1280 Enterprise Series™

Color Touchscreen Indicator

Installation Manual

RICE LAKE WEIGHING SYSTEMS

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An ISO 9001 registered company

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www.ricelake.com

1.0 Introduction

The 1280 Enterprise Series is a color touchscreen, programmable, multi-channel digital weight indicator/controller. Manufactured with industrial-grade components, the 1280 is built to achieve top performance, even in harsh environments. The 1280 features a Freescale i.MX6 microprocessor, Linux-based operating system and 1 GB onboard memory (expandable with micro SD card). Configuration can be performed using the front panel, serial commands or Revolution® scale software.

For applications using the 1280 indicator as a host device, Version 1.03 or later of the 1280 indicator software must be installed.

Custom programs can be written with iRite®, a domain-based programming language based off of Basic, Pascal and Ada—empowering programmers to customize display widgets, store and retrieve data with the onboard database and utilize the 150+ built-in-functions. From tailored basic weighing to complex process automation, the 1280 delivers uncompromising speed for today's most demanding applications as well as vast expandability for future needs.

Manuals are available for viewing and/or downloading from the Rice Lake Weighing Systems website at www.ricelake.com/manuals

Warranty information can be found on the website at www.ricelake.com/warranties

1.1 Features

Features of the 1280 include:

- Support for up to eight scales (combination of analog load cell, total, serial scales or program scales)
- Eight programmable Digital I/O bits available on the CPU board (connector J1) including onboard pulse input pins, with 24 additional per option card
- Two communication ports that support RS-232, RS-485 and RS-422
- Two USB host ports
- One USB device port
- AC or DC power options
- Ethernet – wired, Wi-Fi and Wi-Fi Direct
- Bluetooth

1.1.1 Other Features

- Built in Web Server for remote access to screens
- Configurable print formats can be defined for up to 1000 characters. Additional print formats can be created with iRite.
- Truck in/out, recipe batching, counting and checkweighing iRite programs and source code included.
- 100 configurable setpoints.
- The 1280 is NTEP, OIML and Measurement Canada certified. See Specifications for more information.

1.1.2 Enclosure Types

- Universal
- Panel Mount – numeric keypad
- Panel Mount – touch only (7" and 12" display)
- Wall Mount

1.1.3 Option Cards

The CPU board provides six slots for installing scale or other option cards. Available option cards include:

- Single- and dual-channel scale cards to drive up to sixteen 350 ohm load cells per card. Scale cards support both 4- and 6-wire load cell connections.
- Single- and dual-channel analog output card for 0–10 VDC, 0–20 mA or 4-20 mA tracking of gross or net weight values.
- 24-channel digital I/O expansion card
- Dual channel serial port card (with RS-232, RS-422 and RS-485)
- Dual channel analog input card for 0–100 mV, 0-10 VDC, 0–20 mA or 4-20 mA
- 4-channel relay card
- CompactCom card that supports EtherNet/IP™, DeviceNet™, ProfiNet, Profibus® DP Modbus TCP, EtherCAT and PowerLink networks.

1.2 Safety

Safety Signal Definitions:

DANGER *Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. Includes hazards that are exposed when guards are removed.*

WARNING *Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death. Includes hazards that are exposed when guards are removed.*

CAUTION *Indicates a potentially hazardous situation that, if not avoided, could result in minor or moderate injury.*

IMPORTANT *Indicates information about procedures that, if not observed, could result in damage to equipment or corruption to and loss of data.*

General Safety

Do not operate or work on this equipment unless this manual has been read and all instructions are understood. Failure to follow the instructions or heed the warnings could result in injury or death. Contact any Rice Lake Weighing Systems dealer for replacement manuals.

WARNING

Failure to heed could result in serious injury or death.

Some procedures described in this manual require work inside the indicator enclosure. These procedures are to be performed by qualified service personnel only.

Do not allow minors (children) or inexperienced persons to operate this unit.

Do not operate without enclosure completely assembled.

Do not place fingers into slots or possible pinch points.

Do not use this product if any of the components are cracked.

Do not make alterations or modifications to the unit.

Do not remove or obscure warning labels.

Do not submerge.

Before opening the unit, ensure the power cord is disconnected from the power source.

2.0 Installation

This section describes procedures for connecting power, load cells, digital I/O and data communications cables to the 1280 indicator. Instructions for replacement of the circuit boards are also included, along with assembly drawings and replacement parts lists for the service technician.

WARNING *Failure to heed the following statements could result in serious injury or death.*

* *Use a wrist strap for protection and damage to components from electrostatic discharge (ESD) when working inside the indicator enclosure.*
* *Procedures requiring work inside the indicator must be performed by qualified service personnel only.*
* *In the wall and universal mounts, the supply cord serves as the power disconnect. The power receptacle to the indicator must be accessible for these models.*

2.1 Unpacking

Immediately after unpacking, visually inspect the 1280 to ensure all components are included and undamaged. The shipping carton should contain the controller, display, CD, parts kit, any options ordered with the unit and the appropriate manuals. If any parts were damaged in shipment, notify Rice Lake Weighing Systems and the shipper immediately.

2.2 Mounting/Assembly

There are three enclosure styles – universal mount, wall mount and panel mount.

2.2.1 Universal Mount Enclosure with Tilt Stand

The universal mount is shipped with a tilt stand and can be mounted on a wall, tabletop or any flat surface.

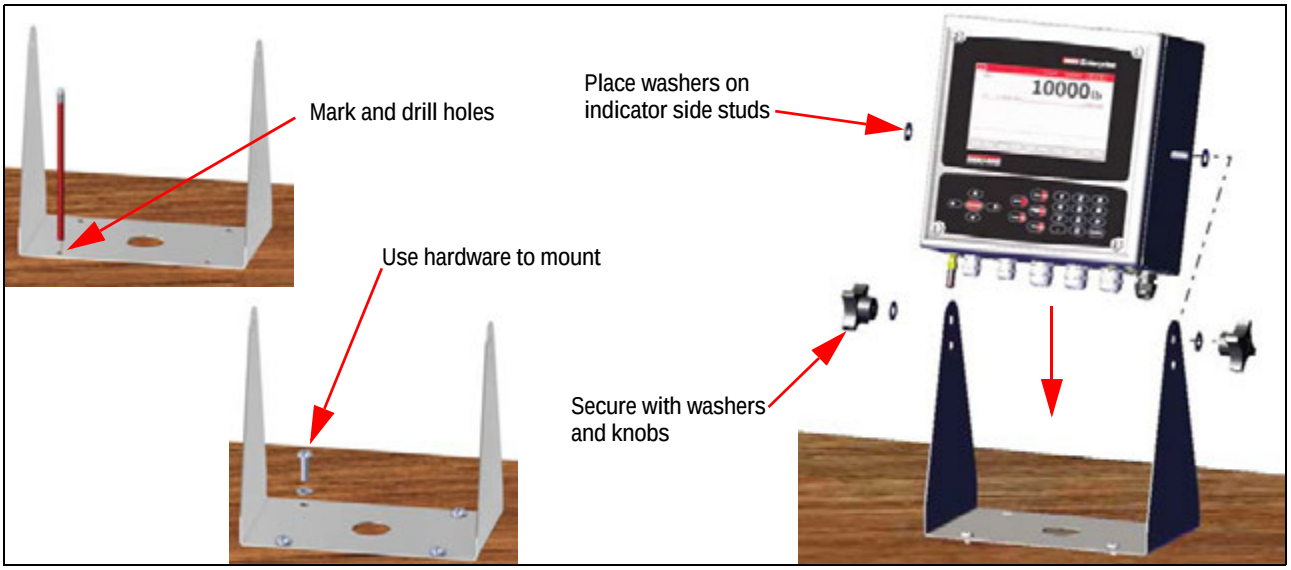


Figure 2-1. Mount Universal Enclosure

1. Using the tilt stand as a template, mark the screw locations. See Figure 2-5 on page 5 for dimensions.

Note *The universal enclosure can mount to the same location where a 920i universal enclosure was mounted; the screw locations for the tilt stand are the same.*

2. Drill holes for the screws.
3. Mount the tilt stand using the appropriate hardware (not included).
4. Place one washer on each side stud of the indicator enclosure.
5. Place the indicator side studs into the holes on the arms of the tilt stand.
6. Secure with remaining washers and hand knobs from the hardware kit.
7. Wire the indicator. See Section 2.4 on page 16.

Remove Shipping Bracket

The universal mount is shipped with a shipping bracket inside the enclosure to stabilize it during shipping.

1. Loosen the four screws securing the front door.

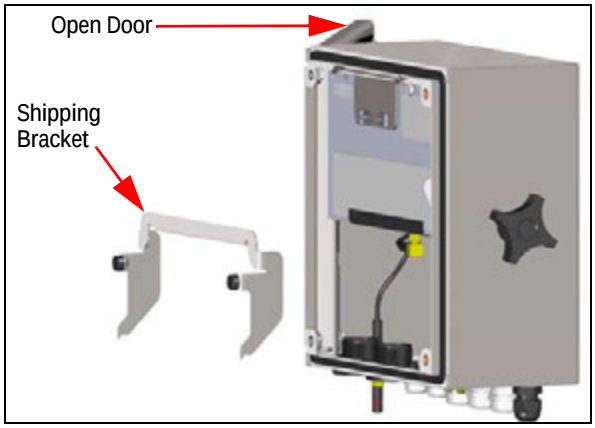


Figure 2-2. Remove Shipping Bracket

2. Pull the door and fully extend the hinge to swing the door open.
3. The bracket is loose, remove it from the enclosure.

Note *Retain shipping bracket for future shipping needs.*

Controller Disassembly

Note *The controller can be tilted up with the locking tab or it can be completely removed from the enclosure by removing the retaining wire bail.*

1.Remove the large fillister screw in the back of the indicator to tilt or remove the controller. The seal must be broken for this purpose.

Figure 2-3. Open Cover

2. Loosen the four screws securing the front door.
3. Pull the door and fully extend the hinge to swing the door open.
4. Pull the locking tab to the left to release the controller assembly.
5. Remove the wires connected to the controller assembly.
6. Remove the retaining wire bail connected to the controller assembly. This only needs to be removed if the controller is being removed from the enclosure.
7. Lift controller assembly from the enclosure.

Reverse this procedure for reassembly. Upon reassembly, ensure display and keyboard wires are properly connected.

Note *To close the door to the universal enclosure, push the bail in and down so that it does not get caught on the controller assembly.*

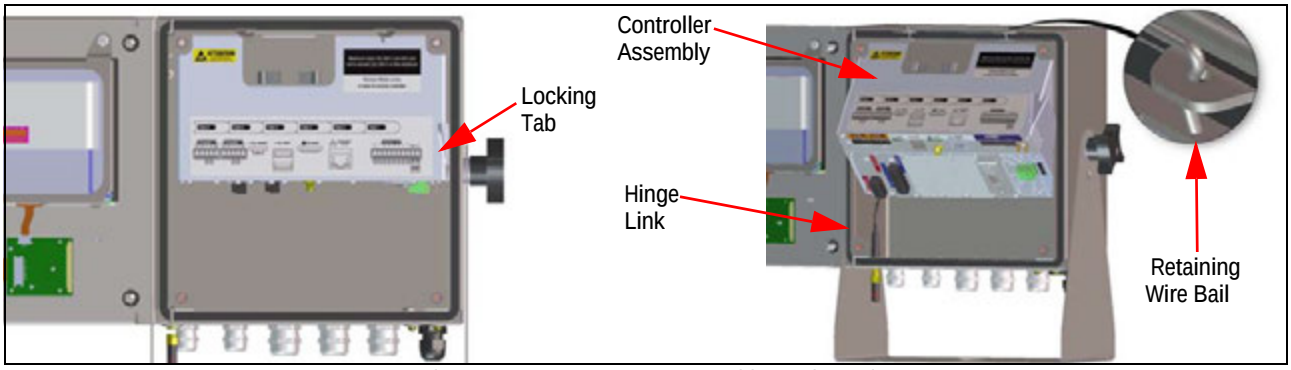


Figure 2-4. Remove CPU Assembly– Universal

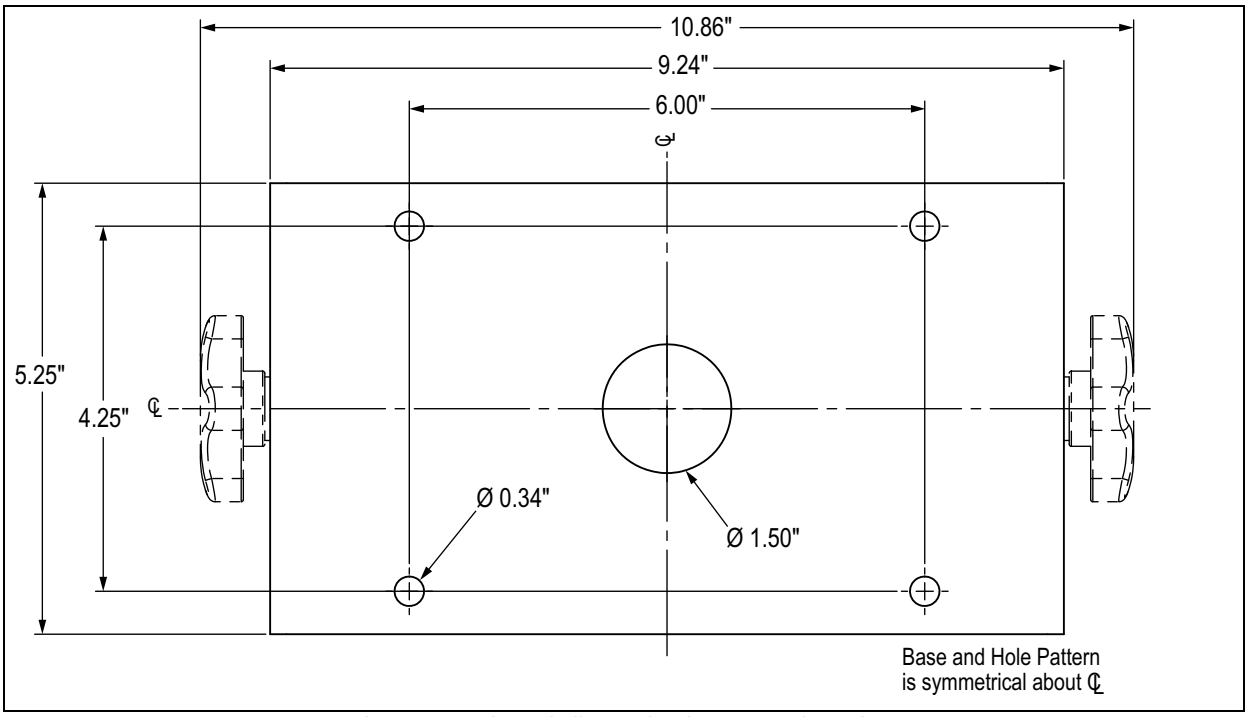


Figure 2-5. Universal Tilt Stand Hole Pattern Dimensions

IMPORTANT *This illustration is not to scale and is for illustration purposes only. Use the dimensions to mark the holes for the universal mount, or use the bottom of the tilt stand as a template. Do not use Figure 2-5 as a template.*

Sealing the Setup Switch

In certain Legal for Trade applications, it may be necessary to seal the indicator to restrict access from the setup switch. Use the following instructions to seal the universal enclosure.

IMPORTANT *The audit trail jumper (JP1) needs to be disabled, in the off (right) position, in order to seal the setup switch with a lead seal wire. Access is not prevented simply by sealing the setup switch.*

1. Turn the audit trail jumper (JP1) to the right to turn off. See Section 2.7 on page 22 for instructions on how to remove the CPU board (which is necessary to disable the audit trail jumper). This restricts access from the configuration menu through the front panel.
2. If not previously installed, install the large fillister screw in the back of the indicator.
3. Wrap the lead wire seal through the large fillister screw and the two smaller fillister screws in order to seal the indicator. This will restrict access to the setup switch.

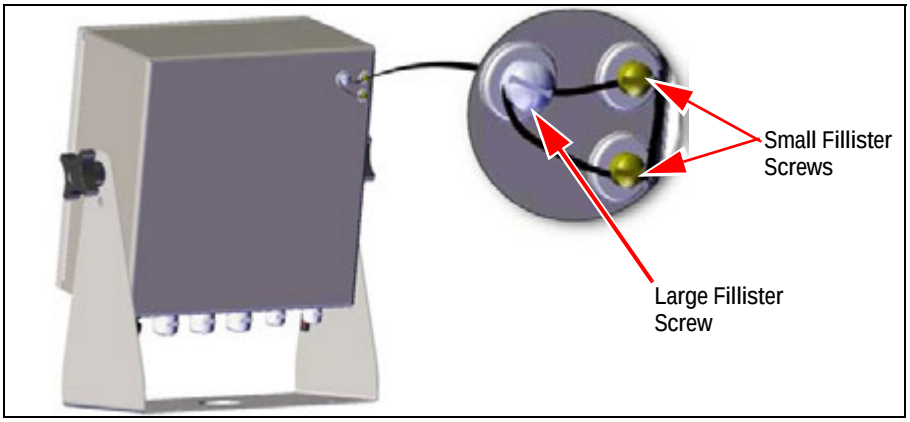


Figure 2-6. Seal the Setup Switch (Universal Mount)

Sealing the Front Door

In Legal for Trade applications, it is necessary to seal the indicator to restrict access to the internal hardware of the indicator. To seal the universal enclosure front door, wrap a lead wire seal through the large bottom right screw securing the front door and the two small fillister screws on the bottom of the enclosure. Alternatively, the A/D scale card includes fillister screws and a bracket that prevent the load cell cable from being disconnected.

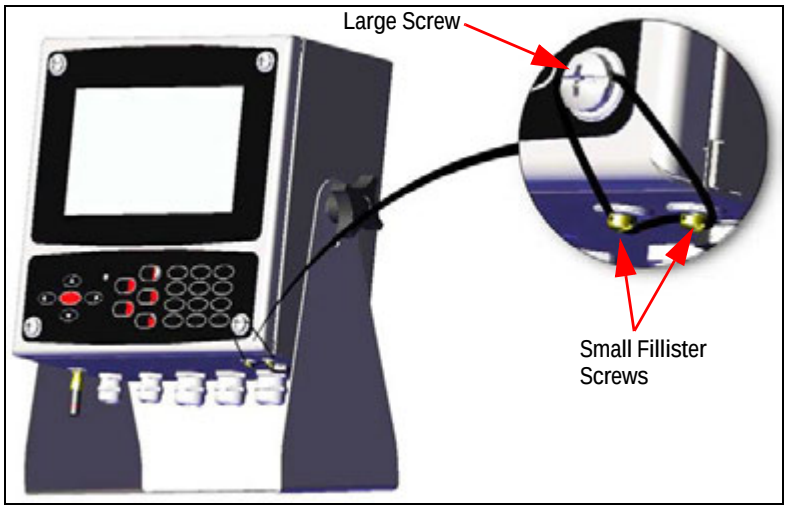


Figure 2-7. Seal the Front Door (Universal Mount)

2.2.2 Wall Mount Enclosure

1. Using the wall mount as a template, mark the screw locations. See Figure 2-14 on page 10 for dimensions.

Note *The wall enclosure can mount to the same location where a 920i was mounted; the screw locations are the same.*

2. Drill holes for the screws.
3. Mount using the appropriate hardware (not included).

Figure 2-8. Wall Mount

Remove Shipping Bracket

1. Loosen the four screws on the front door.
2. Swing the door open.
3. Remove the four screws securing the bracket in place.
4. Remove bracket from the enclosure.

Figure 2-9. Remove Shipping Bracket

Controller Disassembly

Figure 2-10. Open Door

1. Loosen the four screws on the front door.
2. Swing the door open.
3. Remove the wires connected to the controller assembly.

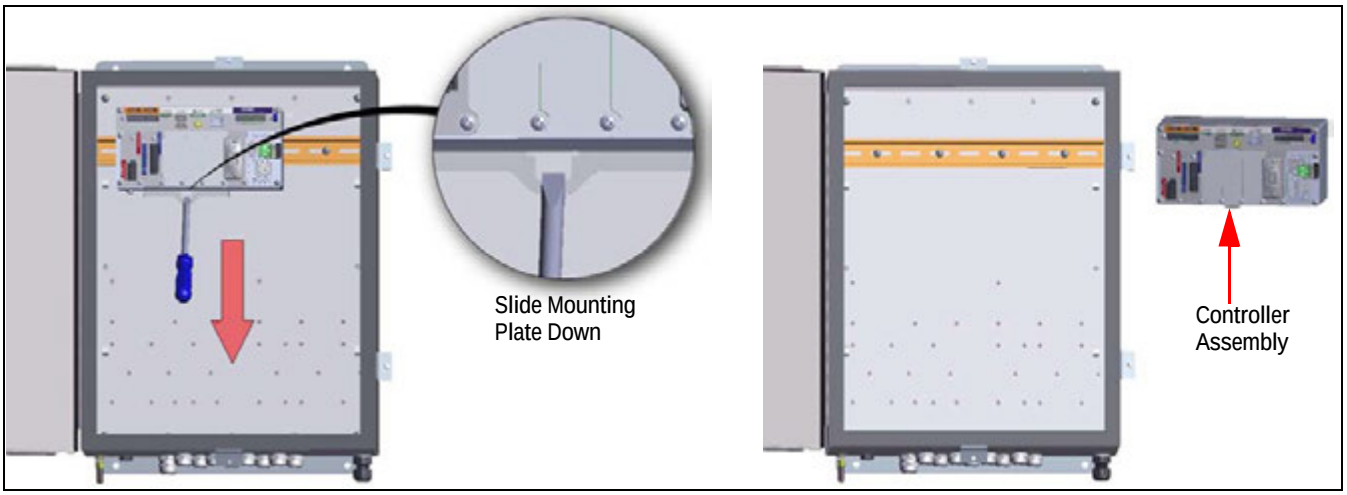


Figure 2-11. Remove Controller Assembly - Wall Mount

4. While supporting the controller assembly, use a screwdriver to slide the mounting plate down.
5. Lift the controller assembly up to remove it from the DIN rail and pull it out of the enclosure.

Reverse this procedure for controller assembly installation.

Note *When closing the door, tighten screws to 15 in-lb to ensure the enclosure is securely sealed.*

Sealing the Setup Switch

In Legal for Trade applications, it is necessary to seal the indicator to restrict access to the setup switch. Use the following instructions to seal the wall mount enclosure.

IMPORTANT *The audit trail jumper (JP1) needs to be disabled, in the off (right) position, in order to seal the setup switch with a lead seal wire. Access is not prevented simply by sealing the setup switch.*

1. Turn the audit trail jumper (JP1) to the right to turn off. See Section 2.7 on page 22 for instructions on how to remove the CPU board (which is necessary to disable the audit trail jumper). This will restrict access from the configuration menu through the front panel.
2. Wrap the lead wire seal through the large fillister screw and the bottom tab of the DIN rail clip to restrict access to the setup switch.

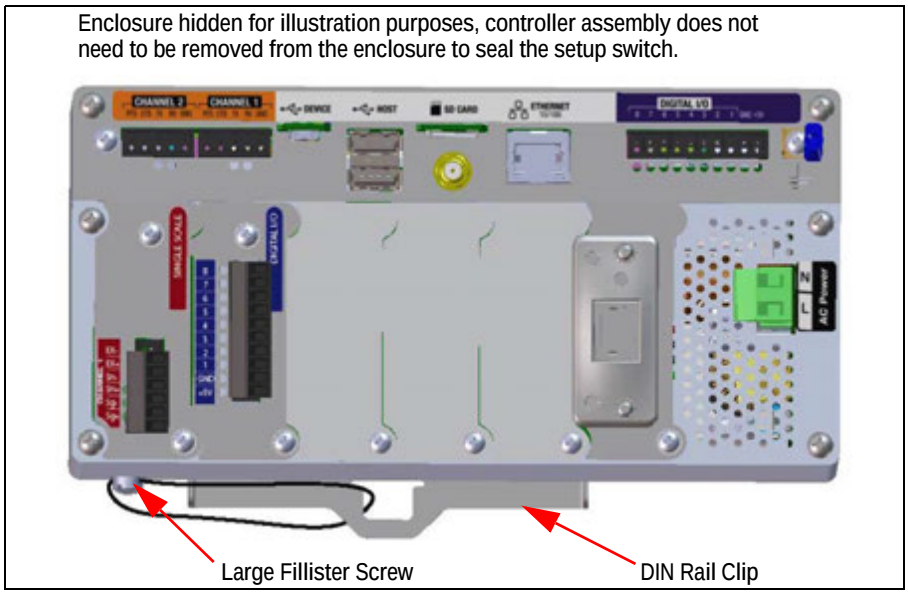


Figure 2-12. Seal the Setup Switch

Sealing the Front Door

In Legal for Trade applications, it is necessary to seal the indicator to restrict access to the internal hardware of the indicator. To seal the wall mount enclosure front door, wrap the lead wire seal through the large screw securing the front door and the hole in the edge of the door enclosure. Alternatively, the A/D scale card includes fillister screws and a bracket that prevent the load cell cable from being disconnected.

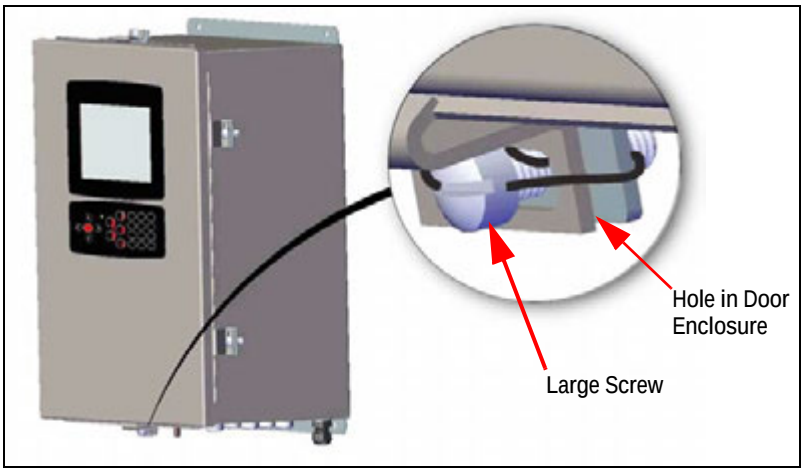


Figure 2-13. Seal the Front Door

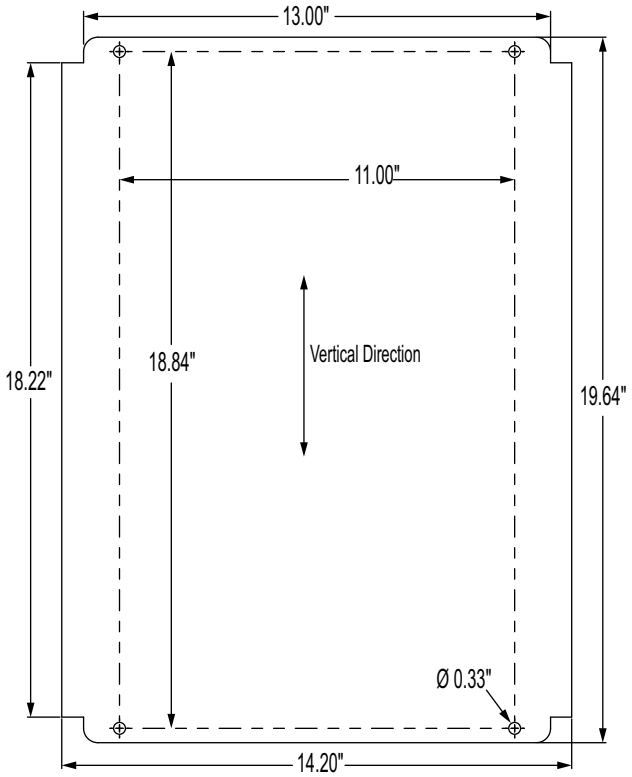


Figure 2-14. Wall Mount Dimensions

IMPORTANT *This illustration is not to scale. It is for illustration purposes only. Use the dimensions to mark the holes for the wall mount. Do not use Figure 2-14 as a template.*

2.2.3 Panel Mount Enclosure

The panel mount will ship partially assembled. The display assembly must be removed from the backing plate to allow installation on the existing panel.

Figure 2-15. Mark and Drill Holes for Panel

1. Tape the panel mount template to the outside of the panel.
2. Mark and drill holes according to the template.

Panel Mount Dimensions

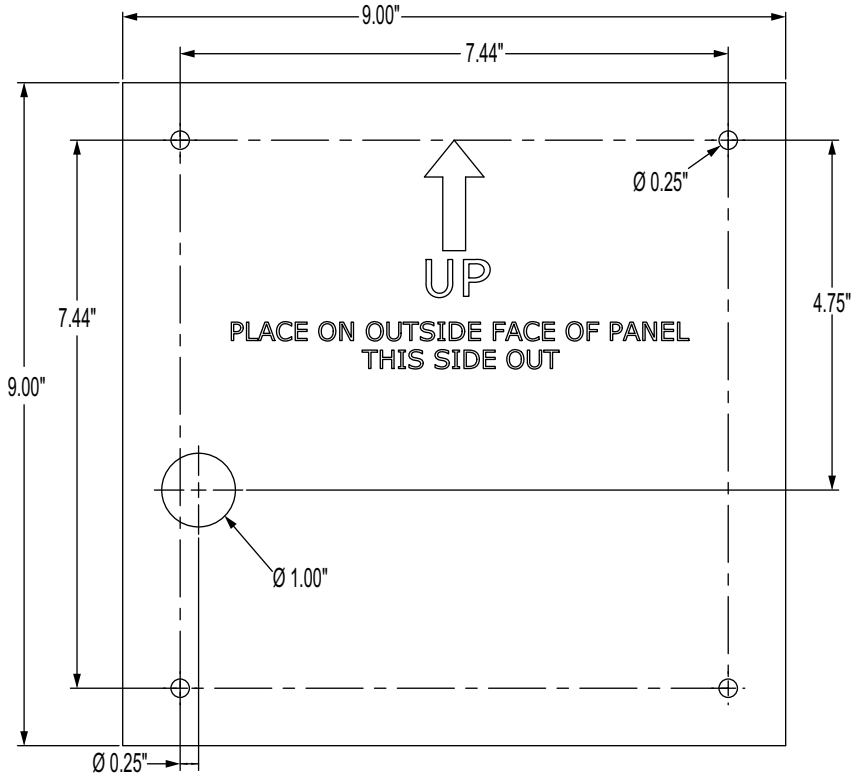


Figure 2-16. Panel Mount with Keypad Dimensions

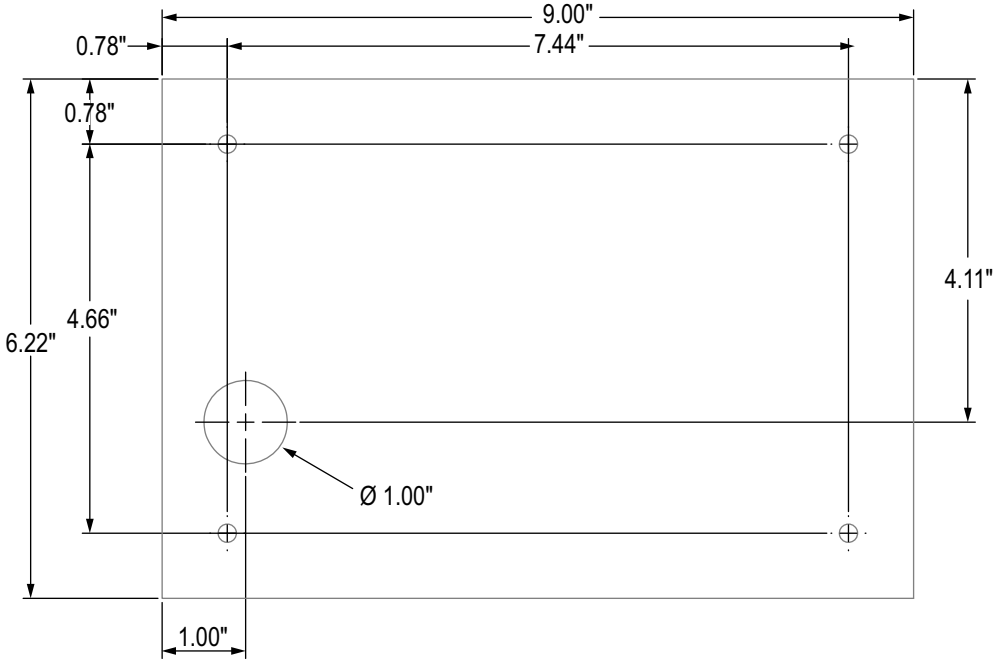


Figure 2-17. 7" Touch Only Panel Mount Dimensions

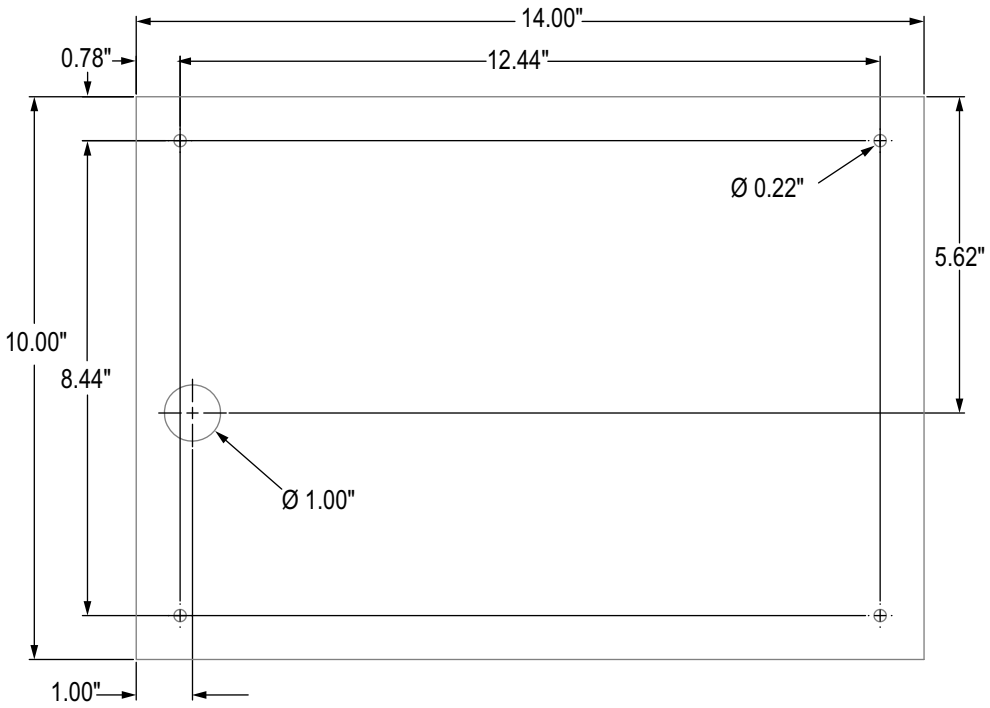


Figure 2-18. 12" Touch Only Panel Mount Dimensions

IMPORTANT *The illustrations above are not to scale, they are for reference only. Use the dimensions to mark the holes for the panel mount, or use the template provided with the indicator. Do not use Figure 2-16, Figure 2-17 and Figure 2-18 as templates.*

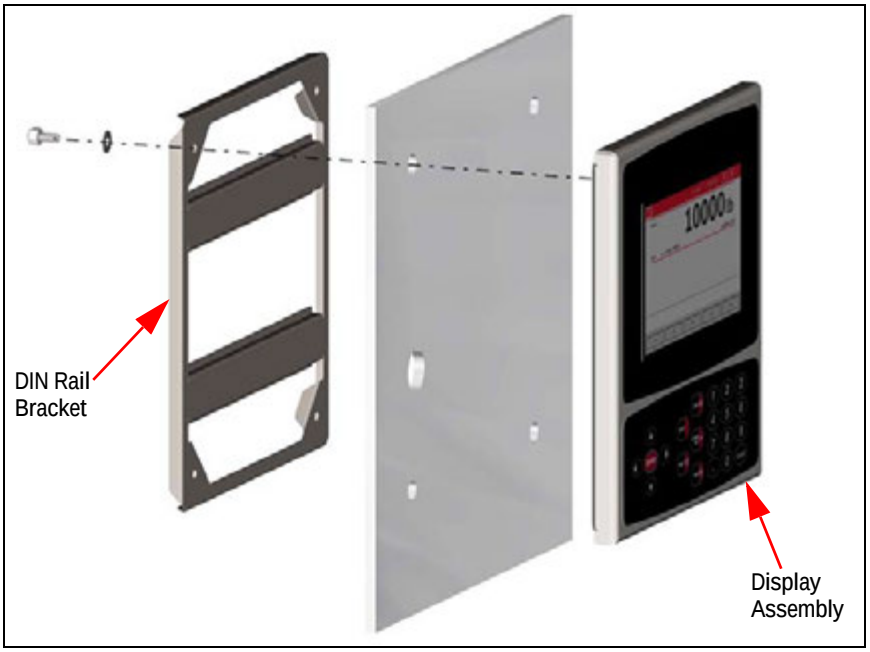


Figure 2-19. Panel Enclosure Mounting

3. Place the display assembly and the DIN rail bracket on either side of the panel. Ensure that the DIN rail bracket is horizontal.
4. Use studs, nuts and washers to secure the display assembly to the DIN rail bracket.

Installing Grounding Bus Bar

The grounding bus bar is installed on the controller assembly for grounding purposes on the panel mount enclosure.

1. Remove the four corner screws from the controller assembly.
2. Align the bus bar to the screw holes and secure by reinstalling the screws.

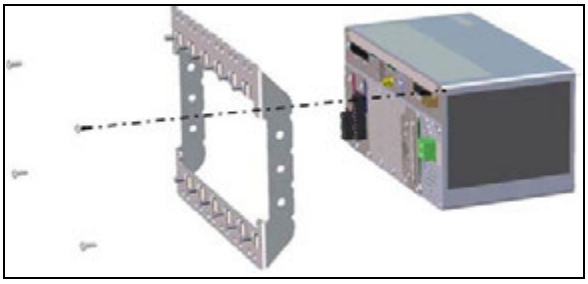


Figure 2-20. Grounding Bus Bar Installation

Install Controller Assembly

The controller assembly can be mounted to a standard DIN rail.

1. Hook the bracket on the back of the controller assembly onto the DIN rail.

Note *The controller assembly can be installed up to 30 inches from the display of the panel mount enclosure.*

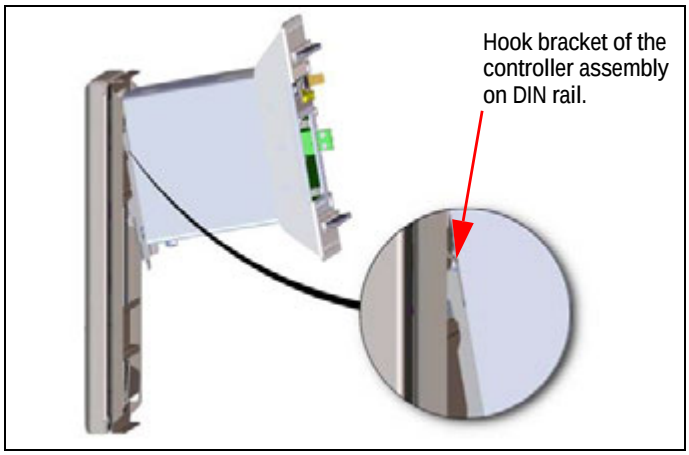


Figure 2-21. Hook Bracket on DIN Rail

2. Push controller assembly against the DIN rail in order to engage the spring clip. The controller assembly locks onto the DIN rail bracket.
3. Connect wiring. See Section 2.4 on page 16.

Removing Controller Assembly

1. Disconnect wiring.
2. Supporting the controller assembly and use a screwdriver to slide the mounting plate down.
3. Unhook the controller assembly from the DIN rail bracket.
4. Carefully remove the controller assembly from the DIN rail bracket and release the mounting plate.

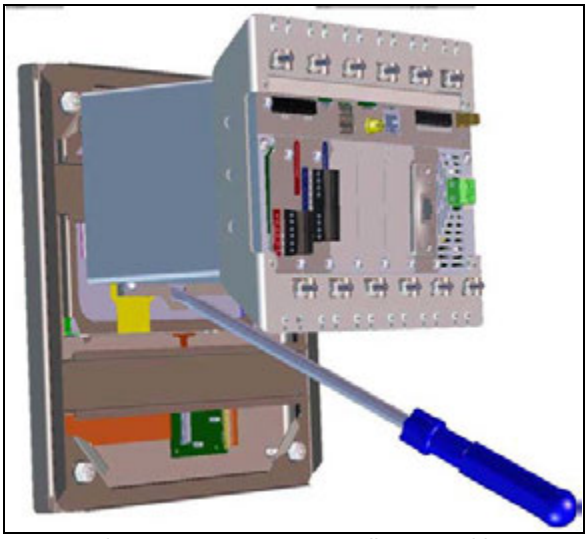


Figure 2-22. Remove Controller Assembly

Seal Setup Switch

In Legal for Trade applications, it is necessary to seal the indicator to restrict access to the setup switch. Use the following instructions to seal the panel mount enclosure.

IMPORTANT *The audit trail jumper (JP1) needs to be disabled, in the off (right) position, in order to seal the setup switch with a lead seal wire. Access is not prevented simply by sealing the setup switch.*

Wrap the lead wire seal through the large fillister screw and through the bottom tab of the DIN rail clip to restrict access to the setup switch. Alternatively, the A/D scale card includes fillister screws and a bracket that prevent the load cell cable from being disconnected.

Enclosure and grounding bus bar hidden for illustration purposes. Controller Assembly does not need to be removed from the enclosure to seal the setup switch and the grounding bus bar can remain attached, if installed.

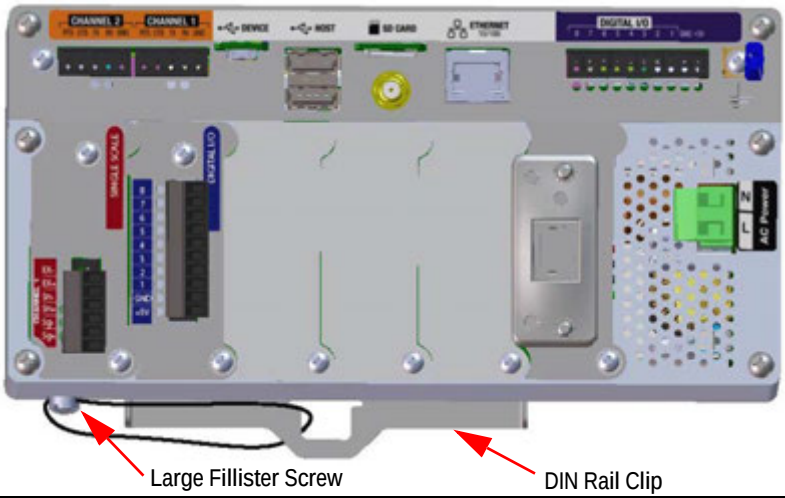


Figure 2-23. Seal the Setup Switch (Panel Mount Enclosure)

2.3 Option Card Installation

Use the following instructions to install option cards. There are two SPI communication buses for the six option card slots: one for slots 1, 2 and 3 and one for slots 4, 5 and 6. Communication is faster with less traffic on an SPI bus. For optimal performance, populate slots 1 and 4 first in order to keep cards on their own SPI bus.

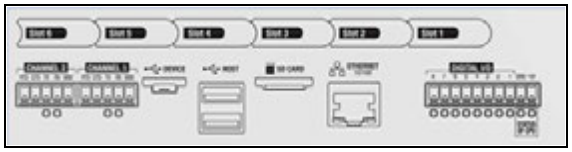


Figure 2-24. Label on Top of Controller Assembly

Note *Figure 2-25 on page 15 illustrates label location.*

WARNING *Failure to heed the following statements could result in serious injury or death.*

* *Use a wrist strap for protection and damage to components from electrostatic discharge (ESD) when working inside the indicator enclosure.*
* *Procedures requiring work inside the indicator must be performed by qualified service personnel only.*
* *In the wall and universal mounts, the supply cord serves as the power disconnect. The power receptacle to the indicator must be accessible for these models.*
* *Option cards are not hot-swappable. Disconnect power to the indicator before installing option cards.*

Note *It is recommended to remove the controller assembly from the universal enclosure for easier installation of the option cards. See Section 2.2.1 on page 3.*

1. Remove the hardware securing the slot cover plate.
2. Remove the slot cover plate.
3. Slide the option card into place.
4. Secure the card using the hardware that secured the slot cover plate.
5. Connect cables. See Section 2.4 on page 16.

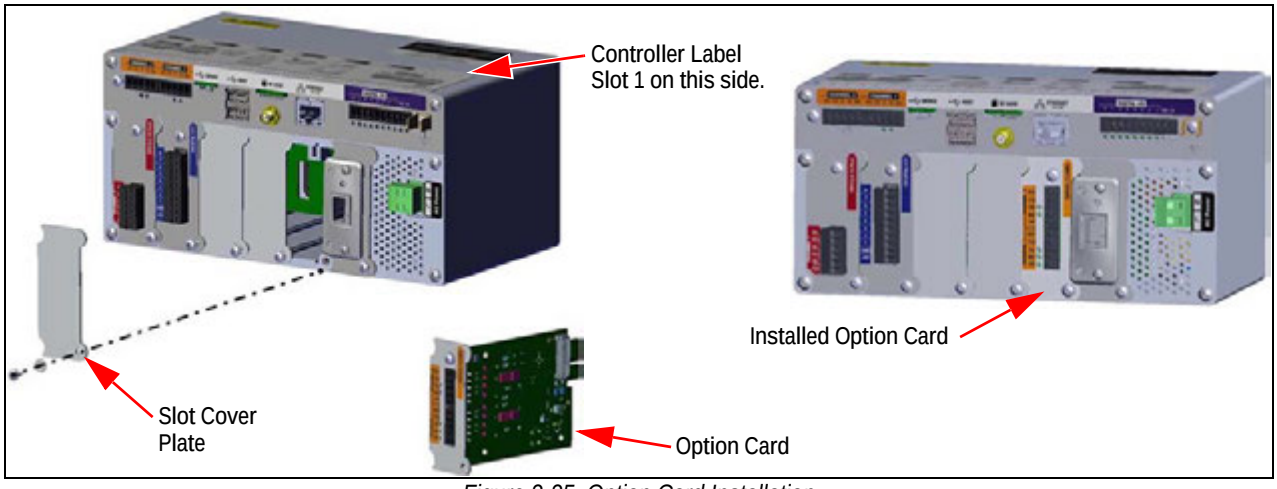


Figure 2-25. Option Card Installation

Seal the Scale Card

Once an option card has been put into place and cable connections have been made, a seal can be placed over the card and connections to restrict access and keep them from being removed.

Figure 2-26. Seal Option Card

1. Align the sealing bracket over the connectors on the option card.
2. Secure with two fillister screws.
3. Insert the lead wire seal through the holes in the sealing bracket and the fillister screws.

2.4 Cable Connections

The universal and wall enclosures provide cord grips for cabling into the indicator; one for the power cord and the rest are to accommodate interface cables. Install plugs in unused cord grips to prevent moisture from entering the enclosure. Secure wires after cabling is complete to avoid low voltage circuits contacting high voltage circuits.

2.4.1 Grounding Through Cord Grips

To ground cables to the universal or wall enclosures, route the cable through one of the metal cord grips. Ensure the exposed shielding makes contact with the tabs of the grounding washer inside the cord grip.

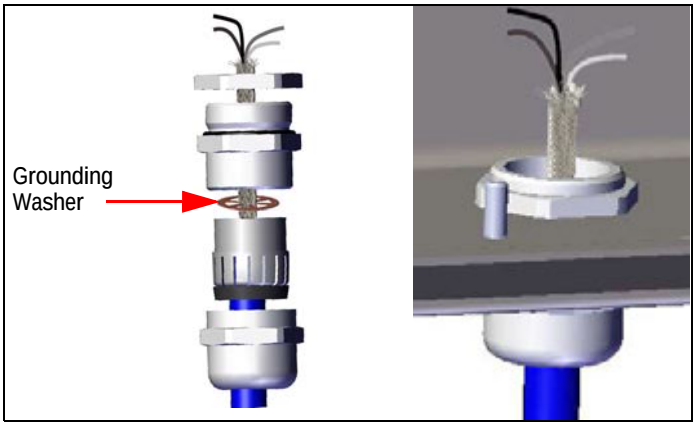


Figure 2-27. Universal and Wall Enclosure Grounding

Note *Ensure contact between the exposed shielding and the tabs of the grounding washer.*

2.4.2 Panel Enclosure Grounding

To ground cables to the panel enclosure, place the shield wire on the grounding clip on the controller assembly.

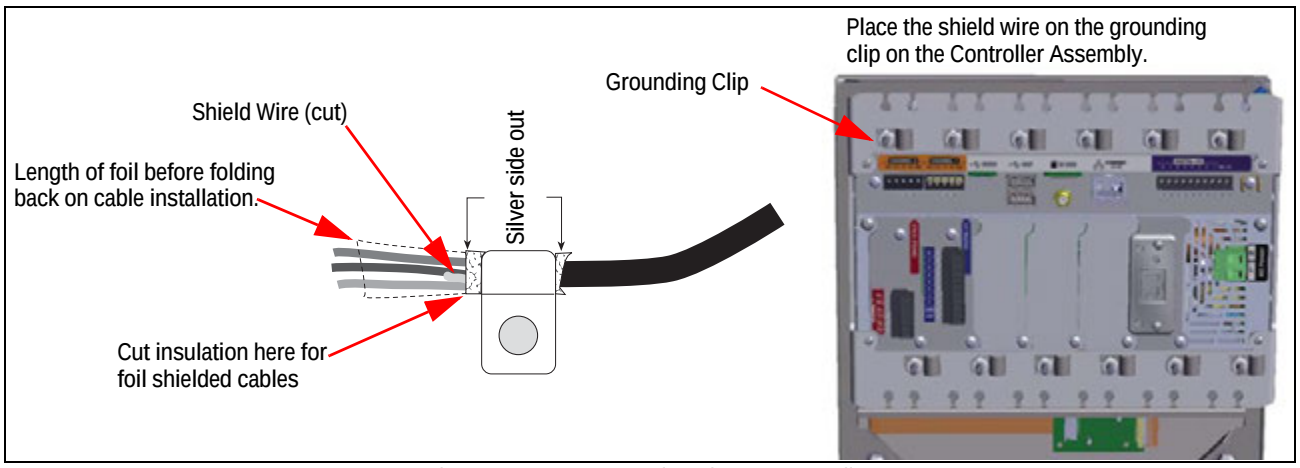


Figure 2-28. 1280 Panel Enclosure Grounding

Note *The controller assembly must be grounded to the stud and nut that hold the panel enclosure to the backing plate per national electrical code (NEC).*

2.4.3 Load Cells

Use the following instructions to attach the cable from a load cell or junction box to an installed A/D scale card channel.

1. Route the cables.
2. Wire the load cell cables to J1.
3. Plug the connector into the appropriate channel of the A/D scale card.
4. Wire the load cell cable from the load cell or junction box to connector J1 and/or J2 if using a dual A/D scale card as shown in Table 2-1 on page 18.

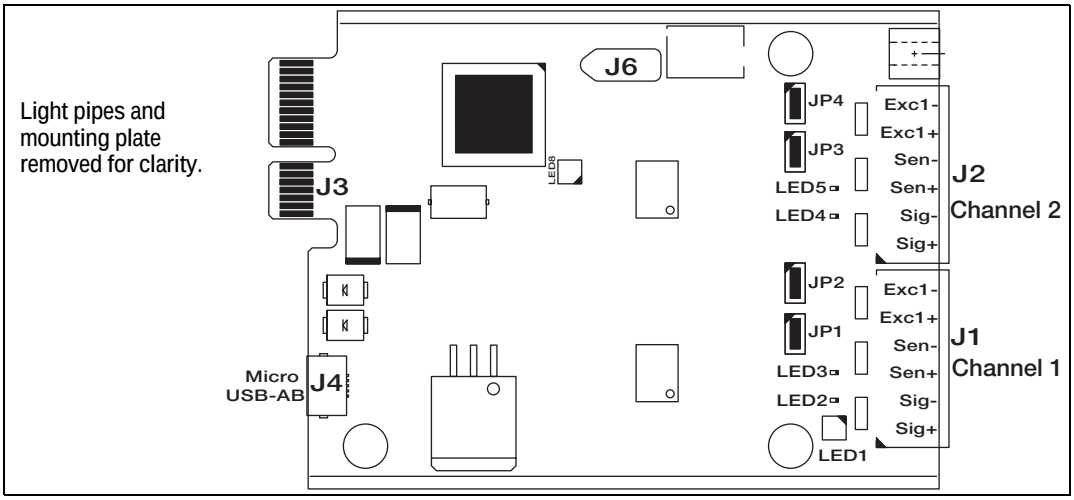


Figure 2-29. Single and Dual A/D Scale Cards

- If using a 6-wire load cell cable (with sense wires), remove jumpers JP1 and JP2 before reinstalling connector J1. On dual-channel A/D scale cards, remove jumpers JP3 and JP4 for connections to J2.
- For 4-wire installation, leave jumpers JP1 and JP2 on (or JP3 and JP4 depending on the channel).

Scale Card Connector Pin	Function
1	+SIG
2	–SIG
3	+SENSE
4	–SENSE
5	+EXC
6	–EXC

Table 2-1. Scale Card Pin Assignments

IMPORTANT *The A/D scale card must be removed from the controller prior to configuring the sense line jumpers.*

Note *The hardware of J2 will not be populated on a single A/D scale card.*

2.4.4 Serial Communications

The two communication ports on the 1280 CPU board support full duplex RS-232, RS-422 or RS-485 communications at up to 115200 bps.

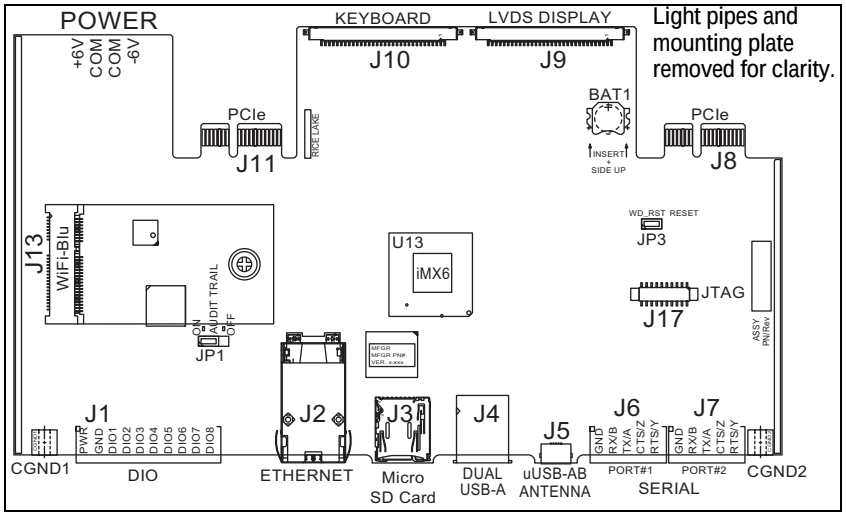


Figure 2-30. CPU Board (Top View)

Use the following instructions to attach serial communication cables.

1. Route cable through the cord grip and ground the shield wire. See Section 2.4 on page 16.
2. Remove the screw holding the face plate.
3. Use clip to ground the front plate.
4. Wire the cables to the connector.
5. Plug the connector into J6 and J7 on the board.

Connector	Pin	Signal	Port
J6	1	GND	1
	2	RS-232 RX/RS-485 B	
	3	RS-232 TX/RS-485 A	
	4	RS-232 CTS/RS-485 Z	
	5	RS-232 RTS/RS-485 Y	

Table 2-2. Serial Port Pin Assignments

Connector	Pin	Signal	Port
J7	1	GND	2
	2	RS-232 RX/RS-485 B	
	3	RS-232 TX/RS-485 A	
	4	RS-232 CTS/RS-485 Z	
	5	RS-232 RTS/RS-485 Y	

Table 2-2. Serial Port Pin Assignments

Serial ports are configured using the *Serial* menu. See Section 5.1 on page 67 for configuration information.

An optional dual-channel serial communications card, Kit PN 164685, is also available. Each serial option card provides two additional serial ports. Both ports on the option card can support RS-232, RS-422 or RS-485.

Note *All wiring must conform to the NEC or local ordinances.*

2.4.5 CPU Digital I/O Wiring

Digital I/O pins are configured using the Digital I/O menu. See Section 8.0 on page 94 for configuration information.

An optional 24 I/O bit card (PN 164684) is also available. Each Digital I/O option card provides an additional 24 configurable I/O bits. Alternatively, a 4 channel Relay card (PN 164689) is also available.

Use the following instructions to wire to the CPU board DIO connector.

1. Route the cables through the cord grip and ground the shield wire. See Section 2.4 on page 16. For a wall mount enclosure, route wires to a Relay Rack if so equipped (skip Step 2 and Step 3).
2. Remove the screw holding the face plate.
3. Use clip to ground the front plate.
4. Wire the cables to the connector (included in the parts kit).
5. Plug the connector into J1 on the board.

Connector	Pin	Signal
J1	1	+5 VDC
	2	GND
	3	DIO 1
	4	DIO 2
	5	DIO 3
	6	DIO 4
	7	DIO 5
	8	DIO 6
	9	DIO 7
	10	DIO 8

Table 2-3. CPU Digital I/O Pin Assignments

2.5 Wiring Schematics

2.5.1 Key Pad Model

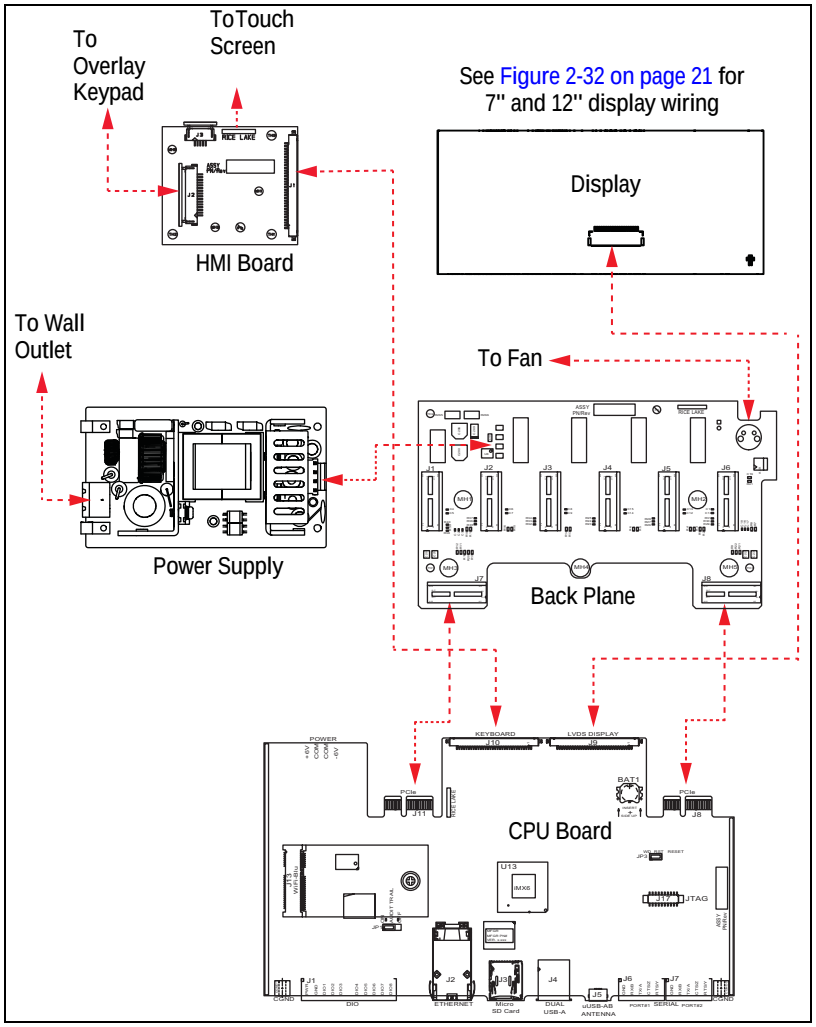


Figure 2-31. Wiring Diagram

2.5.2 Touch Screen Only (Virtual Keypad)

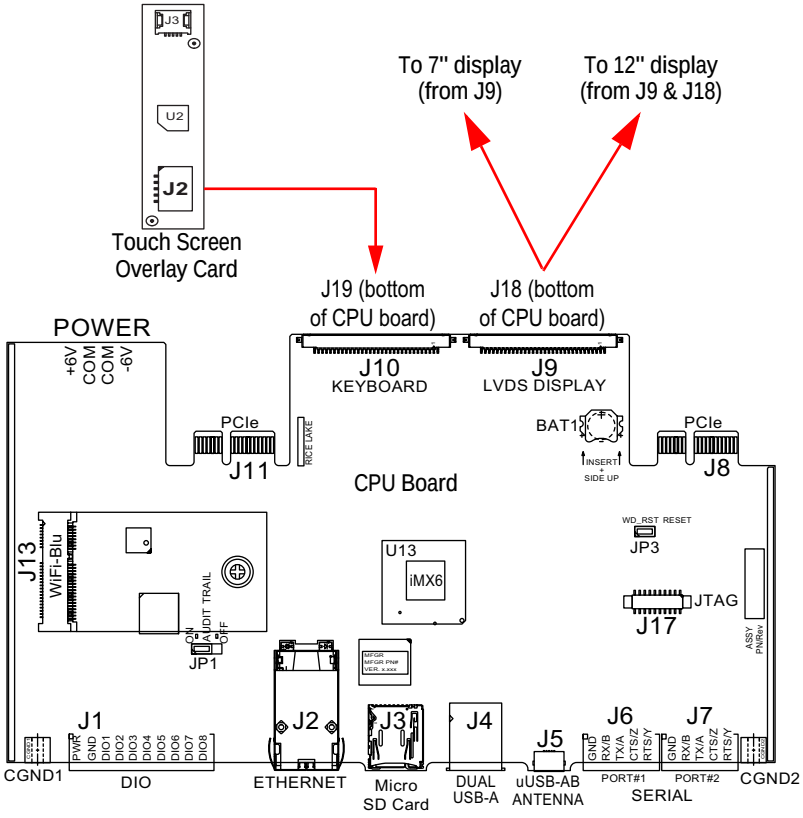


Figure 2-32. Panel Mounts – 7" and 12" Touch Only

The HMI cable (PN 180002) plugs from J2 on the overlay card to J19 on bottom of CPU board.

Connect CPU to display cable (PN 164995 or 164970) from J9 to 7" display.

Connect CPU to display cable (PN 180001) from J9 and J18 on the bottom of CPU board to 12" display.

Note *Additional cable lengths are available.*

2.6 Configuration Methods

The indicator can be configured using:

- Front panel keys to navigate through a series of configuration menus; see Section 3.0 on page 35
- Revolution® configuration utility; see Section 13.0 on page 115
- EDP command configuration; see Section 15.0 on page 142

Note *Some configuration parameters, such as those used to configure the display and widgets, cannot be accessed through the configuration menus. Revolution provides the most complete and efficient configuration interface. See Section 14.0 on page 130.*

2.7 CPU Board Replacement

WARNING *Failure to heed the following statements could result in serious injury or death.*

* *Use a wrist strap for grounding to protect components from electrostatic discharge (ESD) when working inside the indicator enclosure.*
* *Procedures requiring work inside the indicator must be performed by qualified service personnel only.*
* *In the wall and universal enclosures, the supply cord serves as the power disconnect. The power receptacle to the indicator must be easily accessible for these models.*

1. Disconnect all cables from the controller assembly.

IMPORTANT *Handle with care. The boards are fragile.*

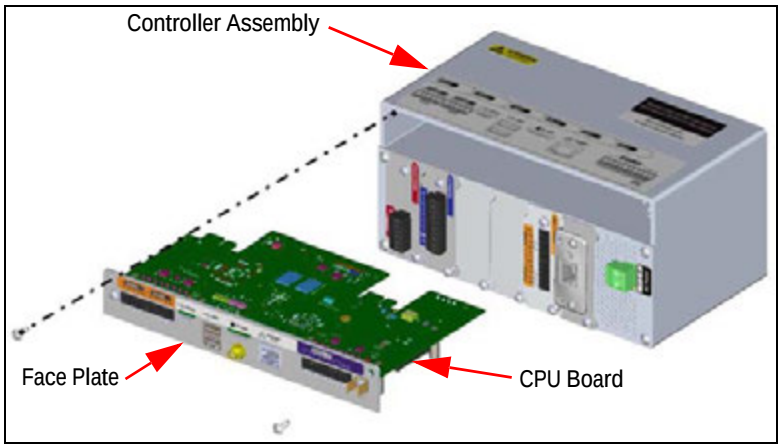


Figure 2-33. Remove CPU Board

2. Remove the two screws securing the face plate to the controller assembly.
3. Remove the face plate and board assembly from the controller.

IMPORTANT *Only remove the CPU board from the face plate if it is being replaced.*

2.7.1 Remove CPU Board from Face Plate

1. Remove the nut securing the antenna.
2. Remove the two screws securing the CPU board to the face plate.

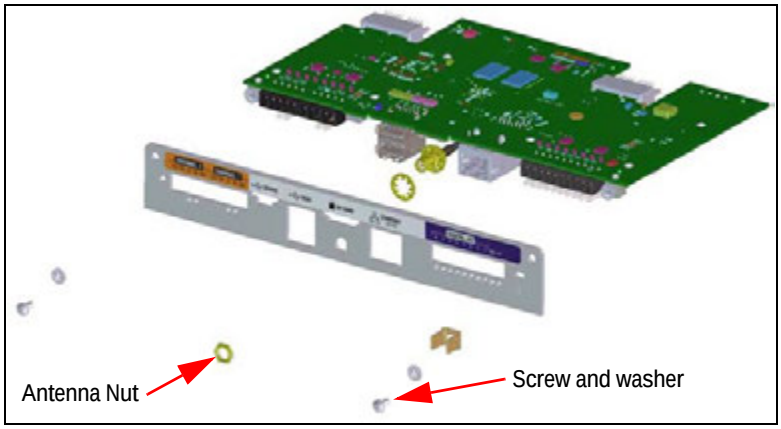


Figure 2-34. CPU Board and Face Plate

3. Separate the face plate and the CPU board.

Reverse procedure for reassembly.

2.8 Power Supply Replacement

WARNING *Failure to heed the following statements could result in serious injury or death.*

* *Use a wrist strap for grounding to protect components from electrostatic discharge (ESD) when working inside the indicator enclosure.*
* *Procedures requiring work inside the indicator must be performed by qualified service personnel only.*
* *In the wall and universal enclosures, the supply cord serves as the power disconnect. The power receptacle to the indicator must be easily accessible for these models.*

Use the following instructions to replace the power supply.

1. Disconnect all cables from the controller assembly.

IMPORTANT *Handle with care. The boards are fragile.*

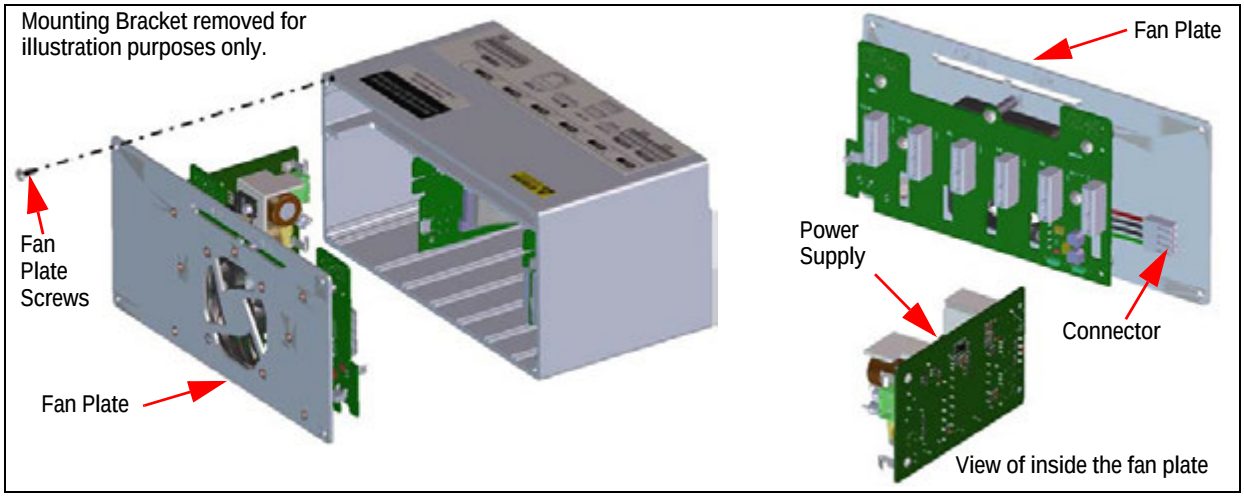


Figure 2-35. Remove Power Supply

2. Remove the four screws from the fan plate.
3. Carefully pull the fan plate/power supply assembly from the enclosure, supporting the power supply as it is removed. It is only connected to the fan plate assembly by a connector.
4. Disconnect the power supply from the connector.

Reverse procedure for reassembly.

2.9 Replace Fan Plate and Back Plane

WARNING *Failure to heed the following statements could result in serious injury or death.*

* *Use a wrist strap for grounding to protect components from electrostatic discharge (ESD) when working inside the indicator enclosure.*
* *Procedures requiring work inside the indicator must be performed by qualified service personnel only.*
* *In the wall and universal enclosures, the supply cord serves as the power disconnect. The power receptacle to the indicator must be easily accessible for these models.*

IMPORTANT *If replacing CPU boards, a new fan plate is also required.*

Use the following instructions to replace the fan plate and back plane.

1. Disconnect the power supply. See Section 2.8 on page 23.
2. Loosen the five screws securing the back plate board assembly and remove the board.

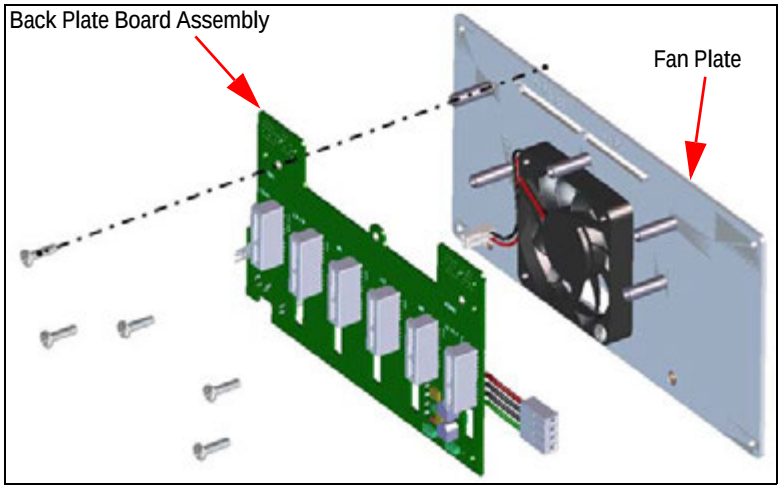


Figure 2-36. Remove Back Plate Board Assembly

Note *Note the orientation of the fan prior to removal. It is important that the fan is reinstalled in the correct orientation.*

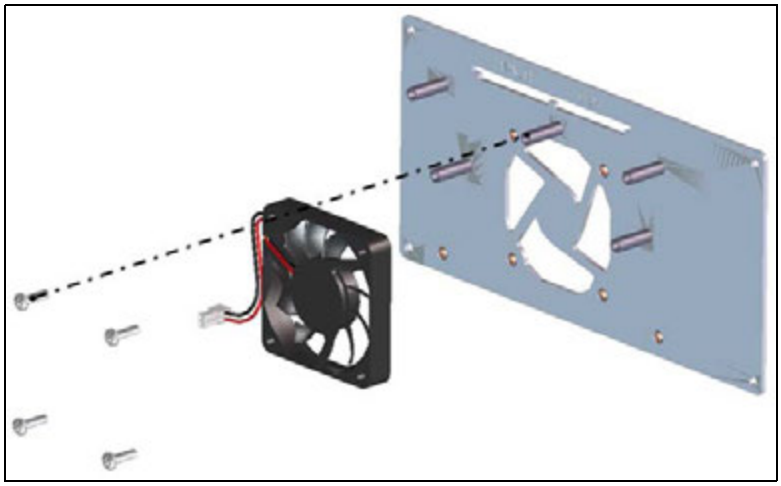


Figure 2-37. Remove Fan

3. Loosen the four screws securing the fan to the fan plate and remove the fan.

Reverse this procedure for reassembly.

2.10 Replacement Parts

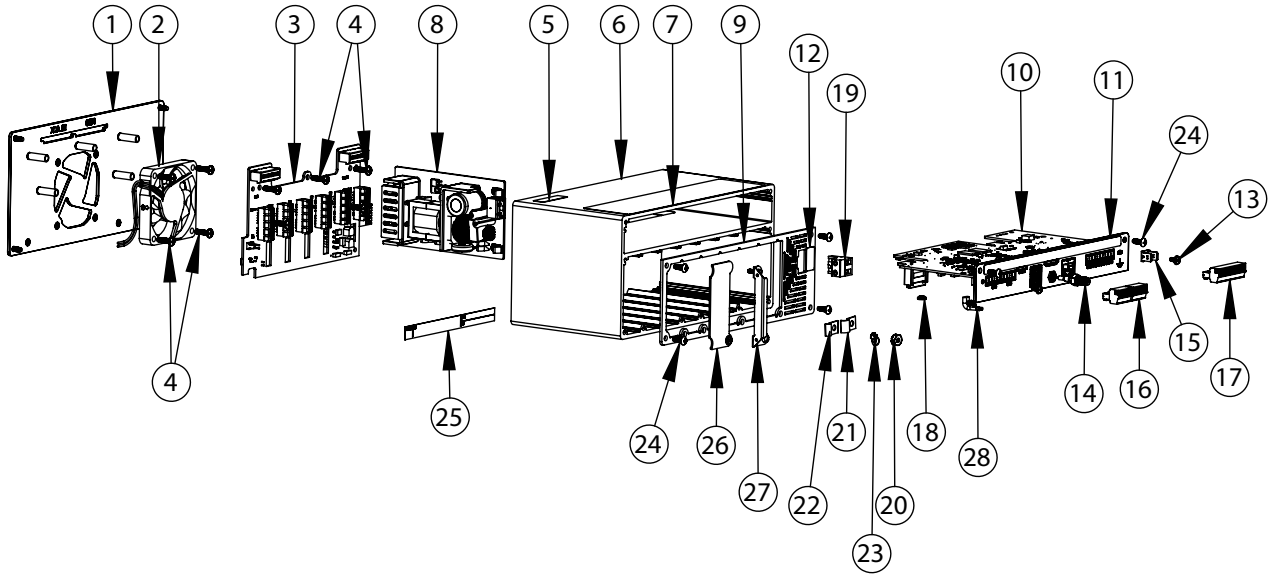


Figure 2-38. Controller Assembly Repair Parts

Item No.	Part No.	Description
1	169350	Fan Mount Plate Assembly • CPU, Rev A, Requires Rev A Fan Plate • CPU, Rev B, Requires Rev A Fan Plate • CPU, Rev C, Requires Rev B Fan Plate • CPU, Rev D, Requires Rev C Fan Plate *NOTE: When upgrading CPU board revisions, the fan plate must also be updated.*
2	166745	Fan Assembly, 60 mm x 10 mm DC
3	160758	Board Assembly, Backplate
4	44341	Screw, MACH 6-32 NC x 1/2" lg
5	168591	Label, ESD Warning
6	169159	Extrusion Assembly
7	167190	Label, 1280 Controller
8	162693	AC Power Supply
	162694	DC/DC Power Supply
9	169354	Face Plate Assembly
10	160757	Board Assembly, CPU
11	169357	Face Plate, CPU PCB
12	167476	Label, AC Power
	167477	Label, DC Power
13	14822	Screw, Mach 4-40NC x 1/4"
14	163336	Cable, Antenna Bulkhead
15	168830	Terminal, Tab 1/4" Push
16	153882	Conn, 5 Pos Screw Terminal
17	164918	Conn, 10 Pos Screw Terminal
18	170492	Battery, Rechargeable
19	162677	Connector for AC, 2 Pos Screw Terminal
	15888	Connector for DC, 3 Pos Screw Terminal
20	14621	Nut, Kep 6-32 NC Hex
21	67550	Clamp, Ground Shield, Radius 0.125"
22	53075	Clamp, Ground Shield, Radius 0.078"
24	163327	Screw, Mach 6-32NC x 3/8"
25	94422	Label, Capacity
26	163408	Blank Plate, Option Card Slot Cover
27	165927	Clip, Locking Load Cell (Kit PN 166957)

Table 2-4. Controller Assembly Repair Parts List

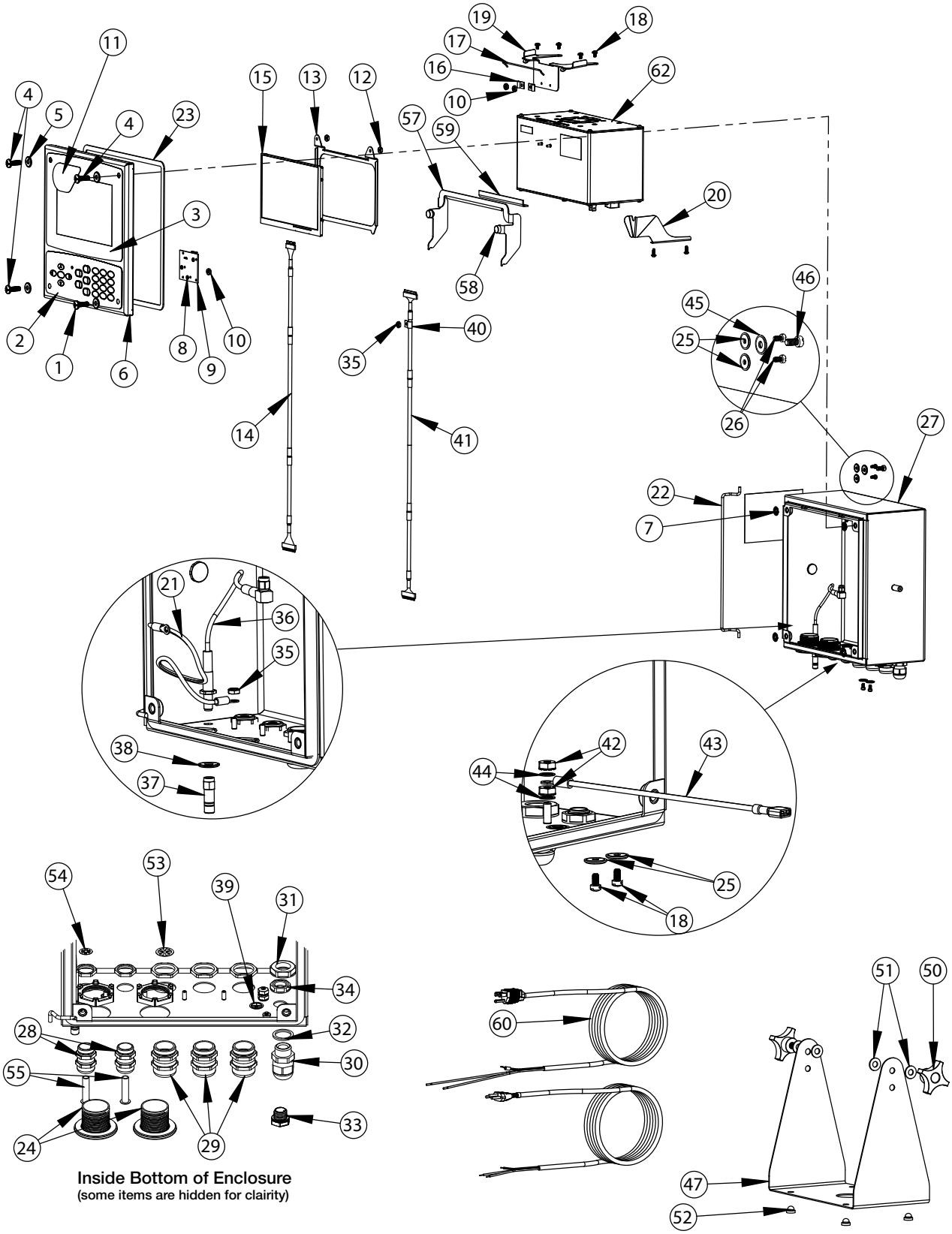


Figure 2-39. Universal Repair Parts

Item No.	Part No.	Description
	169926	Door Assembly, Universal (inc. 1-11)
1	165970	Screw, 1/4-20NC x 3/4"
2	161731	Overlay, Keypad 1280
3	161730	Overlay, Touchscreen 1280
4	166631	Screw, 1/4-20NC x 3/4"
5	182281	Washer, Washer Cup 1/4"
	182246	Washer Gasket, 1/4"
6	169450	Front Door, 1280 Universal
7	166653	Retainer, Push Nut Bolt 1/4"
8	69898	Washer, Nylon #4 ID = 0.112
9	160759	Board Assembly, 1280 HMI_Int
10	159280	Nut, Lock Nylon Insert
11	172840	Decal, 1280 Start Screen
	160383	Universal Display, 500 NITS (inc. 12-15)
	160385	Universal Display, 1000 NITS (inc. 12-15)
12	58248	Nut, Lock 6-32 NC HEX Nylon
13	162272	Mounting Bracket Display (500 Nit)
	162271	Mounting Bracket Display (1000 Nit)
14	163467	Cable, CPU to Display (500 Nit)
	163444	Cable, CPU to Display (1000 Nit)
15	163400	Display, (500 NITS) 7" LCD
	163399	Display, (1000 NITS) 7" LCD
	169461	Universal Controller Bracket (inc. 16-20)
16	53075	Clamp, Ground Cable Shield
17	168545	Bail, 1280 Controller Retainer Wire
18	14839	Screw, Machine 6-32NC x 1/4"
19	169462	Bracket Assembly, 1280 Controller
20	168937	Snap Tap, 1280 Controller Support
	169927	Universal Cabinet Assembly (inc. 21-39)
21	40672	Wire Assembly, Ground 9"
22	169410	Hinge Link
23	160379	Gasket, Front Panel
24	124698	Panel Plug, Round Solid
25	167537	Washer, Sealing BarTite #6
26	183663	Tall Flanged Drilled Hex Head Screw
27	169452	Enclosure Shell Assembly, Universal
28	169875	Cord Grip, PG 9 With Nut

Item No.	Part No.	Description
29	169876	Cord Grip, PG 13.5 With Nut
30	15626	Cord Grip, Black PG 9
31	15627	Locknut, Black PCN9
32	30375	Seal Ring, Nylon PG9
33	164598	Vent, Breather Sealed
34	88734	Nut, Breather Vent
35	58248	Nut, Lock 6-32 NC Hex Nylon
36	166240	Cable, Antenna Extension
37	168098	Antenna, RP-SMA
38	182281	Washer, Washer Cup 1/4"
	182246	Washer Gasket, 1/4"
39	16892	Label, Ground
		Other Items (inc. 40-49)
40	67550	Clamp, Ground Cable Shield
41	166693	Cable, CPU to HMI 1280
42	14626	Nut, Kep 8-32 NC Hex
43	167700	Wire, Ground 9 Inch
44	15134	Washer, Lock NO 8 Type A
45	182282	Washer Cup #10
	182247	Washer Gasket #10
46	183662	Tall Flanged Drilled Hex Head Screw
47	161620	Stand, Tilt Surface Mount
	163785	Universal Parts Kit (inc. 50-56)
50	164064	Hand Knob, 4-Arm 5/16-18
51	79024	Washer, Plain 5/16" Nylon
52	42149	Bumper, Rubber Grommet
53	169879	Grounding Clip, Cord Grip PG 13.5 Cable
54	169878	Grounding Clip, Cord Grip PG 9 Cable
55	19538	Post Plug, Slotted Black
	172859	Bracket Assembly (inc. 57-59)
57	172856	Bracket, 1280 Controller
58	15149	Foot, Rubber Bumper
59	172872	Pad, Foam
60	165108	Cord, US Power
	165109	Cord, European Power
62	169676	Controller Assembly (Figure 2-38 on page 25)

Table 2-5. Universal Parts List

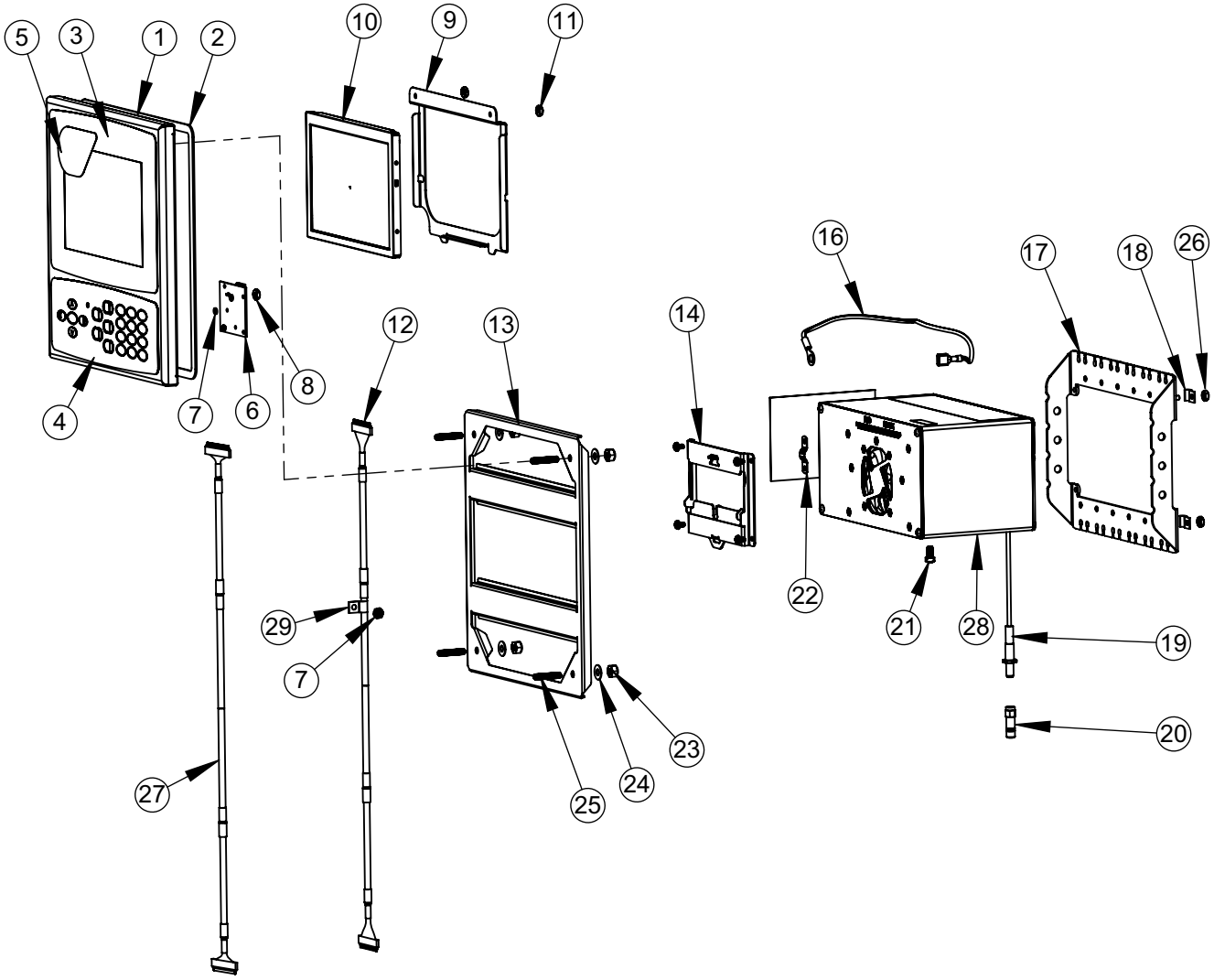


Figure 2-40. Panel Mount Repair Parts

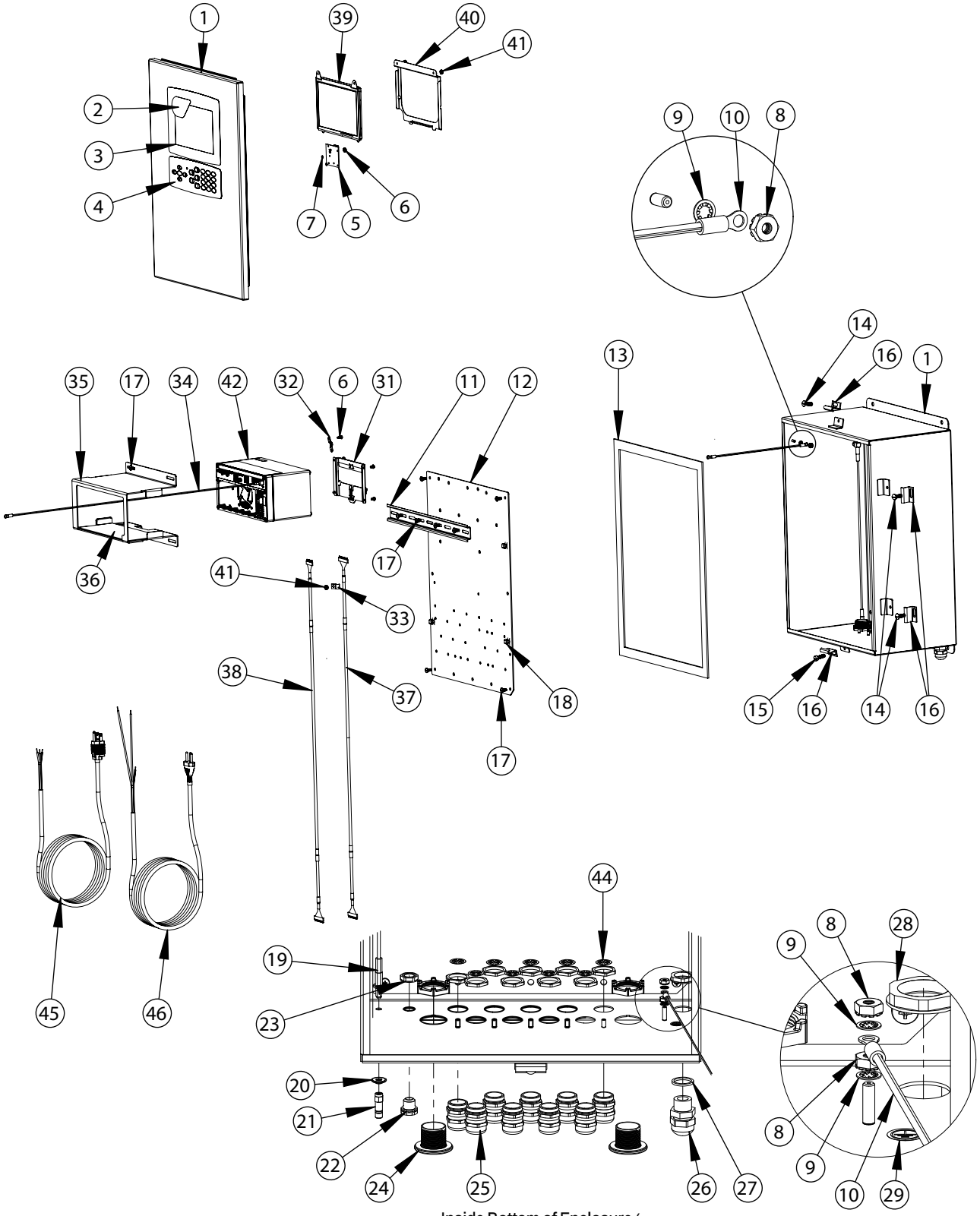
Item No.	Part No.	Description
	169930	Enclosure Face Plate Assembly (Inc 1-7)
1	169929	Face Panel 1280
2	160379	Gasket, Front Panel
3	164120	Overlay, Touchscreen
4	164121	Overlay, Keypad
5	172840	Decal, 1280 Start Screen
6	160759	Board Assembly, HMI-Int
7	69898	Washer, Nylon #4 ID = 0.112
8	159280	Nut, Lock Nylon Insert
	166725	500 NIT Display (Inc 9-12)
	166726	1000 NIT Display (Inc 9-12)
9	162272	Mounting Bracket Display (500 Nit)
	162271	Mounting Bracket Display (1000 Nit)
10	163400	Display, (500 Nit) 7" LCD
	163399	Display, (1000 Nit) 7" LCD
11	58248	Nut, Lock 6-32NC Hex Nylon
12	164995	Cable, CPU to Display (500 Nit)
	164970	Cable, CPU to Display (1000 Nit)
13	162309	Backer Bracket

Item No.	Part No.	Description
14	166838	Bracket Assembly, DIN Rail
	163786	Parts Kit, Panel (Inc. 16-25 and all NS)
16	168872	Wire, 9" Ground, 1/4" Eye
17	169023	Ground Bus Bar
18	53075	Clamp, Ground Cable Shield
19	166241	Cable, Antenna Extension
20	168098	Antenna, RP-SMA
21	14877	Screw, Fillister 10-32NF x 3/8"
22	168629	Ground Strap, 1280 CPU
23	14630	Nut, Lock 10-32NF Hex
24	22062	Washer, Plain No 10 Type A
25	168877	Screw, Set #10-32 x 1"
26	14621	Nut, Kep 6-32NX Hex
NS	15130	Washer, Lock No 6 Type A
NS	158207	Screw, Mach 6-32 x 1/4" Fillister
27	166694	Cable, CPU to HMI 1280
28	169676	Controller Assembly
29	67550	Clamp, Ground Cable Shield
NS	14839	Screw, Mach 6-32NC x 1/4"

Table 2-6. Panel Enclosure Repair Parts List

Note *If controller is not connected to the panel, ground per NEC.*

Cover exploded for clarity



Inside Bottom of Enclosure (some items hidden for clarity)

Figure 2-41. Wall Mount Repair Parts

Item No.	Part No.	Description
	164680	1280 Indicator Sub-Assembly (includes 1-29)
1	161416	Enclosure Assembly
2	172840	Decal, 1280 Start Screen
3	164120	Overlay, Touchscreen
4	164121	Overlay, Keypad
5	160759	Board Assembly, 1280 HMI Interface
6	159280	Nut, Lock Nylon Insert
7	69898	Washer, Nylon #4 ID 0.112"
8	14626	Nut, Kep 8-32NC Hex
9	15134	Washer, Lock No 8 Type A
10	40672	Wire Assembly, Ground 9"
11	43383	Rail, DIN 12.75" Length
12	164900	Back Plane Panel, 1280
13	68724	Gasket, Cover
14	71447	Screw, Mach 1/4 - 28NF x 3/4"
15	71455	Screw, Mach 1/4 - 28NF x 3/4"
16	71739	Clip, Clinching Enclosure
17	14875	Screw, MACH 10-32NF x 3/8"
18	80590	Mount, Cable tie Arrowhead
19	166241	Cable, Antenna Extension
20	166634	Washer, Sealing Bartite
21	168098	Antenna, RP-SMA
22	88733	Vent, Breather Sealed
23	88734	Nut, Breather Vent
24	124695	Panel Plug, Round Solid
25	169876	Cord Grip, PG13.5 With Nut
26	68600	Cord Grip, PG11

Item No.	Part No.	Description
27	68599	Seal Ring, Nylon PG 11
28	68601	Nut, PG 11, Power Cord Cable
29	16892	Label, Ground Protective
31	166838	Bracket Assembly, DIN Rail
32	168629	Ground Strap
33	67550	Clamp, Ground Cable Shield
34	167701	Wire, Ground 24 #8 Eye
	173052	Bracket Assembly, 1280 (Includes 35-36)
35	172860	Bracket, 1280 Wall Mount
36	173053	Gasket, 1280 Wall Mount
37	166694	Cable, CPU to HMI
	166725	Universal Display, 500 NITS (Includes 38-41)
	166726	Universal Display, 1000 NITS (Includes 38-41)
38	164995	Cable, CPU to Display (500 Nit)
	164970	Cable, CPU to Display (1000 Nit)
39	163400	Display, (500 Nit) 7" LCD
	163399	Display, (1000 Nit) 7" LCD
40	162272	Mounting Bracket (500 Nit)
	162271	Mounting Bracket (1000 Nit)
41	58248	Nut, Lock 6-32NC Hex Nylon
42	169676	Controller Assembly (Figure 2-38 on page 25)
	163787	Parts Kit 1280 Wall Mount (Inc. items below)
44	169879	Ground Clip, Cord Grip PG13.5
	172220	Plug, 3/8 Barb for Tubing
45	165111	Cord, US Power
46	165112	Cord, European Power

Table 2-7. Wall Mount Repair Parts List

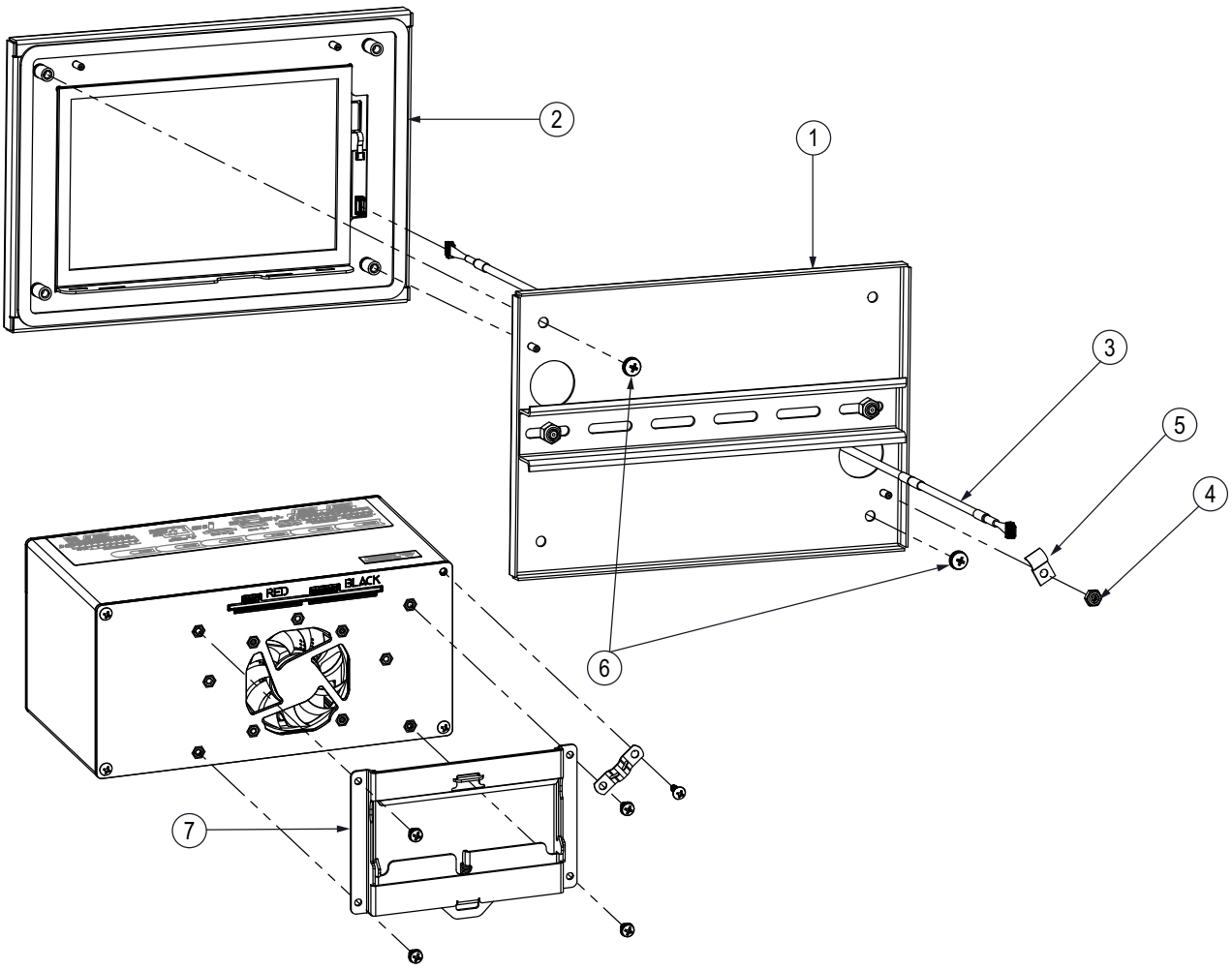


Figure 2-42. Panel Mount Touch Screen – 7" Repair Parts

Item No.	Part No.	Description
1	182145	Mounting Plate Assembly, 7-inch Panel Mount
2	176168	Display, Assembly, 7-inch Panel Mount
	166725	Display Board (500 Nit)
	166726	Display Board (1000 Nit)
3	180002	Cable, CPU to Touchscreen
4	58248	Locknut, 6-32NC Nylon Insert
5	67550	Clamp, Ground Cable Shield
6	55718	Screw, Machine 10-32NF x 1/4 Internal Tooth Washer
7	166838	DIN Rail Mount, 1280 CPU
	164995	Cable, CPU to Display (500 Nit)
	164970	Cable, CPU to Display (1000 Nit)

Table 2-8. Panel Mount Touch Screen – 7" Repair Parts List

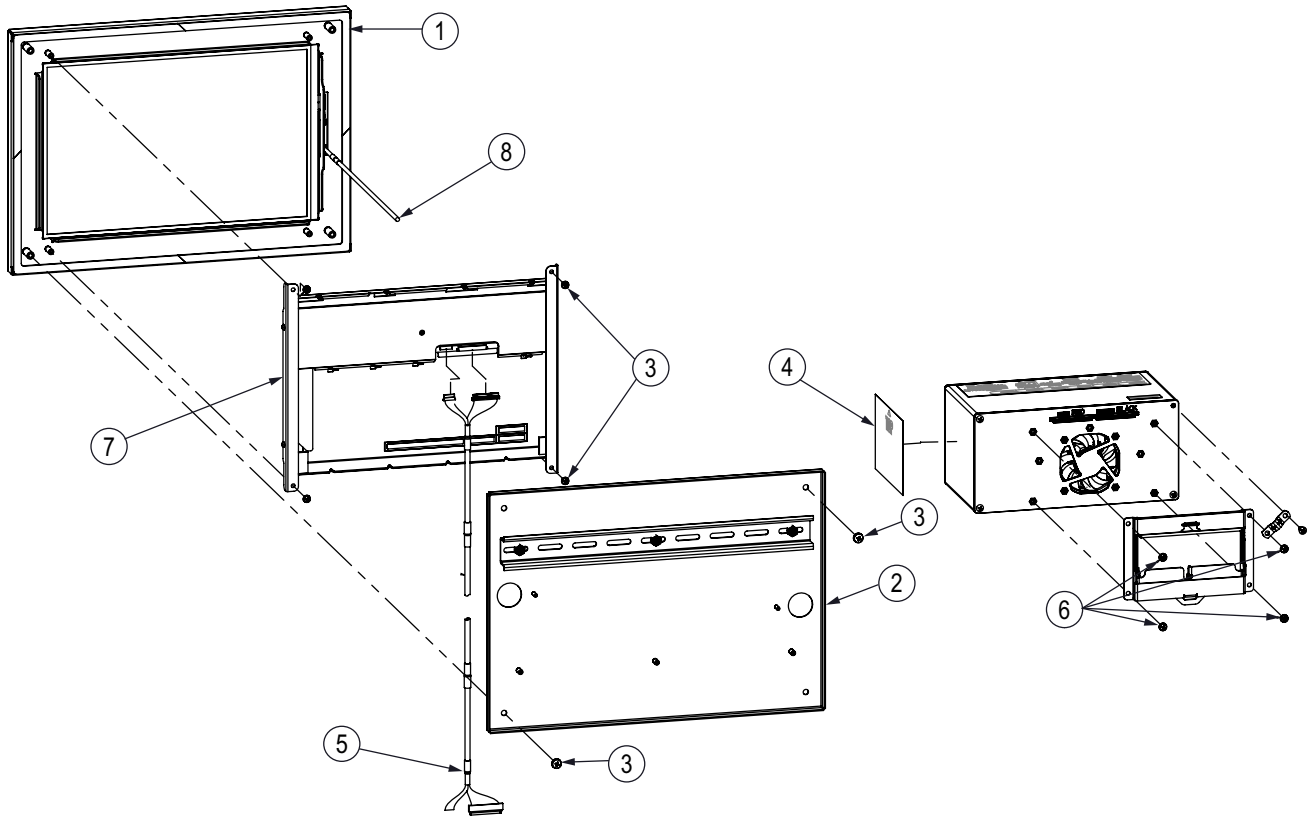


Figure 2-43. Panel Mount Touch Screen – 12" Repair Parts

Item No.	Part No.	Description
1	176167	Panel Mount, Touch Only, 12"
2	179554	Mounting Bracket, 1280
3	55718	Screw, Machine 10-32NF x 1/4 PPH internal tooth washer
4	165902	Label, 1280 Serial Tag
5	180001	Cable, CPU to Display
6	166838	Din Rail Mount
7	182992	Display, 12"
8	180002	Cable, CPU to Touchscreen

Table 2-9. Panel Mount Touch Screen – 12" Repair Parts List

2.11 Label Legend

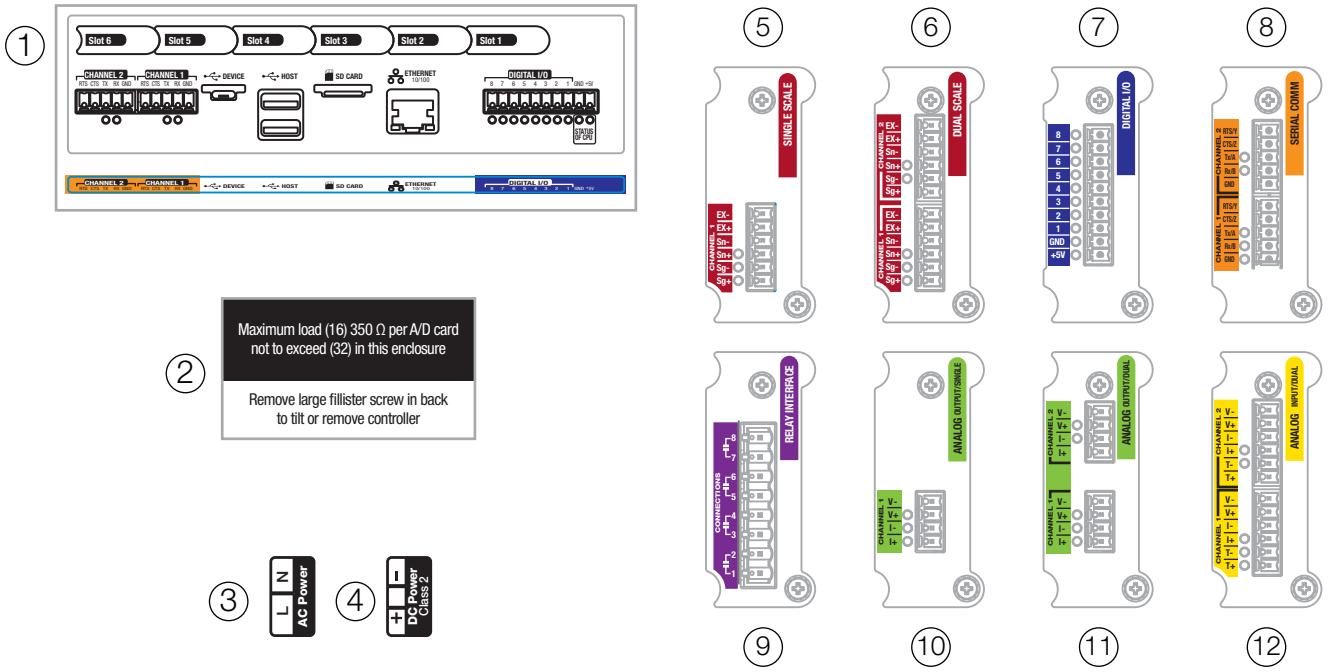


Figure 2-44. Label Repair Parts

Note Numbers 5-12 display the position of labels on the option plate.

Item No.	Part No.	Description
1	167190	Label, 1280 Controller
2	168592	Label, Max Load (Universal Only)
3	167476	Label, AC Power 1280
4	167477	Label, DC Power 1280
5	167191	Label, Single Scale Option
6	167192	Label, Dual Scale Option
7	167193	Label, Digital IO Option
8	167194	Label, Serial Option
9	167195	Label, Relay Option
10	167196	Label, Analog Output (Single) Option
11	167197	Label, Analog Output (Dual) Option
12	167198	Label, Analog Input/Thermocouple (Dual) Option

Table 2-10. Label Repair Parts List

3.0 Configuration Menu

Configuration has a series of menus that allow the parameters of the indicator to be set up. Detailed descriptions of the Scale Configuration, Communications, Features, Formats, Digital I/O, Analog Output, Setpoints and Diagnostics menus are provided in Section 4.0 through Section 11.0.

IMPORTANT *The audit trail jumper (JP1) needs to be disabled, in the off (right) position, in order to seal the setup switch with a lead wire seal. Access is not prevented simply by sealing the setup switch.*

3.1 Access Setup Parameters

1. Press ☰ on the weigh mode screen. The *Main Menu* will display.
2. Press ⚙ Configuration for access to the Configuration menu. If the Configuration menu does not appear, see the following note.

Note *To access Configuration through the front panel (by pressing the button on the touchscreen, jumper JP1 needs to be in the on (left) position. In order to restrict access to Configuration using the front panel, JP1 needs to be in the off (right) position, requiring the setup switch to access Configuration. See Figure 3-3 on page 36.*

3. Access to the configuration menu may be restricted with a password. If prompted, enter the password and press Done. The Configuration menu displays. See Section 3.3 on page 37.

See Section 6.4 on page 81 for more information on passwords.

3.2 Access Configuration Menu – Sealed Indicator

If the indicator has been sealed, there is a jumper in place (JP1) that will not allow access to the configuration menu on the touchscreen. Use the following instructions to enter configuration on a sealed indicator.

1. Break the wire seal.
2. Remove the large fillister screw.
3. Use a non-conductive tool to press the setup switch inside the indicator.

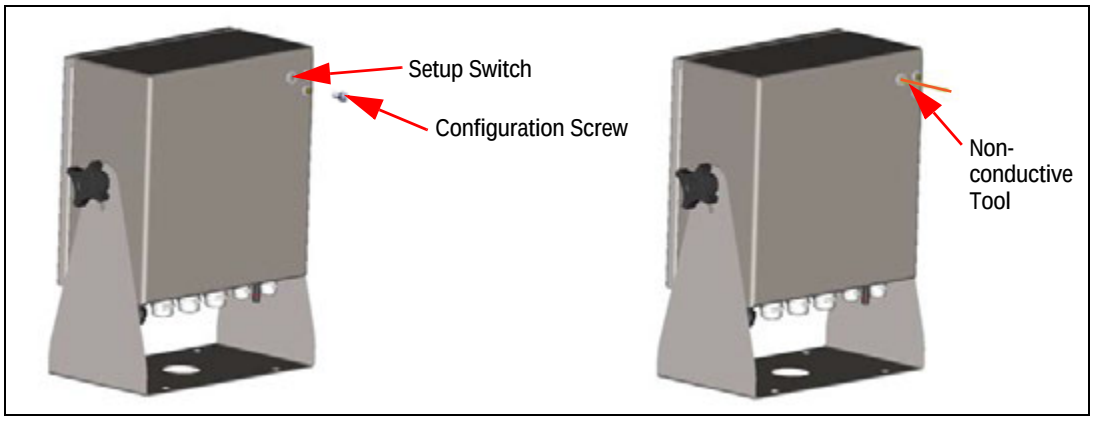


Figure 3-1. Setup Switch Location (Universal Enclosure)

IMPORTANT *Press lightly to avoid damaging the switch or board.*

Figure 3-2. Setup Switch Locations (Panel/Wall Mount Enclosures)

4. Access to the configuration menu may be restricted with a password. If prompted, enter the password and press Done. The configuration menu displays, see Section 3.3 on page 37.

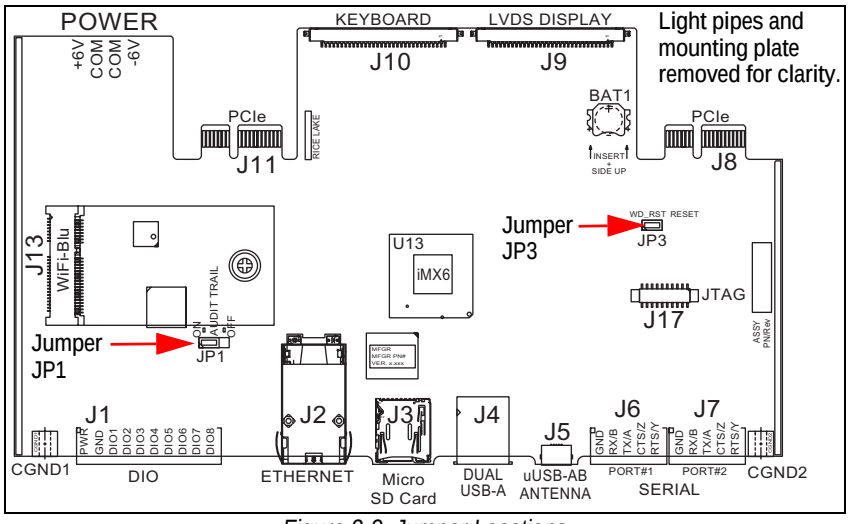


Figure 3-3. Jumper Locations

Note *The front door to the indicator may also be sealed to prevent access to the hardware. This may be required in some Legal for Trade applications.*

3.3 Configuration Menu

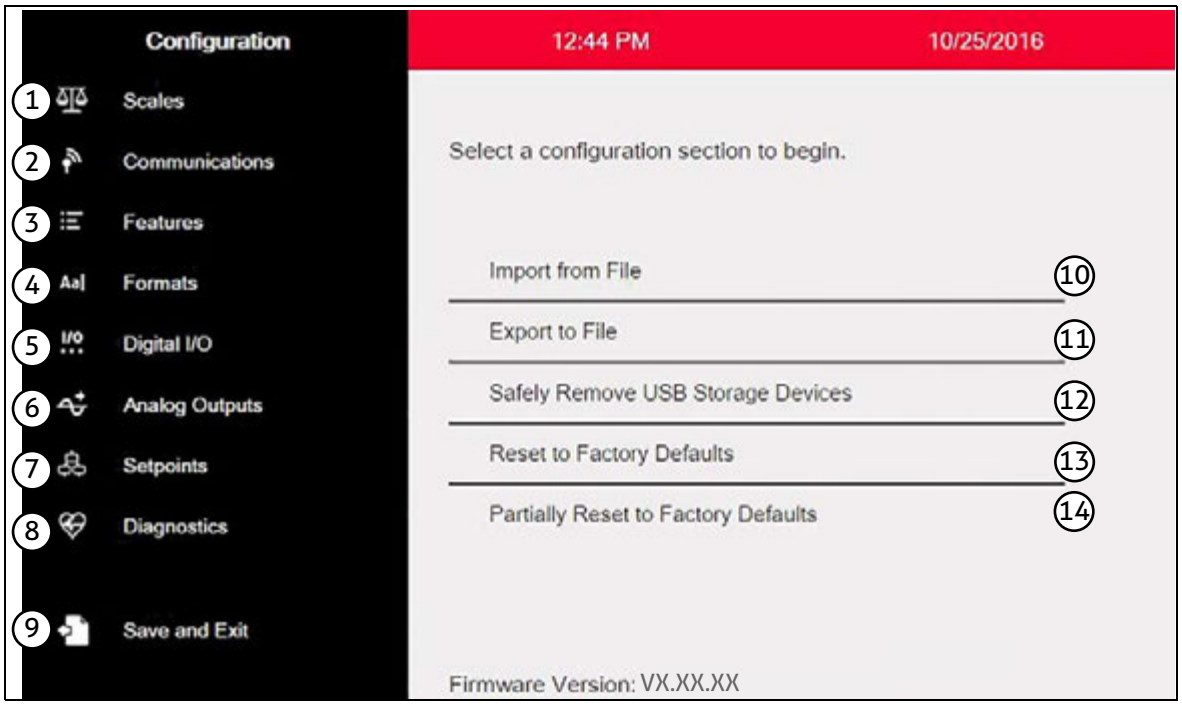


Figure 3-4. Configuration Menu

Item No.	Selection	Description
1	Scales Menu	Set the scale parameter, see Section 4.0 on page 55.
2	Communications Menu	Set the communication parameters, see Section 5.0 on page 67.
3	Features Menu	Set features parameters, see Section 6.0 on page 75.
4	Formats Menu	Set the print and stream format parameters, see Section 7.0 on page 86.
5	Digital I/O Menu	Assign functions to digital inputs and outputs, see Section 8.0 on page 94.
6	Analog Outputs Menu	Used to configure the analog output, see Section 9.0 on page 96.
7	Setpoints Menu	Used to configure setpoints, see Section 10.0 on page 98.
8	Diagnostics Menu	Recalibrate touchscreen and set the backlight, see Section 11.0 on page 111.
9	Save and Exit Button	Press to save settings and return to weigh mode.
10	Import From File	Press to import an existing file, see Section 13.0 on page 115.
11	Export to File	Press to export files, see Section 13.0 on page 115.
12	Safely Remove USB Storage Devices	Press to release the USB connection before removing the flash drive or USB cable to ensure the drive continues to work properly and does not become corrupt.
13	Reset to Factory Defaults	Press to restore all settings to factory defaults.
14	Partially Reset to Factory Defaults	Press to partially restore settings to factory defaults, this preserves Ethernet and scale settings.

Table 3-1. Configuration Main Menus

3.3.1 Configuration Menu Map

Figure 3-5 illustrates the menu structure in the configuration menu selections.

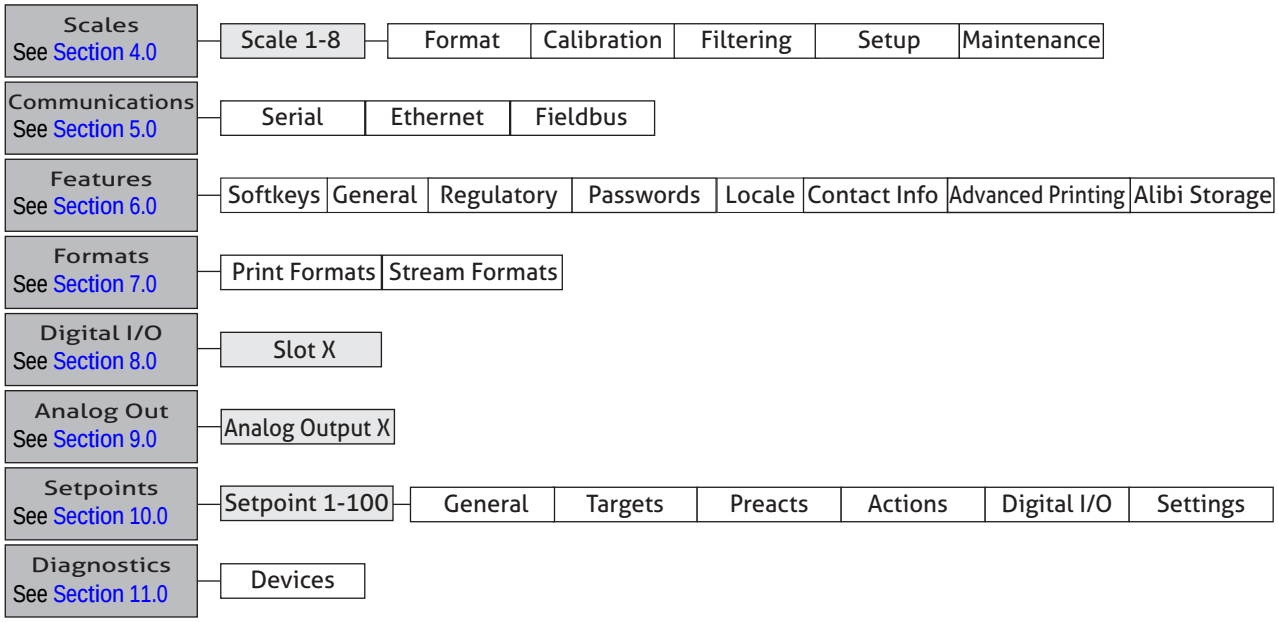


Figure 3-5. Configuration Menu Map

4.0 Specifications

Power AC

Line Voltages	100-240 VAC (Range 85-265 VCA)
Frequency	50 or 60 Hz
Power Consumption	60 Watts

Power DC

Line Voltages	11-30 VDC (Range 9-36 VDC)
Power Consumption	60 Watts

Scale Card Specifications

Excitation Voltage	10 ± 0.5 VDC bi-polar 16 x 350Ω or 32 x 700Ω load cells per scale card
Analog Signal Input Range	–60 mV to +60 mV
Analog Signal	1.0 μV/graduation minimum Sensitivity at 7.5 Hz -120 Hz 4.0 μV/graduation typical @ 960 Hz
A/D Sample Rate	7.5–960 Hz, software selectable
Input Impedance	>35 MΩ typical
Internal Resolution	8 000 000 counts
Wt Display Resolution	9,999,999
Input Sensitivity	10 mV per internal count
System Linearity	±0.01% of full scale
Input Voltage Differential	±800 mV referenced to earth ground
Input Overload	Load cell signal lines ±10 V continuous, ESD protected
RFI/EMI Protection	Short circuit protection, 600W transient voltage suppression Protection for ESD, EFT (electrical fast transients), tertiary lightning, and system-generated transients per IEC 60001-4-2, 60001-4-4, and 60001-4-5; European Standards EN50082 and EN61000-4
Digital Filter	Software selectable: Three Stage, Adaptive or Damping

Option Cards

Six slots supporting following options and loads:

Fieldbus	EtherNet I/P, PROFINET, Modbus/TCP, DeviceNet, Profibus DP
Single Analog Output	16 bit, voltage output 0-10 VDC, current output 0-20mA, 4-20mA
Dual Analog Output	16 bit, voltage output 0-10 VDC, current output 0-20mA, 4-20mA
Analog Input	2 channel, 16 bit, voltage input ±10 VDC, 0-100 mVDC, current input 0-20mA,
Serial	2 channel, full duplex RS-232 with CTS/RTS, RS-485 or RS-422, 1200-115,200 baud
Digital I/O	24 channels, configurable as inputs or outputs Inputs- 5 VDC max, active low Outputs- 20 mA max per channel, active low 5 VDC source available - 500 mA max
Relay	4 channel, dry contact, max current 3A @ 30 VDC, 3A @250VAC

Digital I/O

8 channels	Configurable as inputs or outputs
Inputs	5 VDC max, active low, maximum pulse input frequency is 5 kHz
Outputs	20 mA max per channel, active low 5 VDC source available - 500 mA max

Communications

Port 1 & 2	Full duplex RS-232 with CTS/RTS, RS-422/485 full and half duplex
Baud Rate (Ports 1 & 2)	1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200
Port 3	USB 2.0 Device (Micro)
Port 4	Bluetooth® SPP 2.1+EDR Standards 4Mbaud
USB Host	(2) Type A Connectors max 500 mA

Networking

Wired Ethernet	802.3 10/100 Auto – MDI/MDI-X
Wi-Fi	802.11 b/g/n 2.4 GHz
Wi-Fi Network Type	Infrastructure
Security Types	Open/Shared Key/ WPA-Personal/ WPA2-Personal
Encryption Types	None/TKIP/AES

Operator Interface

Display	TFT WVGA Color
7 inch	800 x 480 Resolution White LED Backlight 500 NIT – Standard 1000 NIT – Viewable Outdoors
12 inch	1280 x 800 Resolution White LED Backlight 1500 NIT – Standard
Keyboard	22-key membrane panel, tactile feel
Touchscreen	5-wire resistive

Memory

Onboard	8GB eMMC (system use),1GB DDR3 460 MB onboard database storage
Micro SD Card	Up to 32 GB

Environmental

Operating Temp.	Legal 14 to 104°F (–10 to +40°C) Industrial -4 to 131°F (–20 to +55°C) *Depending on enclosure and load
Storage Temp.	-4 to 158°F (–20 to +70°C)
Humidity	0–95% relative humidity

Enclosure

7" with Keypad	Universal Mount, Panel Mount, Wall Mount
7" Touch Only	Panel Mount
12" Touch Only	Panel Mount

Certifications and Approvals

NTEP
CoC Number15-001
Accuracy Class III/IIIL n_{max}: 10,000d

Measurement Canada
Approval AM-5980C
Accuracy Class III/IIIHD n_{max} : 10,000d

File Number: R76/20006 - NL1 - 16.04

European: TC8596,
Accuracy Class III/IIII n_{max} : 10,000d

4dPanelMountandUniversal

4a Panel Mount

Approvals for 7" and 12" touch-only panel mounts - pending

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