CleanLogix

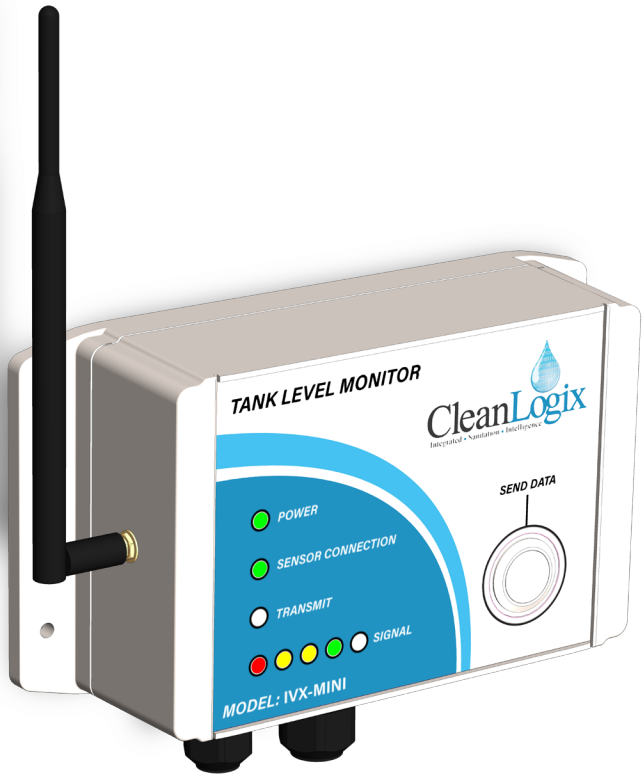
USER MANUAL

MODEL:

IVX MINI / BETA

Inventory Logix

English (Original Instructions)
Updated: 11/02/17



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⚠ WARNING:

1. Avoid contact of chemicals with skin and eyes. If contact occurs, see MSDS sheet for further first aid measures.
2. Always wear appropriate PPE
3. Follow safety instructions of chemical manufacturer (MSDS).
4. Always follow plant and OSHA guidelines about the use of equipment.
5. Disconnect power before servicing equipment.

Overview

Inventory Logix systems track chemical levels, predict chemical consumption and send critical email alerts when tank levels get low. Using ultrasonic or pressure sensors, they continuously monitor the level of chemicals in any size and shape of container. Data is synchronized to an on-line interface, where it can easily be viewed in custom reports at any time.

Specifications

Sensors

- Maximum number of Sensors (per Controller): 16
  - Ultrasonics
  - Pressure
  - 4-20mA rated Sensor
- Sensor Ranges:
  - ***IVX-US-7***: 4 in. - 7 ft. (0.1 - 2.1m)
  - ***IVX-US-13***: 12 in. - 13 ft. (0.3 - 4.0m)
  - ***IVX-PT (PP, PVDF, SS)***: 0 - 22 ft. (0 - 6.7m)

Networking

- **MINI**: Cellular based GSM (AT&T and T-Mobile)
- **BETA**: Ethernet based:
  - 1883 UDP/TCP MQTT
  - 22 UDP/TCP SSH for a reverse tunnel to service unit - OR - a VPN to plant network to service unit.
  - 53 UPD/TCP DNS

NOTE: Optional CELL-POE or CELL-POE-D systems are available for Verizon cellular connection on BETA Controllers.

Terminology

- **Controller** - The IVX unit (either MINI or BETA). Will be used with configured Sensors to measure and record chemical volume amounts.
- **Sensor** - Either pressure or ultrasonic (4-20mA). Each Sensor will be paired to a specific Container and chemical within Clean Intel for accurate reporting of all volume amounts.
- **Signal Converter** - Connected to every IVX Sensor, the IVX-SIG converts 4-20mA signals to communicate with the IVX Controller. Also identifies the Sensor ID # via internal DIP switches for configuration purposes.
- **Container** - Used to describe any tank, tote, or other apparatus for storing a particular chemical or liquid. Containers are linked to Sensors to accurately record volume amounts through the Controller.
- **Clean Intel** - The online interface for configuring and viewing volume levels for all configured Containers and Sensors. Alarms and email notifications are managed and maintained using this interface as well as user management and consumption reports for all dispense activities.
- **Calibration** - Configuration sequence to enable a new Sensor and/or Container. Will allow the Sensor to record accurate volume measurements and alert users of low or high quantity levels.

MINI Installation Requirements

Electrical

- 110 VAC, 5A, Single Phase, 50-60 Hz
- NEMA 5-15 GFCI Protected Outlet
- Surge suppression recommended

Network

- Activated subscription service through Clean Logix for GSM based cellular connection

Mounting MINI Controller

1. Determine mounting location, with consideration of the following:
   - User accessibility
   - Distance to electrical outlet
   - Distance to Containers for Sensors
   - Accessibility to Cellular Signal
2. Securely mount unit to wall using appropriate hardware (not included).
3. Plug power cord into a 115 VAC, GFCI protected receptacle.

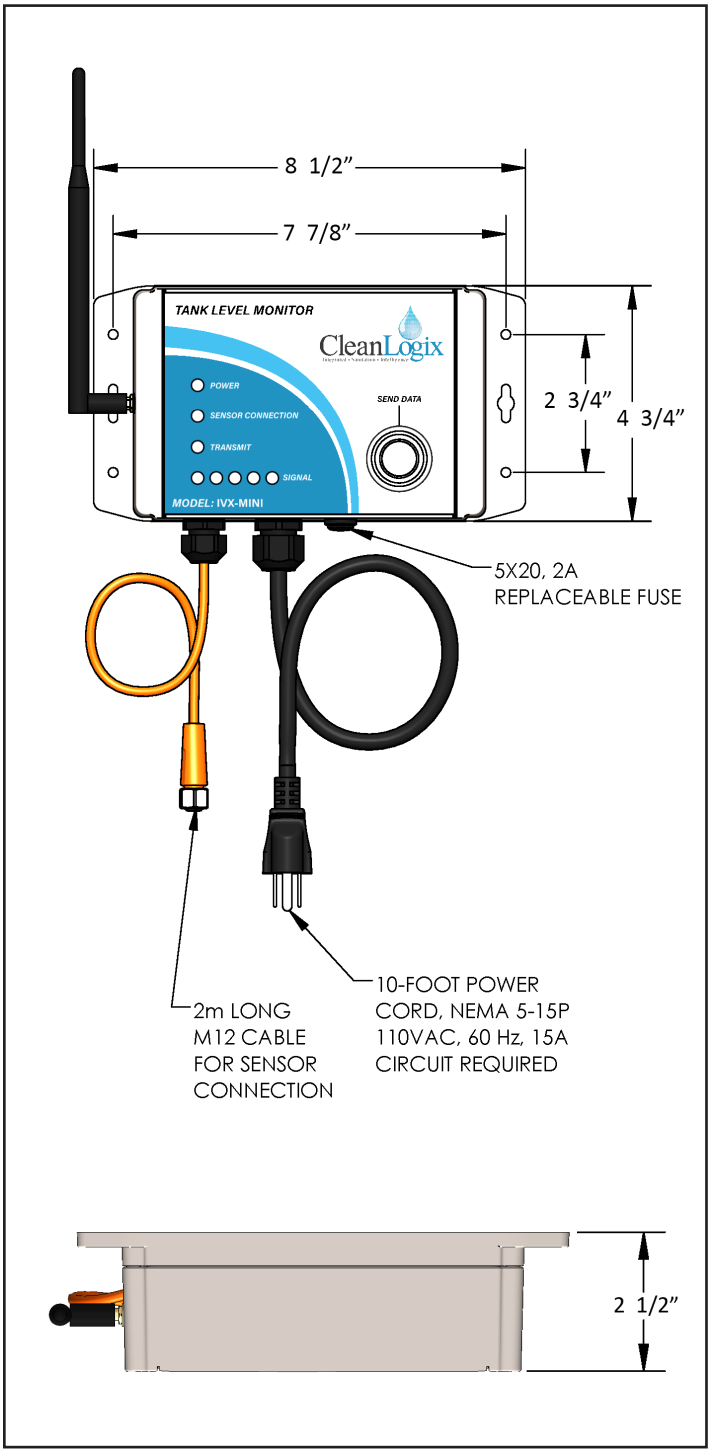


Figure 4.1: MINI Dimensions and Installation Set-up

BETA Installation Requirements

Electrical

- 110 VAC, 5A, Single Phase, 50-60 Hz
- NEMA 5-15 GFCI Protected Outlet
- Surge suppression recommended

Network

- Cat 5e or higher Ethernet cable connection (field-wired sealed plug included with unit).

  -OR-

- CELL-POE or CELL-POE-D modem for Verizon cellular connection with activated subscription service through Clean Logix.

Mounting BETA Controller

1. Determine mounting location, with consideration of the following:
   - User accessibility
   - Distance to electrical outlet
   - Distance to Containers for Sensors
   - Accessibility to Ethernet or Cellular Signal
2. Attach the included mounting feet using included hardware.
3. Securely mount unit to wall using appropriate hardware (not included).
4. Plug power cord into a 115 VAC, GFCI protected receptacle.
5. Connect Ethernet to plant's network or CELL-POE device, if applicable. (For CELL-POE installation see ***Appendix F***)

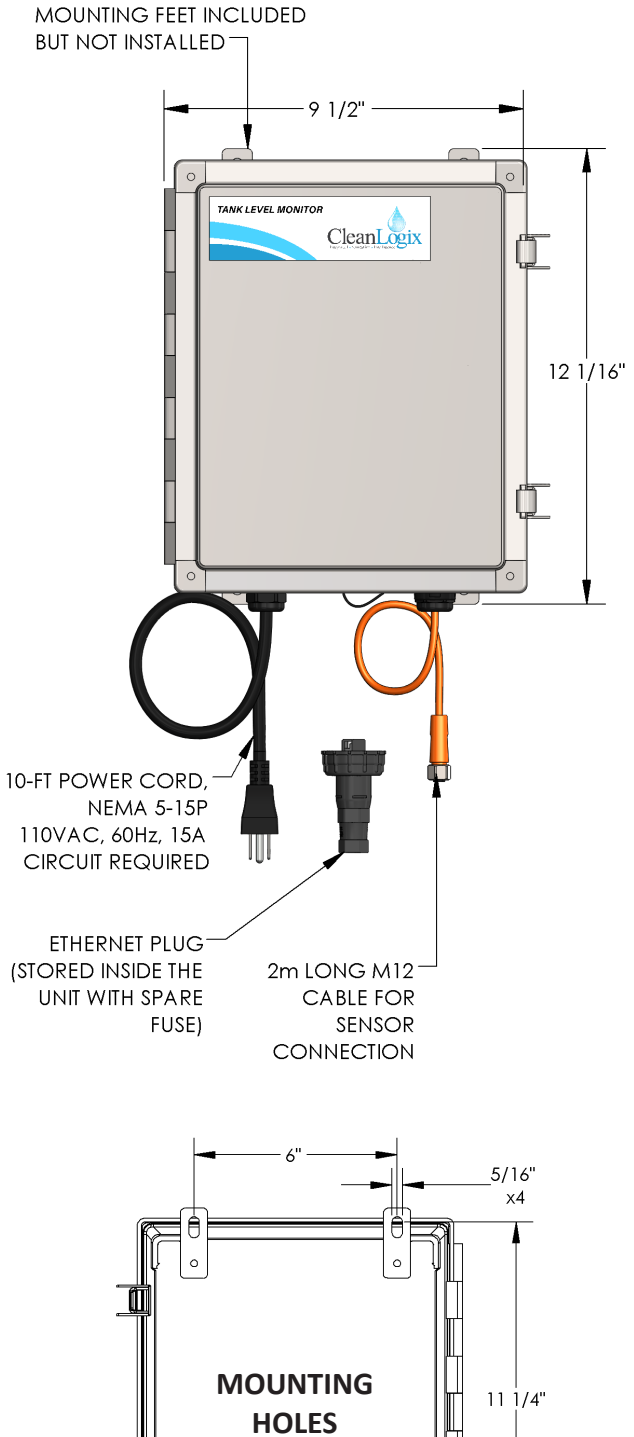


Figure 5.1: BETA Dimensions and Installation Set-up

Installing Sensors

To begin, identify the Container(s) to be monitored and select the appropriate Sensor(s) for pairing. The installation process may vary depending on the Sensor type. Review the following installation instructions for included Sensor types.

To begin, select a Container and Sensor to be configured and record the following information:

- **Sensor ID #**
  Check DIP Switch inside cover
- **Container Name**
- **Container Height**
- **Container MAX Volume**
- **Current Volume Amount**

NOTE: Be sure the Sensor length and construction material are appropriate for the size Container and chemical they will be configured with.

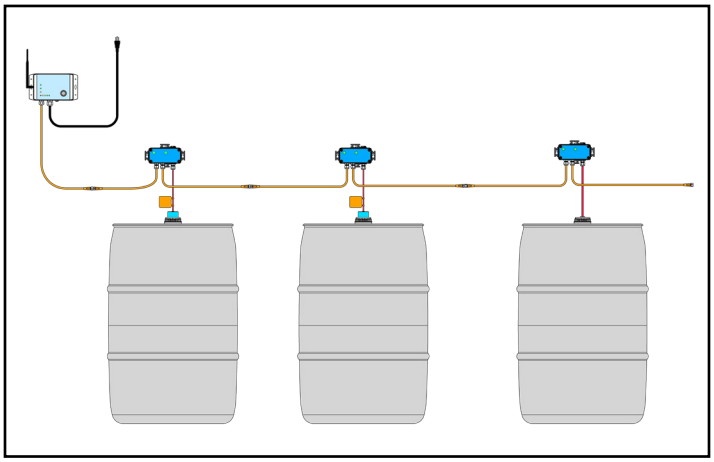


Figure 6.1: Daisy-chain connection of Sensors to IVX Controller

IVX-PT Pressure Sensors

Pressure transmitters are designed to be completely submersed within the application fluid. The transmitters can either rest along the bottom of the Container or suspended at any desired level as shown in [Figure 6.2].

NOTE: The physical location of the pressure sensor will indicate the lowest level able to be measured within the tank.

Example) Mounting the transmitter 2 feet from the bottom of the tank, will result in the lowest reading of liquid being 2 feet from the bottom.

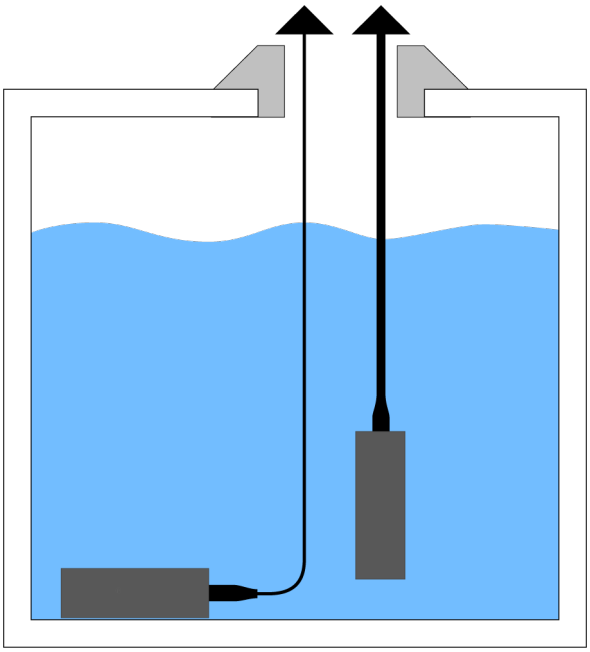


Figure 6.2: Pressure Sensor positioning at bottom and suspended at custom level

Installation

1. Select the location and position in the Container to install the Sensor.

> **NOTE:** Avoid installing the Sensor along the bottom of the Container if materials such as sludge or debris will build up and coat/cover the transmitter as shown in [Figure 7.1].

2. Insert the pressure Sensor into the Container and lower into position.
3. If the Container is equipped with a 2 in. NPS threaded opening the included cap assembly can be directly attached to the top of the Container.

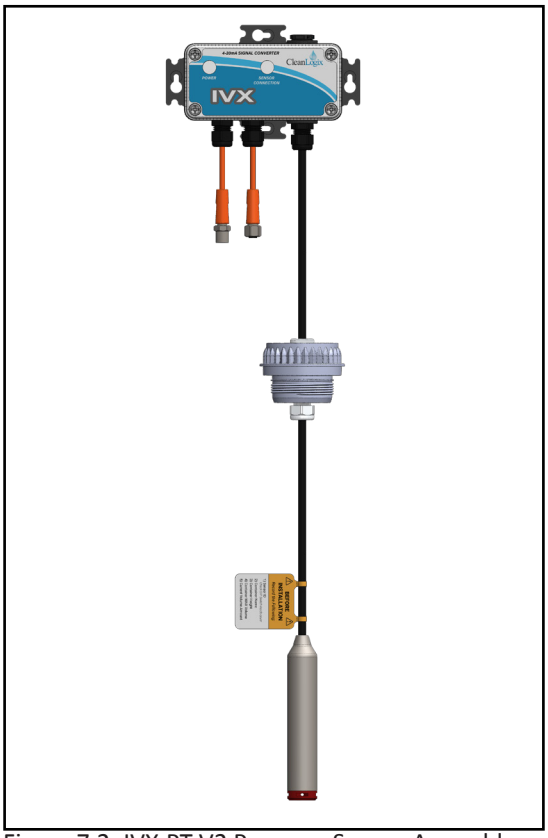


Figure 7.2: IVX-PT-V2 Pressure Sensor Assembly

> **⚠ CAUTION:**
> Avoid installations where objects in the Container will cause the Sensor to move or swing [Figure 7.3]. If necessary, reposition the Sensor.

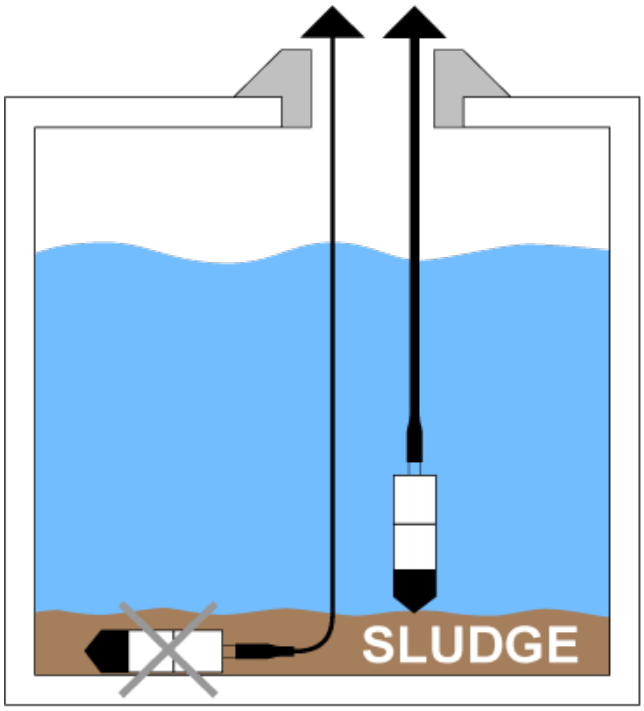


Figure 7.1: Sensor positioning in the event of sludge or debris

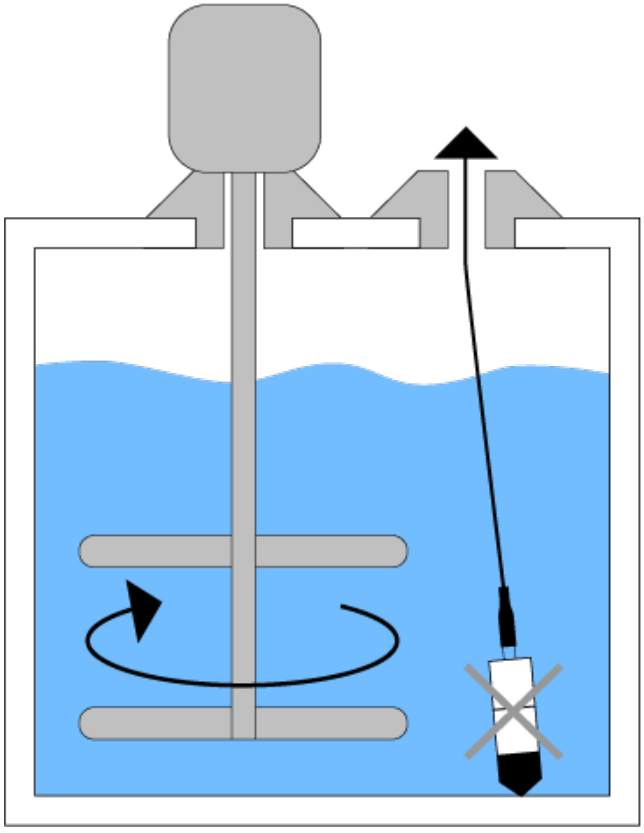


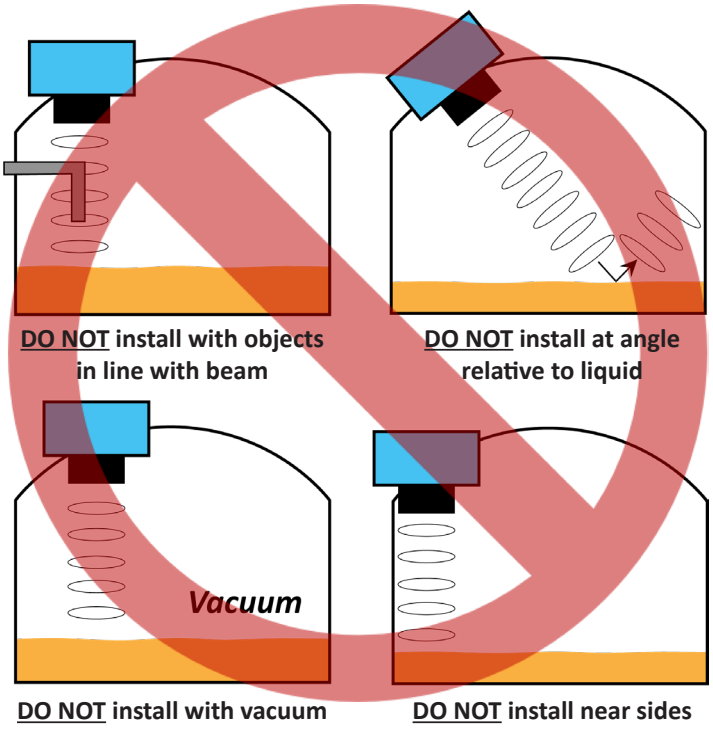
Figure 7.3: Mixer blade positioning complications

IVX-US Ultrasonic Sensors

Ultrasonic Sensors are designed to be mounted at the top of a Container, above the measurable liquid. Volume measurements are generated via a high frequency ultrasonic pulse that measures the time it takes a reflected echo to return to the Sensor and calculates the target distance using the speed of sound. The value of the speed of sound, which is a function of temperature, is determined by the Sensor using its internal temperature probe.

Ultrasonic Sensors should always be mounted perpendicular to the liquid surface and installed away from any objects that could interfere with the sonic pulse waves. Consider then Sensor's position in the Container with consideration to the following:

- Do not mount at an angle
- Liquid should never enter the dead band
- Mount at least 2-3 in. away from sidewalls
- Do not mount in vacuum
- *Dome Top:* Avoid mounting in center
- *Cone Bottom:* Position over the deepest part of Container



Installation

1. Select the location and position in the Container to install the Sensor.
2. If the Container is equipped with a 2 in. NPS threaded opening the included cap assembly can be directly attached to the top of the Container [Figure 9.1].

NOTE: Coarse/buttress threaded caps are available upon request.

Figure 9.1: IVX-US-V2 Ultrasonic Sensor assembly

Installation Using Stand Pipe

A standpipe may be used to dampen turbulence or separate surface foam from the point of measurement in a Container [Figure 9.2].

1. Select a pipe/tube with a minimum 3 in. ID made of a compatible material for the intended liquid to be measured.
2. Use a coupling and reducer bushing to attach the Ultrasonic Sensor to the top of the pipe
3. Pipe length should be measured to the lowest level a liquid could fall to.
4. Cut a 45 degree angle at the bottom of the pipe and drill a 1/4 in. pressure equalization hole within the dead band of the Sensor.

NOTE: Bottom of the pipe must be submerged at all times to prevent foam from entering!

⚠ CAUTION:
Pumps should not drive liquid past the open end, which would cause liquid in the pipe to oscillate.

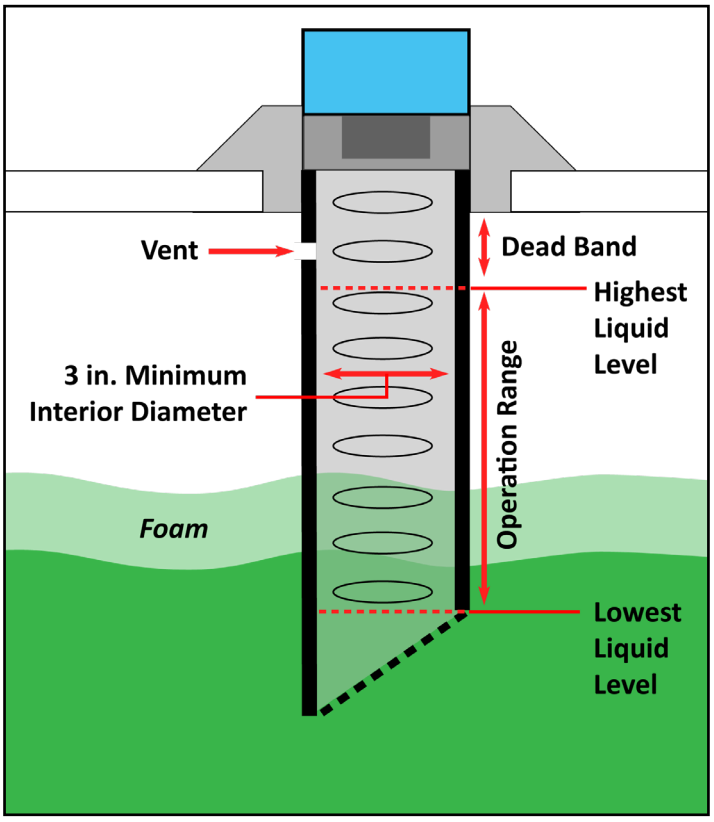


Figure 9.2: Stand Pipe installation with Ultrasonic Sensor

IVX Signal Converter (IVX-SIG)

The IVX-SIG reads 4-20mA signals from its Sensor and communicates level readings back to the IVX Controller. Signal Converters purchased as part of a sensor assembly will arrive pre-wired and ready to connect.

Installation

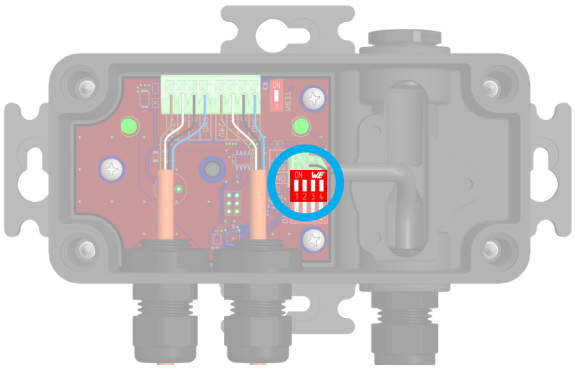
1. Determine mounting location, with consideration of the following:
   - Visibility of status lights
   - Distance from Containers for Sensors
   - Distance from IVX Controller
2. Securely mount unit to a flat surface (hardware not included) or zip-tied to a stable pipe [Figure 10.1].

Sensor ID

Signal Converters contain a DIP Switch that sets the Sensor ID #. Sensor IDs are used in identifying sensors for configuration purposes. Each Sensor connected to a single IVX controller requires a unique Sensor ID # (1-16).

NOTE: If multiple Sensors are to be used with an IVX Controller the Sensor ID# MUST be reset.

1. Unscrew and remove the white cover
2. Using the label inside the cover, set the Sensor ID# accordingly.



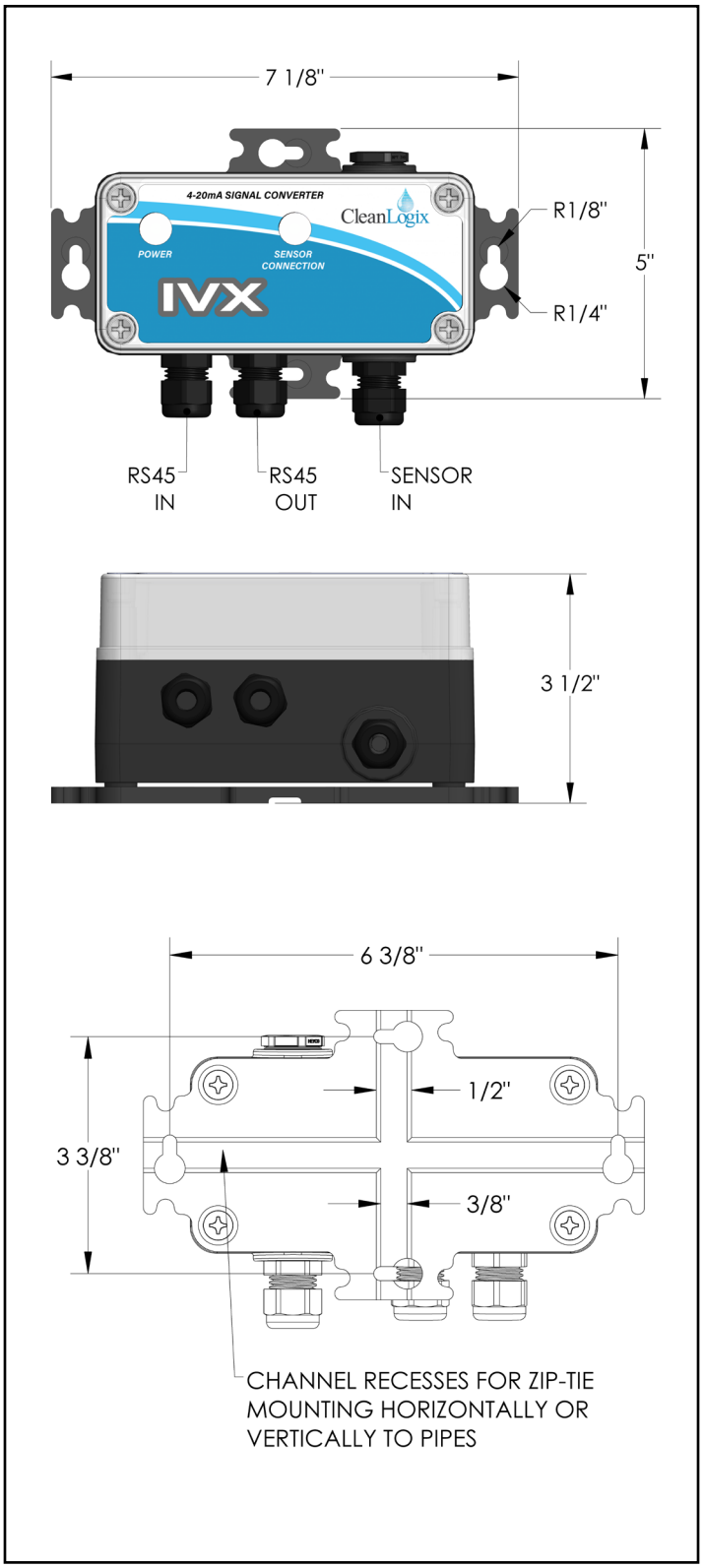


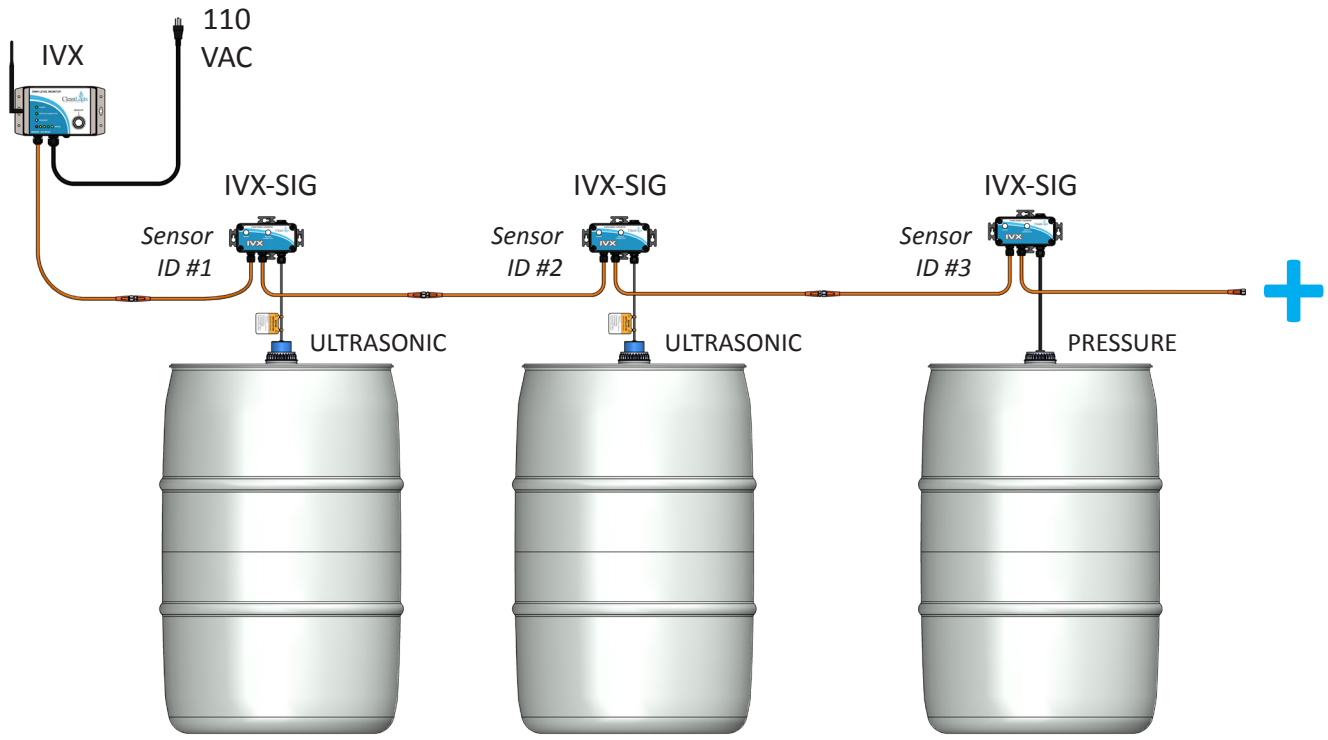
Figure 10.1: IVX-SIG Dimensions and Installation Set-up

Connection Architecture

1. Connect Controller and Signal Converters in a daisy-chain fashion using the orange M12 RS-485 cables, up to 16 sensors can be connected to a single IVX Controller.

> **NOTE:** Sensors can be installed in any order, regardless of sensor type or its ID#.

2. Hand tighten M12 cable connections, then tighten two more clicks using wrenches.
3. Connect M12 Port Cap to the final Signal Converter in the chain to seal the cable and complete the sequence.
4. If not yet identified, record the following information for each Sensor to aid in configuring the unit later:
   - **Sensor ID #**
     Check DIP Switch inside cover
   - **Container Name**
   - **Container Height**
   - **Container MAX Volume**
   - **Current Volume Amount**



Installation Example: IVX-MINI shown with (2) IVX-US-V2 and (1) IVX-PT-V2 Sensors

Clean Intel

In order to connect and configure the Sensors to their designated Containers the IVX's web interface, Clean Intel, must be accessed.

Accessing and Login

1. To login, open a web browser (Google Chrome, Safari, etc.) and go to **cleanintel.com**
2. Login as an administrator [Figure 12.1].
3. When prompted, select the IVX (Inventory Logix) branch of Clean Intel [Figure 12.2].

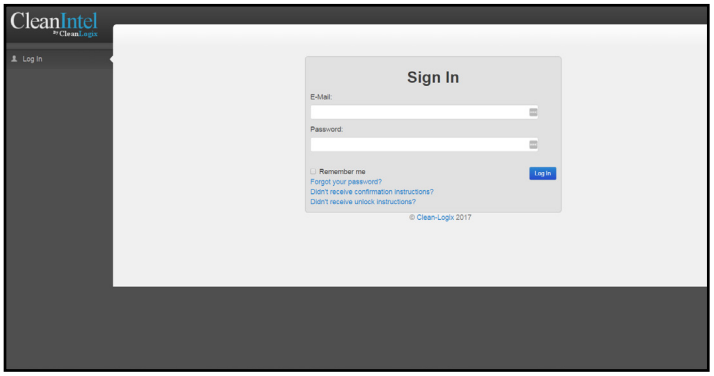


Figure 12.1: Clean Intel Login Screen (shown in Google Chrome)

Figure 12.2: Clean Intel Product Branches

Adding a Sensor

1. Using the Admin menu on the left side, open the Sensors page to view a list of connected Sensors and Containers.
    - Connected Containers and Sensors will appear in this list with their Sensor ID#
    - 🔗 icon identifies a "linked" Sensor and Container configuration
2. Click the **New+** button to add a new sensor:
    - *Site/Manufacturer:* Identify the plant site or manufacturer where the Sensor will be
    - *Sensor Type:* Ultrasonic or Pressure
    - *Inventory Unit:* (optional) IVX Controller
    - *Channel #:* Sensor ID#
    - *In Service:* Identify if this sensor is/will be active post-configuration.
3. When information is filled in, the **Save** button will highlight Blue and can be selected [Figure 12.3].

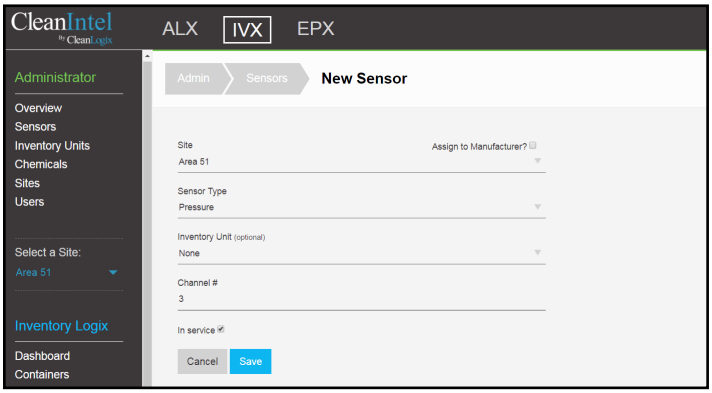


Figure 12.3: Add New Sensor Screen (complete)

Clean Intel (continued)

Adding a Container

1. Using the Inventory Logix menu, open the Container page to view a list of connected Sensors and Containers.
2. Click the **New+** button to add a new Container and fill out the following [Figure 13.1]:
    - *Name:* Identifier for reporting purposes
    - *Volume Label:* Unit of measure
    - *Max Volume:* How much chemical can the container hold when full?
    - *Expected Daily Consumption:* (optional) for projected ordering purposes
    - *Height:* (optional) how tall is the container? Aids in Ultrasonic Calibrations.
    - *Chemical:* (optional) Identify the Chemical in the container.
    - *Location:* (optional) Where is the container?
    - *Inventory Sensor:* (optional) Select the Sensor to be linked with this Container.
3. When all required information is filled in, the **Save** button will highlight Blue and can be selected.
4. After being linked with a Sensor, additional options will appear on the Containers page as shown in [Figure 13.2]:
    - *Calibrations:* Inputted data for volume measurement
    - *Alarms:* For creating and subscribing to notifications (low volume, reorder date, etc.)
    - *Levels:* Detailed overview page for live readings and level/consumption history

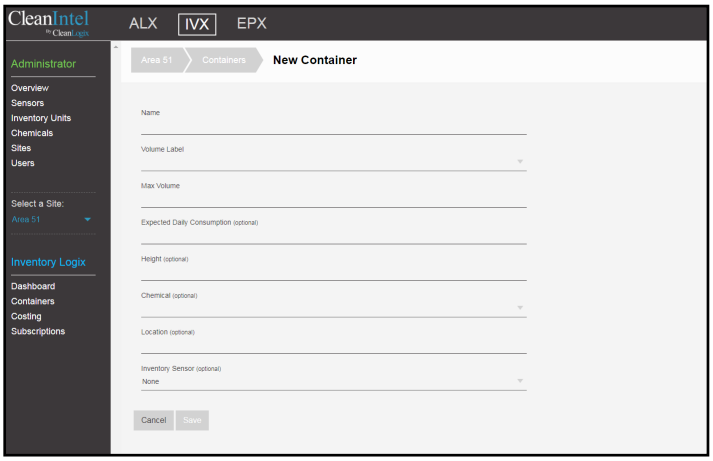


Figure 13.1: Add New Container

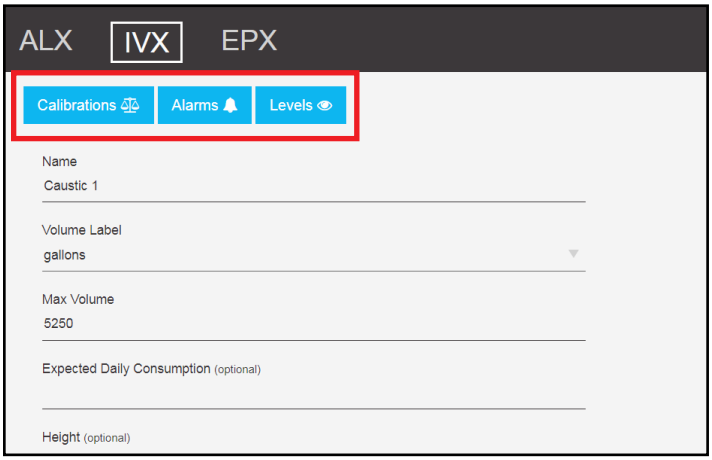


Figure 13.2: Added Container/Sensor Links

Clean Intel - Calibrations

Before a Sensor can begin reporting volume measurements it must be calibrated. The combination of two Calibration points will allow the IVX Controller to accurately measure any volume amount of its Container. Depending on Sensor type the Calibration process may differ.

To begin, access the Calibrations page for the Sensor/ Container to be calibrated:

1. Log in to Clean Intel and open the **Containers** tab.
2. Select the Sensor/Container configuration.
3. Select **Add Calibration Point+,** the following will need to be identified for each sensor:
    - *Sensor Reading:* The raw 4-20mA reading from the sensor
    - *Volume:* Amount at specified Sensor Reading

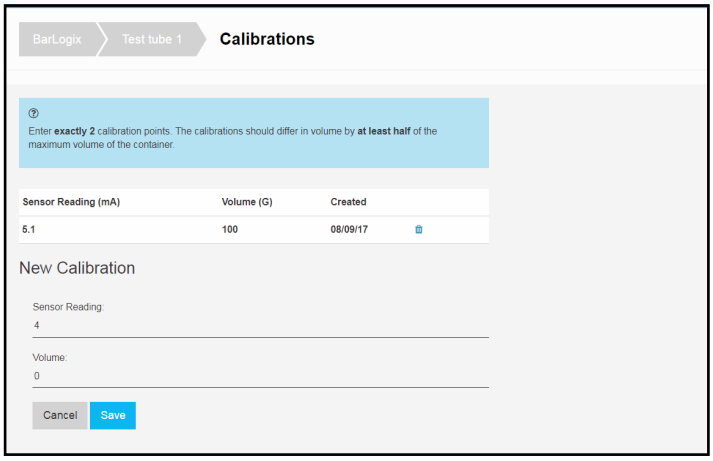


Figure 14.1: Adding a new Calibration Point

Calibrating Pressure Sensors

Pressure sensor mA readings correlate with the volume amount in a container. The ***greater*** the volume, the ***greater*** the raw mA reading will be.

Calibration Point 1: Zero

1. Suspend the sensor in mid-air and record the raw mA reading (should be around 4.0 mA)
2. This will identify the container as EMPTY
3. Add the recorded mA **Sensor Reading** and enter its **Volume** as 0
4. Click **Save** to add the 1st Calibration

Calibration Point 2: Current Volume

1. Re-install sensor in container (page 6)
2. Add the raw mA reading of the sensor and enter the CURRENT volume in the container
3. Click **Save** to add the 2nd Calibration

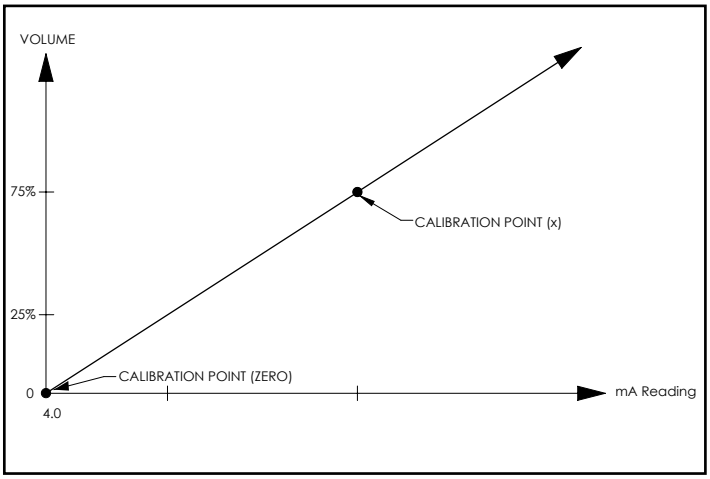


Figure 14.2: Calibration Table for Pressure Volume readings.
Greater Volume = Greater mA Reading

Calibrating Ultrasonic Sensors

Ultrasonic sensors mA readings correlate with the volume amount in a container based on the distance of the sensor's ultrasonic beam reflection. The ***lesser*** the volume, the ***greater*** the raw reading will be. Two options are available to calibrate an Ultrasonic Sensor:

NOTE: A tape measure will be necessary to measure the height of the container and liquid.

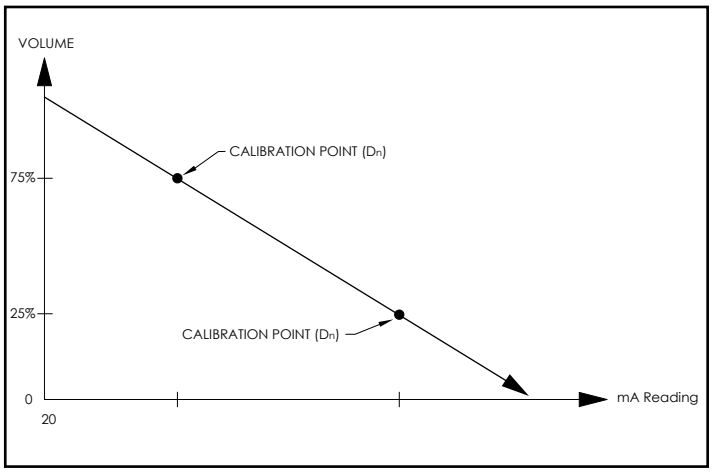


Figure 15.1: Calibration Table for Ultrasonic Distance readings
Lower Volume = Greater mA Reading

OPTION 1: Formula Calculation

Using the following formulas, the mA readings of a sensor can be calculated using container and liquid volume measurements. The following distances can be used to identify mA readings:

- **D_1** = Distance from sensor to full capacity
- **D_2** = Distance from sensor to current level
- **D_3** = Distance from sensor to bottom of container (empty)

NOTE: Ultrasonic formulas can be used for both calibration points for any volume level.

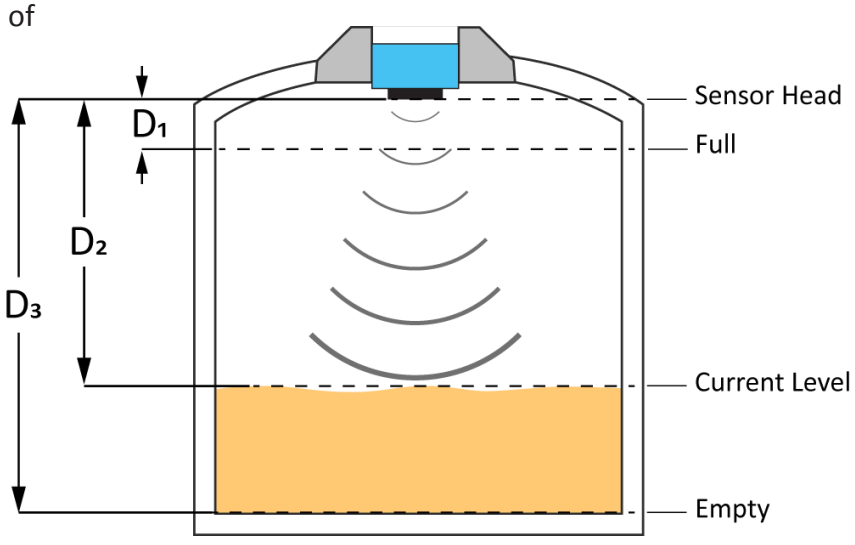
US-7 (4 in. - 7 ft.):

$mA = (0.2 \times D_n) + 3.2$

US-13 (12 in. - 13 ft.):

$mA = (0.111 \times D_n) + 2.666$

NOTE: Formula values are based in inches.



OPTION 2: Current Volume Raw Readings

The current volume and raw mA readings of the sensor can be inputted as a Calibration:

1. Add the raw mA reading of the installed sensor and enter the CURRENT volume of the container
2. Click **Save** to add the 2nd Calibration

NOTE: Raw readings for Ultrasonics will be lower than Pressure at the same volume due to sensor type and mA output.

Controller is Not Powered On

Cause	Solution
The Controller is not receiving power	• Ensure unit is plugged into 110 VAC outlet that is receiving power. • Check and confirm the power cord is not damaged and is connected.
Cause	**Solution**
A fuse has been blown	• Find and replace it (a spare fuse is included with BETA Controllers, it can be found inside the unit.)

Controller is Not Communicating With Sensor

Cause	Solution
The Sensor has not been configured properly or at all	• Verify DIP Switches are not duplicated in the chain, reset if necessary. • Login to Clean Intel and verify the Sensor has been configured and linked to the container.
Cause	**Solution**
There is an issue with the Cable	• Verify power and signal status lights on IVX-SIG Signal Converters • Check the orange M12 Cable for any damaged or disconnected areas. • Ensure all connection points are linked and tightened. • Verify there are not damaged wires or instable connections by unscrewing the Cable connection points, checking the wires/plugs inside each port, and reconnecting them back together.

IVX-SIG Signal Converter "Power" Light is not Illuminated

Cause	Solution
There is an issue with the Cable	• Check the orange M12 Cable for any damaged or disconnected areas. • Ensure all connection points are linked and tightened. • Verify there are not damaged wires or instable connections by unscrewing the Cable connection points, checking the wires/plugs inside each port, and reconnecting them back together.

Sensor Readings Not Reporting to Clean Intel

Cause	Solution

Low connection signal	• Verify the network connection on the IVX and in the facility
	• Power down and reboot the following (depending on set-up and equipment):
	  • Controller for MINI Cellular connection
	  • Facility's internet modem for BETA Ethernet connection
	  • CELL-POE or CELL-POE-D unit for BETA Cellular connection

Cause	Solution
The network connection attempting to be used is unable to be paired with the IVX	• Try a different configuration or contact Clean Logix for network subscription support.

Cause	Solution
Data has not been transmitted yet.	• Wait - data is transmitted to Clean Intel every 10-15 minutes. • If a MINI is installed: press the "Send Data" button on the unit to instantly send a reading to Clean Intel.

Sensor Reading is Inaccurate

Cause	Solution
Something is interfering with reading the physical aspects of the Container.	• Pressure Sensors: verify it is not clogged or coated in substance that may be preventing it from obtaining readings. • Ultrasonic Sensors: verify there is not an object or feature of the container interfering with the sonic beam reflection. • Clean the Sensor.

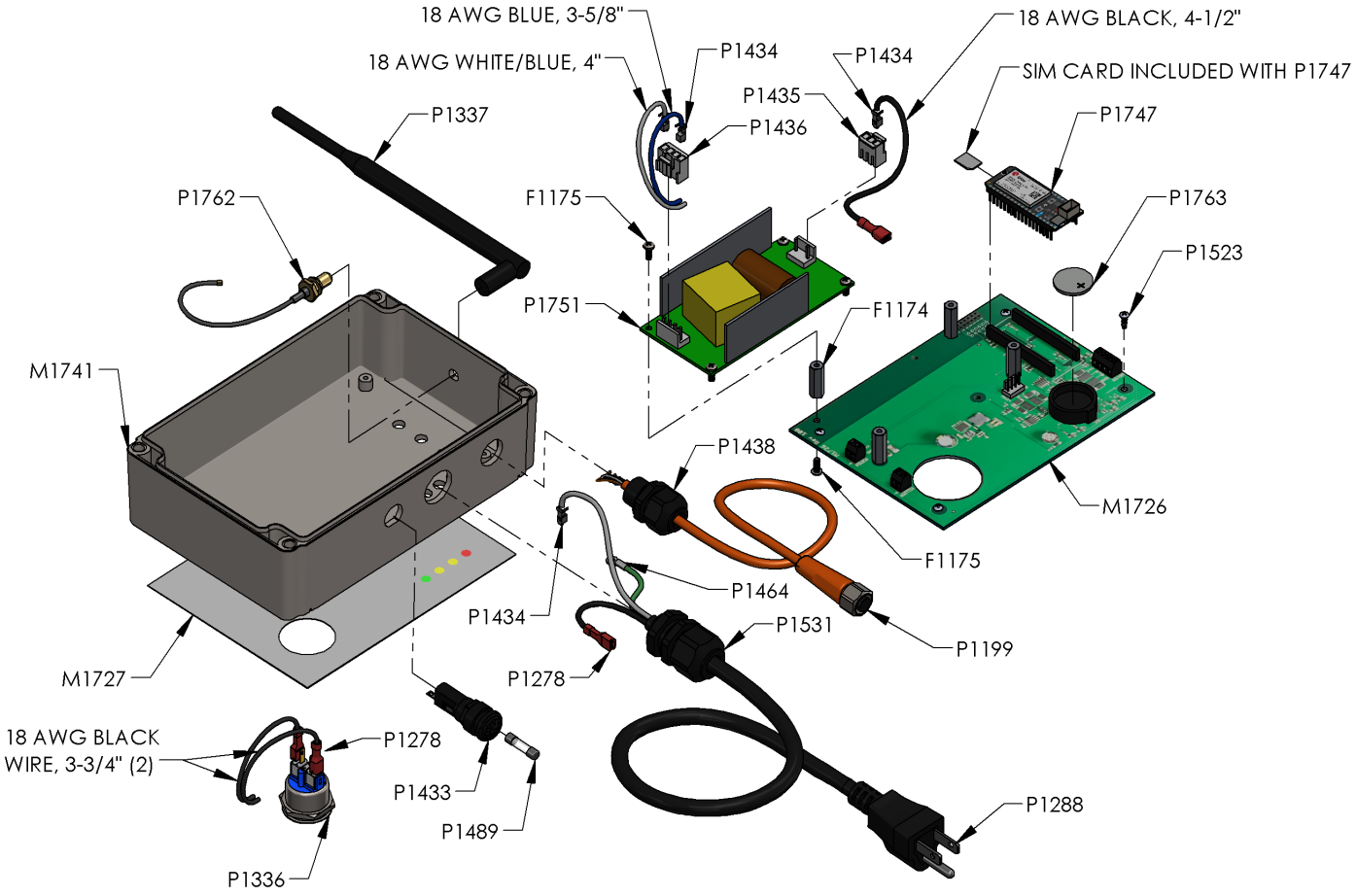
Cause	Solution
One or both of the sensor's calibrations are inaccurate	• Recalibrate.

Maintenance

- Check for corrosion on cable connection points.
- Check Ultrasonic Sensors for coating or condensation accumulation to maintain accurate readings.
- Check Pressure Sensors for sludge, debris or other clogs to maintain accurate readings.
- Verify Calibration settings and recalibrate if necessary.
- Check Network connection to verify stable connection to Ethernet or Cellular services, depending on equipment.
- Verify report emails are being sent to specified personnel.
- Verify Alarms have been set-up and are subscribed to.

Notes:

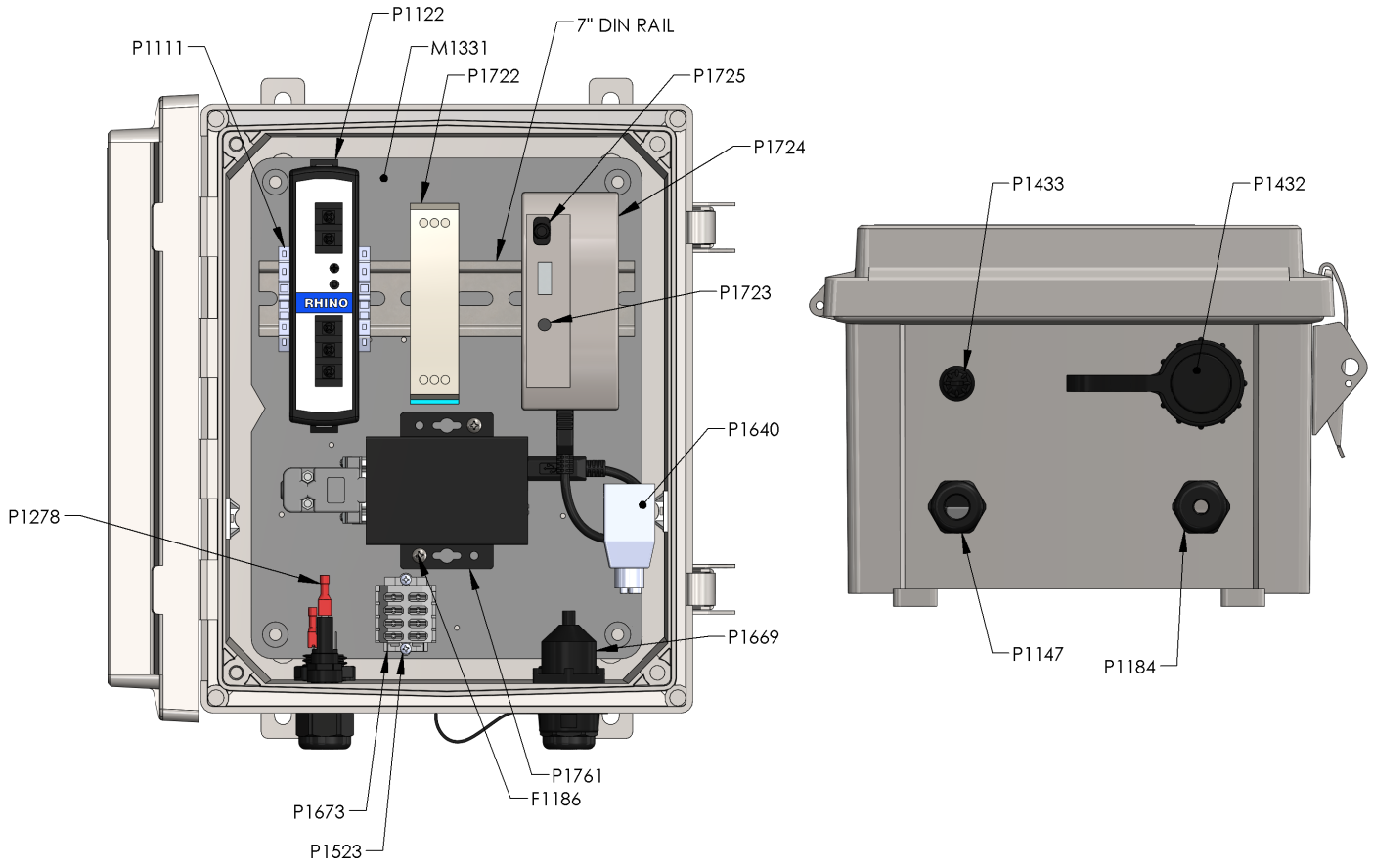
Appendix A - MINI Parts Callout



Part No.	Description
F1174	STANDOFF 4-40 X 3/4" FEMALE HEX ALU
F1175	SCREW MACHINE 4-40 X 5/16 ZN
M1726	PCB IVX-MINI
M1727	DECAL IVX-MINI CLEAN LOGIX
M1741	ENCLOSURE IVX-MINI
P1199	CAN CABLE 2.0m M12 AXIAL FEMALE/MALE 4 POLE
P1278	TERMINAL QUICK CONNECT 18-22 AWG .110" TO .125" X .020" TAB
P1288	POWER CORD 18-3 SO 5-15P, 10 FEET
P1336	PUSHBUTTON SPDT 22mm SS
P1337	ANTENNA 900MHZ HG R-SMA
P1433	FUSE HOLDER 250V 10A PANEL MOUNT
P1434	TERMINAL CRIMP VH/NV 18-22AWG JST
P1435	TERMINAL HOUSING VH 3-POS
P1436	TERMINAL HOUSING VH 4-POS

Part No.	Description
P1438	CORD GRIP PG9 X .065-.230 BLK
P1464	TERMINAL, #4 RING, 18-22 AWG NON-INS
P1489	FUSE 250VAC 5A 5X20
P1523	SCREW #4-24 X 5/16" HI-LO PHILLIPS PAN ZN
P1531	CORD GRIP PG11 X .230-.400 BLK W/NUT
P1747	PARTICLE ELECTRON KIT
P1751	POWER SUPPLY 24V 2.5 AMP 60 WATT OPEN FRAME
P1762	CABLE, SMA BULKHEAD TO U.FL, 100mm, IP67
P1763	BATTERY COIN CELL CR2032VP
P1675	RECEPTACLE USB-A CIRCULAR SEALED w/0.50m CABLE
P1751	POWER SUPPLY 24V 2.5 AMP 60 WATT OPEN FRAME
P1762	CABLE, SMA BULKHEAD TO U.FL, 100mm, IP67
P1763	BATTERY COIN CELL CR2032VP

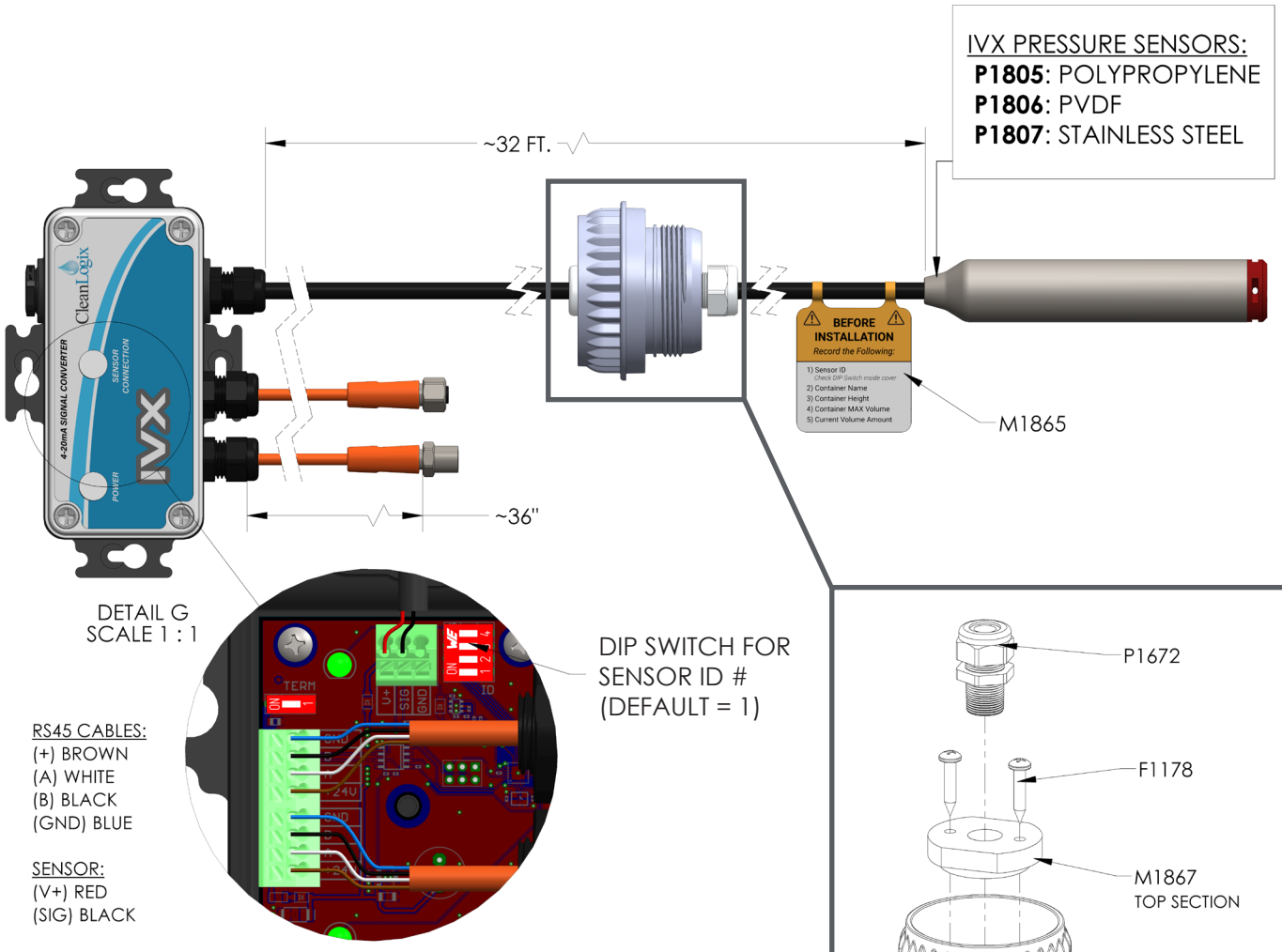
Appendix B - BETA Parts Callout



Part No.	Description
F1075	SCREW SELF TAP 10-16 X 12 TRUSS HD
F1186	SCREW #8-18 X 1/2 HI-LO SS
M1331	BACK PANEL ALX-CELL
M1727	DECAL IVX-MINI CLEAN LOGIX
P1111	END STOP TERMINAL BLOCK
P1122	POWER SUPPLY 24VDC 60W
P1147	CORD GRIP 1/2 NPT X .170 - .450 BLK
P1148	CORD GRIP NUT 1/2 NPS NYL
P1169	DIN RAIL 35mm X 175mm LONG 0.175
P1181	ENCLOSURE FIBOX AR1086CHSSL
P1184	CORD GRIP 1/2 NPT X .095-.260 BLK
P1278	TERMINAL QUICK CONNECT 18-22 AWG .110" TO .125" X .020" TAB
P1282	CAN CABLE 5 Meter (16.48ft)
P1288	POWER CORD 18-3 SO 5-15P
P1432	USB DUST CAP ASSY
P1433	FUSE HOLDER 250V 10A PANEL MOUNT

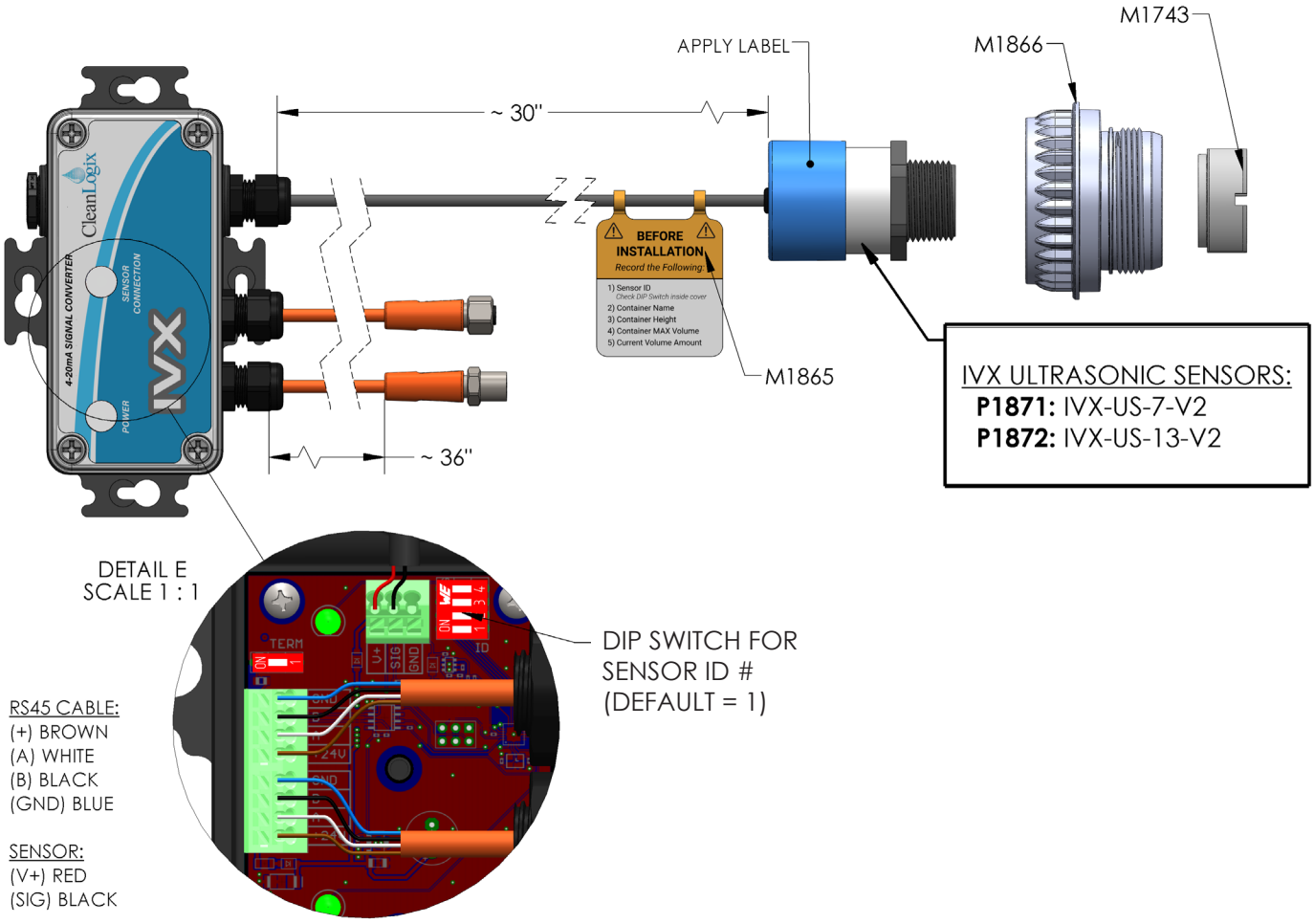
Part No.	Description
P1489	FUSE 250VAC 5A 5X20
P1523	SCREW #4-24 X 5/16" HI-LO PHILLIPS PAN ZN
P1555	CABLE TIE HOLDER
P1640	POE INJECTOR WITH LED INDICATOR
P1668	TERMINAL RJ45 FIELD WIRED CIRCULAR SEALED
P1669	RECEPTACLE RJ45 PANEL MOUNT CIRCULAR SEALED w/ 0.25m CABLE
P1673	TERMINAL BLOCK 4-POS 2 CONDUCTOR FLANGE MOUNT
P1722	POWER SUPPLY 5V 10 WATT DIN RAIL
P1723	CIRCUIT BOARD RDS REPORTING MODULE
P1724	ENCLOSURE DIN RAIL MOUNT RDS REPORTING MODULE
P1725	CABLE USB MALE A TO MICRO B 3 FT.
P1754	MICRO SD CARD 32GB
P1761	USB TO RS485 ADAPTER

Appendix C - IVX-PT-V2 Pressure Sensor Parts Callout



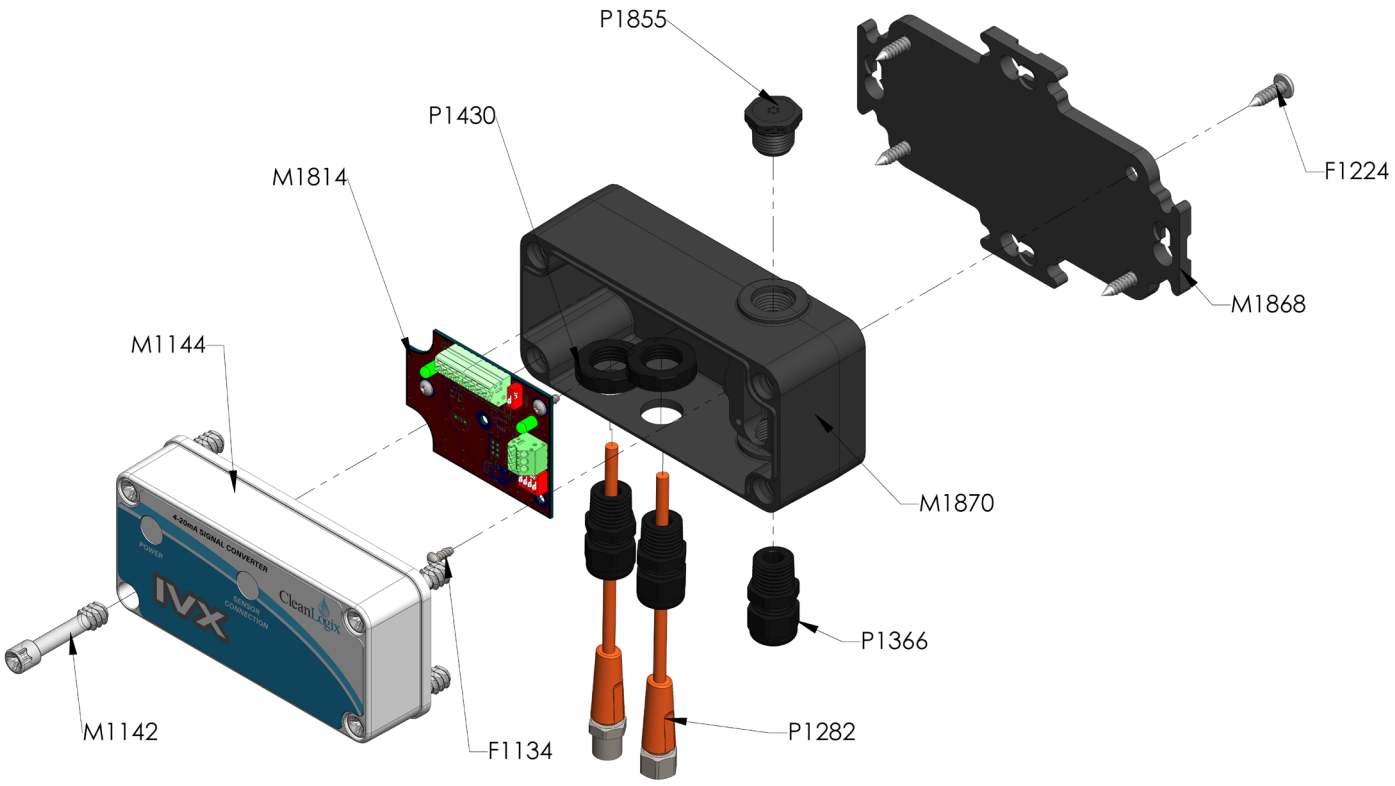
Part No.	Description
F1178	SCREW SHARX #10 X 1 PAN HD 316SS
M1865	DECAL IVX SENSOR PREP TAG
M1866	DRUM PLUG WITH CENTER MACHINED OUT
M1867	DRUM PLUG SWIVEL PLATE
P1672	CORD GRIP 3/8 NPT X .160-.310 PVDF
P1805	PRESSURE TRANSDUCER, POLYPROPYLENE
P1806	PRESSURE TRANSDUCER, PVDF
P1807	PRESSURE TRANSDUCER, STAINLESS STEEL

Appendix D - IVX-US-V2 Ultrasonic Sensor Parts Callout



Part No.	Description
M1743	SENSOR SWIVEL NUT
M1865	DECAL IVX SENSOR PREP TAG
M1866	DRUM PLUG WITH CENTER MACHINED OUT
P1871	ULTRASONIC SENSOR, 4" - 7' DEPTH
P1872	ULTRASONIC SENSOR, 12" - 13' DEPTH

Appendix E - IVX-SIG 4-20mA Signal Converter Parts Callout



Part No.	Description
F1134	SCREW HI-LO 8-18 X 3/8 SS
F1224	SCREW SELF TAP #12 X 3/4 316SS
M1142	ALX-PC COVER SCREW
M1144	ALX-PC COVER
M1814	PCB 4-20MA TO RS485 CONVERTER V2
M1863	DECAL, IVX-SENSOR 4-20mA SIGNAL CONVERTER
M1868	MOUNTING PLATE, ALX-PC BASE
M1870	ALX-PC BASE REV100 (MACHINED)
P1282	CAN CABLE 5 Meter (16.48ft)
P1366	CORD GRIP 3/8 NPT X .105-.315 BLK
P1430	CORD GRIP NUT 3/8" NPT NYLON
P1855	VENT, PLUG .375 NPT BLK

Appendix F - CELL-POE (Power-Over-Ethernet) & IVX-BETA

IVX BETA controllers are connected to Clean Intel and network sources via Ethernet. Should a cellular connection be desired, the CELL-POE device may be used with the BETA controller for Verizon cellular networking services.

The CELL-POE connects to the BETA controller via its Ethernet port and is powered through this connection.

CELL-POE Installation

1. Attach the mounting feet with the included hardware.
2. Choose an installation location with consideration of the following:
   - Verizon cellular reception

   NOTE: Check internal lights for signal strength. Unit can be installed outdoors if necessary to increase reception signal.

   - Location for user/maintenance access
   - Distance from IVX Controller
3. Securely mount the CELL-POE using appropriate hardware (not included).
4. Connect to IVX-BETA using Cat6 Ethernet cable (50 ft. included with unit).

NOTE: Cat6e is recommended over Cat5e cables for increased network speed and less interference. If necessary, longer cables may be used.

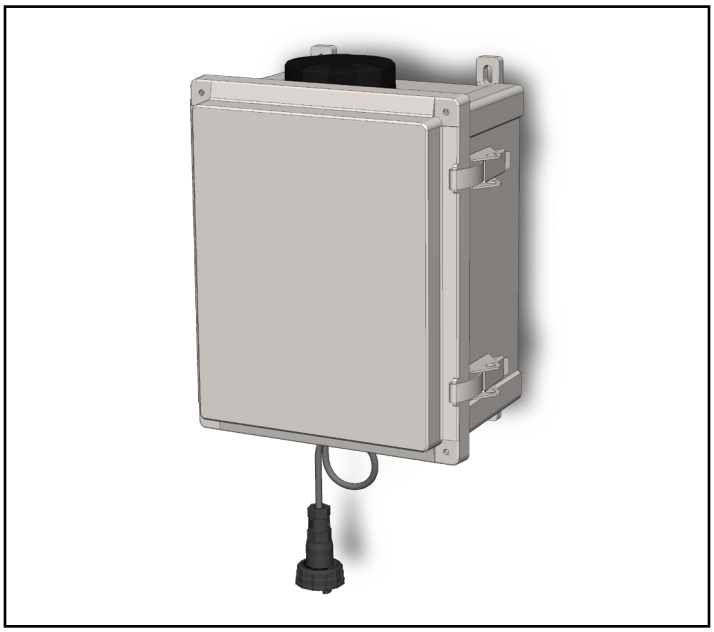


Figure 24.1: CELL-POE unit with built-in antenna

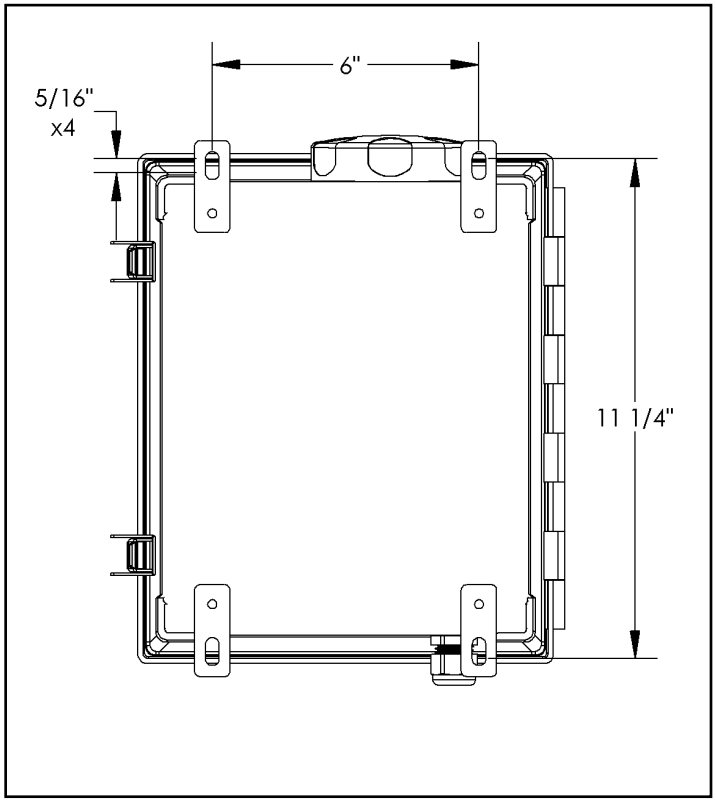
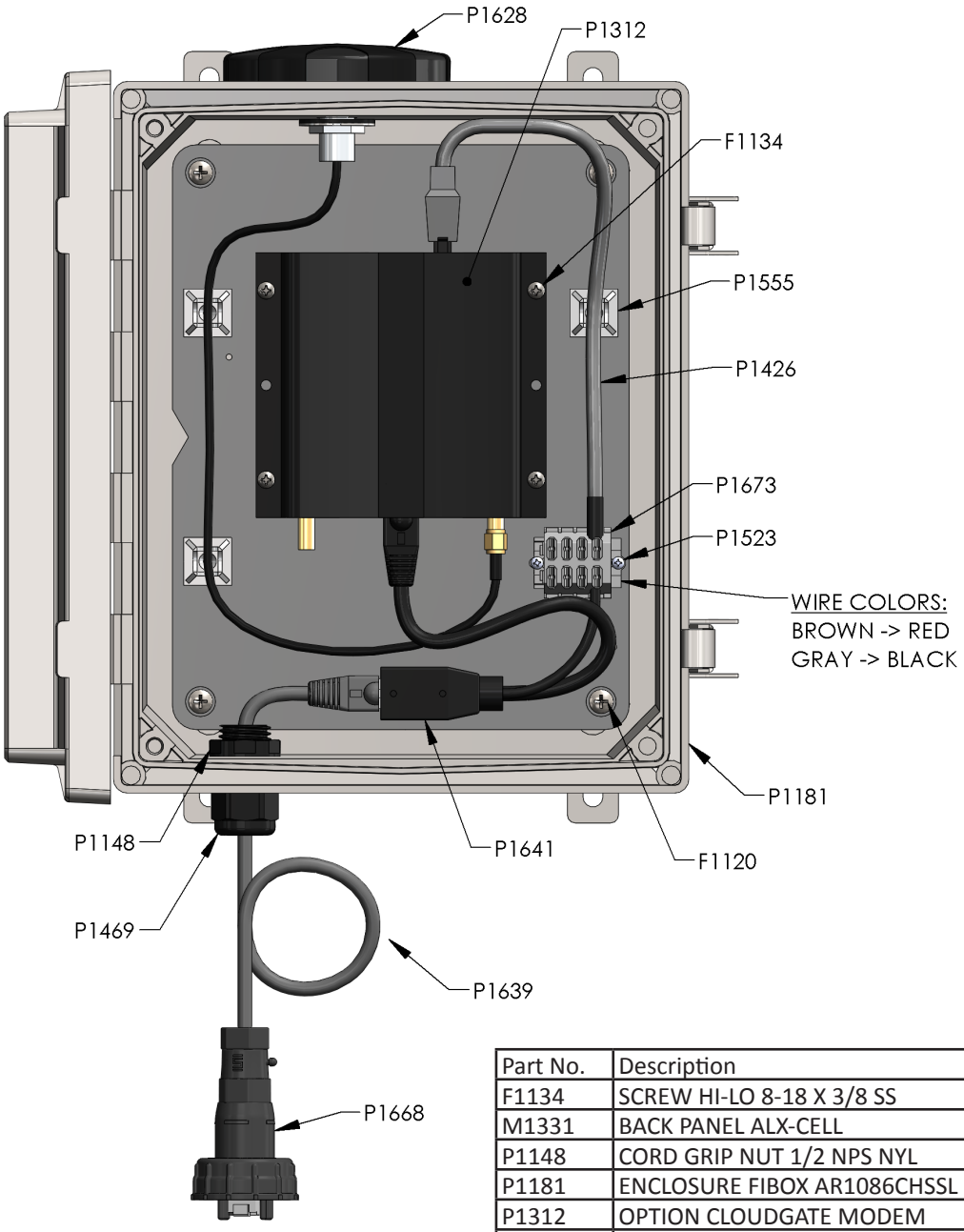


Figure 24.2: CELL-POE mounting hole dimensions

Appendix G - CELL-POE (Power-Over-Ethernet) Parts Callout



Part No.	Description
F1134	SCREW HI-LO 8-18 X 3/8 SS
M1331	BACK PANEL ALX-CELL
P1148	CORD GRIP NUT 1/2 NPS NYL
P1181	ENCLOSURE FIBOX AR1086CHSSL
P1312	OPTION CLOUDGATE MODEM
P1426	POWER CABLE FOR CLOUDGATE MODEM
P1469	CORD GRIP 1/2 NPT X .210-.330 BLK SPLIT GLAND
P1523	SCREW #4-24 X 5/16" HI-LO PHILLIPS PAN ZN
P1555	CABLE TIE HOLDER
P1628	ANTENNA LOW PROFILE DOME
P1639	CABLE PATCH CAT6 GRAY 50'
P1641	POE SPLITTER 5.5/2.1 mm DC SHIELDED
P1668	TERMINAL RJ45 FIELD WIRED CIRCULAR SEALED
P1673	TERMINAL BLOCK 4-POS 2 CONDUCTOR FLANGE MOUNT