LNC-T/M 5X8A

Maintenance Manual

2012/10 Ver：V01.00 (4408210138)

Leading Numerical Controller

Suitable for T508A T518A M528A T/M568A T/M5800A

LNC Technology Co., Ltd.

MENU

1. Hardware

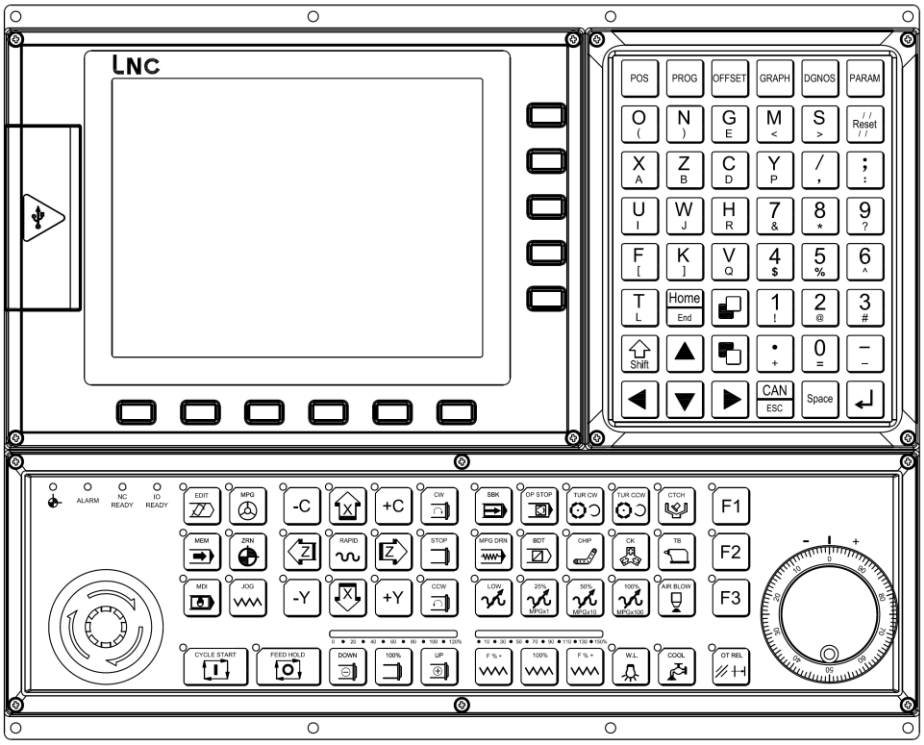
1.1 Specification

LNC-T/M 5X8	SPEC
Monitor	8" TFT LCD
SD RAM	256MB(T/M 5800A is 512MB)
System CF Card	1Gor above
Data Interface	USB/CF/LAN
USER I/O	20Input/16 Output, up to 2 set
Serial I/O	1 Port, use with SIO/EIO to extend I/O board upto 128IN/128OUT. (only available on T/M568A ，T/M 5800A)
MPG Interface	3 in 1 MPG, include IN and Encoder
Control Axes	Max. 6 axes(include Spindle) T/M568A T/M 5800A has 6 axes; T518/M528 has 4 axes
Power	AC 110V/240V 50Hz/60Hz input power

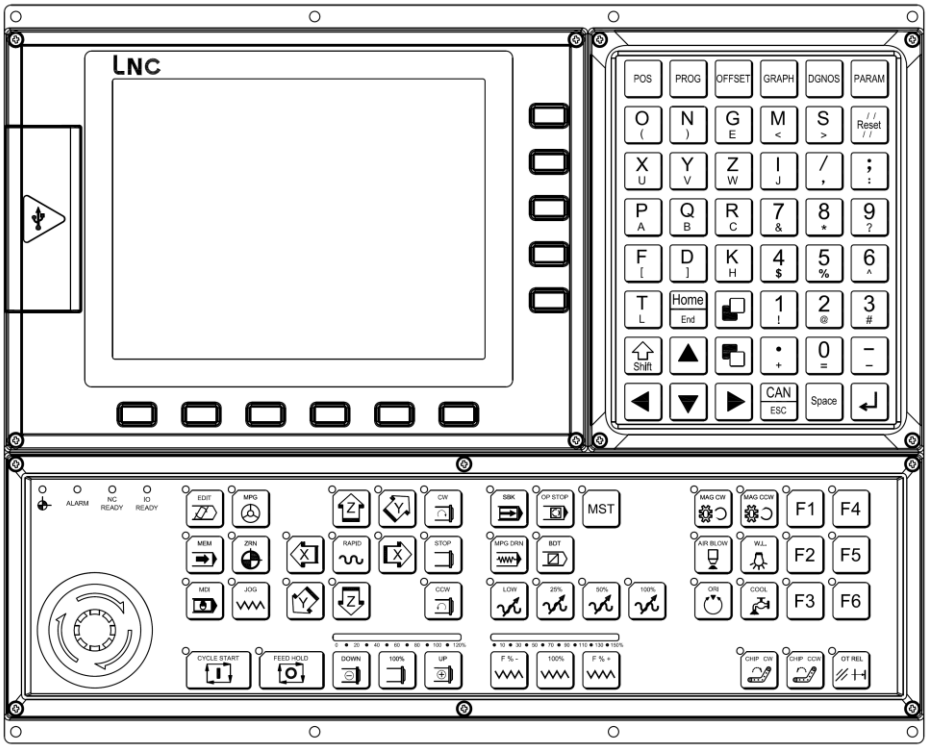
LNC- T/M 5X8A System Power Demand

Power Category	Specification	Usage	NOTE
System Power	AC110V/240V 50Hz/60Hz	For System	
External Power(24V)	DC24V/(4A UP)	For external IO	

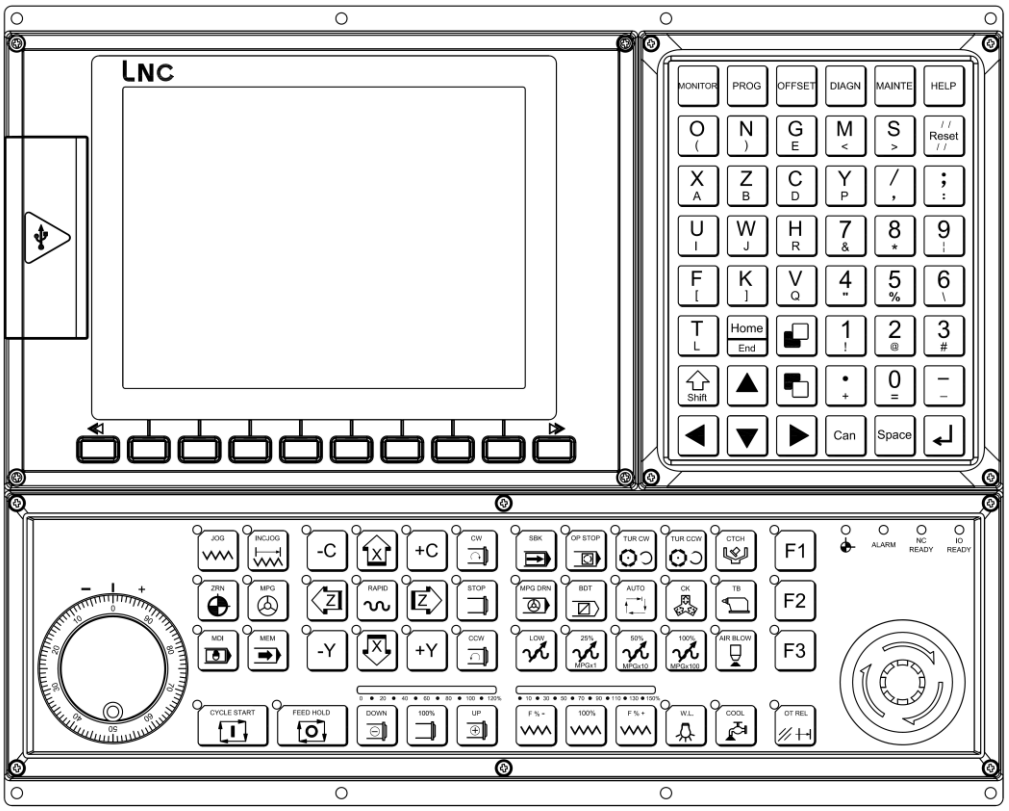
1.2 Product form and ports



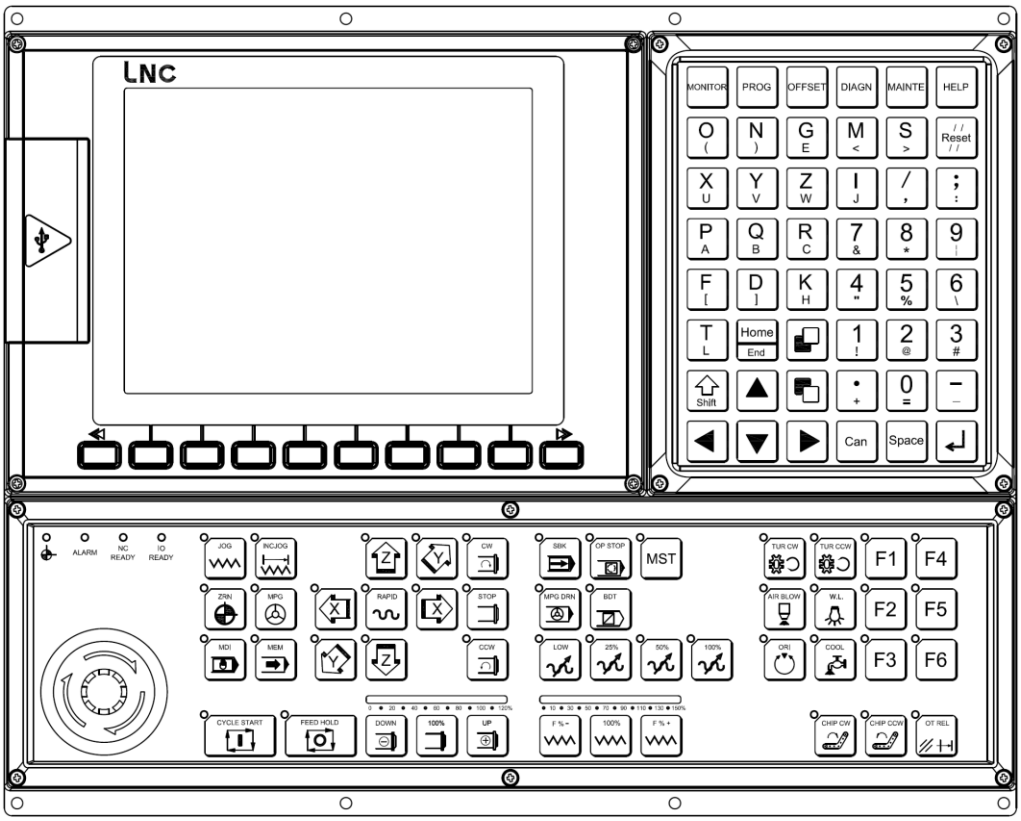
T 5X8A Controller Front View (right side MPG is also available)



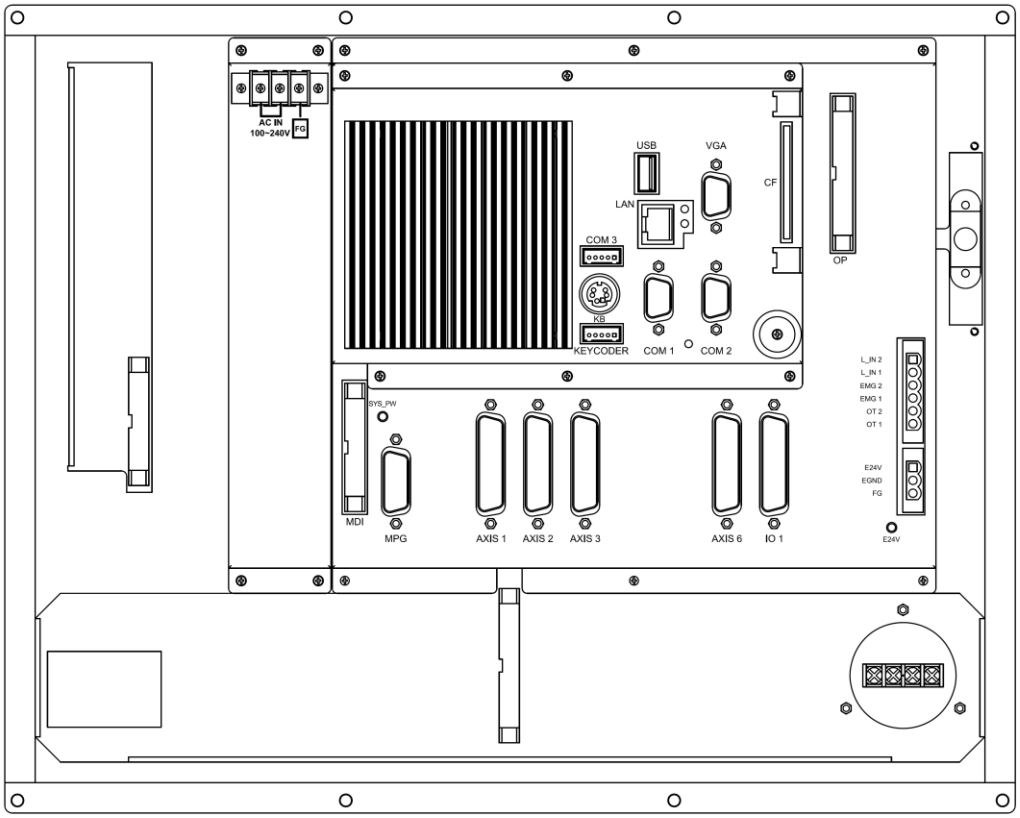
M 5X8A Controller Front View



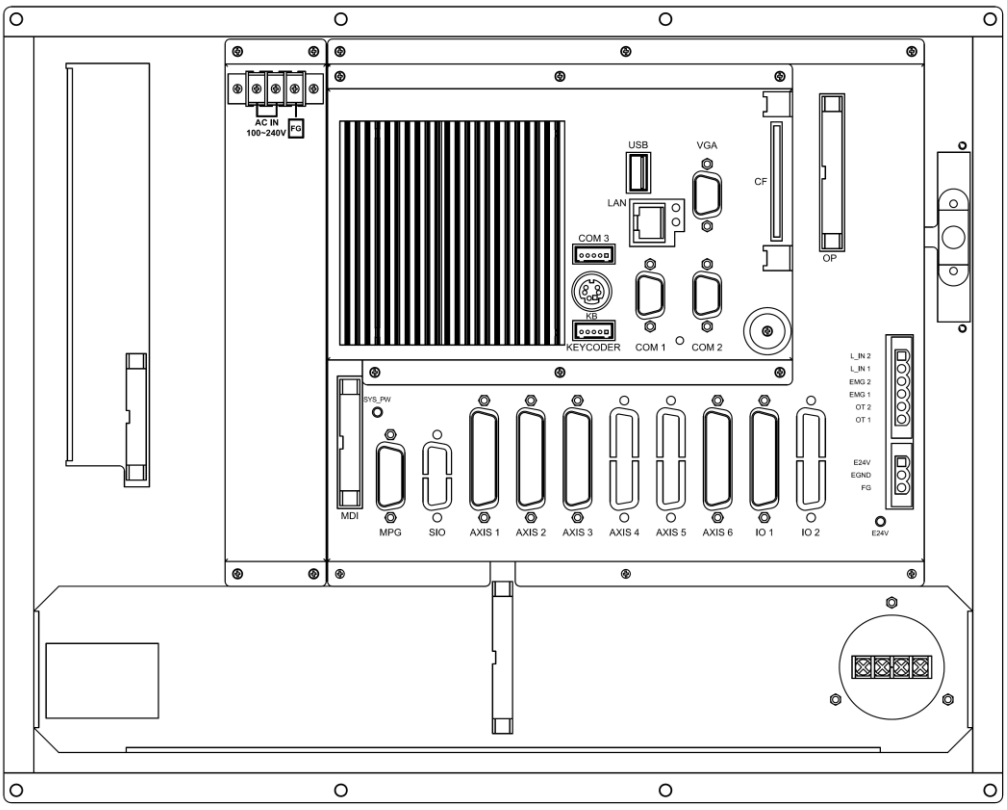
LNC-T5800A Front View



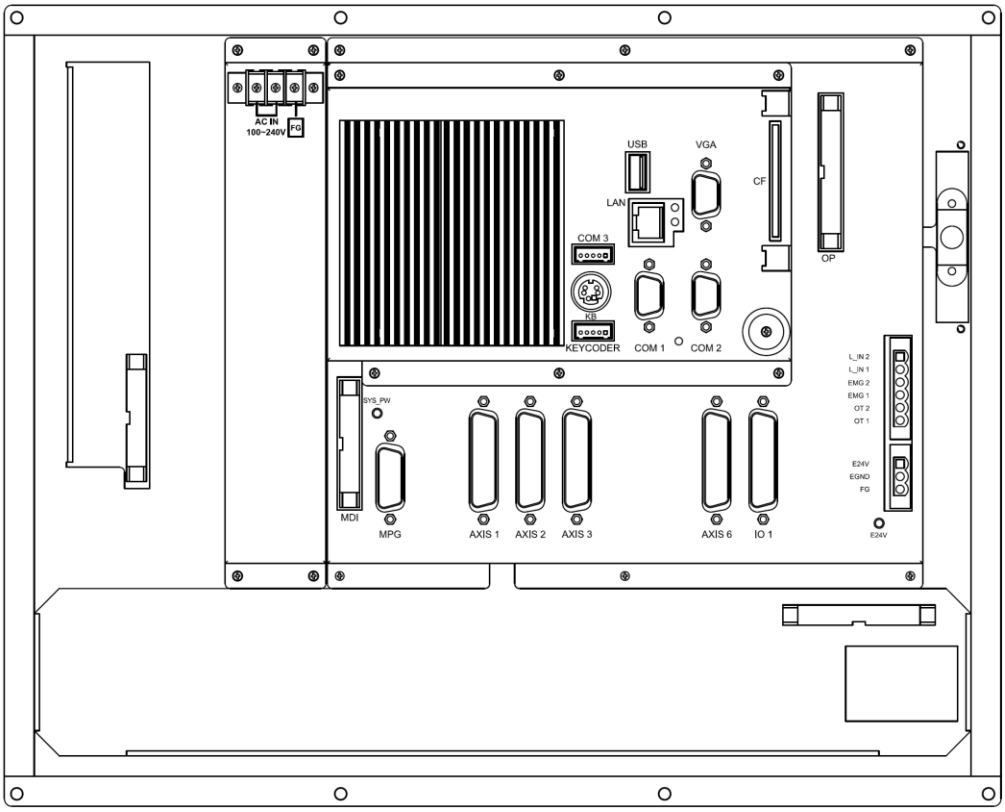
LNC-M5800A Front View



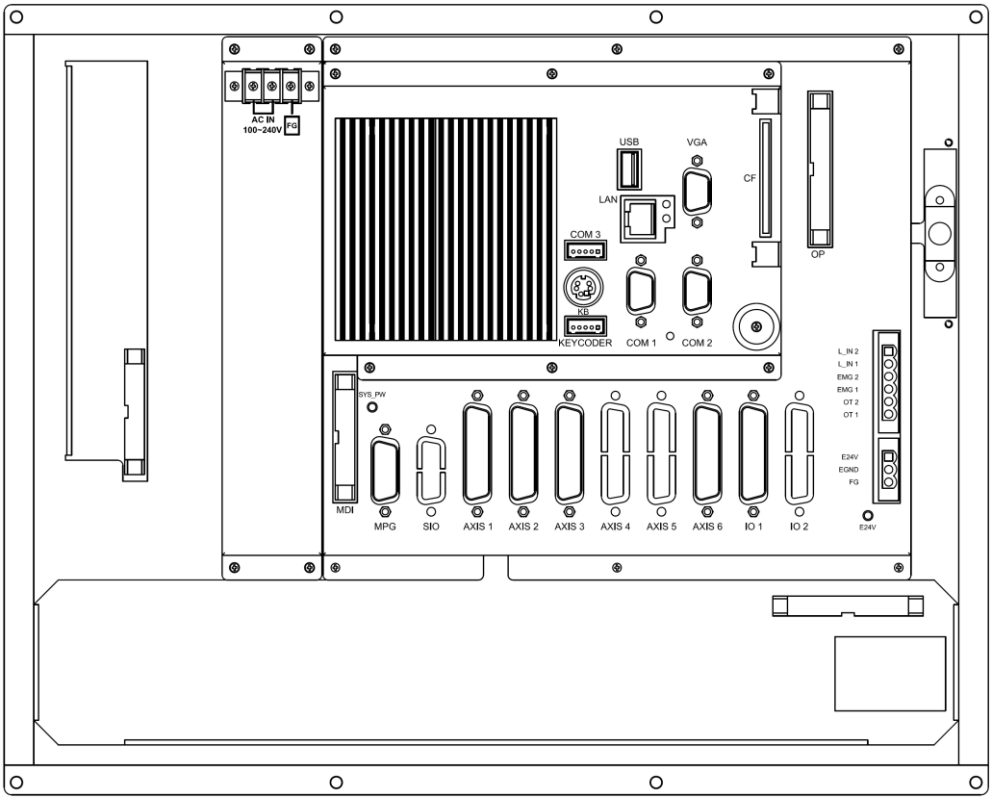
T 518A Controller Back View



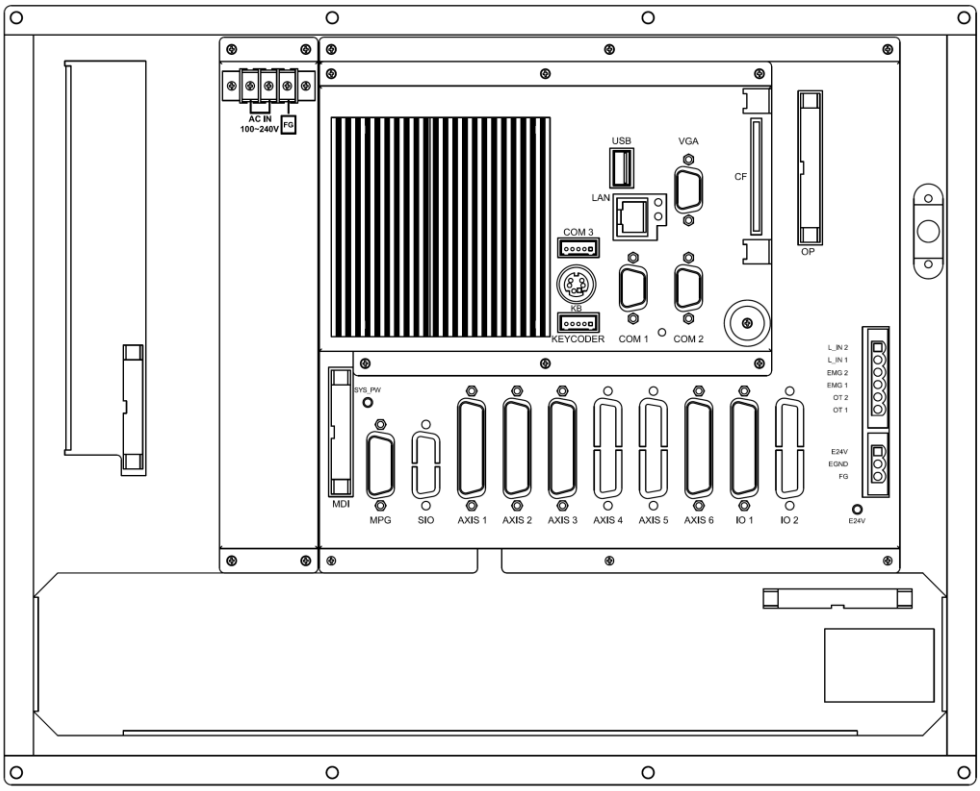
T 568A Controller Back View



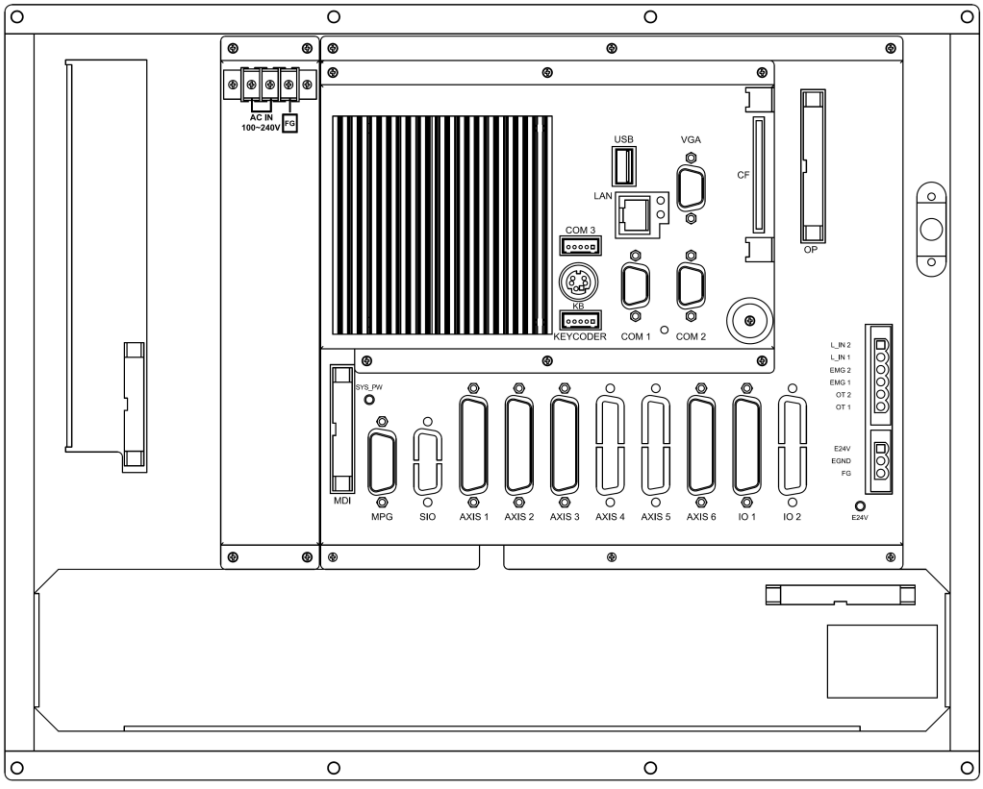
M 528A Controller Back View



M 568A Controller Back View



LNC-T5800A Back View

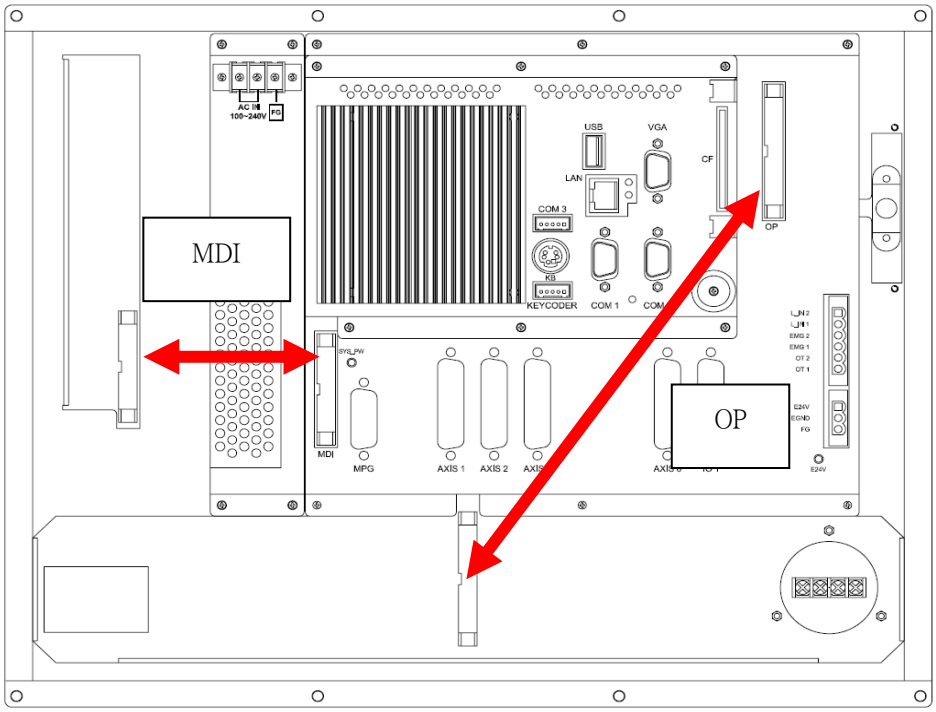


LNC-M5800A Back View

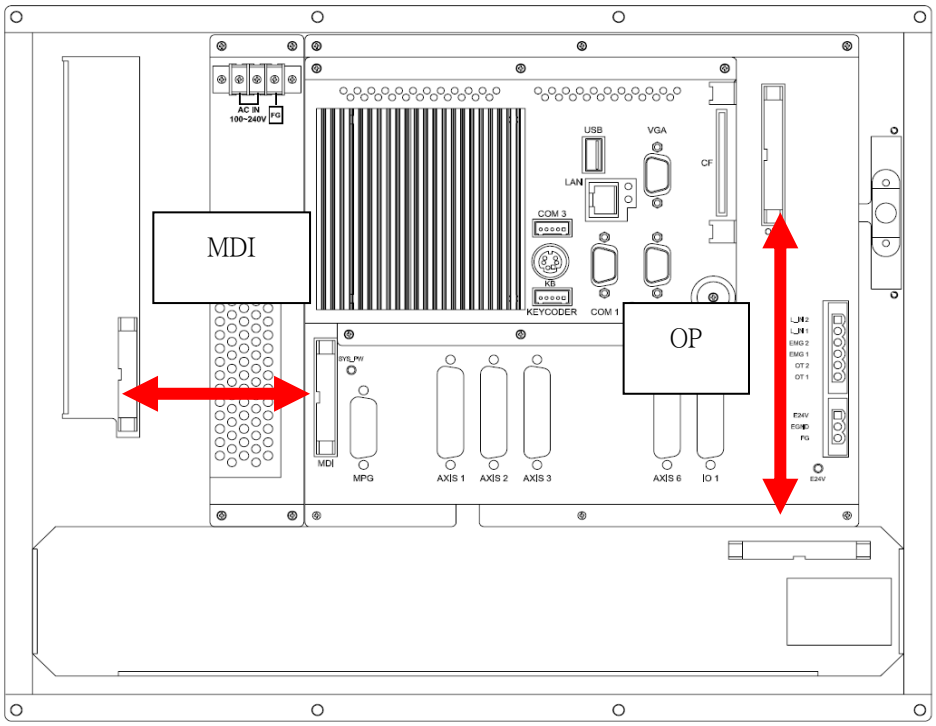
1.3 System wiring diagram and instructions

1.3.1 System wiring

Wiring on controller

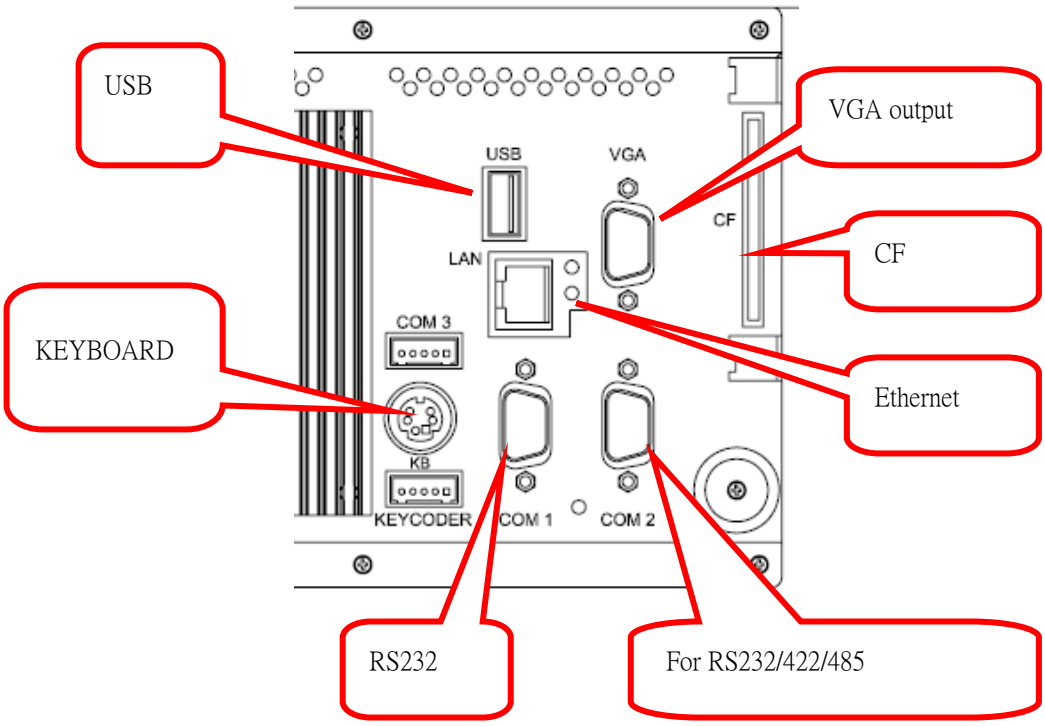


T 5X8A Wiring on controller

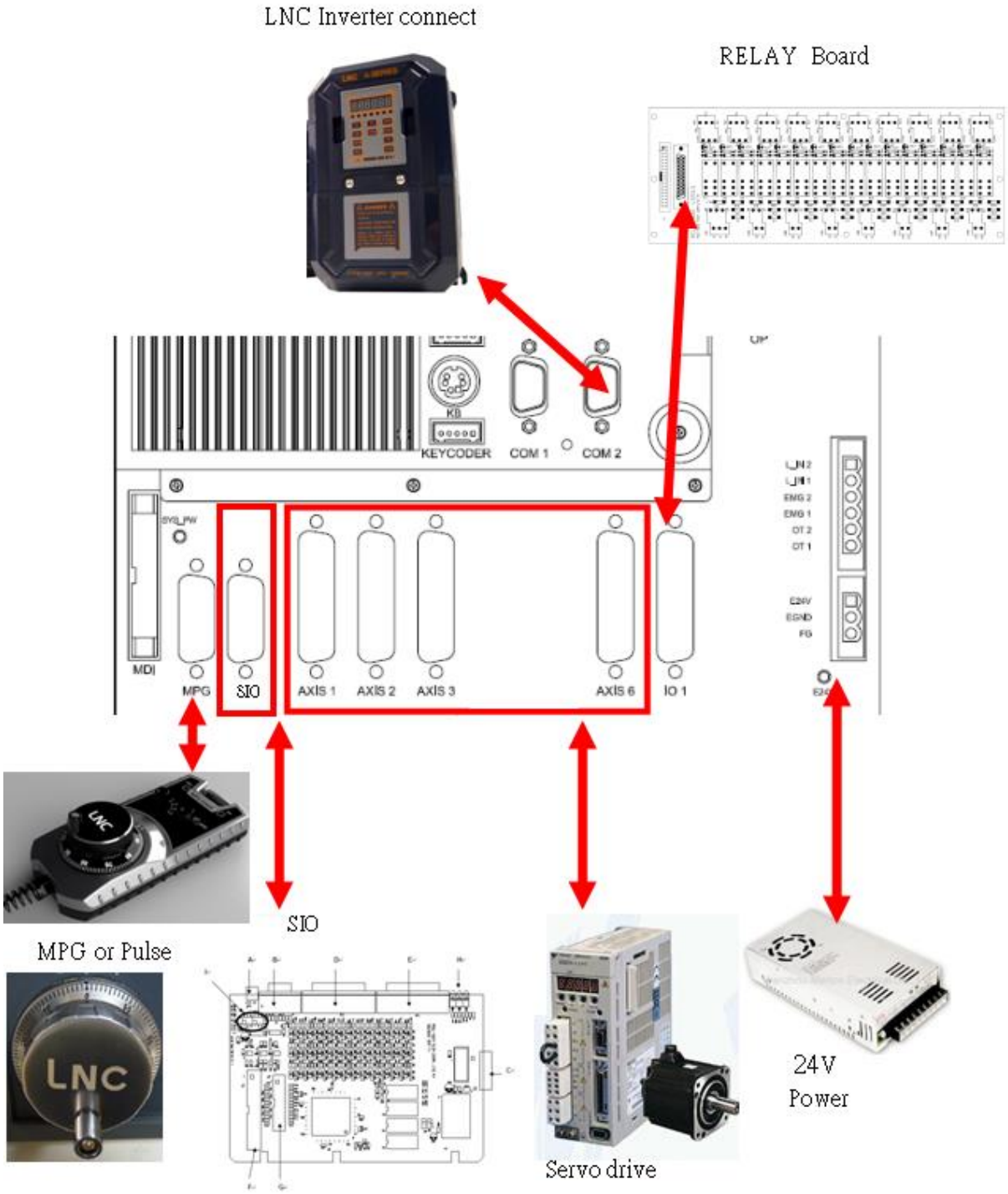


M 5X8A Wiring on controller

PC interface

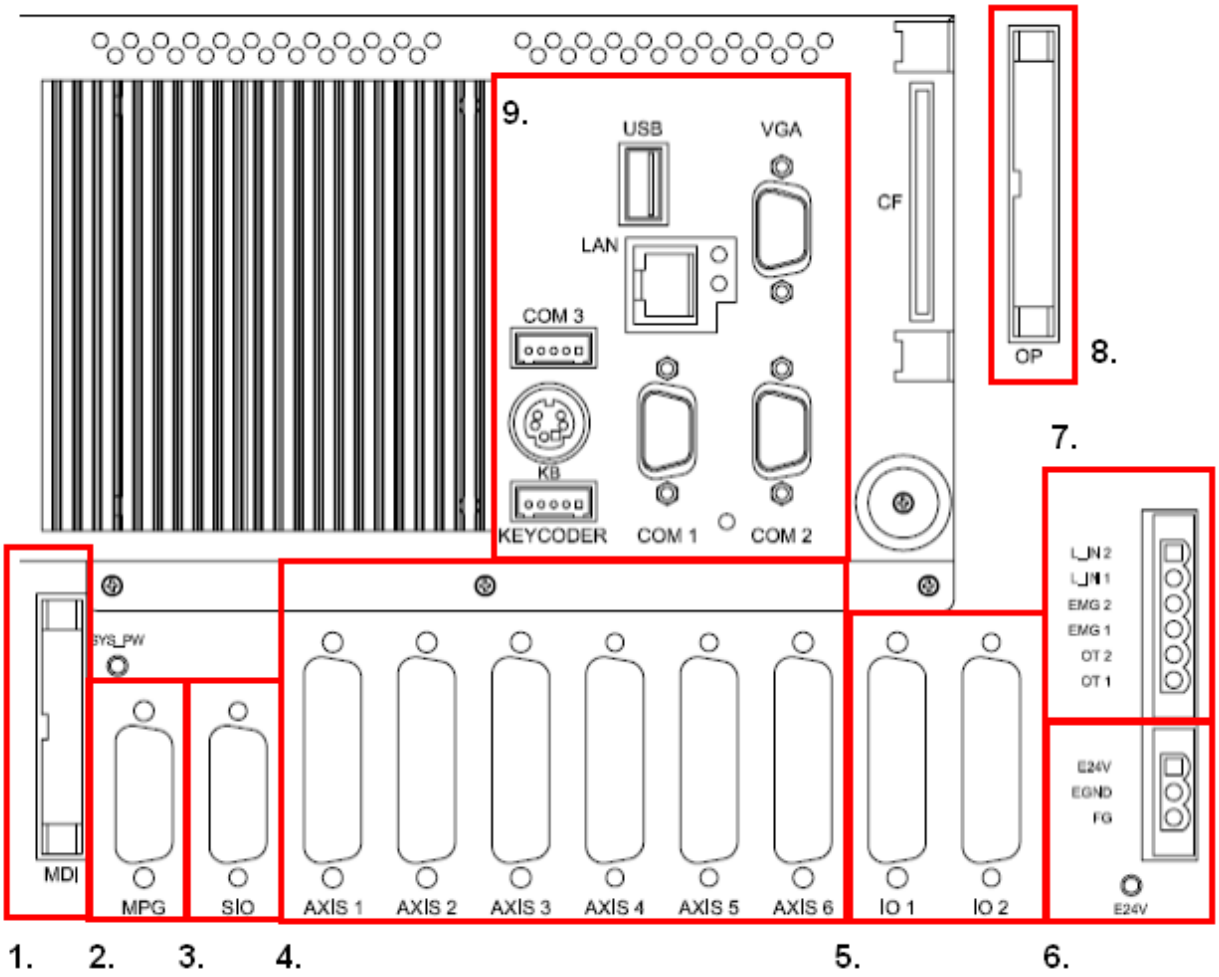


Motion ports and IO, accessories



Note: SIO only availible on T/M 568A

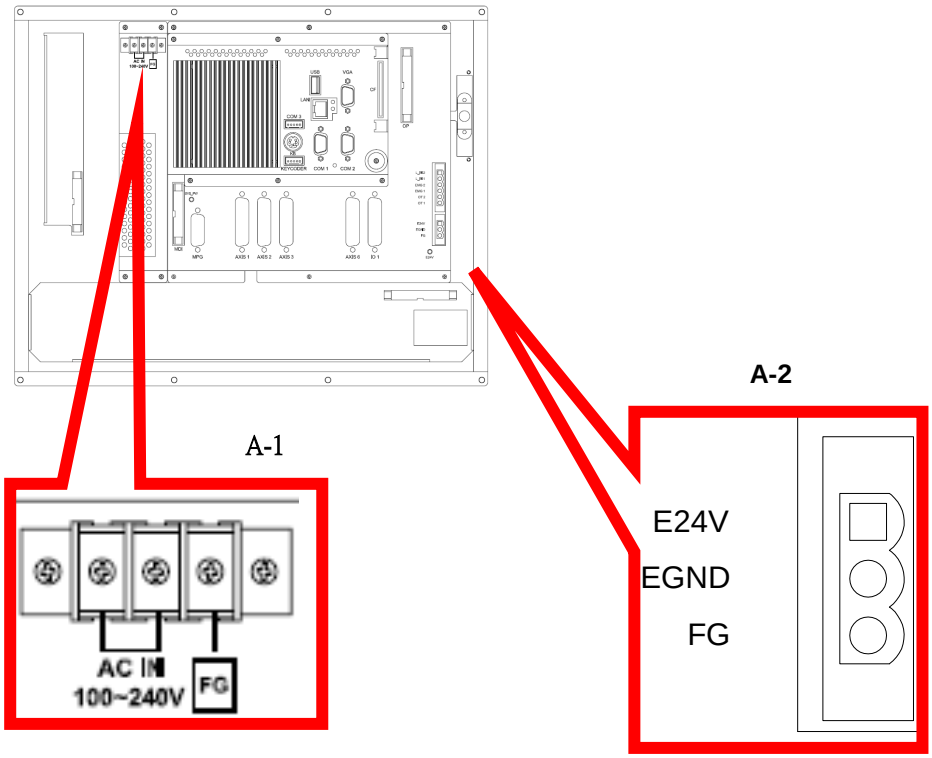
Connectors



Item	Ports	Function	Connector	Remark
1	MDI	MDI	2.54mm 26PIN IDC	
2	MPG	MPG port	D-SUB 15 PIN(Female)	Include command and IN
3	Serial I/O	I/O extand port	D-SUB 15 PIN(Male）	Avalible on T/M 568A
4	AXIS 1~6	Axis	D-SUB 25 PIN(Female)	T518A/M528A has 4axes (AXIS1~3、AXIS6)； T/M568A has 6 axes
5	USER I/O	20IN/16OUT	HD_D-SUB 44 PIN(Male)	T518A/M528A IO2 is optional;T/M568A IO2 is standard
6	E24V、EGND、FG	24V Input	3PIN 5.08mm terminals	
7	Local_IN/EMG/OT	Tool Measure and Safety function	6PIN 5.08mm terminals	
8	OP	Connect to OP	2.54mm 34 PIN IDC	
9		PC interface	Regular PC interface	

1.3.2 System wiring instruction

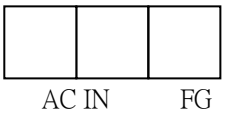
A、Power input：



A-1：System power supply

◎ Details：Offer 5V.12V power for system.

◎ Terminal details as following：

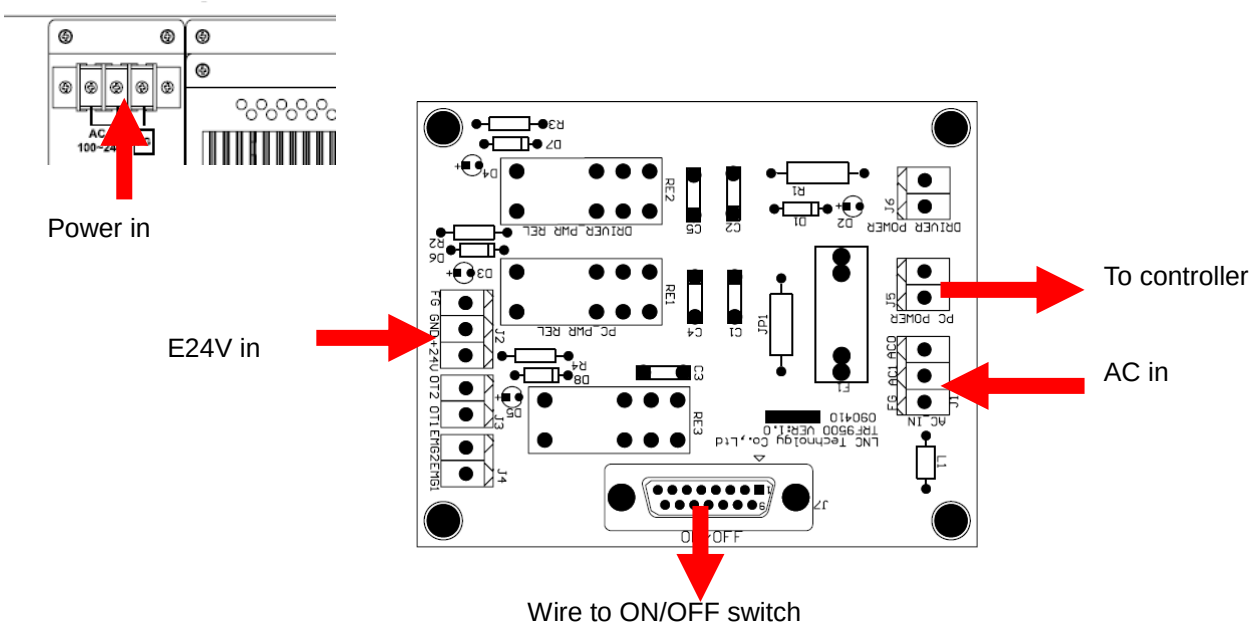


Put AC110V/230V power connect to power supply's AC IN, FG to grounding, please connect with metal chassis (grounding)

LNC-T/M 5X8A POWER will power on when AC power input, no other switch. If you need a switch, please arrange with TRF9500 ON/OFF switch board.

TRF9500 On/OFF switch board

Step 1:

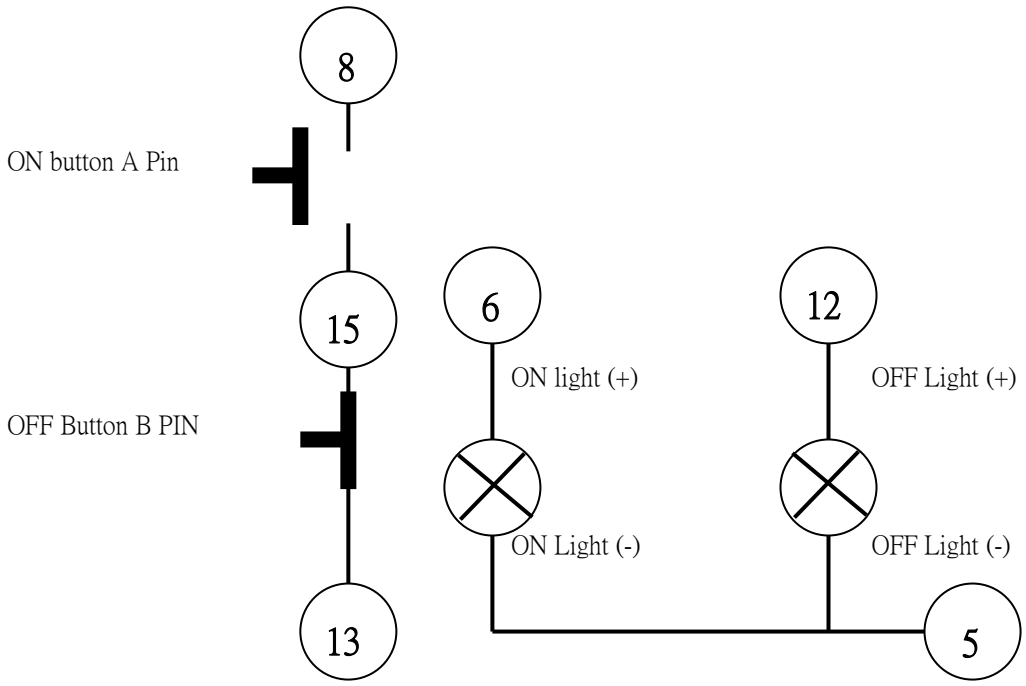


Step 2:

ON/OFF connector signal (PIN define as following) connect with ON/OFF button

PIN	Name	Description
1	-	-
2	-	-
3	-	-
4	-	-
5	EGND	E24V power GND
6	OFF1	OFF button PIN 1
7	-	-
8	ON1	ON button PIN 1(E24V)
9	-	-
10	-	-
11	-	-
12	OFFL	OFF button light control
13	OFF2	OFF button PIN 2
14	-	-
15	ON2	ON button PIN 2

ON/OFF button PIN Wiring:

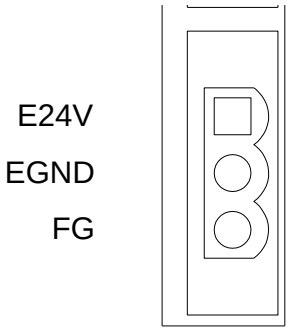


- AC power cable: We recommend you use PVC cables and the cable diameter is 0.75 mm2 or above material (better within 5m).
- Before sending electricity, please make sure the wiring is correct. (Please do not connect AC power to FG; otherwise the controller will be burned out.)

A-2: External E24V Connector

◎ Description:E24V is for controller, power control and external I/O to use.

◎ Connector Description: As below:



E24V and EGND connect to external power supply AC output side；FG to grounding, please connect with metal chassis (grounding)

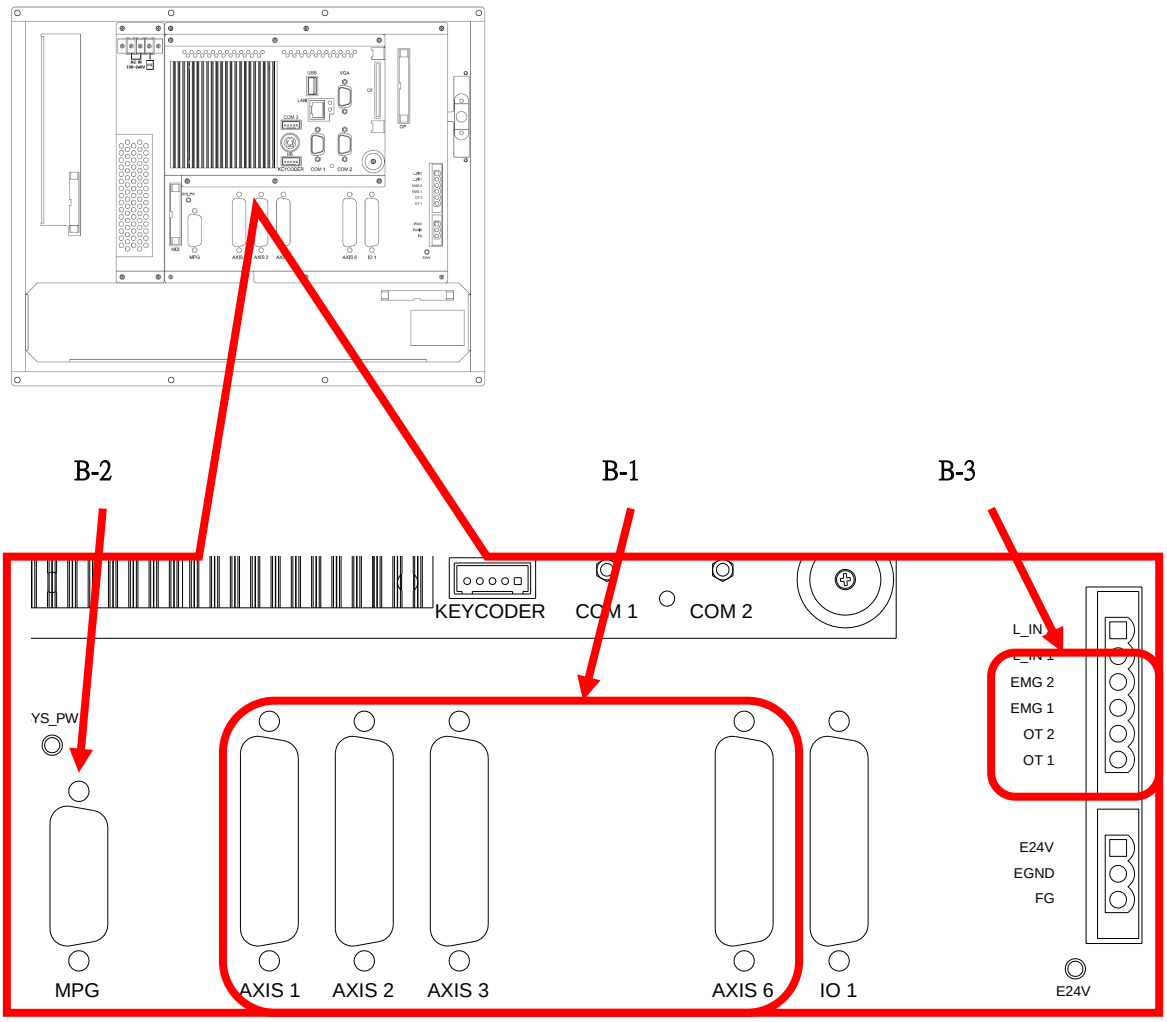
◎ Power Demand :

(1) E24V/4A above

(2) Output voltage ripple and noise is smaller than 150mVp-p.

- We recommend you to use the power supply of LNC (E24V/5.8A, E5V/3A). With using this model, LNC have passed the CE test. We cannot guarantee your needs without using this model.
- When using this power supply, please make sure the installation location will not be too far (DC output may have drop voltage.) After booting, E24V power supply voltage will need to stay within E24V±0.5V.

B Motion Control:

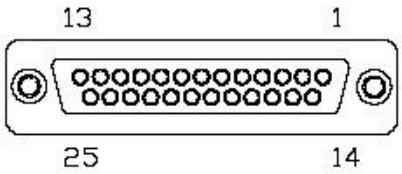


Note: T/M 568A Support 6 Axes

B-1: Servo Control Connector

◎ Description:B-1 offers 4 axis control pin(X, Y, Z, SP) to connect and control back side drives.

◎ Connector Description: Use D_SUB 25PIN (Jack) connect, details as below:



PIN	Name	Description	PIN	Name	Description
1	/PB	Pulse output /B	14	/PA	Pulse output /A
2	PB	Pulse output B	15	PA	Pulse output A
3	E5V	External E5V for linear scale	16	-	-
4	EGND	External grounding	17	DACO	Analog voltage output
5	AGND	Analog output grounding	18	E24V	External power E24V
6	SRV_ON	Servo start control	19	ALARM	Servo alarm
7	EGND	External power grounding (E5V,E24V)	20	SVI_COM	Servo COM setting
8	SVI_COM	Servo COM setting	21	EGND	External power grounding
9	SRV_RST	Signal reset signal	22	-	-
10	C	Encoder C	23	/C	Encoder /C
11	A	Encoder A	24	/A	Encoder /A
12	B	Encoder B	25	/B	Encoder /B
13	FG	Chassis grounding	-	-	-

◎Remark:

(1) Axis 5, 6 with E5V, Axis 5: ±10V voltage output(optional), Axis 6: offer ±10V voltage output, as following chart

4 axis	Support 1 analog
	Support 2 analog
6 axis	Support 1 analog
	Support 2 analog

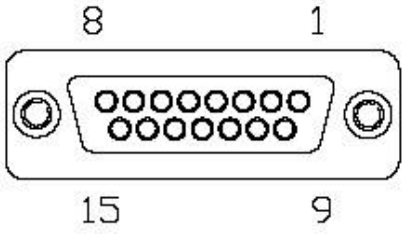
(2) Only SP Connector has both analog ±10V and pulse E5V output. Other axis only has E5V output.

- When making the connection cables of control pin and back-end driver, please use better shielding cover and cables (A.W.G24 UP) And make sure the connection of shielding cables to reduce the chance of noise interference. LNC offers standard cables for selection.
- Please don't bind signal control cables with power cables at the same time or put at the same cable box.

B-2: MPG Control Connector

◎ Description: This connector is for MPG to use which includes pulse and IO signal.

◎ Connector Description: Use D_SUB 25PIN (Jack) connect, details as below:



PIN	Name	Description	PIN	Name	Description
1	E5V	MPG IO power	9	EGND	MPG power grounding
2	MPG4	MPG 4	10	MPG5	MPG 4
3	E/B	Encoder /B	11	EB	Encoder B
4	E/A	Encoder /A	12	EA	Encoder A
5	X100	MPG ratio 100	13	X10	MPG ratio 10
6	MPGZ	MPG Z	14	MPG2	MPG2
7	MPGX	MPG X	15	MPG6	MPG6
8	E5V	MPG E5V power	-	-	-

◎ Description:

(1) Encoder feedback is differential signal.

(2) This pin offer 8 sets of 5V input for axis direction and ratio selection to use.

(3) PIN 1 can be used for MPG IN power, but don't use 24V to avoid damage.

B-3: OT& EMG Connect

◎ Description:

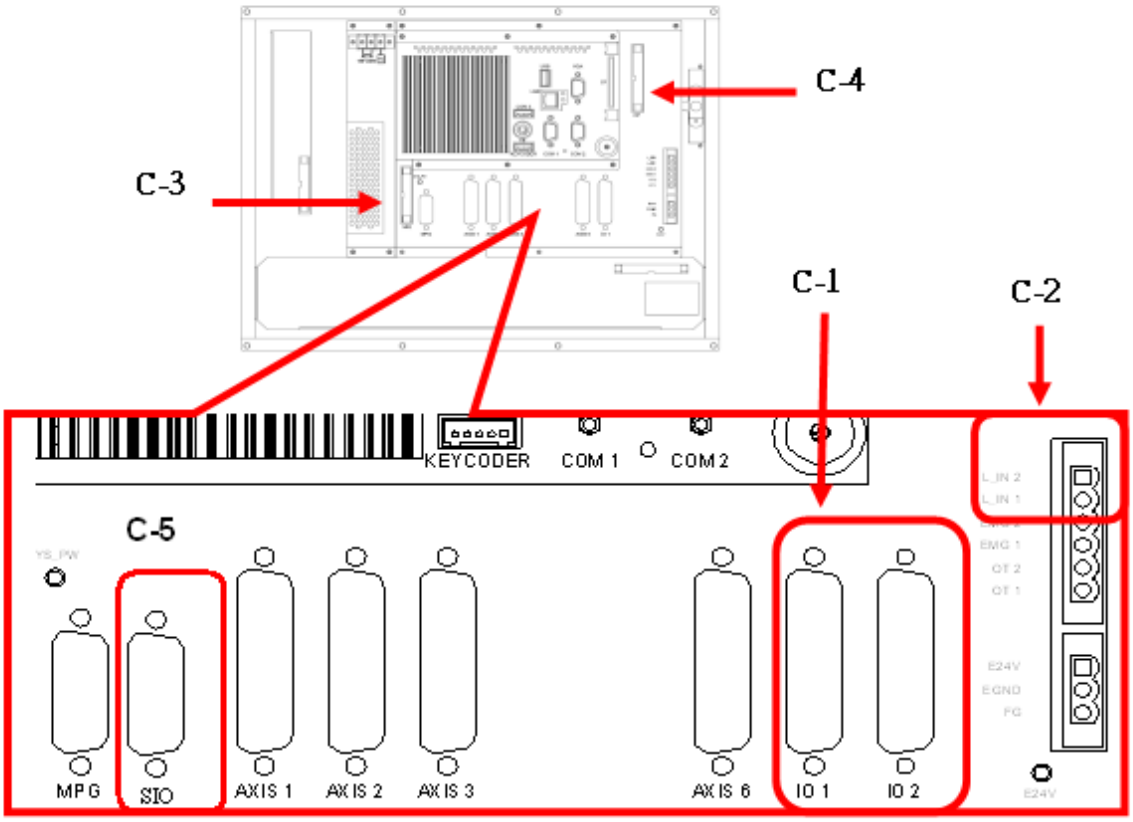
(1) OT connect is the over travel point and a safe point to protect hardware. Normally will be at short-circuit situation.

(2) When you want to make servo on, you will need to make OT and EMG to be short circuit, therefore OT object is close pin. When using several OT objects, please connect with serial way, and EMG will be short circuit state at normal using.

(3) If you use the EMG on OP, no need to short EMG1/ EMG2.

- Because the OT Connector will have usage of parallel connection (1 hole with 2 lines), please make sure the connection is firm in order to prevent malfunction caused by poor contact.
- If the OT and EMG PIN are not used, please make it at short-circuit situation.

C, IO Control:



Note:only T/M 568A Support SIO

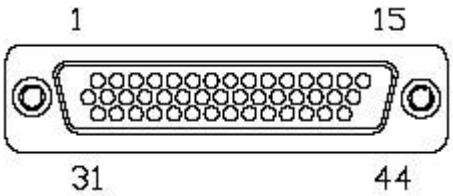
C-1：ON_BOARD IO connector

Detail: T/M 5X8A offers 1 I/O port (connect to 20IN/16OUT REL board), O is 24V level, Max. current 60mA, I is NPN/PNP switchable.

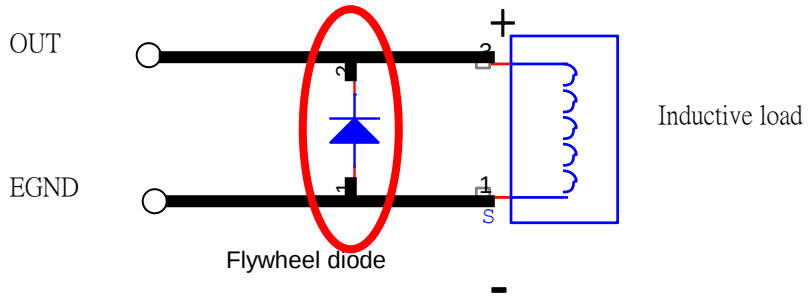
USER IO Connector

◎ Description:C-1offers 20IN/16 OUT IO interface, usually for connection with RELY board.

◎ Connector Description: Adopts HD_SUB 44PIN (Plug), please refer to appendix 1 for definition: PIN



◎ Out point usage: If you want use Output point without RELY board, use inductive load please arrange with flywheel diode for protection purpose.



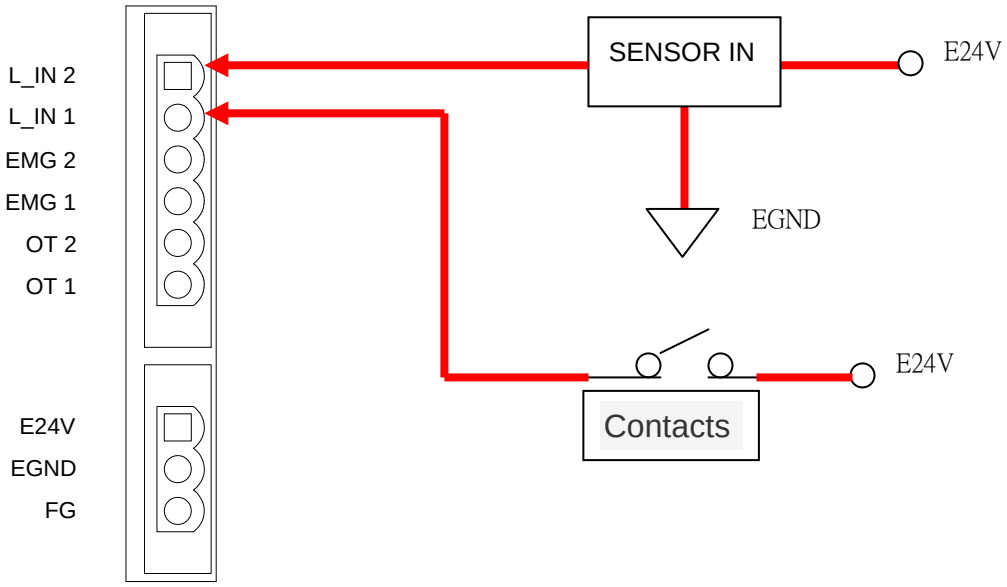
Recommend item: IN4007

- **Max current loading is 60 mA, otherwise will cause damage.**
  E.G. E24V/60 mA=400Ω ←Loading resistor must higher than this.
- **When use inductive loads (E.g. RELAY), please add flywheel diode for protection purpose.**
- **If OUT point short with ground, IC will be burned right away.**

C-2: Quick IN Connector

◎ Description: C-3 offers 2 IN for tool measuring.

◎ Connector Description: Connector's use 2PIN JP terminal, details are as below:



- **IN is 24V standard and same source with E24V, EGND, otherwise reading will be abnormal.**

C-3：MDI

◎ Description: Use for connect to MDI.

◎ Connector Description: 2.54mm 26PIN IDC

C-4：OP Connector

◎ Description：Offering for OP connecting, max 80IN/80OUT, power level 5V DC.

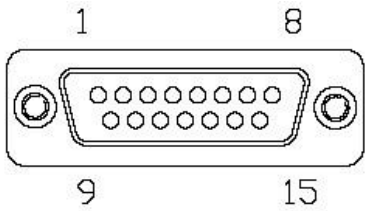
◎ Connector Description：2.54mm 34 PIN IDC Connector 。

C-5：Serial IO port

◎ SIO port

Detail：C-2 used for extand I/O port, ues with SIO/EIO boards to extand I/O board.

Connector: D_SUB 15PIN(Male), connect to SIO/EIO board

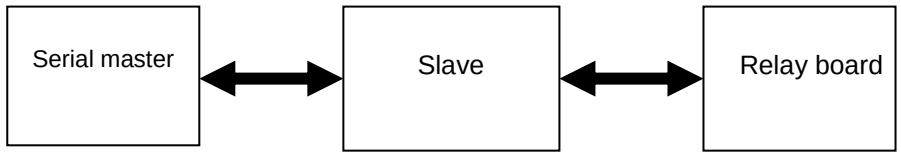


- This control port MUST use with shelled cable and large then A.W.G24, LNC offer standard cable for this.
- (1、9)；(2、10)；(3、11)；(4、12)Need twisted cable.
- DO NOT set these cables with POWER cables on panel box.

I/O card and SIO module

LNC-T/M 568A can extand the I/O control upto 128IN/128OUT following are the wiring diagram:

◎ Serial I/O functions as following

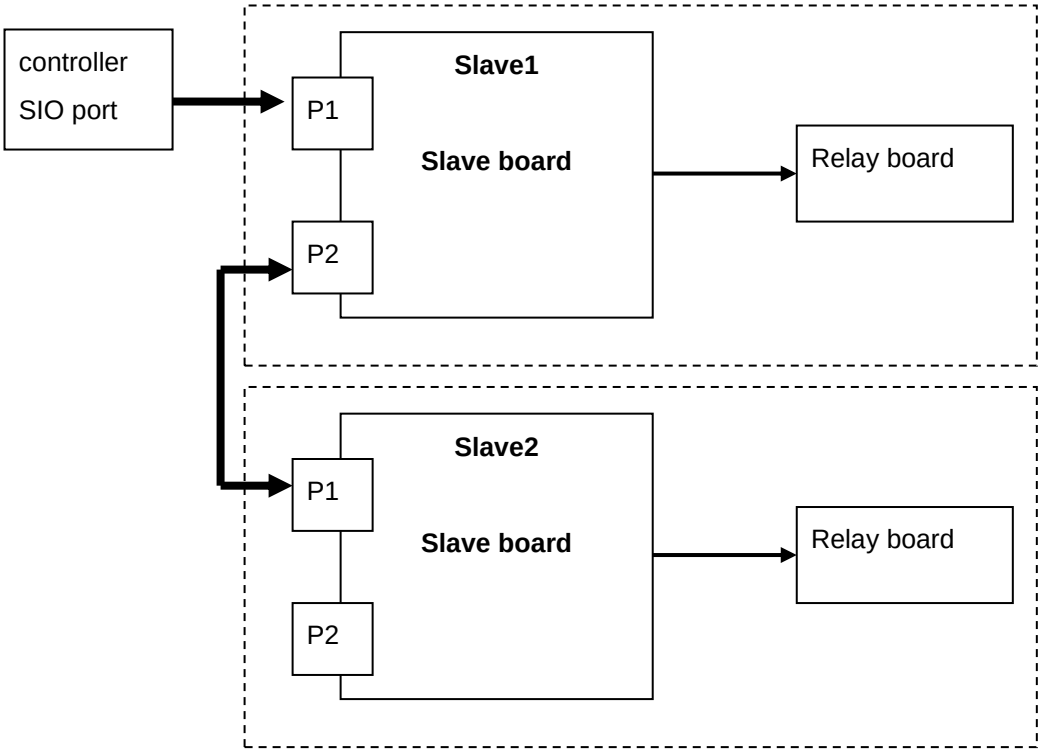


Controller

SIO-1520
SIO-1540
EIO-2000
Operation Panel

REL-2840

◎ Serial I/O connect as following: (1 PORT accept upto 2 slave board)



Serial I/O extanded I/O pints:

Modules

Controller site (MASTER)		
Hardware	Serial port	Remark
LNC-T/M 568A	1	

I/O extand board(SLAVE, each can serialy extand)		
Hardware	I/O points	Remark
SIO-1540	40IN / 32OUT	
EIO-2000-1	40IN / 32OUT	
EIO-2000-2	60IN / 48OUT	
SIO-1520	40IN / 32OUT	Used for Operation Panel
OP-2520	64IN / 64OUT	Used for Operation Panel

User I/O port		
Hardware	I/O	Remark
REL-2840	20IN / 16OUT	

I/O port amount:

(1) LNC-T/M 568A, with EIO-2000-2, max I/O point is

1(SIO) × 2(EIO-2000-2) × 60 IN = 120IN

1(SIO) × 2(EIO-2000-2) × 48 OUT = 96 OUT

(2) LNC-T/M 568A, with SIO-1540, max I/O is

1(SIO) × 2(SIO-1540) × 40 IN = 80IN

1(SIO) × 2(SIO-1540) × 32 OUT = 64 OUT

And so on.

Each hardware set up according to it's user manual.

OP Connector I/O points are all 5V level, if connect higher than 5V, it will damage the board.

D、PCM-6889 com Defined：

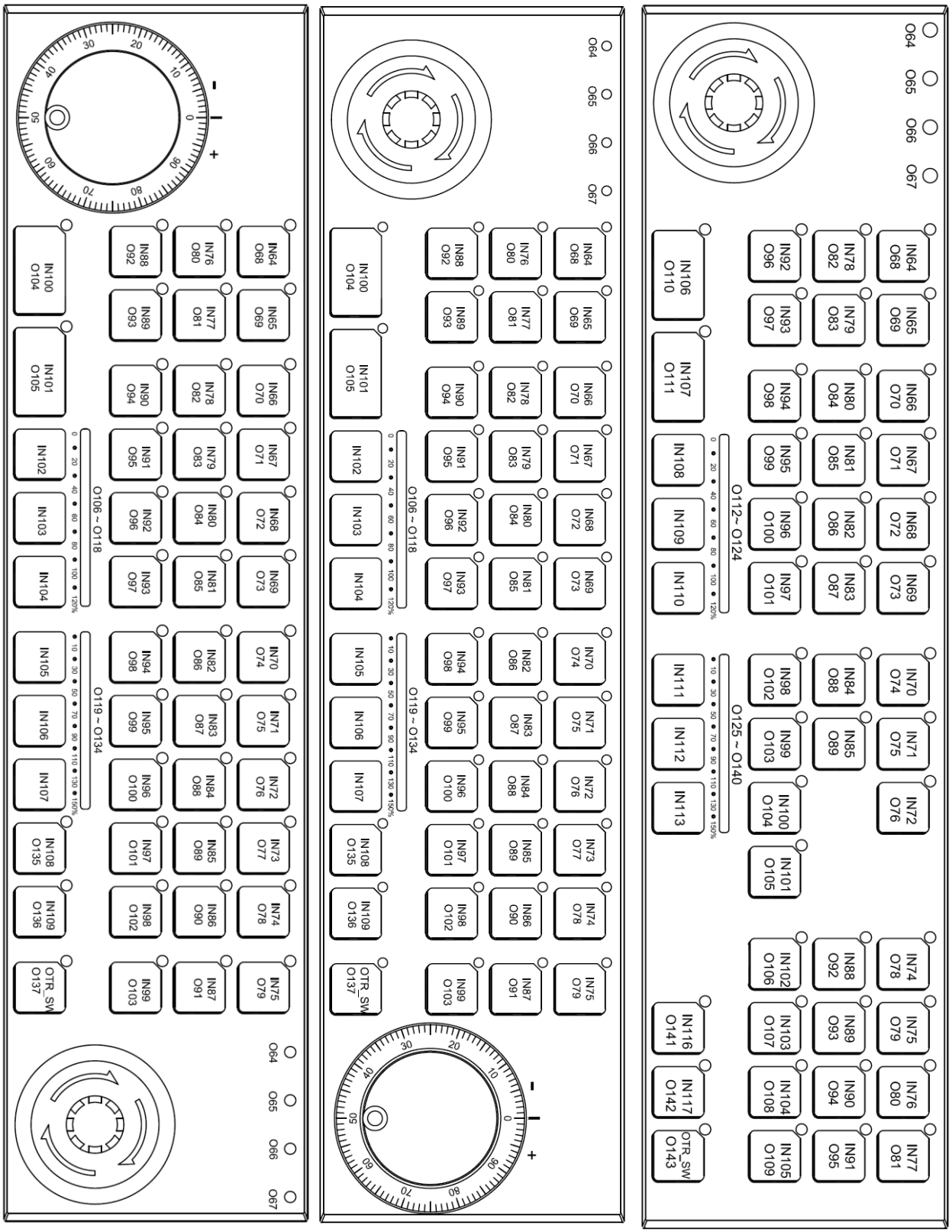
PCM-6889 COM1

Pin#	Signal Name	Pin#	Signal Name
1	DCD1	2	RXD1
3	TXD1	4	DTR1
5	GND	6	DSR1
7	RTS1	8	CTS1
9	RI1	10	X

PCM-6889 COM2

Pin#	Signal Name	Pin#	Signal Name
1	NC	2	232RX
3	232TX	4	NC
5	GND	6	422TX-/RS485-
7	422TX+/RS485+	8	422RX+
9	422RX-	10	X

1.4 OP hardware I/O mapping



T5X8A&T5800A(Left tside MPG T5X8A&T5800A(Righ tside MPG) M 5X8A&M5800A

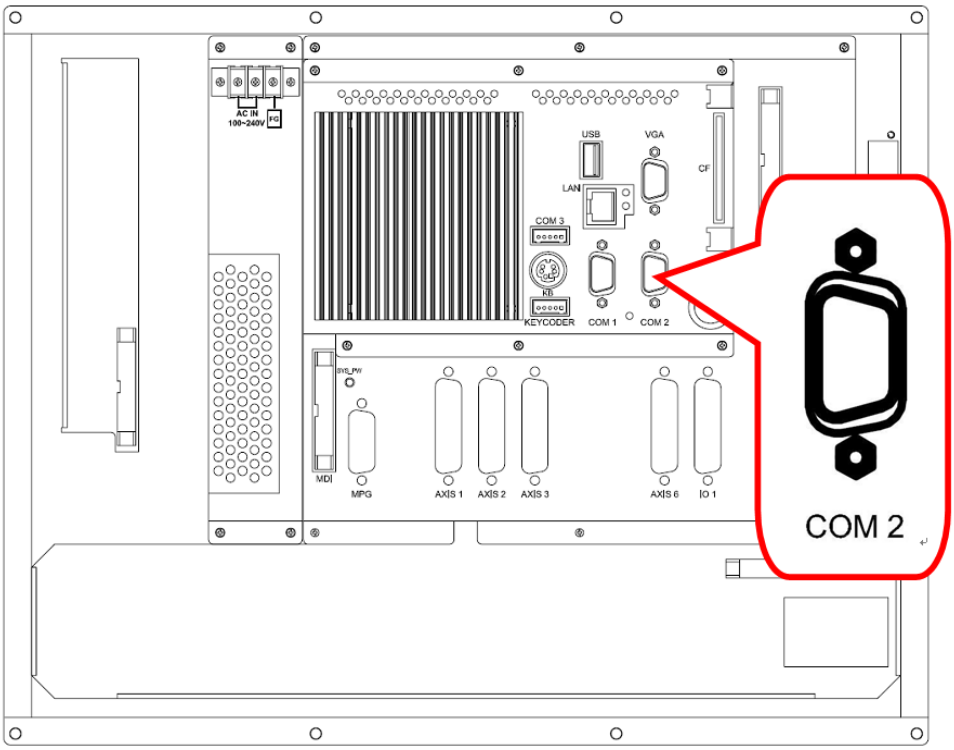
1.5 PLC I/O Table

IN/OUT Table

I 0	L-IN0 , Local Input with Latch function	O 0		
I 1	L-IN1 , Local Input with Latch function	O 1		
I 2	EMG	O 2		
I 3		O 3	Servo_Reset	
I 4		O 4		
I 5		O 5	Watch Dog(For Systems)	
I 6	MPG Axis_X	O 6		
I 7	MPG Axis_Y	O 7		
I 8	MPG Axis_Z	O 8		
I 9	MPG Axis_4	O 9		
I 10	MPG Axis_5	O 10		
I 11	MPG Axis_6	O 11		
I 12	MPG Rate_x10	O 12		
I 13	MPG Rate_x100	O13		
I 14	Servo_Alarm_X	O14		
I 15	Servo_Alarm_Y	O15		
I 16	Servo_Alarm_Z	O16		
I 17	Servo_Alarm_4	O17		
I 18	Servo_Alarm_5	O18		
I 19	Servo_Alarm_6	O 19		
		O 20	Servo_On_All	Servo_On_X
		O 21		Servo_On_Y
		O 22		Servo_On_Z
		O 23		Servo_On_4
		O 24		Servo_On_4
		O 25		Servo_On_6
I64~I143	OP KEY	O64~O143	OP LED	
I144~I163	I/O1 INPUT0~19	O144~O159	I/O1 OUTPUT0~15	
I164~I183	I/O2 INPUT0~19	O160~O175	I/O2 OUTPUT0~15	
I192~I255	RIO 0~63	O192~O255	RIO 0~63	
I256~I319	RIO 64~127	O256~O319	RIO 64~127	
I320~I399	Serial communication I/O	O320~O399	Serial communication OUT	

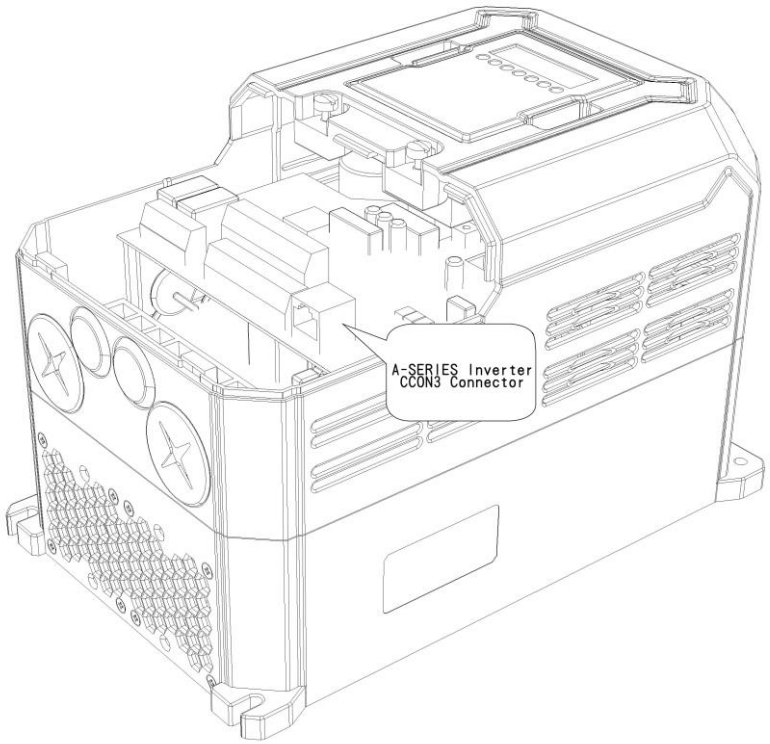
1.6 LNC-M5X8A + A-SERIES Inverter communication wiring description

1.6.1 LNC-M5X8A port



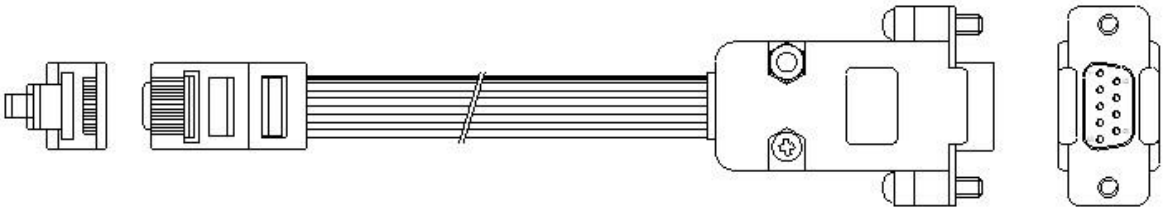
Use LNC-M5X8A COM2 Port

1.6.2 A-SERIES Inverter port



Use A-SERIES CCON3 Port

1.6.3 Cable type



A-SERIES Inverter communication cable

1.6.4 PIN definition

PIN	A-SERIES CCON3 Port	LNC-M6X8A COM2 Port	PIN
1 PIN			
2 PIN			
3PIN	RX-	TX-	6 PIN
4 PIN	RX+	TX+	7 PIN
5 PIN	TX-	RX-	9 PIN
6 PIN	TX+	RX+	8 PIN
7 PIN			
8PIN			
9 PIN			

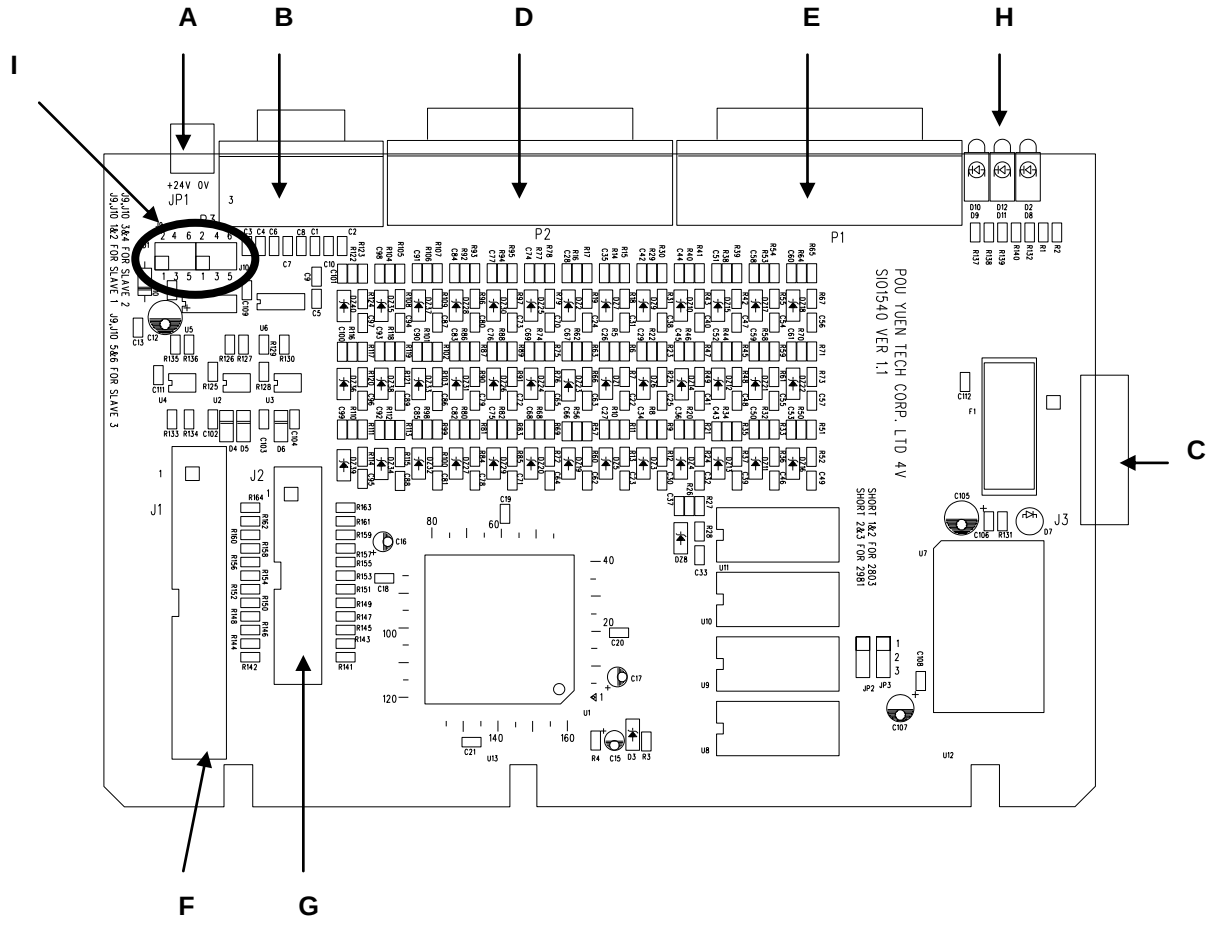
1.6.5 Notice

1. Need to make COM2 to be RS422.
2. A-SERIES Inverter communication cable is special cable, only supply by LNC.
3. available in 1M, 3M, 5M, 7M

1.7 I/O SIO 1540

I/O-SIO 1540 definition

1. Description:
    1. SIO-1540 offers 40 IN /32 OUT(also 24 IN / 32 OUT option)
    2. Hardware layout:



2. Connector description:

Power			
Picture	Type	Function	Usage
A	3PIN 3.81mm head	DC(24V) POWER INPUT	To POWER
Light			
Picture	Type	Function	Usage
H	E5V GREEN LED	E5V indicator light	E5V normal>ON
	E24V GREEN LED	E24V indicator light	E24V normal>ON
	CS YELLOW LED	Transmission Light	Connect to controller>On
	DO YELLOW LED	Transmission Light	Connect to controller>On
	DI YELLOW LED	Transmission Light	OK>Lights on
	LK YELLOW LED	Transmission Light	OK>Lights on
IO Connector			
Picture	Type	Function	Usage
B	D_SUB HD 15PIN Jack	Serial Port	To Controller RIO
C	16PIN 2.54mm easy head	Serial Port	To Controller RIO
D	D_SUB HD 44PIN Plug	Back 20 IN/16 OUT	To REL
E	D_SUB HD 44PIN Jack	Front 20 IN/16 OUT	To REL
F	40PIN 2.54 mm easy head	Spare 32 O points	OPTION
G	26PIN 2.54 mm easy head	Spare 24 I points	OPTION
Setting			
Picture	Type	Function	Usage
I	2.54mm JUMPER	SLAVE number setting	Later chapter

3. Setting:

A: E24V Power Connector

◎Description: This pin is for O point output power, if this pin has problem, O point output will be error. (Has no effect to IN point).

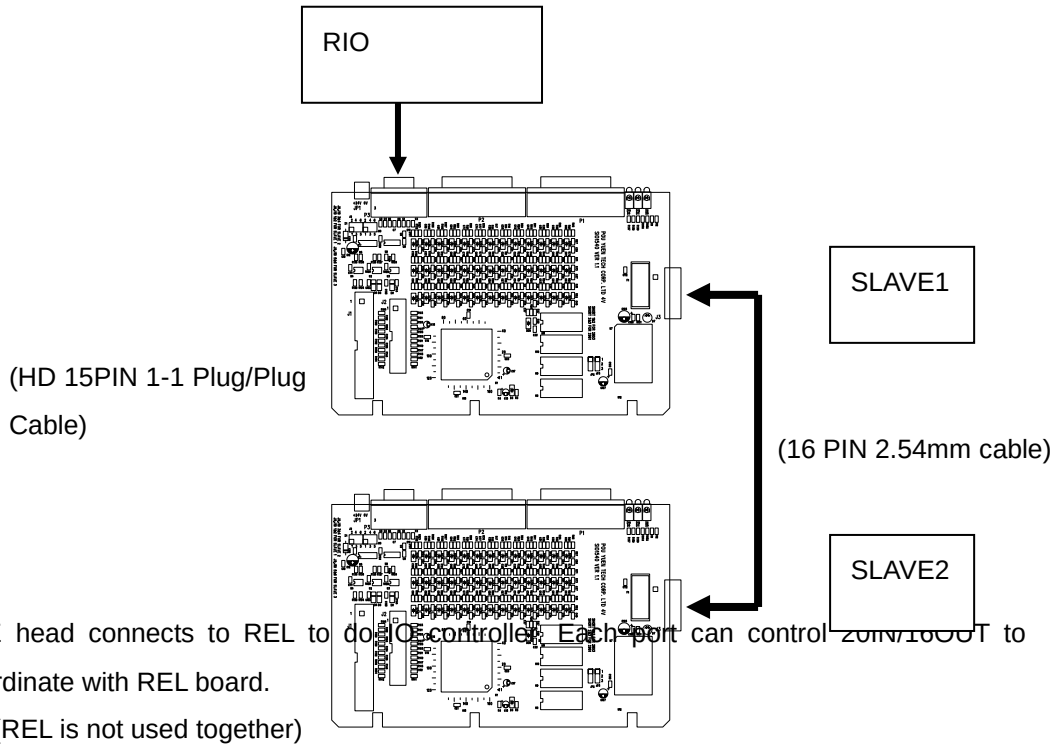
◎Rated Capacity:E24V±0.5V (3A UP)

B, C: Serial Communication Connector

◎Description: 1 B, C Connector is for serial connection; need to connect with controller's RIO port.

2 B, C Connector is for parallel signal, is for serial expansion to use.

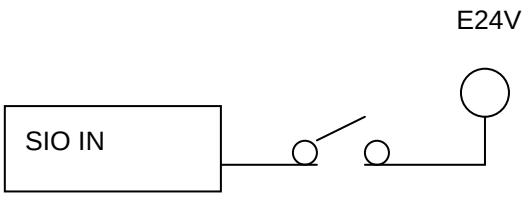
◎expansion example: Connection instruction for 2 SIO-1540 cards.



D, E: IO Port

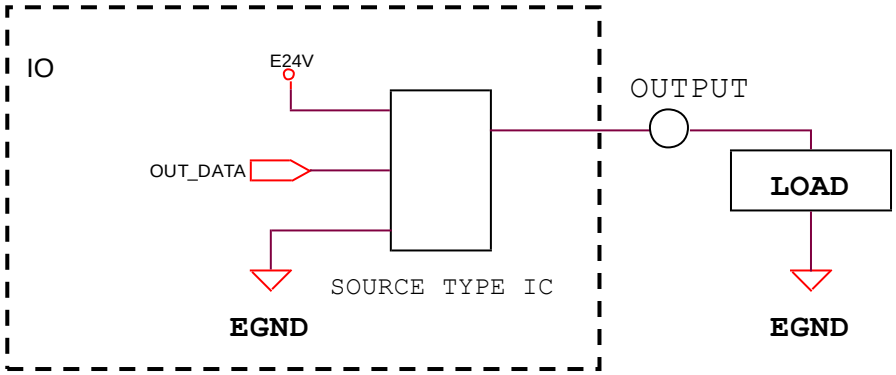
◎Description:1. D, E head connects to REL to do IO controller. Each port can control 2DIN/16OUT to coordinate with REL board.

◎IN points as below:(REL is not used together)



◎O point direct usage:(REL is not used together)

O type is SOURCE TYPE, motion output is E24V, and max voltage is 60mA



- **Please do not make the current more than 60 mA, when doing load selection. Otherwise it may have damage to components. E24V/60 mA=400Ω ← Load resistance cannot be less than this value.**
- **When O point grounds, if short-circuit happens, IC will burn out instantly, please pay special attention to is.**

F, G: Spare IO Connector

◎Description:1 F,E head reserve 32OUT/24IN-IO『control interface』, this interface cannot be directly used, need to coordinate with SIO-1530 card.

H: Communication/Power Light

◎Description:

(1) E5V Indicator light: when SIO-1540 module connects with controller system, sending power, indicator light will be ON that means the module power is complete.

(2) CS, DO Indicator light: If SIO-1540 connects with controller correctly, sending power, CS and DO will ON. If these two lights didn't ON at the same time, there may be some errors in it; there will also have problems after later transmission.

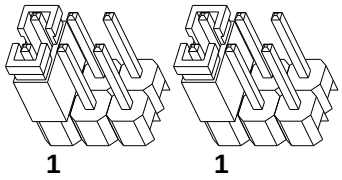
(3) LK,DI Indicator light: When CS,DO Indicator light On, If SIO-1540 module's SLAVE number setting is the same to PLC setting, LK,DI will ON.

(4) E24V Indicator light: When E24V Indicator light ON, that means the O interface power OK, but if it's OFF, O point will not have feedback.

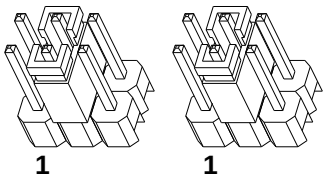
I: SLAVE JUMPER

◎Description: SLAVE number setting, after setting, you need to coordinate with software, PLC plan to work normally. Please do not change randomly.

◎Setting Sample:



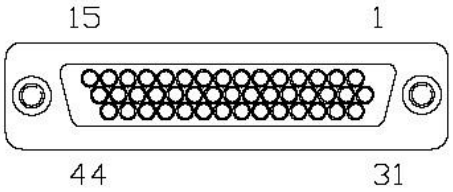
SLAVE1, JUMPER Setting



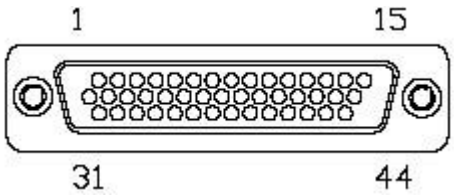
SLAVE2 ，JUMPER Setting

4. PIN Definition

1. E: 44 PIN HD Connector (Jack) definition, please refer to annex 2



2. D: 44 PIN HD Connector (Plug) definition, please refer to annex 2



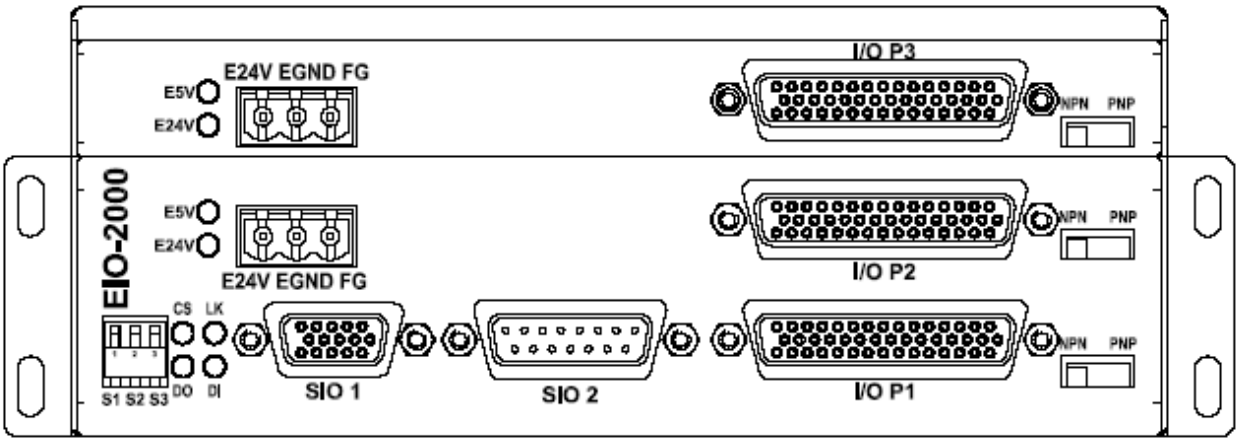
1.8 I/O EIO2000 Definition

Specification

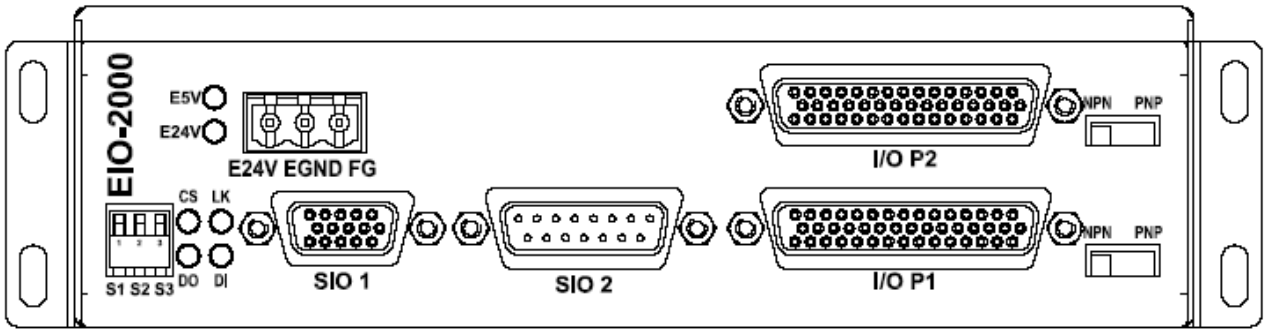
1. Type (1) - 40 IN / 32 OUT; Type (2) - 60 IN / 48 OUT
2. Every serial port can connect with 2 sets of EIO-2000；Max up to 120 IN / 96 OUT.
3. NPN and PNP mode setting.
4. SLAVE number setting (1~3)

Hardware:

EIO-2000(60in 48out)



EIO-2000(40in 32out)



Connector Light Description

Power			
Picture	Component	Function	Description
E24V EGND FG	3PIN 5.08mm	DC(24V)POWER/FG	Connect to Power/chassis
Light			
Picture	Component	Function	Description
E5V	Green LED	E5V light	
E24V	Green LED	E24V light	
CS	Yellow LED	Sending state light	Connect to controller>On
DO	Yellow LED	Sending state light	Connect to controller>On
DI	Yellow LED	Sending state light	OK>Lights on
LK	Yellow LED	Sending state light	OK>Lights on
IO Connector			
Picture	Component	Function	Description
SIO1	HD_SUB 15PIN Jack	Serial port	To controller RIO port
SIO2	D_SUB 15PIN Jack	Serial port	To controller RIO port*1
I/O P1	HD_SUB 44PIN Jack	20IN/16OUT IO port	To REL
I/O P2	HD_SUB 44PIN Jack	20IN/16OUT IO port	To REL
I/O P3	HD_SUB 44PIN Jack	20IN/16OUT IO port	To REL
Setting			
Picture	Component	Function	Description
S1 S2 S3		SLAVE number setting	The one is『ON』, others are OFF
NPN PNP		IN mode	20 IN are all at the same mode

*1 SIO1 and SIO2 is one on one parallel circuit for serial connection.

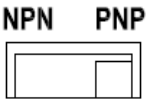
Setting and light description

(A) PNP & NPN switches:

You can use this switch to change EIO-2000 IN mode to make the 20 IN to be the same mode. (P1~P3), each connector can be set independently.

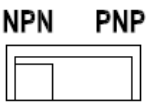
(1) PNP mode :(default)

When changing to PNP, this IN will be set to be PNP mode> external signal is E24V, at this time this IN works.



(2) NPN mode:

When changing to NPN, this IN will be set to be NPN mode> external signal is EGND, at this time this IN works.



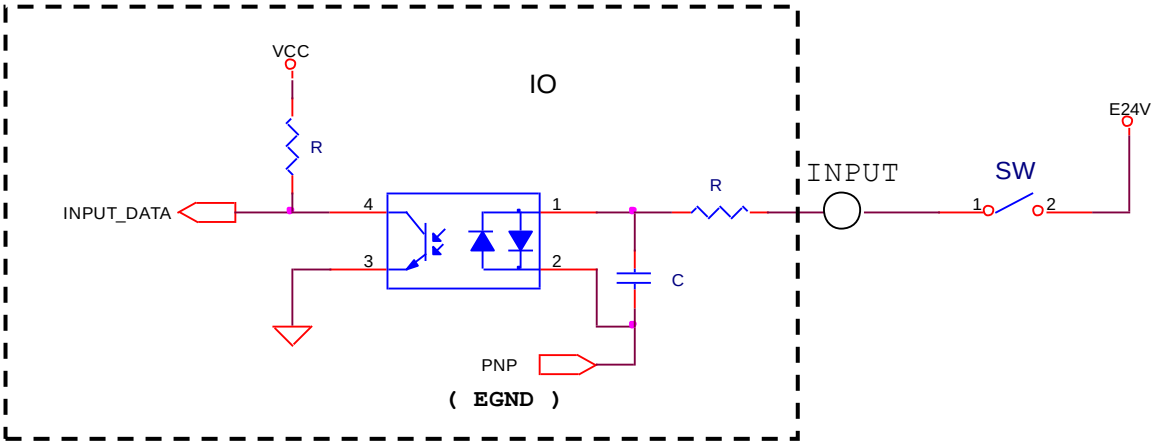
- **Component power should be the same with E24V and EGND; otherwise the IN will be invalid.**
- **Please switch off E24V power and do mode switching, make sure not to do switching while electricity ON.**

(B) IO Port (P1,P2,P3):

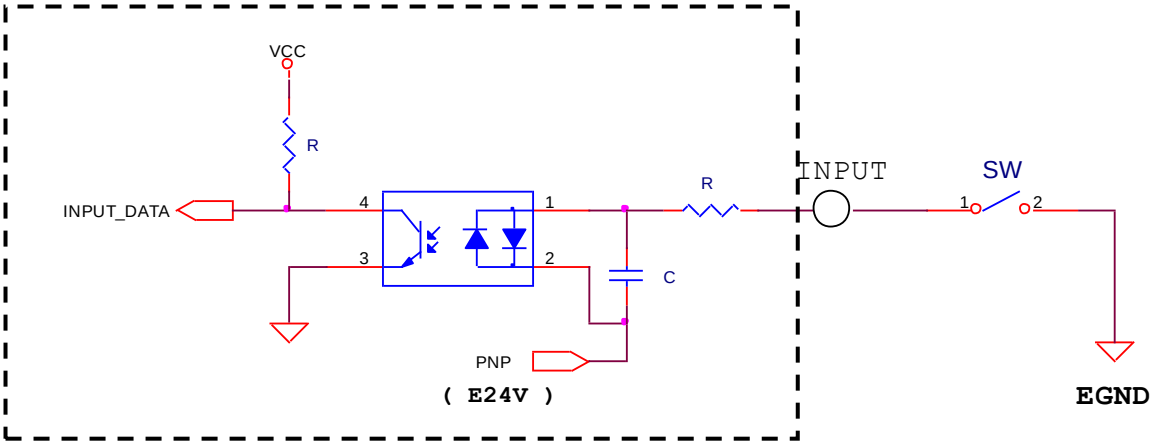
This Pin is to REL board to do IO control. Every port can control 20IN/16OUT with REL board.

(1) IN Usage (Take a point to be example)

PNP:

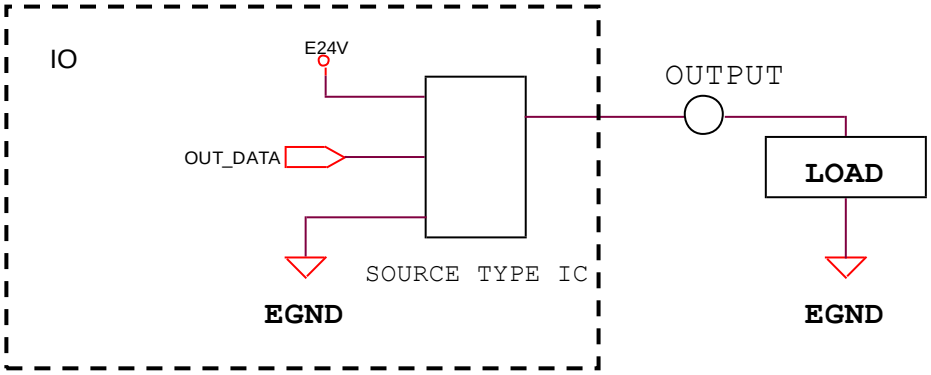


NPN:



(2) OUT Usage

OUT type is SOURCE TYPE, motion output is E24V, max voltage is 60mA



Notice:

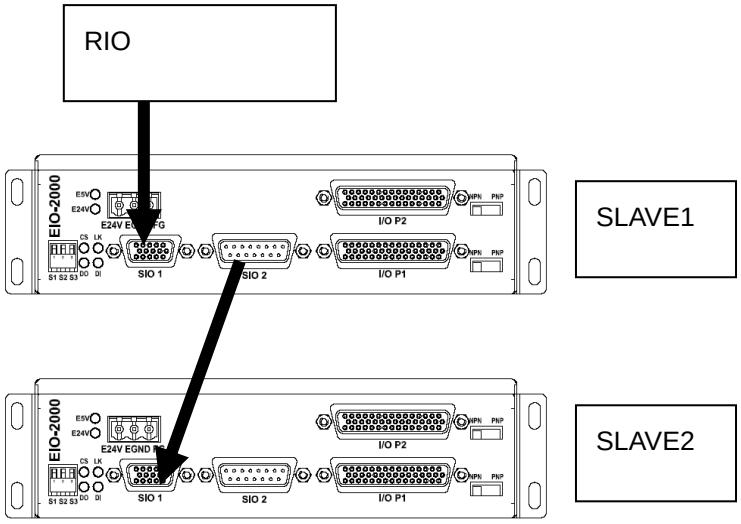
- **Please do not make the current more than 60 mA, when doing load selection. Otherwise it may have damage to components. E24V/60 mA=400Ω ← Load resistance cannot be less than this value.**
- **When O point grounds, if short-circuit happens, IC will burn out instantly, please pay special attention to is.**

(C) Serial Port SIO1,SIO2:

1. SIO1, SIO2 is serial communication control connector; need to connect with controller RIO port.
2. SIO1, SIO2 are 2 serial connectors for serial connection to expand.

Usage is as below:

(Take serial connection of 2 sets of 40IN/32OUT for example)

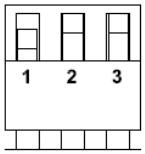


- **Serial connection cable is one on one cable, please make sure the shielding of wire, and refer to annex 1.**

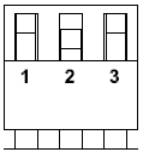
(D) SLAVE Switch:

This switch is slave number setting, you need to use software, PLC planning to coordinate with this, please do not change randomly.

1. (S1) pull to the end, 2 and 3 pull to upper side, and this IO mode is SLAVE1



2. (S2) pull to the end, 1 and 3 pull to upper side, and this IO mode is SLAVE2.



(E) E24V/EGND power input terminal:

1. 1.40 IN /32 OUT modules have 1 power connector, and 60IN /48 OUT module has 2 power connector. This power is for IO input and output. When using this module, please input E24V at 2 connectors to make the power stable.
2. When the power is introduced correctly, the E24V light will on.

- **Input voltage range is between 22V~26V.**
- **FG connects to power chassis, not to EGND. If the chassis connects to EGND, system will have error, please pay more attention on the wiring.**

(F) Light description:

E5V Light:

After EIO2000 and controller connecting to each other, send electricity and this light is ON> Module power is OK.

CS, DO Light:

After EIO2000 and controller connecting to each other, send electricity and CS,DO will be ON, but if not> there is error and the communication will be error too.

LK, DI Light:

When CS, DO is ON > if the EIO2000's SLAVE number setting is in accordance with PLC> the communication is OK>LK, DI will be ON.

E24V Light:

E24V is on> IO interface power is correct, if this light is OFF, IO will not have action.

IO Connector PIN definition is 3 connectors, please refer to annex 2.

1.9 RELY 2840 definition

REL2840

1.7.1 Description:

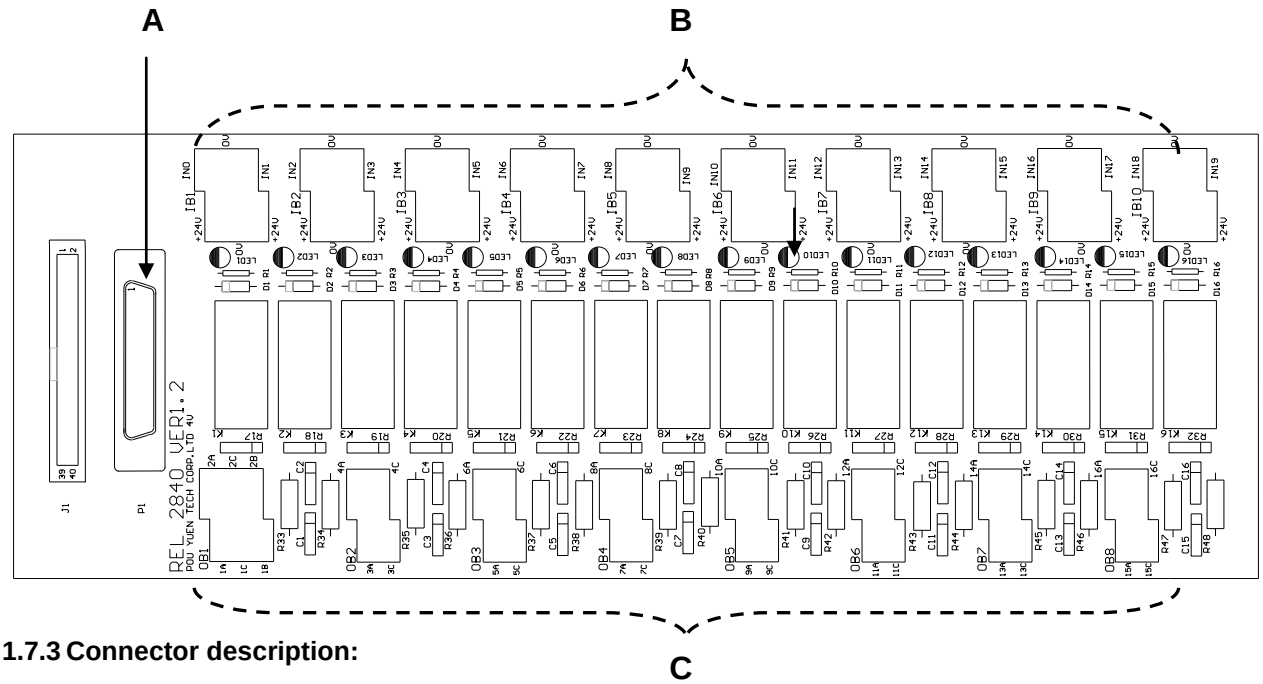
(1) Offers 20 sets of IN and E24V/EGND input point with terminal lock.

(2) Output side offers 2 sets of A,B,C connects and 14 sets of A,C connects, total for 16 sets of output.

(3) Input connect capacity is AC 6A/250V with protection circuit.

(4) This relay board use for AC/DC mix control, but the machanical relay board has life time and response time limit. For high frequency ON/OFF purpose, please use REL7816D.

1.7.2 Hardware layout:



1.7.3 Connector description:

IO Connector			
Picture	Component	Function	Description
A	D_SUB HD 44PIN Jack	20 IN / 16 OUT	USER IO
B	5.08mm Connector with lock	IN Connector	To external component
C	5.08mm Connector with lock	OUT Connector	To external component

Note

1. B Connector with terminal lock offers 20 sets of EGN and 20 sets of E24V Connector to cooperate with

input.

2. Every RELAY will have its own red LED, when the output is ON, the LED will be ON. Users can use this to debug for relay and output points.

1.7.4 Setting:

A: IO Control Connector

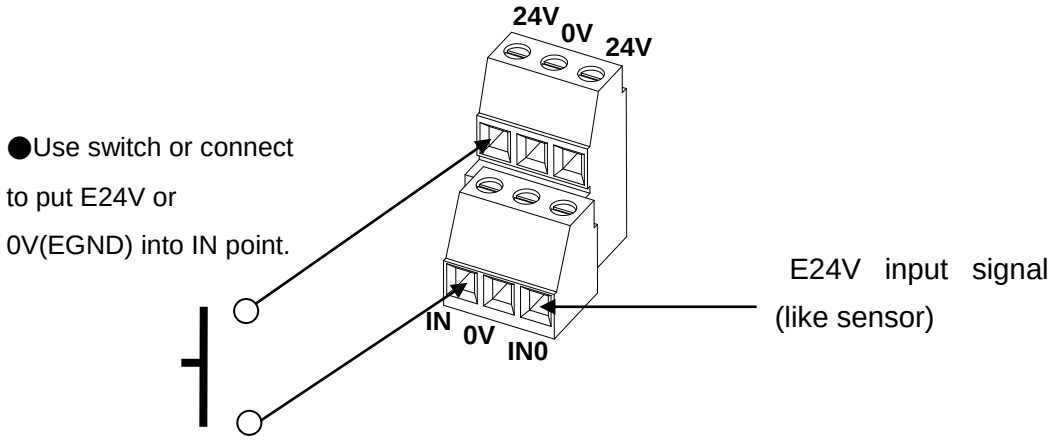
◎ Description: This connector is 20 IN/16 OUT IO control connector to connect with SIO and EIO.

B: IN Connector

◎ Description:1. IN signal will be lead in by these connectors, via IO control connector to return back to SIO and EIO.

2. The E24V and EGND (0V) of Connector was led by SIO and EIO, via IO control connector to REL-2840.

◎ IN Connector usage sample:

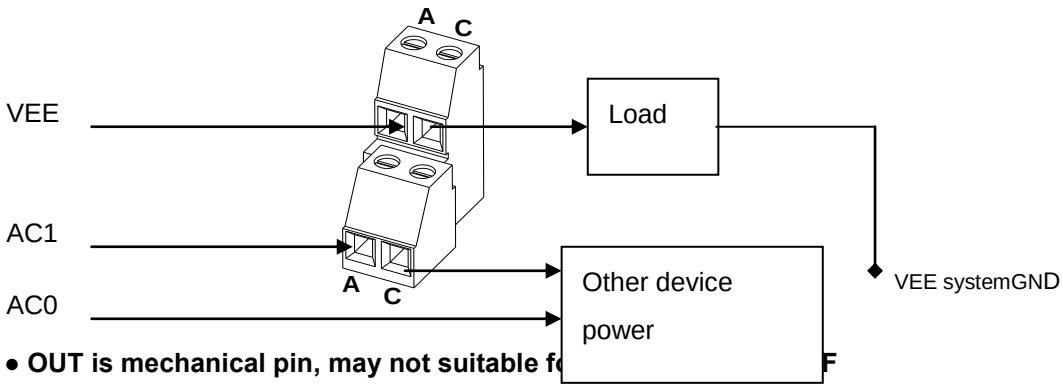


- **When using NPN IN, please make sure the SIO and EIO support NPN mode**
- **Please follow direction to do wiring, not make E24V and EGND at short circuit situation.**

C: OUT Connector

◎ Description: REL-2840 O Connector is at RELAY A and C, capacity is 6A / 250V.

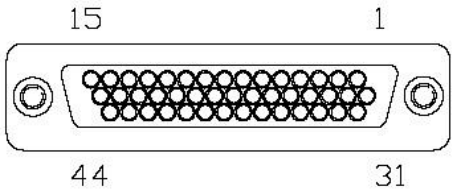
◎ OUT Connector usage sample:



- **OUT is mechanical pin, may not suitable f F**
- **DO NOT over capacity.**

1.7.5 Connecter PIN definition:

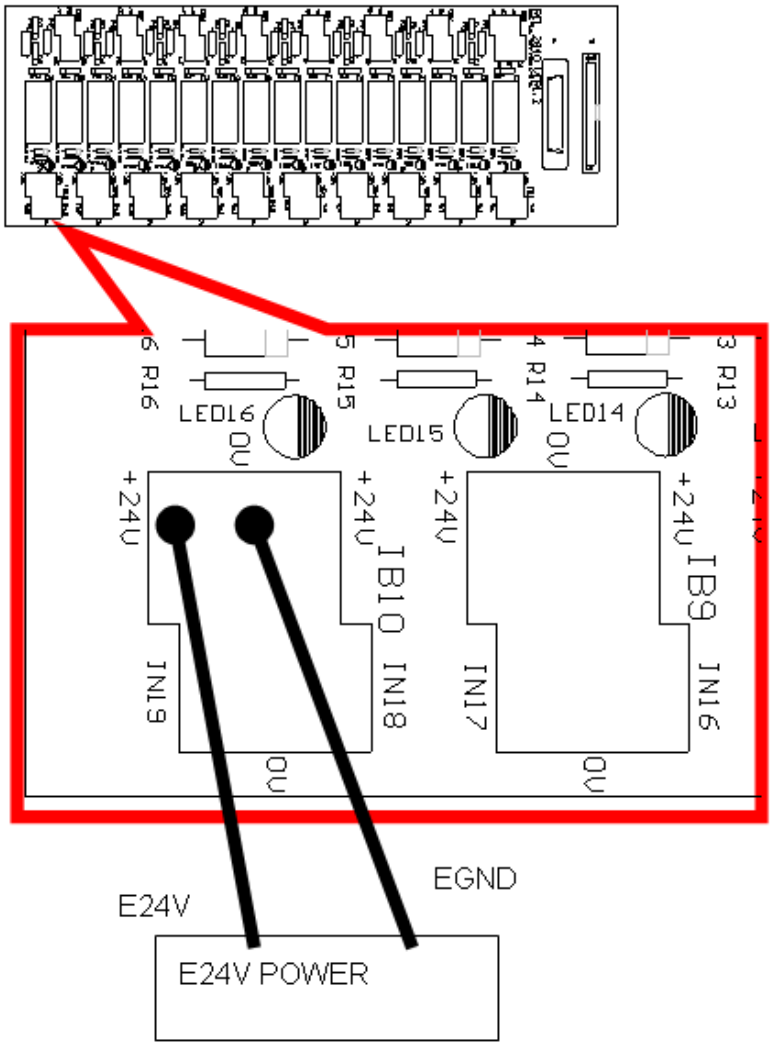
A: 44 PIN HD Connector (Plug) definitions,



PIN	definition	PIN	definition	PIN	definition
1	IN 00	16	IN 01	31	IN 02
2	IN 03	17	IN 04	32	IN 05
3	IN 06	18	IN 07	33	IN 08
4	IN 09	19	IN 10	34	IN 11
5	IN 12	20	IN 13	35	IN 14
6	IN 15	21	IN 16	36	IN 17
7	IN 18	22	IN 19	37	OUT 02
8	OUT 00	23	OUT 01	38	OUT 05
9	OUT 03	24	OUT 04	39	OUT 08
10	OUT 06	25	OUT 07	40	OUT 11
11	OUT 09	26	OUT 10	41	OUT 14
12	OUT 12	27	OUT 13	42	-
13	OUT 15	28	-	43	E24V
14	-	29	-	44	E24V
15	EGND	30	EGND	-	-

1.7.6 Power wiring note:

When Appling REL2840, please add wiring at IB10 as following



● **This POWER must same with IO module OR controller 24V power.**

1.10 Relay board REL7816D Instruction

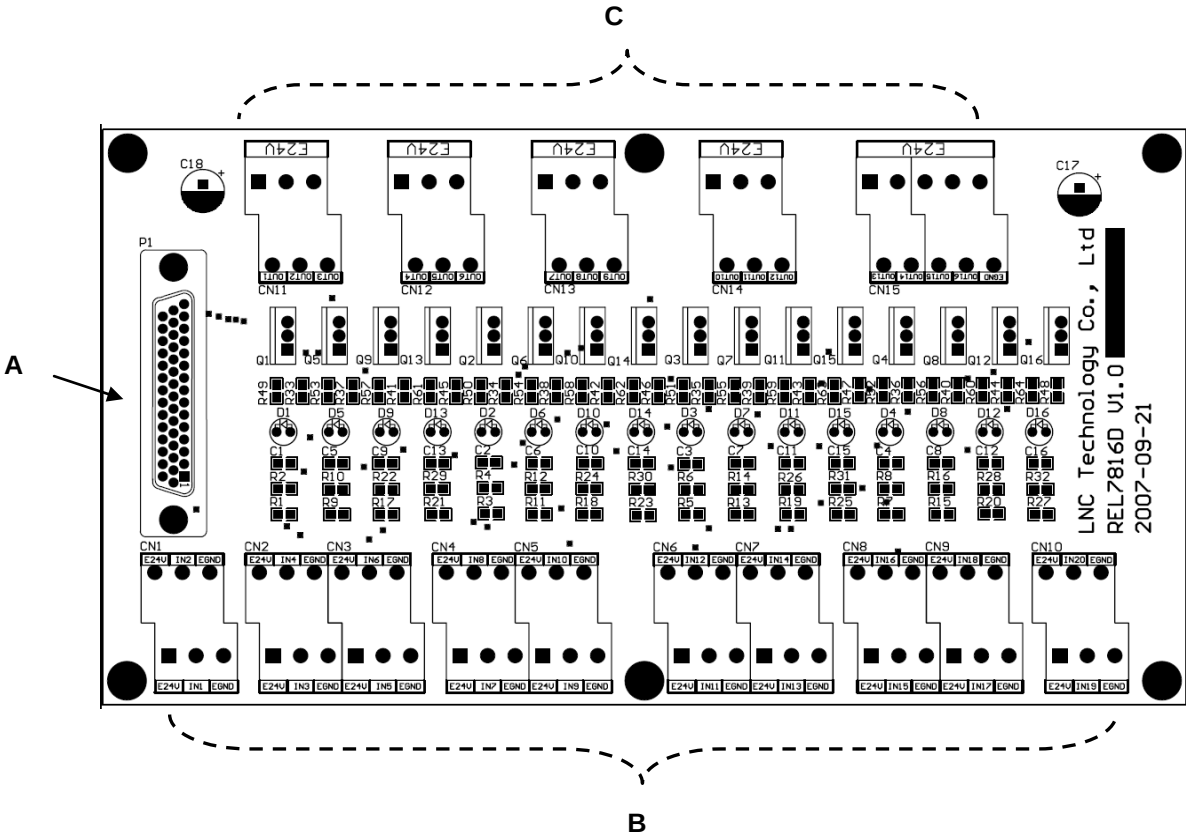
1.8.1 Regulation:

(1) Offer 20IN and E24V/EGND terminal.

(2) 16 MOSFET (SINK) output, used for DC control. High frequency ON/OFF.

(3) Output Max 2A。

1.8.2 Hardware LAYOUT:



1.8.3 Connector ,Unit Description:

IO Connector			
Picture	Component	Function	Description
A	D_SUB HD 44PIN Jack	20 IN / 16 OUT	USER IO
B	5.08mm Connector with lock	IN Connector	To external component
C	5.08mm Connector with lock	OUT Connector	To external component

◎ Note：

Note 1:B Connector with terminal lock offers 20 sets of EGN and 20 sets of E24V Connector to cooperate with input.

Note 2:Every MOSFET have its own red LED, when the output is ON, the LED will be ON. Users can use this to debug for relay and output points.

1.8.4 Setting:

A: IO Control Connector

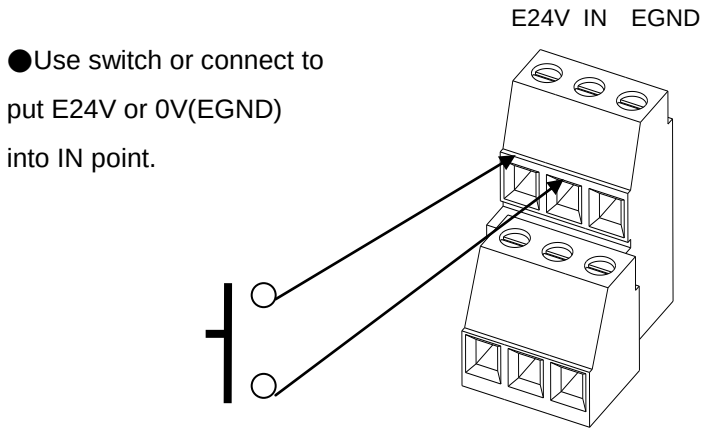
◎Description: This connector is 20 IN/16 OUT IO control connector to connect with SIO and EIO.

B: IN Connector

◎Description:

1. IN signal will be lead in by these connectors, via IO control connector to return back to SIO and EIO.
2. The E24V and EGND (0V) of Connector was led by SIO and EIO, via IO control connector to REL-7816D.

◎IN Connector usage sample:

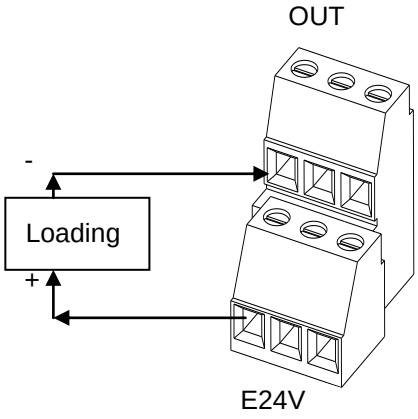


- **When using NPN IN, please make sure the SIO and EIO support NPN mode**
- **Please follow direction to do wiring, not make E24V and EGND at short circuit situation.**

C: OUT Connector

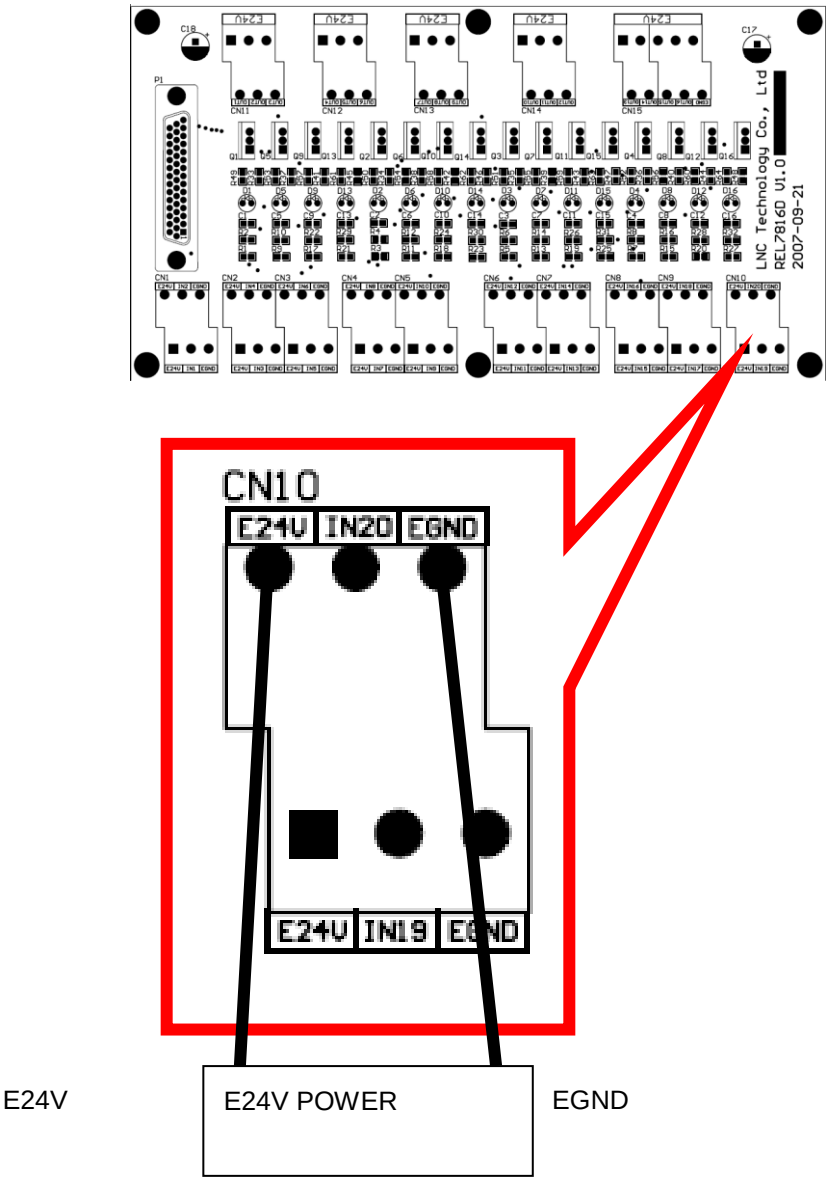
◎ Description:REL7816D Output is MOSFET acting, acting on (EGND), output max 2A.

◎ OUT Connector usage sample:



- **OUTPUT only use with DC.**
- **Max current 2A, otherwise it will damage the board.**

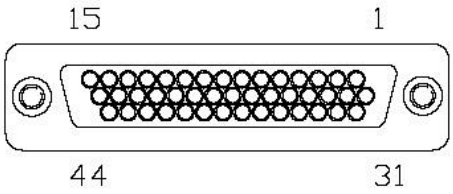
1.8.5 REL7816D must add wire on CN10 Connector as following



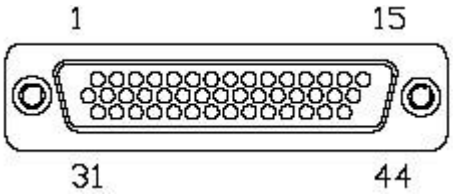
1.11 Annex

Annex 1:

44 PIN HD Connector pin details



Female



Male

IO pin details

PIN	Define	PIN	Define	PIN	Define
1	IN 00	16	IN 01	31	IN 02
2	IN 03	17	IN 04	32	IN 05
3	IN 06	18	IN 07	33	IN 08
4	IN 09	19	IN 10	34	IN 11
5	IN 12	20	IN 13	35	IN 14
6	IN 15	21	IN 16	36	IN 17
7	IN 18	22	IN 19	37	OUT 02
8	OUT 00	23	OUT 01	38	OUT 05
9	OUT 03	24	OUT 04	39	OUT 08
10	OUT 06	25	OUT 07	40	OUT 11
11	OUT 09	26	OUT 10	41	OUT 14
12	OUT 12	27	OUT 13	42	-
13	OUT 15	28	-	43	-
14	-	29	-	44	-
15	-	30	-	-	-

Description: This hardware PIN and IO define need the PLC ladder and software to make them work.

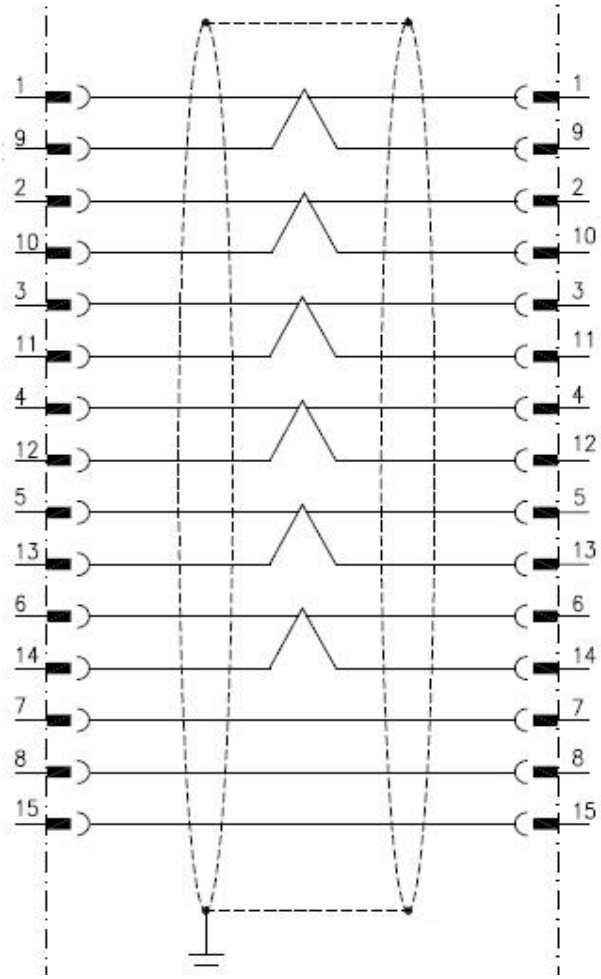
Annex 2:

SIO serial communication cable information:

*Cable is one on one.

*Use pair twisted cables

*The metal shield must be connected.



Annex 3:

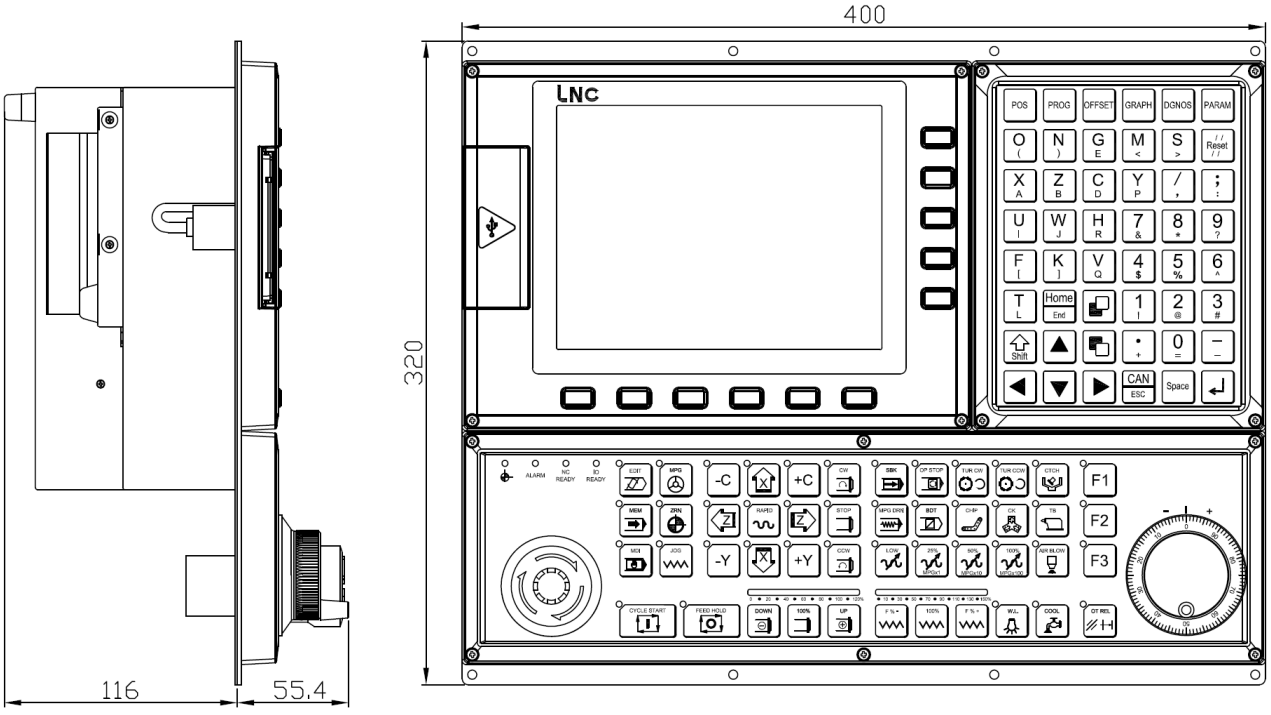
HD_SUB 44PIN(1) definition『USER IO(plug)/SIO1540(Jack)/EIO2000(Jack)』					
PIN	Definition	PIN	Definition	PIN	Definition
1	IN 00	16	IN 01	31	IN 02
2	IN 03	17	IN 04	32	IN 05
3	IN 06	18	IN 07	33	IN 08
4	IN 09	19	IN 10	34	IN 11
5	IN 12	20	IN 13	35	IN 14
6	IN 15	21	IN 16	36	IN 17
7	IN 18	22	IN 19	37	OUT 02
8	OUT 00	23	OUT 01	38	OUT 05
9	OUT 03	24	OUT 04	39	OUT 08
10	OUT 06	25	OUT 07	40	OUT 11
11	OUT 09	26	OUT 10	41	OUT 14
12	OUT 12	27	OUT 13	42	-
13	OUT 15	28	-	43	E24V
14	-	29	-	44	E24V
15	EGND	30	EGND	-	-

HD_SUB 44PIN(2)definition 『SIO1540(Plug)/EIO2000(Jack)』					
PIN	Definition	PIN	Definition	PIN	Definition
1	IN 20	16	IN 21	31	IN 22
2	IN 23	17	IN 24	32	IN 25
3	IN 26	18	IN 27	33	IN 28
4	IN 29	19	IN 30	34	IN 31
5	IN 32	20	IN 33	35	IN 34
6	IN 35	21	IN 36	36	IN 37
7	IN 38	22	IN 39	37	OUT 18
8	OUT 16	23	OUT 17	38	OUT 21
9	OUT 19	24	OUT 20	39	OUT 24
10	OUT 22	25	OUT 23	40	OUT 27
11	OUT 25	26	OUT 26	41	OUT 30
12	OUT 28	27	OUT 29	42	-
13	OUT 31	28	-	43	E24V
14	-	29	-	44	E24V
15	EGND	30	EGND	-	-

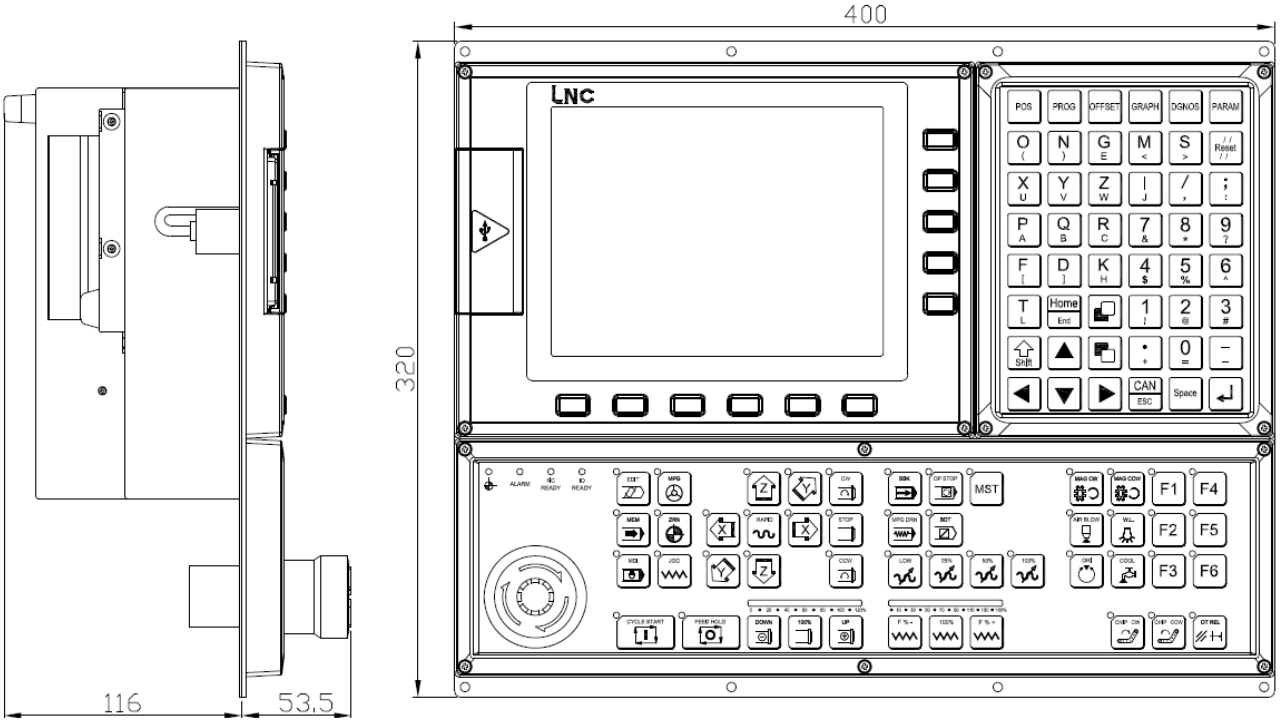
HD_SUB 44PIN(3) definition『EIO2000(Jack)(60IN / 48OUT) has this Connector 』					
PIN	Definition	PIN	Definition	PIN	Definition
1	IN 40	16	IN 41	31	IN 42
2	IN 43	17	IN 44	32	IN 45
3	IN 46	18	IN 47	33	IN 48
4	IN 49	19	IN 50	34	IN 51
5	IN 52	20	IN 53	35	IN 54
6	IN 55	21	IN 56	36	IN 57
7	IN 58	22	IN 59	37	OUT 34
8	OUT 32	23	OUT 33	38	OUT 37
9	OUT 35	24	OUT 36	39	OUT 40
10	OUT 38	25	OUT 39	40	OUT 43
11	OUT 41	26	OUT 42	41	OUT 46
12	OUT 44	27	OUT 45	42	-
13	OUT 47	28	-	43	E24V
14	-	29	-	44	E24V
15	EGND	30	EGND	-	-

2. Dimension and application instruction

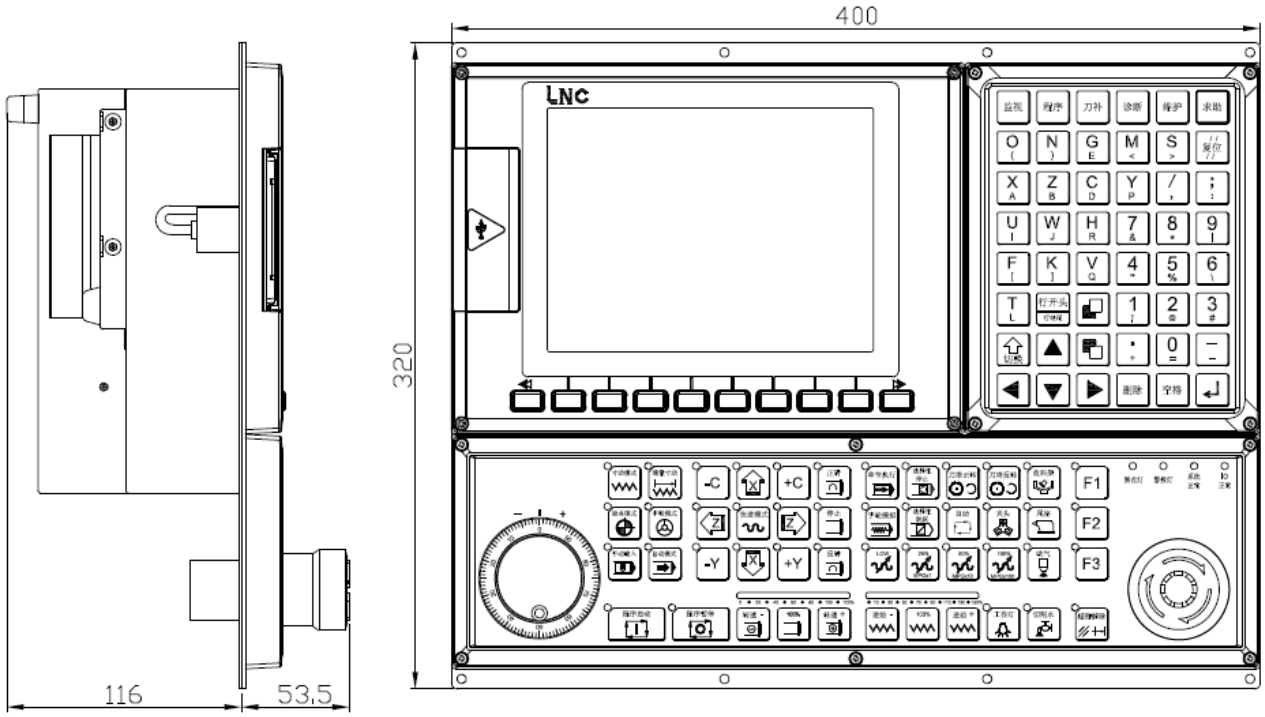
2.1 Dimension



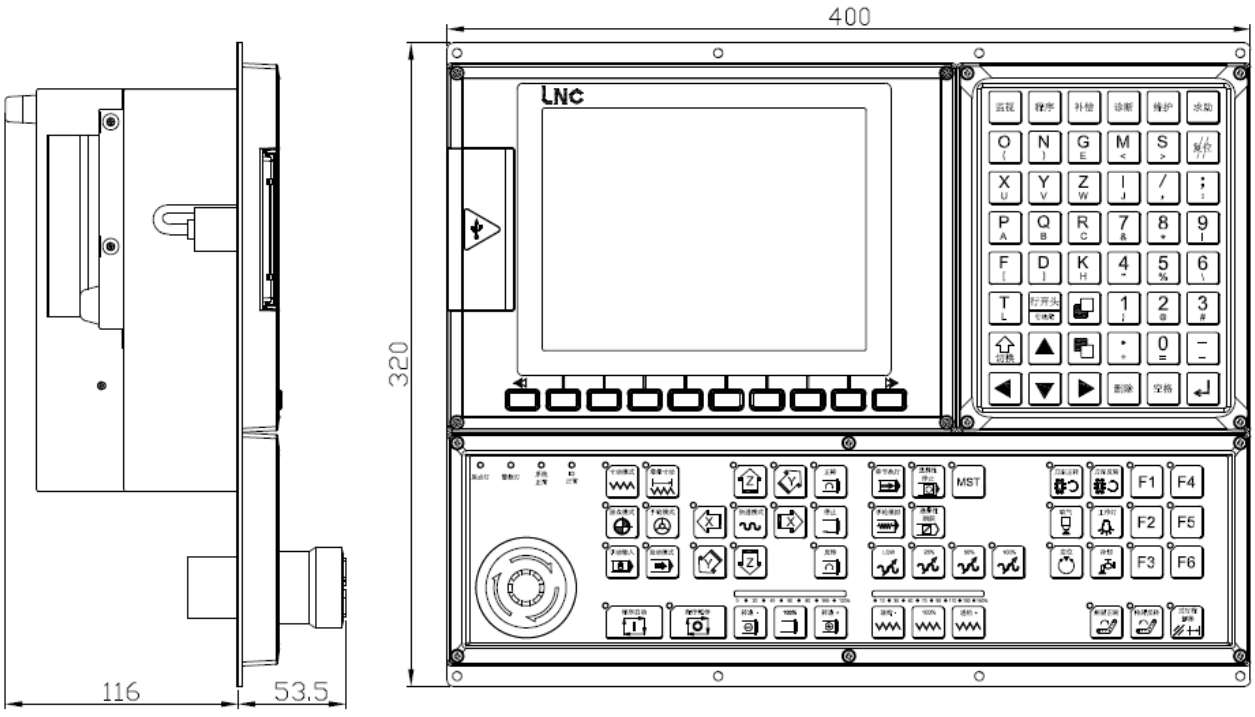
T 5X8A Dimension



M 5X8A Dimension

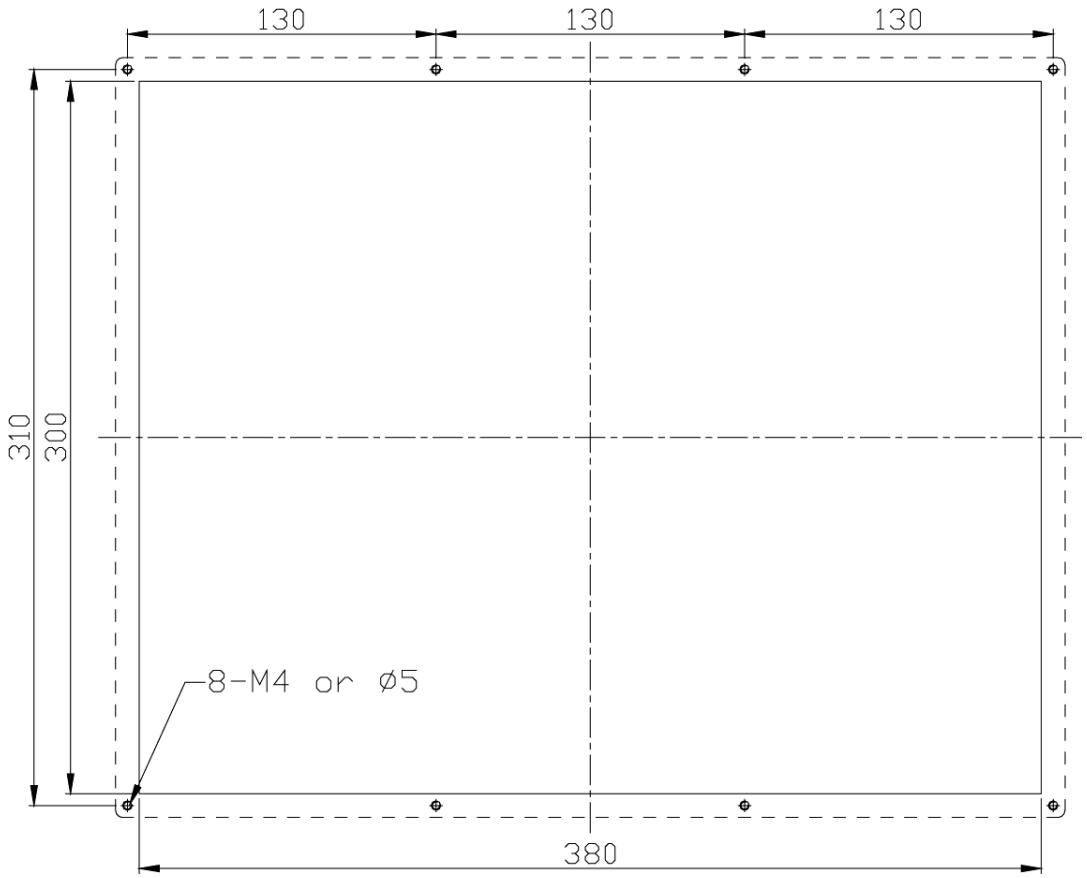


LNC-T5800A Dimension

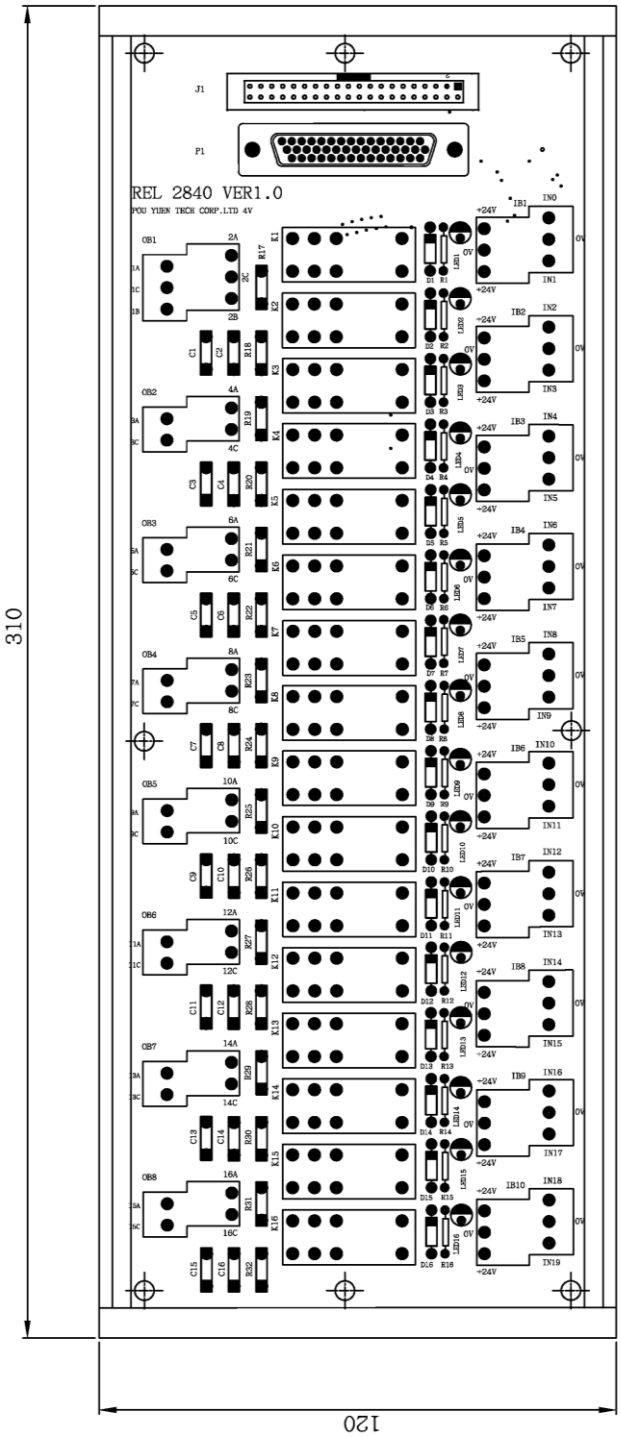


LNC-M5800A Dimension

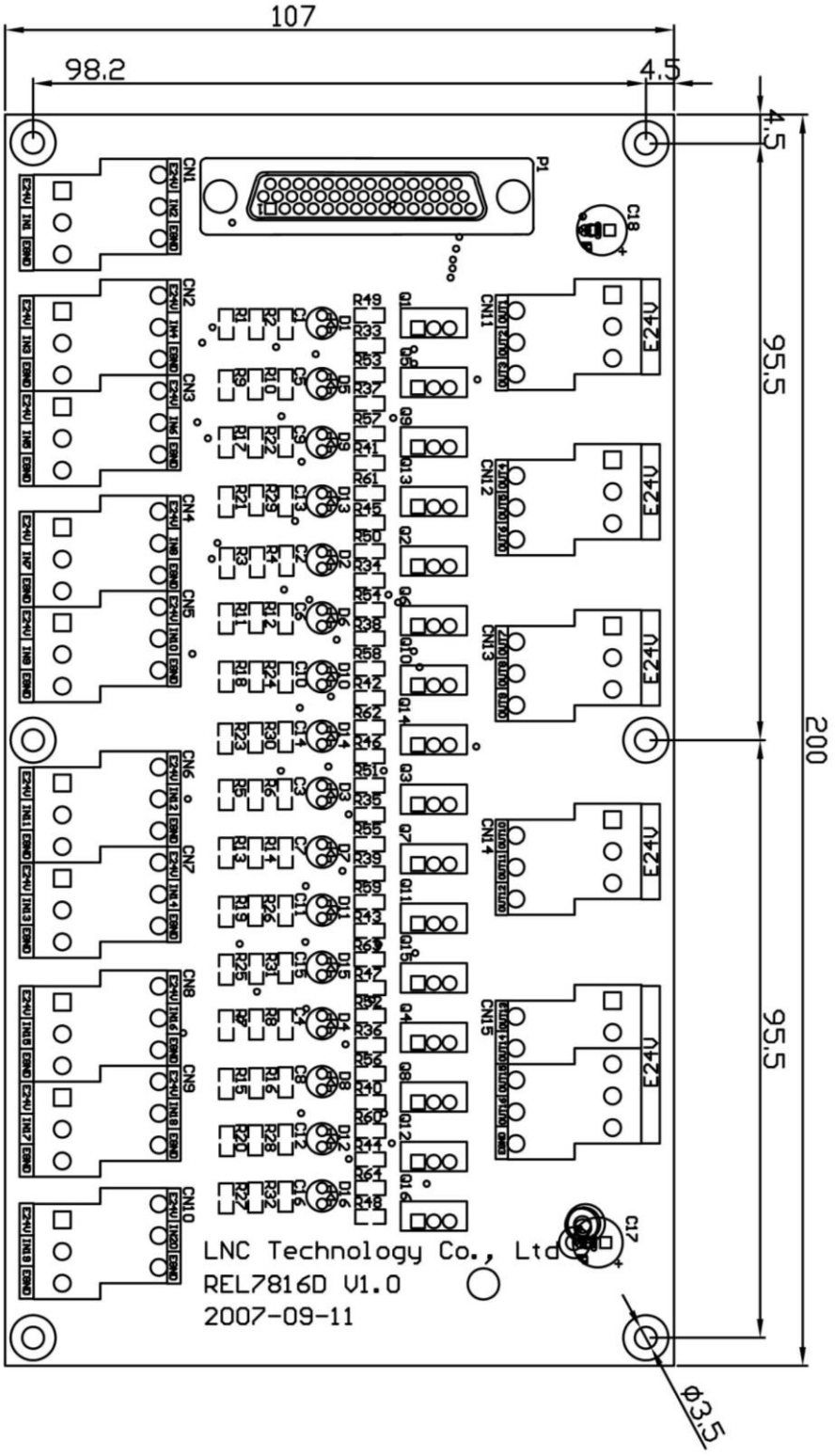
2.2 Chassis dimension



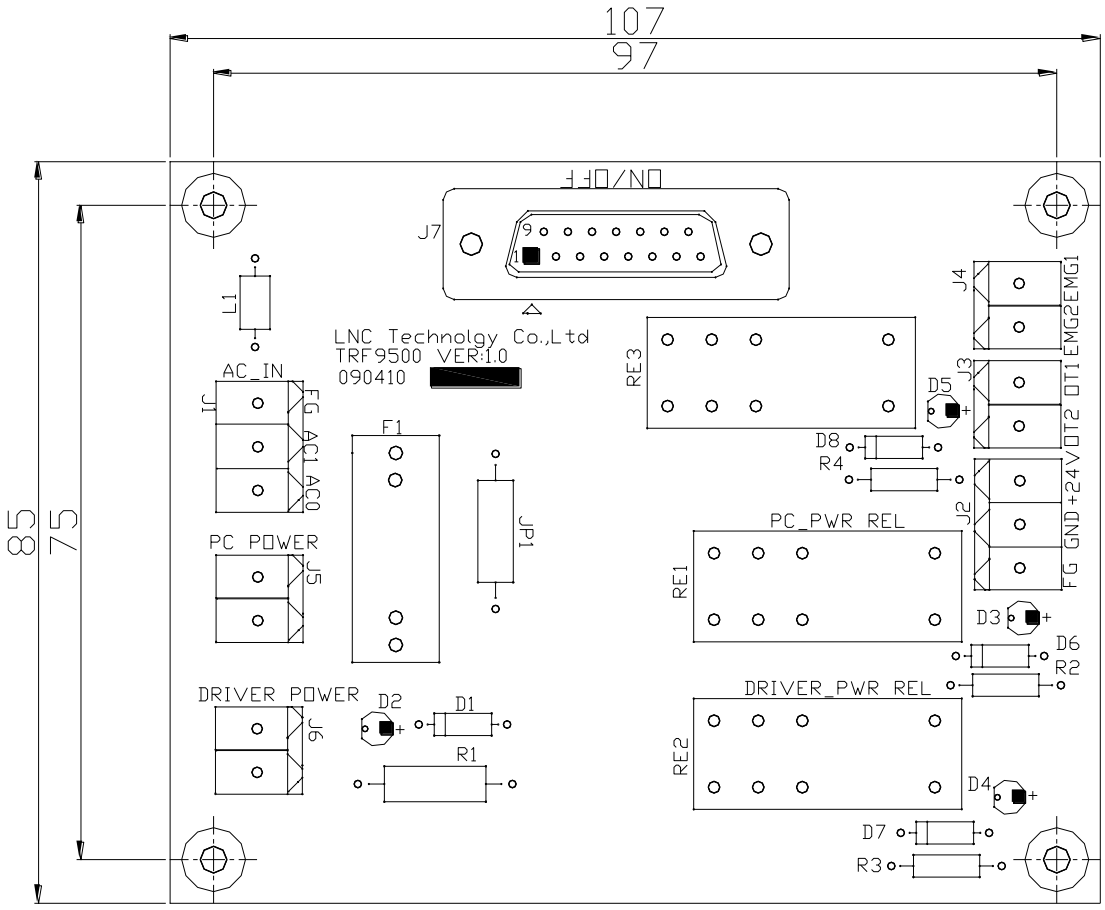
2.3 REL2840



2.4 REL7816D


107
98.2
4.5
4.5
95.5
95.5
200
LNC Technology Co., Ltd
REL7816D V1.0
2007-09-11
φ3.5

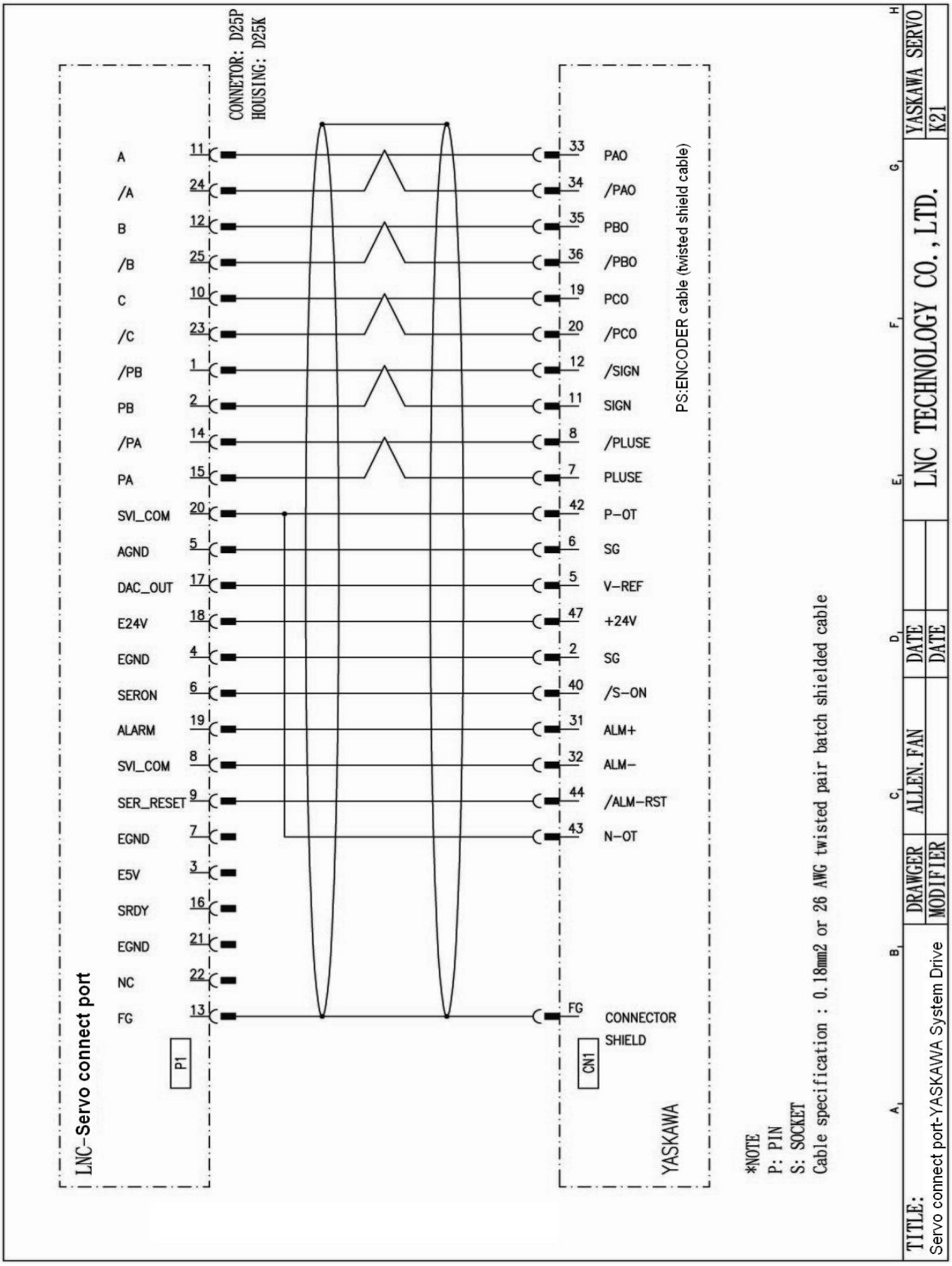
TRF-9500 Dimension

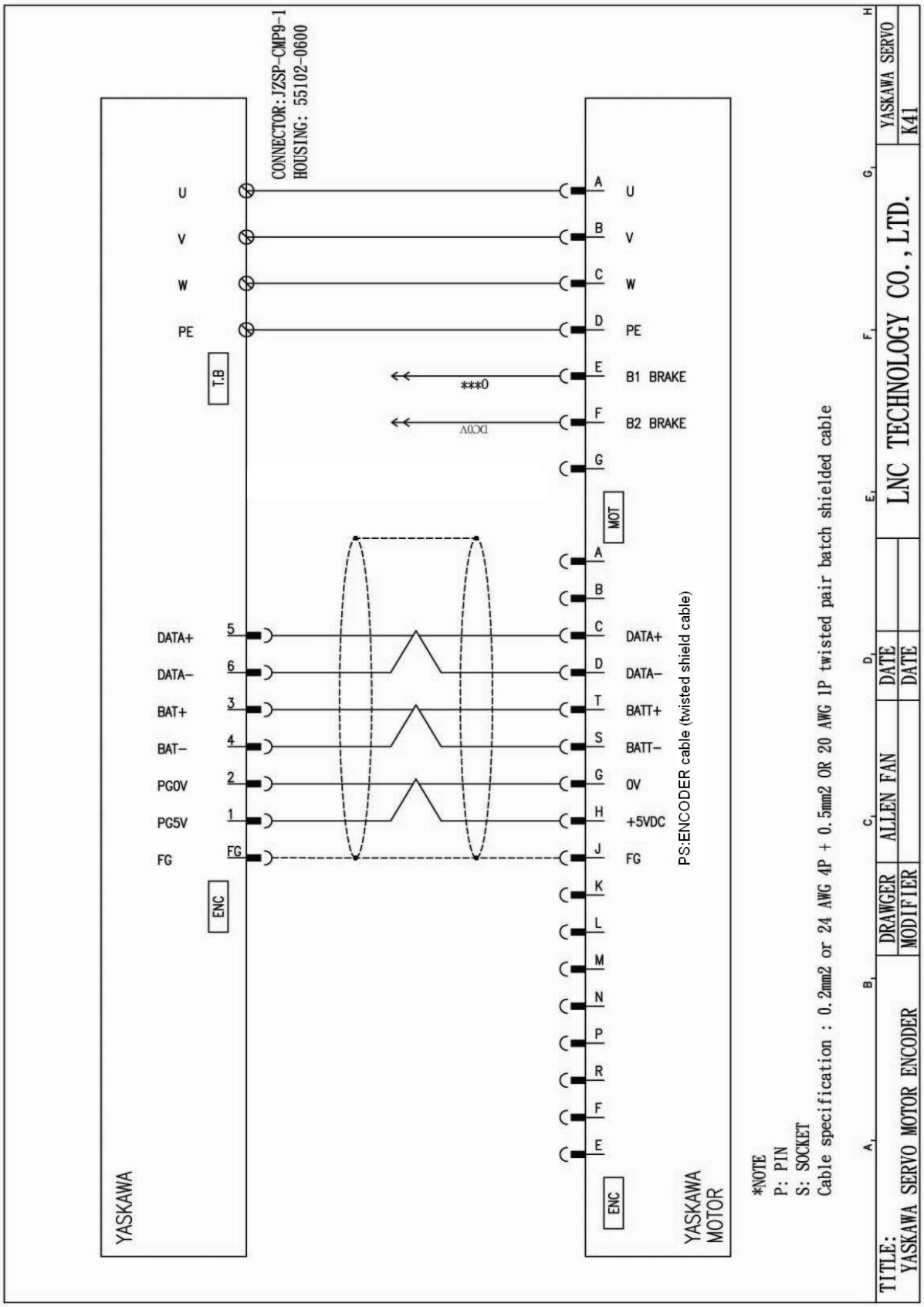


Please follow the chassis dimensions, if the screw hole does not match and force to apply may cause damage.

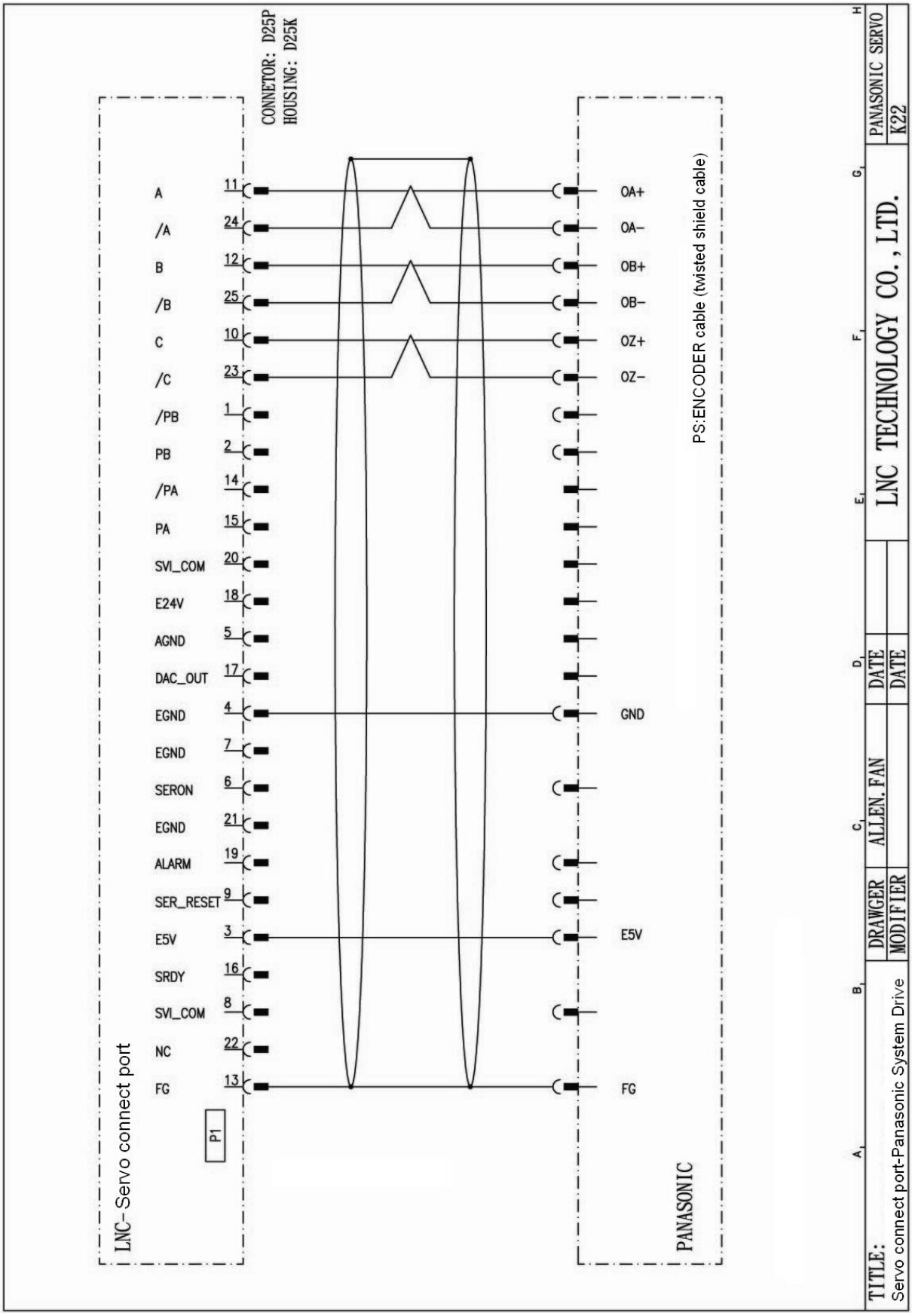
Appendix A Servo wiring instruction

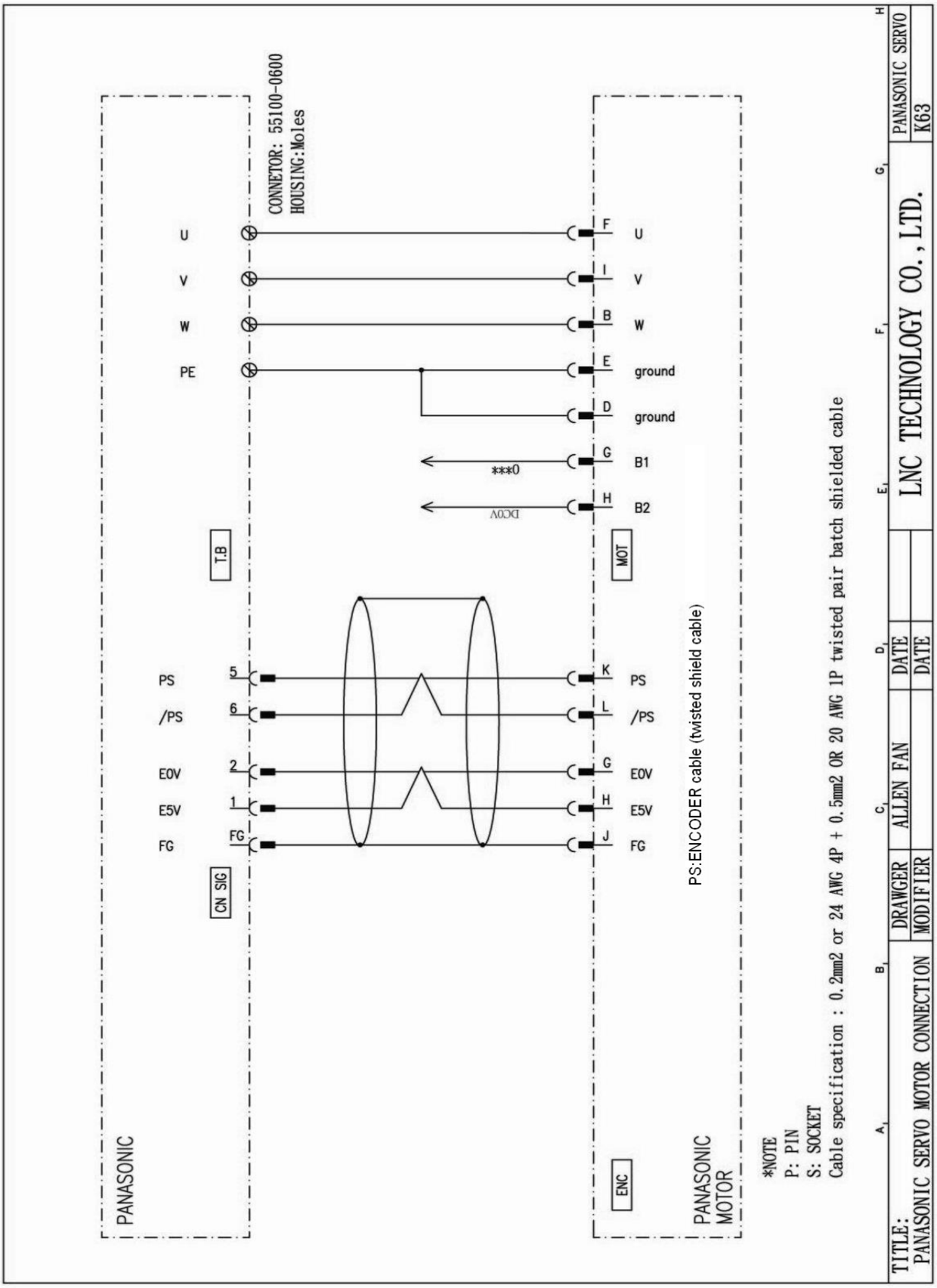
A1 Yaskawa servo



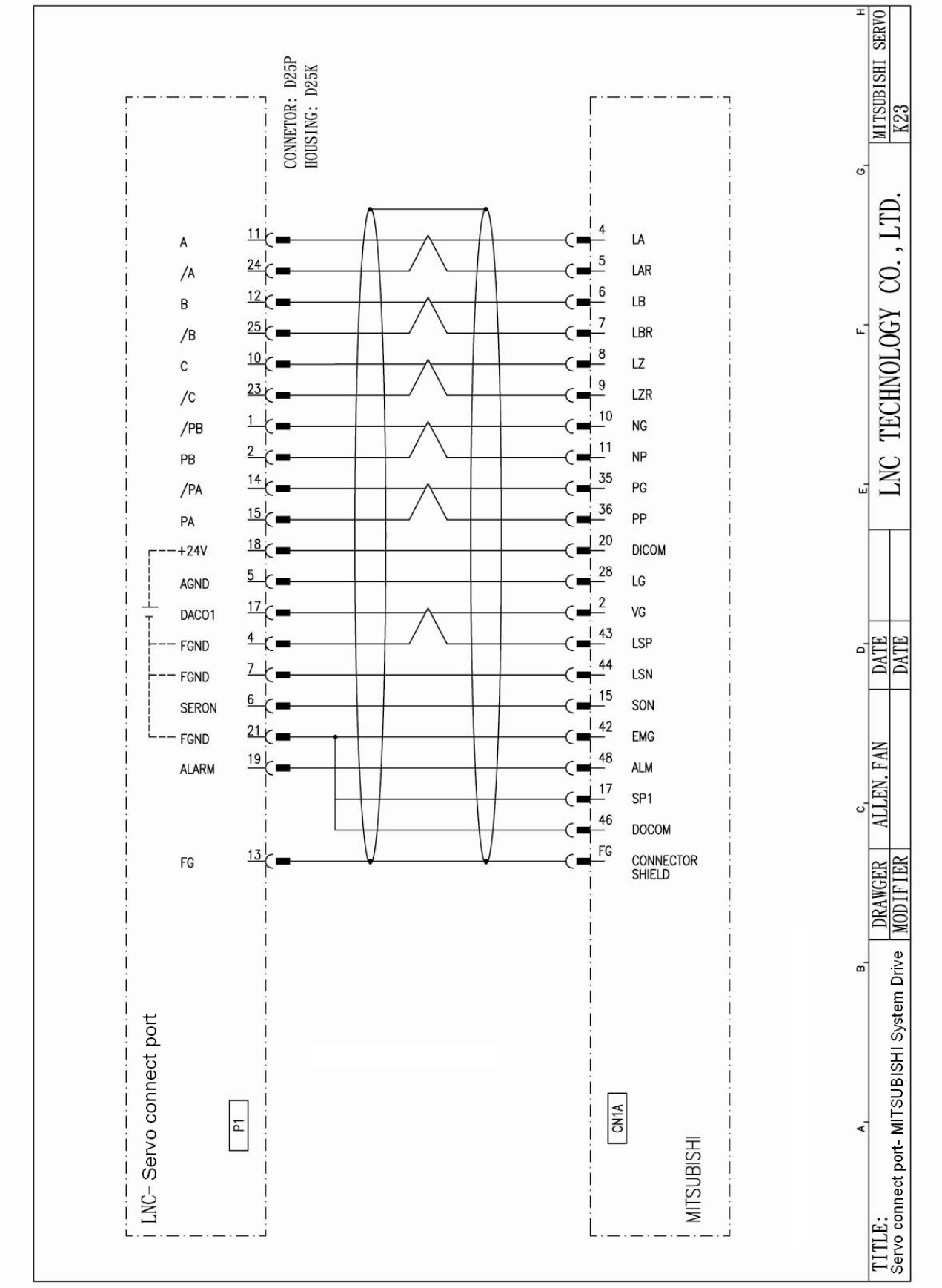

CONNECTOR:JZSP-CMP9-1
HOUSING: 55102-0600
U
V
W
PE
T.B
***0
DC0V
B1 BRAKE
B2 BRAKE
MOT
DATA+
DATA-
BAT+
BAT-
PG0V
PG5V
FG
ENC
PS:ENCODER cable (twisted shield cable)
YASKAWA
YASKAWA MOTOR
ENC
*NOTE
P: PIN
S: SOCKET
Cable specification : 0.2mm2 or 24 AWG 4P + 0.5mm2 OR 20 AWG 1P twisted pair batch shielded cable
LNC TECHNOLOGY CO., LTD.
TITLE:
YASKAWA SERVO MOTOR ENCODER
DRAWGER
ALLEN FAN
MODIFIER
DATE
YASKAWA SERVO
K41

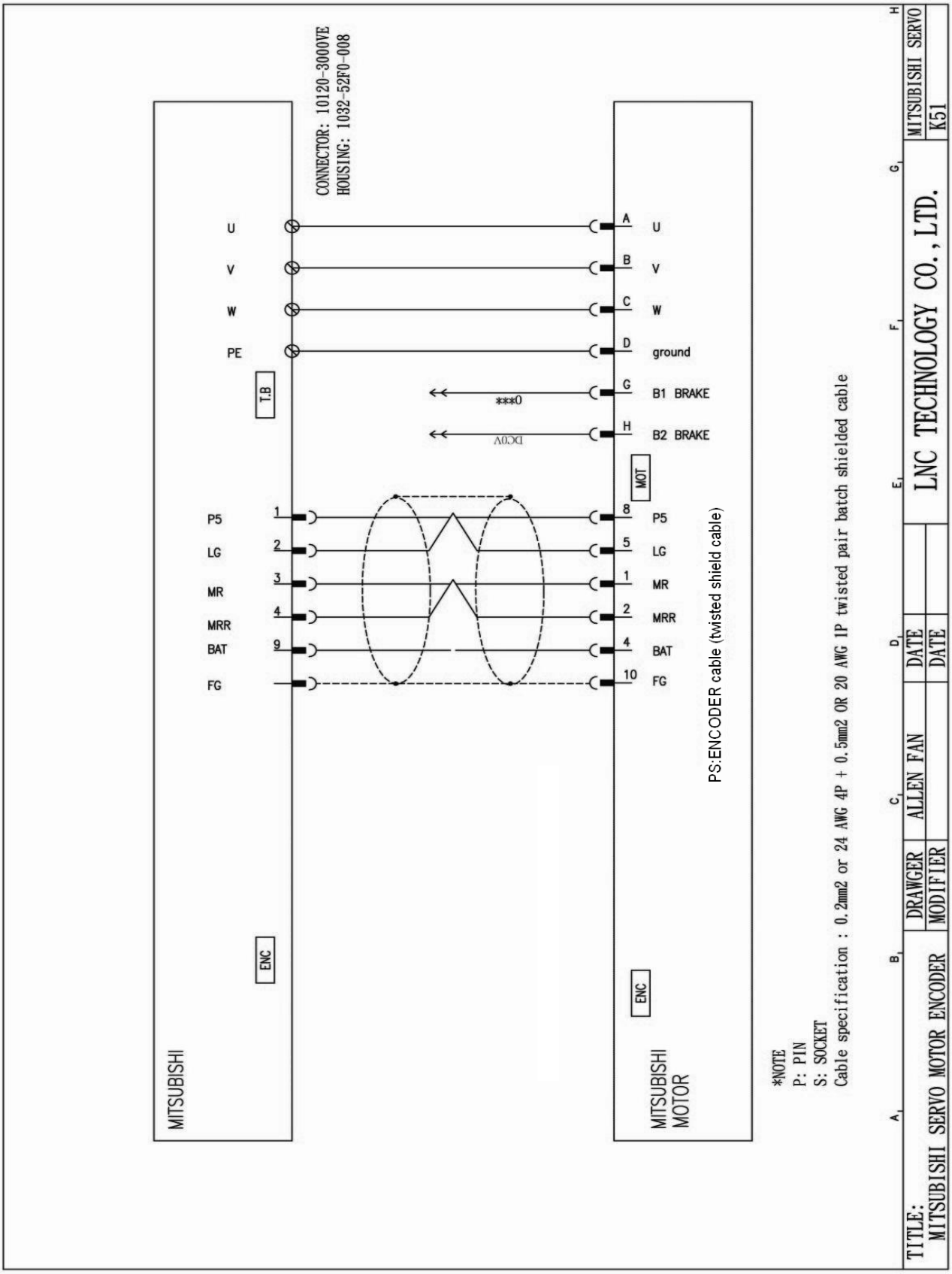
A2 Panasonic




PANASONIC
CONNETOR: 55100-0600
HOUSING:Moles
U
V
W
PE
T.B
PS
/PS
E0V
E5V
FG
CN SIG
5
6
2
1
FG
F
I
B
E
D
G
H
U
V
W
ground
ground
B1
B2
MOT
K
L
G
H
J
PS
/PS
E0V
E5V
FG
ENC
PANASONIC
MOTOR
PS:ENCODER cable (twisted shield cable)
*NOTE
P: PIN
S: SOCKET
Cable specification : 0.2mm2 or 24 AWG 4P + 0.5mm2 OR 20 AWG 1P twisted pair batch shielded cable
TITLE:
PANASONIC SERVO MOTOR CONNECTION
DRAWGER
MODIFIER
ALLEN FAN
DATE
DATE
LNC TECHNOLOGY CO., LTD.
PANASONIC SERVO
K63

A3 Mitsubishi

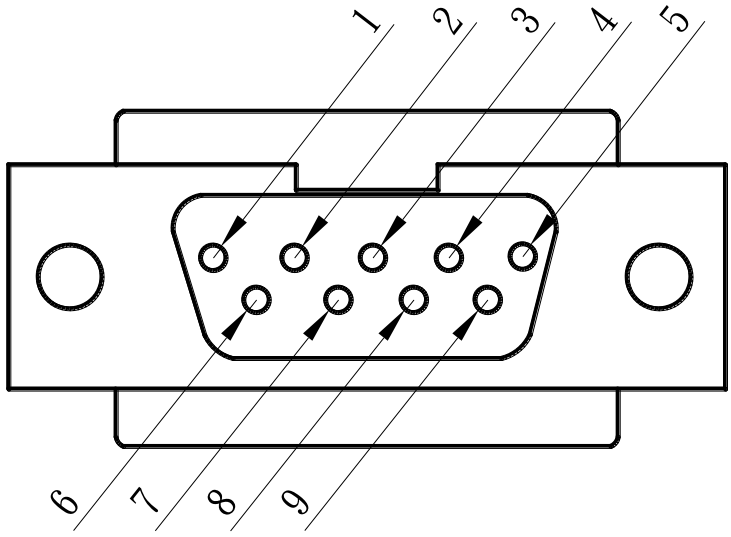



CONNECTOR: 10120-3000VE
HOUSING: 1032-52P0-008
U
V
W
PE
T.B
P5
LG
MR
MRR
BAT
FG
ENC
MITSUBISHI
A U
B V
C W
D ground
G B1 BRAKE
H B2 BRAKE
MOT
8 P5
5 LG
1 MR
2 MRR
4 BAT
10 FG
ENC
MITSUBISHI MOTOR
PS:ENCODER cable (twisted shield cable)
*NOTE
P: PIN
S: SOCKET
Cable specification : 0.2mm2 or 24 AWG 4P + 0.5mm2 OR 20 AWG 1P twisted pair batch shielded cable
LNC TECHNOLOGY CO., LTD.
TITLE: MITSUBISHI SERVO MOTOR ENCODER
DRAWGER ALLEN FAN DATE
MODIFIER DATE
MITSUBISHI SERVO
K51

Appendix B RS232 Connection Description

For remote transmission connector standard, it means the remote transmission connector and the external setting signal connection standard. RS-232C is the very easy transmission standard. If not using hard-part flow control, only needs 3 signal cables in order to accomplish the double transmission jobs.

The electronic feature of RS232 belongs to the in-balance transmission method. So the transmission distance is a little bit short, approximate 15m, due to the anti-interference function is weak. According to the RS-232C standard, connector circuit must be the physical D type connector. D type connector has 25 cords (short name is DB25). But, it can be 9 cords (short name is DB9). Most of PC uses DB9, like the diagram show below:



PIN	Abb.	Meaning
Pin1	CD	Carrier Detect
Pin2	RXD	Receive
Pin3	TXD	Transmit
Pin4	DTR	Data Terminal Ready
Pin5	GND	Ground
Pin6	DSR	Data Set Ready
Pin7	RTS	Request To Send
Pin8	CTS	Clear To Send
Pin9	RI	Ring Indicator

Transmitting Cable instruction

There are two types of Pin for a normal type remote port. One is 9 Pin and the other one is 25 Pin. Usually the NC side has 9Pin male port. But, the PC side has either 9Pin or 25Pin. Male port.

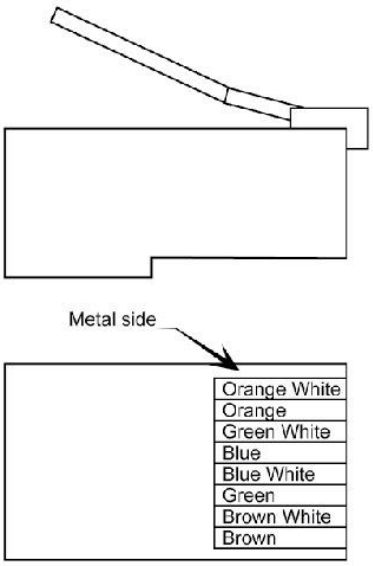
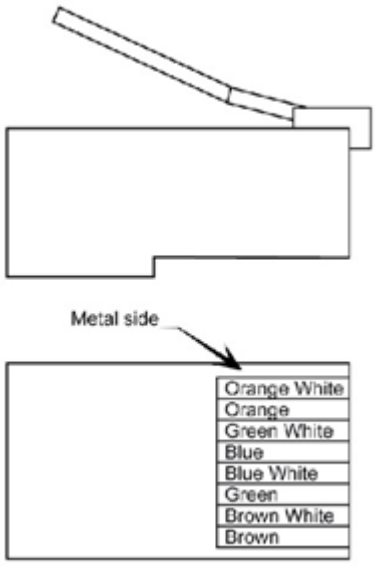
The method to connect NC and PC is to do the transmitting via jumper cable. If user's equipment is 9Pin, then please use the 9Pin connector. Actually, 9Pin is very useful for other controller system application. Sometimes, 3Pin can have the same control function. So the simplest 3Pin is to use the 2nd, the 3rd and the 5th pins to receive and transmit:

Pin definition as following:

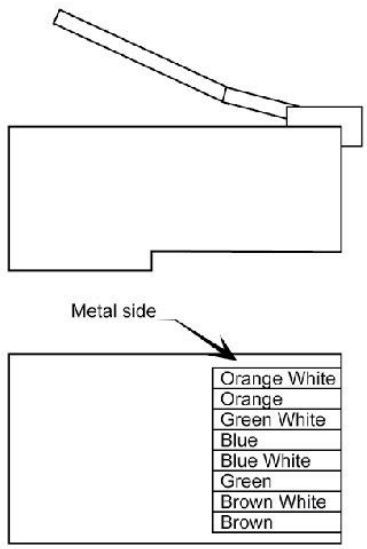
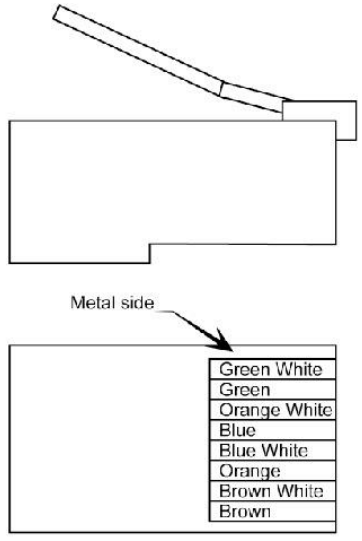
NC COM1(9pin female) to PC COM1(9pin female)	NC PC ---------- pin2(RD) --- pin3(TD) pin3(TD) --- pin2(RD) pin5(SG) --- pin5(SG)
NC COM1(9pin female) to PC COM2(25pin female)	NC PC ---------- pin2(RD) --- pin3(TD) pin3(TD) --- pin2(RD) pin5(SG) --- pin7(SG)

Appendix C net cable instruction

Ordinary HUB connects with controller:

Ordinary RJ45 cable	
PC	NC
	

Directly connection

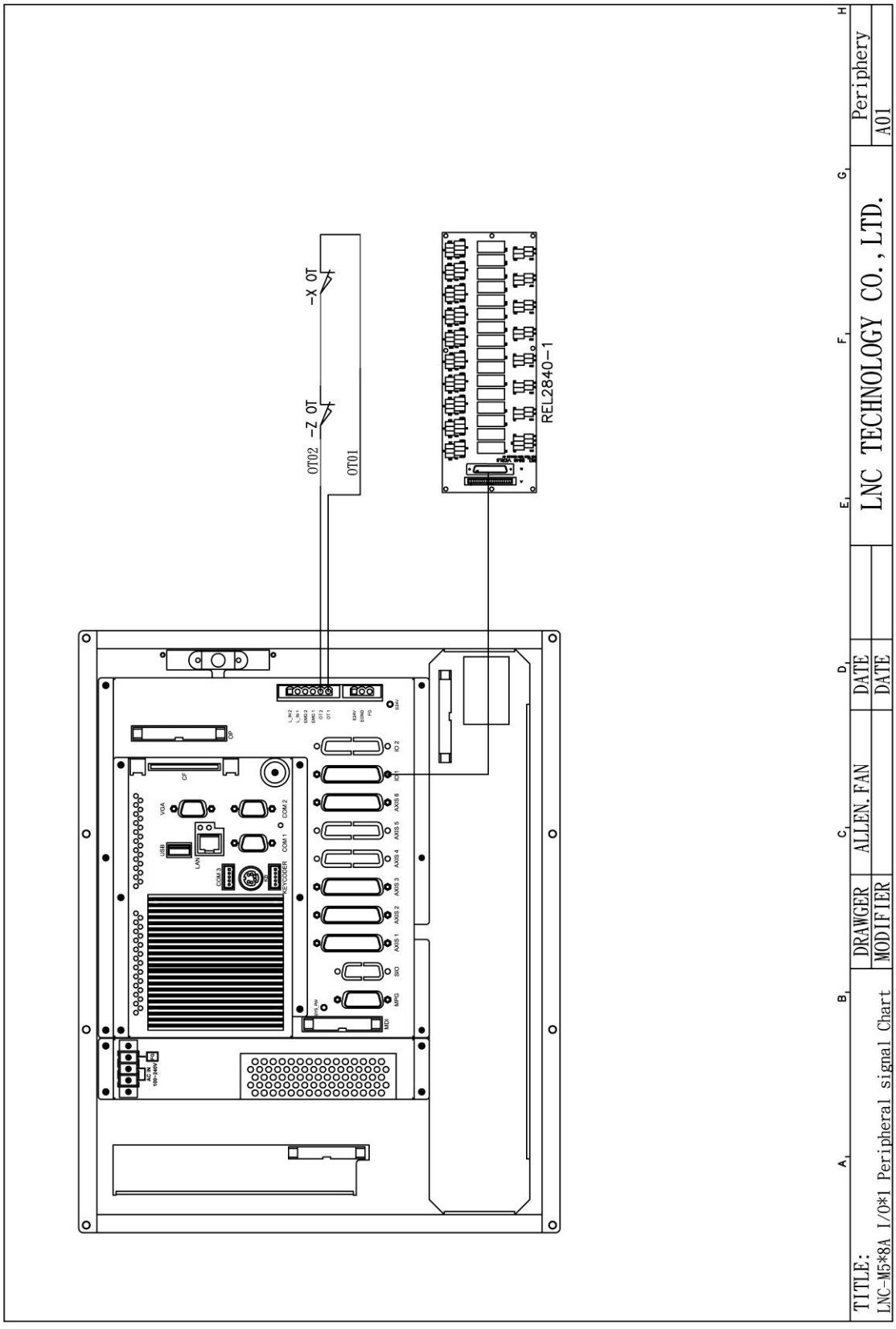
One to One link, RJ45 instruction	
PC	NC
	

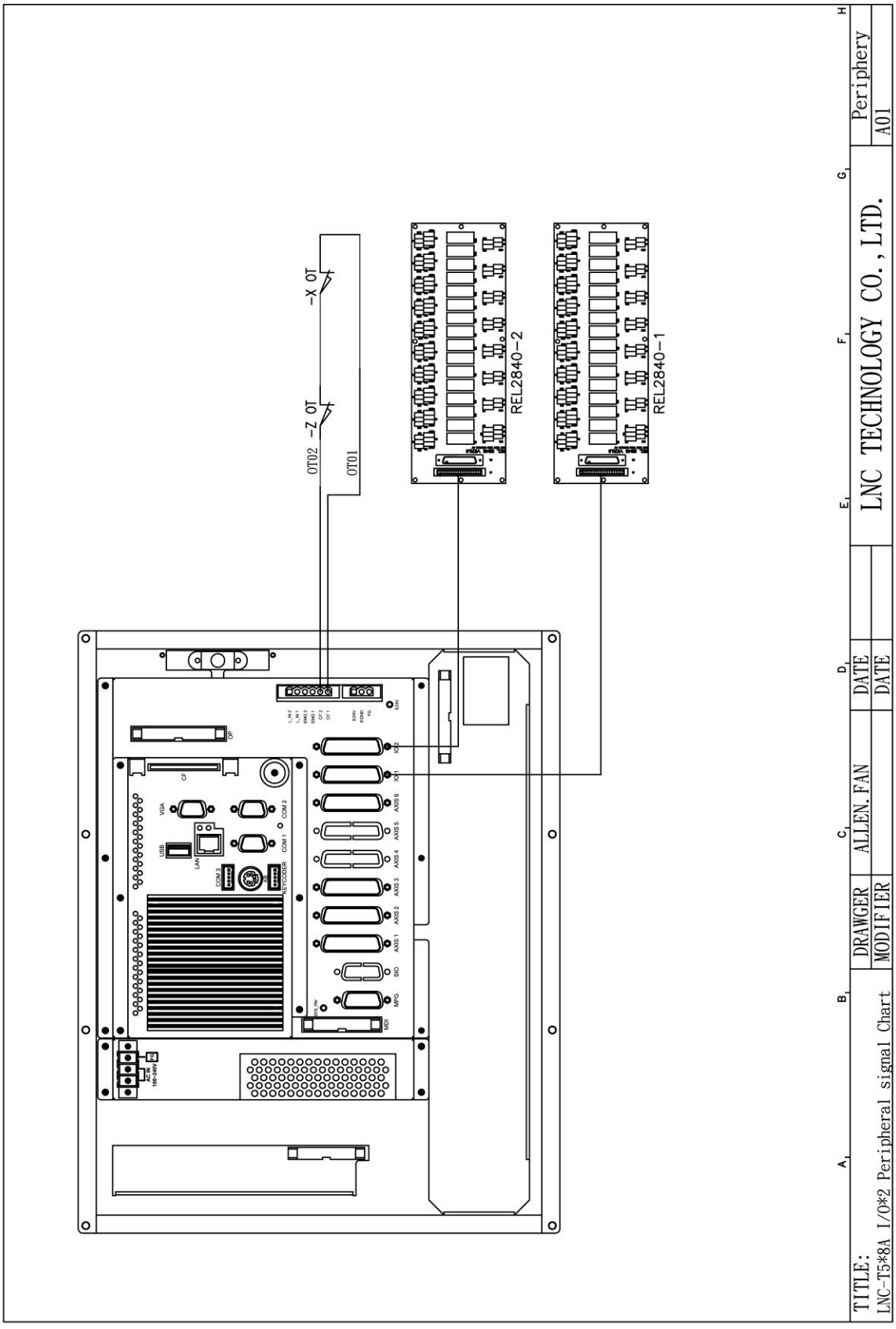
Appendix D LNC MPG wiring instruction

LNC MPG2000				
4 axis			5 axis	6 axis
15PIN(公)	Definition	Color		
1	COM(+24V)	Yellow/ Black	As Left	As Left
2	4	Orange/Black		
3	/B	Blue/Black		
4	/A	Green/Black		
5	x100	Light green		
6	Z	Brown		
7	X	Purple		
8	+5V	Red		
9	0V,-L	Black, Black/White		
10				
11	B	Blue		
12	A	Green		
13	x10	Light Blue		
14	Y	Orange		
15				
Shell	G	Metal		
	5	Brown/Black		
	6	Pink/Black		

Appendix E Wiring instruction

A-system wiring diagram

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-Z OT
OT02
OT01
REL2840-2
REL2840-1
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Periphery
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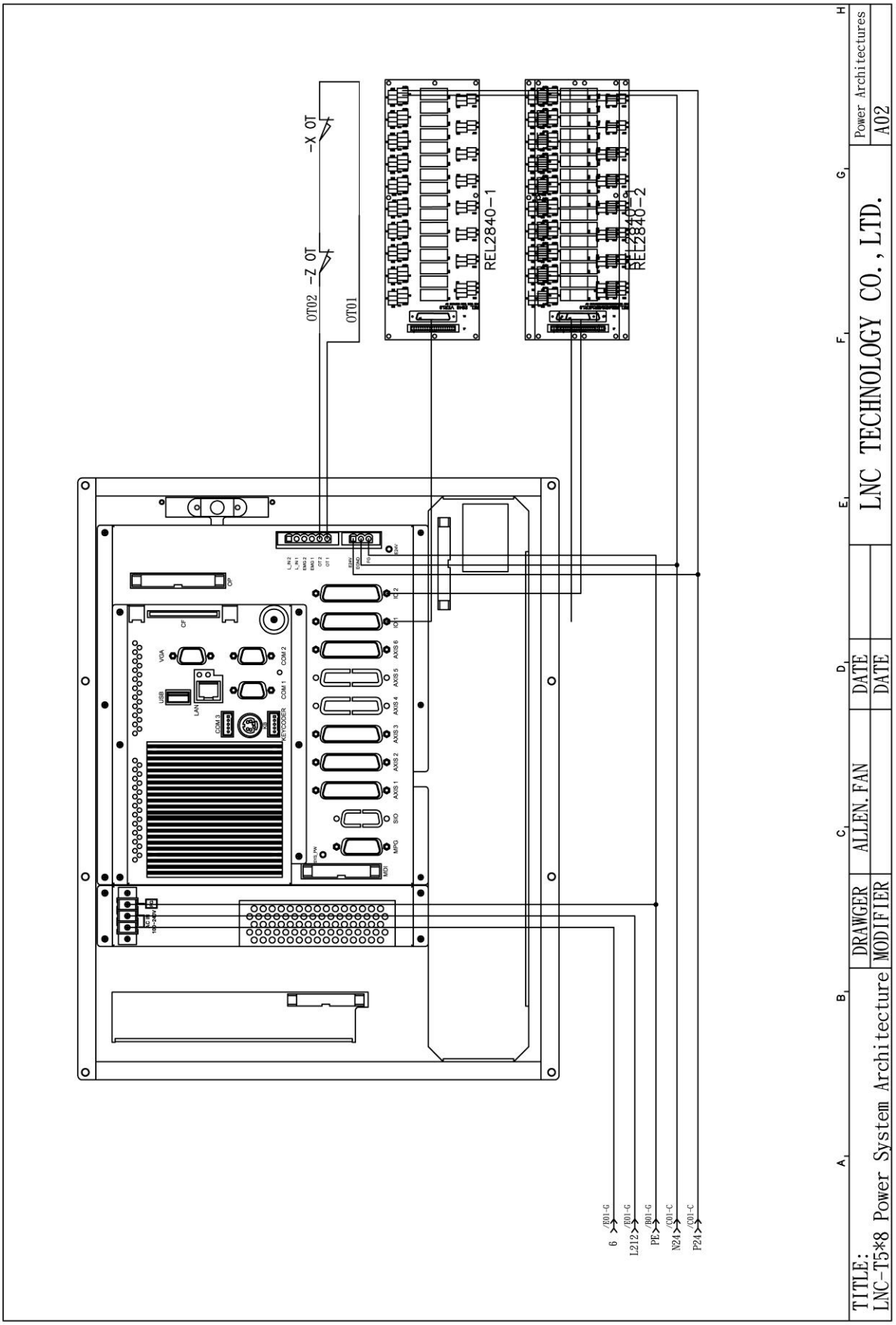
TITLE:
LNC-T5*8A I/O*2 Peripheral signal Chart
DRAWGER
MODIFIER
ALLEN.FAN
DATE
DATE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-Z OT
OT02
OT01
REL2840-1
REL2840-2
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Power Architectures
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LNC-T5*8 Power System Architecture
DRAWGER
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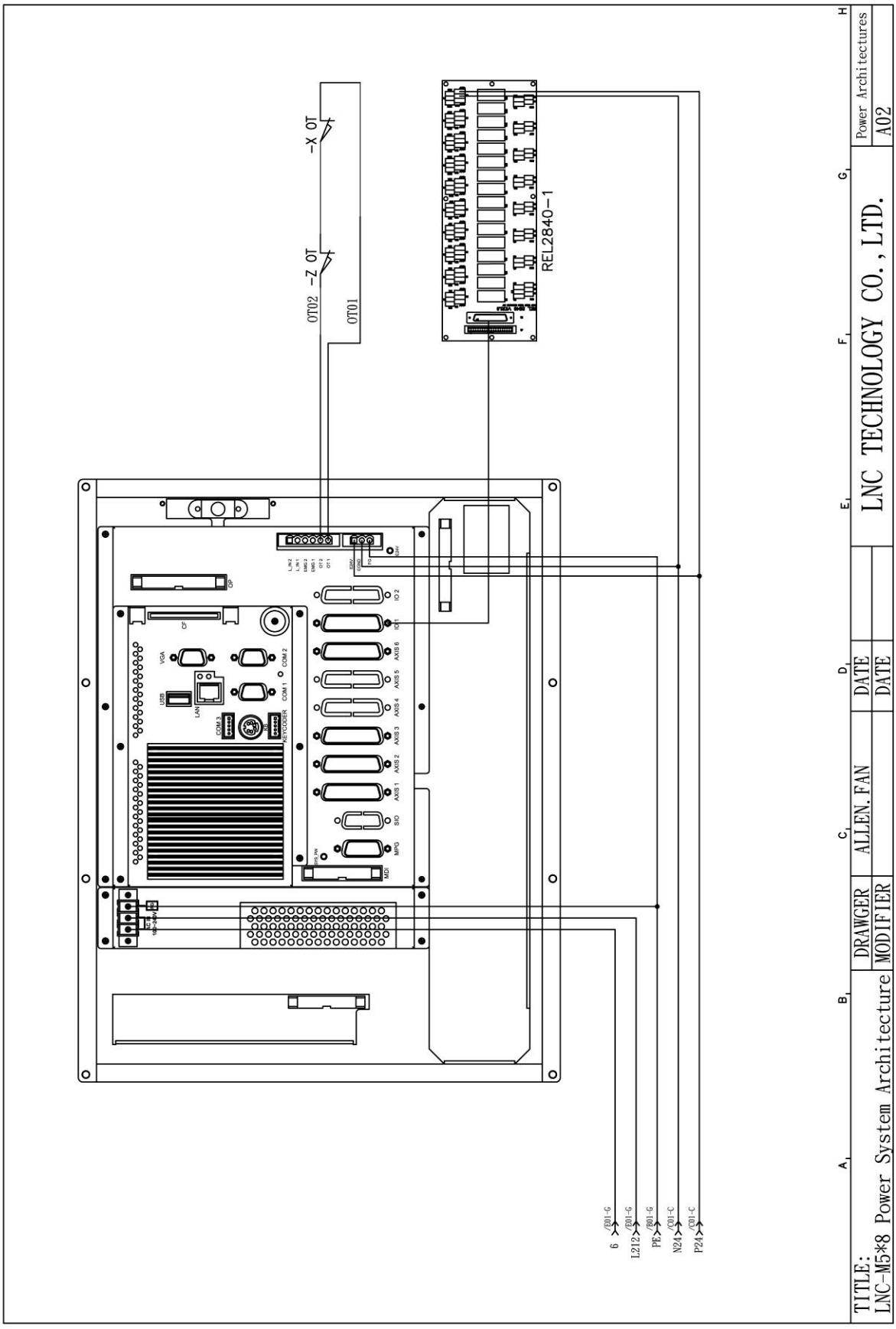
ALLEN. FAN
DATE
DATE
6
L212
PE
N24
P24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-Z OT
OT02
OT01
REL2840-1
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Power Architectures
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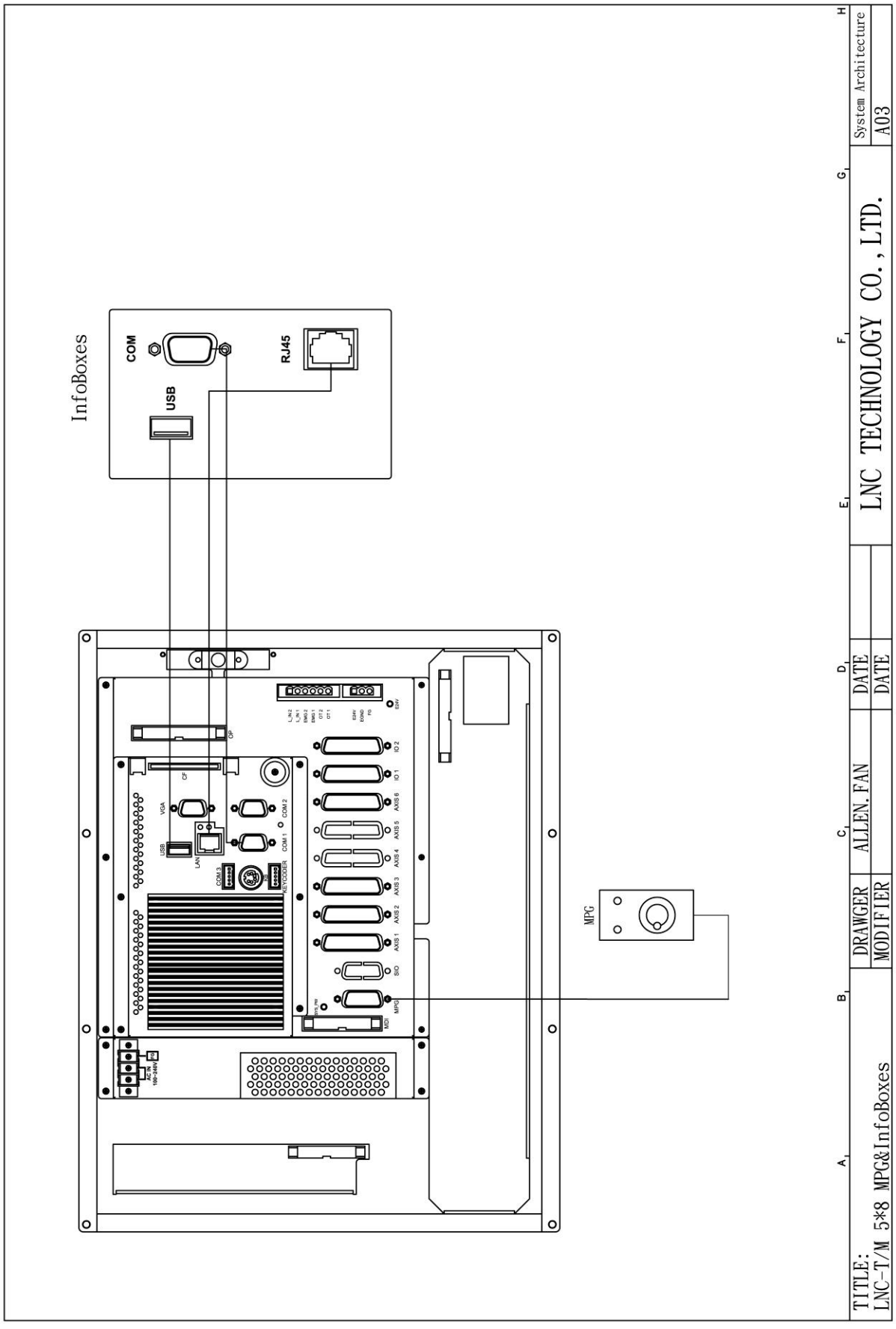
DRAWGER
MODIFIER
ALLEN.FAN
DATE
DATE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COM
USB
RJ45
MPG
LNC TECHNOLOGY CO., LTD.
System Architecture
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DRAWGER
ALLEN. FAN
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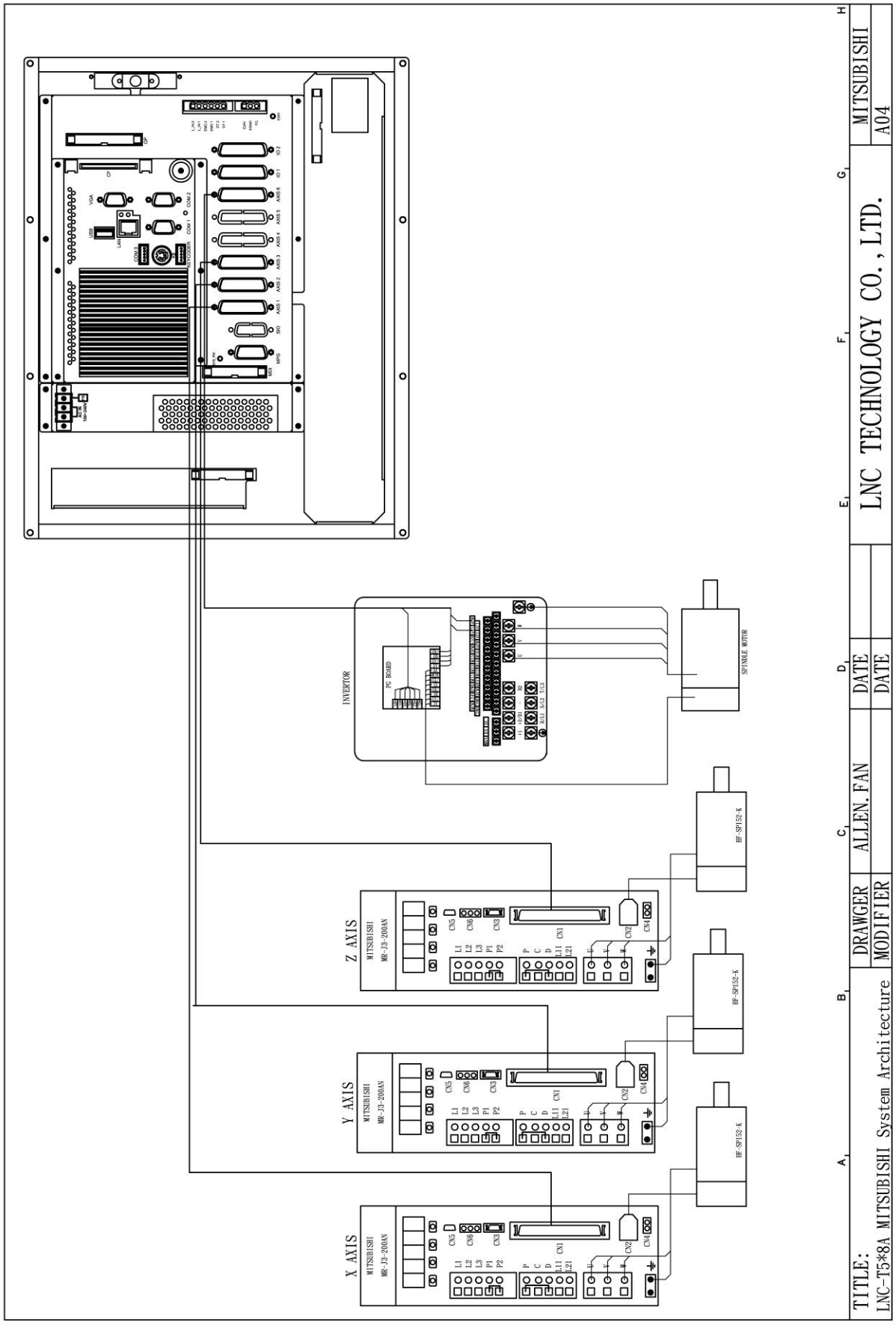
MODIFIER
DATE
TITLE:
LNC-T/M 5*8 MPG&InfoBoxes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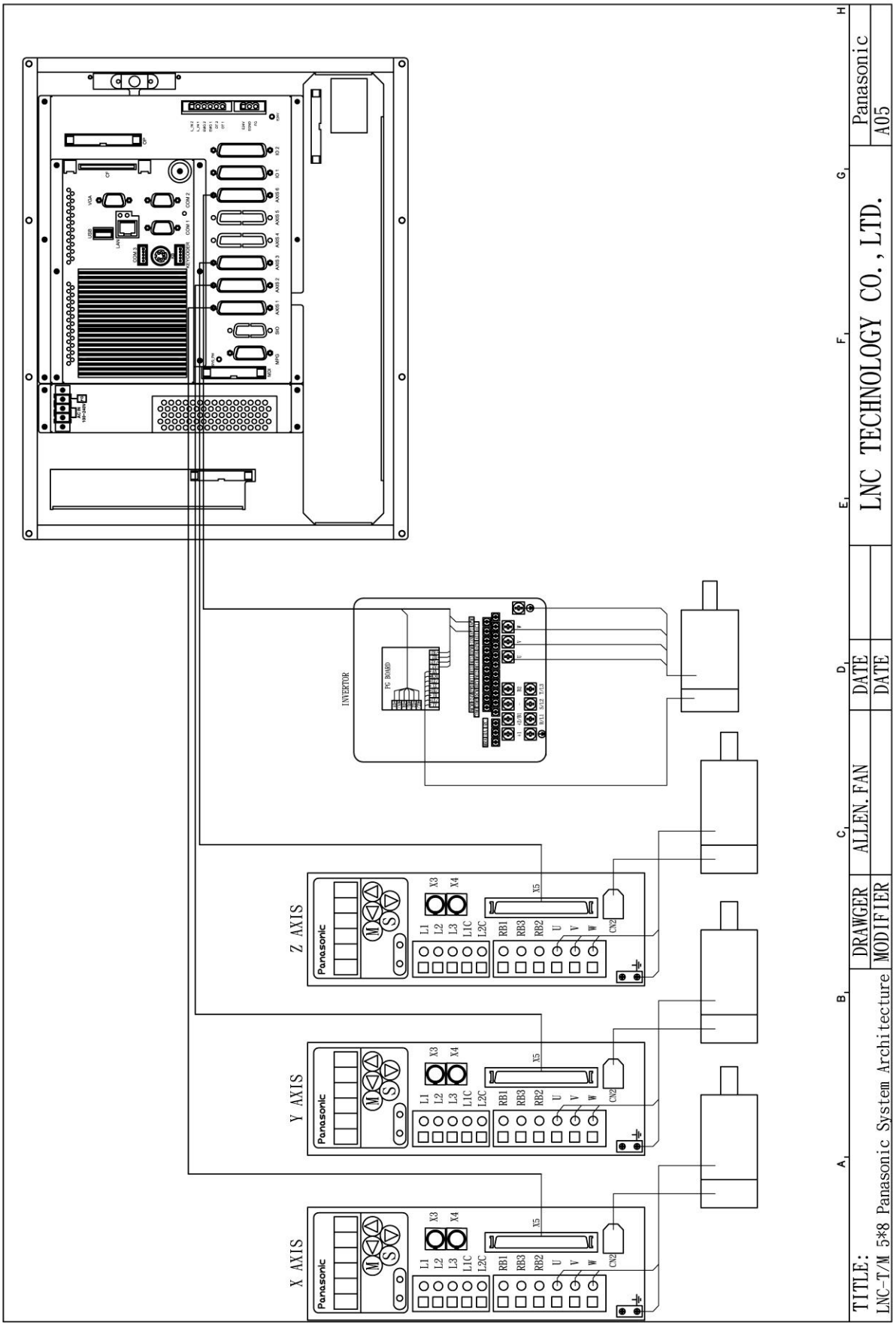
DRAWGER
ALLEN.FAN
MODIFIER
DATE
DATE
MITSUBISHI
A04
INVERTOR
PC BOARD
SPINDLE MOTOR
Z AXIS
Y AXIS
X AXIS
MITSUBISHI
MR-J3-200AN
HF-SP152-K


LNC TECHNOLOGY CO., LTD.
Panasonic
A05
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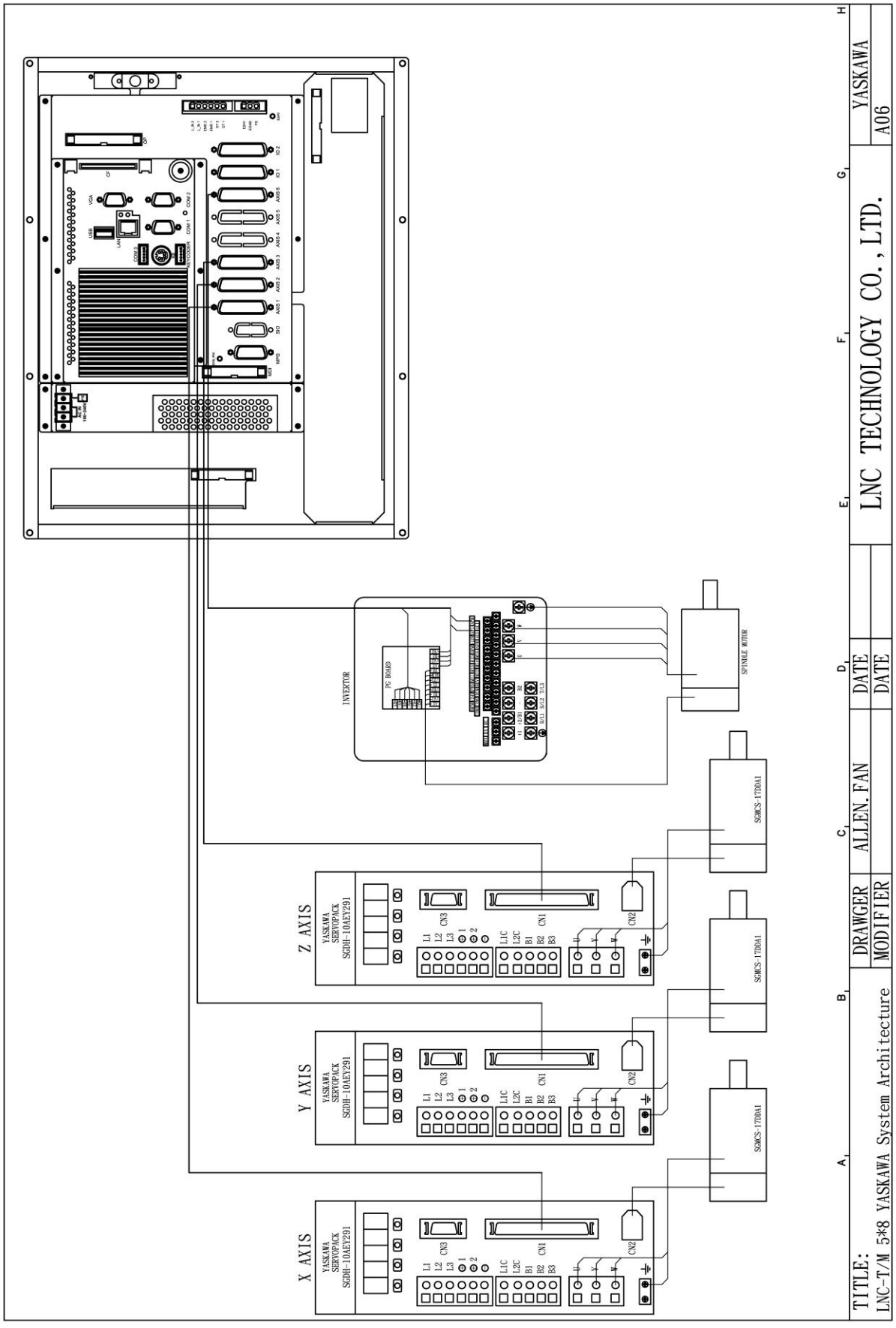
MODIFIER
DATE
DATE
INVERTOR
PC BOARD
Z AXIS
Y AXIS
X AXIS
Panasonic
L1
L2
L3
L1C
L2C
RB1
RB3
RB2
U
V
W
X3
X4
X5
CN2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YASKAWA
A06
DRAWGER
ALLEN.FAN
MODIFIER
DATE
DATE
TITLE:
LNC-T/M 5*8 YASKAWA System Architecture
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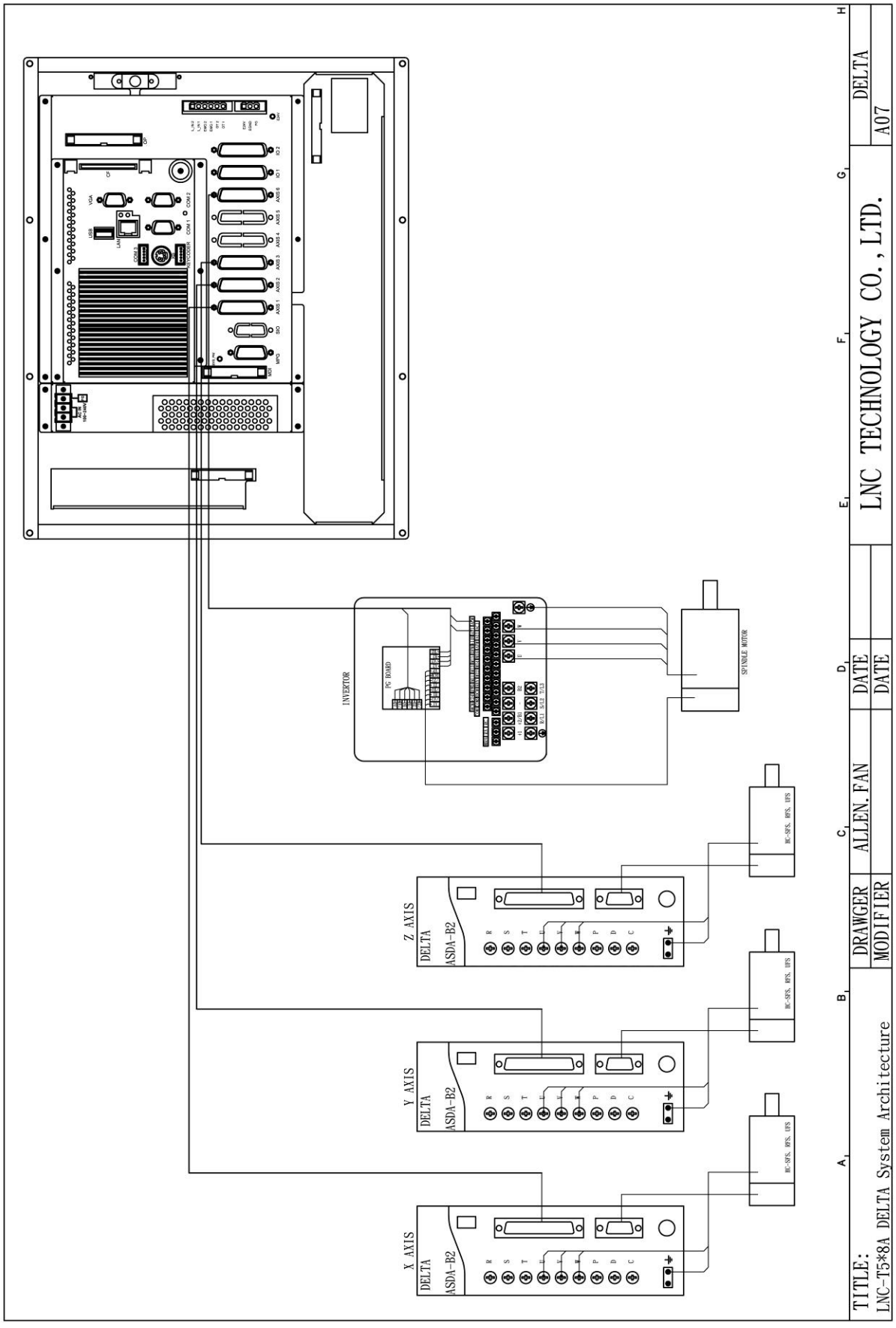
SPINDLE MOTOR
Z AXIS
Y AXIS
X AXIS
YASKAWA SERVOPACK SGDH-10AEY291
SGMCS-17D0A1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DELTA
A07
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ALLEN.FAN
MODIFIER
DATE
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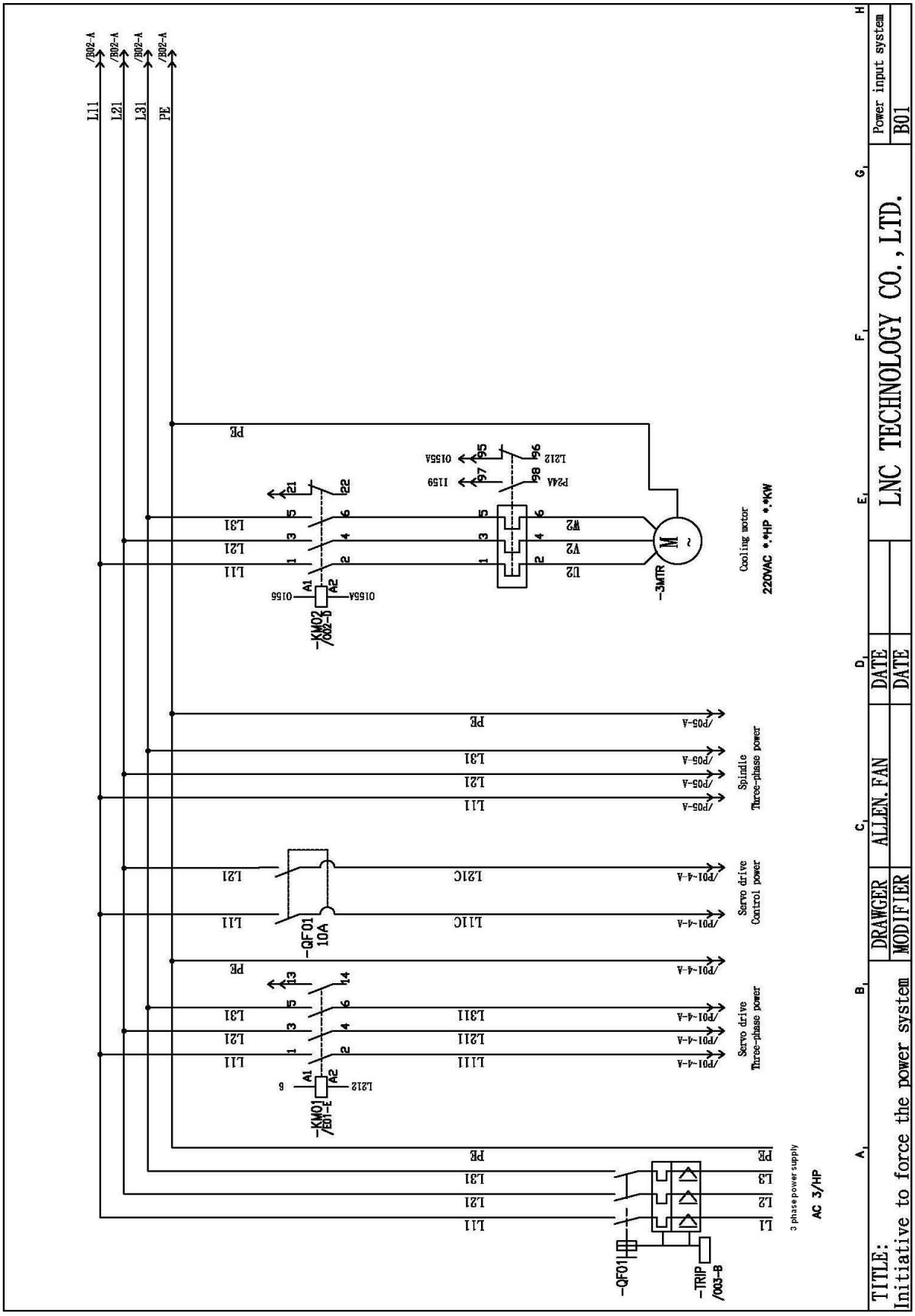
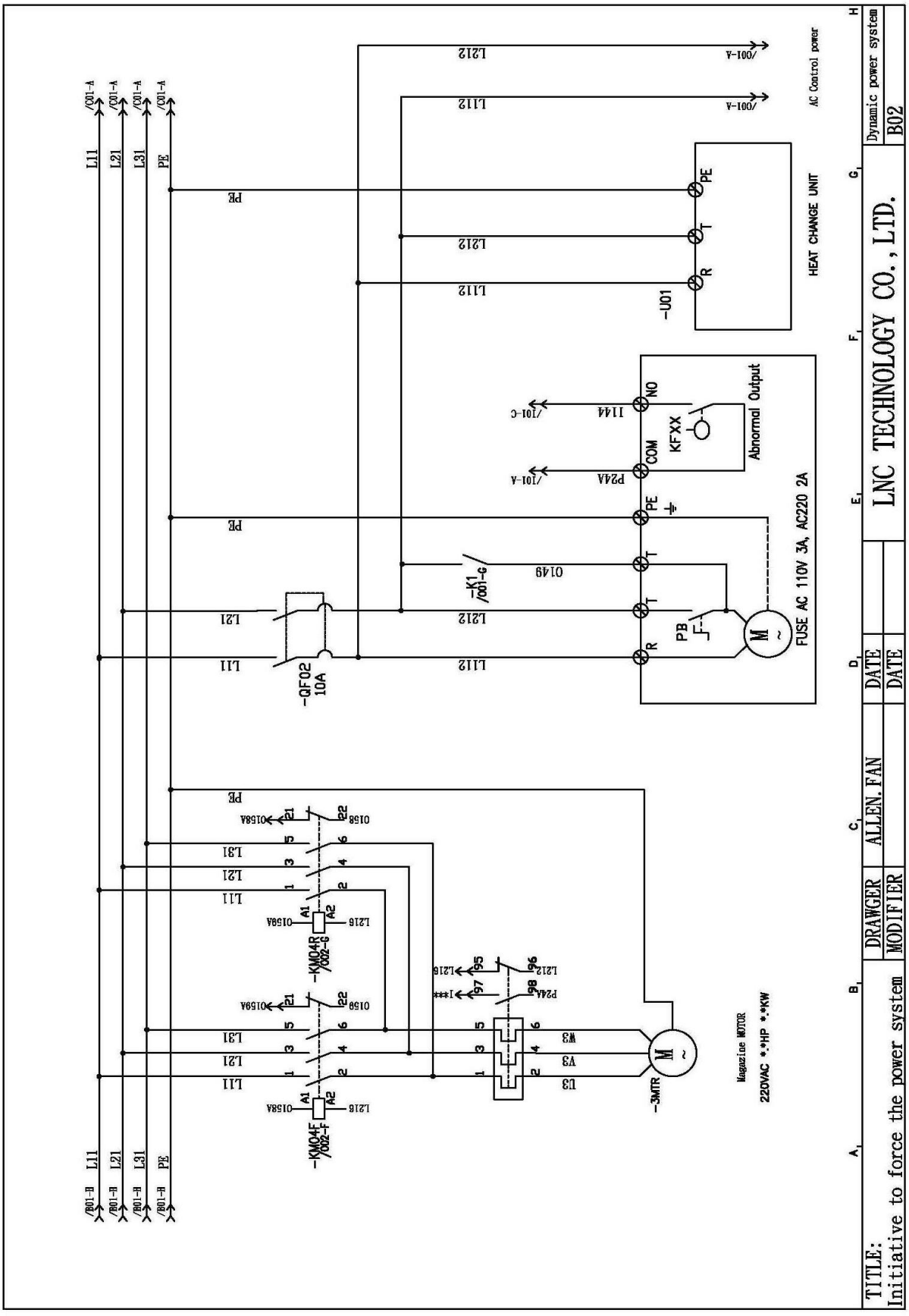
TITLE:
LNC-T5*8A DELTA System Architecture
INVERTOR
PC BOARD
SPINDLE MOTOR
Z AXIS
Y AXIS
X AXIS
DELTA
ASDA-B2
MC-SFS, HFS, UFS

B-Power wiring

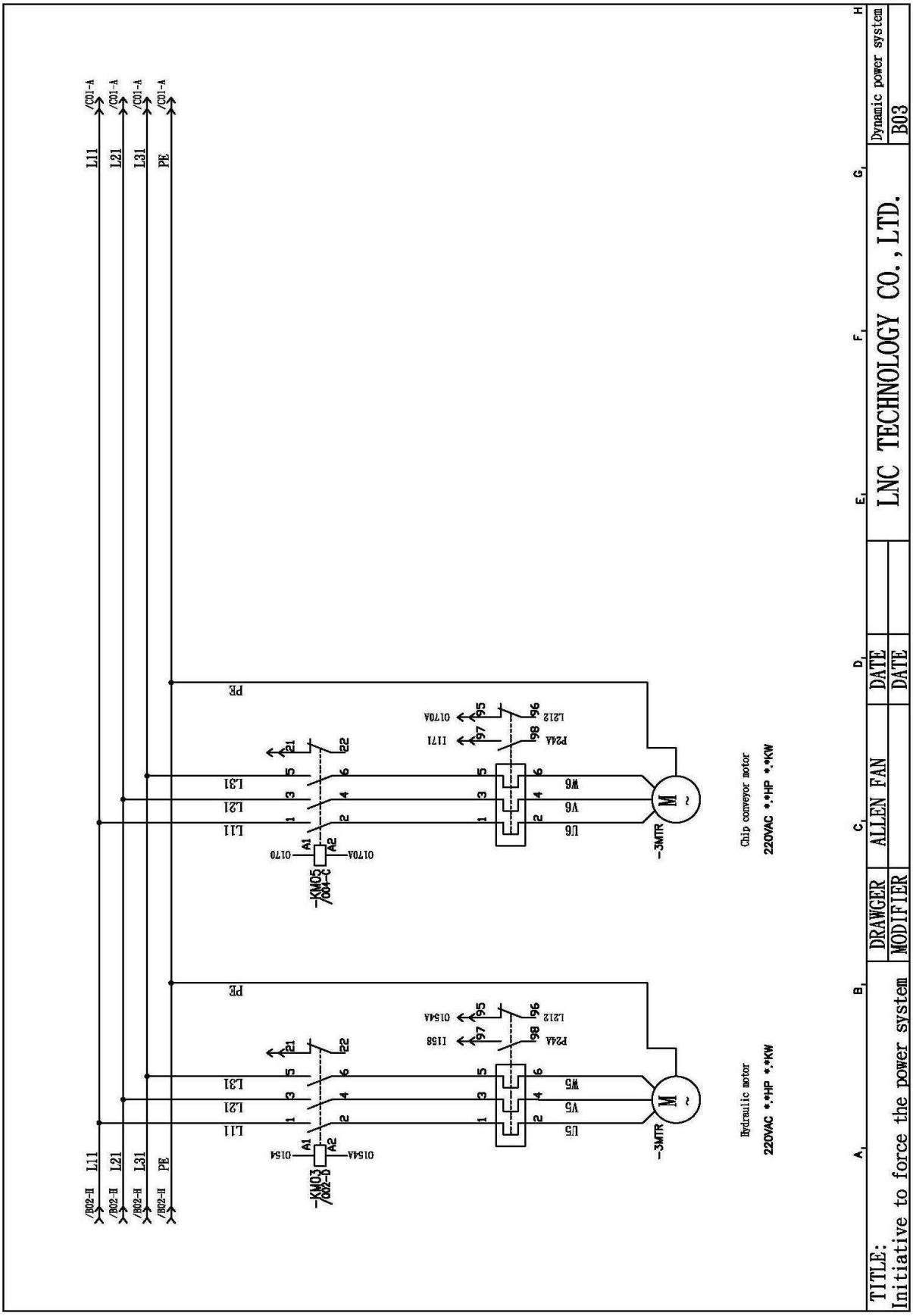
Lathe


LNC TECHNOLOGY CO., LTD.
Power input system
B01
DRAWGER
MODIFIER
ALLEN.FAN
DATE
DATE
TITLE:
Initiative to force the power system
3 phase power supply
AC 3/HP
Cooling motor
220VAC *.*HP *.*KW
Spindle
Three-phase power
Servo drive
Control power
Servo drive
Three-phase power
-3MTR
-QF01
10A
-KM02
/002-C
-KM01
/B01-E
-QF01
-TRIP
/003-B

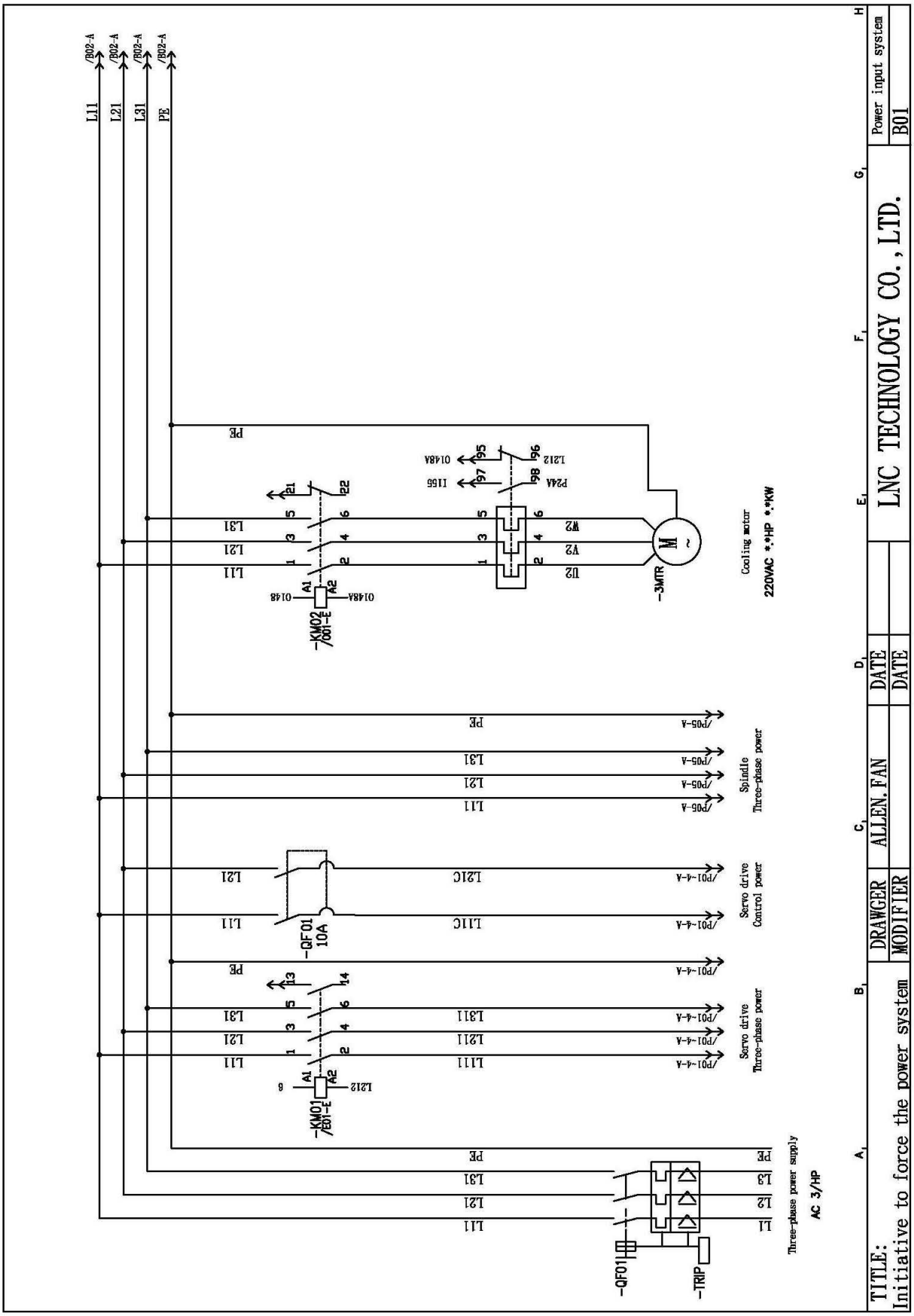
Lathe


LNC TECHNOLOGY CO., LTD.
Dynamic power system
B02
AC Control power
HEAT CHANGE UNIT
-U01
Abnormal Output
KFXX
FUSE AC 110V 3A, AC220 2A
-QF02
10A
-K1
-KM04R
-KM04F
-3MTR
Magazine MOTOR
220VAC *.*HP *.*KW
ALLEN.FAN
DRAWGER
MODIFIER
DATE
TITLE:
Initiative to force the power system

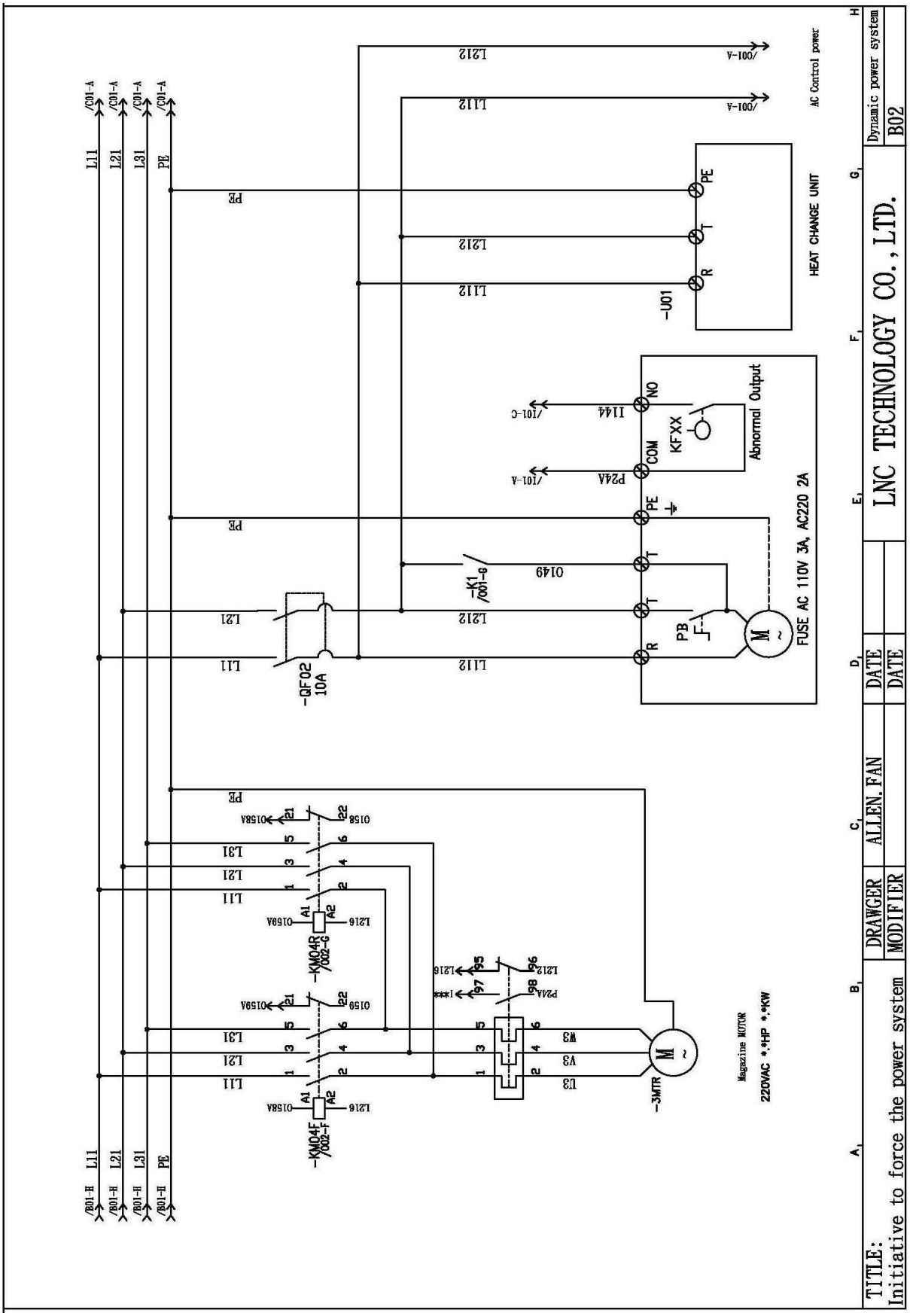
Lathe


LNC TECHNOLOGY CO., LTD.
TITLE:
Initiative to force the power system
DRAWGER
MODIFIER
ALLEN FAN
DATE
DATE
Dynamic power system
B03
Chip conveyor motor
220VAC *.*HP *.*KW
Hydraulic motor
220VAC *.*HP *.*KW
-3MTR
-KM05
-KM03
L11
L21
L31
PE
U6
V6
W6
U5
V5
W5

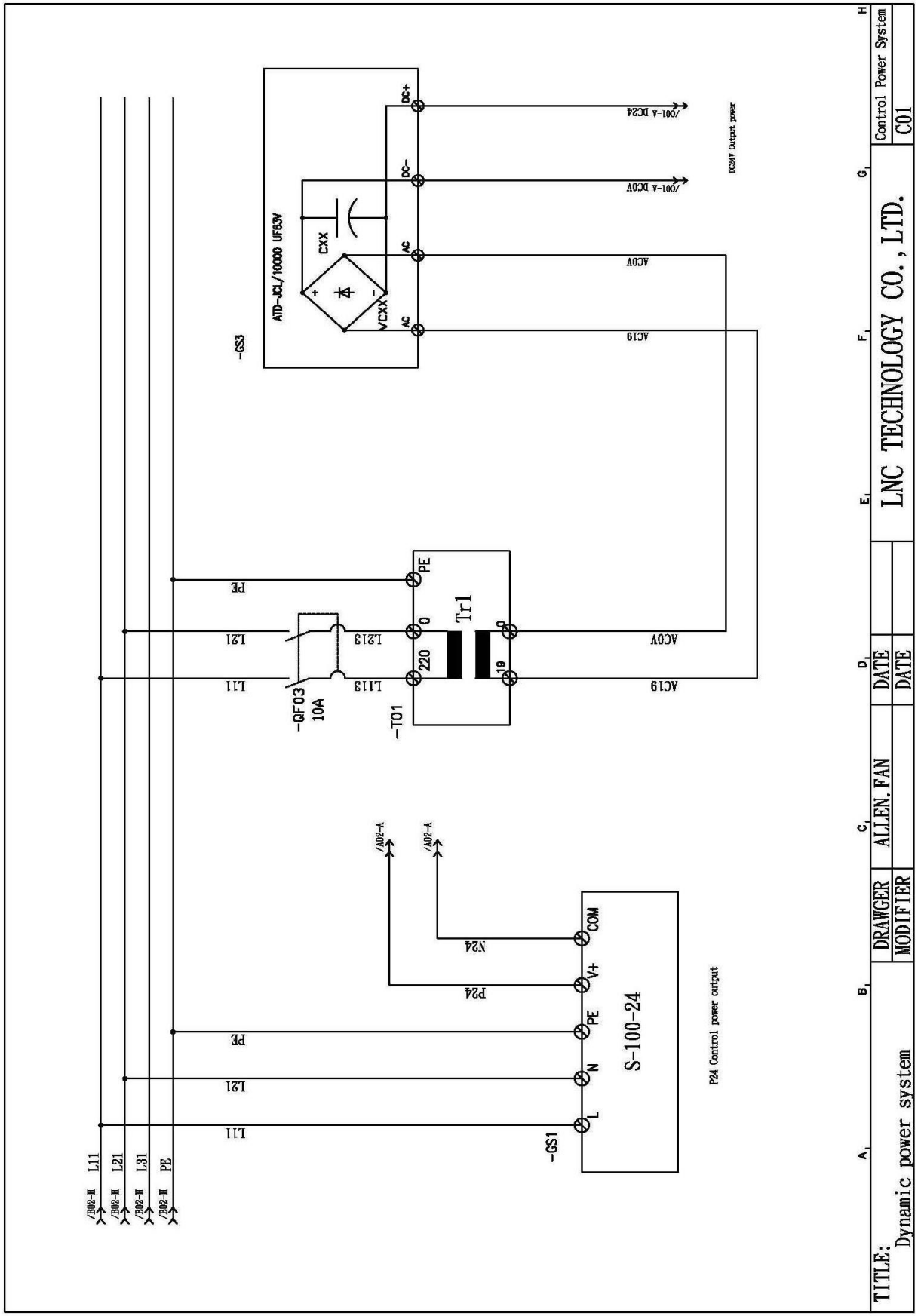
Mill


LNC TECHNOLOGY CO., LTD.
Power input system
B01
DRAWGER
MODIFIER
ALLEN.FAN
DATE
DATE
TITLE:
Initiative to force the power system
Three-phase power supply
AC 3/HP
Cooling motor
220VAC *.*HP *.*KW
Spindle
Three-phase power
Servo drive
Control power
Servo drive
Three-phase power
-3MTR
-QF01
10A
-KM01
-KM02
-TRIP
L11
L21
L31
PE

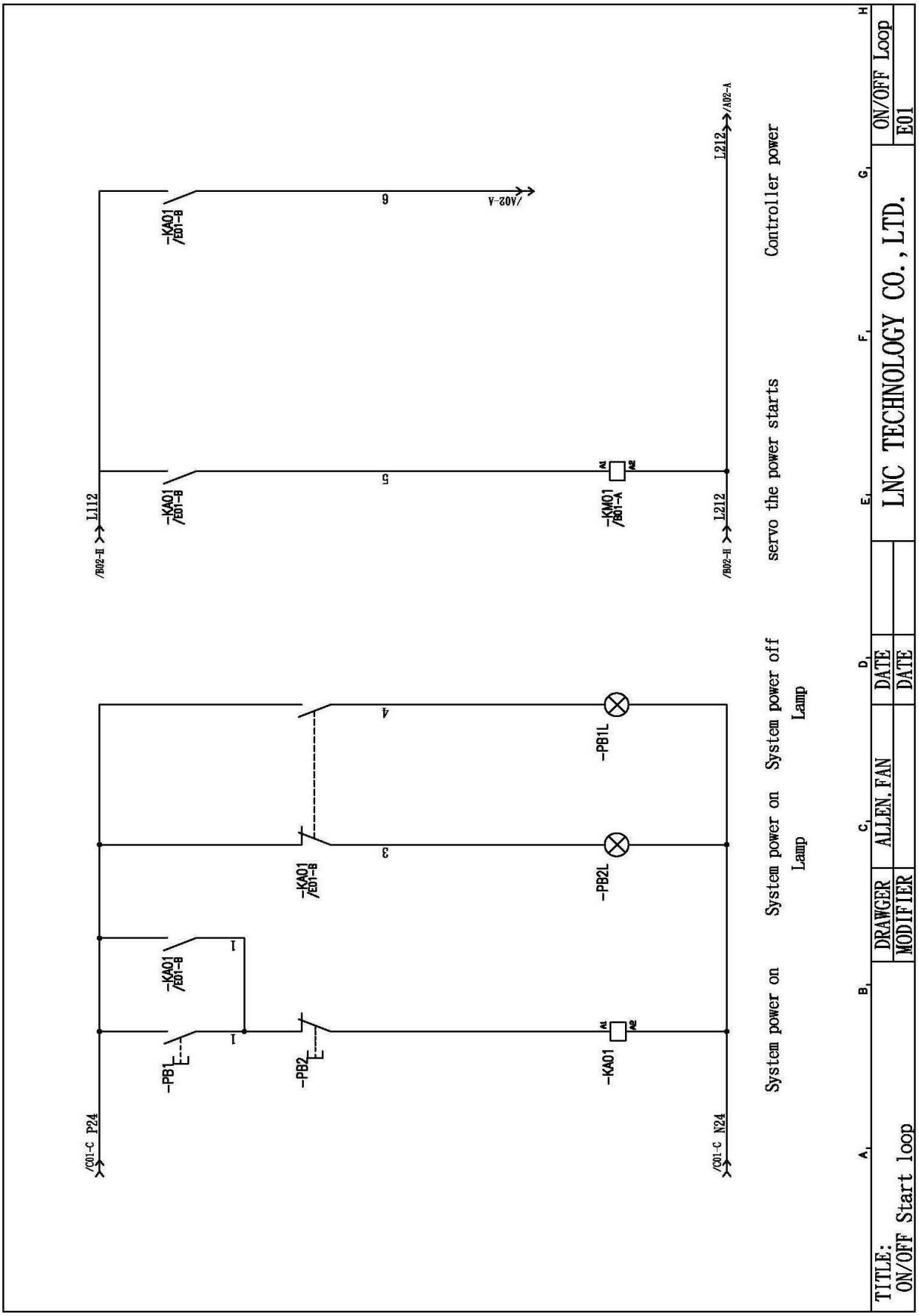
Mill


LNC TECHNOLOGY CO., LTD.
Dynamic power system
B02
TITLE:
Initiative to force the power system
DRAWGER
MODIFIER
ALLEN. FAN
DATE
DATE
HEAT CHANGE UNIT
AC Control power
FUSE AC 110V 3A, AC220 2A
Abnormal Output
KFXX
-QF02
10A
-KM04R
-KM04F
-3MTR
Magazine MOTOR
220VAC *.*HP *.*KW

C-ControlLoop

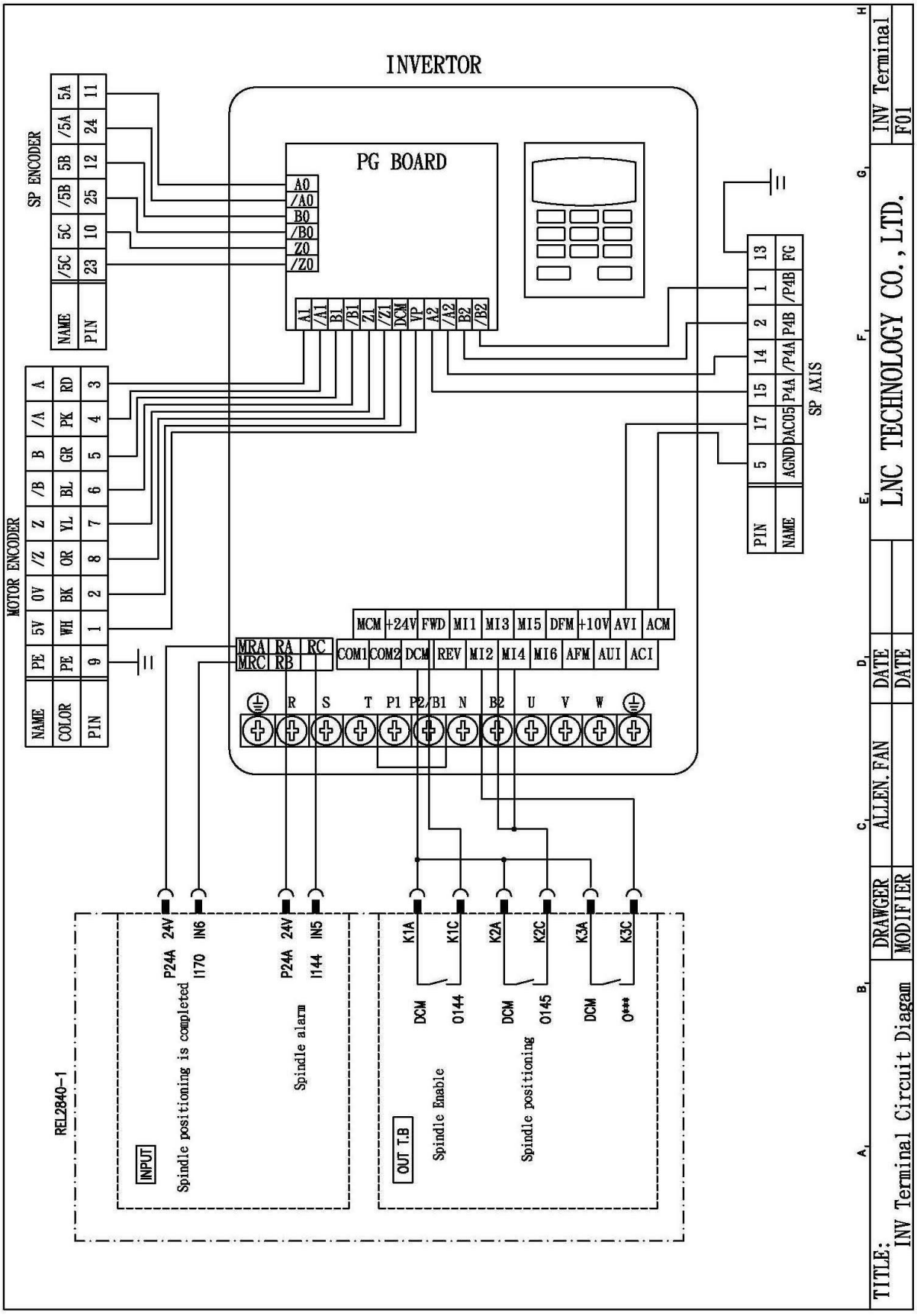


D-ONOFF

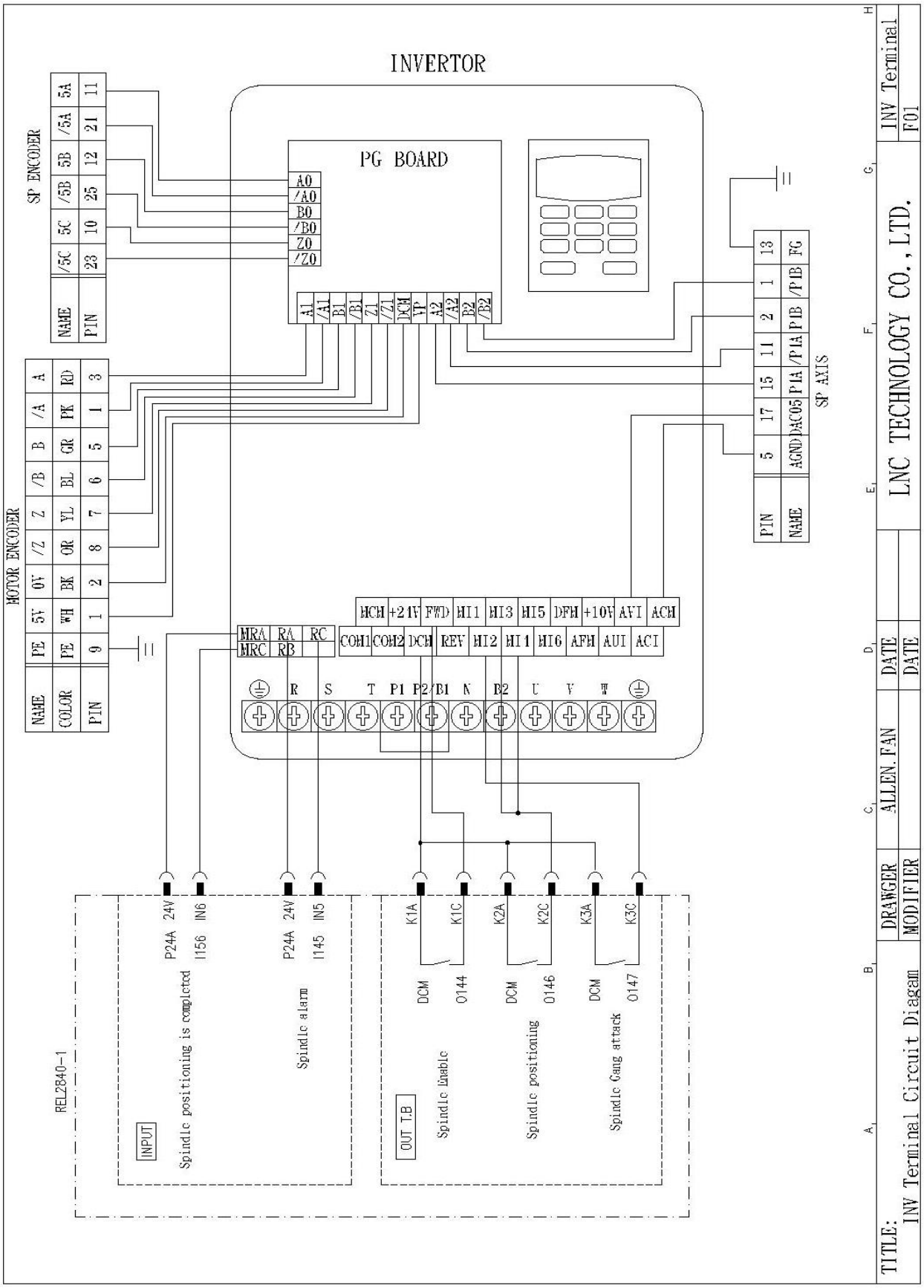

TITLE:
ON/OFF Start loop
DRAWGER
MODIFIER
ALLEN.FAN
DATE
DATE
LNC TECHNOLOGY CO., LTD.
ON/OFF Loop
E01
/C01-C P24
-PB1
-KA01 /E01-B
-PB2
-KA01 /E01-B
-KA01 /E01-B
-PB1L
-PB2L
-KA01
-KM01 /E01-A
/C01-C N24
/A02-A
/A02-A
L112
/A02-H
L212
/A02-H
System power on
System power on Lamp
System power off Lamp
servo the power starts
Controller power

E- SP Terminal interface

Lathe

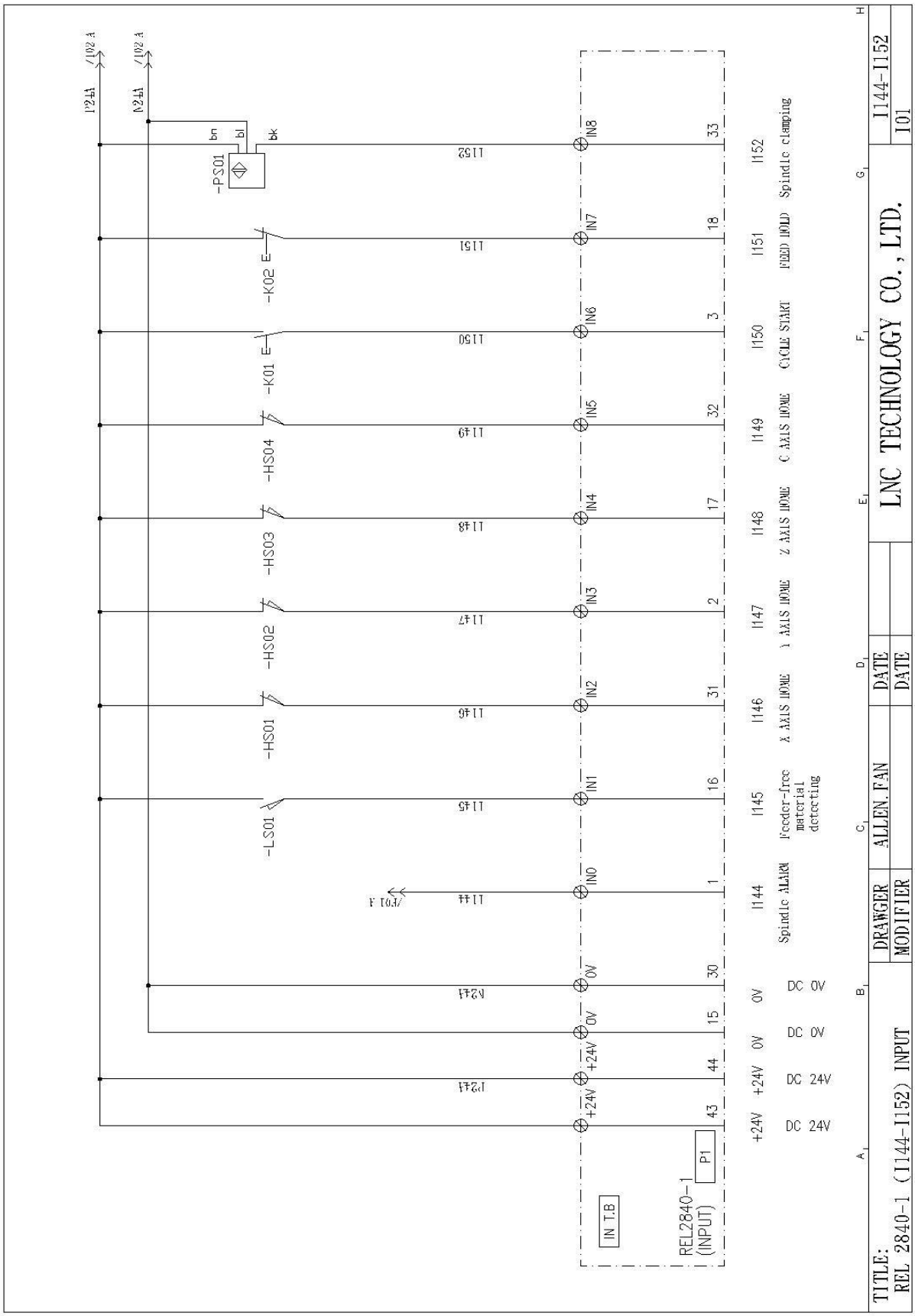


Mill

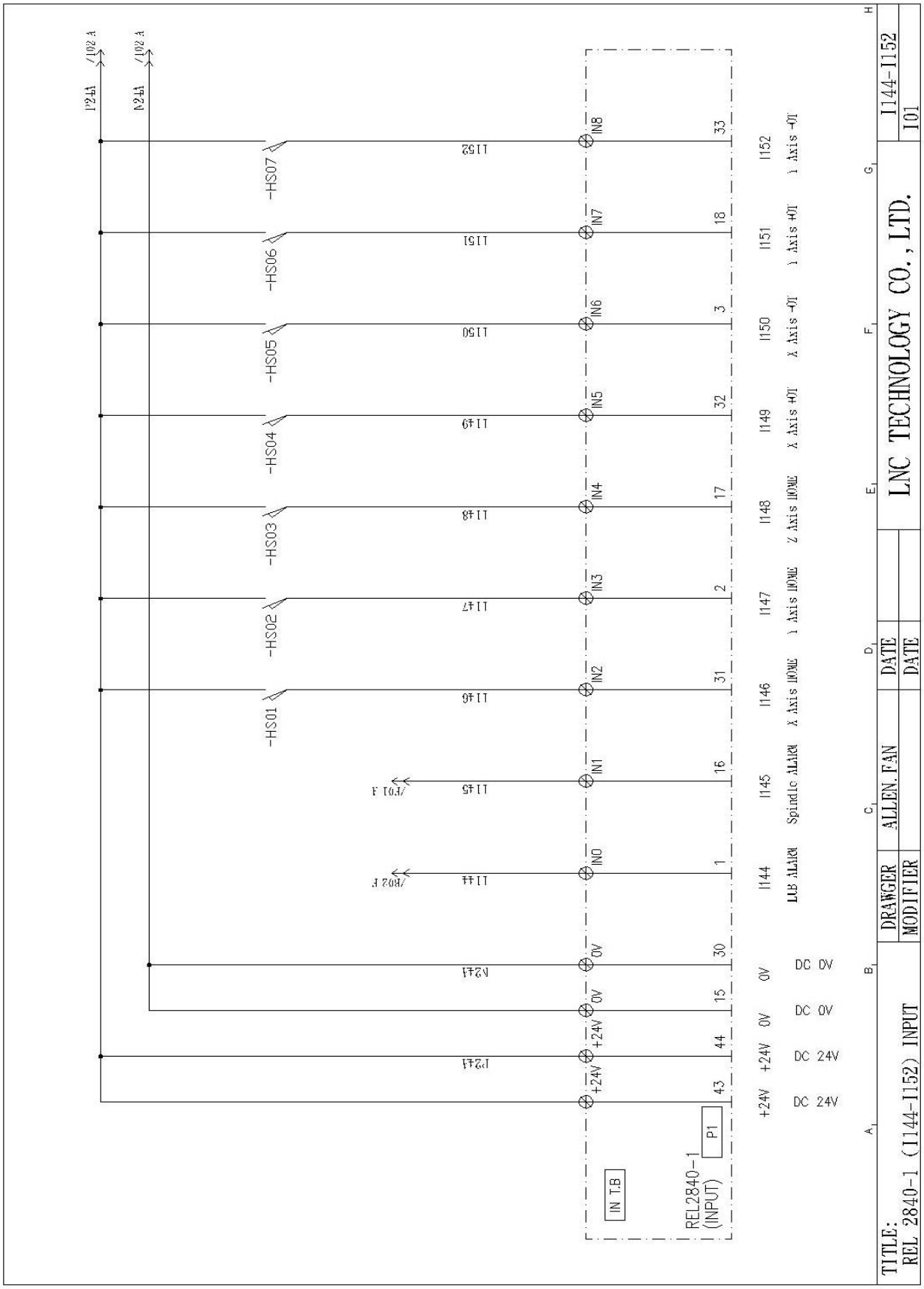

INVERTOR
PG BOARD
SP ENCODER
MOTOR ENCODER
SP AXIS
LNC TECHNOLOGY CO., LTD.
INV Terminal Circuit Diagam
INV Terminal
F01
ALLEN.FAN
DRAWGER
MODIFIER
DATE
REL2840-1
INPUT
Spindle positioning is completed
Spindle alarm
OUT T.B
Spindle Unable
Spindle positioning
Spindle Gang attack

F-INPUT Wiring

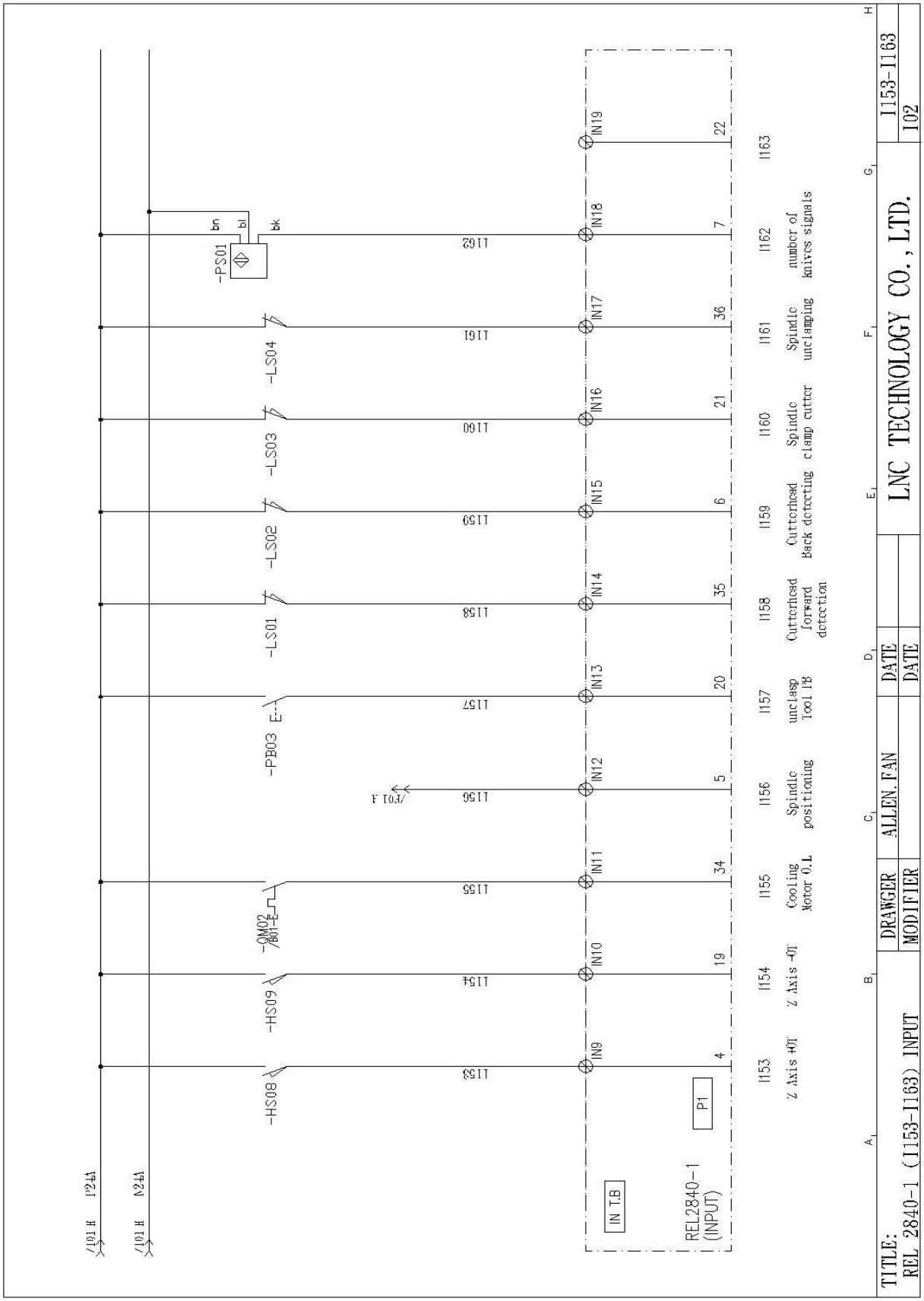
Lathe



Mill

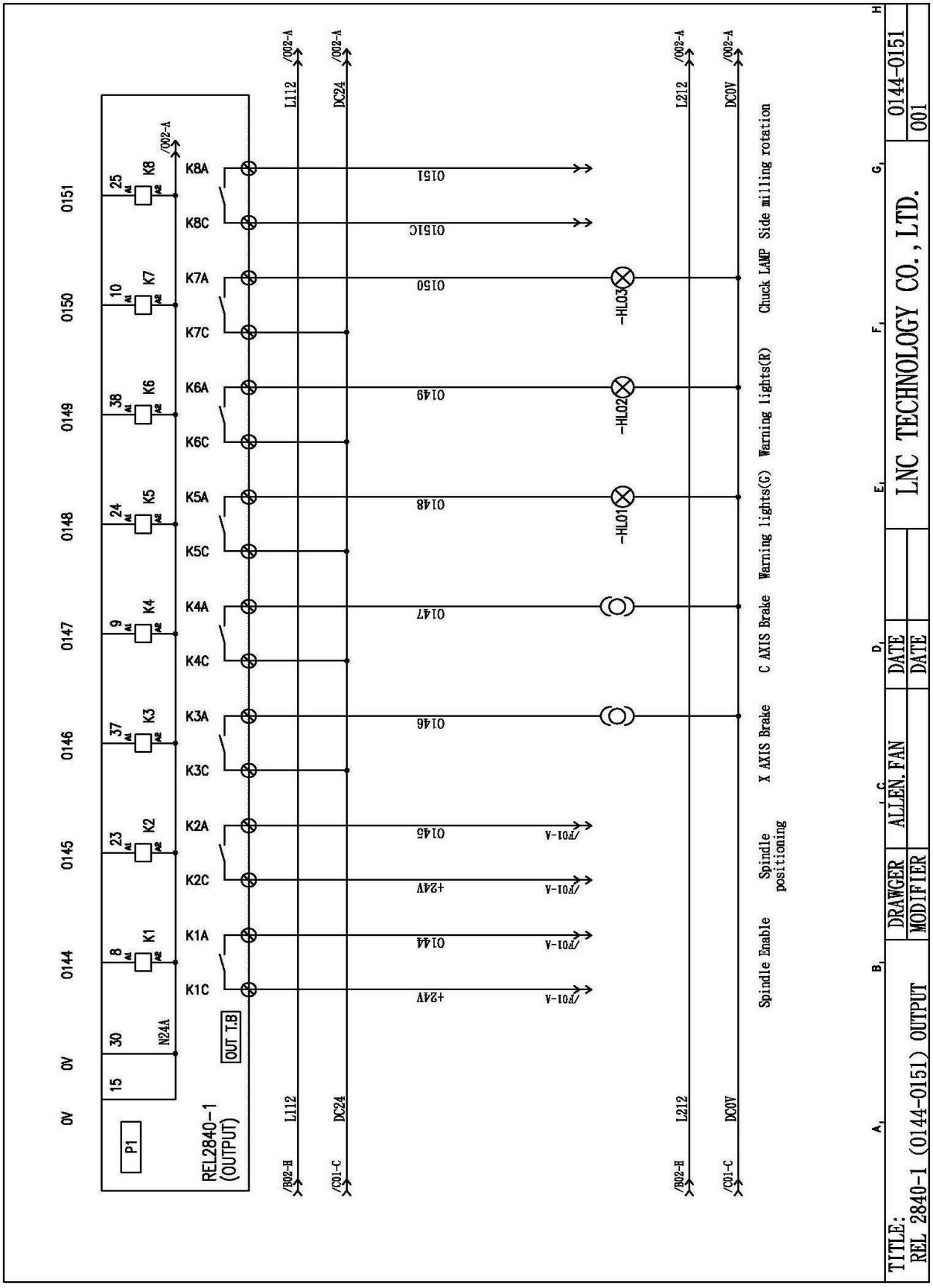

TITLE:
REL 2840-1 (I144-I152) INPUT
LNC TECHNOLOGY CO., LTD.
I144-I152
I01
DRAWGER
MODIFIER
ALLEN.FAN
DATE
DATE
REL2840-1
(INPUT)
P1
IN T.B
-HS01
-HS02
-HS03
-HS04
-HS05
-HS06
-HS07
IN0
IN1
IN2
IN3
IN4
IN5
IN6
IN7
IN8
I144 LUB ALARM
I145 Spindle ALARM
I146 X Axis HOME
I147 Y Axis HOME
I148 Z Axis HOME
I149 X Axis +OT
I150 X Axis -OT
I151 Y Axis +OT
I152 Y Axis -OT
+24V
0V
DC 24V
DC 0V

Mill

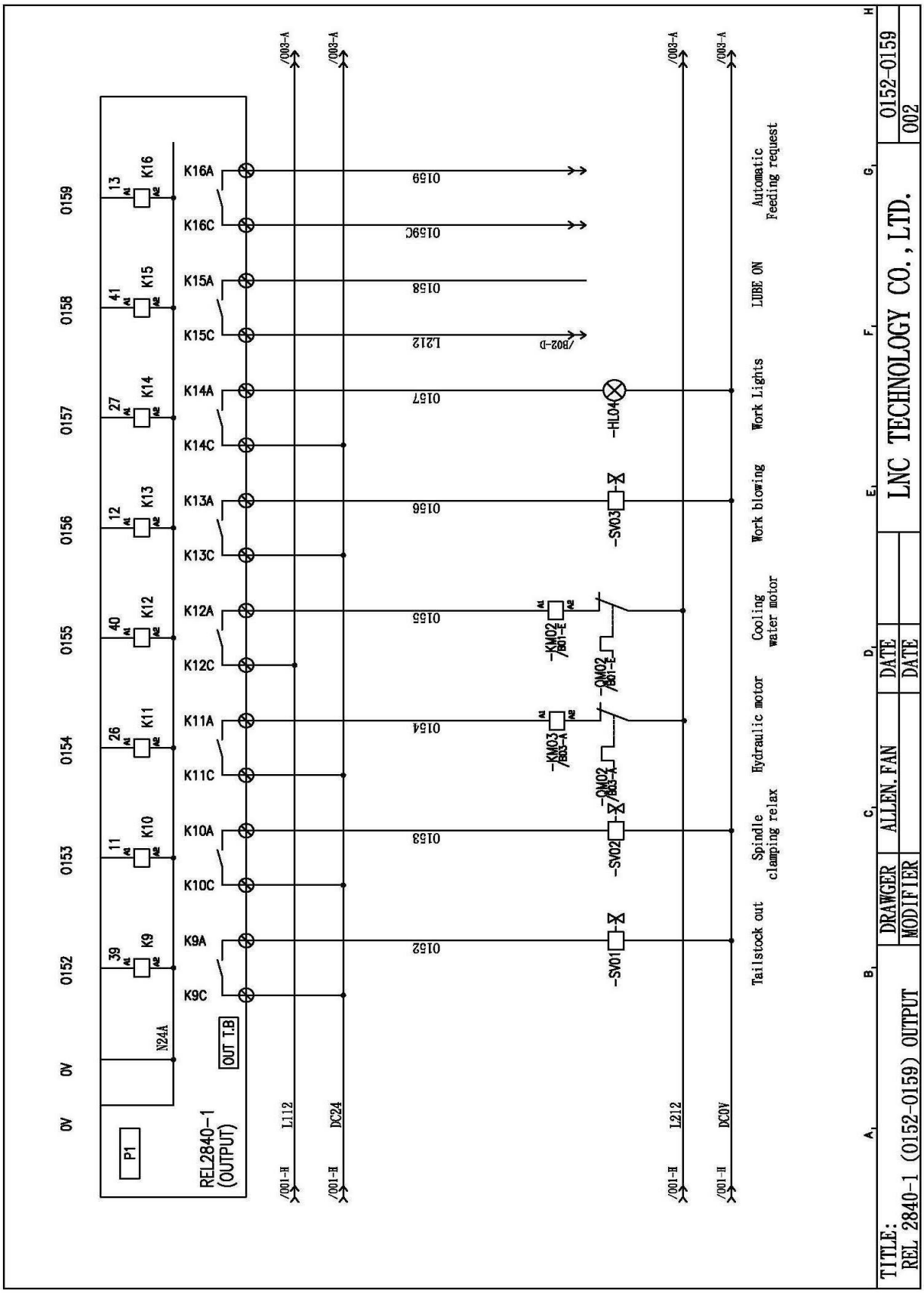

TITLE:
REL 2840-1 (I153-I163) INPUT
DRAWGER
MODIFIER
ALLEN. FAN
DATE
DATE
LNC TECHNOLOGY CO., LTD.
I153-I163
I02
REL2840-1
(INPUT)
P1
IN.T.B
-PS01
-LS04
-LS03
-LS02
-LS01
-PB03
-QM02
-HS09
-HS08
IN9
IN10
IN11
IN12
IN13
IN14
IN15
IN16
IN17
IN18
IN19
I153 Z Axis +OT
I154 Z Axis -OT
I155 Cooling Motor O.L
I156 Spindle positioning
I157 unclasp Tool PB
I158 Cutterhead forward detection
I159 Cutterhead Back detecting
I160 Spindle clamp cutter
I161 Spindle unclamping
I162 number of knives signals
I163

G-OUTPUT Wiring

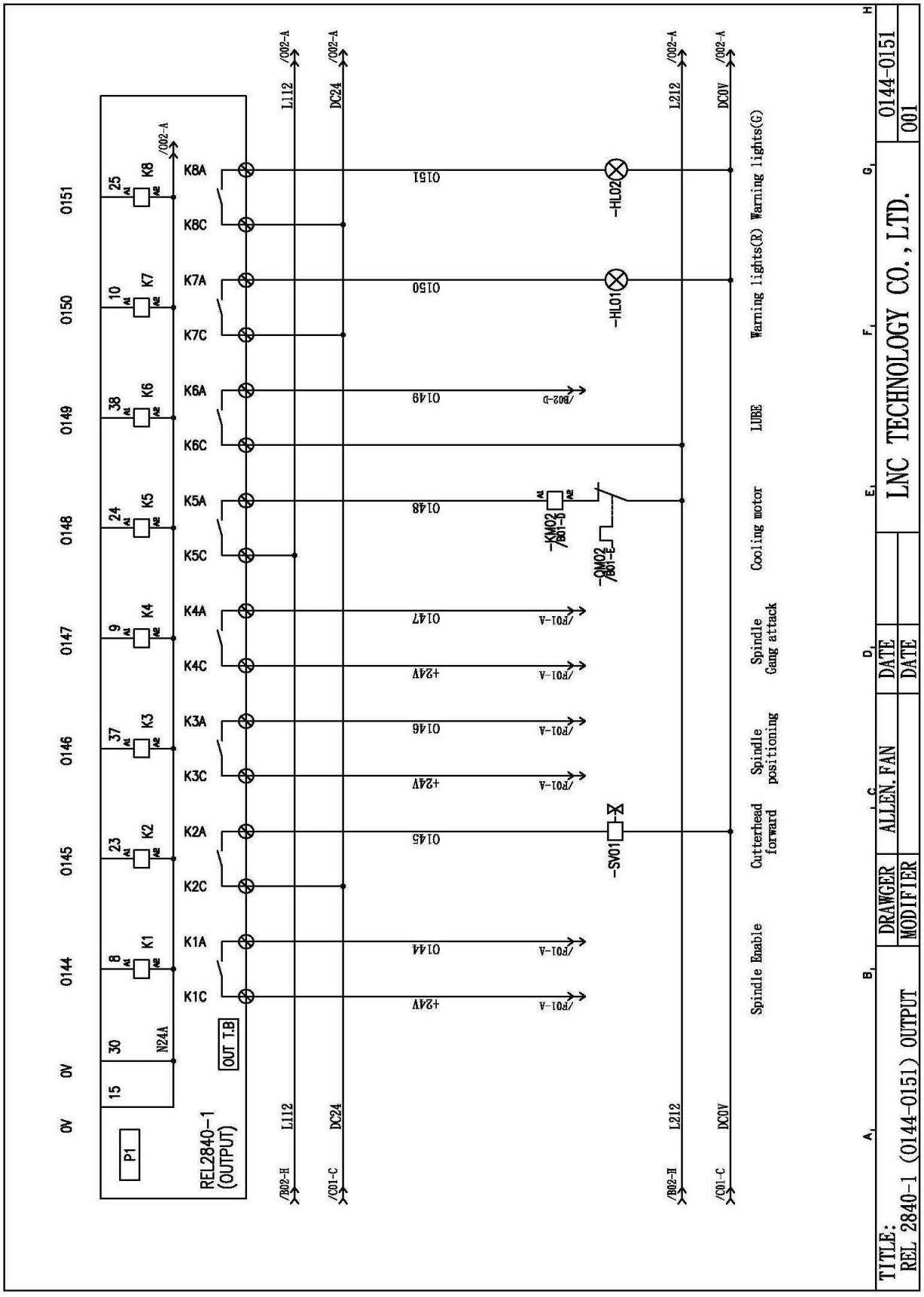
Lathe



Lathe

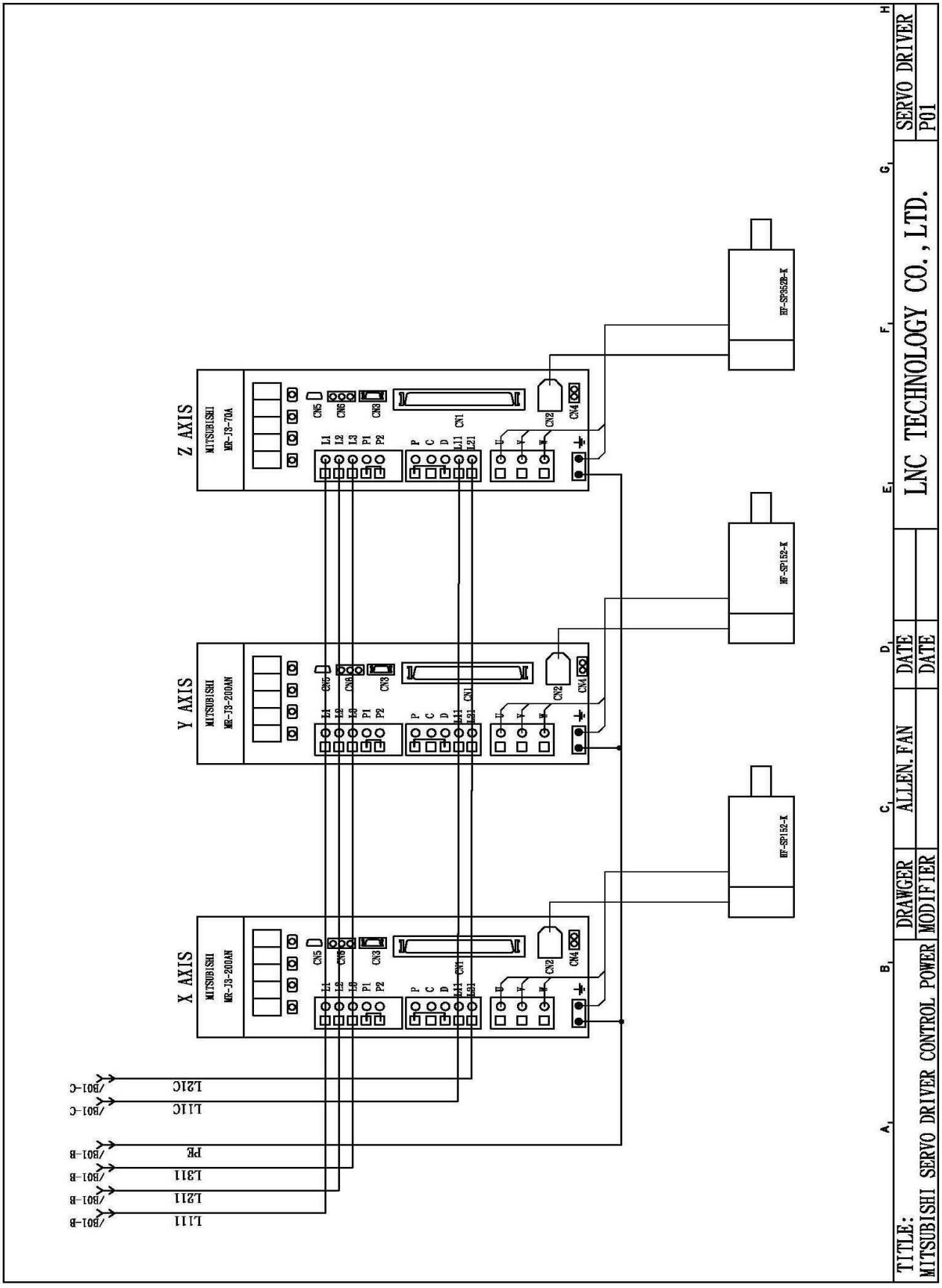

TITLE:
REL 2840-1 (0152-0159) OUTPUT
DRAWGER
MODIFIER
ALLEN.FAN
DATE
DATE
LNC TECHNOLOGY CO., LTD.
0152-0159
002
REL2840-1
(OUTPUT)
P1
OUT T.B
N24A
0V
0152
0153
0154
0155
0156
0157
0158
0159
K16
K15
K14
K13
K12
K11
K10
K9
K16A
K16C
K15A
K15C
K14A
K14C
K13A
K13C
K12A
K12C
K11A
K11C
K10A
K10C
K9A
K9C
0159
0158
L212
0157
0156
0155
0154
0153
0152
-HL04
-SV03
-KM02
-KM03
-SV02
-SV01
Automatic Feeding request
LUBE ON
Work Lights
Work blowing
Cooling water motor
Hydraulic motor
Spindle clamping relax
Tailstock out
L112
DC24
L212
DC0V

Mill

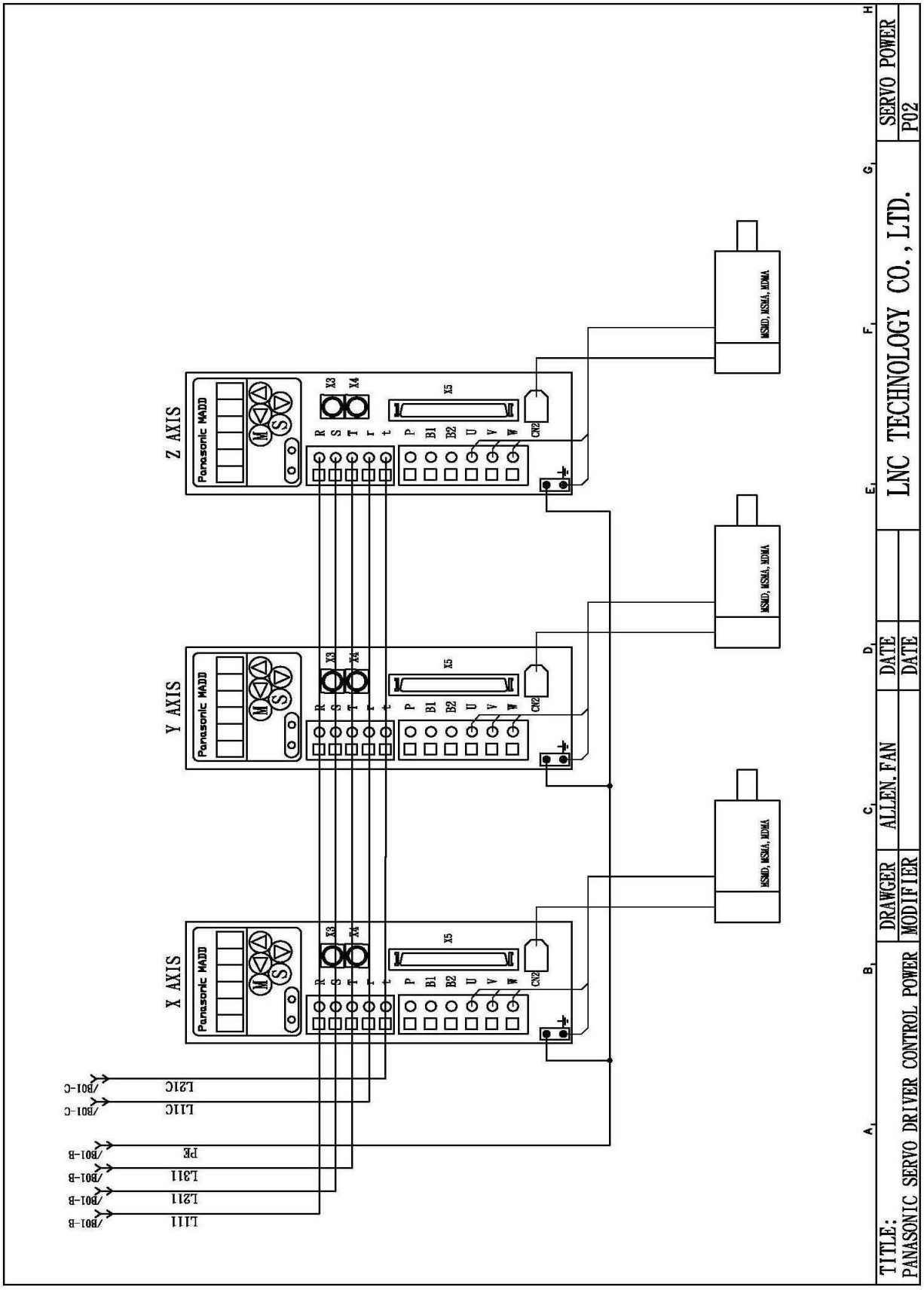

REL2840-1 (OUTPUT)
P1
OUT T.B
K8A
K8C
K7A
K7C
K6A
K6C
K5A
K5C
K4A
K4C
K3A
K3C
K2A
K2C
K1A
K1C
-HL02
-HL01
-KM02
-SV01
Warning lights(R) Warning lights(G)
LUBE
Cooling motor
Spindle Gang attack
Spindle positioning
Cutterhead forward
Spindle Enable
LNC TECHNOLOGY CO., LTD.
TITLE:
REL 2840-1 (0144-0151) OUTPUT
DRAWGER
MODIFIER
ALLEN.FAN
DATE
0144-0151
001

H-Servo power wiring

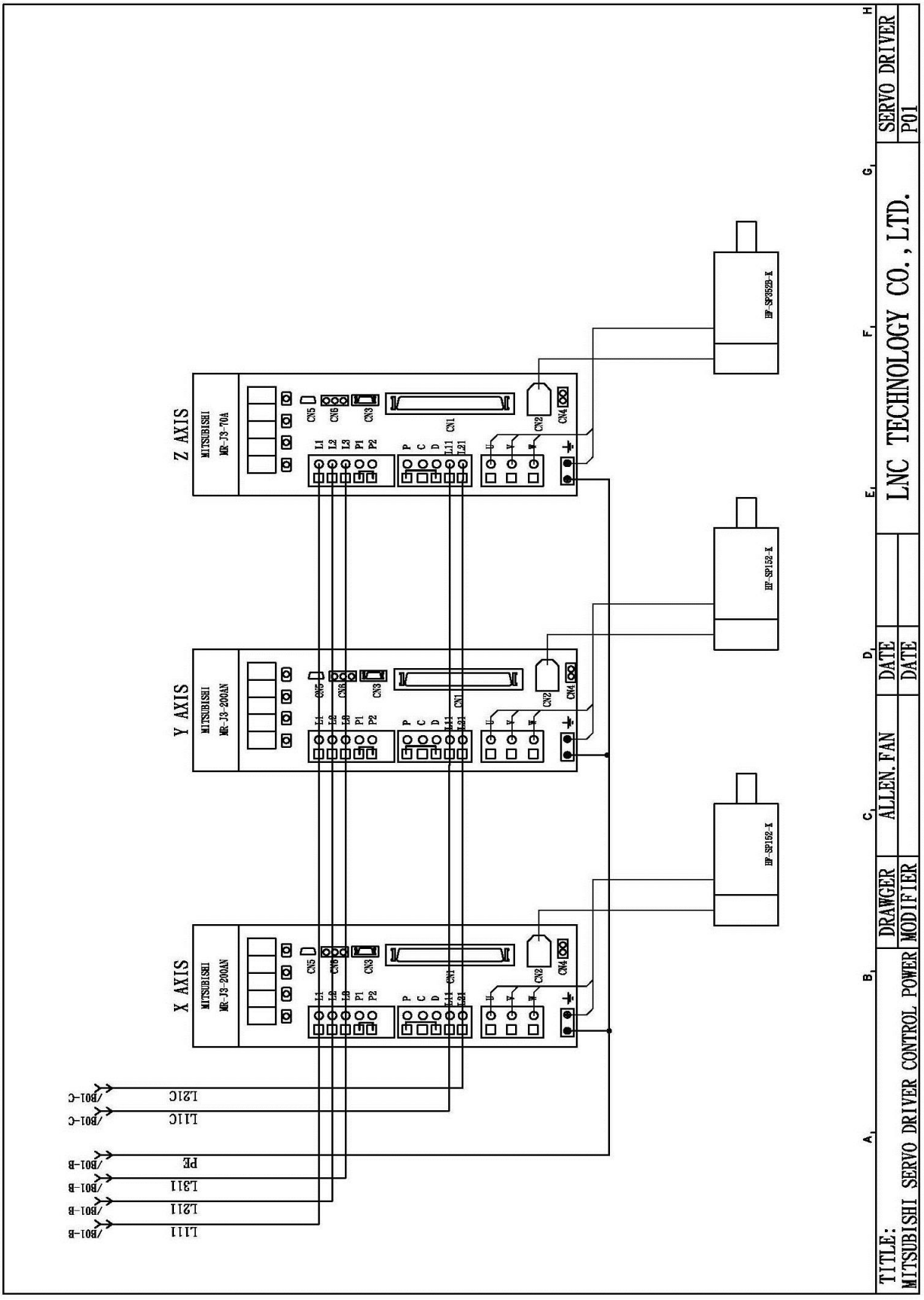
Lathe



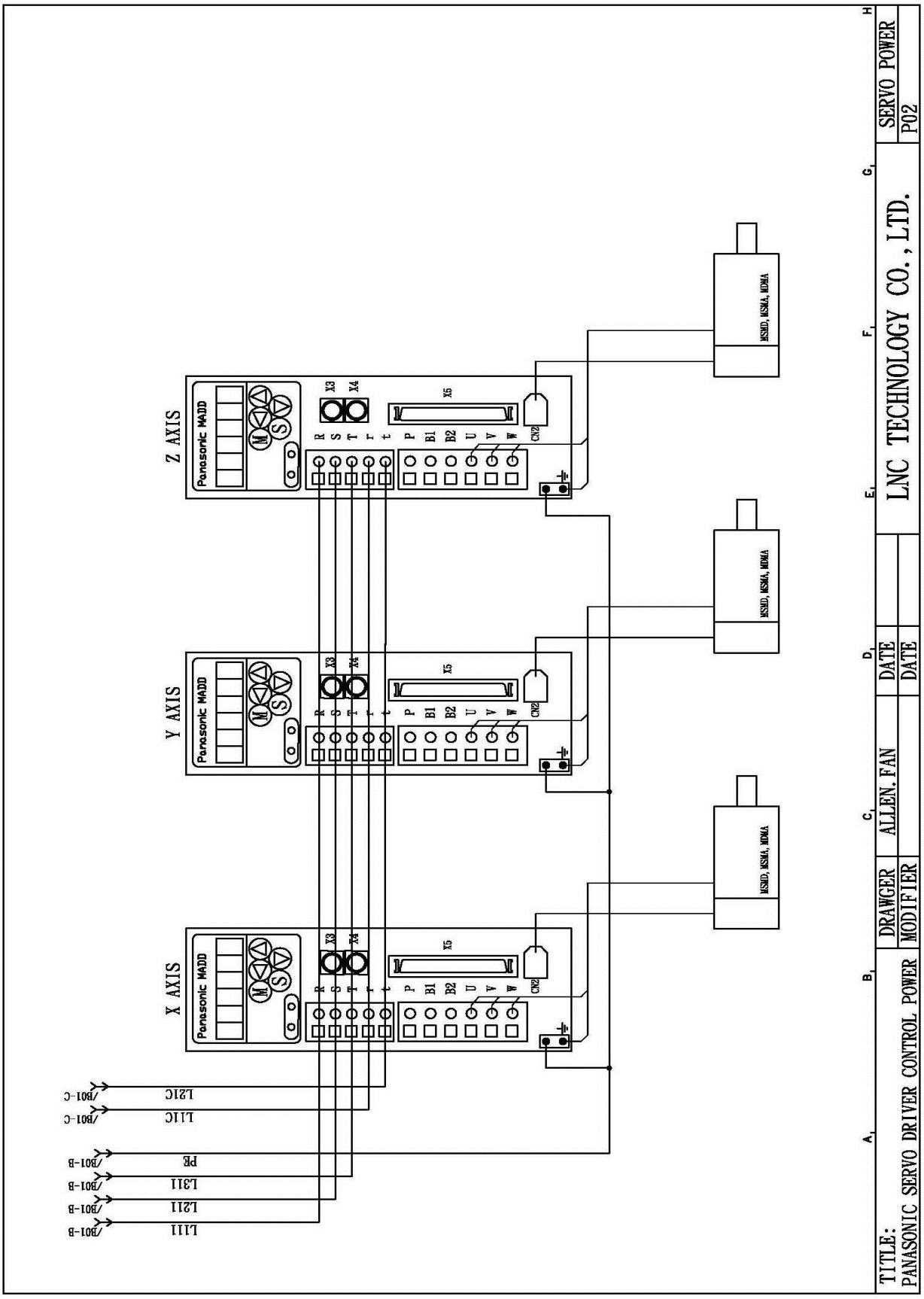
Lathe


TITLE:
PANASONIC SERVO DRIVER CONTROL POWER
LNC TECHNOLOGY CO., LTD.
SERVO POWER
P02
DRAWGER
MODIFIER
ALLEN, FAN
DATE
DATE
Z AXIS
Y AXIS
X AXIS
Panasonic MADD
X3
X4
X5
CN2
R
S
T
r
t
P
B1
B2
U
V
W
L21C
L11C
PE
L311
L211
L111
/B01-C
/B01-C
/B01-B
/B01-B
/B01-B
/B01-B

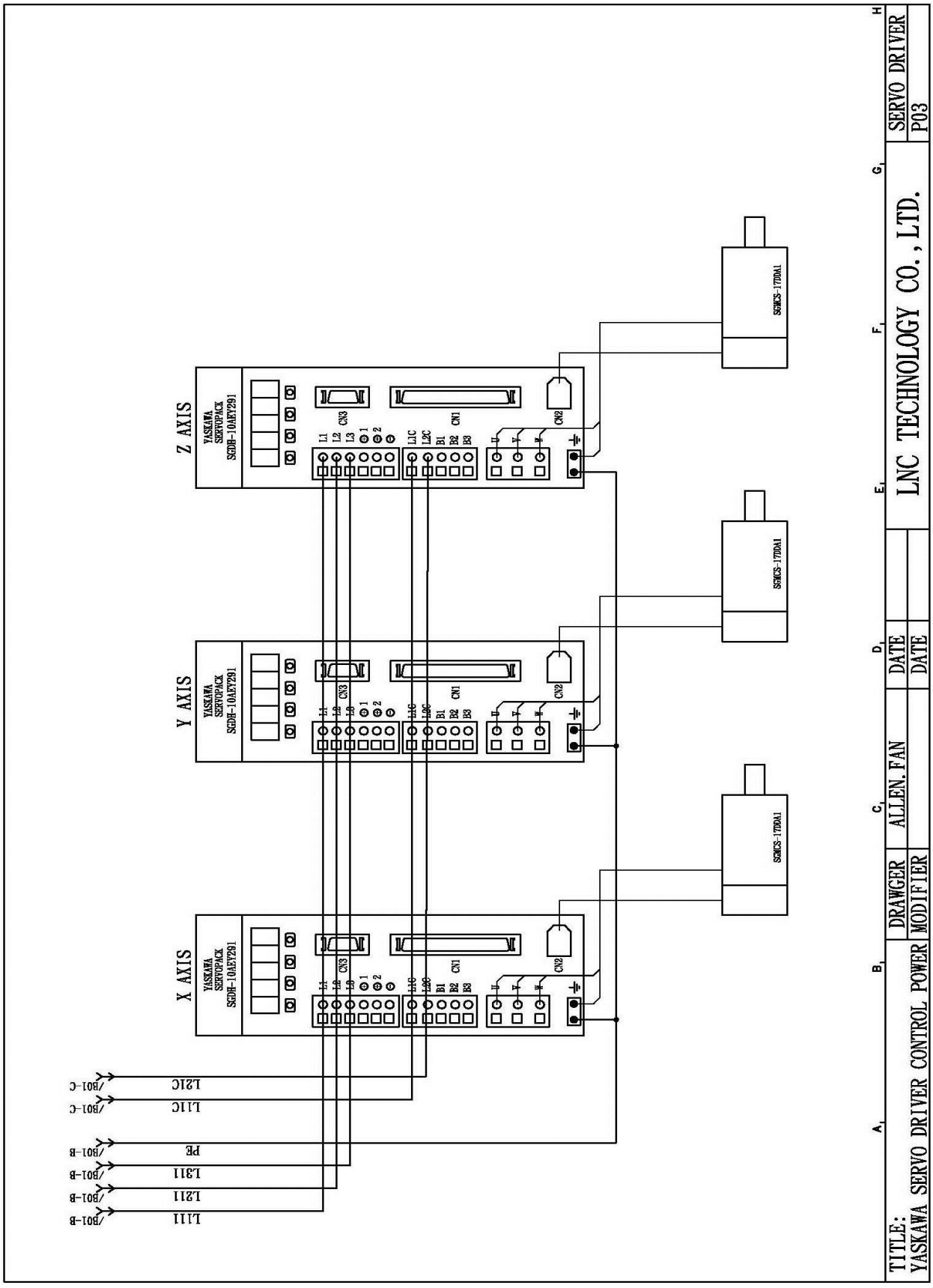
Mill


Z AXIS
Y AXIS
X AXIS
MITSUBISHI
MR-J3-70A
MR-J3-200AN
CN1
CN2
CN3
CN4
CN5
CN6
CN8
L1
L2
L3
P1
P2
P
C
D
L11
L21
U
V
W
HF-SP352B-K
HF-SP152-K
HF-SP152-K
/B01-C
/B01-C
/B01-B
/B01-B
/B01-B
/B01-B
L21C
L11C
PE
L311
L211
L111
TITLE:
MITSUBISHI SERVO DRIVER CONTROL POWER
LNC TECHNOLOGY CO., LTD.
DRAWGER
MODIFIER
ALLEN.FAN
DATE
DATE
SERVO DRIVER
P01

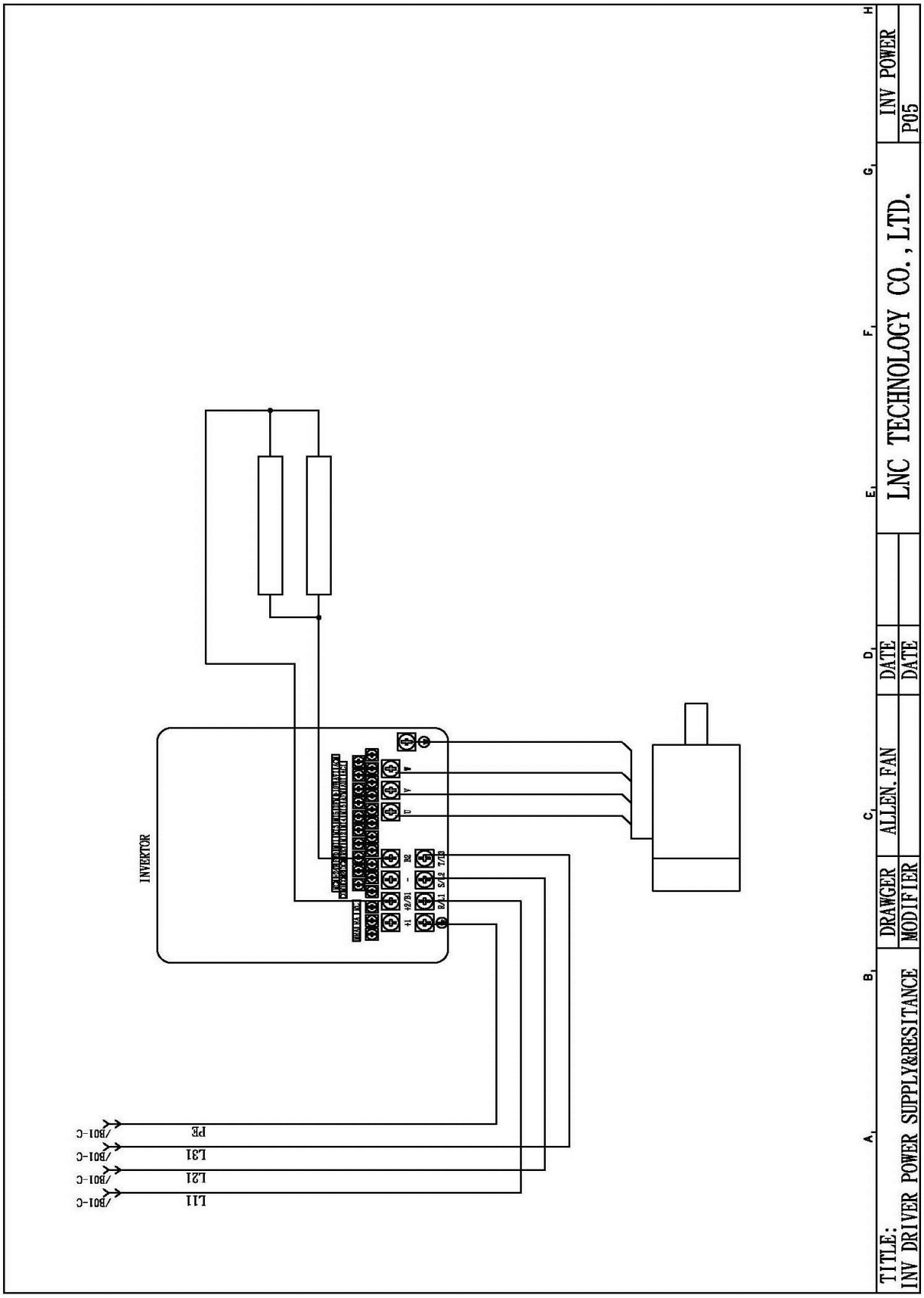
Mill


Z AXIS
Y AXIS
X AXIS
Panasonic MADD
KSMD, KSMA, MDMA
L111
L211
L311
PE
L11C
L21C
TITLE:
PANASONIC SERVO DRIVER CONTROL POWER
DRAWGER
MODIFIER
ALLEN. FAN
DATE
DATE
LNC TECHNOLOGY CO., LTD.
SERVO POWER
P02

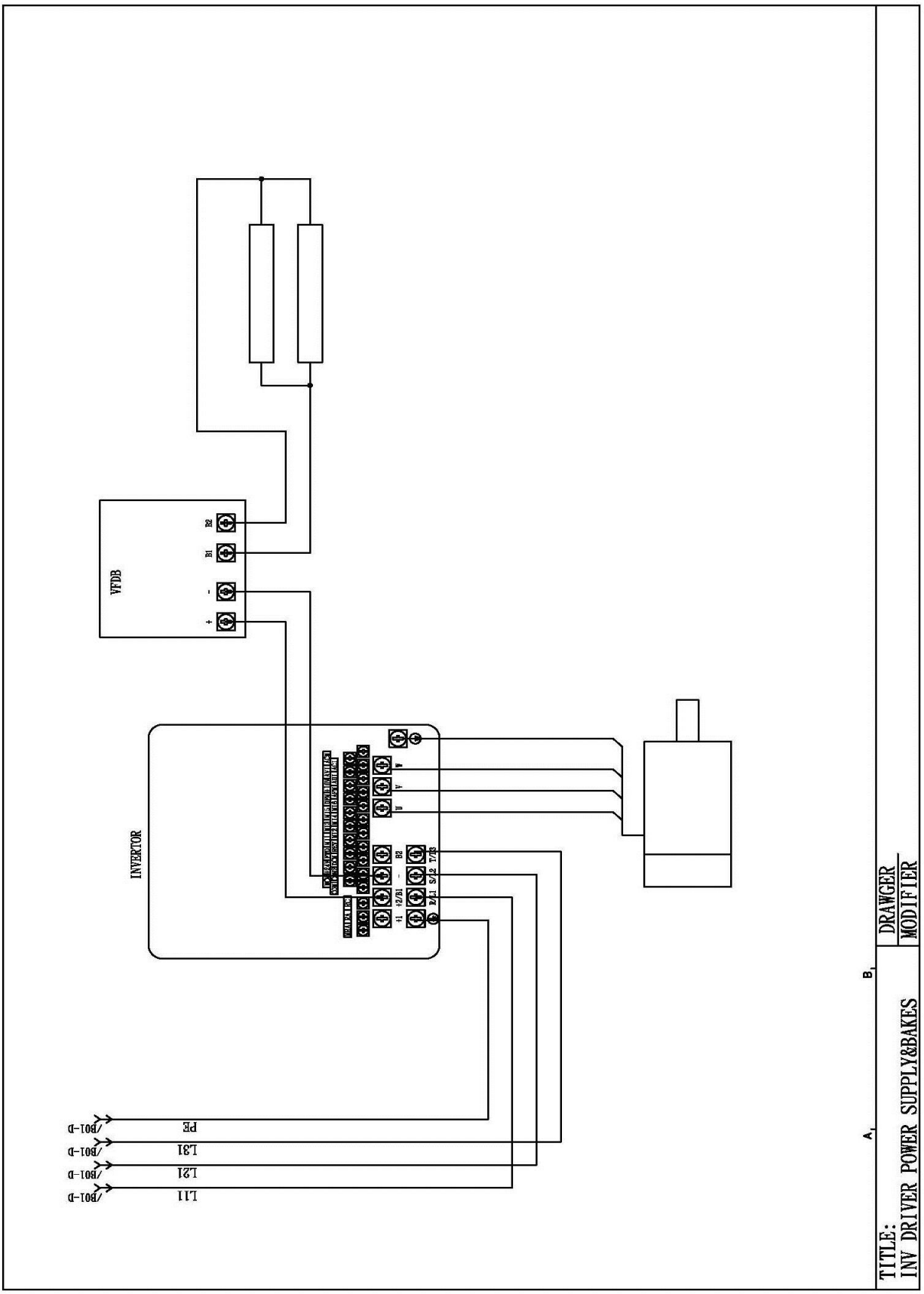
Mill


Z AXIS
Y AXIS
X AXIS
YASKAWA SERVOPACK SGDB-10ADY291
SGMCS-17D0A11
L1C
L2C
L111
L211
L311
PE
/B01-B
/B01-C
TITLE: YASKAWA SERVO DRIVER CONTROL POWER
DRAWGER
MODIFIER
ALLEN.FAN
DATE
LNC TECHNOLOGY CO., LTD.
SERVO DRIVER
P03

Mill

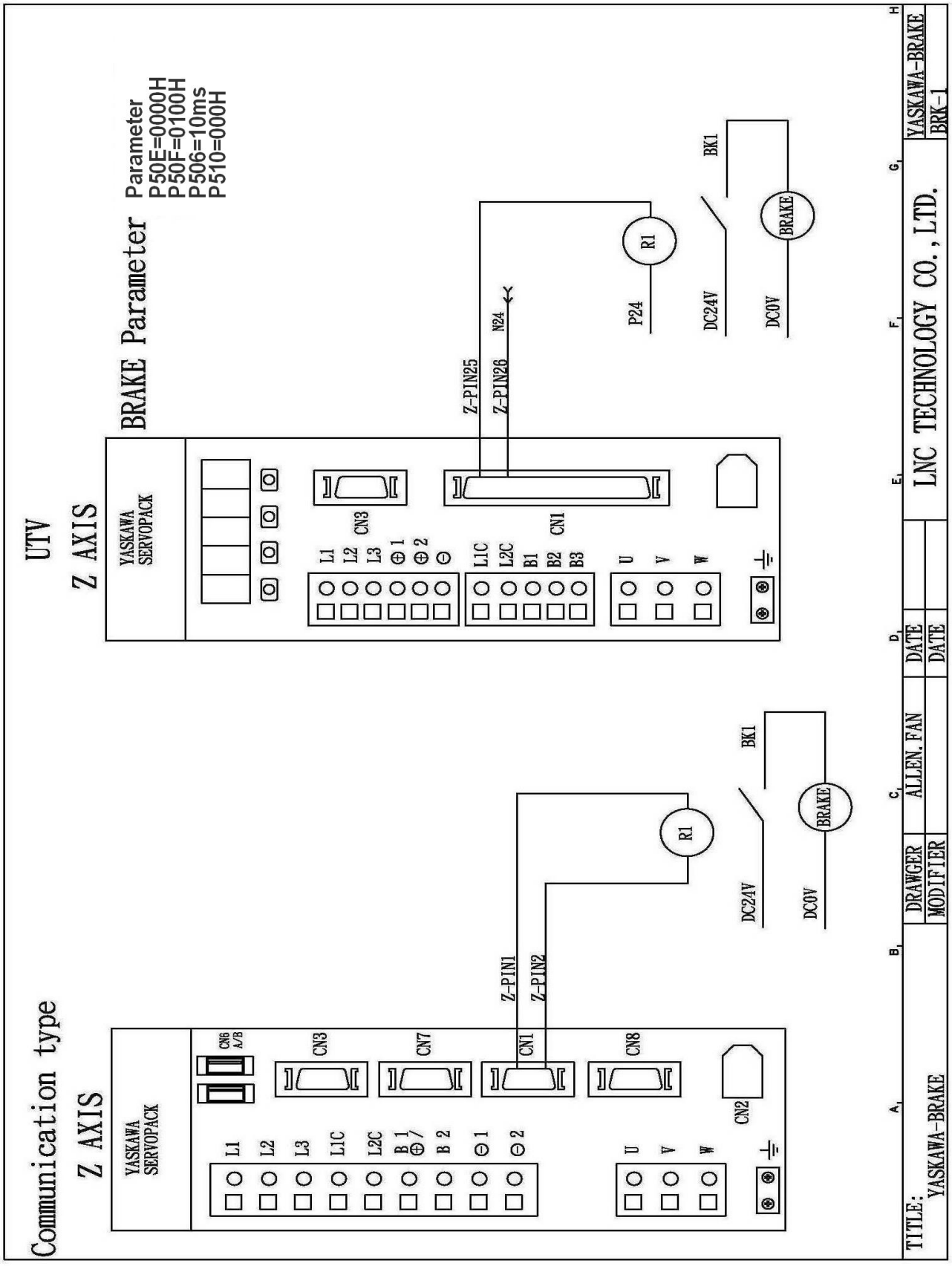

INVERTOR
PE
L31
L21
L11
/R01-C
/R01-C
/R01-C
/R01-C
TITLE:
INV DRIVER POWER SUPPLY&RESITANCE
DRAWGER
MODIFIER
ALLEN. FAN
DATE
DATE
LNC TECHNOLOGY CO., LTD.
INV POWER
P05

Mill

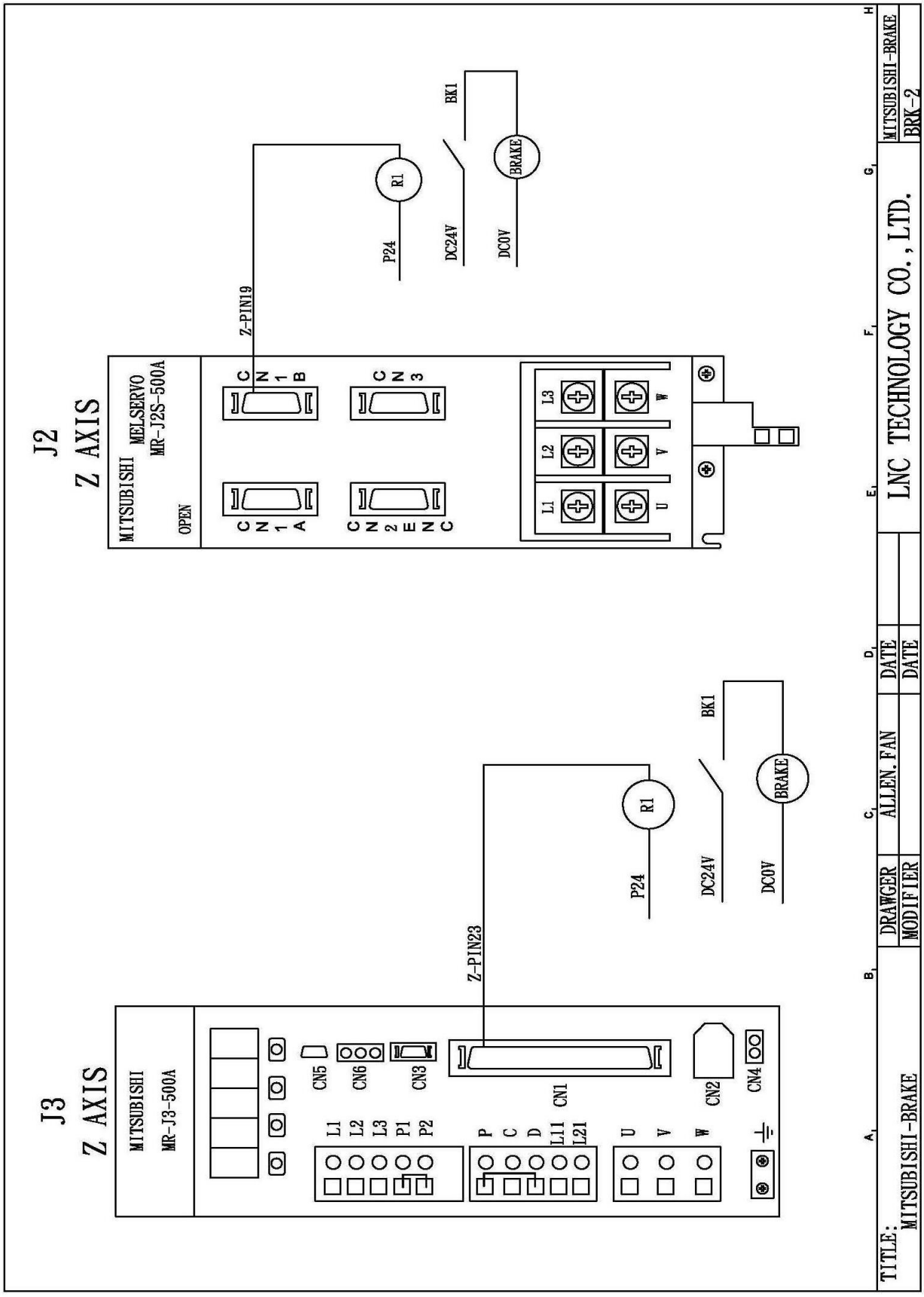

VFDB
B2
B1
-
+
INVERTOR
PE
L31
L21
L11
TITLE:
INV DRIVER POWER SUPPLY&BAKES
DRAWGER
MODIFIER

I-Independent brake servo system

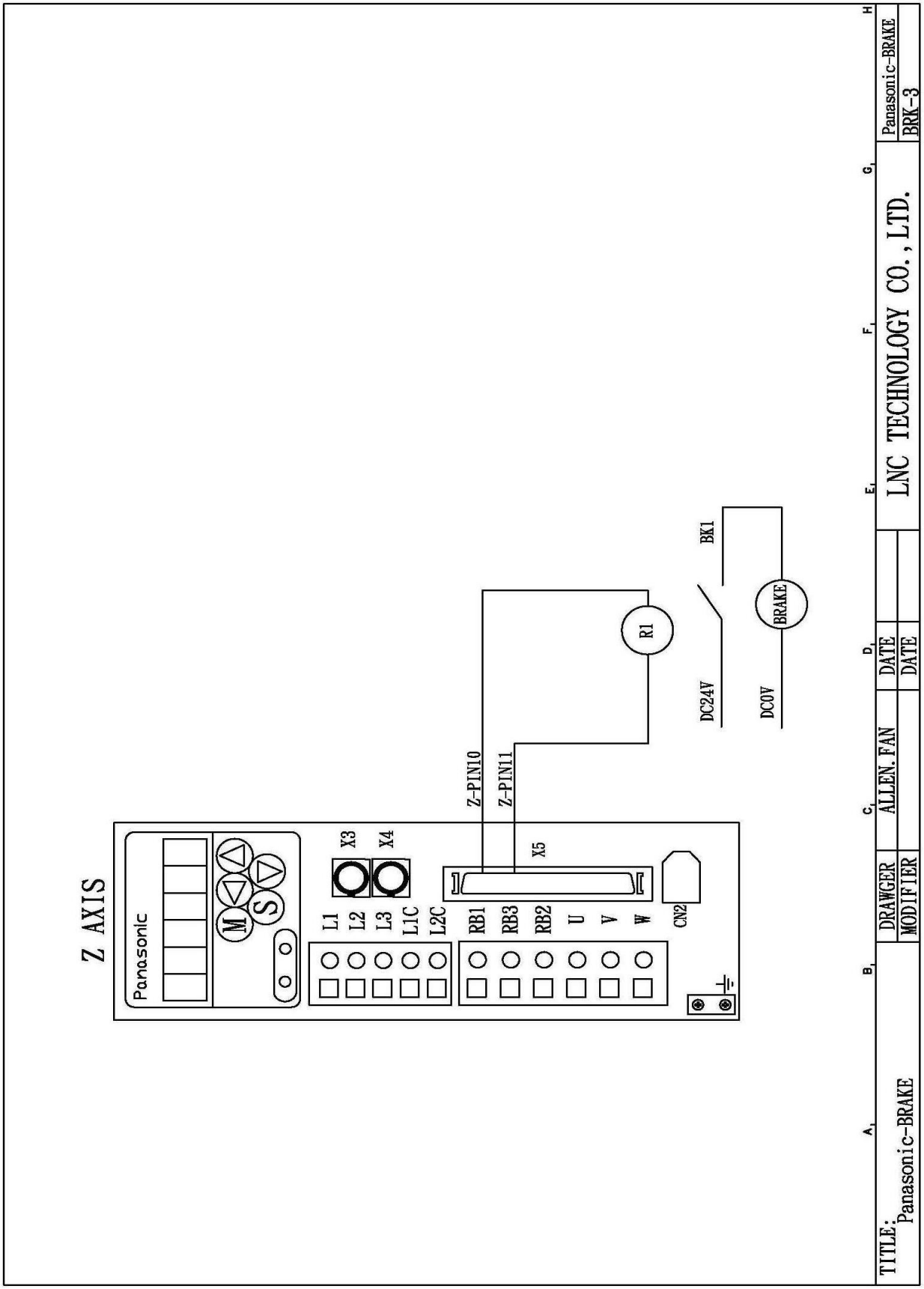
Lathe



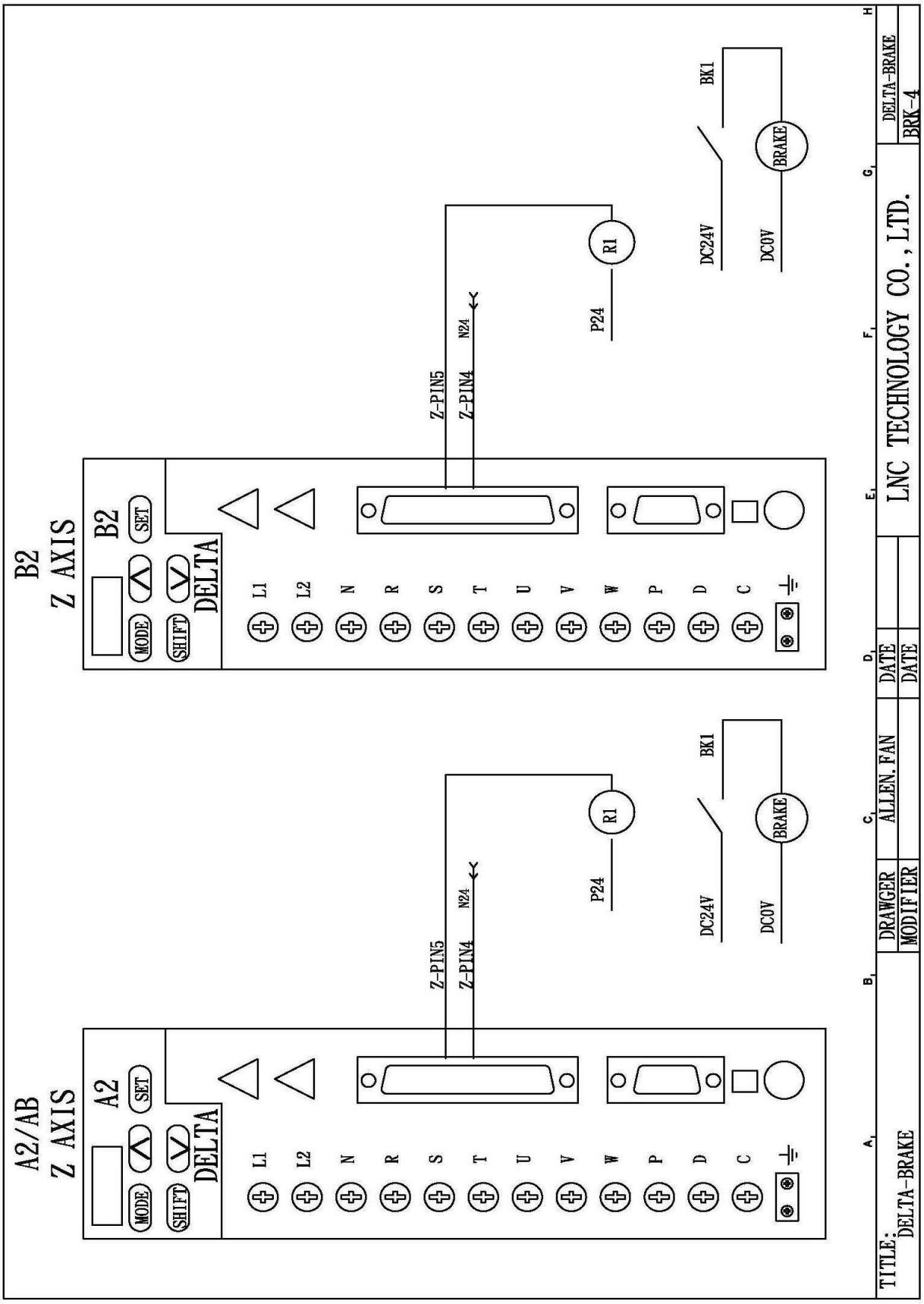
Lathe


J2
Z AXIS
MITSUBISHI
MELSERVO
MR-J2S-500A
OPEN
CN1A
CN1B
CN2
CN3
Z-PIN19
P24
R1
DC24V
DC0V
BK1
BRAKE
L1
L2
L3
U
V
W
J3
Z AXIS
MITSUBISHI
MR-J3-500A
CN1
CN2
CN3
CN4
CN5
CN6
Z-PIN23
L1
L2
L3
P1
P2
P
C
D
L11
L21
U
V
W
TITLE:
MITSUBISHI-BRAKE
DRAWGER
MODIFIER
ALLEN.FAN
DATE
DATE
LNC TECHNOLOGY CO., LTD.
MITSUBISHI-BRAKE
BRK-2

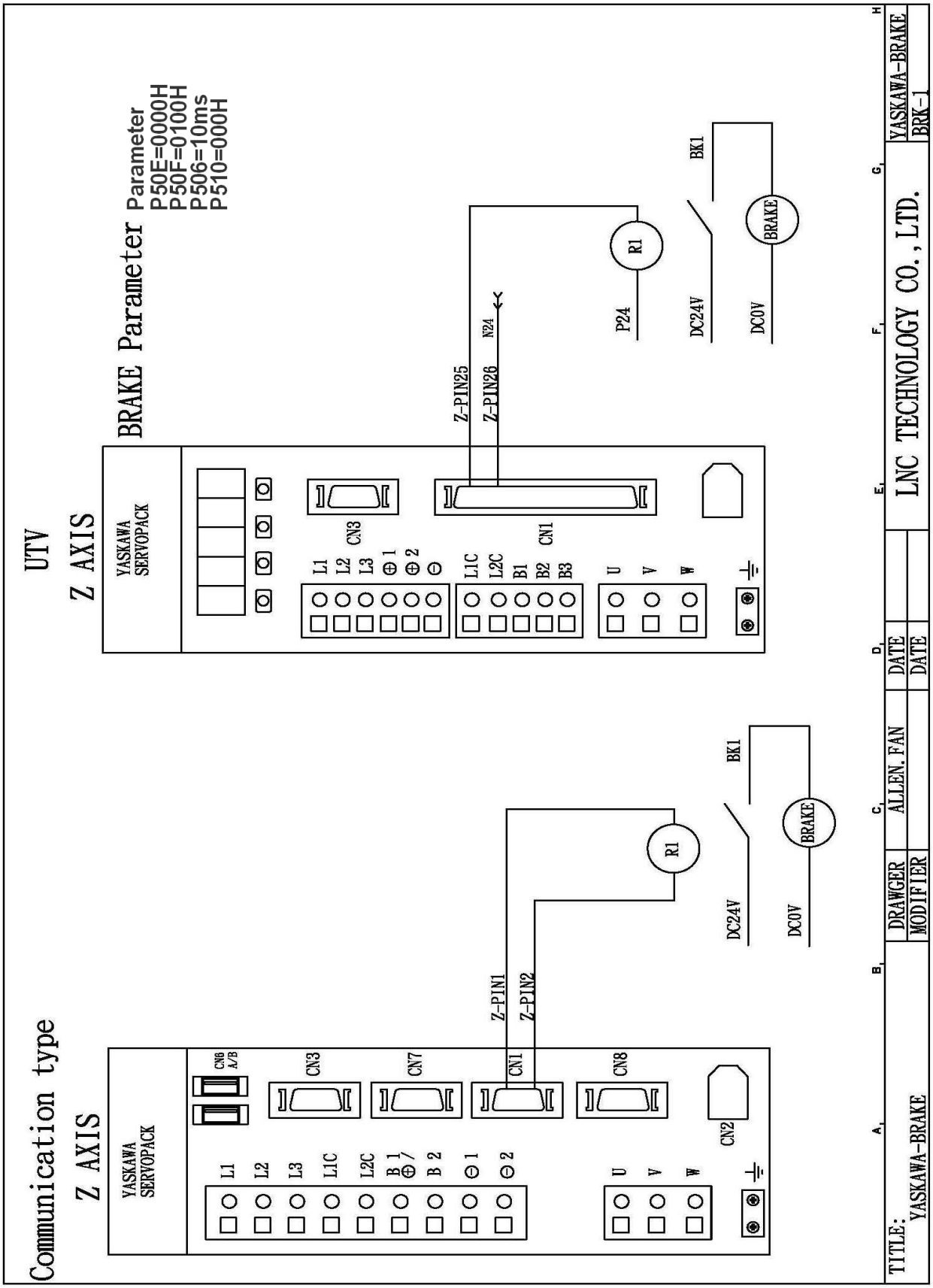
Lathe


Z AXIS
Panasonic
M
S
X3
X4
X5
L1
L2
L3
L1C
L2C
RB1
RB3
RB2
U
V
W
CN2
Z-PIN10
Z-PIN11
R1
BK1
DC24V
DC0V
BRAKE
TITLE: Panasonic-BRAKE
DRAWGER
MODIFIER
ALLEN. FAN
DATE
DATE
LNC TECHNOLOGY CO., LTD.
Panasonic-BRAKE
BRK-3

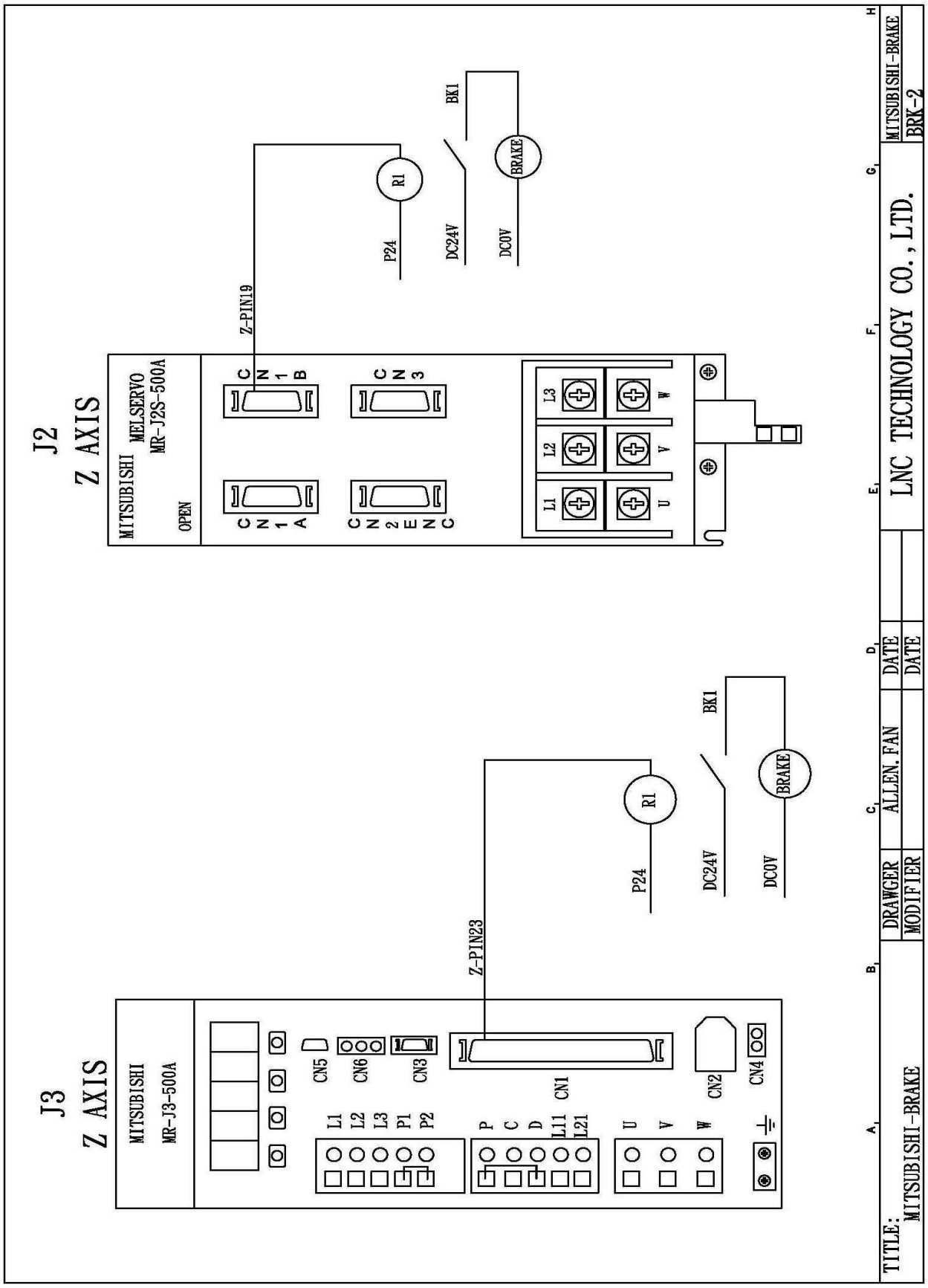
Lathe


A2/AB
Z AXIS
A2
SET
MODE
SHIFT
DELTA
L1
L2
N
R
S
T
U
V
W
P
D
C
Z-PIN5
Z-PIN4
N24
P24
R1
BK1
DC24V
DC0V
BRAKE
B2
Z AXIS
B2
SET
MODE
SHIFT
DELTA
LNC TECHNOLOGY CO., LTD.
TITLE:
DELTA-BRAKE
DRAWGER
MODIFIER
ALLEN. FAN
DATE
DATE
DELTA-BRAKE
BRK-4

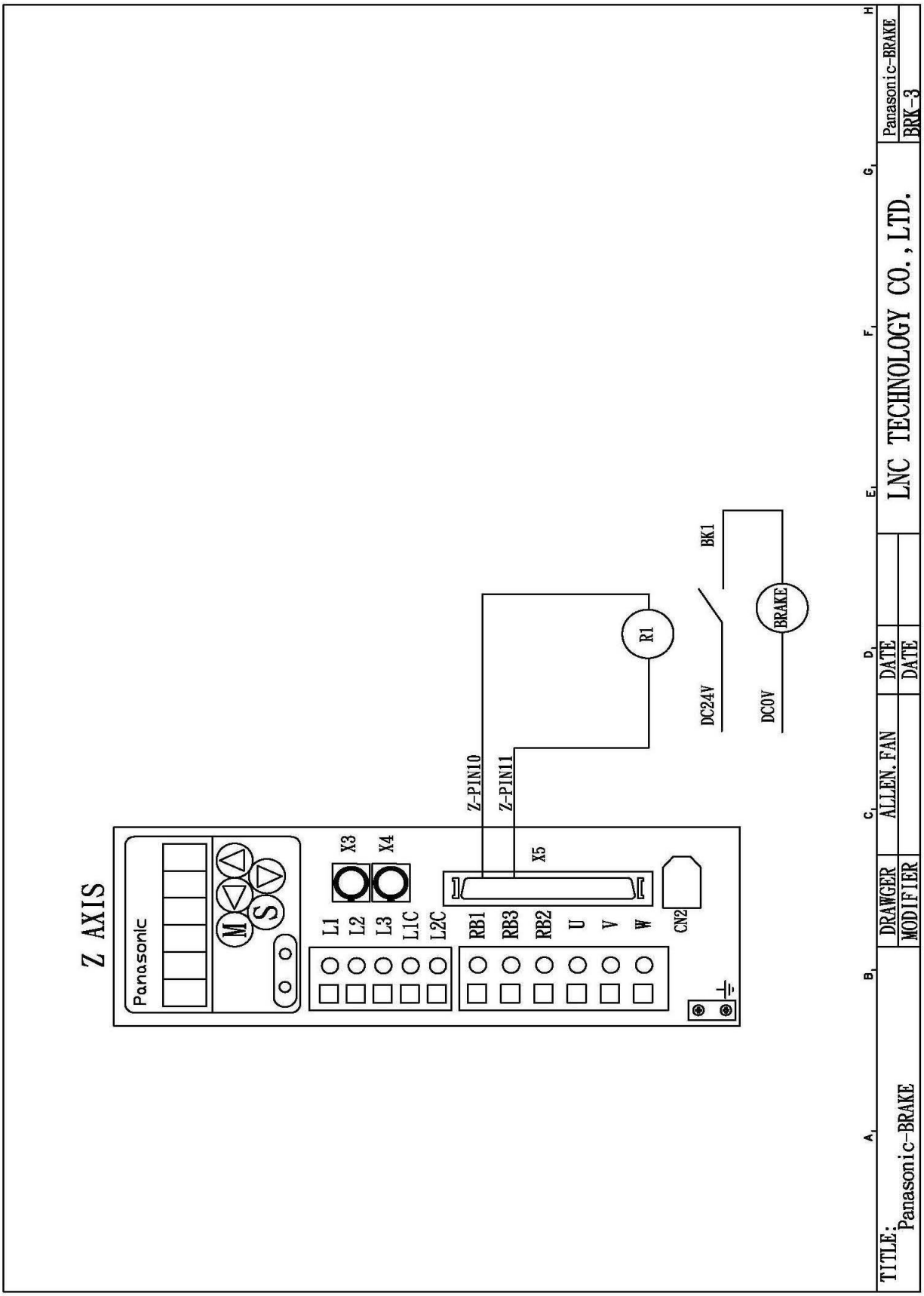
Mill


Communication type
Z AXIS
YASKAWA SERVOPACK
CN6 A/B
CN3
CN7
CN1
CN8
CN2
L1 L2 L3 L1C L2C B1/⊕ B2 ⊖1 ⊖2
U V W
Z-PIN1
Z-PIN2
R1
BK1
DC24V
DC0V
BRAKE
UTV
Z AXIS
YASKAWA SERVOPACK
BRAKE Parameter
Parameter
P50E=0000H
P50F=0100H
P506=10ms
P510=000H
CN3
CN1
L1 L2 L3 ⊕1 ⊕2 ⊖
L1C L2C B1 B2 B3
U V W
Z-PIN25
Z-PIN26
N24
P24
R1
BK1
DC24V
DC0V
BRAKE
LNC TECHNOLOGY CO., LTD.
TITLE:
YASKAWA-BRAKE
DRAWGER
MODIFIER
ALLEN. FAN
DATE
DATE
YASKAWA-BRAKE
BRK-1

Mill


J2
Z AXIS
MITSUBISHI
MELSERVO
MR-J2S-500A
OPEN
CN1A
CN1B
CN2
CN3
Z-PIN19
P24
R1
BK1
DC24V
DC0V
BRAKE
L1
L2
L3
U
V
W
J3
Z AXIS
MITSUBISHI
MR-J3-500A
CN1
CN2
CN3
CN4
CN5
CN6
Z-PIN23
L11
L21
P
C
D
P1
P2
TITLE:
MITSUBISHI-BRAKE
DRAWGER
MODIFIER
ALLEN.FAN
DATE
LNC TECHNOLOGY CO., LTD.
MITSUBISHI-BRAKE
BRK-2

Mill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Panasonic
M
S
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X4
X5
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L2
L3
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RB3
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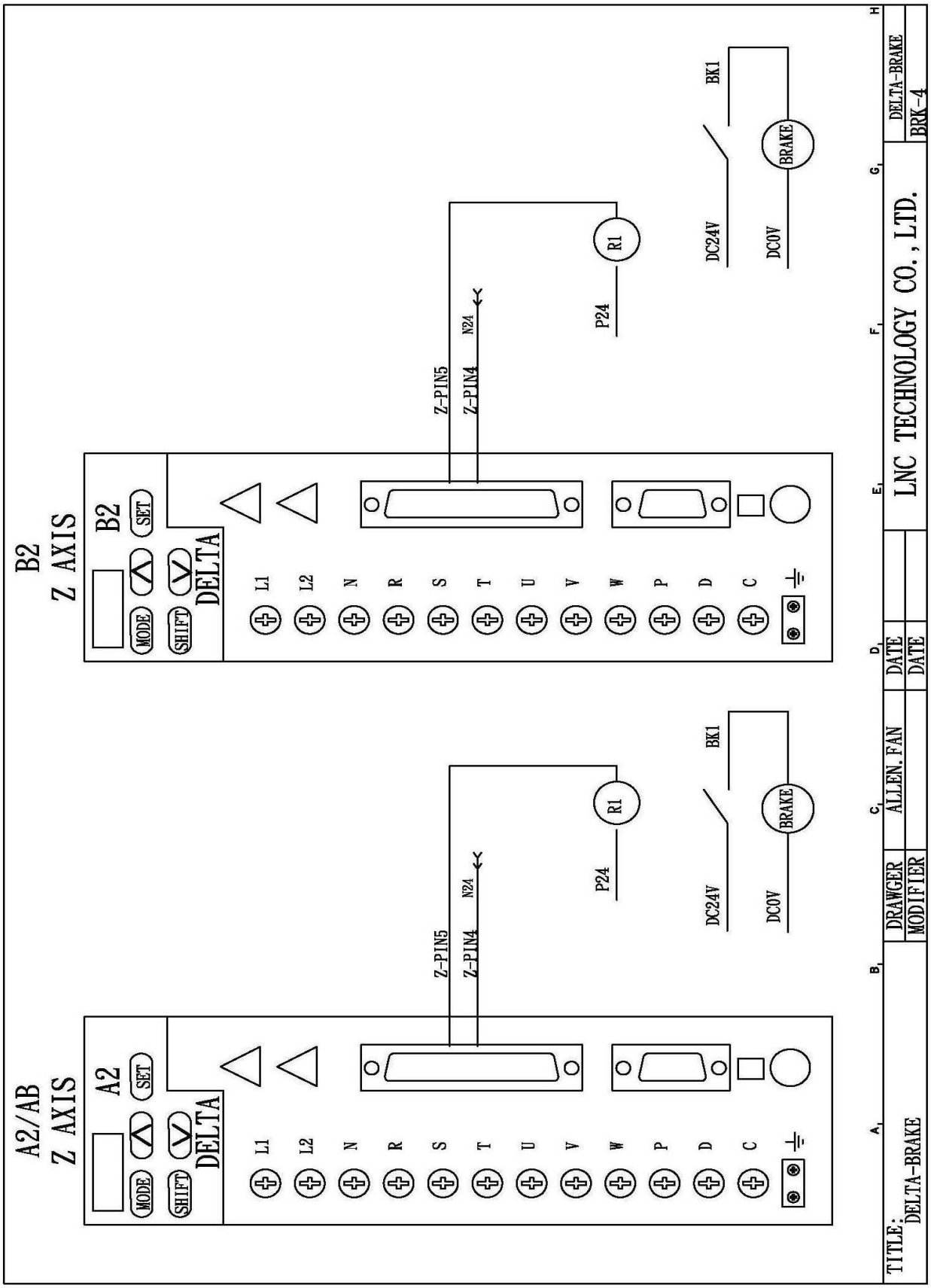
U
V
W
CN2
Z-PIN10
Z-PIN11
R1
BK1
DC24V
DC0V
BRAKE
TITLE:
Panasonic-BRAKE
DRAWGER
MODIFIER
ALLEN.FAN
DATE
DATE
LNC TECHNOLOGY CO., LTD.
Panasonic-BRAKE
BRK-3

Mill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A2
MODE
SHIFT
SET
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L2
N
R
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T
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P
D
C
Z-PIN5
Z-PIN4
N24
P24
R1
DC24V
DC0V
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BRAKE
B2
Z AXIS
B2
MODE
SHIFT
SET
DELTA
LNC TECHNOLOGY CO., LTD.
TITLE:
DELTA-BRAKE
DRAWGER
MODIFIER
ALLEN.FAN
DATE
DELTA-BRAKE
BRK-4