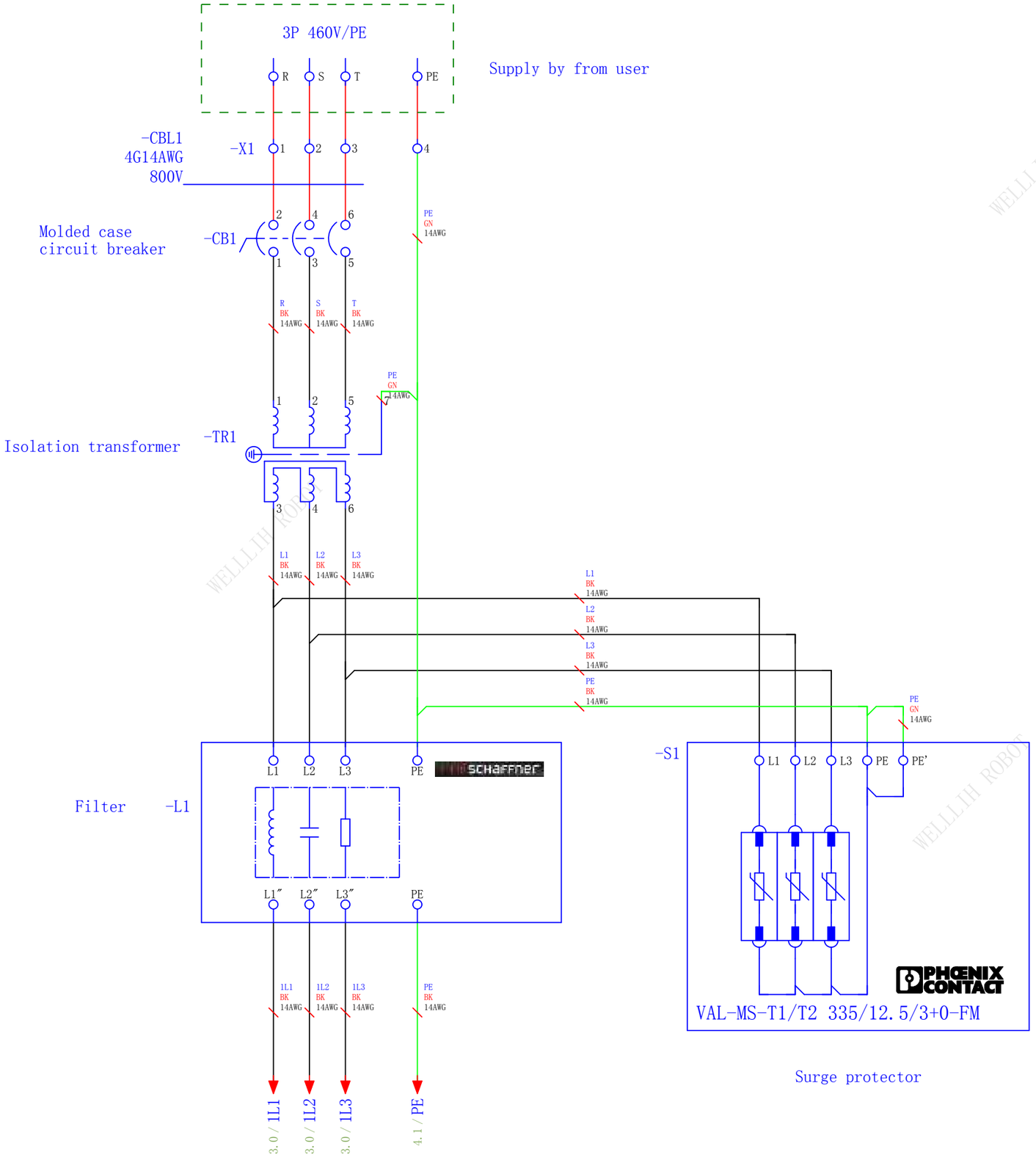
NINGBO WELL-LIH ROBOTS TECHNOLOGY CO.,LTD.
NO.48 Xiangqiao Road,Langxia Street,Yuyao City,Zhejiang 315480 P.R.China

Company / customer	
Project description	American Standard Electrical Schematic
Job number	WL-Max-GUS-A2-MN-001
Commission	
Manufacturer (company)	NINGBO WELL-LIH ROBOTS TECHNOLOGY CO.,LTD.
Path	
Project name	American Standard STO Electrical Schematic
Make	
Type	
Place of installation	
Responsible for project	
Part feature	

Created on 2019-03-30
Edit date 2019-05-28 by (short name) 10169 Number of pages 65

Be careful!

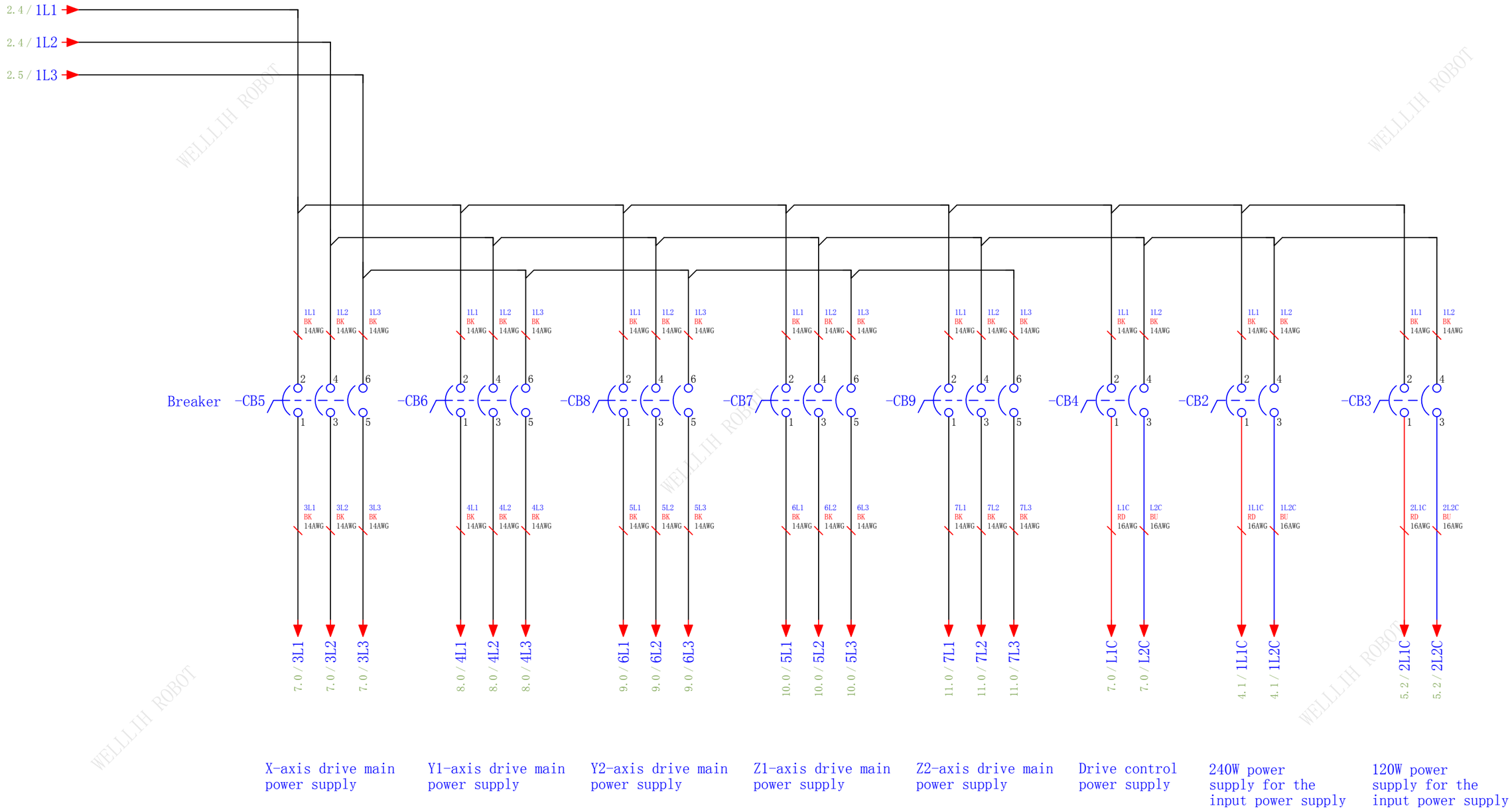
There will still be voltage after disconnecting the main switch



1

3

			Date	2019-05-27			Main circuit		=
			Ed	10169					+
			Appr		American Standard Electrical Schematic			460V/3P/PE	WL-Max-GUS-A2-MN-001
Modification	Date	Name	Original		Replacement of	Replaced by			



			Date	2019-05-27	American Standard Electrical Schematic	WELLLIH 伟立机器人	Main circuit		=
			Ed	10169					+
			Appr					460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 3
Modification	Date	Name	Original		Replacement of	Replaced by				Page 3/65

240W power supply

			Date	2019-05-27				=	
			Ed	10169				+	
			Appr		American Standard Electrical Schematic		240W power supply		
Modification	Date	Name	Original		Replacement of	Replaced by		460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 4 Page 4/65

3.8 / 2L1C

3.8 / 2L2C

4.7 / PE

PE / 7.0

2L2C
BU
16AWG

2L1C
RD
16AWG

PE
BK
14AWG

-G2

N L PE

AC 200V-240V

120W power supply

DELTA

DC24V 5A

OUT+ OUT+ OUT- OUT-

2P24
BN
20AWG

2P24 / 12.0

2N24
BU
20AWG

2N24 / 12.0

120W power supply

			Date	2019-05-27			120W power supply		=
			Ed	10169					+
			Appr		American Standard Electrical Schematic				
Modification	Date	Name	Original		Replacement of	Replaced by		460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 5 Page 5/65

Cooling Fan

Cooling Fan 1

Cooling Fan 2

Cooling Fan 3

Cooling Fan 4

3.2 / 3L1
3.2 / 3L2
3.2 / 3L3
3.6 / L1C
3.7 / L2C
5.7 / PE
6.8 / 1P24
6.8 / 1N24

L1C / 8.0
L2C / 8.0
PE / 8.0
1P24 / 8.0
1N24 / 8.0
1P24J / 8.0
1P24K / 8.0

DI1- / 23.7
LX0 / 31.1

3L1 BK 14AWG
3L2 BK 14AWG
3L3 BK 14AWG
PE BK 14AWG
L1C RD 16AWG
L2C BU 16AWG
1P24 BN 20AWG
1N24 BU 20AWG
DI1- BU 20AWG
LX0 BU 20AWG
1P24J BN 20AWG
1N24 BU 20AWG
1P24K BN 20AWG
1N24 BU 20AWG

-ASDA1

R S T PE L1C L2C

Main circuit power input

Control circuit power input

CN1: VDD 5, COM+ 6, COM- 14, GND 16, NC 15, DI1- 7, DI2- 8, DI3- 9, DI4- 10, DI5- 11, DI6- 12, DI7- 13

Input signals

CN-STO: COM+ 1, STO_A 2, /STO_A 3, STO_B 4, /STO_B 5, FDBK_A 6, FDBK_B 7, COM- 8

Safe Torque Off

Motor connection

Regenerative resistor

Encoder

Full-closed control

Output signals

U V W FG P+ D C - CN2 CN5 CN5 CN1 1 DO1+ 2 DO1- 3 DO2+ 4 DO2- 25 DO3+ 26 DO3- 23 DO4+ 24 DO4- 17 OA 18 /OA 19 OB 20 /OB 21 OZ 22 /OZ

USB

CANopen

CN4 CN4 CN6 IN 1-8 CN6 OUT 9-16 CN3 1 GND 2 RS-232 TX 3 - 4 RS-232 RX 5 RS-485 (+) 6 RS-485 (-) CN8 1 BAT+ 2 BAT- 1' BAT+ 2' BAT-

-CBL2
4G18AWG
BK BK BK GNYE
1 2 3 PE

-R1
x2 x1

-CBL3
3P22AWG

-M1
U V W FG

Encoder

M
3～

Motor

X-axis servo drive

			Date	2019-05-27				=
			Ed	10169				+
			Appr		American Standard Electrical Schematic		460V/3P/PE	WL-Max-GUS-A2-MN-001
Modification	Date	Name	Original		Replacement of	Replaced by		

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X-axis drive

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3.3 / 4L1
3.3 / 4L2
3.3 / 4L3
7.9 / L1C
7.9 / L2C
7.9 / PE
7.9 / 1P24
7.9 / 1N24
7.9 / 1P24J
7.9 / 1P24K

L1C / 9.0
L2C / 9.0
PE / 9.0
1P24 / 9.0
1N24 / 9.0
1P24J / 9.0
1P24K / 9.0

DI1- / 23.7
LY1- / 31.1

4L1 BK 14AWG
4L2 BK 14AWG
4L3 BK 14AWG
PE BK 14AWG
L1C RD 16AWG
L2C BU 16AWG
1P24 BN 20AWG
1N24 BU 20AWG
DI1- BU 20AWG
LY1- BU 20AWG
1P24J BN 20AWG
1N24 BU 20AWG
1P24K BN 20AWG
1N24 BU 20AWG

-ASDA2

R S T PE L1C L2C

Main circuit power input

Control circuit power input

CN1: VDD COM+ COM- GND NC DI1- DI2- DI3- DI4- DI5- DI6- DI7-
5 6 14 16 15 7 8 9 10 11 12 13

Input signals

CN-STO: COM+ STO_A /STO_A STO_B /STO_B FDBK_A FDBK_B COM-
1 2 3 4 5 6 7 8

Safe Torque Off

Motor connection

Regenerative resistor

Encoder

Full-closed control

Output signals

USB

CANopen

U V W FG P+ D C - CN2 CN5 CN5 CN1 1 2 3 4 25 26 23 24 17 18 19 20 21 22

DO1+ DO1- DO2+ DO2- DO3+ DO3- DO4+ DO4- OA /OA OB /OB OZ /OZ

CN4 CN4 CN6 IN CN6 OUT CN3 1 2 3 4 5 6 CN8 1 2 1' 2'

CN4: 1-8
CN6: 9-16
CN3: GND RS-232 TX RS-232 RX RS-485 (+) RS-485 (-)
CN8: BAT+ BAT- BAT+ BAT-

-CBL4
4G18AWG
BK BK BK GNYE
1 2 3 PE

-R2
x2 x1

-CBL5
3P22AWG

-M2
U V W FG
Encoder

M
3～
Motor

Y1-axis servo drive

7

9

			Date	2019-05-27	American Standard Electrical Schematic		Y1-axis drive	=	
			Ed	10169				+	
			Appr				460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 8
Modification	Date	Name	Original		Replacement of	Replaced by			Page 8/65

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3.4 / 6L1
3.4 / 6L2
3.4 / 6L3
8.9 / L1C
8.9 / L2C
8.9 / PE
8.9 / 1P24
8.9 / 1N24
8.9 / 1P24J
8.9 / 1P24K

L1C / 10.0
L2C / 10.0
PE / 10.0
1P24 / 10.0
1N24 / 10.0
1P24J / 10.0
1P24K / 10.0

5L1 BK 14AWG
5L2 BK 14AWG
5L3 BK 14AWG
PE BK 14AWG
L1C RD 16AWG
L2C BU 16AWG
1P24 BN 20AWG
1N24 BU 20AWG
DI1- / 23.7
DI1- BU 20AWG
LY2- / 31.1
LY2- BU 20AWG
1P24J BN 20AWG
1N24 BU 20AWG
1P24K BN 20AWG
1N24 BU 20AWG

-ASDA3

R S T PE L1C L2C

Main circuit power input

Control circuit power input

CN1: VDD 5, COM+ 6, COM- 14, GND 16, NC 15, DI1- 7, DI2- 8, DI3- 9, DI4- 10, DI5- 11, DI6- 12, DI7- 13

Input signals

CN-STO: COM+ 1, STO_A 2, /STO_A 3, STO_B 4, /STO_B 5, FDBK_A 6, FDBK_B 7, COM- 8

Safe Torque Off

Motor connection

Regenerative resistor

Encoder

Full-closed control

Output signals

U V W FG P+ D C - CN2 CN5 CN5 CN1 1 2 3 4 25 26 23 24 17 18 19 20 21 22

CN1: DO1+, DO1-, DO2+, DO2-, DO3+, DO3-, DO4+, DO4-, OA, /OA, OB, /OB, OZ, /OZ

USB

CANopen

CN4 CN4 CN6 IN CN6 OUT CN3 1 2 3 4 5 6 CN8 1 2 1' 2'

CN4: 1-8
CN6: 9-16
CN3: GND, RS-232 TX, -, RX, RS-485 (+), RS-485 (-)
CN8: BAT+, BAT-, BAT+, BAT-

-CBL6
4G18AWG
BK BK BK GNYE
1 2 3 PE

-R3
x2 x1

-CBL7
3P22AWG

-M3
U V W FG
Encoder
M
3～
Motor

Y2-axis servo drive

8 10

			Date	2019-05-27	American Standard Electrical Schematic		Y2-axis drive	=
			Ed	10169				+
			Appr				460V/3P/PE	WL-Max-GUS-A2-MN-001
Modification	Date	Name	Original		Replacement of	Replaced by		

3.5 / 5L1
3.5 / 5L2
3.5 / 5L3
9.9 / L1C
9.9 / L2C
9.9 / PE
9.9 / 1P24
9.9 / 1N24
9.9 / 1P24J
9.9 / 1P24K

L1C / 11.0
L2C / 11.0
PE / 11.0
1P24 / 11.0
1N24 / 11.0
1P24J / 11.0
1P24K / 11.0

6L1 BK 14AWG
6L2 BK 14AWG
6L3 BK 14AWG
PE BK 14AWG
L1C RD 16AWG
L2C BU 16AWG
1P24 BN 20AWG
1N24 BU 20AWG
DI1- / 23.7
LZ10 / 31.1
LZ10 / 16.1
DI1- BU 20AWG
LZ10 BU 20AWG
1P24J BN 20AWG
1N24 BU 20AWG
1P24K BN 20AWG
1N24 BU 20AWG

-ASDA4

R S T PE L1C L2C

Main circuit power input

Control circuit power input

CN1: VDD 5, COM+ 6, COM- 14, GND 16, NC 15, DI1- 7, DI2- 8, DI3- 9, DI4- 10, DI5- 11, DI6- 12, DI7- 13

Input signals

CN-STO: COM+ 1, STO_A 2, /STO_A 3, STO_B 4, /STO_B 5, FDBK_A 6, FDBK_B 7, COM- 8

Safe Torque Off

Motor connection

Regenerative resistor

Encoder

Full-closed control

Output signals

USB

CANopen

U V W FG P+ D C - CN2 CN5 CN1 1 2 3 4 25 26 23 24 17 18 19 20 21 22

CN1: DO1+, DO1-, DO2+, DO2-, DO3+, DO3-, DO4+, DO4-, OA, /OA, OB, /OB, OZ, /OZ

CN4 CN6 IN 1-8 CN6 OUT 9-16 CN3 1 2 3 4 5 6 CN8 1 2 1' 2'

CN3: GND, RS-232 TX, -, RS-232 RX, RS-485 (+), RS-485 (-)

CN8: BAT+, BAT-, BAT+, BAT-

-CBL8 4G18AWG BK BK BK GNYE 1 2 3 PE

-R4 x2 x1

-CBL9 3P22AWG

Z1-BK+ / 12.6

Z1-BK- / 12.7

Z1-DO3+ BU 20AWG

Z1-DO4+ BU 20AWG

Brake Signal

Z1-DO3+ / 12.1

Z1-DO4+ / 12.2

-M4

U V W FG BK1 BK2 Encoder

M 3~

Motor

Holding brake

Z1-axis servo drive

9 11

			Date	2019-05-27	American Standard Electrical Schematic	WELLLIH 伟立机器人	Z1-axis drive	=
			Ed	10169				+
			Appr				460V/3P/PE	WL-Max-GUS-A2-MN-001 Page 10
Modification	Date	Name	Original		Replacement of	Replaced by		Page 10/65

3.6 / 7L1
3.6 / 7L2
3.6 / 7L3
10.9 / L1C
10.9 / L2C
10.9 / PE
10.9 / 1P24
10.9 / 1N24
10.9 / 1P24J
10.9 / 1P24K

PE / 14.0
1P24 / 12.0
1N24 / 12.0
1P24J / 22.6
1P24K / 22.6

7L1 BK 14AWG
7L2 BK 14AWG
7L3 BK 14AWG
PE BK 14AWG
L1C RD 16AWG
L2C BU 16AWG
1P24 BN 20AWG
1N24 BU 20AWG
DI1- / 23.7
LZ20 / 31.4
DI1- BU 20AWG
LZ20 BU 20AWG
1P24J BN 20AWG
1N24 BU 20AWG
1P24K BN 20AWG
1N24 BU 20AWG

-ASDA5

R S T PE L1C L2C

Main circuit power input

Control circuit power input

CN1: VDD 5, COM+ 6, COM- 14, GND 16, NC 15, DI1- 7, DI2- 8, DI3- 9, DI4- 10, DI5- 11, DI6- 12, DI7- 13

Input signals

CN-STO: COM+ 1, STO1_A 2, /STO_A 3, STO_B 4, /STO_B 5, FDBK_A 6, FDBK_B 7, COM- 8

Safe Torque Off

Motor connection

Regenerative resistor

Encoder

Full-closed control

Output signals

U V W FG P+ D C - CN2 CN5 CN5 CN1 1 2 3 4 25 26 23 24 17 18 19 20 21 22

DO1+ DO1- DO2+ DO2- DO3+ DO3- DO4+ DO4- OA /OA OB /OB OZ /OZ

CN4 USB

CN6 IN 1-8 CN6 OUT 9-16 CN3 1 GND 2 RS-232 TX 3 - 4 RS-232 RX 5 RS-485 (+) 6 RS-485 (-) CN8 1 BAT+ 2 BAT- 1' BAT+ 2' BAT-

CANopen

-CBL10 4G18AWG BK BK BK GNYE 1 2 3 PE

-R5 x2 x1

-CBL11 3P22AWG

Z2-BK+ / 13.6

Z2-BK- / 13.7

-M5

U V W FG BK1 BK2 Encoder

M 3~

Motor

Holding brake

Z2-DO3+ BU 20AWG
Z2-DO4+ BU 20AWG

Brake Signal

Z2-DO3+ / 13.1
Z2-DO4+ / 13.2

Z2-axis servo drive

10

12

			Date	2019-05-27	American Standard Electrical Schematic		Z2-axis drive	=
			Ed	10169				+
			Appr				460V/3P/PE	WL-Max-GUS-A2-MN-001 Page 11
Modification	Date	Name	Original		Replacement of	Replaced by		Page 11/65

11.9 / 1P24
11.9 / 1N24
5.7 / 2P24
5.7 / 2N24

1P24 / 13.0
1N24 / 13.0
2P24 / 13.0
2N24 / 13.0

Z1-DO4+ / 10.9

Z1 axis brake signal 2

1P24 BN 20AWG
Z1-DO4+ BU 20AWG
2N24 BU 20AWG

-CR31
13 A1
12 NC
11NO
42 NC
41NO
DRM
14 A2
14COM
44COM

200 / 63.3
201 / 63.4

1P24 BN 20AWG
200 BN 20AWG
2P24 BN 20AWG
201 BU 20AWG
2N24-1 BU 20AWG

-CR32
13 A1
12 NC
11NO
42 NC
41NO
DRM
14 A2
14COM
44COM

Z1-DO3+ BU 20AWG
Z1-DO4+ BU 20AWG
2N24-1 BU 20AWG
Z1-DO4+ BU 20AWG
Z1-DO4+ BU 20AWG
Z1-BK+ BU 20AWG
Z1-BK- BU 20AWG

10.9 / Z1-DO3+
10.1 / Z1-BK+
10.2 / Z1-BK-

Weidmüller intermediate relay

Z1 axis brake signal 1

Z1 axis brake coil

11

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			Date	2019-05-27	American Standard Electrical Schematic	WELLIH 伟立机器人	Z1 axis brake circuit	=
			Ed	10169				+
			Appr				460V/3P/PE	WL-Max-GUS-A2-MN-001
Modification	Date	Name	Original		Replacement of	Replaced by		

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12.8 / 1P24
12.8 / 1N24
12.8 / 2P24
12.8 / 2N24

1P24 / 14.0
1N24 / 14.0

Z2-DO4+ / 11.9

Z2 axis brake signal 2

-CR33

13 A1
12 NC
11NO
42 NC
41NO
14 A2
14COM
44COM

1P24 BN 20AWG
Z2-DO4+ BU 20AWG
2N24 BU 20AWG
Z2-DO3+ BU 20AWG
2N24-2 BU 20AWG

11.9 / Z2-DO3+

-CR34

300 / 63.4
301 / 63.5
1P24 BN 20AWG
300 BN 20AWG
2P24 BN 20AWG
301 BU 20AWG
2N24-2 BU 20AWG
Z2-BK+ BU 20AWG
Z2-BK- BU 20AWG

11.1 / Z2-BK+
11.2 / Z2-BK-

Weidmüller intermediate relay

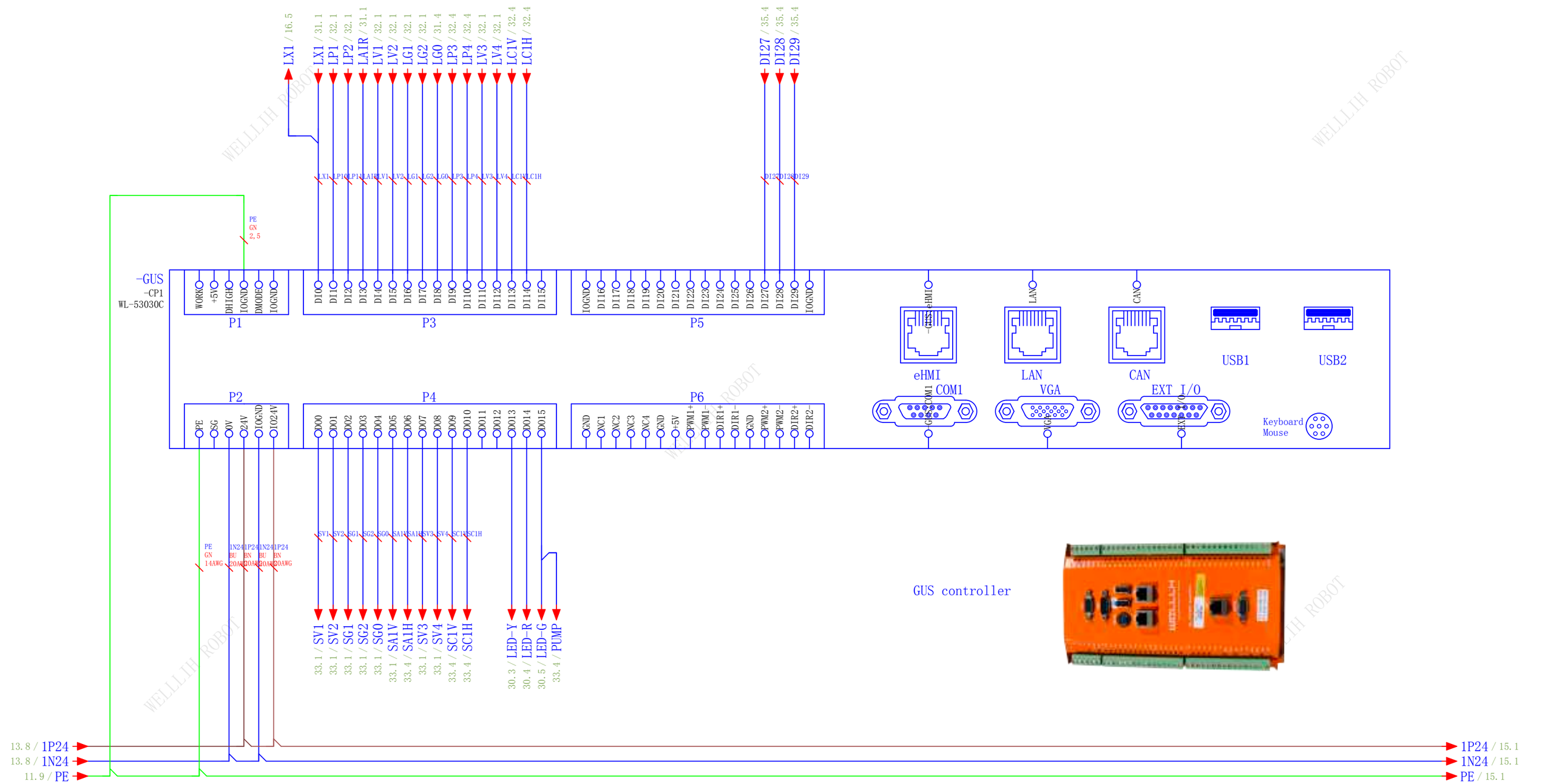
Z2 axis brake signal 1

Z2 axis brake coil

12

14

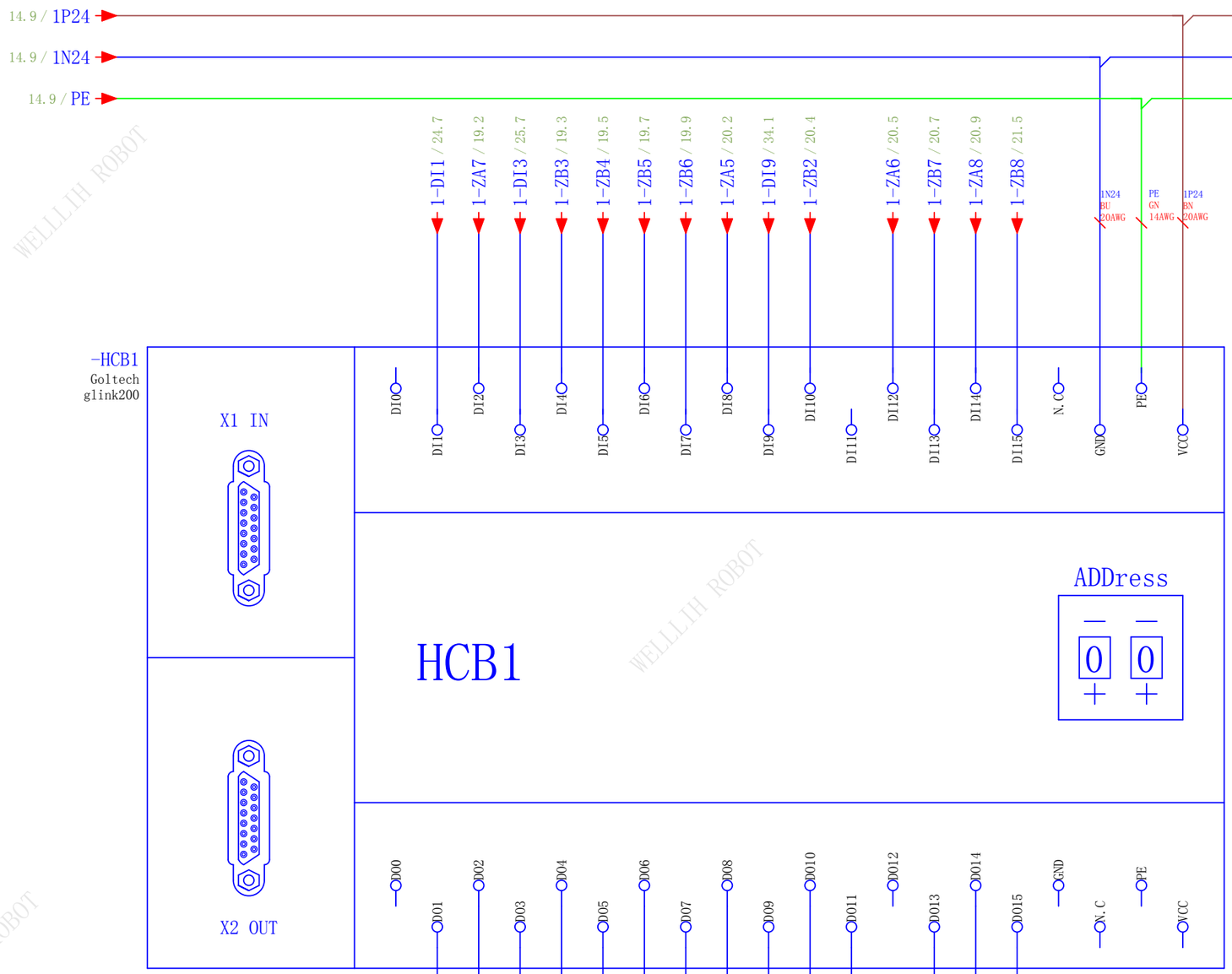
			Date	2019-05-27				=
			Ed	10169				+
			Appr		American Standard Electrical Schematic	WELLIH 伟立机器人	Z2 axis brake circuit	
Modification	Date	Name	Original		Replacement of	Replaced by	460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 13 / Page 13/65



13

15

			Date	2019-05-27			GUS controller	=	
			Ed	10169				+	
			Appr		American Standard Electrical Schematic				
Modification	Date	Name	Original		Replacement of	Replaced by		460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 14
										Page 14/65



1-DI1：Emergency Stop

1-DI2：Mold Full Open

1-DI3： Movable Gates Close 1

1-DI4： Ejector Fully Retracted

1-DI5：Ejector Fully Forward

1-DI6：Core 1 Fully Set

1-DI7：Core 1 Fully Pulled

1-DI8：Rejected Parts

1-DI10：Fully Automatic

1-DI12： No Parts Available

1-DI13：Core 2 Fully Set

1-DI14：Intermediate mould opening position

1-DI15：Core 2 Fully Pulled

1-DO1：Permit Clamp Close

1-DO2：Robot No-Operational

1-DO3：Permit Ejector Forward

1-DO4：Permit Ejector Back

1-DO5： Permit Clamp Motion 1

1-DO6： Permit Neutron Forward

1-DO7： Permit Neutron Back

1-DO8：Conveyer belt

1-DO9：Permit Clamp Motion 2

1-DO10：Conveyer belt

1-DO11：Manual switch isolation relay

1-DO14：Fence door locking/unlocking

1-DO15：Fence door indicator

			Date	2019-05-27				=
			Ed	10169				+
			Appr		American Standard Electrical Schematic	WELLIH 伟立机器人	Expansion module	
Modification	Date	Name	Original		Replacement of	Replaced by	460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 15
									Page 15/65

15.8 / 1P24

15.8 / 1N24

1P24 / 17.0

1N24 / 17.0

1-DO1.1 / 17.0

A6 / 61.7

1P24
BN
20AWG

1-DO1.1
BU
20AWG

A6
BU
20AWG

1-DO1.1
BU
20AWG

A6
BU
20AWG

-CR29

13 A1 | 12 NC | 11NO | 42 NC | 41NO

DRM

14 A2 | 14COM | 44COM

-CR30

13 A1 | 12 NC | 11NO | 42 NC | 41NO

DRM

14 A2 | 14COM | 44COM

1-DO1
BU
20AWG

A6-1
BU
20AWG

LZ10
BU
20AWG

1-DO1
BU
20AWG

A6-1
BU
20AWG

LX1
BU
20AWG

10.3 / LZ10

15.3 / 1-DO1

17.1 / A6-1

14.1 / LX1

Weidmüller intermediate relay

15

17

			Date	2019-05-27				=
			Ed	10169				+
			Appr		American Standard Electrical Schematic	WELLIH 伟立机器人	Anti-collision mode circuit	
Modification	Date	Name	Original		Replacement of	Replaced by	460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 16 / Page 16/65

16.9 / 1P24
16.9 / 1N24

1P24 / 18.0
1N24 / 18.0

1-DO1.1 / 16.2
1-DO2 / 15.3
1-DO3 / 15.3
1-DO4 / 15.4
1-DO5 / 15.4

1P24 BN 20AWG
1-DO1.1 BU 20AWG
1P24 BN 20AWG
1-DO2 BU 20AWG
1P24 BN 20AWG
1-DO3 BU 20AWG
1P24 BN 20AWG
1-DO4 BU 20AWG
1P24 BN 20AWG
1-DO5 BU 20AWG

-CR1
-CR2
-CR3
-CR4
-CR5

A1 A2 12 11 14
REL-MR- 24DC/21

A9 BU 20AWG
A6 BU 20AWG
A9 BU 20AWG
B2 BU 20AWG
A9 BU 20AWG
B4 BU 20AWG
A9 BU 20AWG
B3 BU 20AWG
A3 BU 20AWG
C3 BU 20AWG

16.4 / A6-1
61.7 / B2
61.7 / B4
18.1 / A9
61.7 / B3
61.7 / A3
61.7 / C3

Phoenix intermediate relay

16 18

			Date	2019-05-27			Euro signal output isolation	=	
			Ed	10169				+	
			Appr		American Standard Electrical Schematic				
Modification	Date	Name	Original		Replacement of	Replaced by	460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 17 / Page 17/65

17.9 / 1P24
17.9 / 1N24

1P24 / 19.0
1N24 / 19.0

1-D06 / 15.4
1-D07 / 15.4
1-D08 / 15.4
1-D09 / 15.4
1-D010 / 15.5

1P24 BN 20AWG
1-D06 BU 20AWG
1-D07 BU 20AWG
1-D08 BU 20AWG
1-D09 BU 20AWG
1-D010 BU 20AWG

-CR6 -CR7 -CR8 -CR9 -CR10

A1 A2 12 11 14

REL-MR- 24DC/21

A9 BU 20AWG
B6 BU 20AWG
B5 BU 20AWG
CNV-A BU 20AWG
CNV-B BU 20AWG
B8 BU 20AWG
A9 BU 20AWG
B7 BU 20AWG

17.6 / A9
61.7 / B6
61.7 / B5
62.4 / CNV-A
62.4 / CNV-B
61.7 / B8
61.7 / A9
61.7 / B7

Phoenix intermediate relay

17 19

			Date	2019-05-27	American Standard Electrical Schematic	WELLLH 伟立机器人	Euro signal output isolation		=
			Ed	10169					+
			Appr					460V/3P/PE	WL-Max-GUS-A2-MN-001
Modification	Date	Name	Original		Replacement of	Replaced by			

Page 18
Page 18/65

9 / 1P24 → 1P24 / 20.0

9 / 1N24 → 1N24 / 20.0

ZA7 / 60.6 — ZB3 / 60.6 — ZB4 / 60.6 — ZB5 / 60.6 — ZB6 / 60.6

	ZA7	ZB3	ZB4	ZB5	ZB6	1N24
	BU 20AWG	BU 20AWG	BU 20AWG	BU 20AWG	BU 20AWG	BU 20AWG

-CR11 -CR12 -CR13 -CR14 -CR15

REL-MR- 24DC/21

A1 A2 12 11 14

	1N24	1-ZA7	1-ZB3	1-ZB4	1-ZB5	1-ZB6
	BU 20AWG	BU 20AWG	BU 20AWG	BU 20AWG	BU 20AWG	BU 20AWG

15.3 / 1-ZA7 — 15.4 / 1-ZB3 — 15.4 / 1-ZB4 — 15.4 / 1-ZB5 — 15.4 / 1-ZB6

Phoenix intermediate relay

			Date	2019-05-27	American Standard Electrical Schematic		European signal input isolation	=
			Ed	10169				+
			Appr				460V/3P/PE	WL-Max-GUS-A2-MN-001
Modification	Date	Name	Original		Replacement of	Replaced by		

19.9 / 1P24 → 1P24 / 21.1

19.9 / 1N24 → 1N24 / 21.1

ZA5 / 60.6 → -CR16 → 15.4 / 1-ZA5

ZB2 / 60.6 → -CR17 → 15.5 / 1-ZB2

ZA6 / 60.6 → -CR18 → 15.5 / 1-ZA6

ZB7 / 60.6 → -CR19 → 15.5 / 1-ZB7

ZA8 / 60.6 → -CR20 → 15.5 / 1-ZA8

	Wire	Color	Gauge
ZA5	ZA5	BU	20AWG
1N24	1N24	BU	20AWG
ZB2	ZB2	BU	20AWG
ZA6	ZA6	BU	20AWG
ZB7	ZB7	BU	20AWG
ZA8	ZA8	BU	20AWG
1-ZA5	1-ZA5	BU	20AWG
1-ZB2	1-ZB2	BU	20AWG
1-ZA6	1-ZA6	BU	20AWG
1-ZB7	1-ZB7	BU	20AWG
1-ZA8	1-ZA8	BU	20AWG

-CR16 / -CR17 / -CR18 / -CR19 / -CR20: A1, A2, 12, 11, 14

REL-MR- 24DC/21

Phoenix intermediate relay

			Date	2019-05-27	American Standard Electrical Schematic		European signal input isolation		=
			Ed	10169					+
			Appr					460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 20
Modification	Date	Name	Original		Replacement of	Replaced by				Page 20/65

20.9 / 1P24 → 1P24 / 22.0

20.9 / 1N24 → 1N24 / 22.0

ZB8 / 60.6

ZB8
BU
20AWG

1N24
BU
20AWG

-CR21

A1 A2

REL-MR- 24DC/21

12 11 14

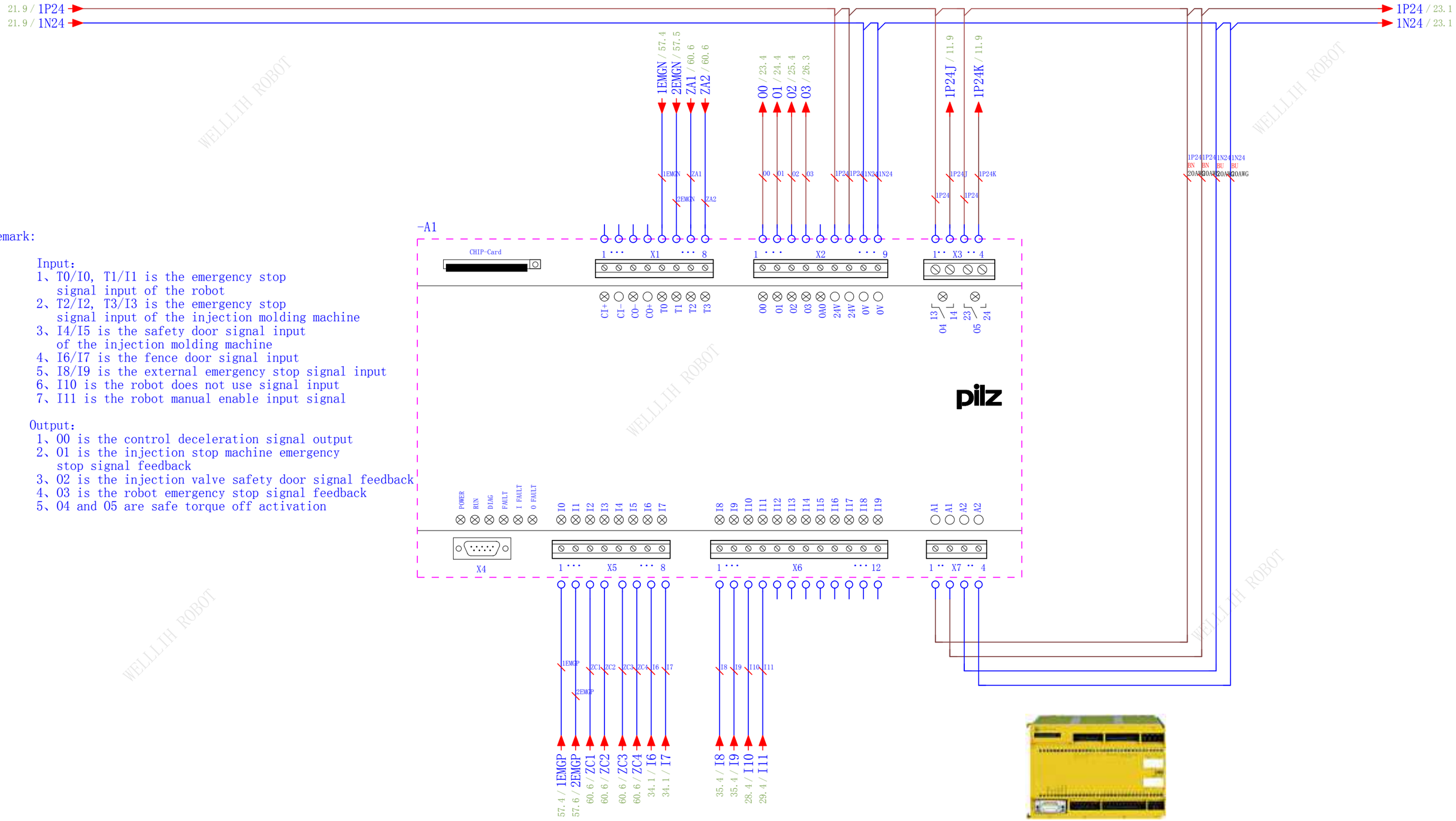
1N24
BU
20AWG

1-ZB8
BU
20AWG

15.6 / 1-ZB8

Phoenix intermediate relay

			Date	2019-05-27			European signal input isolation		=
			Ed	10169					+
			Appr		American Standard Electrical Schematic				
Modification	Date	Name	Original		Replacement of	Replaced by		460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 21
										Page 21/65



Remark:

Input:
1、T0/I0, T1/I1 is the emergency stop signal input of the robot
2、T2/I2, T3/I3 is the emergency stop signal input of the injection molding machine
3、I4/I5 is the safety door signal input of the injection molding machine
4、I6/I7 is the fence door signal input
5、I8/I9 is the external emergency stop signal input
6、I10 is the robot does not use signal input
7、I11 is the robot manual enable input signal

Output:
1、O0 is the control deceleration signal output
2、O1 is the injection stop machine emergency stop signal feedback
3、O2 is the injection valve safety door signal feedback
4、O3 is the robot emergency stop signal feedback
5、O4 and O5 are safe torque off activation

			Date	2019-05-27			PILZ safety PLC		=
			Ed	10169					+
			Appr		American Standard Electrical Schematic			460V/3P/PE	WL-Max-GUS-A2-MN-001
Modification	Date	Name	Original		Replacement of	Replaced by			

22.9 / 1P24 → 1P24 / 24.1

22.9 / 1N24 → 1N24 / 24.1

00 / 22.5

1N24 BU 20AWG

EMG BU 20AWG

1N24 BU 20AWG

-CR22

A1 A2 12 11 14

REL-MR- 24DC/21

Phoenix intermediate relay

-TB3

DI1- BU 20AWG	1	DI1- / 7.3
DI1- BU 20AWG	2	DI1- / 8.3
DI1- BU 20AWG	3	DI1- / 9.3
DI1- BU 20AWG	4	DI1- / 10.3
DI1- BU 20AWG	5	DI1- / 11.3

Control deceleration signal

22

24

			Date	2019-05-27		Control deceleration trigger circuit		=	
			Ed	10169				+	
			Appr		American Standard Electrical Schematic		460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 23
Modification	Date	Name	Original		Replacement of	Replaced by			Page 23/65

23.8 / 1P24 → 1P24 / 25.1

23.8 / 1N24 → 1N24 / 25.1

01 / 22.5

1N24
BU
20AWG

00
BU
20AWG

1N24
BU
20AWG

-CR23

A1 A2 12 11 14

REL-MR- 24DC/21

1-DI1
BU
20AWG

1-DI1 / 15.3

Phoenix intermediate relay

Injection molding machine
emergency stop signal feedback

			Date	2019-05-27					=	
			Ed	10169					+	
			Appr		American Standard Electrical Schematic		Injection molding machine emergency stop signal feedback	460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 24
Modification	Date	Name	Original		Replacement of	Replaced by				Page 24/65

24.8 / 1P24 → 1P24 / 26.1

24.8 / 1N24 → 1N24 / 26.1

02 / 22.5

1N24
BU
20AWG

02
BN
20AWG

1N24
BU
20AWG

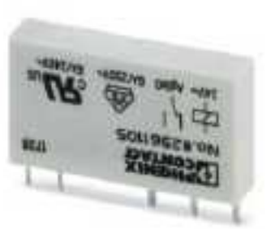
-CR24

A1 A2 12 11 14

REL-MR- 24DC/21

1-DI3
BU
20AWG

→ 1-DI3 / 15.3



Phoenix intermediate relay

Injection molding machine
safety door signal feedback

			Date	2019-05-27					=	
			Ed	10169					+	
			Appr		American Standard Electrical Schematic		Injection molding machine safety door signal feedback			
Modification	Date	Name	Original		Replacement of	Replaced by		460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 25 Page 25/65

25.8 / 1P24 → 1P24 / 27.1

25.8 / 1N24 → 1N24 / 27.1

1N24
BU
20AWG

A1 / 61.7

A1
BU
20AWG

A2 / 61.7

A2
BU
20AWG

-CR28

PILZ

A1	33	43	23/22	11
A2	34	44	24/21	12

Strong breaking relay

03
BN
20AWG

C1
BU
20AWG

C2
BU
20AWG

61.7 / C1

61.7 / C2

Robot emergency
stop signal feedback

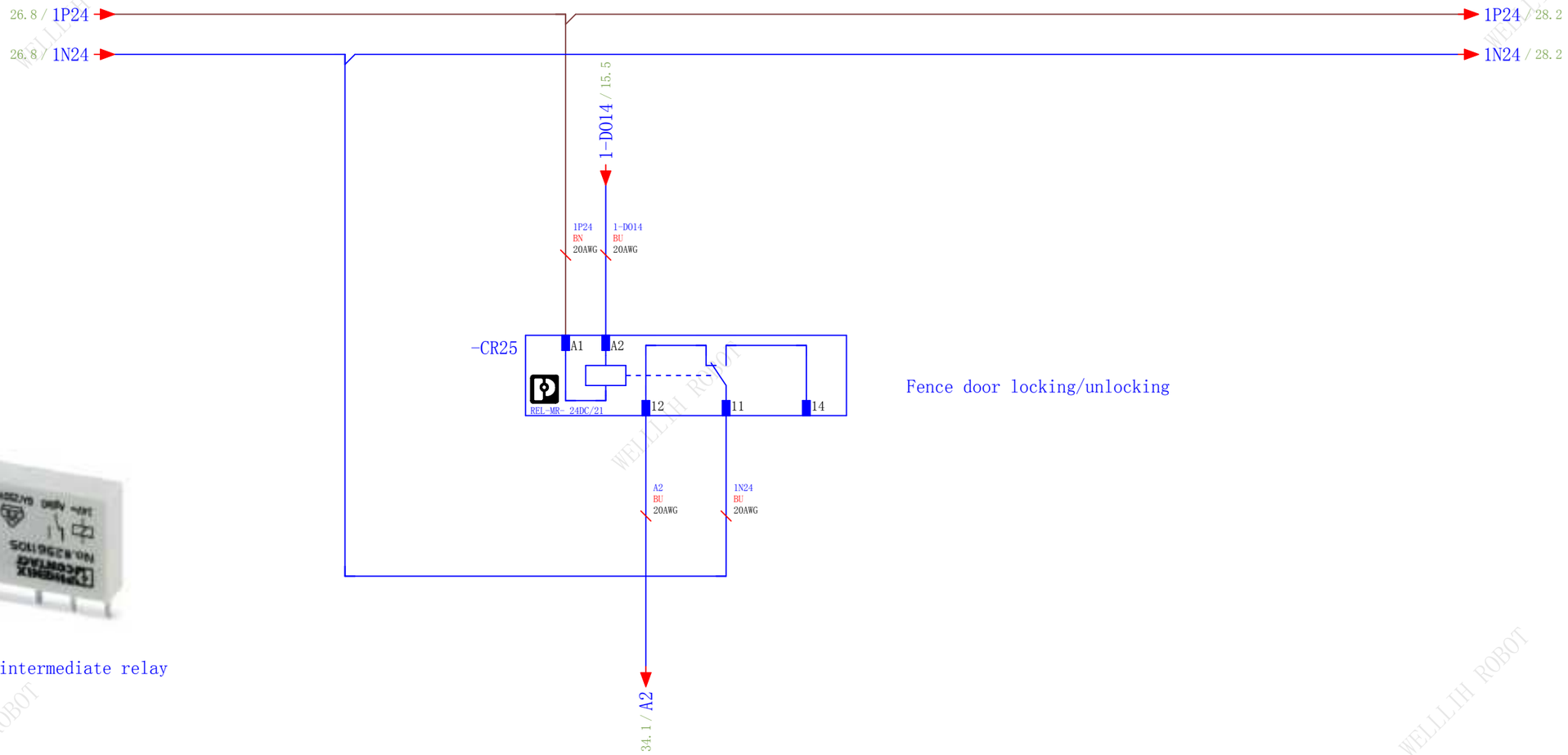
22.5 / 03

/26.4
/26.4
/26.5
/26.6

25

27

			Date	2019-05-27	American Standard Electrical Schematic	WELLIH 伟立机器人	Robot emergency stop signal feedback		=
			Ed	10169					+
			Appr					460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 26
Modification	Date	Name	Original		Replacement of	Replaced by				Page 26/65



Fence door locking/unlocking

Phoenix intermediate relay

			Date	2019-05-27			Fence door control relay		=
			Ed	10169					+
			Appr		American Standard Electrical Schematic				
Modification	Date	Name	Original		Replacement of	Replaced by		460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 27 / Page 27/65

27.8 / 1P24

27.8 / 1N24

1P24 / 29.2

1N24 / 29.2

1-DO2 / 15.3

1P24
BN
20AWG

1-DO2
BU
20AWG

-CR26

A1

A2

REL-MR- 24DC/21

12

11

14

Robot No-Operational

Phoenix intermediate relay

I10
BU
20AWG

1P24
BN
20AWG

22.5 / I10

			Date	2019-05-27	American Standard Electrical Schematic		Robot No-Operational		=
			Ed	10169					+
			Appr				460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 28
Modification	Date	Name	Original		Replacement of	Replaced by			Page 28/65

28.8 / 1P24 → 1P24 / 30.1

28.8 / 1N24 → 1N24 / 30.1

1-DO11 / 15.5

1P24 BN 20AWG

1-DO11 BU 20AWG

-CR27

A1 A2 12 11 14

REL-MR- 24DC/21

Manual switch isolation relay

Phoenix intermediate relay

I11 BU 20AWG

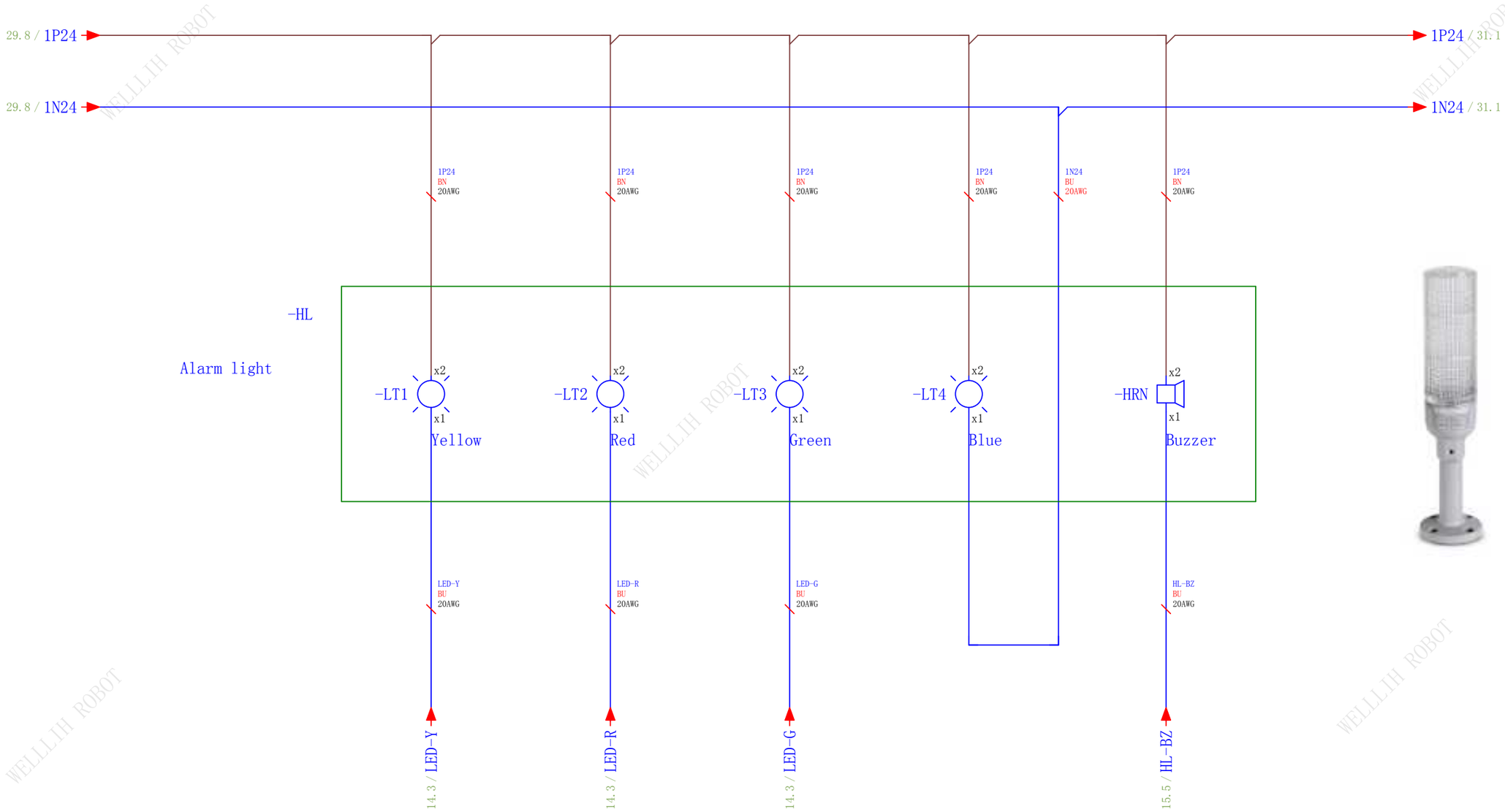
1P24 BN 20AWG

22.5 / I11

			Date	2019-05-27				=	
			Ed	10169				+	
			Appr		American Standard Electrical Schematic				
Modification	Date	Name	Original		Replacement of	Replaced by	460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 29 / Page 29/65

WELLIH 伟立机器人

Manual switch isolation relay

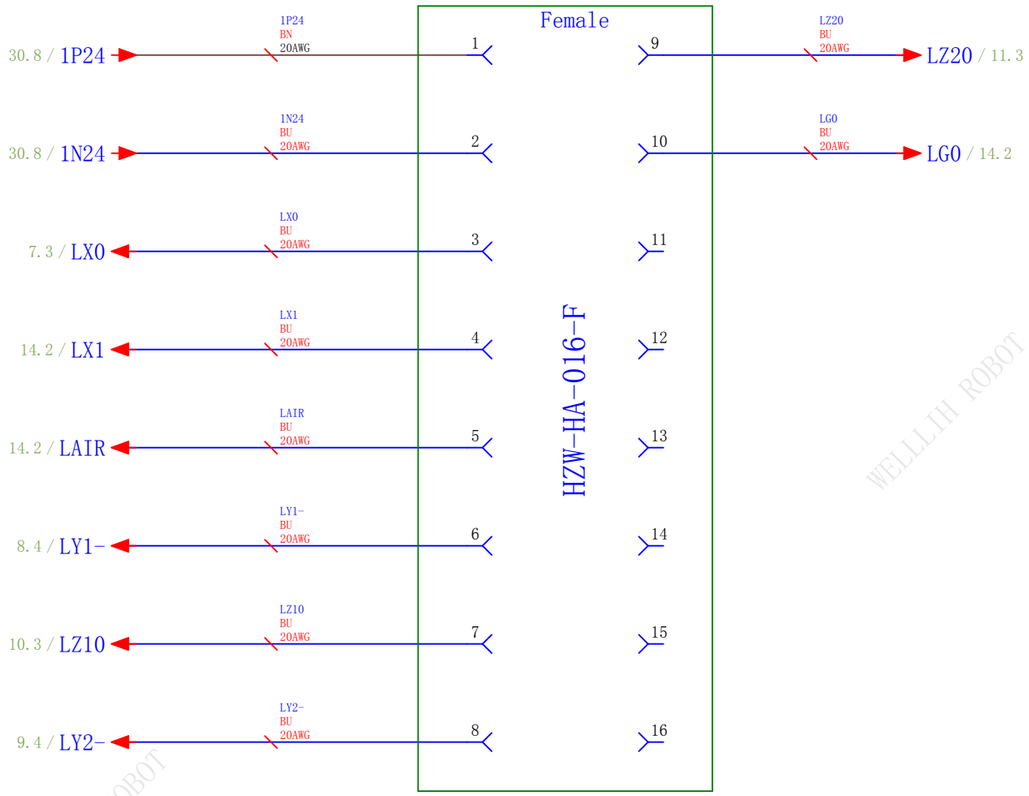


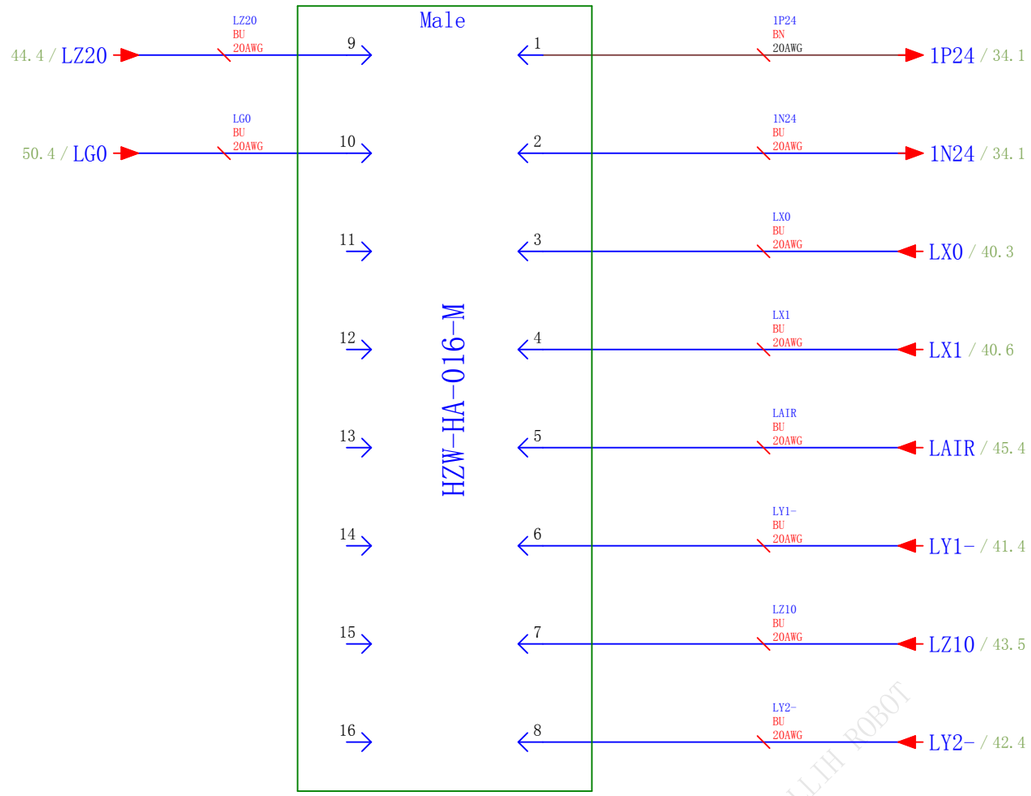
			Date	2019-05-27				=	
			Ed	10169				+	
			Appr		American Standard Electrical Schematic				
Modification	Date	Name	Original		Replacement of	Replaced by	460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 30 / Page 30/65

伟立机器人

Alarm light and buzzer

-PL1 =





30

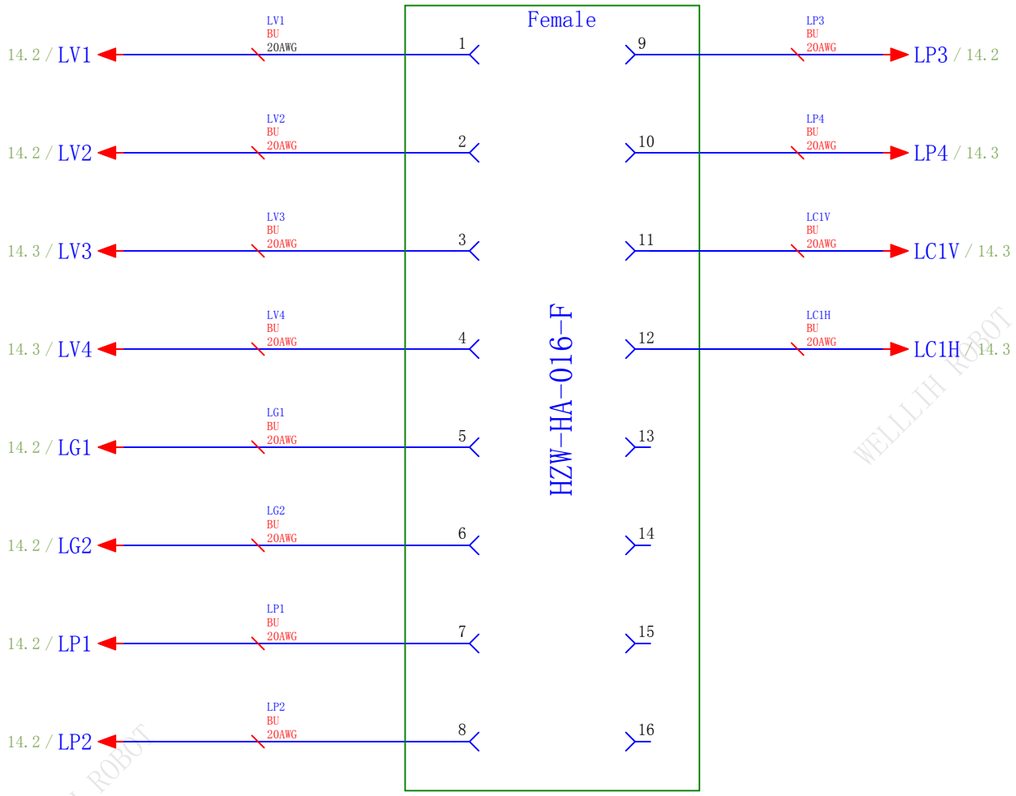
32

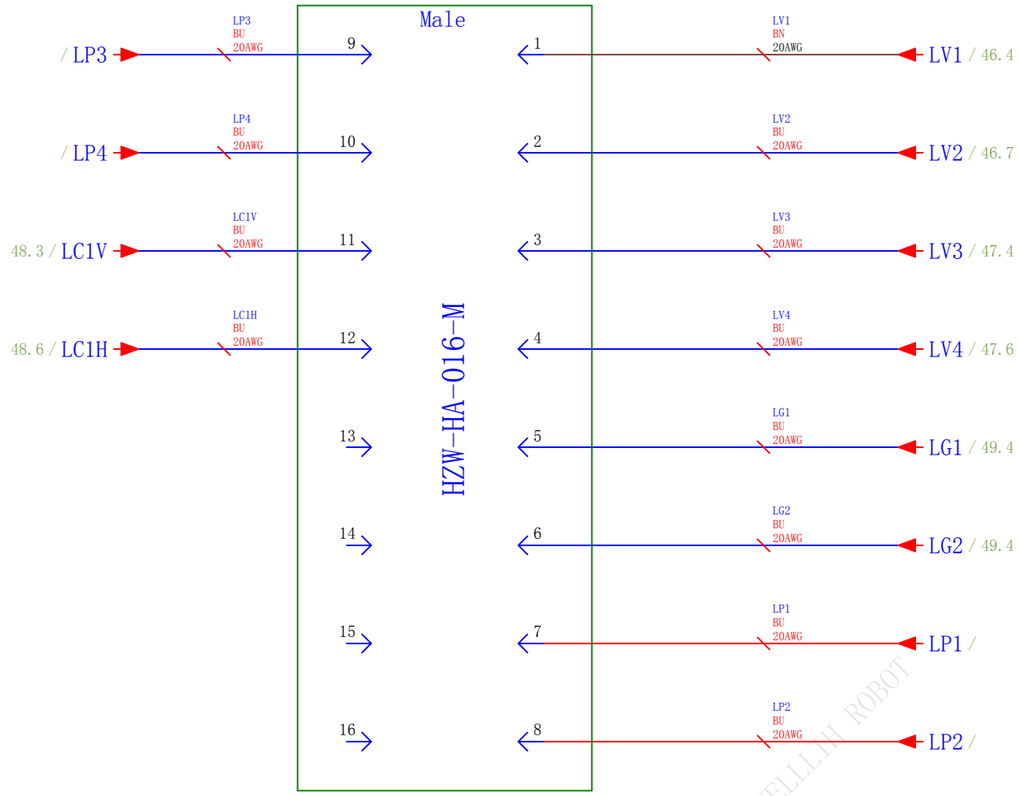
			Date	2019-05-27				=	
			Ed	10169				+	
			Appr		American Standard Electrical Schematic				
Modification	Date	Name	Original		Replacement of	Replaced by	460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 31
									Page 31/65

伟立机器人

-PL1 connector definition map

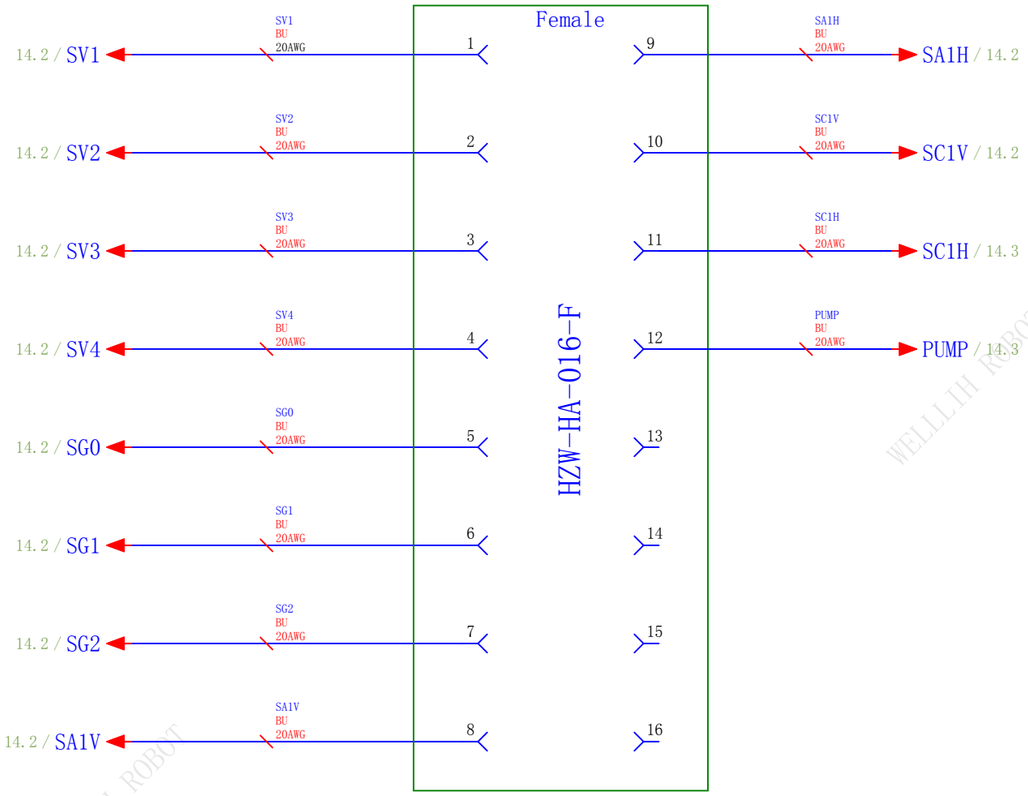
-PL2 =

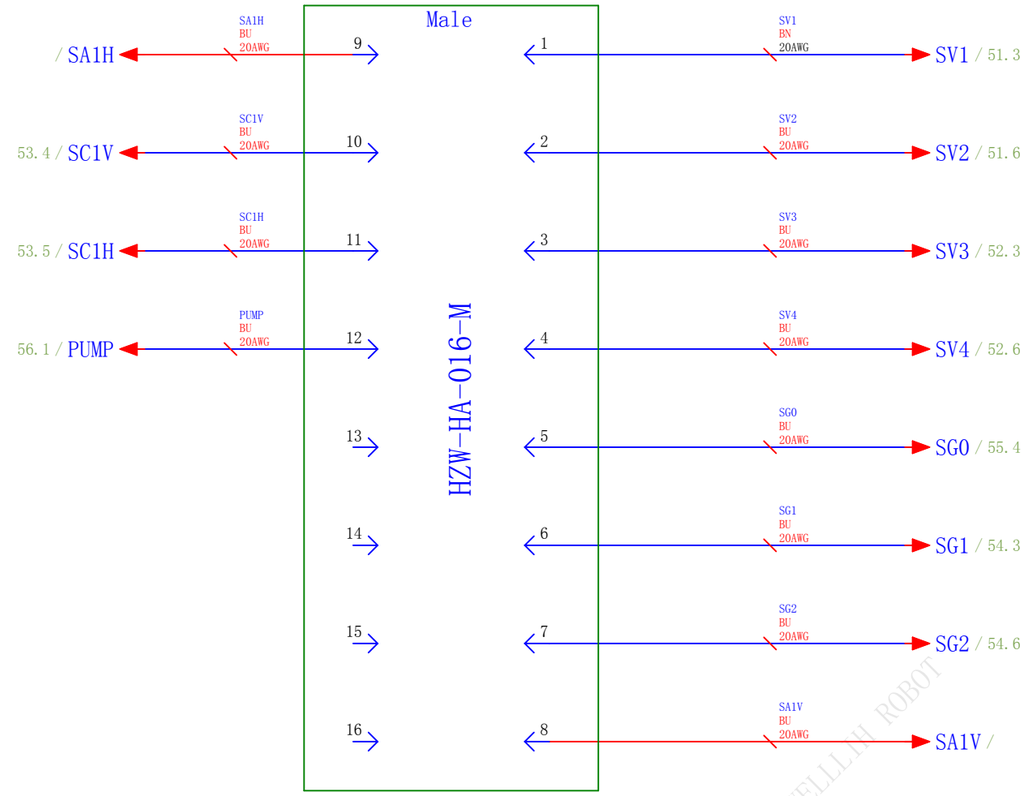




			Date	2019-05-27			-PL2 connector definition map		=	
			Ed	10169					+	
			Appr		American Standard Electrical Schematic			460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 32
Modification	Date	Name	Original		Replacement of	Replaced by				Page 32/65

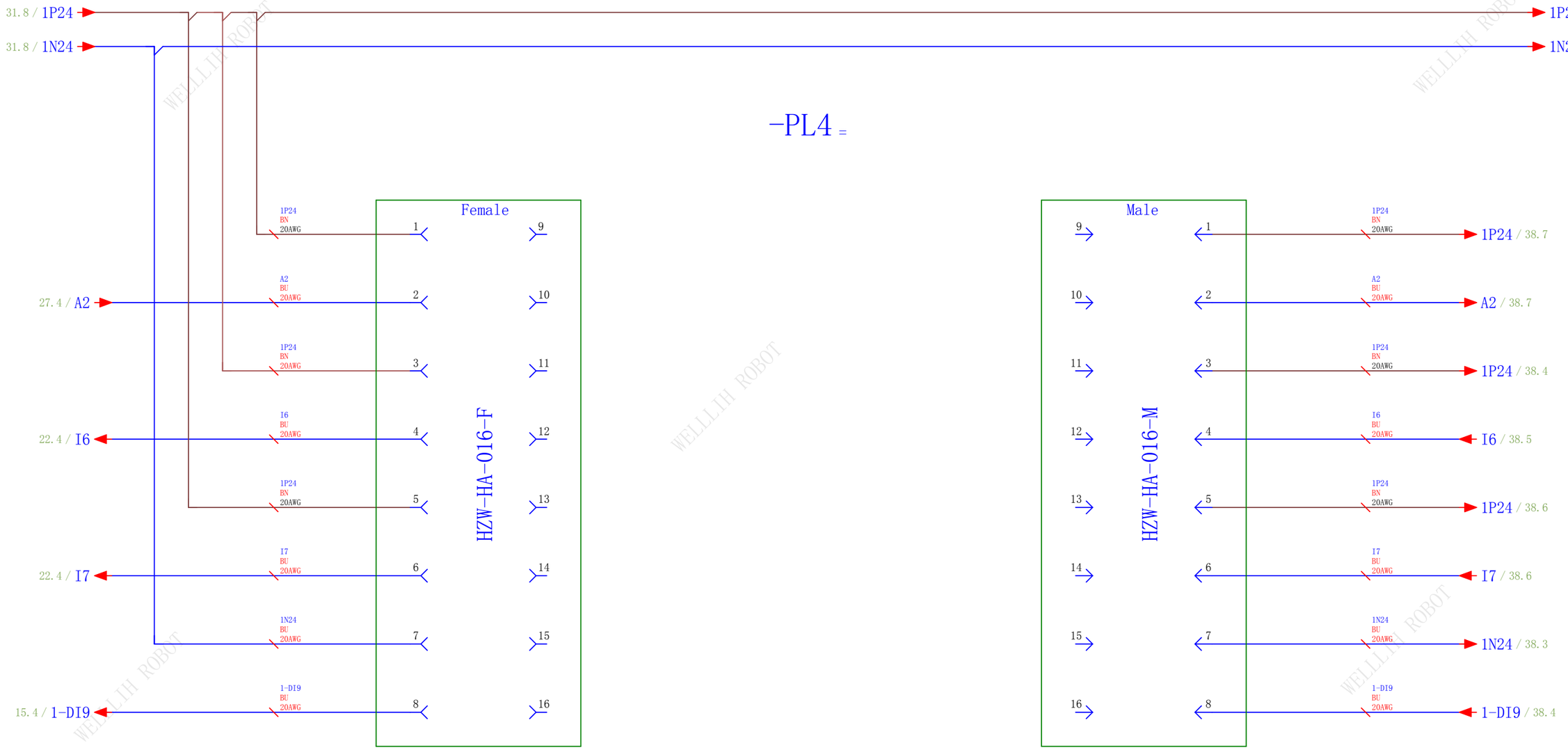
-PL3=





			Date	2019-05-27	American Standard Electrical Schematic	WELLLIH 伟立机器人	-PL3 connector definition map		=
			Ed	10169					+
			Appr					460V/3P/PE	WL-Max-GUS-A2-MN-001 Page 33
Modification	Date	Name	Original		Replacement of	Replaced by			Page 33/65

-PL4 =



			Date	2019-05-27			-PL4 connector definition map		=
			Ed	10169					+
			Appr		American Standard Electrical Schematic			460V/3P/PE	WL-Max-GUS-A2-MN-001
Modification	Date	Name	Original		Replacement of	Replaced by			

34.9 / 1P24

34.9 / 1N24

1P24 / 40.1

1N24 / 40.1

-PL5 =

Male

HZW-HA-016-M

9	1	1P24 BN 20AWG		
10	2	1N24 BU 20AWG		
11	3	I8 BU 20AWG	I8 / 22.4	
12	4	I9 BU 20AWG	I9 / 22.5	
13	5	DI27 BU 20AWG	DI27 / 14.4	
14	6	DI28 BU 20AWG	DI28 / 14.5	
15	7	DI29 BU 20AWG	DI29 / 14.5	
16	8	1-DO15 BU 20AWG	1-DO15 / 15.6	

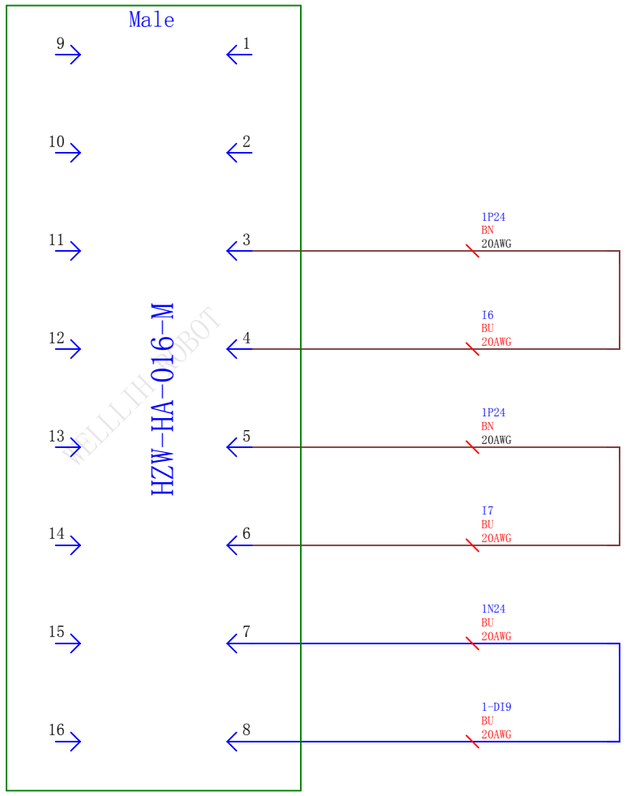
Female

HZW-HA-016-F

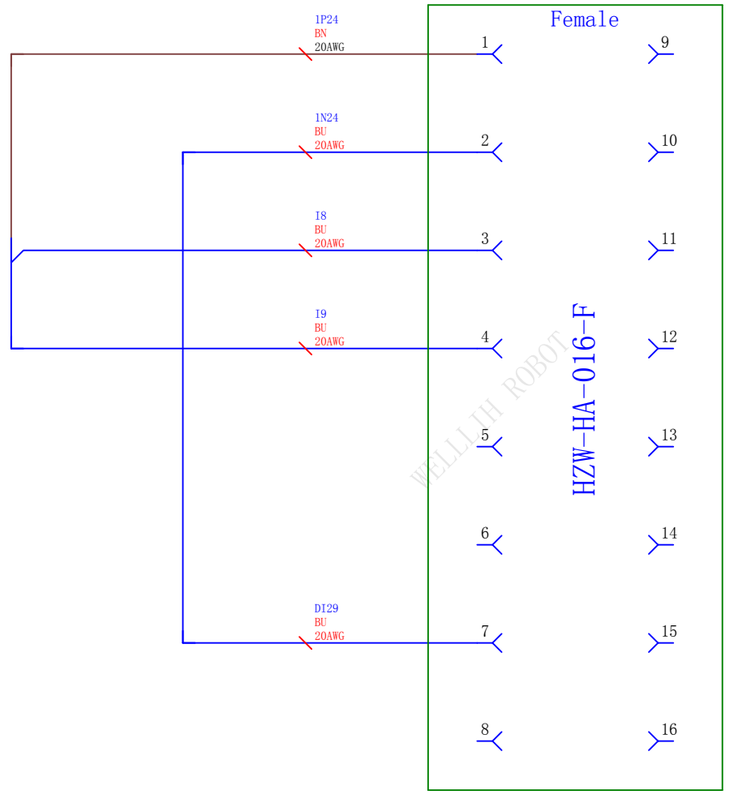
39.3 / 1P24	1P24 BN 20AWG	1	9	
39.4 / 1N24	1N24 BU 20AWG	2	10	
39.3 / I8	I8 BU 20AWG	3	11	
39.4 / I9	I9 BU 20AWG	4	12	
39.5 / DI27	DI27 BU 20AWG	5	13	
39.7 / DI28	DI28 BU 20AWG	6	14	
39.4 / DI29	DI29 BU 20AWG	7	15	
39.8 / 1-DO15	1-DO15 BU 20AWG	8	16	

			Date	2019-05-27	American Standard Electrical Schematic	WELLIH 伟立机器人	-PL5 connector definition map	=	
			Ed	10169				+	
			Appr				460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 35
Modification	Date	Name	Original		Replacement of	Replaced by			Page 35/65

-PL 4 Shorting Plug



-PL 5 Shorting Plug

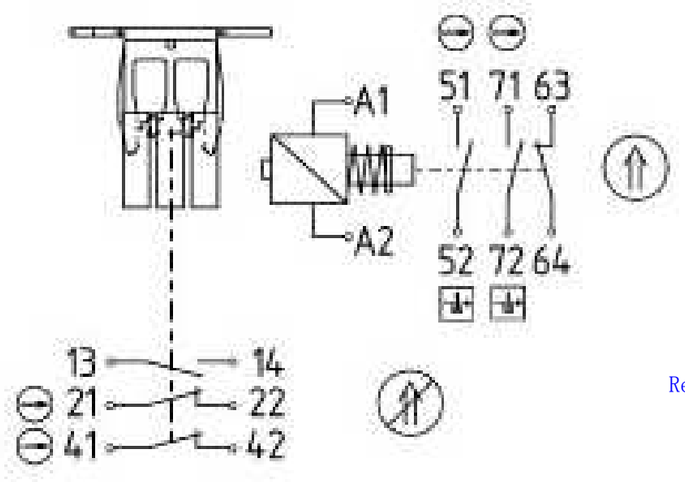


			Date	2019-05-27				=	
			Ed	10169				+	
			Appr		American Standard Electrical Schematic		-PL5Shorting Plug		
Modification	Date	Name	Original		Replacement of	Replaced by		460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 37 Page 37/65

-U4

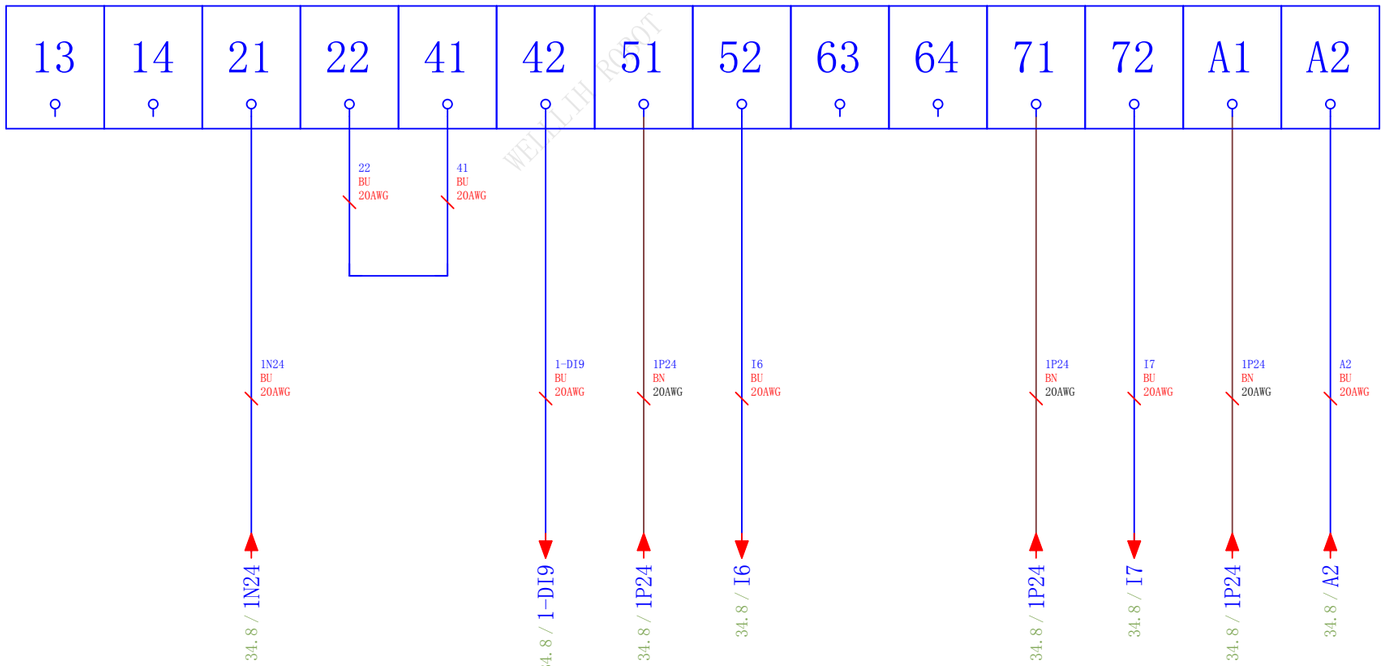
SCHMERSAL

AZM161SK12/12RKA-024



Remark:

Safety door locks are provided by the customer



37

39

			Date	2019-05-27	American Standard Electrical Schematic	WELLIH 伟立机器人	External fence door	=
			Ed	10169				+
			Appr				460V/3P/PE	WL-Max-GUS-A2-MN-001
Modification	Date	Name	Original		Replacement of	Replaced by		

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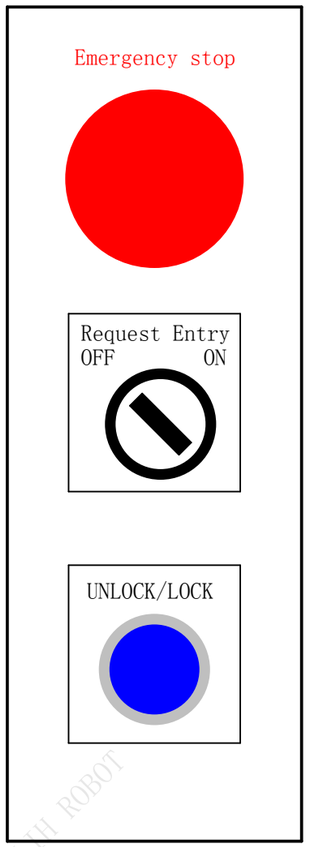
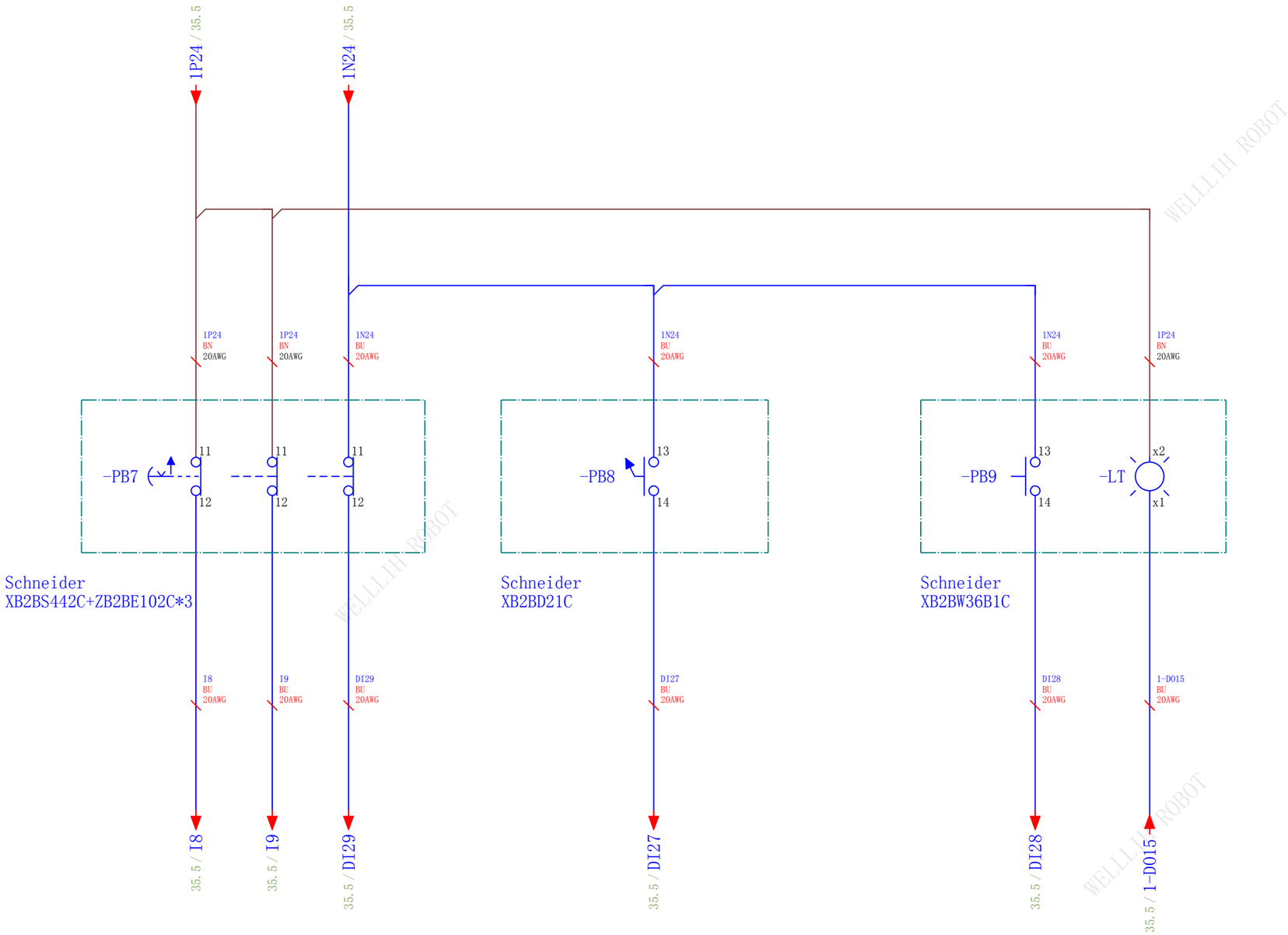
-U5

Remark:

Button box is provided by the customer





			Date	2019-05-27			External button box		=
			Ed	10169					+
			Appr		American Standard Electrical Schematic			460V/3P/PE	WL-Max-GUS-A2-MN-001
Modification	Date	Name	Original		Replacement of	Replaced by			

35.9 / 1P24

35.9 / 1N24

1P24 / 41.2

1N24 / 41.2

1P24
BN
20AWG

1N24
BU
20AWG

1P24
BN
20AWG

1N24
BU
20AWG

-B1

-B2

1 2 3

1 2 3

LX0
BU
20AWG

LX1
BU
20AWG

31.8 / LX0

31.8 / LX1

Inductive sensor

Inductive sensor

X-axis origin switch (three-wire system)

NPN normally open type

X-axis storage switch (three-wire system)

NPN normally open type

			Date	2019-05-27					=	
			Ed	10169					+	
			Appr		American Standard Electrical Schematic		X-axis sensor			
Modification	Date	Name	Original		Replacement of	Replaced by		460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 40 / Page 40/65

40.8 / 1P24 →

40.8 / 1N24 →

→ 1P24 / 42.2

→ 1N24 / 42.2

1P24
BN
20AWG

1N24
BU
20AWG

1 2

−B3

3

Inductive sensor

LY1-
BU
20AWG

31.8 / LY1- →

Y1 axis reverse limit switch (three-wire system)

NPN normally open type

			Date	2019-05-27			Y1-axis sensor		=	
			Ed	10169					+	
			Appr		American Standard Electrical Schematic			460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 41
Modification	Date	Name	Original		Replacement of	Replaced by				Page 41/65

41.8 / 1P24 →

41.8 / 1N24 →

→ 1P24 / 43.1

→ 1N24 / 43.1

1P24
BN
20AWG

1N24
BU
20AWG

1 2

−B4

3

LY1−
BU
20AWG

31.8 / LY2−

Inductive sensor

Y2 axis reverse limit switch (three-wire system)

NPN normally open type

			Date	2019-05-27			Y2-axis sensor		=
			Ed	10169					+
			Appr		American Standard Electrical Schematic			460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 42
Modification	Date	Name	Original		Replacement of	Replaced by				Page 42/65

42.8 / 1P24

42.8 / 1N24

1P24 / 44.1

1N24 / 44.1

1P24
BN
20AWG

1N24
BU
20AWG

1

2

3

-B5

LZ10
BU
20AWG

31.8 / LZ10

Inductive sensor

Z1-axis storage switch (three-wire system)

NPN normally open type

			Date	2019-05-27	American Standard Electrical Schematic		Z1-axis sensor		=
			Ed	10169					+
			Appr					460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 43
Modification	Date	Name	Original		Replacement of	Replaced by				Page 43/65

43.8 / 1P24

43.8 / 1N24

1P24 / 45.1

1N24 / 45.1

1P24
BN
20AWG

1N24
BU
20AWG

1

2

-B6

3

LZ20
BU
20AWG

31.5 / LZ20

Inductive sensor

Z2-axis storage switch (three-wire system)

NPN normally open type

			Date	2019-05-27	American Standard Electrical Schematic	WELLIH 伟立机器人	Z2-axis sensor		=
			Ed	10169					+
			Appr					460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 44
Modification	Date	Name	Original		Replacement of	Replaced by				Page 44/65

44.8 / 1P24 → 1P24 / 46.1

44.8 / 1N24 → 1N24 / 46.1

1N24
BU
20AWG

13

-S1 P

/2.6

14

LAIR
BU
20AWG

31.8 / LAIR

Gas source detection

Gas source detection

NPN normally open type

			Date	2019-05-27	American Standard Electrical Schematic		WELLLIH 伟立机器人	Air pressure detection		=
			Ed	10169						+
			Appr						460V/3P/PE	WL-Max-GUS-A2-MN-001
Modification	Date	Name	Original		Replacement of	Replaced by				

45.8 / 1P24

45.8 / 1N24

1P24 / 47.1

1N24 / 47.1

-BP1

FES.8035553 FESTO
SPAN-B2R-Q4-PN-PN-L1

p1

PNP NPN | PNP NPN

BN +24V DC power supply | BK Output A | WH Output B | BU 0V DC

1 2 3 4

1P24 BN 20AWG

1N24 BU 20AWG

LV1 BU 20AWG

32.8 / LV1

-BP2

FES.8035553 FESTO
SPAN-B2R-Q4-PN-PN-L1

p1

PNP NPN | PNP NPN

BN +24V DC power supply | BK Output A | WH Output B | BU 0V DC

1 2 3 4

1P24 BN 20AWG

1N24 BU 20AWG

LV2 BU 20AWG

32.8 / LV2

Negative pressure gauge 1

Negative pressure gauge 2

Suction cup 1 detection (three-wire system)

NPN normally open type

Suction cup 2 detection (three-wire system)

NPN normally open type

			Date	2019-05-27				=	
			Ed	10169				+	
			Appr		American Standard Electrical Schematic	WELLLIH 伟立机器人	Negative pressure gauge		
Modification	Date	Name	Original		Replacement of	Replaced by		460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 46
										Page 46/65

46.8 / 1P24

46.8 / 1N24

1P24 / 48.1

1N24 / 48.1

Negative pressure gauge 3

-BP3

FES. 8035553 FESTO
SPAN-B2R-Q4-PN-PN-L1

p1

PNP NPN | PNP NPN

BN +24V DC power supply | BK Output A | WH Output B | BU 0V DC

1 2 3 4

1P24 BN 20AWG

1N24 BU 20AWG

LV3 BU 20AWG

32.8 / LV3

Suction cup 3 detection (three-wire system)

NPN normally open type

-BP4

FES. 8035553 FESTO
SPAN-B2R-Q4-PN-PN-L1

p1

PNP NPN | PNP NPN

BN +24V DC power supply | BK Output A | WH Output B | BU 0V DC

1 2 3 4

1P24 BN 20AWG

1N24 BU 20AWG

LV4 BU 20AWG

32.8 / LV4

Suction cup 4 detection (three-wire system)

NPN normally open type

Negative pressure gauge 4

			Date	2019-05-27			Negative pressure gauge		=
			Ed	10169					+
			Appr		American Standard Electrical Schematic	WELLLIH 伟立机器人			
Modification	Date	Name	Original		Replacement of	Replaced by		460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 47
										Page 47/65

47.8 / 1P24 → 1P24 / 49.1

47.8 / 1N24 → 1N24 / 49.1

1N24
BU
20AWG

13
−B7
14

LC1V
BU
20AWG

32.5 / LC1V

Lateral position sensor (two-wire system)

C-axis screwed into place (two-wire system)

1N24
BU
20AWG

13
−B8
14

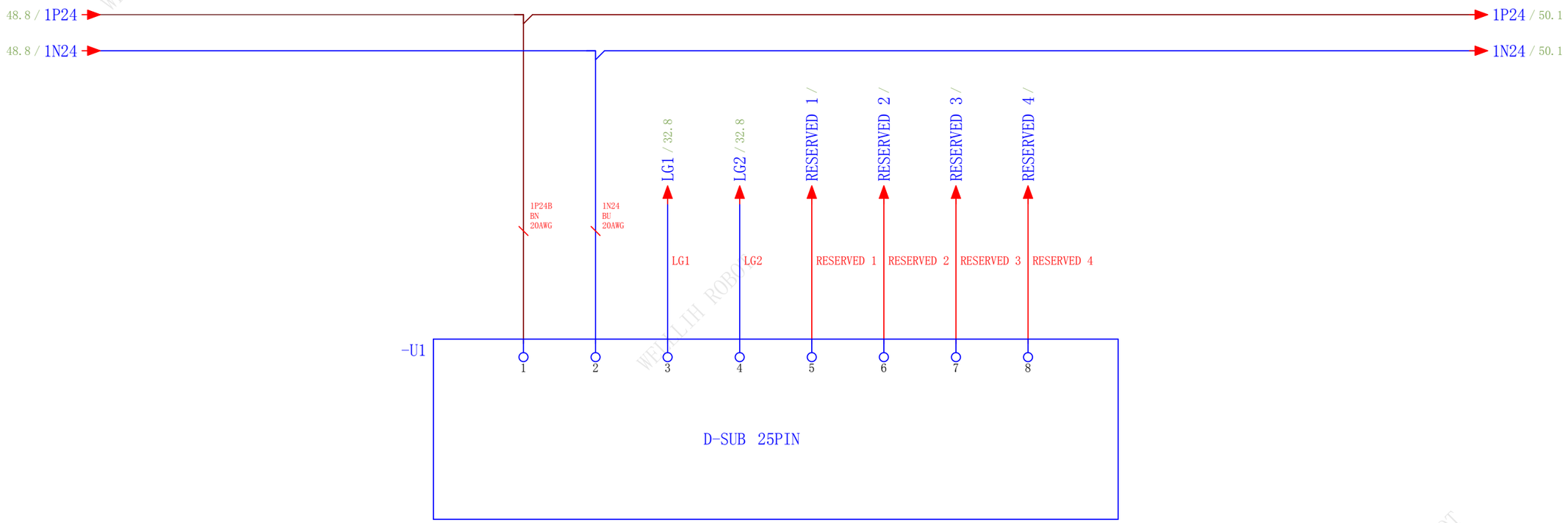
LC1H
BU
20AWG

32.5 / LC1H

Lateral position sensor (two-wire system)

C-axis is screwed out in place (two-wire system)

			Date	2019-05-27	American Standard Electrical Schematic		Lateral position signal		=
			Ed	10169					+
			Appr				460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 48
Modification	Date	Name	Original		Replacement of	Replaced by			Page 48/65



			Date	2019-05-27			Arm end fixture signal		=	
			Ed	10169					+	
			Appr		American Standard Electrical Schematic			460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 49
Modification	Date	Name	Original		Replacement of	Replaced by				Page 49/65

49.8 / 1P24
49.8 / 1N24
1P24 / 51.1
1N24 / 51.1

1N24
BU
20AWG

13
-B9
14

LG0
BU
20AWG

31.5 / LG0

Auxiliary gripper sensor (two-wire system)

Secondary arm clamp detection

			Date	2019-05-27	American Standard Electrical Schematic		Auxiliary fixture signal		=
			Ed	10169					+
			Appr					460V/3P/PE	WL-Max-GUS-A2-MN-001
Modification	Date	Name	Original		Replacement of	Replaced by			

50.8 / 1P24

50.8 / 1N24

1P24 / 52.1

1N24 / 52.1

1P24
BN
20AWG

-Y1

x1

x2

SV1
BU
20AWG

33.8 / SV1

Festo solenoid valve

Suction cup 1 solenoid valve output

1P24
BN
20AWG

-Y2

x1

x2

SV2
BU
20AWG

33.8 / SV2

Suction cup 2 solenoid valve output

			Date	2019-05-27	American Standard Electrical Schematic		WELLIH 伟立机器人	Suction cup solenoid valve output		=
			Ed	10169						+
			Appr						460V/3P/PE	WL-Max-GUS-A2-MN-001
Modification	Date	Name	Original		Replacement of	Replaced by				

51.8 / 1P24

51.8 / 1N24

1P24 / 53.1

1N24 / 53.1

1P24
BN
20AWG

-Y3

x1

x2

SV3
BU
20AWG

33.8 / SV3

Festo solenoid valve

Suction cup 3 solenoid valve output

1P24
BN
20AWG

-Y4

x1

x2

SV4
BU
20AWG

33.8 / SV4

Suction cup 4 solenoid valve output

51

53

			Date	2019-05-27	American Standard Electrical Schematic		WELLIH 伟立机器人	Suction cup solenoid valve output	=
			Ed	10169					+
			Appr					460V/3P/PE	WL-Max-GUS-A2-MN-001
Modification	Date	Name	Original		Replacement of	Replaced by			

Page 52

Page 52/65

52.8 / 1P24

52.8 / 1N24

1P24 / 54.1

1N24 / 54.1

1P24
BN
20AWG

1P24
BN
20AWG

-Y8

SC1V
BU
20AWG

SC1H
BU
20AWG

33.5 / SC1V

33.5 / SC1H

Festo solenoid valve

C-axis screwed into the electric solenoid valve output

C-axis unwinding solenoid valve output

			Date	2019-05-27			Side view solenoid valve output		=
			Ed	10169	American Standard Electrical Schematic				+
			Appr					460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 53
Modification	Date	Name	Original		Replacement of	Replaced by				Page 53/65

53.8 / 1P24

53.8 / 1N24

1P24 / 55.1

1N24 / 55.1

1P24
BN
20AWG

-Y5

x1

x2

SG1
BU
20AWG

33.8 / SG1

Clamp 1 solenoid valve output

1P24
BN
20AWG

-Y6

x1

x2

SG2
BU
20AWG

33.8 / SG2

Clamp 2 solenoid valve output

Festo solenoid valve

			Date	2019-05-27	American Standard Electrical Schematic		Clamp solenoid valve output		=
			Ed	10169					+
			Appr					460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 54
Modification	Date	Name	Original		Replacement of	Replaced by				Page 54/65

54.8 / 1P24

54.8 / 1N24

1P24 / 56.0

1N24 / 56.0

1P24
BN
20AWG

-Y7

x1

x2

SGO
BU
20AWG

33.8 / SGO

Festo solenoid valve

Secondary arm clamp
solenoid valve output

54

56

			Date	2019-05-27	American Standard Electrical Schematic		Auxiliary arm clamp solenoid valve output		=
			Ed	10169					+
			Appr				460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 55
Modification	Date	Name	Original		Replacement of	Replaced by			Page 55/65

55.8 / 1P24
55.8 / 1N24
1P24 / 57.1
1N24 / 57.1

1P24
BN
20AWG

PUMP-1
BU
20AWG

-CR35

13 A1
12 NC
11NO
42 NC
41NO
DRM

14 A2
14COM
44COM

PUMP-2
BU
20AWG

PUMP
BU
20AWG

33.5 / PUMP

-U4

Oil can

DIP switch

KE

ON

1 2 3 4 5 6 7

Input

1 2

Remark:
4 and 7 are ON

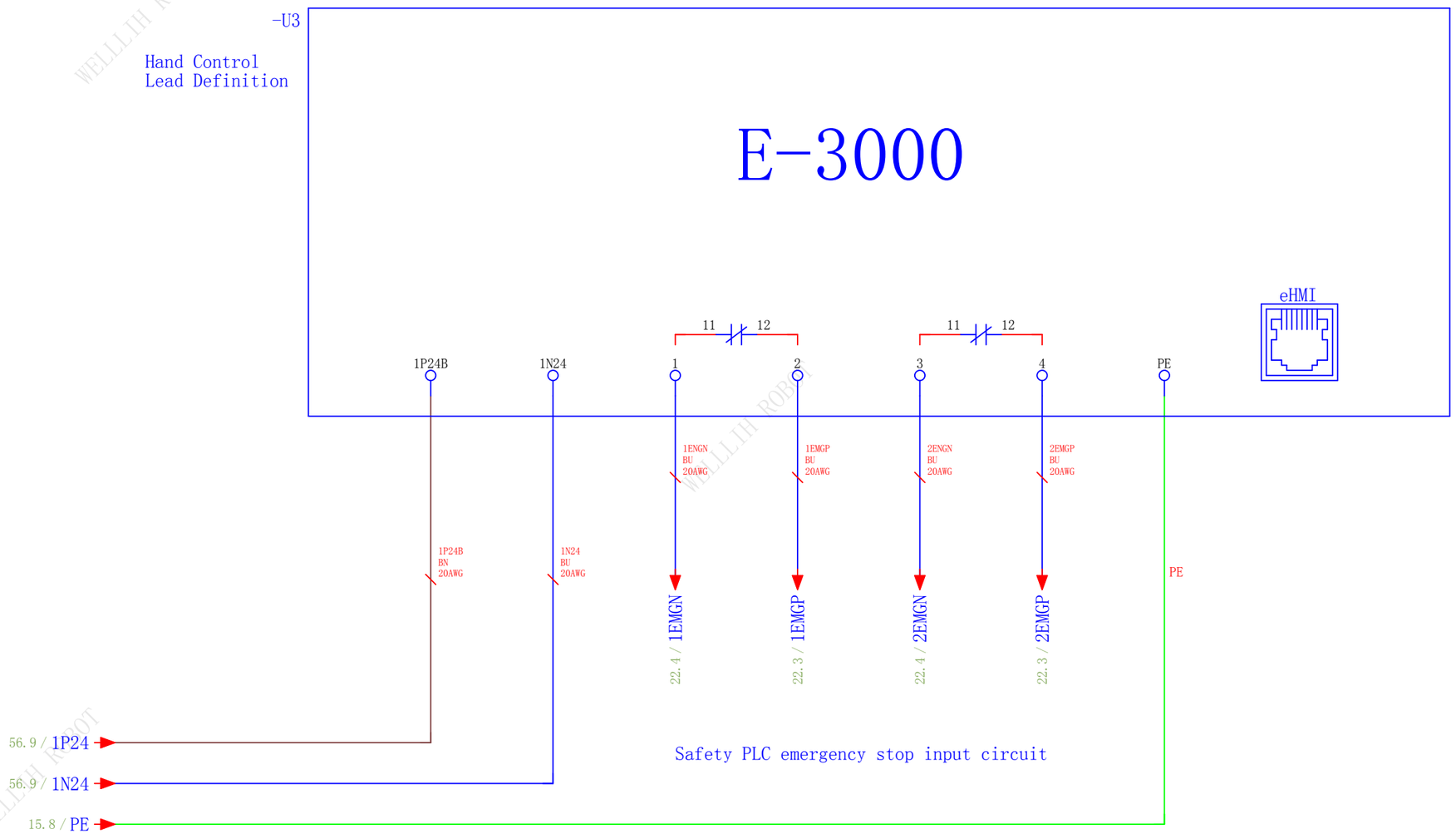
Automatic lubricating oil pot

			Date	2019-05-27		Oil Can		=	
			Ed	10169	American Standard Electrical Schematic			+	
			Appr				460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 56
Modification	Date	Name	Original		Replacement of	Replaced by			Page 56/65

-U3

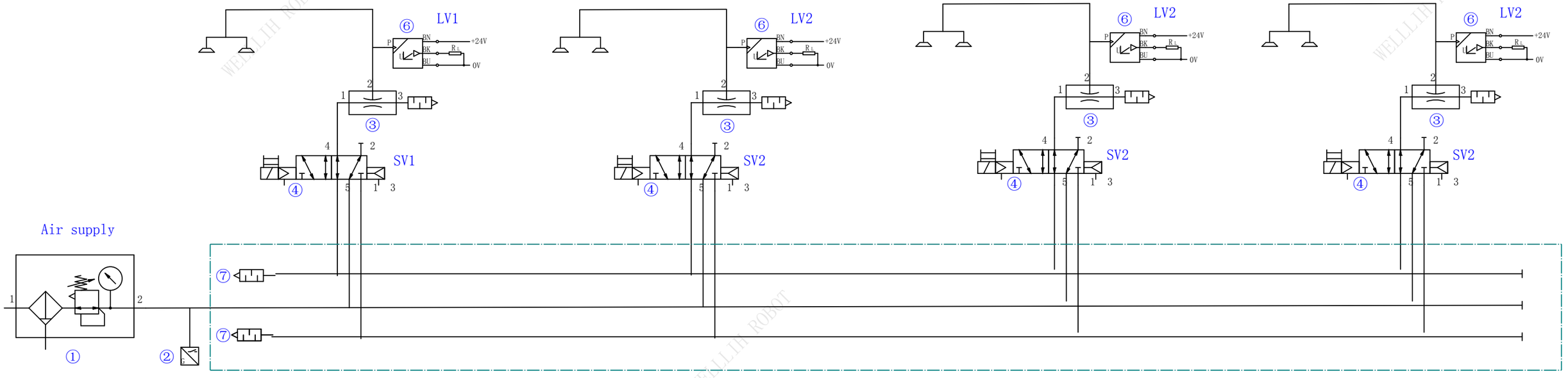
Hand Control
Lead Definition

E-3000



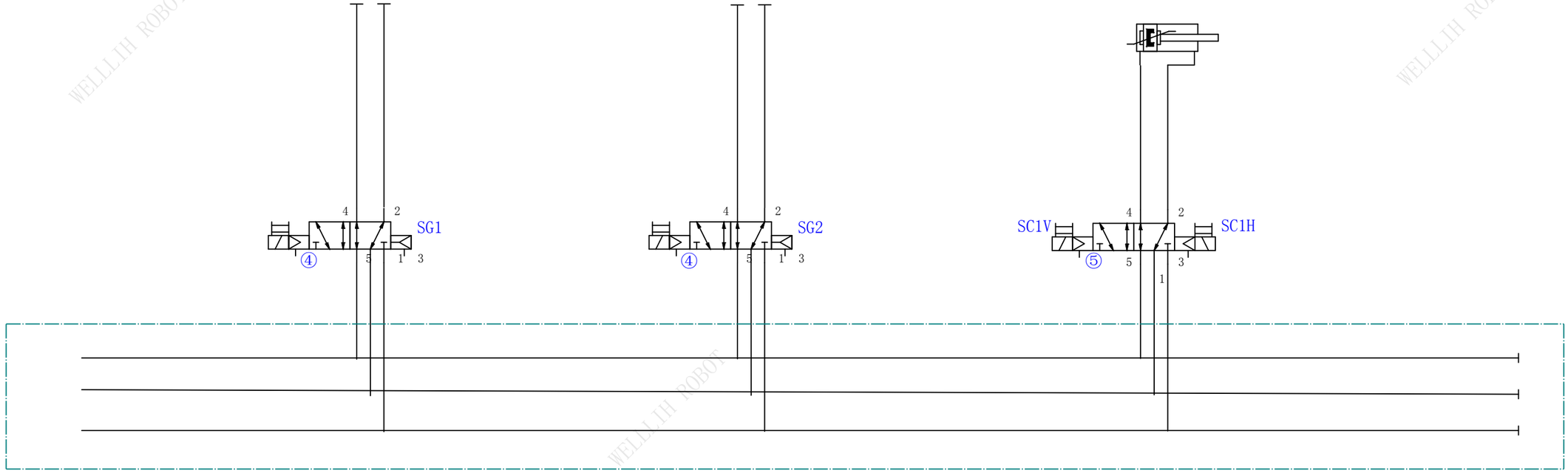
Safety PLC emergency stop input circuit

			Date	2019-05-27	American Standard Electrical Schematic		E3000 hand controller		=
			Ed	10169					+
			Appr					460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 57
Modification	Date	Name	Original		Replacement of	Replaced by				Page 57/65



Number	Name	Model
①	Valve	STBW-II
②	LAIR	QYBH001
③	Vacuum generator	VTM20-B
④	Solenoid valve	VUVG-L14-M52-AT-G18-1P3
⑥	Sensor	SPTE-V1R-S6-B-2.5K
⑦	silencer	SN200-02

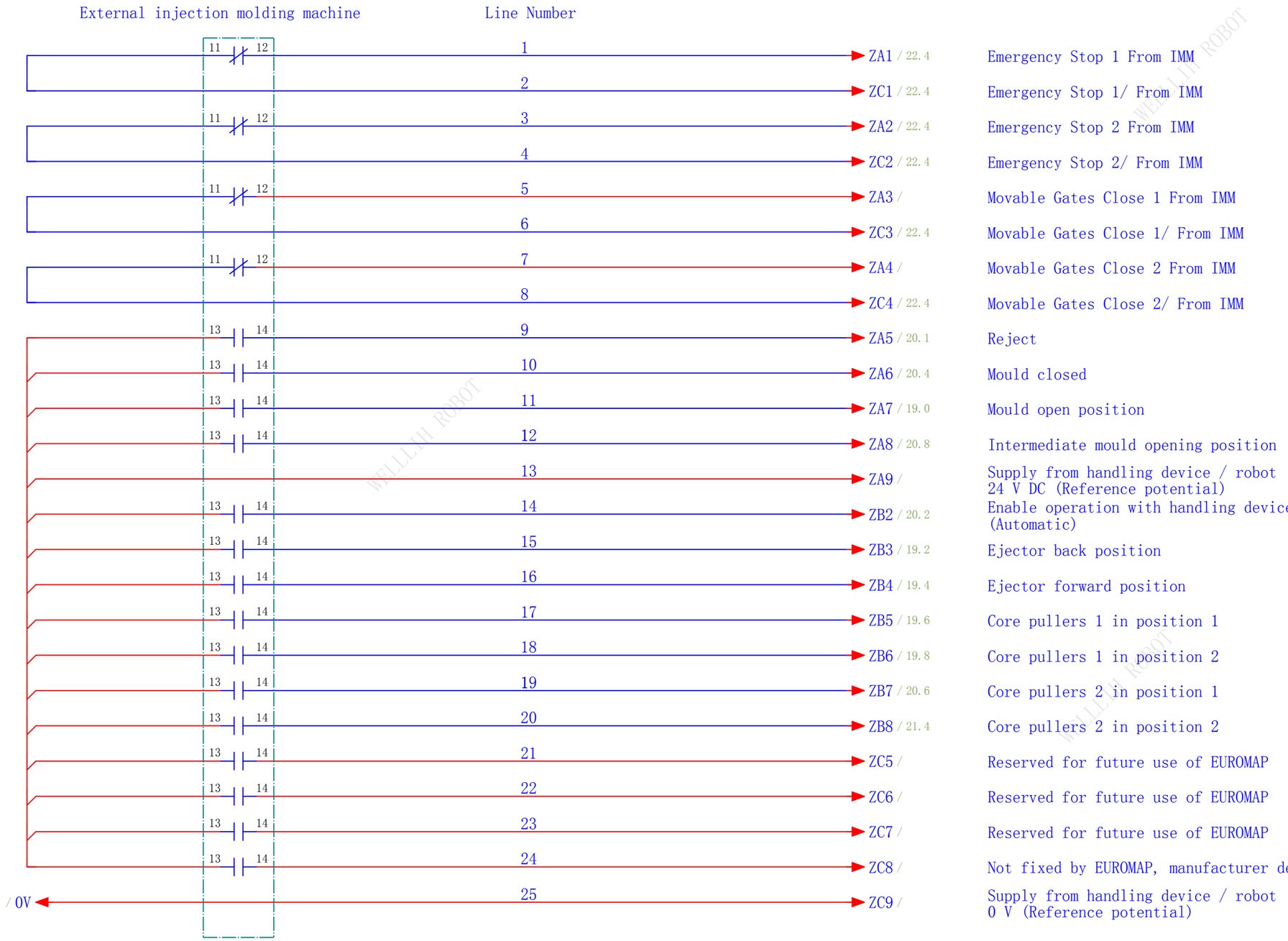
			Date	2019-04-18			Gas road map 1	=	
			Ed	10169				+	
			Appr		American Standard Electrical Schematic			460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 58
Modification	Date	Name	Original		Replacement of	Replaced by				Page 58/65



Number	Name	Model
④	Solenoid valve	VUVG-L14-M52-AT-G18-1P3
⑤	Solenoid valve	VUVG-L14-B52-T-G18-1P3

			Date	2019-04-18				=	
			Ed	10169				+	
			Appr		American Standard Electrical Schematic		Gas road map 2		
Modification	Date	Name	Original		Replacement of	Replaced by		460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 59
										Page 59/65

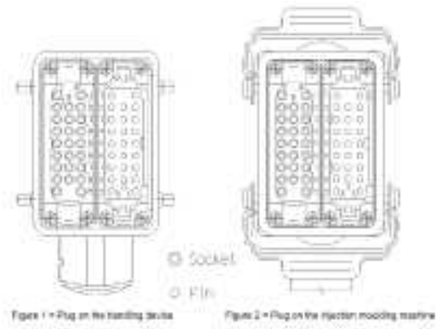
EUROMAP 67 Robot input signal



REMARK:

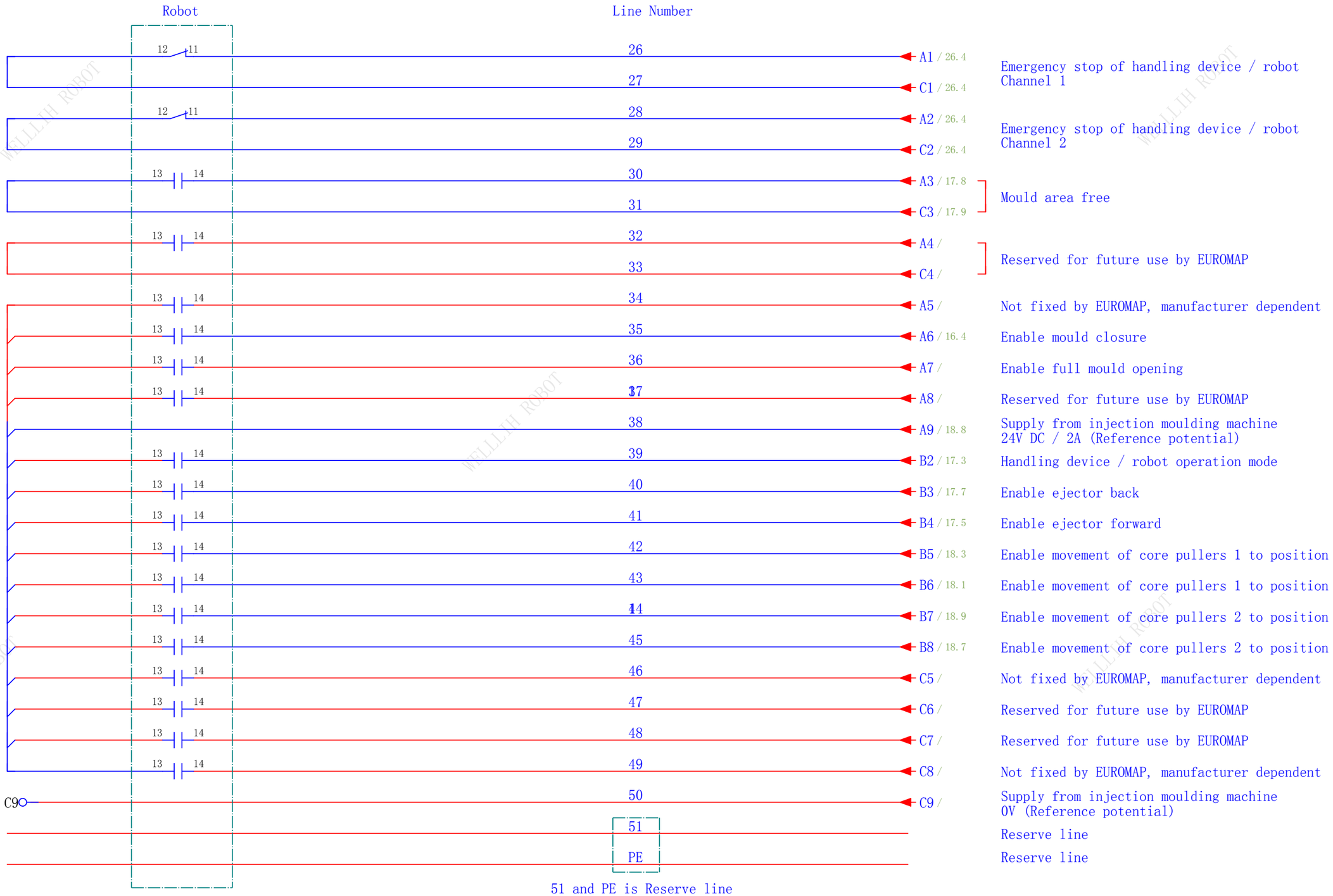
1、 ZA3, ZA4, ZA9 need to be connected to 1P24

2、 ZC9 need to be connected to 1N24



			Date	2019-05-27			European standard 67 input signal	=	
			Ed	10169	American Standard Electrical Schematic			+	
			Appr				460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 60
Modification	Date	Name	Original		Replacement of	Replaced by			Page 60/65

EUROMAP 67 Robot output signal



Emergency stop of handling device / robot Channel 1

Emergency stop of handling device / robot Channel 2

Mould area free

Reserved for future use by EUROMAP

Not fixed by EUROMAP, manufacturer dependent

Enable mould closure

Enable full mould opening

Reserved for future use by EUROMAP

Supply from injection moulding machine 24V DC / 2A (Reference potential)

Handling device / robot operation mode

Enable ejector back

Enable ejector forward

Enable movement of core pullers 1 to position 1

Enable movement of core pullers 1 to position 2

Enable movement of core pullers 2 to position 1

Enable movement of core pullers 2 to position 2

Not fixed by EUROMAP, manufacturer dependent

Reserved for future use by EUROMAP

Not fixed by EUROMAP, manufacturer dependent

Supply from injection moulding machine 0V (Reference potential)

Reserve line

Reserve line

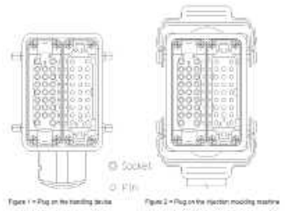
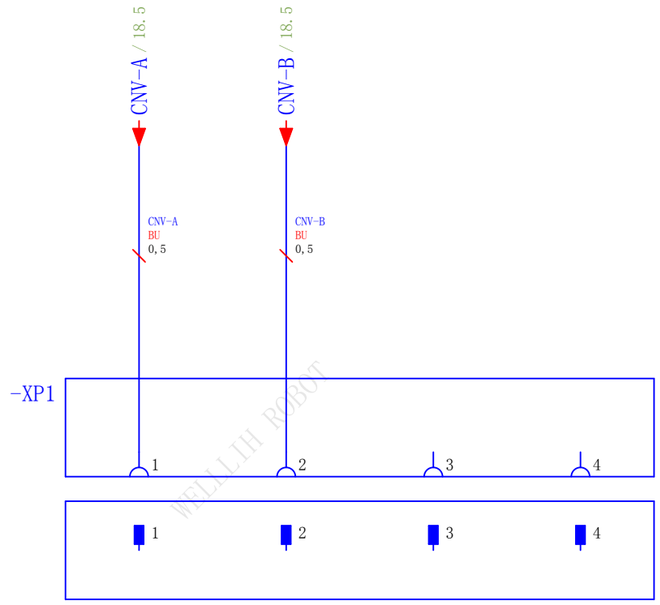


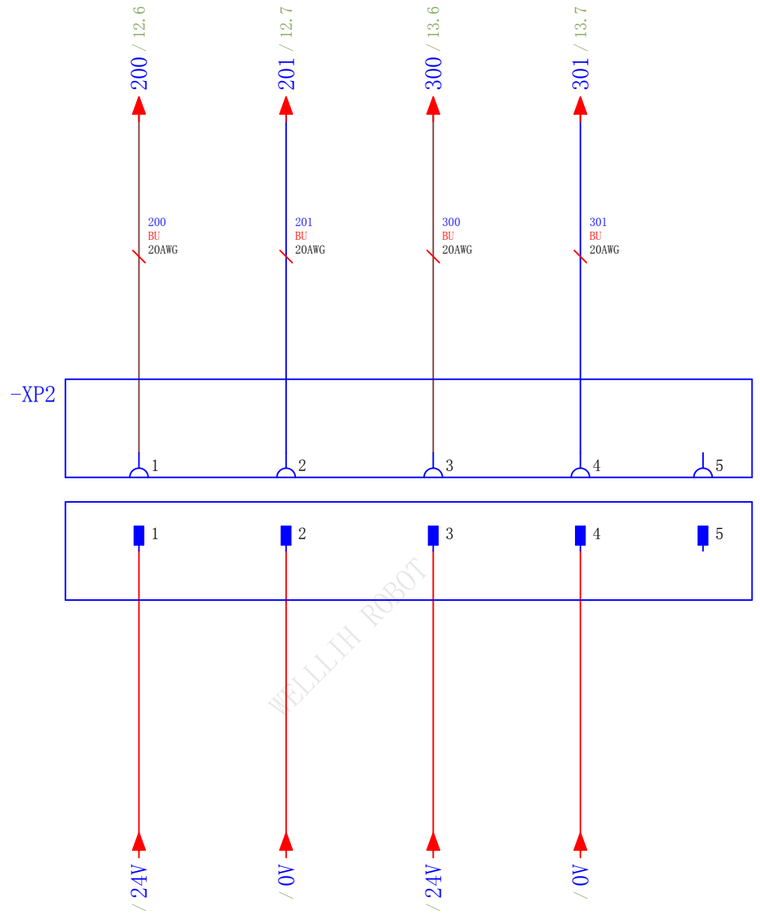
Figure 1 = Plug on the handling device Figure 2 = Plug on the injection moulding machine

			Date	2019-05-27	American Standard Electrical Schematic	WELLLIH 伟立机器人	European standard 67 output signal	=	
			Ed	10169				+	
			Appr				460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 61
Modification	Date	Name	Original		Replacement of	Replaced by			Page 61/65



To conveyor

			Date	2019-05-27			Conveyor belt connector		=
			Ed	10169	American Standard Electrical Schematic				+
			Appr					460V/3P/PE	WL-Max-GUS-A2-MN-001
Modification	Date	Name	Original		Replacement of	Replaced by			



REMARK:
24V power supply from the customer
for raising or lowering the arm

			Date	2019-05-27	American Standard Electrical Schematic	WELLIH 伟立机器人	External connector	=
			Ed	10169				+
			Appr				460V/3P/PE	WL-Max-GUS-A2-MN-001 Page 63
Modification	Date	Name	Original		Replacement of	Replaced by		Page 63/65

67 to 12 interface adaptor

EUROMAP 67 SOCKET

European regulations 67
connector corresponding
to the shell

32 core wire number

EUROMAP 12 PLUS

European regulations 12
connector corresponding
to the shell

ZA1		ZA1/65.4
ZC1		ZC1/65.4
ZA2		ZA2/65.5
ZC2		ZC2/65.5
ZA3		ZA3/65.8
ZC3		ZC3/65.8
ZA4		ZA4/65.9
ZC4		ZC4/65.9
ZA5	8	8/
ZA6	12	12/
ZA7	2	2/
ZA9	16	16/
ZB2	10	10/
ZB3	4	4/
ZB4	5	5/
ZB5	6	6/
ZB6	7	7/
ZC9		Reserved, do not connect
A1	19	19/
C1		
A2		
C2	27	27/
A3	18	18/
C3	26	26/
A6	17	17/
A9	32	32/
B2	20	20/
B3	21	21/
B4	22	22/
B5	23	23/
B6	24	24/
C9		Reserved, do not connect

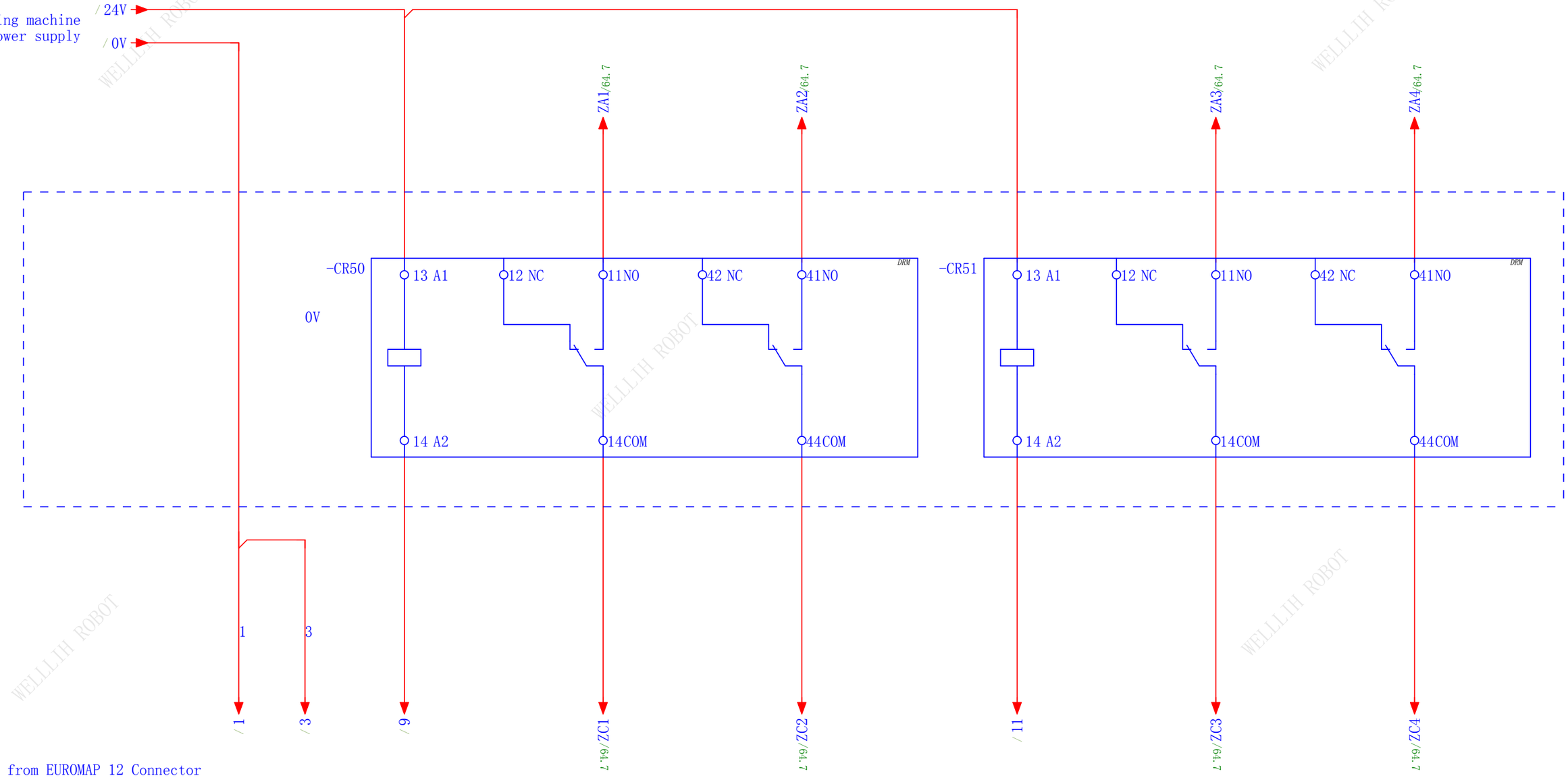
63

65

			Date	2019-05-28				=	
			Ed	10169				+	
			Appr		American Standard Electrical Schematic		European standard 67 to European regulations 12 schematic		
Modification	Date	Name	Original		Replacement of	Replaced by		460V/3P/PE	WL-Max-GUS-A2-MN-001

67 to 12 interface adaptor

Remark:
Injection molding machine
or robot 24V power supply



Remark:
1: 1、3、9、11 from EUROMAP 12 Connector
2: ZA1、ZC1、ZA2、ZC2、ZA3、ZC3、ZA4、ZC4
from EUROMAP 67 Connector
3: 24V、0V from Injection molding machine
or robot 24V power supply
4: CR13 and CR14 is Intermediate relay

			Date	2019-05-28	American Standard Electrical Schematic		European standard 67 to European regulations 12 schematic	=	
			Ed	10169				+	
			Appr				460V/3P/PE	WL-Max-GUS-A2-MN-001	Page 65
Modification	Date	Name	Original		Replacement of	Replaced by			Page 65/65