



SERIAL NUMBER



FTW 174 GPRS

**Wireless Monitoring System
Reference Manual
Part Number 7911741GPRS**

Front Matter

Abstract

This manual contains information and instructions for installing, operating and maintaining the FTW 174 Wireless Monitoring System.

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Warranty

Flash Technology warrants all components, under normal operating conditions, for 1 year.

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Section 1 – Introduction

Introduction

The FTW 174 provides wireless monitoring through RS-485 communications and/or four (4) dry contact inputs. The unit also monitors site power.

Equipment monitoring through RS-485 communications is available with all Flash Technology FLC series controllers and any FTB strobe system equipped with a 9038 or 4747 (Ver. 6.9 or higher) PCB.

Dry contacts are typically alarm relays provided by equipment for external monitoring of alarm conditions. Each input of the FTW 174 can be configured by Flash Technology's National Operations Center (NOC) to alarm on either open or closed status. **Alarm on open is preferred for fail safe monitoring.**

All alarm and communication monitoring is handled by the NOC.

PLEASE NOTE

Before permanently installing and/or wiring the wireless monitoring unit, power-up the system on-site to ensure wireless service in your area. Refer to Section 2 for detailed instructions.

Description

The component layout and internal wiring of the unit is shown in Figure 1-1. The dry contact inputs are located on J2 of PCB 9039 as shown in Figure 3-3.

Specifications

Physical

13.33H x 11.30W x 5.60D inches
(External)
10 lbs.

Electrical

AC Voltage 120 VAC, 60 Hz
Power 7VA
Battery Operation 24+ hrs

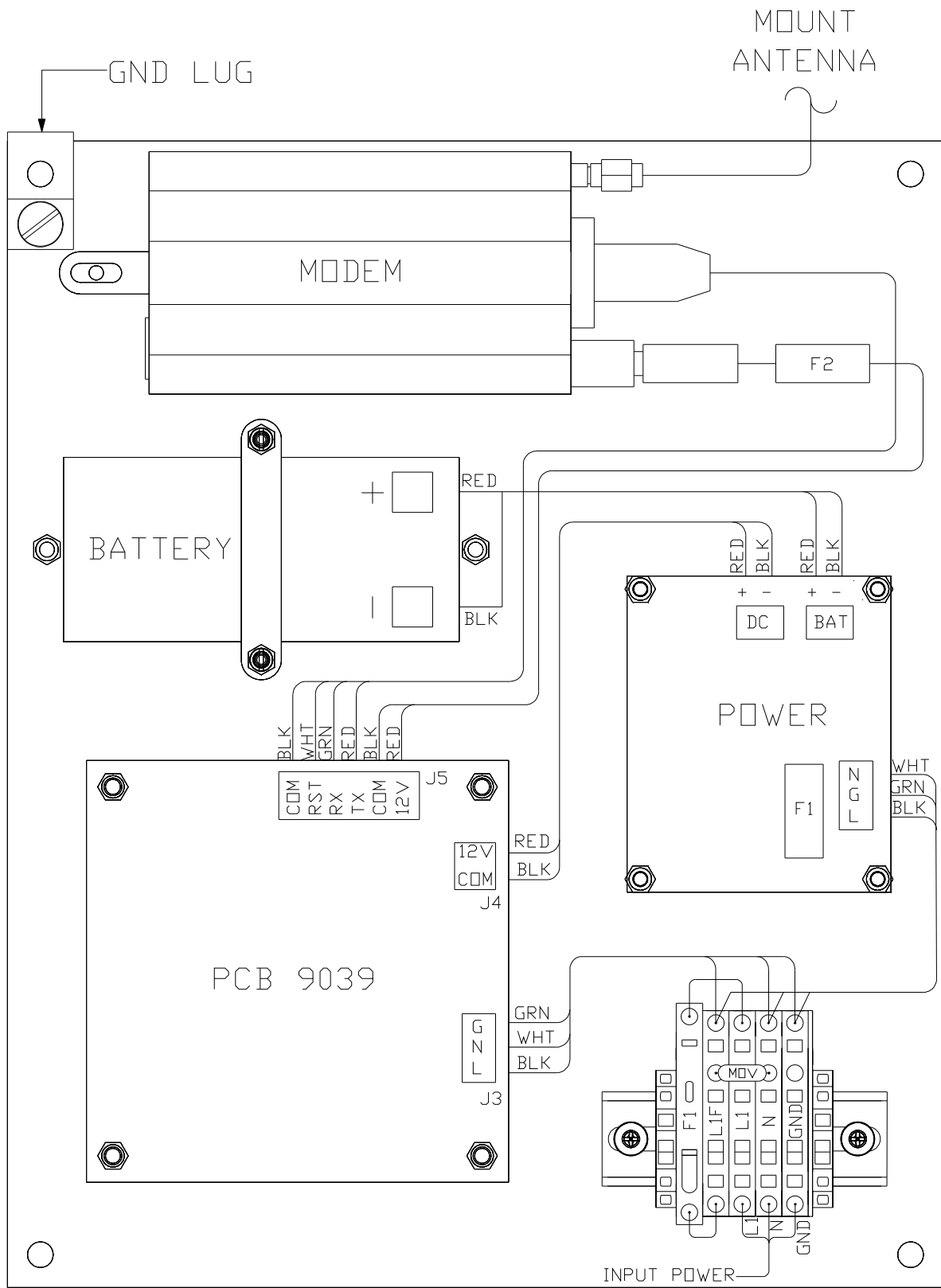


Figure 1-1 – FTW 174 Internal Wiring & Component Layout

Section 2 – Initial On-Site Wireless Service Check

Unpacking

Inspect shipping cartons for signs of damage before opening them. Check package contents against the packing list and inspect each item for visible damage. Report damage claims promptly to the freight handler.

Important

The following steps will verify wireless service in your area and must be performed at the location where the unit is to be installed. A label located on the inside front cover of the monitoring unit is provided to call attention to this process. Figure 2-1 depicts the label noted above. Prior to installation, the on-site technician should apply 120 VAC to the unit and then monitor the green LED indicator labeled “ACTIVE” on PCB 9039 for status. See Figure 3-3 for location of the LED. If wireless service is available, the LED will


indicate signal strength by a series of short blinks (1-5). Once a wireless signal is found, the unit will attempt to connect to the NOC. This operation is indicated by rapid blinking of the LED. If communication is achieved, the “ACTIVE” LED will be solid on with short blinks to indicate signal strength (1-5). This process may take several minutes. See Figure 2-1 for complete details of the “Active” LED.

Finding the Best Install Location

Move the external antenna to different locations to find the maximum signal strength available at the site, as indicated by the number of ACTIVE LED blinks. This will help determine the location where the FTW 174 should be mounted.

Upon successful completion of these steps, shut off power to the unit and proceed with installation.

ATTENTION



Prior to installation, apply power to the unit and observe the "ACTIVE" LED to verify service. Please note that this sequence may take several minutes to complete.

OFF - Initializing.

OFF with short BLINKS - Wireless network found. Number of short blinks indicates signal strength (1 - 5).

RAPID BLINKING - Communication with NOC underway. Waiting for verification.

ON with short BLINKS - Communication with NOC verified. Number of short blinks indicates signal strength (1 - 5). Begin installation.

Contact the NOC at (800) 821-5825 for technical support.

P/N 3905210
Rev A

Figure 2-1 – Wireless Service Label

Section 3 – Mounting and Installation

Mounting

The base of the unit has four (4) mounting feet as shown in Figure 3-4. Mounting hardware is not included.

Installation

AC Power Wiring

AC Power terminal block TB1 incorporates MOV1 and Fuse F1 for increased protection against AC Power transients. Also, fuseholder TB1 acts as a power disconnect to the unit. Grasp the fuseholder on the sides and pull forward to disconnect power.

Connect 120 VAC power to terminal block TB1 (L, N, GND) as shown in Figure 3-1, but leave power turned off until you are ready for activation (see Section 4). The terminal block uses spring-cage contacts to provide rugged, trouble-free connections which are vibration-proof and gas-tight, thus providing long-term stability. The conductor contact force is determined by the spring tension and so is independent of the user tightening torque as with screw type terminals.

To install a wire, follow these steps:

1. Strip the insulation, exposing **0.4 inch** (10 mm) or more of conductor.
2. Insert a standard 1/8" width screwdriver (supplied) into the rectangular slot and push. This causes the spring clip to open.
3. Insert the conductor fully into the round terminal compartment and then remove the screwdriver. The conductor automatically makes contact.

4. Check that contact is made to conductor metal and not insulation.

Dry Contact Input Wiring

Connect the equipment to be monitored via dry contact inputs as shown in Figure 3-3. A label has been provided on the inside cover of the unit to record each input, up to four (4), that is connected. Figure 3-2 depicts the dry contact input label.

RS-485 Wiring

Connect the equipment to be monitored via RS-485 as shown in Figures 3-5 or 3-6. Figure 3-3 shows the layout of the PCB 9039 board.

Antenna Mounting Bracket

The supplied Antenna Universal Mounting Bracket Kit (PN 1905353) provides multiple mounting options for the magnetic mount antenna, permitting installation in the optimum location for best signal strength and reliable communication. The bracket permits mounting on wall, Uni-strut, or pole (Figure 3-7) and the bracket material is galvanized for long life and ferrous for firm attraction of the antenna's magnetic base. The bracket also permits mounting of a photocell in either of two holes on the top plate.

Grounding

To provide increased immunity from lightning damage to the FTW 175, it is essential that the Ground Lug located in the upper left corner of the FTW baseplate (Figure 1-1) be properly connected by a No. 2 AWG conductor to the site Grounding System. Observe proper Grounding Procedures.

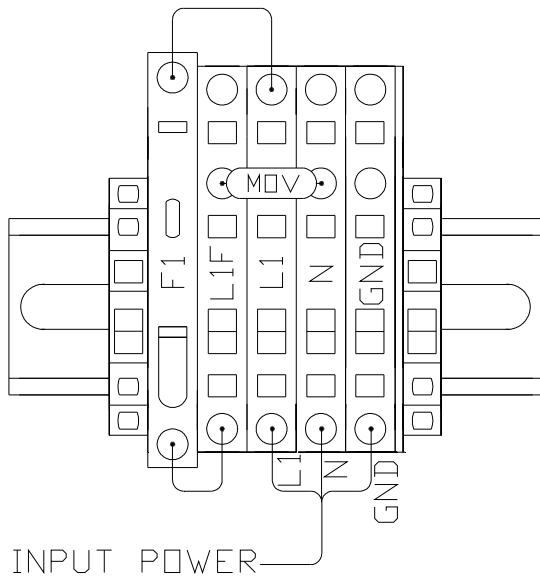


Figure 3-1 – AC Termination

DRY CONTACT INPUTS	
DESCRIPTION	ALARM (CIRCLE ONE)
1 _____	OPEN / CLOSED
2 _____	OPEN / CLOSED
3 _____	OPEN / CLOSED
4 _____	OPEN / CLOSED

Figure 3-2 – Dry Contact Input Label

Status Indicator LED's

Table 3-1 describes the LED's that are present on the PCB 9039. The location of each LED is shown in Figure 3-3.

Table 3-1 – PCB 9039 LED's

Item	Description
ACTIVE	<p>Off – Initializing.</p> <p>Off with short BLINKS – Wireless Network found. BLINKS indicate signal strength (1-5).</p> <p>Rapid BLINKING – Communication with NOC underway. Waiting for verification.</p> <p>On with short BLINKS - NOC communication verified. BLINKS indicate signal strength (1-5).</p>
232RX	The RS-232 port is receiving data from the modem.
232TX	The RS-232 port is transmitting data to the modem.
485TX	The RS-485 port is transmitting data to the lighting system.
485RX	The RS-485 port is receiving data from the lighting system.
IN1	Dry contact input #1 is closed or shorted.
IN2	Dry contact input #2 is closed or shorted.
IN3	Dry contact input #3 is closed or shorted.
IN4	Dry contact input #4 is closed or shorted.

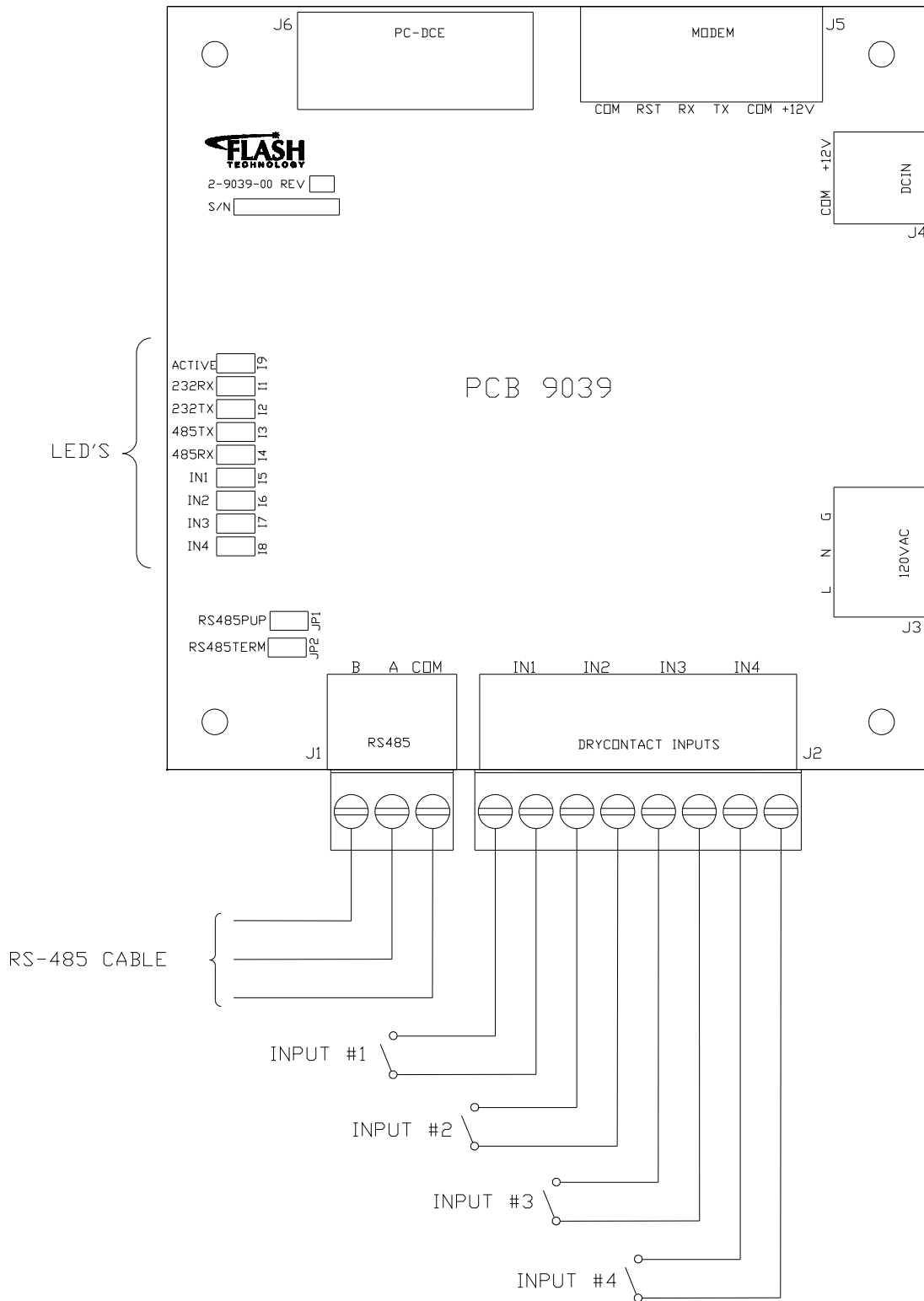


Figure 3-3 – PCB 9039 Layout and External Wiring

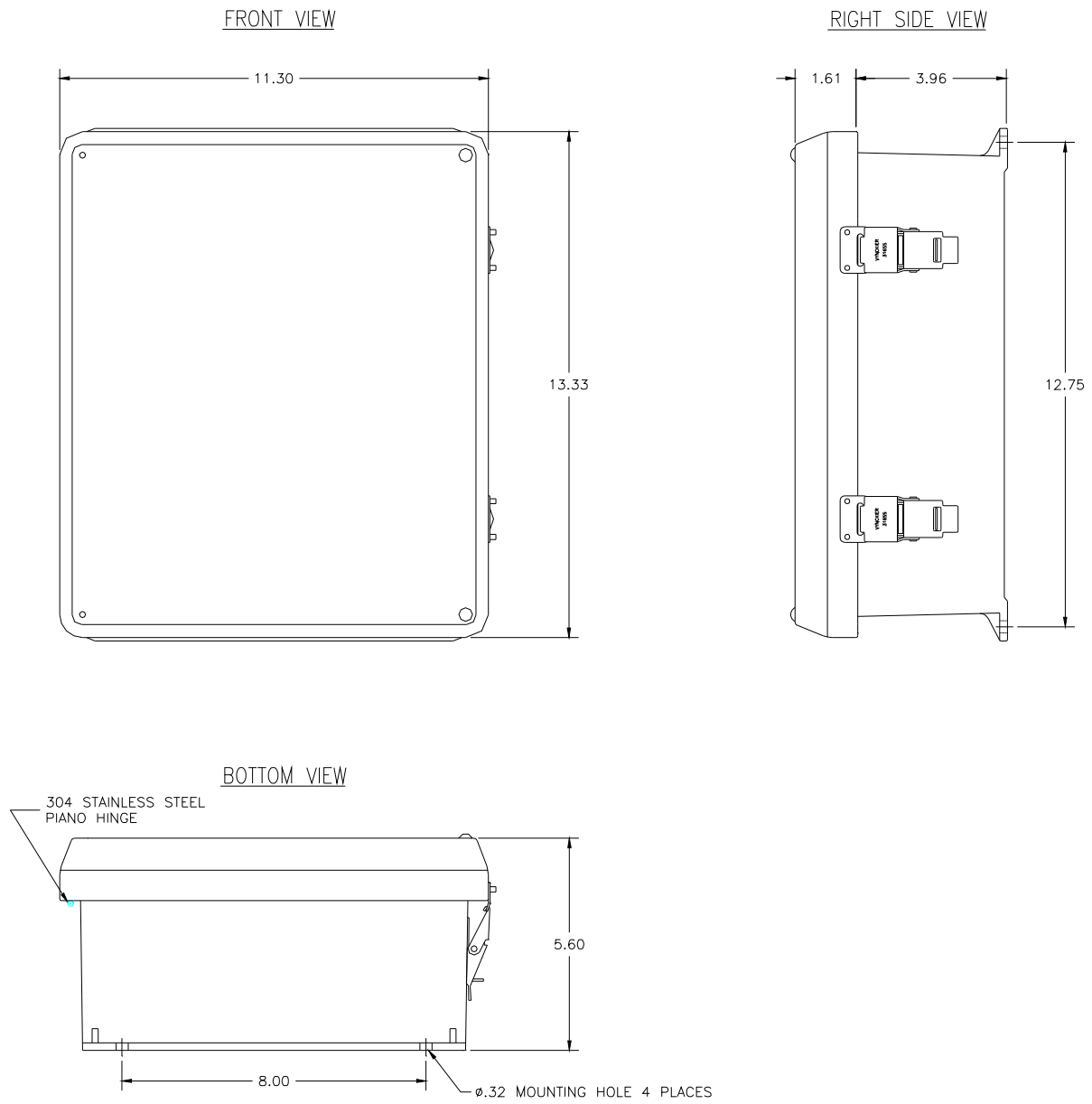


Figure 3-4 – Enclosure Mounting Footprint

NOTES:
 RS485 PORT J1 PINS 1, 2 AND 3 ON THE FTW 174 MUST BE
 CONNECTED TO J2 PINS 1, 2 AND 3 ON THE 36XX CONTROLLER.
 FTW 174: FLC 36XX
 J1 PIN 1 TO J2 PIN 1
 J1 PIN 2 TO J2 PIN 2
 J1 PIN 3 TO J2 PIN 3

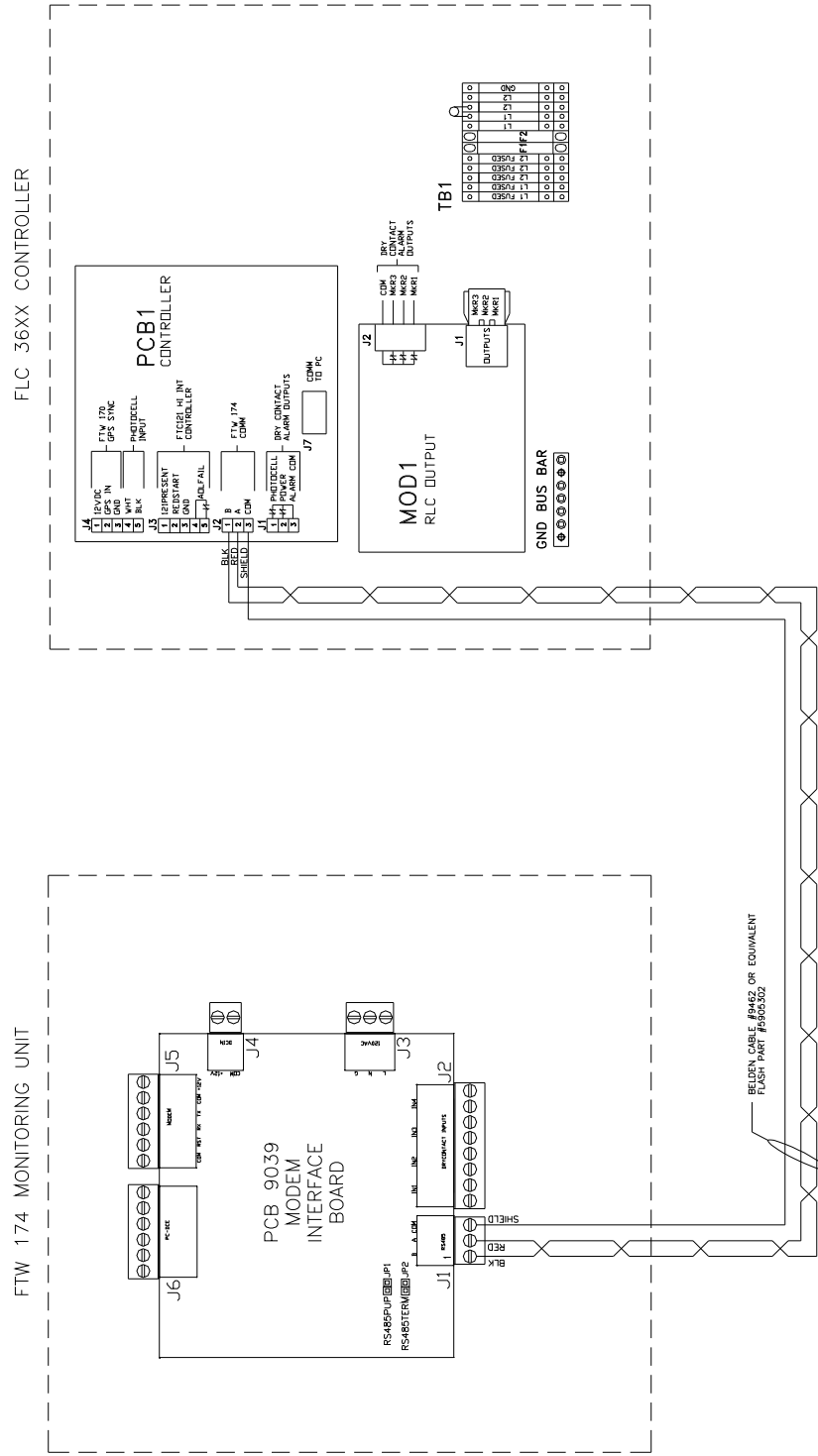


Figure 3-6 – RS-485 Installation with FLC 36XX



Wall Mount

Use screws to mount to the inside or outside wall of a shelter.

(Screws are not included in the kit.)



Horizontal Uni-strut Mount

Use spring-nuts to mount to Uni-strut.

(Spring-nuts are not included in the kit.)



Vertical Pole or H-frame post Mount

Use 3" U-bolt (*included*) to mount to pole or H-frame post. The bracket permits use of larger U-bolts, up to 5".

Figure 3-7 – Antenna Universal Mounting Bracket

Section 4 – Activation

Monitoring

Once the installation is complete, follow the procedure below to activate the service and begin monitoring:

1. Please be prepared to provide the following information:

The wireless number for this unit. See Figure 4-1. The card is located on the inside front cover.

Your name, contact number and company.

If monitoring an FCC registered tower site, the site number and FCC number.

Descriptions of the items being monitored by each input.

2. Re-apply power to the equipment and observe the “Active” LED shown in Figure 3-3. Once the LED is “On with short BLINKS”, communication with the NOC has been established. This process may take several minutes. Refer to Figure 2-1 and Table 3-2 for complete details of the “Active” LED.
3. Secure the external antenna on the Antenna Mounting Bracket in a location which provides maximum signal strength as indicated by the number of ACTIVE LED blinks
4. Connect the red wire to + (Positive) and the black wire to – (Negative) on the battery as shown in Figure 1-1.
5. Call 1-800-821-5825 to initiate monitoring while on-site. The NOC technician will request several tests to be performed to verify correct installation and operation of the system.

6. Please note that once the unit is powered and communication is established, it will automatically send a message to the NOC to initiate service and billing will begin.

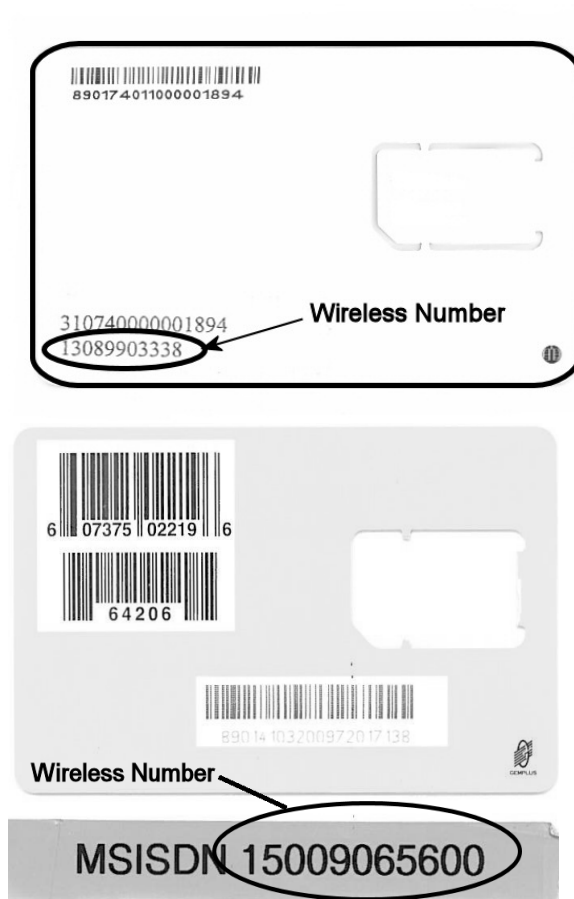


Figure 4-1 – Wireless Number

Section 5 – Recommended Spare & Replaceable Parts

Customer Service

Customer Service: (800) 821-5825

Telephone: (615) 261-2000

Facsimile: (615) 261-2600

Shipping Address:

Flash Technology
332 Nichol Mill Lane
Franklin, TN 37067

Ordering Parts

To order spare or replacement parts, contact customer service at 1-800-821-5825.

Table 5-1 – Major Replaceable Parts

Reference	Description	Part Number
MODEM	Wireless Modem (GPRS)	5905200
HARNESS	Harness, FTW 174, Modem Signal	4905205
BATTERY	12V Battery	4991875
POWER	Power Supply	5905202
POWER	Fuse 2 Amp Slow Blow 5x20 mm	11000008012
PCB 9039	Board, Modem Interface	2903911
ANTENNA	External w/ 12' (ft) cable	4905227
ANTENNA	Kit Antenna Mounting Bracket	1905353
TB1	FUSE 3 AMP 3AB	4150218
TB1	Varistor 130V	6901079

Table 5-2 – Optional Items

Reference	Description	Part Number
CABLE	RS-485; Single Pair, 22 AWG, Red/Black	5905302
CABLE	Dry Contacts; 4 Pair, 22 AWG, Red/Black	5993101

Disconnecting Power

When removing power from the equipment, ensure that the red wire to the battery is disconnected first. Reconnect battery after work is completed.

Return Material Authorization (RMA) Policy

IF A PRODUCT PURCHASED FROM FLASH TECHNOLOGY MUST BE RETURNED FOR ANY REASON (SUBJECT TO THE WARRANTY POLICY), PLEASE FOLLOW THE PROCEDURE BELOW:

Note: An RMA number must be requested from Flash Technology prior to shipment of any product. No returned product will be processed without an RMA number. This number will be the only reference necessary for returning and getting information on the product's progress.

Failure to follow the below procedure may result in additional charges and delays. Avoid unnecessary screening and evaluation charges by contacting Technical Support prior to returning material.

1. To initiate an RMA, customers should call Flash Technology's Network Operation Center at (800-821-5825) to receive technical assistance and a Service Notification number. The following information is required before a Service Notification number can be generated:

- Site Name/Number / FCC Registration number/ Call Letters or Airport Designator
- Site Owner (provide all that apply – owner, agent or subcontractor)
 - Contractor Name
 - Contractor Company
- Point of Contact Information: Name, Phone Number, Email Address, Fax Number and Cell Phone (or alternate phone number)
- Product's Serial Number
- Product's Model Number or part number
- Service Notification Number (if previously given)
- Reason for call, with a full description of the reported issue

2. The Service Notification number will then serve as a precursor to receiving an RMA number if it is determined that the product or equipment should be returned. To expedite the RMA process please provide:

- Return shipping method
- Purchase Order (if non-warranty repair)
- Shipping Address
- Bill To Address
- Any additional information to assist in resolving the issue or problem

3. A P.O. is required in advance for the replacement of product that may be under warranty. Flash will then, at its discretion issue a credit once the validity of the warranty has been determined.

4. A purchase order (P.O.) is also required in advance for all non-warranty repairs. NOTE: the purchase order is required prior to the issuance of the RMA number.

- If the P.O. number is available at the time of the call, an RMA number will be issued and the customer must then fax or email the P.O. with the RMA number as the reference, to ensure prompt processing.
- If the P.O. number is NOT available at the time of the call, a Service Notification Number will be given to the customer and should be referenced on the P.O. when faxed or emailed to RMA Rep.
- Flash will then, at its discretion repair or replace the defective product and return the product to the customer based on the shipping method selected.
- The customer may purchase a new product before sending in the existing product for repair. If Flash Technology determines the existing product is still covered under warranty a credit will be issued to the customer for the new product.

5. After receiving the Flash Technology RMA number, please adhere to the following packaging guidelines:

- All returned products should be packaged in a way to prevent damage in transit. Adequate packing should be provided taking into account the method of shipment.

Note: Flash Technology will not be responsible for damaged items if product is not returned in appropriate packaging.

6. All packages should clearly display the RMA number on the outside of all RMA shipping containers. RMA products (exact items and quantity) should be returned to:

Flash Technology
Attn: RMA #XXX
332 Nichol Mill Lane
Franklin, TN 37067

7. All RMA numbers:

- Are valid for 30 days. Products received after may result in extra screening and delays.
- Must have all required information provided before an RMA number is assigned.

Return to Stock Policy

- **Parts can be returned within 60 days of ship date and will be subject to a 25% restocking fee. Product must:**
 - Be in the original packaging
 - Not be damaged
- **After 60 days no parts can be returned**