Technical Information Sheet

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Issued by: Mark Demick

Subject
This document describes how to use the Eurotherm iTools OPC Server and iTools Controls with the Wonderware InTouch SCADA software to create InTouch windows displaying Eurotherm Series 2000 or Series 3000 instrumentation using the iTools Controls.

Software and Hardware Used

Eurotherm iTools V5.00, EuroMBus, Eurotherm iTools Controls
Wonderware InTouch, Version 8.0.1
Eurotherm 3216, E1.06

Introduction

This Technical Information Sheet (TIS) describes how the Eurotherm iTools ActiveX Controls that are bundled with the Eurotherm iTools software and how to use them in the Wonderware WindowMaker development environment. There are two (2) controls available; Series2000Panel and OPCItemGrid.

The Series2000Panel control provides an exact replica of a Eurotherm controller's faceplate with operational pushbuttons in an ActiveX container application. The ActiveX container application utilized is InTouch. The OPCItemGrid control enables reading and writing the parameters of a Eurotherm controller grouped into folders. By changing the BrowseRoot attribute of the OPCItemGrid control, any instrument folder may be viewed and the parameters in that folder may be read or written – as applicable. No Wonderware tags need to be created to utilize these controls. Creating Wonderware tags can enhance the functionality as this document describes.

The communications mechanism used by the Eurotherm controls is OPC (Object linking and embedding for Process Control). The OPC Server used is EuroMBus from iTools V5. iTools may be downloaded from www.eurotherm3.com/iTools.

It is assumed that the reader has as a prerequisite a competency in Wonderware InTouch development.

Configuring iTools

A Eurotherm 3216 with EIA-232 comms, a 3216 and 3504 simulation in iTools was used to provide the controller views. To create the simulated 3216 and 3504 in iTools under **File**, a **New Clone File** was created. This is shown in Figure 1 below. For the live controller view, a 3216 with the EIA-232 comms option was connected to a PC serial port, and the **Scan** icon in the iTools **Main Toolbar** was clicked. This caused iTools to automatically scan the serial network and locate and build the database for any Eurotherm controllers connected to serial ports.

Note that the live controller has yellow values while the simulated controllers have values displayed in white.

The images of the controllers in the Panel View pane in Figure 1 represent the Series2000Panel control. This control supports full faceplate functionality for the following Series 2000 product family; the 2216e, 2208e, 2204e, 2416, 2408 and 2404; and, for the Series 3000; 3216, 3508 and 3504.

In iTools, use your mouse to click on any of the pushbuttons in the controller faceplate views and notice that they emulate the functionality of a real controller.

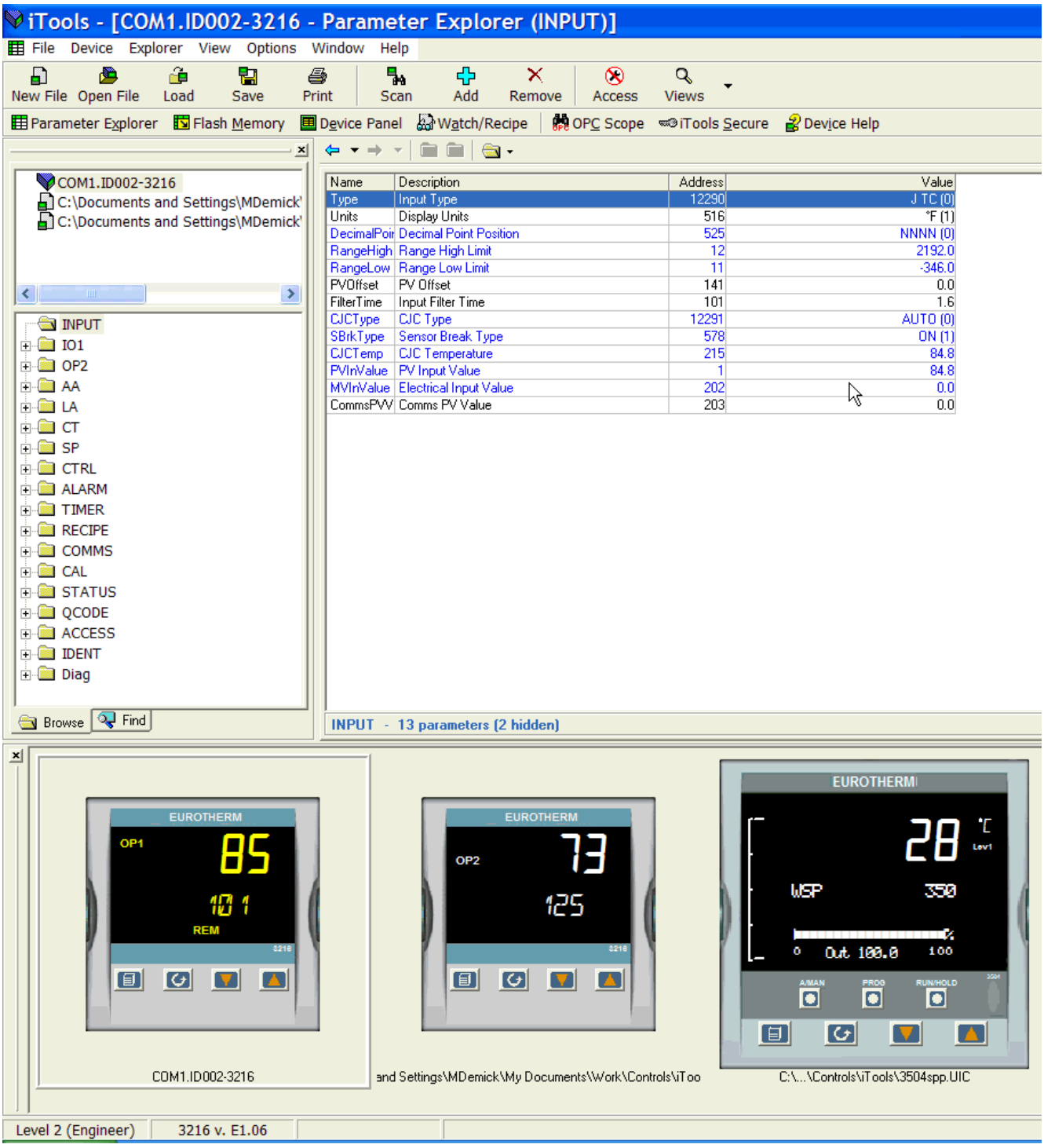
iTools - [COM1.ID002-3216 - Parameter Explorer (INPUT)]
File Device Explorer View Options Window Help
New File Open File Load Save Print Scan Add Remove Access Views
Parameter Explorer Flash Memory Device Panel Watch/Recipe OPC Scope iTools Secure Device Help
COM1.ID002-3216
C:\Documents and Settings\MDemick'
C:\Documents and Settings\MDemick'
INPUT
IO1
OP2
AA
LA
CT
SP
CTRL
ALARM
TIMER
RECIPE
COMMS
CAL
STATUS
QCODE
ACCESS
IDENT
Diag
Browse
Find
Name Description Address Value
Type Input Type 12290 J TC (0)
Units Display Units 516 °F (1)
DecimalPoir Decimal Point Position 525 NNNN (0)
RangeHigh Range High Limit 12 2192.0
RangeLow Range Low Limit 11 -346.0
PVOffset PV Offset 141 0.0
FilterTime Input Filter Time 101 1.6
CJCType CJC Type 12291 AUTO (0)
SBrkType Sensor Break Type 578 ON (1)
CJCTemp CJC Temperature 215 84.8
PVInValue PV Input Value 1 84.8
MVInValue Electrical Input Value 202 0.0
CommsPVV Comms PV Value 203 0.0
INPUT - 13 parameters (2 hidden)
EUROTHERM
OP1
85
REM
COM1.ID002-3216
EUROTHERM
OP2
73
125
and Settings\MDemick\My Documents\Work\Controls\iToo
EUROTHERM
28
WSP
350
Out 100.0
C:\...\Controls\iTools\3504spp.UIC
Level 2 (Engineer)
3216 v. E1.06

Figure 1

Configuring Wonderware InTouch

In a new or existing application, open the **Wizard/ActiveX Installation** dialog box to install the two (2) iTools controls. Go to the **Special/Configure/Wizard/ActiveX Installation**... menu item to open this dialog box as shown in Figure 2. Click on the ActiveX Control Installation tab to activate that property sheet.

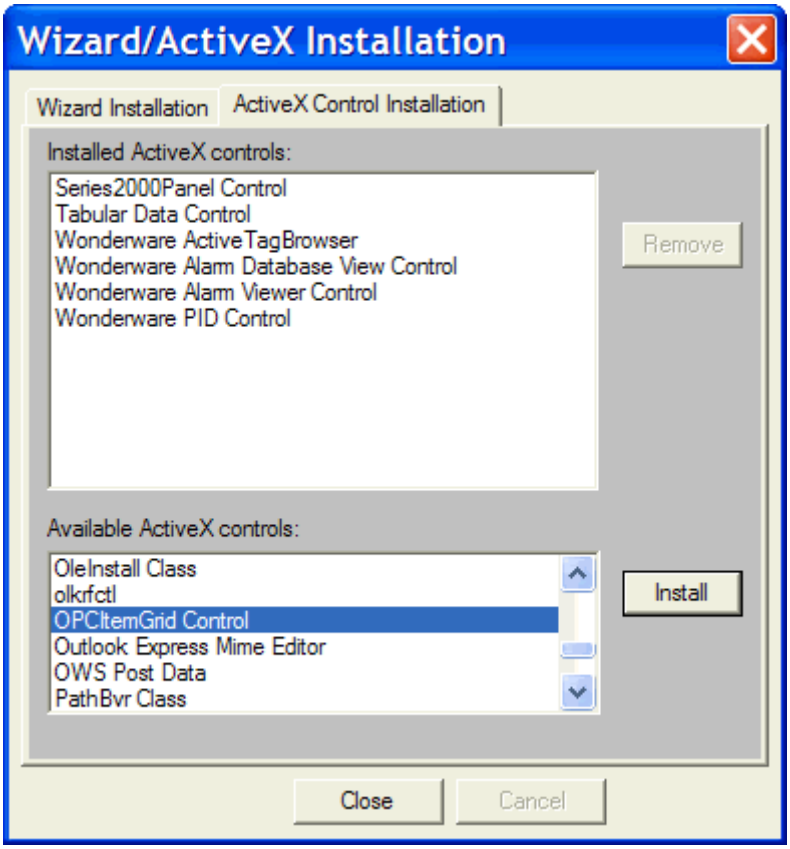

Figure 2

To install the iTools controls, search for Series2000Panel and OPCItemGrid Control in the **Available ActiveX controls** list and press **Install** for each one of them. As you click on **Install** for each one, the control name is moved to the **Installed ActiveX controls** list. In Figure 2 the Series2000Panel Control has been installed and the OPCItemGrid Control can be moved to Installed by clicking on the Install button. Press the **Close** button to complete installation of the iTools controls. The two (2) iTools controls are now available for use in WindowMaker by clicking on the Wizard dialog tool in the **Wizards/ActiveX** toolbar.

You can select more than one (1) control at a time by using either the **Shift** – for consecutive entries – or the **Ctrl** key – for selections not consecutively listed.

To place one of the iTools controls on a WindowMaker window, click the Wizard Dialog tool in the **Wizards/ActiveX Toolbar**. The **Wizard Selection** dialog box appears. In the list of wizards, click the **ActiveX Controls** category. All available ActiveX controls will be shown the display area as in Figure 3.

Select the ActiveX control that you want to use and then click **OK**, or double-click the control. The dialog box will close and your window reappears. The cursor will change to the corner symbol, , when you return to the window. Click the location in the window where you want to paste the ActiveX control. Drag the red handles in the control to resize as desired.

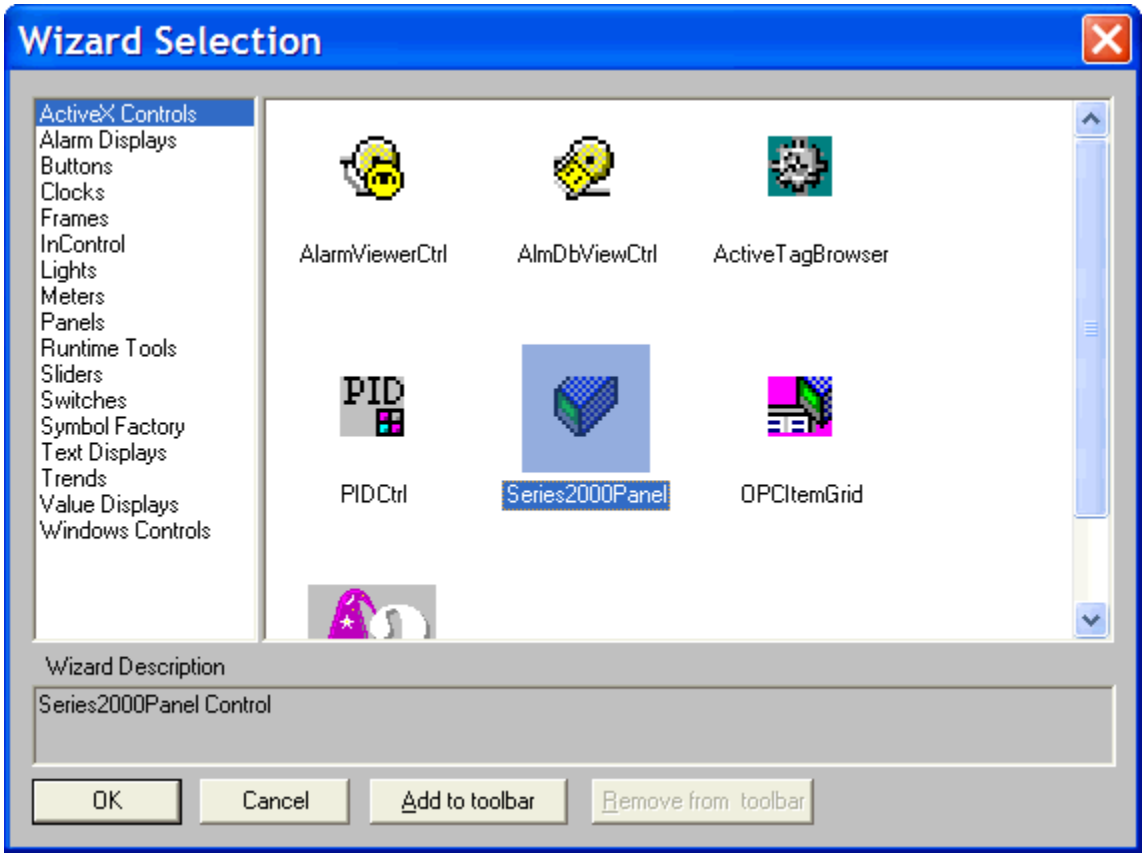

Figure 3

Series2000Panel Control

Figure 4 shows a Series2000Panel control and the Properties dialog box for that control. Double-click the Series2000Panel control to open the Properites dialog box and configure it's properties. Click on the General tab to activate that property sheet.

The **Prog ID** is always the name of the Eurotherm OPC Server;

Eurotherm.ModbusServer.1

Type it in exactly as above. The **Device Name** represents the instrument that will be displayed in the Series2000Panel control and is derived from the OPC path from EuroMBus for instruments that are either connected or simulated. The **Device Name** can either be typed in or an InTouch message memory tag can be created to input the **DeviceName** dynamically. If typed in directly as shown in Figure 4, the Series2000Panel control will display and remotely operate that controller.

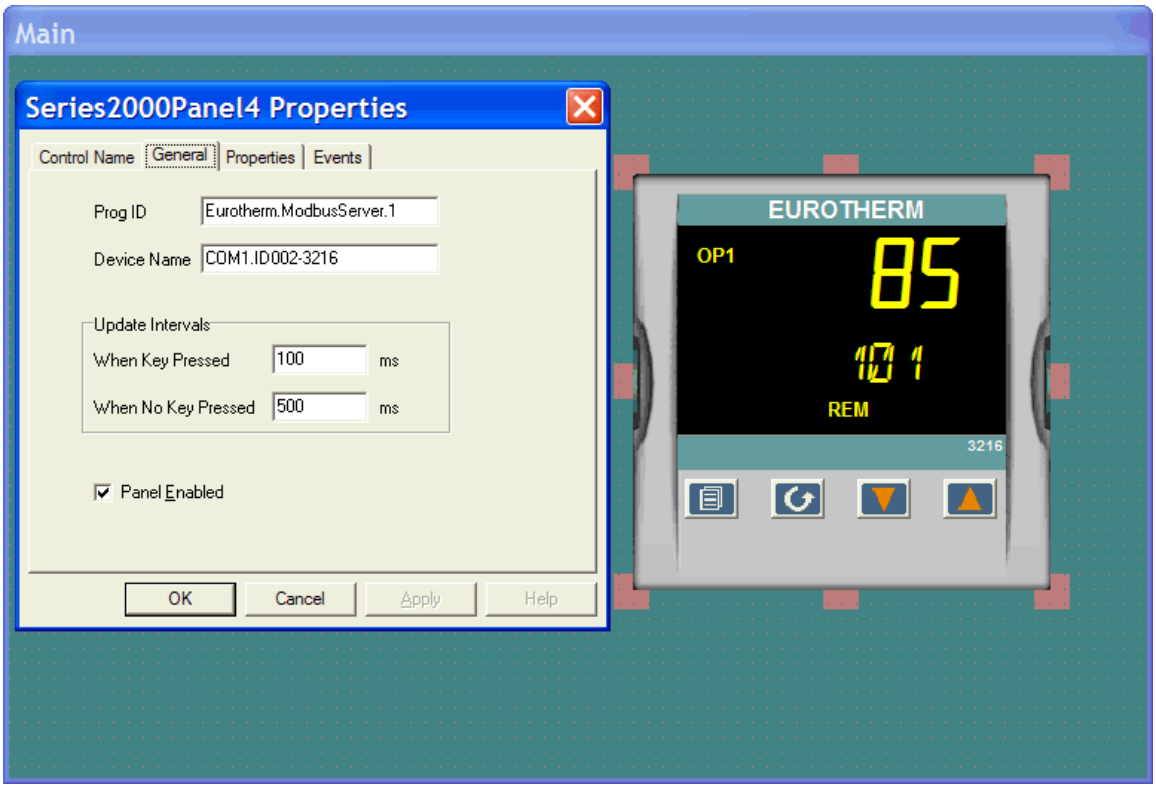

Figure 4

The **Device Name** for the Series2000Panel control consists of the OPC path name up to but not including any of the parameter folder names. To view EuroMBus select **Options/Advanced/Show Server** in iTools. Figure 5 displays the hierarchical tree view of connected or simulated instruments in EuroMBus, here a live 3216 and its parameter folders and the simulated 3216 and 3504 are shown. Therefore, the Device Name for the live 3216 would be; **COM1.ID002-3216**; and, for the simulated 3216; **SIMULATION._MDEMICKCloneFile1**. Enter the text exactly as displayed in EuroMBus.

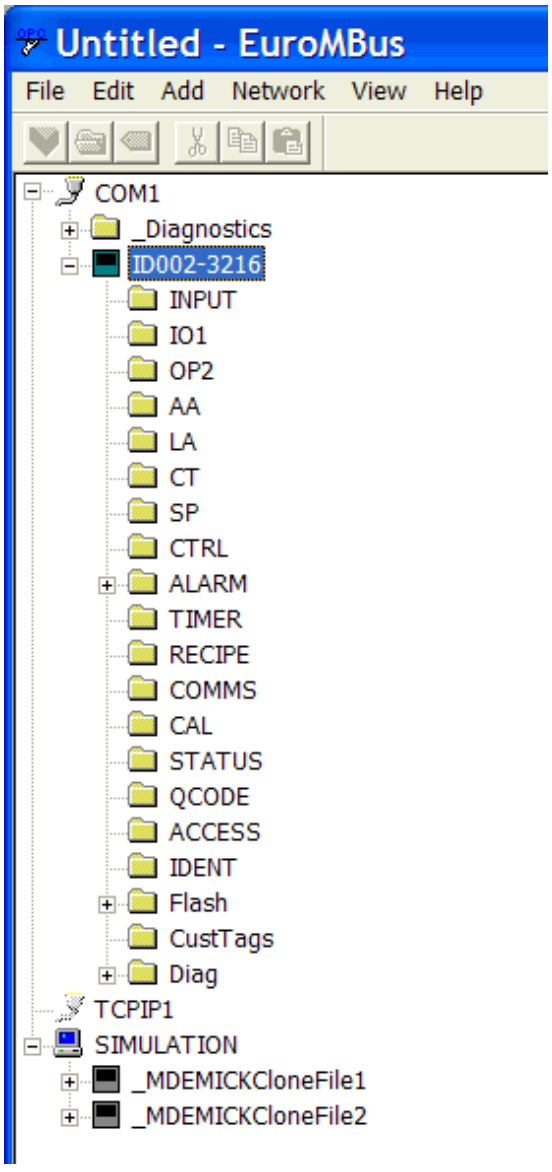

Figure 5

To dynamically change the Eurotherm controller that the Series2000Panel control displays and operates a memory message tag can be created that is used to write to the Device Name property. Click on the **Properties** tab to activate that property sheet as shown in Figure 6. The memory message tag DeviceName has been entered in the **Associated Tag** column for the **Device Name** property. The green arrow pointing to the left indicates that the tagname can change the property's value, but the property cannot change the tagname's value.

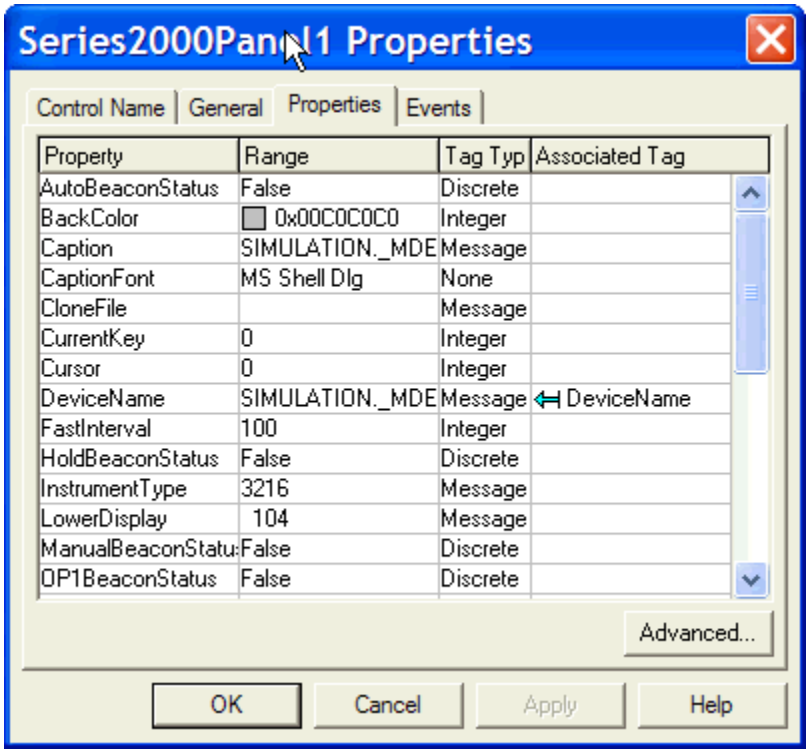

Figure 6

OPCItemGrid Control

iTools displays instrument parameters in the Parameter Explorer. Instrument parameters are grouped into logical folders, the 3216 Input folder parameters from iTools shown in Figure 7.

Name	Description	Address	Value	Lo Limit	Hi Limit	Comment
Type	Input Type	12290	J TC (0)	J TC (0)	CMS (10)	
Units	Display Units	516	°C (0)	°C (0)	PERC (4)	
DecimalPoir	Decimal Point Position	525	NNNN (0)	NNNN (0)	NN.NN (2)	
RangeHigh	Range High Limit	12	1200.0	-210.0	1200.0	
RangeLow	Range Low Limit	11	-210.0	-210.0	1200.0	
PVOffset	PV Offset	141	0.0	-1999.0	3000.0	
FilterTime	Input Filter Time	101	OFF (0)	OFF (0)	100.0	
CJCType	CJC Type	12291	AUTO (0)	AUTO (0)	0°C (1)	
SBrkType	Sensor Break Type	578	ON (1)	OFF (0)	LAT (2)	
CJCTemp	CJC Temperature	215	73.2	-1999.0	9999.0	
PVInValue	PV Input Value	1	73.2	-1999.0	9999.0	
MVInValue	Electrical Input Value	202	0.0	-10.0	80.0	
CommsPVV	Comms PV Value	203	0.0	-1999.0	9999.0	

Figure 7

The OPCItemGrid control displays the Eurotherm controller parameters within a folder as in Figure 7. By dynamically modifying the BrowseRoot control property, the OPCItemGrid control can automatically display all the parameters in a controller's folders.

In Figure 8 is the OPCItemGrid control, a **ComboBox** control at the top of the window and two (2) memory message tags. The **ComboBox** has been configured as a **Drop Down** style and contains a selection of parameter folder names to be displayed. A Window script is used to fill the ComboBox with the folder name selections and build the BrowseRoot string for the OPCItemGrid control.

The tmpString is a memory message tag required to enter in the OPC Path up the parameter folders and including a dot. It points to a particular controller – either real or simulated. When a parameter folder is selected in the **ComboBox** control, it appends the parameter folder name in parenthesis to tmpString as can be seen in the BrowseRoot memory message tag.

In Figure 8 the tmpString is set to the live 3216 controller – **COM1.ID002-3216.** . This value could also be the Initial Value in the **Tagname Dictionary** as shown in Figure 9. To view the simulated 3216, tmpString would be; **SIMULATION._MDEMICKCloneFile1.** .

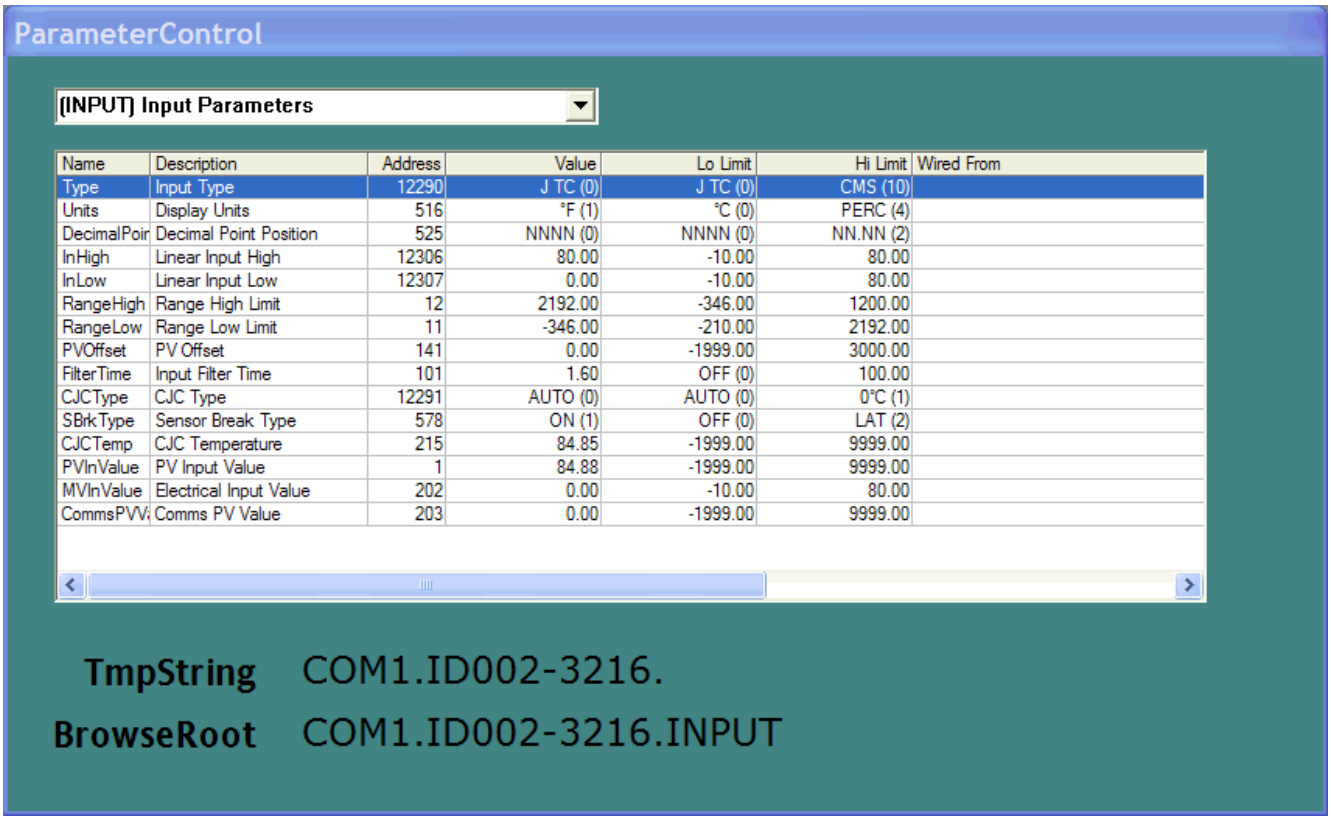

Figure 8

To configure the OPCItemGrid control, double click on the control and select the General tab to activate that property page. Enter in the Prog ID as shown in Figure 10. The Browse Root text box will be left blank and in this property page but will become associated with the BrowseRoot memory message tag on the Properties property page as shown in Figure 11.

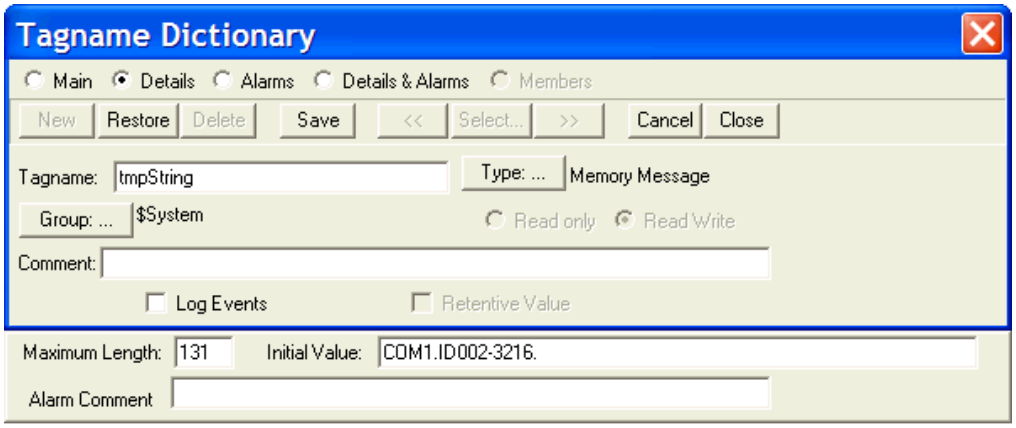

Figure 9

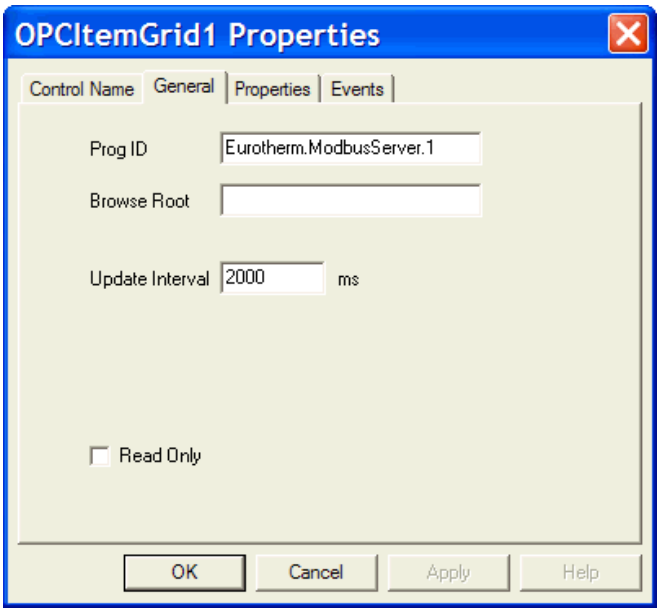

Figure 10

By changing the BrowseRoot tag, it is possible to use one (1) OPCItemGrid control to display parameter folders for multiple instruments.

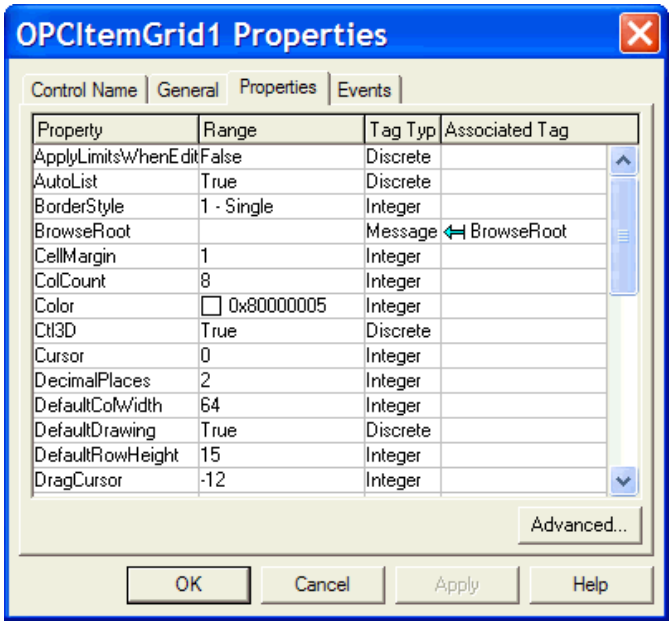

Figure 11