



1974 to 2008 in 48 hours: A 5TI migration project

The 5TI was released by Texas Instruments in 1974, and thirty four years later a large number of units are still controlling machines around the world. One such installation is on a Husky injection moulding machine used by Queensland Blow Moulders in their Lytton factory. After decades of reliable service the 5TI processor has developed an intermittent fault that changes the preset values of certain timers resulting in machine malfunctions, wasted raw materials and production loss. Needing technical assistance they contacted CT Oceania.

The first solution attempted was to procure a second hand 5TI processor. CT Oceania used its network of contacts to locate a 5TI processor and assisted in the installation and configuration of this replacement unit. After only a few days production, the newly installed unit failed and the original unit with the intermittent fault was installed until another solution is found.

CT Oceania submitted a proposal to management to replace the 5TI processor with a new CTI 2500 Series processor. Managements' main concern with attempting a migration was based on experience from previous control system migration projects that resulted in extended periods of downtime as bugs and issues are resolved before consistent full production can be achieved. CT Oceania presented to management that

unlike other migration options available, the CTI 2500 Series based solution is very low risk and cost because:

1. Whilst the program conversion is manual it is simply a data entry exercise as the CTI 2500 Series supports the 5TI's ladder instructions. This avoids the time, cost and risk associated with redesigning a program. PLC Workshop for 505 provides the rapid application development environment required to complete this task.

"I recommend the CTI 2500 Series migration solution for a 5TI PLC. We only had to replace the failed component and it was the most seamless control system migration project I have experienced"
Alan Wilkes
Managing Director



2. The CTI 2500 Series interfaces with the 5TI's I/O modules eliminating the risk, time and cost associated with modifying, testing and documenting new wiring. Should a 5TI I/O module fail in the future it will be replaced with CTI 2500 Series I/O, requiring changes to the PLC I/O configuration and wiring but not the program.
3. The four slot CTI 2500 Series rack will occupy the 5TI's space in the cabinet so no cabinet modifications are needed.

4. The existing timer/counter interface is easily replaced with a Parker XPR 6" HMI touch screen. The improved HMI interface will reduce the time it takes an operator to change machine settings.

The entire migration project took less than 48 hours to complete. The installation, commissioning and training stages took less than four hours and once the machine was warmed up it has been running at full production.

Queensland Blow Moulders are very satisfied with their new control system that offers all the benefits, performance and features expected of a modern PLC platform. They are looking forward to uninterrupted operation of their Husky machine well into the future.

Contact CT Oceania for information on the CTI 2500 Series migration solutions for 5TI, TI505, TI525, TI535, TI545, TI565, TI575 and Series 505 PLC platforms. Our customers' experiences have proven that the CTI 2500 Series migration solution for these PLC platforms is the easiest, most automated, lowest risk, and typically a tenth of the cost of other solutions available today.



Articles

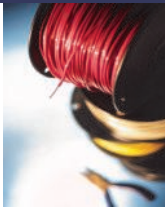
- 1974 to 2008 in 48 hours: A 5TI migration project.
- Training courses.
- Batteries, cables and connectors.
- Programming tip #1.

On the Grapevine

- Over 1,000,000 CTI I/O points shipped since year 2000.
- More than 100 CTI 2500 Series processors shipped in Australia.
- CTI have released their 2502 to replace the 505-7002 counter.

Batteries, cables and connectors

CT Oceania stock and supply all your PLC battery, cable and connector needs. If we don't stock it we will source it for you.



Products

- SIMATIC 505 PLC batteries
- CTI 2500 Series PLC batteries
- Profibus DP Belden 3079A cable
- Profibus DP connectors
- Remote I/O Belden 9860 cable
- Remote I/O Belden 9271 cable
- Remote I/O network tapping boxes

Training courses and schedule

FasTrak PLC Workshop for 505

Description

A 2 day hands on course

Objectives

Increase your efficiency in programming and troubleshooting your Siemens SIMATIC 505 and CTI 2500 Series PLC platforms.

Prerequisites

Experience with PLCs and basic knowledge of ladder programming. Competent using a PC with Windows XP Pro or Vista.



FasTrak PLC Workshop for 505 Tasmania (Devonport)

29th to 30th July
 (Free user forum 31st July)

Western Australia (Perth)
 13th to 14th August

New South Wales (Sydney)
 17th to 18th September

South Australia (Adelaide)
 7th to 8th October

Victoria (Melbourne)
 29th to 30th October

CTI 2500 Series Course 1 Queensland (Brisbane)

23rd to 26th September
 (All courses are limited to ten attendees)

CTI 2500 Series Course 1

Description

A 4 day hands on course

Objectives

Understand the CTI 2500 Series components, operation and architecture so you can design and assemble a control system. Write and edit Ladder Logic using all available instructions. How to monitor and troubleshoot faults.

Prerequisites

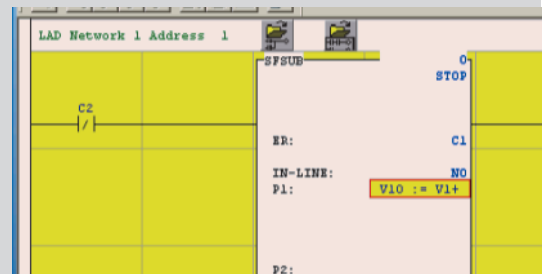
Experience with PLCs and basic knowledge of ladder programming. Competent using a PC with Windows XP Pro or Vista.

Programming tip #1

Using the ladder instruction SFSUB you can execute mathematical expressions without having to write a special function subroutine, special function program or use ladder math instructions. Each SFSUB instruction can execute up to five expressions.

How to configure:

1. Enter a SFSUB instruction in the ladder editor.
2. Configure the SFSUB number as 0.
3. Enter one integer, floating point or Boolean expression per P field.



Execution:

When the power flow to the RLL SFSUB instruction transitions from OFF to ON and the instruction is not currently executing the expressions are placed in the queue for execution during the Analogue portion of the scan cycle. Once the expressions have been executed, the SFSUB instructions output turns on and will remain on until the power flow to the SFSUB turns OFF.