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Subject: Analog Input Daughter Board

Application Information

Contents:

Introduction:

The P225 analog input daughter board provides 8 channels of 16 bit analog inputs. By putting the analog inputs on a daughter board they are especially useful for use as position feedback. The reading of the analog inputs is synchronised with the servo loop of the Motion Coordinator at 1msec/500usec or 250usec servo period.

System Requirements:

Motion Coordinator with system software v1.6309

Wiring Configuration:

The analog inputs are connected via a 15 way "D" connector. The P225 has an isolation barrier between the analog to digital converters and rest of the Motion Coordinator. However on Motion Coordinators without an isolated external power supply, such as the EURO205X and the MC206 the isolators will only isolate the data signals, not provide full isolation.

Signal	D Connector Pin
Analog Input 0	1
Analog Input 1	2
Analog Input 2	3
Analog Input 3	4

Analog Input 4	5
Analog Input 5	6
Analog Input 6	7
Analog Input 7	8
Analog GND	9
Analog GND	10
Analog GND	11
Analog GND	12
Analog GND	13
Analog GND	14
Analog GND	15

Each analog input channel has a 0..10 volt input range.

Configuring the Motion Coordinator:

Motion Coordinators with system software version 1.6309 or higher will automatically detect analog input daughter boards. The boards are detected as "communications" daughter boards. The detection process sets the NAIO BASIC keyword depending on the highest analog channel found by the system.

For Example: If a P225 is fitted into a EURO205X Motion Coordinator the analog inputs will be read using AIN(40) to AIN(47) , the COMMSTYPE SLOT(0) will return 28 and the NAIO will return 48.

Analog Input BASIC Channel Number	Description
0..31	CAN Analog input channels
32..39	Analog inputs built into the Motion Coordinator
40..71	Analog inputs from P225 Analog Daughter Board

If the P225 is to be used as analog feedback by setting ATYPE=30. The system software will check the number of enabled "remote" axes.

Relevant BASIC Commands:

COMMS_TYPE

The COMMS_TYPE of a P225 is 28.

NAIO

Using a single P225 will set the NAIO to 48 irrespective of the number of CAN analog channels connected. If multiple P225's are fitted to an MC224 the NAIO can be 56,64 or 72.

AIN(40)…AIN(71)

The AIN function can be used to read the value from an analog channel. The number returned will be in the range of 0..65535. For a single P225 in slot 0, the range is AIN(40)..AIN(47) and for other slots the value is AIN(40 + (slot_number * 8) + input_number).

Slot Number	AIN values
Slot 0	AIN(40) … AIN(47)
Slot 1	AIN(48) … AIN(55)
Slot 2	AIN(56) … AIN(63)
Slot 3	AIN(64) … AIN(71)

ATYPE

An axis can be set to use an analog channel as position feedback by setting ATYPE=30. The parameter AXIS_ADDRESS should be set to the analog channel number prior to making this setting.

To set up an axis to use the first analog input as voltage feedback for the servo loop, you must have the appropriate Remote Enable feature code to activate it. When the Remote Axis FEC has been entered, the following initialisation is required for the axis:

```
BASE(axis_number)
AXIS_ADDRESS=40  ' use the first analog input as feedback
ATYPE=30  ' set axis to voltage feedback type
```