

Doc No.: AN-251

Version: 1.0

Date: 18 March 2010

Subject: Using module registration as I/O

APPLICATION NOTE

1. Introduction

MC464 drive modules have built in registration Inputs and the FlexAxis has PSWITCH outputs. You can now use these as regular I/O points with all the I/O commands in TrioBASIC. It also enables you to check the status of your registration sensor using IN or the I/O status window in Motion Perfect.

When using the TrioBASIC commands to control the I/O they are sampled at the same rate as the built in I/O channels (1 msec).

1.1. I/O assignment

By default the controller will place expansion module I/O in slot order after the built in I/O and before any CANIO. So for example a system with a MC464, a Panasonic module (slot 0), a FlexAxis (slot 1) and a CANIO Module will have the following I/O

0-7 Built in inputs

8-15 Built in bi-directional I/O

16-23 Panasonic inputs

24-27 FlexAxis inputs

28-31 FlexAxis bi-directional I/O

32-47 CANIO bi-directional I/O

MODULE_IO_MODE allows you to alter the position of module I/O.

1.2. Requirements

The following are minimum requirements for Module I/O, you can find all of this information in the controller configuration window in Motion Perfect 2.

P860 (MC464) - Firmware version 2.0084

P871 (Panasonic) - FPGA version 9

P872 (SERCOS) - FPGA version 5

P873 (S/PLM) - FPGA version 9

P874 (Flex8) - FPGA version 6
P876 (EtherCAT) - FPGA version 3
P879 (Flex4) - FPGA version 3
P881 (FlexSSI) - FPGA version 2

2. MODULE_IO_MODE

2.1. Required Version:

2.0084 or newer

2.2. Type:

Slot Parameter

2.3. Syntax:

MODULE_IO_MODE = mode

2.4. Description:

This parameter sets the start address of any expansion module I/O channels. You can also turn off module I/O for backwards compatibility.

Note:

This parameter is stored in Flash EPROM and should only be entered in the command line.

2.5. Parameters:

mode: 0 = Module I/O disabled
 1 = Module I/O is after controller I/O and before CANIO (default)
 2 = Module I/O is after CANIO

Warning:

If you are upgrading the firmware in an existing controller, this parameter may be set to 0. The default of 1 is on a factory installed system.

2.6. Example:

A system with MC464, a Panasonic module (slot 0), a FlexAxis (slot 1) and a CANIO Module will have the following I/O assignment:

MODULE_IO_MODE=1 (default)

0-7 Built in inputs
8-15 Built in bi-directional I/O
16-23 Panasonic inputs
24-27 FlexAxis inputs
28-31 FlexAxis bi-directional I/O
32-47 CANIO bi-directional I/O

MODULE_IO_MODE=0 (off)

- 0-7 Built in inputs
- 8-15 Built in bi-directional I/O
- 16-31 CANIO bi-directional I/O

MODULE_IO_MODE=2 (end)

- 0-7 Built in inputs
- 8-15 Built in bi-directional I/O
- 16-31 CANIO bi-directional I/O
- 32-39 Panasonic inputs
- 40-43 FlexAxis inputs
- 44-47 FlexAxis bi-directional I/O