Software Products:
TymPro™ User Profile Editor - Tymkon™ Host Software

Instruction Manual

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1. SYSTEM OVERVIEW

1.1. *Tymkon*

Tymkon (pronounced 'time-con') is a series of process sequence controllers designed for batch-type process-control applications. All Tymkon controllers are based on a CMOS microprocessor as the major control element. This, along with other CMOS components and with the application of digital filtering, enables these controllers to operate reliably in the high electrical noise environments in which they often must function. Programming may be accomplished with front-panel controls or from a host computer.

1.2. *TicTalk*

TicTalk is a phrase used to encompasses an entire network (used in the generic sense) of Host Computers, Tymkon's, Gas Panel Interfaces, Drive Controllers and other peripherals. In a typical installation, the interconnection of these devices requires the integration of several different parallel and serial communications protocols from several different vendors. *TicTalk* provides the user a consistent programming interface for these various devices.

1.3. *TymEdit*

TymEdit is a recipe editor that allows the user to edit and print process segment tables, recipes, temperature tables and configuration information. This information is then stored in a Microsoft Access database on the PC's hard disk where it can be retrieved for later download to one or more Tymkon's.

1.4. *TymPlex*

TymPlex is a PC-based software application that provides a graphical user interface and data collection tool for all current versions of Tymkon process sequencer controllers. It allows the user to download recipes from Microsoft Access databases created by TymEdit and provides access to all of the Tymkon front panel functions as well as data logging functions.

TymPlex generally runs on any personal computer capable of running Windows98, Windows2000 or WindowsXP. Windows95 and WindowsNT are not supported. A separate document is available that details the minimum system hardware requirements for current versions of the software.

1.5. *TymPro*

TymPro is a user profile editor that allows an installation's supervisory staff to edit user lists, process lists, and user-permissions information. These data tables are then made available to TymPlex, TymEdit and other Tymkon-related applications to regulate user access.

2. DESCRIPTION

TymPro is a user profile editor that allows an installation's supervisory and engineering staff to edit user lists, process lists, and user-permissions information. This information is then made available to *TymPlex*, *TymEdit* and other *Tymkon*-related applications to regulate user access.

TymPro, and it's associated data tables, are structured to allow a high degree of control over which users are permitted or denied access to which process tools and to which functions. Depending on how *TymPro* is installed and configured, it may be used to control access to a single tool or to hundreds of tools. Similarly, a separate copy of *TymPro* and its data tables may be installed on each host computer or, if multiple host computers are networked together, a single copy of *TymPro* can be used to edit a single centralized database. Another variation allows the user to distribute updated copies of a centralized database to multiple hosts using removable media such as floppy disks, CD ROMs or USB Flash memory.

An unusual aspect of *TymPro* is that multiple process tools may grouped into various user-defined process categories. For example, selected users may be permitted to download recipes to Tymkons on any tool in a particular process category but may be excluded from downloading to Tymkons in other process categories. This grouping capability might also be used to regulate access based on the tool's location. For example, all tools in a particular 4-stack diffusion furnace might be placed in a group called 'Bank 1' and only those users with appropriate 'Bank 1' permissions would be allowed access.

3. DATABASE STRUCTURE

TymPro stores user and tool information in two different types of database files. One file contains a table of user information and a table of process categories. The second file contains a table of user permissions. The user may choose to maintain a separate copy of each file on each host computer or a master copy of either or both files may be maintained on a server.

3.1. UserAdmin.mdb File (containing Operators & Processes Tables)

The first database file is typically named "UserAdmin.mdb". If a separate copy of this file is maintained on each host computer, it usually resides in the application's "AppData" folder. If a central database will be used, an entry may be added to TymPlex.ini and/or TymEdit.ini as described later in this document to inform those applications as to the location of this file.

Regardless of where it resides, this file contains two tables: one named ***Operators*** and one named ***Processes***.

3.2. Permissions.mdb File (containing Permissions Table)

The second database file is typically named "Permissions.mdb". If a separate copy of this file is maintained on each host computer, it usually resides in the application's "AppData" folder. If a central database will be used, an entry may be added to TymPlex.ini and/or TymEdit.ini as described later in this document to inform those applications as to the location of this file.

Regardless of where it resides, this file contains one table named ***Permissions***.

3.3. Table Details

3.3.1. Operators

This table contains an entry for each person who will be permitted any sort of access to any of these database tables or to any of the process tools. If a central database is maintained, each person is entered once and only once. This table is used to store the user's name and password and also to broadly define the range of each person's access. Following is a list of the fields in this table:

Field Name	Type	Description
UserName	Text (50 char)	Name of user (ex: "John Doe")
UserID	Text (50 char)	Optional field for employee number.
Password	Text (50 char)	Case sensitive password.
TimeOut	Long	Used by some applications to control an automatic logout function.
LoginTime	Double	Used by some applications to totalize login time for each user.
InformCount	Long	Reserved for future use.
WarnCount	Long	Reserved for future use.
AlertCount	Long	Reserved for future use.
EditUsers	True/False	Determines whether this user may edit the *Operators* table.
EditProcesses	True/False	Determines whether this user may edit the *Processes* table.
EditPermissions	True/False	Determines whether this user may edit the *Permissions* table.
General	True/False	Determines whether this user may be allowed general access to viewing screens and printing graphs etc.
Operator	True/False	Determines whether this user may be allowed access to those functions related to operating process tools.
Maintenance	True/False	Determines whether this user may be allowed access to maintenance and setup functions.
Engineer	True/False	Determines whether this user may be allowed access to those functions related to process engineering.
Photo	Text (255 char)	Reserved for future use.

3.3.2. Processes

This table contains a single field. It is used to store the list of process categories to which each tool may belong. Following is a list of the fields in this table:

Field Name	Type	Description
ProcessType	Text (50 char)	Name of process type or

3.3.3. Permissions

This is the most detailed of the three tables. It contains specific information regarding the access rights of each user. Multiple records may be entered for each user to allow different access rights for different process categories. Following is a list of the fields in this table:

Field Name	User Type	Description
UserName		Selected from ***Operators*** table.
ProcessType		Selected from ***Processes*** table.
ViewOK	General	Determines whether this user may view screens (for this process).
PrintOK	General	Determines whether this user may print recipes or graphs.
Run	Operator	Determines whether this user may run Tymkon recipes.
Reset	Operator	Determines whether this user may reset the Tymkon.
Step	Operator	Determines whether this user may step through Tymkon recipes.
GraphSetup	Operator	Determines whether this user may reconfigure the data graph.
SelectRecipe	Operator	Determines whether this user may select Tymkon recipes.
Download	Operator	Determines whether this user may download Tymkon recipe files.
Counters	Maintenance	Determines whether this user may clear runs counters.
Timers	Maintenance	Determines whether this user may clear usage timers.
ToolSetup	Maintenance	Determines whether this user may change comm ports and tool name.
Datalog	Engineer	Determines whether this user may enable or disable datalog.
Edit	Engineer	Determines whether this user may edit recipes.
LotID	Engineer	Determines whether this user may enable or disable lot number entry.
ToolID	Engineer	Determines whether this user may change process category.
SetupApp	Engineer	Determines whether this user may enable or disable tooltips etc.
ExitApp	Engineer	Determines whether this user may exit the host application.

4. GENERAL OPERATION

In addition to controlling access to other *Tic-Talk* applications, this program controls access to itself. When users log in to *TymPro*, they are granted access to the three database tables according to whether they have already been granted access in the *Operators* table. Thus, to edit the *Operators* table, the user must already be enabled in the '*Edit Users'* field of the *Operators* table. To edit the *Processes* table, the user must be enabled in the '*Edit Processes'* field of the *Operators* table. Finally, to edit the *Permissions* table, the user must be enabled in the '*Edit Permissions'* field of the *Operators* table.

A reserved user name, *'~Default User'* has been pre-assigned for use under special conditions. Each time *TymPlex* or *TymEdit* is initially started, this special user is automatically logged in without the need to enter a password. When *TymPro* is first installed on a particular computer, empty data tables are created as detailed above and an entry is added to the *Operators* table with the '*User Name'* field set to *'~Default User'*. Initially, this special user is permitted access to all functions.

Similarly, a reserved process type, *'~All Processes'* has been pre-assigned for use under special conditions. When *TymPro* is first installed on a particular computer, after the data tables have been created as detailed above, an entry is added to the *Processes* table with the '*Process Type'* field set to *'~All Processes'*.

In addition, after the data tables have been created as detailed above, an entry is added to the *Permissions* table with the '*User Name'* field set to *'~Default User'* and the '*Process Type'* field set to *'~All Processes'*.

After the *TymPro* software has been installed, the person configuring the user access data tables may log in as *'~Default User'*, add himself to the *Operators* table and then edit and restrict the permissions of *'~Default User'*. Generally, after the software has been configured, the *'~Default User'* would only be allowed access to any features enabled by the *View OK* field and, possibly, any features enabled by the *Print OK* field (both are fields in the *General* category).

Upon initial inspection of the table structures, the reader might initially get the impression that similar information is being entered twice, first in the *Operators* table in the *General, Operator, Maintenance & Engineer* fields and, then, in the detailed permissions fields in the *Permissions* table. Some clarification is required: The fields in the *Operators* table serve as a mask against which a user's permissions are compared when a user logs in to a tool. For example, if the user doesn't have the *Engineer* field enabled in the *Operators* table, access to any *Engineer* related feature will be denied whether or not an entry in the *Permissions* table enables that feature. This structure allows a plant manager to enable the *Edit Permissions* field for a workgroup supervisor. The workgroup supervisor can then edit individual operator permissions, but the workgroup supervisor would not be allowed to add permissions to a user in those categories that have not already been enabled for that user in the *Operators* table. (Note: The workgroup supervisor would not have *Edit Permissions* enabled in the *Operators* table.) Similarly, any user editing the *Permissions* table may not add any permissions to a user that they do not enjoy themselves. This structure allows the workgroup supervisor some degree of control over what their operators have access to, but only to the extent granted by the plant manager.

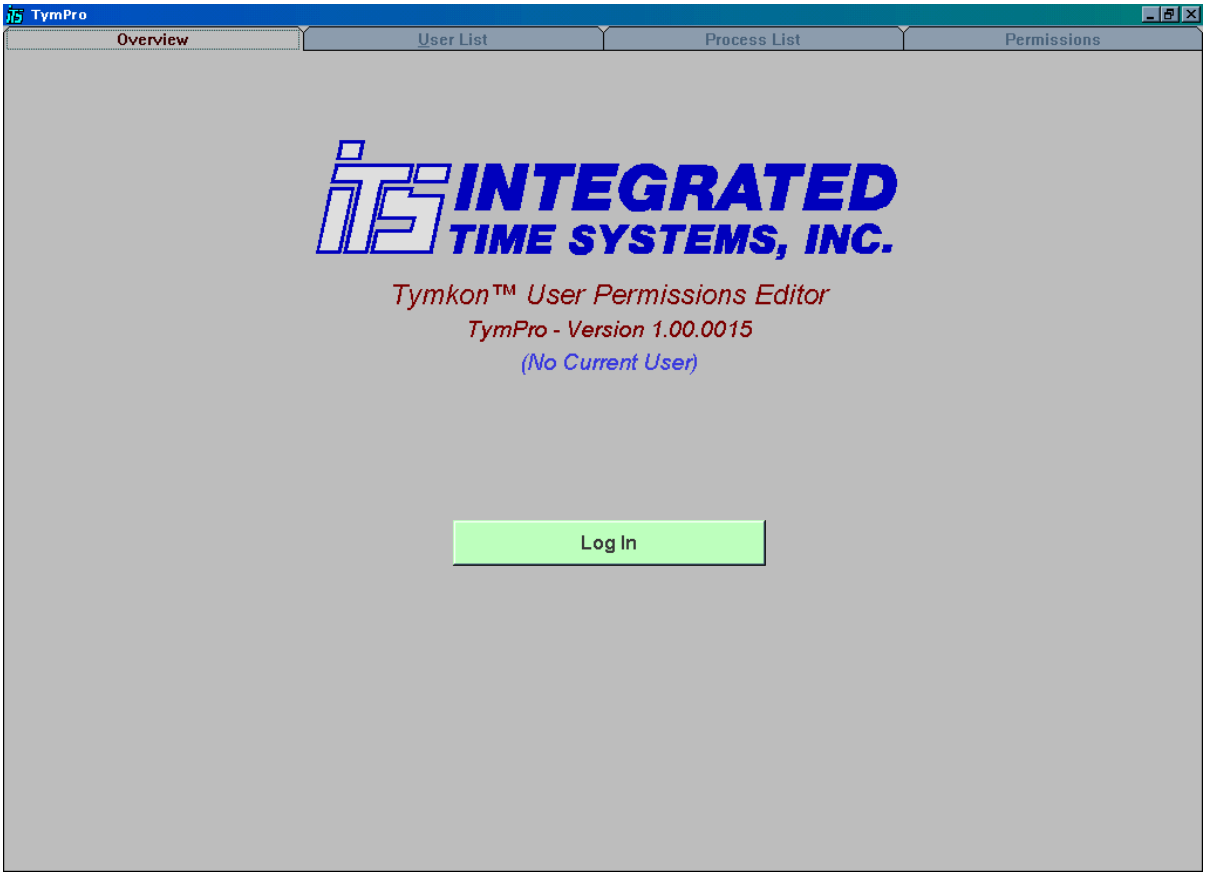
5. INSTRUCTIONS

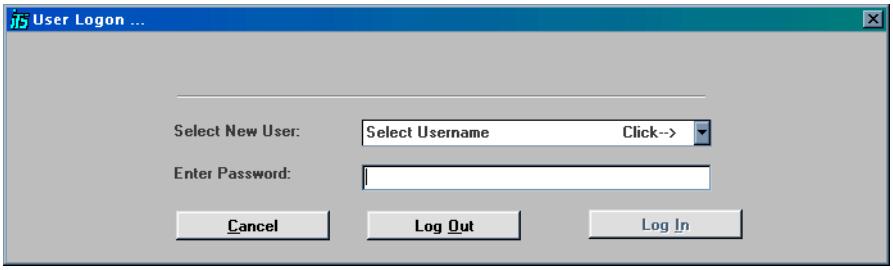
As do all *Tic-Talk* applications, *TymPro* uses 'tab' controls to group similar user functions on its screen. The tab controls have the appearance of conventional tab folders that might be used to organize various documents in a file cabinet. Under various conditions, different tabs may be enabled or disabled, visible or not visible and selected or not selected. The tab controls in all *Tic-Talk* applications exhibit the same colors, fonts and behavior to minimize user training requirements.

While *TymPlex* and *TymEdit* use more than one tab control, *TymPro* displays a single tab control across the top of its screen. This tab is referred to as the 'main' tab and has captions (or titles) labeled *'Overview'*, *'User List'*, *'Process List'* and *'Permissions'*. The left-most tab, '*Overview*' is enabled under all conditions whereas the remaining three tabs are individually enabled depending on whether the current user is allowed access to the corresponding tables. Generally, when the *'User List'* tab is enabled, the user has access to the *Operators* table, when the *'Process List'* tab is enabled, the user has access to the *Processes* table and when the *'Permissions'*. tab is enabled, the user has access to the *Permissions* table.

In most installations, when *TymPro* is run the first time after installation, neither of the two database files will exist on the local hard drive. When this occurs, *TymPro* creates the two files and adds a single entry to each of the three tables that are contained in the files to enable a user named '~Default User' access to all tabs. After the user has created entries for himself and for the companies' personnel, the permissions of the '~Default User' may be restricted to allow access only to newly authorized users.

5.1. Overview Tab

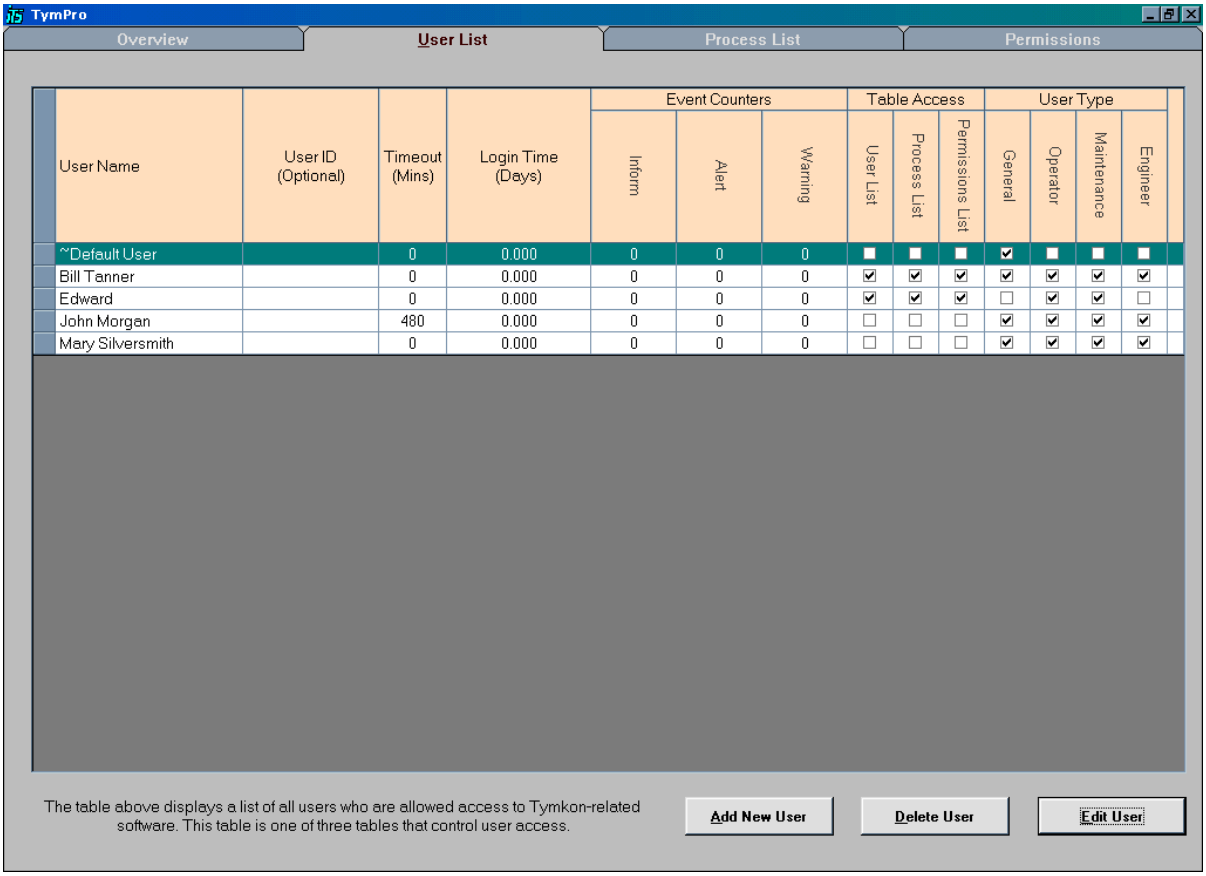


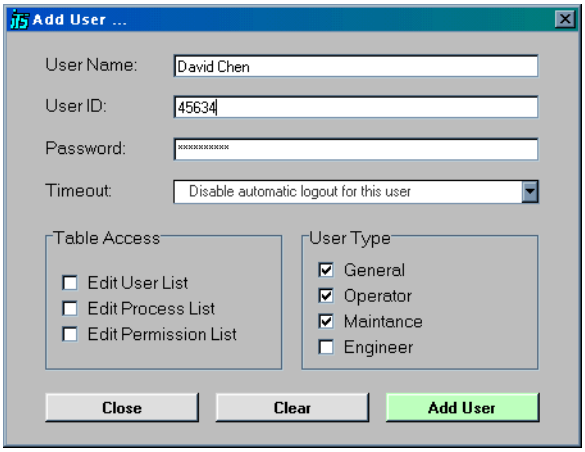


When T*ymPro* is first started, the *Overview* tab will be selected and the remaining tabs will be disabled. To enable access to the remaining tabs the first time, click the green *'Log In'* button near the center of the *Overview* screen. After the *User Login* form appears, select *'~Default User'* from the *'Select Username'* dropdown and click the small *'Log In'* button in the lower right corner of the *User Login* form. After the user has created an entry in the *Operators* table for himself, he may log in as himself and enter his personal password. The *'~Default User'* is never required to enter a password, but once the user tables are properly configured, the '~Default User' is not allowed further access to the tables.

Once a user has logged in to the program, the caption on the Log In button is renamed to 'Change User' and the button color is changed from green to gray.

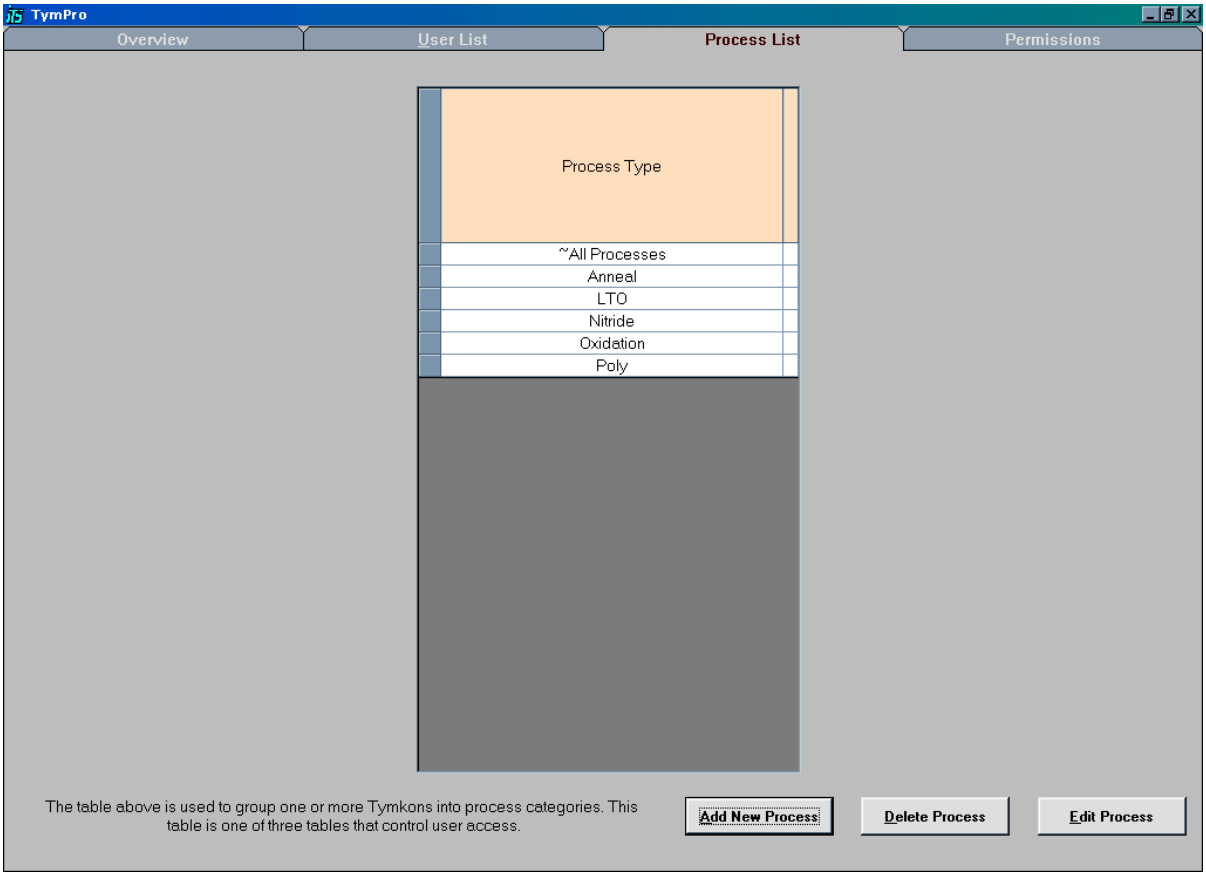
5.2. User List Tab

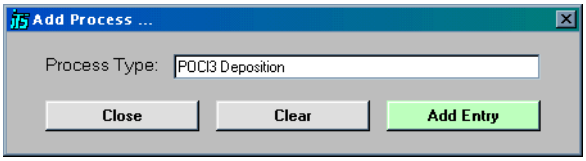




If the current user has been granted *User List* Table Access, the *User List* tab is enabled.

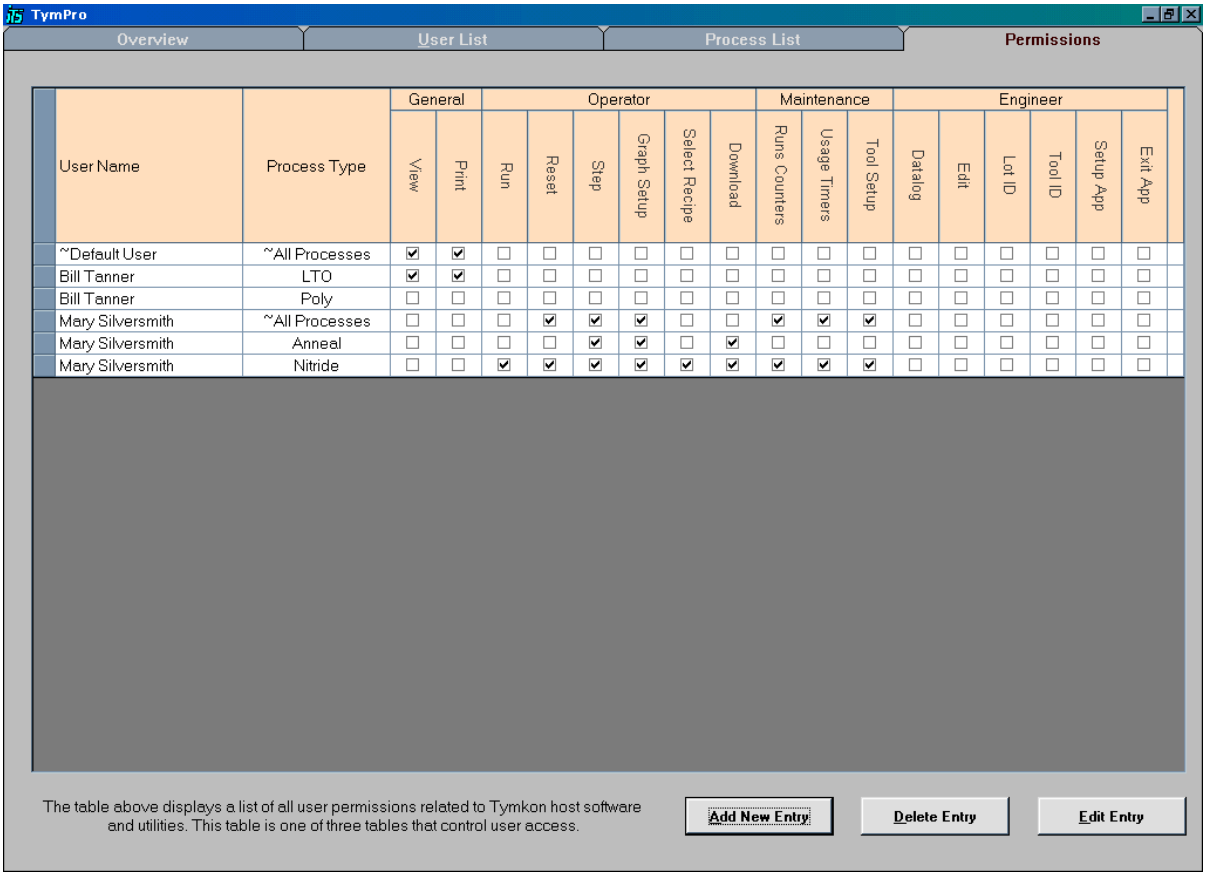
5.3. Process List Tab

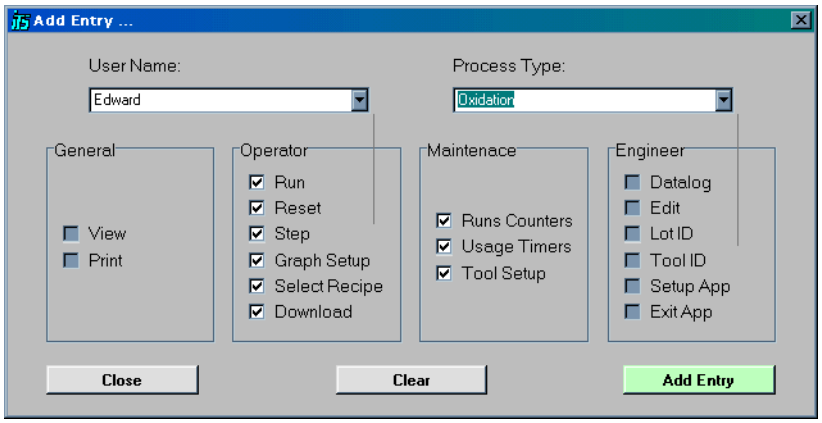




If the current user has been granted *Process List* Table Access, the *Process List* tab is enabled.

5.4. Permissions Tab





If the current user has been granted *Permissions List* Table Access, the *Permissions* tab is enabled.