Display Navigation Guide
EMX

Senva Sensors
9290 SW Nimbus Ave
Beaverton, OR 97008

154-0045

Rev.	Release Date	By	Description of Change	ECR
0A		NJS	Initial Release	---

Contents

Also See:

152-0390 EMX Installation Guide

154-0041 EMX BACnet Protocol Guide

154-0040 EMX Modbus Protocol Guide

Display Navigation

The display navigation guide assumes that device installation is complete, and the EMX is powered on. For installation instructions please refer to the EMX installation guide linked earlier in this document. The display will show the home screen when any button is pressed, while the screensaver is active. From any other screen press the ESC button repeatedly to return to the home screen. If you see a lock icon on the screen enter the user set passcode to access the device.

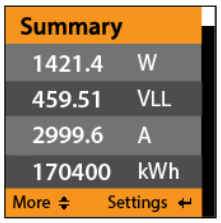
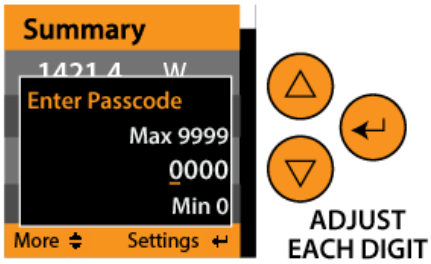
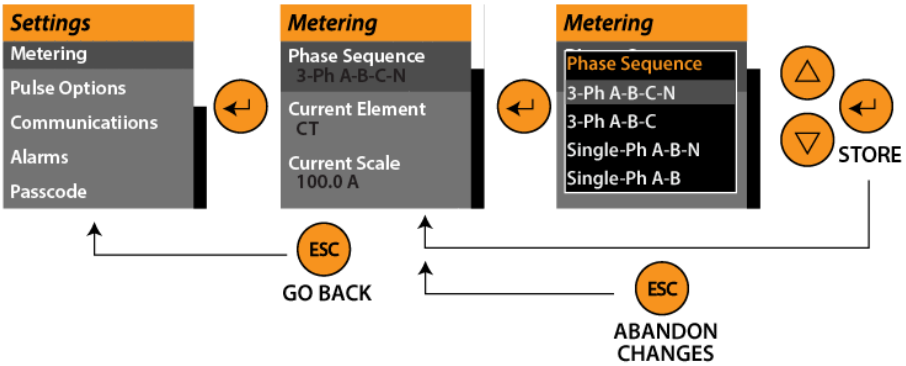


Figure 1: Default Home Display

If passcode is set, enter the passcode to access the menu.

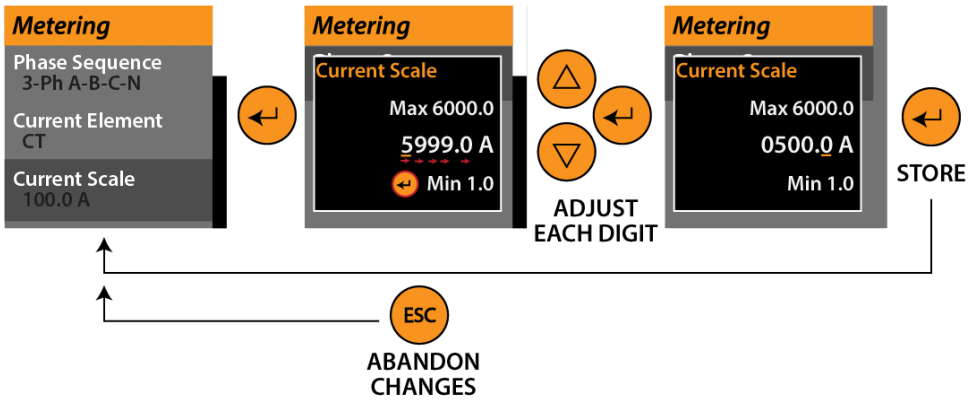


To change any setting, press enter to see the settings menu and navigate to desired parameter and press enter again to choose. For example, to adjust metering parameters, access the settings menu by pressing the 'enter' button once to access settings and once more to access the "Metering" menu and then select "Phase Sequence".

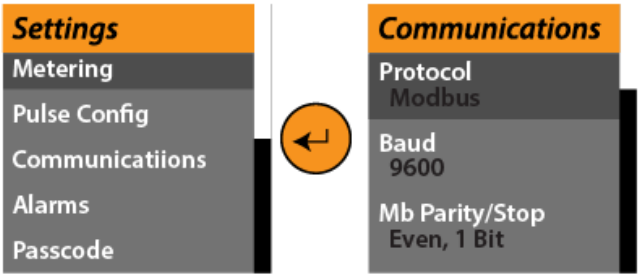


Use the arrows to scroll to select the desired setting, store it by using the enter button and use the escape button to return to the main screen.

To adjust a numerical setting, set each digit individually and press enter to move cursor to the right. When all digits are set, the value will be saved when enter is pressed again.



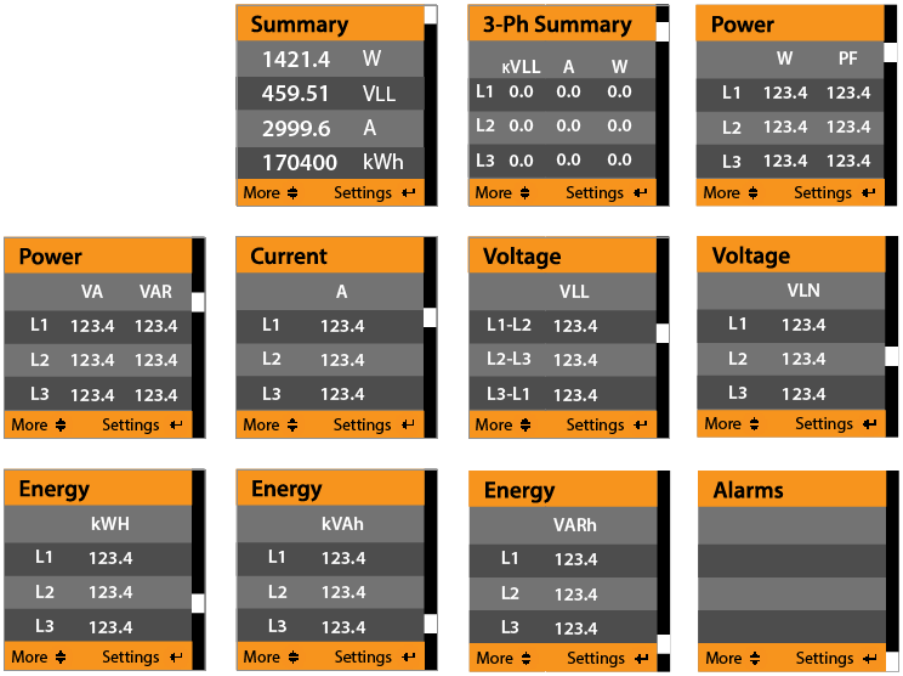
To view comms, navigate to "Communications" in the main menu.



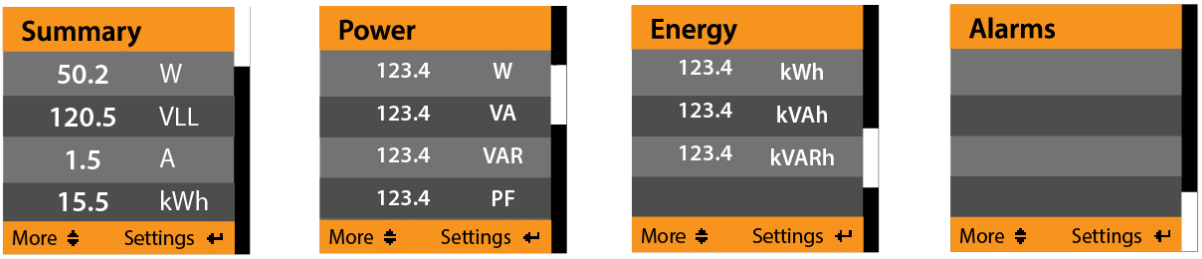
Display

The EMX main screen will show the "Summary" screen when any button is pressed if the screen is off. Using the up and down buttons the main screen can be scrolled to see all 11 screens bellow. Fewer screens will be visible if the device is set for single phase operation.

3-Phase Screens:



Single-Phase Screens:



Metering Parameters

Parameter	Description	Selections	Functionality
Metering > **Phase Sequence**	Sets the configuration of the meter based on the phases connected.	3-Ph A-B-C-N	3 phase connection with a neutral.
		3-Ph A-B-C	3 phase connection without a neutral.
		Single-Ph A-B-N	Single phase connection with a neutral wire.
		Single-Ph A-B	Single phase connections without a neutral connection.
Metering > **Current Element**	Select if the current input is a 0.33V CT or Rogo Coil	CT	selected if an Iron Core 1/3-volt CT is used.
		Rogowski Coil	Selected if a Rogowski loop is being used.
Metering > **Current Scale**	*Setting the scaling for the current*	1-6000A (default 1A)	Sets the input scaling for the metering CT or Rogowski coil
Metering > **Orientation**	*Ordering is ABC, sets the orientation for the current sensors*	default +++	Can select the positive and negative orientation of the phases.
Metering > **Voltage Scale**	*Setting the scaling for the voltage*	0.001–320V (default 1V)	Allows the user to scale the Voltage readings.
Metering > **Display Units**	*Sets the display unit type*	IEC or IEEE (default IEEE)	Will change the how the main screen with display units for Current, Voltage and Power.
Metering > **Ph angle Comp**	*Phase angle compensation*	-1.52 – 1.52 (default 0)	This setting can be used to adjust the Phase angle compensation.
Metering > **Voltage Trim**	*Voltage compensation*	.9-1.1 (default 1.0)	Use this to add an offset to the voltage. Offset can be up from 90 to 110% of the readings.
Metering > **Current Trim**	*Current compensation*	.9-1.1 (default 1.0)	Use this to add an offset to the current. Offset can be up from 90 to 110% of the readings.
Metering > **Power Trim**	*Power compensation*	.9-1.1 (default 1.0)	Use this to add an offset to the Power readings. Offset can be up from 90 to 110% of the readings.
Metering > **Reactive Trim**	*Reactive compensation*	.9-1.1 (default 1.0)	Use this to add an offset to the reactive readings. Offset can be up from 90 to 110% of the readings.

Pulse Configuration

Parameter	Description	Selections	Functionality
Pulse Config > Pulse 1 Units	*Setting the units of one output pulse*	1-1000Wh (default 1Wh)	This will set what one Pulse will represent
Pulse Config > Pulse 1 Duration	*Sets how long each pulse is*	10-500 ms (default 10 ms)	Sets the duration in ms of each pulse for Pulse Out 2.
Pulse Config > Pulse 1 Source	*Sets the source for the Pulse*	Import Wh Export Wh Import VARh Export VARH Input 1 Input 2 Alarm NO Alarm NC Phase Loss NO Phase Loss NC	Sets which parameter is associate with the pulse output for Pulse Out 1.
Pulse Config > Pulse 1 Count	*Stores the number of pulses*		Total amount of input pulses on channel 1.

Settings for Pulse Output 2 will have the same options as shown above

Communications

Parameter	Description	Selections	Functionality
Communications > **Protocol**	*Choose Device communication protocol*	BACnet, Modbus	Allows the user to select the communication protocol
Communications > **Baud**	*Selects the device Baud Rate*	9600-115200	Allows the user to select the needs Baud rate for communications, 9600, 19200, 38400, 57600, 76800, 115200
Communications > **Mb Parity/Stop**	*Selects the Parity and stop bit*	Even odd/ 1 or 2 bits	Allows the user to select the communications parity and stop bit
Communications > **Mb Address**	*Changes the Modbus device address*	1-247	Allows the user to set the Modbus device address.
Communications > **Bn Dev Name**	*Shows the BACnet device name*		Allows the user to see the device name
Communications > **Bn Dev Instance**	*Sets the Device instance*	4194302 max	Allows the user to set the BACnet device instance. The default is 665 followed by the last three digits of the serial number.
Communications > **Bn MSTP Address**	*Changes the BACnet device address*	1-127	Allows the user to set the BACnet MSTP address.
Communications > **BN Max Master**	*Changes the BACnet Max Master*	1-127	Allows the user to set the BACnet max master.
Communications > **Frames Transmitted**	*Shows the transmitted frames*		Allows the user to see that the device is transmitting frames and the number of frames that has been transmitted
Communications > **Frames Received**	*Shows the transmitted frames*		Allows the user to see that the device is receiving frames and the number of frames that has been received
Communications > **Frame Errors**	*Shows the Error Frames*		Allows the user to see if there have been any dropped packets.

Alarms

Parameter	Description	Selections	Functionality
Alarm Setup > **Voltage Range**	*Voltage Range Alarm*	Enable/Disable	Sets if the alarm is turned on
Alarm Setup > **Nominal Voltage**	*Nominal Operating voltage*	1.0-6000.0V	Sets what the idea reading in normal operations is.
Alarm Setup > **Voltage Thresh**	*Alarm Threshold*	1-20% (default: 10%)	Sets the threshold limits for what is acceptable in normal operation.
Alarm Setup > **Current Range**	*Current Range Alarm*	Enable/Disable	Sets if the alarm is turned on
Alarm Setup > **Nominal Current**	*Nominal Operating Current*	1.0-6000.0A	Sets what the idea reading in normal operations is.
Alarm Setup > **Current Thresh**	*Alarm Threshold*	1-20% (default: 10%)	Sets the threshold limits for what is acceptable in normal operation.
Alarm Setup > **Gnd Curr Range**	*Ground Current Range Alarm*	Enable/Disable	Sets if the alarm is turned on
Alarm Setup > **Nominal Gnd Curr**	*Nominal Operating Ground Current*	1.0-6000.0A	Sets what the idea reading in normal operations is.
Alarm Setup > **Gnd Curr Thresh**	*Alarm Threshold*	0-20% (default: 10%)	Sets the threshold limits for what is acceptable in normal operation.
Alarm Setup > **Frequency Range**	*Frequency Range Alarm*	Enable/Disable	Sets if the alarm is turned on
Alarm Setup > **Nominal Freq**	*Nominal Operating Frequency*	45.0-65.0 Hz	Sets what the idea reading in normal operations is.

Alarm Setup > **Freq Thresh**	*Alarm Threshold*	1-20% (default: 10%)	Sets the threshold limits for what is acceptable in normal operation.
Alarm Setup > **Phase Loss**	*Phase Loss Alarm*	Enable/Disable	Sets if the alarm is turned on
Alarm Setup > **Loss Threshold**	*Alarm Threshold*	1-20% (default: 10%)	Sets the threshold limits for what is acceptable in normal operation.
Alarm Setup > **Phase Imbalance**	*Phase Imbalance Alarm*	Enable/Disable	Sets if the alarm is turned on
Alarm Setup > **Imbalance Thresh**	*Alarm Threshold*	1-20% (default: 10%)	Sets the threshold limits for what is acceptable in normal operation.
Alarm Setup > **Low Pwr Factor**	*Low Power Factor Alarm*	Enable/Disable	Sets if the alarm is turned on
Alarm Setup > **Pwr Factor Thresh**	*Alarm Threshold*	0.01-0.99 (default: 0.50)	Sets the threshold limits for what is acceptable in normal operation.

Passcode

Passcode > **Set Passcode**	*Sets the passcode*	0-9999 (default 0)	This is used to add a passcode to lock the ability to enter the menu. If this field is set to 0 then no passcode will have to be set to enter the settings menu. When the passcode is set it will be required to enter that code.

Advanced

Parameter	Functionality
Advanced > **Reboot System**	This menu function will reboot the device.
Advanced > **Reboot Settings**	This will restore the device to its default factory settings.
Advanced > **Reset Wh**	This will reset the Wh counter to zero.
Advanced > **Reset Pwr-Acc Time**	This will reset the power accumulator time to zero
Advanced > **Reset Pulse Count**	This will reset the pulse counters
Advanced > **Power-Acc Time**	This will show the time in seconds of the power accumulator time
Advanced > **Power-On Time**	This will show the time in seconds of the total power on time for the device.
Advanced > **Power Loss count**	This will show how many times the device has lost power.