

PROCESS CONNECTIONS

# **MTL SmartPlant symbol library for FOUNDATION fieldbus™ components**

Measurement Technology Limited  
is a member of The MTL  
Instruments Group plc



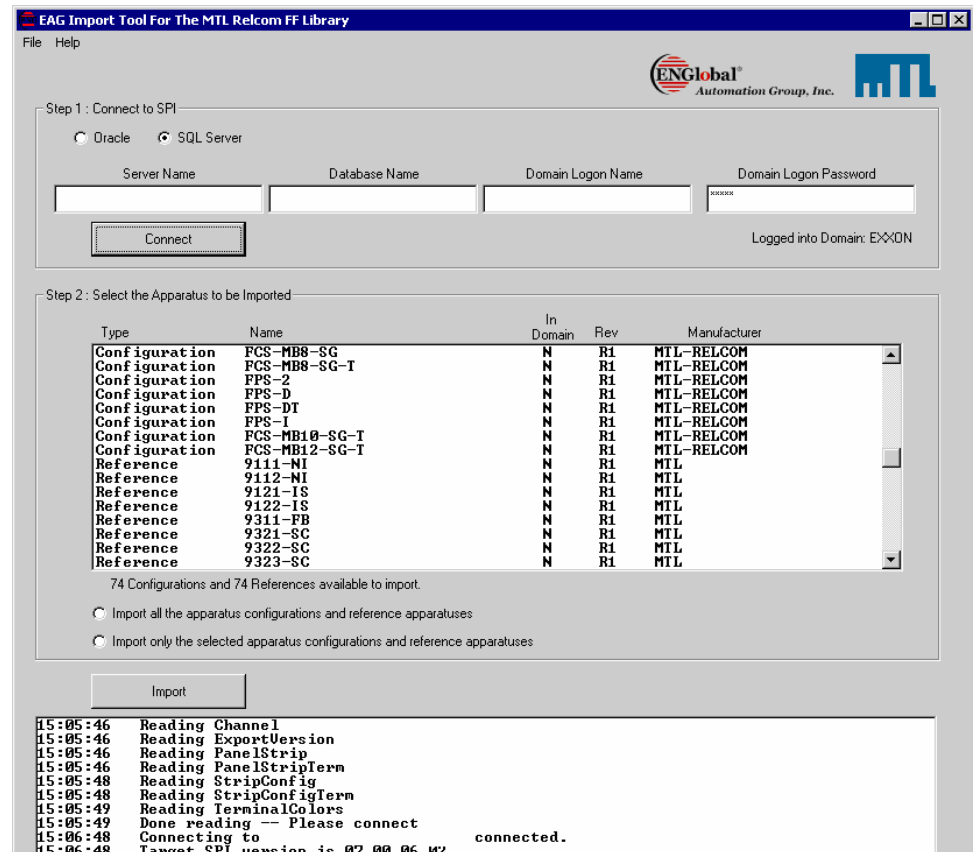
- MTL has made it easier for engineering designers and end users to use their FOUNDATION fieldbus™ products by developing a utility to import the complete range of MTL-Relcom fieldbus products (Power Supplies, Megablocks™, surge protectors, and Entity conversion blocks) into SmartPlant Instrumentation version 7.
- SmartPlant is among the most successful examples of the new generation design tools created to reduce the cost of designing control systems. The cost of designing a single control loop can be in excess of one man-day, so using tools like SmartPlant can dramatically reduce these costs. The utility, including all associated files is available for download below.
- **To use the MTL-Relcom SmartPlant library, users must be running a valid copy of SmartPlant Instrumentation ver 7.**
- **Registration for download is required so that we can notify users of new updates to the library.**



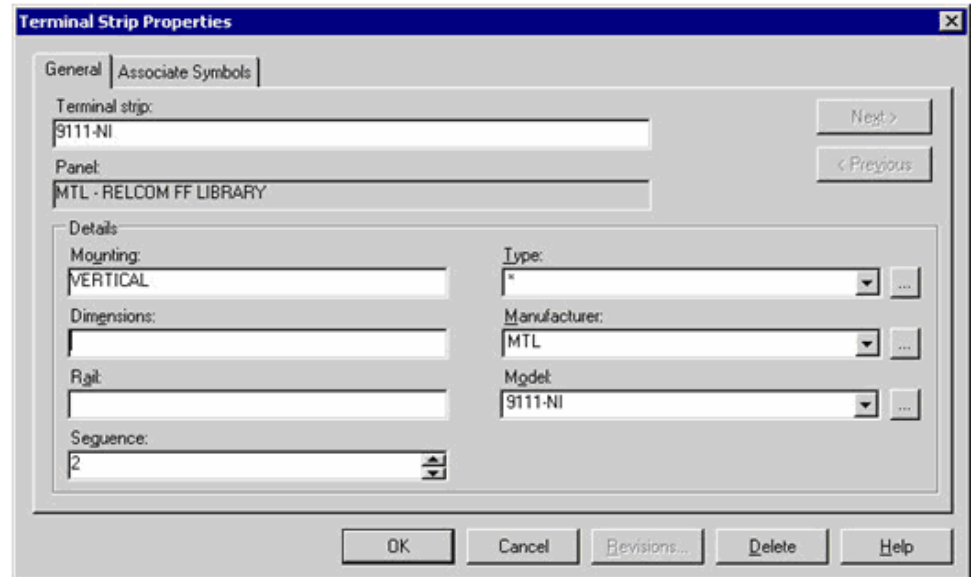
- Register for Updates Like many modern companies today, the MTL Group constantly strives to provide the best products and services for its customers. By completing and submitting the simple form below, MTL will notify you via email of any SmartPlant library updates as they are released. Be sure to read our [Privacy Policy](#) for added peace of mind.
- [http://www.mtl-inst.com/products/fieldbus/smartplant/smartplant\\_register.php](http://www.mtl-inst.com/products/fieldbus/smartplant/smartplant_register.php)

Personal Details	
<i>Fields marked * are mandatory</i>	
Title:	<input type="text" value="Mr"/> *
First Name:	<input type="text"/> *
Last Name:	<input type="text"/> *
Company:	<input type="text"/> *
Country:	<input type="text" value="United Kingdom"/> *
Email:	<input type="text"/> *
Verify Email:	<input type="text"/> *
<input type="submit" value="Submit"/>	

- **INSTALLATION GUIDE**
- After downloading the executable zip file below to a directory on your drive, all you need to do is “double click” on the import utility file and the necessary library will be created inside your SmartPlant Instrumentation environment. The following screen capture shows how a successfully completed run of the import utility should appear.



- Once imported, each device/apparatus contains not only information about itself but it also has proper orientation information for preparation of Enhanced Smart Loop drawings/reports. The Terminal Strip Properties Window



The image shows a screenshot of the 'Terminal Strip Properties' dialog box. The dialog has a title bar with the text 'Terminal Strip Properties' and a close button. It contains two tabs: 'General' and 'Associate Symbols'. The 'General' tab is active. The dialog is divided into several sections:

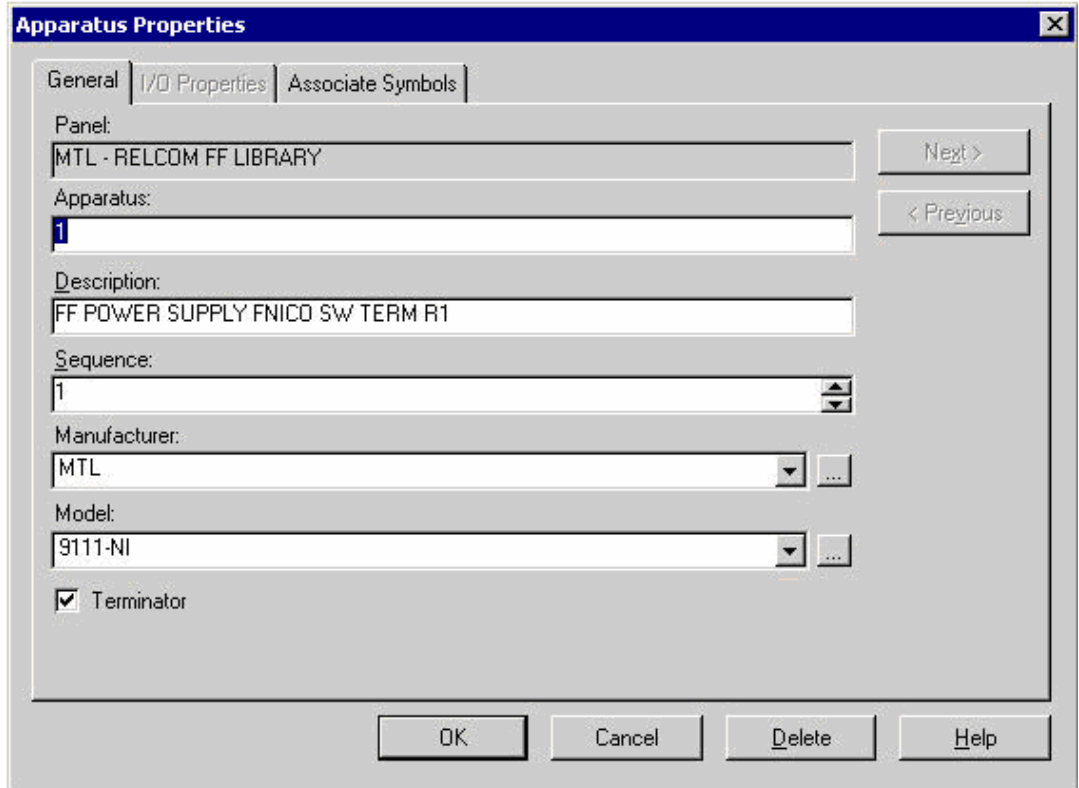
- Terminal strip:** A text field containing '9111-NI'. To its right are 'Next >' and '< Previous' buttons.
- Panel:** A text field containing 'MTL - RELCOM FF LIBRARY'.
- Details:** A section containing several fields:
  - Mounting:** A text field containing 'VERTICAL'.
  - Dimensions:** An empty text field.
  - Rgit:** An empty text field.
  - Sequence:** A text field containing '2' with a small up/down arrow icon to its right.
  - Type:** A dropdown menu with a small '...' button to its right.
  - Manufacturer:** A dropdown menu containing 'MTL' with a small '...' button to its right.
  - Model:** A dropdown menu containing '9111-NI' with a small '...' button to its right.

At the bottom of the dialog are five buttons: 'OK', 'Cancel', 'Revisions...', 'Delete', and 'Help'.



- The next screen shot, apparatus properties is of the actual equipment and includes such useful information as the manufacturer and model number. Note also that for cases in which the terminator is user configurable, there is a “check box” for the designer to easily inform the construction personnel how the device is to be used in the field. The User entered Description field allows the designer to assign the individual apparatus to the appropriate panel using the project naming conventions.
- Just as important as having the correct manufacturer and model number represented properly in the SmartPlant Instrumentation database is that the information will be reflected in the resulting Bill of Materials (BoM) that SmartPlant can generate once the project design is complete. Designers no longer have to worry about having the right quantity of the correct model numbers for each and every component of their Fieldbus wiring system.

- All Functions shown in the Apparatus configuration are consistent with the naming conventions of SmartPlant Instrumentation for Fieldbus designs of “home run in”, “home run out”, “trunk in”, “trunk out”, and “spur”. Note also that like all MTL products the terminator connections are color coded to be clearly identifiable versus any other connection.
- The order of the terminals also follows the same convention as the devices themselves. A consistent naming convention is used for all “apparatus” so that within the alphanumeric constraints of SmartPlant Instrumentation the terminal numbering closely matches the numbers used on the devices themselves.



The screenshot shows the 'Apparatus Properties' dialog box with the following fields and values:

Field	Value
Panel:	MTL - RELCOM FF LIBRARY
Apparatus:	1
Description:	FF POWER SUPPLY FNICO SW TERM R1
Sequence:	1
Manufacturer:	MTL
Model:	9111-NI
Terminator:	<input checked="" type="checkbox"/>

Buttons: Next >, < Previous, OK, Cancel, Delete, Help

- A consistent naming convention is used for all “apparatus” so that within the alphanumeric constraints of SmartPlant Instrumentation the terminal numbering closely matches the numbers used on the devices themselves. The following summarizes the convention used:

<b>A</b>	<b>Alarm – DC contact to alarm in the event of a failure within the component</b>
<b>H</b>	<b>Home Run – Home Run segment going to the Host System</b>
<b>PS</b>	<b>Power Supply – Bulk 24 Volt DC power supply to the Fieldbus Power Conditioner</b>
<b>T</b>	<b>Trunk – Trunk cable is both the power and the communications highway between the Control Room and the Field</b>
<b>[T]</b>	<b>Terminator – If the Apparatus has an Internal Terminator the Position Label field will represent it as [T]</b>



- When it is time to generate the necessary segment drawing for construction in the field, the resulting Enhanced Smart Loop contains all the information needed to complete the construction, including the proper orientation of all the connections (left and right side) and the correct part names.

**Apparatus**

Apparatus profile

Configuration name: MTL 9111-NI

Fieldbus apparatus  Internal terminator

Description: FF POWER SUPPLY FNICO SW TERM R1

Manufacturer: MTL

Model: 9111-NI

Number of apparatuses: 1

Apparatus numbering

Prefix:

Numbered

Apparatus configuration

Orientation	Function	Channel	Polarity	Terminal Numbering	Polarity	Channel	Function
L&R	HomeRunIn		-	H-	T+	+	HomeRunOut
L&R	HomeRunIn		Shield	HS	TS	Shield	HomeRunOut
L&R	HomeRunIn		+	H+	T-	-	HomeRunOut
L			+	PS+			
L			-	PS-			
L			+	PS+			

Add Terminal Delete Terminal

Save Close New... Edit Delete Create Help



- The screen capture below of the workspace shows how a typical apparatus will appear in the connection view where it is “wired” to other components in a system. The designer simply “connects” the appropriate signal cable to the associated terminals on the apparatus the program will connect the correct “+”, “-” and “Shield” to the correct wire within the cable.

