

DataXport

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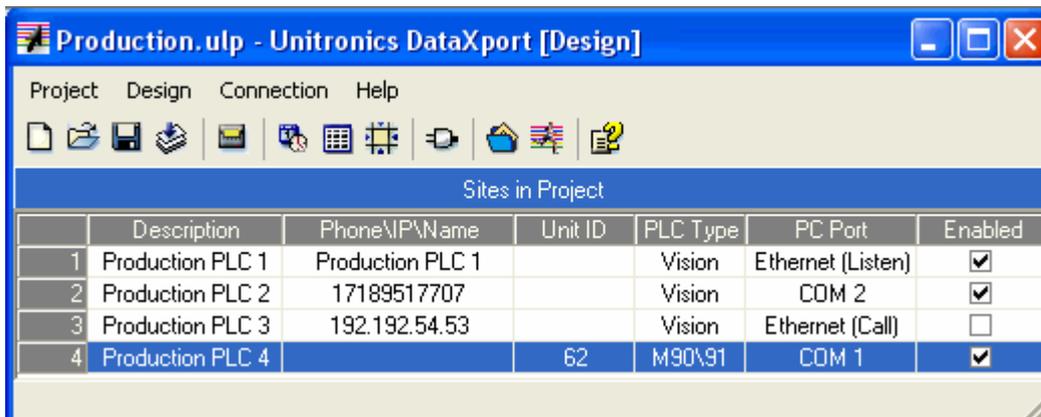
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DataXport

DataXport creates logs of run-time or stored data from Data Tables and operand regions within Unitronics PLCs. DataXport saves the data logs in .ulp format. You can open these data logs using DataXport's companion application, DataXIs, and then export the data to Excel files.

Via DataXport, you can:

- Log data according to a date/time-based schedule.
- Simultaneously log data from one or more Unitronics PLCs.
- Access PLCs and log data via a direct, network, Ethernet, or modem connection.
- Save the data that is logged during each session to an Excel file, and automatically email it at the end of a session.



Building a DataXport Project

Start DataXport:

1. Go to Start > Programs > Unitronics> DataXport.

-or-

Open the Unitronics folder located on the Desktop, then double-click on the DataXport icon. Note that DataXport is installed in the Unitronics program group by default. It is stored elsewhere only if you specified another program group during installation.

2. The DataXport design window opens.

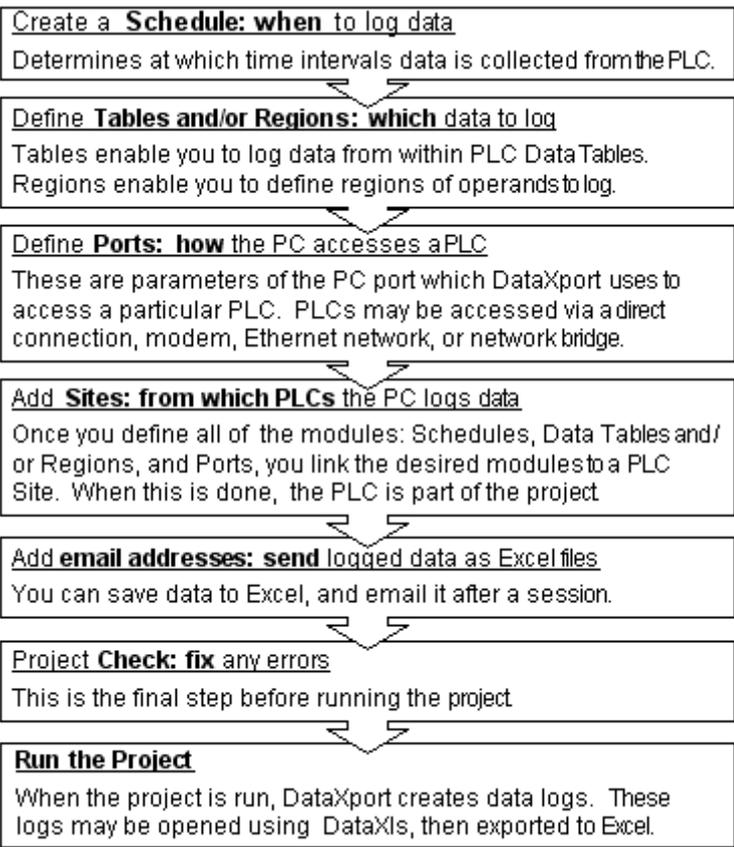
The DataXport Design window displays the list of Site you include in the project, together with the parameters of how the PLC within the Site is accessed.



To build a DataXport project, you first define the project's modules listed on the right. These modules determine when the data is logged, which data is logged, and how the PLC can be accessed.

Once their parameters are defined, all of these modules are global to the entire DataXport project and may be linked to any PLC in the Site List.

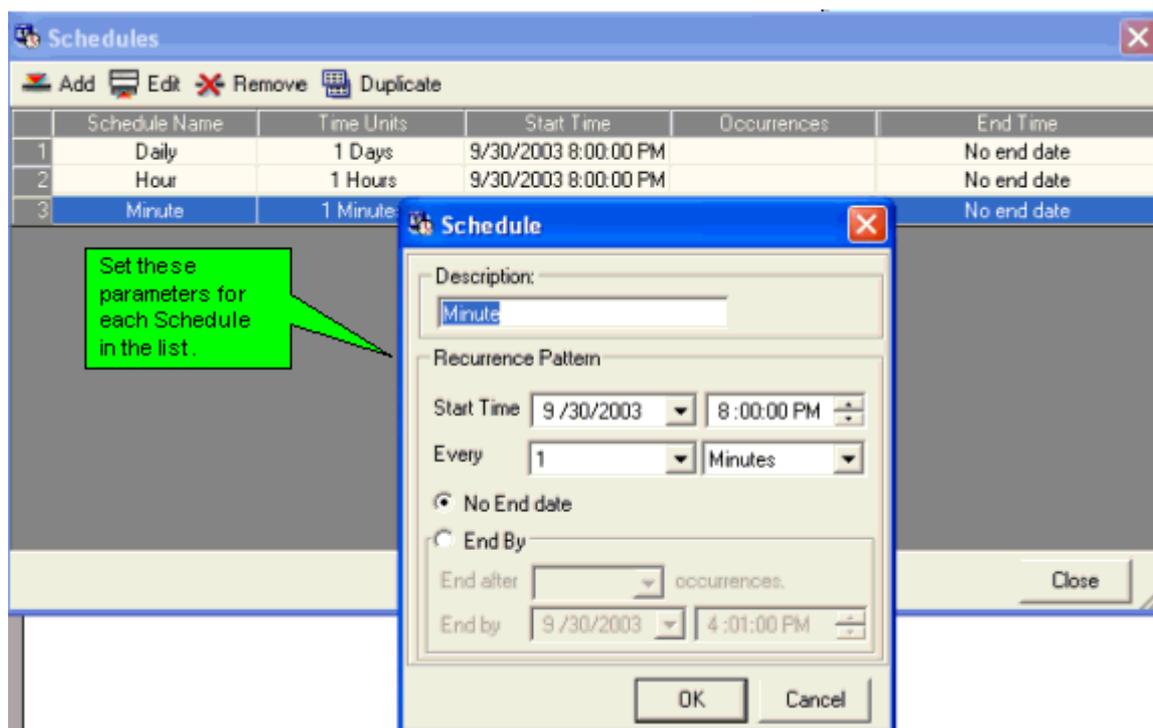
The Site List comprises all of the PLCs in the project together with all of the linked parameters.



Module 1: Schedules - When to Log

The Schedule determines the time intervals data between data log actions.

1. Select Schedules from the Design menu.
2. Click Add to create a new schedule, click Edit or double-click a line to redefine an existing schedule; the Schedule opens.
3. Make the appropriate entries, then click OK to add the Schedule to the list.



Module 2: Tables & Regions - What to Log

DataXport can log data either from Data Tables, an M90/91 PLC's Database, or from Regions of operands.

Vision Data Tables

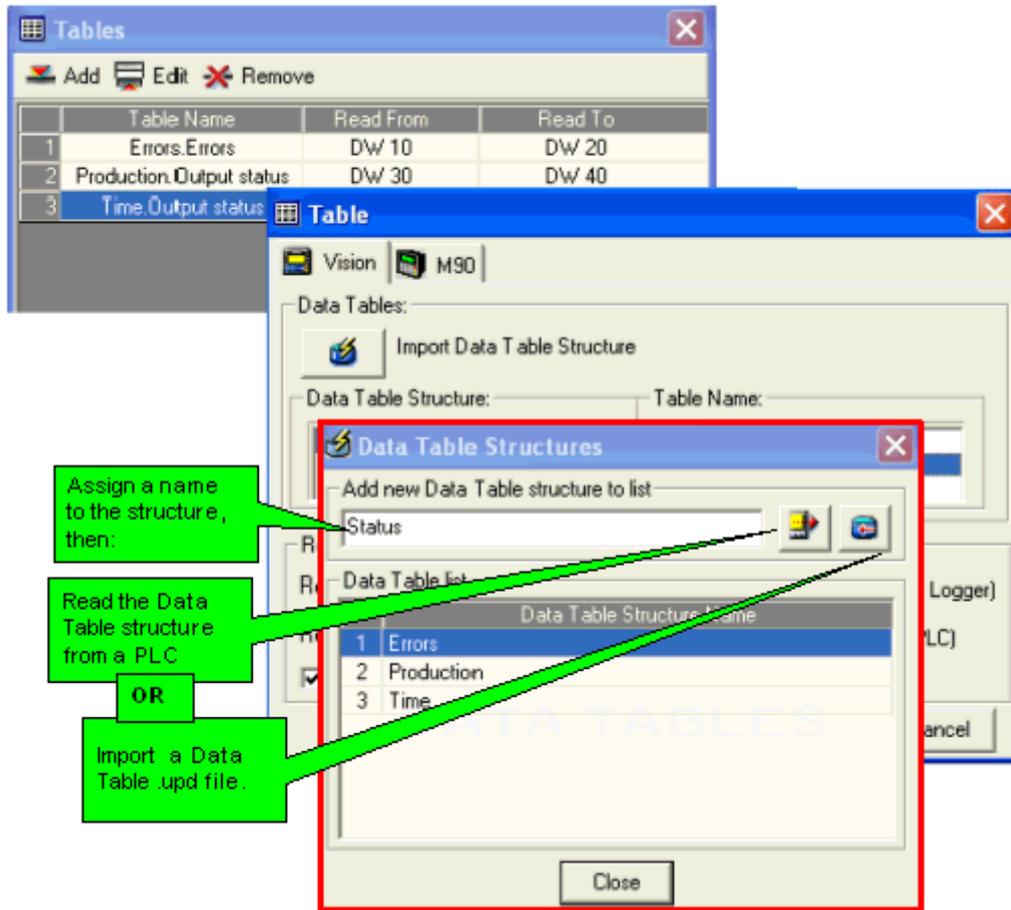
To log data from PLC Data Tables within Vision PLCs, DataXport must first import Data Table structures from the PLC. To do this, DataXport can access the PLC via direct connection, modem, Ethernet, or CANbus/ R485.



Check the related topic, [Linking to a PLC to Import Data Tables](#).

Table assigns a working name to the data that is harvested from a PLC Data Table.

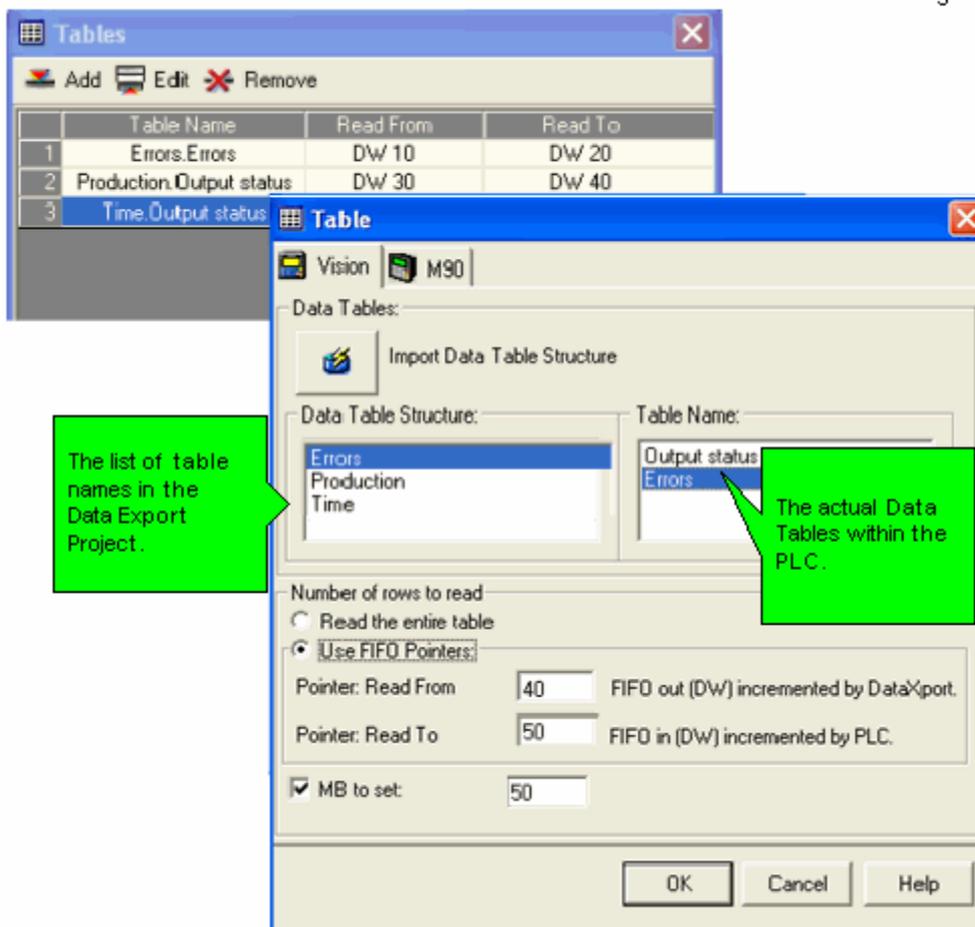
1. Select Tables from the Design menu.
2. Click on the Import Data Table Structure button, then click Add to append it to the list.
3. Name the Data Table Structure, then either:
 - Read the structure from the PLC
 - or-
 - Import a .upd file.



- Notes •**
- If the PC does not have a working communications link to the PLC as described in the topic Linking to a PLC to Import Data Tables, you will not be able to import Table structures..
 - If your project includes more than one PLC, and the Data Tables in these PLCs are identical, you do not have to import them from each PLC. Importing un-needed Data Tables will make the project very 'heavy'.

Once the Data Tables have been imported from the PLC, they are listed in the Data Table Structure left-hand pane as shown below. Highlighting one displays the Table names in the right hand pane.

- Click a Structure, select a Table within the structure, and then enter Rows to Read for that specific table. The Read From and Read To pointers are linked to DWs in the PLC. The DW values determine the length of the block of data that is collected from the PLC Data Table **each** time the site is scanned. You can also select the Read Entire The PLC can now read an entire table during a session, without using FIFO pointers.



M90 Database

The M90 OPLC has a special memory area containing integers that are function as a database. These integers are not related in any way to system or memory integers.

Within the database, you can access and use integers 0 through 1023 via SI 40 and SI 41.

Since, unlike Vision PLCs, the M90 database is not structured, there is no structure to import.

Table assigns a working name to the data that is harvested from a PLC Data Table.

1. Select Tables from the Design menu.
2. Click on the M90 tab.
3. Name the Data Table Structure, enter the Start Address and other parameters; and then click OK; the Table is added to the list.

Table

Vision M90

M90 Table Definition:

Table name:

Start Address:

Number of columns:

Number of rows:

Number of rows to read

Pointer: Read From FIFO out (MI) incremented by DataXport.

Pointer: Read To FIFO in (MI) incremented by PLC.

MB to set:

OK Cancel Help

Notes •

An Invalid FIFO pointers error results if a FIFO pointer is out of the range of MI addresses used for the M90 Database.

Data Regions

Defining regions enables you to harvest data from the operands within a PLC.

1. Select Regions from the Design menu; the Regions window opens.
2. Enter parameters as shown below.

Regions

Add Edit Remove

	Description	Operand Type	Read From	Read To
1	Operator	MI	1	2

Region

Description:

Operand Type:

Read From:

Read to:

MB to set:

OK Cancel Close

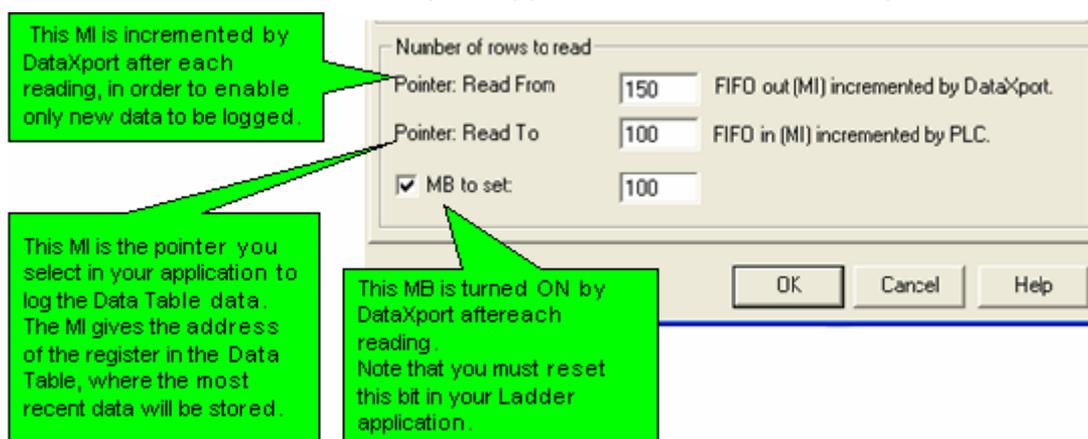
Name the region, set the Operand type and range to be read.

Each time the Regions are read, DataXport will turn this MB ON.

Reading values: FIFO Pointers

The FIFO pointers determine the size of the block of data read during a DataXport call.

- Pointer: Read from / FIFO out (MI), incremented by DataXport.
This MI is incremented by DataXport after each reading. It should not be used for any other purpose in your Ladder application.
- Pointer: Read to / FIFO In (MI), incremented by PLC.
This is the MI you use in your Ladder application to indicate which data is to be logged. It is generally the MI you use to fill the Data Table.
- MB to set (optional): this MB is turned ON by DataXport after each reading. You must reset this bit in your application after each reading.



Example

An application stores a temperature value into a PLC Data Table every minute. Each time the temperature is stored into a Data Table register, MI 150 is incremented by one. The incrementing value enables the temperature to be stored into consecutive Data Table registers. Within the DataXport project, MI 150 is the Pointer: Read to / FIFO In, and MI 100 is the Pointer: Read from / FIFO Out.

The DataXport application is set to call the PLC and log data every 20 minutes.

When the application starts running, both MI150 (PLC pointer) and MI100 (PC pointer) hold 0. MI 150 is incremented by 1 every minute, when the temperature is stored into the PLC. After 20 minutes, the value of MI 150 will be 19.

DataXport then calls the PLC. During the call, DataXport logs Data Table values from register 0 to 19, and then writes '19' into MI100. The PLC application continues running; each minute the temperature is stored and MI 150 is incremented by 1.

At the beginning of the next DataXport call, 20 minutes later, the value of MI 150 will be 39, while the value of MI100 will still be 19. During the call, DataXport will log the new values--from 20 to 39--and will write '39' into MI 100.

- Notes •**
- An Invalid FIFO pointers error results if a FIFO pointer is:
 - Less than 0.
 - Greater than or equal to the number of rows in the Data Table.

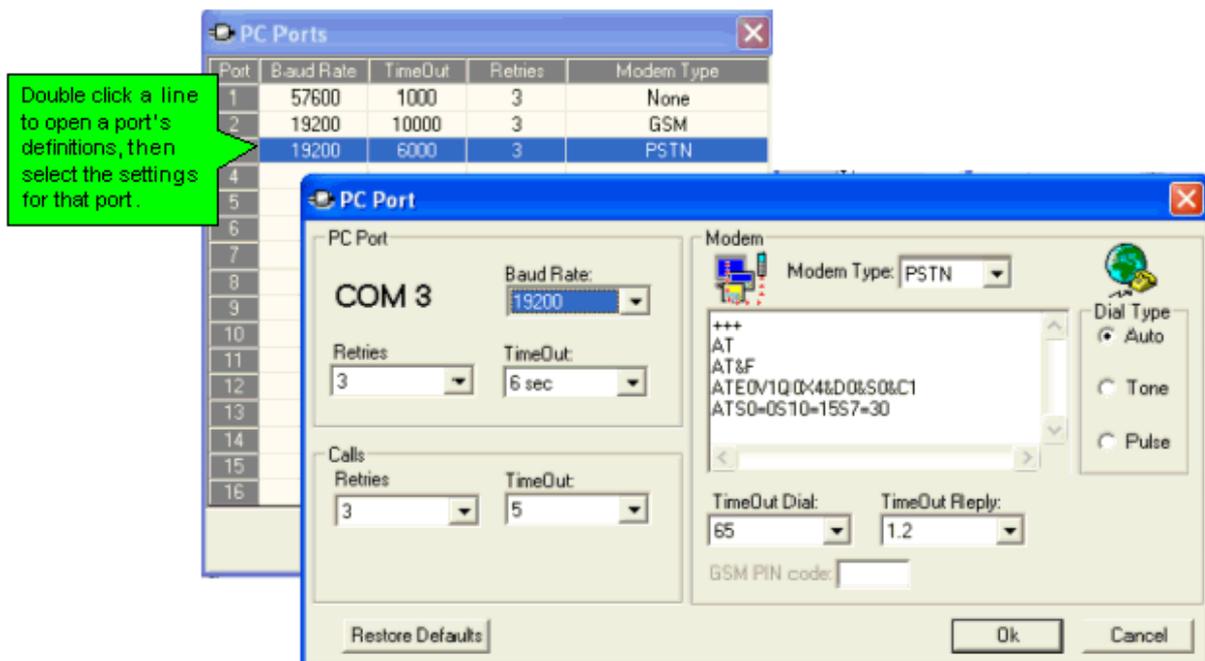
Module 3: Ports - How to Access the PLC

Ports determine the parameters of the communication link that is used by the PC running DataXport in order to access a PLC and log data.

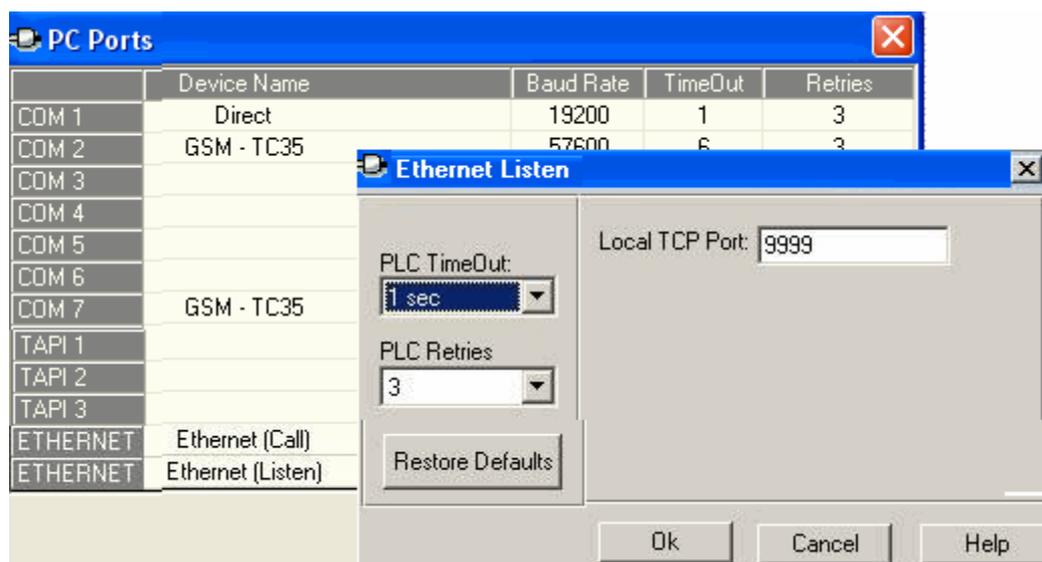
- Note •** The Connection menu options are **not** related to the way the PC (DataXport) will access a PLC in order to log data. Connection menu options are **only** used to access a PLC in order to import Data Table structures from Vision PLCs.
- The PLC name **must be identical** to the name assigned in the controller's Ladder application via Set PLC Name.

1. Select Ports from the Design menu; the PC Ports window opens.
2. Double-click a line to open PC Port Settings, then make the desired selections..

Note that the lower lines in the PC Ports windows can be configured for TAPI, and the last 2 lines for Ethernet.



Ethernet Listen sets a particular PC port, via which PLCs can 'call' and connect to the PC. Once the connection is established, the PC will export whatever data is set for that PLC.



Linking PLCs to Modules: the Site List

Once all of the modules have been defined, you can create the Site List.

1. Select Add Site from the Design menu; the PLC window opens.
2. In the left-hand pane, enter the PLC name, then select the module parameters displayed on the right-hand side of the PLC window as shown below.



The PLC name **must be identical** to the name assigned in the controller's Ladder application via Set PLC Name.

3. Make the appropriate selections regarding PLC type.
4. Select a PC port, the COM ports that are offered are the ones defined in the Ports Module. The required parameters in this section change according to the port you select. For example, if you select a port connected to a modem, you fill in a phone number; if you select an Ethernet port, relevant parameters such as IP address are required.
5. Select MB to set if you want a specific MB to turn ON when this PLC is accessed.
6. Select Enabled if the PC is to include this specific PLC site when the DataXport project is run. If Enabled is not selected, data will not be logged from this PLC even though it appears in the project.
7. If the PLC is in a network, select that option and the correct Network ID.
8. Select Excel files to cause DataXport to create an Excel file whenever a data log is created. Note that DataXport creates a separate Excel file for each data log.

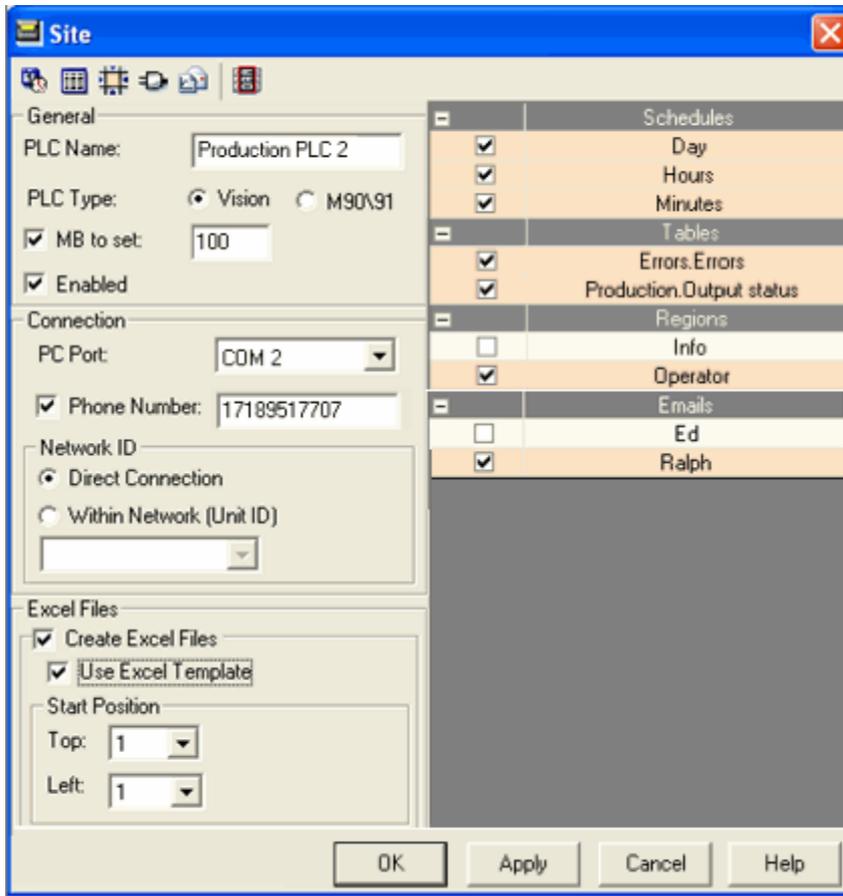
- Note** • If you do not select the Use Excel Template option, DataXport will use a default Excel template. To cause DataXport to use a customised Excel template:
- a. Select Use Excel Template.
 - b. Store the template in the folder :::\DataXport\Excel Templates.

The name of the Excel template must be **identical** to the PLC Name given in the Site.

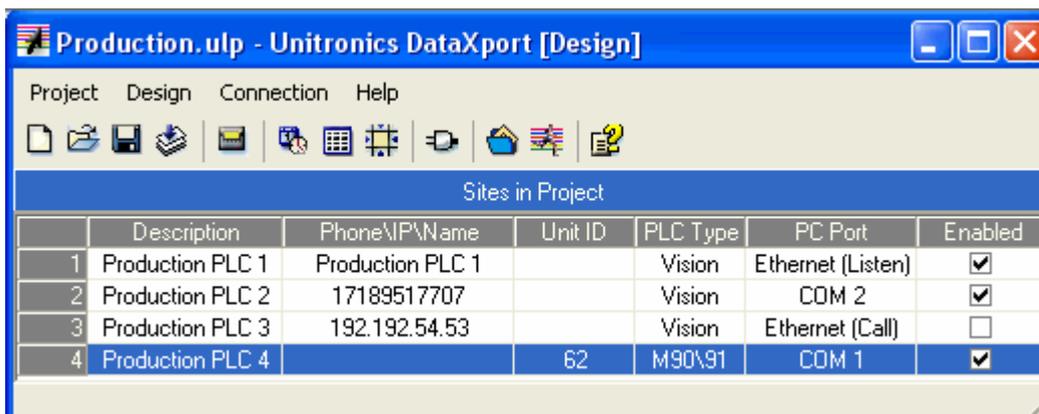
9. In the right-hand pane, select the desired
 - Schedules,
 - Tables and/or Regions,
 - Emails

These are all of the parameters that have already been defined in the project.

- Note •** All modules; Schedules, Ports, Tables and/or Regions; are global to the entire DataXport project. You can link any module to any number of Sites.



- When the PLC has been defined, click OK, the PLC is added to the list and will be displayed in the DataXport Design window. When the list is complete, save and name the project.



To edit the parameters of a PLC that is already in the list, double-click the line to open it.

Checking the Project

When the project is complete, Select Check from the Actions menu to find any errors.

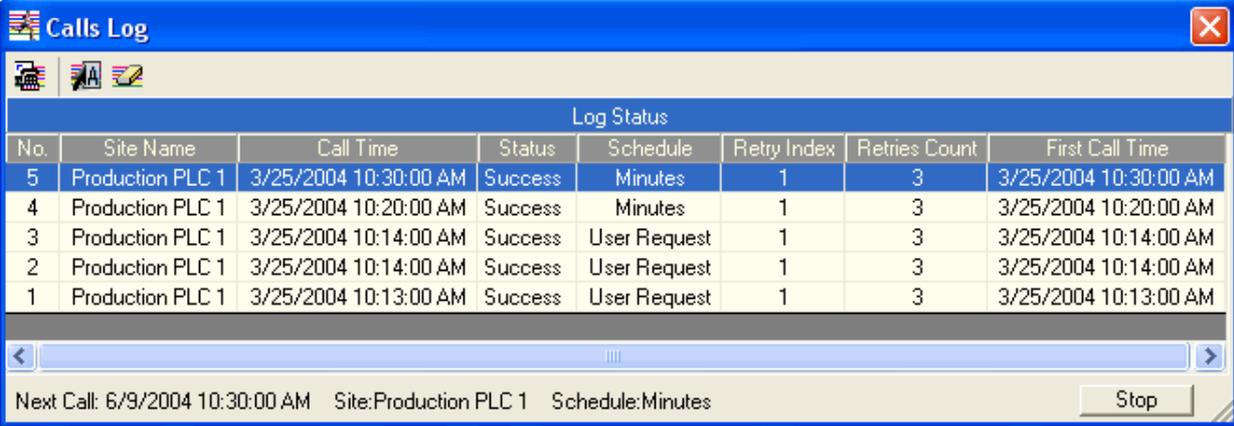
After correcting any errors, you can run the project

Running the DataXport Project

Run, located on the Actions menu, activates the DataXport project.

1. Select Run from the Actions menu, DataXport begins exporting the requested data from Data Tables and operands within the target PLCs, via the defined ports and according to the defined schedules.

Note that you can also force a call.

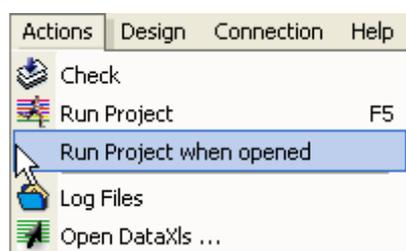


The screenshot shows a window titled 'Calls Log' with a table of call records. The table has the following columns: No., Site Name, Call Time, Status, Schedule, Retry Index, Retries Count, and First Call Time. The data rows are as follows:

Log Status							
No.	Site Name	Call Time	Status	Schedule	Retry Index	Retries Count	First Call Time
5	Production PLC 1	3/25/2004 10:30:00 AM	Success	Minutes	1	3	3/25/2004 10:30:00 AM
4	Production PLC 1	3/25/2004 10:20:00 AM	Success	Minutes	1	3	3/25/2004 10:20:00 AM
3	Production PLC 1	3/25/2004 10:14:00 AM	Success	User Request	1	3	3/25/2004 10:14:00 AM
2	Production PLC 1	3/25/2004 10:14:00 AM	Success	User Request	1	3	3/25/2004 10:14:00 AM
1	Production PLC 1	3/25/2004 10:13:00 AM	Success	User Request	1	3	3/25/2004 10:13:00 AM

Below the table, there is a status bar showing: Next Call: 6/9/2004 10:30:00 AM Site: Production PLC 1 Schedule: Minutes. A 'Stop' button is visible in the bottom right corner.

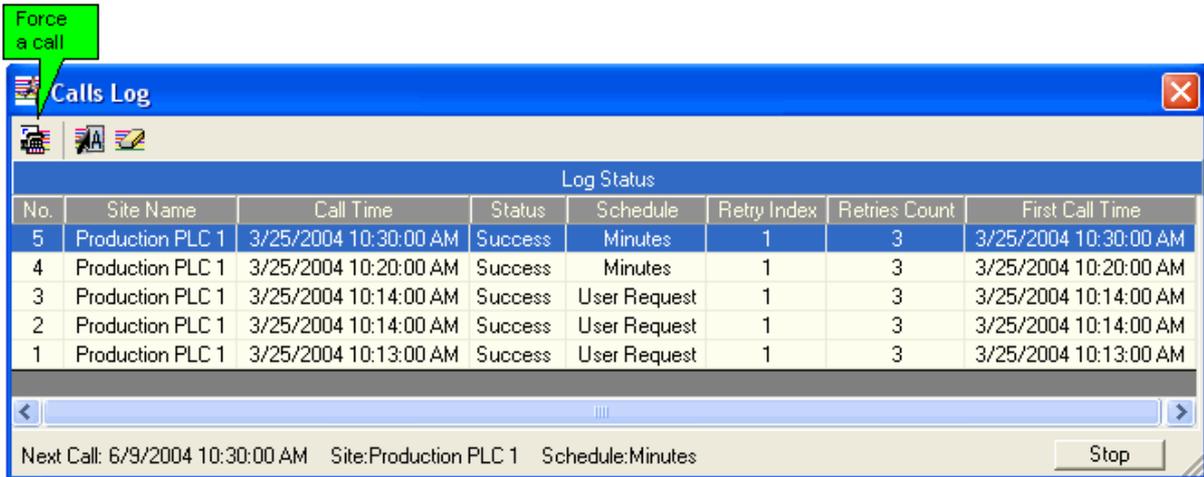
You can also cause a DataXport project to enter Run Mode whenever the project is opened by selecting that option from the Actions menu.



Force Call

You can force the PC to call a PLC and export the data tables/regions defined for that PLC in one of two ways:

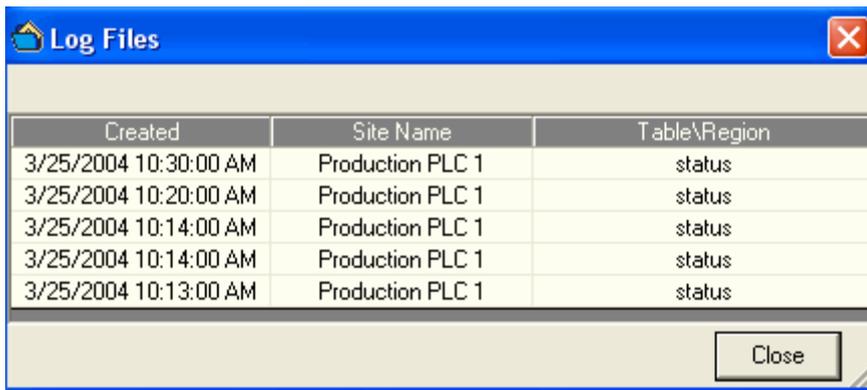
- By sending an SMS message to the PC's GSM modem. Assuming that the name of the site is Production 1, the SMS must read
DATAEXPORT CALL TO: Production 1
Note the capital letters and semicolon.
- By selecting Run Project, and then clicking the Force Call button shown below.



Viewing Logs

View, located on the Project menu, shows the DataXport log calls. To view the logged data, use DataXIs.

1. Select View from the Project menu, Site status is displayed.

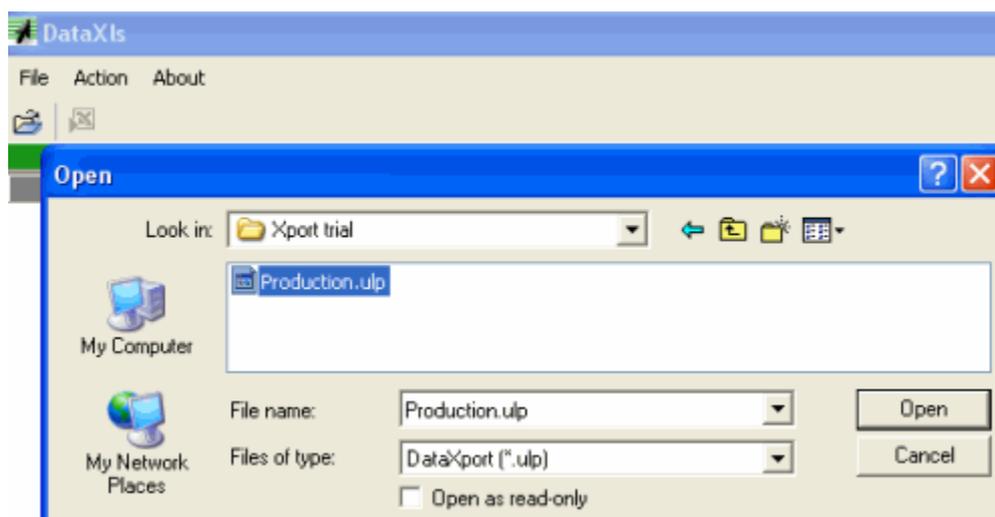


DataXIs: Accessing Data Logs

DataXIs enables you to open the logs in Excel format. You can then manipulate the data in Excel.

Start DataXIs:

1. Go to Start > Programs > Unitronics> DataXIs.
-or-
Open the Unitronics folder located on the Desktop, then double-click on the DataXIs icon.
2. Click the Open icon, then navigate to the desired .ulp project and click Open.



DataXIs opens the project as shown below.

3. To view files in Excel, drag the mouse over a log to highlight it, then either:
 - Select the Excel icon from the toolbar, or,
 - Right-click the highlighted area and select Send Selected to Excel.

Site Name	Table/Revision Name	Created
WNI-1	16 WNI-1.Data Log	10/7/2003 11:15:00 AM
		11/7/2003 11:34:00 AM
		11/26/2003 11:08:00 AM
		12/2/2003 3:20:00 PM
WNI-2	17 WNI-2.Data Log	12/2/2003 8:32:00 PM
WNI-3	18 WNI-3.Data Log	

Row	Time	Date	Year	Conductivity pH	Input 0	Input 1	Output 0	
1	218	1054	2409	2003	4537	108	0	100
2	219	1109	2409	2003	4659	108	0	100
3	220	1124	2409	2003	4793	108	0	100
4	221	1139	2409	2003	4878	108	0	100
5	222	1154	2409	2003	4780	108	0	100
6	223	1209	2409	2003	4683	108	0	100
7	224	1224	2409	2003	4159	108	0	100
8	225	1239	2409	2003	3659	107	0	100
9	226	1254	2409	2003	3573	107	0	100
10	227	1309	2409	2003	3585	107	0	100
11	228	1324	2409	2003	3622	107	0	100
12								