Honeywell | MIWI350

MIWI350 Installation and Operations Guide

FD-610 | Version 2.01 | July 2019

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1 About MIWI350

The MIWI350 is the latest offering in the Honeywell's EVC Product Line. This product line provides a more competitive, reliable, and easy to use solution. It also provides a comprehensive selection of communication hardware and power supply systems optimized to integrate with the Mercury Instruments precision measurement instrumentation. It also includes software for Remote Monitoring and Data Acquisition (RMADA), including alarm handling and notification.

The MIWI350 device typically includes:

- An inbuilt Electronic Volume Corrector or Electronic Recorder (using electronics from the Honeywell EC350/ERX350)
- A built-in electronic cellular modem

1.1 Product Features

- CSA C/US Class 1, Division 2, Group C & D
- Compatible with MasterLink and Power Spring software
- Available in UMB (Universal Mounting Bracket), Wall, Pipe, and Portable mounting options
- Internal or External Mounted Display
- Modem Power Control
- Optional Backup Battery for Uninterrupted EVC Functionality

1.2 Power Supply Options

- Solar Power with rechargeable Sealed Lead-Acid Battery (Refer to Quick Start Guide FD-612)
- Battery - Alkaline Packs (Dual/Quad) (Refer to Quick Start Guide FD-613)

1.3 Abbreviations

CLR100	CloudLink 4G Modem
CLR110	CloudLink 4G M1 Modem
CORR.VOL	Corrected Volume
CSA	Canadian Safety Agency
ELV	Extra Low Voltage
EVC/EC	Electronic Volume Corrector
FCC	Federal Communications Commission
HMI	Human Machine Interface
I/O	Input/Output
MIWI350	MI Wireless with Gas Volume Correction functionality
MIWIPCB	MIWI Power and Communication Box
MPC	Modem Power Control

PD Board	Power Distribution Board
SLA	Sealed Lead Acid
UMB	Universal Mounting Bracket

1.4 Specifications

1.4.1 Power Input Sources and Options

Configuration	Source/Battery Type	Voltage (VDC)	Battery Backup	Type	Backup Battery Voltage (VDC)	Ampere Hours (Ah)	Battery Power usage
Dual pack with Supercap	Alkaline	18					EVC & MODEM
Quad pack with Supercap	Alkaline	18					EVC & MODEM
Backup Battery	Alkaline	6	Yes	Alkaline	6		EVC Only as backup
Solar with SLA Battery	Solar Panel	14.5	Yes	Lead-Acid	12	7/21	EVC & MODEM

1.4.2 Certifications

Metrology

Measurement Canada (approval pending)

Haz Loc Certifications

CSA C/US Class I, Division 2, Groups C and D, T3C

IECEx Class I, Zone 2 Group IIB (approval pending)

Wireless Certification (IC & FCC)

Max RF POWER of the Modem

CLR100: 25dBm/316mW

CLR110: 23dBm/200mW

RV50 Modem: 32dBm/1.6W

Industry Canada: IC ICES-003

FCC: Part 15 B Class-A Digital device

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and;
2. This device must accept any interference received, including interference that may cause undesired operation.

> **Note:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates—and can radiate— radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

> **Warning:** Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

> **Caution:** This equipment has been tested. It complies with Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses and radiates radio frequency energy. If this device is not installed and used in accordance with the instructions, it can cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in installation.

> **Note:** The radiated output power of the device is far below the exposure limits. Nevertheless, use the device in such a manner that the potential for human contact during normal operation is minimal.

1.4.3 Environmental

Maximum Operating Temperature Range (see listed configurations below):

–40 °F to +149 °F (–40 °C to +60 °C).

For your reference, the Operating Temperature Range for different assemblies are as below:

Ambient Temperature vs Assembly Code Table

Assembly Code (ACXX)[1]	Ambient Temperature Range (°C)	Assembly Description[2]
AC01	–20 to 45	EVC, Modem, Barrier, and 21Ah SLA Battery
AC02	–15 to 45	EVC, Modem, Barrier, and 7Ah SLA Battery
AC03	–20 to 55	EVC, Modem, and Barrier[3]
AC04	–30 to 60	EVC and RV50 Modem[3]
AC05	–40 to 60	EVC and CL4G Modem[3]

1: *The assembly code (ACXX) is also mentioned on the product Label for cross reference.*

2: *The assembly description indicates the max configuration supported for each assembly code. The product assembly may vary based on the order.*

3: *Indicates the part which constraints the temperature range for each code.*

Humidity: 0-95% Non-Condensing

Type of Installation: Out Door Unit

Altitude: Less than 2000m

1.4.4 Temperature Measurement

- Highly stable, solid state temperature sensor (Thermistor)
- Range: -40 °F to +158 °F (-40 °C to +70 °C)

1.4.5 Pressure Measurement

Ambient temperature range of Pressure Transducer: -40°F to 158°F (-40° to 70°C)

Maximum pressures per pressure transducer type and range: 6 to 1500psig/30-1500psia

Type	Pmax	Units
Gauge	6	psig
Gauge	30	psig
Gauge	60	psig
Gauge	100	psig
Gauge	300	psig
Gauge	600	psig
Gauge	1000	psig
Gauge	1500	psig
Absolute	30	psia
Absolute	100	psia
Absolute	300	psia
Absolute	600	psia
Absolute	1000	psia
Absolute	1500	psia

1.5 Safety Measures

1.5.1 Safety and Hazardous Information

MIWI350 complies with the general safety standards and regulations. However, failure to operate this product as per the safety instructions available in this document may lead to hazards.

It is approved for use in hazardous areas (Class I Division 2). Different versions of MIWI350 are available depending on the operating conditions. The permitted operating conditions are marked on each product. Check the operating condition limits of MIWI350 before installing. You must be familiar with the currently applicable electrical installation standards and regulations before installing and operating MIWI350 in hazardous areas.

1.5.2 Conditions of Acceptability

1. The MIWI350 enclosure shall not be opened in the presence of ignitable concentration of explosive gas atmosphere. Do not connect/disconnect the device unless the power has been switched off or the area is deemed to be non-hazardous.

2. The externally powered configurations of the MIWI350 shall only be powered by a Class 2 ELV circuit not exceeding 20V DC.
3. Use only Honeywell approved battery/battery packs with this product. Substitution of components will void suitability for Class I Division 2.

> **Warning:** Denotes an explosion hazard. Ensure you follow all instructions described in the warning notification.

1.5.3 Warning-Explosion Hazard/Avertissement - Risque d'explosion

Do not Open, Disconnect, or Service in an area where an explosive atmosphere may be present. Any service or repair shall be performed by qualified technicians only.

Ne pas ouvrir, déconnecter ou entretenir dans une zone où une atmosphère explosive peut être présente. Toute réparation ou réparation ne doit être effectuée que par des techniciens qualifiés.

Honeywell recommends you to observe the warning information described in this document and other generally applicable safety rules.
- No warranty claims can be asserted if there is an unauthorized interference with the device.
- You can use MIWI350 in hazardous areas, under permitted operating conditions. Ensure to comply with the applicable laws and regulations, and company policies for the usage of MIWI350.
- Installation, commissioning, service, maintenance and troubleshooting of MIWI350 in hazardous areas must only be done by specially trained and qualified staff.
- Operate MIWI350 only if the instrument is completely intact.

1.5.4 Security Control Measures

Security control recommendations are provided hereby to avoid unauthorized external access that may result in the following:

- Loss of system availability
- Incorrect execution of controls causing damage to the plant, or theft or contamination of product
- The capture, modification, or deletion of data
- Loss of data

> **Caution:** The caution warns you of possible damage to property and provides instructions to avoid damage to MIWI350.

Recommendations:

- Use a state full firewall at the business network to restrict access from the business network to process control network.

- Use physical security for process control network systems. Take steps to implement and enforce physical security of devices in network.

- Do not allow the use of unauthorized removable media near to the device installation.
- Use strong passwords on network equipment.
- Prevent the use of unauthorized laptops on the process control network.
- Ensure safe storage of installation media, license keys, and configuration information.
- Prevent unauthorized tampering, the device must be physically protected in locked cabinets, and logically protected with passwords.
- The host device and software should be protected by anti virus and patch updated.
- Restrict physical access to the device. Avoid access to local interfaces (RS232, Ethernet and USB interfaces) of RV50 modem.
- Avoid default credentials for RV50/CloudLink 4G Modem access. The user is strongly advised to change the default password for device access.
- Refer CloudLink 4G Modem User's Manual for security features in CloudLink 4G Modem and refer RV50 data sheet for RV50.

1.5.5 Things to Remember

1.5.5.1 Usage of MIWI350 in Hazardous Areas

You may use MIWI350 in hazardous areas, under permitted operating conditions. Ensure to comply with the applicable laws and regulations, and company policies for the usage of MIWI350.

1.5.5.2 Installation and Commissioning of MIWI350 in Hazardous Areas

MIWI350 must be installed and commissioned only by specially trained and qualified staff. The installation of the intrinsically safe circuits must comply with the applicable local laws or regulations. Operate MIWI350 only if the instrument is completely intact.

1.5.5.3 Service, Maintenance, and Troubleshooting

The service, maintenance and troubleshooting of MIWI350 device operating in hazardous areas must be performed only by specially trained and qualified staff.

MIWI350 contains no user replaceable part except the approved battery Packs.

Replacement of battery pack

To maintain acceptability of use in hazardous locations, only use replacement battery packs supplied by Honeywell.

Honeywell approved battery packs are:

Sl No.	Battery Pack	Honeywell Part Number
1	Alkaline Dual Pack	22-2770-3-KIT
2	Alkaline Quad Pack	22-2770-3-KIT X 2
3	SLA Battery 21Ah	40-6180-KIT
4	SLA Battery 7Ah	40-2321-KIT
5	Backup Battery	40-6064-KIT

Fuse rating of the SLA battery 5A, 32V

Make: Bussman

Part No.: 5ATC

2 Installation

2.1 Unpacking

After you receive the MIWI350 device:

1. Remove the contents from the box and the mounting kit bag.
2. Check the shipment against the order to ensure that the components ordered are installed in MIWI350.
3. Report any shortage or shipping damages to your Honeywell Account Manager immediately.

2.2 Mounting Options

The MIWI350 device can be installed on the field using the following mounting options:

Meter or UMB Mount

Wall Mount

> **Note:** Recommended Brick Wall Fasteners - Stainless Steel Thread Forming ¼" dia-2.0" length, Screw size 0.25" Min Torque 56 lb-in.

Pipe Mount – U-Bolt 2" 3" and 4"

2X 20-9141
FOR 2" PIPE MOUNTING

4X 20-6731
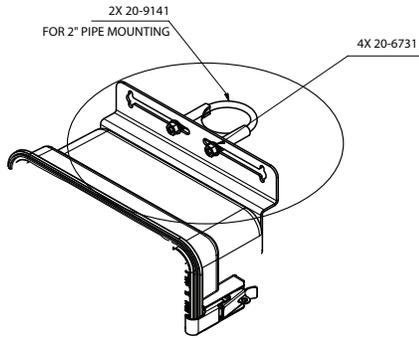
Portable Mount
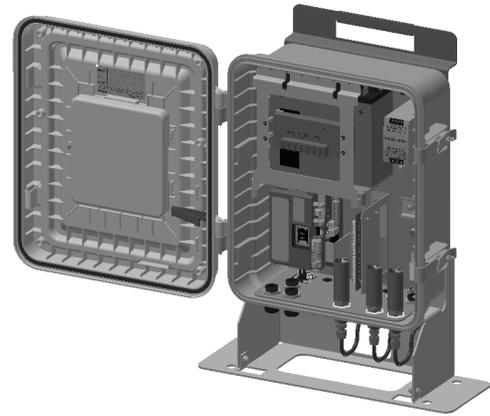
2.2.1 Device Marking

MERCURY INSTRUMENTS
MODEL MIWI350
GAS VOLUME CORRECTOR

CLASS I, DIV 2 GROUPS C & D; T3C
WHEN INSTALLED AS PER DRAWING 40-6187

RATINGS: **XXXX**
ASSEMBLY CODE: **ACXX**

USE ONLY MERCURY INSTRUMENTS BATTERY PACKS AS
PER INSTALLATION DRAWING 40-6187

DIV 2 WARNINGS: EXPLOSION HAZARD
DO NOT OPEN, DISCONNECT OR SERVICE IN AN AREA
WHERE AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT.
ANY SERVICE OR REPAIR SHALL BE PERFORMED BY
QUALIFIED TECHNICIANS ONLY.

DIV 2 AVERTISSEMENT: RISQUE D'EXPLOSION
NE PAS OUVRIR, DÉBRANCHER OU RÉPARER DANS UNE
ZONE OÙ UNE ATMOSPHÈRE EXPLOSIVE PEUT ÊTRE
PRÉSENTE. TOUTE RÉPARATION OU RÉPARATION NE DOIT
ÊTRE EFFECTUÉE QUE PAR DES TECHNICIENS QUALIFIÉS.

CAUTION
REFER TO USER MANUAL FOR DETAILED OPERATING
TEMPERATURE SPECIFICATION AND MODEM POWER INPUT
SPECIFICATIONS

HONEYWELL/MERCURY INSTRUMENTS
1280 KEMPER MEADOW DR.
CINCINNATI, OH 45240 USA

22-1209-X

3 Mechanical Assembly and User Interface

The MIWI350 device assembly includes:

- Door that includes Internal or external display, and without display (MIWIPCB).
- Case that holds Batteries, Antenna, Power Distribution Board, Solar Charge Controller, Barriers, Terminal Blocks, super capacitor, and a Modem.
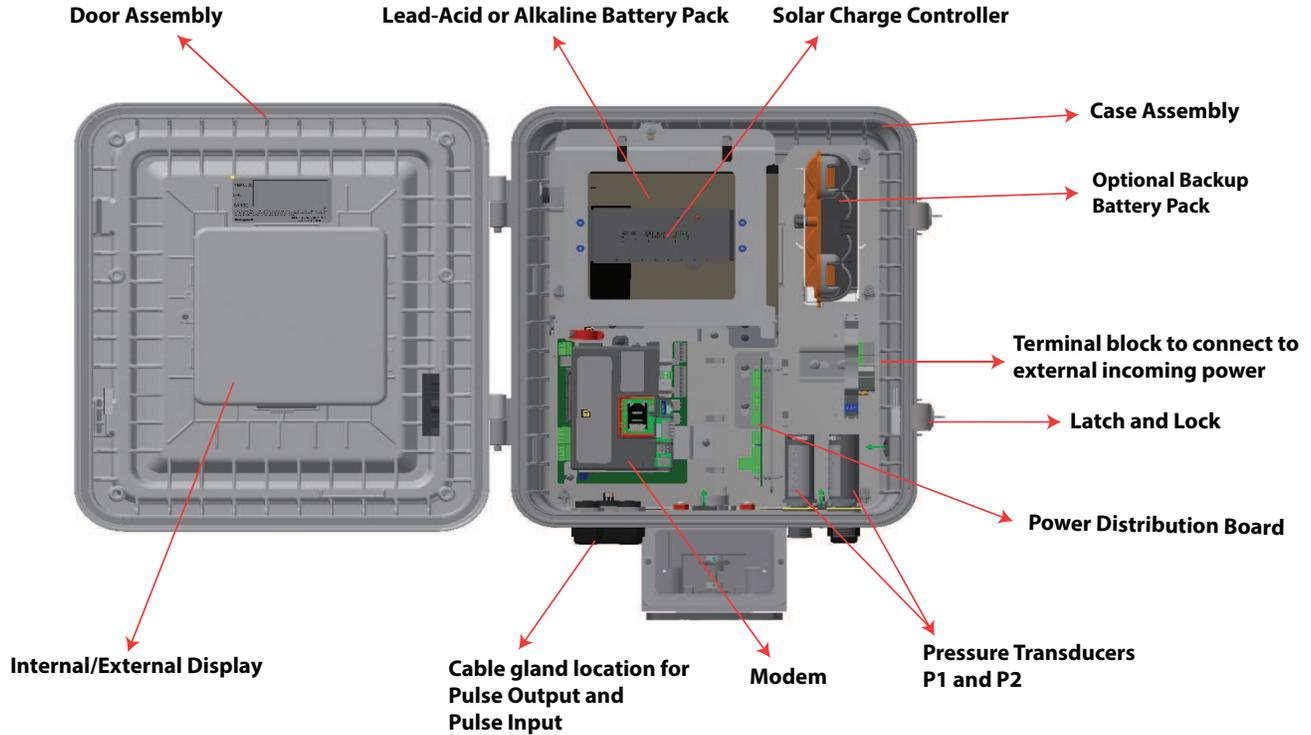
Figure 3-1: MIWI350 Mechanical Assembly

3.1 Device Dimensions

The figures below illustrate the dimensions of a MIWI350 device (all dimensions are in inches.)
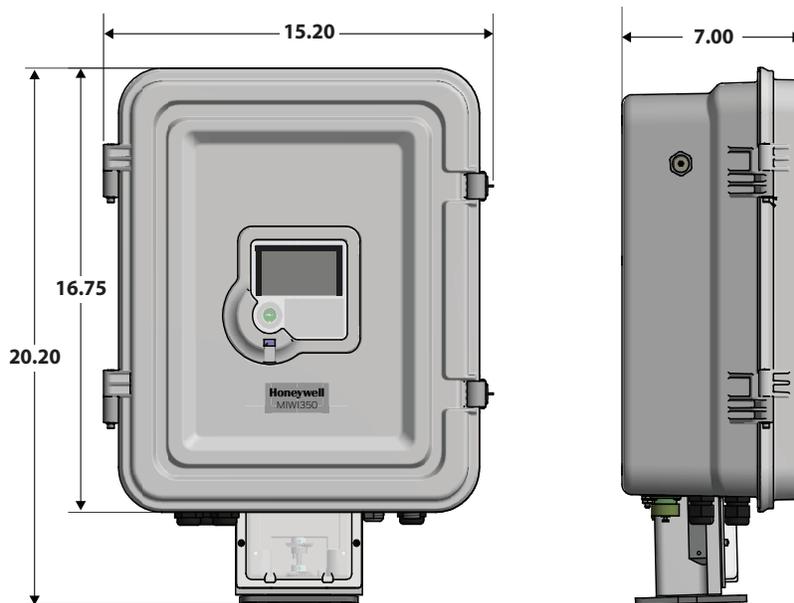
Figure 3-2: Meter Mount
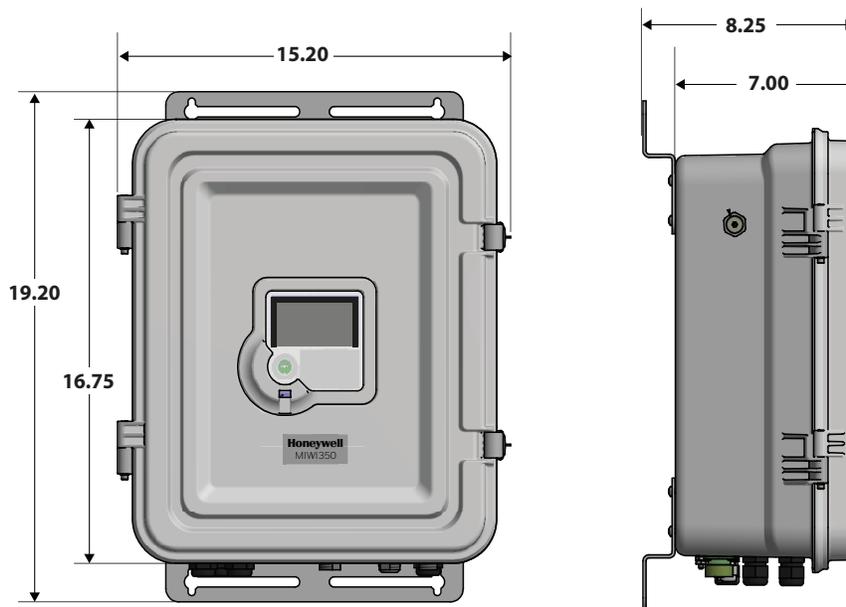
Figure 3-3: Remote Mount

3.2 Display Options

The MIWI350 device is available with two display options – External and Internal. Power or Communication Box variant is available without display option.
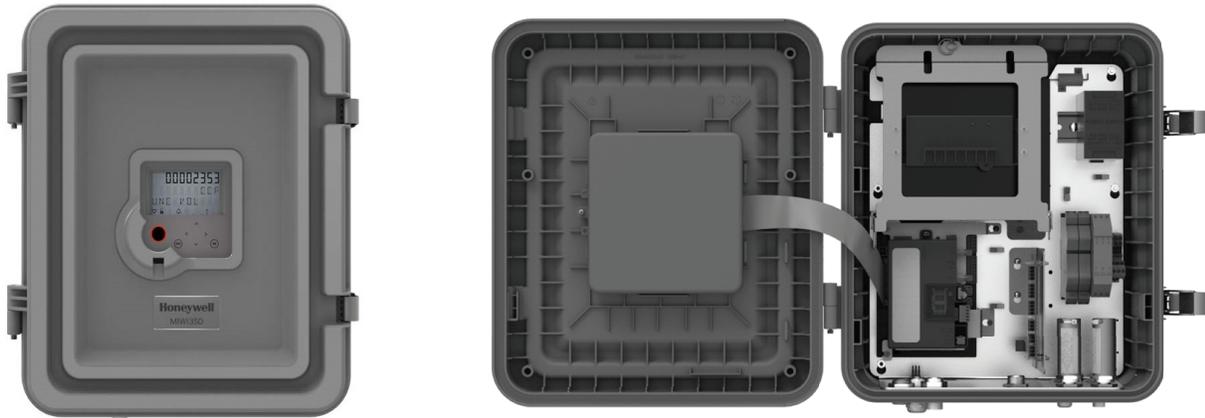
Figure 3-4: MIWI350 with External Display
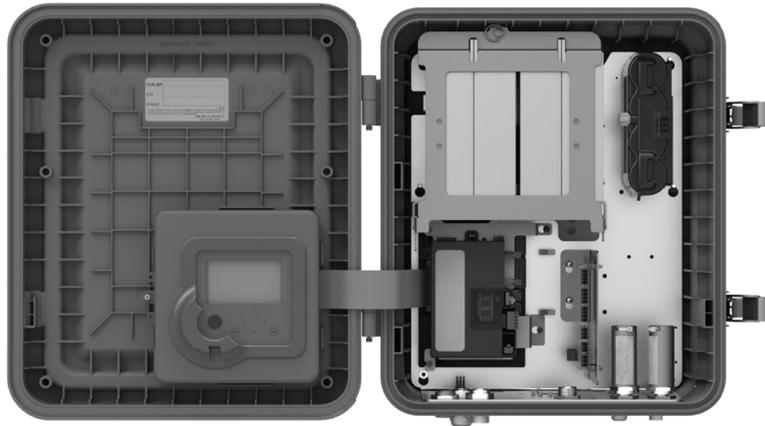
Figure 3-5: MIWI350 with Internal Display
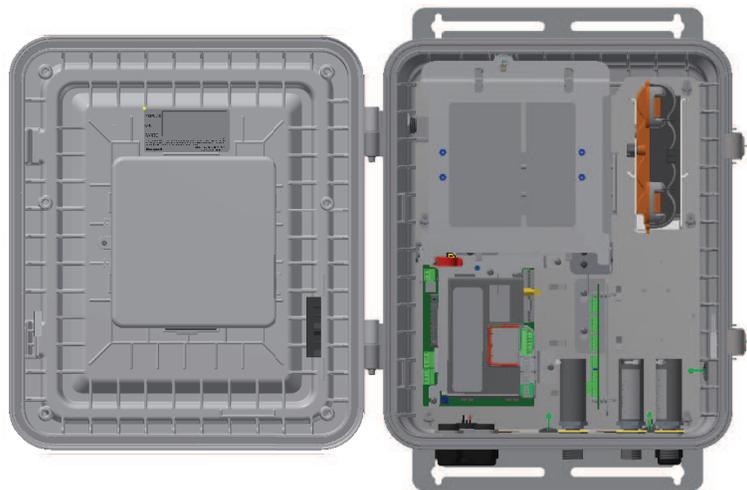
Figure 3-6: MIWI350 Power and Communication Box

3.2.1 HMI User Interface

MIWI350 device includes a ten character, configurable, alphanumeric LCD display with icons to display the status information and alarm conditions. The LCD display can be configured to ON or OFF at different times of day. Following is an LCD display illustration, showing all segments ON.
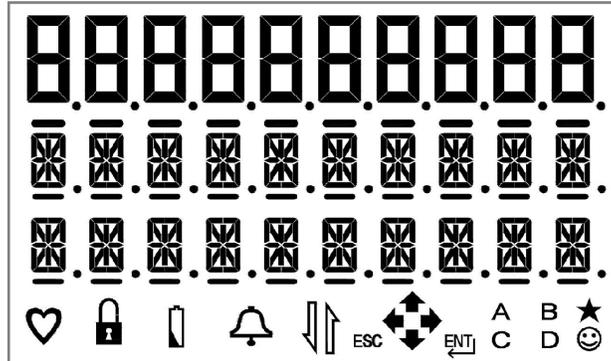
Figure 3-7: LCD display

	Heart Beat: flashes to indicate normal operation.
	Lock/Unlock: indicates whether the unit is metrologically sealed or not.
	Battery: indicates a low battery condition.
	Alarm: indicates an alarm condition (e.g. high pressure).
	Comm: indicates that the serial communications is active.
	Navigation key function indicator: as you scroll through the options in each operating mode, indicates the keys that are active for the selected option.
	Output channel indicator: indicates the pulse output channel that is active.
	Smile: indicates the HMI is unlocked. The navigation keys are functional.
	Star: The Star icon turns on during pressure and temperature measurement, which is dynamic, based upon instrument sample rate.

Option	Description
ESC and ▲	Unlock the keypad and activate the display. To unlock the keypad, press ESC and hold ▲ at the same time until display test appears. Display Test (all segments ON at the same time).
▽ or ▲	Scroll up and down in a menu or increase and decrease a value at the current position.
◁ and ▷	Navigate to the next and/or previous digit. Move the cursor one character at a time, in forward or backward directions.
OK	Access the main menu or display the submenu of the current menu. It is also used for accepting an input value.
ESC	Display the Home screen, cancel an entry, or go back to the previous menu.

Principles of menu navigation

- The menu is organized in a tree format.

- Use OK to drill down one level.

- Use ESC to go up one level.

- Use ▲ or ▽ to navigate within the elements of the same subgroup.


```
L2.4         CONFIG
L2.4.1                ALARMS
L2.4.1.1                      LIMITS
L2.4.2         INSTRUMENT
L2.4.2.1                   SITE INFO
L2.4.2.1.1                         UNIT S/N
L2.4.2.1.2                         FW VERSION
L2.4.2.1.3                         SITE ID #1
L2.4.2.1.4                         SITE ID #2
```
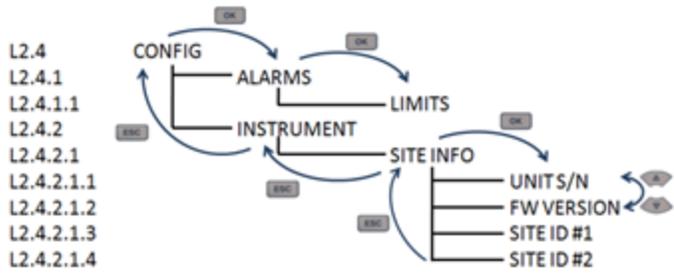
Refer to the Honeywell EC350 User's Manual for more information on using the HMI User Interface.

3.3 Gland Entries

Pulse Output

Pulse Input

P3 Pressure Transducer (Future)

P2 Pressure Transducer

P1 Pressure Transducer

Incoming Power

Ground/Earthing

Temperature Probe

Figure 3-8: Gland Entries

Instruction for Grounding:

The ground terminal shall be connected to safety earth using 12AWG or higher wire gauge and the insulation shall have flammability rating of UL94 V-2 or better. The color code and wiring shall be done as per the rule by the National Electrical Code.

4 Electrical Assembly

4.1 Input/Output Board
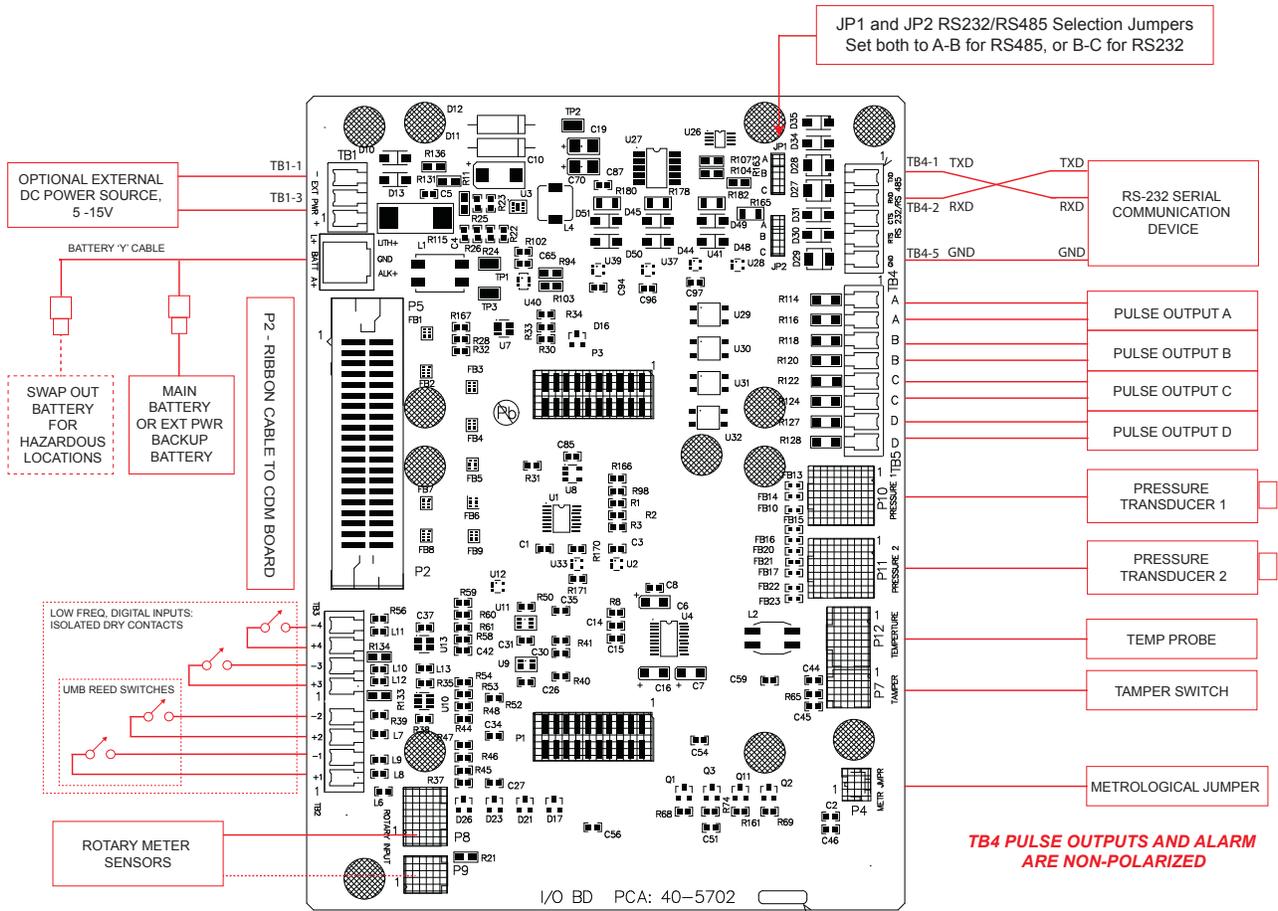
Figure 4–1: Input/Output Board or EVC Board

4.2 Power Distribution Board

Modem Power Control enables an instrument to turn the power to a modem "OFF" or "ON" only when required for scheduled calls and maintenance. It can be used to reduce the amount of power required by the modem assembly so that non-rechargeable batteries can be used or even smaller solar panels can be installed.

Refer Figure 4-2 for more information.
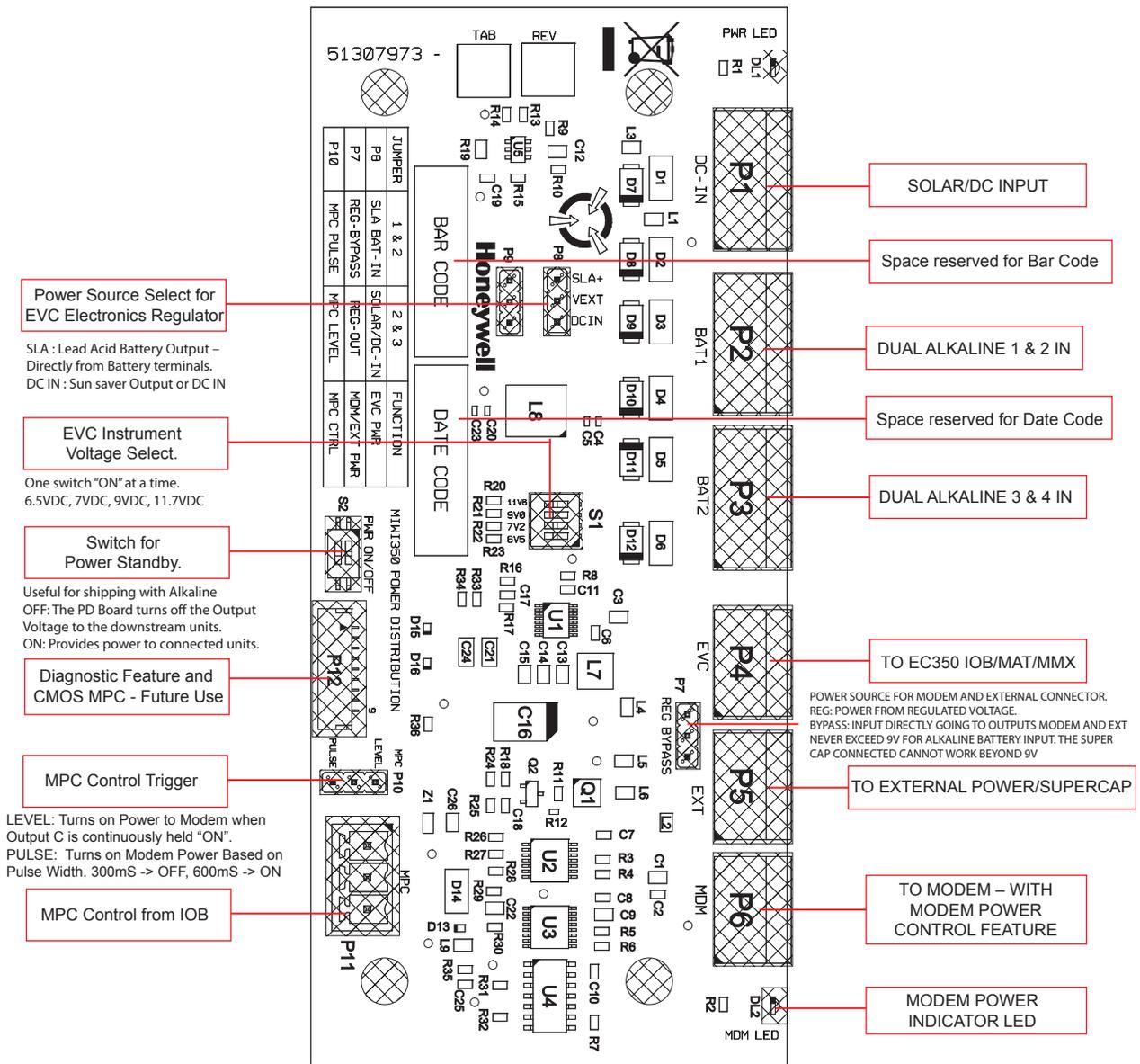
Figure 4–2: Power Distribution Board

The following labels appear around the board diagram:

- SOLAR/DC INPUT
- Space reserved for Bar Code
- DUAL ALKALINE 1 & 2 IN
- Space reserved for Date Code
- DUAL ALKALINE 3 & 4 IN
- TO EC350 IOB/MAT/MMX
- POWER SOURCE FOR MODEM AND EXTERNAL CONNECTOR. REG: POWER FROM REGULATED VOLTAGE. BYPASS: INPUT DIRECTLY GOING TO OUTPUTS MODEM AND EXT NEVER EXCEED 9V FOR ALKALINE BATTERY INPUT. THE SUPER CAP CONNECTED CANNOT WORK BEYOND 9V
- TO EXTERNAL POWER/SUPERCAP
- TO MODEM – WITH MODEM POWER CONTROL FEATURE
- MODEM POWER INDICATOR LED

Left-side labels:

Power Source Select for EVC Electronics Regulator
SLA : Lead Acid Battery Output – Directly from Battery terminals.
DC IN : Sun saver Output or DC IN

EVC Instrument Voltage Select.
One switch "ON" at a time.
6.5VDC, 7VDC, 9VDC, 11.7VDC

Switch for Power Standby.
Useful for shipping with Alkaline
OFF: The PD Board turns off the Output Voltage to the downstream units.
ON: Provides power to connected units.

Diagnostic Feature and CMOS MPC - Future Use

MPC Control Trigger
LEVEL: Turns on Power to Modem when Output C is continuously held "ON".
PULSE: Turns on Modem Power Based on Pulse Width. 300mS -> OFF, 600mS -> ON

MPC Control from IOB

4.2.1 Power Distribution Board connections Solar-Input/AC-DC input with lead acid battery back up
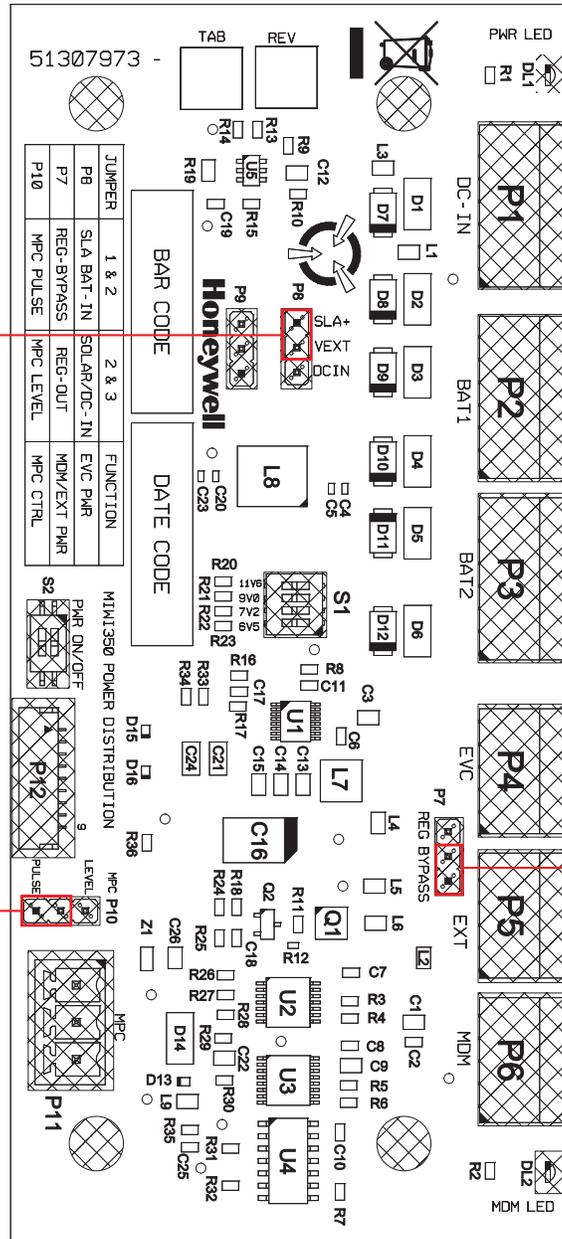
Connect the regulator input to lead acid battery terminals directly. Hence even the Sun Saver output is shut off due to low voltage, the EVC output would continue to get power from the batteries.

Connects the incoming voltage to modem and external connector directly i.e., in this case, the Sun Saver output is directly connected to modem and external output. Can connect to RV50, CL R100 and CL R110 (CL R1XX - External input).

Pulse/Level input for MPC function

4.2.2 Power Distribution Board jumper settings for Alkaline Battery or DC input

Connects the regulator input to DC input.

Connects the regulated input to modem and external output connector.
The voltage selected using S1 is reflected on these outputs*.

Pulse/Level input for MPC function
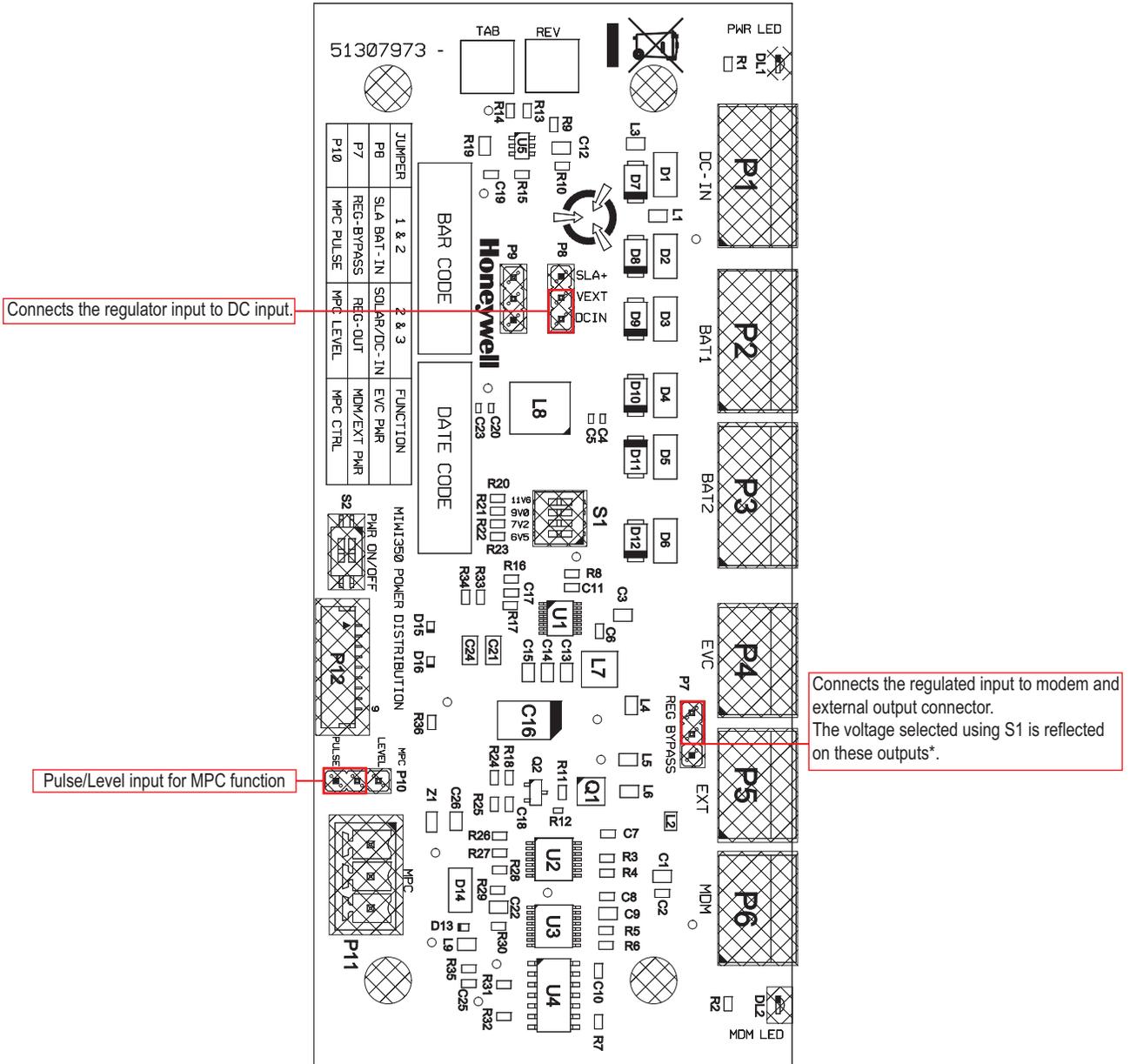
* IMPORTANT NOTE: Never exceed 9V for Alkaline battery input. The supercap connected cannot work beyond 9V.

4.2.3 Power Distribution board Output voltage and Jumper settings

POWER SOURCE	VOLTAGE IN	INSTRUMENT	S1 INSTRUMENT VOLTAGE	MODEM	JUMPER SETTING P7 | P8	MPC P10
SOLAR	12V	EC350	11.6V	RV50	1-2 | 1-2	PULSE
ALKALINE	18V	EC350	9V	RV50	2-3 | 2-3	PULSE
AC-DC/TEC	12V	EC350	11.6V	RV50	1-2 | 1-2	PULSE
DC	12V	EC350	9V	RV50	2-3 | 2-3	PULSE
SOLAR	12V	EC350	11.6V	CLR100/R110	1-2 | 1-2	PULSE
ALKALINE	18V	EC350	9V	CLR100/R110	2-3 | 2-3	PULSE
AC-DC/TEC	12V	EC350	11.6V	CLR100/R110	1-2 | 1-2	PULSE
DC	12V	EC350	9V	CLR100/R110	2-3 | 2-3	PULSE
SOLAR	12V	Mini-Max	6.5V	AS PER MSG	1-2 | 1-2	PULSE
ALKALINE	18V	Mini-Max	6.5V	AS PER MSG	2-3 | 2-3	PULSE
AC-DC/TEC	12V	Mini-Max	6.5V	AS PER MSG	1-2 | 1-2	PULSE
DC	12V	Mini-Max	6.5V	AS PER MSG	2-3 | 2-3	PULSE
SOLAR	12V	Mini-AT	9V	AS PER MSG	1-2 | 1-2	PULSE
ALKALINE	18V	Mini-AT	9V	AS PER MSG	2-3 | 2-3	PULSE
AC-DC/TEC	12V	Mini-AT	9V	AS PER MSG	1-2 | 1-2	PULSE
DC	12V	Mini-AT	9V	AS PER MSG	2-3 | 2-3	PULSE

4.3 Modem

The currently supported modems which can be used with a MIWI350 device include:
- Honeywell CloudLink R100/R110-M1 Modem
- Sierra Wireless AirLink® RV50/RV50X

5 Internal Wiring

5.1 Power Distribution Board and IO Board

IO Board   Power Distribution Board
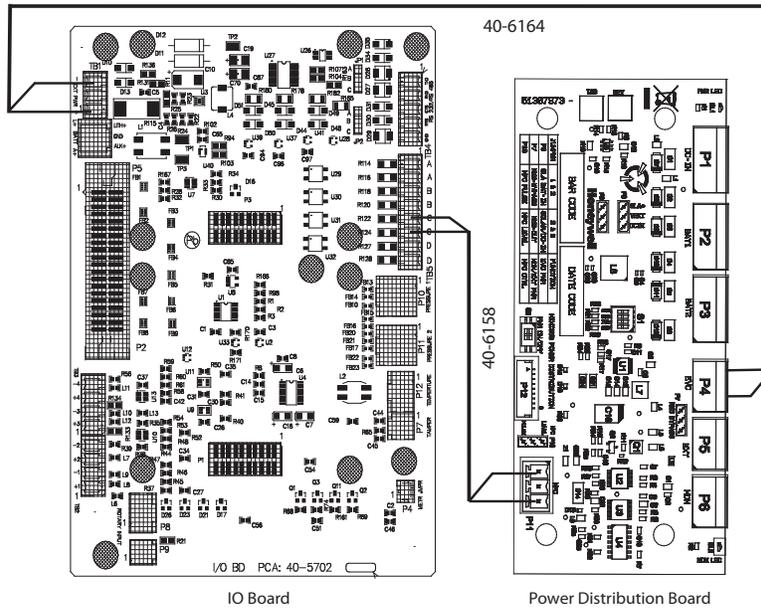
Figure 5–1: Electrical Wiring between Power Distribution Board and IO Board

5.2 Power Distribution Board and Modem

Cloud Link Modem/RV50 Modem (Optional)   Power Distribution Board
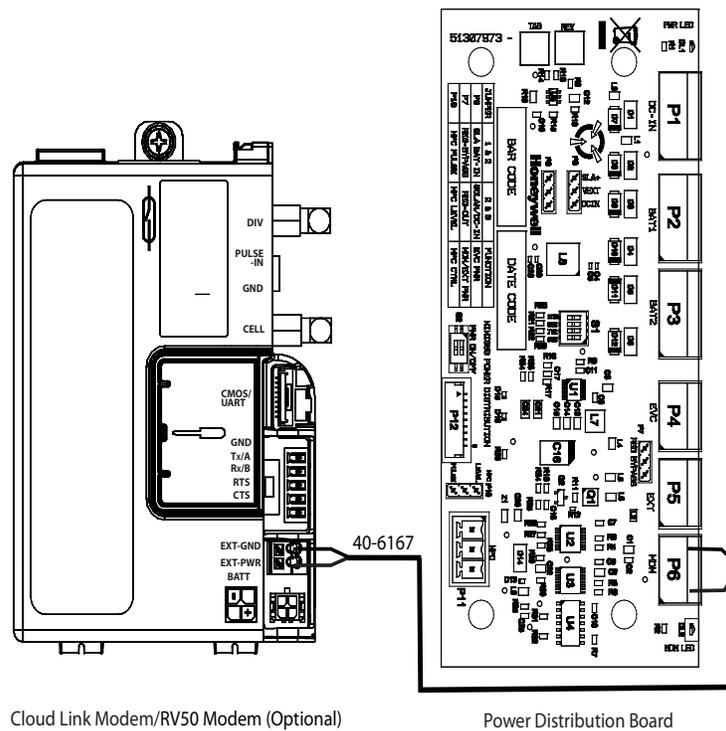
Figure 5–2: Electrical Wiring between Power Distribution Board and Modem

5.3 IO Board and Modem
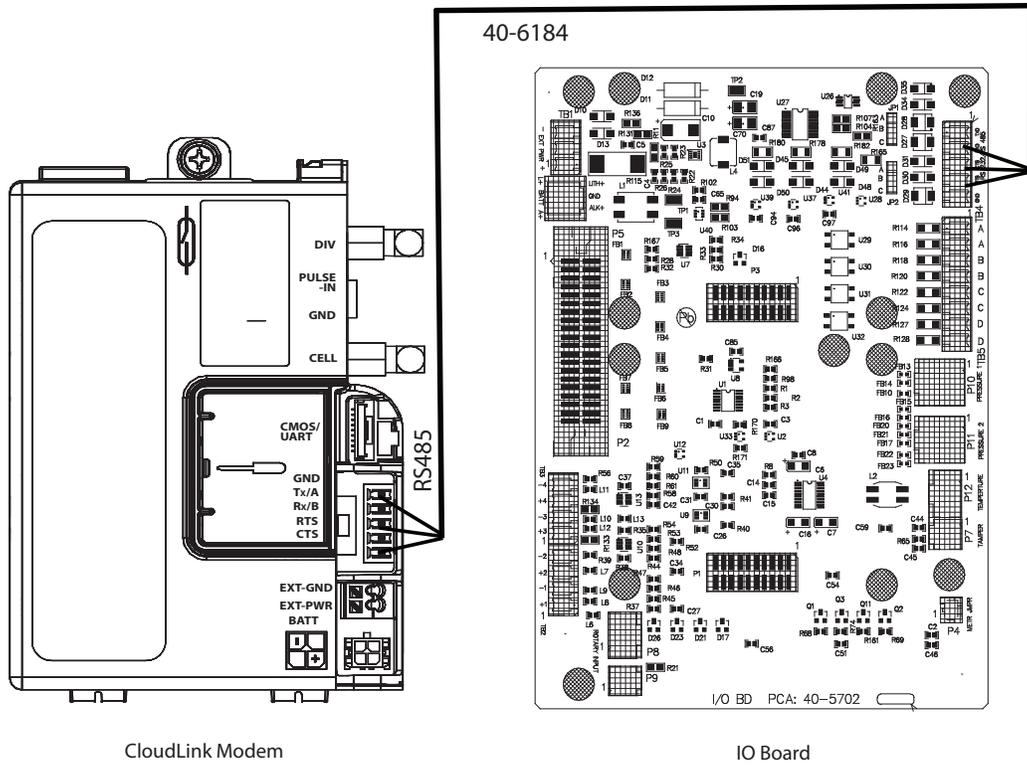
Figure 5–3: Electrical Wiring between IO Board and CloudLink Modem
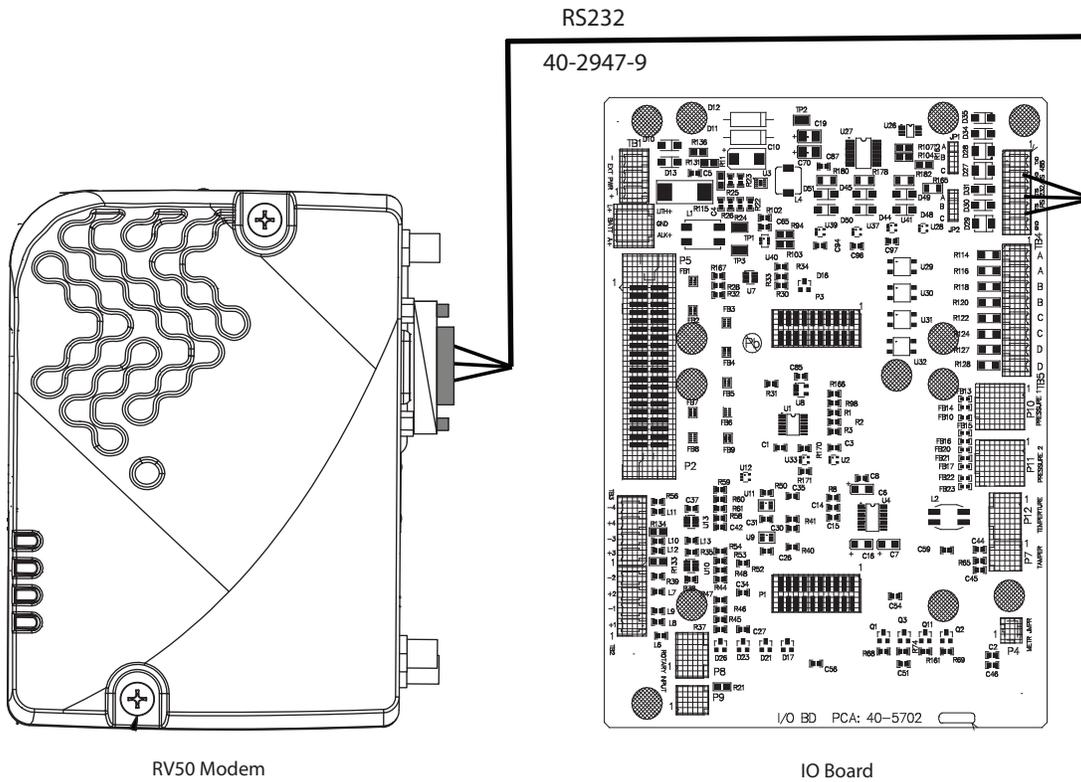
Figure 5–4: Electrical Wiring between IO Board and RV50 Modem

6 Battery Installation

6.1 Lead-Acid Battery

To install a 7Ah/21Ah lead-acid battery:

1. Quarter turn the screw and open the battery mount bracket flip cover.

2. Carefully insert the battery in the mount bracket.

3. Connect the battery pack cable (*) to battery charge controller cable.

4. Close the battery mount bracket flip cover by quarter turning the screw.

*40-6169-3 - If you are connecting a 12V 7Ah lead-acid battery

*40-6169-2 - If you are connecting a 12V 21Ah lead-acid battery

6.2 Dual/Quad Alkaline Battery

To install a Dual/Quad alkaline battery pack:

1. Quarter turn the screw

2. Carefully insert the battery in the mount bracket.
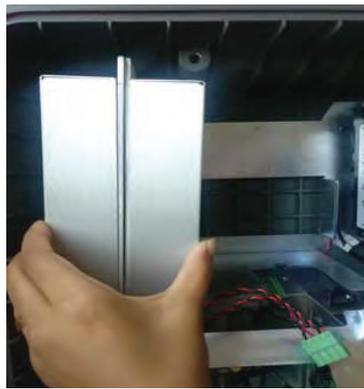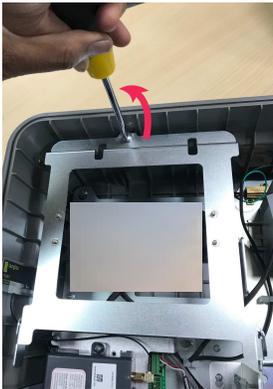
Dual battery pack
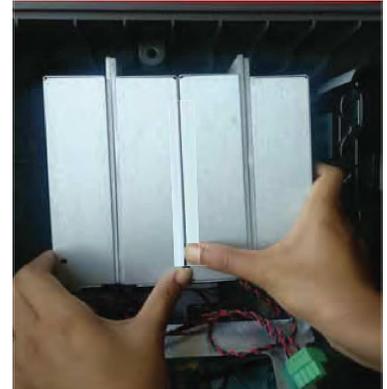
Quad battery pack

3. Close the battery mount flip cover and turn back the screw.

4. Connect the dual/quad battery cable to power distribution board
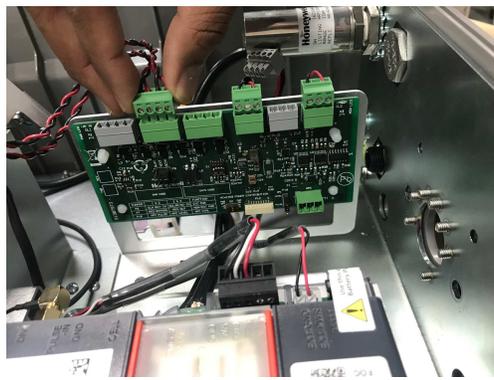
6.3 Battery Life

MIWI350 with CloudLink R100 (1 call/day)

Battery Type	Months
7Ah 12V DC SLA	2.0
21Ah 12V DC SLA	6.0
Dual Alkaline Battery pack (12Ah-derated)	6.9
Quad Alkaline Battery Pack (24Ah-derated)	13.7

MIWI350 with CloudLink R110 (1 call/day)

Battery Type	Months
7Ah 12V DC SLA	2.4
21Ah 12V DC SLA	7.3
Dual Alkaline Battery pack (12Ah-derated)	8.3
Quad Alkaline Battery Pack (24Ah-derated)	16.6

MIWI350 with RV50* (1 call/day)

Battery Type	Months
7Ah 12V DC SLA	2.0
21Ah 12V DC SLA	6.0
Dual Alkaline Battery pack (12Ah-derated)	6.8
Quad Alkaline Battery Pack (24Ah-derated)	13.7

*RV50 Modem power controlled

7 Reference Drawings

7.1 MIWI350 with EC350 or ERX350

7.1.1 Wiring Dual or Quad Battery

DUAL 18VDC ALKALINE RECEPTACLE PACK

QUAD 18VDC ALKALINE RECEPTACLE PACK
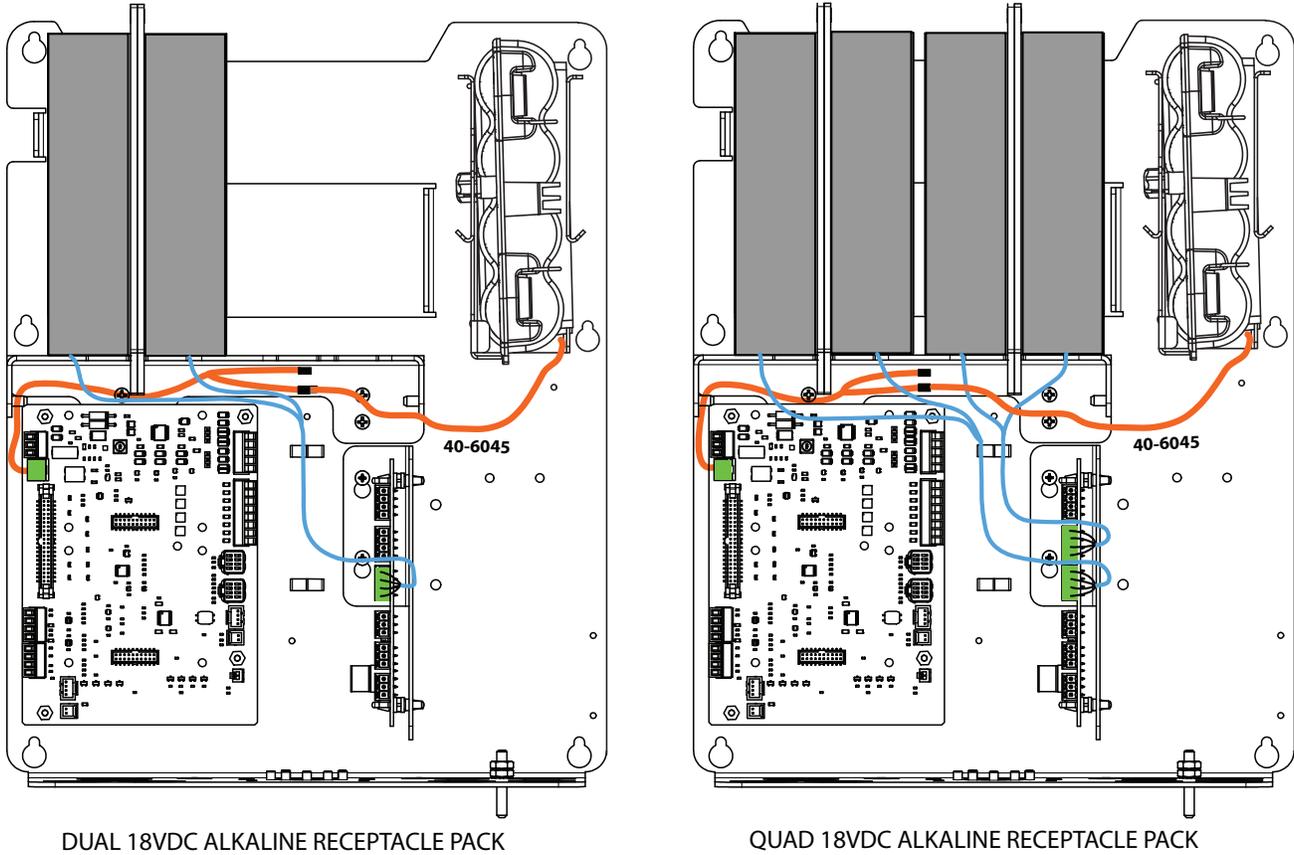
Note: The cable color code/pin mapping are for illustration purpose only.

Figure 7-1: Electrical Wiring – DUAL/QUAD 18VDC ALKALINE RECEPTACLE PACK

Cable (Part#)	Connects	To
40-6045	Optional External DC Power Source/Super Capacitor	IO Board TB1-1 & TB1-3

7.1.2 Wiring Solar Power for MIWI350

SOLAR POWER with 7Ah BATTERY   SOLAR POWER with 21Ah BATTERY
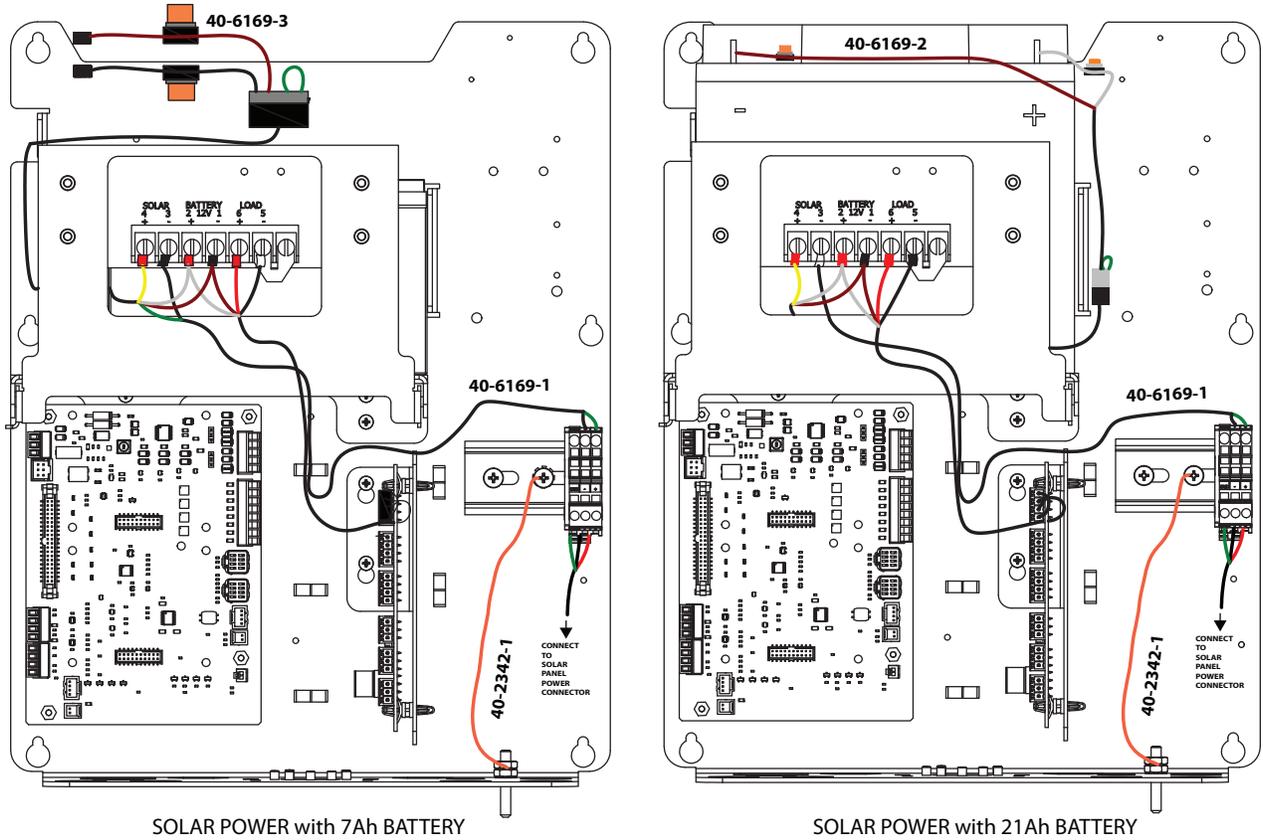
Note: The cable color code/pin mapping are for illustration purpose only.

Figure 7-2: Electrical Wiring – SOLAR POWER WITH 7Ah/21Ah SLA BATTERY

Cable (Part#)	Connects	To
40-6169-3	Connector from Solar Charge controller	12V 7Ah lead-acid battery
40-6169-2	Connector from Solar Charge controller	12V 21Ah lead-acid battery
40-6169-1	Connector from Solar Charge controller	External power input junction box
	Connector from Solar Charge controller	Power Distribution Board P1(DC-IN)
40-2342-1	Device Ground/Earthing	External power input junction box

7.2 MIWI350 as Power Box

7.2.1 Wiring Dual or Quad Battery for MIWIPCB

DUAL 18VDC ALKALINE RECEPTACLE PACK   QUAD 18VDC ALKALINE RECEPTACLE PACK
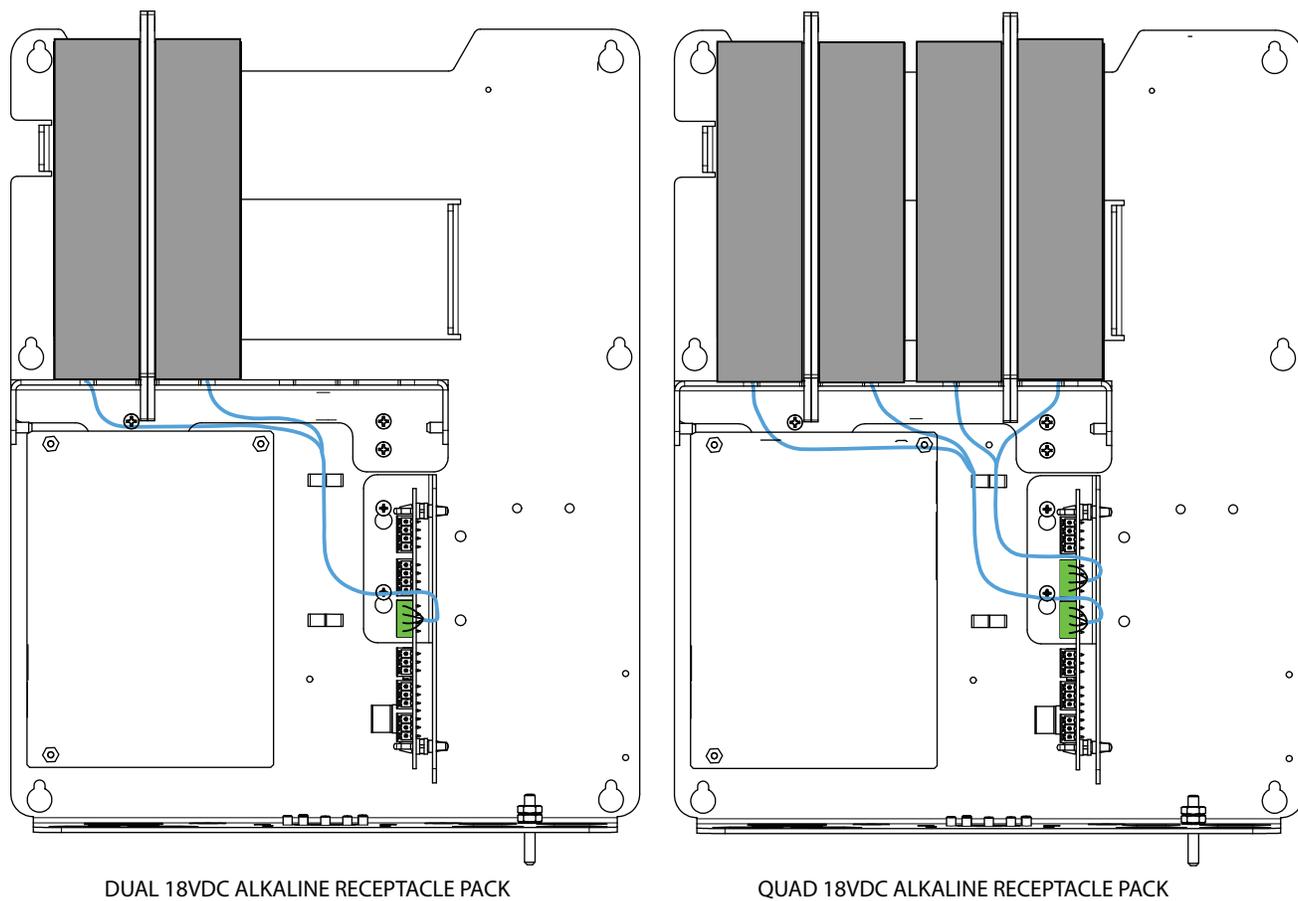
Note: The cable color code/pin mapping are for illustration purpose only.

Figure 7-3: Electrical Wiring – DUAL/QUAD 18VDC ALKALINE RECEPTACLE PACK

7.2.2 Wiring Solar Power for MIWIPCB

SOLAR POWER With 7Ah BATTERY

SOLAR POWER With 21Ah BATTERY
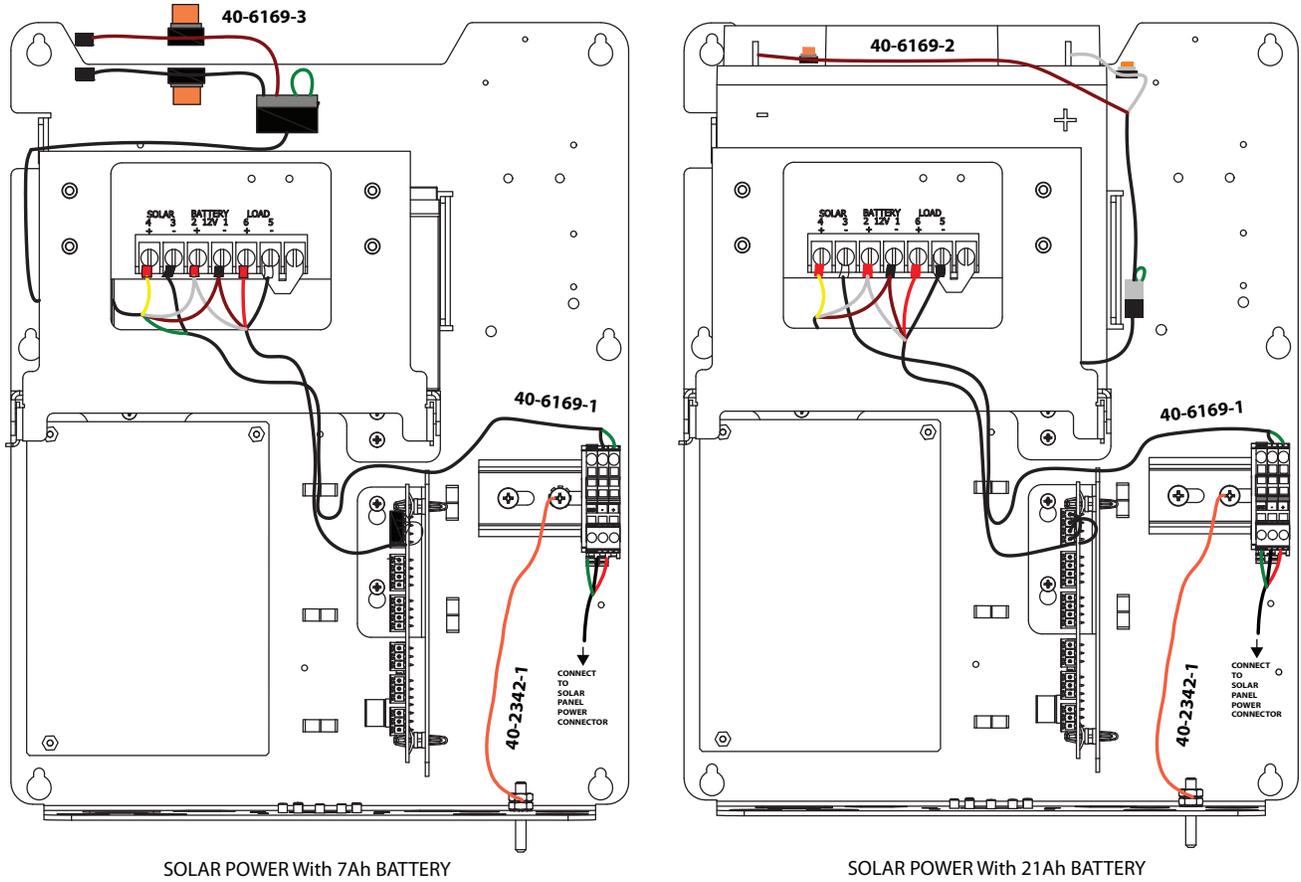
Note: The cable color code/pin mapping are for illustration purpose only.

Figure 7-4: Electrical Wiring – SOLAR POWER WITH 7Ah/21Ah SLA BATTERY

Cable (Part#)	Connects	To
40-6169-3	Connector from Solar Charge controller	12V 7Ah lead-acid battery
40-6169-2	Connector from Solar Charge controller	12V 21Ah lead-acid battery
40-6169-1	Connector from Solar Charge controller	External power input junction box
	Connector from Solar Charge controller	Power Distribution Board P1 (DC-IN)
40-2342-1	Device Ground/Earthing	External power input junction box

7.3 MIWI350 as Power or Communication Box

7.3.1 Barrier Connections

7.3.1.1 With CloudLink Modem

RS485 CONNECTIONS

CL R100 SERIAL CONNECTOR	COLOR
PIN 1 (GND)	BLACK
PIN 2 (TXD/A)	WHITE
PIN 3 (RXD/B)	RED

CASE CONNECTOR PINOUT

CASE CONNECTOR	FUNCTION
A: WHITE	DO NOT USE
B: RED	RXD/B
C: BLUE	DO NOT USE
D: BLUE	MPC+
E: BLACK	MPC-
F:BLACK	TXD/A

NOTE: CUT THE CONDUCTORS AND COVER THE "DO NOT USE" PINS WITH INSULATION TAPE

DO NOT CONNECT BLACK WIRE OF 40-6184.
CUT THE STRIPPED CONDUCTORS AND ADD INSULATION TAPE

ROUTE THE CABLE THROUGH THE PD BOARD PLATE SLOT AND CONNECT AS SHOWN.

DETAIL H

CASE CONNECTOR TO BARRIER CONNECTION

Figure 7-5: Internal Wiring – CloudLink R100 Connections

DO NOT CONNECT BLACK WIRE OF 40-6184.
CUT THE STRIPPED CONDUCTORS AND ADD INSULATION TAPE

RED
BLACK
RED
WHITE
RED
BLACK

20-8314

22-1036-1
4X 60-4221
40-6167-1
40-6167
40-6184
40-6182

RS485 CONNECTIONS	
CL R110 SERIAL CONNECTOR	BARRIER WIRE (COLOR)
PIN 1 (GND)	BLACK
PIN 2 (RS485/A)	WHITE
PIN 3 (RS485/B)	RED

40-2342-1
BLACK (MPC-)
BLUE (MPC+)
BLACK
RED

40-6043-1

22-3037
20-3827

CASE CONNECTOR TO BARRIER CONNECTION

CASE CONNECTOR PINOUT	
CASE CONNECTOR	FUNCTION
A:WHITE	DO NOT USE
B:RED	RS485/B
C: BLUE	DO NOT USE
D:BLUE	MPC+
E: BLACK	MPC-
F:BLACK	RS485/A

NOTE: CUT THE CONDUCTORS AND COVER THE "DO NOT USE" PINS WITH INSULATION TAPE

DETAIL J
SCALE 1.30 : 1

ROUTE THE CABLE THROUGH THE PD BOARD PLATE SLOT
AND CONNECT AS SHOWN.

Figure 7-6: Internal Wiring – CloudLink R110 Connections
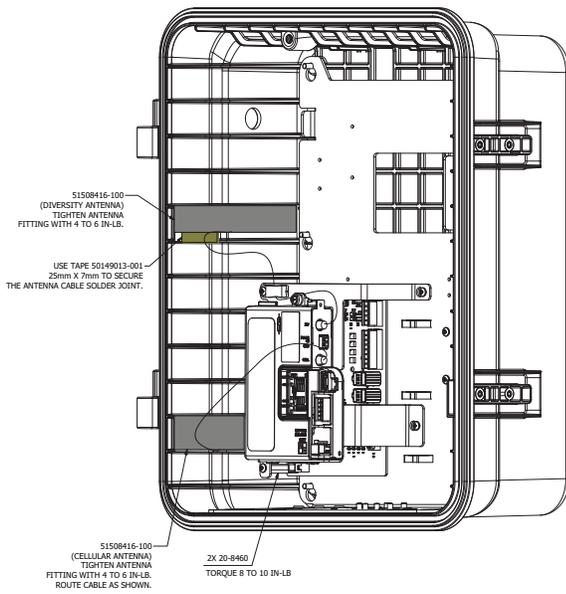
INTERNAL ANTENNA CONNECTION (CLOUDLINK R100)
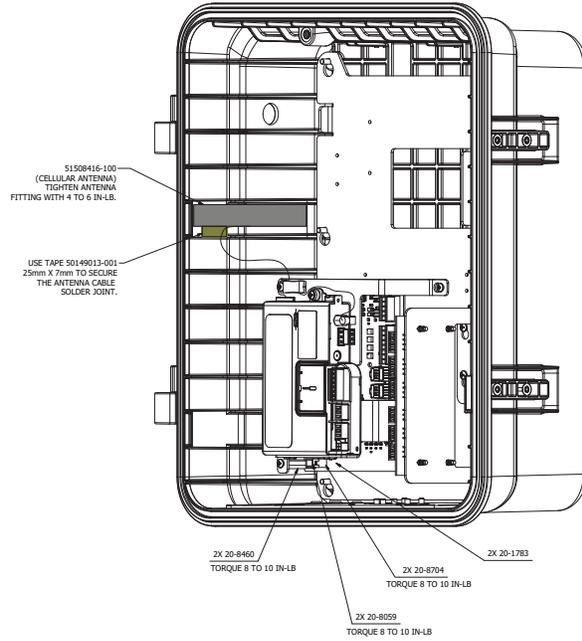
INTERNAL ANTENNA CONNECTION (CLOUDLINK R110)

Note: For 'Ready for CloudLink Modem' option, all necessary cables and fasteners will be provided except CloudLink modem.

7.3.1.2 With RV50 Modem
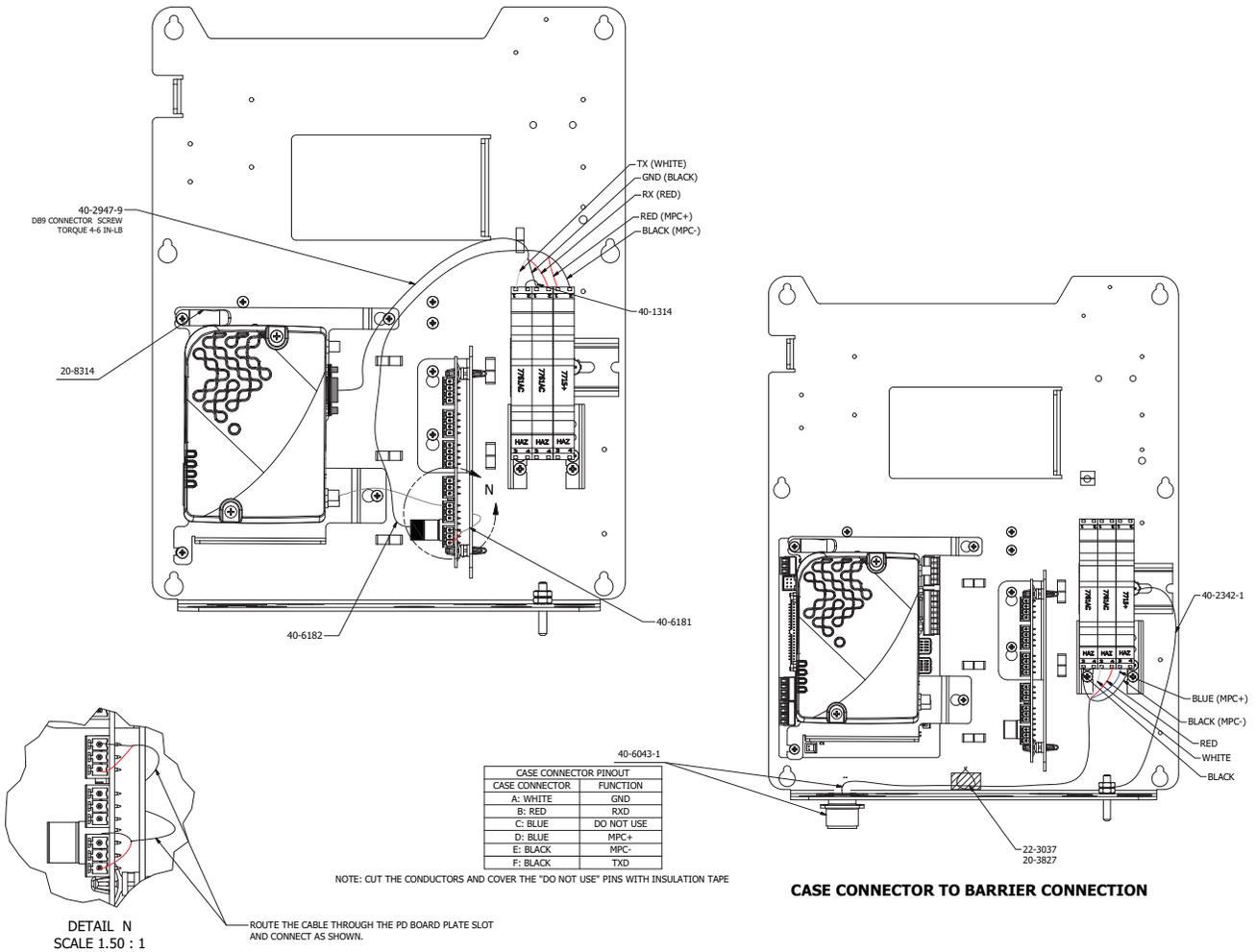
Figure 7-7: Internal Wiring – RV50 Modem Connections
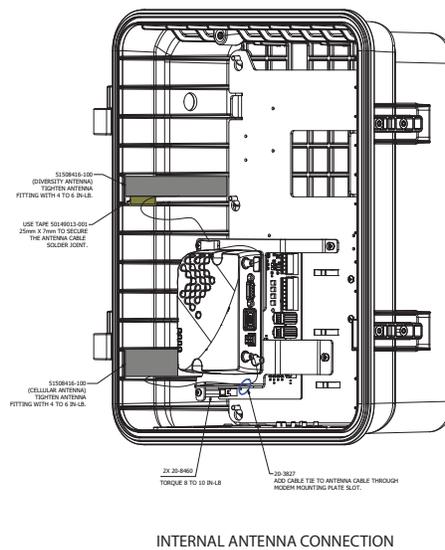
INTERNAL ANTENNA CONNECTION

> **Note:** For 'Ready for RV50' option, all necessary cables and fasteners will be provided except RV50 modem.

7.3.2 Terminal Block Connections

7.3.2.1 With CloudLink Modem

RS232/RS485 CONNECTIONS	
CL R100 SERIAL CONNECTOR	COLOR
PIN 1 (GND)	BLACK
PIN 2 (TXD/A)	WHITE
PIN 3 (RXD/B)	RED

CASE CONNECTOR PINOUT	
CASE CONNECTOR	FUNCTION
A:WHITE	GND
B:RED	RXD/B
C: BLUE	DO NOT USE
D: BLUE	MPC+
E: BLACK	MPC-
F:BLACK	TXD/A

NOTE: CUT THE CONDUCTORS AND COVER THE "DO NOT USE" PINS WITH INSULATION TAPE

CASE CONNECTOR TO TERMINAL BLOCK CONNECTION

DETAIL P
SCALE 1.50 : 1

ROUTE THE CABLE THROUGH THE PD BOARD PLATE SLOT AND CONNECT AS SHOWN.

Figure 7–8: Internal Wiring – CloudLink R100 Connections

BLACK
RED
BLACK
RED
WHITE
RED (MPC+)
BLACK (MPC-)

20-8314

M

40-6167-1

40-6167

40-6184   40-6182

RS232 CONNECTIONS	
CL R110 SERIAL CONNECTOR	BARRIER WIRE (COLOR)
PIN 1 (GND)	BLACK
PIN 4 (RXD)	RED
PIN 5 (TXD)	WHITE

40-2342-1
BLACK (MPC-)
BLUE (MPC +)
RED
BLACK
WHITE

40-6043-1

22-3037
20-3827

CASE CONNECTOR TO TERMINAL BLOCK CONNECTION

CASE CONNECTOR PINOUT	
CASE CONNECTOR	FUNCTION
A: WHITE	GND
B:RED	RXD
C:	DO NOT USE
D: BLUE	MPC+
E: BLACK	MPC-
F: BLACK	TXD

NOTE: CUT THE CONDUCTORS AND COVER THE "DO NOT USE" PINS WITH INSULATION TAPE

DETAIL M
SCALE 1.30 : 1

ROUTE THE CABLE THROUGH THE PD BOARD PLATE SLOT
AND CONNECT AS SHOWN.

Figure 7-9: Internal Wiring – CloudLink R110 Connections
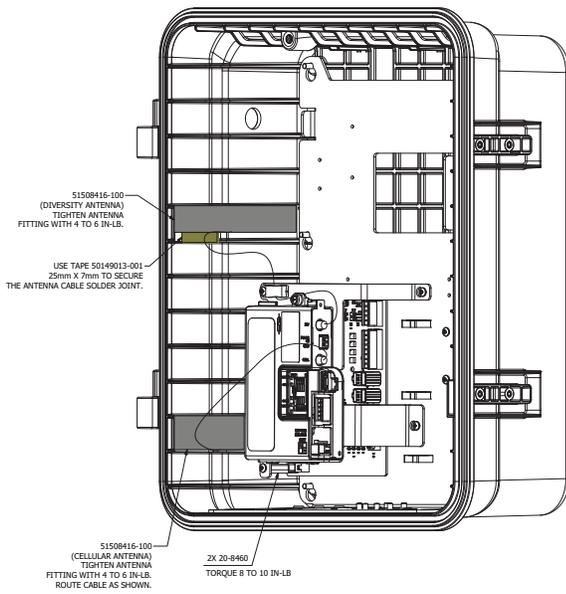
51508416-100
(DIVERSITY ANTENNA)
TIGHTEN ANTENNA
FITTING WITH 4 TO 6 IN-LB.

USE TAPE 50149013-001
25mm X 7mm TO SECURE
THE ANTENNA CABLE SOLDER JOINT.

51508416-100
(CELLULAR ANTENNA)
TIGHTEN ANTENNA
FITTING WITH 4 TO 6 IN-LB.
ROUTE CABLE AS SHOWN.

2X 20-8460
TORQUE 8 TO 10 IN-LB

INTERNAL ANTENNA CONNECTION (CLOUDLINK R100)

51508416-100
(CELLULAR ANTENNA)
TIGHTEN ANTENNA
FITTING WITH 4 TO 6 IN-LB.

USE TAPE 50149013-001
25mm X 7mm TO SECURE
THE ANTENNA CABLE
SOLDER JOINT.

2X 20-8460
TORQUE 8 TO 10 IN-LB

2X 20-8704
TORQUE 8 TO 10 IN-LB

2X 20-1783

2X 20-8059
TORQUE 8 TO 10 IN-LB
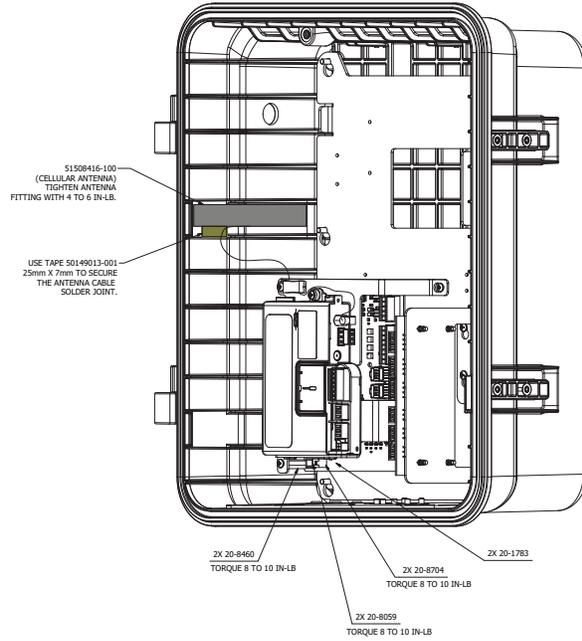
INTERNAL ANTENNA CONNECTION (CLOUDLINK R110)

Note: For 'Ready for CloudLink Modem' option, all necessary cables and fasteners will be provided except CloudLink modem.

7.3.2.2 With RV50 Modem

| CASE CONNECTOR PINOUT	
CASE CONNECTOR	FUNCTION
A:WHITE	GND
B:RED	RXD
C: BLUE	DO NOT USE
D: BLUE	MPC+
E: BLACK	MPC-
F:BLACK	TXD

NOTE: CUT THE CONDUCTORS AND COVER THE "DO NOT USE" PINS WITH INSULATION TAPE

DETAIL G
SCALE 1.50 : 1

ROUTE THE CABLE THROUGH THE PD BOARD PLATE SLOT
AND CONNECT AS SHOWN.

CASE CONNECTOR TO TERMINAL BLOCK CONNECTION
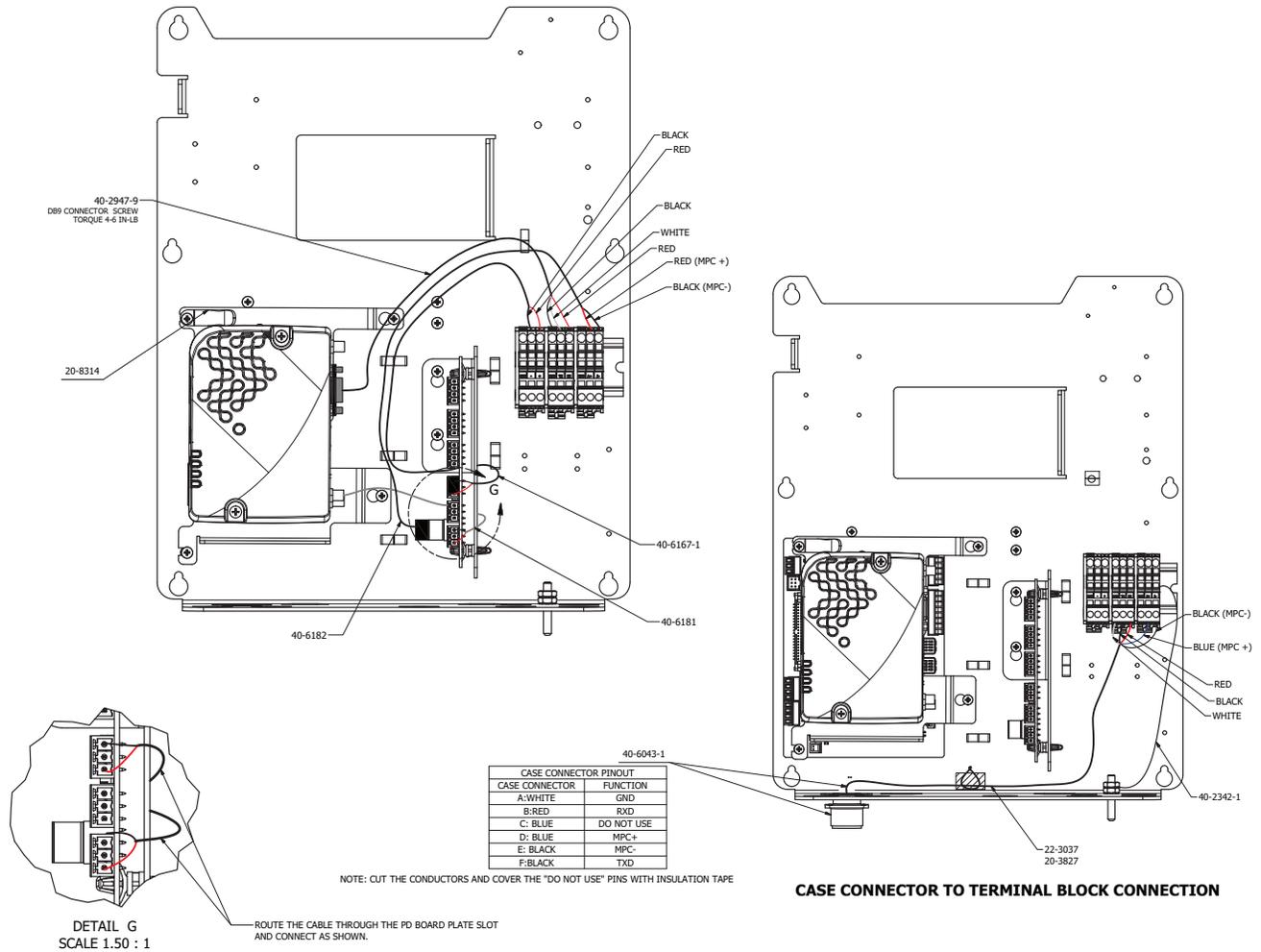
Figure 7-10: Internal Wiring – RV50 Modem Connections

INTERNAL ANTENNA CONNECTION

Note: For 'Ready for RV50' option, all necessary cables and fasteners will be provided except RV50 modem.

8 External Connections

P3 Pressure Transducer (Future) P2 Pressure Transducer P1 Pressure Transducer

Connect pressure tubing to pressure transducer(s)

Follow the below steps to connect pressure tubing to pressure transducer(s):

1. Insert o-ring on transducer fitting threads and push it till it reaches on the groove on case.
2. Insert the jam nut on transducer and tighten it with dome nut clock-wise.

9 Configuration Software

User can use Honeywell MasterLink software application to configure and deploy a MIWI350 device.

MasterLink can be used to configure MIWI350 as:

- EC350/ERX350 Device
- Cellular Modem (CLR100/CLR110/RV50 Modem)
- EC350/ERX350 and Cellular Modem as an Integrated Device

To learn more about MasterLink, EC350/ERX350, or CloudLink, refer to their respective user guides available on the Honeywell Process Website.

Product Name	Documentation Link
Honeywell MasterLink Software	MasterLink User Guide
Honeywell EC350	EC350 User's Guide
Honeywell ERX350	ERX350 User's Guide
CloudLink 4G Modem	CloudLink 4G Modem User Guide

10 Orderable Kits

Description	Part#
METER CASE & DOOR EXT DISP ASSY MIWI350	22-3116-1-KIT
METER CASE & DOOR INT DISP ASSY MIWI350	22-3116-2-KIT
REMOTE CASE & DOOR EXT DISP ASSY MIWI350	22-3116-3-KIT
REMOTE CASE & DOOR INT DISP ASSY MIWI350	22-3116-4-KIT
IO BOARD FASTENERS MIWI350	22-3117-KIT
BATT BRACKET LEAD ACID MIWI350	22-3118-1-KIT
BATT BRACKET ALKALINE MIWI350	22-3118-2-KIT
POWER DISTRIBUTION BOARD MIWI350	22-3119-KIT
PORTABLE MNT PIPE KIT MIWI350	22-3120-KIT
EXT DISPLAY COVER MIWI350	22-3126-1-KIT
INTERNAL DISPLAY COVER MIWI350	22-3126-2-KIT
CASE CONN COVER MIWI350	22-2963-3-KIT
CASE CONN ASSY MIWI350	22-3128-KIT
3/8 STRAIN RELIEF WITH PLUG (NYLON) MIWI350	22-3129-KIT
GROUNDING MIWI350	22-3102-KIT
BLIND PLUG MIWI350	22-3164-KIT
1/2 STRAIN RELIEF FOR POWER MIWI350	22-3138-KIT
TC-111 STL CITY CONDUIT MIWI350	22-3165-KIT
1/2 STRAIN RELIEFS MIWI350	22-3140-KIT
SMA TO N-FEMALE-ASM COAX RG174 22 IN	40-4507-1-KIT
CORRECTED VOL. I/P SWITCH-MIWI350	22-3127-1-KIT
CORR.VOL. I/P SWITCH-REV FLOW MIWI350	22-3127-2-KIT
UNCORRECTED VOL I/P SWITCH MIWI350	22-3127-3-KIT
UNCORR.VOL. I/P SW REV FLOW MIWI350	22-3127-4-KIT
KIT ASSY CA & RES 2 OHM MI WI W/DIO&RES	40-4130-1-KIT
SUN SAVER ASSY FOR MIWI350	22-3148-KIT
DIN RAIL WITH SCREWS MIWI350	22-3139-KIT
7Ah BRACKET MIWI350	22-3149-KIT
KIT ALKALINE BATT BKT WITH CABLE MIWI350	22-3161-KIT
TEC POWER MIWI350	22-3162-KIT
SUPERCAP MIWI350	22-3163-KIT

Description	Part#
CL4G BRACKET MIWI350	22-3150-1-KIT
RV50 BRACKET MIWI350	22-3150-2-KIT
REMOTE BRACKET MIWI350	22-3159-KIT
U-BOLT GUILL 2 7/16 OD 2 IN	20-9141-KIT-2
U-BOLT GUILL 3 11/16 OD 3 IN	20-9142-KIT-2
U-BOLT GUILL 4 11/16 OD	20-9140-KIT
PORTABLE BRACKET MIWI350	22-3160-KIT
MPC CABLE, POWER DISTRIBUTION BOARD TO I/O BOARD	40-6158-KIT
POWER SUPPLY CABLE, POWER DISTRIBUTION BOARD- I/O BOARD	40-6164-KIT
POWER SUPPLY CABLE, POWER DISTRIBUTION BOARD-CL4G MODEM	40-6167-KIT
PWR SUPPLY CABLE, POWER DISTRIBUTION BOARD TO PWR BARRIER	40-6167-1-KIT
PWR SUPPLY CABLE, POWER DISTRIBUTION BOARD TO EXT. POWER	40-6167-2-KIT
SOLAR CHARGE CONTROLLER. LOAD O/P CABLE	40-6169-1-KIT
21Ah LEAD-ACID BATTERY CABLE	40-6169-2-KIT
7Ah LEAD-ACID BATTERY CABLE	40-6169-3-KIT
MAGNETIC SWITCH ASSY	40-6170-KIT
GROUND CABLE	40-2342-1-KIT
POWER SUPPLY CABLE, POWER DISTRIBUTION BOARD-RV50 MODEM	40-6181-KIT
MPC CABLE, POWER DISTRIBUTION BOARD TO PULSE BARRIER	40-6182-KIT
LATCH MIWI350	22-3125-KIT
BREATHER MIWI350	22-3103-KIT
GASKET MIWI350	22-3112-KIT
DOOR ALARM MAGNET/SWITCH	40-5162-6-KIT
9" TEMP PROBE W/ 6' SS CABLE W/ POLY COAT	40-143209075PVC-1-KIT

Notes

For more information:

To learn more about Honeywell's Smart Gas Metering Solutions, visit MI-TAC-Support@Honeywell.com | www.honeywellprocess.com or contact your Honeywell Process Solutions representative.

Honeywell Process Solutions

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Honeywell