CS Labs CSMIO IP/A Encoder Port connections

ENCODER INPUTS CONNECTOR (0/1/2)

	Port Pin Lable	Function	Pin No			Pin No	port lable	Port	Device	Cable Type To Be Used
Encoder Inputs Connector (0/1/2)	Encoder Ch0 **A+**		**1**		---------->	**20**	**PA+**	PORT CN2	AASD-20 Servo Drive **(X axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	Encoder Ch0 **B+**		**2**		---------->	**18**	**PB+**	PORT CN2	AASD-20 Servo Drive **(X axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	Encoder Ch0 **C+**		**3**		---------->	**15**	**PZ+**	PORT CN2	AASD-20 Servo Drive **(X axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	**+5V**		**4**		---------->	**22?**	**OZ?**	PORT CN2	AASD-20 Servo Drive **(X axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	Encoder Ch1 **A+**		**5**		---------->	**20**	**PA+**	PORT CN2	AASD-20 Servo Drive **(Y axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	Encoder Ch1 **B+**		**6**		---------->	**18**	**PB+**	PORT CN2	AASD-20 Servo Drive **(Y axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	Encoder Ch1 **C+**		**7**		---------->	**15**	**PZ+**	PORT CN2	AASD-20 Servo Drive **(Y axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	**+5V**		**8**		---------->	**22?**	**OZ?**	PORT CN2	AASD-20 Servo Drive **(Y axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	Encoder Ch2 **A+**		**9**		---------->	**20**	**PA+**	PORT CN2	AASD-20 Servo Drive **(Z axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	Encoder Ch2 **B+**		**10**		---------->	**18**	**PB+**	PORT CN2	AASD-20 Servo Drive **(Z axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	Encoder Ch2 **C+**		**11**		---------->	**15**	**PZ+**	PORT CN2	AASD-20 Servo Drive **(Z axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	**+5V**		**12**		---------->	**22?**	**OZ?**	PORT CN2	AASD-20 Servo Drive **(Z axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	**GND**		**13**		---------->			PORT CN2		***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	Encoder Ch0 **A-**		**14**		---------->	**19**	**PA-**	PORT CN2	AASD-20 Servo Drive **(X axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	Encoder Ch0 **B-**		**15**		---------->	**17**	**PB-**	PORT CN2	AASD-20 Servo Drive **(X axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	Encoder Ch0 **C-**		**16**		---------->	**16**	**PZ-**	PORT CN2	AASD-20 Servo Drive **(X axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	**GND**		**17**		---------->	**1**	**GND**	PORT CN2	AASD-20 Servo Drive **(X axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	Encoder Ch1 **A-**		**18**		---------->	**19**	**PA-**	PORT CN2	AASD-20 Servo Drive **(Y axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	Encoder Ch1 **B-**		**19**		---------->	**17**	**PB-**	PORT CN2	AASD-20 Servo Drive **(Y axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	Encoder Ch1 **C-**		**20**		---------->	**16**	**PZ-**	PORT CN2	AASD-20 Servo Drive **(Y axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	**GND**		**21**		---------->	**1**	**GND**	PORT CN2	AASD-20 Servo Drive **(Y axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	Encoder Ch2 **A-**		**22**		---------->	**19**	**PA-**	PORT CN2	AASD-20 Servo Drive **(Z axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	Encoder Ch2 **B-**		**23**		---------->	**17**	**PB-**	PORT CN2	AASD-20 Servo Drive **(Z axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	Encoder Ch2 **C-**		**24**		---------->	**16**	**PZ-**	PORT CN2	AASD-20 Servo Drive **(Z axis)**	***TWISTED PAIR CABLE ONLY***
Encoder Inputs Connector (0/1/2)	**GND**		**25**		---------->	**1**	**GND**	PORT CN2	AASD-20 Servo Drive **(Z axis)**	***TWISTED PAIR CABLE ONLY***

DIGITAL INPUTS CONNECTOR (NO'S 0-11)

	Port Pin Lable	Function	Pin No		Pin No	port lable	Port	Device
	(use these nos for Mach or SimCNC)							
Digital Inputs connector (no's 0-11)	Input **0+ (+24V DC)**	ALARM (E-Stop, drive fault, etc) **X** axis	**1**	---------->	**23**	**ALARM (out)**	Port CN2	AASD-20 Servo Drive **(X axis)**
Digital Inputs connector (no's 0-11)	Input **1+ (+24V DC)**	ALARM (E-Stop, drive fault, etc) **Y** axis	**2**	---------->	**23**	**ALARM (out)**	Port CN2	AASD-20 Servo Drive **(Y axis)**
Digital Inputs connector (no's 0-11)	Input **2+ (+24V DC)**	ALARM (E-Stop, drive fault, etc) **Z** axis	**3**	---------->	**23**	**ALARM (out)**	Port CN2	AASD-20 Servo Drive **(Z axis)**
Digital Inputs connector (no's 0-11)	Input **3+ (+24V DC)**		**4**	---------->		**N.C limit switch**	connection L1	Limit Switch X axis LEFT
Digital Inputs connector (no's 0-11)	Input **4+ (+24V DC)**		**5**	---------->		**N.C limit switch**	connection L1	Limit Switch X axis RIGHT
Digital Inputs connector (no's 0-11)	Input **5+ (+24V DC)**		**6**	---------->		**N.C limit switch**	connection L1	HOME Switch X axis
Digital Inputs connector (no's 0-11)	Input **6+ (+24V DC)**		**7**	---------->		**N.C limit switch**	connection L1	Limit Switch Y axis LEFT
Digital Inputs connector (no's 0-11)	Input **7+ (+24V DC)**		**8**	---------->		**N.C limit switch**	connection L1	Limit Switch Y axis RIGHT
Digital Inputs connector (no's 0-11)	Input **8+ (+24V DC)**		**9**	---------->		**N.C limit switch**	connection L1	HOME Switch Y axis
Digital Inputs connector (no's 0-11)	Input **9+ (+24V DC)**		**10**	---------->		**N.C limit switch**	connection L1	Limit Switch Z axis UP
Digital Inputs connector (no's 0-11)	Input **10+ (+24V DC)**		**11**	---------->		**N.C limit switch**	connection L1	Limit Switch Z axis Down
Digital Inputs connector (no's 0-11)	Input **11+ (+24V DC)**		**12**	---------->		**N.C limit switch**	connection L1	HOME Switch Z axis
Digital Inputs connector (no's 0-11)	GND (NOT USED)	DO NOT CONNECT	**13**	---------->				
Digital Inputs connector (no's 0-11)	Input **0- (0V DC)**	0V for ALARM (drive fault signal out) **X** axis	**14**	---------->	**10**	**sig In COM**	Port CN2	AASD-20 Servo Drive **(X axis)**
Digital Inputs connector (no's 0-11)	Input **1- (0V DC)**	0V for ALARM (drive fault signal out) **Y** axis	**15**	---------->	**10**	**sig In COM**	Port CN2	AASD-20 Servo Drive **(Y axis)**
Digital Inputs connector (no's 0-11)	Input **2- (0V DC)**	0V for ALARM (drive fault signal out) **Z** axis	**16**	---------->	**10**	**sig In COM**	Port CN2	AASD-20 Servo Drive **(Z axis)**
Digital Inputs connector (no's 0-11)	Input **3- (0V DC)**		**17**	---------->		**N.C limit switch**	connection COM	Limit Switch X axis LEFT
Digital Inputs connector (no's 0-11)	Input **4- (0V DC)**		**18**	---------->		**N.C limit switch**	connection COM	Limit Switch X axis RIGHT
Digital Inputs connector (no's 0-11)	Input **5- (0V DC)**		**19**	---------->		**N.C HOME switch**	connection COM	HOME Switch X axis
Digital Inputs connector (no's 0-11)	Input **6- (0V DC)**		**20**	---------->		**N.C limit switch**	connection COM	Limit Switch Y axis LEFT
Digital Inputs connector (no's 0-11)	Input **7- (0V DC)**		**21**	---------->		**N.C limit switch**	connection COM	Limit Switch Y axis RIGHT
Digital Inputs connector (no's 0-11)	Input **8- (0V DC)**		**22**	---------->		**N.C HOME switch**	connection COM	HOME Switch Y axis
Digital Inputs connector (no's 0-11)	Input **9- (0V DC)**		**23**	---------->		**N.C limit switch**	connection COM	Limit Switch Z axis UP
Digital Inputs connector (no's 0-11)	Input **10- (0V DC)**		**24**	---------->		**N.C limit switch**	connection COM	Limit Switch Z axis Down
Digital Inputs connector (no's 0-11)	Input **11- (0V DC)**		**25**	---------->		**N.C HOME switch**	connection COM	HOME Switch Z axis

DIGITAL OUTPUTS CONNECTOR (NO'S 0-15)

	Port Pin Lable	Function	Pin No		Pin No	port lable	Port	Device
Digital Outputs connector (no's 0-15)	+24V supply for outputs 0-3		**1**	---------->	**9**	**CN2**	**DC 12~24v**	servo drives
Digital Outputs connector (no's 0-15)	output **0**	**ENABLE** (drives wont function without this on)	**2**	---------->	**6**	**CN2**	SIGin 1	**ALL** SERVO DRIVES (& VFD)
Digital Outputs connector (no's 0-15)	output **2**		**3**	---------->				
Digital Outputs connector (no's 0-15)	+24V supply for outputs 4-7		**4**	---------->	**24v**	**24v OUTPUT** *(control circuit)*		**VFD**
Digital Outputs connector (no's 0-15)	output **4**		**5**	---------->	**X1**	**FWD** *(CW ROTATION)*		**VFD**
Digital Outputs connector (no's 0-15)	output **6**		**6**	---------->				
Digital Outputs connector (no's 0-15)	+24V supply for outputs 8-11		**7**	---------->				
Digital Outputs connector (no's 0-15)	output **8**		**8**	---------->				
Digital Outputs connector (no's 0-15)	output **10**		**9**	---------->				
Digital Outputs connector (no's 0-15)	+24V supply for outputs 12-15		**10**	---------->				
Digital Outputs connector (no's 0-15)	output **12**		**11**	---------->				
Digital Outputs connector (no's 0-15)	output **14**		**12**	---------->				
Digital Outputs connector (no's 0-15)	GND (*not used*)	DO NOT CONNECT	**13**	---------->				
Digital Outputs connector (no's 0-15)	0V GND for outputs 0-3		**14**	---------->				
Digital Outputs connector (no's 0-15)	output **1**	**RST** (alarm reset**)**	**15**	---------->	**7**	CN2	SIGin 2	**ALL** SERVO DRIVES (& VFD)
Digital Outputs connector (no's 0-15)	output **3**		**16**	---------->				
Digital Outputs connector (no's 0-15)	0V GND for outputs 4-7		**17**	---------->	**D. COM**	**Digital COM GND**		**VFD**
Digital Outputs connector (no's 0-15)	output **5**		**18**	---------->	**X2**	**REV** *(CCW ROTATION)*		**VFD**
Digital Outputs connector (no's 0-15)	output **7**		**19**	---------->				
Digital Outputs connector (no's 0-15)	0V GND for outputs 8-11		**20**	---------->				
Digital Outputs connector (no's 0-15)	output **9**		**21**	---------->				
Digital Outputs connector (no's 0-15)	output **11**		**22**	---------->				
Digital Outputs connector (no's 0-15)	0V GND for outputs 12-15		**23**	---------->				
Digital Outputs connector (no's 0-15)	output **13**		**24**	---------->				
Digital Outputs connector (no's 0-15)	output **15**		**25**	---------->				

CS LABS CSMIO IP/A connections

Analog Input / Output connector

	Port Pin Lable	Function	Pin No			Pin No	port lable	Port	Device	Cable Type To Be Used
Analogue I/O Port connector	Analog Output CH0 (+/- 10V)		1	---------->		25	V ref (+)	PORT CN2	AASD-20 Servo Drive (X axis)	TWISTED PAIR CABLE ONLY
Analogue I/O Port connector	Analog Output CH1 (+/- 10V)		2	---------->		25	V ref (+)	PORT CN2	AASD-20 Servo Drive (Y axis)	TWISTED PAIR CABLE ONLY
Analogue I/O Port connector	Analog Output CH2 (+/- 10V)		3	---------->		25	V ref (+)	PORT CN2	AASD-20 Servo Drive (Z axis)	TWISTED PAIR CABLE ONLY
Analogue I/O Port connector	Analog Output CH3 (+/- 10V)		4	---------->		N.C	(not connected)	PORT CN2	Horizontal Rotary 4th AXIS	TWISTED PAIR CABLE ONLY
Analogue I/O Port connector	Analog Output CH4 (+/- 10V)		5	---------->		N.C	(not connected)	PORT CN2		TWISTED PAIR CABLE ONLY
Analogue I/O Port connector	Analog Output CH5 (+/- 10V)		6	---------->		N.C	(not connected)	PORT CN2		TWISTED PAIR CABLE ONLY
Analogue I/O Port connector	Analog Output 0 **(0-10V)**		7	---------->		A11	analog input	+24v terminal	VFD (9100 series)	TWISTED PAIR CABLE ONLY
Analogue I/O Port connector	Analog Output 1 **(0-10V)**		8	---------->						
Analogue I/O Port connector	Analog Input 0		9	---------->				PORT CN2		
Analogue I/O Port connector	Analog Input 1		10	---------->				PORT CN2		
Analogue I/O Port connector	Analog Input 2		11	---------->				PORT CN2		
Analogue I/O Port connector	Analog Input 3		12	---------->				PORT CN2		
Analogue I/O Port connector	10V (MAX 50mA)		13	---------->				PORT CN2		
Analogue I/O Port connector	GND CH0		14	---------->		13	A GND (Vref-)	PORT CN2	AASD-20 Servo Drive (X axis)	TWISTED PAIR CABLE ONLY
Analogue I/O Port connector	GND CH1		15	---------->		13	A GND (Vref-)	PORT CN2	AASD-20 Servo Drive (Y axis)	TWISTED PAIR CABLE ONLY
Analogue I/O Port connector	GND CH2		16	---------->		13	A GND (Vref-)	PORT CN2	AASD-20 Servo Drive (Z axis)	TWISTED PAIR CABLE ONLY
Analogue I/O Port connector	GND CH3		17	---------->		N.C	(not connected)	PORT CN2	Horizontal Rotary 4th Axis	TWISTED PAIR CABLE ONLY
Analogue I/O Port connector	GND CH4		18	---------->		N.C	(not connected)			TWISTED PAIR CABLE ONLY
Analogue I/O Port connector	GND CH5		19	---------->		N.C	(not connected)			TWISTED PAIR CABLE ONLY
Analogue I/O Port connector	GND		20	---------->		A.COM	Analogue Ground		VFD (9100 series)	
Analogue I/O Port connector	GND		21	---------->						
Analogue I/O Port connector	GND		22	---------->						
Analogue I/O Port connector	GND		23	---------->						
Analogue I/O Port connector	GND		24	---------->						
Analogue I/O Port connector	GND		25	---------->						

	SERVO DRIVE X AXIS									
Port Pin Lable	**Function**	Pin No				Pin No	port lable	**Port**	**Device**	**Cable Type To Be Used**
GND	**GND** (Digital GND, FOR ENCODER FEEDBACK OUT)	**1**		---------->		**17?**	**GND**	encoder inputs port 0/1/2	CSMIO IP/A	
PV (open collector pulse)	***NOT USED FOR SPEED / TORQUE CONTROL***	**2**		---------->		***N.C.***	***(not connected)***	***DO NOT CONNECT***		
PP+ (input power +24V)	***NOT USED FOR SPEED / TORQUE CONTROL***	**3**		---------->		***N.C.***	***(not connected)***	***DO NOT CONNECT***		
PD+ (input pulse +5v)	***NOT USED FOR SPEED / TORQUE CONTROL***	**4**		---------->		***N.C.***	***(not connected)***	***DO NOT CONNECT***		
PD-	***NOT USED FOR SPEED / TORQUE CONTROL***	**5**		---------->		***N.C.***	***(not connected)***	***DO NOT CONNECT***		
signal in 1	SRV-ON	**6**		---------->		**2**	**ENABLE** (Digital outputs port)	Digital Outputs connector (no's 0-15)	CSMIO IP/A	
signal in 2	Alarm Reset	**7**		---------->		**15**	**RST** (Digital outputs port)	Digital Outputs connector (no's 0-15)	CSMIO IP/A	
signal in 4	ZERO SPD	**8**		---------->						
DC 12~24v	+12 ~+ 24v POWER	**9**		---------->		**1**	**+24V supply for outputs 0-3**	Digital Outputs connector (no's 0-15)	CSMIO IP/A	
COM	signal I/O COMMON PORT	**10**		---->		**14**	Input **0- (0V DC)**	Digital Inputs connector (no's 0-11)	CSMIO IP/A	
						14	0V GND for outputs 0-3	Digital Outputs connector (no's 0-15)	CSMIO IP/A	
Signal Out 1	SERVO READY	**11**		---------->						
Signal Out 3	POSITION COMPLETED	**12**		---------->						
A GND	Analog GND (for -10 +10V)	**13**		---------->		**14**	**GND CH0**	Anolog I/O port	CSMIO IP/A	
PP- (input pulse +5V) ?	***NOT USED FOR SPEED / TORQUE CONTROL***	**14**		---------->		***N.C.***	***(not connected)***	***DO NOT CONNECT***		
PZ+	Z+ PHASE PULSE OUTPUT	**15**		---------->		**3**	**Enc Ch0 C+**	encoder inputs port 0/1/2	CSMIO IP/A	Twisted Pair (Sheilded)
PZ-	Z- PHASE PULSE OUTPUT	**16**		---------->		**16**	**Enc Ch0 C-**	encoder inputs port 0/1/2	CSMIO IP/A	Twisted Pair (Sheilded)
PB-	B- PHASE PULSE OUTPUT	**17**		---------->		**15**	**Enc Ch0 A-**	encoder inputs port 0/1/2	CSMIO IP/A	Twisted Pair (Sheilded)
PB+	B+ PHASE PULSE OUTPUT	**18**		---------->		**2**	**Enc Ch0 B+**	encoder inputs port 0/1/2	CSMIO IP/A	Twisted Pair (Sheilded)
PA-	A- PHASE PULSE OUTPUT	**19**		---------->		**14**	**Enc Ch0 A-**	encoder inputs port 0/1/2	CSMIO IP/A	Twisted Pair (Sheilded)
PA+	A+ PHASE PULSE OUTPUT	**20**		---------->		**1**	**Enc Ch0 A+**	encoder inputs port 0/1/2	CSMIO IP/A	Twisted Pair (Sheilded)
signal in 3	Position Deviation	**21**		---------->						
OZ	Z open collector output	**22**		---------->						
Signal Out 2	ALARM DETECTION	**23**		---------->		**1**	**ALARM (out)**	Digital Inputs connector (no's 0-11)	CSMIO IP/A	
Signal Out 4	ZERO SPEED	**24**		---------->						
V ref	-10 +10v SIGNAL	**25**		---------->		**1**	**IP/A** (ANALOG I/O PORT)	Anolog I/O port	CSMIO IP/A	