MPU11 090212 User Guide

Updated 3/11/15

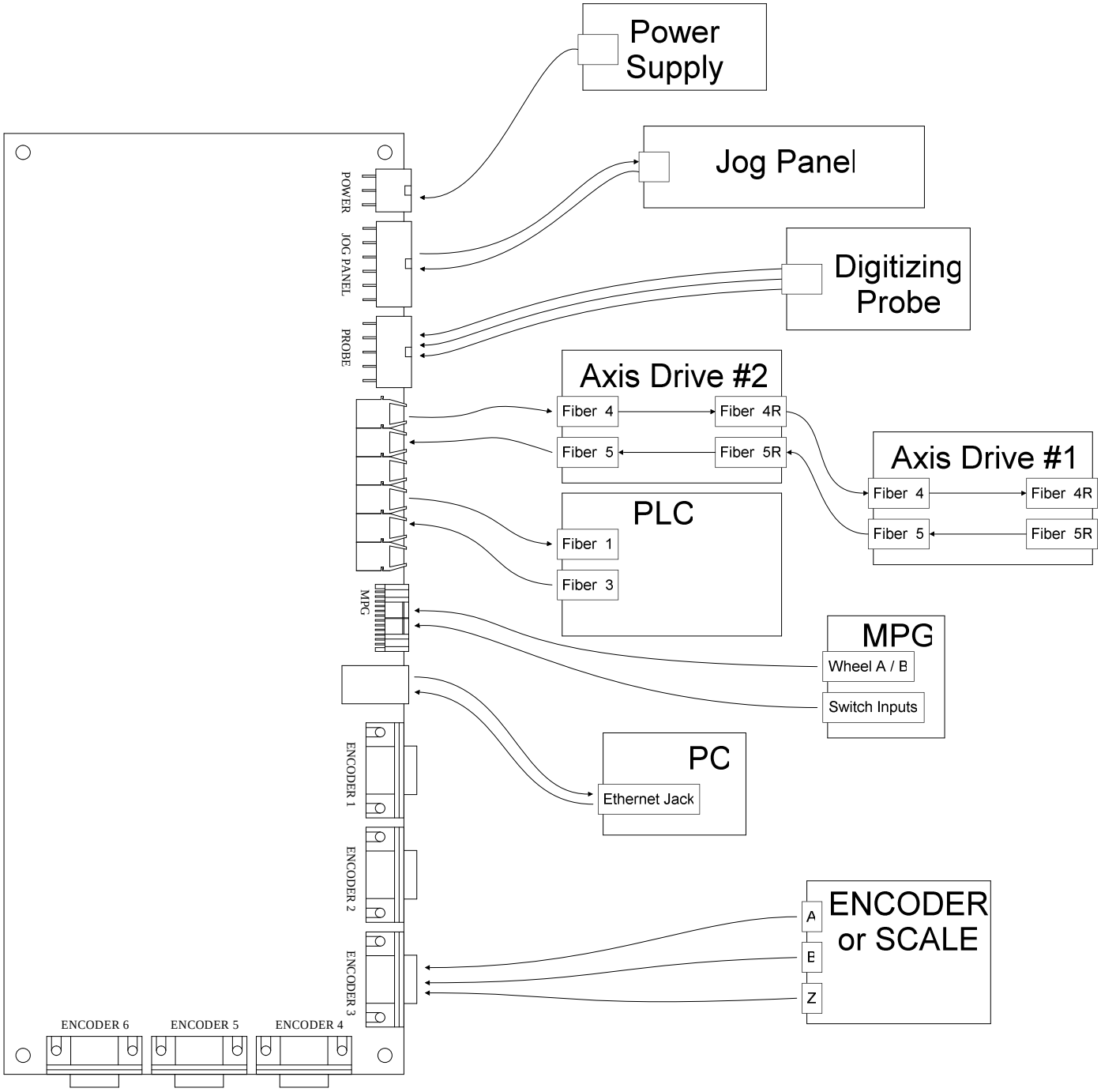
Overview

The MPU11 is Centroid's next generation motion control card. It supports greater communication bandwidth with new protocols and more processing power.

MPU11 Features

Application:	Motion Control Processor
Maximum number of Axes:	8
Encoder and Scale Inputs:	6 Incremental Encoders (Differential A, B, and Z channels)
PLC Protocol Support	PLCbus protocol up to 768in / 768 out
	PLCIO2 Protocol
	RTK2 Shift Register Protocol
Drive Protocol Support	DriveBus Protocol
	Centroid Legacy DC Protocol
Jog Panel Protocol Support	JogLink Protocol
	Legacy Serial Protocol
MPG Support	Differential encoder and discrete inputs (no serial MPG support)
Control Interface:	100 Mb/s Ethernet to PC
Dimensions (W*D*H):	12 * 5 * 0.75 inches

MPU11 Typical Accessory Connections



MPU11 Specifications

Characteristic	Min.	Typ.	Max.	Unit
5 Volt Supply Current	1	-	-	A
12 Volt Supply Current**	0	-	-	A
Open Collector Output Current	-	10	90	mA
Open Collector Output Voltage	-	5	25	V
Input Operating current	9	11	15	mA
Encoder channel input low	0	-	0.5	V
Encoder channel input high	3.5	-	5	V
Encoder input frequency low speed (per channel)*	0	-	1200	khz
Encoder input frequency high speed (per channel)*	0	-	6000	khz
Size: 12 * 5 * 0.75 (W*D*H)				Inches

*FPGA Firmware versions below 0.56 limited encoder input frequency to 800khz.
See parameter 323 for switching to low speed filter on MPU11 FPGA versions 0.59 and newer.
**12V passed on to probe and jog panel header, check those accessories for power requirements.

MPU11 Troubleshooting

Symptom	Possible Cause	Corrective Action
+5V LED not lit	No power	Check connections to POWER header
FPGA OK LED not lit	MPU11 not ready	Wait for MPU11 to start and enter run mode
	Internal Fault	Return for repair
DSP-OK LED not lit	MPU11 is booting up	Wait for MPU11 to detect hardware and start run mode
DSP-DEBUG LED flashing fast (20 times per second)	MPU11 is detecting hardware	Wait for MPU11 to detect hardware and start run mode
DSP-DEBUG LED flashing one time per second	New drive protocols active	None
DSP-DEBUG LED and DSP-OK LED flash alternately 8 times per second	FPGA memory test failed	Return for repair
DSP-DEBUG LED and DSP-OK LED both on continuous	DSP failed to initialize	Return for repair
Encoder connection bad	Bad encoder or wiring	Check or replace encoder and cable
	Return not connected	Connect return line. If the encoder is not powered by MPU11's +5V, this is sometimes overlooked.

MPU11 I/O Map

Input Specification			Input Location	
Number	Function	Type	Connector	Pin
769	Mechanical Probe	12VDC Opto	H3	6
770	DSP Probe	12VDC Opto	H3	4
771	Probe Detect	12VDC Opto	H3	8
772	Probe Auxiliary	12VDC Opto	H3	10
773	MPG x1	5VDC	H4	9
774	MPG x10	5VDC	H4	11
775	MPG x100	5VDC	H4	13
776	MPG Axis 1	5VDC	H4	4
777	MPG Axis 2	5VDC	H4	6
778	MPG Axis 3	5VDC	H4	8
779	MPG Axis 4	5VDC	H4	10
780	MPG Axis 5	5VDC	H4	12
781	MPG Axis 6	5VDC	H4	14
782	MPG Axis 7	5VDC	H4	16
783	MPG Axis 8	5VDC	H4	18
784	MPG Aux 1	5VDC	H4	15
785	MPG Aux 2	5VDC	H4	20
786	MPG Aux 3	5VDC	H4	22

Output Specification			Output Location	
Number	Function	Type	Connector	Pin
769	MPG LED	Open Collector	H4	17
770	MPG Aux 1	Open Collector	H4	19
771	MPG Aux 2	Open Collector	H4	21

*Open Collector outputs are pulled up to 5V

*5 VDC inputs are not isolated

MPU11 Connections and Mounting Footprint