Product：4−axis controller with built-in driver

Model：FMAX−4X−2SD

Product Specification

Impress, not just satisfy
Nippon Pulse Motor Co., Ltd.

1. Outline

1.1. Outline

This controller is a product for 4-axis motion control. It can control motion in two ways: remote control from PC and stand-alone control that can be operated by the controller alone.

Two out of the controllable four axes have drivers built-in so that it can control a shaft motor without a separate driver.

The other two axes are equipped with I/F signals to connect drivers so that they can control the drivers and motors selected by the user.

1.2. Features

This controller has the following features.

- Command control from PC through USB communication
- Standalone control separated from PC
- Programming language for stand-alone program with utility software
- Operation check by utility software
- Compile, write and read standalone program by utility software
- Joystick operation with analog input (X-axis, Y-axis)
- Two built-in drivers manufactured by Elmo (X-axis, Y-axis)
- PCL6045BL mounted as motion control LSI
- 13 types of homing mode
- Manual pulser operation
- On-the-fly speed change (speed overridden during movement).
- On-the-fly target positon change (target position overridden during movement).
- 2 to 4-axis linear interpolation
- 2-axis circular interpolation
- Sync output configuration
- Absolute positioning or incremental positioning can be selected
- 12 inputs and 12 outputs of general-purpose input/output signals

1.3. Supported OS

- Windows® 7 and 8

2. Specifications

2.1. Specifications

Item	Specification		Note
Product name	4-axis controller with built-in driver		
Model	FMAX-4X-2SD		
Size	220(W) × 100(D) × 55(H) [mm]		
Weight	580 [g]		
Power supply	Main Control Board	DC24 [V] ±10[%] Max 1.0[A]	
	Driver built-in board	DC12 to DC48 [V]	
Number of controllable axes	4 [axes] (X-axis, Y-axis, Z-axis, U-axis)		
Built−in drivers	Number of axes	2 [axes] (X-axis, Y-axis)	
	Driver type	TWE 3/60 (manufactured by Elmo)	
	Continuous maximum output current	1.0 [A]	
	Maximum peak current	4.6 [A]	
Serial port	USB 2.0		miniB type
	RS-232C		* 2-1
Maximum output frequency	5 [MHz] (X-axis, Y-axis 2 [MHz])		* 2-2
Analog input	2 [lines] (AIn1, AIn2)		* 2-3
Pulser input	PA, PB for each axis		
Comparator output	4 [lines] (CMPx, CMPy, CMPz, CMPu)		* 2-4
Driver I/F signal (output)	Pulse output (PLS, DIR) Excitation ON/OFF (SON) Deviation counter clear (ERC)		* 2-5
Driver I/F signal (input)	Encoder signal (EA, EB, EZ), Alarm (ALM) In position (INP), Servo ready (RDY)		* 2-5
Mechanical input signal	Emergency stop (ExEMG), External start (ExSTA) The following signals are prepared for each axis: Positive direction end limit (+EL) Negative direction end limit (−EL) Home position (ORG), Slow-down (SD)		
General-purpose output	12 [point] Photo-coupler output		
General-purpose input	12 [point] Photo-coupler input		
Corresponding standard	CE Marking RoHS Directive 2011/65/EU (2015/863/EU is not included) EMC Directive 61000-6-2：2005, 61000-6-4：2007+A1：2011		

* 2-1. RS-232C is for built-in driver adjustment.
* 2-2. Up to 2 [MHz] for the X-axis and Y-axis due to the specification of built-in driver.
* 2-3. AIn 1 corresponds to the X-axis, and AIn 2 corresponds to the Y-axis. Z-axis and U-axis are not supported.
* 2-4. It can also be used as a general-purpose output.
* 2-5. Regarding driver I/F signal, only the Z-axis and the U-axis are connected to the connector (CN 5). Since the X-axis and the Y-axis are connected to the built-in drivers, they are not connected to the connector.

2.2. Configurations (Block Diagram)

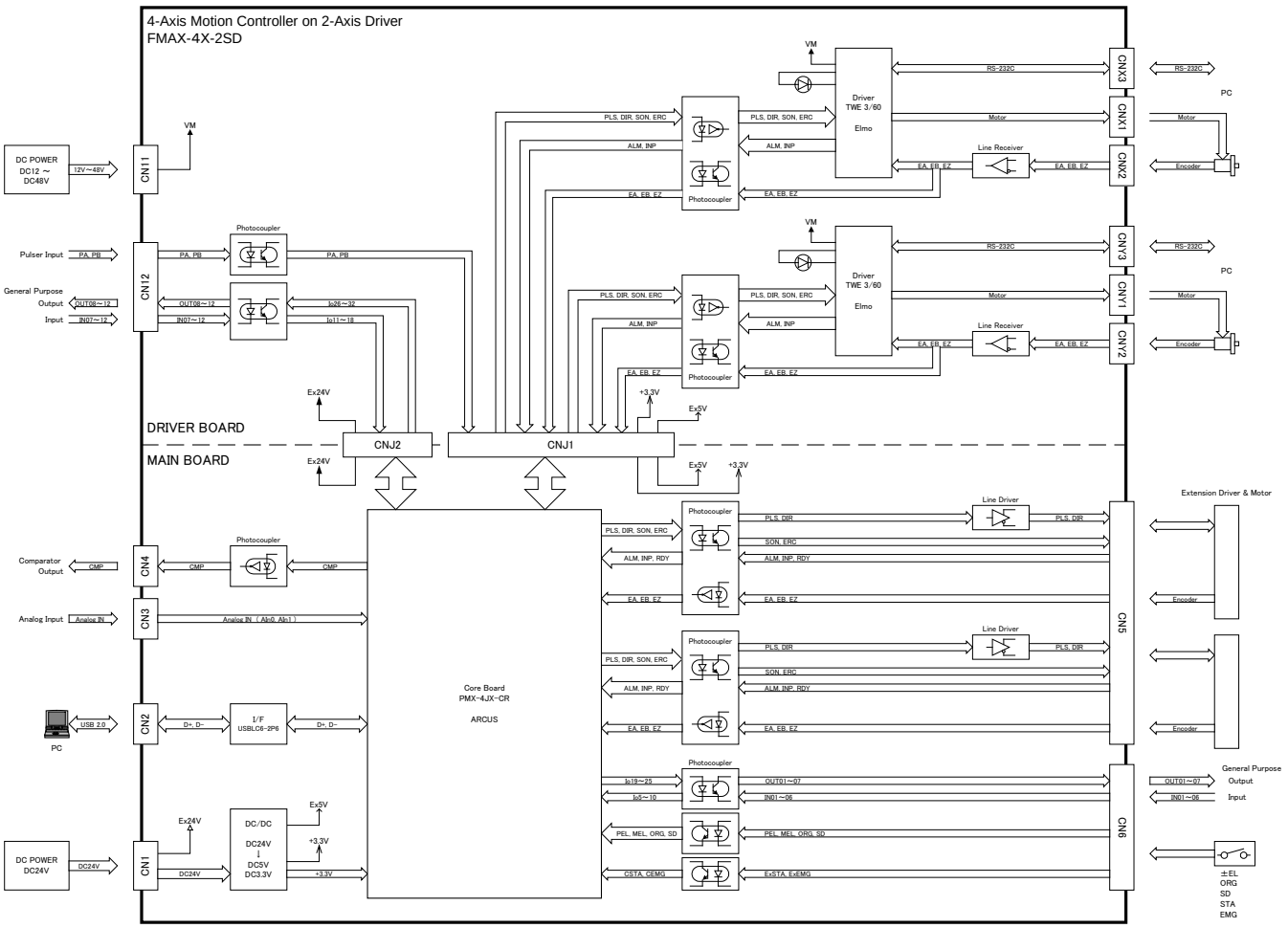

Fig. 2-2-1