

TLS-2N

Installation, Setup & Operation



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Thoroughly examine all components and units as soon as they are received. If any cartons are damaged or missing, write a complete and detailed description of the damage or shortage on the face of the freight bill. The carrier's agent must verify the inspection and sign the description. Refuse only the damaged product, not the entire shipment.

VEEDER-ROOT'S PREFERRED CARRIER

1. Contact VR Customer Service at 800-873-3313 with the specific part numbers and quantities that were missing or received damaged.
2. Fax signed Bill of Lading (BOL) to VR Customer Service at 800-234-5350.
3. VR will file the claim with the carrier and replace the damaged/missing product at no charge to the customer. Customer Service will work with production facility to have the replacement product shipped as soon as possible.

CUSTOMER'S PREFERRED CARRIER

1. It is the customer's responsibility to file a claim with their carrier.
2. Customer may submit a replacement purchase order. Customer is responsible for all charges and freight associated with replacement order. Customer Service will work with production facility to have the replacement product shipped as soon as possible.
3. If "lost" equipment is delivered at a later date and is not needed, VR will allow a Return to Stock without a restocking fee.
4. VR will NOT be responsible for any compensation when a customer chooses their own carrier.

RETURN SHIPPING

For the parts return procedure, please follow the appropriate instructions in the "General Returned Goods Policy" and "Parts Return" pages in the "Policies and Literature" section of the Veeder-Root **North American Environmental Products** price list.

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Introduction

This manual contains installation procedures for peripherals required to perform manual meter mapping and adjusted delivery reports that are ordered either as a factory installed option (Form Numbers 856090-061 or 856090-062), or as a retrofitted upgrade to the TLS-2N Console. All setup and operation instructions for the TLS-2N option are included in this manual as well.

IMPORTANT! You must follow all instructions in the TLS2 Site Prep manual (see related manuals below) to mount the TLS-2N Console, install probes, connect probe and power wiring, etc.; and you must follow all of the instructions in the TLS2 Setup and Operation manual to setup and operate the console. This manual contains only TLS-2N related installation, setup, and operation instructions for the TLS-2N Console, and as such, supplements those manuals.

Contractor Certification Requirements

Veeder-Root requires the following minimum training certifications for contractors who will install and setup the equipment discussed in this manual:

Level 1 Contractors holding valid Level 1 Certification are approved to perform wiring and conduit routing, equipment mounting, probe and sensor installation, tank and line preparation, and line leak detector installation.

Level 2/3 Contractors holding valid Level 2 or 3 Certifications are approved to perform installation checkout, startup, programming and operations training, troubleshooting and servicing for all Veeder-Root Tank Monitoring Systems, including Line Leak Detection and associated accessories.







Warranty Registrations may only be submitted by selected distributors.

Related Manuals

577013-756	TLS2 Site Prep and Installation Manual
576013-757	TLS2 Setup & Operators Manual

Safety Precautions

The following safety symbols are used throughout this manual to alert you to important safety hazards and precautions.

 <div>EXPLOSIVE Fuels and their vapors are extremely explosive if ignited.</div>	 <div>FLAMMABLE Fuels and their vapors are extremely flammable.</div>
 <div>ELECTRICITY High voltage exists in, and is supplied to, the device. A potential shock hazard exists.</div>	 <div>TURN ELECTRICAL POWER OFF Live power to a device creates a potential shock hazard. Turn Off electrical power to the device and associated accessories when servicing the unit..</div>
 <div>WARNING Heed the adjacent instructions to avoid damage to equipment, property, environment or personal injury..</div>	 <div>READ ALL RELATED MANUALS Knowledge of all related procedures before you begin work is important. Read and understand all manuals thoroughly. If you do not understand a procedure, ask someone who does.</div>

**WARNING**



You are working with a device in which potentially lethal voltages may be present. Death or injury may result if safety precautions are not followed.

- 1. Turn off, tag, and lockout power to the console before installing this kit.**
- 2. Read all instructions and symbol warnings.**

Installation of CDIM/EDIM Board Upgrade Kits

This section describes the field installation of the TLS-2N EDIM and CDIM module kits into a TLS-2N Console. The instructions in this section apply to both kits. Skip this section if the TLS-2N console has the factory installed CDIM or EDIM option.

KIT REQUIRED

- TLS-2N CDIM Module kit - P/N 330020-444, or
- TLS-2N EDIM Module kit - P/N 330020-443

SPECIAL TOOLS REQUIRED (NOT IN KIT)

- Torx drive screwdrivers to fit #T-10 and #T-15 screws

PROCEDURE

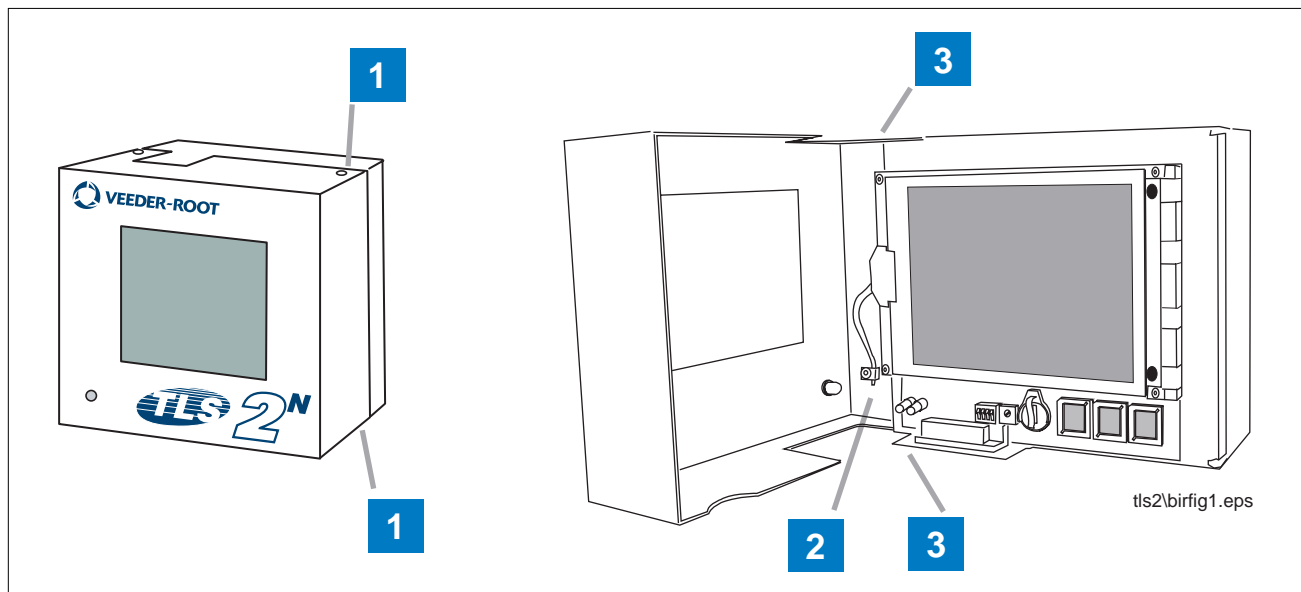


Figure 1. Replacing TLS-2N Console Door



Shut off, tag, and lockout power to the TLS-2N Console.

- 1 Remove the top and bottom T-15 screws and washers from the right side of the console door (item 1 in Figure 1), swing the door to the left. Replace the two screws (and washers) into their holes and tighten them.
- 2 Loosen the T-15 screw in the door grounding terminal and remove the ground wire (item 2 in Figure 1).
- 3 Remove and retain the top and bottom T-15 screws and washers (item 3 in Figure 1) from the left side of the console door and remove and discard the door. Replace the top and bottom T-15 screws in their holes and tighten.

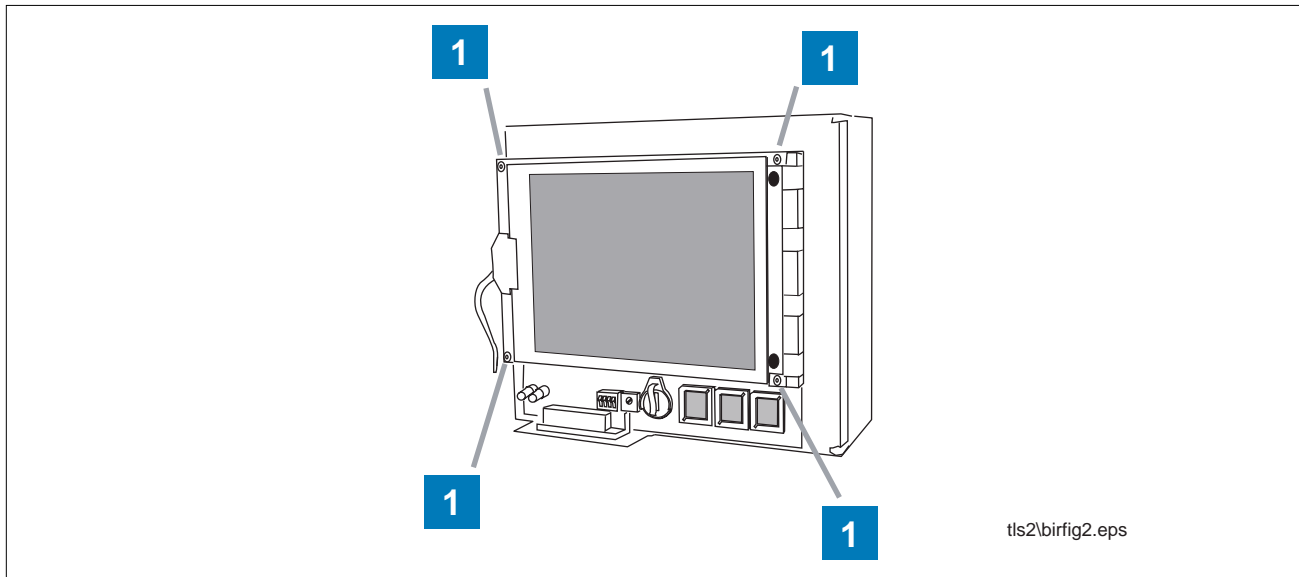


Figure 2. Disconnecting the display assembly from the CPU board

- 4 Remove the four T-10 screws and washers (item 1 in Figure 2) attaching the display to the CPU board. Retain the two shorter screws (0.5" long) and all of the washers. Carefully remove the last screw while holding the display assembly. Lower the display until it is supported by its cables.

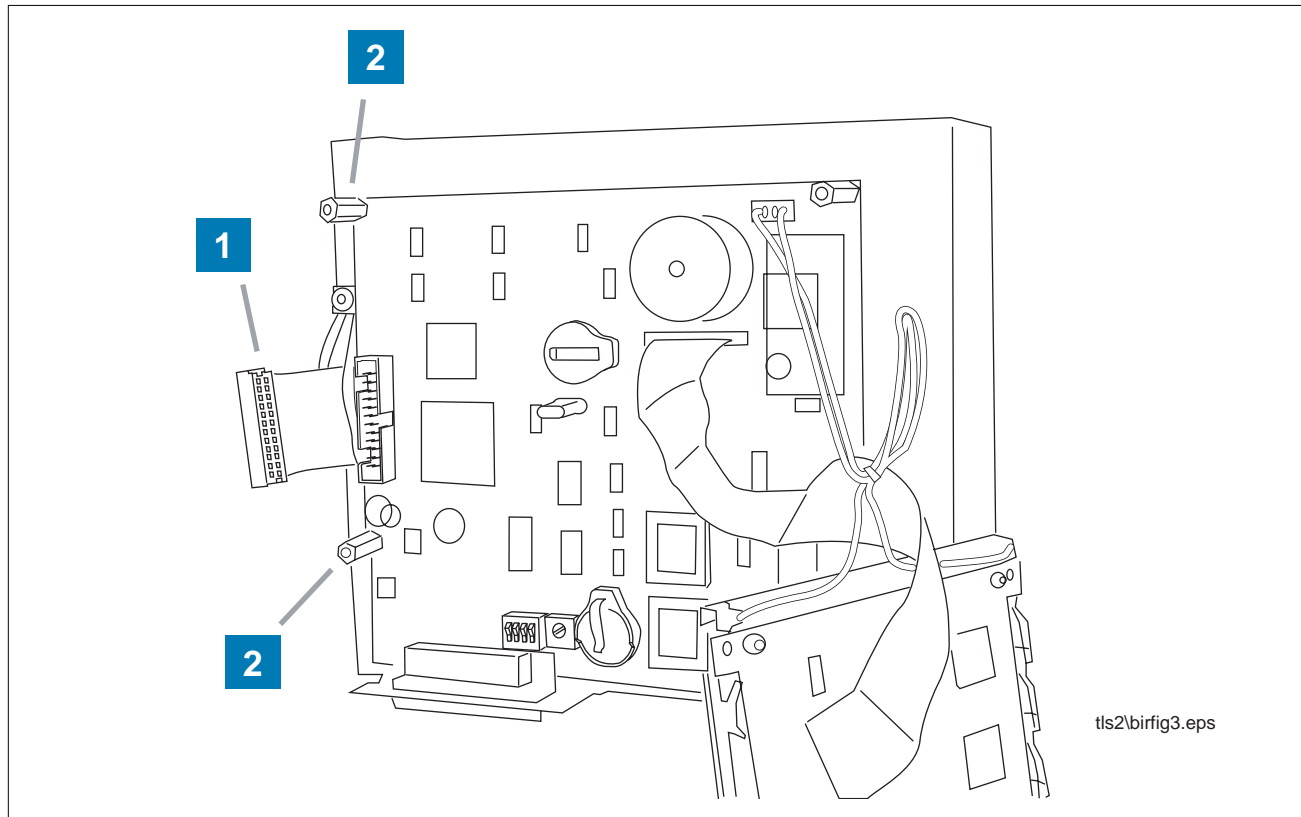


Figure 3. Preparing the CPU board for the DIM module

- 5 Disconnect the ribbon cable from the connector (J1) on the left edge of the CPU board (item 1 in Figure 3).
- 6 Remove the two hex standoffs (item 2 in Figure 3) from the CPU board and replace them with the two 0.688" long hex standoffs in the kit. Tighten the two standoffs.

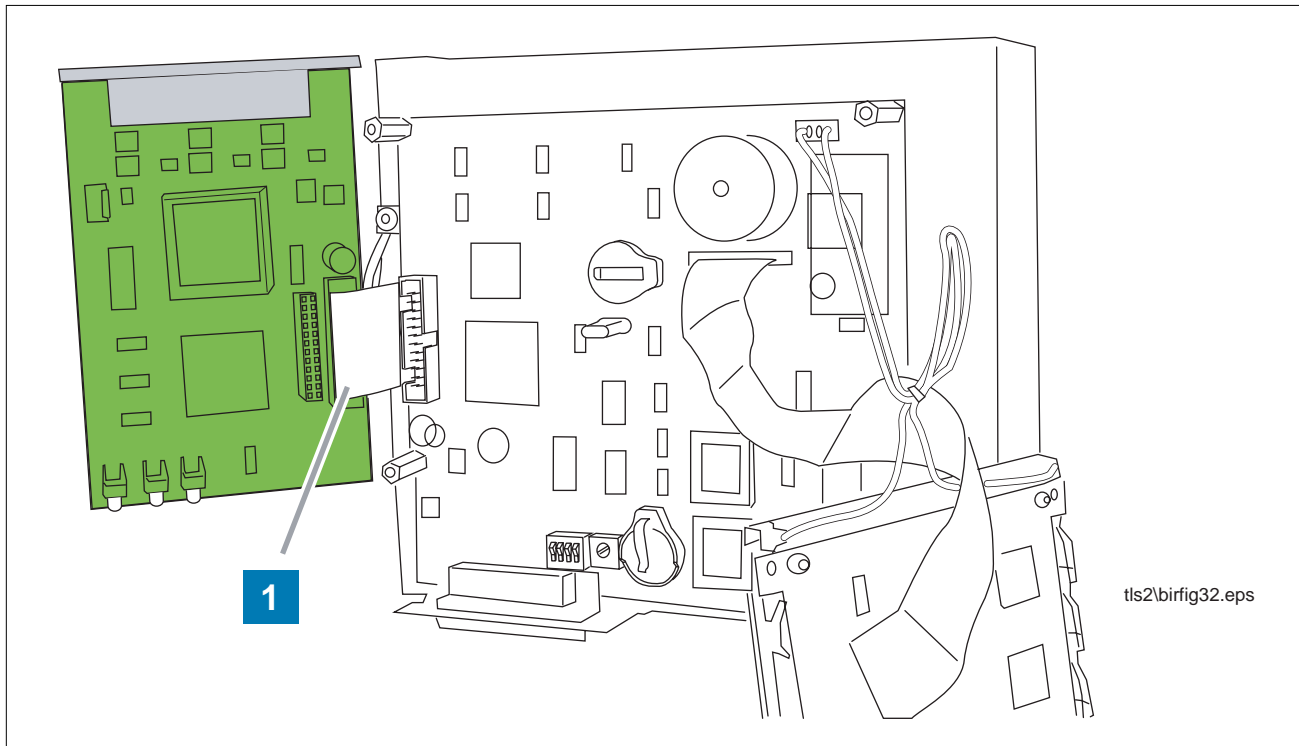


Figure 4. Attaching the CPU board power supply cable to the DIM module

- 7 Get the CDIM or EDIM module from the kit.
- 8 Plug the ribbon connector, removed previously from the CPU board connector, into the connector (J3 on EDIM or J6 on CDIM) on the edge of the DIM module board (item 1 in Figure 4). Note that the end plate of the DIM module is up.

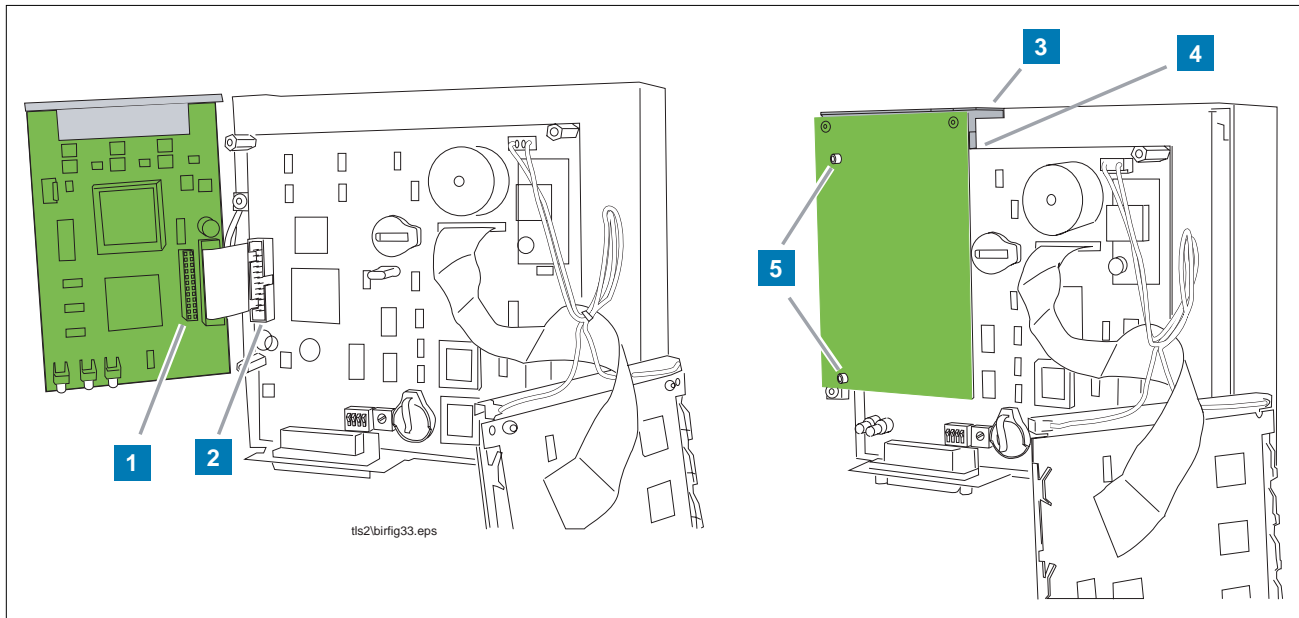


Figure 5. Attaching the DIM board to the CPU board

- 9 Swing the DIM board over onto the CPU board and plug the connector (item 1 in Figure 5) of the DIM board into the 2-row shrouded header (item 2 in Figure 5) on the CPU board.
- 10 When correctly installed, the DIM board will be flush with the top of the console (item 3 in Figure 5) and the end plate bracket will be seated against the edge of the CPU board (item 4 in Figure 5).
- 11 The small standoffs on the rear of the DIM board (item 5 in Figure 5) should be aligned over the holes in the hex standoffs replaced on the CPU board in Step 6 on Page 5.

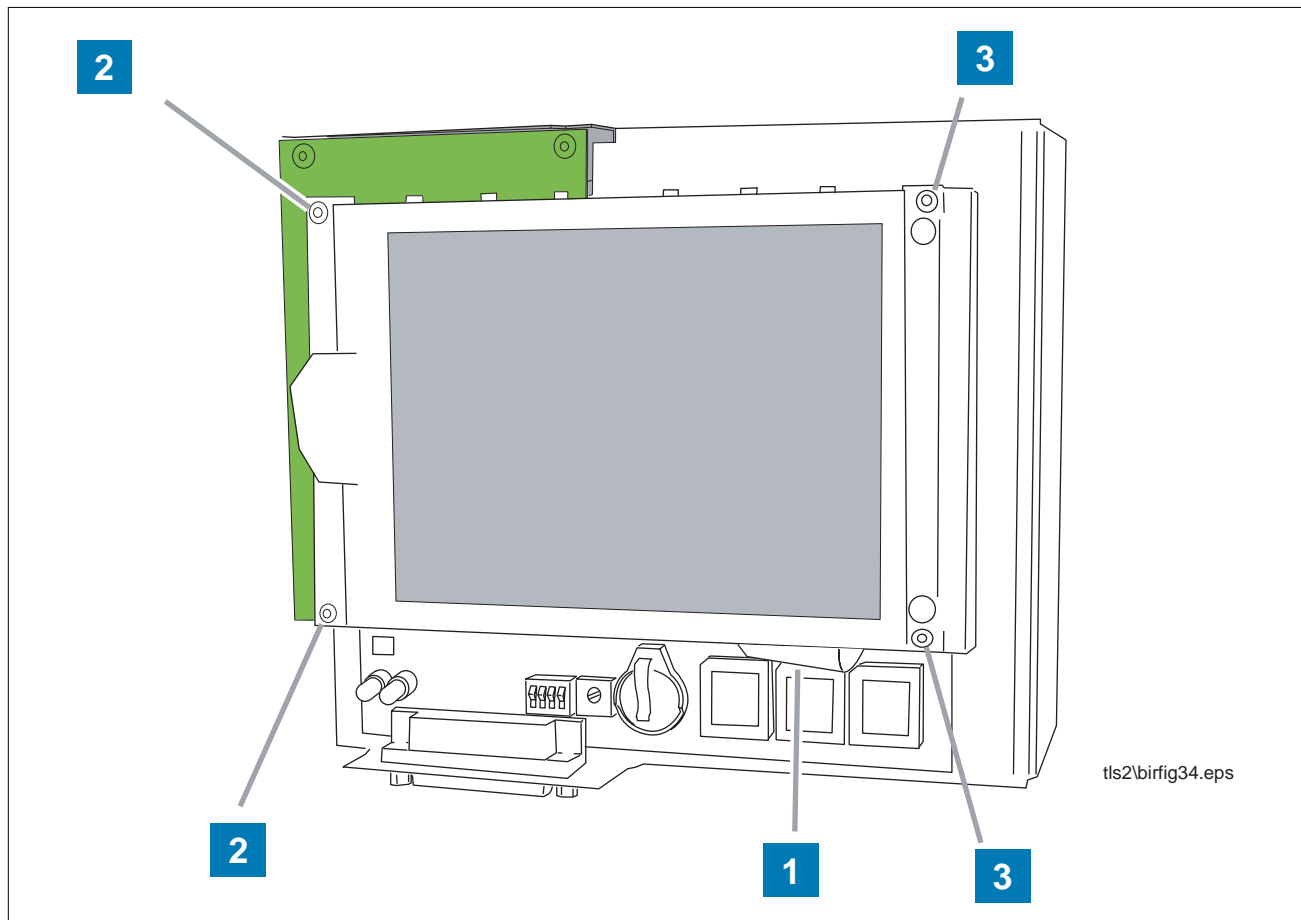


Figure 6. Reattaching the display assembly to the CPU board

- 12 Get the two 0.5" long T-10 screws and the four washers retained from Step 4 on Page 4. Get two of the 0.5" long T-10 screws from the kit.
- 13 Fold the ribbon cable from the CPU board to the display assembly so it is between the display assembly and the CPU board (see item 1 in Figure 6) as you align the display mounting holes over the hex standoffs.
- 14 Reattach the display assembly to the CPU board using the four T-10 screws and washers. The left two screws (item 2 in Figure 6) must pass through the standoffs on the back of the DIM board (item 5 in Figure 5 on page 7) and into the shortened hex standoffs on the CPU board.
- 15 The right two screws (item 3 in Figure 6) attach to the original hex standoffs on the CPU board.

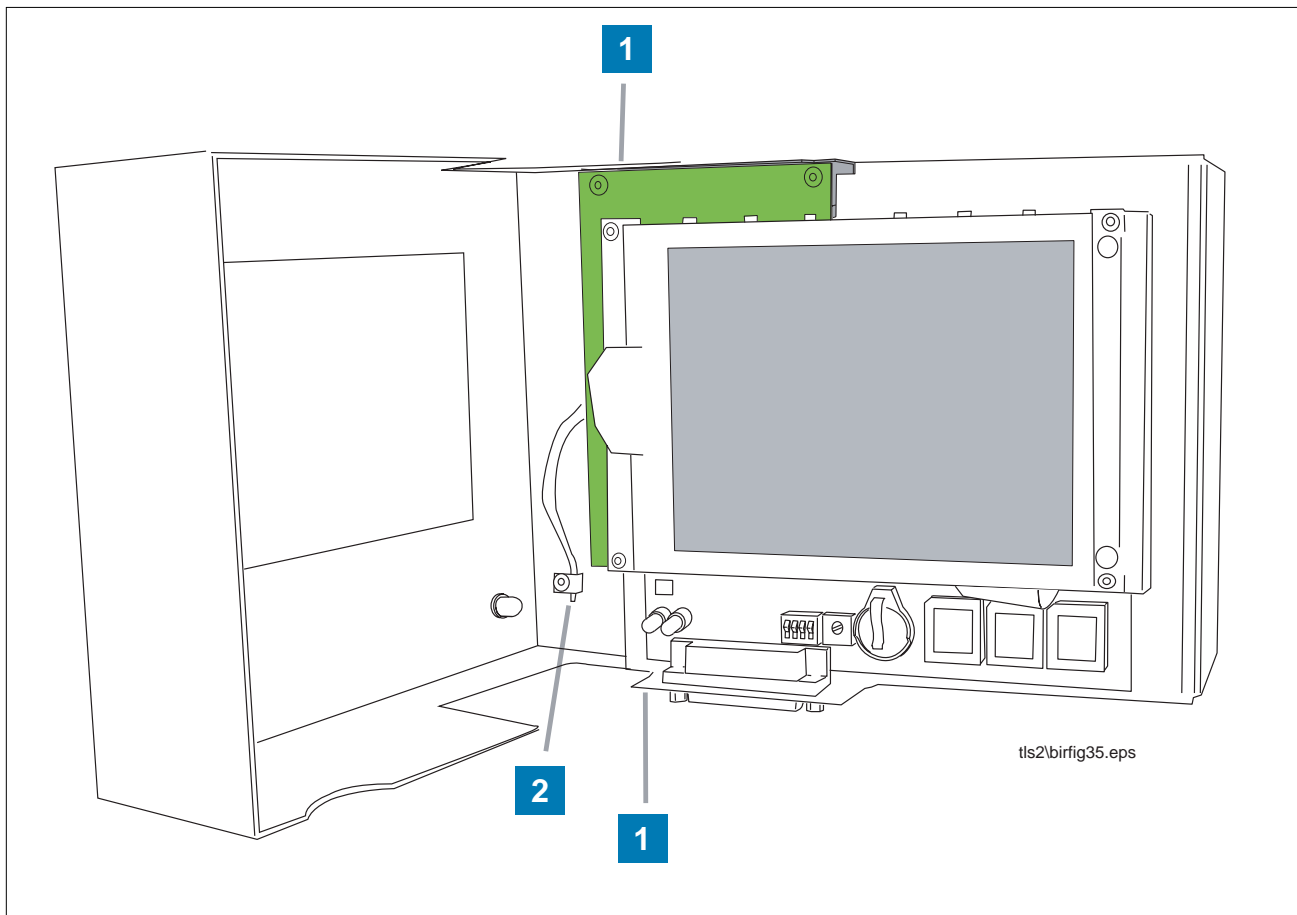


Figure 7. Attaching the new door to the TLS-2N Console

- 16 Remove and retain the top and bottom T-15 screws and washers used to attach the left side of the removed door to the console (item 1 in Figure 7). Get the new door from the kit and attach its left side to the console using these screws and washers. Tighten the screws.
- 17 Loosen the T-15 screw in the grounding terminal on the inside of the new door and insert the grounding wire that was disconnected from the old door. Tighten the screws.
- 18 The door should close over the display and clear the DIM module's end plate.

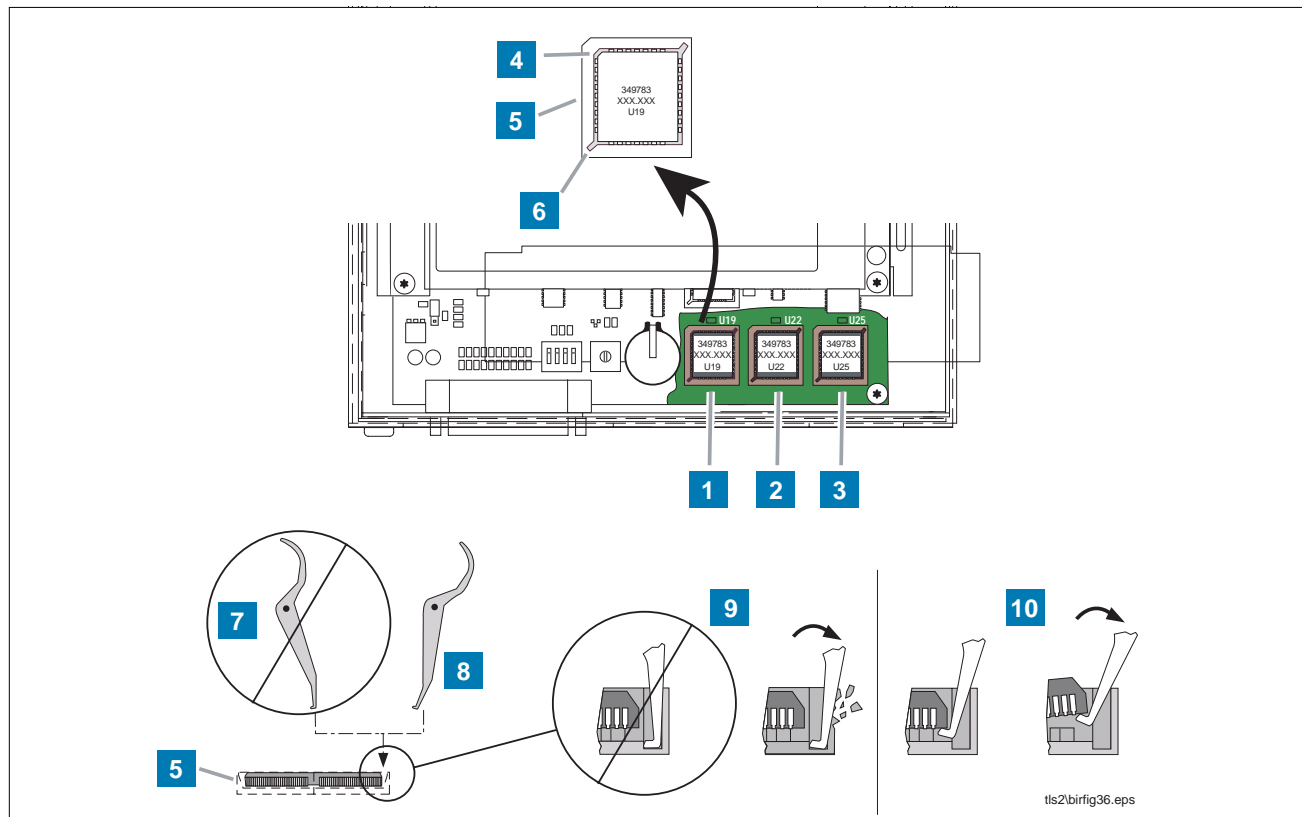


Figure 8. Identifying and replacing software in the TLS-2N Console

- 19 Get the three software chips, and chip removal tool from the kit.
- 20 Remove software chips U19 (item 1), U22 (item 2), and U25 (item 3).
- 21 Keep the chip removal tool angled (item 8) as it is inserted into one of the two slots (item 6) in the chip socket (item 5).
- 22 If the tool's hook is too upright (item 7) it may not be under the chip and wedged instead into the base of the slot. When the tool is rotated it may break the socket instead of lifting up the chip.
- 23 Angling the tool's hook when inserting it into the slot, will position the hook correctly, under the corner of the chip (item 10). When the tool is rotated, it will lift up the corner of the chip. Alternate the tool between opposite slots until the chip is up enough to be lifted out of the socket.
- 24 Insert each of the three replacement software chips from the kit, while orienting the angled corner of the chip (item 4) with the angled corner of the socket. Put chip U19 from the kit in the U19 socket, U22 in the U22 socket, etc.
- 25 Remove the console's top and bottom T-15 torx shoulder screws and washers that secure the right side of the door and close the door. Replace each of the two T-15 screws (and washers) through the right side top and bottom holes in the door and tighten.
- 26 This completes the DIM module field installation procedure. Proceed to the next section to install DIM peripheral equipment and interconnection wiring.

Installing DIM Peripheral Equipment and Wiring



For all POS installations discussed in this section, keep cables from the Cable Adapter Box (CAB) to the TLS-2N Console physically separated from any other wiring or conduits to eliminate data transmission problems.

Remove ac power to the TLS-2N Console (switch circuit breaker off at the panel) prior to connecting the dispenser interface cable.

Gilbarco G-Site POS

TLS-2N Consoles interface with G-Site POS systems using an EDIM. Follow the instructions below to connect the TLS-2N Console with EDIM to a G-Site POS.

REQUIRED DIM INSTALLATION KIT AND CONTENTS

VR/GB Protocol EDIM Kit P/N 331063-XXX which contains:

- One 4-conductor cable with RJ-45 jacks on both ends - length as ordered (P/N 331134-XXX)
- One 25-pin D to RJ-45 Adapter (P/N 331138-001)
- One 25-pin D to RJ-45 Adapter (P/N 331138-002)

INSTALLATION PROCEDURE

PC G-SITE Application

For a PC G-Site installation follow the connection instructions in Figure 9.

C-2 G-SITE Application

For a C-2 G-SITE application follow the connection instructions in Figure 10.

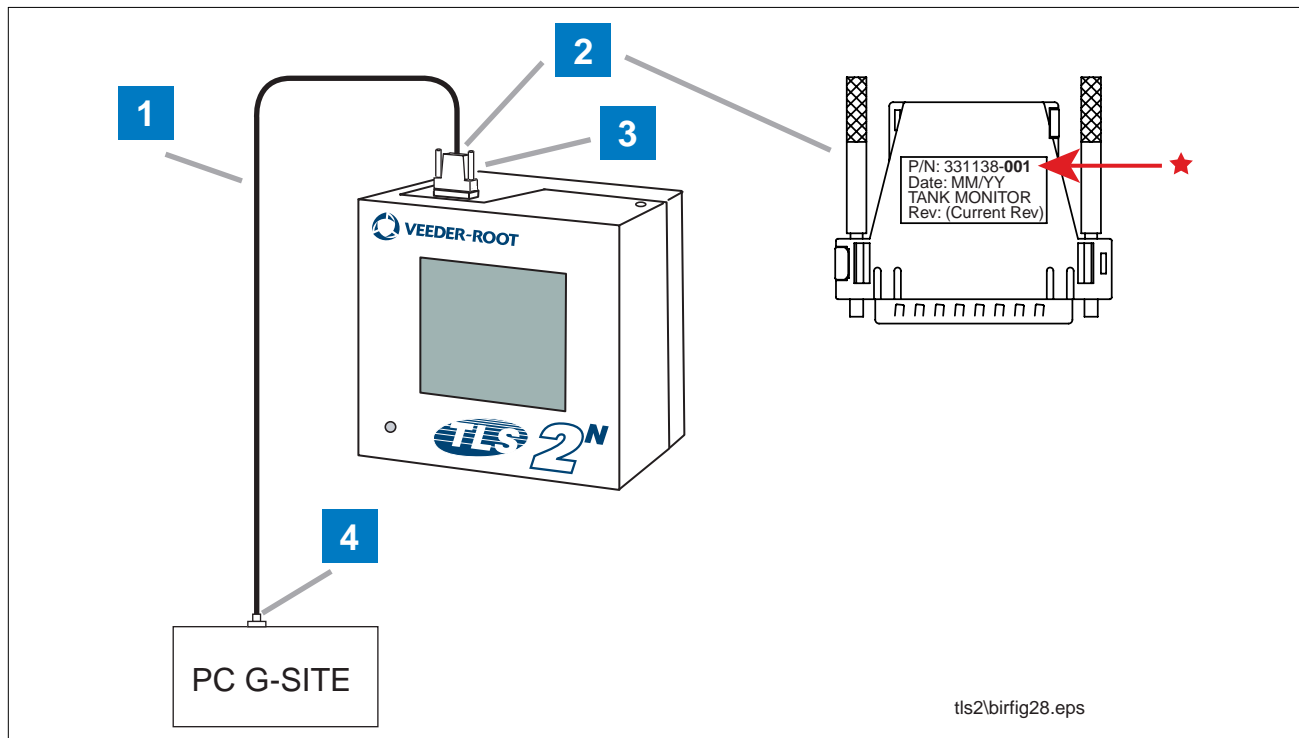


Figure 9. PC G-SITE Installation

LEGEND FOR NUMBERED BOXES

- 1 RJ-45 cable (P/N 331134-XXX).
- 2 Connect RJ-45 plug on one end of cable in jack in top of adapter, P/N 331138-001.
NOTE: use 331138-001 adapter only!
- 3 Attach adapter to EDIM connector on top of the TLS-2N.
- 4 Connect RJ-45 plug on other end of cable in the TANK MON jack on the G-SITE PC.

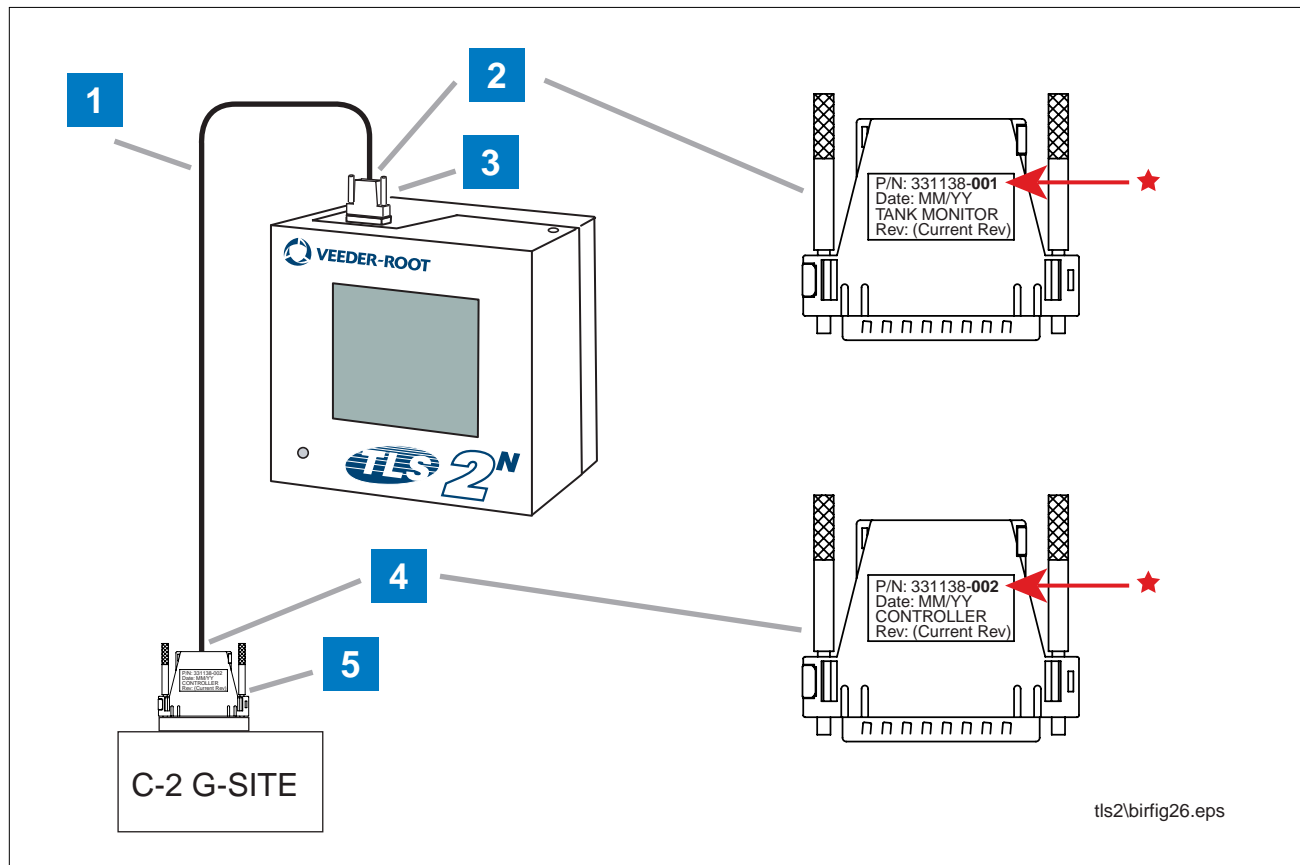


Figure 10. C-2 G-SITE Installation

LEGEND FOR NUMBERED BOXES

- 1 RJ-45 cable (P/N 331134-XXX).
- 2 Connect one end of cable in RJ-45 jack in top of adapter, P/N 331138-001.
NOTE: use 331138-001 adapter only!
- 3 Attach adapter to EDIM connector on top of TLS-2N.
- 4 Connect other end of cable in RJ-45 jack in top of adapter, P/N 331138-002.
NOTE: use 331138-002 adapter only!
- 5 Attach adapter to TANK GAUGE jack on the G-SITE C-2 Controller.

Gilbarco Transac Series POS Systems

TLS-2N Consoles interface with Gilbarco Transac series POS systems shown in Table 1 using a CDIM. Follow the instructions below to connect the TLS-2N Console with CDIM to one of these POS systems.

Table 1.- Supported POS Terminals

Model No.	POS Console	Model No.	POS Console
TCR-G	PA0180-121	Transac 12A	PA0151, PA0152
TCR-G/2	PA0180-121	Transac 12B	PA0173
Transac 11	PA0132, PA0141	Transac 12C	PA0188
Transac 12	PA0134, PA0142	Transac 12G	PA0203

REQUIRED DIM INSTALLATION KIT AND CONTENTS

VR Dispenser Interface Kit P/N 848702-000 which contains:

- One Cable Adapter Box (CAB) (P/N 330591-002)
- One 6-foot (1.83 m) 2-conductor cable with 3-pin plug on one end and stripped wires on other end (P/N 331105-001)
- One CDIM adapter cable with RJ-45 plugs on each end - length as ordered (P/N 330592-XXX)

SYSTEM LIMITATIONS

- The dispenser must separately meter each product prior to blending. The TLS-2N Console cannot provide reconciliation on dispensers that blend fuel prior to the metering process.
- Only Transac 12G, TCR-G, and TCR-G/2 consoles interface with electronic blenders where the dispenser meters each product separately.
- Only Gilbarco electronic dispensers are supported.
- The Gilbarco Current Loop Dispenser Interface Module does not support Gilbarco G-Site applications.



IMPORTANT! In Transac 11 and Transac 12 pre-pay applications, cashiers should be urged to close out each transaction promptly. The required metered sales data is reported on close-out. Failure to close-out promptly can cause the TLS-2N to delay reconciliation reports, and impact the system's ability to improve tank calibration.

Do not disconnect the dispenser communication wiring between the POS and the distribution box during a customer transaction. It can result in a loss of dispenser data.

INSTALLATION PROCEDURE

1. Mount the CAB as described in Figure 11.
2. Connect cabling between the TLS-2N, CAB and POS as shown in Figure 12.

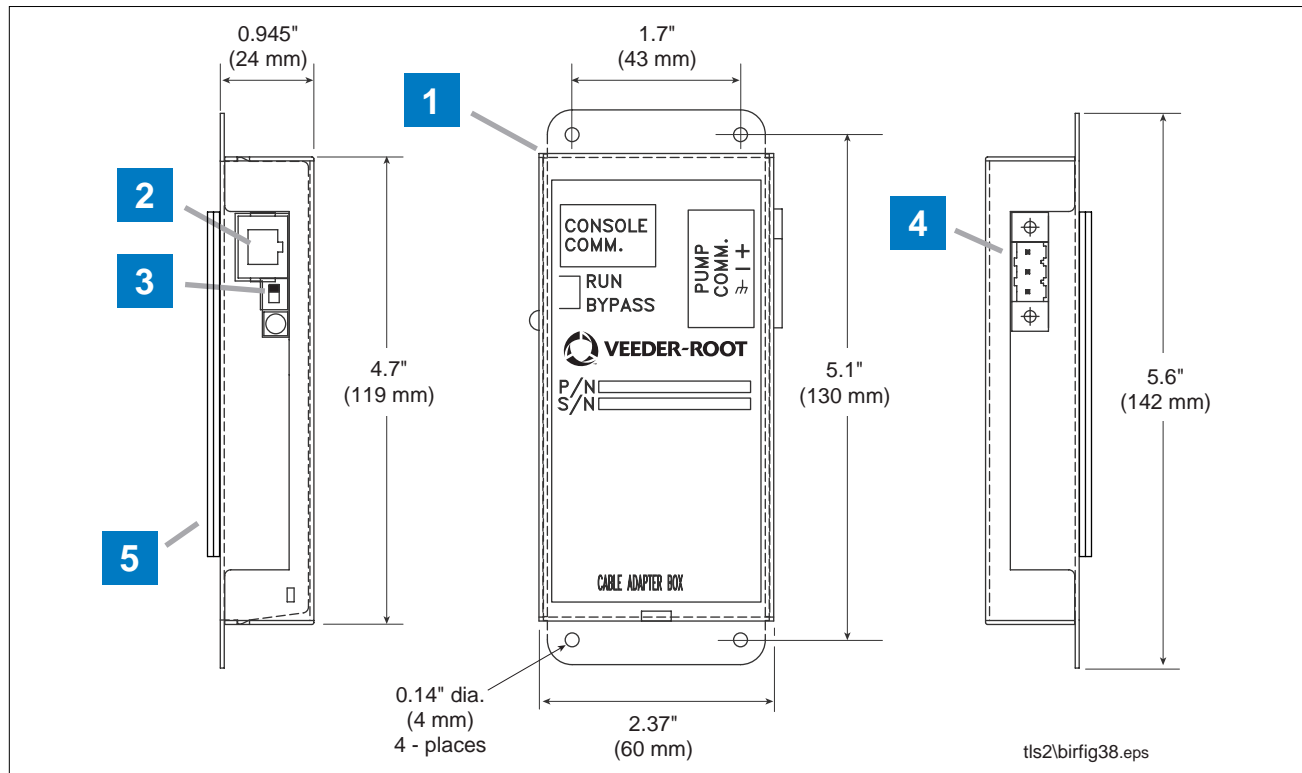


Figure 11. CAB Dimensions

LEGEND FOR NUMBERED BOXES

- 1 Mount the CAB within 6-feet (1.83 m) of the distribution box/controller using either the adhesive velcro strips on the back of the CAB, or with screws in the four mounting holes. If using the velcro strips, remove the protective paper from the velcro strips and then firmly press the CAB onto the mounting surface. Do not attempt to remove the CAB once it is in position.
 - 2 RJ-45 cable jack
 - 3 Run - Bypass switch
- NOTE: To ensure proper operation, this switch must be set to RUN.**
- 4 3-pin jack
 - 5 Velcro mounting strip

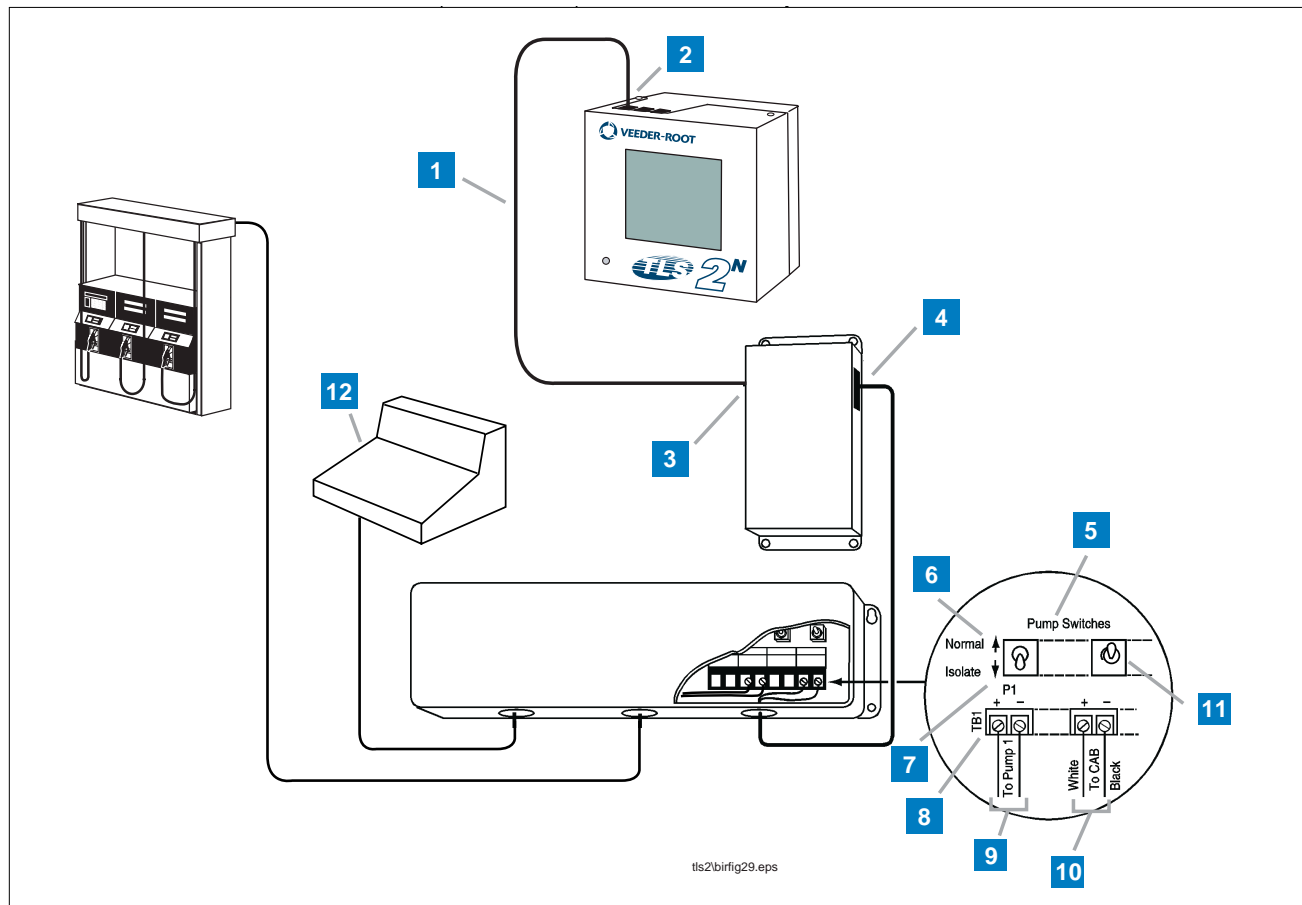


Figure 12. Transac Series Installation

LEGEND FOR NUMBERED BOXES

- 1 Cable with RJ-45 plugs at each end - length as ordered (P/N 330592-XXX).
- 2 Connect the RJ-45 plug on one end of the cable in any unused CDIM jack in the top of TLS-2N.
- 3 Connect the RJ-45 plug on the other end of the cable in the CONSOLE COMM jack on the top left side of the CAB.
- 4 Connect the 3-pin plug end of the 6-foot (1.83 m) shielded 2-wire cable (P/N 331105-001) to the PUMP COMM jack on the right side of the CAB (P/N 330591-002).
- 5 Pump Switches in Distribution Box.
- 6 Normal position - toggle switch is up.
- 7 Isolate position - toggle switch is down.
- 8 Terminal strip T1.
- 9 These two wires go to Pump 1.
- 10 Connect the white wire of the 2-wire cable from the CAB to any unused pump's (+) terminal. At the same pump position, connect the black wire of the cable to the pump's (-) terminal.

NOTE: cut off excess shield back to cable cover. It is not used.

- 11 Throw the toggle switch for the pump connected to the CAB in step 10 to the Normal position (Up).

NOTE: If all of the pump positions are in use, connect the 2-wire cable in series with one of the pumps in the distribution box. Choose any pump/dispenser position. Set the toggle switch for that position to "ISOLATE" the wire on the (-) side of the current loop. Splice this pump wire with the white wire from the CAB. Connect the black wire from the CAB to the (-) side of the terminal block. Secure the splice connections with appropriate sized wire nuts for the wires involved. Return the toggle switch to the "NORMAL" position.

- 12 POS terminal (see Table 1).

Gilbarco TS-1000 POS Systems

TLS-2N Consoles w/ CDIM option support the Gilbarco equipment shown below:

- Gilbarco Dispenser Distribution Box PA02420000000
- Gilbarco Dispenser Distribution Box PA02610000010
- Gilbarco Dispenser Distribution Box PA02610000020
- Gilbarco Pump Controller Model PA02410000000
- Gilbarco Transac System 1000 Console Model PA02400000000
- Gilbarco Transac System 1000 Console Model PA02400001010

REQUIRED DIM INSTALLATION KIT AND CONTENTS

VR Dispenser Interface Kit P/N 848722-XXX which contains:

- One Cable Adapter Box (CAB) (P/N 330591-002)
- One 10-foot (3.05 m) “Y” cable with 9-pin “D” style connectors (P/N 330501-010)
- One CDIM adapter cable with RJ-45 plugs on each end (P/N 330592-XXX) - length as ordered

SYSTEM LIMITATIONS

- The dispenser must separately meter each product prior to blending. The TLS-2N Console cannot provide reconciliation on dispensers that blend fuel prior to the metering process.
- Only Gilbarco electronic dispensers are supported.
- In-dispenser credit card readers in these POS systems are not supported by the Gilbarco CDIM.
- The Gilbarco Current Loop Dispenser Interface Module does not support Gilbarco G-Site applications.

INSTALLATION PROCEDURE

1. Mount the CAB as described in Figure 11 on page 15.
2. Connect cabling between the TLS-2N, CAB and POS as shown in Figure 12.

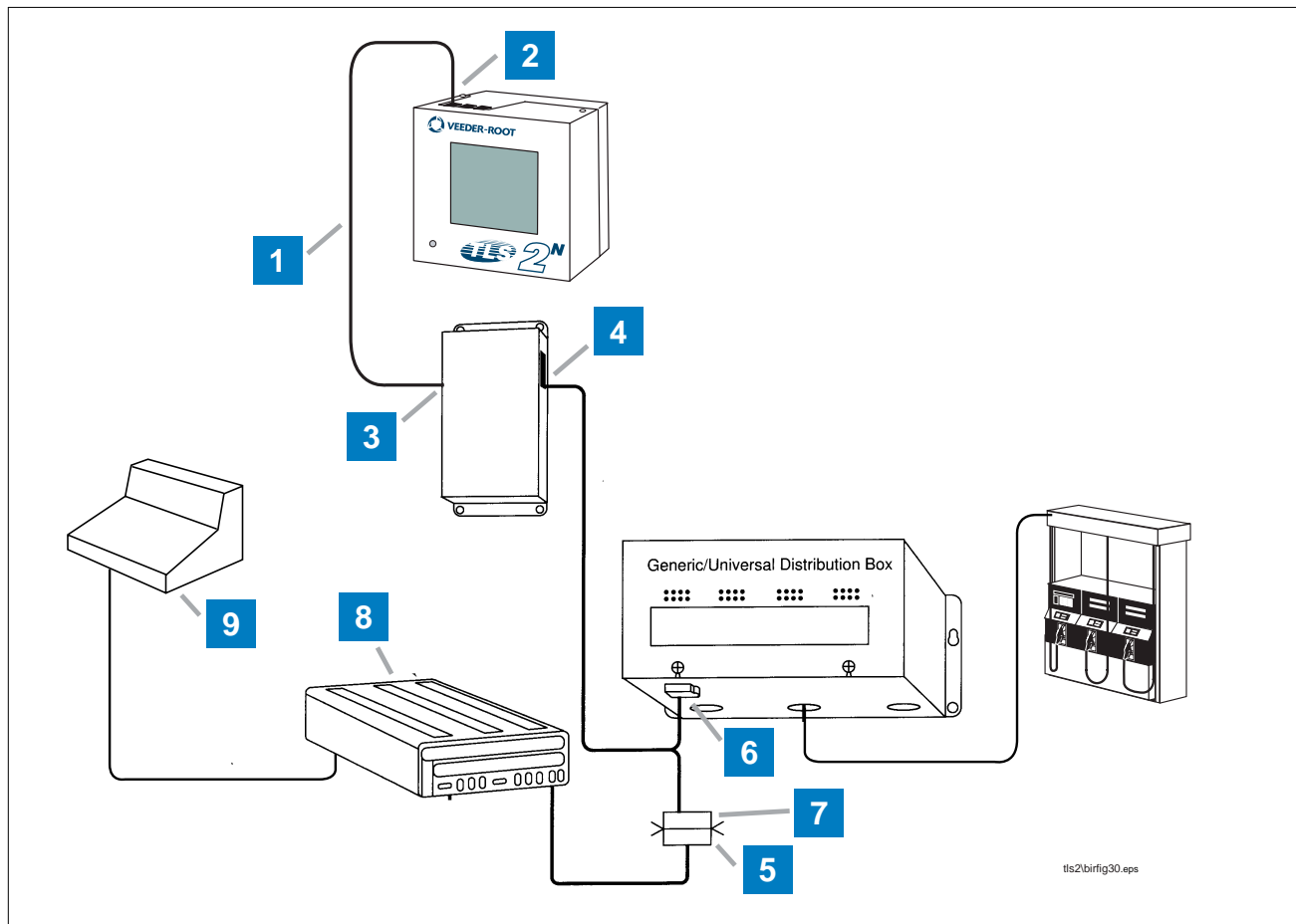


Figure 13. TS-1000 Installation

LEGEND FOR NUMBERED BOXES

- 1 Comm cable with RJ-45 plugs at each end - length as ordered (P/N 330592-XXX).
- 2 Connect the RJ-45 plug on one end of the comm cable in any unused CDIM jack in the top of TLS-2N.
- 3 Connect the RJ-45 plug on the other end of the comm cable in the CONSOLE COMM jack on the top left side of the CAB.
- 4 Connect the single connector end of the "Y" cable (P/N 330501-010) to the PUMP COMM jack in the right side of the CAB.
- IMPORTANT! The station's dispenser communications will be down while you make these connections. Customers should be advised that no fueling can take place.**
- 5 When station fueling is idle, unplug the nine-pin connector from the controller where it connects to the Distribution Box (underside).
- 6 In its place, attach the nine-pin female connector on the Veeder-Root "Y" cable.
- 7 Now attach the connector from the controller, removed in step 5, to the male nine-pin connector on the Veeder-Root "Y" cable.
- NOTE: Be sure to secure the cable connections with the connector mounting screws.**
- At this time, dispenser communications should resume.**
- 8 TS-1000 or PAM Site Controller.
- 9 POS terminal.

Gilbarco Storemaster POS System

TLS-2N Consoles w/ CDIM option support the Gilbarco equipment shown below:

- Gilbarco Dispenser Distribution Box PA02420000000
- Gilbarco Dispenser Distribution Box PA02610000010
- Gilbarco Dispenser Distribution Box PA02610000020
- Gilbarco Dispenser Distribution Box PA0281XXXXXX0

REQUIRED DIM INSTALLATION KIT AND CONTENTS

VR Dispenser Interface Kit P/N 848741-XXX which contains:

- One Cable Adapter Box (CAB) (P/N 331056-001)
- One 6-foot (1.83 m) DB9 to DB9, straight through, male/female serial cable (P/N 576010-904)
- One CDIM adapter cable with RJ-45 plugs on each end (P/N 330592-XXX) - length as ordered

Figure 14 diagrams the Storemaster POS system and TLS-2N components.

SYSTEM LIMITATIONS

- The dispenser must separately meter each product prior to blending. The TLS-2N Console cannot provide reconciliation on dispensers that blend fuel prior to the metering process.
- Only Gilbarco electronic dispensers are supported.
- In-dispenser credit card readers in these POS systems are not supported by the Gilbarco CDIM.
- The Gilbarco Current Loop Dispenser Interface Module does not support Gilbarco G-Site applications.

INSTALLATION PROCEDURE

1. Mount the CAB as described in Figure 15 on page 21.
2. Connect cabling between the TLS-2N, CAB and POS as shown in Figure 16 on page 22.

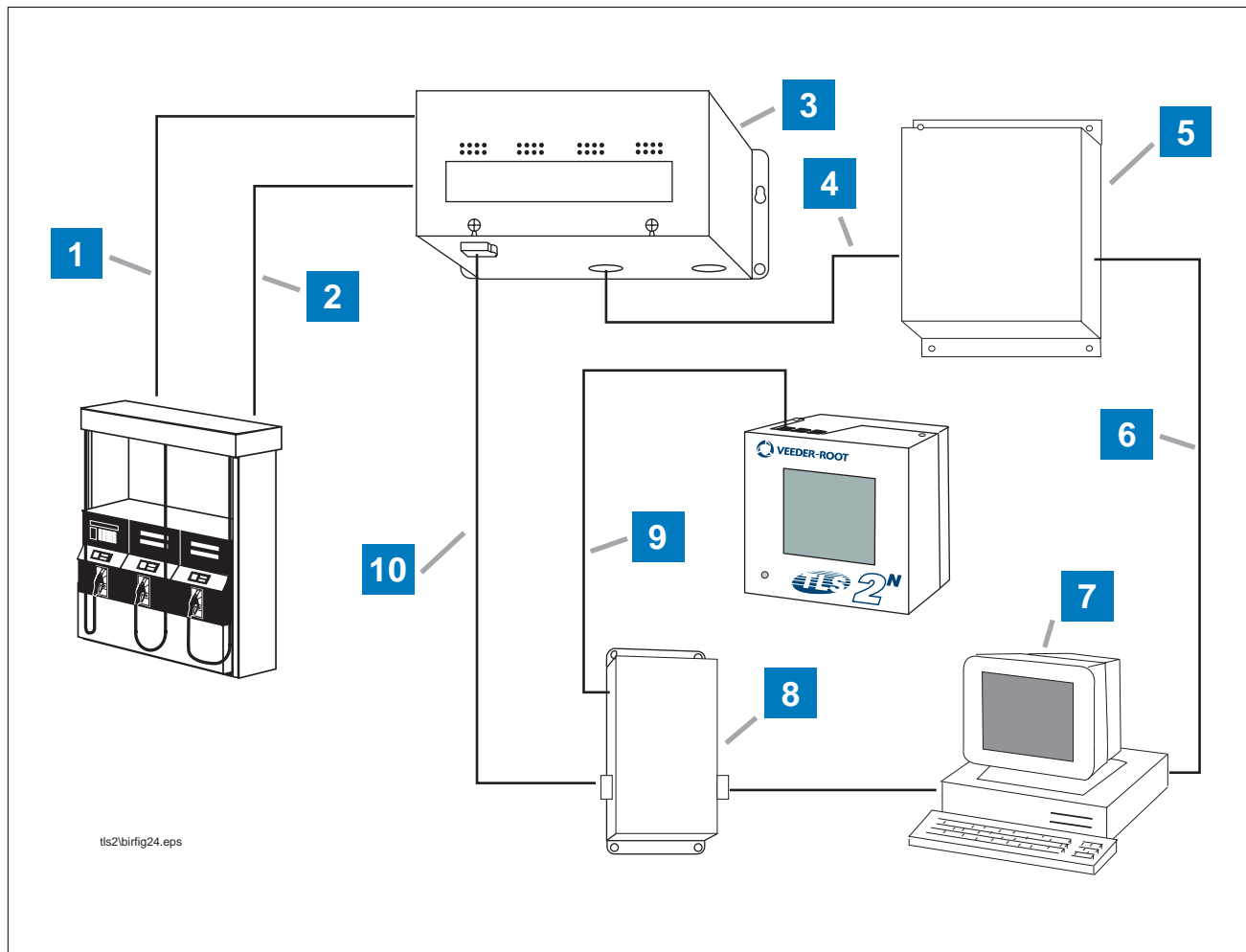


Figure 14. TLS-2N, DIM peripherals, and Storemaster POS Components

LEGEND FOR NUMBERED BOXES

- | | | | |
|---|------------------------------|----|---|
| 1 | Current loop | 5 | Communications cable (P/N 330592-XXX - length as ordered) |
| 2 | CRIND loop | 10 | 6-foot (1.83 m) DB9 to DB9, straight through, male/female serial cable (P/N 576010-904) |
| 3 | Universal distribution box | | |
| 4 | CRIND loop | | |
| 5 | AutoGas 507 CRIND controller | | |
| 6 | Computer connection | | |
| 7 | Storemaster POS | | |
| 8 | CAB (P/N 331056-001) | | |

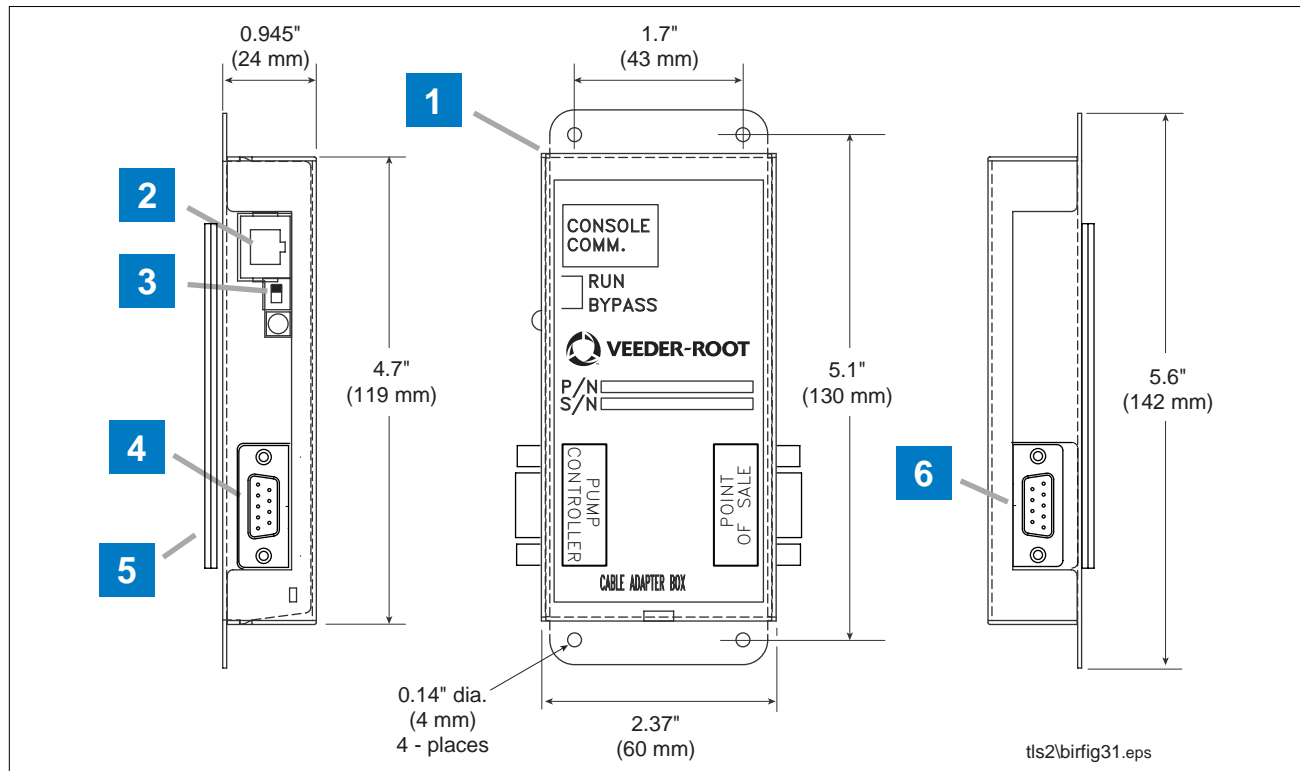


Figure 15. CAB Dimensions

LEGEND FOR NUMBERED BOXES

- | | |
|--|---|
| <p>1 Mount the CAB within 6-feet (1.83 m) of the distribution box using either the adhesive velcro strips on the back of the CAB, or with screws in the four mounting holes. If using the velcro strips, remove the protective paper from the velcro strips and then firmly press the CAB onto the mounting surface. Do not attempt to remove the CAB once it is in position.</p> <p>2 RJ-45 cable jack</p> <p>3 Run - Bypass switch</p> | <p>4 DB9 female connector</p> <p>5 Velcro strip</p> <p>6 DB9 male connector</p> |
|--|---|

NOTE: To ensure proper operation this switch must be set to RUN.

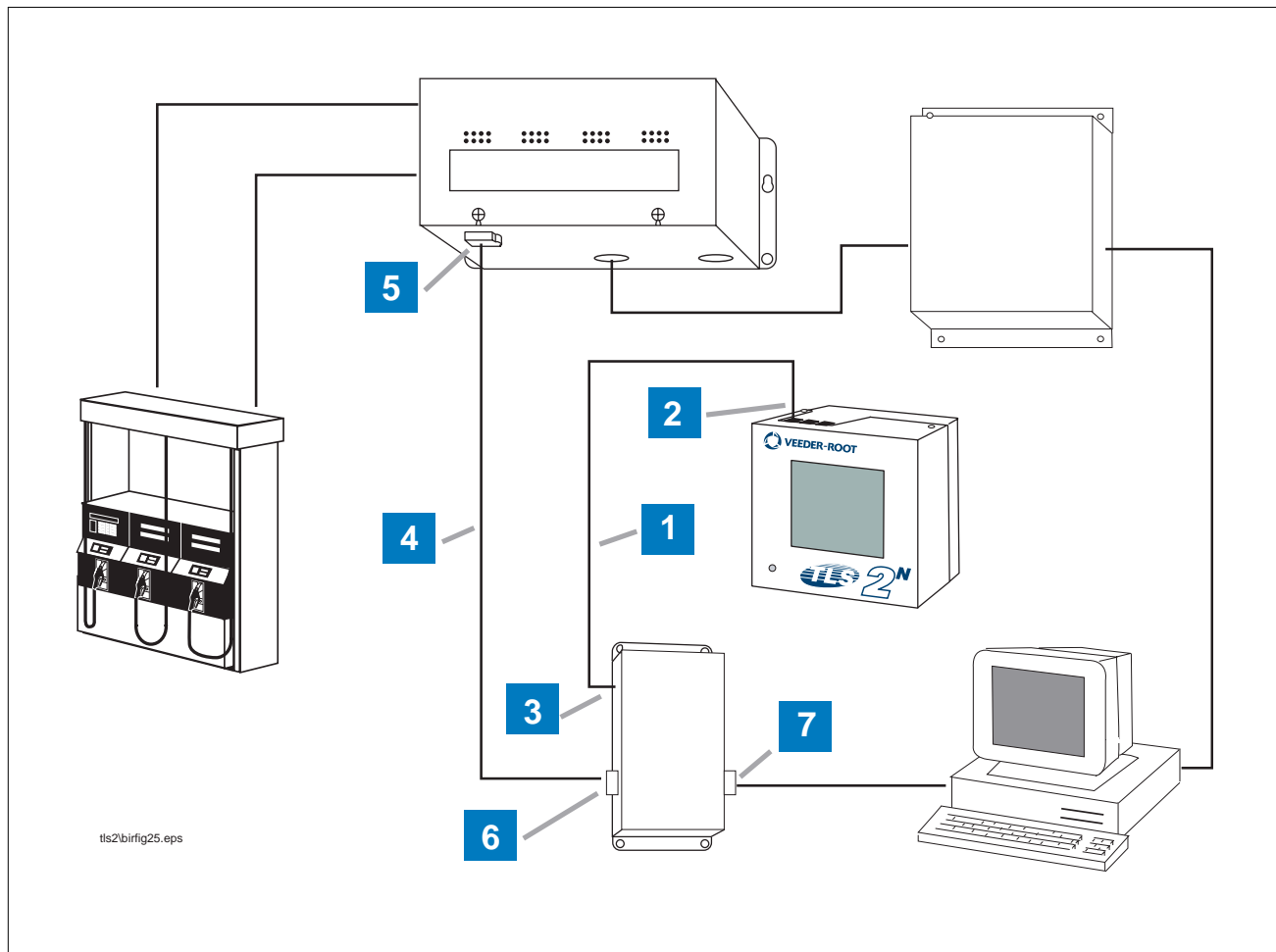


Figure 16. Storemaster POS Installation

LEGEND FOR NUMBERED BOXES

- 1 Comm cable with RJ-45 plugs at each end - length as ordered (P/N 330592-XXX).
- 2 Connect the RJ-45 plug on one end of the comm cable in any unused CDIM jack in the top of TLS-2N.
- 3 Connect the RJ-45 plug on the other end of the com cable in the CONSOLE COMM jack on the top left side of the CAB.
- 4 6-foot (1.83 m) DB9 to DB9, straight through, male/female serial cable (P/N 576010-904)

IMPORTANT! The station's dispenser communications will be down while you make these connections. Customers should be advised that no fueling can take place.

- 5 Disconnect POS cable connector at the distribution box. Attach the female end of the 6-foot serial cable (item 4) to this distribution box connector.
- 6 Attach the other end of the 6-foot serial cable to the PUMP CONTROLLER connector on the left side of the CAB.
- 7 Attach the POS plug you removed at the distribution box in step 5 to the POINT OF SALE connector on the right side of the CAB.

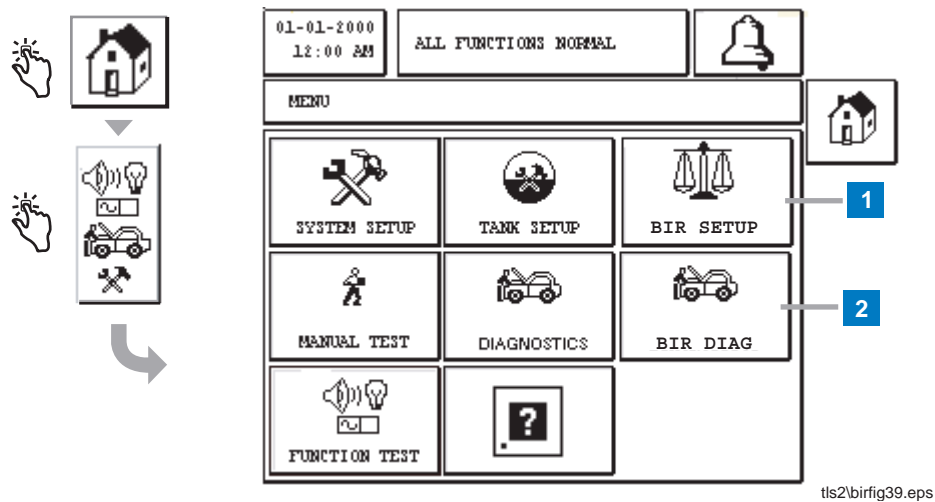
Setup

This section describes setup and operating procedures for the TLS-2N Console. This manual assumes that the console is installed, successfully cold booted, and setup for all in-tank functions. Continue to refer to the TLS2 Setup and Operation manual (P/N 577013-757) for in-tank related setups.

System Setup Screens

Setup instructions for TLS-2N System Setup screens created or changed for the TLS-2N are discussed in this section. In the screen examples that follow, there are label codes inserted beneath each parameter, e.g., [303]. These numerical codes are to help non-English speaking users connect the English label in the example to the translated explanation in the text below the example. For a complete index of label codes see page 44.

Main Menu Screen



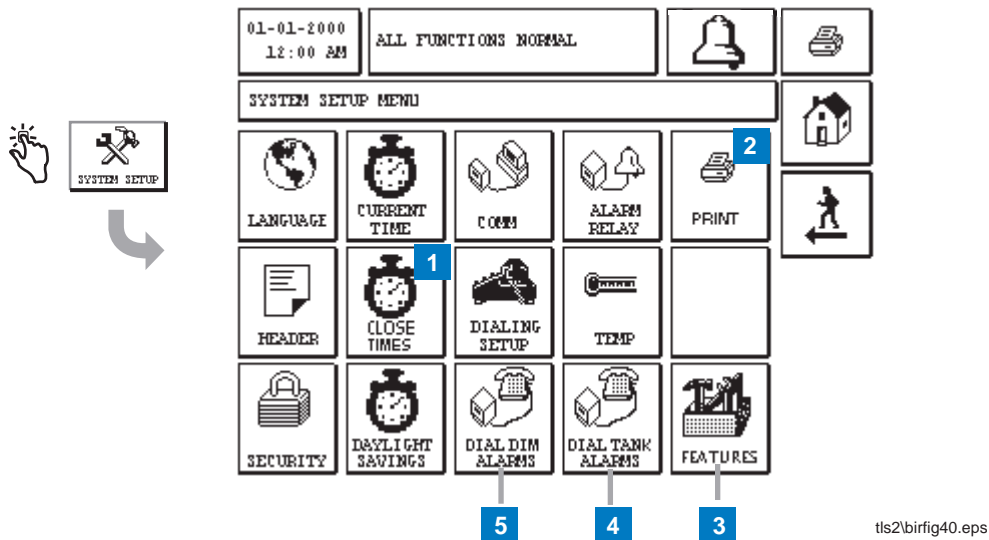
LEGEND FOR NUMBERED BOXES

The Main Menu screen has two new buttons for the BIR option:

- 1 BIR Setup button - touch to display the BIR Setup screen (page 33).
- 2 BIR Diag button - touch to display the Meter Events screen (page 45).

The remaining buttons on this screen are unchanged.

System Setup Screen



LEGEND FOR NUMBERED BOXES

The System Setup screen has five new buttons:

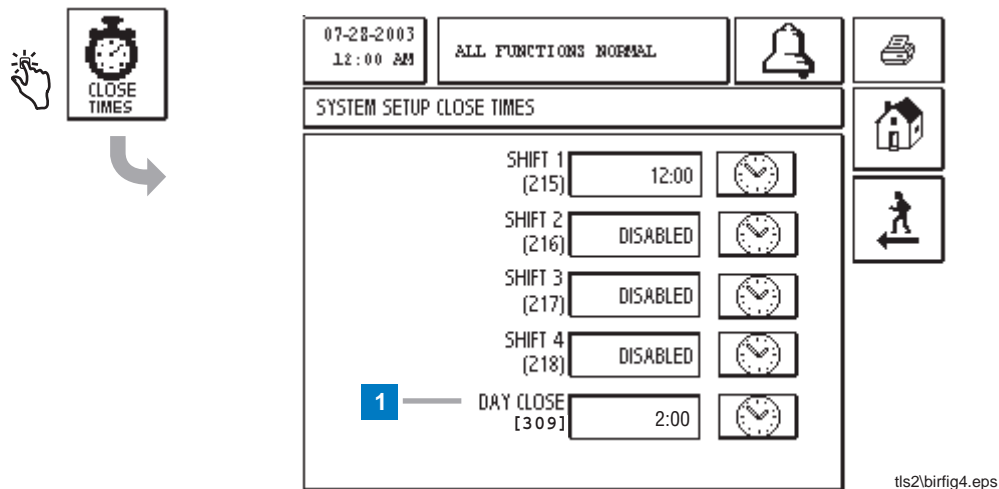
- 1 Close Times button - touch to display the System Setup Close Times Screen (page 26).
- 2 Print button - touch to display the System Setup Automatic Printing Setup Screen (page 27).
- 3 Features button - touch to display the System Setup Features Screen which provides access to the H-Protocol Format [259], Euro Protocol Prefix [260], Stick Height Offset [261], and Leak Test Format [262] setups. Aside from being accessed from a new button, these four functions are unchanged.

- 4 Dial Tank Alarms button - touch to display the System Setup Autodial Alarms Setup Screen (page 29).
- 5 Dial Dim Alarms button - touch to display the Autodial Alarm Dim Setup Screen (page 27).

Note: The Autodial Alarm button has been replaced by the Dial Tank Alarm/Dial DIM Alarm buttons in the System Setup Menu.

The remaining buttons on this screen are unchanged.

[305-309] System Setup Close Times Screen



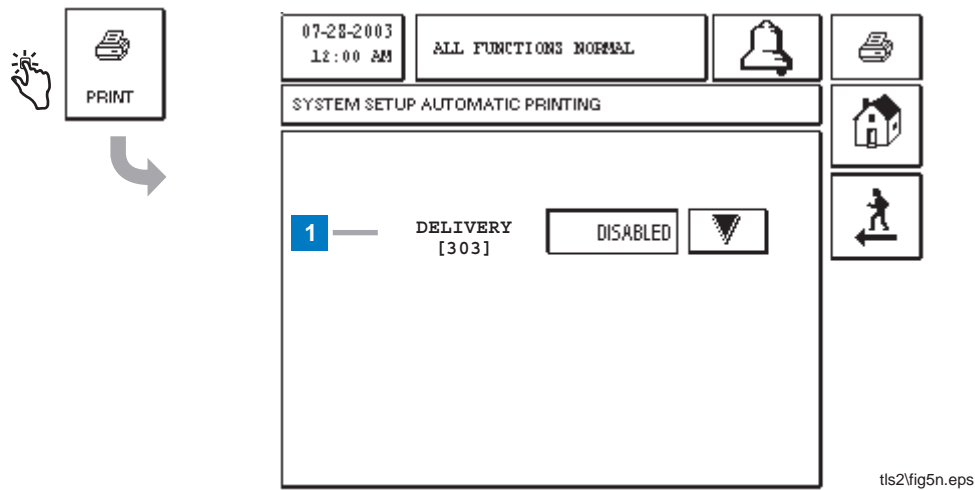
LEGEND FOR NUMBERED BOXES

The System Setup Close Time screen is a new screen:

- 1 Shift 1 [215]. Touch this button to open the Shift 1 close time screen. Enter a time for the system to close the Shift 1 Report. Disabled is the default.
- 2 Shift 2 [216]. Touch this button to open the Shift 2 close time screen. Enter a time for the system to close the Shift 2 Report. Disabled is the default.
- 3 Shift 3 [217]. Touch this button to open the Shift 3 close time screen. Enter a time for the system to close the Shift 3 Report. Disabled is the default.
- 4 Shift 4 [218]. Touch this button to open the Shift 4 close time screen. Enter a time for the system to close the Shift 4 Report. Disabled is the default.

- 5 Day Close [309]. Touch this button to open the Day Close time screen. Enter a time for the system to store the current day's data and close the Daily Report. The default time is 2:00 a.m.

[303] System Setup Automatic Printing Screen

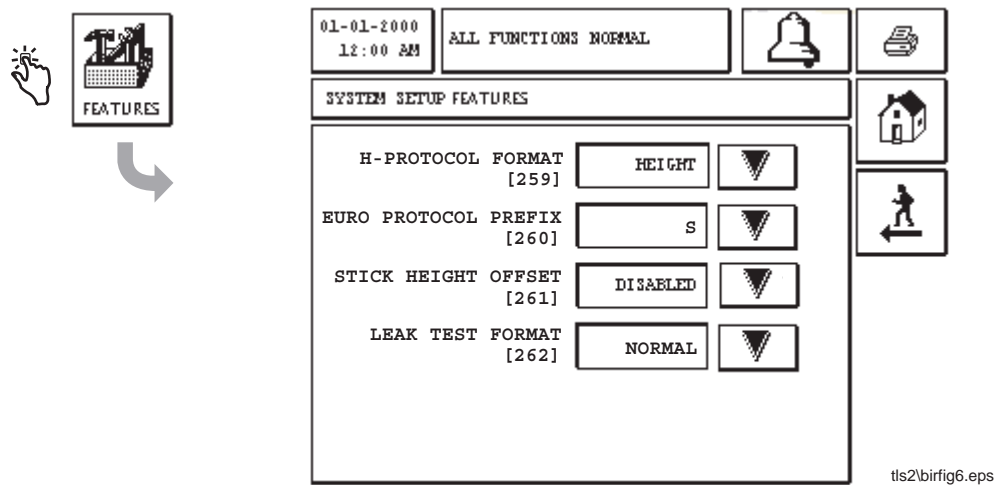


LEGEND FOR NUMBERED BOXES

The System Setup Automatic Printing screen is a new screen:

- 1 Delivery [303] - Touch this button to enable or disable Delivery Report at delivery end (increase and adjusted). Disabled is the default.

System Setup Features Screen



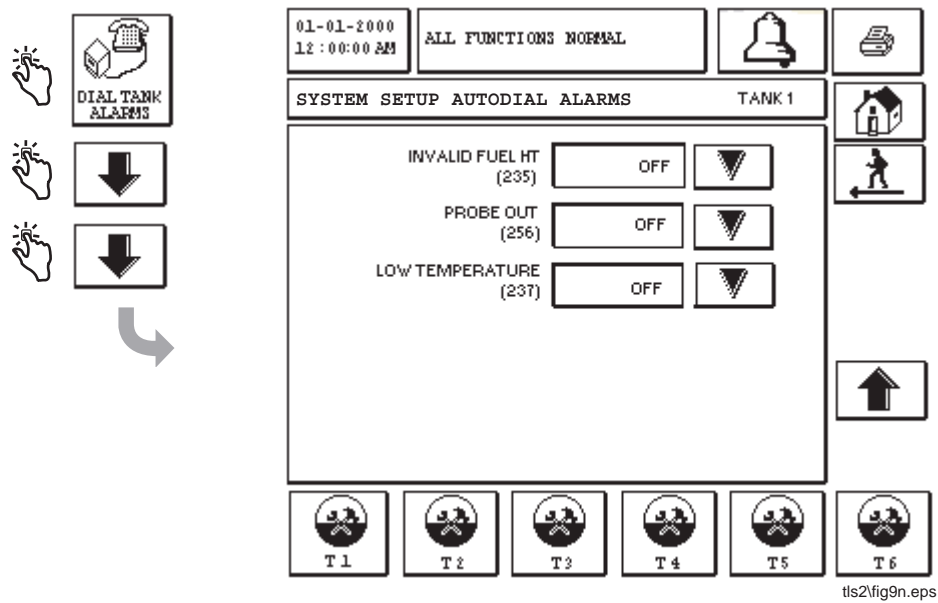
LEGEND

In the TLS-2N, the System Setup Features screen above is used to determine the desired format for each of the following features:

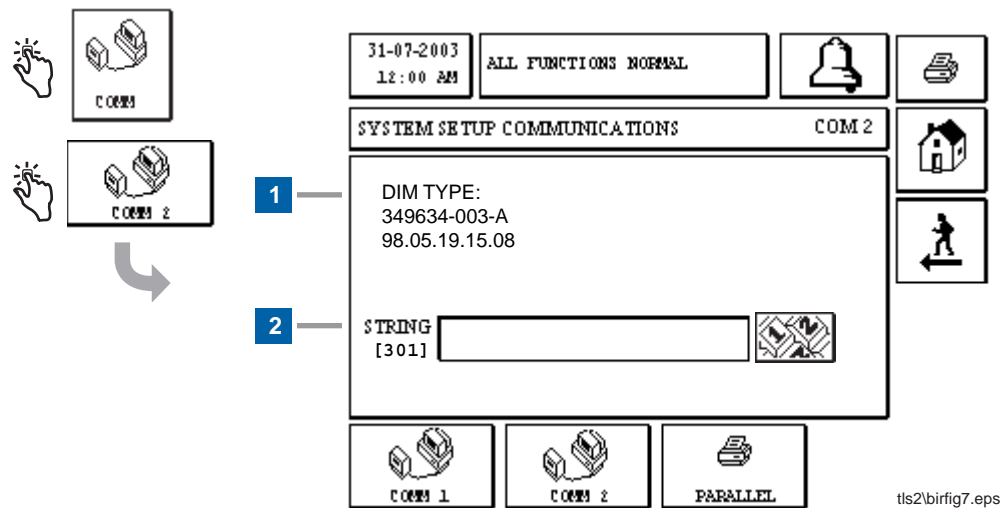
- H-Protocol Format
- Euro Protocol Prefix
- Stick Height Offset
- Leak Test Format

See Manual 577013-757 for details.

Autodial Alarm Tank Screen



{301} System Setup Communications Screen

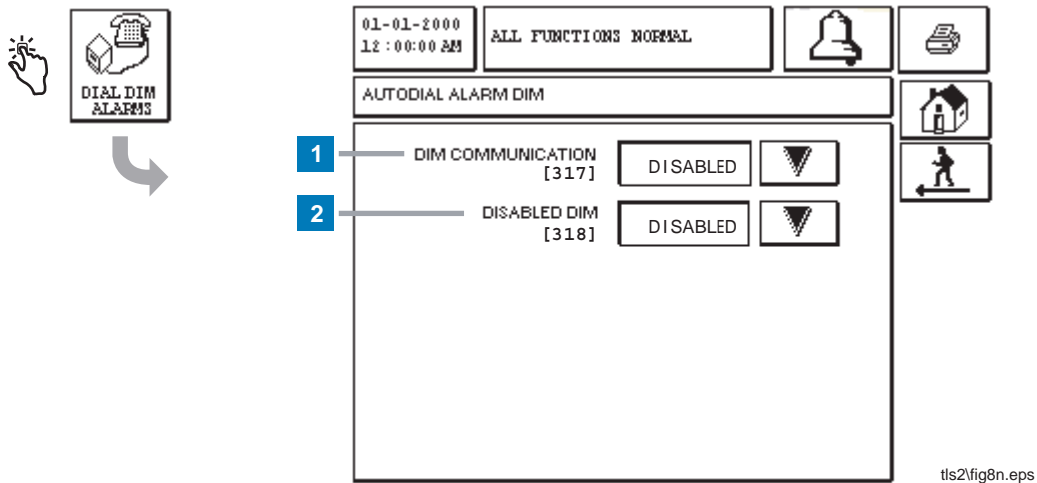


tls2\birfig7.eps

LEGEND FOR NUMBERED BOXES

- 1 Comm Type - This window displays the DIM type installed in the TLS-2N - EDIM or CDIM.
- 2 String [301] - Use the alpha-numeric keypad to edit the DIM string in the TLS-2N console:
 - If metric units are selected, enter B1EHVM
 - If U.S. units are selected, enter B1EHVG

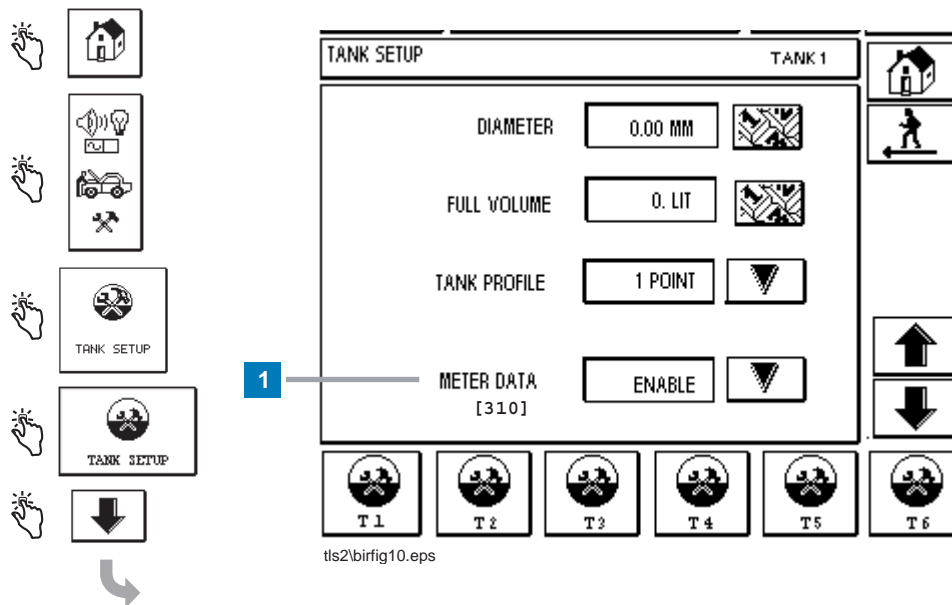
{317-318} Autodial Alarm DIM Screen



LEGEND FOR NUMBERED BOXES

- 1 DIM Communication [317] - touch the down arrow to touch the down arrow button to select Enabled or Disabled. When set to Enabled, the system sends a report of a (DIM) Communication alarm to a programmed location. Disabled is the default setting.
- 2 Disabled DIM [318] - touch the down arrow to touch the down arrow button to select Enabled or Disabled. When set to Enabled, the system sends a report of a Disabled DIM alarm to a programmed location. Disabled is the default setting.

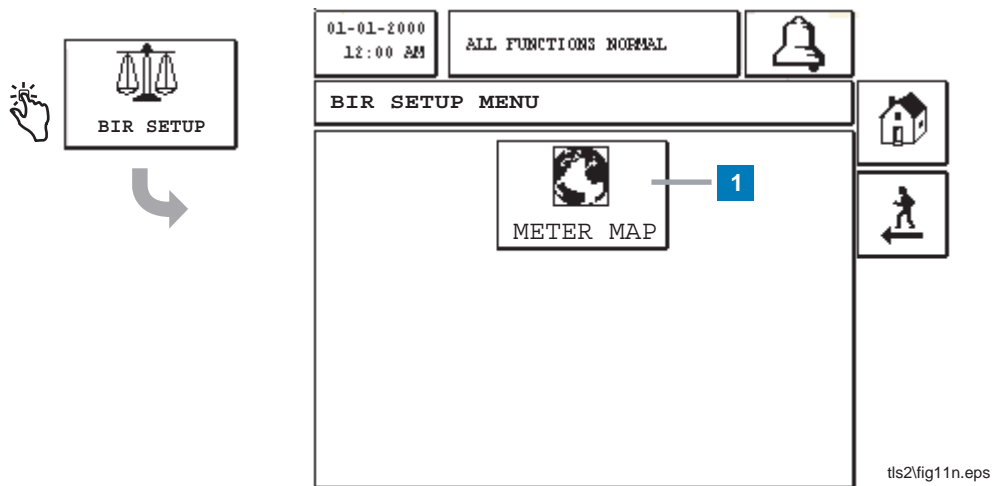
[310] Tank Setup Screen



LEGEND FOR NUMBERED BOXES

- 1 Meter Data [310] is a new parameter that has been added to the Tank Setup screen - touch the down arrow button to select **Enabled** or **Disabled**. Select **Enabled** if the tank is being monitored (has an installed probe connected to the TLS-2N and the TLS-2N is receiving meter data from the POS). This parameter must be set to **Enabled** for each monitored tank in the station.

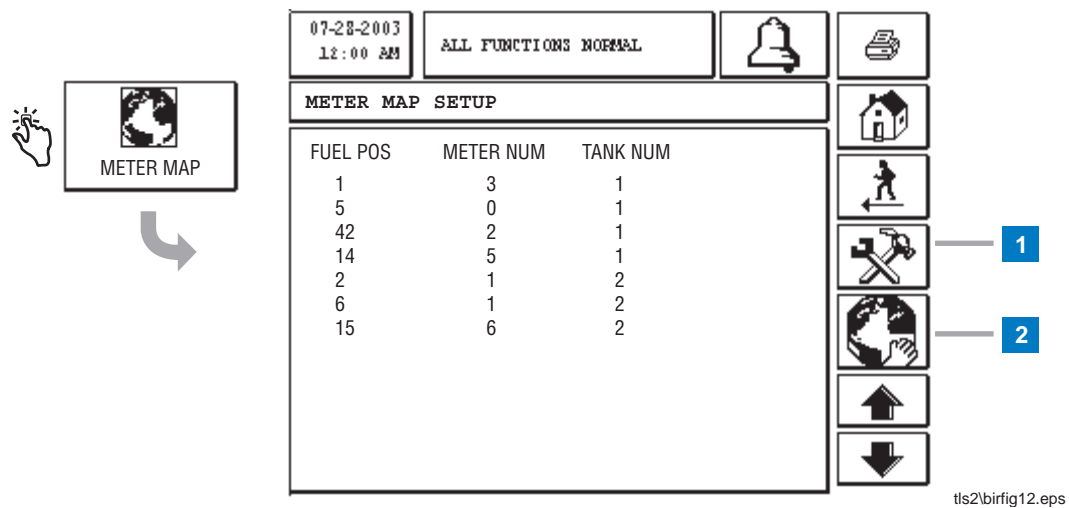
Setup Screen



LEGEND FOR NUMBERED BOXES

- 1 Meter Map - touch this button to open the Site Meter Map screen (page 34).

Site Meter Map Screen

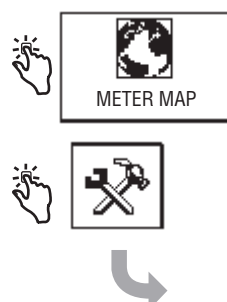


LEGEND FOR NUMBERED BOXES

This screen displays the meter map setup of the site showing POS-assigned Fueling Position numbers/Meter numbers and their user-assigned Tank number.

- 1 Meter Map Setup button - touch this button to open Meter Map Entry screen (page 35).
- 2 Clear Meter Map button - touch this button to open the Clear Meter Map screen (page 37).

Meter Map Entry Screen



07-28-2003 12:00 AM	ALL FUNCTIONS NORMAL		
ENTER: METER MAP ENTRY			
1 FUEL POS 00	2 METER 00	3 TANK 00	
←		→	
1	2	3	4
6	7	8	9
SAVE	CANCEL	NEXT	123

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LEGEND FOR NUMBERED BOXES

The Meter Map Entry Screen allows the user to enter or edit a Fueling Position, Meter Number and/or Tank number during the meter mapping procedure.

- 1 FUEL POS - In this field enter a Fueling Position number for the meter in item 2.
- 2 METER - In this field enter a Meter number for the Fueling Position in item 1.
- 3 TANK - In this field enter a Tank number for the adjacent FP and M numbers (items 1 and 2). A 99 entry for the tank number signifies a probeless tank.

Meter Mapping Procedure

All meters that report sales data to the POS must be mapped to a tank. Meters that are mapped to tanks that are not monitored by the TLS-2N must be mapped to a 'probeless' tank (e.g., a propane tank may report sales data to the POS and not be monitored by the TLS-2N).

Meters are identified by the combination of fueling position-meter number, for example FP1 M2.

Meters mapped to a set of manifolded tanks are to be mapped to the lowest numbered tank of the set.

Blended products are a combination of two meters. These meters will be mapped to the individual tanks that make up the product so mapping of a blended product's fueling position is not necessary.

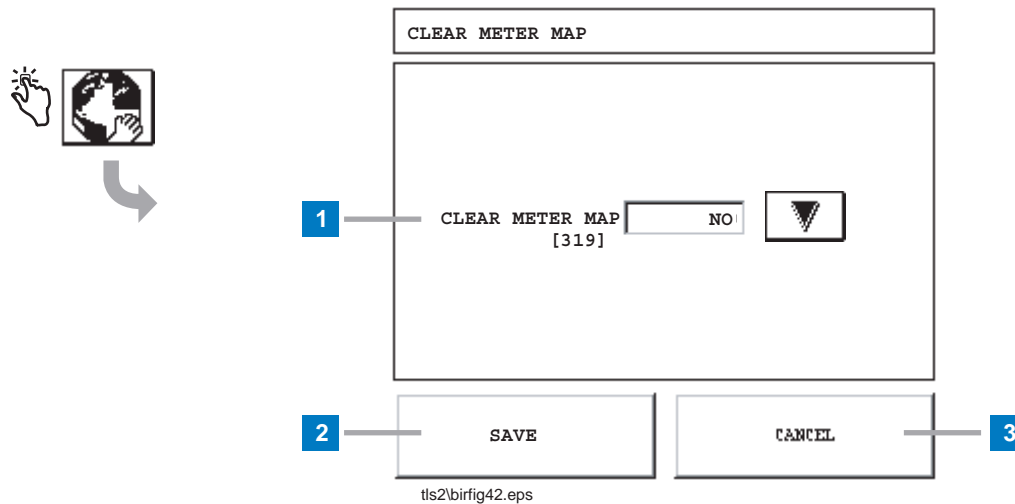
It is easiest to map one tank at a time. For each tank perform the steps below. Do not forget the 'probeless' tank if it applies to this site. Do not perform these steps on the secondary tanks of manifolded sets.

Before beginning this procedure, make sure all tanks that report sales data to the POS are configured in the TLS-2N and that the Meter Data (310) parameter (ref. "[310] Tank Setup Screen" on page 32) is set to **Enabled** for each of these tanks.

MAPPING PROCEDURE

1. Display the Clear Meter Map screen on the TLS-2N (ref. page 37). Clear the meter map. **NOTE: you only clear the meter map at the beginning of the mapping procedure.**
2. Begin with the product you have assigned to Tank 1 (e.g., 'regular' product). Start at the first fueling position of 'regular' supplied by tank 1 and dispense approximately 1 liter into a proving can then replace the nozzle into its cradle. Continue to dispense from each of the remaining 'regular' fueling positions supplied by Tank 1 in the site.
3. Display the Site Meter Map screen on the TLS-2N (page 34). The screen will display POS assigned fueling position and meter numbers, and a "?" in the TANK NUM column for each of your dispenses. If you have a printer installed, print out this screen. If a printer is not available, on a piece of paper list each fueling position/ meter number pair that have a "?" under the TANK NUM column.
4. Display the Meter Map Entry screen (ref. page 35). Enter each fueling position number/meter number pair from your list and a 1 for the tank number. If this is a 'probeless tank' use 99 for the tank number. When all FP/ meter pairs on the list have been entered that are assigned to this tank, press SAVE. You have now mapped all meters supplied by Tank 1.
5. Repeat steps 2 - 4 for every fueling position supplied by Tank 2, Tank 3, etc., until you have mapped all tanks in the site that report sales data to the POS.

[319] Clear Meter Map Screen



LEGEND FOR NUMBERED BOXES

- 1 [319] Clear Meter Map - touch the arrow button to select Yes and touch the Save button (item 2) to clear the site's meter map. The default is No.
Touch Cancel (item 3) to close the screen and return to the Setup Meter Map screen.



Warning! Clearing the meter map should only be done when initially mapping the site's meters. Clearing the meter map for any other reason will prevent monitoring site sales data.

Reports

Two reports are accessed from the Inventory Report Screen (see example below):

- Shift Inventory Report (no example shown)
- Stick Offset Report (see page 39)

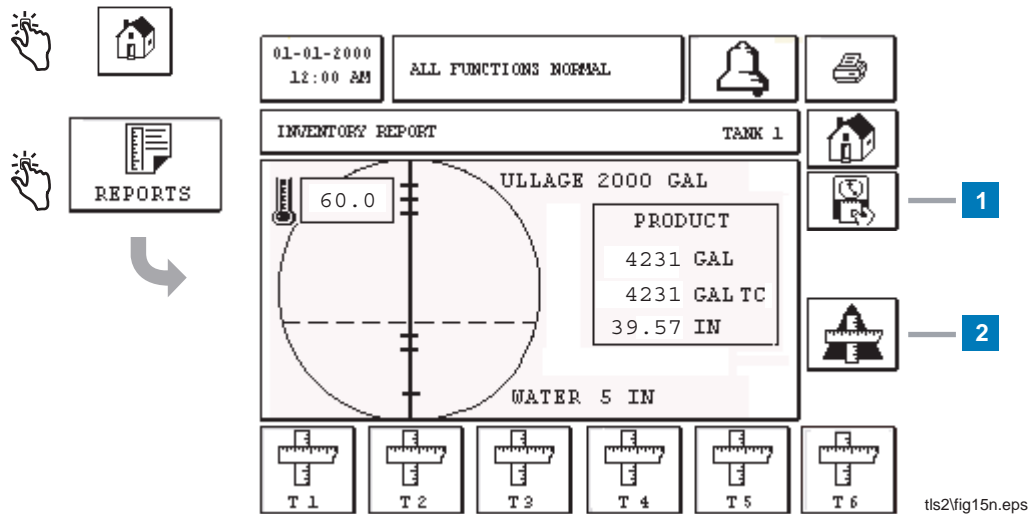
The Delivery Report is accessed from the Main Menu:

- Delivery Report (see page 40)
- The Adjusted Delivery Report is accessed from the Delivery Report screen (see page 41)

The Meter Events report is accessed from the Main Menu:

Meter Events report (see page 45)

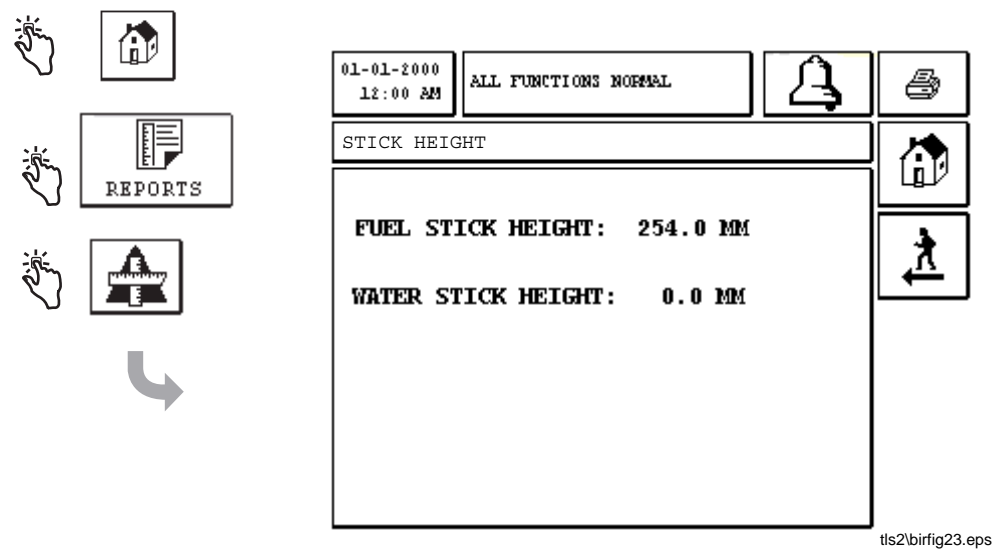
Inventory Report Screen



LEGEND FOR NUMBERED BOXES

- 1 Shift Report button - touch this button to view Shift Inventory Report.
- 2 Delta Stick button - touch this button to the view water and fuel stick heights report (page 39).

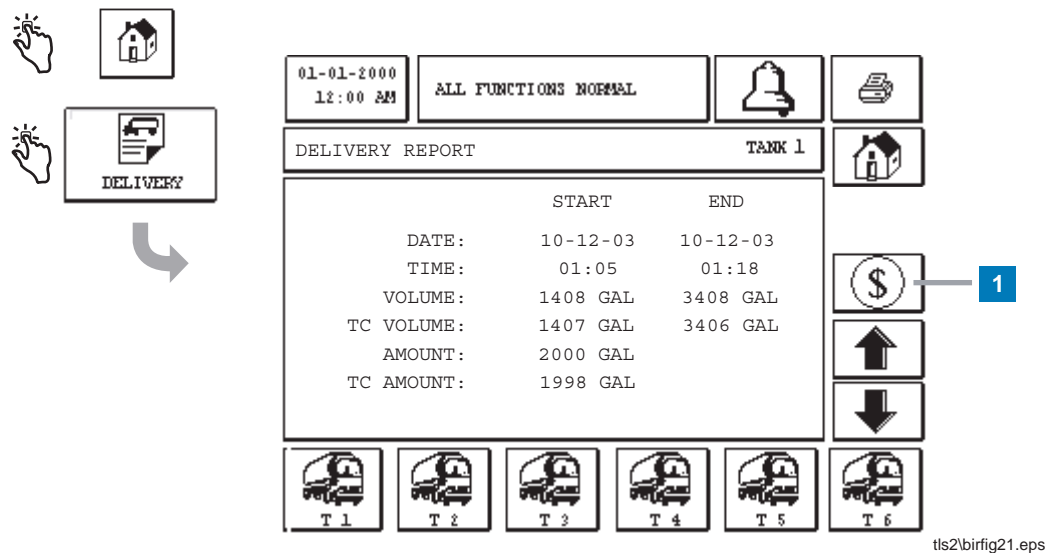
Stick Offset Report Screen



LEGEND FOR NUMBERED BOXES

This screen reports the current fuel stick height (probe measured fuel height minus stick offset) and water stick height (probe measured water height minus stick offset). Water stick height is new.

Delivery Report Screen





LEGEND FOR NUMBERED BOXES

This screen reports the inventory increase following each delivery.



- 1 Adjusted Delivery button - touch this button to open the Adjusted Delivery report screen for the selected tank (page 41).

Adjusted Delivery Report Screen





01-01-2000
12:00 AM



ALL FUNCTIONS NORMAL









ADJUSTED DELIVERY REPORT REG 1


	START	END	AMOUNT
DATE:	01-12-03	02-12-03	
TIME:	01:33	02:47	
WATER:	0	0	0
VOLUME:	1298	2948	2000
TC VOLUME:	1298	2948	2000













T 1 T 2 T 3 T 4 T 5 T 6





T 1 T 2 T 3 T 4 T 5 T 6

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LEGEND FOR NUMBERED BOXES

This screen reports adjusted delivery. Volumes in the Adjusted Delivery report are calculated as follows:
Adjusted Delivery = end volume - start volume + sales

Alarms

Table 2 lists new alarms.

Table 2. Alarm Message Table

Alarm	Type	Cause	Action
Communication Alarm	DIM	No communication between DIM and an external device	Call for service following the procedures established for your site.
Disabled DIM Alarm	DIM	No communication between TLS-2N and DIM	Call for service following the procedures established for your site.
Unmapped Meter	DIM	A Fuel Position/Meter is seen that has not been mapped.	Map meter to tank.
Close Shift Warning	System	The system is waiting for an idle period to close for a shift report.	System clears itself after idle period and shift closes.
Close Daily Warning	System	The system is waiting for an idle period to close for a daily shift report.	System clears itself after idle period and shift closes.

Information on Alarm States

ACTIVE ALARMS

When an alarm goes active, the console's internal beeper activates, the alarm relay activates (if enabled), the front panel LED flashes red, and the Message Window (item 1 in Figure 17) displays an alarm message. In the case of multiple alarms, the Message Window will automatically scroll through the active alarms. In the case of an alarm assigned to auto dial, the console dials out and establishes a connection with the remote host. The host can then send requests to the console to determine the reason for the call.

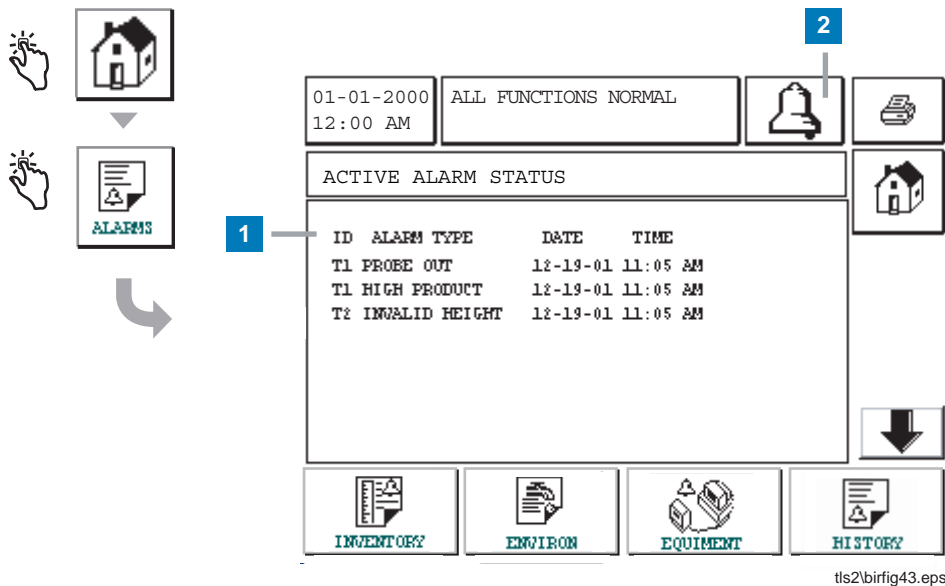


Figure 17. Active Alarm Screen

ACKNOWLEDGING AN ACTIVE ALARM

When an alarm is active, the user can turn the beeper off and deactivate the alarm relay by touching screen's the ALARM Button (item 2 in Figure 17). The front panel LED will stay in the ALARM state and the alarm will remain in the active alarm list until the alarm returns to normal state. If the alarm is inactive but not acknowledged, it will remain in the alarm list and the beeper and alarm relay (if enabled) will remain active until it is acknowledged.

RETURNING TO NORMAL STATE

With any alarm when an out-of-limit condition(s) is corrected, or a faulty device is replaced with a properly operating one, the alarm is automatically cleared.

Label Code Index

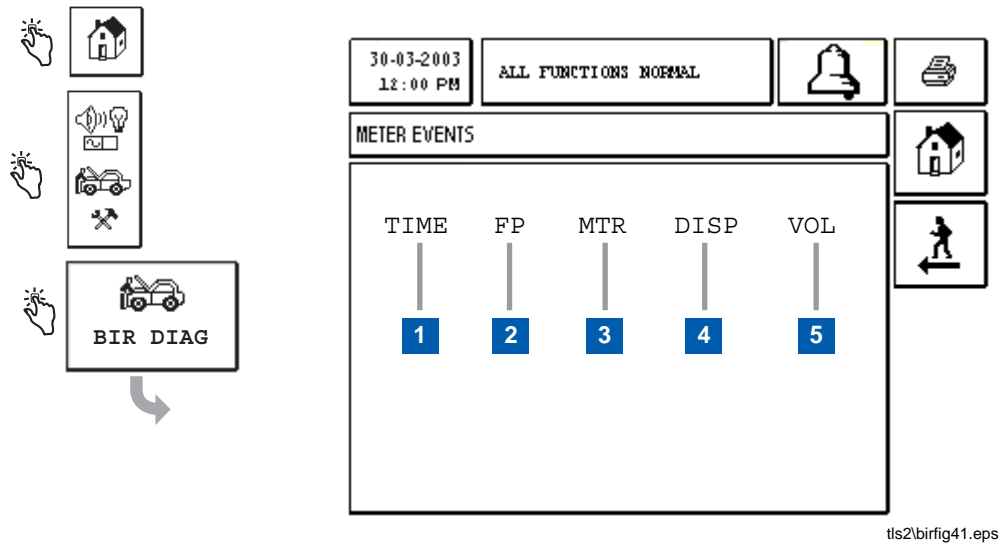
Table 4 is included to help non-English speaking users find translations of all English parameter labels used in the TLS-2N Setup screens. Beneath each label is a unique numerical code in brackets, e.g., [301]. This code is listed in the table below and points to a Setup Screen in this manual in which the label is used.

Table 4. Setup Label Codes

Label Code	Parameter Label	Where Used
301	String	page 30
303	Delivery	page 27
309	Day Close	page 26
310	Meter Data	page 32
317	DIM Communication	page 31
318	Disabled DIM	page 31
319	Clear Meter Map	page 37

Diagnostics

Meter Events Screen



LEGEND FOR NUMBERED BOXES

This screen reports the site's meter events log.

- 1 FP - fuel position dispensed from
- 2 M - meter supplying fuel position
- 3 Start Time - time dispense began
- 4 End Time - time dispense ended
- 5 Sales - amount dispensed

Use this screen to verify FP/meter pairs and the amount dispensed.

Serial Commands

This section contains a list of RS-232 serial commands supported by the TLS-2N only. TLS2 serial commands described in manual 577013-767 are also supported by the TLS-2N.

Command	Title
210	Last Adjusted Delivery Report (1 record)
20B	Adjusted Delivery Report (10 records)
21B	Extended Adjusted Delivery Report (60 records)
212	In-Tank Stick Water Height Report
511	Set BIR Shift Printouts Flag
512	Set BIR Daily Printouts Flag
544	Set Delivery Printout Flag
603	Product Code
606	Set 20 Point Tank Chart
615	Set Meter Data Present
7B1	Setup Meter Map
7B2	Set Meter Calibration Offset
79B	Set Shift Manual Adjustment Value
79C	Set Daily Manual Adjustment Value
79D	Close BIR Shift
79E	Clear Tank Map Table (only for auto meter map)
79F	Set BIR Temperature Compensation Flag
790	DIM Software Revision
791	Set Mechanical Dispenser Interface String (only need one)
792	Set Electronic Dispenser Interface String
793	Set Reconciliation Auto Daily Closing Time
795	Set Periodic Reconciliation Mode
796	Set Periodic Reconciliation Report Length (only rolling)
797	Set Periodic Reconciliation Alarm Flag
798	Set Periodic Reconciliation Alarm Threshold
799	Set Periodic Reconciliation Alarm Offset
A54	30 Sec Sample Diagnostic
C01	Basic Inventory Reconciliation Daily "Row" Report
C03	Basic Inventory Reconciliation Shift "Row" Report
C07	Basic Inventory Reconciliation Periodic "Row" Report

