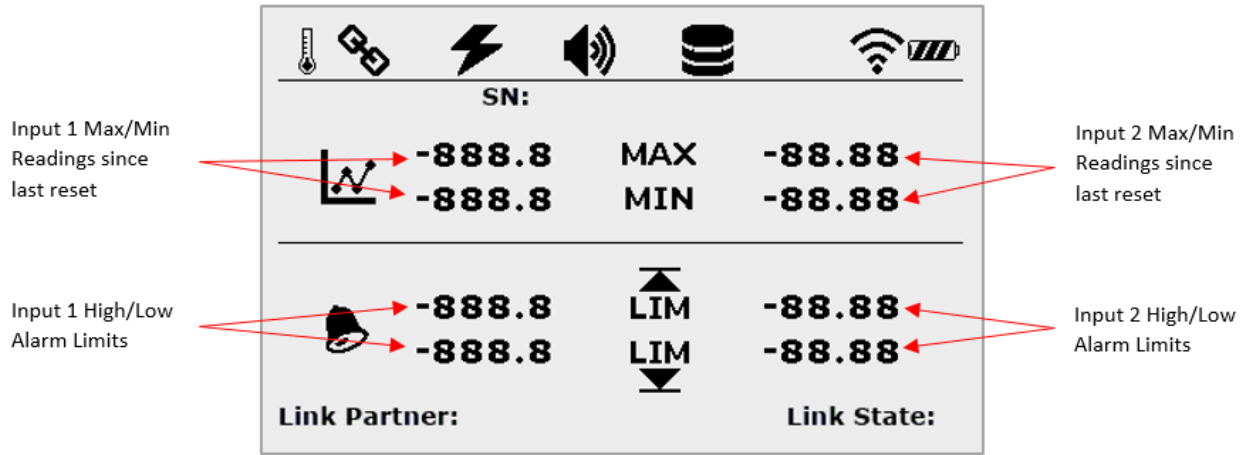
	Press	Result
Step 1	 x1	Min Max Screen

Table 4-1 Access Min Max Menu Procedure



4-2 Min Max Screen

4.3 Clear Min Max




	Press	Result
Step 1	 x2	Option Screen
Step 2	 x1	Select Clear Min Max
Step 3	 x1	Confirm Clear Min Max

Table 4-2 Clear Min Max Procedure

4.4 Diagnostics Menu

The VPx sensor has onboard diagnostic capabilities that can assist in a variety of setup or troubleshooting scenarios.

To access the “Diagnostics” screen, start at the Home screen:





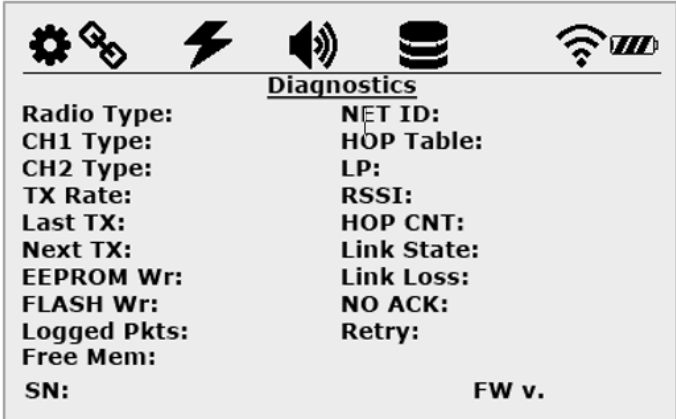
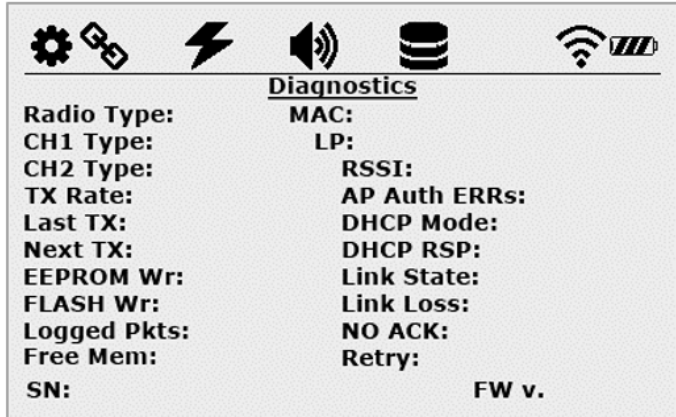
	Press	Result
Step 1	 x2	Option Screen
Step 2	 x1	Move  up to “Diagnostics”
Step 3	 x1	Diagnostics Screen

Table 4-3 Access Diagnostics Screen Procedure

<p>900 MHz RTD, Voltage, Current RTD, Voltage, Current Transmit Rate Last Transmission Next Transmission Read-only Memory Writes Flash Memory Writes Data Packets Logged Free Memory Sensor Serial Number</p>	 <p style="text-align: center;">Diagnostics</p> <p>Radio Type: NET ID: CH1 Type: HOP Table: CH2 Type: LP: TX Rate: RSSI: Last TX: HOP CNT: Next TX: Link State: EEPROM Wr: Link Loss: FLASH Wr: NO ACK: Logged Pkts: Retry: Free Mem: SN: FW v.</p>	<p>900 MHz Network Identification 900 MHz, Mobile Access, SpectraLink Link Partner Received Signal Strength Indicator Hop Count to reach destination Is Sensor Connected to Access Point Lost Link count No Acknowledgement from Access Point Connection Retries Firmware Version</p>
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4-3 900 MHz Diagnostics Screen

<p>Wi-Fi RTD, Voltage, Current RTD, Voltage, Current Transmit Rate Last Transmission Next Transmission Read-only Memory Writes Flash Memory Writes Data Packets Logged Free Memory Sensor Serial Number</p>	 <p style="text-align: center;">Diagnostics</p> <p>Radio Type: MAC: CH1 Type: LP: CH2 Type: RSSI: TX Rate: AP Auth ERRs: Last TX: DHCP Mode: Next TX: DHCP RSP: EEPROM Wr: Link State: FLASH Wr: Link Loss: Logged Pkts: NO ACK: Free Mem: Retry: SN: FW v.</p>	<p>Sensor's MAC Address Link Partner Received Signal Strength Indicator No. of Errors Communicating with AP Dedicated IP or DHCP Mode Reserved IP Address on the Network Is Sensor Connected to Access Point Lost Link count No Acknowledgement from Access Point Connection Retries Firmware Version</p>
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4-4 Wi-Fi Diagnostics Screen

5.0 New Battery

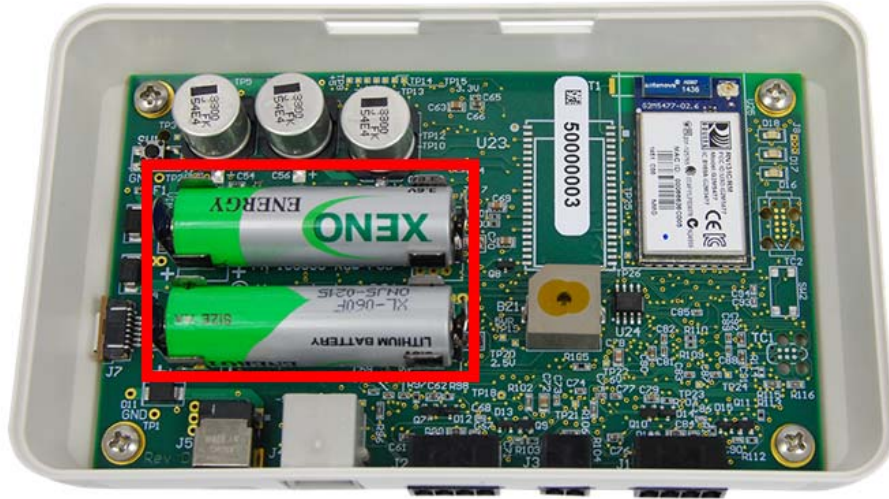
Note: Use only 3.6 V Lithium-Ion Batteries (P/N 166112). The VPx sensor will not power on with a normal 1.5 V AA battery.

5.1 Battery Replacement

To replace the (2) 3.6V lithium batteries in the VPx sensor, press down on the two recessed areas on the rear plate of the sensor and pull back the back cover to open the unit.



5-1 VPx Sensor Top and Back View



5-2 VPx Sensor Internal View (Back Cover Removed)

After replacing the batteries, it is necessary to reset the battery level indicator. To reset the battery level indicator, start from the Home screen:






	Press	Result
Step 1	 x2	Option Screen
Step 2	 x2	Move  up to “New Battery”
Step 3	 x1	New Battery Confirmation
Step 4	 x1	“Confirm” New Battery

Table 5-1 Reset Battery Level Display Procedure (LCD)

6.0 Specs

All specs below are estimated ranges for the particular inputs. Please refer to the probe specific documentation for the exact ranges and tolerances.

6.1 RTD

The VPx sensor utilizes (2) 1,000 Ohm RTDs to cover -200°C to +140°C

4-Wire RTD – (P/N CM-000188)

Range: -90°C to +140°C

Tolerance: $\pm 0.5^{\circ}\text{C}$ @ -25°C to +45°C ($\pm 1.0^{\circ}\text{C}$ @ -90°C to -26°C and +46°C to +140°C)

4-Wire Cryo RTD – (P/N CM-000189)

Range: -200°C to +70°C

Tolerance: $\pm 1.0^{\circ}\text{C}$ over full operating range

6.2 Temperature and Humidity

VPx monitors temperature and humidity with an external probe.

Temperature and Humidity Probe – (P/N 72112)


















Range: +5°C to 40°C and 10% RH to 90% RH

Accuracy: $\pm 0.5^{\circ}\text{C}$ and $\pm 3\%$ RH

6.3 Power

VPx sensor makes use of a 5V 1A AC/DC Wall Mount Adapter (TWA22 – Power Supply)

7.0 LCD Icon Legend

Icon	Description
	Alarm, above/below alarm limits
	Alarm, limits (Min-Max screen)
	Battery Full
	Battery 2/3
	Battery 1/3
	Battery Low
	A/C Power connected
	Home
	Settings
	Link broken
	Link connected
	Min Max
	Fast Transmit
	Memory 1/3 full
	Memory 2/3 full
	Memory full
	Sound On














	Sound Muted
	Icon for Min/Max screen
	Motion (not moving)
	Motion (Moving)
	Contact
	No Contact
	Door Open
	Door Closed
	Signal Quality (no signal)
	Signal Quality – Poor
	Signal Quality – Fair
	Signal Quality – Good
	Signal Quality – Best


Table 7-1 LCD Icon Legend

8.0 VPx Sensor without LCD


The VPx sensors without LCDs have only one button on the front.

	Mute	Mute local Audio Visual Alarms
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8.1 Alarm

To mute local Audible and/or visual alarms, press the  button to silence the local alarm **ONLY**. * To perform corrective action for alarm states, do so in the ViewPoint software.

***Note:** This is only possible when the sensor is in an alarm state. It cannot be used to mute future alarms.

Muting the sensor with the  button on the device will only mute that alarm. If, after muting the local alarm, the sensor comes back into and then goes back out of range again, then the local alarm will be triggered again and will need to be muted again if desired. Probes and Accessories

8.2 Battery Replacement

To get to the batteries, push the tabs on the top of the sensor and pull back the back cover.





8-1 VPx Sensor Top and Back View



8-2 VPx Sensor Internal View (Back Cover Removed)

8.2.1 Resetting Battery Usage

To reset the battery usage counter, first remove the old batteries. Wait about one minute with the batteries removed. Hold down the  button and insert the new batteries.

Note: Keep pressing the  button while inserting the new batteries.

9.0 Probe List

Input/Accessory Type	Part Number
Standard RTD	CM-000188
Cryo RTD	CM-000189
Temp/Humidity (Snap)	72112 (requires CM-000164)
Analog Cable	CM-000284
Door Switch, Motion, Alarm Contact	CM-000183
3.6V Li Batteries	166113
AC Adapter	TWA26

Table 9-1 Input and Accessory Type Part Numbers