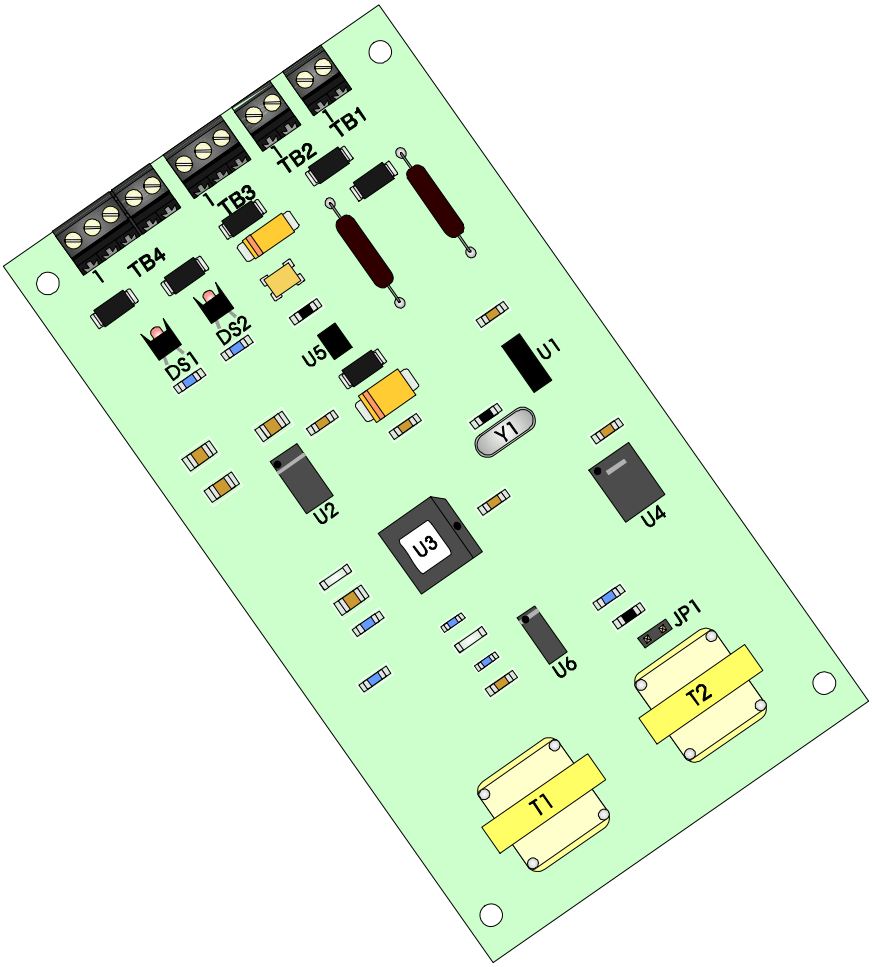
Low Power Transmitter Interface Board Part No. 392950-01-4

For The Following Bristol Instruction Manuals: CI-3530-20B & CI-3530-25B



IMPORTANT! READ INSTRUCTIONS BEFORE STARTING!

Be sure that these instructions are carefully read and understood before any operation is attempted. Improper use of this device in some applications may result in damage or injury. The user is urged to keep this book filed in a convenient location for future reference.

These instructions may not cover all details or variations in equipment or cover every possible situation to be met in connection with installation, operation or maintenance. Should problems arise that are not covered sufficiently in the text, the purchaser is advised to contact Bristol for further information.

EQUIPMENT APPLICATION WARNING

The customer should note that a failure of this instrument or system, for whatever reason, may leave an operating process without protection. Depending upon the application, this could result in possible damage to property or injury to persons. It is suggested that the purchaser review the need for additional backup equipment or provide alternate means of protection such as alarm devices, output limiting, fail-safe valves, relief valves, emergency shutoffs, emergency switches, etc. If additional in-formation is required, the purchaser is advised to contact Bristol .

RETURNED EQUIPMENT WARNING

When returning any equipment to Bristol for repairs or evaluation, please note the following: The party sending such materials is responsible to ensure that the materials returned to Bristol are clean to safe levels, as such levels are defined and/or determined by applicable federal, state and/or local law regulations or codes. Such party agrees to indemnify Bristol and save Bristol harmless from any liability or damage which Bristol may incur or suffer due to such party's failure to so act.

ELECTRICAL GROUNDING

Metal enclosures and exposed metal parts of electrical instruments must be grounded in accordance with OSHA rules and regulations pertaining to "Design Safety Standards for Electrical Systems," 29 CFR, Part 1910, Subpart S, dated: April 16, 1981 (OSHA rulings are in agreement with the National Electrical Code).

The grounding requirement is also applicable to mechanical or pneumatic instruments that include electrically-operated devices such as lights, switches, relays, alarms, or chart drives.

EQUIPMENT DAMAGE FROM ELECTROSTATIC DISCHARGE VOLTAGE

This product contains sensitive electronic components that can be damaged by exposure to an electrostatic discharge (ESD) voltage. Depending on the magnitude and duration of the ESD, this can result in erratic operation or complete failure of the equipment. Read supplemental document S14006 at the back of this manual for proper care and handling of ESD-sensitive components.

WARRANTY

A. Bristol warrants that goods described herein and manufactured by Bristol are free from defects in material and workmanship for one year from the date of shipment unless otherwise agreed to by Bristol in writing.

B. Bristol warrants that goods repaired by it pursuant to the warranty are free from defects in material and workmanship for a period to the end of the original warranty or ninety (90) days from the date of delivery of repaired goods, whichever is longer.

C. Warranties on goods sold by, but not manufactured by Bristol, are expressly limited to the terms of the warranties given by the manufacturer of such goods.

D. All warranties are terminated in the event that the goods or systems or any part thereof are (i) misused, abused or otherwise damaged, (ii) repaired, altered or modified without Bristol's consent, (iii) not installed, maintained and operated in strict compliance with instructions furnished by Bristol, or (iv) worn, injured or damaged from abnormal or abusive use in service time.

E. THESE WARRANTIES ARE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED (INCLUDING WITHOUT LIMITATION WARRANTIES AS TO MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE), AND NO WARRANTIES, EXPRESS OR IMPLIED, NOR ANY REPRESENTATIONS, PROMISES, OR STATEMENTS HAVE BEEN MADE BY BRISTOL UNLESS ENDORSED HEREIN IN WRITING. FURTHER, THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION OF THE FACE HEREOF.

F. No agent of Bristol is authorized to assume any liability for it or to make any written or oral warranties beyond those set forth herein.

REMEDIES

A. Buyer's sole remedy for breach of any warranty is limited exclusively to repair or replacement without cost to Buyer of any goods or parts found by Seller to be defective if Buyer notifies Bristol in writing of the alleged defect within ten (10) days of discovery of the alleged defect and within the warranty period stated above, and if the Buyer returns such goods to Bristol's Watertown office, unless Bristol's Water-town office designates a different location, transportation prepaid, within thirty (30) days of the sending of such notification and which upon examination by Bristol proves to be defective in material and workmanship. Bristol is not responsible for any costs of removal, dismantling or reinstallation of allegedly defective or defective goods. If a Buyer does not wish to ship the product back to Bristol, the Buyer can arrange to have a Bristol service person come to the site. The Service person's transportation time and expenses will be for the account of the Buyer. However, labor for warranty work during normal working hours is not chargeable.

B. Under no circumstances will Bristol be liable for incidental or consequential damages resulting from breach of any agreement relating to items included in this quotation, from use of the information herein or from the purchase or use by Buyer, its em-ployees or other parties of goods sold under said agreement.

How to return material for Repair or Exchange

Before a product can be returned to Bristol for repair, upgrade, exchange, or to verify proper operation, form (GBU 13.01) must be completed in order to obtain a RA (Return Authorization) number and thus ensure an optimal lead time. Completing the form is very important since the information permits the Bristol Repair Dept. to effectively and efficiently process the repair order.

You can easily obtain a RA number by:

A. FAX
Completing the form (GBU 13.01) and faxing it to (860) 945-3875. A Bristol Repair Dept. representative will return call (or other requested method) with a RA number.

B. E-MAIL
Accessing the form (GBU 13.01) via the Bristol Web site (www.bristolbabcock.com) and sending it via E-Mail to brepair@bristolbabcock.com. A Bristol Repair Dept. representative will return E-Mail (or other requested method) with a RA number.

C. Mail
Mail the form (GBU 13.01) to

Bristol Inc.
Repair Dept.
1100 Buckingham Street
Watertown, CT 06795

A Bristol Repair Dept. representative will return call (or other requested method) with a RA number.

D. Phone
Calling the Bristol Repair Department at (860) 945-2442. A Bristol Repair Department representative will record a RA number on the form and complete Part I, then send the form to the Customer via fax (or other requested method) for Customer completion of Parts II & III.

A copy of the completed Repair Authorization Form with issued RA number should be included with the product being returned. This will allow us to quickly track, repair, and return your product to you.

Bristol Repair Authorization Form (off-line completion)

(Providing this information will permit Bristol to effectively and efficiently process your return. Completion is required to receive optimal lead time. Lack of information may result in increased lead times.)

Date_____ **RA #**_____**SH** **Line No.**_____

Standard Repair Practice is as follows: Variations to this is practice may be requested in the "Special Requests" section.

- Evaluate / Test / Verify Discrepancy
- Repair / Replace / etc. in accordance with this form
- Return to Customer

Please be aware of the Non warranty standard charge:

- There is a $100 minimum evaluation charge, which is applied to the repair if applicable (√ in "returned" B,C, or D of part III below)

Part I Please complete the following information for single unit or multiple unit returns

Address No. _____ **(office use only)** **Address No.** _____**(office use only)**

Bill to :_____ **Ship to:**_____

_____ _____

_____ _____

Purchase Order:_____ **Contact Name:**_____

Phone:_____ **Fax:**_____**E-Mail:** _____

Part II Please complete Parts II & III for each unit returned

Model No./Part No._____ **Description** _____

Range/Calibration _____ **S/N** _____

Reason for return: ☐ Failure ☐ Upgrade ☐ Verify Operation ☐ Other _____

1. Describe the conditions of the failure (Frequency/Intermittent, Physical Damage, Environmental Conditions, Communication, CPU watchdog, etc.)

_____

_____

_____

_____(Attach a separate sheet if necessary)

2. Comm. interface used: ☐ Standalone ☐ RS-485 ☐ Ethernet ☐ Modem (PLM (2W or 4W) or SNW) ☐Other:_____

3. What is the **Firmware** revision? _____ What is the **Software** & version? _____

Part III If checking "replaced" for any question below, check an alternate option if replacement is not available

A. If product is within the warranty time period but is excluded due to Bristol's warranty clause, would you like the product: ☐ repaired ☐ returned ☐ replaced ☐ scrapped?

B. If product were found to exceed the warranty period, would you like the product: ☐repaired ☐ returned ☐ replaced ☐ scrapped?

C. If product is deemed not repairable would you like your product: ☐ returned ☐ replaced ☐ scrapped?

D. If Bristol is unable to verify the discrepancy, would you like the product: ☐ returned ☐ replaced ☐ *see below?

* Continue investigating by contacting the customer to learn more about the problem experienced? The person to contact that has the most knowledge of the problem is: _____ phone_____

If we are unable to contact this person the backup person is: _____ phone_____

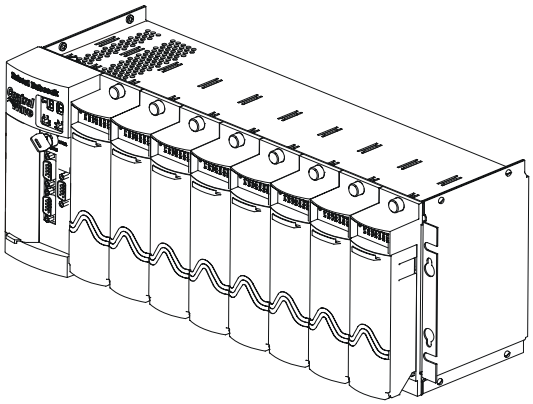
Special Requests: _____

_____

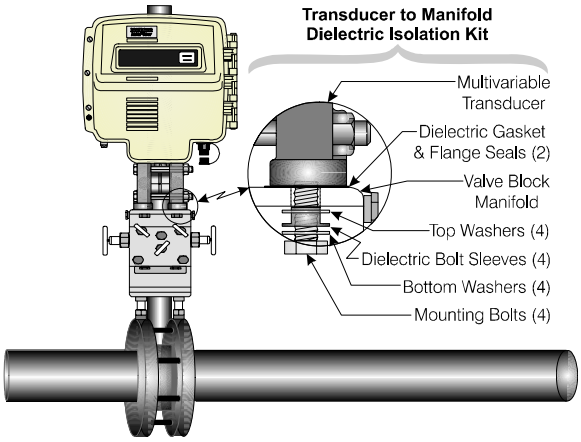
Ship prepaid to: **Bristol Inc., Repair Dept., 1100 Buckingham Street, Watertown, CT 06795**
Phone: 860-945-2442 Fax: 860-945-2220 Form GBU 13.01 Rev. C 04/27/06

Bristol
Training

GET THE MOST FROM YOUR BRISTOL BABCOCK INSTRUMENT OR SYSTEM



- Avoid Delays and problems in getting your system on-line
- Minimize installation, start-up and maintenance costs.
- Make the most effective use of our hardware and software.
- Know your system.



As you know, a well-trained staff is essential to your operation. Bristol Inc. offers a full schedule of classes conducted by full-time, professional instructors. Classes are offered throughout the year at three locations: Houston, Orlando and our Watertown, CT headquarters. By participating in our training, your personnel can learn how to install, calibrate, configure, program and maintain any and all Bristol products and realize the full potential of your system.

For information or to enroll in any class, contact our training department in Watertown at (860) 945-2343. For Houston classes, you can also contact our Houston office, at (713) 685-6200.

A Few Words About Bristol Inc.

For over 100 years, Bristol® has been providing innovative solutions for the measurement and control industry. Our product lines range from simple analog chart recorders, to sophisticated digital remote process controllers and flow computers, all the way to turnkey SCADA systems. Over the years, we have become a leading supplier to the electronic gas measurement, water purification, and wastewater treatment industries.

On off-shore oil platforms, on natural gas pipelines, and maybe even at your local water company, there are Bristol Inc. instruments, controllers, and systems running year-in and year-out to provide accurate and timely data to our customers.

Getting Additional Information

In addition to the information contained in this manual, you may receive additional assistance in using this product from the following sources:

Help Files / Release Notes

Many Bristol software products incorporate help screens. In addition, the software typically includes a 'read me' release notes file detailing new features in the product, as well as other information which was available too late for inclusion in the manual.

Contacting Bristol Inc. Directly

Bristol's world headquarters is located at 1100 Buckingham Street, Watertown, Connecticut 06795, U.S.A.

Our main phone numbers are:

(860) 945-2200
(860) 945-2213 (FAX)

Regular office hours are Monday through Friday, 8:00AM to 4:30PM Eastern Time, excluding holidays and scheduled factory shutdowns. During other hours, callers may leave messages using Bristol's voice mail system.

Telephone Support - Technical Questions

During regular business hours, Bristol's Application Support Group can provide telephone support for your technical questions.

For technical questions about TeleFlow products call (860) 945-8604.

For technical questions about **Control**Wave call (860) 945-2394 or (860) 945-2286.

For technical questions regarding Bristol's **OpenEnterprise** product, call (860) 945-3865 or e-mail: **scada@bristolbabcock.com**

For technical questions regarding **ACCOL** products, **OpenBSI Utilities**, **UOI** and all other software except for **Control**Wave and **OpenEnterprise** products, call (860) 945-2286.

For technical questions about **Network 3000** hardware, call (860) 945-2502.

You can e-mail the Application Support Group at: **bsupport@bristolbabcock.com**

The Application Support Group maintains an area on our web site for software updates and technical information. Go to: **www.bristolbabcock.com/services/techsupport/**

For assistance in interfacing Bristol hardware to radios, contact Bristol's **Communication Technology Group** in Orlando, FL at **(407) 629-9463 or (407) 629-9464**.

You can e-mail the Communication Technology Group at:
orlandoRFgroup@bristolbabcock.com

Telephone Support - Non-Technical Questions, Product Orders, etc.

Questions of a non-technical nature (product orders, literature requests, price and delivery information, etc.) should be directed to the nearest sales office (listed on the rear cover of this manual) or to your Bristol-authorized sales representative.

Please call the main Bristol Inc. number (860-945-2200) if you are unsure which office covers your particular area.

Visit our Site on the World Wide Web

For general information about Bristol Inc. and its products, please visit our site on the World Wide Web at: **www.bristolbabcock.com**

Training Courses

Bristol's Training Department offers a wide variety of courses in Bristol hardware and software at our Watertown, Connecticut headquarters, and at selected Bristol regional offices, throughout the year. Contact our Training Department at **(860) 945-2343** for course information, enrollment, pricing, and scheduling.

PIP-TIBS3530
LOW POWER TRANSMITTER INTERFACE BOARD
PT. NO. 392950-01-4

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Section 1
INTRODUCTION

1.1 DESCRIPTION

Low Power Transmitter Interface Boards allow up to two (2) Bristol, Series 3508 or Series 3808 Transmitters to communicate with an ACCOL loaded host TeleFlow 3530-20B Electronic Gas Measurement Computer (EGMC) or 3530-25B TeleRTU. The EGMC/RTU polls and stores data from each transmitter and communicates with the network. Two LEDS on the LPTI Board [CD (DS1) & RTS (DS2)] indicate the communication status.

The LPTI Board is housed in the TeleFlow Plus or TeleRTU Plus enclosure and is interfaced to a TeleFlow I/O Expansion Board. LPTI Boards are powered by a 12V power supply or battery. LPTI Boards contain one jumper (JP1) for configuration purposes.

The LPTI Board (Figure 1) is wired to the TeleFlow I/O Expansion Board connector (TB5) and is mounted with Snap Track (holder) and Mounting Bracket as illustrated in Figure 2.

1.1.1 Transmitter Operation

3508 Series
Each Transmitter must be assigned a unique address via the SMARTKIT program as described in Section 4.2 PROGRAM LOADING AND STARTUP of the appropriate 3508 Transmitter manual. Additionally, all Transmitters wired to the TI Board must be operated in the minimum current mode (3.8 mA). This mode is selected via the SMARTKIT program as described in Section 4.7 TRANSMITTER OPERATING MODES of the appropriate 3508 Transmitter manual, i.e., CI-3508-10C, CI-3508-30C or CI-3508-99C.

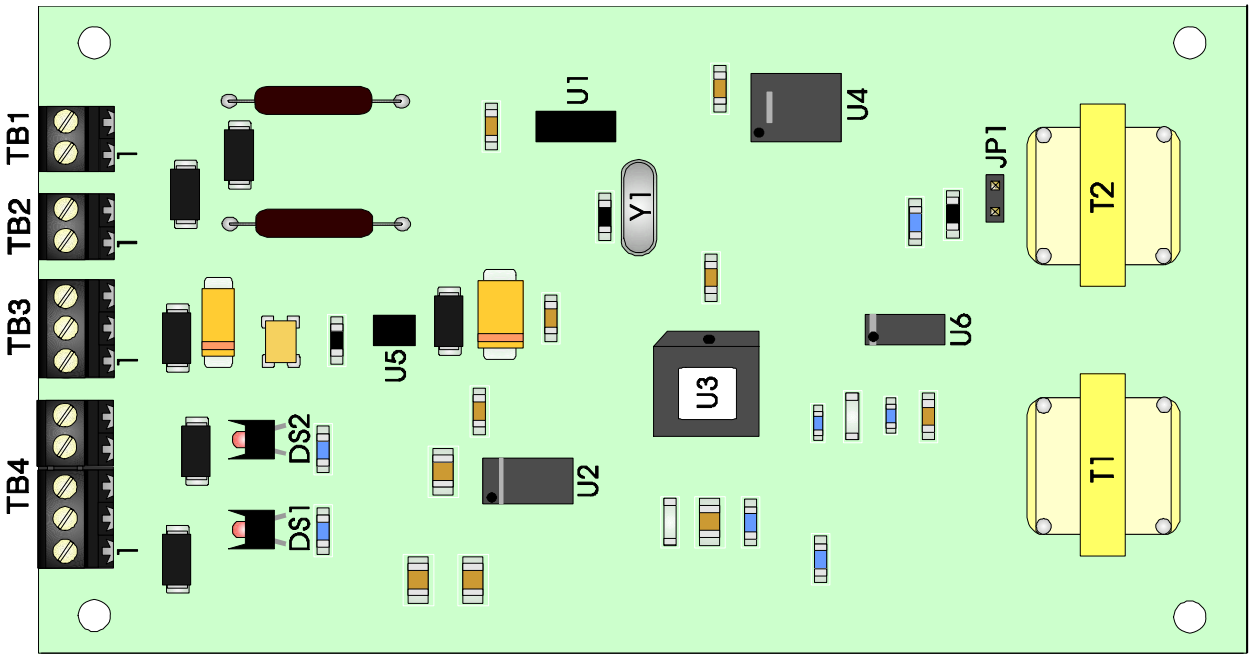

Figure 1 - Transmitter Interface Board P/N 392950-01-4

3808 MVT Series
Each Model 3808 MVT Transmitter must be assigned a unique address via the WebBSI Sign On/Off Menu (see Section 3 of Customer Instruction Manual CI-3808). Additionally, only analog versions of the 3808 MVT can be interfaced to a Transmitter Interface Board.

1.2 LED INDICATORS

The LPTIB contains two LEDs which have the following functions: Carrier Detect (CD) and Request to Send (RTS). When the board is sending a Request To Send, LED DS2 (RTS) will be ON and LED DS1 (CD) will be OFF. Conversely, when the LPTIB is receiving data from a 3508/3808 Transmitter, LED DS2 (RTS) will be OFF and LED DS1 - Carrier Detect (CD) will be ON.

1.3 JUMPER JP1

Jumper JP1 is used to configure the LPTIB for operation with one or two 3508/3808 Transmitters. If only one 3508/3808 Transmitter is to be connected to the LPTIB, Jumper JP1 must be installed across JP1-1 and JP1-2. Additionally, when only one 3508/3808 Transmitter is to be connected to the LPTIB, it must be connected to connector TB1. When two 3508/3808 Transmitters are connected to the LPTIB, Jumper JP1 must be removed and stored in either JP1-1 or JP1-2.

Section 2
INSTALLATION & SERVICE

2.1 REMOVAL/REPLACEMENT & INSTALLATION OF THE LPTIB

2.1.1 Removal/Replacement of the Low Power Transmitter Interface Bd.

An installed LPTI Board option will contain the following parts:

1. LPTI Board (with removable Terminal Blocks
2. Dual PCB Mounting Bracket
3. Snap Track
4. LPTI Board Cables (Power & RS-232 Intf.)
5. Two #8-32 x ¼" SEM Screws
6. Two #8-32 x 3/8" Pan Head Screws and Two #7-32 Elastic Locking Nuts

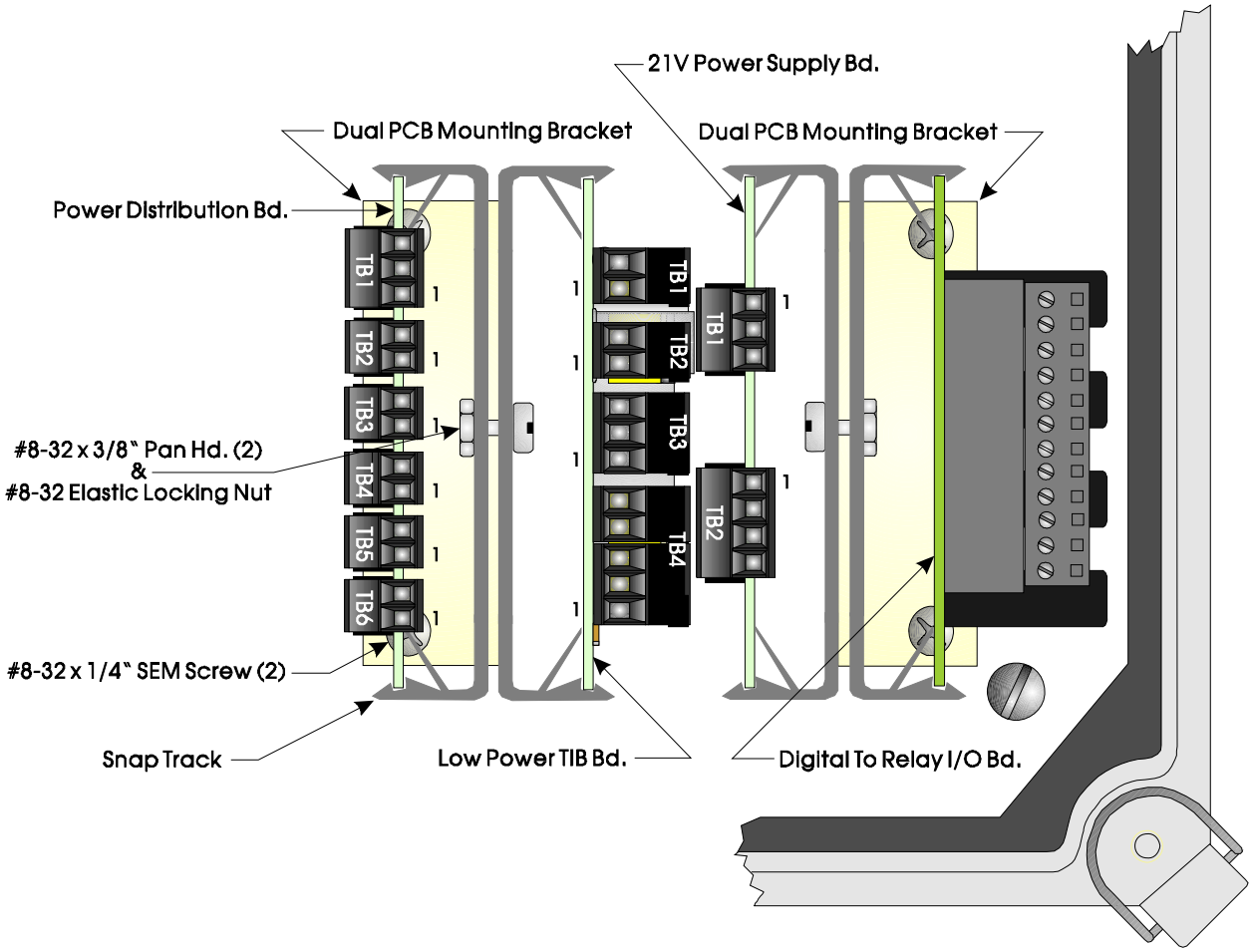

Figure 2 - Low Power Transmitter Interface Board Mounting Diagram TeleFlow Plus or TeleRTU with Power Distribution Board, 21V Power Supply Board & Digital To Relay I/O Board

To remove the optional Low Power Transmitter Interface Board follow steps 1 through 4 below. To replace the Low Power Transmitter Interface Board follow steps 2 and 3 below in reverse order, installing rather than removing the item in question and then perform step 4.

1. Open the Instrument Front Cover (Door).

2. Unplug the removable Terminal Blocks (with wiring harnesses installed) from the optional Low Power Transmitter Interface Board.

3. Slide the Low Power Transmitter Interface Board toward the front of the unit and out of the Snap Track.

   Note: ***If a replacement Low Power Transmitter Interface Board is available follow steps 2 through 3 in reverse order (after configuring Jumper JP1 (see Section 1.3), installing rather than removing the item in question.***

4. Close and Secure the Door.

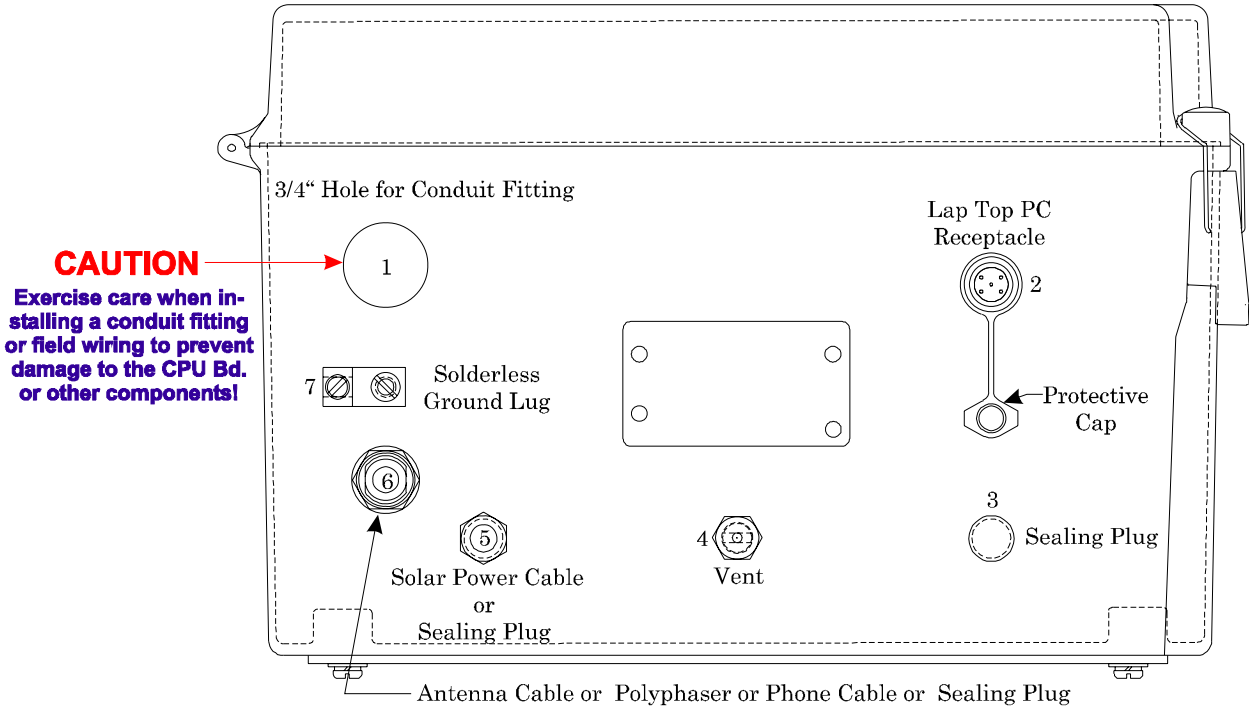

Figure 3 - Bottom View of TeleRTU Plus (Similar to TeleFlow Plus)

2.1.2 Installation of the Low Power Transmitter Interface Board Option

1. Open the Instrument Front Cover.

2. If the unit in question already contains a Power Distribution Board, but only has one Snap Track, the other Snap Track will have to be installed. This will require removal of the two (2) #8-32x3/8” Pan Head Screws and the two (2) #8-32 Elastic locking Nuts which secure the Power Distribution Board’s Snap Track to the Dual PCB Mounting Bracket. Secure the second Snap Track to the Dual PCB Mounting Bracket as shown in Figure 2 using two (2) #8-32 x 3/8” Pan Head Screws and two (2) #8-32 Elastic Locking

Nuts. Configure the LPTIB for operation with one or two 3508/3808 Transmitters. If only one 3508/3808 Transmitter is to be connected to the LPTIB, Jumper JP1 must be installed across JP1-1 and JP1-2. Additionally, when only one 3508/3808 Transmitter is to be connected to the LPTIB, it must be connected to connector TB1. When two 3508/3808 Transmitters are connected to the LPTIB, Jumper JP1 must be removed and installed in JP1-1 or JP1-2. Slide the LPTI Board into the Snap Track (see Figure 2).

3. Connect power wiring (14 AWG) and RS-232 Interface wiring (20 to 14 AWG) to LPTIB. Route field wiring cable(s) (20 to 14 AWG) associated with the LPTI Board into the TeleFlow Plus or TeleRTU Plus through a ¾" conduit fitting (user installed) on the bottom of the enclosure (see Figure 3). Connect Transmitter wiring to the appropriate LPTI Board Terminal Connectors (TB1 and TB2) (see Section 2.2.1, Table 1 & Figure 4).

5. Close and Secure the Instrument Front Cover.

2.2 FIELD WIRING

The device uses compression-type terminals that accommodate up to #14 AWG wire. A connection is made by inserting the bared end (1/4 inch Max.) into the clamp beneath the screw and then securing the screw. Insert the bared end fully to prevent short circuits.

Allow some slack in the wires when making terminal connections. The slack makes the connections more manageable and minimizes mechanical strain on the printed circuit boards and harnesses.

2.2.1 Terminal Connections

LPTI Boards contain four terminal blocks that accommodate interface connections to the 3530-20B or 3530-25B, power and field wiring connections. TB1 & TB2 are two-position Terminal Blocks, which connect to the signal/power inputs of the transmitters. Three-position Terminal Block (TB3) connects to the 3530-20B or 3530-25B power source. Five-position Terminal Block TB4 provides an RS-232 interface with the host 3530-20B/25B.

TABLE 1 - LPTI BOARD TERMINAL DESIGNATIONS

LPTIB TB#	LPTIB TB NAME	CONNECTION if PDB. Is Present	3530-20B CONNECTION If no PDB.	3530-25B CONNECTION If no PDB.
TB1-1	XMTR1-	3508/3808-	3508/3808-	3508/3808-
TB1-2	XMTR1+	3508/3808+	3508/3808+	3508/3808+
TB2-1	XMTR2-	3508/3808-	3508/3808-	3508/3808-
TB2-2	XMTR2+	3508/3808+	3508/3808+	3508/3808+
TB3-1	SHUTDOWN	N/A	N/A	N/A
TB3-2	+12VIN	TB5-1 of PDB.	CPUB J8-1 or J6-1	CPUB J2-1 or J4-1
TB3-3	+12VRET	TB5-2 of PDB.	CPUB J8-2 or J6-2	CPUB J2-2 or J4-2
TB4-1	GND	GND of LPI/OB TB5-1	LPI/OB TB5-1	LPI/OB TB5-1
TB4-2	CTS	RTS of LPI/OB TB5-5	LPI/OB TB5-5	LPI/OB TB5-5
TB4-3	RTS	CTS of LPI/OB TB5-4	LPI/OB TB5-4	LPI/OB TB5-4
TB4-4	RXD	TXD of LPI/OB TB5-7	LPI/OB TB5-7	LPI/OB TB5-7
TB4-5	TXD	RXD of LPI/OB TB5-6	LPI/OB TB5-6	LPI/OB TB5-6

Note: PDB = Power Distribution Board

LPTI Boards may be connected to internally powered transmitters (see Figure 4). In the case of an Internally Powered Transmitter (powered from LPTIB's on-board +12V Supply/Regulator) an external +12 Vdc power supply is wired to LPTI Board connector TB3 as shown in Figure 4. The supply is wired across the +12VIN and +12VRET terminals. The input voltage range is +10.8Vdcc to +16Vdc.

LPTIB's are typically powered from the 3530's power source (battery). Because of power distribution restrictions (CPU Board connector wiring capacity), power is typically routed through a Power Distribution Board (see Figures 5 & 6). Power Distribution Boards are mounted to the 3530 in question using a Snap Track and Dual PCB Mounting Bracket identical to the ones used for the LPTI Board and the Digital to Relay I/O Board options.

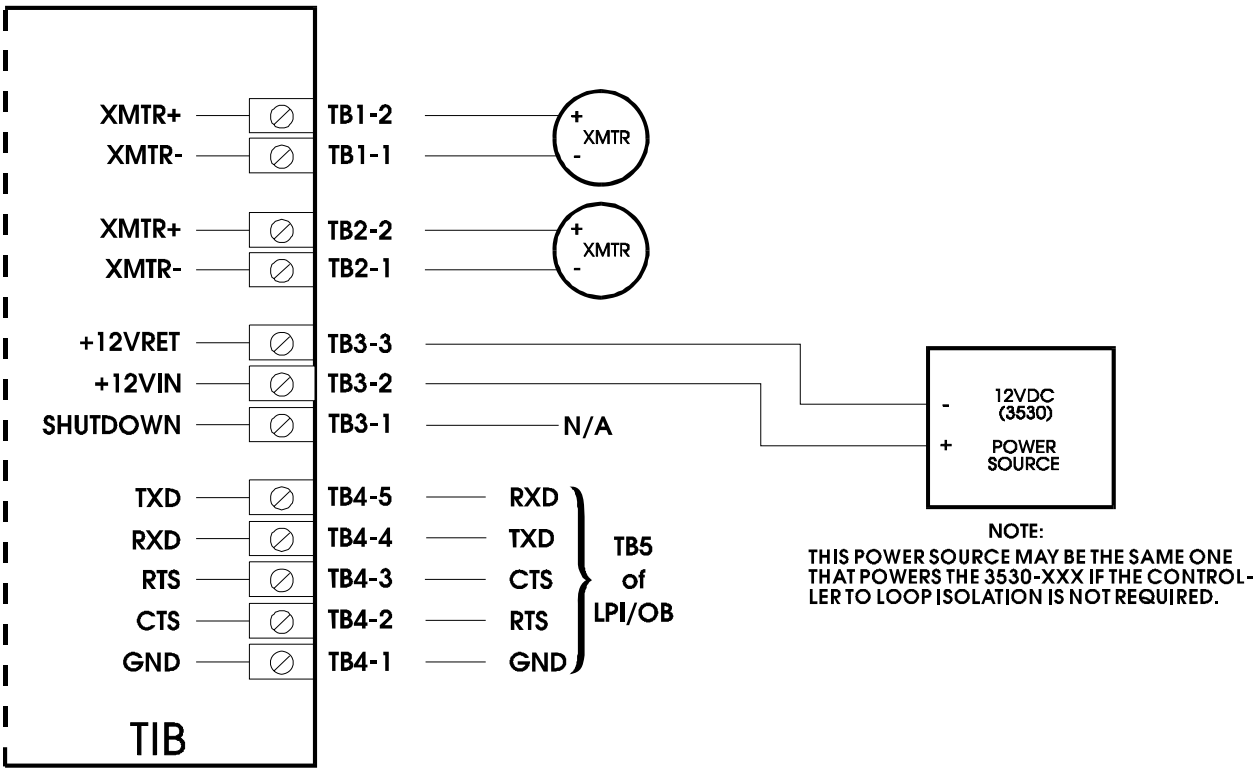

Figure 4 - Internally Powered Transmitter Field Wiring

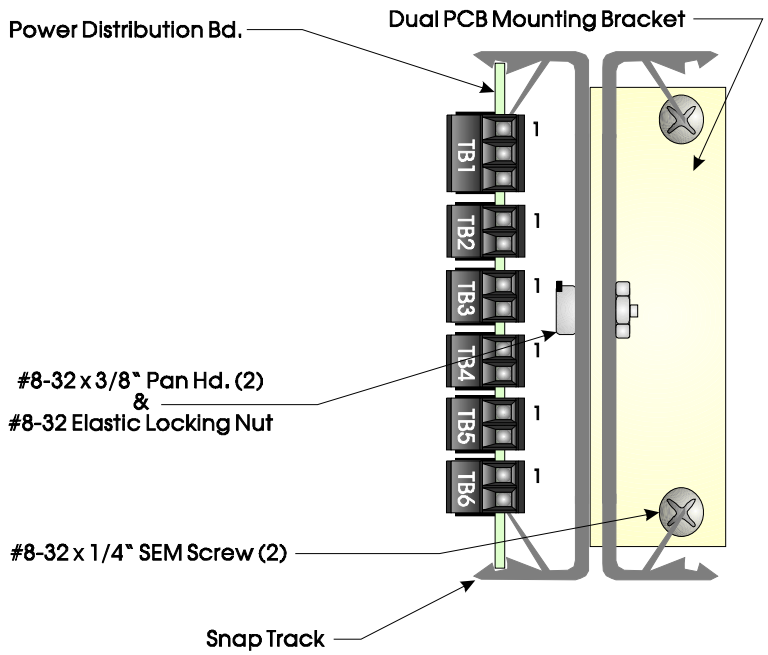

Figure 5 - Mounted Power Distribution Board

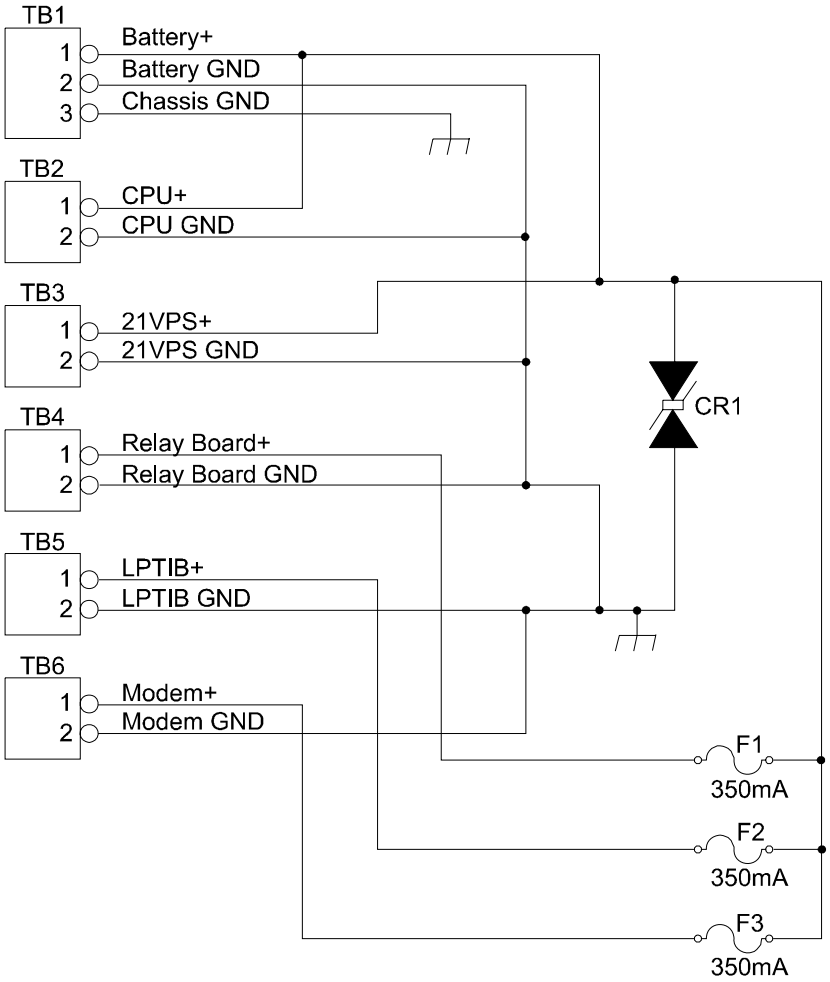

Figure 6 - Power Distribution Board Schematic/Wiring Diagram

Section 3
SPECIFICATIONS

3.1 GENERAL SPECIFICATIONS

Communication Interface:	RS-232 (± 3V minimum)
3508/3808 Interface:	FSK Modem - Bell 202 Compatible (1200 Hz/2200 Hz modulation) Baud Rate is 1200
ESD Susceptibility:	Field connected circuits are designed to meet the requirements of IEC 801-2 for ESD withstand capability up to 10KV.
EMI Compatibility:	Designed to coexist within a shielded enclosure with the TeleFlow (3530-20B) or the TeleRTU (3530-25B) electronics. EMI radiation is insignificant and susceptibility is comparable or superior to associated electronics.
Transient Susceptibility:	Field connected circuits are designed to meet the requirements of ANSI/-IEEEC37.90-1998 (Formerly IEEE 472) for surge withstand capability.

3.2 ENVIRONMENTAL SPECIFICATIONS

Operating Temperature:	-40°C to +60°C (-40°F to +140°F)
Storage Temperature:	-40°C to +85°C (-40°F to +185°C)
Relative Humidity:	15% - 95% Non-condensing
Vibration:	1G for 10Hz to 500Hz per PMC-31-1 (without damage or impairment)

Low Power Transmitter Interface Board
Special Instructions for Class I, Division 2 Hazardous Locations

1. The Bristol Low Power Transmitter Interface Board (LPTIB) is listed by Underwriters Laboratories (UL) as nonincendive and is suitable for use in Class I, Division 2, Groups A, B, C and D hazardous locations or non-hazardous locations only. Read this document carefully before installing a nonincendive Bristol LPTIB Board. In the event of a conflict between the LPTIB Board User Manual (PIP-TIBS3530) and this document, always follow the instructions in this document.

2. Wiring must be performed in accordance with Class I, Division 2 wiring methods as defined in Article 501-4 (b) of the National Electrical Code, NFPA 70 for installations within the United States, or as specified in Section 18-152 of the Canadian Electrical Code for installation in Canada.

3. **WARNING: EXPLOSION HAZARD - Substitution of components may impair suitability for use in Class I, Division 2 environments.**

4. **WARNING: EXPLOSION HAZARD - When situated in a hazardous location, turn off power before servicing/replacing the unit and before installing or removing I/O wiring.**

5. **WARNING: EXPLOSION HAZARD - Do Not disconnect equipment unless the power has been switched off or the area is known to be nonhazardous.**

Low Power Transmitter Interface Board Part No. 392950-01-4

Emerson Process Management
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