



AC Frequency Interface Unit (FIU) for the Galaxy/Millennium Controller

With L70 – L71 Interface Units

WP-93497

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WARNING
 OPENING ENCLOSURES EXPOSE HAZARDOUS VOLTAGES.
 ALWAYS REFER SERVICE TO QUALIFIED PERSONNEL ONLY.

WARNING
 THE TRANSDUCER UNIT IS INTENDED FOR CONNECTION TO BUILDING ENTRANCE PANELBOARDS PROTECTED BY A SECONDARY SURGE ARRESTOR INTENDED FOR LOCATION CATEGORY "B" OR "C" AS DEFINED IN ANSI/IEEE C62.41-1991. THESE ARRESTORS SHOULD BE RATED FOR A MINIMUM OF 50 KA PER PHASE, WITH A CLAMPING VOLTAGE OF 1500V MAXIMUM AT 20 KA. THE ARRESTOR MUST BE CONNECTED TO ALL PHASES OF THE AC LINE AND THE NEUTRAL CONDUCTOR. THE SURGE ARRESTOR IS TO BE GROUNDED WITH THE SHORTEST AND THICKEST WIRE POSSIBLE PER APPLICABLE CODES.

WARNING
 THE TRANSDUCER UNIT IS NOT INTENDED FOR USE IN OUTDOOR APPLICATIONS.

NOTE: The FIU is not intended to be a Power Quality Analyzer. It is intended only to provide a "snapshot" view of AC power frequency. Harmonics are not viewable with this device. No phase, harmonic, or conduction angle information is provided. The Galaxy or Millennium controller can be programmed to provide a history of the AC frequency monitored by the transducer, but the sampling interval is not "real time" and events of short duration (between sampling intervals) may not be captured.

NOTE: The FIU is powered by an external DC source (24V with internal jumper connected, or 48V with the jumper disconnected). The input is protected against reverse polarity by a series diode (e.g. the unit will not sustain damage when it is connected with the polarity reversed, but will not operate until the correct DC supply polarity is connected). The FIU can operate with either + or - grounded, since the DC circuitry is totally floating from

ground (e.g. there is no internal DC ground connection in the transducer). The RPM module wires which connect to the FIU are also isolated from ground.

1. GENERAL

The AC Frequency Interface Unit kit is designed to provide a simple to install, pre-packaged solution for 110 – 240 VAC frequency monitoring applications using external monitoring systems such as the GE Critical Power Galaxy based products. The FIU is designed to provide a flexible solution for applications that require 40-70 or 400 Hz monitoring. The FIU converts AC signals to low voltage DC outputs which can be transmitted to monitoring systems. The FIU is factory calibrated, and can be field calibrated if necessary.

The FIU is factory pre-wired which greatly simplifies the installation process, since the installer only has to:

- Provide DC input from an overcurrent protected source, typically Alarm Battery Supply (ABS). Put the internal zener bypass jumper in place if a 24VDC (VS 48VDC) input is required.
- Connect AC frequency monitoring point inputs (from a 10A or 15A circuit breaker protected source – normally a branch distribution panel or the building AC mains panel) to the measurement points on TB1.
- Connect a monitoring system capable of measuring 0-3V to an easy access connection point on the FIU (Such as the Galaxy Peripheral Monitoring System “RPM” module) to permit interface with the Galaxy controller system.
- Calibrate the FIU to measure specific AC frequency values using easy to turn trim pots.

1.1 Revision Status of Units

The Revision status of the FIU can be determined by looking at the front panel label. Units with no revision status are “Pre-rev. B” units. Units with a revision status are “Rev. B and later units”. Revision B was first shipped in May, 2000. Revision B status does not involve a change in operating functionality for the FIU.

2. INTRODUCTION

AC frequency transducers are used in applications where direct measurement of AC frequency by other monitoring equipment is not possible. The frequency transducer consists of a voltage transformer and additional circuitry which converts the measured waveform into a signal that can be read by the monitoring unit. Both the transformer and signal conditioning circuitry are conveniently housed in a metal enclosure which can be mounted adjacent to the measurement points. The inputs are physically separated and transformer isolated from the outputs.

WARNING
IT IS STRONGLY RECOMMENDED THAT THIS ENTIRE MANUAL BE READ BEFORE INSTALLING THIS UNIT. OBSERVE ALL CAUTIONS AND WARNINGS TO AVOID PERSONAL INJURY OR EQUIPMENT DAMAGE.

2.1 Standard Products

Check the model list number of your unit to make sure it is the type you need. Standard options are as follows.

WP-93497 AC Frequency Interface Unit (FIU) List Numbers and Comcodes: (See note below)

List #	Comcode	Volts	Phase	Description
<i>WP-93497 L70</i>	<i>407 618 370</i>	<i>110-240 line- line or line- neutral</i>	<i>Single</i>	<i>Single phase narrow band frequency interface unit (40-70 Hz), 110-240V</i>
<i>WP-93497 L71</i>	<i>407 618 362</i>	<i>110-240 line- line or line- neutral</i>	<i>Single</i>	<i>Single phase narrow band frequency interface unit (400 Hz), 110-240V</i>

Note: Each transducer requires one connection from a 3VDC peripheral monitor module that is not furnished with the interface unit. If no spare monitor channel is available, a 3VDC peripheral monitor module should be ordered separately (See Section 15.7) .

3. FIU KIT CONTENTS

The FIU kit consists of the following:

- 1 - 40 to 70 or 400 Hz transducer kit in a metal enclosure
- 2 – ½ “ Conduit Opening Grommets (use bottom conduit openings only, See Section 7.1) if conduit not used.
- 1 - Product Manual (Programming, Installation, Troubleshooting, etc)

4. EQUIPMENT REQUIRED

For AC frequency measurements with the Galaxy controller, and for installation, the following components are required:

- Galaxy Intelligent Option card
- Galaxy Remote Peripheral Monitoring Option Card
- 0-3VDC Galaxy Remote Peripheral Monitoring Module and Current Limiting Resistors, as required
- Butt splices to connect current limiting resistors to RPM module input
- Crimp tool for resistor butt-splices (See crimp tool specification in plastic package with the connectors)
- Remote Peripheral monitoring module bus cable (Reference J85501G-1) as required
- Bus termination resistor (Only if the 0-3VDC module is the last device on the bus)
- Maximum 15A AC branch circuit over-current protection device (usually a thermal circuit breaker) rated for the voltage and number of phases monitored by the FIU. This device is mounted in the AC panel being monitored.
- Max 14 AWG wire for connecting the AC voltage source to the FIU input (consult local codes). Wire must be rated to handle branch circuit protection device current rating.

NOTE: Unit Grounding may be provided through the grounded metallic conduit, or by a separate wire from the CO GRD Bar to the identified location on the FIU (per applicable local codes).

- DC power over current protection device (usually a 1A fuse at the Alarm Battery Supply (ABS) fuse panel).
- 1 Small Jeweler’s Flathead Screwdriver and 1 Philips Screwdriver.
- Digital Voltmeter.

5. APPLICATIONS

The FIU provides accurate monitoring of:

- Commercial AC Load Circuits Frequency (PDUs)
- Engine/Generator Output Frequency
- UPS Output Frequency
- Inverter Output Frequency
- General Purpose AC Frequency Monitoring

The Galaxy controller can be programmed to provide accurate AC frequency monitoring and alarm reporting. Examples are:

- UPS output frequency too High/Low
- Inverter output frequency too High/Low
- Commercial AC Failure
- Transfer to Engine/Generator
- Engine/Generator frequency too High/Low
- High/Low AC frequency Alarms

6. SAFETY

6.1 Safety Statements

Please read and follow all safety instructions and warnings before installing, maintaining, or repairing the FIU.

The FIU is listed by Underwriters Laboratories Inc. to the requirements of UL Subject 1801, requirements for DC Power Distribution Centers for Communications Equipment, as a peripheral device for use with DC Power Distribution controllers. The Listing is based on the items noted below.

Install only in restricted access areas (dedicated equipment rooms, equipment closets, or the like) in accordance with articles 110-16, 110-17, and 110-18 of the U.S. National Electric Code (NEC), ANSI/NFPA No. 70, and pursuant to applicable local codes.

UL Listing does not include evaluation of device performance (i.e. measuring functions or for use as any safety control/monitoring device).

This equipment is to be used in controlled environments (an area where the humidity is maintained at levels that can not cause condensation on the equipment, the contaminating dust is controlled, and the steady-state ambient temperature is within the range specified).

This equipment has been evaluated for use in a continuous ambient temperature of up to 50 degrees Celsius (125 F).

The DC input power is to be connected to 48 or 24 VDC (Put zener bypass jumper in place for 24VDC operation) nominal supply that is electrically isolated from the AC mains and reliably earth grounded or, to 48 or 24 VDC power supplies evaluated to UL1950 and identified as Safety Extra Low Voltage (SELV) outputs. The DC input can be provided from a DC distribution or Alarm Battery Supply (ABS) panel using a minimum 1A overcurrent protection device (maximum 2A) at the panel, and wired per local codes. Either polarity of the DC supply can be grounded, since the FIU does not have an internal ground reference on the DC circuitry. Accidental reversal of the DC polarity will temporarily prevent the FIU from operating, and will not cause permanent damage.

The DC input and output shall not be run in the same raceway as the AC wiring. See Section 7.1 for details.

AC input from the source must be protected by a maximum 15A overcurrent branch circuit protector at the monitored source and wired per local codes.

NOTE: Unit Grounding may be provided through the grounded metallic conduit, or by a separate wire from the CO GRD Bar to the identified location on the FIU (per applicable local codes).

Please read and follow all safety instructions and warnings before installing, maintaining, or repairing the FIU.

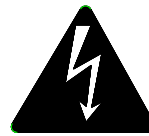
6.2 Warning Statements and Safety Symbols



The above symbol identifies the need to refer to the equipment instructions for important information.



This symbol (or equivalent) is used to identify the presence of hazardous AC mains voltages.

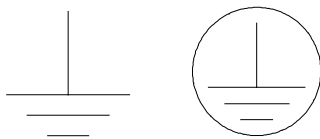


This symbol is used to identify the presence of hazardous AC or DC voltages. It may also be used to warn of hazardous energy levels.

The symbols may sometimes be accompanied by some type of statement - for example: “Hazardous voltage/energy inside. Risk of injury. This unit must be accessed only by qualified personnel.”

When working on or using this type of equipment, the following precautions should be noted:

- This unit must be installed, serviced, and operated only by skilled and qualified personnel who have the necessary knowledge and practical experience with electrical equipment and who understand the hazards that can arise when working on this type of equipment.
- Hazardous energy and/or voltages may be present in the unit and on the interface cables that can shock or cause serious injury. Follow all safety warnings and practices when servicing this equipment.
- The AC line voltage input side of the voltage terminal block (TB-1) contains hazardous AC voltages. Before making any connections to or accessing this connector, disconnect the voltage leads at the source. (Follow all lockout and tagging procedures)
- Avoid contact with bare conductors. Check for hazardous voltage levels before accessing these points on the connector.



The above symbols (or the “GND” symbol) are used to identify the safety earth ground or bonding point for the equipment.

7. MOUNTING

The FIU can be wall mounted on any flat, smooth surface using the 4 mounting holes (1/4" diam., use #12 or 3/16 hardware) provided in the rear of the unit. Correct securing hardware for the installation surface is to be used in mounting this product, and mounting is to be per appropriate industry practices. Securing hardware capable of supporting at least 4 times the weight of the product (32 lb) should be chosen to mount the product. Suitable fasteners or wall anchors should be used when mounting on masonry or drywall. The FIU weighs approximately 8 lbs.

7.1 Conduit Considerations

WARNING

Use the bottom Knockouts for all wiring and conduit entry. Keep wires from the AC voltage being monitored separate from the wires to the Remote Peripheral Module (RPM) and the DC power supply wires. Either grommet(s) or conduit entry fittings must be used at these holes to avoid insulation chafing.

The AC line voltage monitoring wires can be routed to the FIU via a single 1/2" conduit. The Data wires to the Galaxy Remote Peripheral Monitor must be routed through a separate conduit. Likewise, the DC power wires to the FIU should be separated from the AC wires. There are 2 knockout holes (1/2") on the bottom of the unit. The wires must be routed either through the grommets included in the kit, or through the appropriate conduit fittings. For safety, the AC voltage monitoring wires and the DC and Data wires should be kept separated from each other within the FIU box.

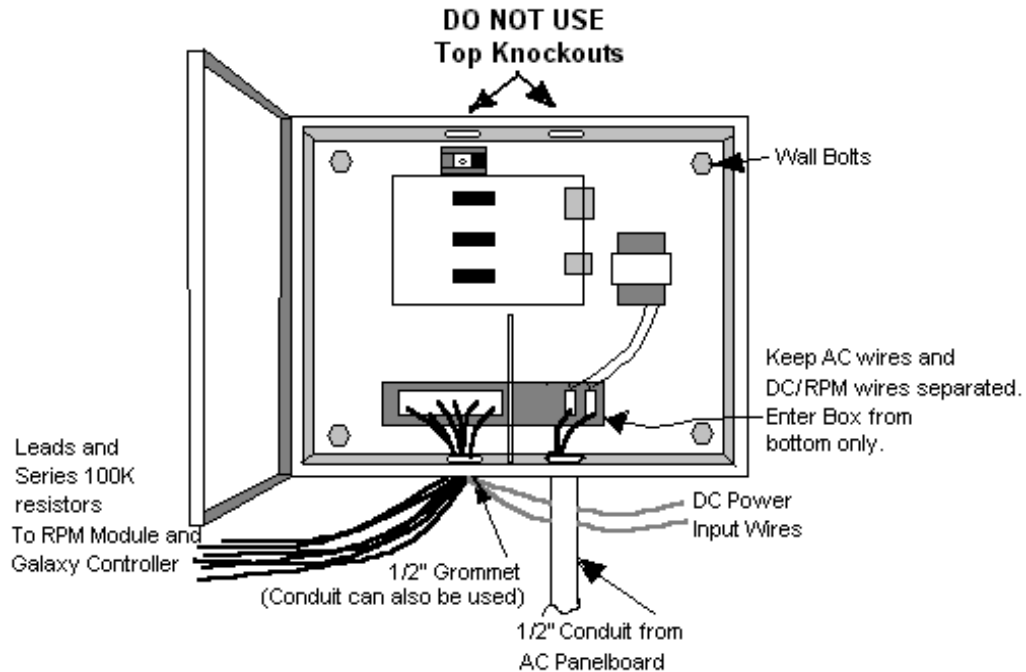


Figure 1 – Conduit and Wire Routing, Typical

8. WIRING

8.1 DC Input

DC Input can be either from a 24 or 48VDC nominal system. If 24 VDC is used, the Zener bypass jumper must be connected.

NOTE: connection of the 24VDC jumper in a 48VDC system will cause damage to the unit.

The DC input power to the unit must be protected by a 1A (Max 2A) overcurrent protection device at the DC distribution panel. Use 14 AWG stranded (maximum diameter allowed by terminals in the unit) or smaller wire capable of handling the maximum fused DC source current. Insulation should be either RHH or RHW.

8.2 GE Critical Power Remote Peripheral Monitoring Module

Before connecting the FIU to the Galaxy Remote Peripheral Monitoring Module, set the module address.

Caution: No two modules can have the same address. All addresses are valid except 00

Use the far left knockout with a grommet (if conduit is not used) for the DC wiring.

Connect the Galaxy Remote Peripheral Monitoring Module using 20-22 AWG twisted pair wire and 100K current limiting resistors to TB1 (the area marked as DC output). See Note below, and Figures 2-5.

*Note: Current Limiting Resistors are not provided with the FIU. These resistors are normally furnished as part of the Remote Peripheral Monitoring Module kits.

8.3 AC Frequency Measurement Points

Electrical knockouts in the area of the AC "Line Voltage Input" are provided on the bottom of the FIU for conduit connections. (Use this knockout for the AC input to keep the wiring separated from the DC side. Use sufficient length of wire to connect to the AC input terminal block and dress/secure wires neatly to keep separated from the DC side and the PWB). See section 7.1.

The sense leads for measuring voltage are to be originated from the load side of a maximum 15A branch circuit protector (not provided with this kit) located within an installed panelboard (the voltage point being monitored). Consult the National Electric Code for recommended wiring sizes and details on connections. The TB1 terminal block can accept wires up to 14 AWG stranded. Insulation should be type THHN or better, rated for conduit useage. The branch circuit protector must be appropriate for the panelboard being monitored.

Note: All GND references in the figures for AC inputs are ACEG points.

WARNING!!

Follow appropriate job safety procedures when working with all electrical equipment.

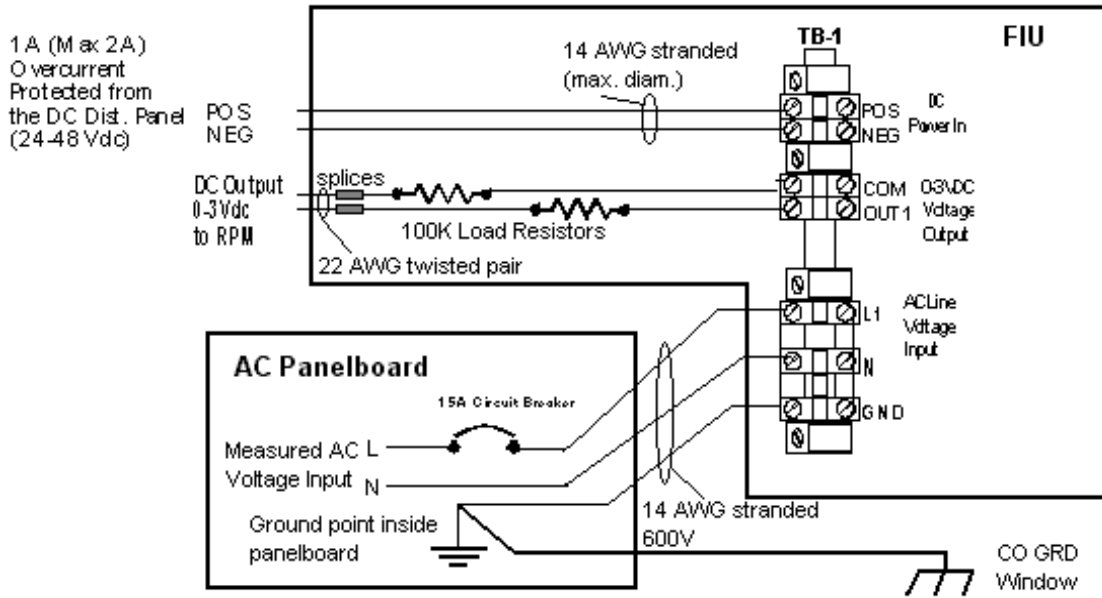


Figure 2 – Single Phase Connection, 120V-240V Line-Neutral (WP-93497 L70, L71)

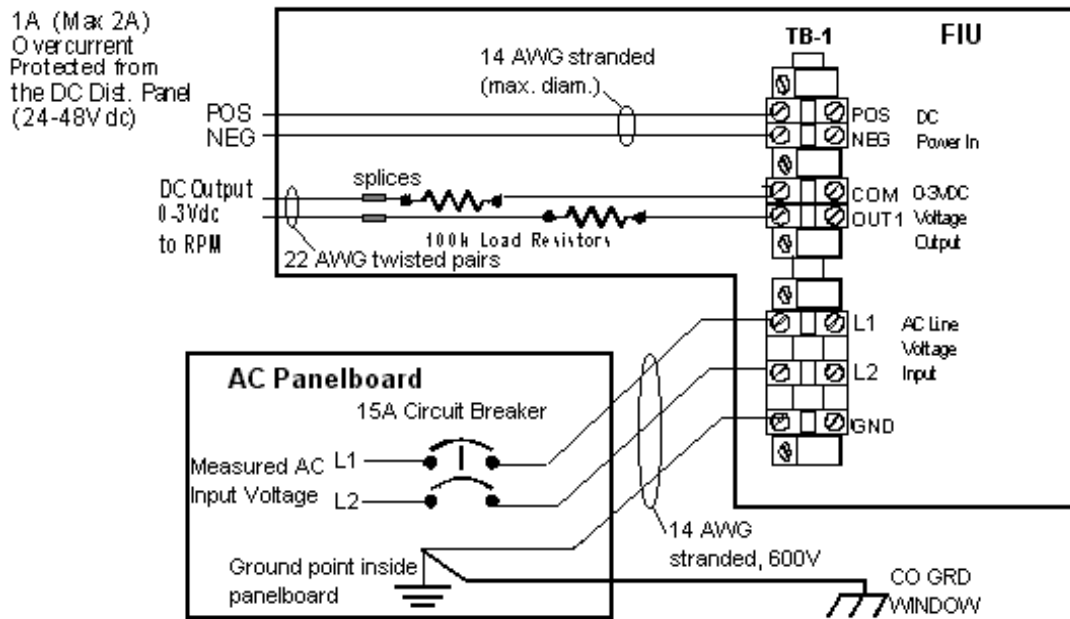


Figure 3 – 208V-240V Line-to-Line configuration (WP-93497 L70, L71)

9. TECHNICAL SPECIFICATIONS

FIU SPECIFICATIONS

Model Number	WP-93497
Configurations	
Frequency Config.	40-70 Hz, or 400Hz
Accuracy	1% for +/- 25% of Calibrated point
Electrical Ratings	
DC Input Power	
-Nominal	24VDC to 48 VDC
Operating Range	16 to 36VDC or 40 to 60 VDC
Current	50 mA max.
Max. Input Voltage	240VAC
Output Signal Voltage	1 output @ 0-3 Vdc proportional to frequency
Environmental	
Temperature	0-125 °F (-17 °C to 51 °C)
Humidity	5 – 95 % RH Non-Condensing
Size	10.25"W x 10.25"H x 4.0"D
Weight	8 lbs.
Safety Agency	Underwriters Laboratories (UL) listed

10. PROGRAMMING THE GALAXY CONTROLLER

*Before beginning, if you are an experienced Easy-View programmer, you may want to bypass this detailed section, and go to the **EasyView Quick Configuration Table**.*

10.1 EasyView Graphical User Interface (GUI) (Microsoft Windows® Based)

The address MUST BE SET by the user, using the rotary hex switches on each remote monitoring module.

Procedure

1. Verify that the FIU unit is connected to a properly connected remote monitoring module on the bus.
2. Login to the Galaxy using the EasyView program.
3. Select **Configure** menu.
4. Under the **Configure** menu, select **Monitoring**.

ALL EASYVIEW ILLUSTRATIONS REFERENCED ARE FOUND IN APPENDIX

5. Under **Monitoring**, select **Voltage Channels**. Reference *Illustration A*.

6. A screen similar to *Illustration B* shall be shown.

7. Locate the address and channel of the transducer module used.

Channel Configuration (Frequency)

Click on the **Modify** button located in the lower left hand corner of the screen. A screen similar to *Illustration C* will now be displayed.

Description field

Type in a text description of the channel. (Note that the following fields are automatically configured by the Galaxy and can not be changed: *Value, Identifier, Type, Address, TLI, Status, Channel, and Voltage Range*)

Scale Factor, Offset, Units

Scale Factor	Offset	Units
9.3	-4.3	Hz

Create User Defined Event for Alarming

For the Galaxy to generate an alarm when the monitored AC frequency is above or below a threshold, a user defined event must be created.

For this channel, using the mouse, select the *Create New User Defined Event And Modify* button in the lower left corner of the screen. *Illustration C.*

Select **OK** to confirm changes. A screen similar to *Illustration D* will now be seen.

The *Description* field is used to define the alarm condition when the AC frequency increases or decreases from the desired value being measured. An example would be *AC frequency Out of Range.*

Select the *Severity* of the alarm. *Illustration D.*

(Optional Step) Select the *LED* to be illuminated on front panel of the controller when the AC frequency is out of range. *Illustration D.*

(Optional Step) Select the alarm *Relay* that will become active when the AC frequency is out of range. *Illustration D.*

Configuration of the *Callout on Alarm* fields is beyond the scope of this manual. Refer to the Galaxy Product Manual.

To configure this user defined event as a *Latched* alarm event, *Enable* the *Latched* field. (*Latched* implies that once the alarm condition retires, the alarm will remain active until it is cleared by the user)

The final step is the *Program Line* definition. The *Program Line* should be the following (assuming channel 1 is used):
(C1XX > Upper Threshold) | (C1XX < Lower Threshold)

XX = Module Address

The “|” symbol is the symbol for **OR**. It is usually above the ENTER key on your keyboard.

This completes the FIU unit programming with EasyView. Galaxy is now ready to monitor AC frequency.

11. MAINTENANCE

The FIU should be checked on a semi-annual basis to insure the FM-1 circuit board is calibrated properly. To perform the maintenance test, use a calibrated frequency counter to measure the input line frequency. Record this reading. Using a Digital Voltmeter, compare the measured reading at TB1 with the table in Section 12 below with the display of the frequency counter. If the measured voltage is more than 1% difference the FM-1 should be field calibrated. Follow the instructions below to calibrate the analog outputs of the FM-1. No other maintenance is required for the FIU.

12. CALIBRATION

To calibrate the FIU's FIU-1 analog output, use a frequency counter (or the frequency position of a DVM) to measure the input line frequency. Record this manual reading. Use the DVM to measure the DC analog voltage by placing the black probe on “COM” and the red probe on the “OUT 1” terminal block.

To adjust the analog output voltage for the frequency use a suitable screwdriver to turn the corresponding adjustment trim pot for the phase being calibrated. Follow the example below to calibrate.

Input Line Frequency	Analog Output Voltage
----------------------	-----------------------

60 Hz	2.15 VDC
400 Hz	2.15 VDC

13. TROUBLESHOOTING

PROBLEM	Possible CAUSE	SOLUTION
No AC frequency Reading at the Galaxy, but the voltmeter has a reading.	There may be a bad connection from the source to the FIU input.	Verify that a solid connection exists between the source and the FIU input.
When a high/low frequency alarm is present, no LED on Galaxy Front Panel.	The User Defined Event and/or severity LED for the frequency transducer is not configured.	Modify User Defined Event for the frequency channel. (See Galaxy Product Manual)
The Alarm LEDs and conditions stay active after a high/low AC frequency condition is no longer present.	The channel is configured as a latched event.	Disable the Latched Event feature under the modify screen.
The frequency values reported by Galaxy are out of the specified accuracy range.	The Scale Factor and Offset values may have been changed.	Change the Scale Factor and Offset values.
No alarms are generated when the alarm thresholds are exceeded.	The User Defined Event for AC frequency Reporting may have been changed.	Verify that the Alarm configuration for the User Defined Event is correct.

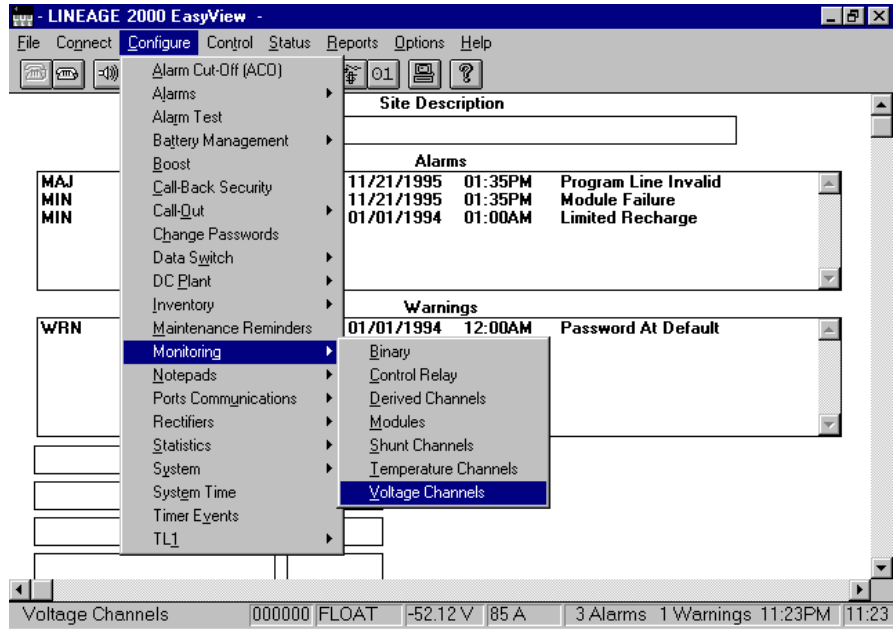
14. EASYVIEW QUICK CONFIGURATION TABLE

(XX=Module Address)

Channel - Frequency	Required	Optional	Entry for Required Values; Example for Optional Values
Description		Yes	AC Frequency
Scale Factor	Yes		9.3
Offset	Yes		-4.3
UDE Description		Yes	AC Frequency Out of Range
Severity		Yes	Major
LED		Yes	AC
Alarm Relay		Yes	AC
Program Line	Yes		(C1XX > Upper Threshold) (C1XX < Lower Threshold)
Latched		Yes	Disable

15. APPENDIX 1

15.1 Illustration A



15.2 Illustration B

ID#	Addr	Chan	Description	Range	Value	State
C130	30	1	0mV-110mV Chan 1 Addr 30	-10.0mV - 110.0mV	-0.03 mV	OK
C230	30	2	0mV-110mV Chan 2 Addr 30	-10.0mV - 110.0mV	-0.01 mV	OK
C330	30	3	0mV-110mV Chan 3 Addr 30	-10.0mV - 110.0mV	-0.13 mV	OK
C430	30	4	0mV-110mV Chan 4 Addr 30	-10.0mV - 110.0mV	0.01 mV	OK
C530	30	5	0mV-110mV Chan 5 Addr 30	-10.0mV - 110.0mV	-0.02 mV	OK
C630	30	6	0mV-110mV Chan 6 Addr 30	-10.0mV - 110.0mV	-0.01 mV	OK
C135	35	1	0V-3V Chan 1 Addr 35	-0.0V - 3.0V	2.17 V	OK
C235	35	2	0V-3V Chan 2 Addr 35	-0.0V - 3.0V	-0.00 V	OK
C335	35	3	0V-3V Chan 3 Addr 35	-0.0V - 3.0V	-0.00 V	OK
C435	35	4	0V-3V Chan 4 Addr 35	-0.0V - 3.0V	-0.00 V	OK
C535	35	5	0V-3V Chan 5 Addr 35	-0.0V - 3.0V	-0.00 V	OK
C635	35	6	0V-3V Chan 6 Addr 35	-0.0V - 3.0V	-0.00 V	OK
C136	36	1	0V-3V Chan 1 Addr 36	-0.0V - 3.0V	2.17 V	OK
C236	36	2	0V-3V Chan 2 Addr 36	-0.0V - 3.0V	-0.00 V	OK
C336	36	3	0V-3V Chan 3 Addr 36	-0.0V - 3.0V	0.00 V	OK
C436	36	4	0V-3V Chan 4 Addr 36	-0.0V - 3.0V	-0.00 V	OK
C536	36	5	0V-3V Chan 5 Addr 36	-0.0V - 3.0V	-0.00 V	OK
C636	36	6	0V-3V Chan 6 Addr 36	-0.0V - 3.0V	-0.00 V	OK
C13A	3A	1	0V-16V Chan 1 Addr 3A	-0.1V - 16.0V	2.20 V	OK
C23A	3A	2	0V-16V Chan 2 Addr 3A	-0.1V - 16.0V	4.40 V	OK
C33A	3A	3	0V-16V Chan 3 Addr 3A	-0.1V - 16.0V	6.61 V	OK
C43A	3A	4	0V-16V Chan 4 Addr 3A	-0.1V - 16.0V	8.81 V	OK
C53A	3A	5	0V-16V Chan 5 Addr 3A	-0.1V - 16.0V	11.02 V	OK
C63A	3A	6	0V-16V Chan 6 Addr 3A	-0.1V - 16.0V	13.21 V	OK
C13C	3C	1	0V-70V Chan 1 Addr 3C	-0.5V - 70.0V	52.13 V	OK
C23C	3C	2	0V-70V Chan 2 Addr 3C	-0.5V - 70.0V	-0.00 V	OK
C33C	3C	3	0V-70V Chan 3 Addr 3C	-0.5V - 70.0V	-0.00 V	OK
C43C	3C	4	0V-70V Chan 4 Addr 3C	-0.5V - 70.0V	0.00 V	OK

15.3 Illustration C

Peripheral Monitor [X]

Monitoring Channels (Voltage)

Description	AC Frequency	Value	0.03 mV
Identifier	C130	Type	Voltage
TL1		Address	30
	Status	ATTACHED	Channel
			1
		Units	Hz
		Offset	-4.3
		Scale Factor	9.3
Voltage Range	0 - 3 V		

(RAW - OFFSET) X (SCALE FACTOR) = Channel Value UNITS

15.4 Illustration D

Alarms [X]

Description AC Frequency Out of Range

Identifier U0001 LED RM

Severity MAJ Relay

TL1

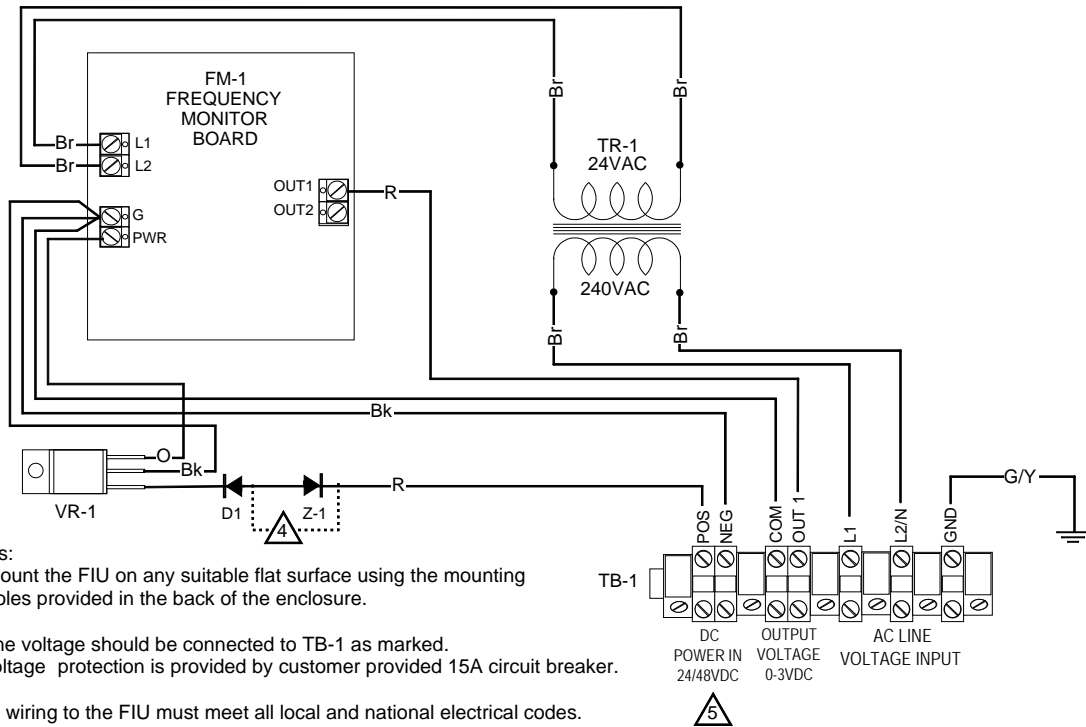
Call Out On Alarm

Notify On Occur DISABLE
 Notify On Retire DISABLE
 NAG On Occur DISABLE
 Notify Delay 0 0-540 seconds
 Notify Destination(s)
 P1 P2 P3 P4

Latched DISABLE

Program Line
C130 < 55

15.5 FIU Internal Wiring Diagram (WP-93497 L70, L71)



Notes:

1. Mount the FIU on any suitable flat surface using the mounting holes provided in the back of the enclosure.
2. Line voltage should be connected to TB-1 as marked.
Voltage protection is provided by customer provided 15A circuit breaker.
3. All wiring to the FIU must meet all local and national electrical codes.
4. Put zener bypass jumper across for 24VDC input.
5. For -48VDC Neg = Bat
For +24VDC Pos = Bat
For -24VDC Neg = Bat

Install only in restricted areas (dedicated equipment rooms, equipment closets, or the like) in accordance with articles 110-16, 110-17 and 110-18 of the U.S. National Electrical Code (NEC), ANSI/NFPA No. 70, and pursuant to applicable local codes.

This equipment is to be used in controlled environments.



Before making any connections to this equipment, refer to the product documentation for safety precautions, important connection and operating considerations and proper hardware (wire, lugs, and crimping tools).

15.6 FIU Unit Dimensions

15.7 FIU Parts List

Comcode	Used With List #(s)	Part Number	Description	Qty
408280634	70	WP-93497-70-MA	Major Assembly - Transformer section - includes backplate and all components (transformers, terminal blocks etc.)	1
408270916	70	WP-93497-PS24	Power Regulator 48/24VDC harness assembly(includes IN004 diode, 20V Zener harnessed as a one assembly)	1
408271013	70	WP-93497-TR240	Isolation Transformer 240VAC Pri / 24VAC Sec.(TR-)	1
408280659	70	WP-93497-70-TB1	Terminal Block (TB-1)	1
408280667	70	WP-93497-FM1	Frequency Transducer (PCB FM-1)	1
408280998	71	WP-93497-71-MA	Major Assembly - Transformer section - includes backplate and all components (transformers, terminal blocks etc.)	1
408270916	71	WP-93497-PS24	Power Regulator 48/24VDC harness assembly(includes IN004 diode, 20V Zener harnessed as a one assembly)	1
408271013	71	WP-93497-TR240	Isolation Transformer 240VAC Pri / 24VAC Sec.(TR-)	1
408280642	71	WP-93497-71-TB1	Terminal Block (TB-1)	1
408280667	71	WP-93497-FM1	Frequency Transducer (PCB FM-1)	1
108040890	AS Needed	WP-93497-LUC221A	Galaxy Peripheral Monitoring Module (listed for ordering purposes only, if req'd)	1
847635851	AS Needed	WP-93497-LUC221TB	Terminal Block – Monitoring Module (listed for ordering purposes only, if req'd)	1