3200 Series Controllers

MODEL

invensys Eurotherm

3200 Series Driver for LabVIEW Applications

Application Note

Purpose of this note

The purpose of this application note is to describe how to download, install and configure two examples of LabVIEW drivers for 3200 series instruments. These drivers are intended to allow easy integration of 3200 series controllers in LabVIEW systems and are a free download.
It is not intended to describe how to configure a LabVIEW application and it is assumed that the reader is familiar with this process.

Product

The 3200 series of controllers are available in 1/16, 1/8, 1/8 horizontal and 1/4 DIN panel sizes. They are designed for precision control of temperature and other process variables and contain a host of advanced features including:

Internal timer and setpoint programming

Instant indication of process alarms including heater faults

Clear information of process with scrolling, customised text messages

Storage and selection of commonly used process recipes

Serial and broadcast communications using Modbus

Designed to integrate seamlessly with PLCs and supervisory control and monitoring systems

Remote setpoint for multi-zone applications

Typical applications include plastics extrusion, hot runner control, thermal forming, ovens and chillers, furnaces, stress relieving and many more.

LabVIEW is a widely used graphical programming environment to develop sophisticated measurement, test, and control systems using intuitive graphical icons and wires that resemble a flowchart. It enables sophisticated user interfaces to be developed for a wide range of process applications and includes advanced analysis and signal processing, data storage and reporting.

3200 Series Driver for LabVIEW Applications

Introduction

3200 series, 3500 series and 2400 series drivers are available for LabVIEW 2009 and LabVIEW 8.2 systems. This application note concentrates on the use of LabVIEW with 3200 series instruments.

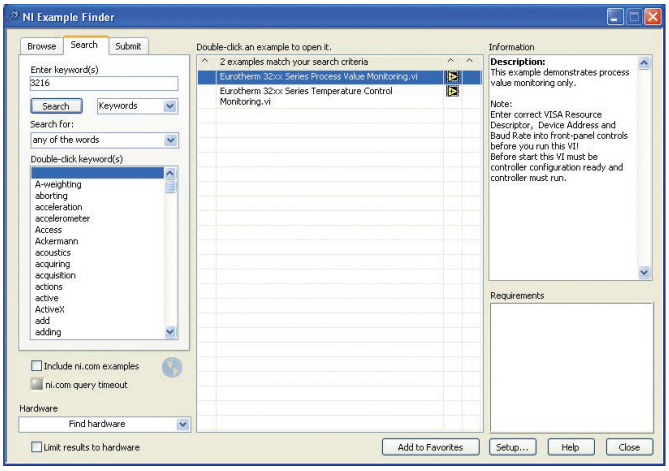
To download the drivers, go to http://www.eurotherm.co.uk/labview/ and choose either 3200 Series LabVIEW 2009 Driver (913 KB) or 3200 Series LabVIEW 8.2.1 Driver (1.07 MB)

Extract these to the LabVIEW instrument library. This may be Program Files\National Instruments\Labview8.2\instr.llb.

Application Example 1

Temperature Monitor

This example charts the process variable from a 3200 series instrument and monitors the state of one alarm.



Open LabVIEW

To find the example select the Help menu and 'Example Finder'. There are two examples:-

The first is – 'Eurotherm.32xx Series Process Value Monitoring.vi'.

They may be found by entering key words, for example, eurotherm, 3216, temperature.

To connect to the instrument

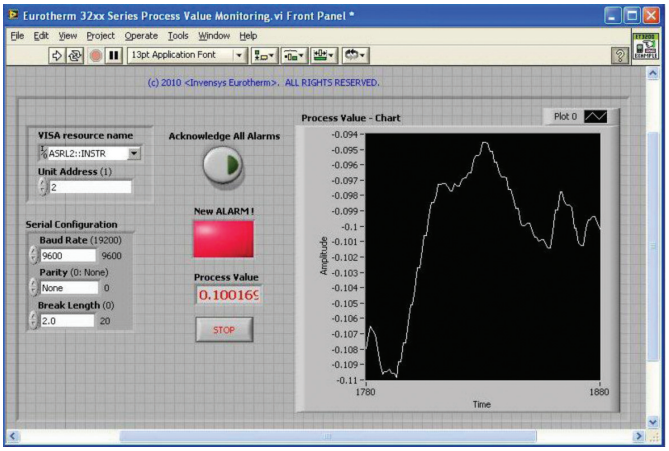
Both examples are for serial interface and use Modbus RTU communications only. For physical wiring refer to the 3200 series User Guide HA028582 or Engineering Manual HA028651.

Enter the VISA resource name. This is ASRL2::INSTR, where 'ASRL' defines the serial port, '2' is the port number and 'INSTR' defines the 3200 controller.

Enter the unit modbus address – '2' in this example.
Enter the 'Baud Rate', 'Parity', 'Break Length' – '9600', 'None', '2.0'ms in this example.

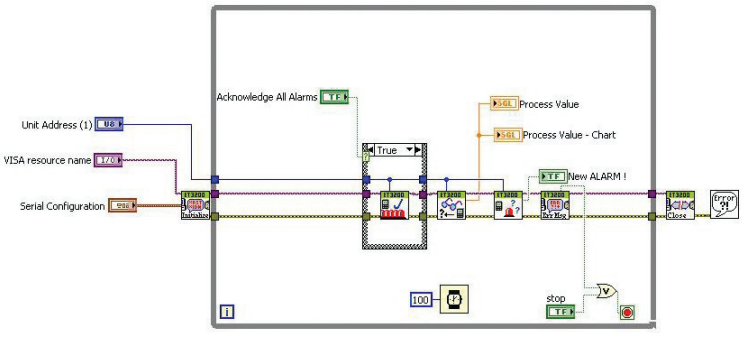
Press Run

When an alarm occurs the beacon changes to red. When acknowledged it changes back to purple.



To display the code

On the menu bar, select 'Window' and 'Show Block Diagram'.



Application Example 2

Temperature Controller

This example has the same features as the previous example but, in addition, it monitors four alarms and illustrates how to write to three typical functions - Setpoint, Auto/Manual and Keylock.

Enter the VISA resource name. This is ASRL2::INSTR, where 'ASRL' defines serial port, '2' is the port number and 'INSTR' defines the 3200 controller.

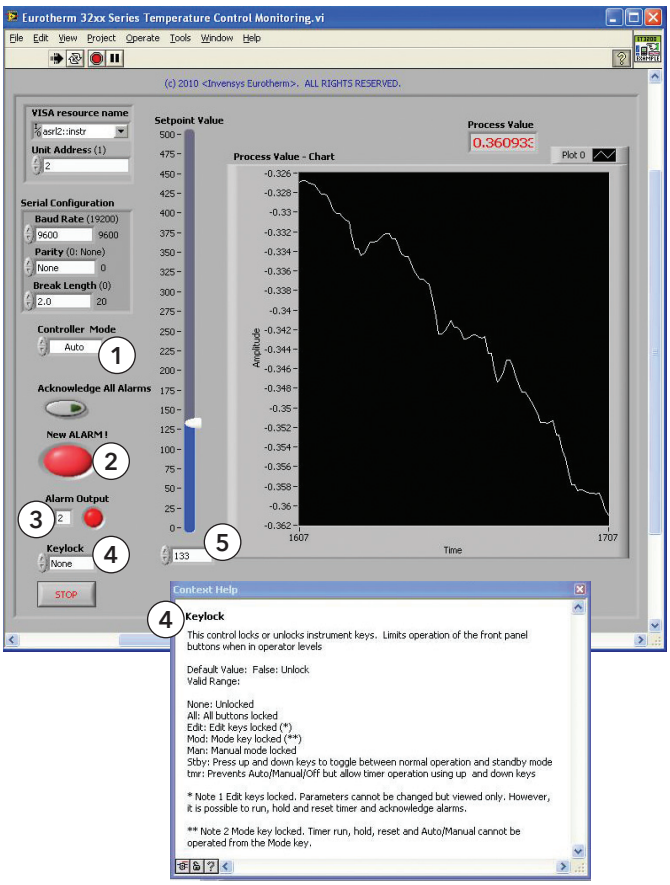
Enter the unit modbus address – '2' in this example

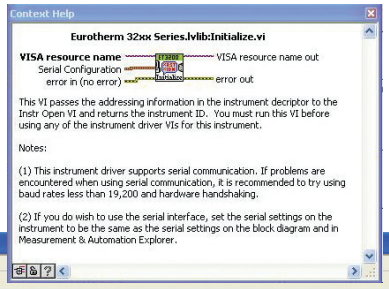
Enter the 'Baud Rate', 'Parity', 'Break Length' – '9600', 'None', '2.0'ms in this example.

Press Run

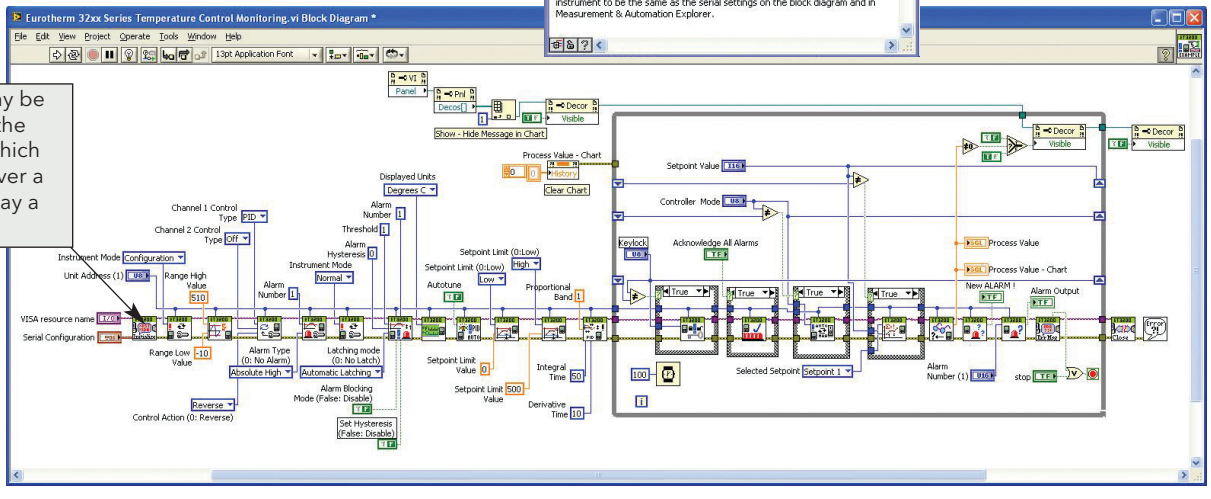
There is approximately a 20 second delay for the application to initialise before real time values are displayed.

1. To put the controller into Auto or Manual operation select using the 'Controller Mode' button.
2. When an alarm occurs the 'New ALARM !' beacon changes to red and is acknowledged as in the previous example.
3. To find which alarm has occurred, scroll through the alarm numbers. The 'Alarm Output' beacon will show red when the active alarm number (or numbers) is selected.
4. Context help may be turned on from the Help menu, in which case hovering over a feature will display a help pop-up. 'Keylock' selects between seven choices – none, tmr, Stby, man, mod, Edit and All. These are described in the 32xx Engineering Manual, HA028651.
5. To change the setpoint value either use the slider or enter the value directly.





To display the code
On the menu bar, select 'Window' and 'Show Block Diagram'.



Context help may be turned on from the Help menu, in which case hovering over a feature will display a help pop-up.

Further information may be downloaded from www.eurotherm.co.uk

3200 Series Controller

User Guide HA029714EFG (English, French, German)
User Guide HA029714EIS (English, Italian, Spanish)
Brochure HA028000
Specification sheet HA08600

Engineering

Manual HA028651

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