



SZGH CNC Controller 880T/1080T Operation Manual V2.0

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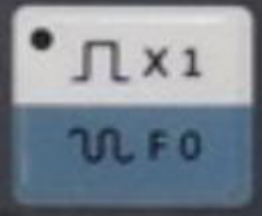
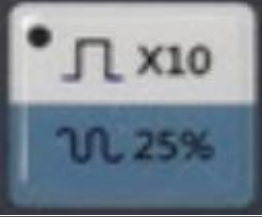
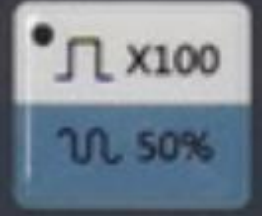
Part 1: Button Description



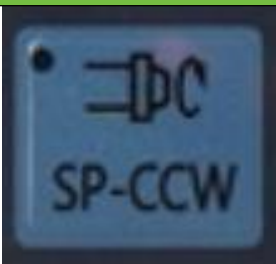
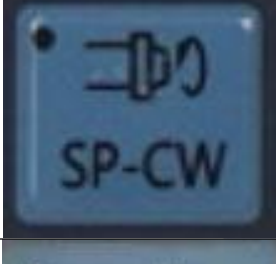
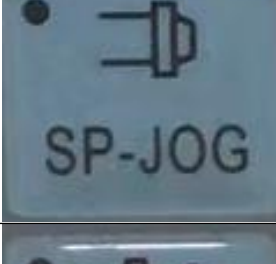
	Axis zero return indicator
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Button	Name	Function Description	Valid mode
	Edit mode	Enter the edit mode to modify the processing program	
	Auto mode	Enter the automatic mode to run the processing program automatically	
	MDI mode	Enter the MDI Mode to run a program you manually input via the operation panel	
	Manual mode	Enter the manual operation mode	
	Hand-wheel mode	Enter the MPG mode	
	Return mode	Enter the return mode, then press the key of axis movement to execute the machine zero return operation	

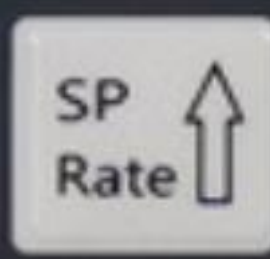
	Step mode	Enter the step mode, then press the axis movement key to move the axis by a single step	
	Single mode	The program single-segment operation/continuous operation status switch	Auto, MDI
	Skip mode	Key to switch whether to skip the program segment marked with "/" at the beginning of the program segment	Auto, MDI
	Machine lock	Feed axis control signal output disabled.	
	Auxiliary function lock	M, S, T Function output invalid	
	Choose Stop	When it is valid, Execute M01 pause	
	Simulate	Enter the dry run mode	Auto, MDI

	LED	Output signal LAMP control button, working light	
	Hand-wheel/Step increment selection	Hand-wheel moves per grid $1/10/100 * \text{minimum equivalent}$ Single step moves per step $1/10/100 * \text{minimum equivalent}$	Handwheel, Step
			
			

Button	Name	Function Description
	Axis movement key	Manual mode movement buttons for each axis, plus fast mode switching buttons

Button	Name	Function Description	Valid mode
	Spindle control	Spindle CW/Spindle stop/Spindle CCW	
			
			
	Spindle-Jog	Spindle jog mode on/off	
	Spindle S/P	Spindle speed/position mode switching	Manual, Handwheel, Return, Step
	Coolant	Coolant On/Off	

	Lubricate	Machine tool lubrication on/off	
	Chuck	Chuck clamp/unclamp	
	Tailstock	Tailstock in/out	
	Manual tool change key	Manual tool change	

	Spindle Rate Key	Spindle speed adjustment(The middle indicator light is on, and the rate is 100%)	
			
			

	Feed Rate Key	Feed speed adjustment(The middle indicator light is on, and the rate is 100%)	
			
			
	G00 Rate Key	Rapid movement speed adjustment(The middle indicator light is on, and the rate is 100%)	
			
			
	Feed hold Key	Program and MDI code execution are suspended	Auto, MDI

	Cycle start button	Program, MDI code running start	Auto, MDI
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Button	Name	Function Description
	Reset	CNC Reset feed output stop
		Enter the parameter interface, you can set common parameters, system parameters and pitch compensation, P1~P8 keys can quickly locate related parameters
		Enter the program interface, you can view the current program, switch to Edit mode to modify it. You can view the program files in the local directory and the USB disk directory, and you can perform program verification and modification.
		Enter the position interface, you can use the F1~F4 keys to switch between absolute, relative, comprehensive and graphic displays. This is the default interface displayed when the computer is turned on. You can return to the position display interface from any interface.
		Enter the tool compensation interface to set tool offset, wear and life, view coordinate values in all coordinate systems, and view the values of all macro variables in the controller.

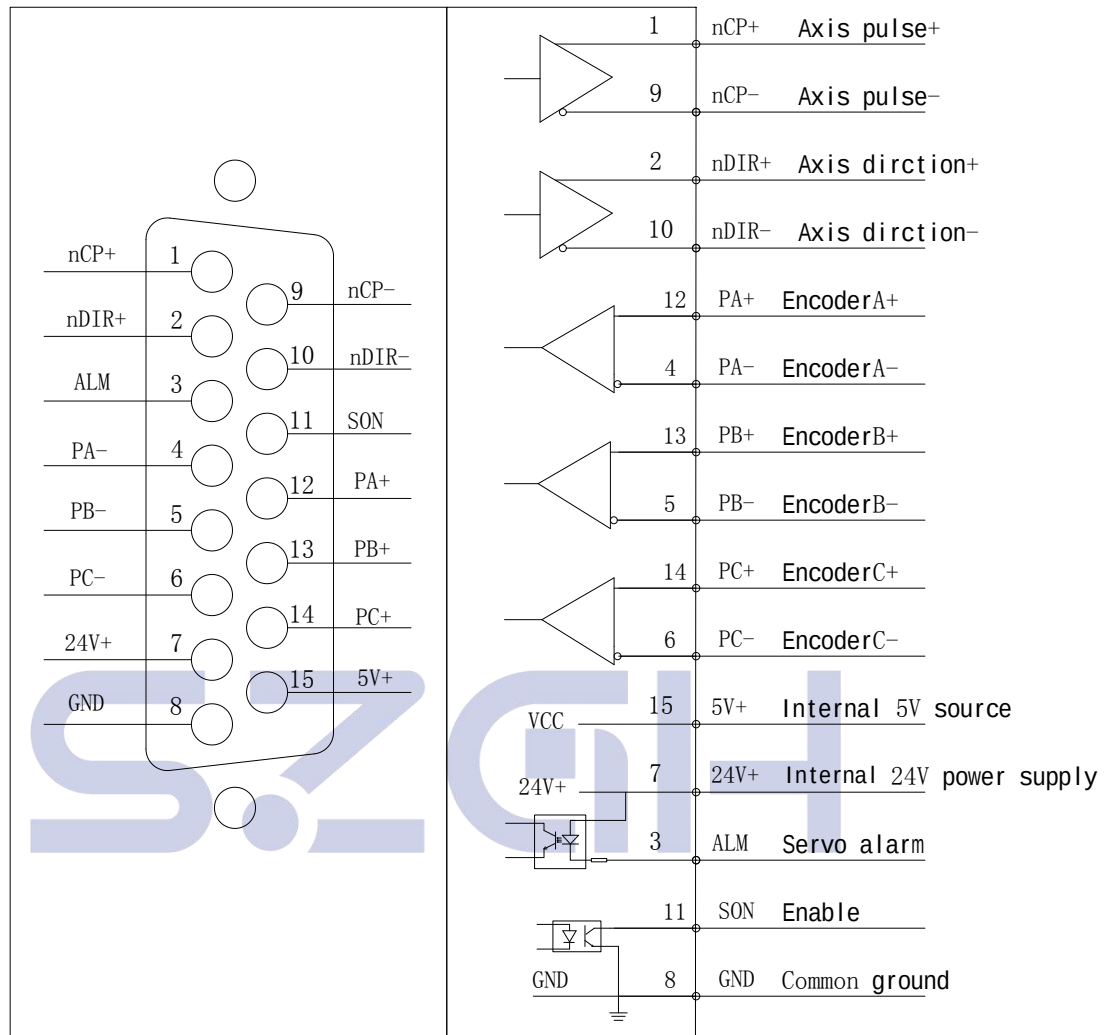
 A blue square button with the word "Diagnosis" in white text.	Enter the diagnostic interface to view the status of the controller input and output signals, customize their functions, diagnose whether the buttons are effective, view the alarm content, and switch to the PLC interface.
 A blue square button with the word "SET" in white text.	Enter the system settings interface, enter the permission password, view and change the time, back up the controller parameters, tool compensation, ladder diagram, port definition and other files, and view the system version

SZGH

Part2: Interface Definition

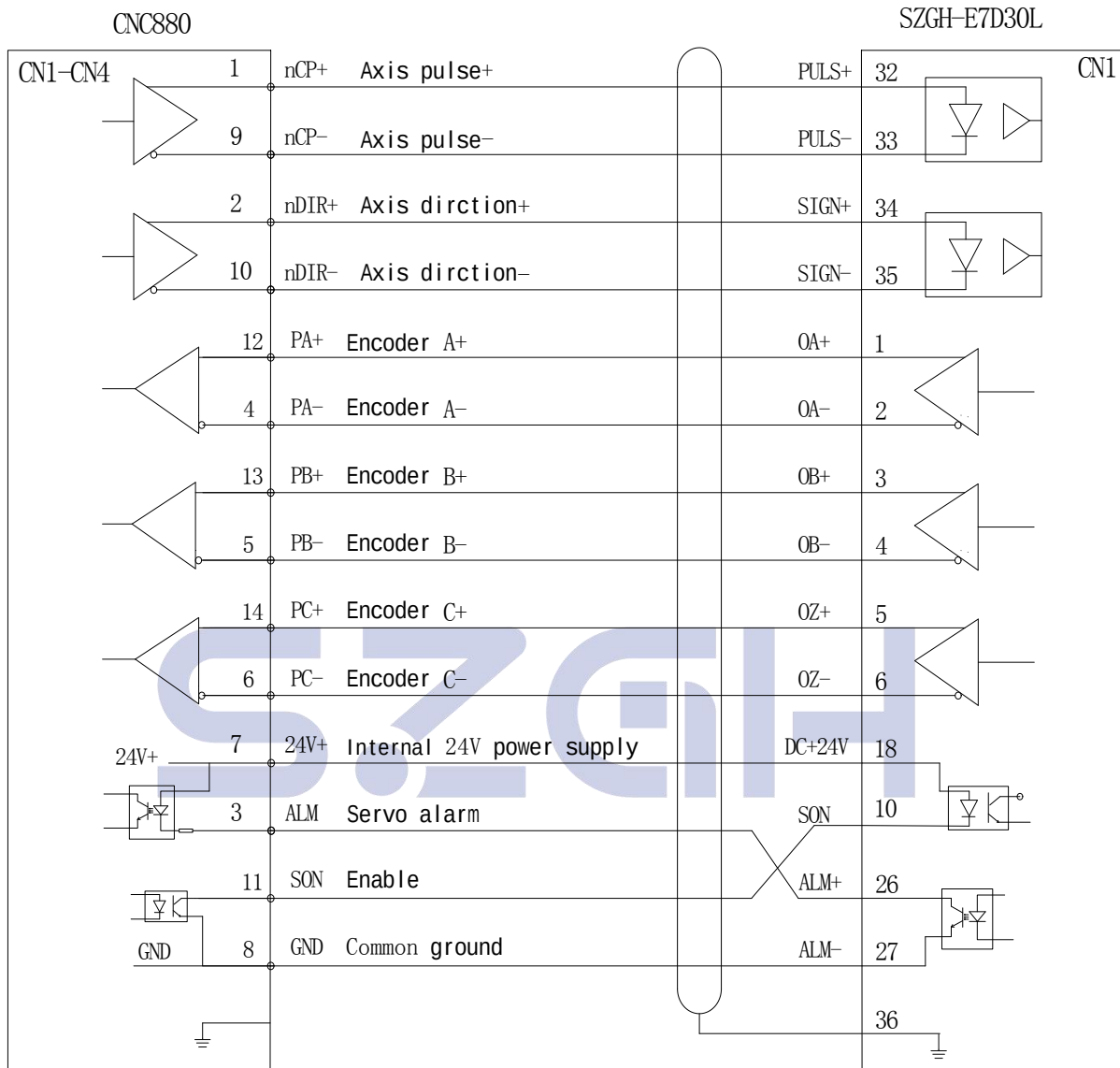


Feed axis CN1-CN4 port definition (DB15 socket)

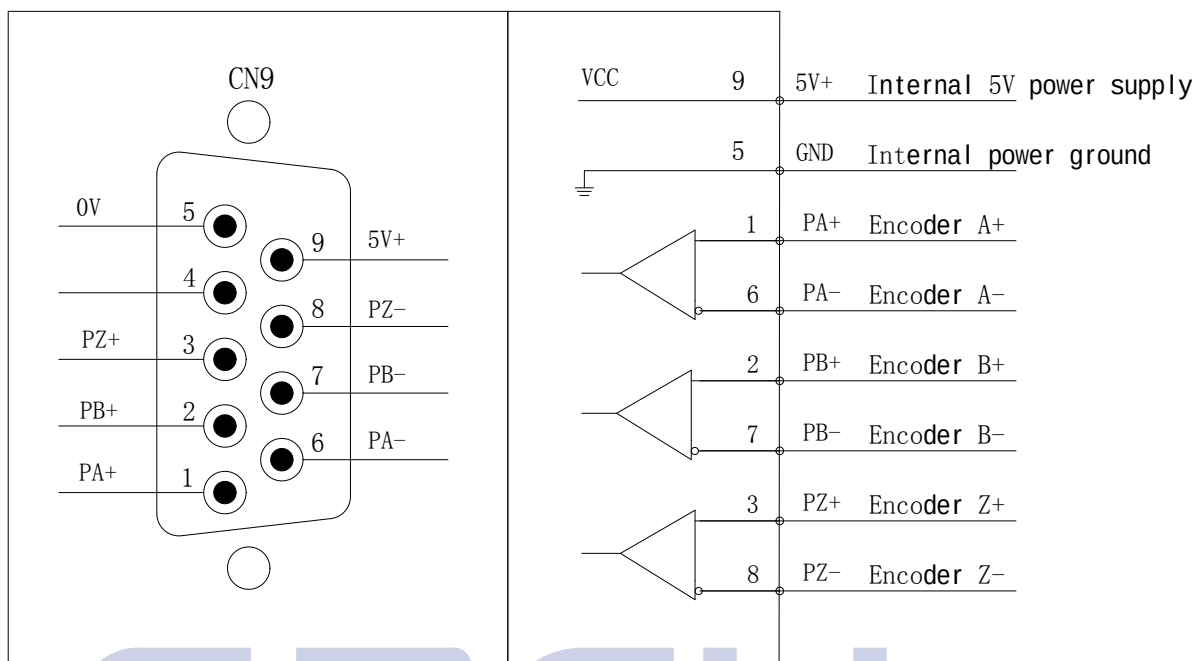


Pin	Signal	Signal description	Pin	Signal	Signal description
1	nCP+	Axis pulse+	9	nCP-	Axis pulse-
2	nDIR+	Axis direction+	10	nDIR-	Axis direction-
3	ALM	Servo alarm	11	SON	Enable
4	PA-	Encoder A-	12	PA+	Encoder A+
5	PB-	Encoder B-	13	PB+	Encoder B+
6	PC-	Encoder C-	14	PC+	Encoder C+
7	24V+	Internal 24V power supply	15	5V+	Internal 5V power supply
8	GND	Common ground			

The port and SZGH-E7D30L connection diagram

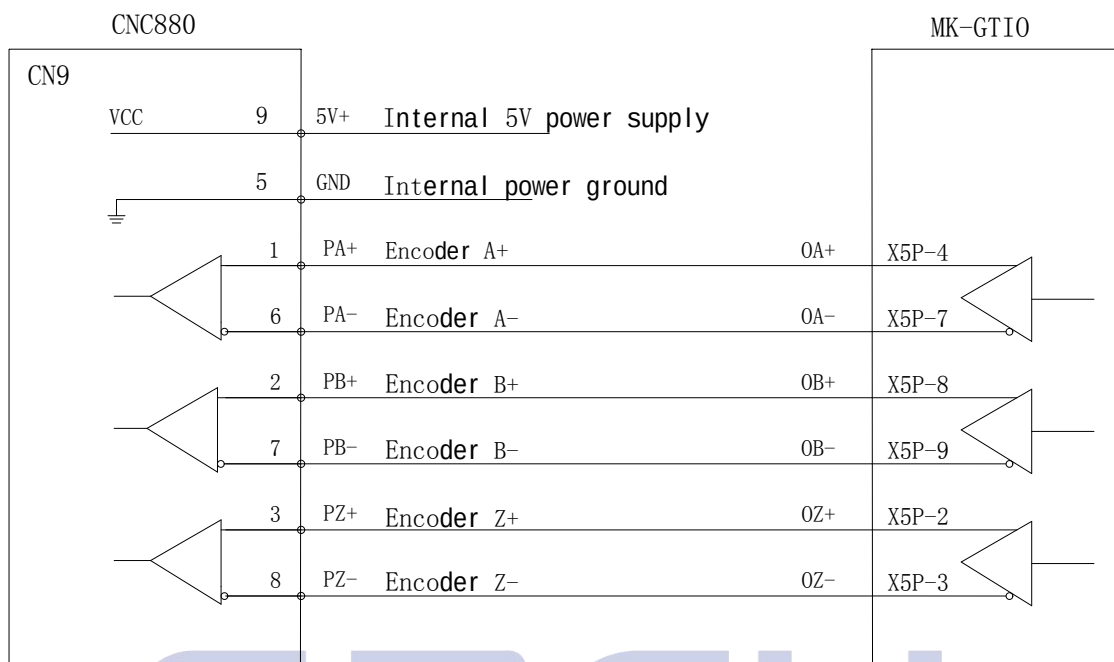


Spindle encoder CN9 port definition(DB9 header)

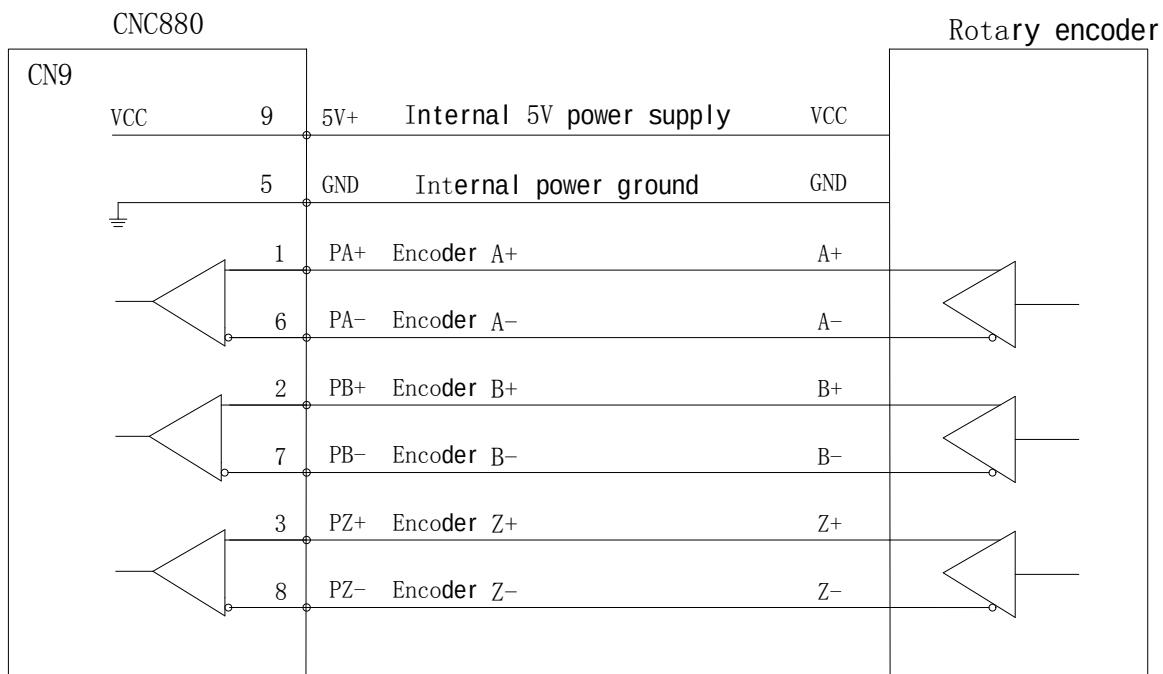


Pin	Signal	Signal description	Pin	Signal	Signal description
1	PA+	Encoder A+	6	PA-	Encoder A-
2	PB+	Encoder B+	7	PB-	Encoder B-
3	PZ+	Encoder Z+	8	PZ-	Encoder Z-
4			9	5V+	Internal 5V power supply
5	GND	Internal power ground			

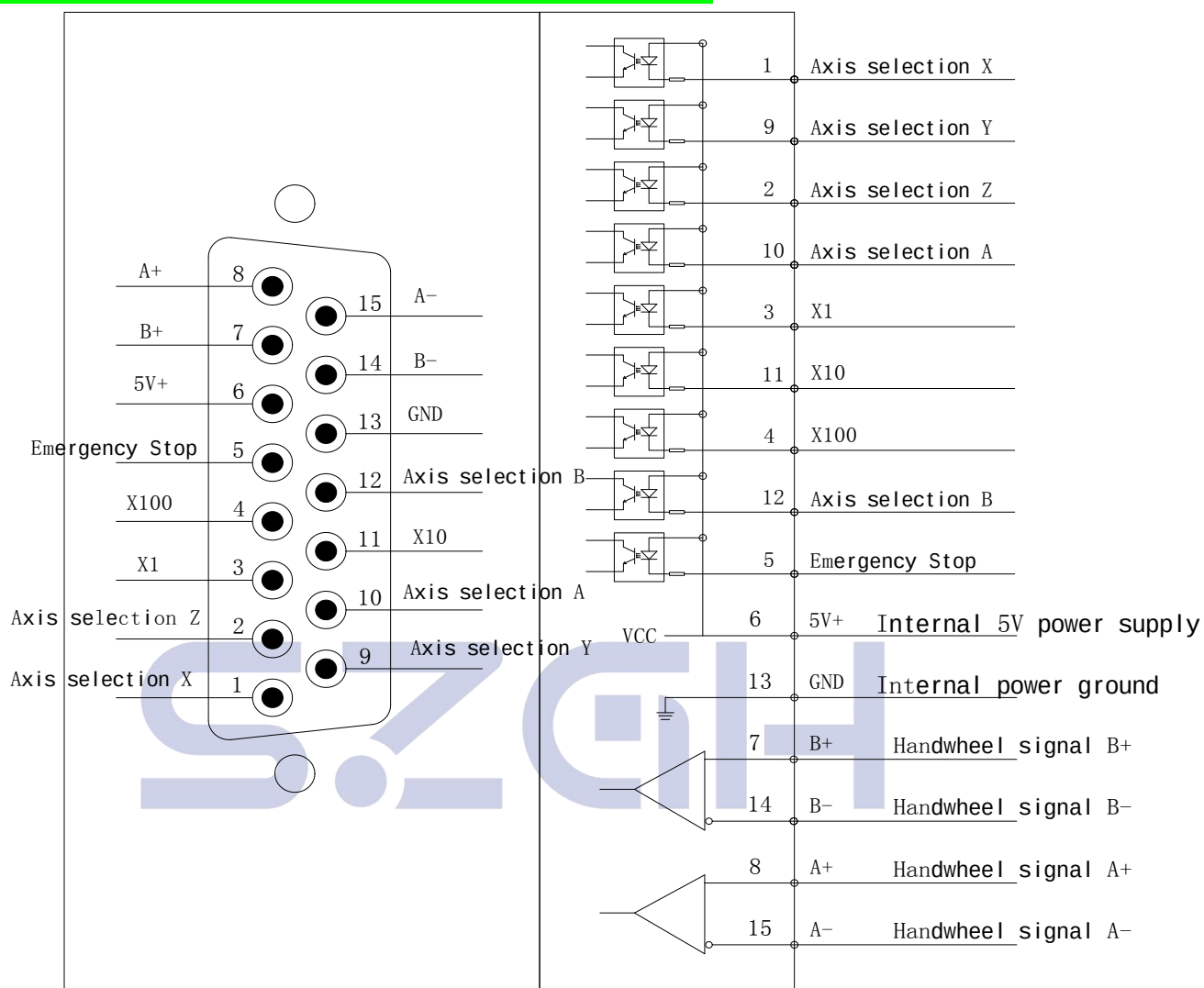
The port and MK servo spindle drive connection diagram



The port and external incremental rotary encoder connection diagram

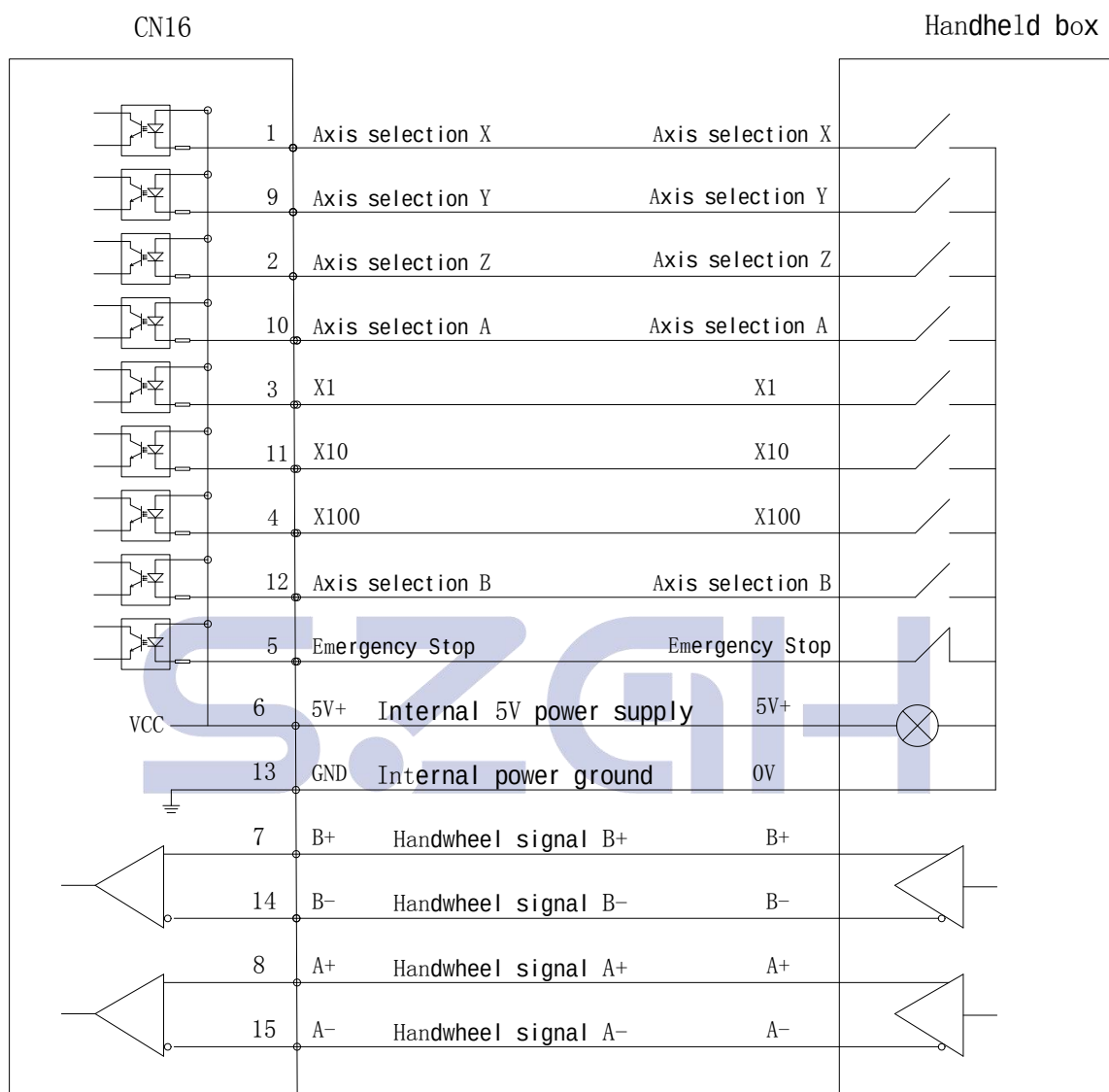


Handheld CN16 port definition(DB15 header)

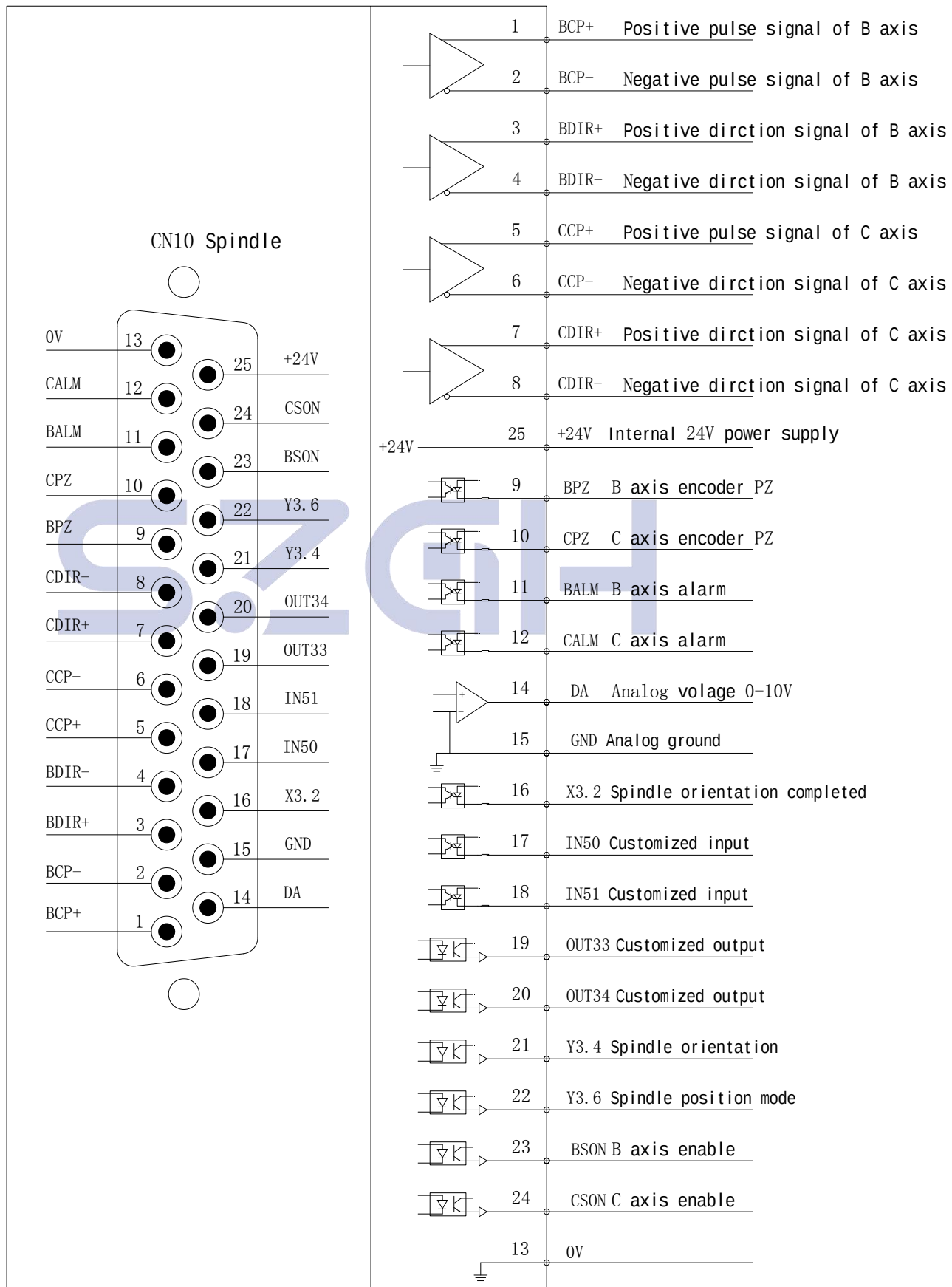


Pin	Signal	Signal description	Pin	Signal	Signal description
1	S_X	Axis selection X	9	S_Y	Axis selection Y
2	S_Z	Axis selection Z	10	S_A	Axis selection A
3	X1	Gear 1	11	X10	Gear 10
4	X100	Gear 100	12	S_B	Axis selection B
5	E-Stop	Emergency Stop	13	GND	Internal power ground
6	5V+	Internal 5V power supply	14	B-	Handwheel signal B-
7	B+	Handwheel signal B+	15	A-	Handwheel signal A-
8	A+	Handwheel signal A+			

The port and MPG connection diagram

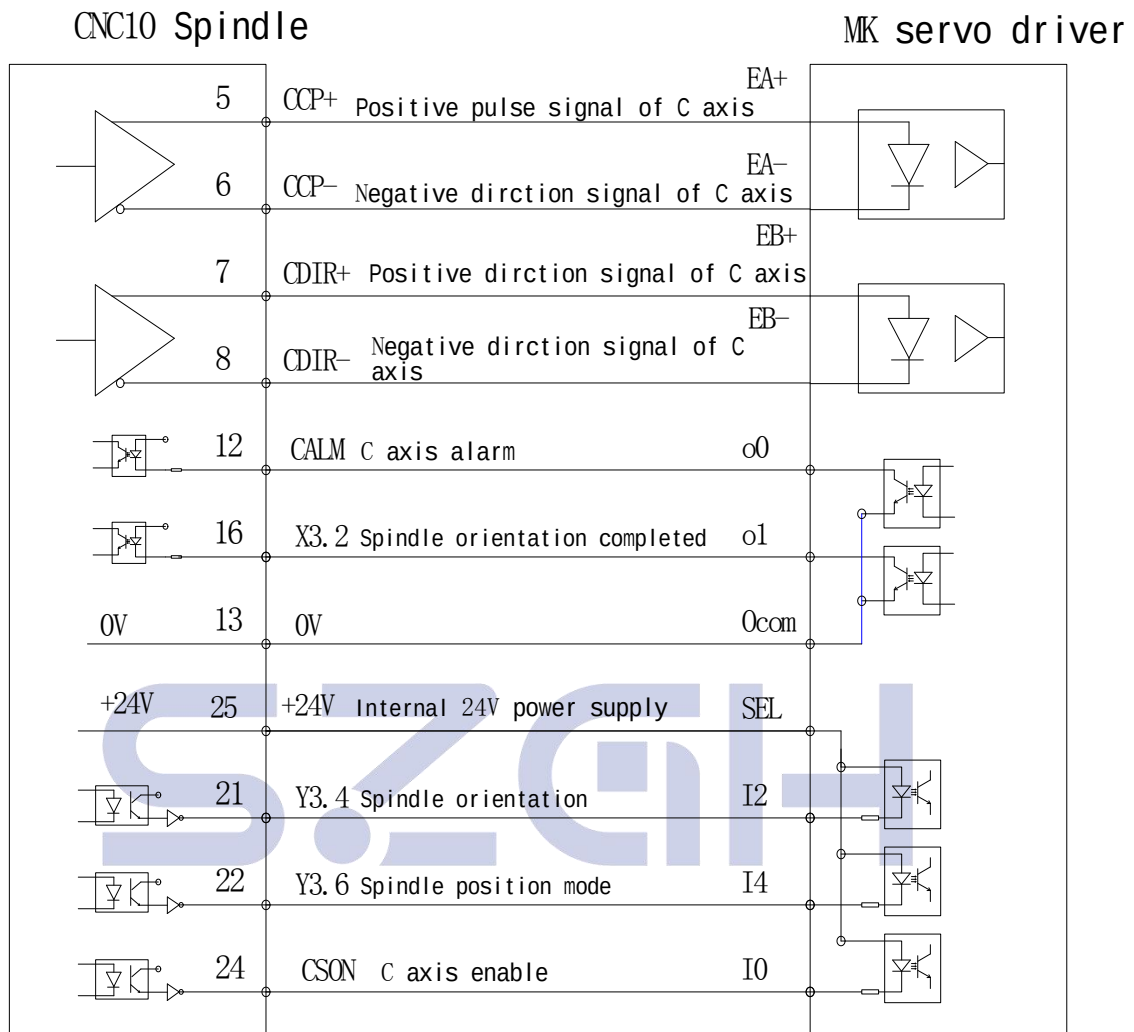


Spindle CN10 port definition (DB25 header)

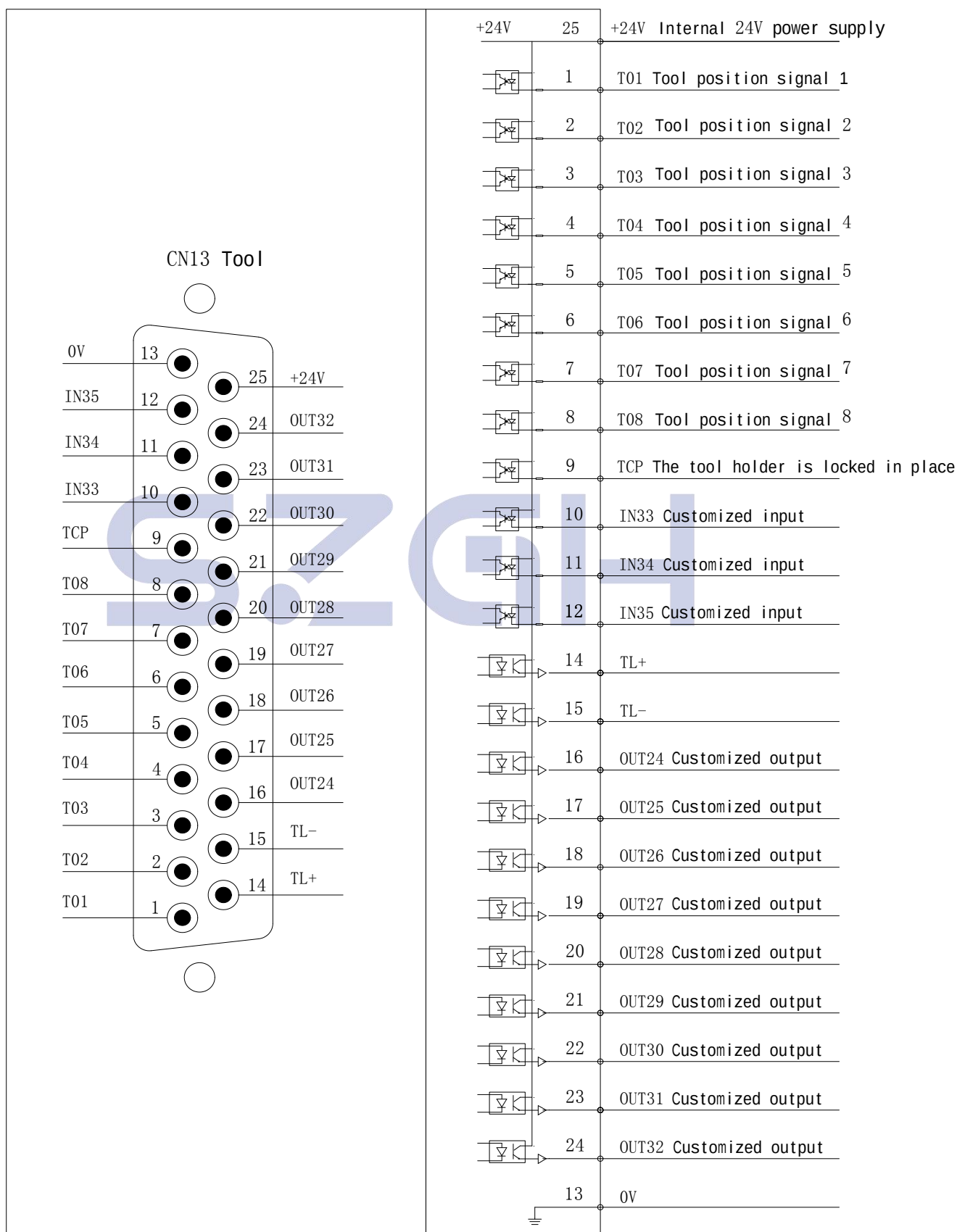


Pin	Signal	Signal description	Pin	Signal	Signal description
1	BCP+	Positive pulse signal of B axis	14	DA	Analog volage 0~10V
2	BCP-	Negative pulse signal of B axis	15	GND	Analog ground
3	BDIR+	Positive direction signal of B axis	16	X3.2	Spindle orientation completed
4	BDIR-	Negative direction signal of B axis	17	IN50	Customized input
5	CCP+	Positive pulse signal of C axis	18	IN51	Customized input
6	CCP-	Negative pulse signal of C axis	19	OUT33	Customized output
7	CDIR+	Positive direction signal of C axis	20	OUT34	Customized output
8	CDIR-	Negative direction signal of C axis	21	Y3.4	Spindle orientation
9	BPZ	B axis encoder PZ	22	Y3.6	Spindle position mode
10	CPZ	C axis encoder PZ	23	BSON	B axis enable
11	BALM	B axis alarm	24	CSON	C axis enable
12	CALM	C axis alarm	25	+24V	Internal 24V power supply
13	0V	Ground			

The port and MK spindle servo drive connection diagram

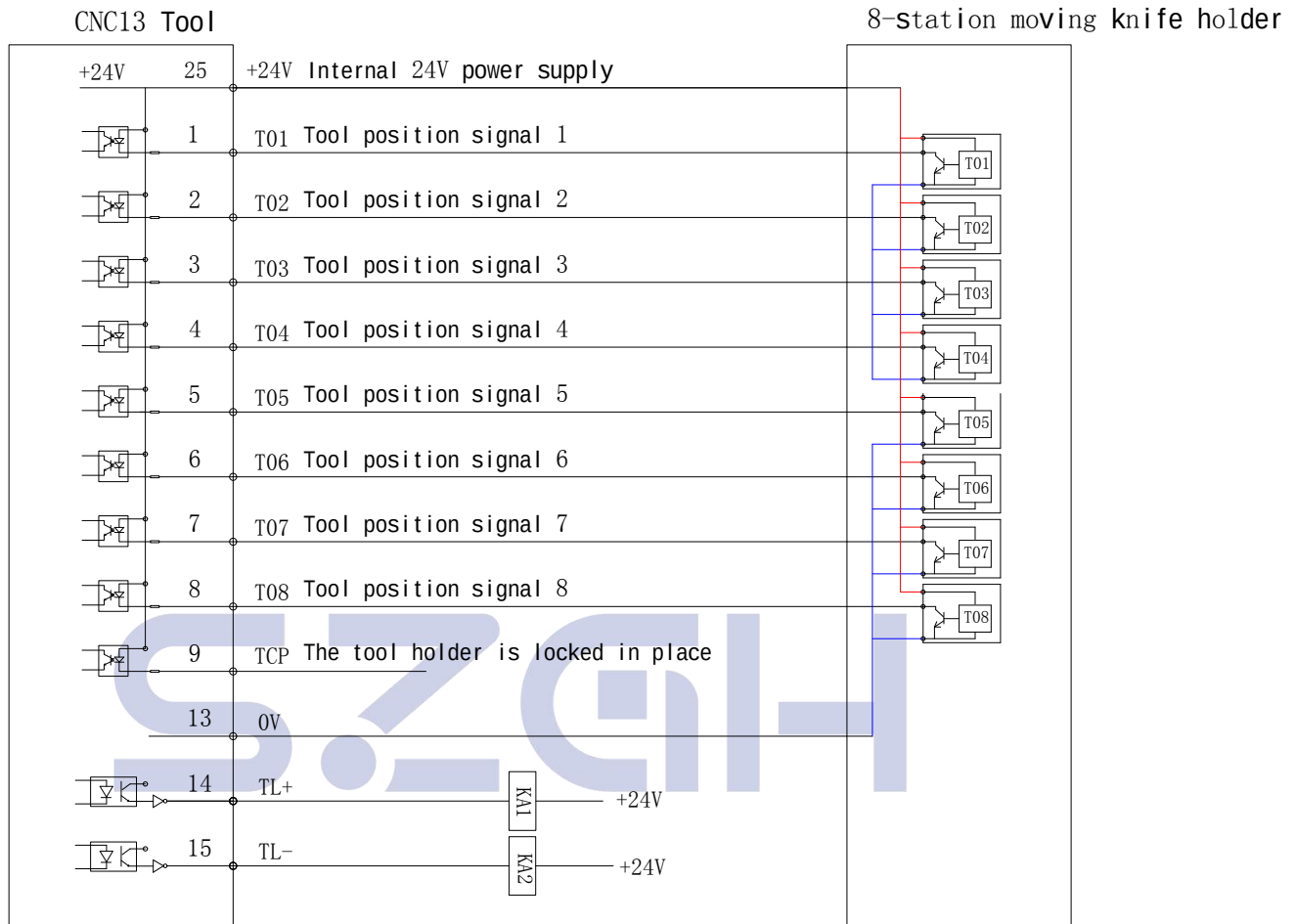


Tool holder CN13 port definition (DB25 header)

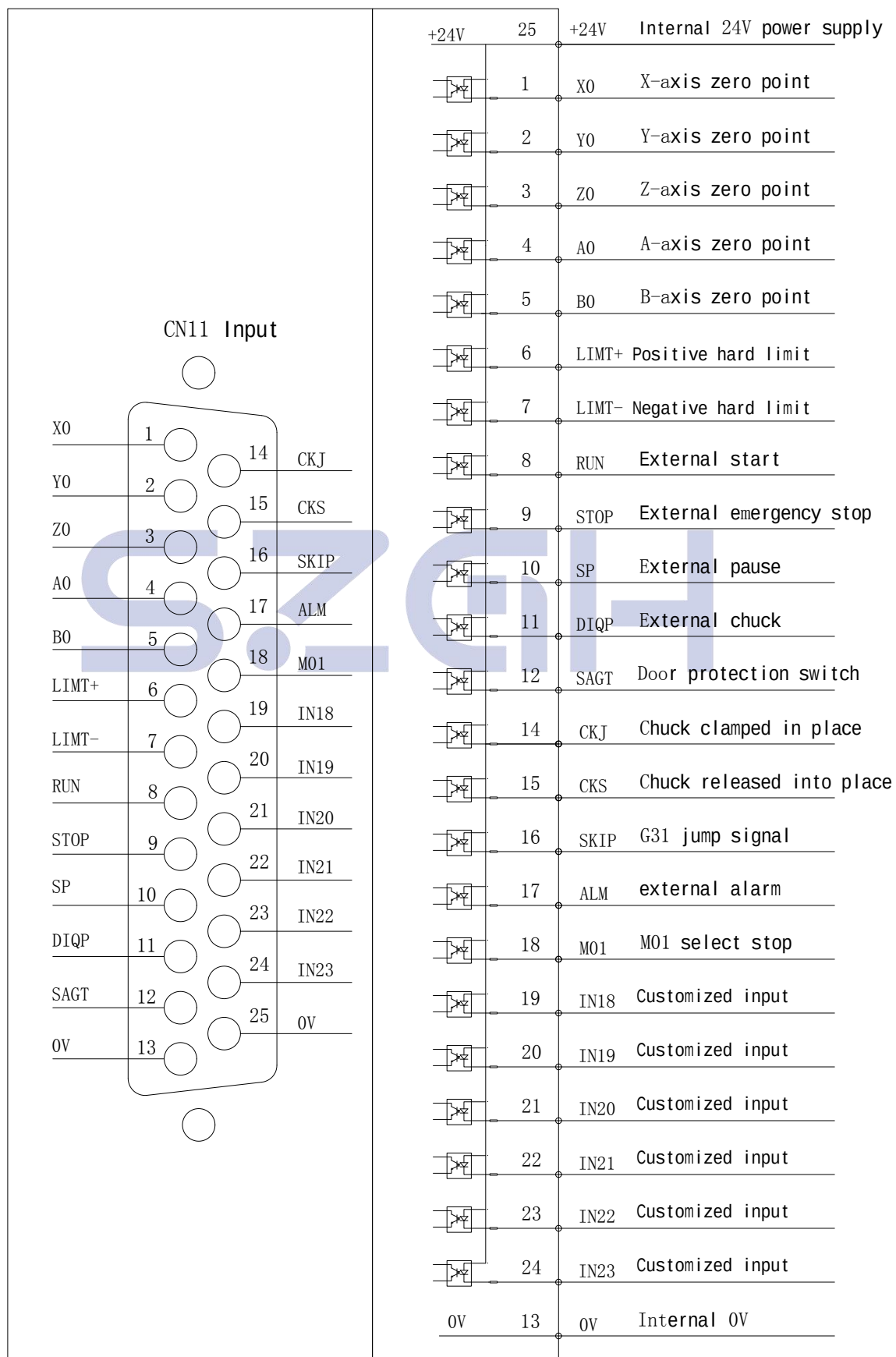


Pin	Signal	Signal description	Pin	Signal	Signal description
1	T01	Tool position signal 1	14	TL+	Tool holder forward rotation
2	T02	Tool position signal 2	15	TL-	Tool holder backward rotation
3	T03	Tool position signal 3	16	OUT24	Customized output
4	T04	Tool position signal 4	17	OUT25	Customized output
5	T05	Tool position signal 5	18	OUT26	Customized output
6	T06	Tool position signal 6	19	OUT27	Customized output
7	T07	Tool position signal 7	20	OUT28	Customized output
8	T08	Tool position signal 8	21	OUT29	Customized output
9	TCP	The tool holder is locked in place	22	OUT30	Customized output
10	IN33	Customized input	23	OUT31	Customized output
11	IN34	Customized input	24	OUT32	Customized output
12	IN35	Customized input	25	24V	Internal power supply
13	0V				

Connection between CNC system and 8-station electric tool holder

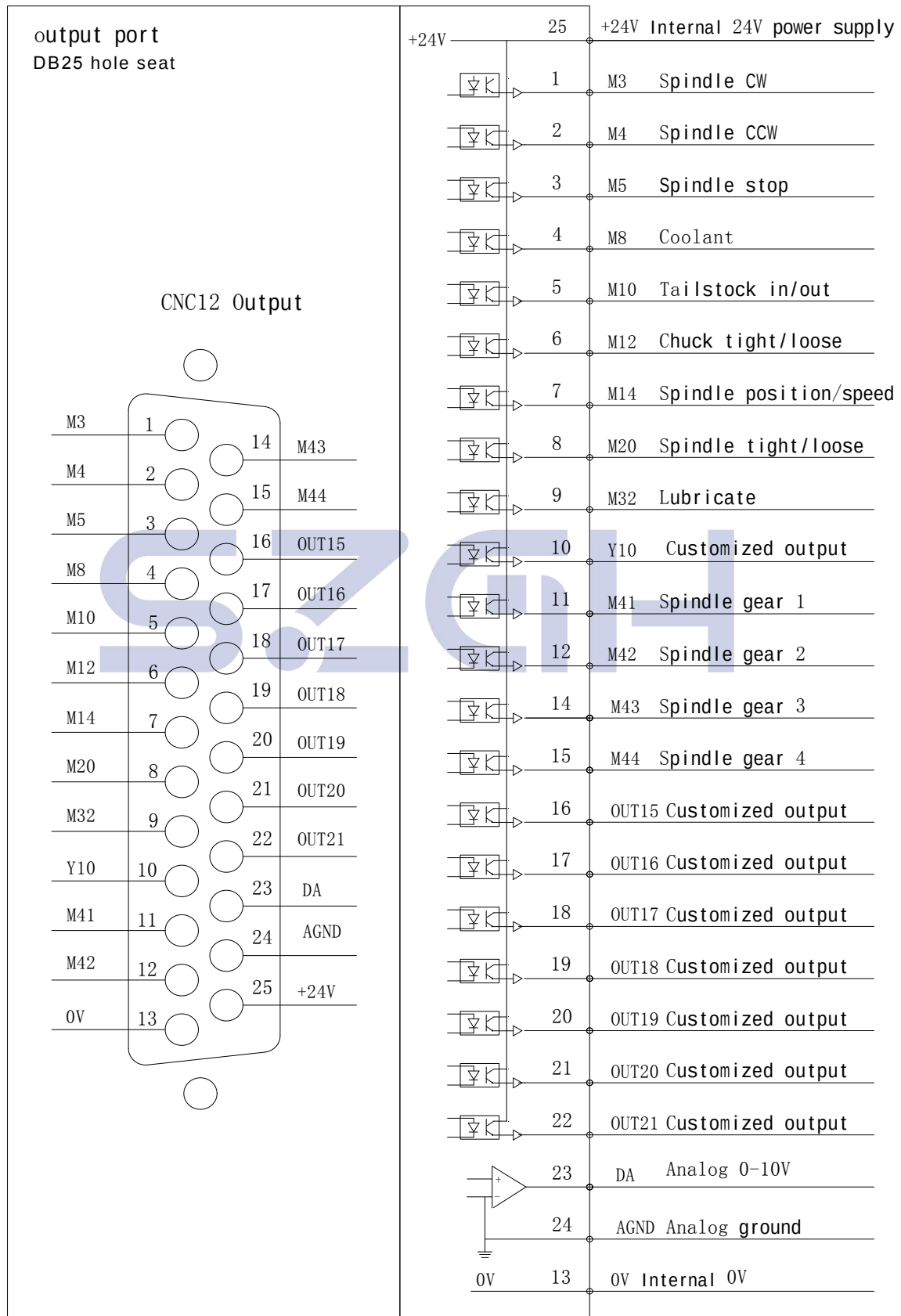


Input CN11 port definition (DB25 socket)



Pin	Signal	Signal description	Pin	Signal	Signal description
1	X0	X-axis zero point	14	CKJ	Chuck clamped in place
2	Y0	Y-axis zero point	15	CKS	Chuck released into place
3	Z0	Z-axis zero point	16	SKIP	G31 jump signal
4	A0	A-axis zero point	17	ALM	External alarm
5	B0	B-axis zero point	18	M01	M01 Select Stop
6	LIMIT+	Positive hard limit	19	IN18	Customized input
7	LIMIT-	Negative hard limit	20	IN19	Customized input
8	RUN	External start	21	IN20	Customized input
9	STOP	External emergency stop	22	IN21	Customized input
10	SP	External pause	23	IN22	Customized input
11	DIQP	External chuck	24	IN23	Customized input
12	SAGT	Door protection switch	25	24V	Internal 24V power supply
13	0V	Internal 0V			

Output CN12 port definition (DB25 socket)



Pin	Signal	Signal description	Pin	Signal	Signal description
1	M3	Spindle CW	14	M43	Spindle gear 3
2	M4	Spindle CCW	15	M44	Spindle gear 4
3	M5	Spindle stop	16	OUT15	Customized output
4	M8	Coolant	17	OUT16	Customized output
5	M10	Tailstock in/out	18	OUT17	Customized output
6	M12	Chuck tight/loose	19	OUT18	Customized output
7	M14	Spindle position/speed	20	OUT19	Customized output
8	M20	Spindle tight/loose	21	OUT20	Customized output
9	M32	Lubricate	22	OUT21	Customized output
10	OUT10	Customized output	23	DA	Analog 0~10V
11	M41	Spindle gear 1	24	AGND	Analog ground
12	M42	Spindle gear 2	25	24V	Internal 24V power supply
13	0V	Internal 0V			

Part 3: Common Parameters



Common parameters

G00 speed parameters

P	Parameter	Ex-Value
0013	Maximum control speed (m/min)	30000
0021	X-axis G00 maximum speed	8000
	Y-axis G00 maximum speed	8000
	Z-axis G00 maximum speed	8000
	A-axis G00 maximum speed	8000
	B-axis G00 maximum speed	8000
0019	X-axis acceleration and deceleration time before G00(ms)	100
	Y-axis acceleration and deceleration time before G00(ms)	100
	Z-axis acceleration and deceleration time before G00(ms)	100
	A-axis acceleration and deceleration time before G00(ms)	100
	B-axis acceleration and deceleration time before G00(ms)	100
0016	G00 interpolation trajectory is (0: Non-linear, 1: Linear)	0
0023	Rapid movement speed when the rapid override is F0 (mm/min)	50.000

Cutting speed parameters

P	Parameter	Ex-Value
0024	Cutting feed acceleration and deceleration type 1 (0: front acceleration and deceleration, 1: rear acceleration and deceleration)	0

0025	Cutting feed acceleration and deceleration type 2 (0: linear type 1: front acceleration and deceleration S type/rear acceleration and deceleration E type)	0
0028	Acceleration and deceleration time before cutting feed (ms)	100
0033	Automatic corner deceleration function (0: angle control, 1: speed difference control)	0
0034	Minimum feed speed of automatic corner deceleration (mm/min)	200
0035	Critical angle between two program segments for automatic corner deceleration (degrees)	5.000
0036	Allowable deviation of each axis of speed difference mode deceleration function	80.00

Axis direction parameters

P	Parameter	Ex-Value
0178	Whether the X-axis movement key is inverted (0: yes 1: no), corresponding to the interface coordinate change	0
	Whether the Y-axis movement key is inverted (0: yes 1: no), corresponding to the interface coordinate change	0
	Whether the Z-axis movement key is inverted (0: yes 1: no), corresponding to the interface coordinate change	0
	Whether the A-axis movement key is inverted (0: yes 1: no), corresponding to the interface coordinate change	0
	Whether the B-axis movement key is inverted (0: yes 1: no), corresponding to the interface coordinate change	0
0177	Is the X-axis movement direction reversed (0: No 1: Yes)	0
	Is the Y-axis movement direction reversed (0: No 1: Yes)	0
	Is the Z-axis movement direction reversed (0: No 1: Yes)	0
	Is the A-axis movement direction reversed (0: No 1: Yes)	0
	Is the B-axis movement direction reversed (0: No 1: Yes)	0
0218	Lathe type (0: horizontal 1: vertical)	0

Manual parameters

P	Parameter	Ex-Value
0051	Manual speed (mm/min)	500
0050	Acceleration and deceleration time of manual feed (ms)	100
0311	The spindle can cut by reaching the percentage of the command speed	100
0049	Manual operation acceleration and deceleration type (0: linear 1: exponential)	0
0048	Manual rapid movement after power on and before returning to mechanical zero (0: invalid 1: valid)	1

Limit parameters

P	Parameter	Ex-Value
0097	Whether to check the stroke before moving (0: No 1: Yes)	1
0098	When an overtravel command is issued, an alarm will be issued during the overtravel (0: before 1: after)	1
0099	Whether the software limit is valid before returning to the mechanical zero point (0: invalid 1: valid)	1
0101	X-axis maximum forward travel (first travel limit mm)	9999.999
	Y-axis maximum forward travel (first travel limit mm)	9999.999
	Z-axis maximum forward stroke (first stroke limit mm)	9999.999
	A-axis maximum forward stroke (first stroke limit mm)	9999.999
	B-axis maximum forward stroke (first stroke limit mm)	9999.999
0102	X-axis maximum travel in negative direction (first travel limit mm)	-9999.999
	Y-axis maximum travel in negative direction (first travel limit mm)	-9999.999

	Z-axis maximum travel in negative direction (first travel limit mm)	-9999.999
	A-axis maximum travel in negative direction (first travel limit mm)	-9999.999
	B-axis maximum travel in negative direction (first travel limit mm)	-9999.999

Electronic gear ratio parameters

P	Parameter	Ex-Value
0007	X-axis electronic gear ratio numerator	1
	Y-axis electronic gear ratio numerator	1
	Z-axis electronic gear ratio numerator	1
	A-axis electronic gear ratio numerator	1
	B-axis electronic gear ratio numerator	1
0008	X-axis electronic gear ratio denominator	1
	Y-axis electronic gear ratio denominator	1
	Z-axis electronic gear ratio denominator	1
	A-axis electronic gear ratio denominator	1
	B-axis electronic gear ratio denominator	1

Alarm parameters

P	Parameter	Ex-Value
0176	X-axis driver alarm level (0. low 1. high)	0
	Y-axis driver alarm level (0. low 1. high)	0

	Z-axis driver alarm level (0. low 1. high)	0
	A-axis driver alarm level (0. low 1. high)	0
	B-axis driver alarm level (0. low 1. high)	0
K0.3	Inverter alarm switch type (0: Normally open 1: Normally closed)	0
K0.4	Lubrication alarm switch type (0: Normally open 1: Normally closed)	0

Turret parameters

P	Parameter	Ex-Value
0126	Total tool position selection (tool row is set to 1)	8
0253	Number of rows of knives	8
K11.0	Tool holder release signal (0: no detection 1: detection) (hydraulic)	0
K11.1	Switch tool holder forward and reverse output (0: No 1: Yes)	0
K11.2	Tool position signal switch type (0: Normally open 1: Normally closed)	0
K11.3	Tool holder locking signal (0: Not detected 1: Detected)	0
K11.4	Tool holder locking signal switch type (0: Normally open 1: Normally closed)	0
K11.5	Tool position signal at the end of tool change (0: Do not check 1: Check)	0
K11.7	Real-time detection of tool position signal (0: No 1: Yes)	0
T007	Delay from tool holder forward rotation to reverse rotation locking (mode B), unit: milliseconds	0
T009	Tool holder reversal locking time, unit: milliseconds	1000
T008	Maximum time for receiving tool post locking signal, unit: milliseconds	1000

T004	Tool change timeout time, unit: milliseconds	15000
D127	Tool holder selection (0: Standard 1: Hydraulic 2: Yantai 3: Wenchang 4: Liuxin 5: Xuyang)	4
K11.6	Wenchang knife tower (0: no 1: yes) absolute value type	0
K30.0	Tool changing direction (0: forward 1: nearest), hydraulic turret	0
K30.3	reversely rotates after reaching T tool number (0: off 1: on)	0
T028	Release output delay (hydraulic pressure), unit: milliseconds	0
T029	Locking output delay (hydraulic), unit: milliseconds	0
T032	Reaching tool number T, delay (hydraulic pressure), unit: milliseconds	0
T036	Delay after rotation stops, unit: milliseconds	0
K30.2	Tool holder overheating (0: no detection 1: detection), Yantai AK31	0
T039	Delay after reaching T knife number (Xu Yang), unit: milliseconds	0
T037	Delay after locking (Xu Yang), unit: milliseconds	0

Chuck parameters

P	Parameter	Ex-Value
K12.0	Chuck control (0: invalid 1: valid)	1
K12.1	The chuck is clamped before the spindle starts (0: Check 1: Do not check)	0
K12.2	Chuck control mode (0: internal card 1: external card)	0
K12.3	Chuck in place signal (0: Do not check 1: Check)	0
K12.4	Chuck clamping completed (0: No 1: Yes) disconnect output	0

K12.5	Chuck release completed (0: No 1: Yes) disconnect output	0
K12.6	Foot switch type (0: Normally open 1: Normally closed)	0
K12.7	Running (0: not allowed 1: allowed) manual control of the chuck	0
T024	Chuck clamping output time, unit: milliseconds	0
T025	Chuck release output time, unit: milliseconds	0
T018	Maximum chuck output time, when the time is up, stop output. 0 is ignored, unit: milliseconds	0

Tailstock parameters

P	Parameter	Ex-Value
K12.0	Tailstock control (0. Invalid 1. Valid))	0
K13.1	Spindle rotation and tailstock advance and retreat (0: interlocked 1: not interlocked)	0
K13.2	Whether to detect the tailstock in-position signal (0: No 1: Yes)	0
K13.3	Record tailstock status when power is off (0: No 1: Yes)	0
K13.4	Tailstock advancement completed (0: No 1: Yes) disconnect output	0
K13.5	Tailstock retraction completed (0: No 1: Yes) disconnect output	0
K13.6	Tailstock forward position switch type (0: Normally open 1: Normally closed)	0
K13.7	Tailstock retraction position switch type (0: Normally open 1: Normally closed)	0
T026	Tailstock forward output time, unit: milliseconds	0
T027	Tailstock retraction output time, unit: milliseconds	0

Spindle parameters

P	Parameter	Ex-Value
0105	Spindle speed (0. Switch control 1. Analog voltage control 2. Full pulse control)	1
0110	Spindle encoder line number	1024
0108	Spindle analog voltage output 10v voltage offset compensation value (V)	0
0112	Maximum spindle speed in 1st gear (r/min)	3000
	Maximum spindle speed in 2nd gear (r/min)	3000
	Maximum spindle speed in 3rd gear (r/min)	3000
	Maximum spindle speed in 4th gear (r/min)	3000
0303	Maximum speed of the second spindle(r/min)	6000
0113	Encoder to main shaft gear ratio: number of main shaft gears	1
0114	Encoder to main shaft gear ratio: Number of encoder gears	1
0312	Switch to handwheel when paused, function(0: None 1: handwheel intervention 2: handwheel offset)	0
0274	Delay detection of spindle speed fluctuation, unit: second	4
0275	Spindle speed fluctuation alarm limit value (set to 0, no detection)	0
0118	Rotation speed when the spindle is jogging (r/min)	40
T012	Spindle jog time, unit: milliseconds	0
K2.4	The spindle is rotating, reverse the spindle, (0: stop first and then reverse 1: alarm)	0
K2.7	Output spindle direction signal type (0: level 1: pulse)	0
T014	Outputs the pulse time in the spindle direction, unit: milliseconds	50

T010	The spindle stops, how long does it take to delay before braking, unit: milliseconds	0
T011	Total time of spindle braking output, unit: milliseconds	0
K15.4	Key operation of spindle during program running (0: valid 1: invalid)	0
0120	spindle speed sampling period	100
K17.7	Multi-spindle function (0: invalid 1: valid), needs to be restarted	0
0235	Detect spindle speed stabilization time before thread cutting (ms)	60
K63.3	Long and short axis change and reverse thread (0: not detected 1: detected) zero signal	0
K15.0	Spindle automatic shifting function (0: invalid 1: valid)	1
K15.1	Shift in place signal (0: Do not check 1: Check)	0
K15.2	M41-44 switch type (0: Normally open 1: Normally closed)	0
K15.3	Spindle gear power-off memory (0: no memory 1: memory)	0
T000	The time for the spindle to shift gears and close the original gear, unit: milliseconds	1000
T001	The time from the new spindle gear output to the end, unit, milliseconds	1000
T045	Spindle automatic shifting timeout time, unit: milliseconds	20
K15.5	Key operation of spindle during program running (0: valid 1: invalid)	1
K16.3	M51-58 orientation completion signal (0: Normally closed 1: Normally open)	1
K16.4	Output after spindle positioning is completed (0: not disconnected 1: disconnected)	0
K16.5	Whether to shield the orientation completion feedback signal (0: No 1: Yes)	1
T055	Delay time before M51-M58 orientation, unit: milliseconds	0
T056	M51-M58 orientation delay time to turn off the spindle, unit: milliseconds	0

T057	M51-M58 orientation timeout, unit: milliseconds	3000
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Cs axis parameters

P	Parameter	Ex-Value
K15.7	Cs axis function (0. Invalid 1. Valid)	1
K15.6	Spindle contour control during emergency stop/reset (0: Not closed 1: Closed)	0
K16.0	Whether the spindle V/P switching shields the driver feedback signal (0: No 1: Yes)	1
K16.1	Spindle position mode signal (0: Normally closed 1: Normally open)	0
K17.1	After powering on, the spindle enters (0: speed 1: position) mode	0
K17.3	Execute M14 (0. Orientation first 1. No orientation) to enter position mode	0
K61.0	C-axis function (0.Servo spindle 1.Feed axis)	0

Lubrication and Backlash parameters

P	Parameter	Ex-Value
K16.2	Automatic lubrication is valid, lubricate when starting up (0: no output 1: output)	1
T013	Lubrication start time, unit: seconds (lubrication is not limited by time when set to 0)	0
T053	Automatic lubrication interval, unit: minutes	1
0062	The reverse backlash compensation method is (0: fixed frequency 1: acceleration and deceleration)	1
0063	X-axis reverse backlash compensation amount (mm)	0.000
	Y-axis reverse backlash compensation amount (mm)	0.000

	Z-axis reverse backlash compensation amount (mm)	0.000
	A-axis reverse backlash compensation amount (mm)	0.000
	B-axis reverse backlash compensation amount (mm)	0.000
0064	Compensation step size for X-axis gap compensation in fixed frequency mode	0.003
	Compensation step size for Y-axis gap compensation in fixed frequency mode	0.003
	Compensation step size for Z-axis gap compensation in fixed frequency mode	0.003
	Compensation step size for A-axis gap compensation in fixed frequency mode	0.003
	Compensation step size for B-axis gap compensation in fixed frequency mode	0.003
0066	Backlash compensation time by increasing or decreasing speed	20

Handwheel and single step parameters

P	Parameter	Ex-Value
0055	Handwheel operation acceleration and deceleration type (0: linear 1: exponential)	0
0061	The coordinates increase when the X-axis handwheel (0: forward 1: counterclockwise) rotates clockwise	0
	The coordinates increase when the Y-axis handwheel (0: forward 1: counterclockwise) rotates clockwise	1
	The coordinates increase when the Z-axis handwheel (0: forward 1: counterclockwise) rotates clockwise	0
	The coordinates increase when the A-axis handwheel (0: forward 1: counterclockwise) rotates clockwise	0
	The coordinates increase when the B-axis handwheel (0: forward 1: counterclockwise) rotates clockwise	0
0215	Maximum speed of X-axis handwheel incomplete operation mode	2000.000
	Maximum speed of Y-axis handwheel incomplete operation mode	2000.000

	Maximum speed of Z-axis handwheel incomplete operation mode	2000.000
	Maximum speed of A-axis handwheel incomplete operation mode	2000.000
	Maximum speed of B-axis handwheel incomplete operation mode	2000.000
0059	Maximum speed of single step feed	18.000
0214	X-axis handwheel/single-step acceleration and deceleration time (ms)	100
	Y-axis handwheel/single-step acceleration and deceleration time (ms)	100
	Z-axis handwheel/single-step acceleration and deceleration time (ms)	100
	A-axis handwheel/single-step acceleration and deceleration time (ms)	100
	B-axis handwheel/single-step acceleration and deceleration time (ms)	100

External switch parameters

P	Parameter	Ex-Value
K20.0	External start (0: Normally open 1: Normally closed)	0
K20.1	External pause (0: Normally open 1: Normally closed)	0
K20.2	External emergency stop (0: Normally open 1: Normally closed)	0
K20.3	External reset (0: Normally open 1: Normally closed)	0
K02.0	Use 3-position switch (0: No 1: Yes)	0
K02.1	3-digit switch signal (0: Normally closed 1: Normally open)	1
K02.2	3-position switch is switched to start gear to continue running (0: Yes 1: No)	0

Tool release clamping parameters

P	Parameter	Ex-Value
0289	Tool change shaft clamping and releasing function (0: off 1: on)	0
0290	The axis number of the tool change axis (0:X 1:Z 2:Y 3:A 4:B 5:C)	0
0291	M16, Y-axis moves (0: no alarm 1: alarm)	0
0292	M16, A-axis moves (0: no alarm 1: alarm)	0
K23.4	Power on (0: No output 1: Output M17)	0
K23.5	M16 is released in place (0: Normally open 1: Normally closed)	0
K23.6	M17 clamped in place (0: Normally open 1: Normally closed)	0
K23.7	M16/M17 (0: detect 1: do not detect) in place signal	0
T033	Delay after M16/M17 is in place, unit: milliseconds	0
T034	M16/M17 timeout time, unit: milliseconds	8000