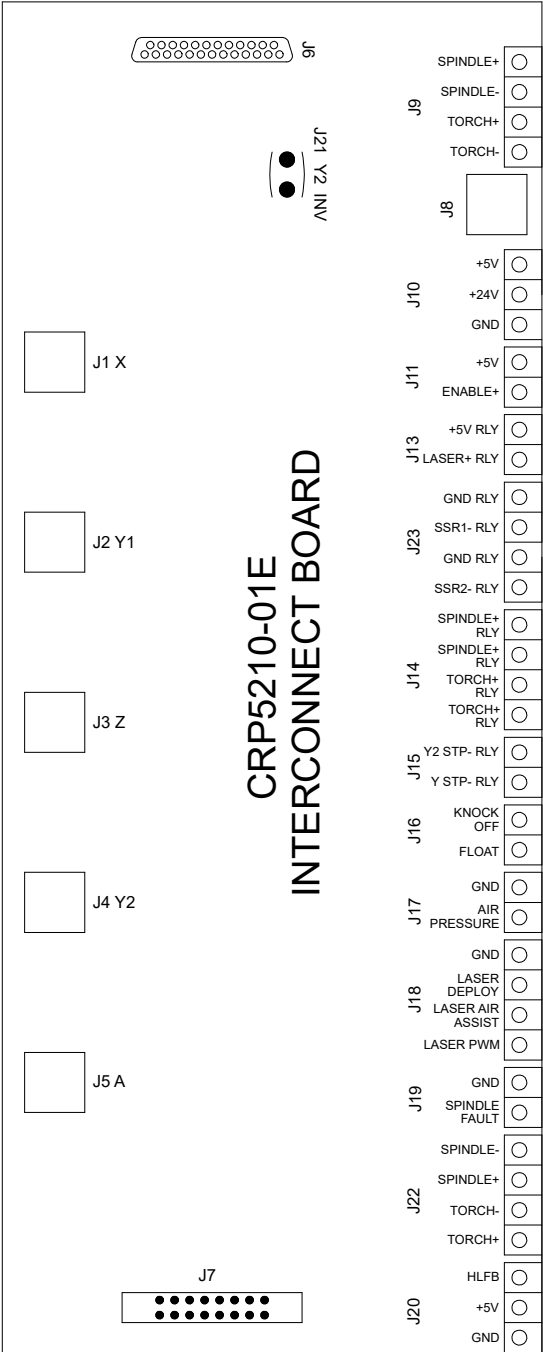


EX Controller Technical Manual

Interconnect Board

CRP5210-01E



Connector Designator	Pin	External Connection	Wire Color	Function	CNC12 I/O Assignment	Voltage
J1	1	X Drive, Pul+	***White	*+5V		5V
	2	X Drive, Pul-	***Black	*X Step		
	3	X Drive, Dir+	***Red	*+5V		
	4	X Drive, Dir-	***Green	*X Direction		
	5	NC				
	6	NC				
J2	1	Y Drive, Pul+	***White	*+5V		5V
	2	Y Drive, Pul-	***Black	*Y Step		
	3	Y Drive, Dir+	***Red	*+5V		
	4	Y Drive, Dir-	***Green	*Y Direction		
	5	NC				
	6	NC				
J3	1	Z Drive, Pul+	***White	*+5V		5V
	2	Z Drive, Pul-	***Black	*Z Step		
	3	Z Drive, Dir+	***Red	*+5V		
	4	Z Drive, Dir-	***Green	*Z Direction		
	5	NC				
	6	NC				
J4	1	Y2 Drive, Pul+	***White	*+5V		5V
	2	Y2 Drive, Pul-	***Black	*Y2 Step		
	3	Y2 Drive, Dir+	***Red	*+5V		
	4	Y2 Drive, Dir-	***Green	*Y2 Direction		
	5	NC				
	6	NC				
J5	1	A Drive, Pul+	***White	*+5V		5V
	2	A Drive, Pul-	***Black	*A Step		
	3	A Drive, Dir+	***Red	*+5V		
	4	A Drive, Dir-	***Green	*A Direction		
	5	NC				
	6	NC				

* Stepper Motors Only

** Servo Motors Only

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Connector Designator	Pin	External Connection	Wire Color	Function	CNC12 I/O Assignment	Voltage
J6	1	Acorn H6 DB25 Port	Multicolor ribbon	Not used	NA	5V
	2		Multicolor ribbon	*Step X		
	3		Multicolor ribbon	*Direction X		
	4		Multicolor ribbon	*Step Y		
	5		Multicolor ribbon	*Direction Y		
	6		Multicolor ribbon	*Step Z		
	7		Multicolor ribbon	*Direction Z		
	8		Multicolor ribbon	*Step A		
	9		Multicolor ribbon	*Dir A		
	10		Multicolor ribbon	Not used		
	11		Multicolor ribbon	Not used		
	12		Multicolor ribbon	Not used		
	13		Multicolor ribbon	Not used		
	14		Multicolor ribbon	Laser PWM		
	15		Multicolor ribbon	Not used		
	16		Multicolor ribbon	Not used		
	17		Multicolor ribbon	Not used		
	18-25		Multicolor ribbon	5V COM		

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Connector Designator	Pin	External Connection	Wire Color	Function	CNC12 I/O Assignment	Voltage
J7	1	CRP860 P2_2-9, pin 1	Grey ribbon	24V to M12 pin 1 (multiple)		24V
	2	CRP860 P2_2-9, P2_15 pin 3	Grey ribbon	GND to M12 pin 3 (multiple)		
	3	CRP860 P2_2 pin 4	Grey ribbon	X Home / Limit	IN2	
	4	NC	Grey ribbon	NC		
	5	CRP860 P2_4 pin 4	Grey ribbon	Y1 Home / Limit	IN2	
	6	NC	Grey ribbon	NC		
	7	CRP860 P2_7 pin 4	Grey ribbon	Y2 Home	IN3	
	8	CRP860, P11 pin 2	Grey ribbon	Relay2 V-	OUT4	
	9	CRP860 P2_9 pin 4	Grey ribbon	Aux1		
	10	CRP860, P12 pin 2	Grey ribbon	Relay1 V-	OUT3	
	11	CRP860 P2_3 pin 4	Grey ribbon	A Home	IN3	
	12	CRP860, P11 pin 1 P12 pin 1	Grey ribbon	24V, Relays 1 and 2		
	13	CRP860 P2_5 pin 4	Grey ribbon	Y+ Limit	IN2	
	14	CRP860 P2_15 pin 2	Grey ribbon	Emergency Stop	IN1	
	15	CRP860 P2_6 pin 4	Grey ribbon	Z+ Home / Limit	IN2	
	16	CRP860 P2_8 pin 4	Grey ribbon	Aux2	IN5	

Connector Designator	Pin	External Connection	Wire Color	Function	CNC12 I/O Assignment	Voltage
J8	1	Acorn H4, IN1	Grey	Emergency Stop	IN1	24V
	2	Acorn H4, IN2	Orange	X, Y1, Z Home, Y+ Limit	IN2	
	3	Acorn H4, IN3	Black	Y2 Home, A home	IN3	
	4	Acorn H4, IN4	Red	Auto Z Touchplate	IN4	
	5	Acorn H1, IN5	Green	Tool Height Setter	IN5	
	6	Acorn H1, IN6	Yellow	Spindle/Servo Fault	IN6	
	7	Acorn H1, IN7	Blue	Air pressure / plasma float / Probe detect	IN7	
	8	Acorn H1, IN8	Brown	Touch probe / plasma knockoff	IN8	
J9	SPINDLE+	Safety contactor 13NO	Green	Spindle Forward Safety Contact		Dry Contact
	SPINDLE-	Safety contactor 14NO	Green	Spindle Forward Safety Contact		
	TORCH+	Safety contactor 6TE	Brown	Torch On Safety Contact		
	TORCH-	Safety contactor 5LE	Brown	Torch On Safety Contact		
J10	+5V	TB14, 5V power terminal block	Blue	5V Power		5V
	+24V	TB12, 24V power terminal block	Orange	24V Power		24V
	GND	TB13, DC COM terminal block	Black	DC Common		5V/24V
J11	+5V	NC	NA	External enable, unused		5V
	ENABLE+	NC	NA	External enable, unused		

Connector Designator	Pin	External Connection	Wire Color	Function	CNC12 I/O Assignment	Voltage
J13	+5V	Relay 1 COM	Orange	Relay1 Passthrough	OUT1	5V
	LASER+	Relay 1 NO	Orange	Relay1 Passthrough	OUT1	
J14	SPINDLE+ RLY	Relay 5 COM	Green	Spindle On	OUT5	Dry Contact
	SPINDLE+ RLY	Relay 5 NO	Green	Spindle On	OUT5	
	TORCH+ RLY	Relay 6 COM	Brown	Torch On	OUT6	
	TORCH+ RLY	Relay 6 NO	Brown	Torch On	OUT6	
J15	Y2 STP- RLY	Relay 8 COM	White	*Y2 Step Disable **Z Brake Release	OUT8	5V
	Y STP- RLY	Relay 8 NC	White	*Y2 Step Disable **Z Brake Release	OUT8	
J16	KNOCK OFF	RX OUT2	White	Torch knockoff	IN8	24V
	FLOAT	RX OUT1	Purple	Torch float	IN7	
J17	GND	Gland plate, Aux3 Pin 3	Blue	Air Pressure		24V
	AIR PRESSURE	Gland Plate, Aux3, Pin 4	Black	Air Pressure	IN7	
J18	GND	Gland plate, Aux4, Pin3	Blue	5V Common		5V
	LASER DEPLOY	Gland plate, Aux4, Pin1	Brown	Laser Deploy	OUT1	
	LASER AIR ASSIST	Gland plate, Aux4, Pin4	Black	Laser Air Assist	OUT1	
	LASER PWM	Gland plate, Aux4, Pin2	White	Laser Pulse PWM	OUT2	
J19	GND	Gland plate, SP/THC pin 1	Blue	*Spindle OK	IN6	24V
	SPINDLE FAULT	Gland plate, SP/THC pin 2	White	*Spindle OK	IN6	

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Connector Designator	Pin	External Connection	Wire Color	Function	CNC12 I/O Assignment	Voltage
J20	HLFB	CRP5310-01E J7 HLFB	White	**Combined Servo Fault Signal	IN6	5V
	+5V	CRP5310-01E J7 +5V	Blue	**5V Power		
	GND	CRP5310-01E J7 COM	Black	**5V Common		
J21	Y DIR INV (Pin 1)	U1, Pin 2		*Y Direction, Inverted		5V
	Y2 DIR (Center, Pin 2)	J4, P4		*Y2 Direction Select		
	Y DIR (Pin 3)	J6, P5		*Y Direction		
J22	SPINDLE-	Gland plate, SP/THC pin 8	Green	Spindle on	OUT5	Dry Contact
	SPINDLE+	Gland plate, SP/THC pin 7	Orange	Spindle on	OUT5	
	TORCH-	Gland plate, SP/THC pin 4	Green/Black	Torch on	OUT6	
	TORCH+	Gland plate, SP/THC pin 3	Orange/Black	Torch on	OUT6	
J23	GND RLY	Relay 3 COM	White	Relay 3 5V COM Passthrough	OUT3	24V
	SSR1- RLY	Relay 3 NO	White	Relay 3 5V COM Passthrough	OUT3	
	GND RLY	Relay 4 COM	Black	Relay 4 5V COM Passthrough	OUT4	
	SSR2- RLY	Relay 4 NO	Black	Relay 4 5V COM Passthrough	OUT4	

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