ProSoft
TECHNOLOGY

Where Automation Connects.

Site Configuration

Operator TermLinx

Site Name Truck Terminal

PLC Addresses
PLC Files

Number of ...
Islands	Gates	Blends	Trans Pool
8	1	32	4096

General | Lift | Dump

Processor Type   ○ PLC-5   ◉ SLC-500   ○ CL5550

Measurement System   ○ SI Units   ◉ US Units

Trans Retention (days)	60	☑ Require PIN at Island
		☐ Transaction Log
Standby Timeout (min)	120	☐ Record Density as "API (RD@60)
		☑ Mark Transaction as "uploaded"
Standby Limit (hr)	99	☐ Allow Shutdown via PLC
Max Stby Trans / Driver	2	☐ Orient Island Display R to L
End-of-day Hour	0	☐ (Old) Entero compatibility

Caption for "Vehicle" **Vehicle**   Caption for "Quota" **Quota**

Activate transaction at ...   Caption for Minor Jurisdiction

Any location   Province

Gates

Islands

Mapping

Done

TermLinx

TLX-TCM

TermLinx Configuration Manager

Terminal Management System

CONFIGURATION MANAGER MANUAL

Please Read This Notice

Successful application of this module requires a reasonable working knowledge of the Rockwell Automation TermLinx hardware, the TLX-TCM Module and the application in which the combination is to be used. For this reason, it is important that those responsible for implementation satisfy themselves that the combination will meet the needs of the application without exposing personnel or equipment to unsafe or inappropriate working conditions.

This manual is provided to assist the user. Every attempt has been made to ensure that the information provided is accurate and a true reflection of the product's installation requirements. In order to ensure a complete understanding of the operation of the product, the user should read all applicable Rockwell Automation documentation on the operation of the Rockwell Automation hardware.

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Contents

1   Guide to the TLX-TCM Configuration Manager Manual

Function		Section to Read	Details
Introduction (Must Do)	→	Product Specifications (page 7)	This section gives the customer an overview of the TermLinx Terminal Management System, including features and benefits as well as functional specifications.
Configuration (Must Do)	→	Configuring TermLinx (page 9) Configuring the TermLinx AccuLoad Interface (page 43)	These sections contain information about configuring the batch controllers and setting up sites.
Reference (Must Do)	→	TermLinx PLC Ladder Logic Interface (page 47)	This section contains detailed ladder logic information.
License, Warranty, and Support Index	→	License, Warranty and Support (page 55)	This section contains License, Warranty, and Support information. Index of chapters.

2   Product Specifications

TermLinx™ is an innovative Terminal Management System (TMS) designed for the Microsoft™ Windows™ XP platform. It meets the growing industry demand for seamless database connectivity to the corporate host management systems. At the same time, it has been designed for cost effective stand-alone operation. One of its outstanding features is its use of non-proprietary, globally available hardware and software platforms, which make it relatively easy to support. TermLinx integrates tightly with Rockwell Automation™ PLCs for its system functions (with a direct data link) and communication interface to the AccuLoad™ Batch Controllers and Set-Stop unit. Because the same PLC can be used for the overall terminal control, TermLinx eliminates the need for additional hardware for station control.

- Easy to use Touch Screen interface
- Display status and alarm information in your HMI
- Uses ORACLE™ database
- Patented Water Cut Technology
- Field Configurable
- Field Expandable

TermLinx provides a well-defined data exchange protocol for central enterprise and corporate wide business management host computer systems. It allows such a system to operate any number of remote TermLinx sites through Ethernet-based TCP/IP LAN/WAN systems on a 7/24 basis.

Benefits include:

- Fewer hardware "boxes" to reduce failures and lower initial system and maintenance costs
- Gate Access (This feature currently applies only to OPACTS users, but is planned for an upcoming TermLinx release)
- TermLinx Configuration Manager, included
- High-level, user-friendly graphical touch screen for truckers
- TermLinx Database Manager, included for:
  - o Database editing and maintenance
  - o Report generation
  - o Database backup in "csv" format for importing into other applications
- TermLinx Configuration Manager (TCM) to facilitate:
  - o Loading/offloading island configuration
  - o Product blend control and configuration
  - o PLC Data File Mapping and hard copy documentation
  - o Automatic PLC Data File tag generation
  - o Extensive operating database options:

- Validation & Lockout by: Driver, Contract #, Time and Date Window, Product Volume, Driver License Expiration, Carrier Insurance Expiration etc.
- Remote on-line maintenance of complete database from corporate headquarters
- Automatic purging of the transaction database based on a configurable time window

- Small installation, short time from installation to implementation
- Scalable for small to large installations

2.1 Functional Specifications

- **Operating system:** Microsoft Windows XP
- **Controller:** Industrial grade non-proprietary platform with global presence (Rockwell Automation PLC)
- **TermLinx, Database Server, System Computer:** Industrial grade touch screen Pentium™ PC
- **Open System Architecture:** ODBC & ACTIVE-X Object module integrated into an HMI Container (Rockwell Software™ RSView32™, Wonderware™, and so on.)
- **Well established client/server type relational database engine:** ORACLE XE 10g
- Flexible and expandable database tables to accommodate wide range operating data file structures
- Ethernet, TCP/IP, LAN/WAN, and PPP connectivity
- Corporate Database access to Multiple TermLinx applications at remote locations
- Tightly integrated with terminal automation PLC system
- Current Transaction data (audit trail) written to PLC data file for HMI or PLC host using RSLinx
- Communication interfaces for Set-Stop units (AccuLoad)
- Option for using powerful internal functions for replacing external Set-Stop units for product volume measurement and batch control using ProSoft's in-chassis flow computer

3   Configuring TermLinx

3.1   Using TermLinx Configuration Manager

TermLinx Configuration Manager is an application that simplifies the task of managing the configuration files which control how your TermLinx system operates. TermLinx Configuration Manager is designed for computers running Microsoft Windows XP.

Note: TermLinx Configuration Manager is not supported on computers running earlier versions of Windows.

The TermLinx Server is configured with configuration files that you create using TermLinx Configuration Manager. A configuration file is called a Project. One project is created for each site by configuring items in a Site Configuration dialog box, and then configuring gates, islands, mapping, and finally, saving the project with a site-specific name. A Project runs on the TermLinx Server only after you save and download the project file to the Server.

3.2   Configurator Responsibilities

Programming

The Configurator must program ladder logic in the PLC for TermLinx, for a minimum of two rungs per bay, and is responsible for programming the PLC, Flow Computer, HMI, and the batch controller.

If the site desires integration with external systems, such as Tank Gauging or Inventory Management Systems, it is possible at either the site level or the corporate level. This is outside the scope of TermLinx, but the SI can make use of the TermLinx data and setup the PLC logic for direct interaction of it with such external systems.

Optionally, implement PLC logic to terminate transactions in progress in the event of a power failure and restore. Refer to TermLinx PLC Ladder Logic Interface (page 47) in this manual for more information on programming.

Site Configuration

The Configurator is responsible for configuring the TermLinx site using TermLinx Configuration Manager (TCM) and making minor adjustments as required. This is not a day-to-day function, but is necessary only when physical changes to the site are made, such as the addition of a new Bay. It is necessary to set up the site, islands (bays) per site, and island information in TCM.

It is very important that the site be configured in coordination with your corporate assignment of Product codes in the database, especially when multiple sites are to be administered from a central location. The Configurator must keep this in mind when preparing the PLC data files. The Configurator also needs to assign PLC files to the site and each island. Part of the island configuration is setting the accumulator characteristics, which relate to the type of batch controller being used.

TermLinx Configuration Manager also allows physical island mapping to associate two TermLinx logical single-mode islands with a single, dual-mode, physical island. Thus, one island, if capable, can be setup as both loading and unloading. The supporting PLC ladder must be present to ensure mutual exclusivity of mode. Refer to Site Configuration (page 13) in this manual for more information on designing and implementing your site.

Database Population

At site setup time, the Configurator works with the Account Administrator to perform initial population of the database. Refer to the TermLinx Database Manager for more information on database configuration.

3.3   Creating Formal Documents

TermLinx uses Crystal Reports runtime to print each formal document. The data comes from the Temporary Database. Upon receiving the signal to issue the document, it prints using the Crystal Report "report format" files that specify completely the contents of the relevant document. The documents are printed using printers connected to parallel ports on the Host; one port is for loading transactions and the other for unloading transactions, and where suitable both loading and unloading transactions may use the same port.

There are sample BOL and BOU reports provided with TermLinx. Use Crystal Reports to customize them. See Setting Formal Report Printing and File Paths (page 37) for details.

The Projects folder contains editable copies of the sample reports; the RPT files may be opened and edited using a Crystal Reports application.

The "Instance" folder contains copies of the sample reports in use by the TermLinx Server, which may not be edited. The TCM File>Instance menu allows newly-edited RPT files to be installed to Instance.

3.4   Starting TermLinx Configuration Manager

To start TermLinx Configuration Manager:

1   Go to Start > Programs > ProSoft Technology > TermLinx > TermLinx Configuration Manager.
2   Click OK to dismiss the Splash Screen.
3   Enter the password when prompted. The default password is "termlinx".

3.5   Starting a New Project

To start a new project:

1   Start TermLinx Configuration Manager.
2   Choose Project > Configure Site.
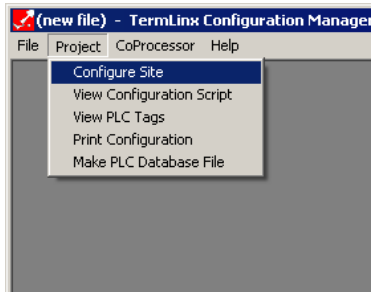
3   Configure your TermLinx Server (according to the information in the Site Configuration Dialog Box section).
4   Choose File > Save As to save the project so you can open it again later.

Boot Mode Setting

After configuring a site, you need to verify the Boot Mode setting, which must be "2" until you are ready to run TermLinx.

To check the setting:

1   Check the setting by going to File > Instance, (page 33) and then edit configuration entries and install files as appropriate.

All installed files are copied to C:\TermLinx\Instance, except for any 3rd party Batch Controller executables which are copied to C:\TermLinx Programs. Refer to C:\Termlinx\Registry.txt for details.

2   In the Configuration tab, select 0 (Automatic Startup) or 1 (Suppress Auto Start, one time).

Important: Do not change the Boot Mode setting to 2 until you are *ready to run TermLinx*.

3.6   Loading a Project

You can open and edit a project you have previously saved. Do this if you have started, but not completed, the configuration of your project, or if you must modify the settings for a project that has already been downloaded to the module.

To load an existing project:

1   Start TermLinx Configuration Manager, and then choose File > Load. This action opens a dialog box that shows a list of TermLinx Configuration Manager project files (OPK files) in the current folder.

Note: TermLinx Configuration Manager uses the folder you most recently used to load or save a TermLinx Configuration Manager project file. The first time you use TermLinx Configuration Manager, it will use the "C:\TermLinx\Projects" folder.

2   Choose the project to load, and then click Open.

To load a sample project:

1   Go to File > Load.
2   Navigate to the default projects folder, C:\TermLinx\Projects. This folder contains several default ProSoft sample projects.
3   Choose the appropriate file:
   o   ProSoft**C**.opk - for use with a ControlLogix PLC
   o   ProSoft**P**.opk - for use with a PLC5
   o   ProSoft**S**.opk - for use with an SLC

3.7 Site Configuration

The Site Configuration dialog box opens when you go to Project menu > Configure Site.

The first time you open the Site Configuration dialog box, the Site PLC Addresses dialog box opens on top of the Site Configuration dialog box. This will continue until the site's PLC files are configured.

Operator/Site Name

- Enter the name of the Terminal Operator in the Operator text box.
- Enter the name of the TermLinx site in the Site Name text box.

Note: The names you enter in the Operator/Site Name text boxes will appear near the top of the TermLinx Bay Status screen, if being used. Make sure to look at the Bay Status screen to verify that your entries fit on the screen.

Site PLC Addresses

It is very important that the site be configured in coordination with your corporate assignment of Product codes in the database, especially when multiple sites are to be administered from a central location. The Configurator must take this into consideration when preparing the PLC data files. PLC files must be assigned to the site and each island. Part of the island configuration is setting the accumulator characteristics, which relate to the type of batch controller being used. Certain settings are required when using an AccuLoad.

The site configuration requires two data files in the PLC: an integer file and a floating point file. Click the PLC Files button to display the Site PLC Addresses dialog box.
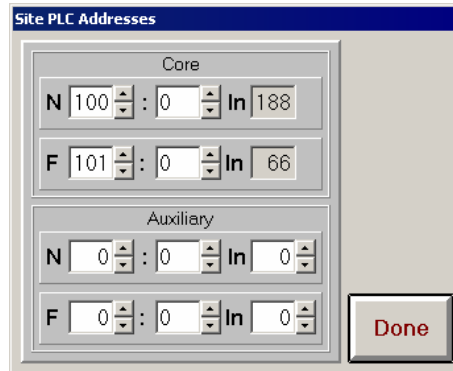
Enter the PLC's memory addresses for each of these files.

- Core: Both files are required, regardless of the number of loading or offloading islands configured.
- Auxiliary: Reserved for future use.

Note: Although these files may be placed anywhere in the PLC file block, it is recommended that they be in a continuous sequence.

Select the Number of:

- Islands at This Site

  Set this number to the total number of loading and/or unloading islands to be configured for your site. TermLinx supports up to 64 islands.

Note: During site configuration, islands are defined for either lifting or dumping. Physical islands at a site are called "bays" in the TermLinx screen.

- Gates at This Site

  Set this number to the number of gates at the terminal for your site. This feature currently applies only to OPACTS users, but is planned for an upcoming TermLinx release.

- Blends for Your Site

  TermLinx allows a maximum of 32 different products or blends per site. If you plan to provide only two blends at your site, you should set the Blends box to 2. However, if you configure the site for more blends than you are currently providing, you will not need to reconfigure the site PLC files if you add more blends later. The PLC Memory required for each blend is very small (4 integer elements plus 2 floating point elements), so unless your PLC memory is very limited, we recommend configuring all 32 blends.

Set Transaction Pool Value

> This is the size of the Transaction Cache in RAM, which is the number of transactions that can be active at a terminal concurrently. Each Transaction requires about 500 bytes. Set this field to 4096 (default value).

3.7.1   Site Configuration Dialog Box: General Tab

Click the General tab to configure options for system-wide settings.

- **Processor Type:** Choose PLC-5, SLC-500 or CL5550.
- **Measurement System:** Select SI to show standard metric system units; select US to show USA units of measurement.
- **Transaction Retention Period (days):** The value of this entry defines the period in days that the Transaction Data and expired Quotas will be kept in the TermLinx archives before being purged (deleted).
- **Standby Timeout (minutes):** The time for which a standby transaction will remain active while an island is free and available for loading or unloading. The transaction will be deleted from the current transaction table after this time has elapsed.
- **Standby Limit (hours):** Time in hours after which a standby transaction will be deleted unconditionally.
- **Maximum Standby Transactions per Driver:** The maximum number of standby transactions a driver is allowed to have concurrently. For example, for a driver with a main truck and a pup (trailer), you can allow a driver to create one transaction for the main truck and a second transaction for the pup before proceeding to load either compartment.
- **End-of-Day Hour:** This time is used by TermLinx for purging (deleting) posted transactions and quotas.
- **Require PIN at Island:** Check if you want the Driver to enter the Driver ID and PIN when starting a transaction through an interface at the island. (Do not check if only the driver's ID must be entered.)
- **Transaction Log:** Check if you want to log to printer every posted transaction. (A separate printer is recommended for transaction log printing)
- **Record Density as ...:** Check if densities are to be logged in units of g/cc (SI units) or API gravity (US units). If this is not checked, densities are logged in units of kg/m3 (SI units) or relative density at 60°F (US units).
- **Mark Transactions as Uploaded:** Check to automatically purge (delete) all posted transactions after the Transaction Retention Period is exhausted. If not checked, transactions are purged only when they are both (a) older than the Transaction Retention Period and (b) marked "uploaded", which is expected to be performed by an external corporate system after fetching them from the local database.
- **Allow Shutdown via PLC:** Check to allow the controlled shutdown of TermLinx via commands set in the PLC (future implementation).
- **Orient Island Display R to L:** Changes the position of the island numbers; numbers can appear in sequence from left to right, or from right to left.
- **Entero compatibility:** Check if the site is managed by a corporate system running EnteroVision.
- **Caption for "Vehicle":** Enter the word to be shown to the Driver which represents a vehicle capable of carrying product.

- **Caption for "Quota":** Enter the word to be shown to the Driver which represents the account, contact, or booking against which a transaction is to be charged.
- **Activate transaction at:** Select where the driver can start a transaction: at the TermLinx touch terminal, at the Batch Controller (for example, AccuLoad), or at both the locations.
- **Caption for Minor Jurisdiction:** Select to display State or Province for government jurisdictions of corresponding size.

3.7.2 Site Configuration Dialog Box: Lift Tab

Click the Lift tab to configure options for transferring product from the site to vehicles:

- **Minimum Authorizable Volume:** Enter the minimum load size that can be lifted at each transaction. This volume must be at least as large as the largest minimum preset configured to any batch controller used for loading at the site.
- **Minimum Splittable Residue:** Enter the volume below which the load cannot be split into a second transaction. This volume must be at least as large as the largest minimum preset configured to any batch controller used for loading at the site.
- **Maximum Authorizable Volume:** Enter the maximum load size that can be lifted at each transaction. Enter "0" if no limit is required. This volume must not exceed the smallest maximum preset configured to any batch controller used for loading at the site.
- **Number of Copies of Ticket:** Enter the number of copies of the ticket (bill of lading/unlading) to print upon completion of each transaction.

- **Units of Preset Entry:** Use the drop-down list to select the units for the volume entered by the driver for lifting product.
- **Assign ticket number sequence for...:** Select Documentation completeness to assign by printed ticket, select Accountability completeness to assign by all transactions, or select Totalizer completeness to assign by any change in the accumulator.
- **Caption to use for "Lift":** Enter the word(s) that you want to appear in the Mode box in the Driver's screen.
- **Preselect for Latest Transaction:** Check this box to display the driver's last posted transaction selection values upon New Transaction creation.
- **Multiple Vehicle Trains:** Check this box for TermLinx to be configured for transactions with multiple vehicle trains. This option is effective only when vehicle validation is enabled (by checking the Enable Vehicle Select box).
- **Multiple Batch Documents:** This option allows for multiple batches to be printed on a single BOL document. For example, for a five-compartment vehicle, all five batches are printed on a single BOL document.
- **Enable Vehicle Select:** Check this box to allow the driver to select a vehicle from a drop-down list as shown in the following picture:
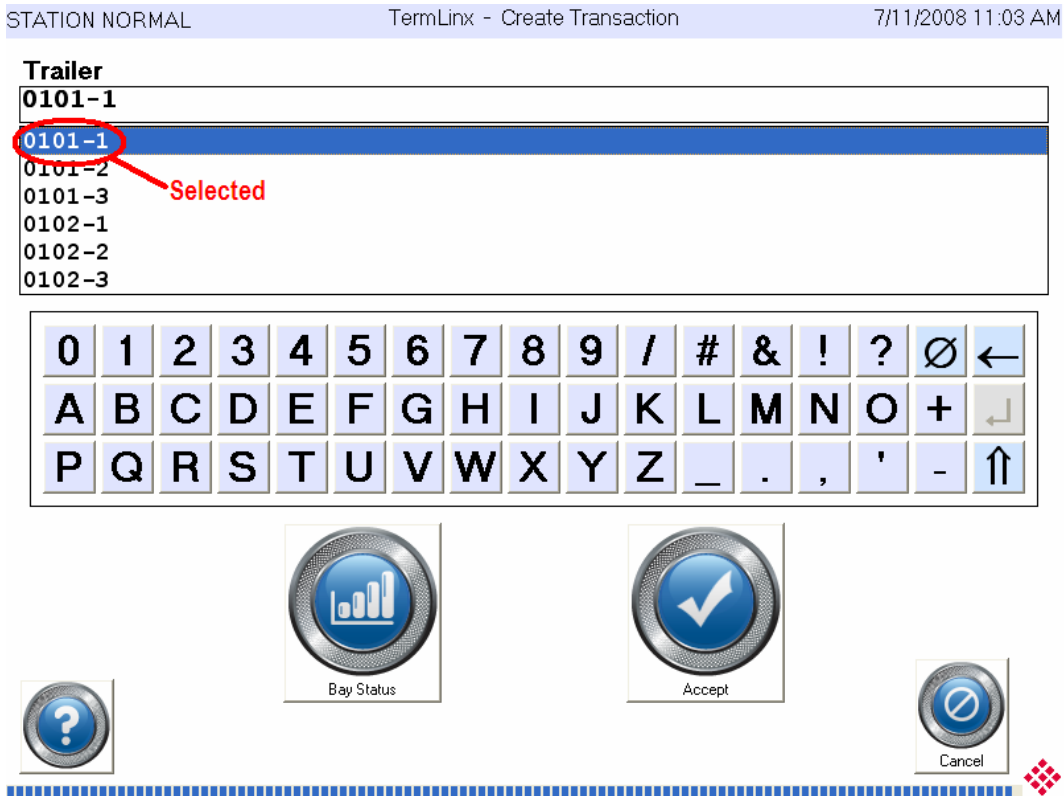
- **Enable Customer Select:** Check this box if the driver should select a customer from a drop-down list (similar to Enable Vehicle Select).
- **Require Manual Quota Acceptance:** Check this box to require the driver to explicitly acknowledge a quota selection (even when there is only one available entry which would otherwise be selected and acknowledged automatically) to create a transaction.

- **Select Quota by Contract Number:** Check this box to display the Quota Contract Number rather than the default Quota Confirmation Code.
- **Select Quota by Keypad Only:** Check this box if the driver should enter the Quota Number using the keypad and not from a drop-down list.
- **Numeric Only Quota Entry:** Check this box if the driver should enter the Quota Number using the NUMERIC keypad only.
- **Enable Consignee Select:** Check this box to require a driver to select a consignee from a drop-down list.
- **Enable Destination Select:** Check this box to require a driver to select a destination from a drop-down list.
- **Require Transaction Detail at Transaction Create:** Check this box if you want drivers to see the Transaction Details screen as they *begin* their transaction.
- **Require Transaction Detail at Transaction End:** Check this box if you want drivers to see the Transaction Details screen as they *finish* their transaction.
- **Auto-Print Documents:** Check this box to print the ticket (BOL/BOU) automatically when the transaction is complete.
- **Warn "Compartment open to air":** Check this box to ask the driver (during the vehicle selection step) if the vehicle has been opened to air. If the driver answers **No**, he may continue the transaction; if the driver answers **Yes**, he remains at the vehicle selection step and must select a different vehicle or answer no to the question in order to continue.
- **Warn "Change from last product":** Check this box to ask the driver (during the product selection step) if the previous load was the same product. If the driver answers **Yes**, he may continue the transaction; if the driver answers **No**, he remains at the product selection step. The driver will be allowed to create a new transaction for a different quota (not recommended) or he can reattempt the transaction for the same quota and answer the question with a **Yes**.

3.7.3 Site Configuration Dialog Box: Dump Tab

Click the Dump tab to configure options for transferring product from vehicles to the site:

Most of the selections on this tab are the same as the Lift tab. The following are different:

- **Enable Supplier Select:** Select (check) if the driver should select a supplier from a drop-down list.
- **Enable Producer Select:** Select (check) if the driver should select a producer from a drop-down list.
- **Enable Source Select:** Select (check) if the driver should select a source from a drop-down list.
- **High-water Shutdown Retry Limit:** Enter the number of shutdowns a driver is limited to before a quota is locked out. This helps prevent drivers from off loading a whole truckload with a high water content.
- **High-water Shutdown Lockout Duration:** Enter the number of hours that a quota remains locked out after exceeding the High-water Shutdown Retry Limit. A quota is locked out if, at the time of transaction creation, the number of High-water Shutdowns for that quota occurring during the preceding Lockout Duration is greater than the Retry Limit.

3.7.4 Gate Configuration Dialog Box

This dialog box opens when you click the Gates button on the Site Configuration dialog box. The first time you click the Gates button, the Gate *n* PLC Addresses dialog box opens on top of the Gate Configuration dialog box. This will continue until the gate's PLC files are configured.

Note: You must select at least one gate in the Site Configuration dialog box for the Gate Configuration dialog box to appear. This feature currently applies only to OPACTS users, but is planned for an upcoming TermLinx release.

Selected Gate

Use the left and right arrows to select the Gate to configure. The number of gates is configured in the Site Configuration dialog box.

Access

Each gate may control Entry to the site, Exit from the site, or both.

- An Entry gate has a keypad or card reader near the outside of the gate.
- An Exit gate has a keypad or card reader near the inside of the gate.

Note: A gate that opens automatically to allow exit is not an Exit gate.

Each TermLinx Entry or Exit gate requires the driver to log in or out, using a keypad or card reader.

Gate PLC Data File Addresses

This button opens the selected gate's PLC File Addresses dialog box, allowing you to configure memory addresses within the PLC to use for Gate control. TermLinx requires two or three integer files and one floating point file for gate control in the PLC Data File Block.

Set the data file address to 0 for each file that is not required. Set the other data file addresses according to the following:

- Common address is required for all types of gates.
- Entry address is required for all Entry gates.
- Exit address is required for all Exit gates.
- Auxiliary fields are reserved for future use.

Note: Although these files may be placed anywhere in the PLC file block, it is recommended that they are in a continuous sequence.

Gate Configuration Options

TermLinx uses the information from the Options section to control whether a driver can enter or exit a gate after logging in.

- **Blind control:** For some types of gate configurations, the hardware and electronics at a gate may not be able to inform the PLC of the status of the gate (for example, open, closed, or in transit). For gates whose status cannot be monitored by the TermLinx, check the Blind Control box.
- **PIN required for entry:** Check this box if the driver must enter a PIN (Personal Identification Number) on the keypad at the entry gate before the gate will open. This option is available only for Entry gates.
- **Lockout enable:** Check this box if a driver whose record in the database is marked "Locked out", should not be allowed to enter. This option is available only for an Entry gate.

Note: A locked-out driver is always allowed to leave.

- **TDG certificate required for entry:** Check this box if a driver must have a valid CDL (Commercial Driver's License for US drivers, or Transport of Dangerous Goods for Canadian drivers) for entry. If the driver's CDL or TDG has expired and this option is selected, the driver may not enter.

Note: A driver whose TDG has expired is always allowed to leave.

- **Driver's license required for entry:** Check this box if a driver must have a valid Driver's License for entry. If the driver's license has expired, the driver may not enter.

Note: A driver whose driver's license has expired is always allowed to leave.

- **Site orientation required for entry:** Check this box if a driver must have a valid Site Orientation for entry. If the Site Orientation has expired, the driver may not enter.

Note: A driver whose site orientation has expired is always allowed to leave.

- **PIN required for exit:** Check this box if the driver must enter a PIN (Personal Identification Number) on the keypad at the exit gate before the gate will open. This option is available only for Exit gates.
- **LED response duration:** Choose a value (in seconds) for this option for the LEDs on the gate keypad or other input device should illuminate. Typically, a green LED indicates that the driver is allowed to pass through the gate, while a red LED indicates that the driver is not allowed to pass through the gate.

3.7.5 Island Configuration Dialog Box

The first time you click the Island button, the Island *n* PLC Addresses dialog box opens on top of the Island Configuration dialog box. This will continue until the island's PLC files are configured.

This sub-dialog box can be opened by clicking the "PLC Files" button in the Island Configuration dialog box.

Note: Physical islands at a site are called "bays" in the TermLinx screen.

Island PLC Addresses

TermLinx requires at least two integers and one floating point file for island control in the PLC Data File Block. Up to eight optional files are required if a transaction image of each posted transaction is to be written to the PLC for access by other systems (for example, SCADA) on the PLC's data highway.

Set the data file address to 0 for each file that is not required. Set the other data file addresses according to the following:

- **Core:** This address is required for the PLC to communicate with TermLinx.
- **Batch Controller I/F:** This address is required for mutual communication among TermLinx, the PLC, and the Batch Controller.
- **Transaction Image - Main:** Enter address in these fields if you want details of the most recent, completed transaction to appear in the PLC.
- **Transaction Image - Stakeholders:** For the detailed description of the data fields available for the transaction image, refer to *PLC Interface File Structure & Program Tags* in the TermLinx Database Manager Manual.
- **Auxiliary fields:** Reserved for future use.

Note: Although these files may be placed anywhere in the PLC file block, it is recommended that they be in a continuous sequence.

Selected Island

Use the Island arrows (in the top, right corner) to select the island to configure.
The number of islands is configured in the Site Configuration dialog box.

Tag

Use this text field to give each island a distinctive name, up to 16 characters
long.

Mode

Choose Lift (load) or Dump (unload) to define the type of transaction to use for
this island.

"Lift" ("Load")

A lift island can:

- Transfer product from the site to vehicles arriving at the site
- Create Bill of Lading documents, which are legally required in order to
  transport a product

"Dump" ("Unload" or "Offload")

A dump island can:

- Transfer product to the site from vehicles arriving at the site
- Create Bill of Unlading or Product Receipt documents, which are useful for
  record-keeping purposes, and which may be legally required to transport or
  transfer a product.

Base

Choose Vol (volume) or Mass to define how the batch controller for the island
measures the quantity of the commodity loaded or unloaded.

Valid Blends

Select (check) one or more blend types (up to 32) to allow for this island.

Flow Rate Units

Choose Volume or Mass to define how to record the measured quantity of the commodity loaded or unloaded at this island, and then select the quantity (for example Liters, Gallons, Kilograms or Pounds), and the time interval (for example, Minute, Hour or Day) from the drop-down lists.

Accumulator Characteristics

TermLinx offers several choices for configuring product accumulator characteristics. These choices allow TermLinx to work with virtually any type of Batch Controller.
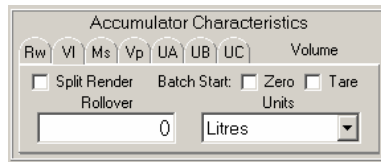
Configure the properties of each accumulator type:

- RW - Raw Meter Count
- Vl - Volume
- Ms - Mass
- Vp - Vapor
- UA, UB, UC - User Groups A, B, and C

The configurable options in this part of the screen depend on the Accumulator Characteristics tab you select. The available options are:

- Split Render Rollover
- Batch Start (Zero or Tare)
- Rollover value
- Units (of measurement)

Note: Options which do not apply to an accumulator type are not displayed when a tab is selected.

The following table describes accumulator characteristics in more detail.

Accumulator Type	Qty	Description
Raw Meter Count	1	Raw Pulse Counter
Volume (Converted to Liters/Gallons)	5	Net Volume Accumulator
		Gross Volume Accumulator
		Gross Standard Volume Accumulator
		Indicated Volume Accumulator
		Water
Mass (Converted to Grams/Pounds)	1	Mass
Vapor	2	Injection Accumulator

Accumulator Type	Qty	Description
		Recovery Accumulator
User Group A	5	Accumulator 1
		Accumulator 2
		Accumulator 3
		Accumulator 4
		Accumulator 5
User Group B	5	Accumulator 1
		Accumulator 2
		Accumulator 3
		Accumulator 4
		Accumulator 5
User Group C	1	Accumulator 1

Accumulator Characteristics

For an AccuLoad Batch controller, configure the following Accumulator characteristics:

- Raw Meter Count
- Volume

These accumulators must be configured for a rollover of 1,000,000,000. For the Raw accumulator type, the check box for "Split Representation" must be cleared (unchecked).

- Accumulator representation: Split or 32 bit
- Rollover value
- Units of measurement

Batch Controller Type

The following batch controller options are available:

- AccuLoad AUT
- AccuLoad STD
- AccuLoad III-S
- AccuLoad III-X
- PLC with integrated flow computer
- Toledo Weigh Scale

AccuLoad Configuration

Configure your AccuLoad in the Batch Controller section of the Island Configuration dialog box. First, select your controller from the Batch Controller drop-down list, and then adjust the settings as needed.

- **Comm Port Number:** Select a number for the Touch Terminal Port for serial data communications.
- **Device Address:** Select a number for the address of the AccuLoad unit.
- **Secure Protocol:** Check this box to select secure transmission of data (recommended); leave this box unchecked if you want data to be transmitted unsecured.

Note: If you check the Secure Protocol box, settings for AccuLoad must be matched by corresponding settings in the TermLinx configuration file.

- **12-hour Clock:** Check this box to assign the 12 hour format to the TermLinx clock; leaving the box unchecked sets the clock to the 24 hour format.

Note: Clock settings for AccuLoad must be matched by corresponding settings in the TermLinx configuration file.

- **Volume Deemed as Net:** Choose "Gross" if the AccuLoad performs no volume correction; choose "Gross Std" if the AccuLoad performs temperature correction only; or choose "Net" if the AccuLoad performs correction for both temperature and pressure.
- **Detect Product Leak:** Check this box if you want the AccuLoad Batch Controller driver to monitor the sequencing of non-resettable totalizers against the batch volumes ticketed, in order to report unauthorized flow (product "leaks"). It is recommended to always turn on this option for newer installs.
- **Allow W&M Download:** Check this box to allow TermLinx to download values of certain sealable parameters to the AccuLoad. For example, Standard Density and API Table Select.
- **Densitometer (does not apply to AUT model):** Check this box if the AccuLoad receives density at operating conditions as a process input and uses the appropriate API tables to calculate Standard Density for use in further calculations.
- **AccuLoad Product (III-X model only):** The AccuLoad III-X can implement up to 6 load points, each of which is assigned to a different TermLinx island. Enter the number as known by the AccuLoad for the product loaded at this island (through this AccuLoad load point).
- **Loggable Additives:** The number of additives whose quantities TermLinx should inquire from the AccuLoad at the end of the transaction, along with the net volume (batch total). This number is limited by both the AccuLoad model and by TermLinx (can log up to 5 additives).

Note: The number in this field must not exceed the number of additives actually injected by the AccuLoad.

- **Additive Translation (III-X model only):** The AccuLoad III-X identifies additives by the injector used to insert the additive substance into the loaded product stream, and therefore identifies the same additive substance by different numbers at different islands. TermLinx, however, identifies additives by the substance itself. This table translates TermLinx additive number (up to 15 of them) to AccuLoad injector number for the additive at this island (where "0" means "not used").

Note: TermLinx can record, in the transaction, the quantities of only the first 5 additives.

PLC Configuration

Configure your PLC in the Batch Controller section of the Island Configuration dialog box. Select PLC from the Batch Controller drop-down list.

- **Valve Sense:** This setting is effective only when this island is the "dump" half of a dual-mode physical island for which the "lift" half has an AccuLoad as its batch controller. If the offload valve status of "open" and "closed" are reported in the PLC at points "Inn_P_VLVO" and "Inn_P_VLVC" (refer to "PLC Tags"), then set this option to provide a more informative and reliable interface to the driver for managing dumping transactions through the AccuLoad at that physical island.

Toledo Configuration

The Toledo is a weigh scale that is used for measuring by weight rather than by volume. Configure your Toledo in the Batch Controller section of the Island Configuration dialog box. First, select Toledo 8142 Dual Adv from the Batch Controller drop-down list, and then adjust the settings as needed.

- **Comm Port Number:** Select a number for the Touch Terminal Port for serial data communications.
- **Device Address:** Select a number for the address of the Toledo unit.
- **Secure Protocol:** Check this box to select secure transmission of data (recommended); leave this box unchecked if you want data to be transmitted unsecured.

Note: If you check the Secure Protocol box, settings for Toledo must be matched by corresponding settings in the TermLinx configuration file.

3.7.6 Physical Island Mapping Dialog Box

This dialog box opens when you click the Mapping button on the Site Configuration dialog box. Use this dialog box to associate pairs of logical ("TermLinx") islands—one Lift and one Dump—to single physical islands.

Note: Physical islands at a site are called "bays" in the TermLinx screen.

The Physical Island Mapping dialog box also allows you to assign TermLinx Islands to specific Physical Islands even if no Lift-Dump pairs are created. For example, when you want to re-number the islands.
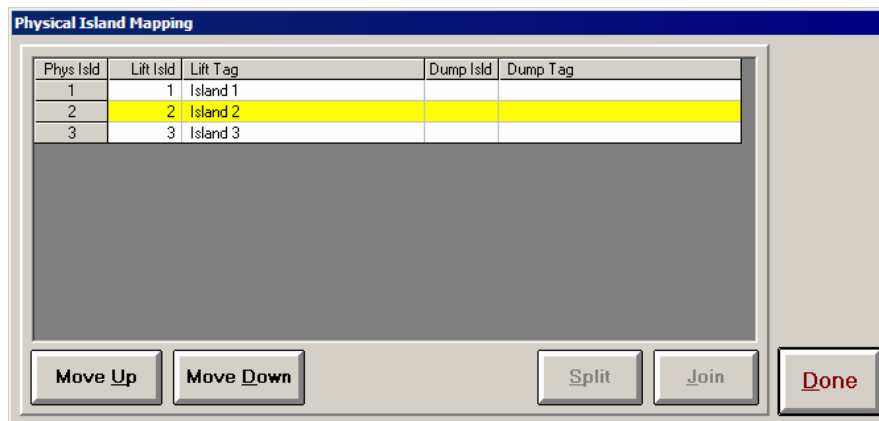
The term "TermLinx Island" is used to represent what manages the monitoring, control, and recording of product flow through a transfer point according to authorizations and constraints available in TermLinx's Accounting Database.

Normally, TermLinx Islands operate independently of each other. A Lift Island can be in the process of delivering product into a truck while an adjacent Dump Island is busy receiving product from another truck.

At some sites, physical transfer points may be capable of product transfer in either direction, that is, a "physical island" may be capable of both "lifting" and "dumping", even though such an island cannot transfer in both directions at the same time.

For each such Lift/Dump Island pair:

- The two TermLinx Islands are constrained so that when one of them is active the other is "temporarily disabled" and cannot start a transaction.
- If a third-party Batch Controller (such as an AccuLoad) is used for the Lift side of the pair, while also providing a conversation path for the driver's convenience in controlling the load, this conversation path is enhanced to include selection of direction of flow ("Mode").
- The PLC must implement additional logic to coordinate the interlock of the two TermLinx Islands.

Move Up / Move Down buttons

Use these buttons to reorder the selected island.

Split button

Use this button to break a link between a Lift Island and a Dump Island.

Join button

Use this button to create a link between the selected island and the island immediately below it in the list that must be of the opposite mode.

3.7.7 Setting Date and Time in TermLinx

The date and time are displayed in the upper, right corner of TermLinx. TermLinx uses the entries in the Windows Time and Short Date fields to display the date and time in TermLinx.

To change the settings for the clock and date:

1 Go to Start > Control Panel > Regional and Language Options and select the Regional Options tab, and click the Customize button.
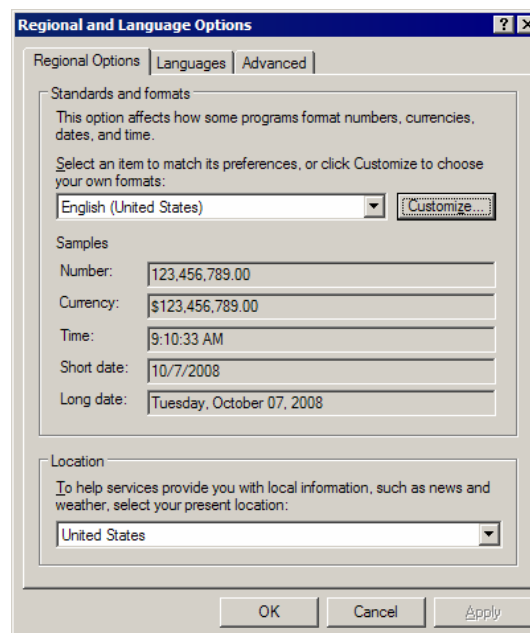
2 Enter the date and time exactly as it should appear in TermLinx. For example, if you want it to show AM, PM, or 24 hour time.

3 Click OK to apply your changes and close the Regional and Language Options dialog box.

3.8 Saving Your Configuration

When you have finished configuring your site, gates, and islands, you must save your project, and then transfer the configuration files to the TermLinx server and the AccuLoad interface.

To save your configuration:

1 Click the Done button on all open dialog boxes.
2 Open the File menu and choose Save.
3 In the File Save dialog box, enter the project name, and then click Save.

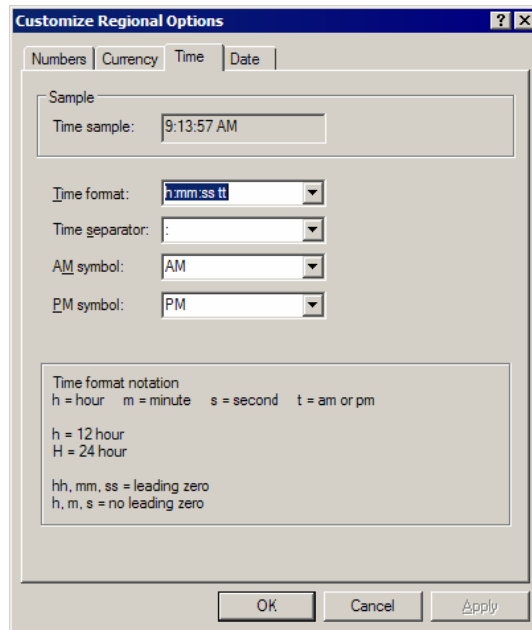Configuration information is saved in two forms: a binary form (.OPK), and a script form (.OPS). These two files contain the same information, but are used for two different purposes. The binary file is used for fast loading by the TermLinx Server. The script file is used for porting configuration between different versions of TermLinx, and for providing configuration information to batch controllers. When loading a TermLinx project, you may choose to load either form. When saving a TermLinx project, both files are written automatically.

The default location for the project files is C:\TermLinx\Projects directory.

The default names for the project files are:

▪ TermLinx.OPK
▪ TermLinx.OPS

3.9 Creating the PLC Database Tag File

The PLC Database Tag File configures memory areas in the PLC to use for TermLinx configuration, gate, and island control.

To generate the database tag file for loading into the PLC processor:

1 Open the Project menu and choose Make PLC Database File. This action generates a database file in CSV (Comma Separated Values) format. The filename matches the name of the project configuration files, and has the extension CSV.
2 Import this file into the PLC program.

3.10 View Configuration Script Dialog Box

This dialog box opens when you choose View Configuration Script from the Project menu. Use this dialog box to view the contents of the configuration script (.OPS file) generated when you save a TermLinx project file.
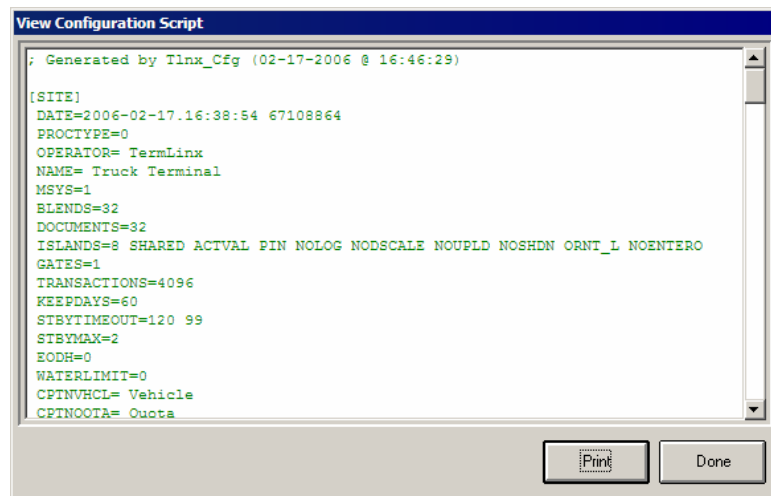
The following example shows a typical Configuration Script.

```
; Generated by Tlnx_Cfg (02-17-2006 @ 16:48:07)

[SITE]
 DATE=2006-02-17.16:38:54 67108864
 PROCTYPE=0
 OPERATOR= TermLinx
 NAME= Truck Terminal
 MSYS=1
 BLENDS=32
 DOCUMENTS=32
 ISLANDS=8 SHARED ACTVAL PIN NOLOG NODSCALE NOUPLD NOSHDN ORNT_L NOENTERO
 GATES=1
 TRANSACTIONS=4096
 KEEPDAYS=60
 STBYTIMEOUT=120 99
 STBYMAX=2
```

```
 EODH=0
 WATERLIMIT=0
 CPTNVHCL= Vehicle
 CPTNQOTA= Quota
 CPTNJDCT=0
 CPTNLIFT= Load
 CPTNDUMP= Unload
 MINPRESET=50 1
 MINSPLIT=10500 1
 MAXPRESET=10500 0
 TKCOPIES=1 1
 PSUNITS=0 0
 TKSQNC=0 0
 PHYSISLD=8 1 0 2 0 3 0 4 0 5 0 6 0 7 0 8 0
 LIFT= PRESLCT NOMVT NOMBD NODTS NODTL VHCL CSTR NOQSLCKEY NOQNBR NOCNSG DSTN
AUTODOC
 DUMP= PRESLCT NOMVT NOMBD DTS NODTL NOVHCL NOSPLR NOQSLCKEY NOQNBR NOPDCR
NOSRCE AUTODOC
 LIFTWARN= AIR PRDC
 PLCFILE= NT 100 0 FL 101 0 VN 0 0 0 VF 0 0 0
[ISLD01]
CONTROLLER= ACCU_AUT 1 3 2 PTCLASCII CLK24 NOWMDOWNLOAD
MODE= LIFT
ACUMRW= 1000000000 0 32BIT NOZERO
ACUMVL= 0 0 SPLIT ZERO
ACUMMS= 0 3 SPLIT ZERO
ACUMVP= 0 3 32BIT NOZERO
ACUMUA= 0 0 32BIT NOZERO
ACUMUB= 0 0 32BIT NOZERO
ACUMUC= 0 0 32BIT NOZERO
BLENDS= 1 2
DOCUMENTS= 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
27 28 29 30 31 32
PLCFILE= 84 0 85 0 184 0 185 0
[ISLD02]
CONTROLLER= NONE
MODE= DUMP
ACUMRW= 32000 0 32BIT NOZERO
ACUMVL= 10000000 0 32BIT NOZERO
ACUMMS= 100000000 3 32BIT NOZERO
ACUMVP= 100000000 3 32BIT NOZERO
ACUMUA= 0 0 32BIT NOZERO
ACUMUB= 0 0 32BIT NOZERO
ACUMUC= 0 0 32BIT NOZERO
BLENDS= 3
DOCUMENTS= 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
27 28 29 30 31 32
PLCFILE= 82 0 83 0 0 0 0 0
[GATE01]
ACCESS= ENTR NOPNIN LKOT TCXD NODLXD SOXD BLIND
LEDRSP=5
PLCFILE= 90 0
; End
```

3.11   Installing TermLinx Configuration Files

The TermLinx system uses configuration files that allow you to design TermLinx for a specific site. The TermLinx Configuration Manager software creates and maintains the following configuration files:

▪ TermLinx Binary Configuration file: <filename>.OPK
▪ TermLinx Script Configuration file: <filename>.OPS

You must copy these files to the correct locations for the TermLinx Server and the PLC to load them when the system starts up.

Note: You must shut down TermLinx in order to install a new configuration file.

3.12   TermLinx Instance Dialog Box

Important: This dialog box is available only when you run TCM on the computer that hosts the TermLinx Server.

TermLinx configuration information is stored in the Windows registry on the machine running the TermLinx Server. The TermLinx Instance dialog box simplifies the task of managing these configuration entries, and protects the registry from accidental changes. To view and modify these settings, run TCM on the TermLinx Server machine, and use the TermLinx Instance dialog box.

In TCM, go to File > Instance to open the TermLinx Instance dialog box, which allows you to manage configuration entries and their associated files in the folder "C:\TermLinx\Instance".
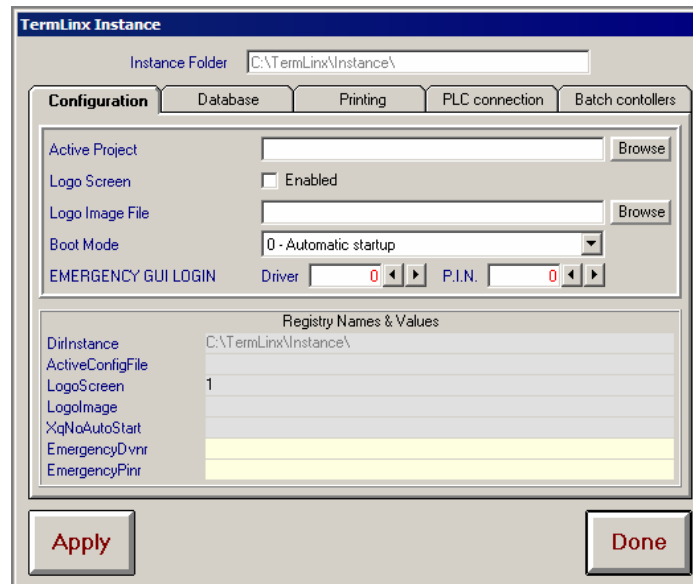
Use this dialog box to copy an instance of the configuration files to this specific TermLinx server. When you are done configuring an instance, click Apply to save your settings.

> **Important:** Each time you make changes in DBM, you must click Apply to save the settings. The Done button will not save changes.

3.12.1 Setting Logo Screen and Boot-Up Info

Click the Configuration tab to configure how TermLinx starts up.

- **Active Project:** type = REG_SZ, name = ActiveConfigFile

  The full path to the live Operational Database file for the running TermLinx instance. This file, which has an extension of .OPK, is created by the TermLinx Configuration Manager application, and normally resides in the instance's current directory ("DirInstance" below). This path should *not* be that of a project .OPK file.

- **Logo Screen:** type = REG_DWORD, name = LogoScreen

  If non-zero, all TermLinx screens time out to the Startup screen, which typically displays the customer's company logo. If zero, then all screens time out to the Overview screen if present, otherwise to the Login screen, and the Startup screen is never displayed.

- **Logo Image File:** type = REG_SZ, name = LogoImage

  The full path to the graphic image file containing the customer's logo, if any, which file normally resides in the instance's current directory ("DirInstance" above). If the file exists, the image is shown on the TermLinx Startup screen and may also be displayed on the TermLinx Login screen. Valid graphic image file formats are .BMP, .DIB, .GIF, .JPG (.JPEG), .WMF, .EMF, .ICO, and .CUR. The image is scaled and stretched to fit within a region of 480 pixels horizontal by 320 pixels vertical (600x400 for the SVGA model) placed against a black background, hence to avoid excessive distortion the image should be as close to this size (larger scales down better than smaller scales up) and aspect ratio (3:2) as possible, and to merge smoothly with its surround the edges of the image should be black or transparent. Since the .JPG (.JPEG) format yields the best results under such scaling and stretching, this format is recommended.

- **Session Notice File:** type = REG_SZ, name = SessionNotice

  The full path of a document file to be displayed each time a driver logs in, which normally resides in the instance's current directory ("DirInstance" above). If the file is not defined or cannot be found, then the driver is logged into the Main screen directly upon providing a valid ID and PIN. If the file is found, then its contents are displayed in a window after entry of valid ID and PIN and before the Main screen is displayed; the driver must acknowledge having read the document before proceeding to the Main screen. The file is displayed as a Rich Text Format file if its name has the extension ".rtf" and as a plain text file if its name has any other extension."

- **Boot Mode:** type = REG_DWORD, name = XqNoAutoStart

A non-zero value prevents TermLinx from restarting automatically upon boot. When TermLinx starts, its first action is to read this value, and only if it is zero (or missing) does TermLinx continue to start; otherwise TermLinx terminates immediately. If the value is 1, however, TermLinx sets this value to 0 before quitting, making startup suppression a one-time-only action. This value is set to 1 by one of the TermLinx shutdown options. For extensive maintenance requiring many non-TermLinx boots, set this value to other than 0 or 1 (e.g. 2); when maintenance is complete and TermLinx is to be restarted, set this value back to 0 before rebooting.

Note: Installation of TermLinx installs this value as 2, so that the procedures of setting up a new site, which may require many boots, can proceed without interference by TermLinx. Set this value to 0 to enable TermLinx for the first time.

- **Emergency GUI Login Driver/P.I.N.:** type = REG_DWORD, names = EmergencyDvnr and EmergencyPinr

  If during a login attempt the entered Driver Number and PIN match these two values, then the login is granted and given SuperTrucker authority without validating the entries against the DRVR table of the database. This "Emergency GUI Login" feature allows recovery from situations in which a database-defined SuperTrucker is missing or inaccessible (such as a database crash) that would otherwise make some maintenance procedures difficult or impossible (such as shutting down TermLinx). Since TermLinx requires both Driver Number and PIN to be non-zero before proceeding with a login, this emergency capability may be disabled by setting either (or both) of these two values to zero. These two values, in particular, may be changed at any time, and the change is effective at the next login attempt. This feature should NOT be regularly used to authorize product-transfer transactions; for those, use database-defined DRVR entries instead.

Note: Installation of TermLinx installs both these values as "1"; be sure to disable Emergency Login (or change the "1"s to numbers that are hard to guess) after the database has been populated.

Configuration Names and Values for Logo and Boot-Up

The following are examples.

- **DirInstance:** Shows the where TermLinx resides.
- **ActiveConfigFile:** C:\TermLinx\Instance\TermLinx.opk
- **LogoScreen:** LogoScreen=1
- **LogoImage:** LogoImage="C:\TermLinx\Instance\TermLinx.jpg"
- **SessionNotice:** SessionNotice="C:\TermLinx\Instance\Notice.rtf"
- **XqNoAutoStart:** XqNoAutoStart=1
- **EmergencyDvnr:** EmergencyDvnr=0
- **EmergencyPinr:** EmergencyPinr=0

TermLinx Configuration Files

The TermLinx Binary Configuration file (<filename>.OPK) contains all the configuration information required by the TermLinx service. When the TermLinx server starts up, it reads the binary configuration file to determine how many loading or unloading islands to service, PLC data mapping, and so on.

TermLinx Configuration Manager saves the binary configuration file in

```
C:\TermLinx\PROJECTS
```

Before you start the TermLinx server, you must copy the configuration file to

```
C:\TermLinx\INSTANCE
```

Because the TermLinx server locks the file during operation, you must stop the server to update the configuration file. The TermLinx server will read the new configuration file the next time the server is started.

3.12.2 Setting Database User IDs and Passwords

Click the Database tab to configure how TermLinx stores database login information.

- **Active Site Code:** type = REG_SZ, name = ActiveSite

  The site identifier for the running TermLinx instance, used for interrogating the Accounting Database. This identifier is the primary key to the SITE and STRF tables, and the first component of the primary key to each of the remaining tables (excluding VRSN).

- **ODBC Data Source:** type = REG_SZ, name = OdbcDsnActg

  The ODBC data source name (DSN) of the Accounting Database for the running TermLinx instance. This name implies not only the location of the Database but also the ODBC driver needed to access it.

- **Database Login, Kernel User Id/Password:** type = REG_SZ,
  - name = OdbcKrnUser

    The user ID used by the privileged TermLinx software for logging into the Accounting Database.
  - name = OdbcKrnPswd

    The password used by the privileged TermLinx software for logging into the Accounting Database.

- **Database Login, Application User Id/Password:** type = REG_SZ,
  - name = OdbcAppUser

    The user id used by external applications such as the TermLinx Database Manager, the TermLinx Database Wizard, or a host system for logging into the Accounting Database.
  - name = OdbcAppPswd

    The password used by external applications such as the TermLinx Database Manager, the TermLinx Database Wizard, or a host system for logging into the Accounting Database.

- **Maximum Connection Retries:** type = REG_DWORD, name = OdbcConnectMaxRetry

  In some boot environments, it may take some time for the database service to become fully operational and ready to respond to connection requests. During boot, the TermLinx kernel repeatedly attempts to connect to the database at a frequency of about one attempt every two seconds until the connection succeeds or this count is exhausted. If missing or erroneous, a value of 120 is assumed.

> Note: If the TermLinx GUI starts before the database service is ready it may become unresponsive (appear to freeze). The GUI will resume responding when the database connection has been established (or deemed to fail).

- **TermLinx Schema Owner:** type = REG_SZ, name = OdbcSchema

  The name of the owner of the database schema that is compatible with the TermLinx system. Two choices are available: "OPACTS" is for use with pre-existing database schemas installed originally for TermLinx's predecessor OPACTS, and "TERMLINX" is for use with newer installations. All new installations assume (and require) schema owner "TERMLINX".

Configuration Names and Values for User IDs and Passwords

The following values are just examples:

- **ActiveSite:** ProSoft
- **OdbcDsnActg:** TERMLINX
  OdbcKrnUser: TERMLINX_KRN
- **OdbcKrnPswd:** termlinx_krn
- **OdbcAppUser:** TERMLINX_MGR
- **OdbcAppPswd:** termlinx_mgr
- **OdbcConnectMaxRetry:** 120
- **OdbcSchema:** TERMLINX

3.12.3 Setting Formal Report Printing and File Paths

Click the Printing tab to configure how TermLinx prints documents and log files.

- **Bill of Lading Port:** type = REG_SZ, name = PrinterPortBol

  The device name of the parallel port connected to the printer of the Bill of Lading (Lift Ticket). This version of TermLinx supports only printers connected directly to physical parallel or USB ports (page 38); serial and network printers are not supported.

- **Bill of Lading Report Definition File:** type = REG_SZ, name = DocDefinitionBol

  The full path to the document definition file for the Bill of Lading (Lift Ticket). This file, which typically has an extension of .RPT, is created by the commercial product Crystal Reports, and normally resides in the instance's current directory ("DirInstance" above). This path should *not* be that of a Crystal Reports working file that may be subject to editing.

- **Product Receipt Port:** type = REG_SZ, name = PrinterPortBou

  The device name of the parallel port connected to the printer of the Bill of Unlading (Dump Ticket).

- **Product Receipt Report Definition File:** type = REG_SZ, name = DocDefinitionBou

   The full path to the document definition file for the Bill of Unlading (Dump Ticket). This file, which typically has an extension of .RPT, is created by the commercial product Crystal Reports, and normally resides in the instance's current directory ("DirInstance" above). This path should *not* be that of a Crystal Reports working file that may be subject to editing.

- **Transaction Log Port:** type = REG_SZ, name = PrinterPortLog

   The device name of the parallel port connected to the printer of the Transaction Log.

Configuration Names and Values for Document Printing

The following values are just examples:

- **PrinterPortBol:** LPT1:
- **DocDefinitinBol:** C:\TermLinx\Instance\BOL.rpt
- **PrinterPortBou:** LPT2:
- **DocDefinitionBou:** C:\TermLinx\Instance\BOU.rpt
- **PrinterPortLog:** LPT3:

USB Printer Configuration Tip

Although TermLinx is designed to output to a printer physically connected to the computer's LPT port, you can create a "virtual" LPT port that allows you to connect to a printer that uses a USB connection.

For a general discussion of how to configure virtual ports on a computer, please refer to Microsoft knowledgebase article 154498 http://support.microsoft.com/kb/314499/.

Important: Your computer must be configured to allow File and Printer Sharing. If you have not already done so, please install and enable the File and Printer Sharing service in your Local Area Connection Properties.
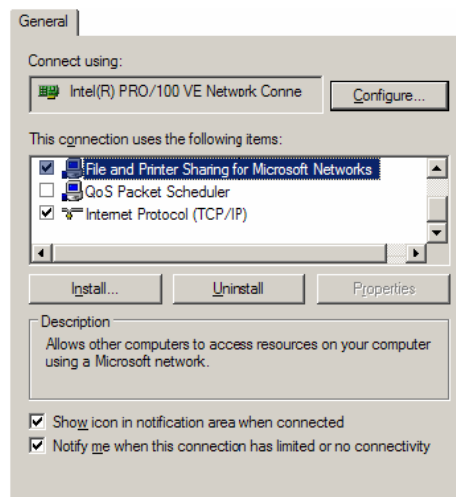
To configure TermLinx to use a USB printer

1 Install the driver for your USB printer.

2 Open the Printer Properties dialog box, and then click the Sharing tab.
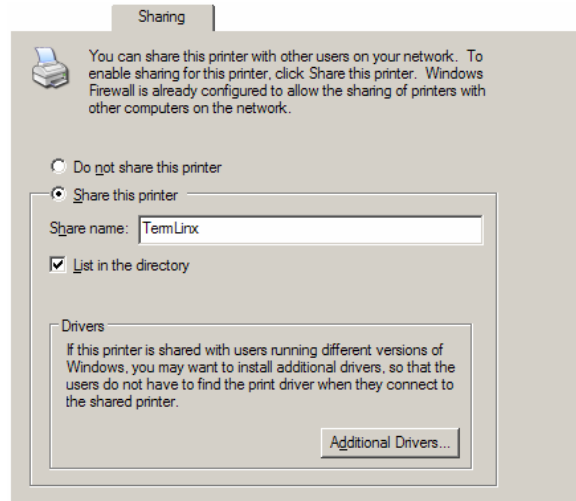
3 Select "Share this printer", and make a note of the Share Name.

4 Click OK to save your settings and dismiss the dialog box.

5 Click Start / Settings / Control Panel, and then open System. Make a note of the full computer name, for example "termlinx.domain.com".

6 Click Start, and then click Run.

7 In the Open box, type cmd, and then click OK.

8 Type

```
net use lpt2 \\<Full Computer Name>\<USB Printer Name> /persistent:yes
```

where *<Full Computer Name>* is the computer name noted in step 2, and *<USB Printer Name>* is the name of your USB printer, from step 1.
Press [Enter] to execute the command.

9 To quit the command prompt, type exit, and then press ENTER.

Important: You must set this as the default Windows printer.

Use the virtual printer port (LPT2 in this example) in your TermLinx configuration.

3.12.4 Setting PLC Connection Information

Click the PLC connection tab to configure how TermLinx connects to the PLC.

- **Station Path:** type = REG_SZ, name = RSLinxStationPath

  The path definition from the TermLinx computer to the processor. For an application where the computer is connected to the processor through a Rockwell Ethernet adapter(1756-ENET/1756-ENBT) in the same rack. this value should be entered as follows:

```
16.12.<1756-ENBT/1756-ENET IP address in ASCII mode>.1.<ControlLogix Processor
Slot Number>
```

  For example, if the 1756-ENET card IP address is 105.102.0.65 and the processor is located in the same rack in slot 0, the station path would be set as follows:

```
16.12.49.48.53.46.49.48.50.46.48.46.54.53.1.0
```

- **Processor Type:** type = REG_SZ, name = RSLinxProcType

  The processor type code for the other end of the RSLinx connection. Valid choices are: "PLC5" and "SLC500" (use "PLC5" for connection to a CL5550).

- **RSLinx Driver:** type = REG_SZ, name = RSLinxDriver

  The RSLinx driver used for communicating with the PLC.

- **RSLinx Port Id:** type = REG_SZ, name = RSLinxPortId

  The RSLinx port id provided to the driver when communicating with the PLC. Valid values are "AB:LOCAL", "AB:NAME", and "AB:CIP".

- **Processor Poll Timeouts Kernel / Application:** type = REG_DWORD,
  o   name = RSLinxTmotKrn

  The timeout in milliseconds used for critical ("kernel") RSLinx polls from TermLinx to the PLC. This number should be large enough so that a timeout occurs only when the connection is genuinely lost.

  o   name = RSLinxTmotApp

  The timeout in milliseconds used for non-critical ("application") RSLinx polls from TermLinx to the PLC. This number should be large enough so that most polls succeed but small enough so that a genuinely lost connection does not overly degrade system response.

Configuration Names and Values for PLC Connection

The following values are just examples:

- **RSLinxStationPath:** 0.43.1.0
- **RSLinxProcType:** PLC5
- **RSLinxDriver:** AB_KT-1
- **RSLinxPortId:** AB:LOCAL
- **RSLinxTmotKrn:** 5000
- **RSLinxTmotApp:** 1000

3.12.5 Setting Batch Controller Application Info

Click the Batch controllers tab to configure how TermLinx communicates to a batch controller.

- **Batch Controller Application #1:** type = REG_SZ, name = RunBCApp<nn>

  The full path to the executable (program file or command file) that is to run instance "<nn>" of an external Batch Controller driver. "<nn>" is replaced by "01" to specify the executable of the first Batch Controller instance, is incremented by 1 to "02" to specify the second instance, and so on until the value for "<nn>" is not found. "<nn>" has no significance to TermLinx except to distinguish multiple instances, to associate with each instance its arguments using "RunBCArg<nn>", and to specify the order of startup. TermLinx supplies two Batch Controller Applications: "BctlAccu.exe" for interfacing with AccuLoad batch controllers, and "BctlTled.exe" for interfacing with Toledo Weigh Scale batch controllers. Both programs, if installed, should reside in folder "C:\TermLinx\Programs".

- **Batch Controller #1 Arguments:** type = REG_SZ, name = RunBCArg<nn>

  The arguments to the Batch Controller instance invoked by "RunBCApp<nn>" for corresponding "<nn>", when required.
  Each running instance of a TermLinx-supplied Batch Controller Application manages the interface to all corresponding devices accessible through a single serial port. This access may be to a single batch controller device via an RS-232 connection, or it may be to many such devices residing on a RS-485 multidrop loop. The three arguments to either "BctlAccu.exe" or "BctlTled.exe" specify the local port number and characteristics of that serial connection; arguments are, in order: (1) the number of the COM port to be used, (2) the baud rate of the connection, and (3) two characters specifying the parity and number of data bits for the connection. For example, "1 9600 e7" specifies "use COM1 at 9600 baud with Even parity and 7 data bits". Do NOT use the same COM port number for more than one Batch Controller driver instance.

- **Batch Controller Application #2:** type = REG_SZ, name = RunBCApp<nn>

  See *Batch Controller Application #1* above.

- **Batch Controller #2 Arguments:** type = REG_SZ, name = RunBCArg<nn>

  See *Batch Controller Arguments #1* above.

Configuration Names and Values Batch Controllers

The following values are just examples:

- **RunBCApp01:** C:\TermLinx\Programs\BctlAccu.exe
- **RunBCArg01:** 1 9600 e7
- **RunBCApp02:** C:\TermLinx\Programs\BctlTled.exe
- **RunBCArg02:** 2 9600 e7

4   Configuring the TermLinx AccuLoad Interface

In This Chapter

4.1   Program Settings

TermLinx supports four AccuLoad models as TermLinx batch controllers: the AUT, the STD, the III-S, and the III-X.

Some settings for AccuLoad must be matched by corresponding settings in the TermLinx configuration file, which you create and maintain with TermLinx Configuration Manager. Some AccuLoad settings must also be matched by arguments given to the invocation of the Batch Controller Driver program.

Settings that must match between TermLinx and AccuLoad are indicated with a highlight in the following tables.

4.1.1   AccuLoad AUT ("AccuLoad I")

Point	Description	Cfg	Value	Notes
02	Pulse Output to Printer		0/1	No local printer
03	Maximum Preset Quantity			Maximum vehicle capacity or greater, or 00000
19	Communication Type	*	1/3	Secure protocol?
20	Communication Control		3	Remote control
21	Communication Address	*	<value>	On same communications loop all distinct
26	Military/Standard Time	*	0/1	12-hour clock?
32	Flashing Totals Display		0	Interferes with prompt download
37	Auto Preset Mode		1	Prevent change at AccuLoad
52	Display Units	*	1/2/4	Metric
53	Preset Delivery Display	*	00/11/22	Compensation
64	Temperature Units	*	0/2	Metric
65	Reference Temperature		0150	If required
67	Protect Codes 90 to 96		0/1	Must download density
68	Programming thru Comm		2/1	Depending on #67

Point	Description	Cfg	Value	Notes
69	Pressure Units	*	0/2/3	Metric
73	Stand-Alone Timeout		1xxx/x000	No standby mode
91	API Table & Product Select		<value>	Correspond to TermLinx product/blend
92	Reference Density		-----	Downloaded
93	Compressibility Factor		00000	Use reference density
96	Print Button Operation		0	Allow End Tran at island

4.1.2 AccuLoad STD ("AccuLoad II")

Point	Description	Cfg	Value	Notes
107	Flashing Totals Display		0	Interferes with prompt
301	Transaction Control		1	Allow End Tran at island
302	Maximum Preset Quantity		<value>	Maximum vehicle capacity or greater, or 00000
303	Minimum Preset Quantity	*	<value>	Minimum authorizable volume or less, or 00000
304	Auto Preset Mode		1	Prevent change at AccuLoad
345	Volume Type, Preset	*	<value>	Compensation
346	Volume Type, Delivery	*	<value>	Compensation
441	Temperature Units	*	0/2	Metric
442	Reference Temperature		0150	If required
444	API Table & Product Select		<value>	Correspond to TermLinx product/blend
445	Reference Density		-----	Downloaded if no dmtr
541	Pressure Units		0/2/3	Metric
544	Pressure Coefficient		00000	Use density
701/5	Communication Type	*	1/2	Secure protocol?
702/6	Communication Control	*	2	Remote control
703/7	Baud Rate	*	<value>	On same communications loop all same; match jumper on any/all AUT on loop
704/8	Data Format	*	<value>	On same communications loop all same; must be 0 (E7) on loop containing AUT
709	Communication Address	*	<value>	On same communications loop all distinct
741	Programming thru Comm		2	Must download density
742	Communications Timeout		<value>	Longer than longest scan time of driver, or 000
743	Communications Alarm Mode	1	<value>	

4.2   PLC Interface

AccuLoad uses the following groups of PLC data points:

- Producer
  Signals
  Current accumulators
  Alarms and status
  Live accumulators

- Consumer
  Batch controller program
  Estimated/requested volume

N:192&	2	Iii_DRVR	P	B	X	Driver number
N:194&	2	Iii_RPIN	P	B	X	PIN number
N:196&	2	Iii_RTSQ	P	B	X	Selected Transaction sequence number
N:198	1	Iii_RTSL	W	B	X	Selected Transaction candidate index

4.3   AccuLoad Driver Interface

The AccuLoad terminal consists of a display screen and a keypad.

AccuLoad prompts a driver to enter a response from the keypad. This response consists of zero or more digits followed by the "E" key. At an AccuLoad-STD, the string of digits must also be preceded by the "E" key.

4.3.1 AccuLoad Prompts

Ready

While an island is off-line, the AccuLoad displays a "Ready" prompt. From the "Ready" prompt, an authorized driver can:

- Enter Program Mode.
- Place the island off-line manually through the TMI.
- Place the island off-line automatically if there is an alarm condition.
- Clear an alarm condition to place the island back on-line.

Enter Driver No.

When an island is online, the AccuLoad continuously displays an "Enter Driver No." prompt.

Enter PIN

For security reasons, the AccuLoad may be configured to require a Personal Identification Number or password as well as a Driver Number. A driver normally has 15 seconds to enter a PIN, otherwise the AccuLoad returns to the "Enter Driver No." prompt.

After a driver enters the PIN, the AccuLoad looks up the driver's database record, and returns one of the following prompts:

- "INVALID"
  Driver number not found, or incorrect PIN; reverts to the "Enter Driver No." prompt after 10 seconds or upon any entry.
- "NO TRANSACTIONS"
  Driver valid, but no standby Transactions valid for this driver and this island; reverts to "Enter Driver No." prompt after 10 seconds or upon any entry.
- "1E-Select E-Next"
  Alternates with the vehicle "equipment type" for one of the valid standby Transactions; reverts to "Enter Driver No." prompt after 30 seconds. An entry of "1" issues an initial "Start" for the selected Transaction; any other entry rotates the selection to the next valid Transaction and restarts the timeout.

Start

Upon selection, the Transaction undergoes an initial "Start" at the island.

Can't Authorize

If the Start fails, the prompt "CAN'T AUTHORIZE" is issued, remaining for 10 seconds (or until any entry) before reverting to the idle prompt.

Preset

Upon Transaction authorization the AccuLoad displays its usual "preset" prompt. The Driver starts Product flow with the "Set" key; the preset amount cannot be altered. During flow, the Driver uses the "Start" and "Stop" keys as necessary. When done, the AccuLoad can terminate the Transaction itself, or, if necessary, the Driver may do so with the "Print" key.

Upon Transaction termination, the AccuLoad normally reverts to the "Enter Driver No." prompt, unless the original preset amount exceeds the amount actually transferred by at least the configured "Minimum Splittable Residue"

nnn Left-Split

For transactions where the original preset amount exceeds the amount actually transferred, the AccuLoad issues the prompt "nnn Left-Split?" (where "nnn" is the residue) alternating with "1E-No, 2E-Yes".

- YES
  The residue becomes the preset for a split Transaction
- NO, or no entry for 30 seconds
  The residue is discarded
- Any other entry repeats the prompt and restarts the timeout.

After this selection the AccuLoad reverts to the idle prompt.

5   TermLinx PLC Ladder Logic Interface

In This Chapter

5.1   The PLC As a Batch Controller

TermLinx requires ladder logic in the PLC processor to communicate with the TermLinx server. The TermLinx computer requires a communications interface via RSLinx to the processor.

1   TermLinx requests an initial "start" of the transaction, by latching "PLC request enable transaction". The PLC must accept or reject the request, based on "authorization permissive" status (maintained by the PLC).

- o   Accept: The PLC latches "xqv accept enable"; TermLinx will unlatch both this and "PLC request enable transaction".
- o   Reject: The PLC unlatches "PLC request enable transaction". This handshake is required for all islands, including those whose primary batch controller is another device such as an AccuLoad.

2   If the PLC accepts the "start" request, TermLinx passes control of the transaction to the batch controller. The PLC may use the handshake in (1) above to change its internal state to, for example, "transaction in progress", for modifying its behavior under such conditions as "ground strap not connected" (while "transaction in progress" this should be alarmed; otherwise it does not matter).

3   The PLC should maintain status bits in Nxx:3, in particular:

- o   "flowing": product is moving (for example, "pump is on").
- o   "busy in sequence": any sequence or state or transition that should prevent a transaction from being "end"ed (for example, pump on, valve open, and so on.).

4   While a transaction is in progress, the user may "stop" and/or "start" it as necessary:

- o   "Stop": TermLinx latches signal "PLC stop transaction"; the PLC should stop the pump and close valves, and acknowledge by clearing the signal.

- o   "Start": TermLinx issues the same "request enable" signal as initially; the PLC responds in the same manner. A "start" from the HMI should **not** start the pump; a driver should confirm the start by pressing a "Start" (Green) button at the island.

"Start" (Green) and "stop" (Red) commands may also be issued from buttons at the island. The PLC must latch signals "xqv island start" and "xqv island stop" respectively; TermLinx responds to the PLC through signals "PLC request enable transaction" and "PLC stop transaction" respectively. Pressing the Start or Stop buttons at the island is identical to pressing "start" or "stop" at the HMI, except that the Start button should not be operational (and not signal "xqv island start") if a transaction has not been authorized (through an initial "start" handshake), and otherwise may start the pump (which should not be available at the HMI).

Important: For an island whose primary batch controller is another device such as an AccuLoad, "start" and "stop" commands issued at the device are not intercepted by TermLinx; PLC detection of such commands must rely on connection of appropriate signal lines from the device to the PLC.

5   The transaction may be ended either by the PLC (for example, when the batch size requested has been reached) or by the HMI. The HMI will not allow the transaction to end while status "busy in sequence" is on. This allows the transaction to be properly terminated in the physical sense by the PLC before being terminated in the financial or authorization sense by the Driver.

When the PLC ends a transaction, it signals TermLinx by latching signal "xqv post transaction", and releases any internal "transaction in progress" state. When TermLinx ends a transaction (for example, from the HMI "end" button), TermLinx latches "xqv post transaction" (signaling itself of the termination), and also latches "PLC end transaction" to signal the PLC to release any internal "transaction in progress" state. The PLC should respond by unlatching the "PLC end transaction", so that it can detect the signal's occurrence at the end of the next transaction, although TermLinx itself does not require the signal to be acknowledged.

5.2   Run TermLinx from Any HMI

You can set up TermLinx to run from any HMI. If you selected the "RSView Template" feature during installation and your HMI is RSView, much of the work has been done for you.

To run TermLinx from within your HMI application:

1   Create an HMI form with a command button named "cmdTermLinx". The operator will push this button to log into the TermLinx GUI.
2   Add to your project a reference to:
   o   TermLinx Overview, XYZ, v 4.0.0 (or whichever subsequent version is available), where "XYZ" identifies the TermLinx overview appropriate for your site. There can be only one TermLinx overview in use at a site; if you have multiple references to choose from, BE SURE that your HMI application includes only one such.
3   Drop the VBA script that follows into the form.
4   Compile and build your HMI application.
5   Ensure that there exists a System Environment variable called "TermLinx_Embedded" (without the quotes) whose value is the complete command line for starting your HMI application. (If you selected the "RSView" feature during TermLinx installation, this variable is already set up to run the template RSView project that you installed -- see the TermLinx startup command file "TermLinx.cmd" for more information.)

VBA Script

```
Dim clsTermLinx As clsTlnxOvrw            ' class for TermLinx interface

Sub Form_Load()
' called when the HMI form is loaded
  On Error Resume Next
  If clsTermLinx Is Nothing Then
    Set clsTermLinx = New clsTlnxOvrw      ' create an instance of the class
  End If
End Sub

Sub Form_Unload()
' called when the HMI form is unloaded
  On Error Resume Next
  Call clsTermLinx.TermLinxDeactivate      ' unload forms of class instance
  Set clsTermLinx = Nothing          ' release the class instance
End Sub

Sub cmdTermLinx_Click()
' called when the operator pushes the <cmdTermLinx> button of the HMI form
  On Error Resume Next
  DoEvents
  Call clsTermLinx.TermLinxActivate  ' show forms of class instance
End Sub

' End VBA_OVRW.txt
```

5.3   PLC Implications for an AccuLoad Batch Controller

- The handshake in step 1 above is required for *all* islands; the PLC is the final arbiter in the transaction authorization sequence. The PLC test program OP_SIM_2 demonstrates the minimum ladder required for implementing step 1 for each of four islands.
- The PLC may at its option comply with the requirements/suggestions in steps 2 and 3 in order to implement station management and control functions that are not available, or not imported from the AccuLoad itself. The PLC status bits referred to in step 3 are interpreted by TermLinx even for an AccuLoad island, and therefore may be used for additional control, but they are not strictly necessary because TermLinx also examines similar bits in the batch controller status word maintained by the AccuLoad driver.
- TermLinx does not permit "start" and "stop" commands to be issued at the HMI for an AccuLoad island, regardless of the setting of the relevant configuration option, therefore step 4 is not currently applicable.
- TermLinx also does not permit the HMI to issue the "end" command for an AccuLoad island; instead, this function is performed automatically by the AccuLoad upon preset exhaustion, or by the Driver pressing the "print" key. When the AccuLoad senses transaction termination by either of these methods, it issues the two signals referred to in step 5.

Notes:

1   Signal names in this document have the form "xqv ..." or "PLC ...". These symbols do not actually occur in the tag descriptors produced by TermLinx Configuration Manager. The prefix represents the consumer of the signal. For example, "Xqv" represents the TermLinx executive.
2   The signal "xqv post transaction" is the signal issued for a "normal" transaction termination, in which any unconsumed residue of the preset is discarded. When such a residue is to be saved for later discharge as a "split" transaction, the proper signal is "xqv split transaction".

   Except for the disposition of any preset residue, the handling of each of these two signals is Identical.
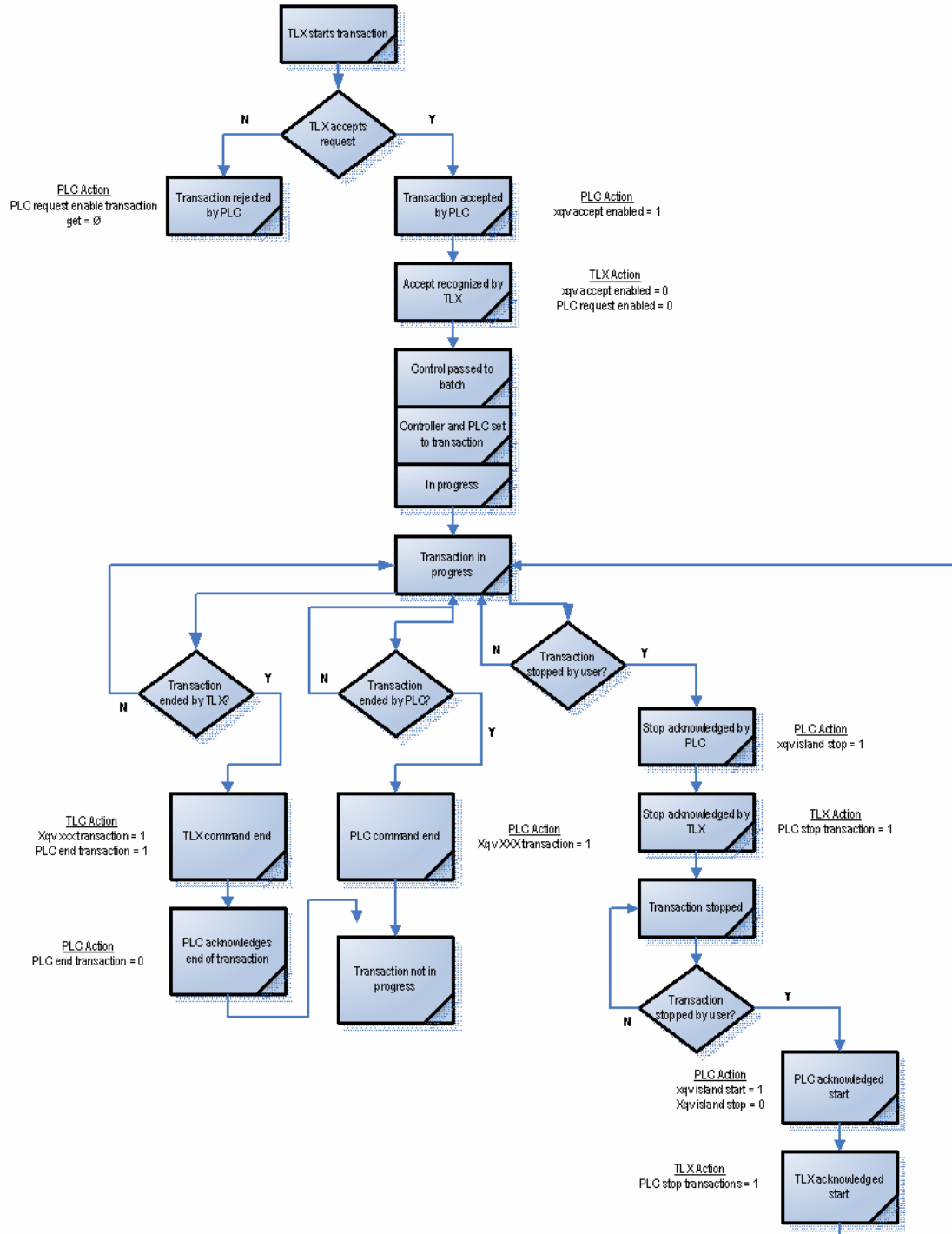
5.4   Sample Ladder

The sample ladder included with the installation provides a starting point to customizing and implementing ladder logic for your own application. The ladder is written in RSLogix 5000 for ControlLogix processors.

You can find the sample ladder in the Samples folder in your TermLinx installation folder.

Due to the way the Rockwell Automation ControlLogix processor handles internal memory and user tags, the exact address of each location is irrelevant. However, TermLinx configuration generates very specific tags for this processor and identifies blocks of tags with reference to numbered loading/unloading islands. *PLC Interface File Structure & Program Tags* in the TermLinx Database Manager Manual documents the complete file structure for the gate control file and the operational loading island files.

5.5   Ladder Logic Diagram

```
                                    TLX starts transaction

                                            │
                                            ▼
                          N         TLX accepts          Y
                    ┌─────────────    request    ─────────────┐
                    ▼                                          ▼
PLC Action                                              PLC Action
PLC request enable transaction   Transaction rejected   Transaction accepted   xqv accept enabled = 1
        get = Ø                       by PLC                by PLC
                                                              │
                                                              ▼
                                                   Accept recognized by   TLX Action
                                                         TLX              xqv accept enabled = 0
                                                                          PLC request enabled = 0
                                                              │
                                                              ▼
                                                   Control passed to
                                                         batch
                                                   Controller and PLC set
                                                     to transaction
                                                      In progress
                                                              │
                                                              ▼
                                                    Transaction in
                                                       progress
```


PLC Action
PLC request enable transaction
get = Ø

PLC Action
xqv accept enabled = 1

TLX Action
xqv accept enabled = 0
PLC request enabled = 0

TLC Action
Xqv xxx transaction = 1
PLC end transaction = 1

PLC Action
PLC end transaction = 0

PLC Action
Xqv XXX transaction = 1

PLC Action
xqv island stop = 1

TLX Action
PLC stop transaction = 1

PLC Action
xqv island start = 1
Xqv island stop = 0

TLX Action
PLC stop transactions = 1

6   Rarely Used OPACTS Features

6.1   Starting the OS-9/Win32 Batch Controller

Note: The information in this section applies only to OPACTS users. If you are running TermLinx, you do not need to be concerned with the details in this section.

Start one instance of the OS-9 AccuLoad batch controller program for each serial port connected to an AccuLoad multi-drop loop. Different AccuLoad models may be mixed on a single loop.

The command line syntax is:

```
ACCUOPCT  <baud> [] [&]
```

where:

	The serial port number "n", for COMMn (OS-9) or COMn (Win32).
ιud>	The communications baud rate, 300 thru 38400.
	The communications parity ("N", "E", or "O") and data bits ("7" or "8") written as a single token. Default is "E7".
	[OS-9 only] An optional literal "&" for placing the process into the background; OS-9 permits only one foreground process. ProSoft recommends that one process (the last) remain in foreground.

ACCUOPCT requires a configuration file (.OPS file) that contains information pertaining to its CoPro port. TermLinx Configuration Manager creates this file for you at the same time as it creates the TermLinx binary configuration file (.OPK).

Important: The CoPro will use the first instance of an .OPS file to read its configuration information. There should only be one .OPS file stored on the CoPro at any time, otherwise operation of the CoPro may not be as intended.

7 ProSoft TermLinx Agreement

In This Chapter

7.1 SCHEDULE A: GENERAL TERMS AND CONDITIONS

7.1.1 DEFINTIONS

1 "Confidential Information" shall mean any information of the Disclosing Party and includes, without limitation, any business, marketing, technical and scientific information, trade secrets, processes, designs, data, formula, plans, prototypes, specification, know-how, improvements, inventions (whether patentable or not), techniques, software, source code, customer lists, research, business opportunities, agreements and other information whether or not related to or arising from the activities contemplated in this Agreement and which may be in any form or medium and whether or not designated as confidential (or like designation). Notwithstanding the forgoing, Confidential Information shall not include any information that (a) is in the public domain without such disclosure being as a result, directly or indirectly, of a breach of the obligations of confidence, secrecy or non-use by the Receiving Party or; (b) was previously known to the Receiving Party, reasonable proof of which lies upon the Receiving Party; or (c) was received by the Receiving Party without any obligation of confidentiality from a source (other than the Disclosing Party) lawfully having possession of such information; or (d) is released or disclosed to the public by the Disclosing Party or by its conduct; or (e) is required to be disclosed by operation of law.

2 "Date of Order" shall mean the Date of Order as set out in an Order.

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5 "Equipment" shall mean the computer and other equipment set out in an Order and other ancillary equipment delivered to Licensee.

6 "Installation Fee" shall mean the Installation Fee as set out in an Order.

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8 "Maintenance Fee" shall mean the Maintenance Fee as set out in an Order.

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11 "Release" shall mean a version of the Software delivered to Licensee containing minor functional enhancements, modifications, extensions, error corrections or bug fixes. Releases do not include a major addition to the functionality of the Software.
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14 "Software License" shall mean the terms and conditions set out in Schedule B.
15 "System" shall mean the Software and Equipment.
16 "System Price" shall mean the System Price for the Equipment and Software as set out in an Order.
17 "Term" shall mean from the Date of Order, continuing in perpetuity.
18 "State" shall mean the United States.
19 "Territory" shall mean Canada.

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1   All amounts payable under this Agreement, including without limitation the System Price, Maintenance Fees and Installation Fees, shall be paid by Licensee to Licensor within thirty (30) days of receipt of an invoice.
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2 The parties agree that the terms and conditions of this Agreement are confidential and that neither party shall disclose the contents of this Agreement without the prior written consent of the other party or except as required by law. Notwithstanding the forgoing, the general relationship of the parties (and not the specific terms) shall not be treated as confidential and the disclosure of same is permitted.

7.1.5 TERM

1 The term of this Agreement shall be the Term, unless terminated earlier as provided herein.

2 This Agreement and the licenses granted herein may be terminated by the non-defaulting party if any of the following events of default occur: (1) if a party materially fails to perform or comply with this Agreement or any provision hereof; (2) if a party fails to comply with the provisions of Section 2 (Price, Payment and Orders) or Section 4 (Confidential Information); (3) if a party becomes insolvent or admits in writing its inability to pay its debts as they mature or makes an assignment for the benefit of creditors; (4) if a party files a petition for bankruptcy, receivership statute or the like, as they now exist or as they may be amended, is filed by a party; or (5) if such a petition is filed by any third party or an application for a receiver is made by anyone and such petition or application is not resolved in favor of the party within ninety (90) days.

3 Termination shall be effective thirty (30) days after notice of termination is delivered to the defaulting party if the defaults have not been cured within such thirty (30) day period.

4 Upon termination of this Agreement, Licensee shall cease and desist all use of the Software.

5   Notwithstanding the termination of the Agreement, Sections 2, 3, 4, 6 and 7 shall survive such termination and remain in force. All other rights and licenses granted hereunder shall be extinguished upon termination.

6   Irrespective of the reason for termination, all payments made by Licensee to Licensor hereunder are non-refundable.

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1   Licensor warrants that the Equipment will be free of manufacture's defect for a period of 120 days from the date of installation and warrants that the Software will have been installed on the Equipment.

2   Licensor does not represent or warrant that all errors in the System or Services can or will be corrected.

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6   LICENSOR'S TOTAL MAXIMUM AGGREGATE LIABILITY UNDER THIS AGREEMENT AND THE LICENSE AND USE (AND INABILITY TO USE) OF THE EQUIPMENT AND SOFTWARE AND IN RELATION TO THE SERVICES UNDER ANY AND ALL OTHER CIRCUMSTANCES, ARISING IN ANY MANNER WHATSOEVER, SHALL BE LIMITED TO FIVE HUNDRED U.S DOLLARS (US $500.00). THIS LIMITATION OF LIABILITY IS CUMULATIVE AND NOT PER INCIDENT.

7   Licensor shall defend Licensee in any suit or proceeding or threatened suit or proceeding brought against Licensee based solely on a claim that the Software infringes any enforceable copyright, trade secret or trademark right in the State or Territory of any third party but only if: (a) Licensee shall notify Licensor in writing of any such suit or proceeding or threatened suit or proceeding promptly after Licensee first learns of same; and (b) Licensee shall provide, at no cost, such reasonable assistance and co-operation as Licensor may reasonably request from time to time in connection with the defense of same. Licensor may either defend or settle such claim. Licensor shall have complete control over any such suit or proceeding including, without limitation, the right to settle on behalf of Licensee on any terms Licensor deems desirable (in the sole exercise of its discretion) so long as it is at no cost to Licensee. Licensee shall have the right to be independently represented by counsel of its own choice and at its own cost. Licensee shall not settle any such claim without Licensor's prior written consent.

8   If the use of any of the Software is enjoined (or is likely to be enjoined in the reasonable opinion of Licensor) as a result of any action or claim, Licensor shall, at its sole option and expense either: (a) obtain for Licensee the right to continue using the Software; or (b) modify the Software so that it no longer infringes; or (c) provide Licensee with reasonable alternate software, as applicable, providing substantially similar features, functions and capability; or (d) refund to Licensee the System Price (less an amount for depreciation on a straight line basis over five years) paid by Licensee for the System and Licensee shall cease using the System.

9   Licensor shall have no liability hereunder for infringement claims based upon modifications made to the Equipment or Software by or on behalf of Licensee, the combination of the Equipment or Software with any other software, equipment, system or process or the use of the Equipment or Software other than as described in the Documentation.

10 The foregoing infringement provision sets out the entire liability and obligations of Licensor and the sole remedies of Licensee in respect of any claim that the Equipment or Software infringes any third party rights, including patent rights.

11 Other than instances where Licensor is obligated to indemnify Licensee herein, Licensee shall indemnify and hold harmless Licensor from and against any claims, demands or causes of action whatsoever, and shall defend or shall defend or settle all claims and actions brought against Licensor by a third party arising out of or related to Licensee's use of the Equipment, Software or Documentation, howsoever such claim or action shall have occurred or arose.

12 Licensee hereby agrees that it is responsible for implementing procedures and systems to protect its operations and data as is prudent to prevent and mitigate against the loss or damage to same in the event of errors or a malfunction in the Equipment or Software. Under no circumstances shall Licensor incur any liability due to Licensee's failure to implement the forgoing.

7.1.7 GENERAL

1   Licensee shall have no right to transfer, assign or otherwise dispose of its rights or obligations hereunder without the prior written consent of Licensor. Licensee shall, however, have the right to transfer this Agreement in the event of a sale of all or substantially all of its assets or the business operations in which the System is used.
2   This Agreement shall be governed, construed and enforced in accordance with the laws of the State of California, without reference to conflict of laws principles. Any dispute arising out of this Agreement or in relation to the Equipment, Software or Services shall be adjudicated in the courts in California, U.S.A. Notwithstanding the forgoing, either party may apply to any court of competent jurisdiction for injunctive relief.
3   The Licensor and Licensee hereunder are independent contractors and nothing contained in this Agreement shall be construed to constitute the parties otherwise.
4   If any provision of this Agreement is held to be invalid by a court of competent jurisdiction, then the remaining provisions shall remain in full force and effect.
5   The failure of either party to enforce at any time any of the provisions of this Agreement shall not be deemed to be a waiver of the right of either party to enforce the same or a different provision in the future.
6   The nonperformance by either party of an obligation hereunder shall be excused to the extent that performance is rendered impossible by strike, fire, flood, governmental acts or orders or restrictions, failure of suppliers, or any other reason where failure to perform is beyond the control and not caused by the negligence or neglect of the non-performing party. Financial difficulty is excluded.
7   This Agreement constitutes the entire agreement between the parties and supersede all previous agreements and representations, oral or written, relating to the subject matter of this Agreement. This Agreement may not be modified or amended except in writing signed by a duly authorized representative of each party.

7.2   SCHEDULE B: SOFTWARE LICENSE

7.2.1 LICENSE

1   Subject to the terms and conditions of the Agreement and this Software License, Licensor hereby grants to Licensee a non-exclusive, non-transferable license for the Term, without right of sublicense, to install and use the Software in the State or Territory for Licensee's internal business purposes only.
2   Licensee shall have no rights in the Software other than as specifically set out herein. Licensee shall not create derivative works of the Software or permit any third party to use the Software or shall Licensee operate the Software on behalf of a third party. Licensee shall not reverse engineer, de-compile or otherwise attempt to derive the source code of the Software.

3 Licensor may attend the office of Licensee to audit Licensee's operations to ensure Licensee's use of the Software is in compliance with the terms of this Agreement. All operational audits will be conducted during regular business hours with reasonable notice.

4 Specific customization development performed by ProSoft Technology, Inc. on behalf of a Customer is owned by ProSoft Technology, Inc. and Licensed by the Customer.

7.3   SCHEDULE C: MAINTENANCE AND SUPPORT

7.3.1 DEFINITIONS

1 "Maintenance and Support" shall mean that Licensor will provide:

   a) Releases, as and when Licensor makes the same generally available to its other customer. Release includes system changes and bug fixes; and
   b) Major upgrades are subject to additional charge; and
   c) Basic Support or 24 / 7 Support as set out in an Order.

2 "Onsite Support Fee" shall mean two hundred and seventy-five dollars (US $275.00) per man-hour.

3 "Basic Hours of Support" shall mean Monday through Friday, excluding statutory holidays in Bakersfield, California, 8:00 a.m. to 5:00 p.m., Pacific Standard Time.

4 "Current Version" means the most recent version of a Release, plus the prior Release.

5 "Basic Support" shall mean Telephone or email support with respect to the Current Version, during the Basic Hours of Support. Such telephone support shall include (i) clarification of the functions and features of the Current Version, (ii) clarification of Documentation and (iii) error verification, analysis and correction.

6 "24 / 7 Support" shall mean the Basic Support and access outside of the Basic Hours of Support to support personnel via message pager for urgent/emergency situations.

7.3.2 GENERALLY

1 For so long as Licensee is current in the payment of all fees, including the System Price and the Maintenance Fees, Licensor shall provide the Maintenance and Support to Licensee.

2 Licensee shall supply the Licensor with the following items:

   o Current PLC ladder logic responsible for interaction with TermLinx system.
   o Contact information for local on-site personnel, or Systems Integration Company responsible for the maintenance and operation of the TermLinx system.
   o Current system diagram pertaining to the TermLinx system.
   o Electronic access to the TermLinx system so that Maintenance and Support can be provided remotely. Failure to provide access may limit support.

3 During the term of the Maintenance and Support, Licensor shall use its reasonable commercial efforts to correct any reproducible programming errors in the Current Version. Upon identification of any programming error, Licensee shall notify Licensor of such error and provide Licensor with a description of the problem and any reasonable assistance as requested by Licensor. Licensor shall use commercially reasonable efforts to correct such errors in the Current Version.

4 Releases may be provided by electronic delivery through an ftp server over the Internet. Licensor will provide Licensee with notice of a new Release by e-mail. Licensee is responsible for installing any Release or alternatively, at Licensee's request, Licensor will install the Release at the Installation Fee.

5 Technical Support contact information is as follows:

By Phone: 661.716-5100 or 800-326-7066

By Email: support@prosoft-technology.com (mailto:support@prosoft-technology.com)

7.3.3 MAINTENANCE FEES

Licensee shall pay to Licensor the Maintenance Fee on the Date of the Order and on every yearly anniversary thereafter. The Licensor may increase the Maintenance Fee by providing sixty (60) days notice of same prior to the Maintenance Fee becoming due in any year.

7.3.4 EXCLUSIONS

1 Licensor shall not be responsible for correcting any errors arising out of (i) the operation of the Software in an environment other than as set out in the Documentation; (ii) any alterations of or additions to the Software performed by parties other than Licensor or under the direction of Licensor; or (iii) use of the Software in a manner other than as contemplated in the Documentation.

2 Licensor has no obligations to provide Maintenance and Support other than in respect of the Current Version.

3 If any Maintenance and Support is required to be delivered other than from the offices of Licensor, Licensee shall pay the Onsite Support Fee (including travel time) and Licensor's reasonable travel, subsistence and other expenses where the same have not already been provided by Licensee.

4 Within thirty (30) days of each month end Licensor shall submit an invoice for any onsite support which it is entitled to charge and any expenses incurred. All invoices shall be accompanied by such personnel timesheets, vouchers, receipts and other materials as reasonably required by written notice by Licensee. Licensee shall pay the amount of said invoice within fourteen (14) days after receipt thereof.

5 Under no circumstances does Licensor warrant or represent that all errors can or will be corrected.

7.3.5 TERM AND TERMINATION

1 The term of Maintenance and Support shall take effect on the Date of the Order and shall remain in effect for one year. The term of Maintenance and Support shall automatically renew at the end of each term for an additional term of one (1) year unless either party notifies the other of termination at least thirty (30) days prior to the end of the then current term.

7.4 SCHEDULE D: INSTALLATION SERVICES

7.4.1 DEFINITIONS

1 "Installation Services" shall mean:

a) the installation of the Software;
b) configuring the Software and Equipment; and
c) delivering the Equipment to the Licensee's location

7.4.2 SCOPE OF SERVICES

1 Licensor shall provide the Installation Services.
2 Licensor will retain the sole and exclusive right to control the manner and means by which the Installation Services are performed. Licensor may subcontract the performance of the Installation Services.

7.4.3 LICENSEE'S DUTIES AND RESPONSIBILITIES

1 Licensee shall make available in a timely manner at no charge to Licensor all of its systems and resources reasonably needed by Licensor to perform the Installation Services.

7.4.4 RELATIONSHIP OF PARTIES

1 Licensee agrees that for a period of six (6) months following the provision of any Installation Services, it will not make any offer to engage any employee or contractor of Licensor as an employee or contractor of Licensee.

7.4.5 FEES

1 Any installation service required will be billed at the Installation Fee per hour (including travel time). Licensee shall pay to Licensor the Installation Fee. Licensor shall invoice Licensee on a biweekly basis in arrears.

7.4.6 EXPENSES

1 Licensee shall reimburse all reasonable travel and other related expenses incurred by Licensor in the performance of the Installation Services.

7.4.7 TERM AND TERMINATION

1   The terms and conditions of this Schedule will take effect on the Date of the
    Order and will remain in effect until all of the Installation Services have been
    completed, unless terminated earlier in accordance with the Agreement.

Index