

TRUMPF



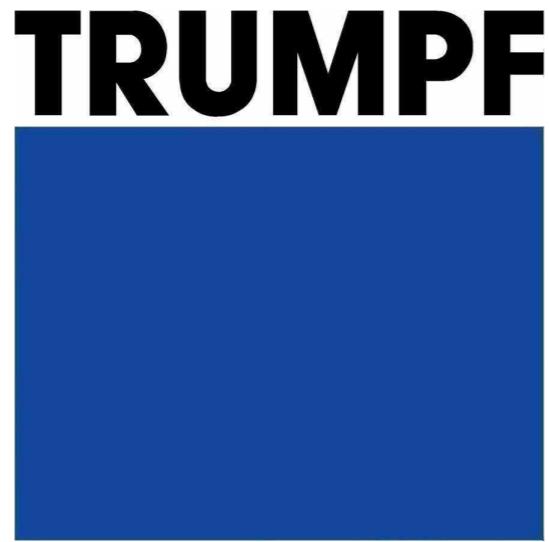
Set of schematics TruLaser 1000 fiber BE

93630-5-E1

Contents

Type	Designation	Document number	Vers.	Stat.	Id.No
E1	Circuit diagram TruLaser 1000 fiber BE	93630-5-201	03	RE	2815136
P1	Pneumatic schematic TruLaser 1000 fiber	93630-5-301	01	RE	2843707
H1	Hydraulic schematic TruLaser 1000 fiber	93630-5-401	02	RE	2843734
L1	Lubrication schematic TruLaser 1000 fibre	93630-5-501	00	RE	2844057
G1	Gas schematic TruLaser 1000 fiber BE	93630-5-601	01	RE	2844058
W1	Water cooling TruLaser 1000 fiber BE	93630-5-701	00	RE	2844059

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			01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Doc. part 002	Version 03	Status RE	Id number 2807035	Sheet 1 of 1	Type E1	Format A3
	Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record TCN521TE	24.02.2023 TCN521TE	24.02.2023 TCN521TE	17.05.2023 TCN520HU					



Circuit diagram TruLaser 1000 fiber BE

Set of schematics TruLaser 1000 fiber BE

93630-5-201

Contents

- Contents
- Location overview
- Functional group overview
- Variants and options overview
- Reference ID overview
- Symbol/component legend
- Mains supply
- Circuit flow diagram
- Setting values
- EtherCAT bus overview
- Ethernet bus overview
- PLC I/O list

TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China <small>COPYRIGHT BY TRUMPF</small>	Project-designation Set of schematics TruLaser 1000 fiber BE	Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE	Contents								
		34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU		Cover page								
	Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number 93630-5-201	Doc. part 002	Version 03	Status RE	Id number 2815136	Sheet 1 of 111	Type E1	Format A3

Page	Func./Loc.	Description
/1		Cover page
/2		Contents Page 1
/3		Contents Page 2
/4		Contents Page 3
/5		Location overview
/6		Functional group overview
/7		Variants and options overview
/8		Reference ID overview
/9		Symbol/component legend
/10		Mains supply
/11		Options
/12		Power supply
/13		Power supply
/14	=MA	Multi-function Power supply Drive
/15	=MA	Multi-function Transformer 220V(option BM111)
/16	=MA	Multi-function Power supply, 24V DC
/17	=MA	Multi-function 0V/PE
/18	=MA	Multi-function 24VDC
/19	=MA	Multi-function Safety relay - Emergency stop
/20	=MA	Multi-function Emergency stop
/21	=MA	Multi-function Safety relay - Safety door monitoring
/22	=SY.SD	Safety functions with safety doors Safety door monitoring
/23	=MS.02	Make safe access to pallet changer Light barrier
/24	=MA	Multi-function STO
/25	=DV	Machine kinematics (axes system/main axes) Drive Axis X1
/26	=DV	Machine kinematics (axes system/main axes) Drive Axis X2
/27	=DV	Machine kinematics (axes system/main axes) Drive Axis Y
/28	=DV	Machine kinematics (axes system/main axes) Drive Axis Z

Page	Func./Loc.	Description
/29	=DV	Machine kinematics (axes system/main axes) Frequency converter
/30	=WP	Workpiece Pallet fixing device(Option: two level pallet)
/31	=WP	Workpiece Pallet infeed sensors
/32	=WP	Workpiece Upper Pallet clamping Sensors (option: two level pallet)
/33	=WP	Workpiece Lower Pallet clamping Sensors (option: two level pallet)
/34	=TL	Handle laser beam tool Cutting unit KL59
/35	=DV	Machine kinematics (axes system/main axes) Cutting unit BM111/Focal drive (option: BM111)
/36	=MA	Multi-function Controller Laser core 800
/37	=MA	Multi-function Controller Laser core 800
/38	=MA	Multi-function Controller Laser core 800
/39	=MA	Multi-function EtherCAT modules
/40	=MA	Multi-function Ethernet switch
/41	=MA	Multi-function M Guard
/42	=MA	Multi-function 4G Router
/43	=MA	Multi-function Outputs
/44	=MA	Multi-function Outputs
/45	=MA	Multi-function Frequency converter Inputs and Outputs
/46	=MA	Multi-function hydraulic Unit Pallet position Sensor
/47	=MA	Multi-function Hydraulic lift unit interface
/48	=MA	Multi-function Hydraulic lift unit interface
/49	=IF.09	Prepare hydraulic energy Hydraulic lift unit

TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE			Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE			Contents				
					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU				Contents Page 1	Contents	Contents Page 1	Contents	
		Project number	Vers.proj.	Doc.type	Original record	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format			
		93630-5-E1	03	E3S	TCN521TE	TCN521TE	TCN520HU	002	03	RE	2815136	2 of 111	E1	A3		

Page	Func./Loc.	Description
/50	=WP.03	Move workpiece pallet vertically hydraulic Unit Pallet position Sensor
/51	=EC.01	Provide air conditioning in electrical cabinet Fan unit/ Service Key
/52	=HM.05	Operation of workpiece changer Start post With light barrier
/53	=HM.05	Operation of workpiece changer Start post Without light barrier(Delete from S02.00)
/54	=HM.05	Operation of workpiece changer Start post E-stop
/55	=HM.06	Activate safety lock using key switch Control panel
/56	=IF.08	Recool cooling water Combination process cooler
/57	=MA	Multi-function Laser suction Control
/58	=MA	Multi-function Laser suction Control
/59	=RM.05	Suction out fumes and dusts Laser suction
/60	=RM.05	Suction out fumes and dusts Suction flaps
/61	=IL	Laser interfaces Laser signal in
/62	=IL	Laser interfaces Laser signal out
/63	=IL	Laser interfaces Laser
/64	=IL	Laser interfaces Laser
/65	=MA	Multi-function Machine body interface
/66	=MA	Multi-function Motion unit interface
/67	=MA	Multi-function Motion unit interface, 24VDC
/68	=WP	Workpiece Motion unit Proximity switch/ Front lift plate sensor
/69	=WM	&=WM; Motion unit Proximity switch
/70	=TL	Handle laser beam tool Motion unit-Valves and Alignment laser diode

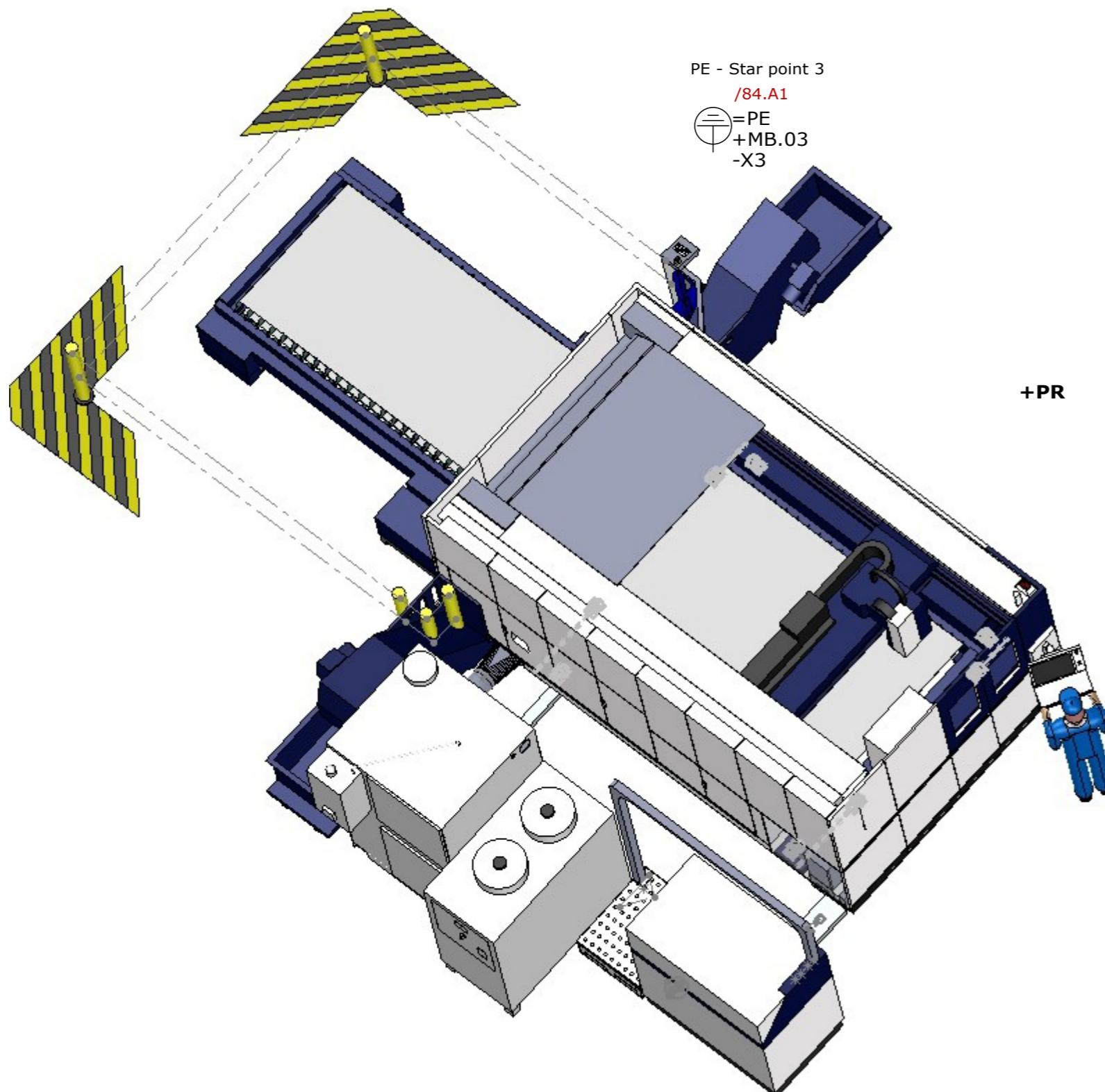
Page	Func./Loc.	Description
/71	=TL.11	Guide and shape cutting gas flow Motion unit Lanny Valve
/72	=MA	Multi-function Pallet door interface
/73	=MS.01	Make safe enclosed protective housing and pallet opening access Pallet changer door (Left rear)
/74	=MA	Multi-function Gas circuit interface
/75	=IF	Interfaces Cutting gas control
/76	=IF.10	Prepare and distribute lubricant Lubrication
/77	=IF	Interfaces Device panel
/78	=CM	&=CM; Device panel
/79	=HM.04	Show operating status of machine with signal lamps Status indicator
/80	=EC.03	Illuminate work area Work area illumination
/81	=HM.01	Observe work area Camera (not used now)
/82	=PE	Protective earthing and EMC Equipotential bonding Star point 1 (left front)
/83	=PE	Protective earthing and EMC Equipotential bonding Star point 2 (left rear)
/84	=PE	Protective earthing and EMC Equipotential bonding Star point 3 (right rear)
/85	=PE	Protective earthing and EMC Equipotential bonding Star point 4 (right front)
/86	=PE	Protective earthing and EMC Equipotential bonding Valve terminal
/87	=PE	Protective earthing and EMC Equipotential bonding Motion unit
/88	+TF	&+TF; Cable laser interface
/89	+CO	Cooling aggregate Power cable Cooling aggregate
/90	+OP	Operating panel Panel PC Topology
/91		EtherCAT topology
/92		EtherCAT topology

TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE			Change number	Edited	Reviewed	Approved	Designation			Contents				
					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Circuit diagram TruLaser 1000 fiber BE			Contents Page 2				
		Project number	Vers.proj.	Doc.type	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
		93630-5-E1	03	E3S					93630-5-201	002	03	RE	2815136	3 of 111	E1	A3

Page	Func./Loc.	Description
/93		Ethernet topology
/94	+MB	Machine body Two Level Pallet changers Sensor station
/95	+MB	Machine body One Level Pallet changers Sensor station
/96	+PC	Pallet changer Pallet A or B in pallet changer(option:one level pallet)
/97	+PC	Pallet changer hydraulic Unit Pallet position Sensor
/98	+PC	Pallet changer hydraulic Unit Pallet position Sensor
/99	+MB.04	Machine body section 4 Pallet changer door Sensors
/100	+MB.04	Machine body section 4 Additional pallet unit Door
/101	+MB	Machine body Pallet clamping Sensors (option: two level pallet)
/102	+MB	Machine body Pallet clamping Sensors (option: two level pallet)
/103		Pallet clamping Sensors (option: one level pallet)
/104		Pallet clamping Sensors (option: one level pallet)
/105		Switch Cabinet
/106		Instrument plate
/107		Setting values
/108		EtherCAT bus overview
/109		Ethernet bus overview
/110		PLC I/O list Sorting A (Ascending address) Page 1
/111		PLC I/O list Sorting A (Ascending address) Page 2

 TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE	Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE	Contents								
		34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU		Contents Page 3								
	Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number 93630-5-201	Doc. part 002	Version 03	Status RE	Id number 2815136	Sheet 4 of 111	Type E1	Format A3

Location overview



Location	Description
+CO	Cooling aggregate
+CU	Cutting unit
+DP	Instrument panel
+EN.01	Cover section 1
+EN.06	Cover section 6
+ES.10	Dedusters (laser suction)
+MB	Machine body
+MB.01	Machine body section 1
+MB.02	Machine body section 2
+MB.03	Machine body section 3
+MB.04	Machine body section 4
+MB.05	Machine body section 5
+MB.07	Machine body section 7
+MB.08	Machine body section 8
+MI	Machine integration
+MU	Motion unit
+NO	Nozzle changer
+OP	Operating panel
+PB	Protection cabins (housings)
+PC	Pallet changer
+PR	Hydraulics aggregate
+SC	Electrical cabinet
+SD	Safety device
+TF	&+TF;

TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation			Change number	Edited	Reviewed	Approved	Designation			Contents				
		Set of schematics TruLaser 1000 fiber BE			34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Circuit diagram TruLaser 1000 fiber BE			Location overview				
Project number	Vers.proj.	Doc.type	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format		
93630-5-E1	03	E3S					93630-5-201	002	03	RE	2815136	5	of 111	E1	A3	

Functional group overview

Functions	Description
=CM	&=CM;
=CM.05	Prepare communication Ethernet TCP/IP WLAN access point
=DP.01	Prepare computer infrastructure functions
=DV	Machine kinematics (axes system/main axes)
=EC.01	Provide air conditioning in electrical cabinet
=EC.03	Illuminate work area
=EP	Electric power supply
=HM.01	Observe work area
=HM.04	Show operating status of machine with signal lamps
=HM.05	Operation of workpiece changer
=HM.06	Activate safety lock using key switch
=HM.08	Displays for sorting finished parts
=IE.04	Prepare intermediate circuit 600V DC for servo drive
=IE.05	Prepare 24V DC control voltage, safeguard current circuits, generate system bus
=IE.06	Connect and distribute customer-provided line voltage 400V/460V 50/60Hz
=IF	Interfaces
=IF.01	Prepare and distribute compressed air
=IF.04	Prepare nitrogen cutting gas
=IF.06	Prepare compressed air cutting gas
=IF.08	Recool cooling water
=IF.09	Prepare hydraulic energy
=IF.10	Prepare and distribute lubricant
=IF.MA	Prepare multiple function cutting gas
=IL	Laser interfaces
=IL.02	Prepare line voltage 400V/460V 50/60Hz for laser
=MA	Multi-function
=MS.01	Make safe enclosed protective housing and pallet opening access
=MS.02	Make safe access to pallet changer
=PE	Protective earthing and EMC
=RM.05	Suction out fumes and dusts
=SY.SD	Safety functions with safety doors
=TL	Handle laser beam tool
=TL.07	Monitor the cutting head to prevent collisions;
=TL.11	Guide and shape cutting gas flow
=WM	&=WM;
=WM.01	Generate X axis feed motion
=WM.02	Generate Y axis feed motion
=WM.03	Generate Z axis feed motion
=WP	Workpiece
=WP.01	Move workpiece pallet horizontally (Chain drive)
=WP.03	Move workpiece pallet vertically

 TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE	Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE	Contents					
		34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU		Functional group overview	6 of 111	Type E1	Format A3		
	Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number 93630-5-201	Doc. part 002	Version 03	Status RE	Id number 2815136

Variants and options overview

Variant/options	Description
EAI	Power supply Aggregates Machine
fd89	
hy3	
LYL	Left-hand installation
NC	Nozzle changer = Yes
REMAP	Remote access per Access Point
SD	Safety device= Yes
SG	Sorting Guide = Yes
SG~1	Sorting Guide = Yes



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Set of schematics TruLaser 1000 fiber B

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Designation

n diagram TruLaser 1000 fiber BE

Contents Variants and options overview

For

number

Code letter for marking the equipment type

- A: Subassemblies, Part subassemblies
- B: Component function: Measure, Acquire, Determine
Typical components: Sensors, Mech. switches, Measuring elements
- C: Component function: Record, Save
Typical components: Buffer batteries, Capacitors, Storage devices
- E: Component function: Cool, Heat, Light
Typical components: Lamps, Lights, Heat exchangers, Air conditioning units
- F: Component function: Protect, Protect
Typical components: Fuses, Line safety switch, Motor circuit-breaker
- G: Component function: Generate
Typical components: Generators, Solar cells, Batteries
- K: Component function: Processing, Control, Control
Typical components: Control subassemblies, I/O subassemblies, Contactor relays, Relays
- M: Component function: Drive
Typical components: Motors, Linear motors, Actuator
- P: Component function: Measure, Test
Typical components: Amperemeter, Voltmeter, Recording voltmeter
- Q: Component function: Connection of energy and load
Typical components: Motor contactors, Fluid valves, Load-break switch, Motor starter
- R: Component function: Limit, Stabilize, Restrict
Typical components: Diodes, Resistors, Limiter
- S: Component function: Manual control, Influence, Select
Typical components: Control units, Selector switch, PC mouses, PC keyboards
- T: Component function: Amplify, Transform, Transform, Form
Typical components: Transformer, Frequency converter, Measuring transducer, Amplifier
- U: Component function: Store, Hold, Support
Typical components: Insulators
- V: Component function: Filter, Clean
Typical components: Line filter
- W: Component function: Conduct, Distribute
Typical components: Busbars, Cable, Optical fibre, Leadthroughs
- X: Component function: Connect, Couple
Typical components: Connectors, Connectors, Terminals, Terminal strips

Conductor color

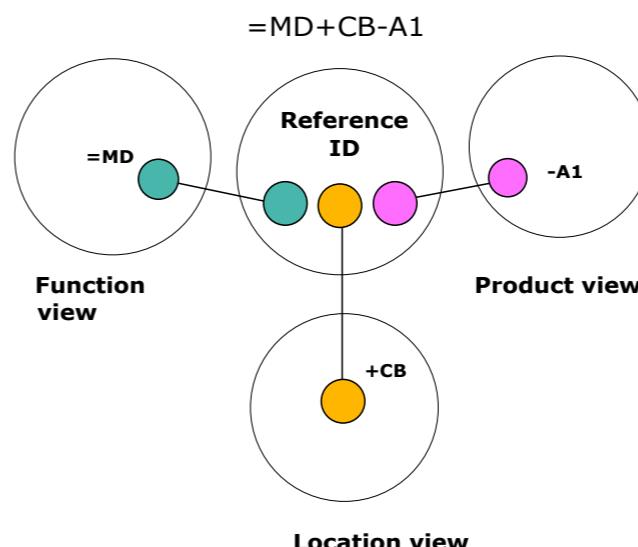
- | | |
|----------------------|--|
| Black (BK): | Main current circuits for direct and alternating voltage |
| Red (RD): | Control circuits for alternating voltage |
| Blue (BU): | Control circuits for direct voltage |
| Dark blue (DBU): | Control circuits for direct voltage |
| Orange (OG): | looped-in external wires / Voltage before main switch |
| Green yellow (GNYE): | Protective conductor |
| White (WH): | Ground analog |

Conductor cross-sections

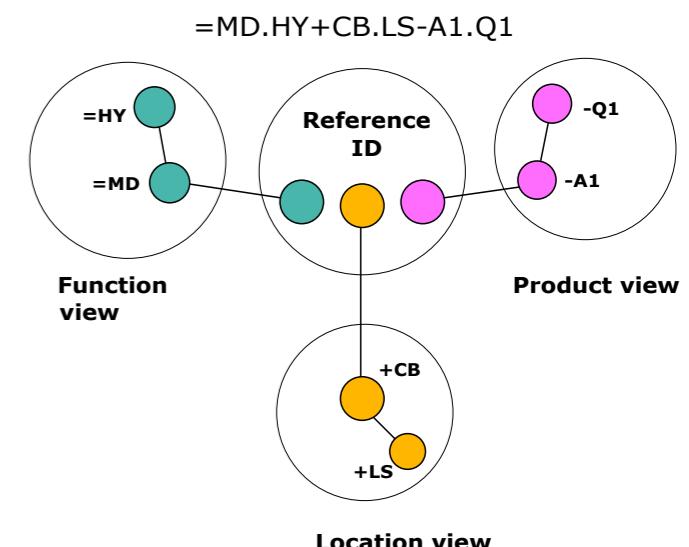
- Unlabeled single cores in the electrical cabinet for 24V DC / 0V DC:
0,5mm² / Blue
- Unlabeled single cores in the electrical cabinet for 230V AC / 0V AC:
1,5mm² / Red

Classification levels

Reference ID with one level



Reference ID with several levels

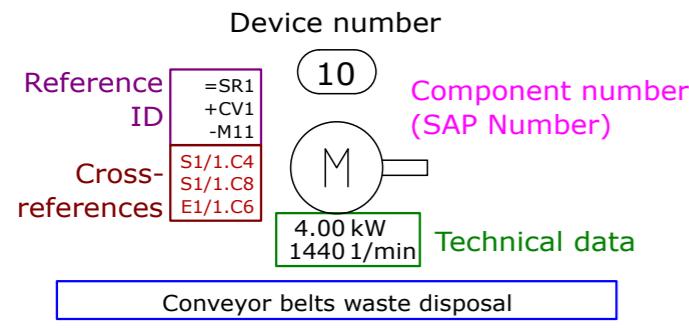


--> =Media delivery (MD). Hydraulics (HY)
--> +Electrical cabinet (CB). Power side (LS)
--> -Module (A1). Motor circuit-breaker (Q1)

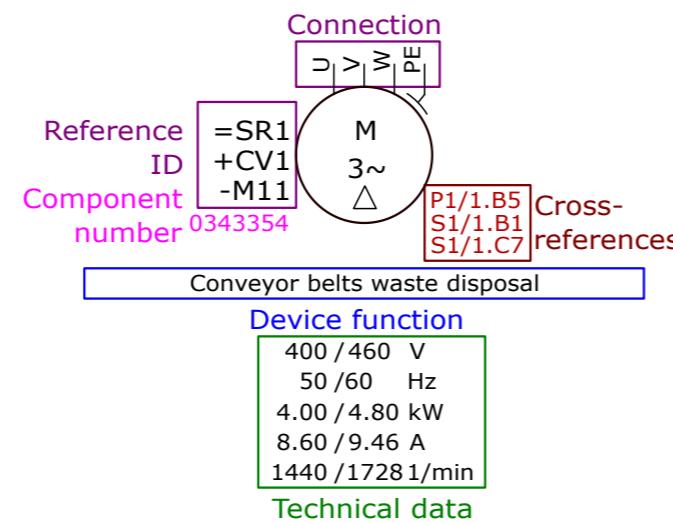
TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE			Change number	Edited	Reviewed	Approved	Designation			Contents				
					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Circuit diagram TruLaser 1000 fiber BE			Reference ID overview				
		Project number	Vers.proj.	Doc.type	Original record	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format			
		93630-5-E1	03	E3S	TCN521TE	TCN521TE	TCN521TE	TCN520HU	93630-5-201	002	03	RE	2815136	8 of 111	E1	A3

Symbol and component structure

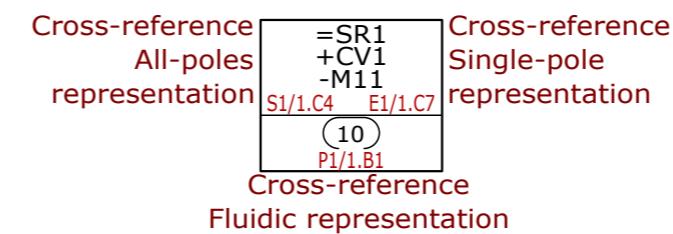
F_Fluid technology



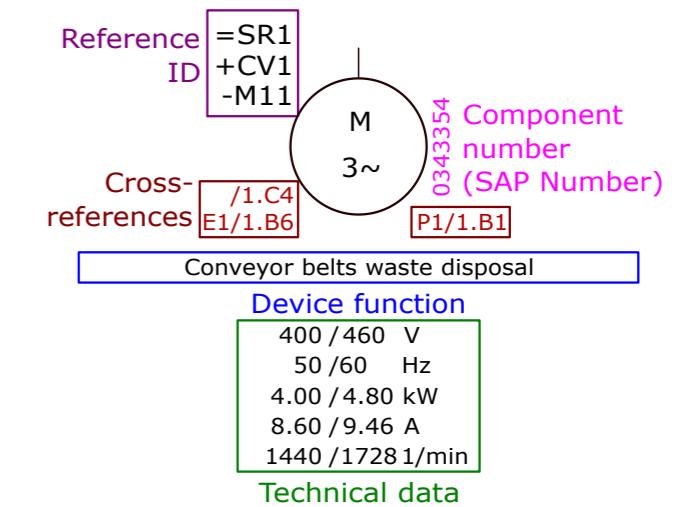
E_Circuit Diagram



Installation plan



E_Circuit Diagram Single Line



Cross-reference structure

E1/1.A1

Type of plan Page Path

Presentation of the twisting of multiple cores in the multi-line circuit diagram

Twisting symbol

Reference to documentation symbol with additional component information



consecutive number

Type of plan

All-poles representation (electric) E1

Single-pole representation (single line) S_

Pneumatics (pneumatic) P_

Hydraulics (hydraulics) H_

Lubrication (lubrication) L_

Gas (gas) G_

Cooling water (water) W_

For references to the same plan type, the plan type is omitted.

The plan type is written in the header of the "Type" field.

TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE			Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE			Contents Symbol/component legend				
					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU								
		Project number	Vers.proj.	Doc.type	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
		93630-5-E1	03	E3S					93630-5-201	002	03	RE	2815136	9 of 111	E1	A3

Mains supply

Mains supply:

L1, L2, L3 and PE clockwise rotary field
Electrical connection at main switch in machine's electrical cabinet

Max. admissible cross-section:

mm² multi-wired
mm² massive
AWG/kcmil

The maximum cross-section indicated is only connectable with several wires and without end sleeves

Rated frequency:

50Hz / 60Hz +/- 1%

Rated voltage:

3 AC 380V +/- 10% for 50Hz / 60Hz

Max. power consumption, fuse protection
and further electrical values:

See el. installation conditions of machine, chapter: Electricity supply

Applies to equipment according to UL 508A

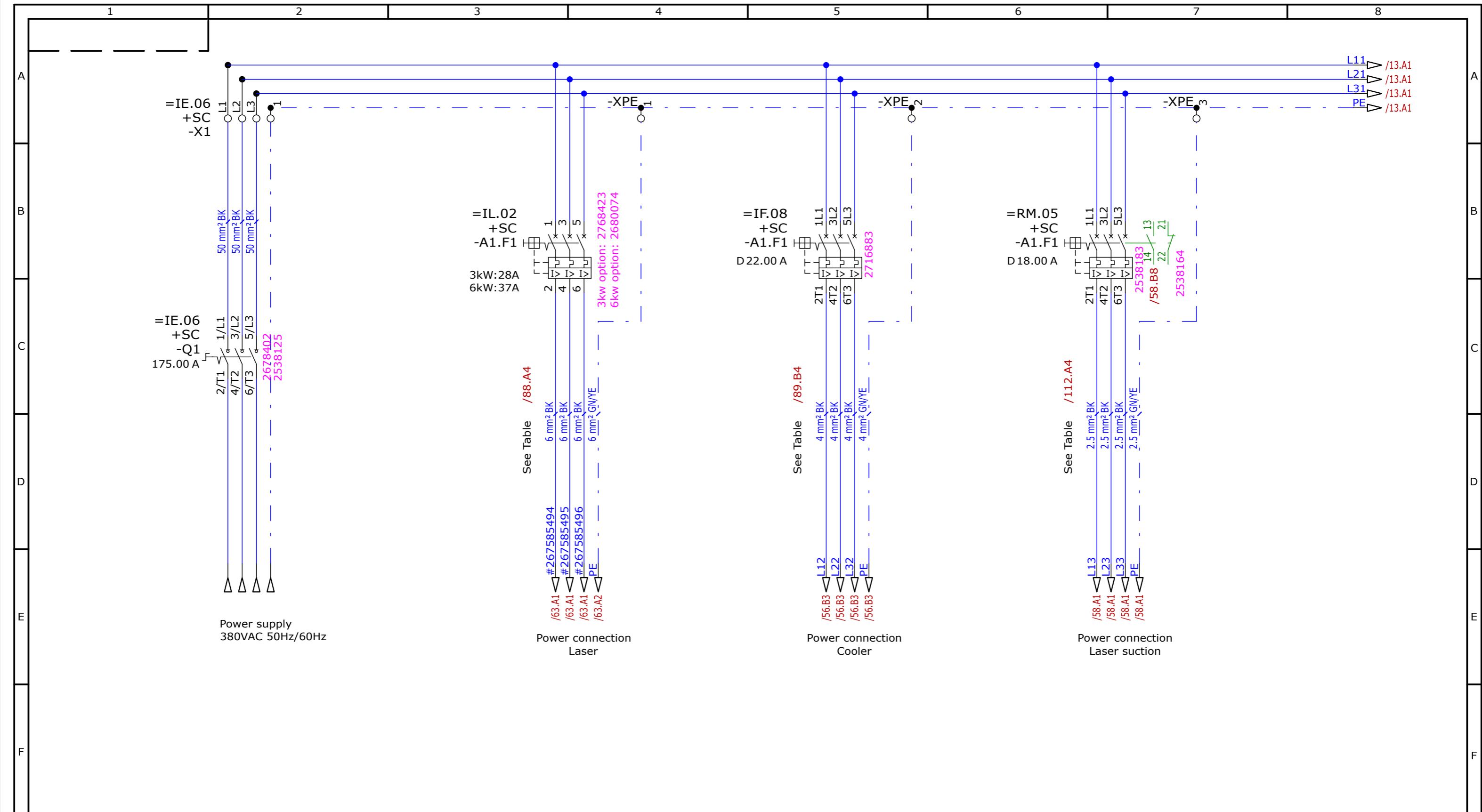
Notes "mains supply terminal" (field terminal)

- **USE COPPER CONDUCTORS ONLY**
- **75°C (167°F)**
- **TIGHTENING TORQUE Nm**

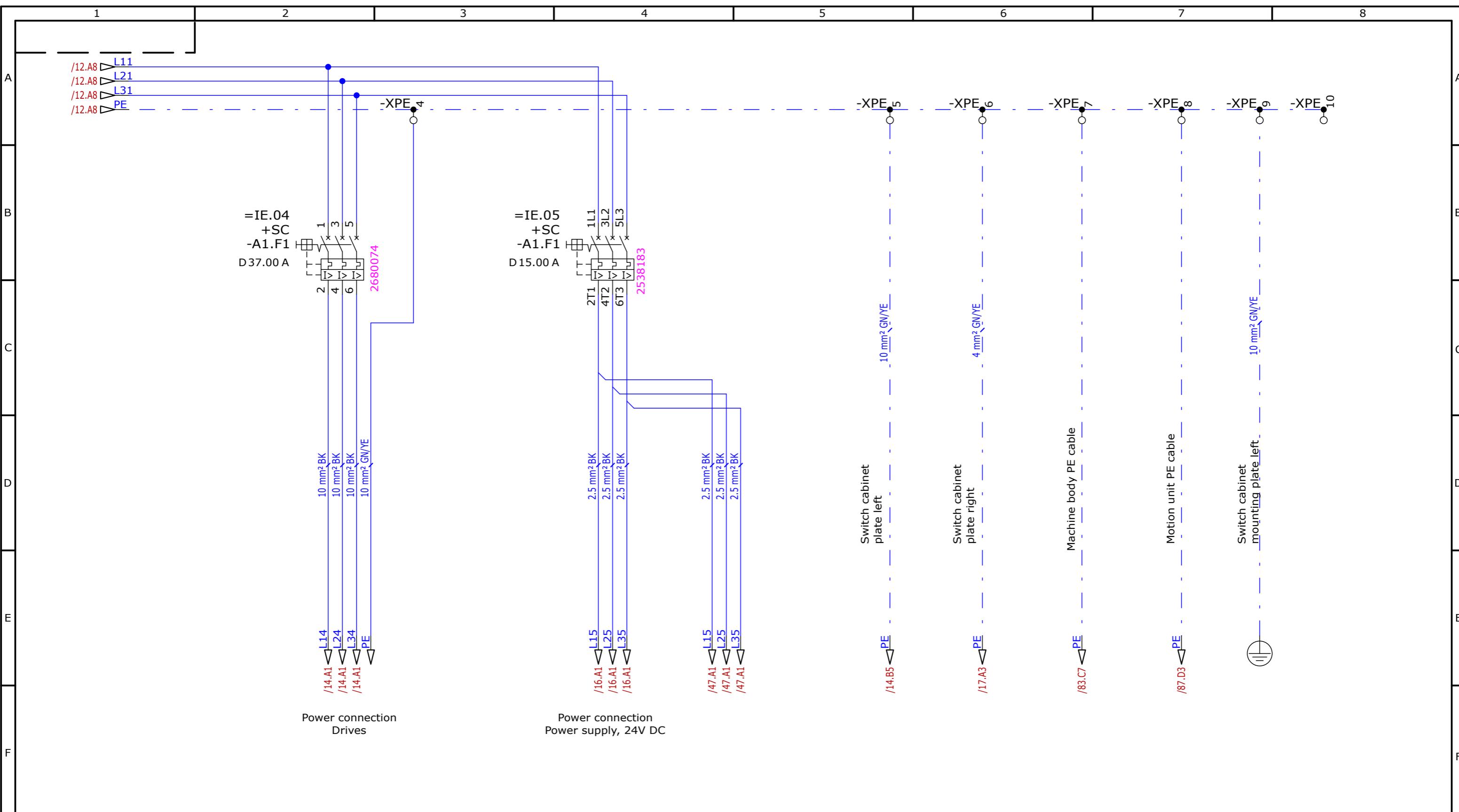
 TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE	Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE	Contents								
		34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU		Mains supply								
	Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number 93630-5-201	Doc. part 002	Version 03	Status RE	Id number 2815136	Sheet 10 of 111	Type E1	Format A3

1	2	3	4	5	6	7	8																																														
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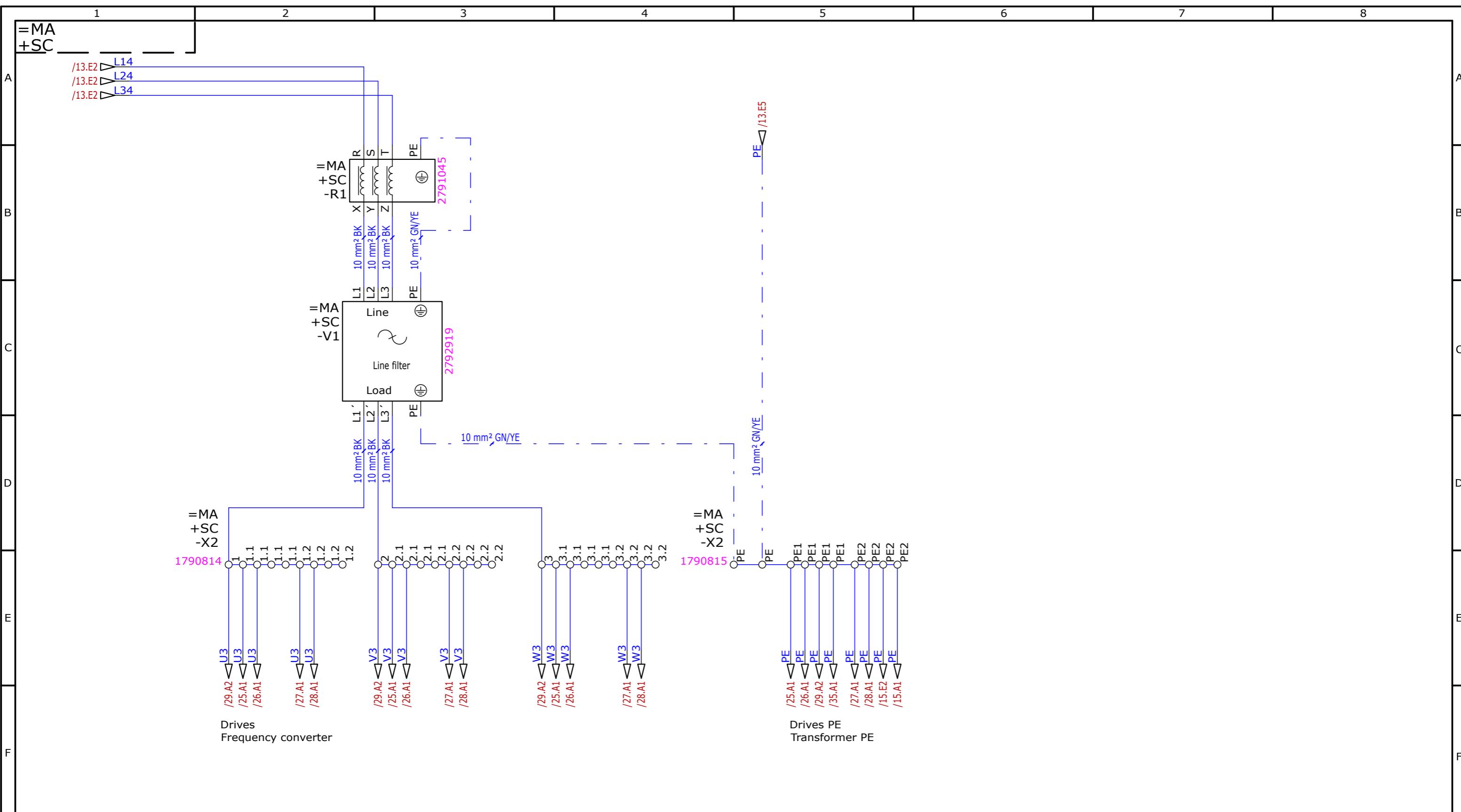
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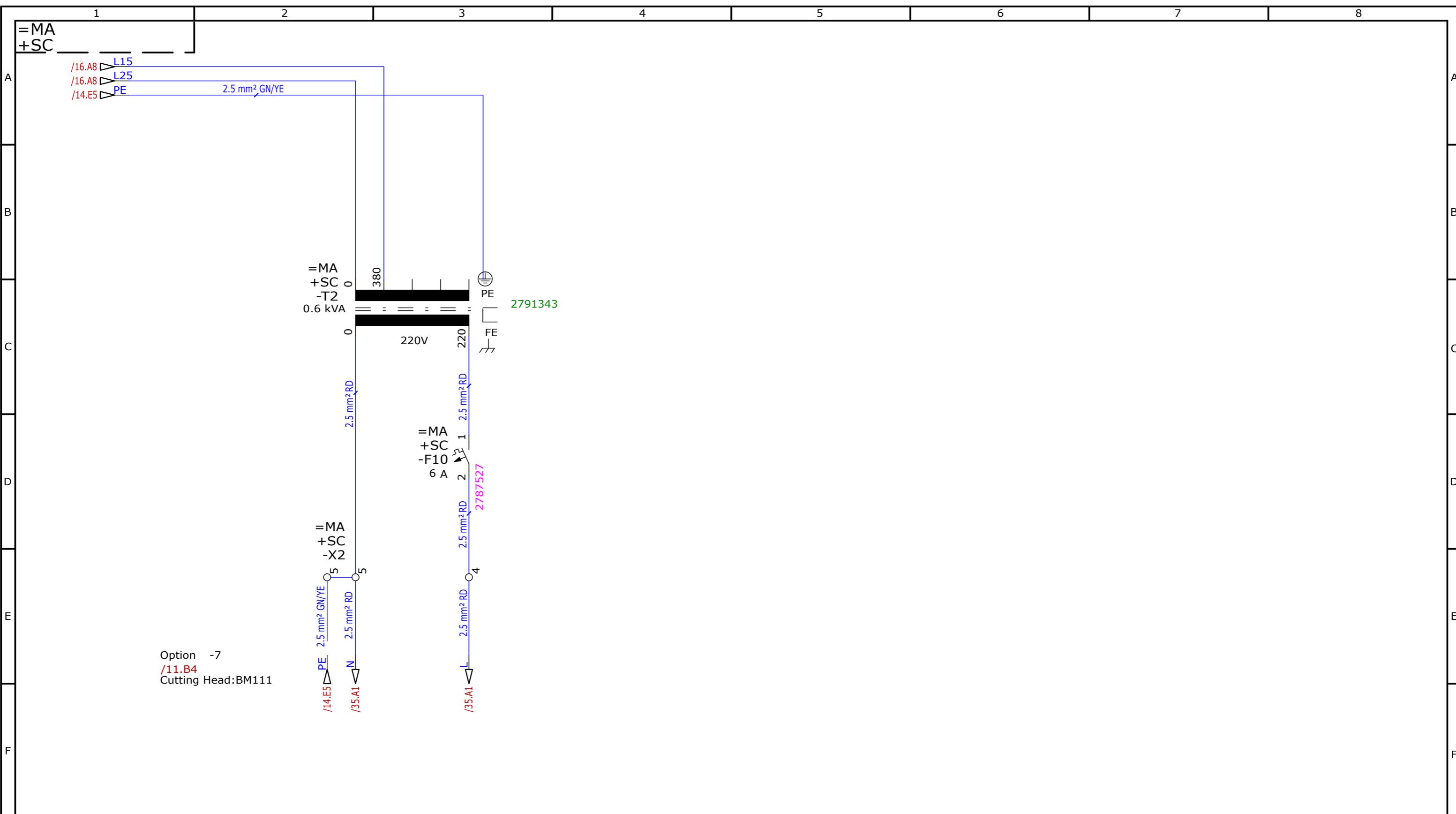
TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE	Change number	Edited	Reviewed	Approved	Designation			Contents Power supply							
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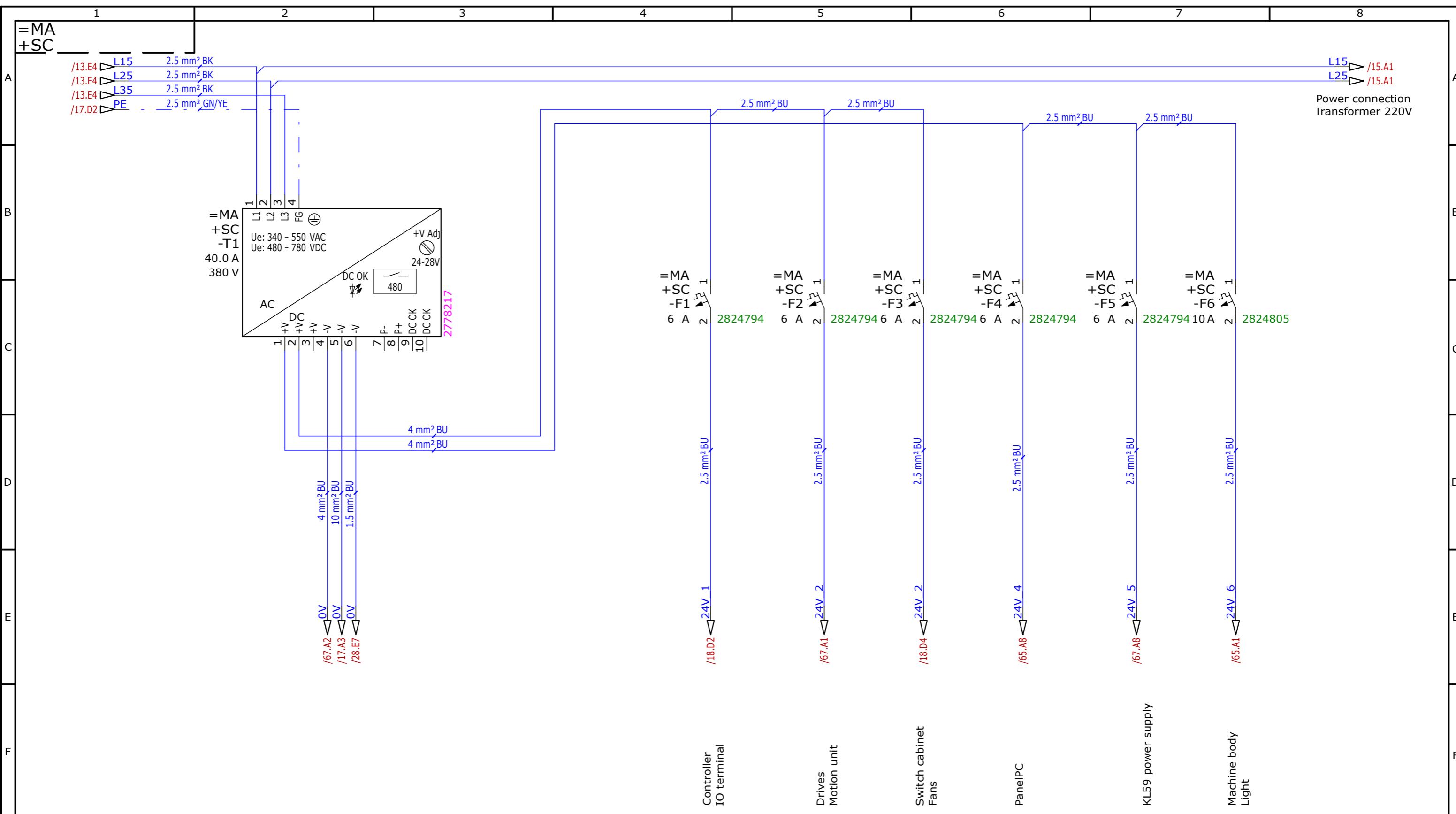
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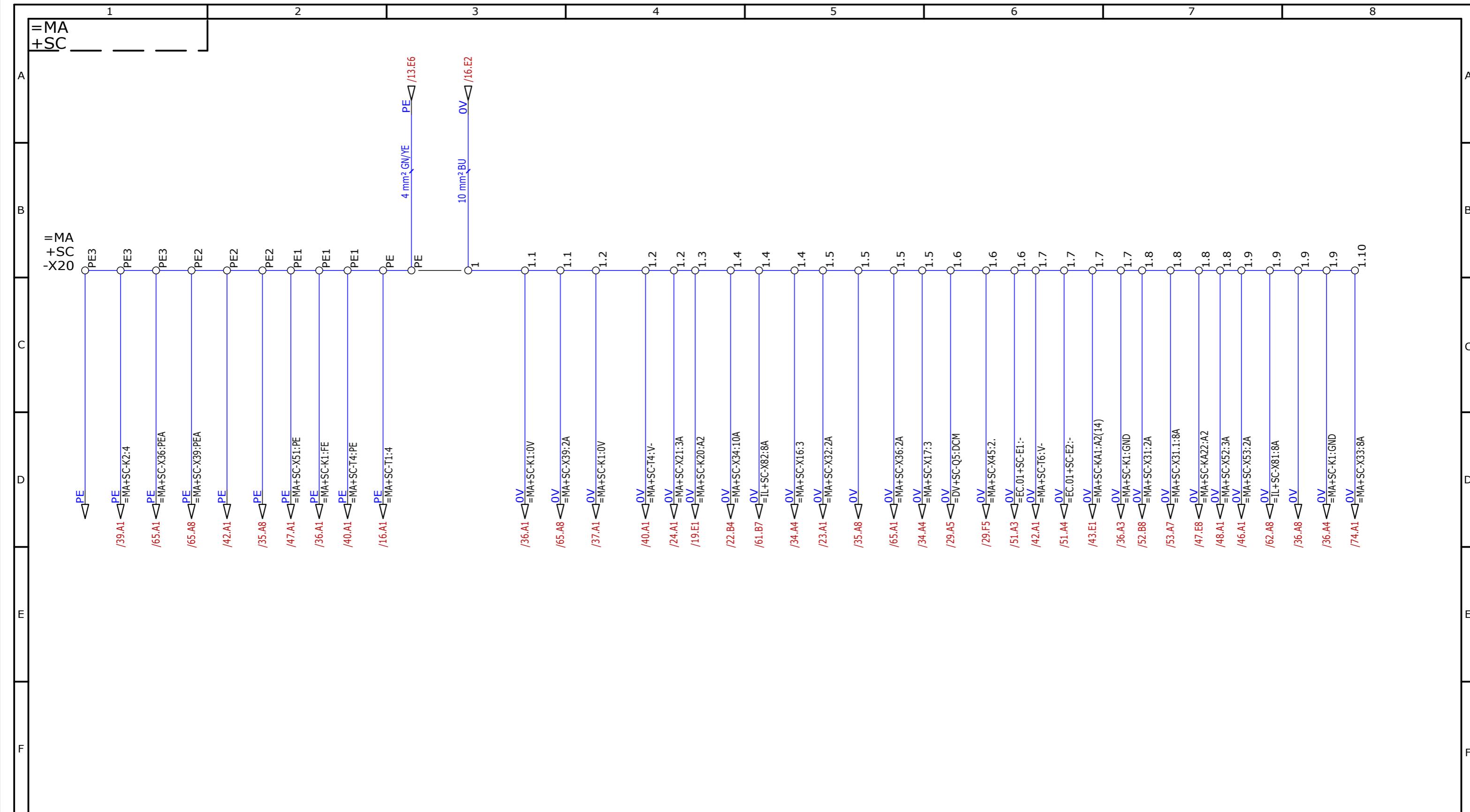
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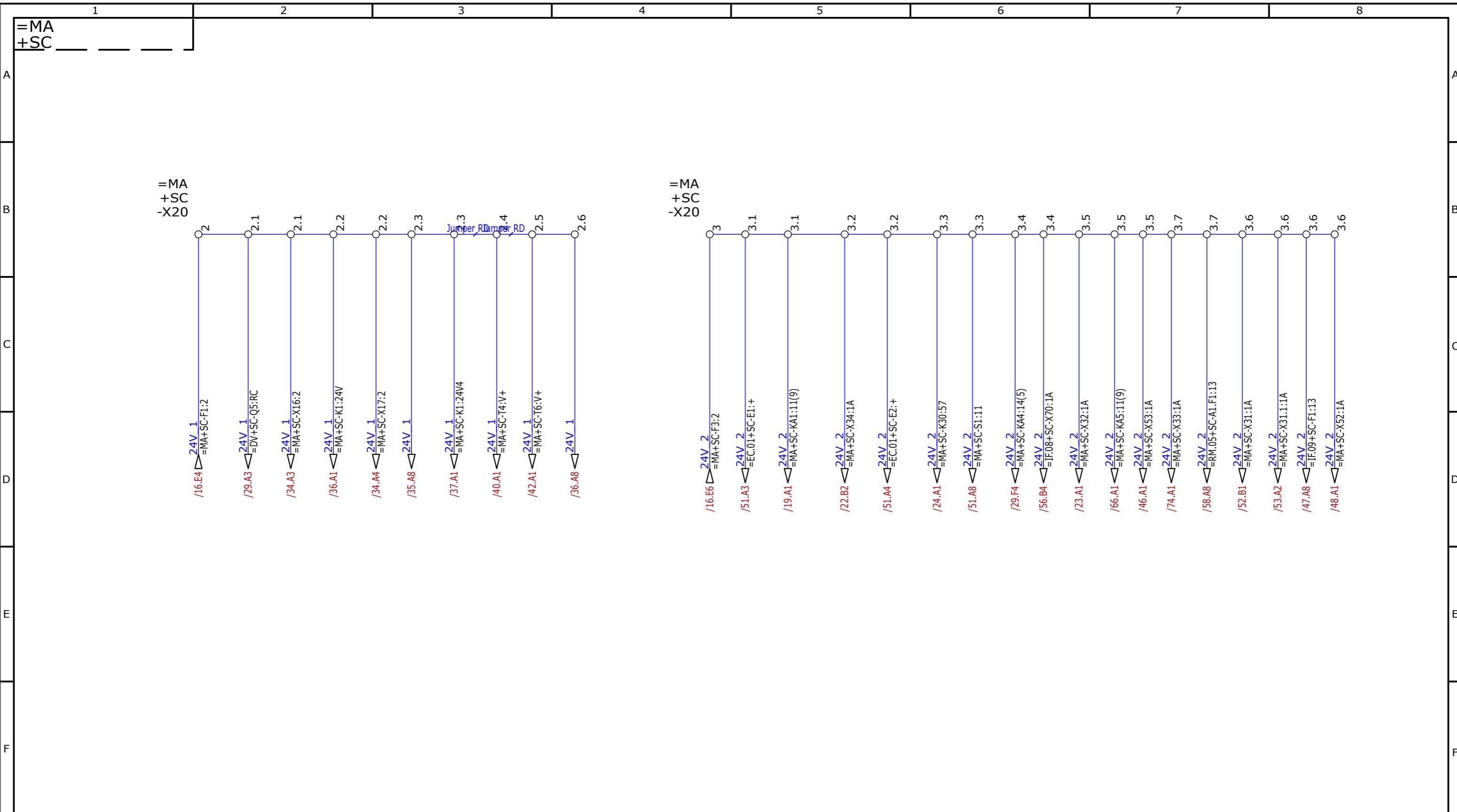
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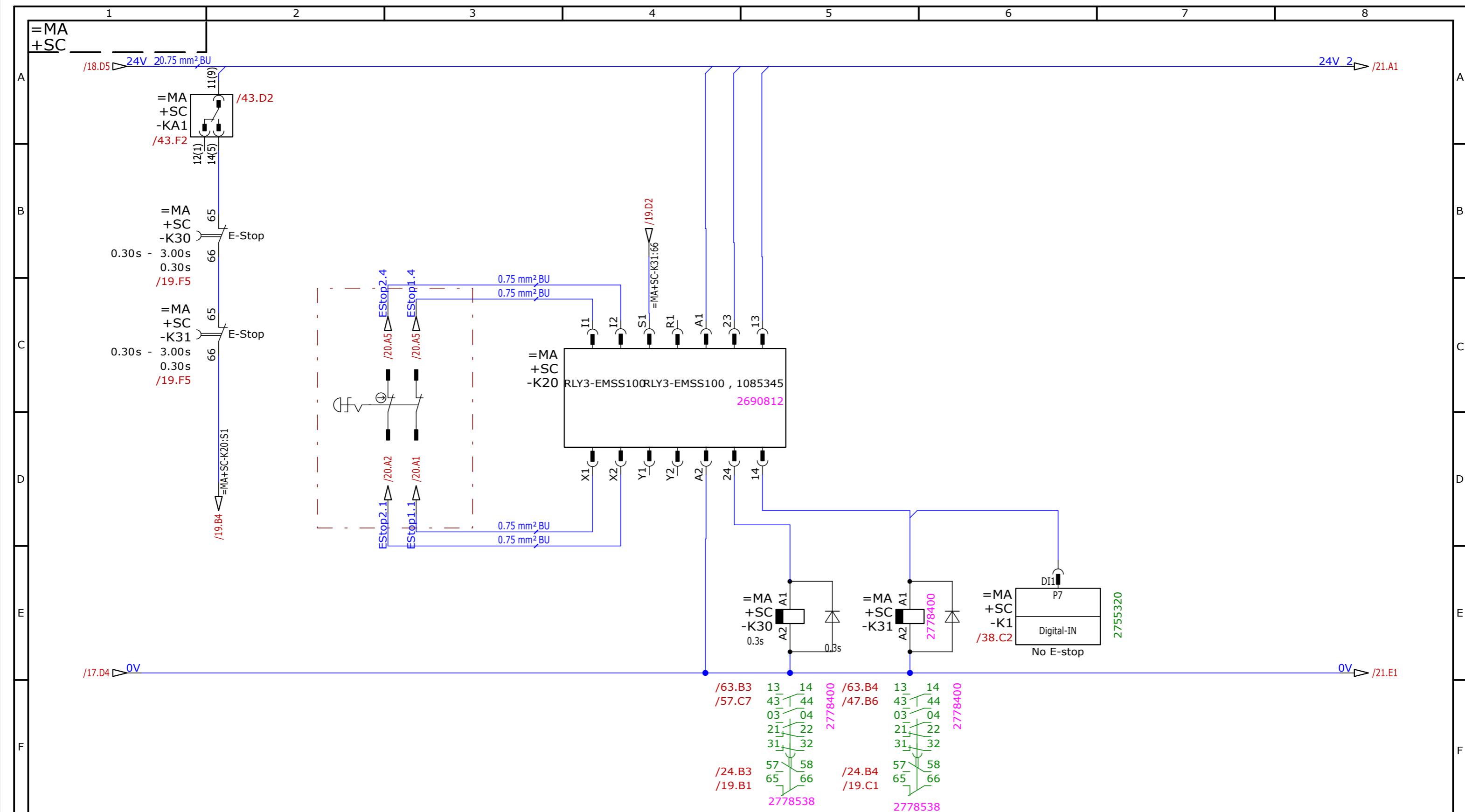
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		Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S					Document number 93630-5-201	Doc. part 002	Version 03	Status RE	Id number 2815136	Sheet 16 of 111	Type E1	Format A3				



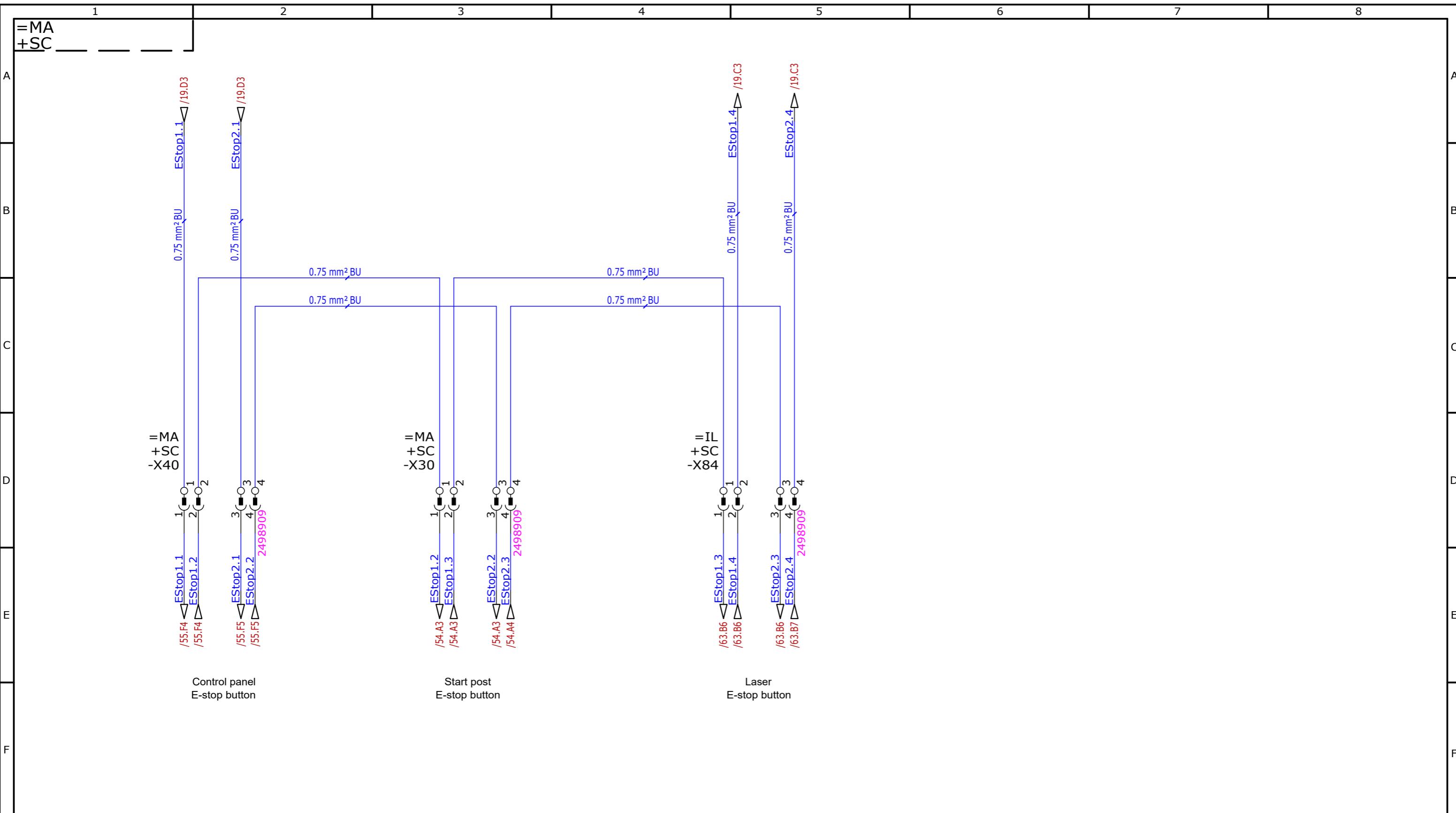
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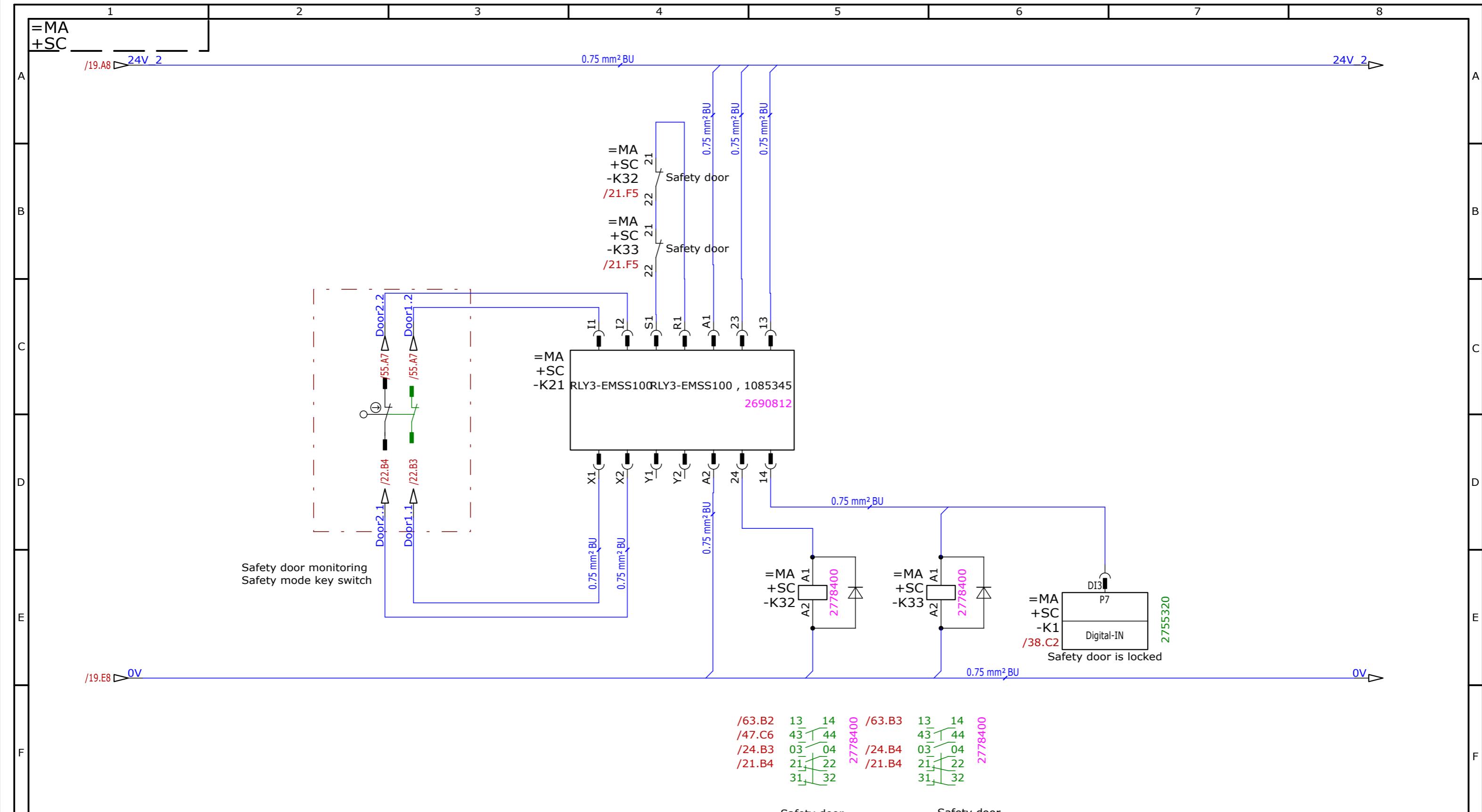
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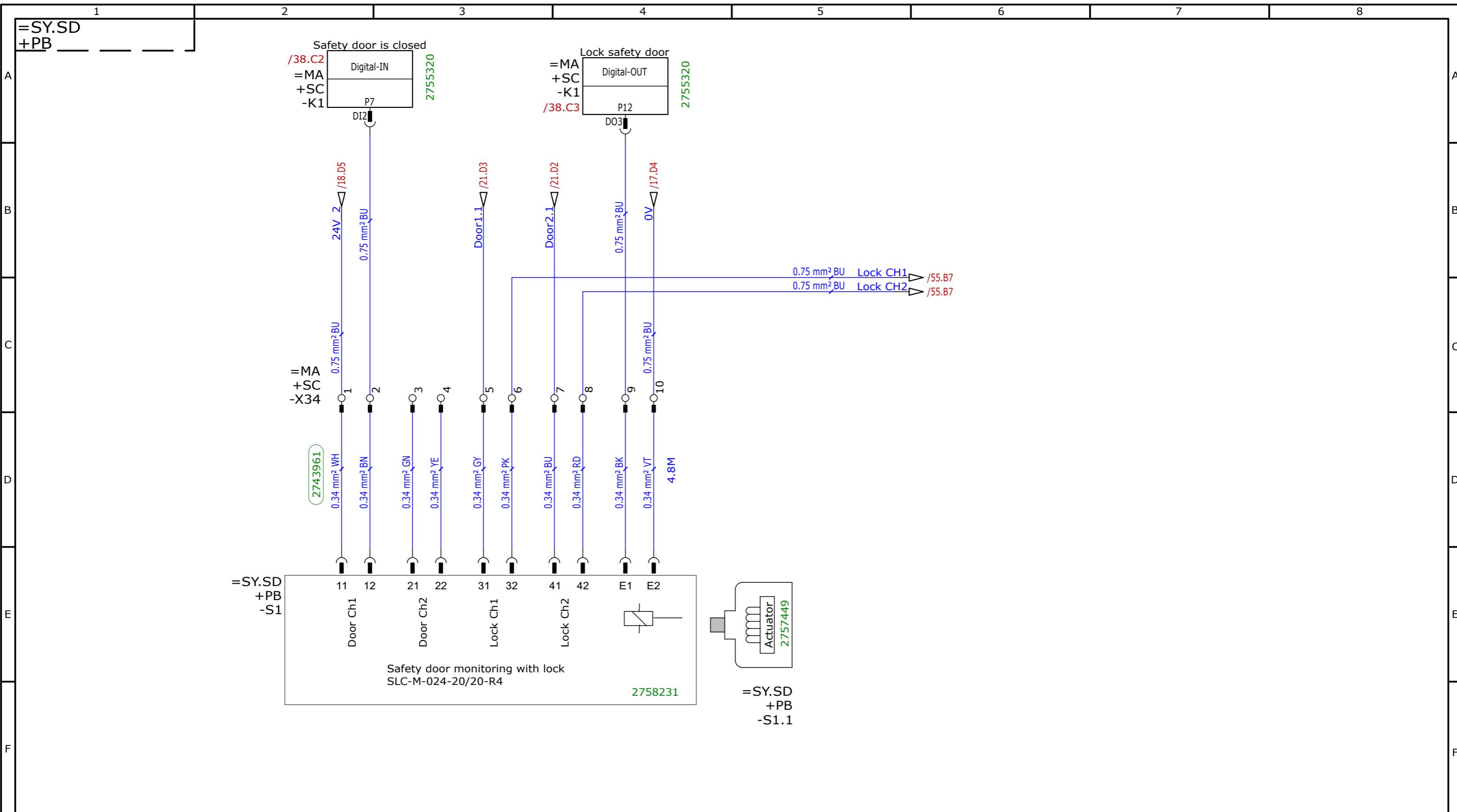
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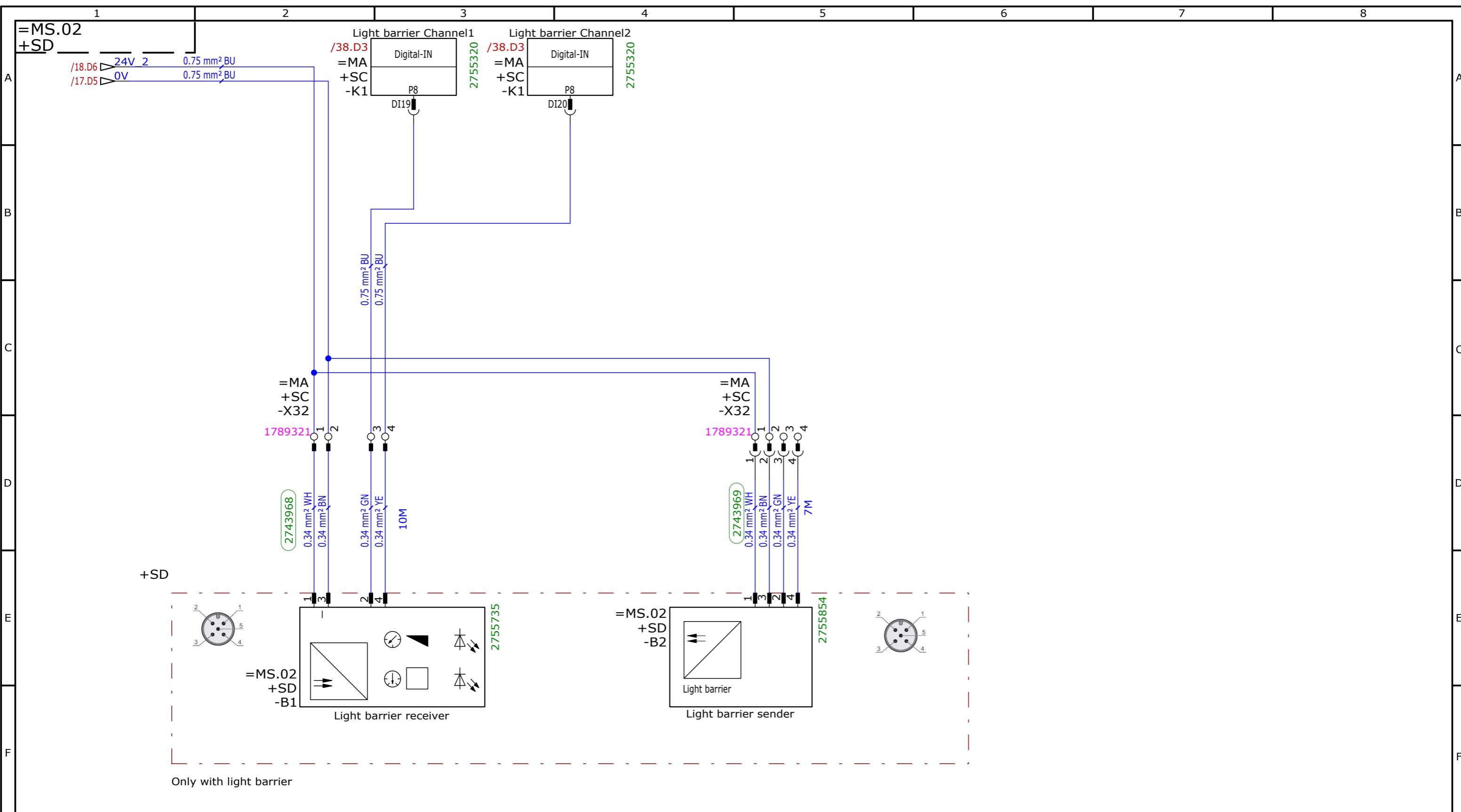
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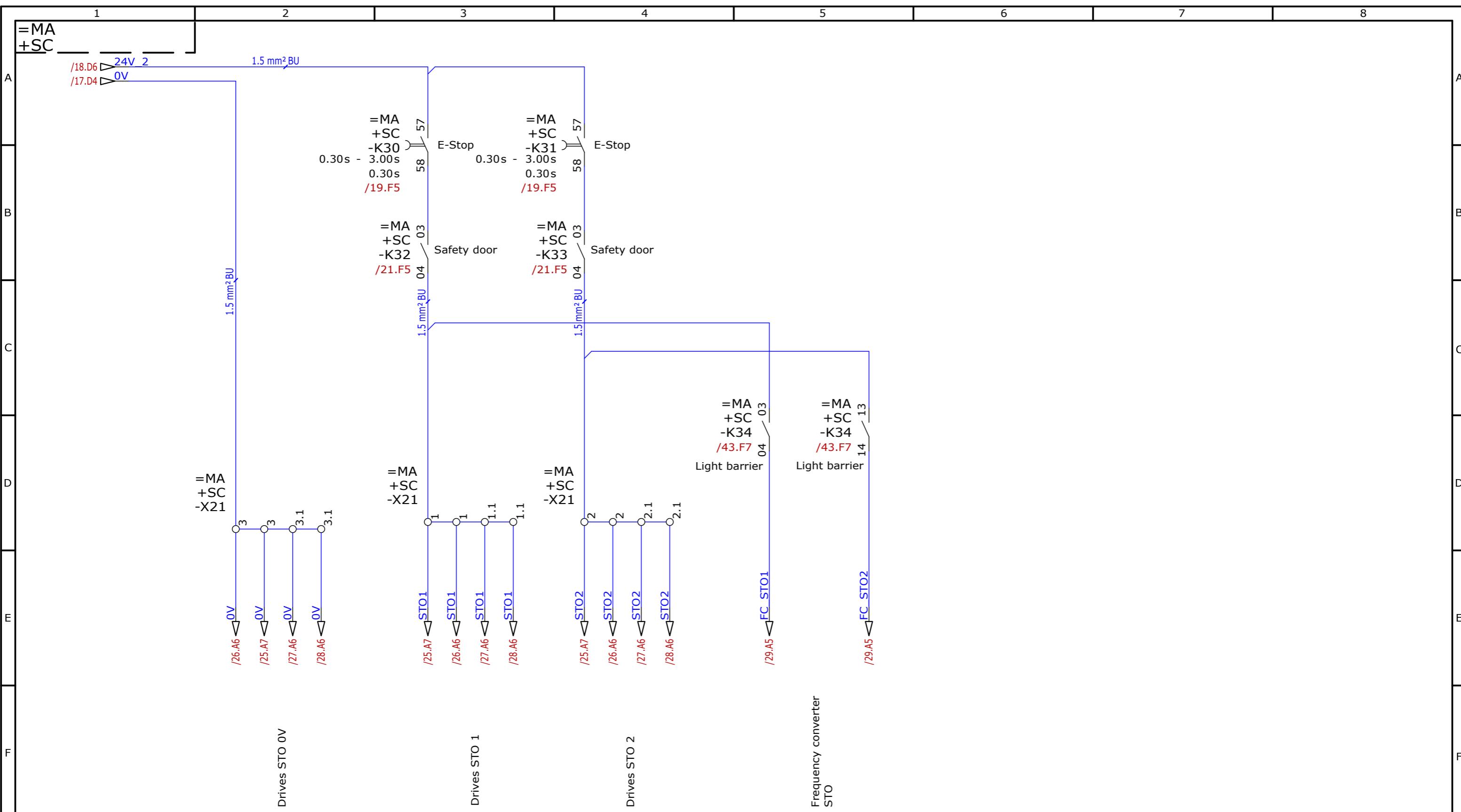
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	Project number	Vers.proj.	Doc.type	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format	
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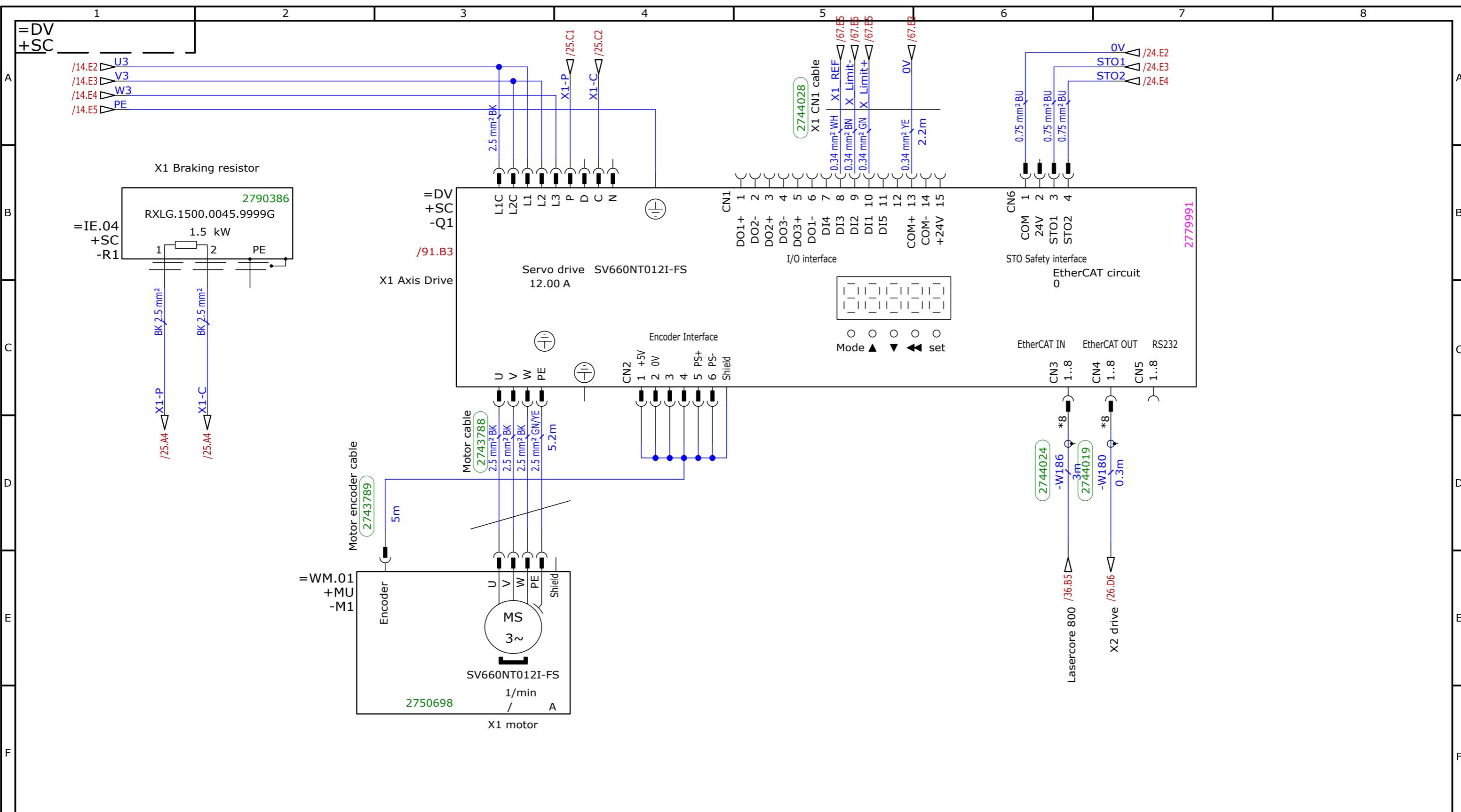
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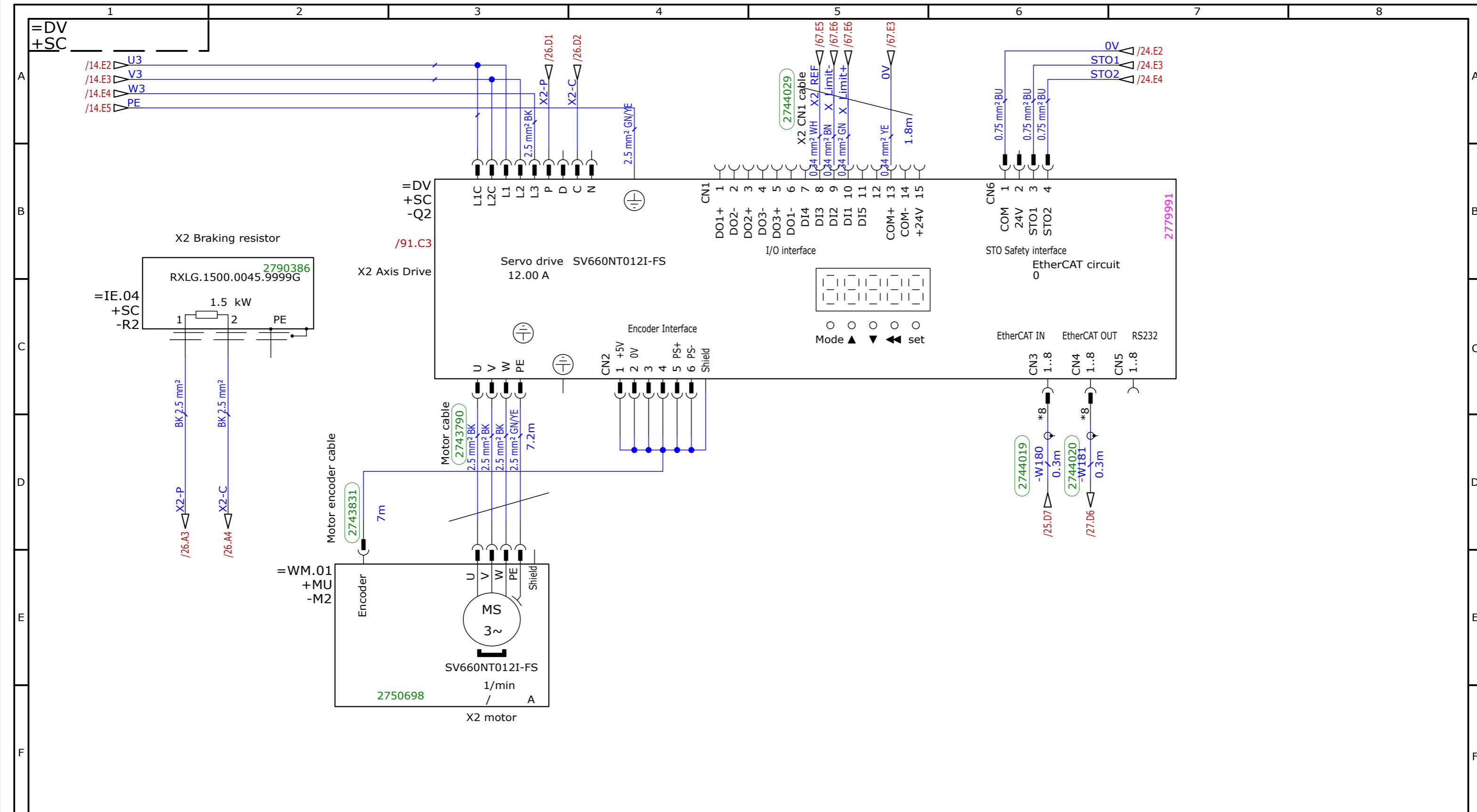
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		Project number	Vers.proj.	Doc.type	Original record	Document number	Doc. part	Version	Status	Id number	Sheet	Type
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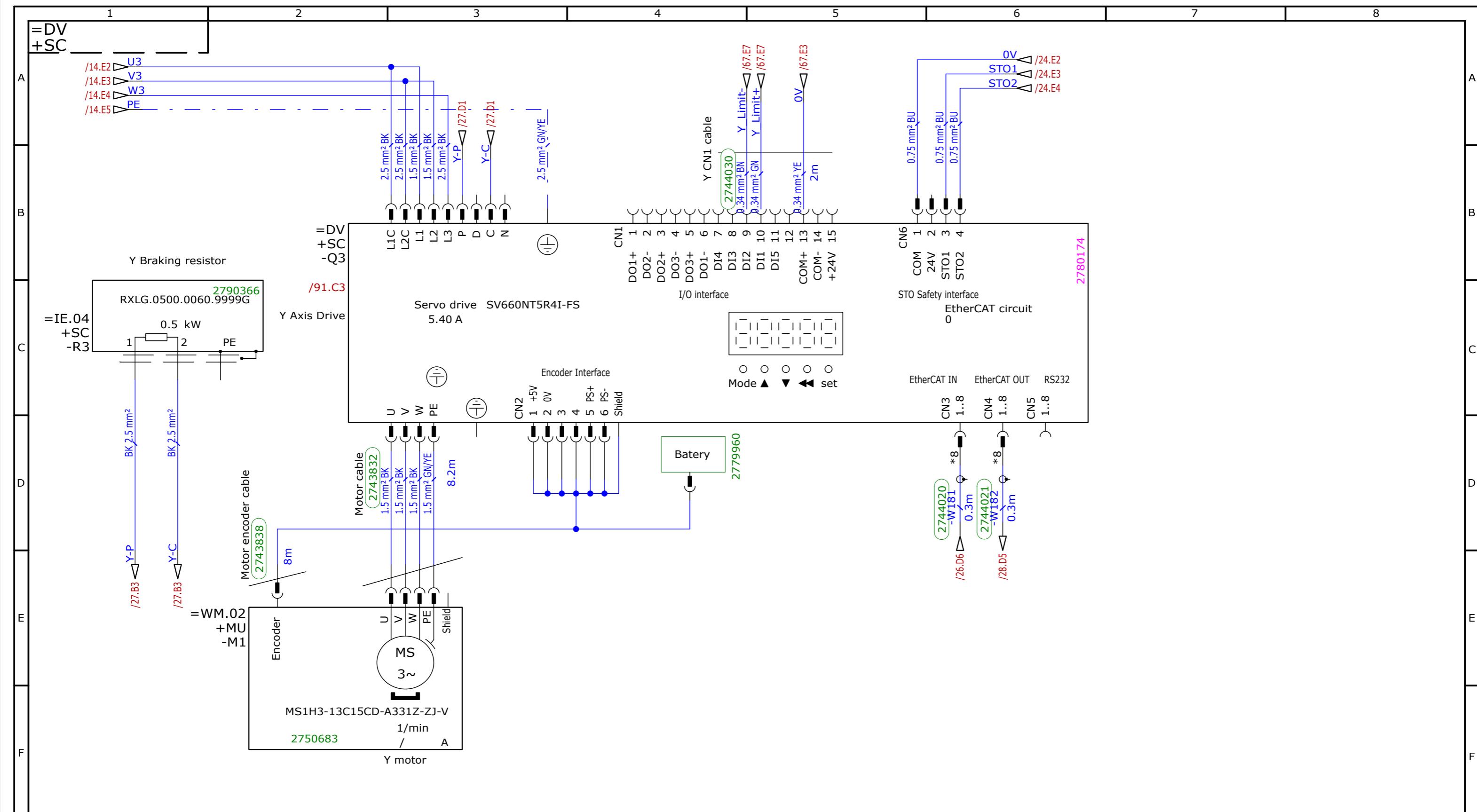
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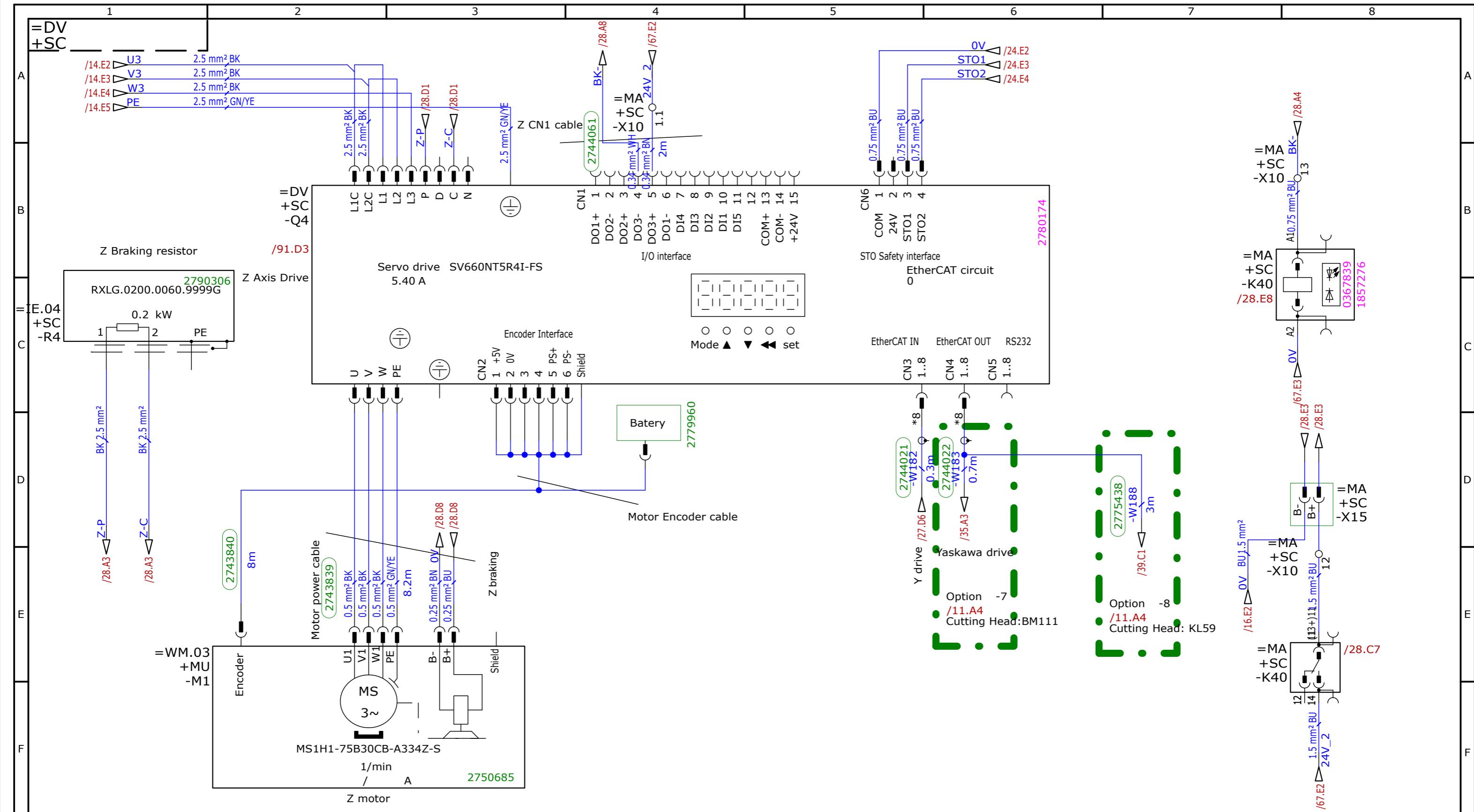
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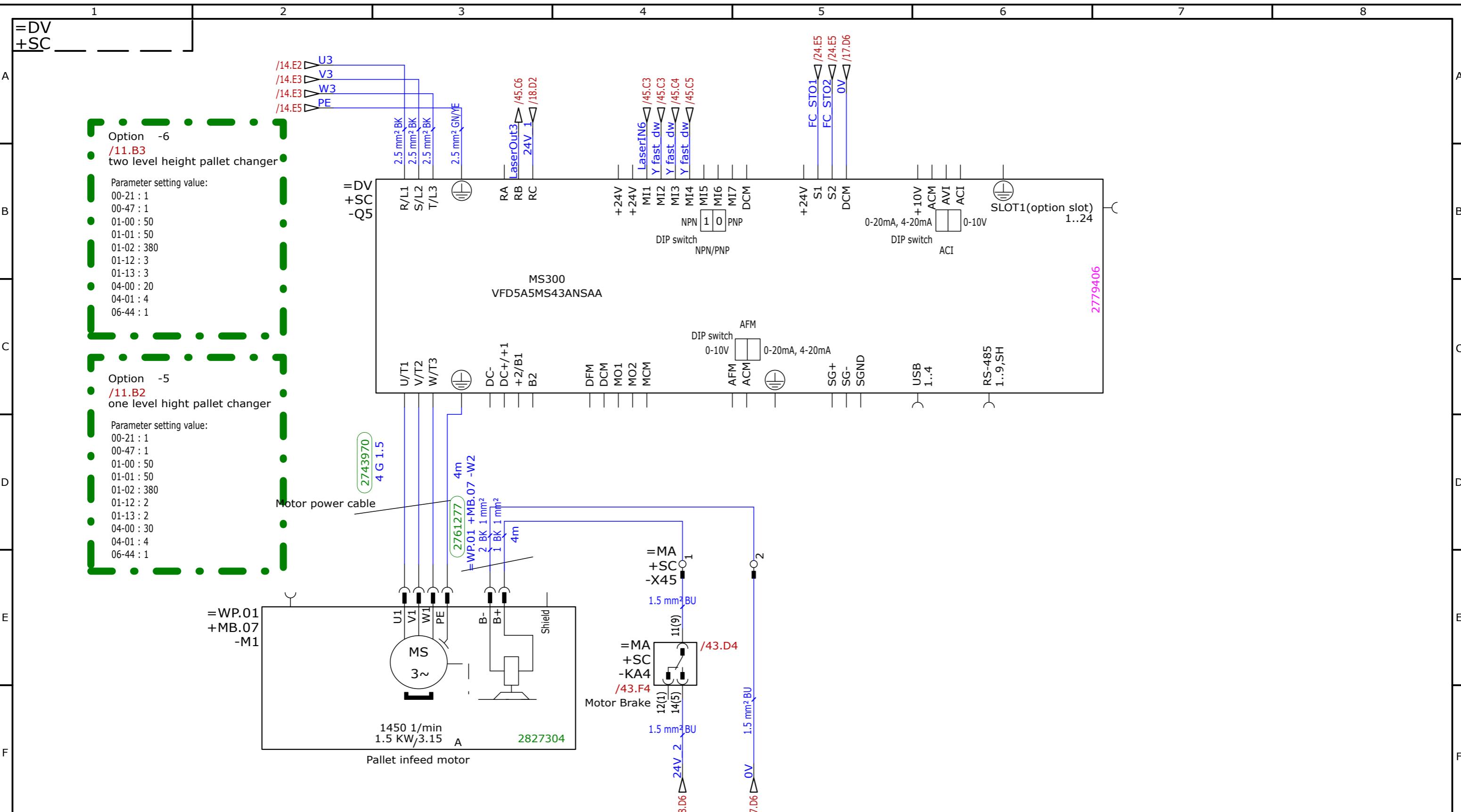


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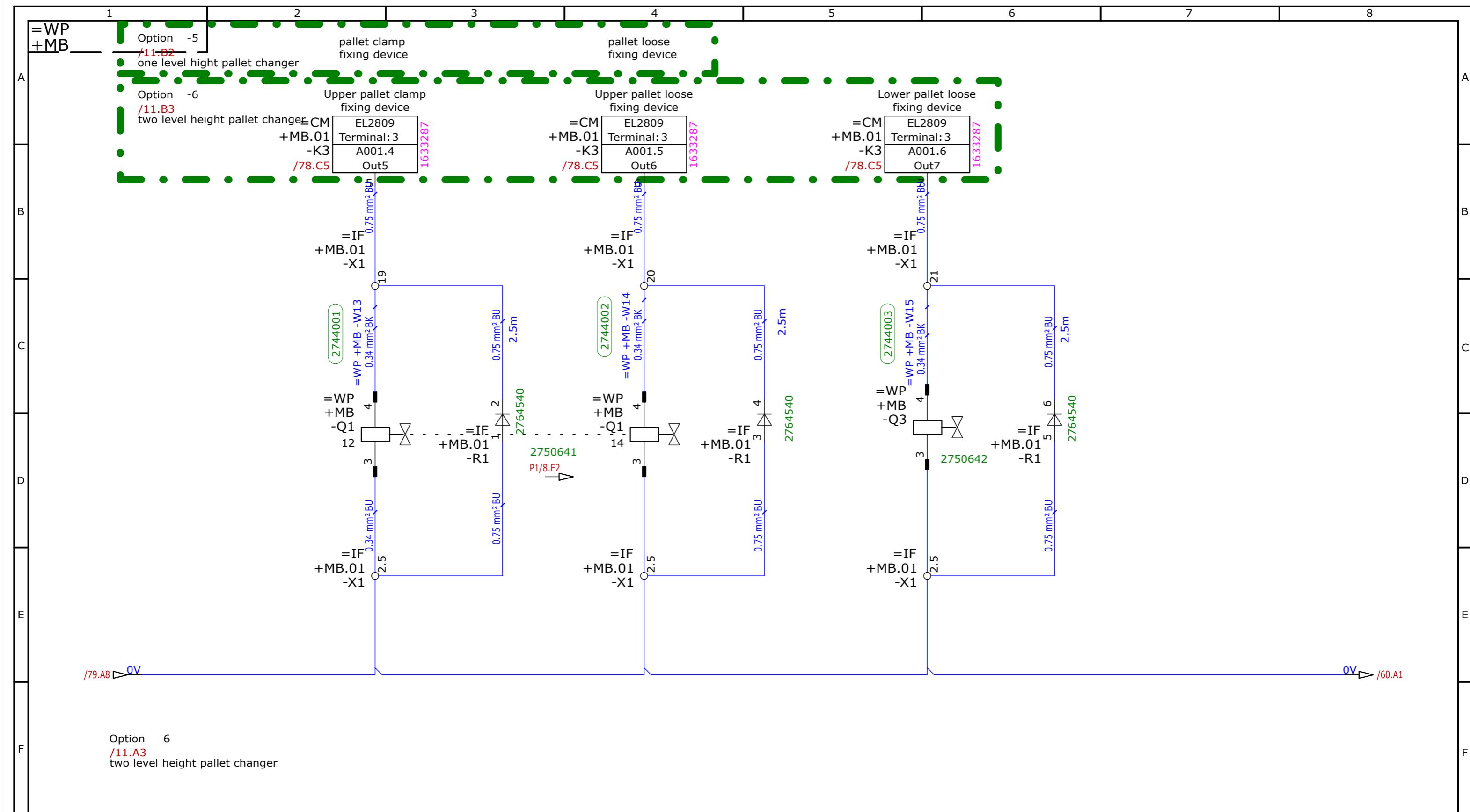


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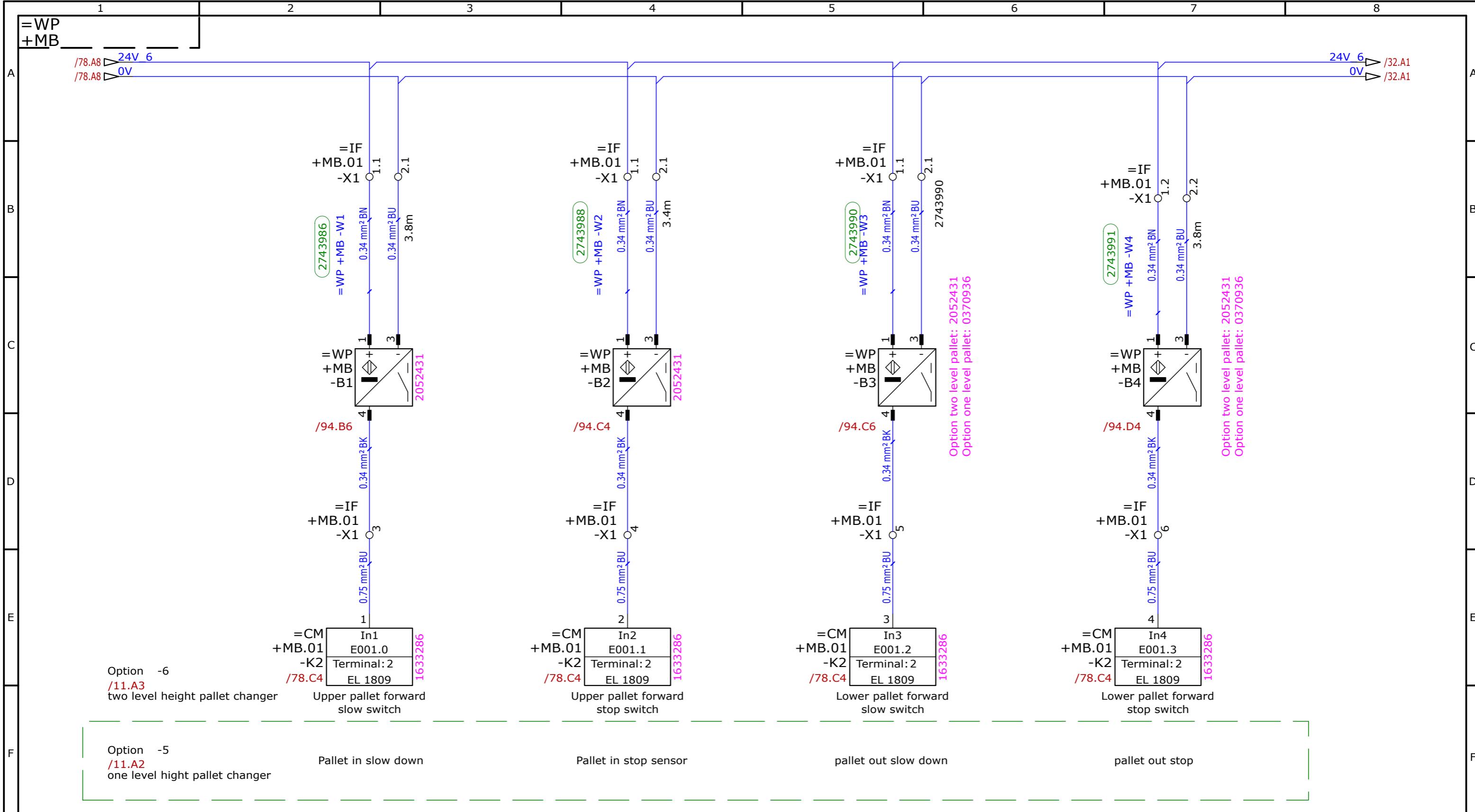




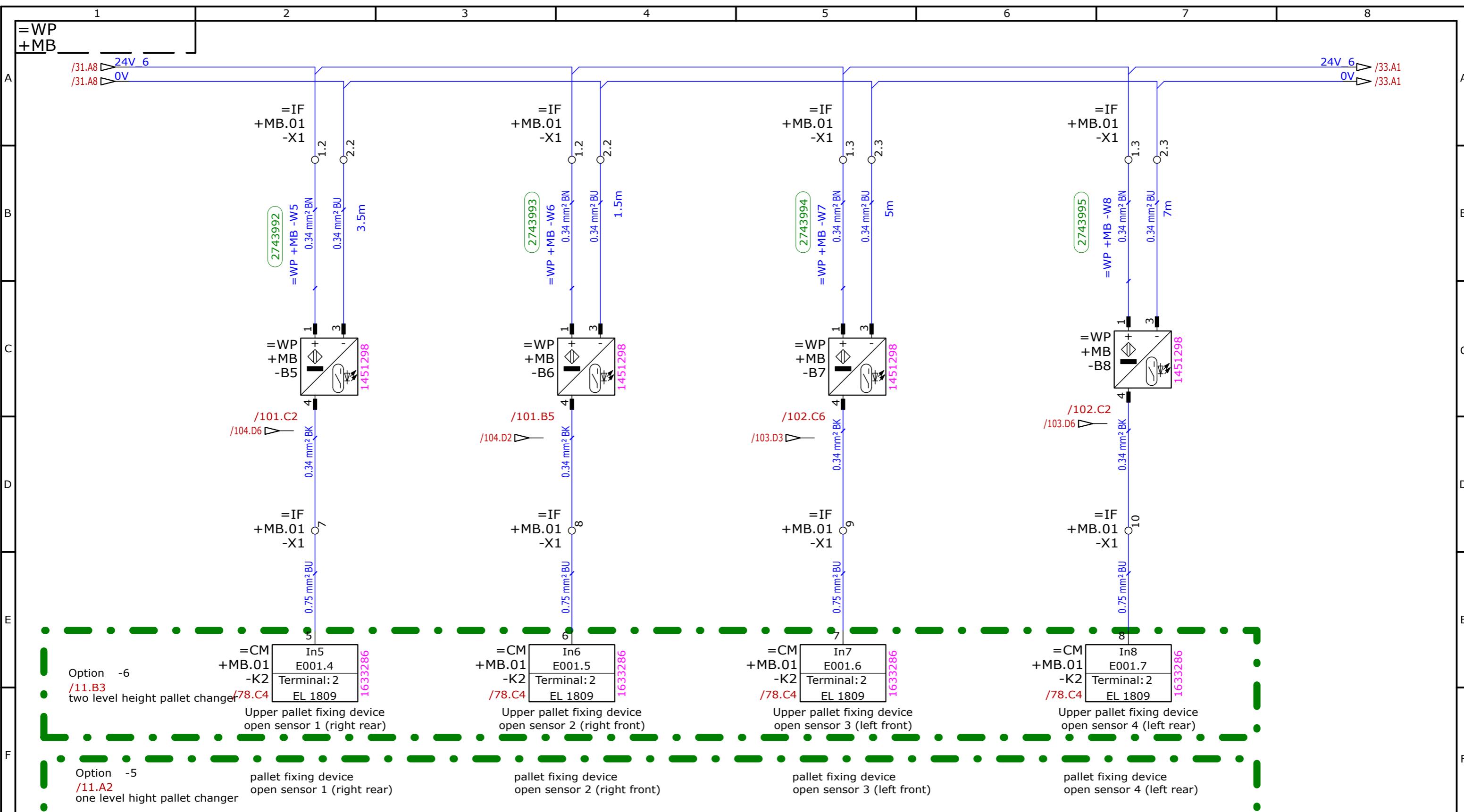
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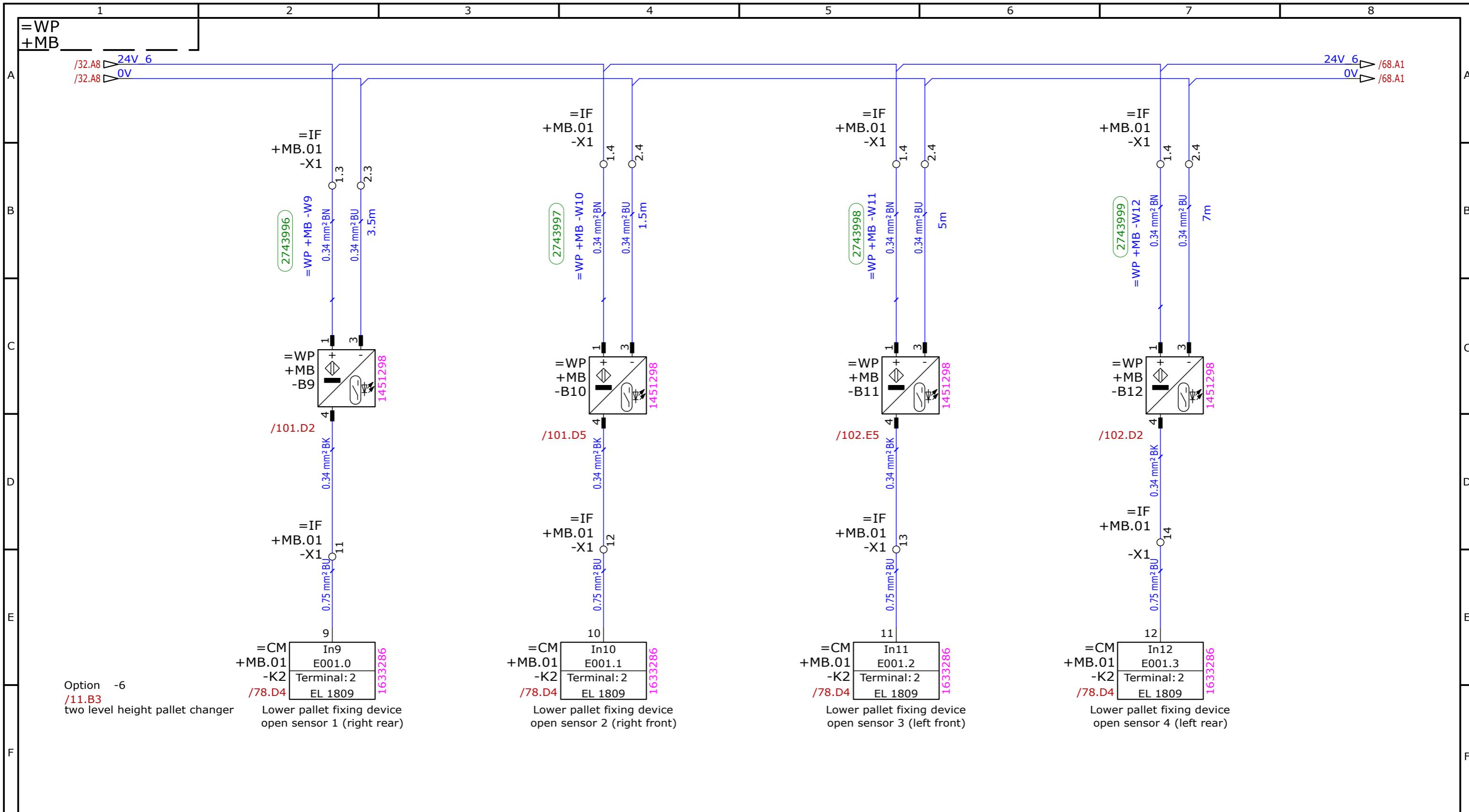
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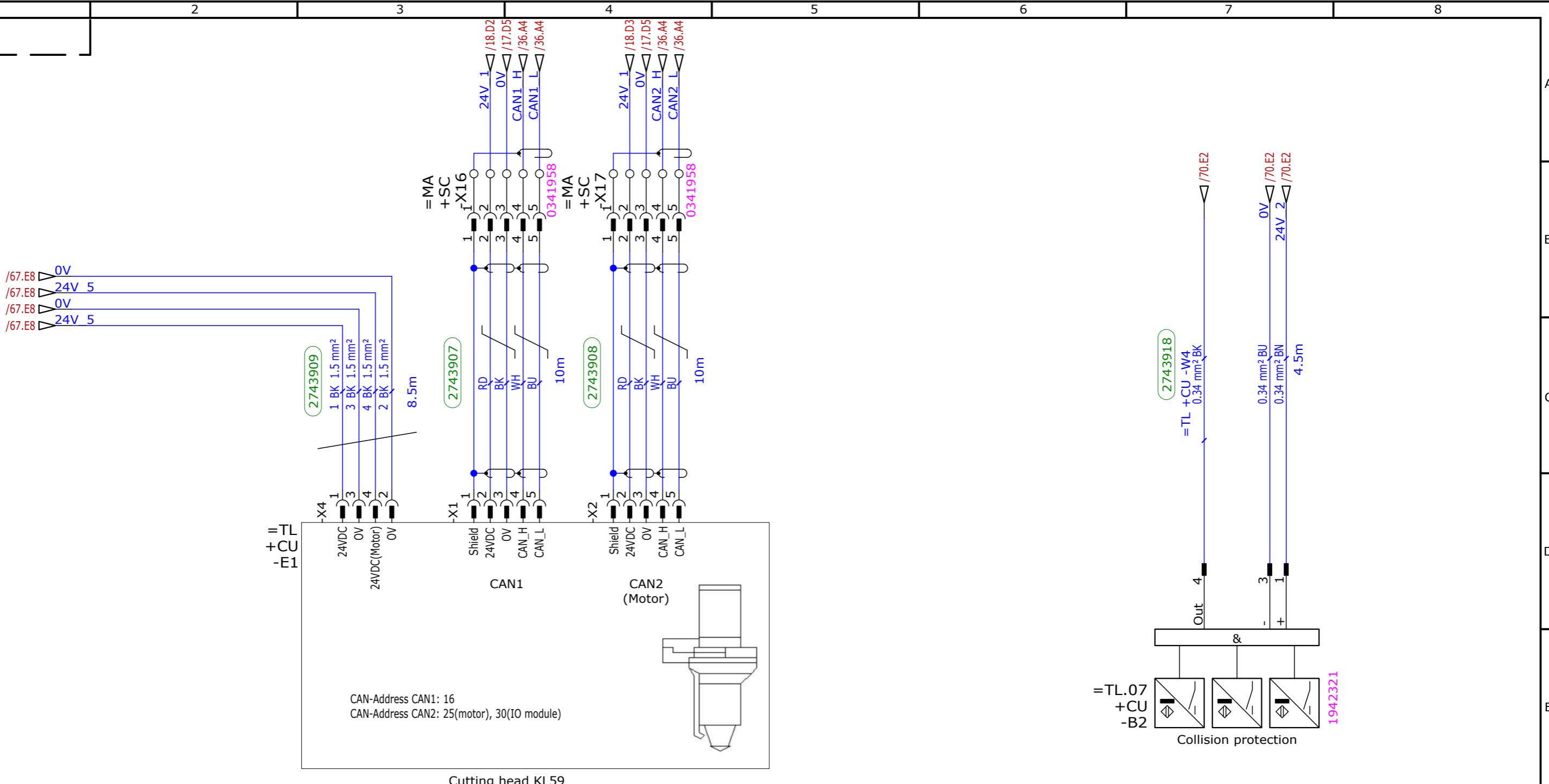
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TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE	Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE	Contents					Upper Pallet clamping Sensors (option: two level pallet)			
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		Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record		Document number 93630-5-201	Doc. part 002	Version 03	Status RE	Id number 2815136	Sheet 32 of 111	Type E1	Format A3	

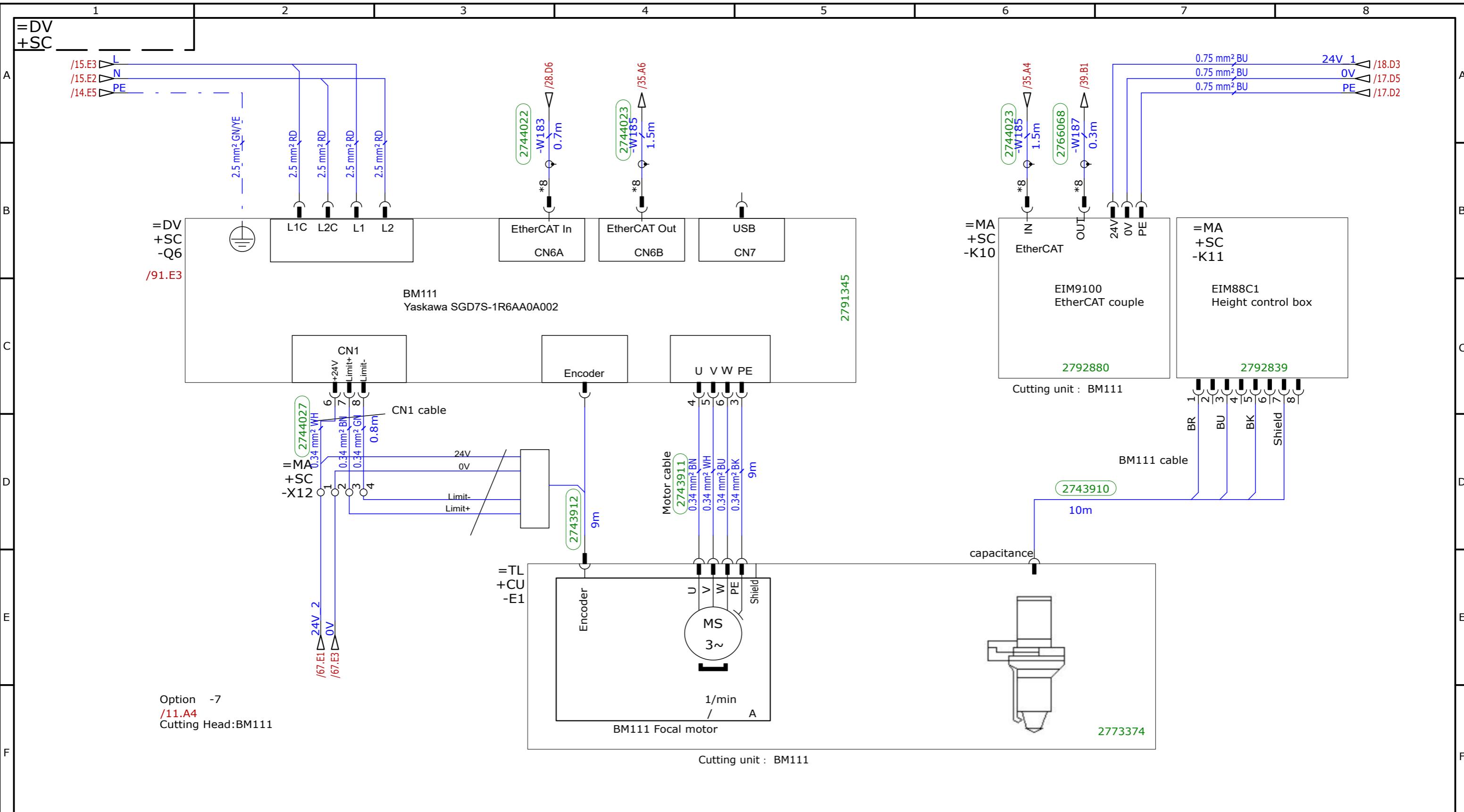


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					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
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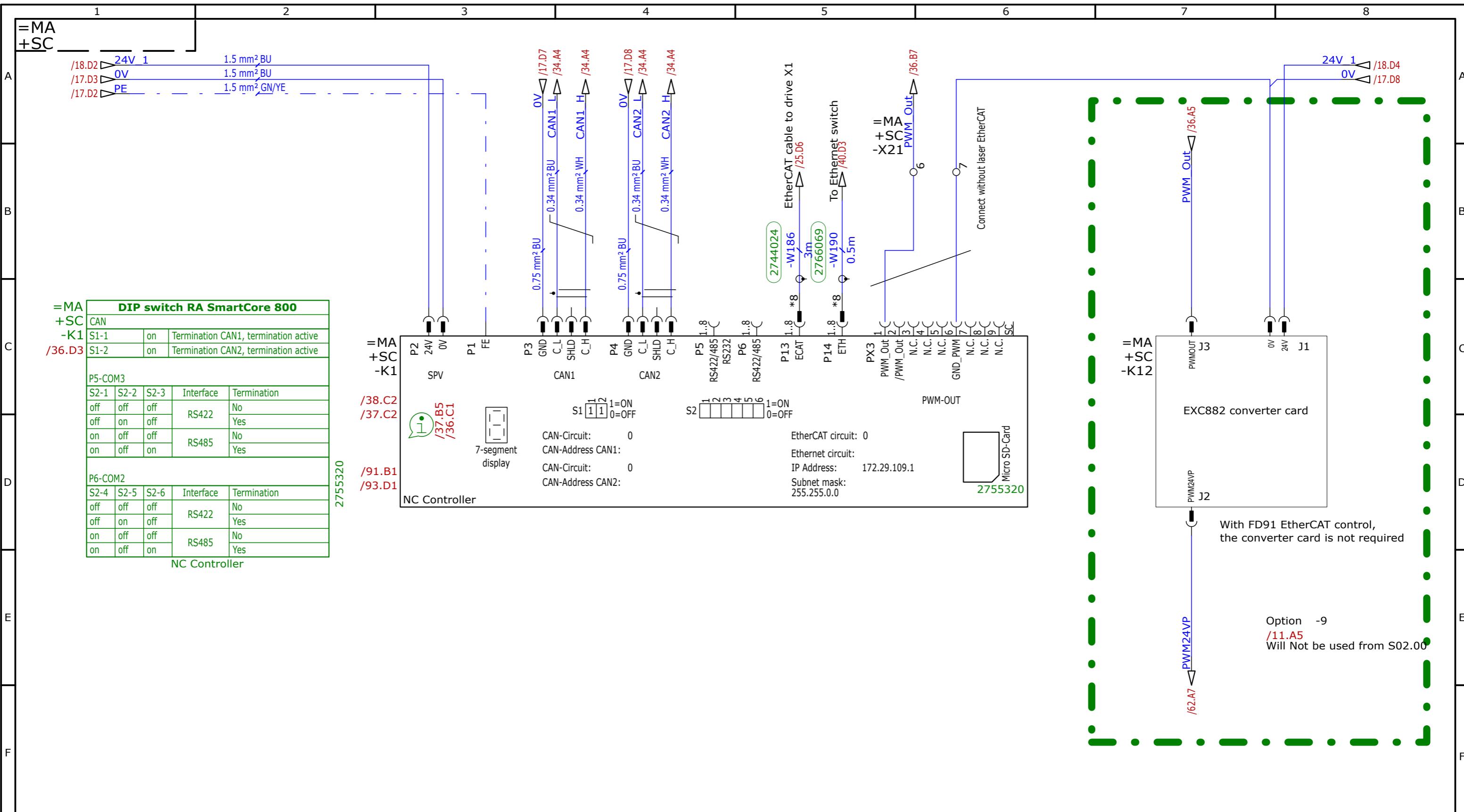


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 Cutting Head: KL59

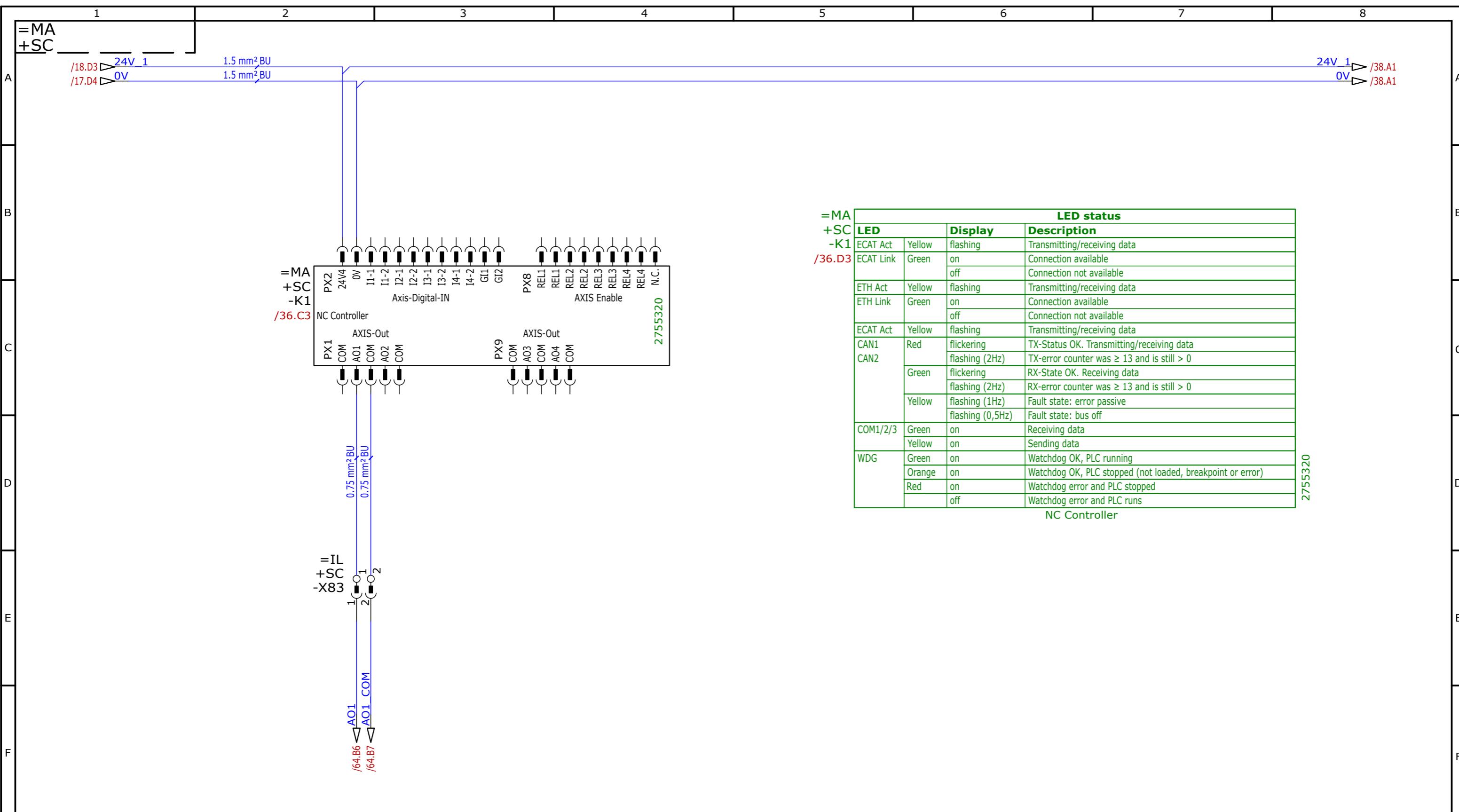
TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE			Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE			Contents Cutting unit KL59				
					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU								
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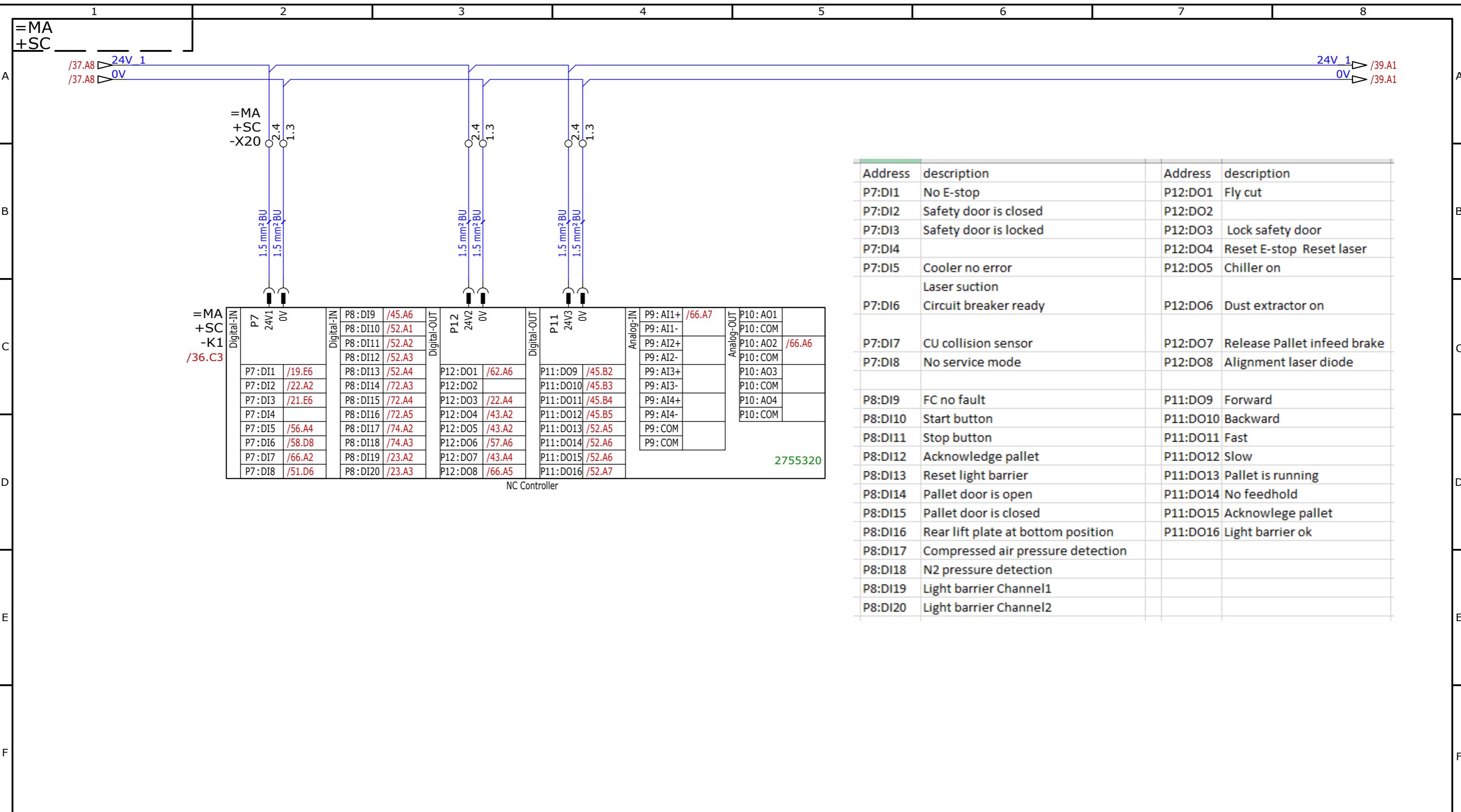
TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China	Project-designation Set of schematics TruLaser 1000 fiber BE	Change number	Edited	Reviewed	Approved	Designation	Contents Cutting unit BM111/Focal drive (option: BM111)					
			34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Circuit diagram TruLaser 1000 fiber BE	Document number	Doc. part	Version	Status	Id number	Sheet
			Project number	Vers.proj.	Doc.type	Original record	93630-5-201	93630-5-201	002	03	RE	2815136	35 of 111
			93630-5-E1	03	E3S	TCN521TE	TCN521TE	TCN520HU					E1



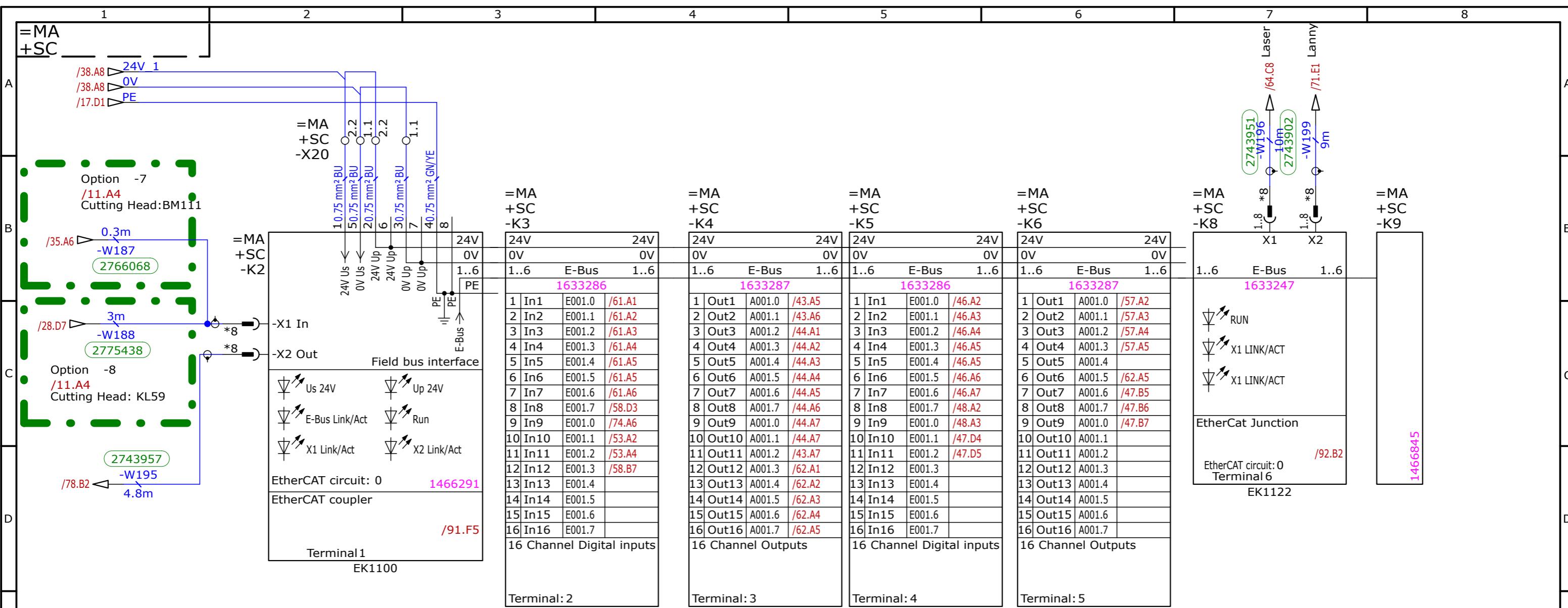
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					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Circuit diagram TruLaser 1000 fiber BE			Laser core 800				
		Project number	Vers.proj.	Doc.type	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
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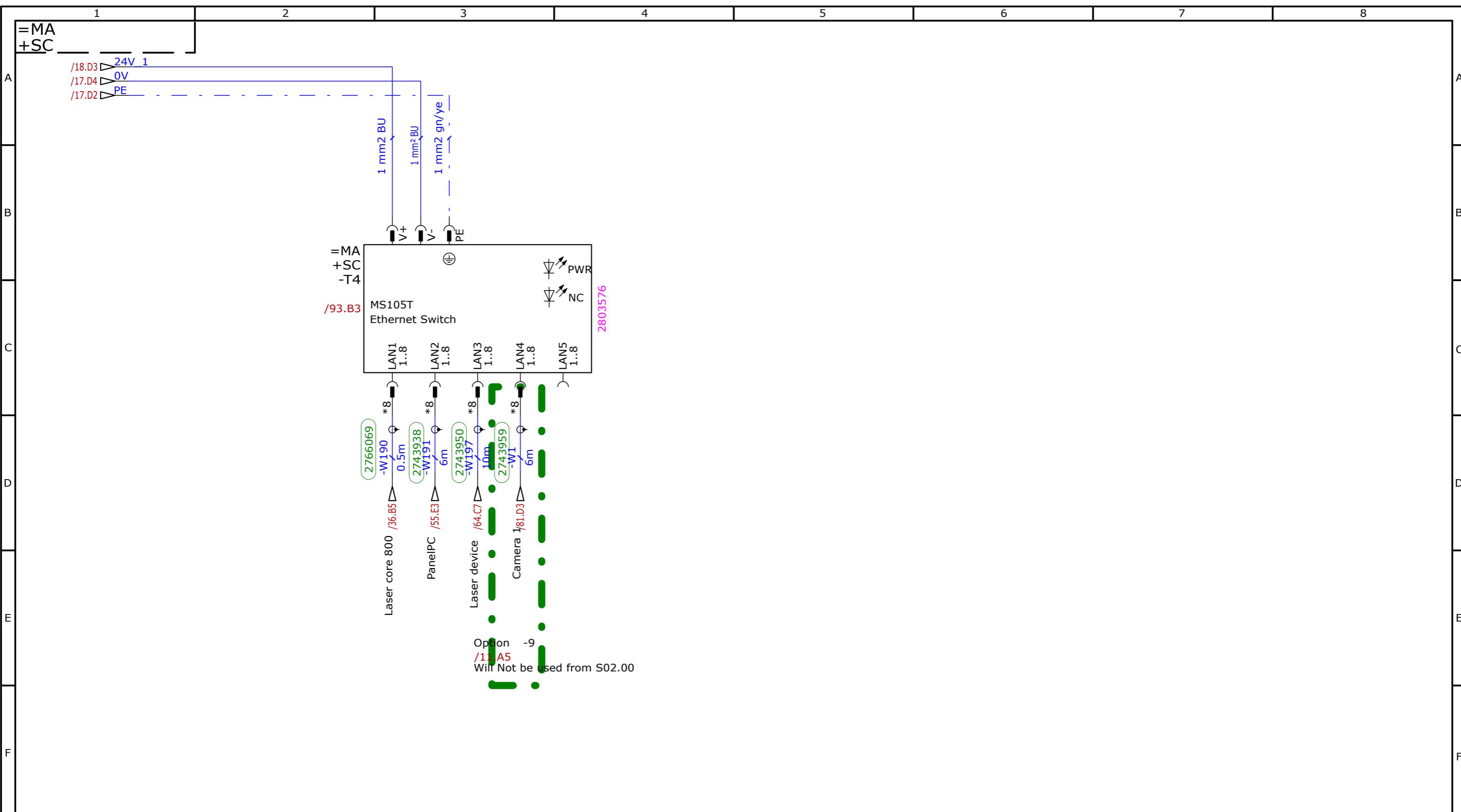
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					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU				Document number 93630-5-201	Doc. part 002	Version 03	Status RE	Id number 2815136
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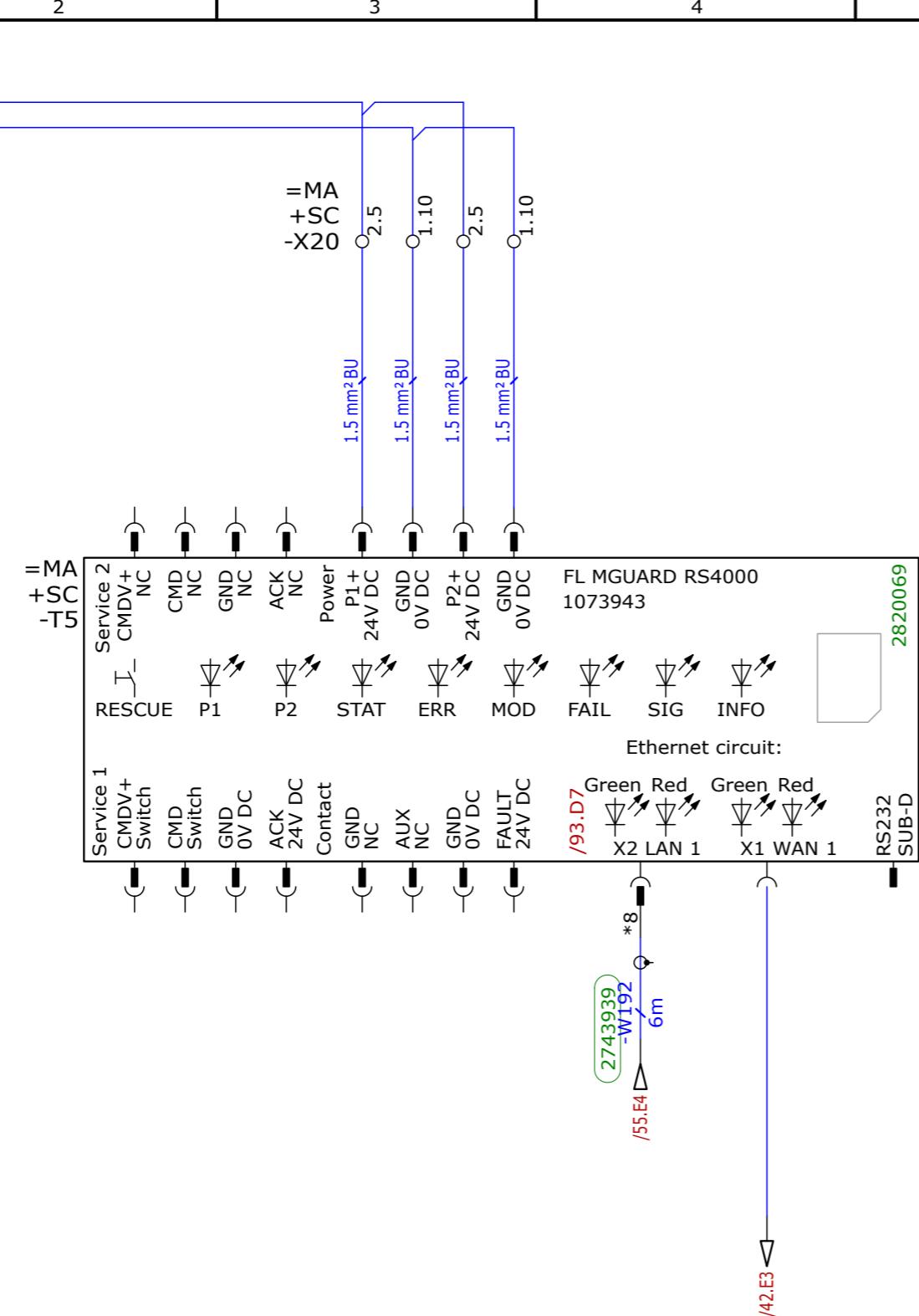
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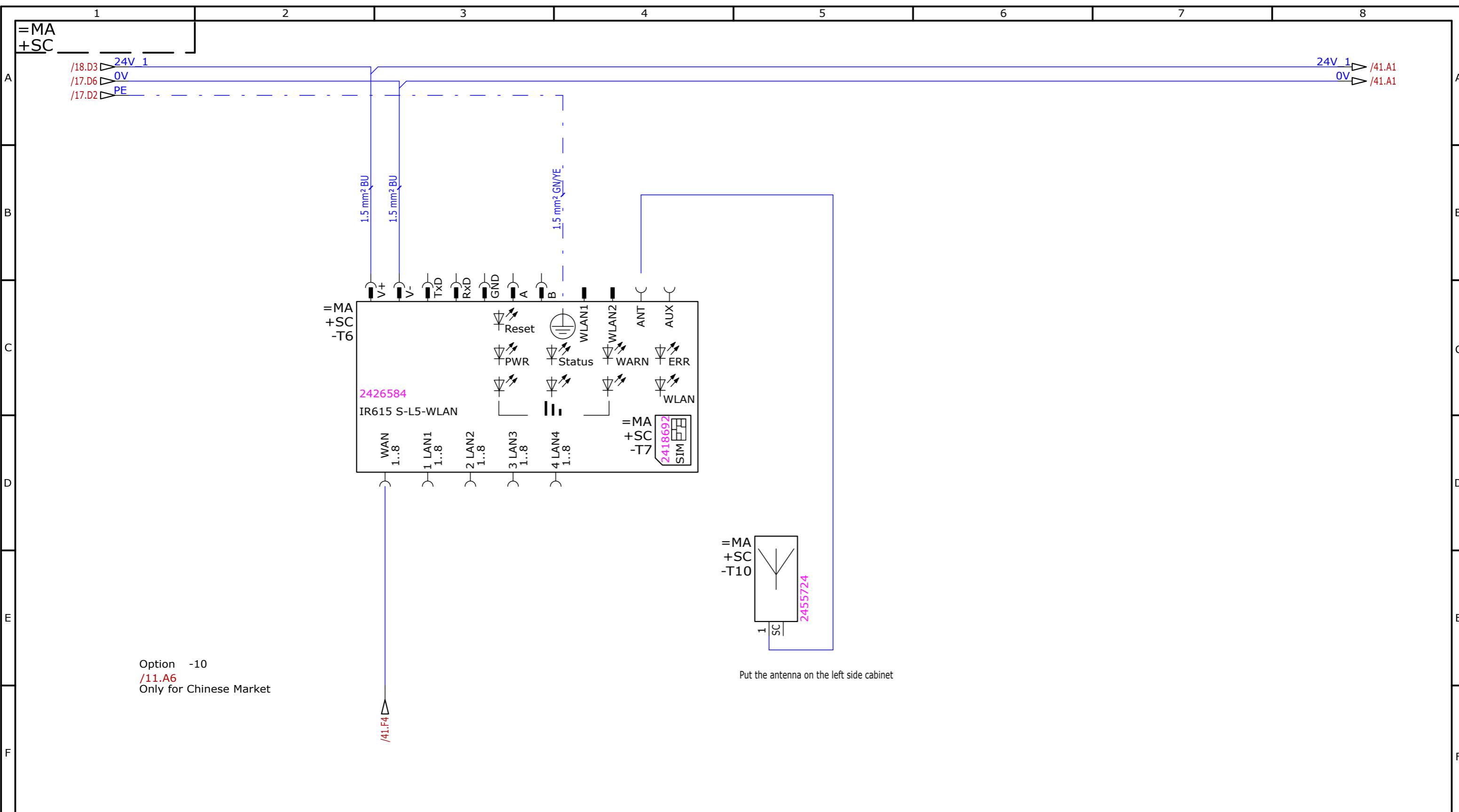
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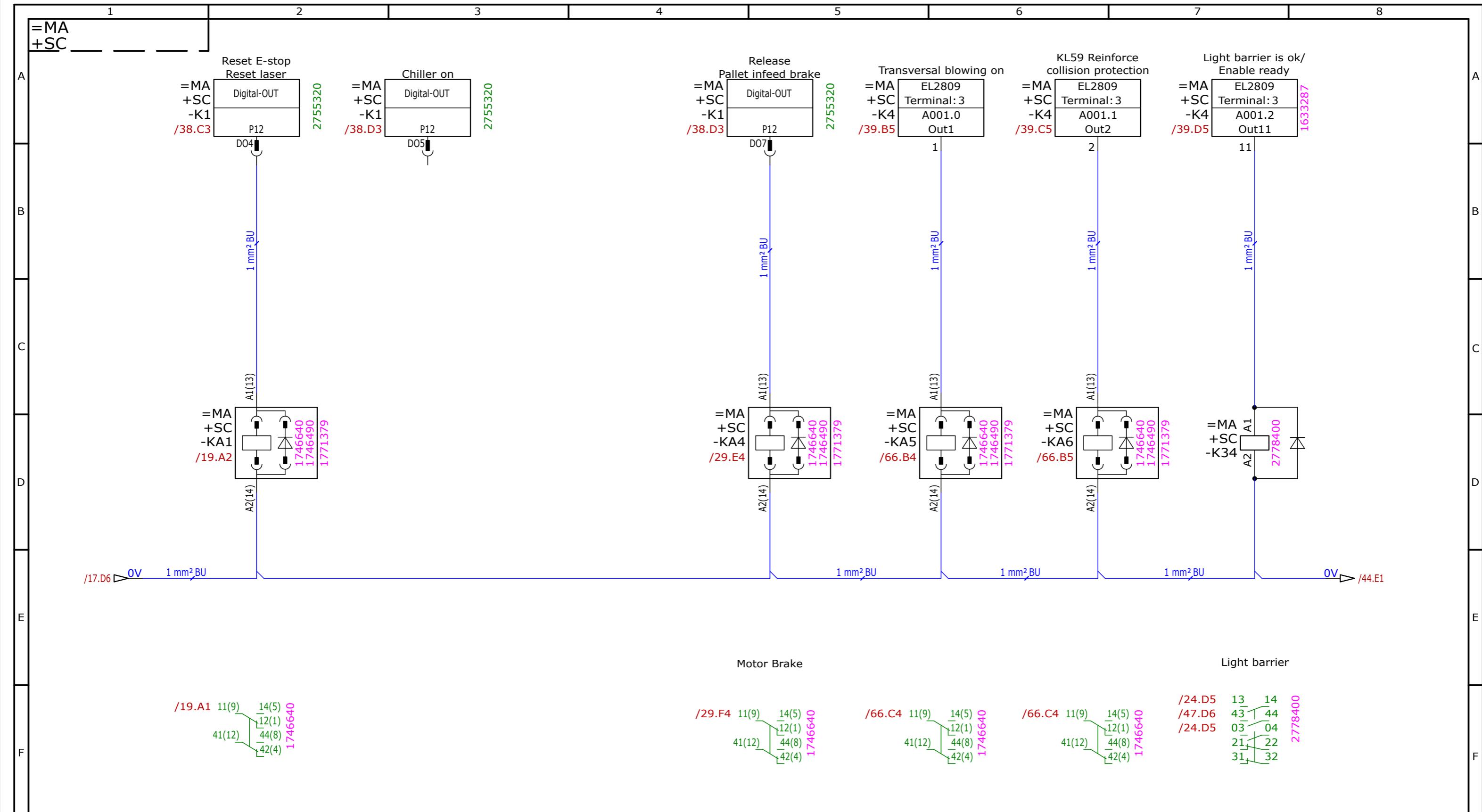
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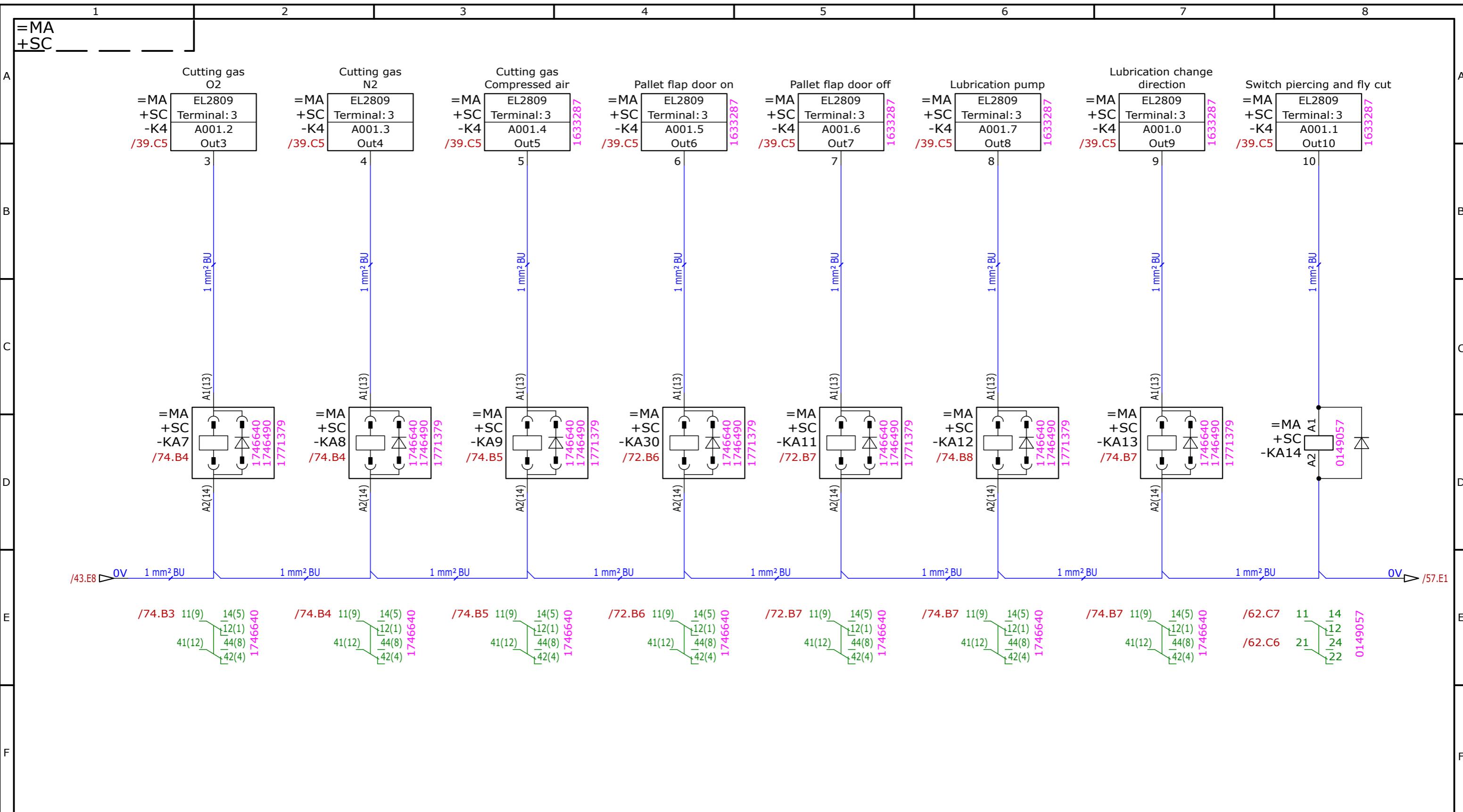
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					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Circuit diagram TruLaser 1000 fiber BE							
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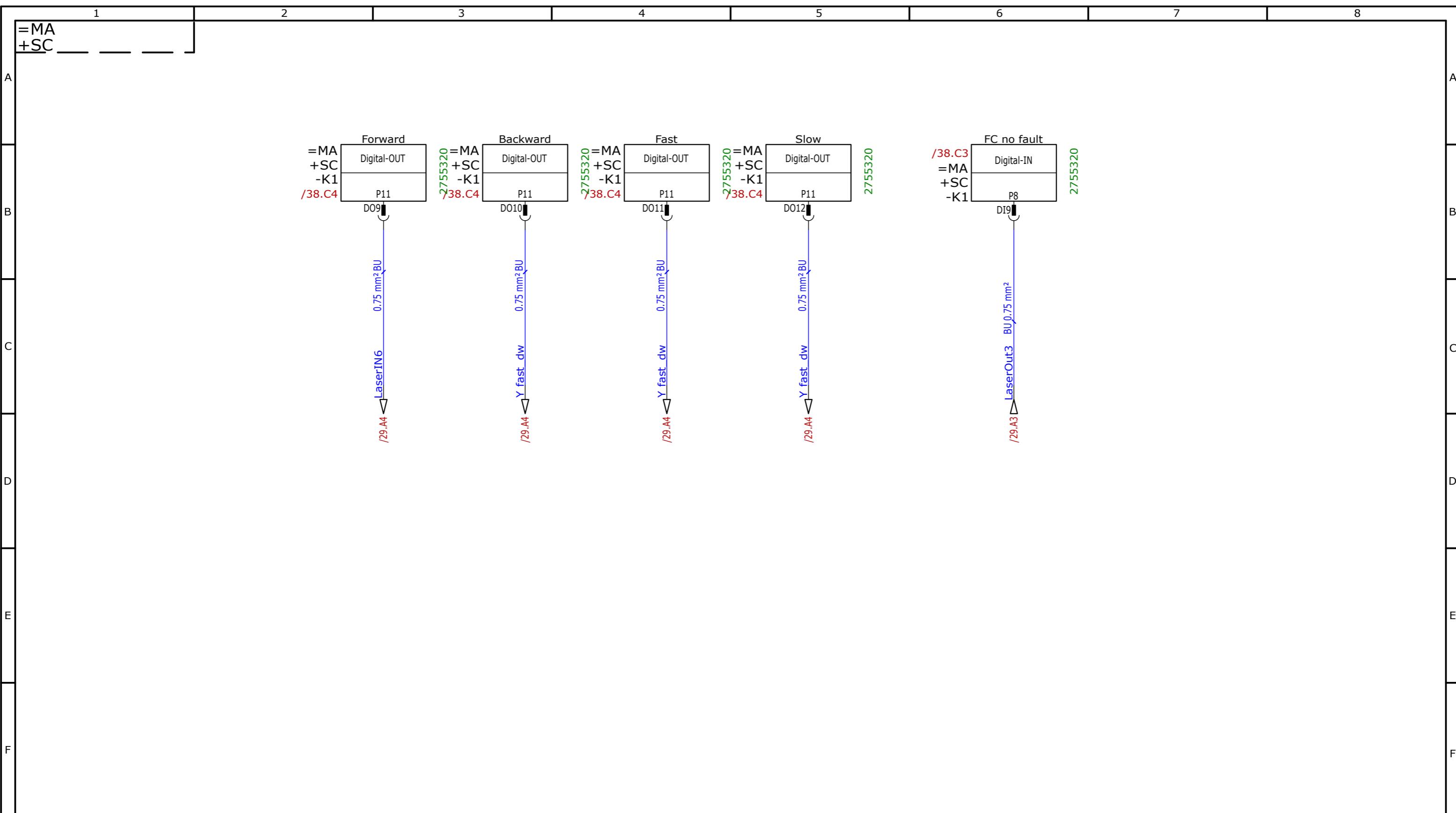
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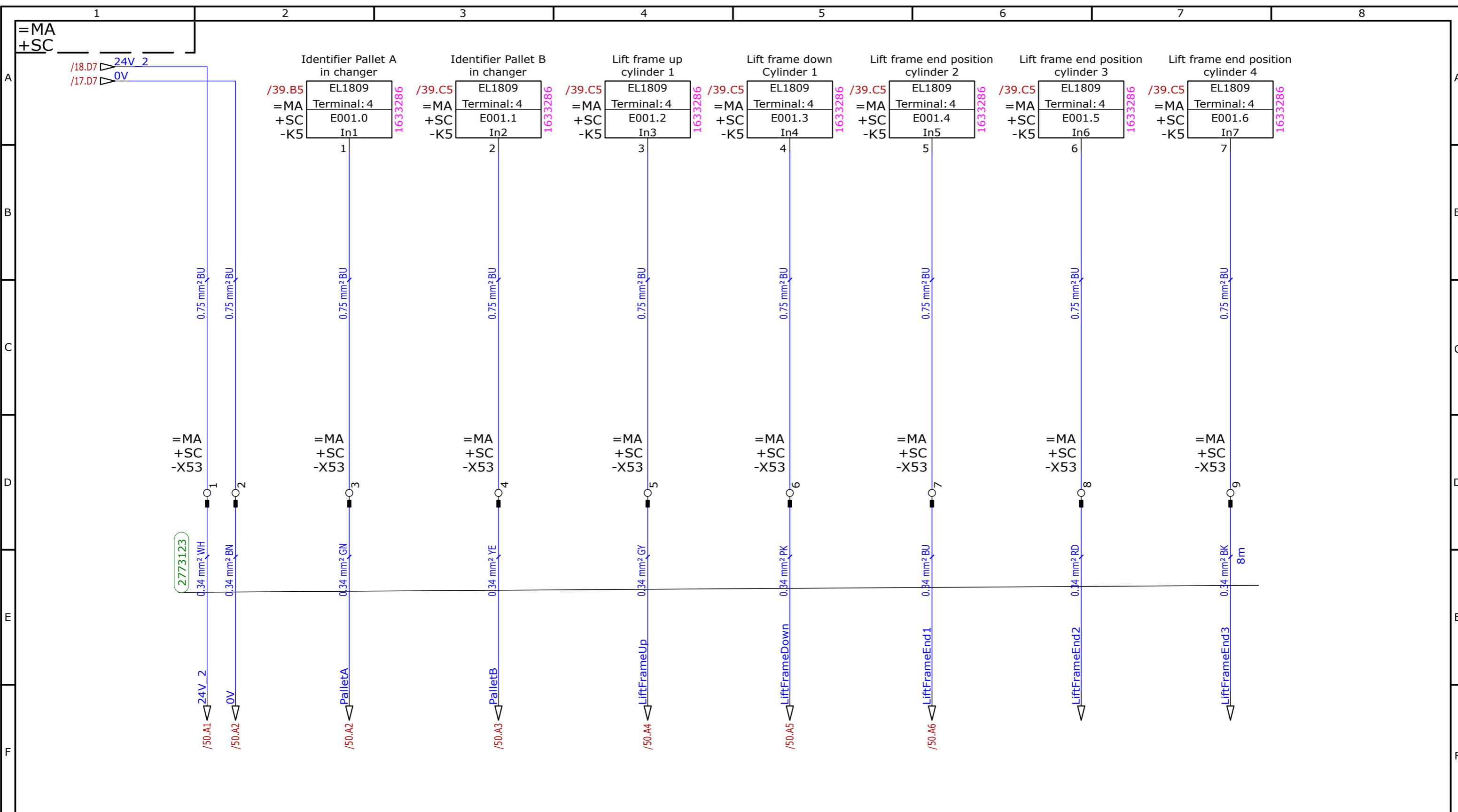
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Project number	Vers.proj.	Doc.type	Original record	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format						
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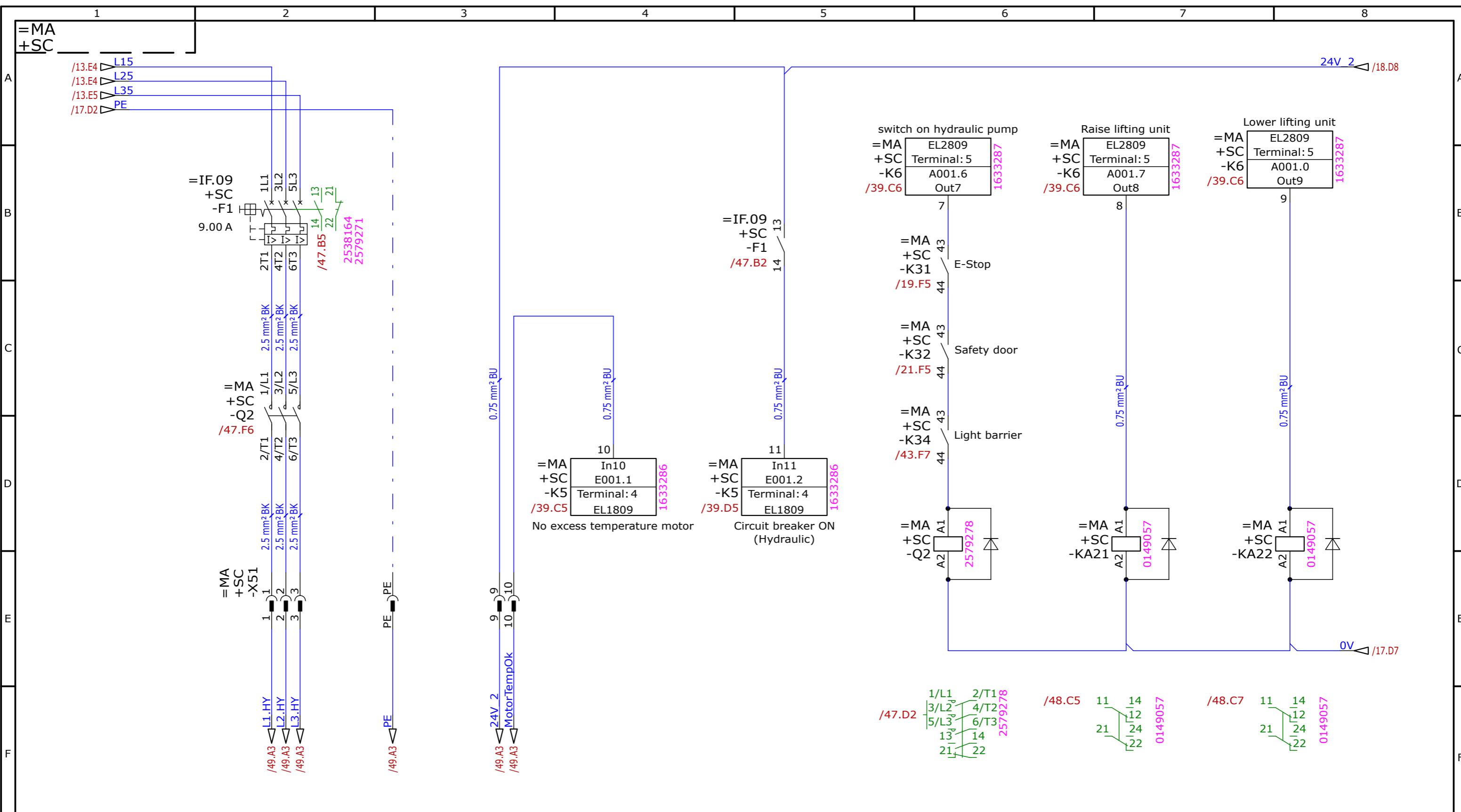
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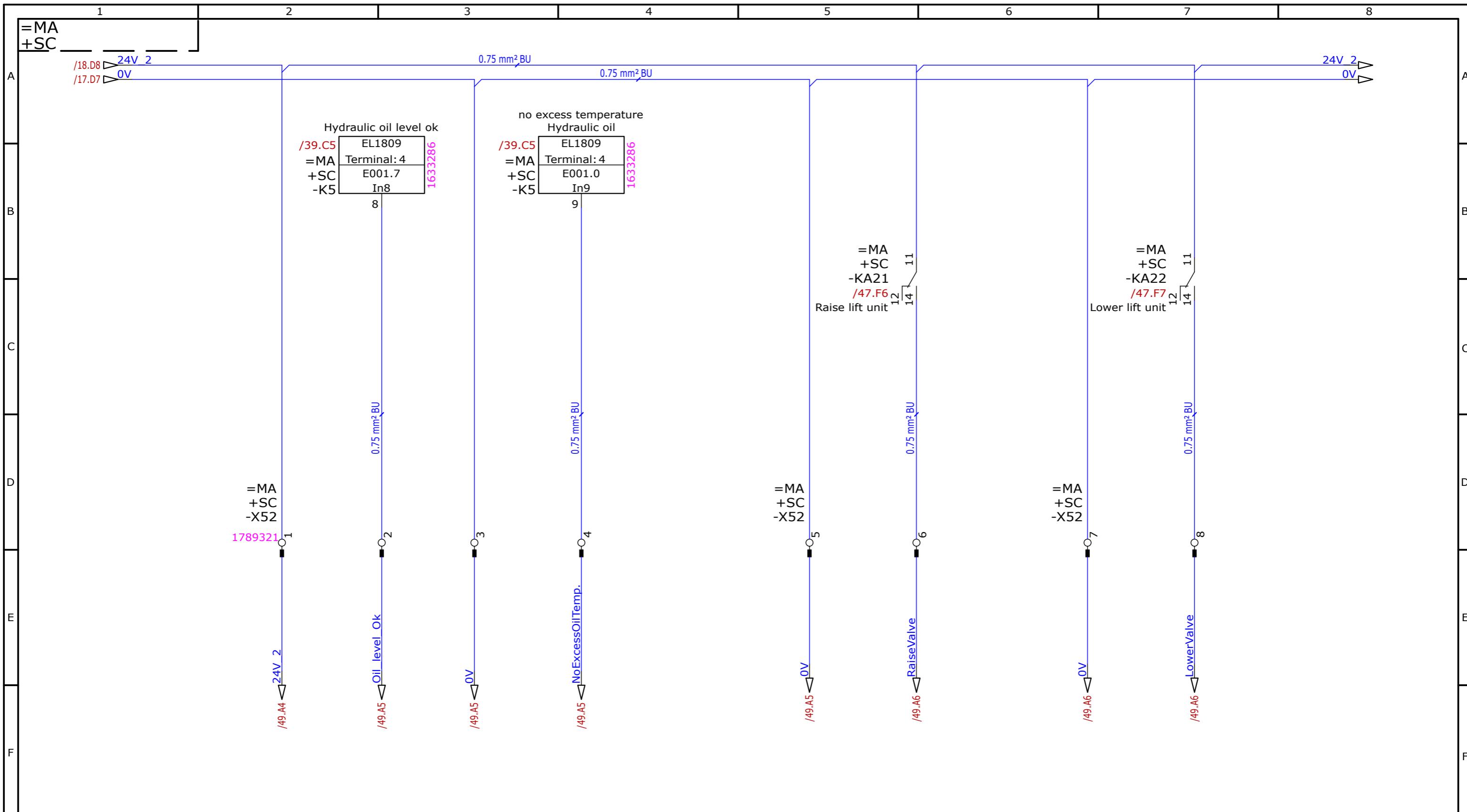
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Project number	Vers.proj.	Doc.type	34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format		
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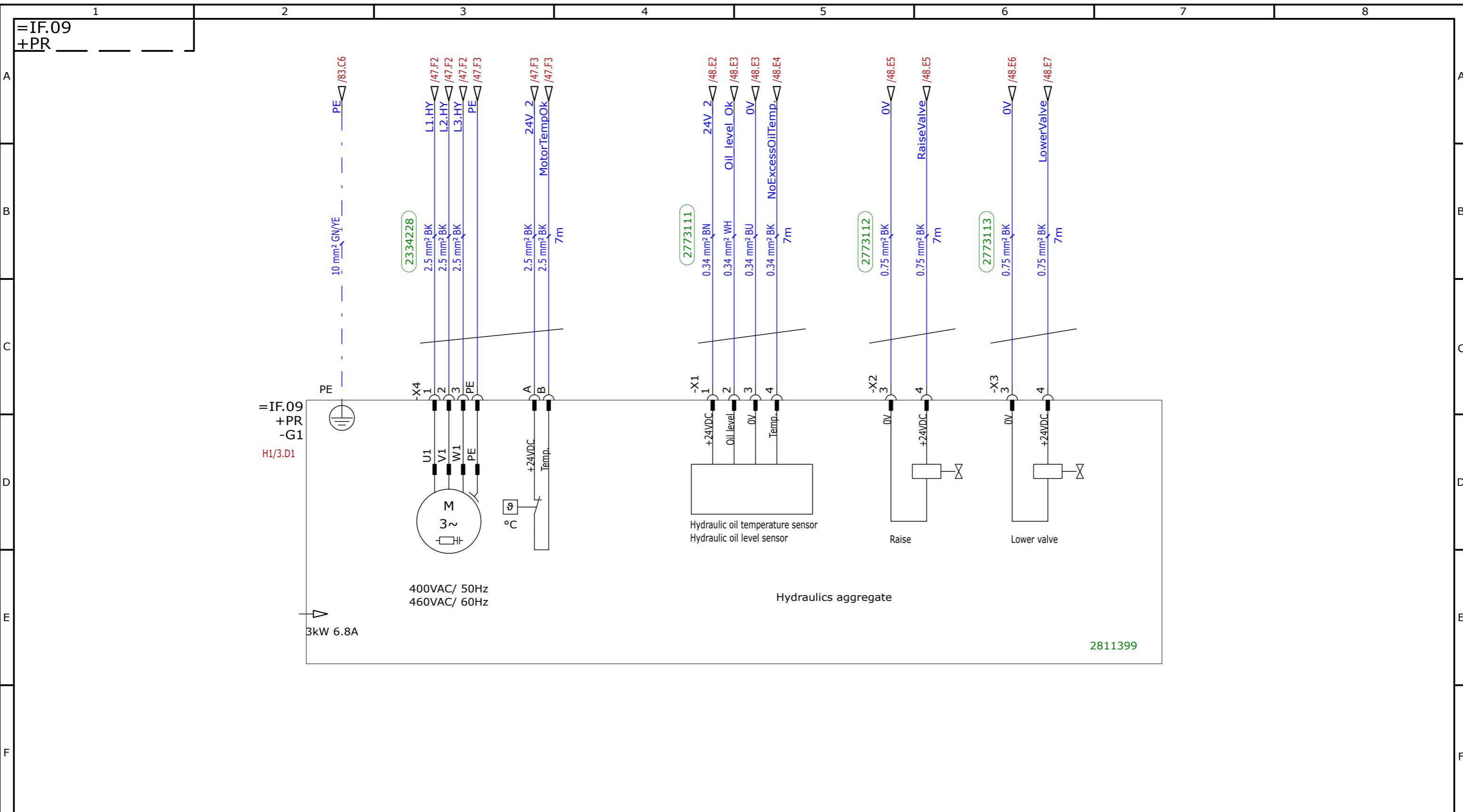
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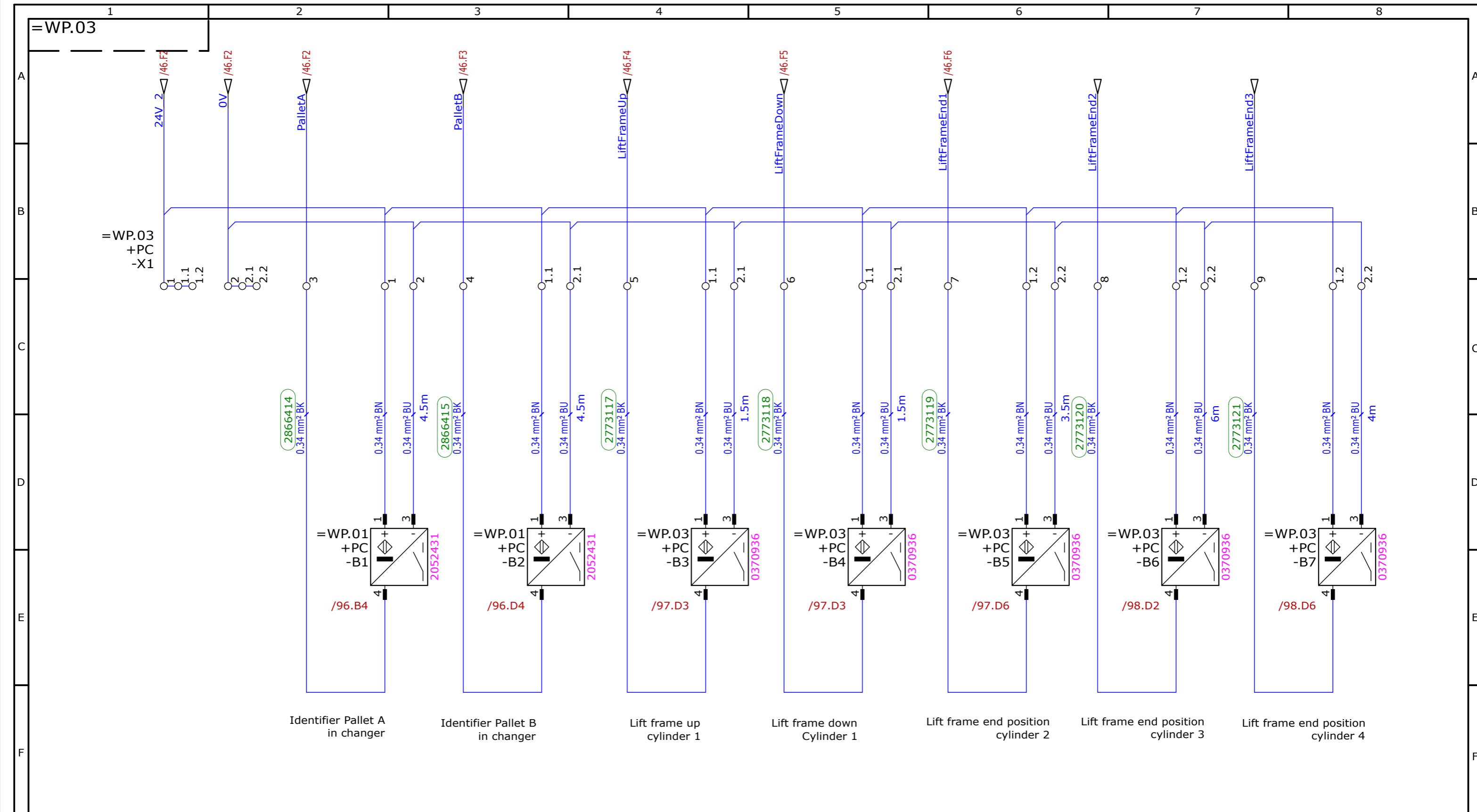
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	Project number	Vers.proj.	Doc.type		TCN521ZX	TCN521ZX	TCN520HU	Document number				Doc. part	Version	Status	Id number		
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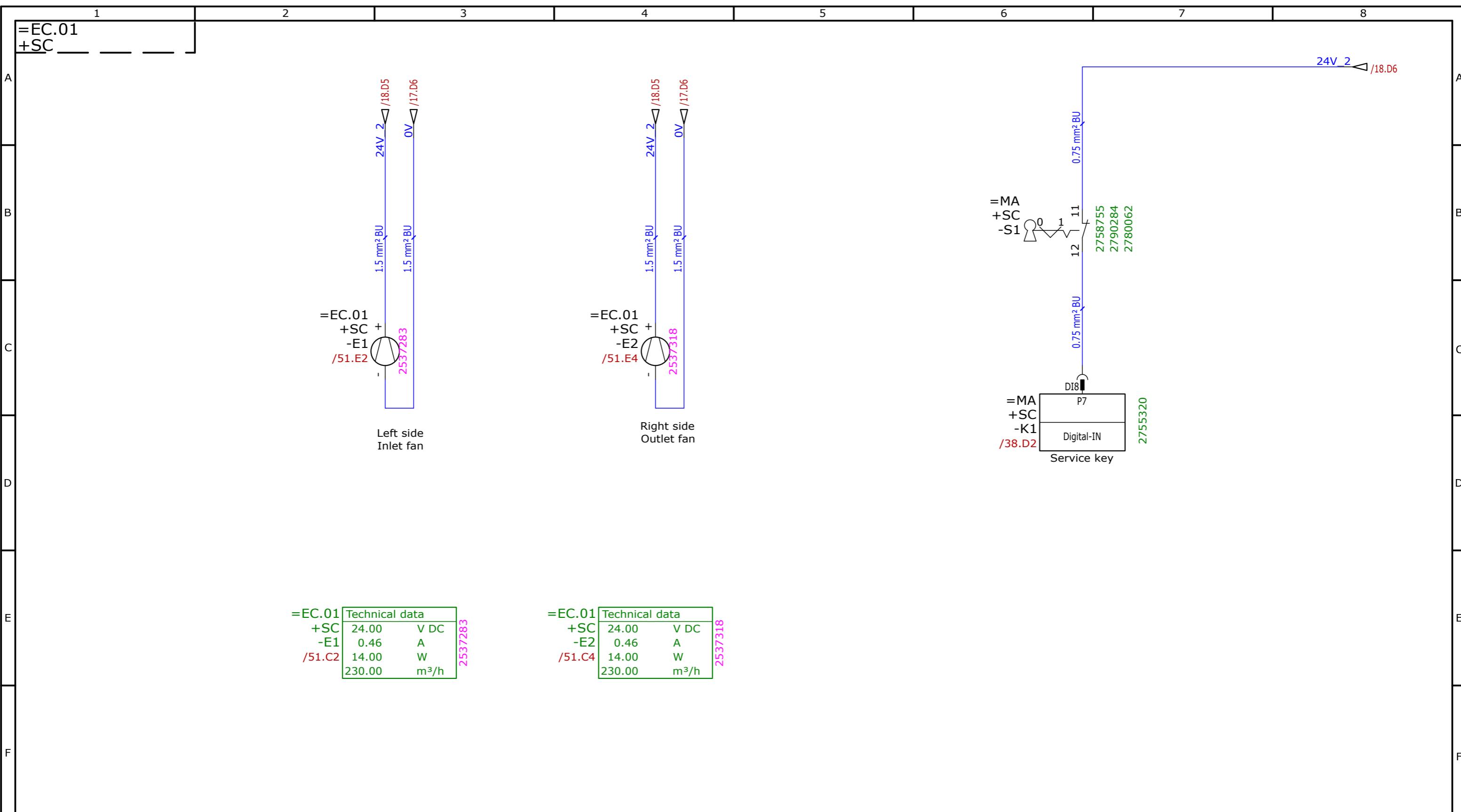
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		Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record		Document number 93630-5-201	Doc. part 002	Version 03	Status RE	Id number 2815136	Sheet 48 of 111	Type E1	Format A3



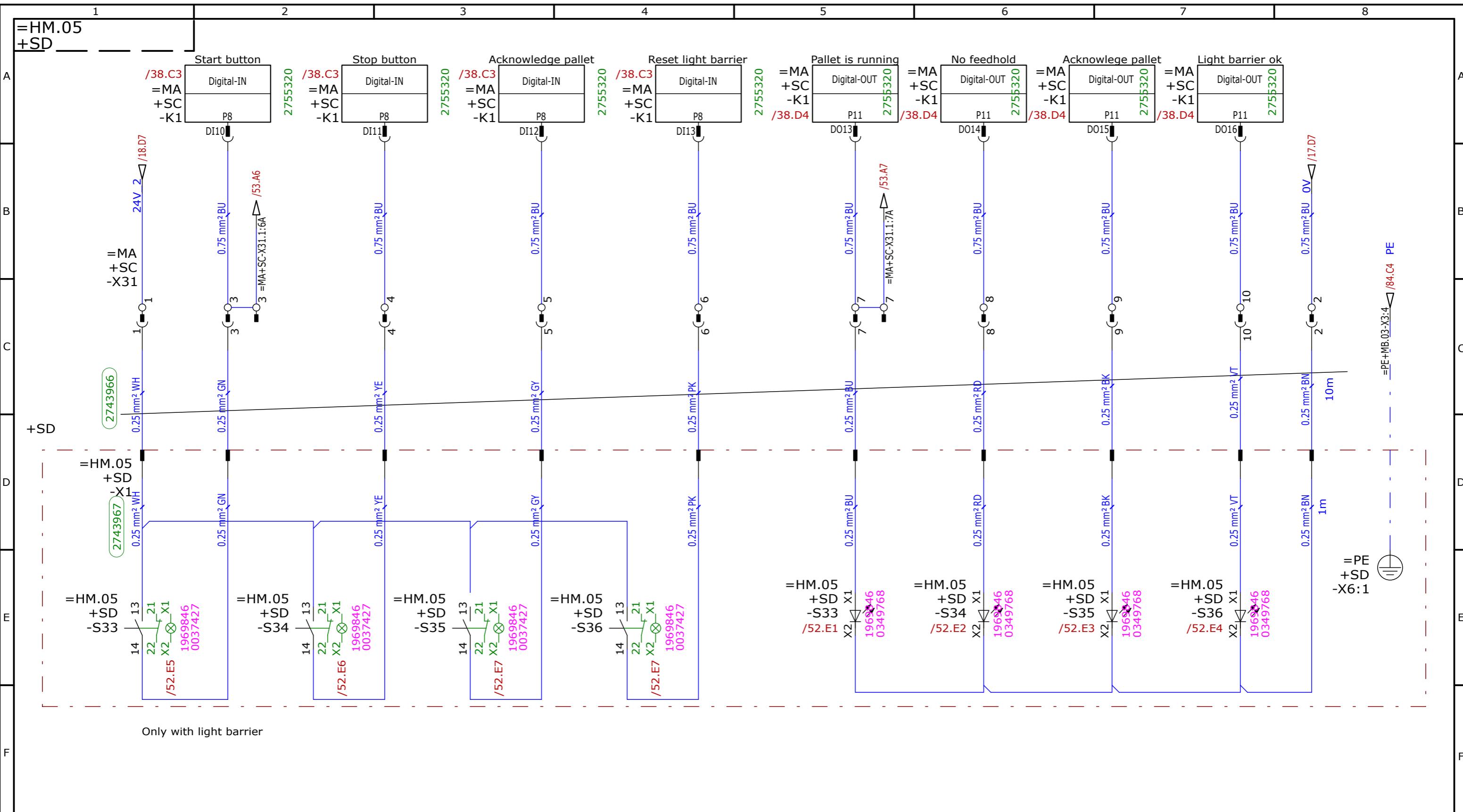
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Project number	Vers.proj.	Doc.type	Original record	03	E3S	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	93630-5-201	002	03	RE	2815136	49 of 111	E1	A3	



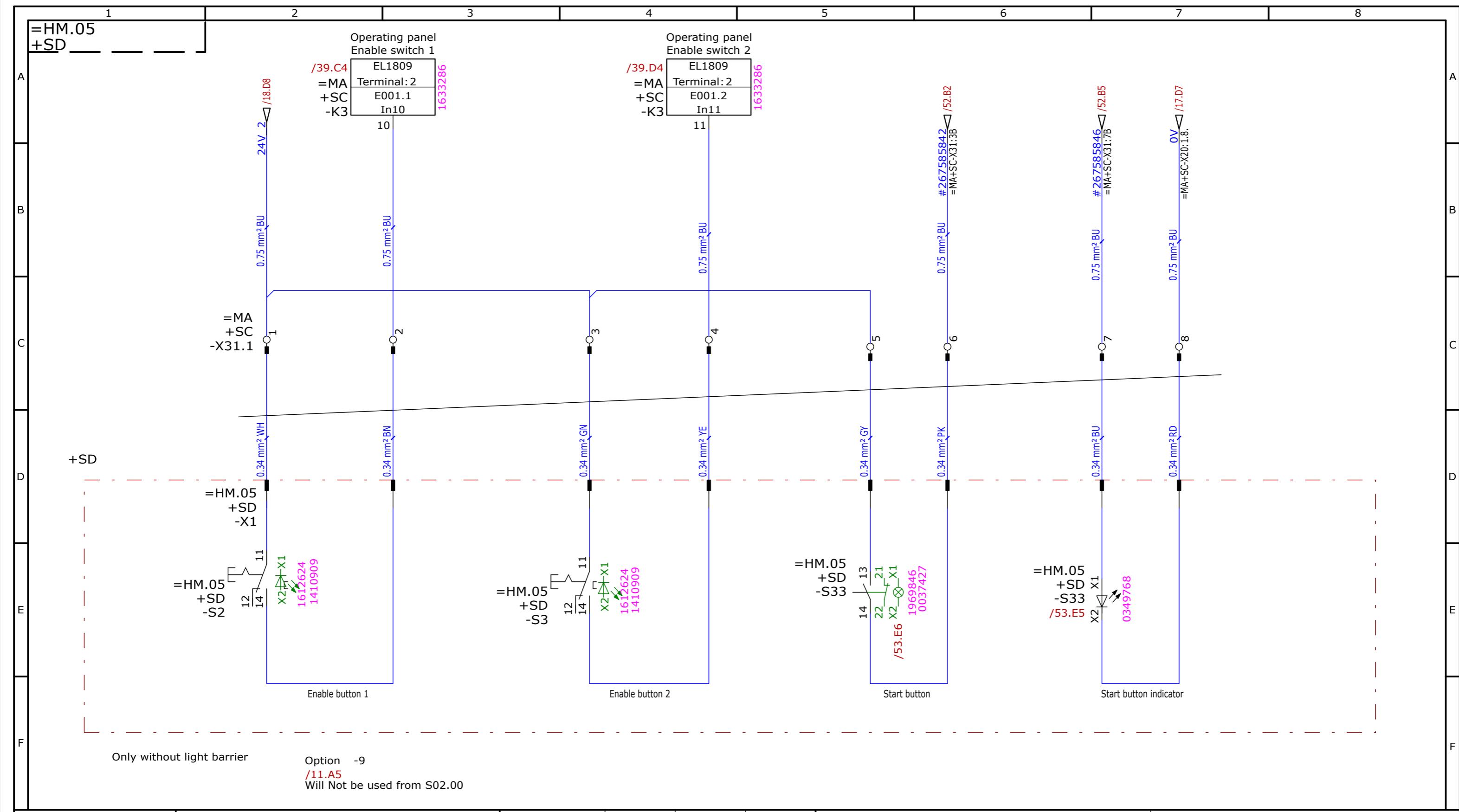
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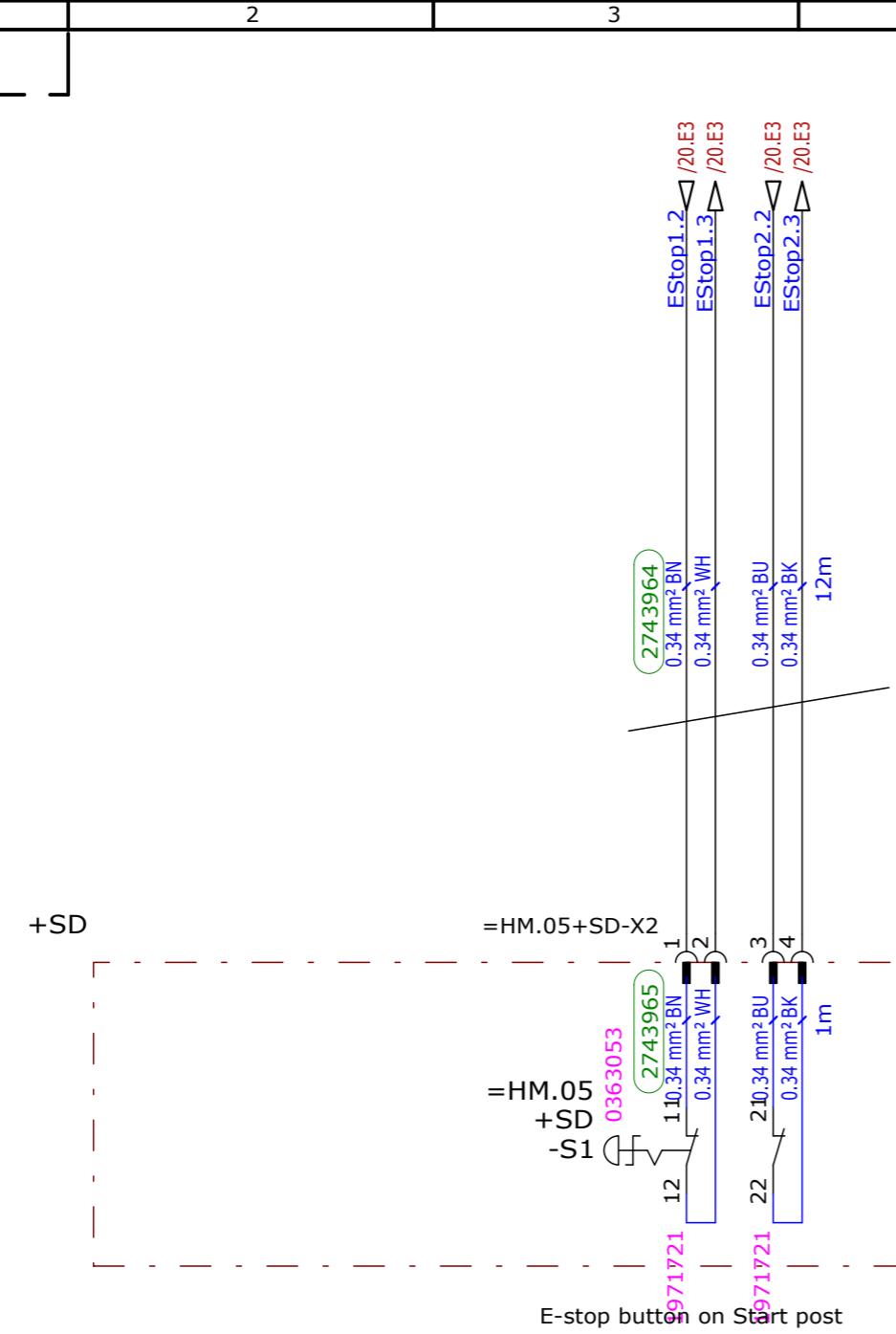
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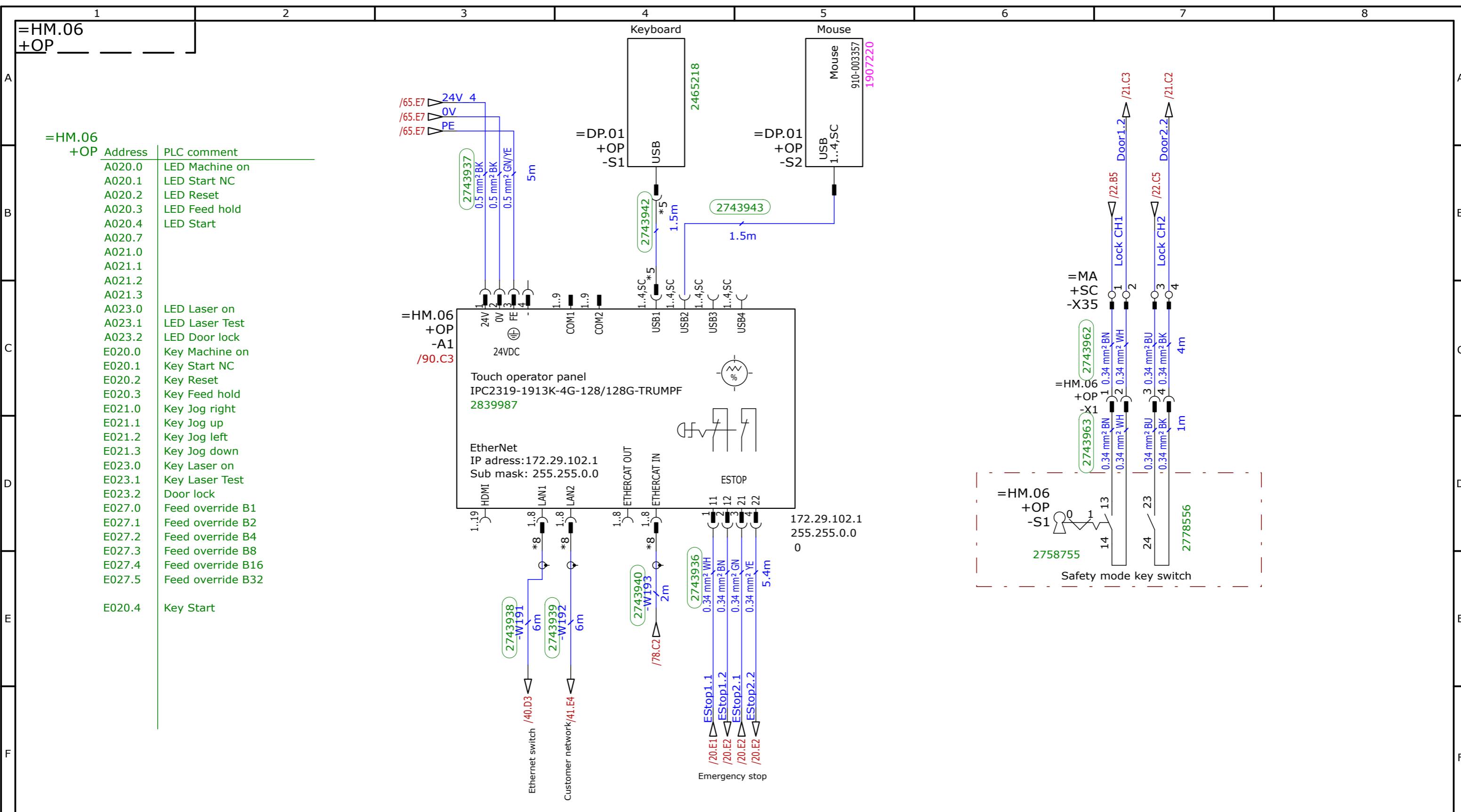
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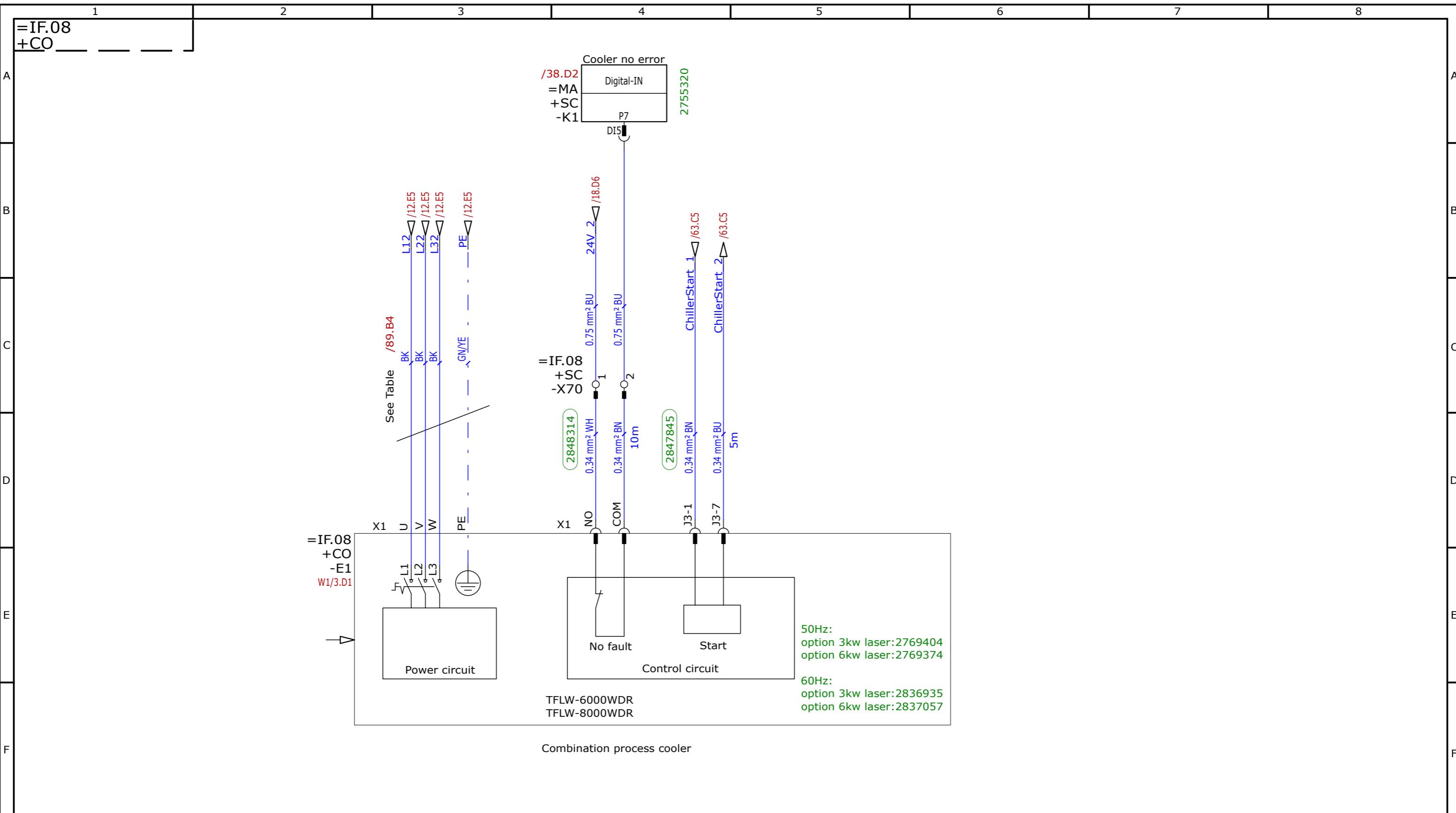
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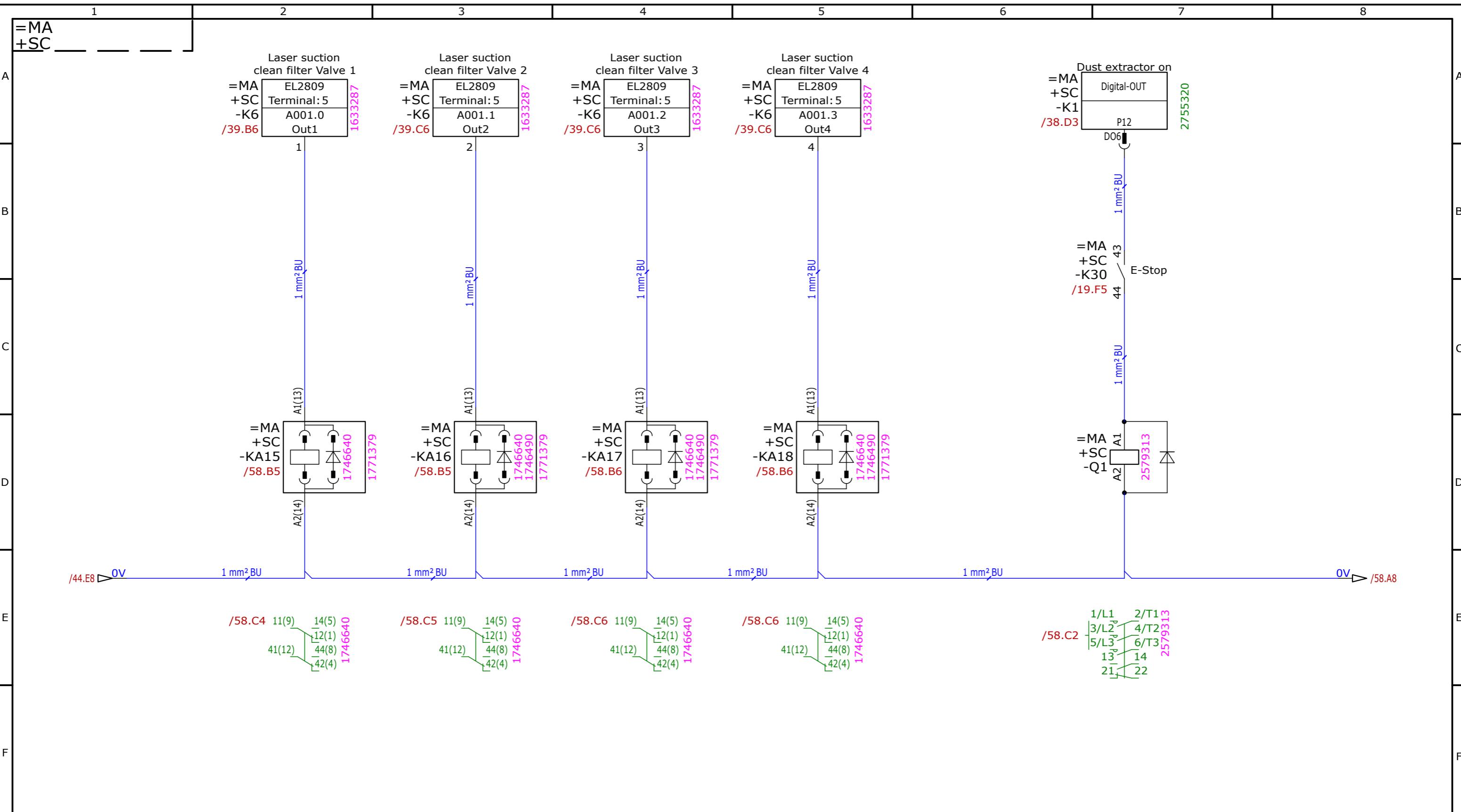
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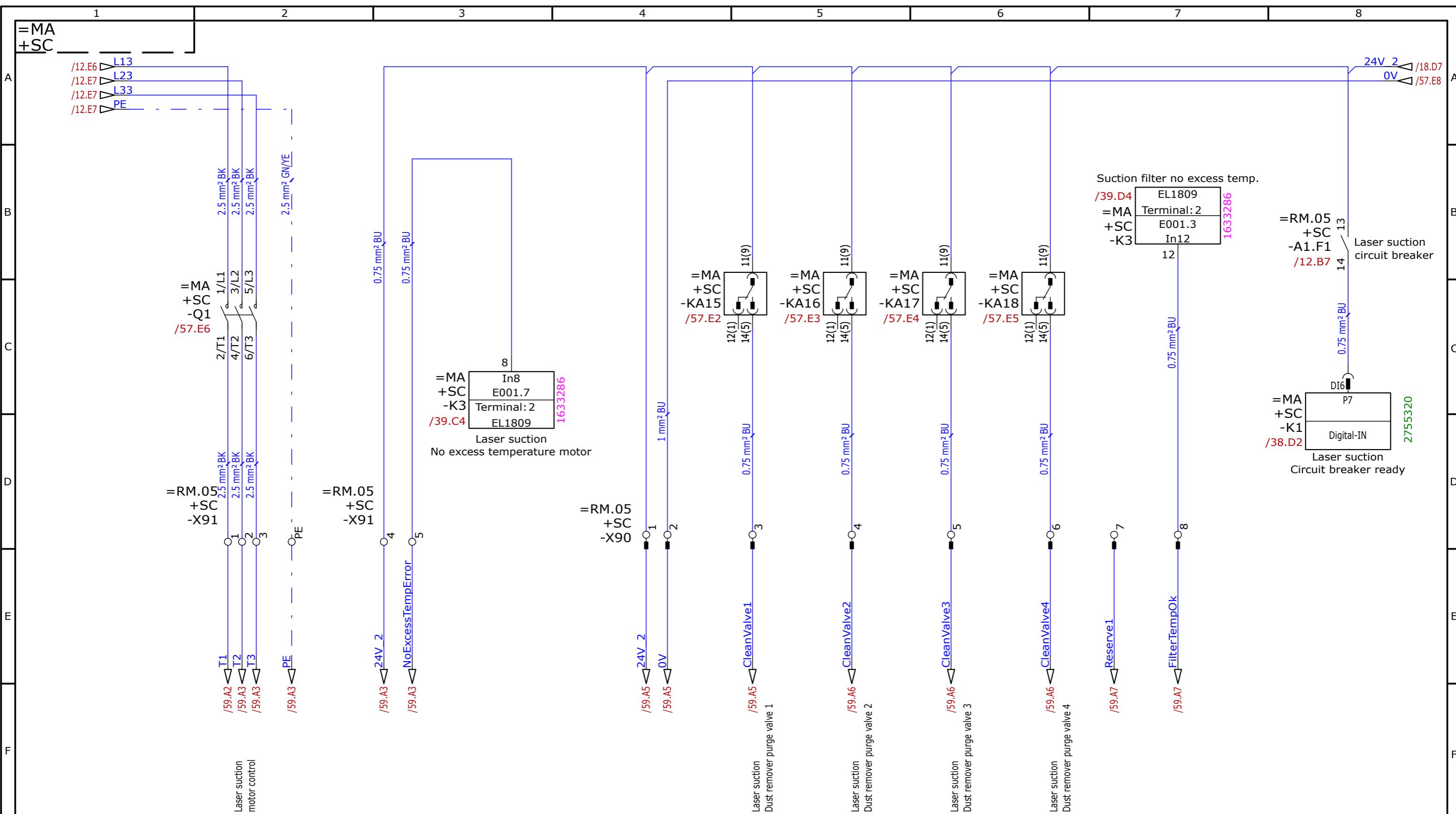
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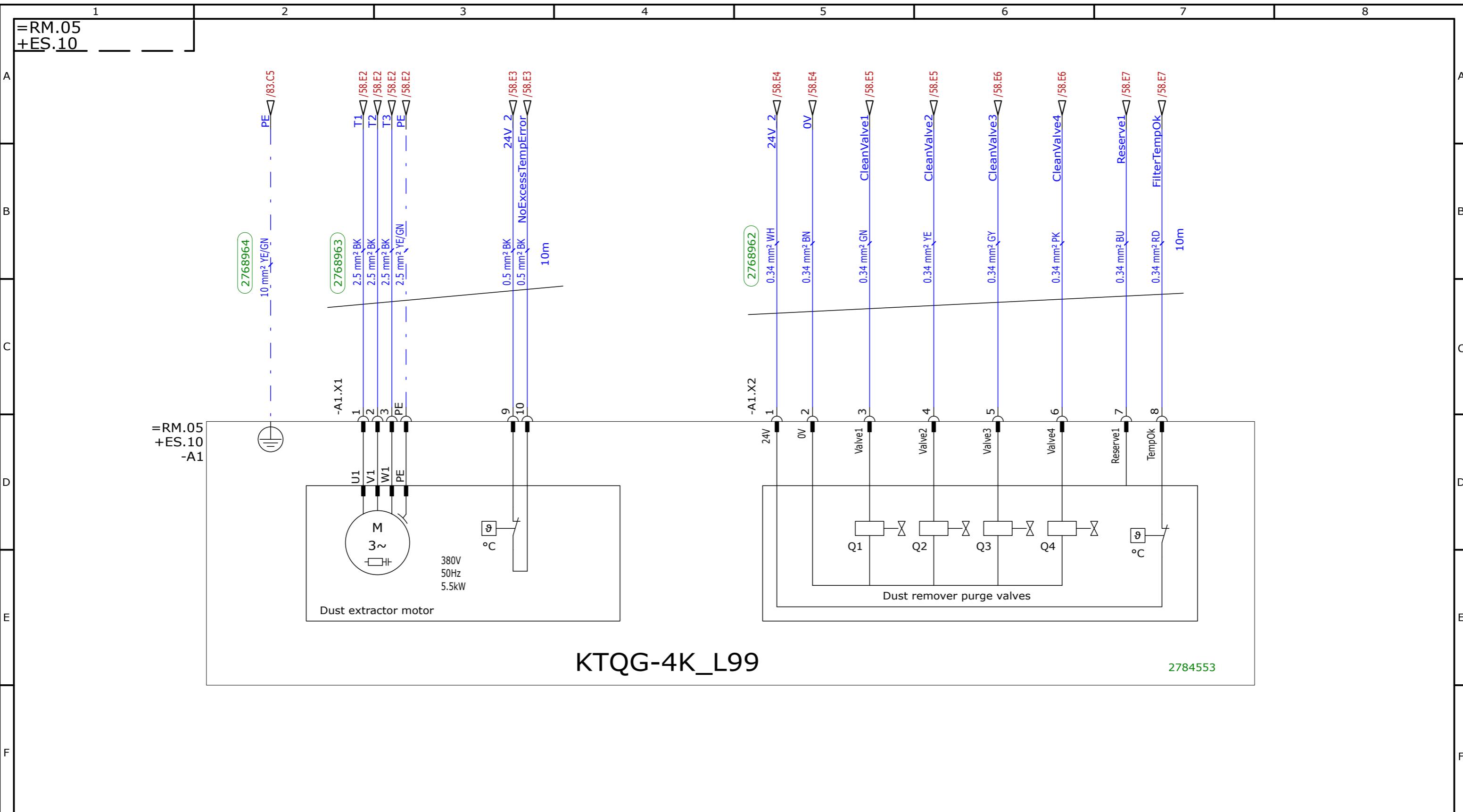
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					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
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TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE	Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE	Contents Laser suction Control				
		34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU						
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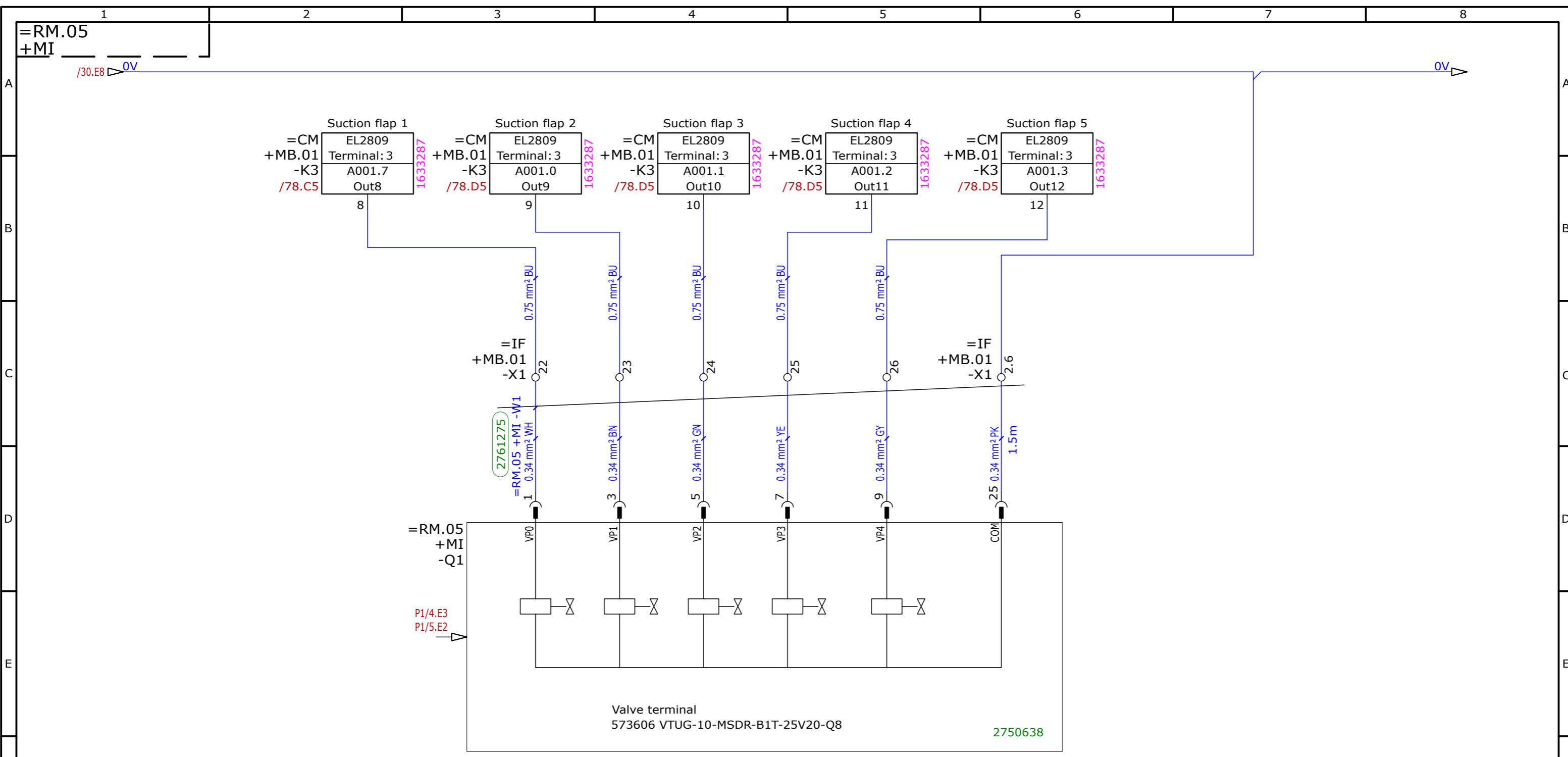
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Project number	Vers.proj.	Doc.type	Original record	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format						
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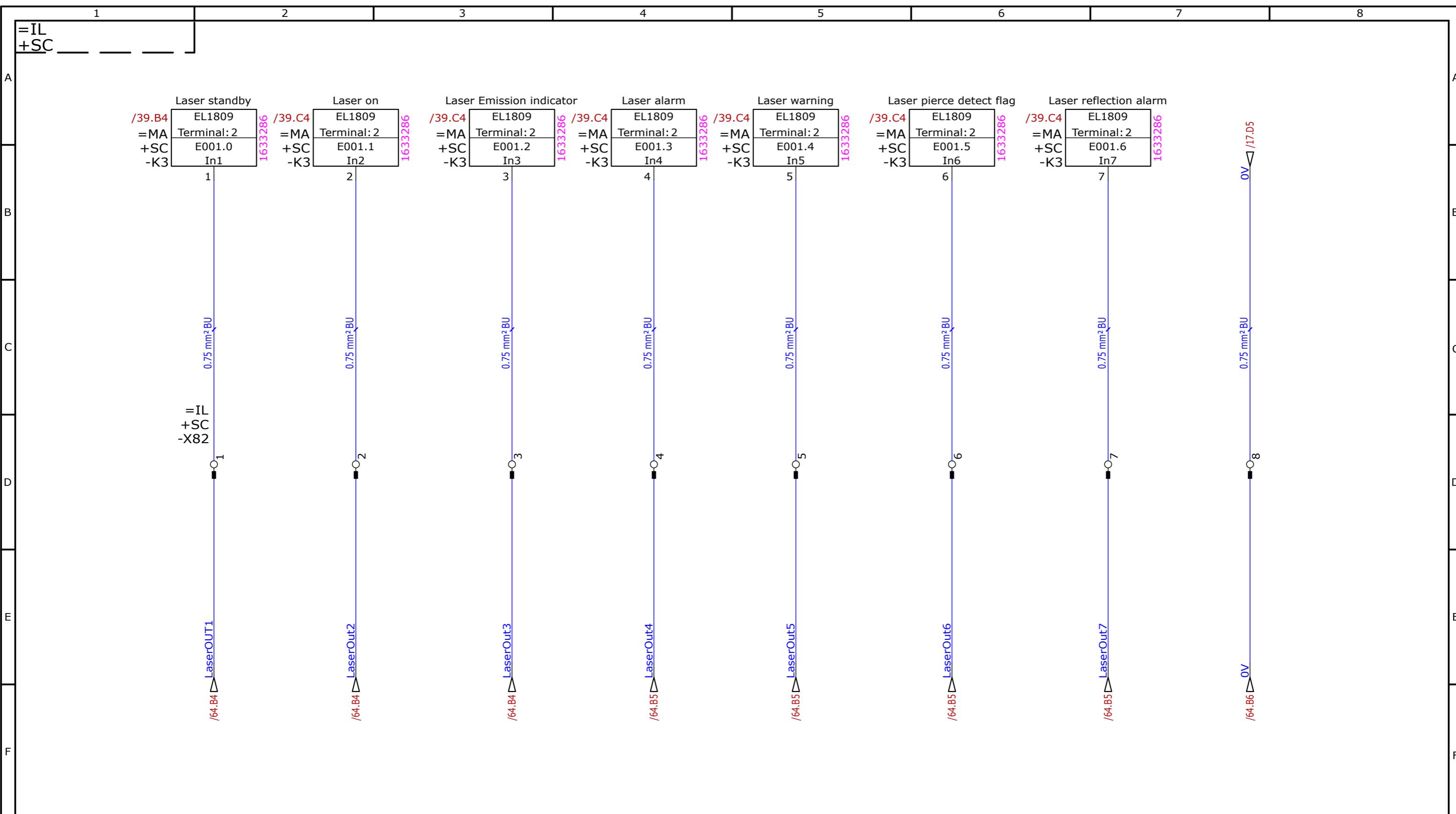
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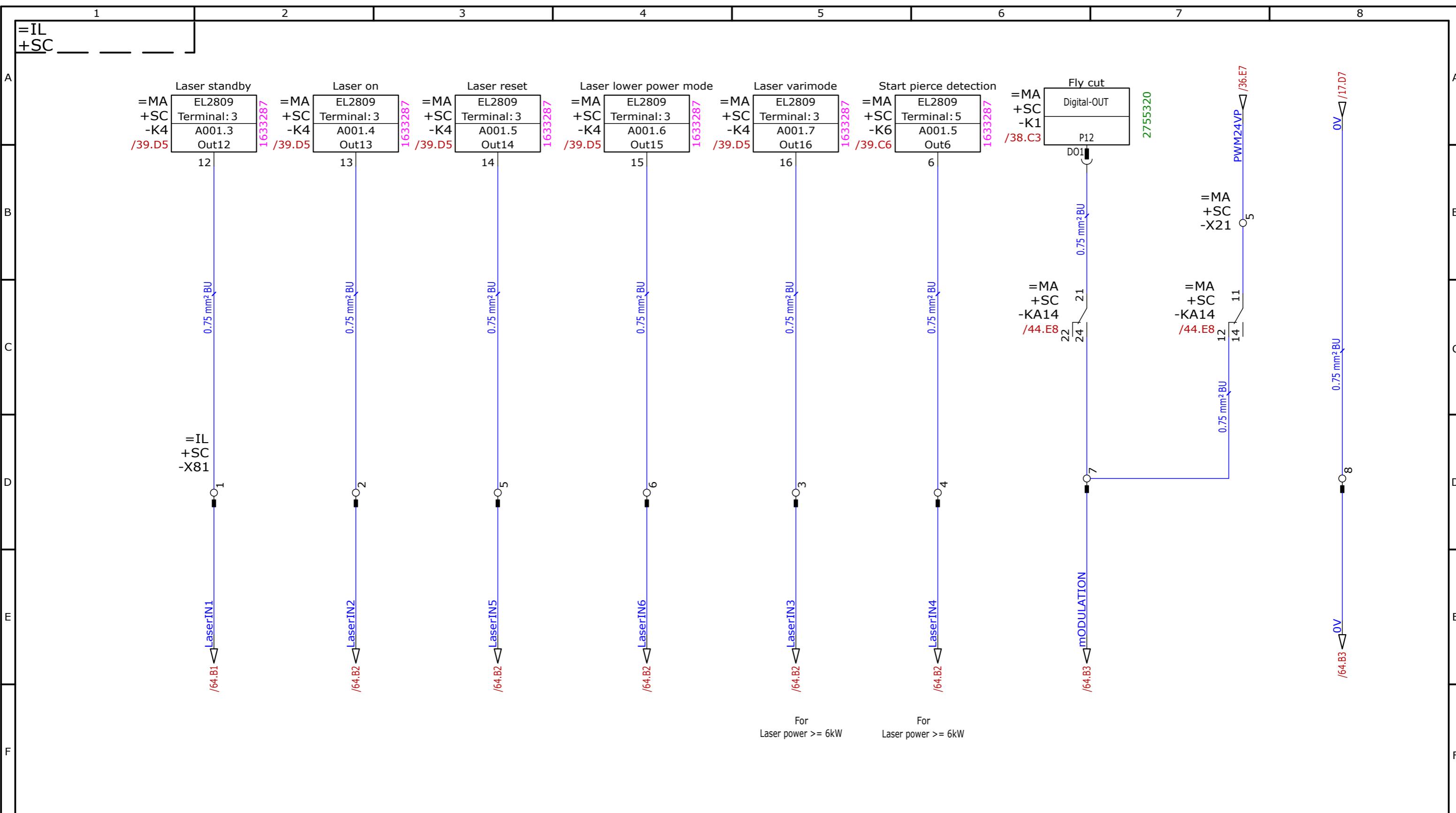
TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE			Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE			Contents Laser suction				
					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU								
		Project number	Vers.proj.	Doc.type	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
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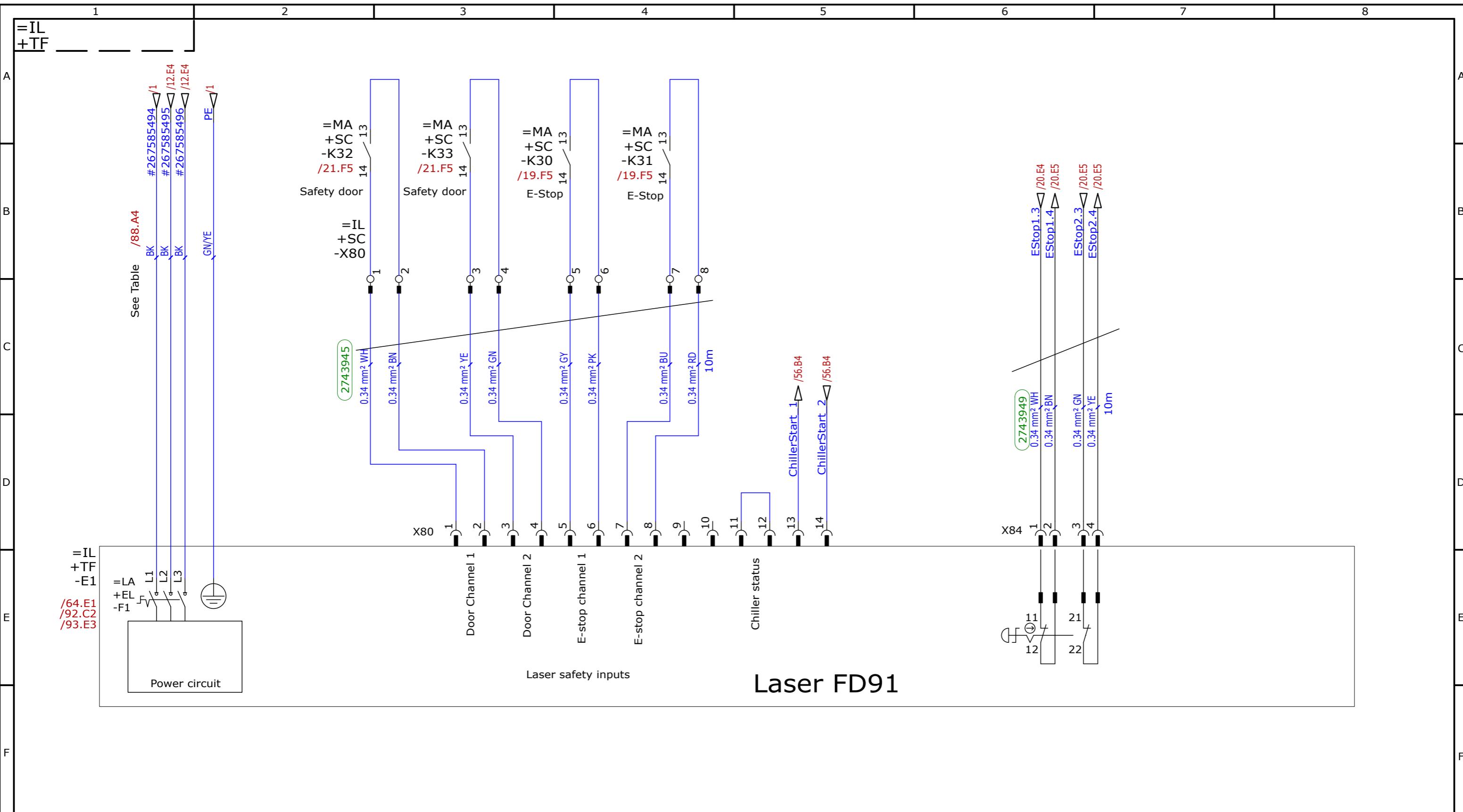
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					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU								
		Project number	Vers.proj.	Doc.type	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
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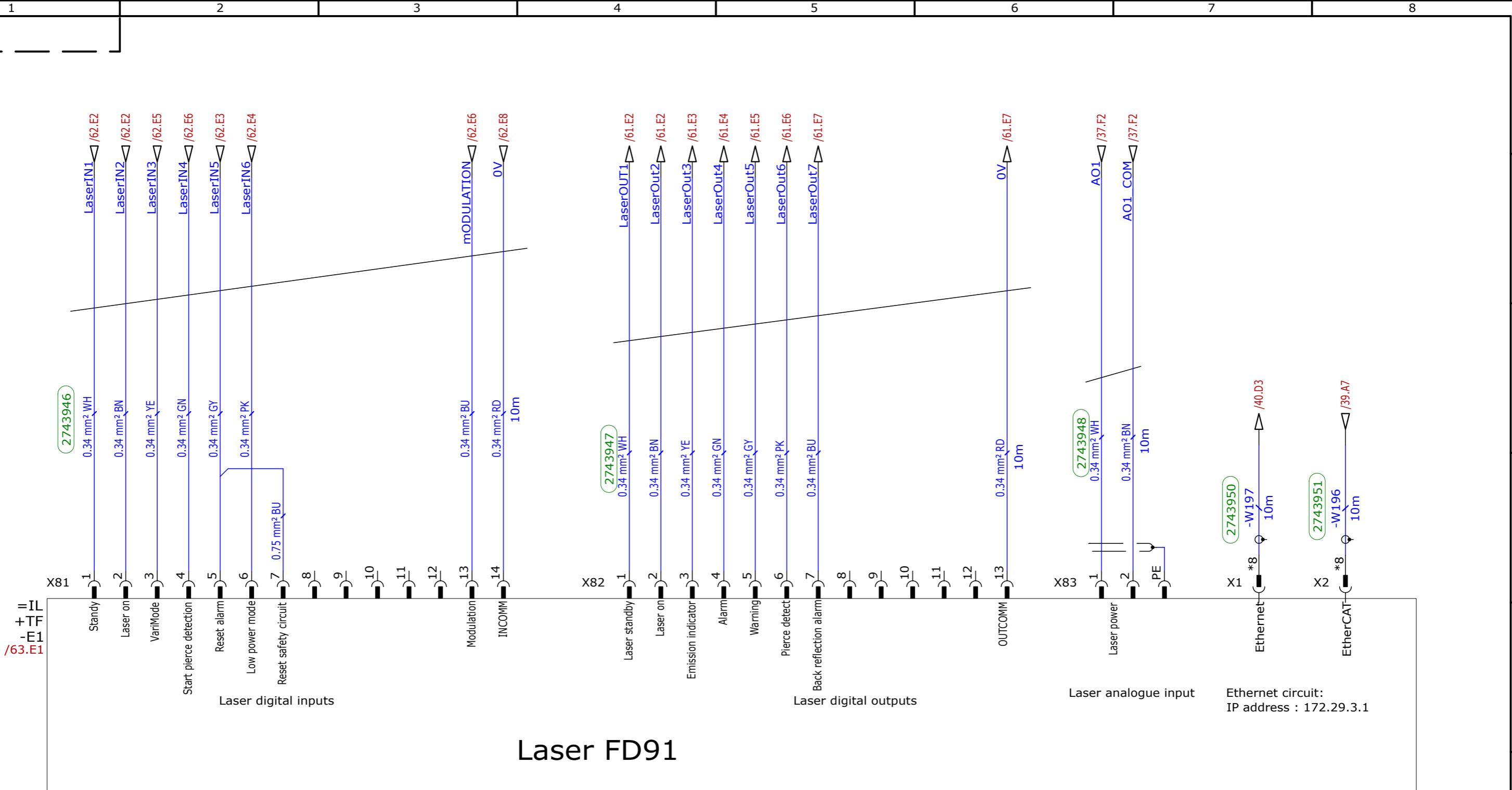
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Project number	Vers.proj.	Doc.type	Original record	03	E3S	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
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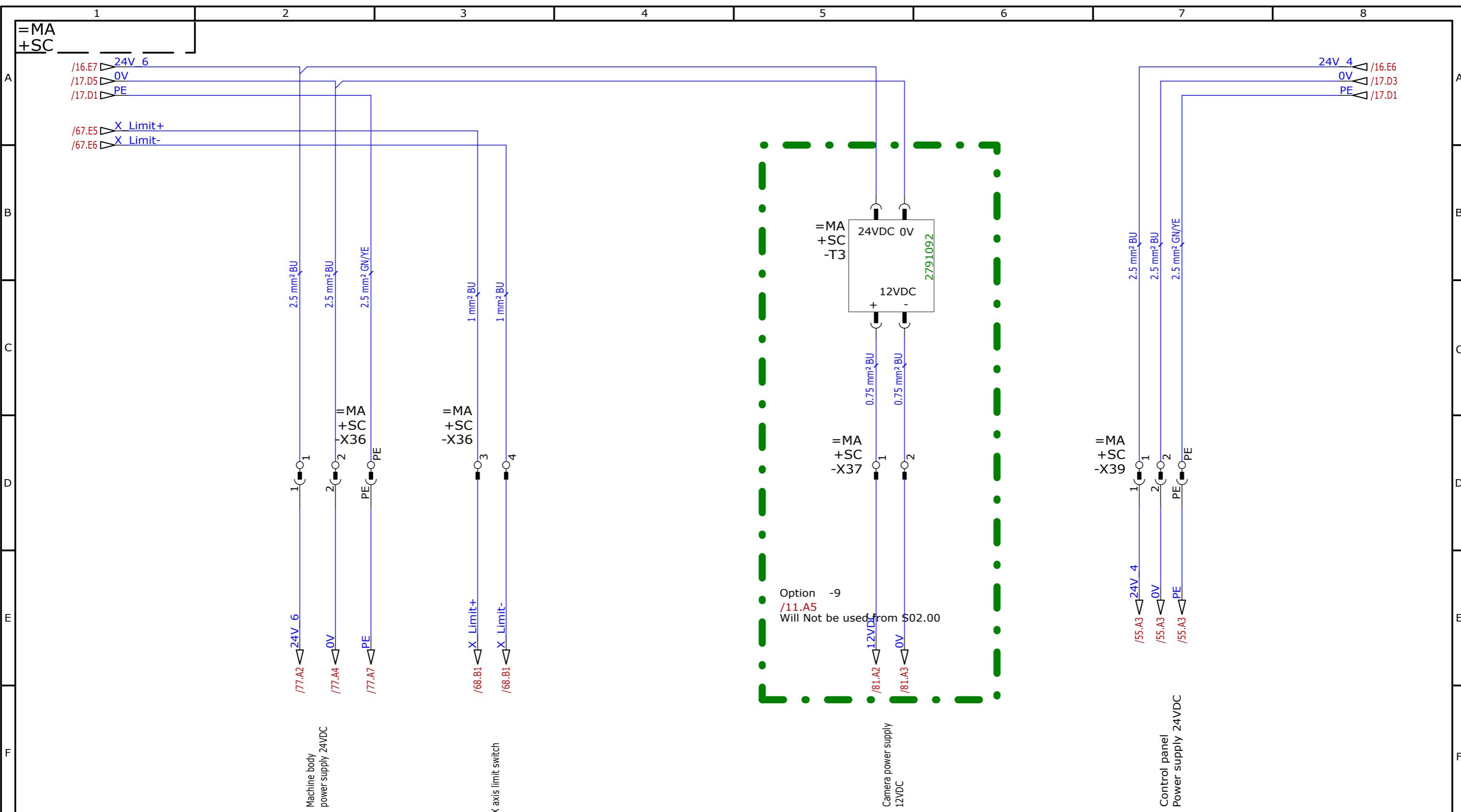
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					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
		Project number	Vers.proj.	Doc.type	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	93630-5-201	002	03	RE	2815136	62 of 111	E1	A3



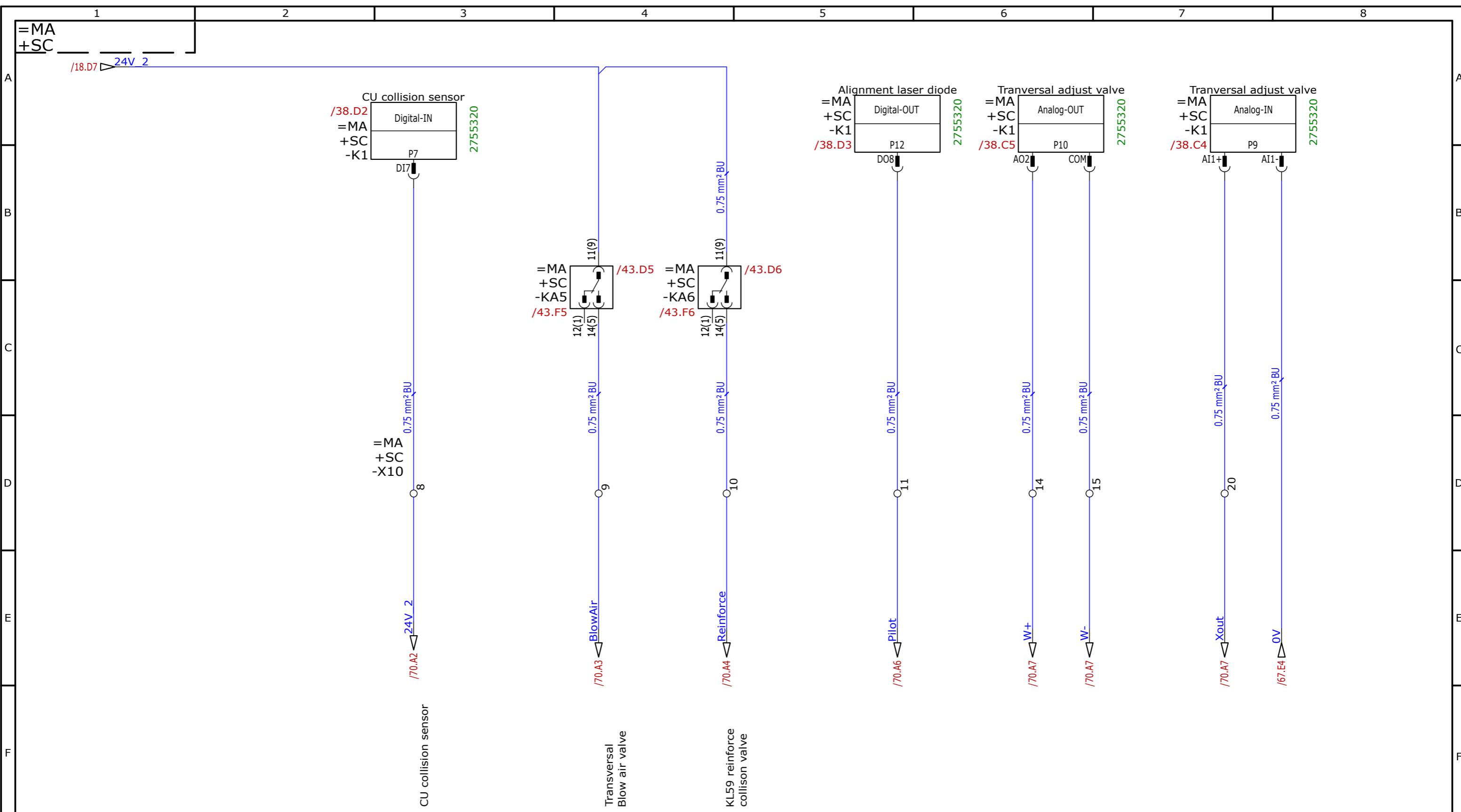
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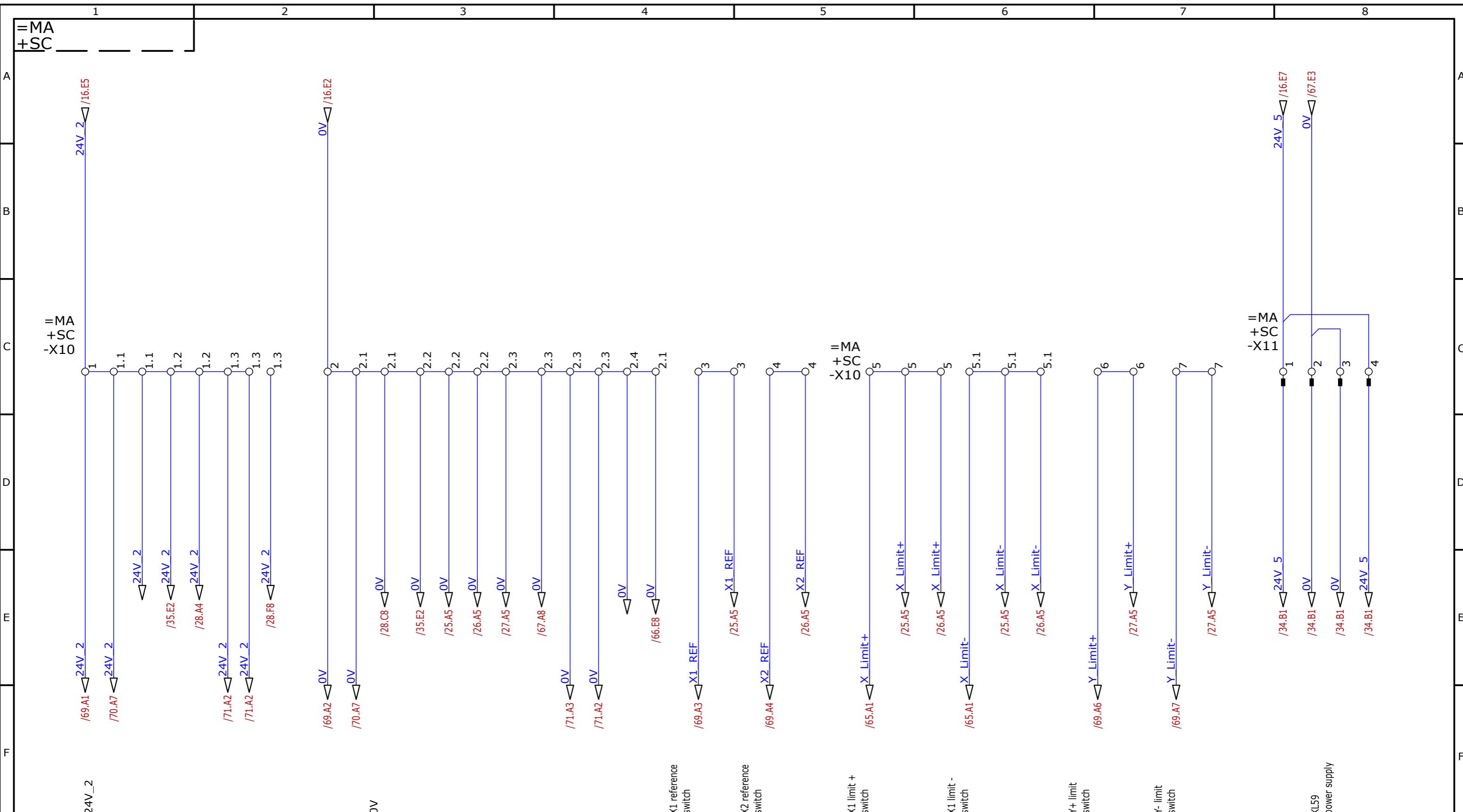
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					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Document number 93630-5-201	Doc. part 002	Version 03	Status RE	Id number 2815136	Sheet 64 of 111	Type E1	Format A3
		Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number 93630-5-201	Doc. part 002	Version 03	Status RE	Id number 2815136	Sheet 64 of 111	Type E1	Format A3

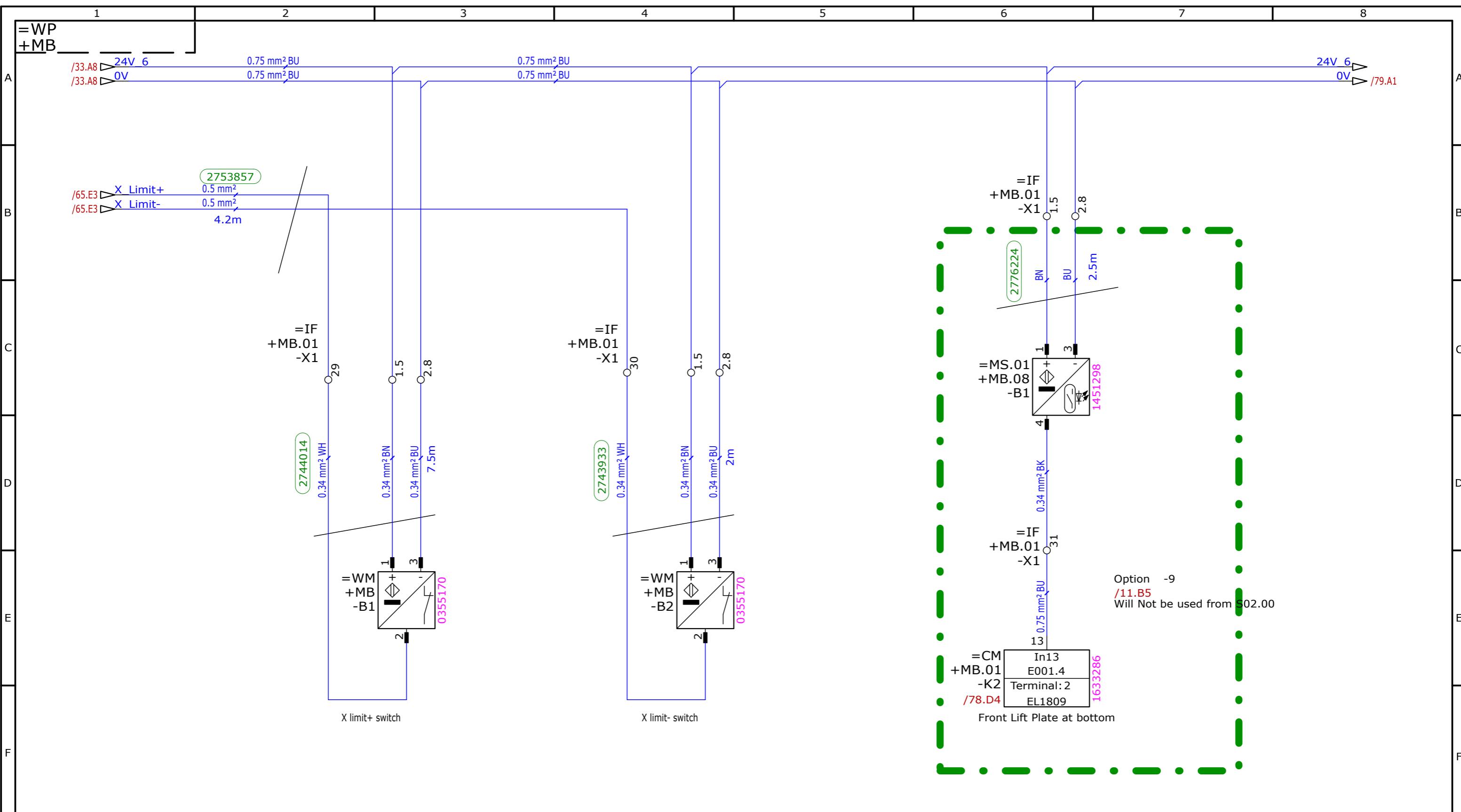


TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE			Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE			Contents Machine body interface				
					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
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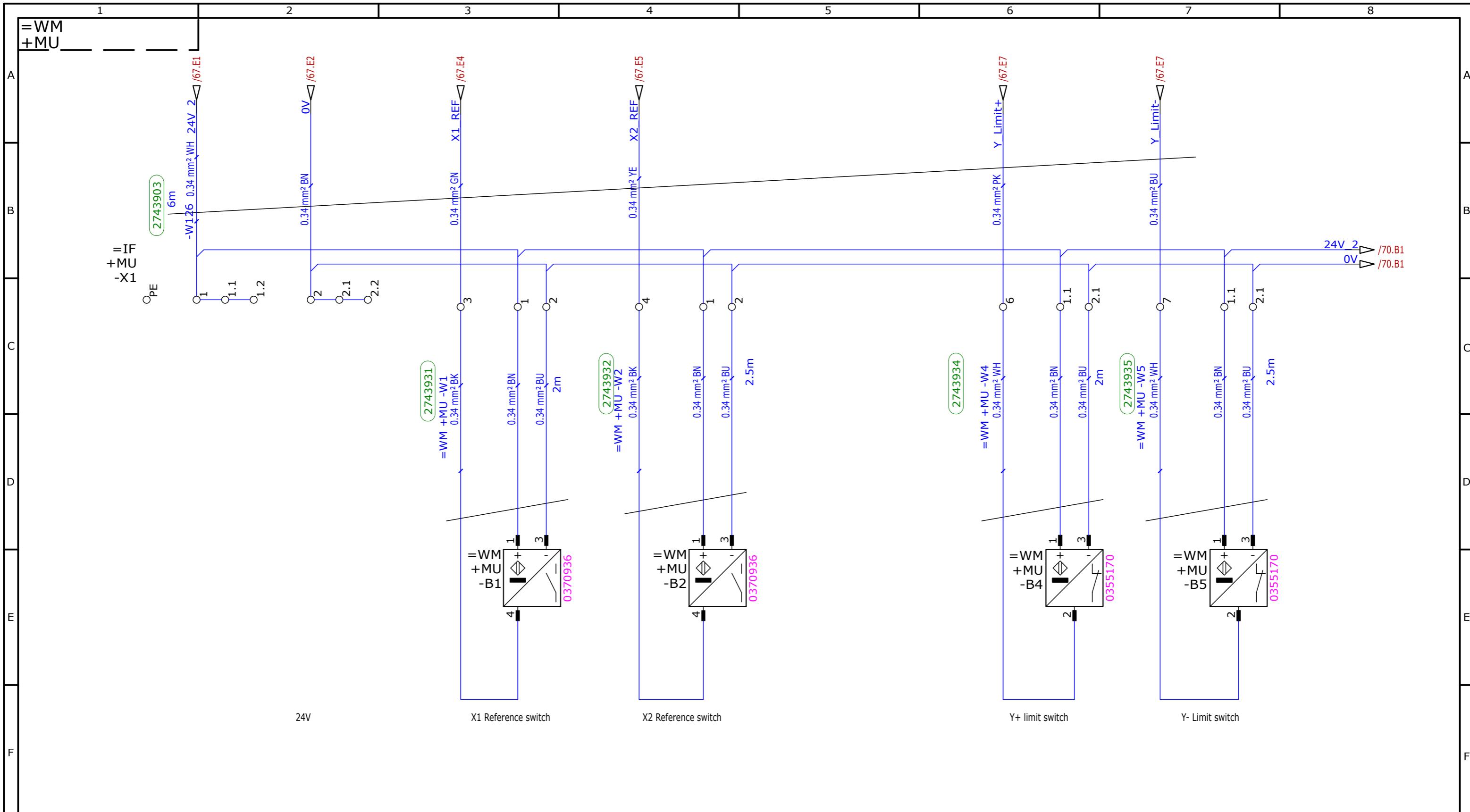


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					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Circuit diagram TruLaser 1000 fiber BE							
		Project number	Vers.proj.	Doc.type	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
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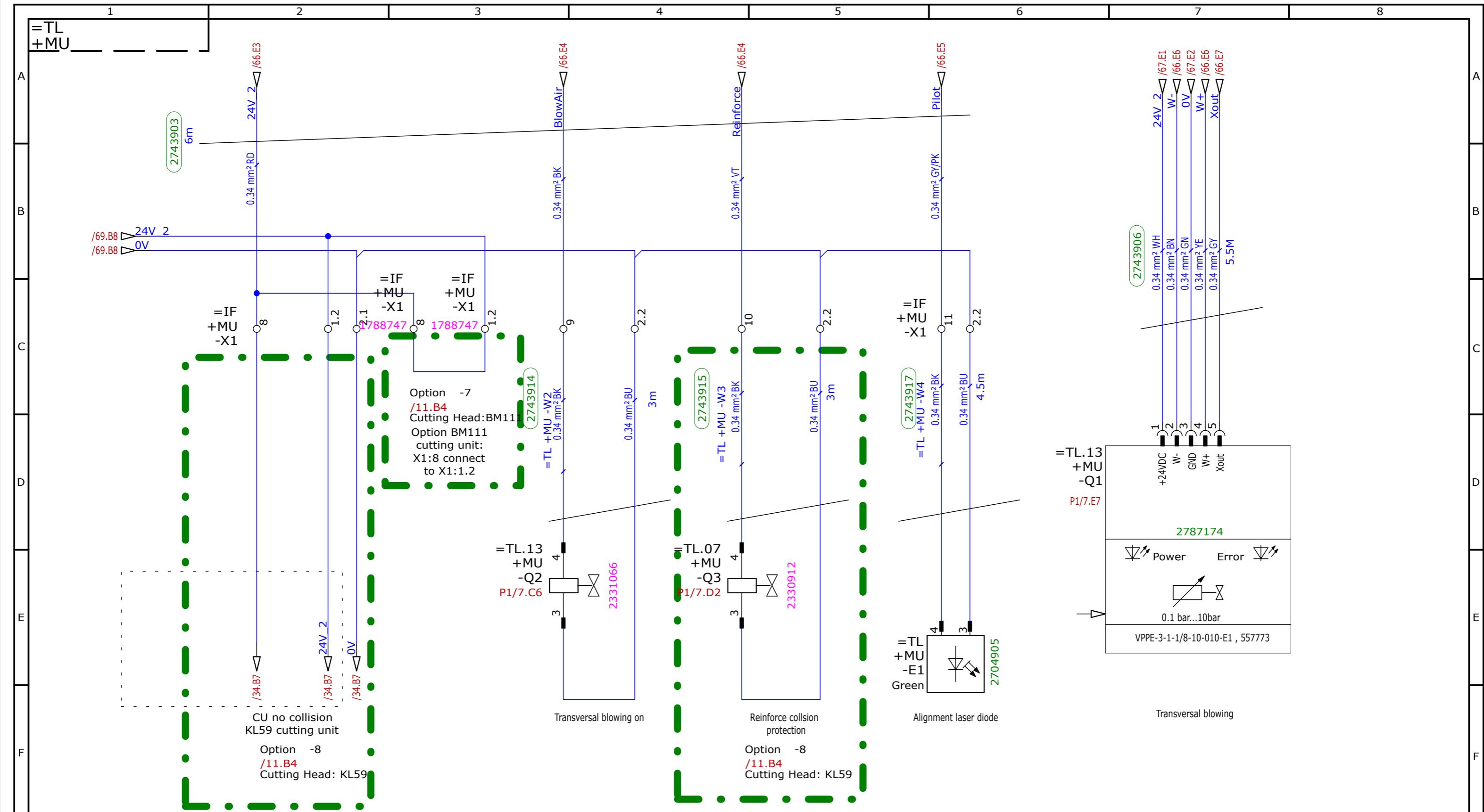




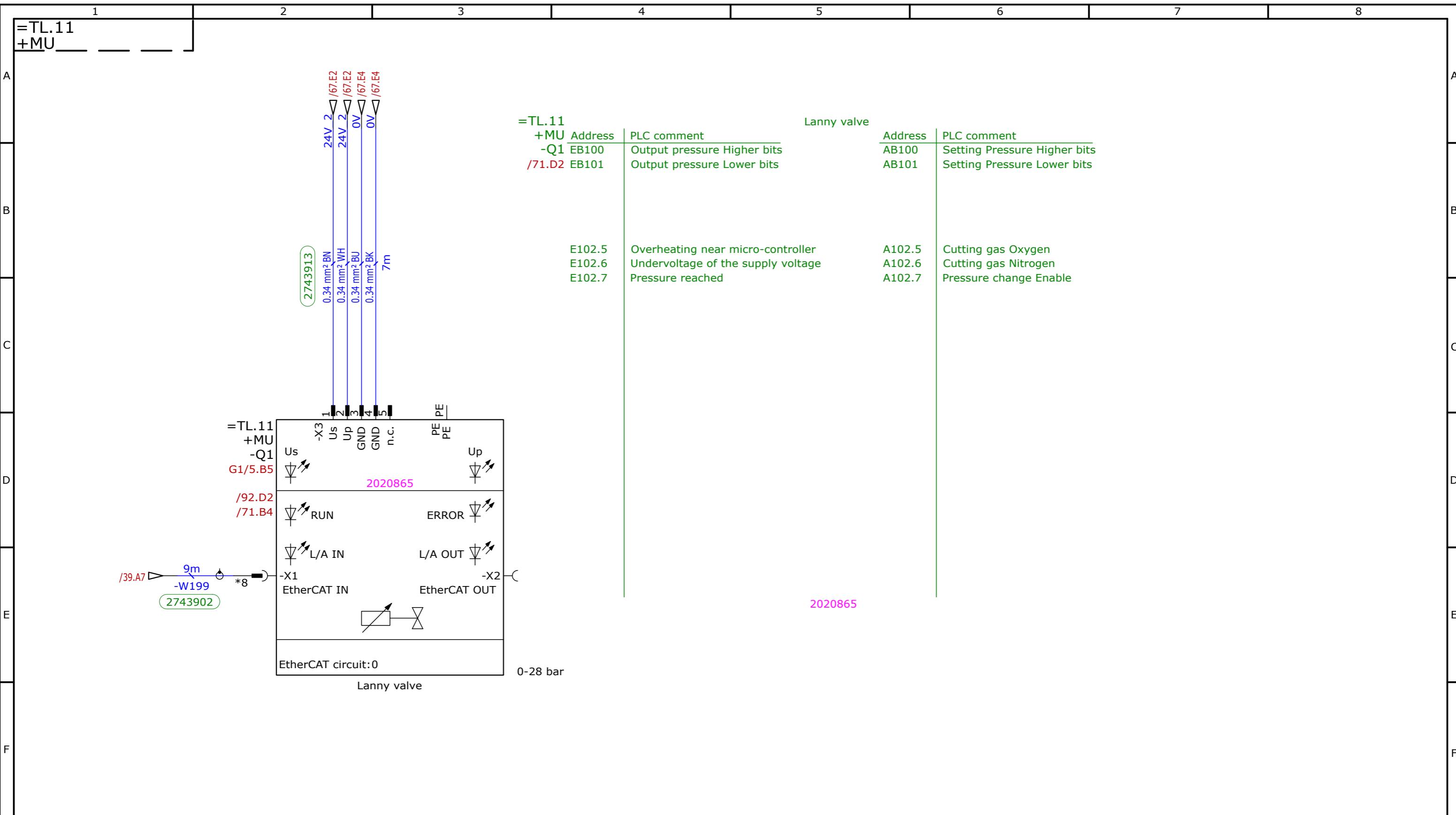
TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China	Project-designation Set of schematics TruLaser 1000 fiber BE			Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE			Contents Motion unit Proximity switch/ Front lift plate sensor				
				34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU								
	Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number 93630-5-201	Doc. part 002	Version 03	Status RE	Id number 2815136	Sheet 68 of 111	Type E1	Format A3



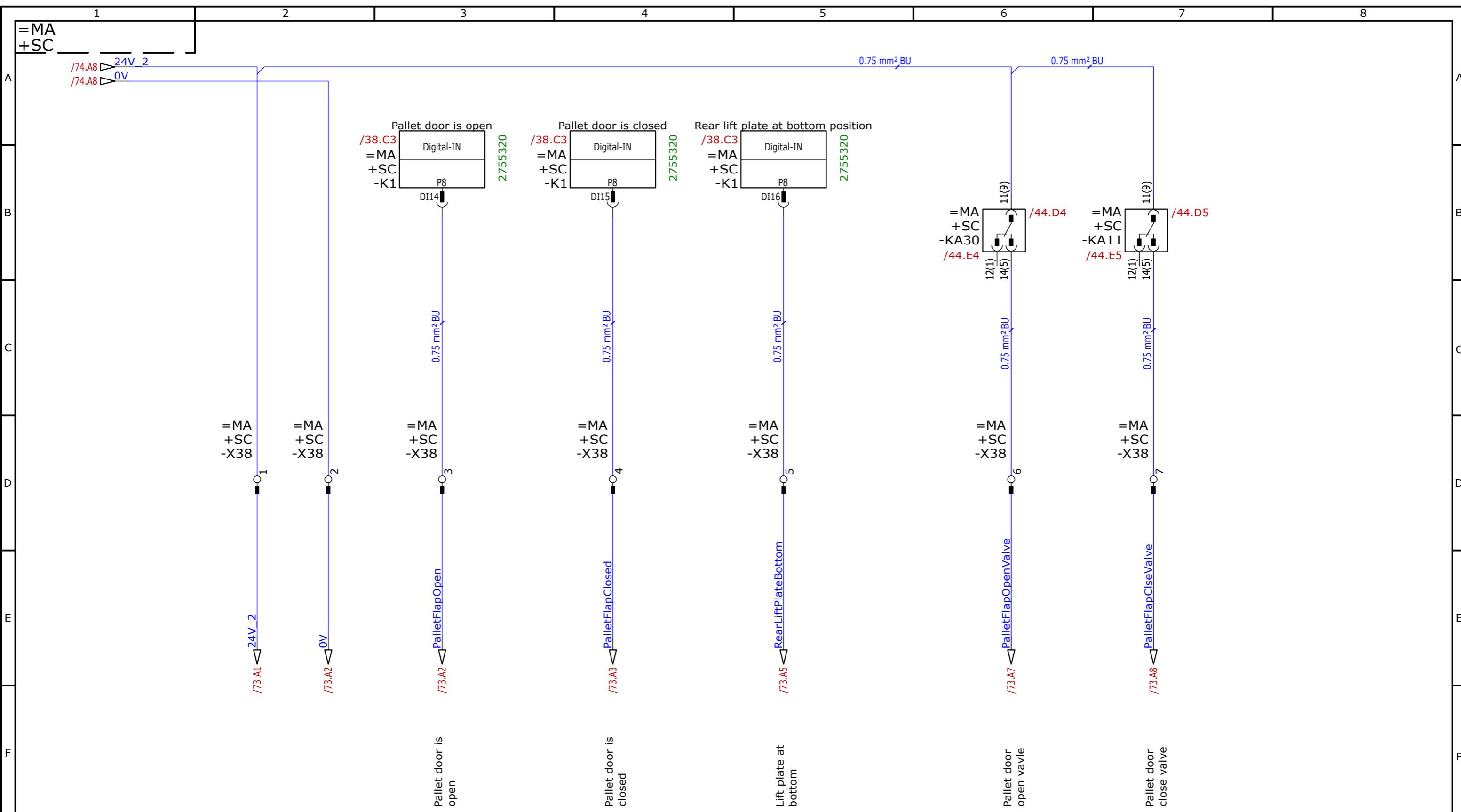
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Project number	Vers.proj.	Doc.type	Original record	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format						
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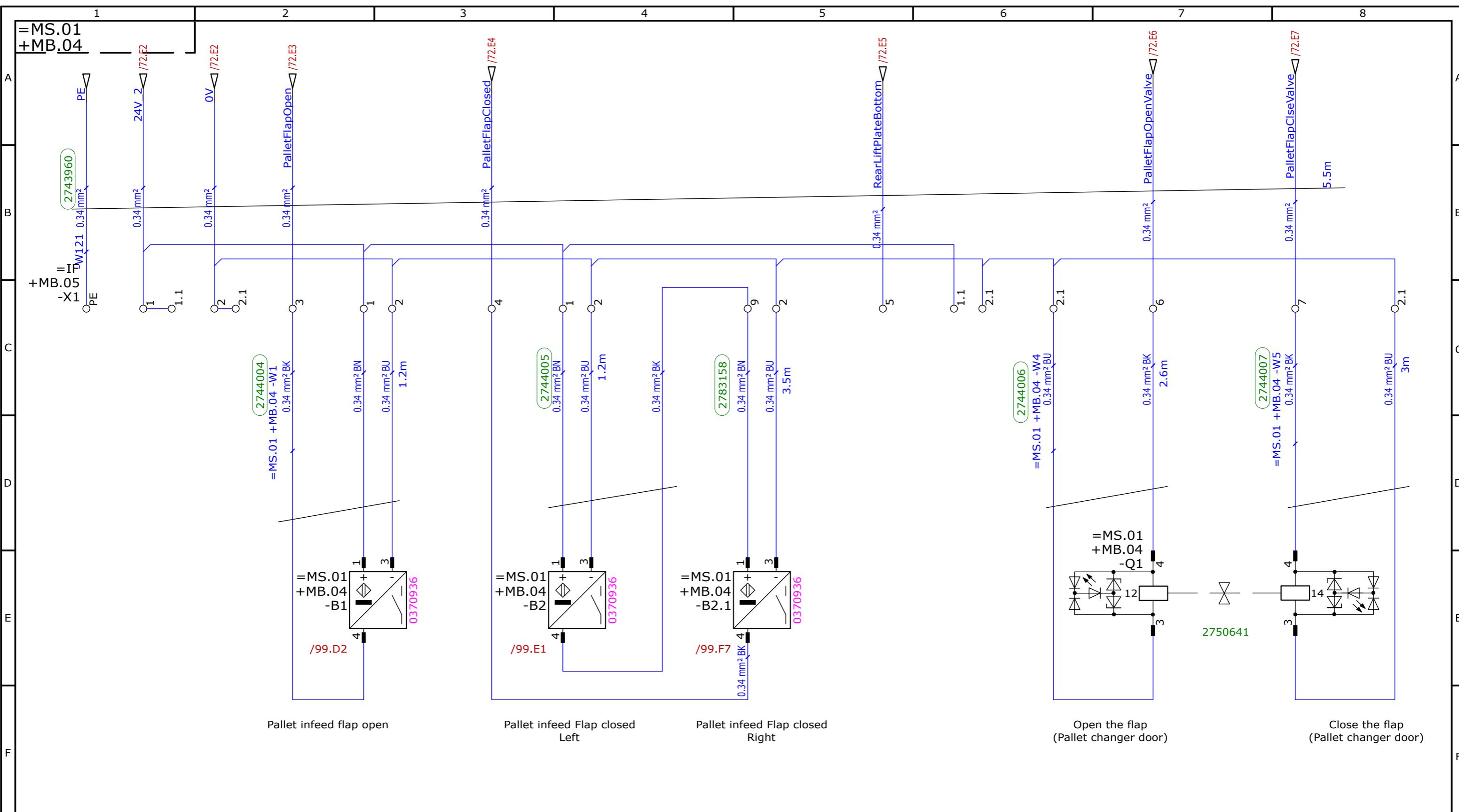
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		Set of schematics TruLaser 1000 fiber BE							Circuit diagram TruLaser 1000 fiber BE											
		Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S					Document number 93630-5-201	Doc. part 002	Version 03	Status RE	Id number 2815136	Sheet 70 of 111	Type E1	Format A3				



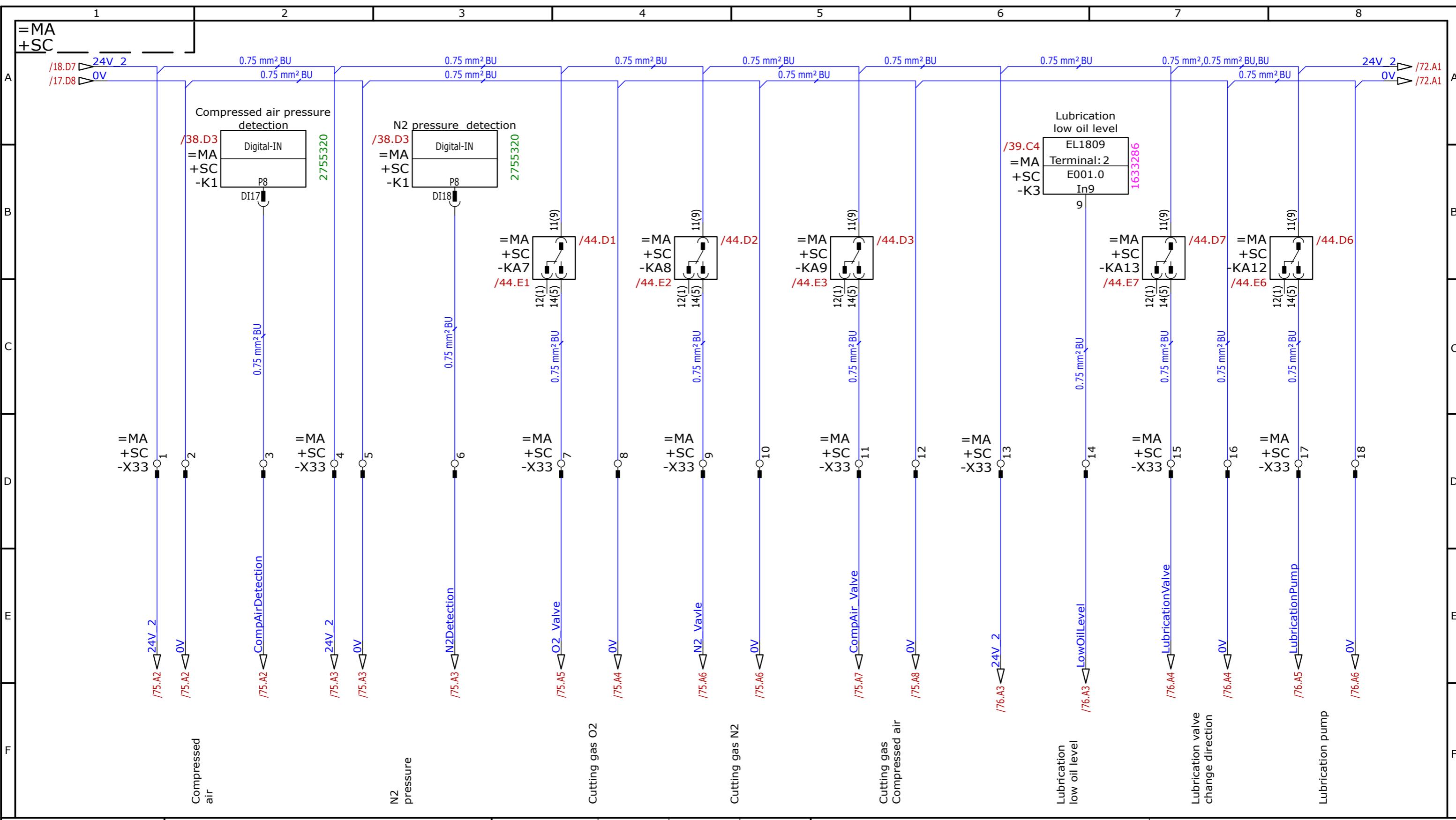
TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China	Project designation Set of schematics TruLaser 1000 fiber BE	Change number	Edited	Reviewed	Approved	Designation			Contents Motion unit Lanny Valve							
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		Project number	Vers.proj.	Doc.type	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
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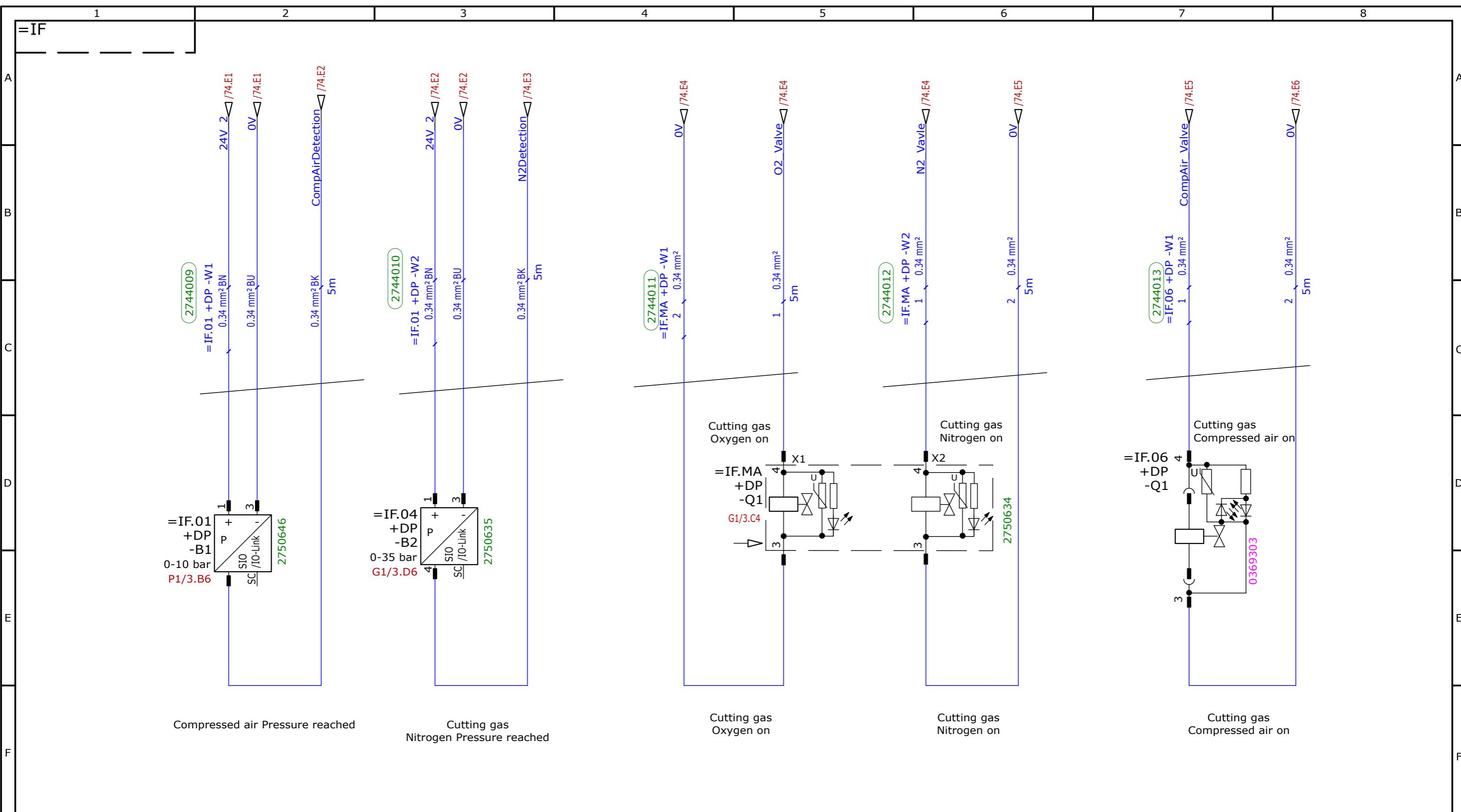
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		Project number	Vers.proj.	Doc.type	34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
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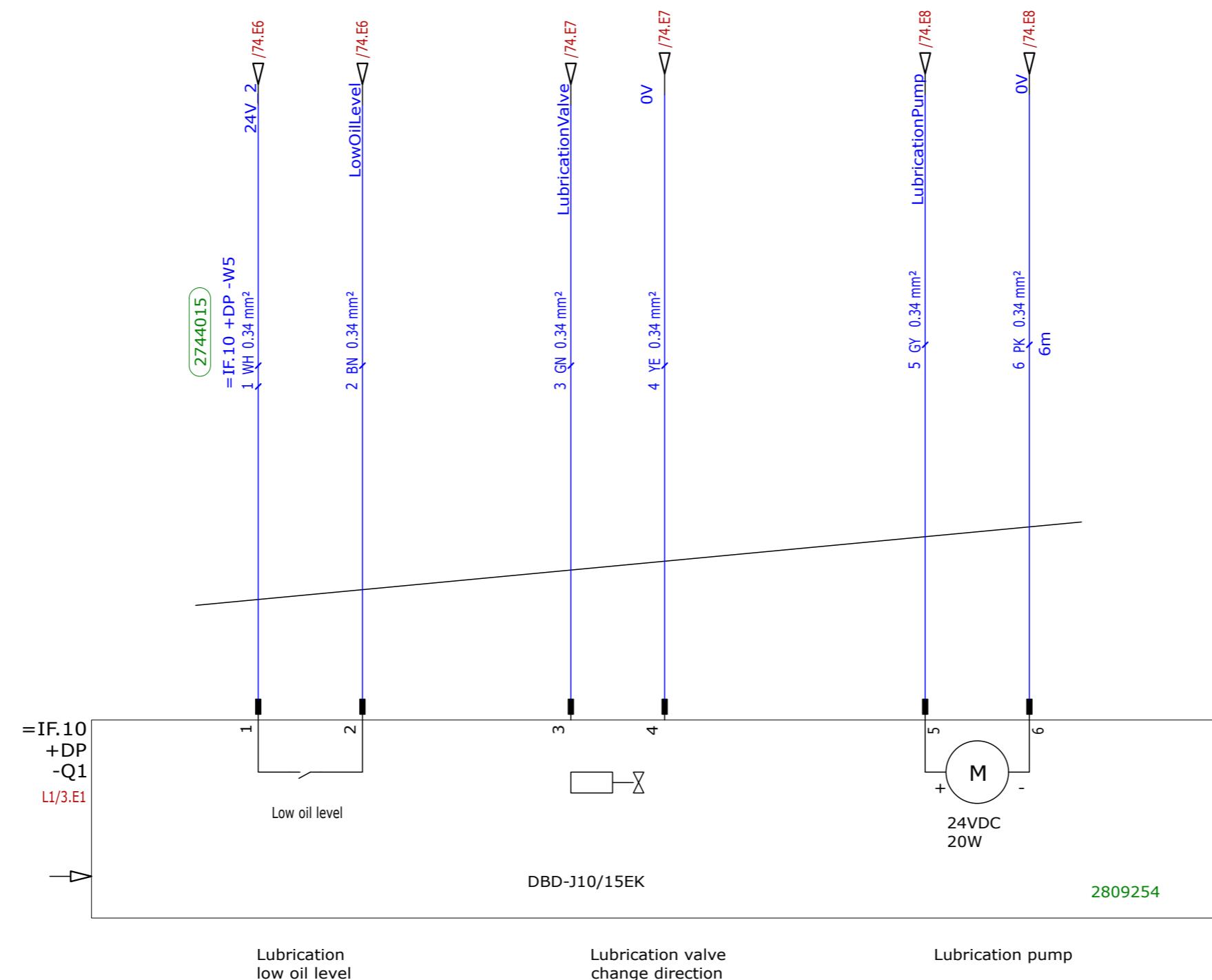
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					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU				Document number	Doc. part	Version	Status	Id number
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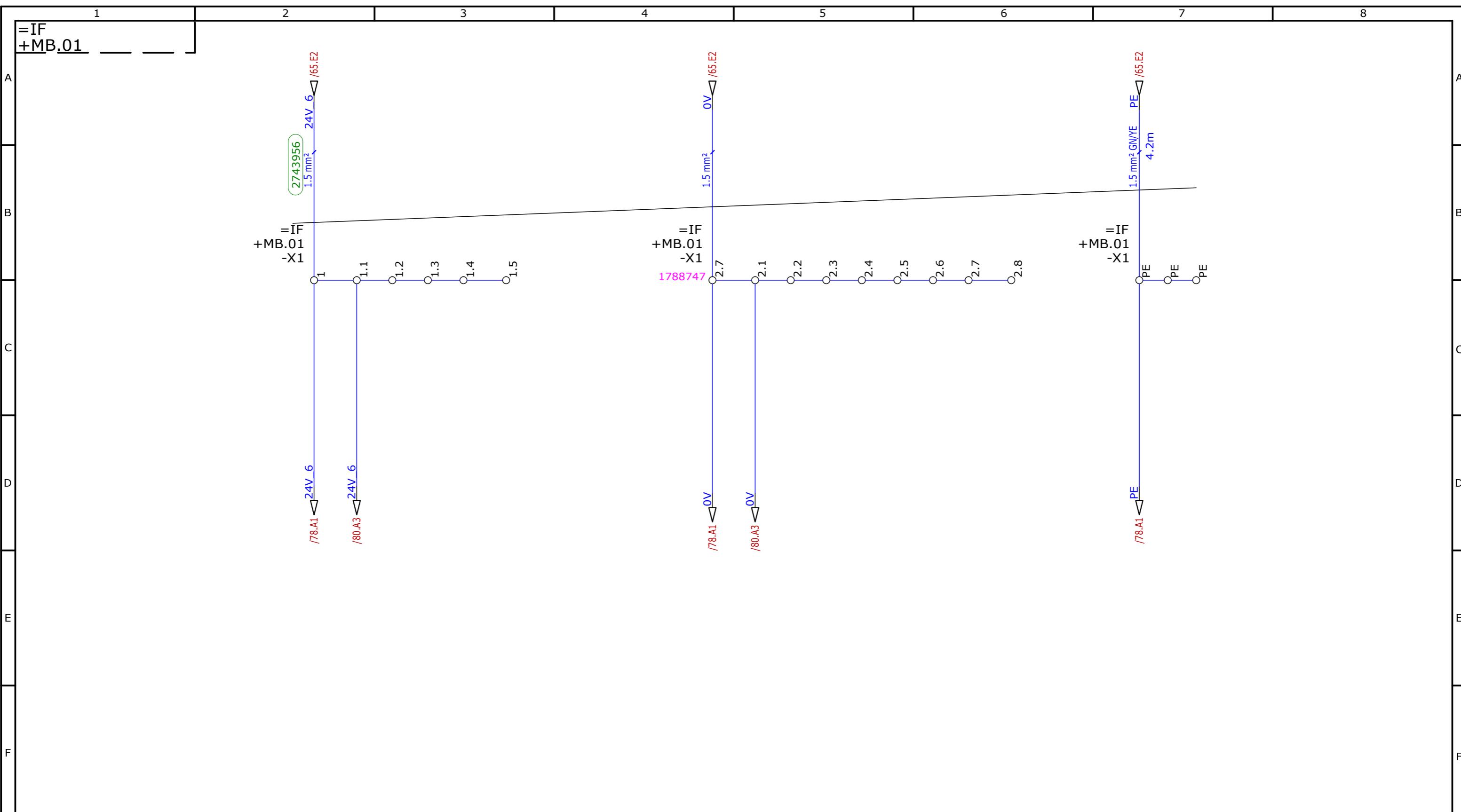
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	Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU					



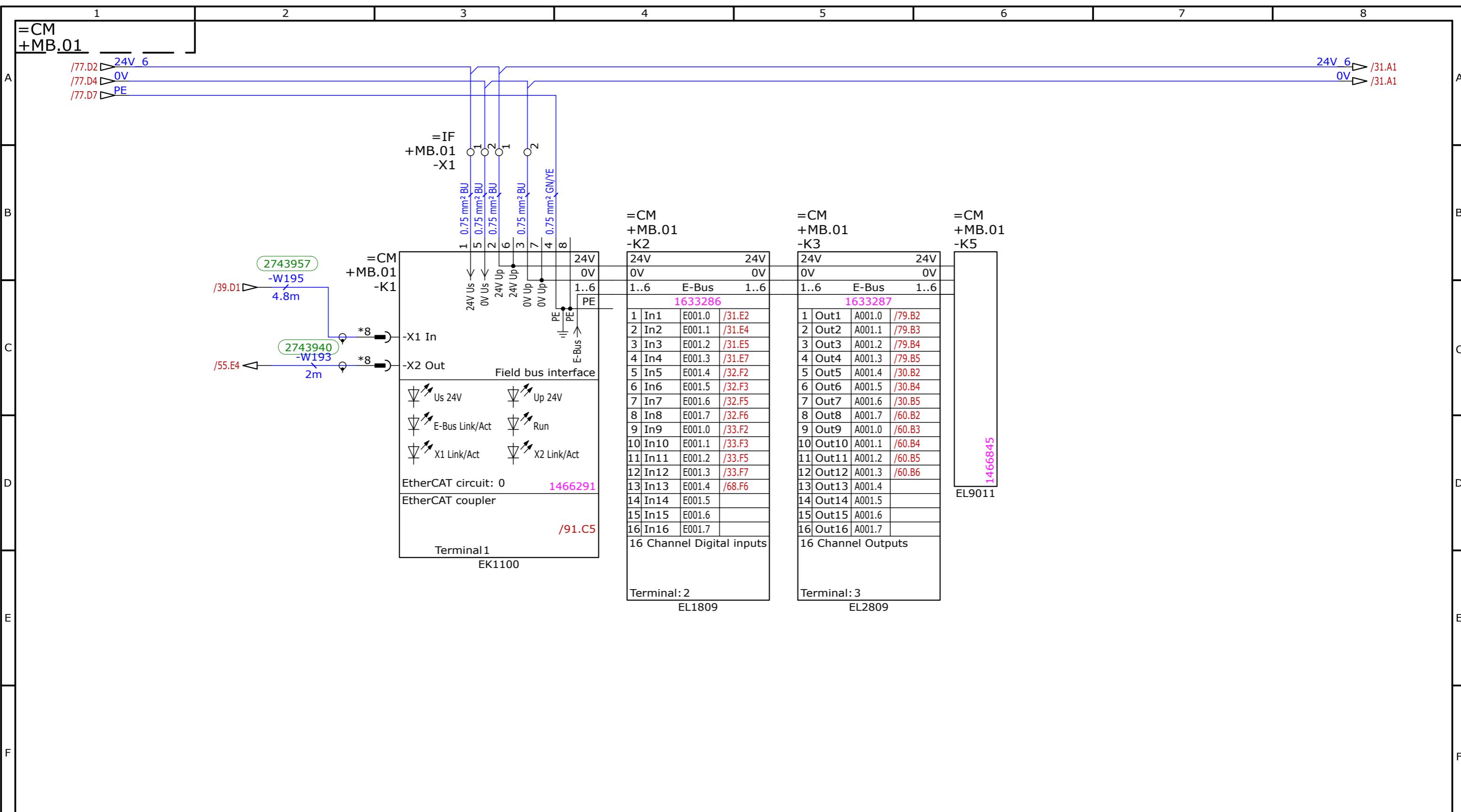
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		Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU								



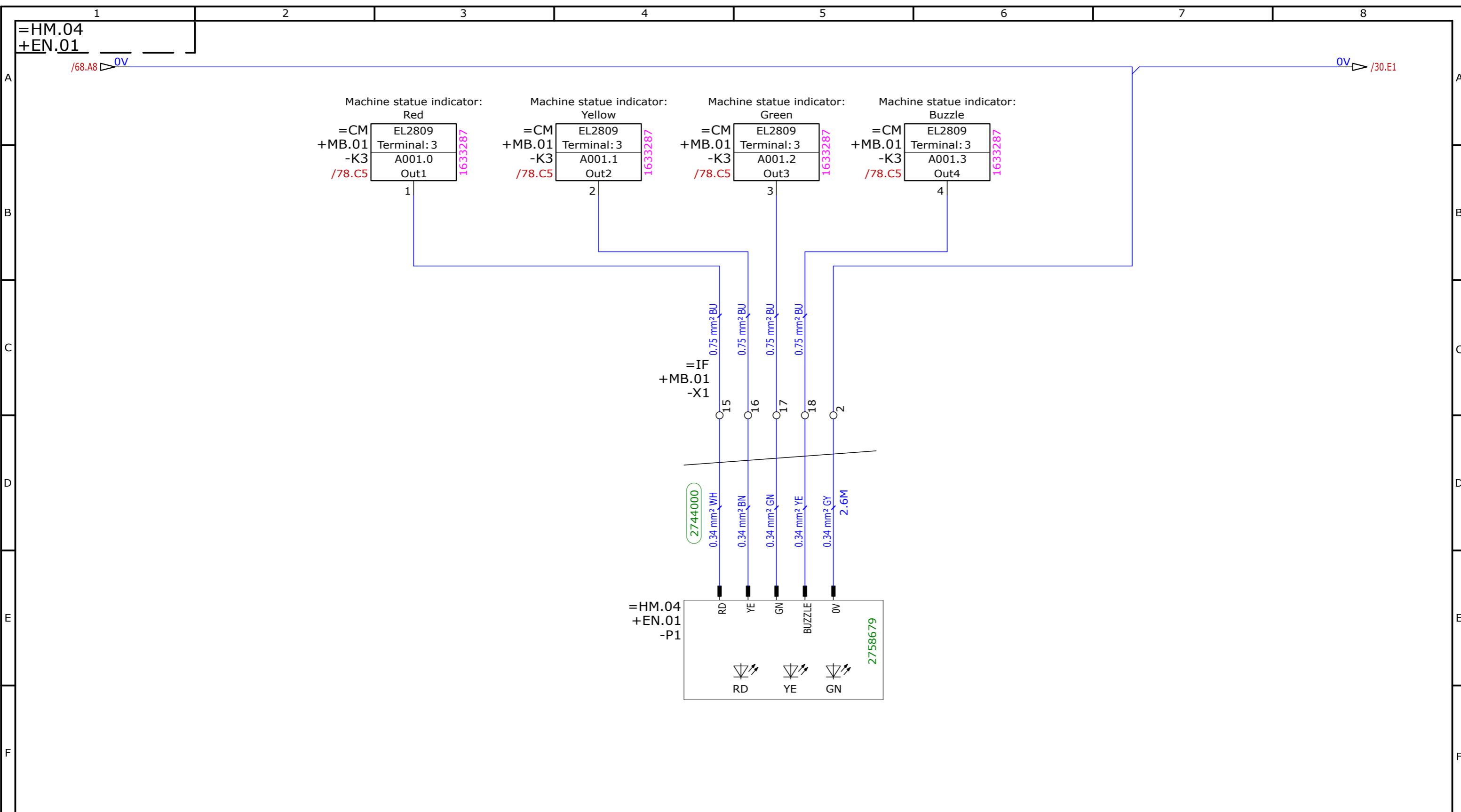
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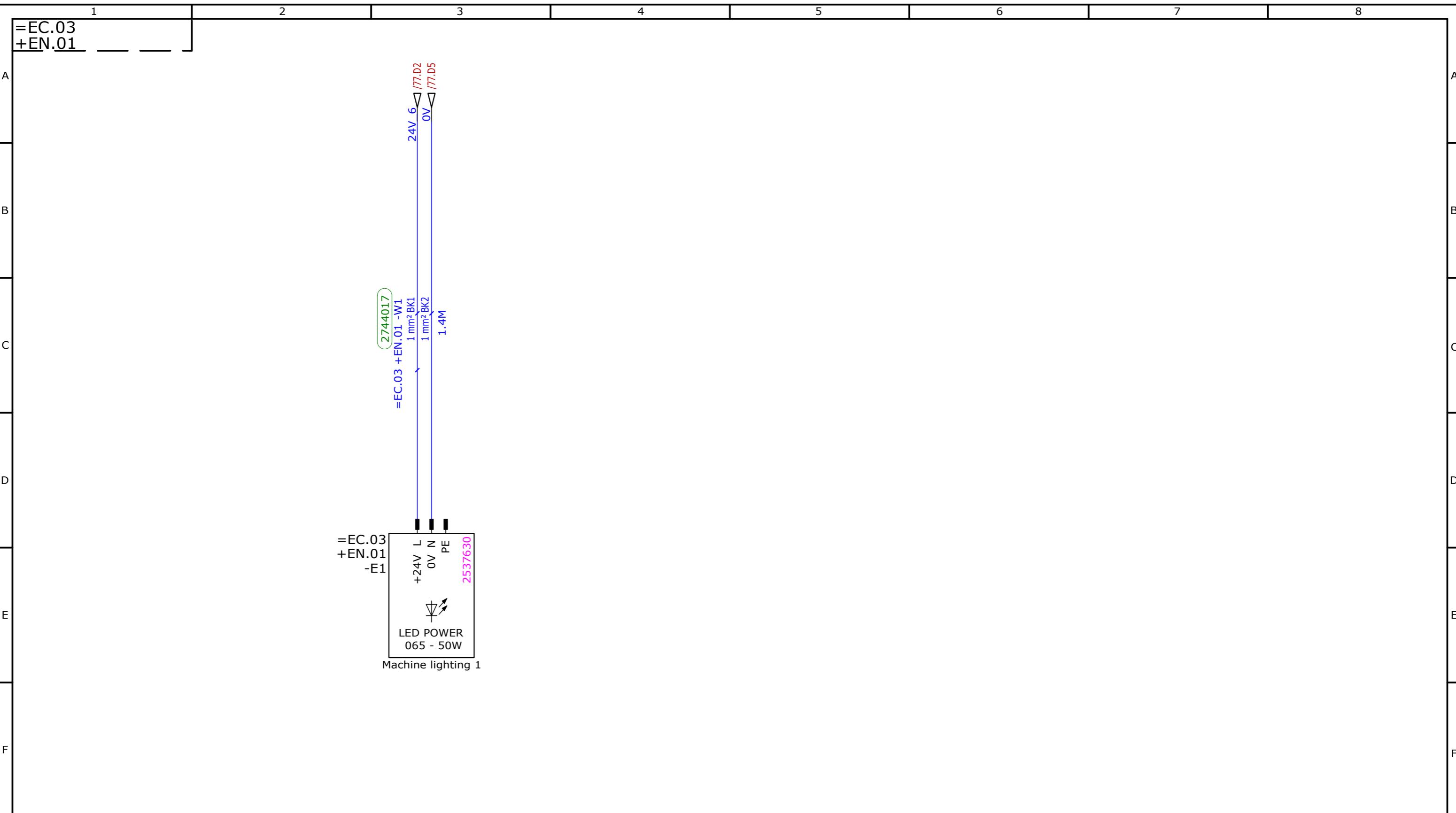
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					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format	
			Project number	Vers.proj.	Doc.type	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	93630-5-201	002	03	RE	2815136	77 of 111	E1	A3



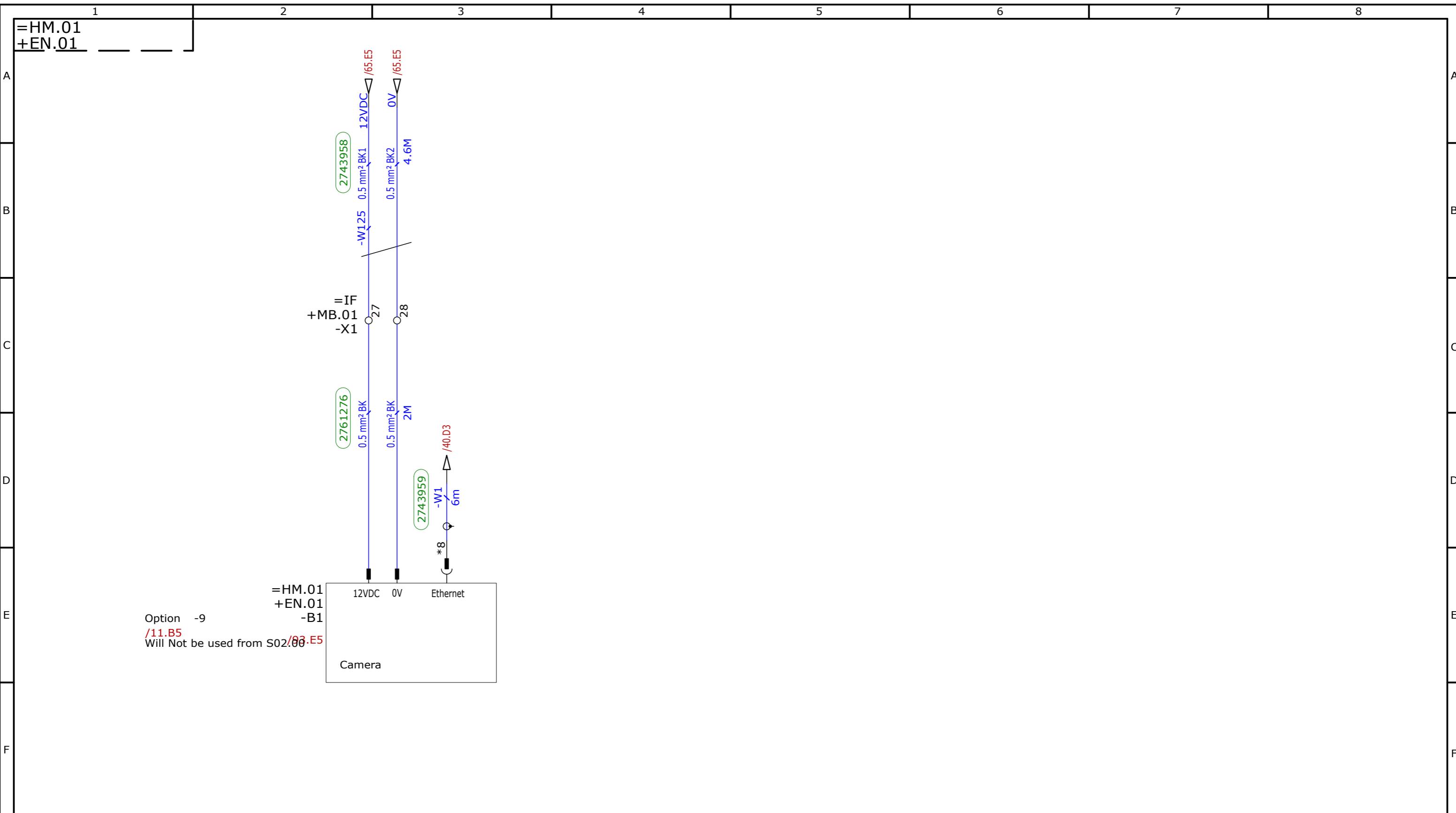
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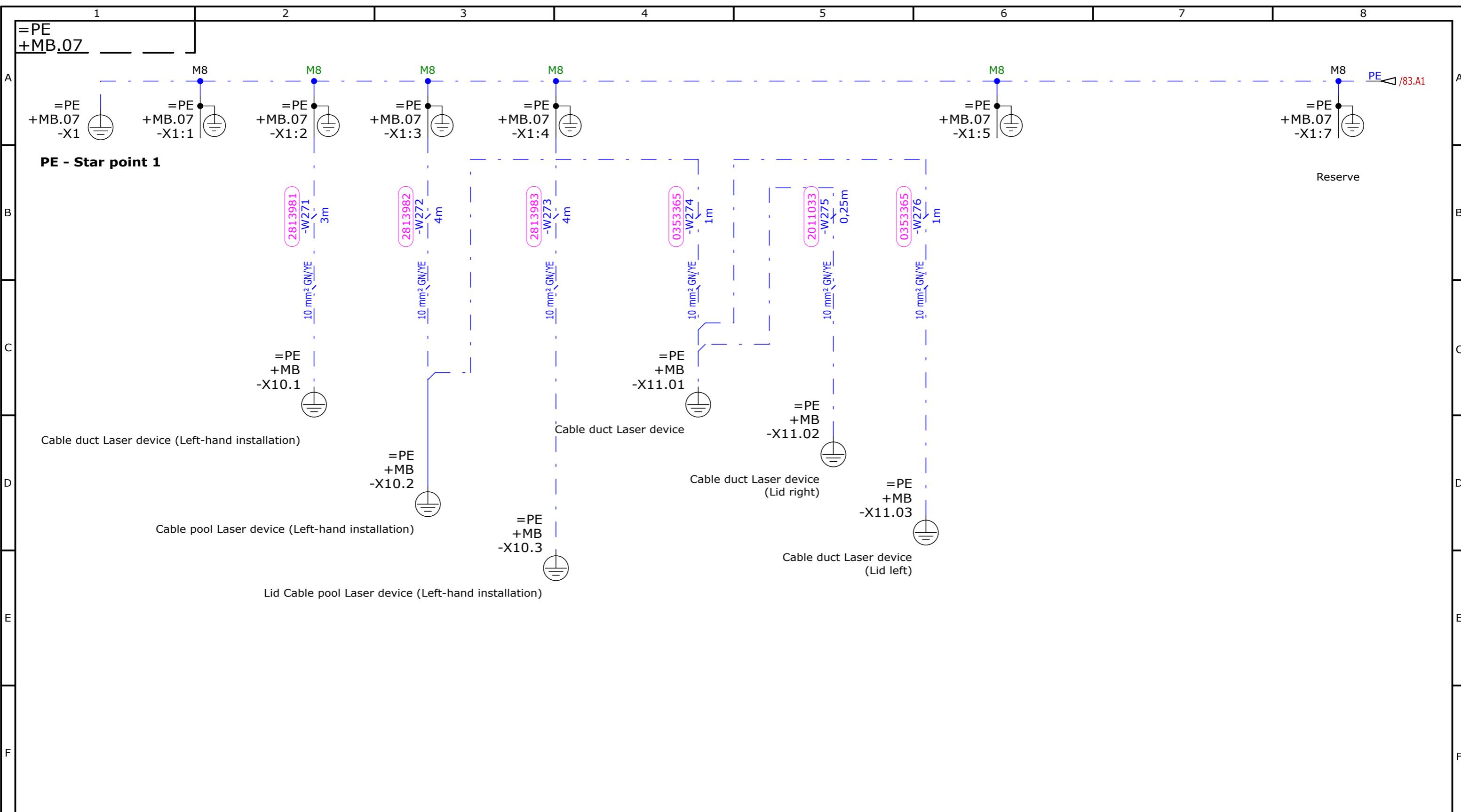
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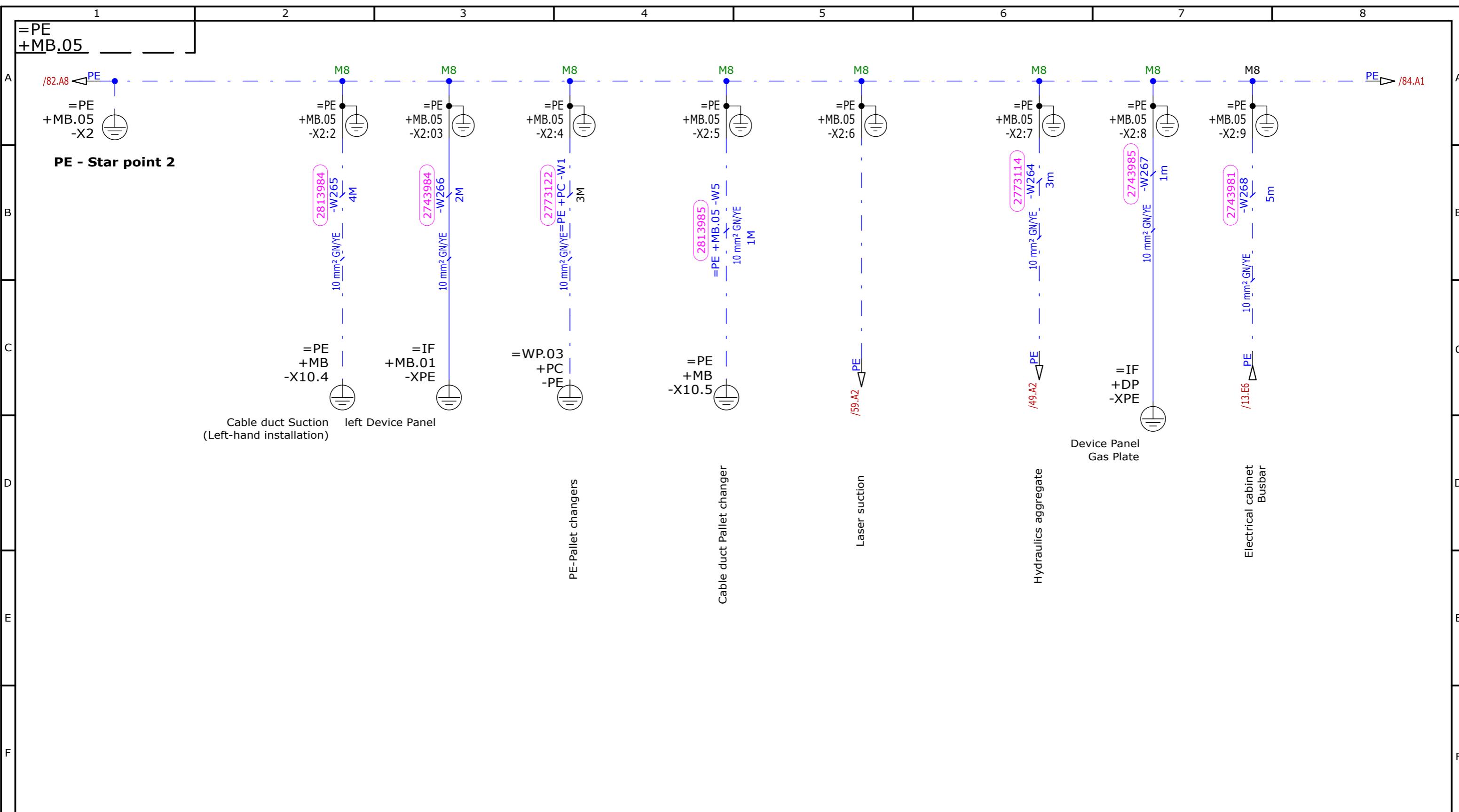
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Project number	Vers.proj.	Doc.type	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format		
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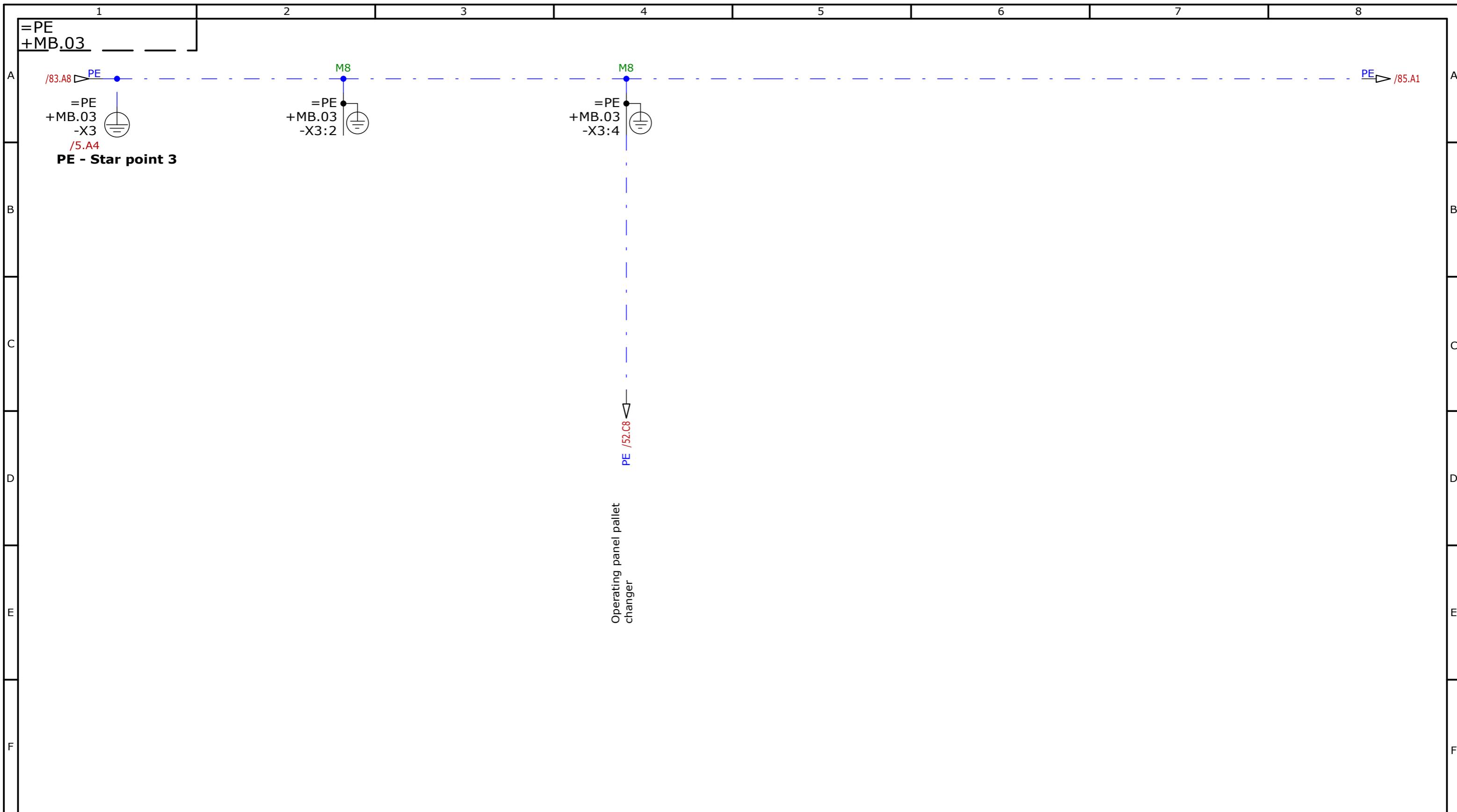
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			Project number	Vers.proj.	Doc.type	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	93630-5-201	002	03	RE	2815136	81 of 111	E1	A3



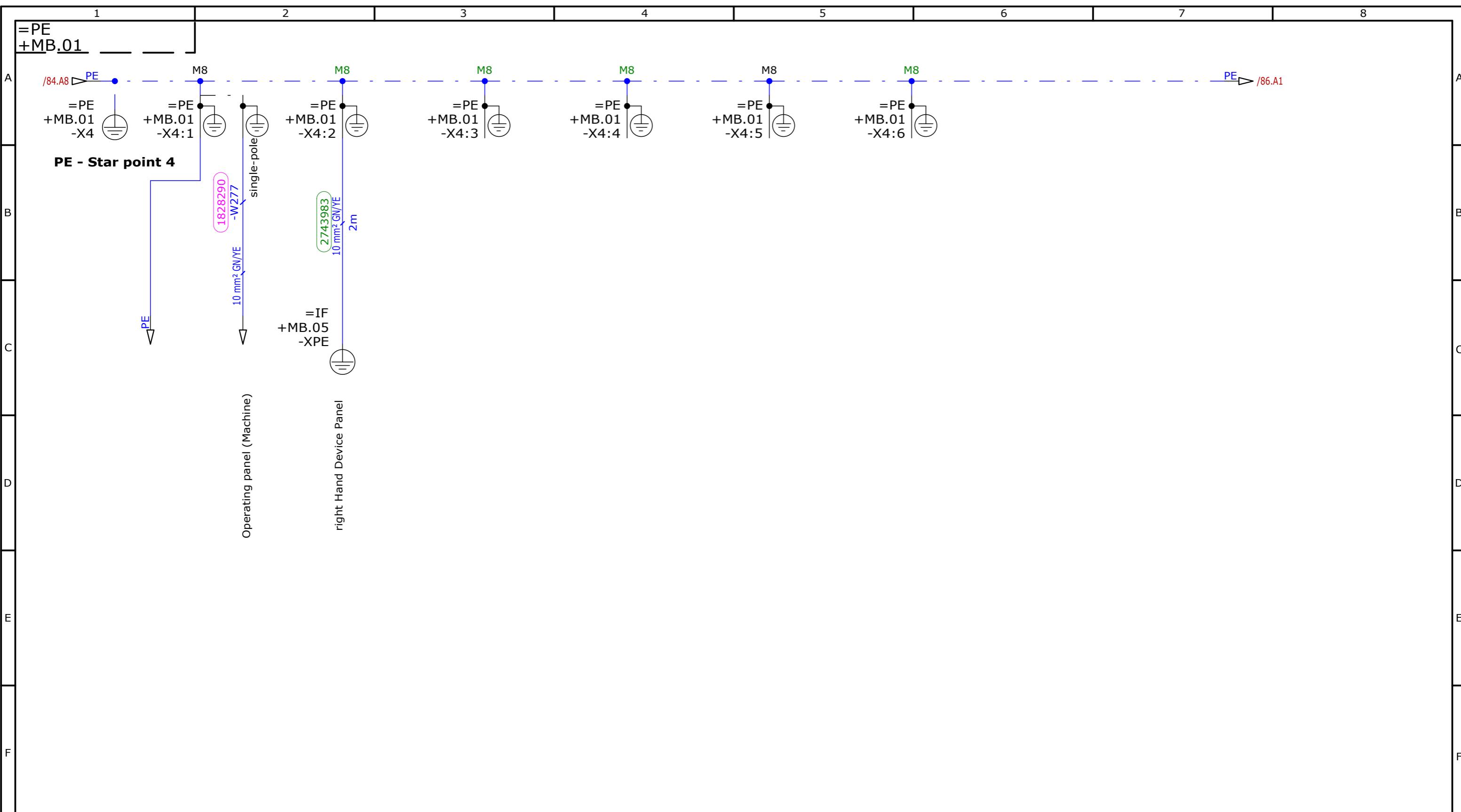
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		Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU								



TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China	Project-designation			Change number	Edited	Reviewed	Approved	Designation			Contents				
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		Project number	Vers.proj.	Doc.type					Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
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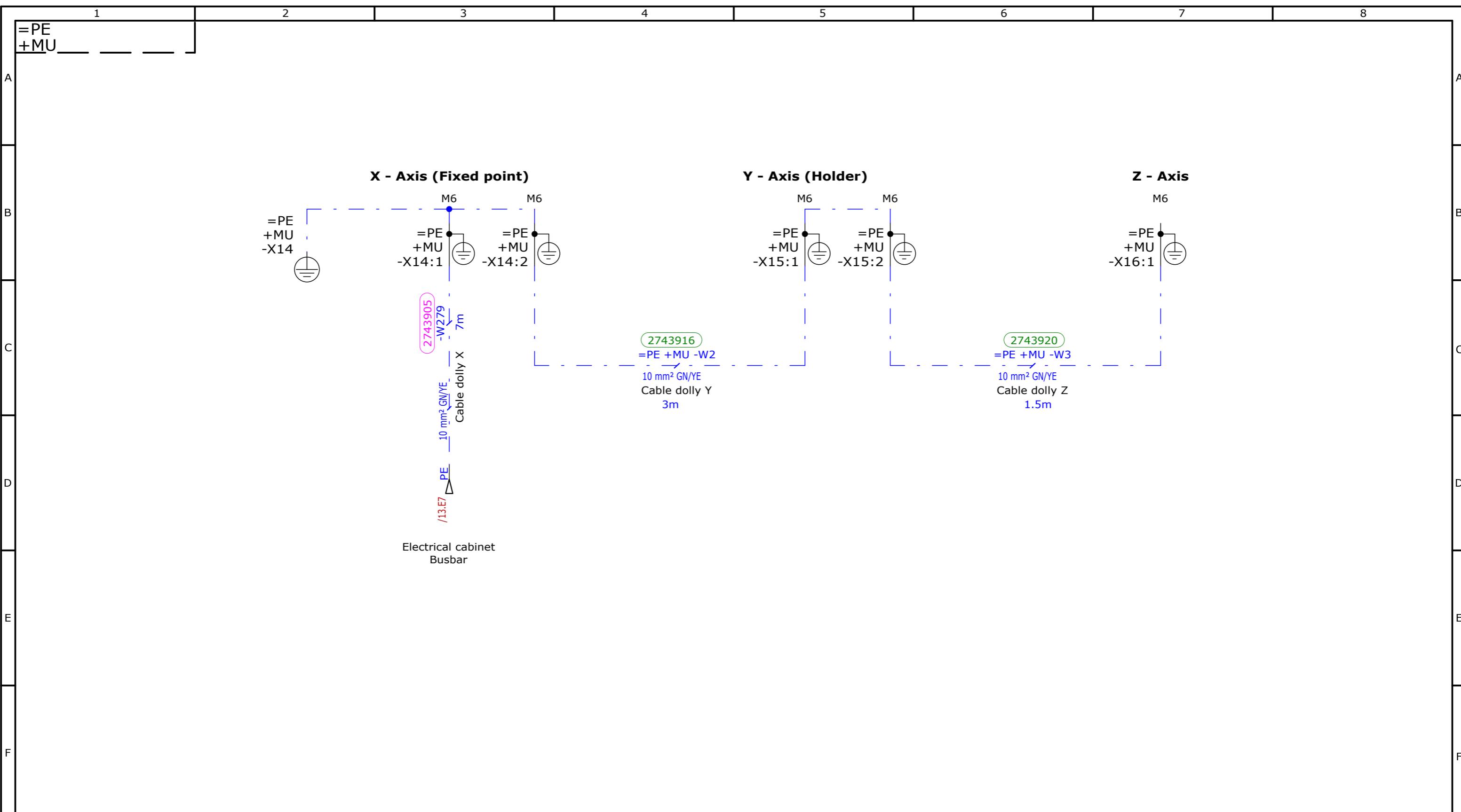
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	Set of schematics TruLaser 1000 fiber BE			34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Circuit diagram TruLaser 1000 fiber BE			(right rear)							
	Project number		Vers.proj.	Doc.type	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format		
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TRUMPF TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE	Change number	Edited	Reviewed	Approved	Designation			Contents				
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Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format			
			Original record	002	03	RE	2815136	85 of 111	E1	A3			



TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China	Project-designation			Change number	Edited	Reviewed	Approved	Designation			Contents					
	Set of schematics TruLaser 1000 fiber BE			34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Circuit diagram TruLaser 1000 fiber BE			Equipotential bonding Valve terminal					
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TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE			Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE			Contents Equipotential bonding Motion unit						
					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format		
			Vers.proj.	Doc.type	Original record	03	E3S	TCN521TE	TCN521TE	TCN520HU	93630-5-201	002	03	RE	2815136	87 of 111	E1	A3

1 2 3 4 5 6 7 8

+TF

=IL.02 +TF -W223		Power connection laser <i>/63.B1 /12.C3</i>					
See Table		Operating materials		Left-hand installation		Right-hand installation	
		Standard	Cross-section (Cores)	Standard	Cross-section (Cores)	Standard	Cross-section (Cores)
TruFiber 3001 G FD91	2743944	6mm2					
TruFiber 6001 G FD91	2776146	10mm2					

A

A

B

B

C

C

D

D

E

E

F

F



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China
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Project-designation
Set of schematics TruLaser 1000 fiber BE

Change number
34711-08

Edited
01.02.2024

Reviewed
01.02.2024

Approved
TCN521ZX

Designation
Circuit diagram TruLaser 1000 fiber BE

TCN521ZX

TCN520HU

Contents Cable laser interface

Project number
93630-5-E1

Vers.proj.
03

Doc.type
E3S

Original record

03.04.2023

17.05.2023

17.05.2023

TCN521TE

TCN521TE

TCN520HU

93630-5-201

Document number
002

Doc. part
03

Version
RE

Status
2815136

Id number
88 of 111

Sheet
E1

Type
A3

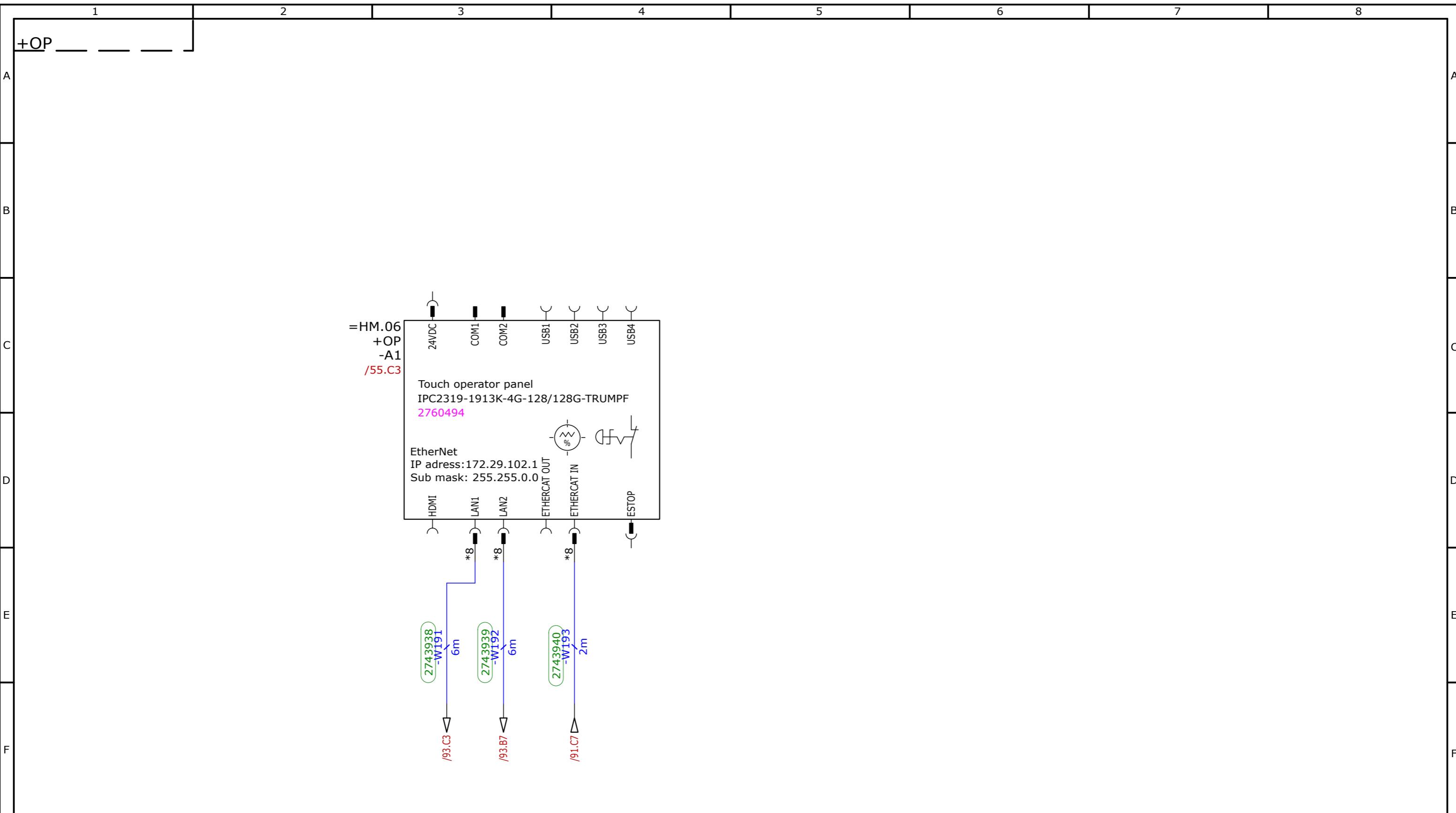
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A	+CO	—	—	—	—	—	—	A
B	=IF.08 +CO -E235 See Table	Power connection Cooling aggregate	/56.C3 /12.C5					B
C	Operating materials	Left-hand installation	Right-hand installation					C
D		Standard	Cross-section (Cores)	Standard	Cross-section (Cores)			D
E	TruFiber 3001 G FD91	2768800	2.5mm2					E
F	TruFiber 6001 G FD91	2743954	4mm2					F

TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE	Change number	Edited	Reviewed	Approved	Designation		Contents Power cable Cooling aggregate							
		34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Circuit diagram TruLaser 1000 fiber BE		Document number	Doc. part	Version	Status	Id number			
	Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	93630-5-201	002	03	RE	2815136	Sheet 89 of 111	Type E1	Format A3

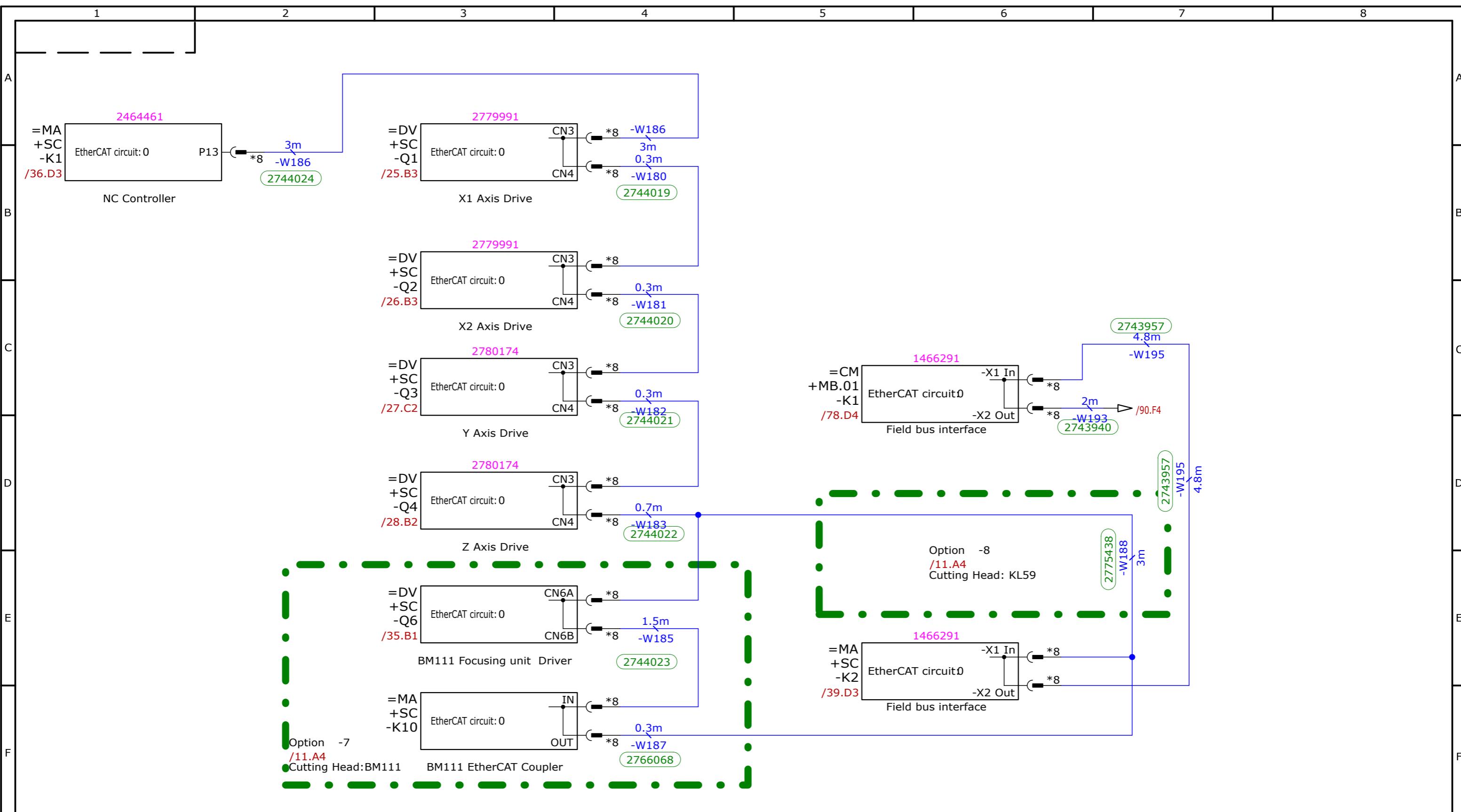
	1	2	3	4	5	6	7	8
A								A
B								B
C								C
D								D
E								E
F								F

-W262 Power cable Exhaust module /12.C6				
Operating materials		Left-hand installation	Right-hand installation	
	Standard	Cross-section (Cores)	Standard	Cross-section (Cores)
TruFiber 3001/6001 G FD91	2768963	2,5mm2		

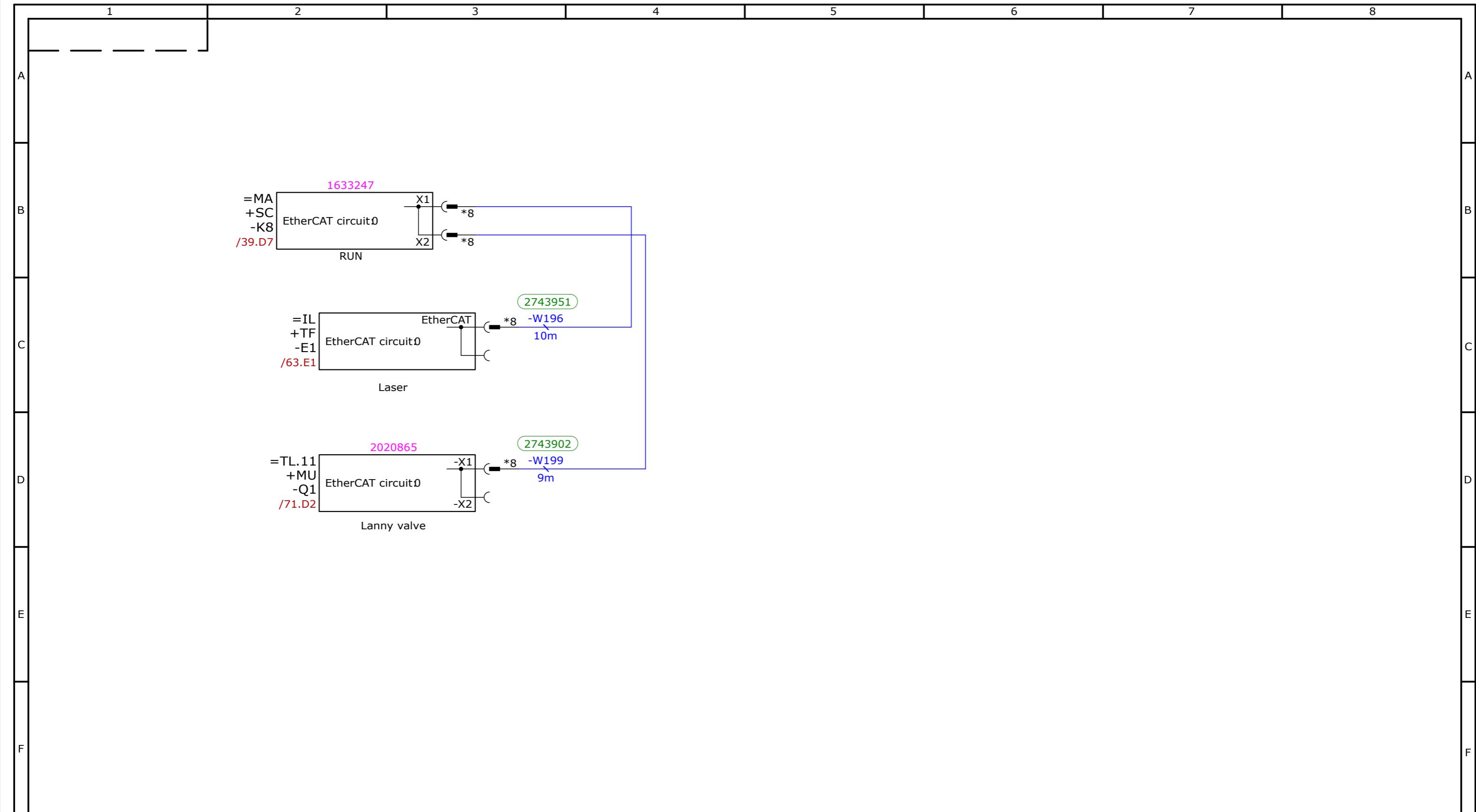
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	Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number 93630-5-201	Doc. part 002	Version 03	Status RE	Id number 2815136	Sheet 112 of 111	Type E1	Format A3



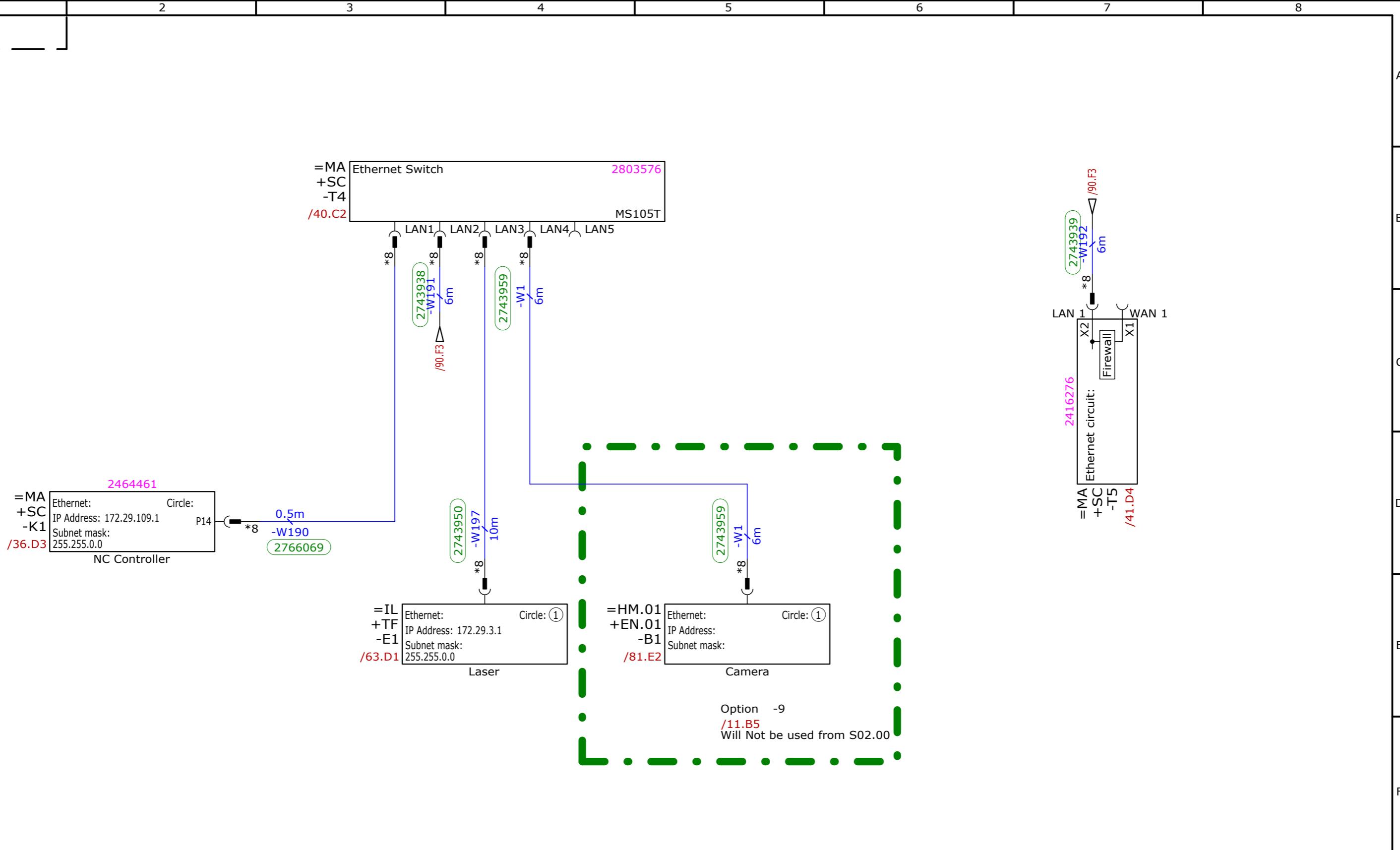
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		Project number	Vers.proj.	Doc.type	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
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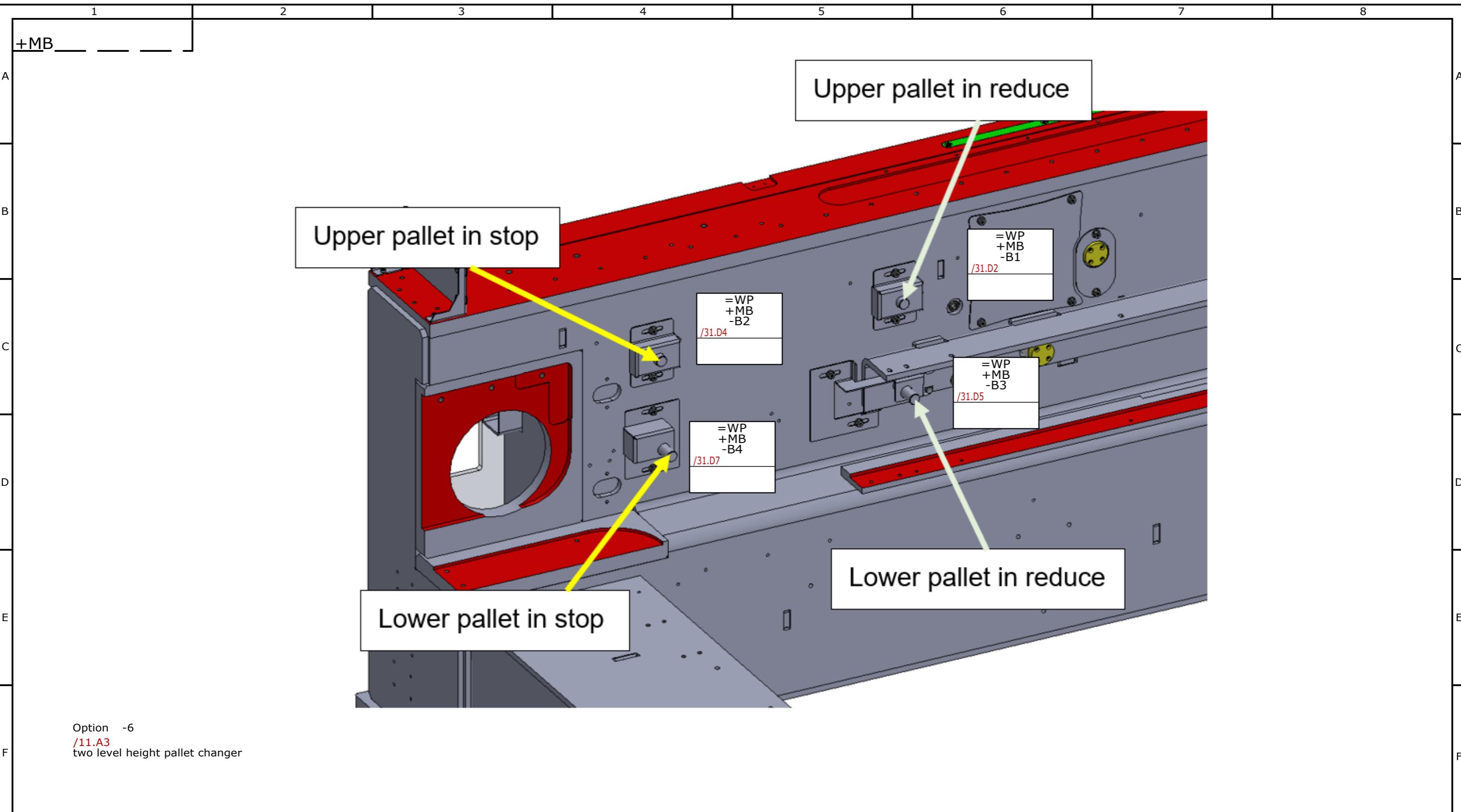
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		Set of schematics TruLaser 1000 fiber BE							Circuit diagram TruLaser 1000 fiber BE							
Project number	Vers.proj.	Doc.type	Original record	34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format	
93630-5-E1	03	E3S	TCN521TE	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	93630-5-201	002	03	RE	2815136	91 of 111	E1	A3		



TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE			Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE			Contents EtherCAT topology				
					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
		Project number	Vers.proj.	Doc.type	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	93630-5-201	002	03	RE	2815136	92 of 111	E1	A3



TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE			Change number	Edited	Reviewed	Approved	Designation			Contents Ethernet topology				
				34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Circuit diagram TruLaser 1000 fiber BE							
	Project number	Vers.proj.	Doc.type	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
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TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China	Project-designation			Change number	Edited	Reviewed	Approved	Designation			Contents Two Level Pallet changers Sensor station							
		Set of schematics TruLaser 1000 fiber BE			34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Circuit diagram TruLaser 1000 fiber BE			Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
		Project number	Vers.proj.	Doc.type								93630-5-201	002	03	RE	2815136	94 of 111	E1	A3
		93630-5-E1	03	E3S	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU											

1 2 3 4 5 6 7 8

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A

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C

D

E

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A

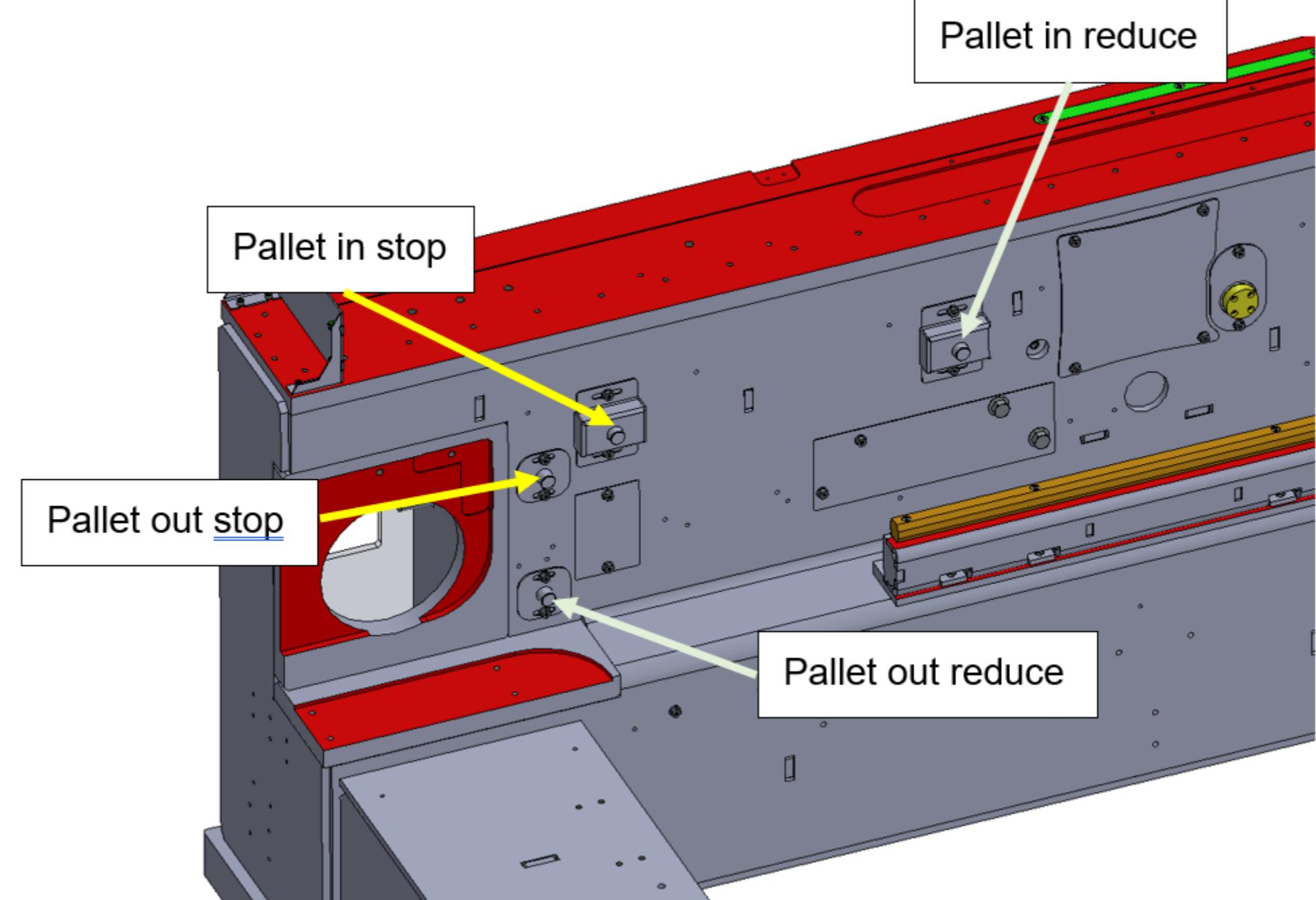
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C

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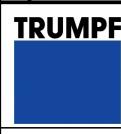
E

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Option -5

/11.A2
one level hight pallet changer



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Project-designation
Set of schematics TruLaser 1000 fiber BE

Change number
34711-08
Edited
01.02.2024
Reviewed
01.02.2024
Approved
TCN521ZX
TCN521ZX
TCN520HU

Designation
Circuit diagram TruLaser 1000 fiber BE

Contents One Level Pallet changers Sensor
station

Project number
93630-5-E1
Vers.proj.
03
Doc.type
E3S

Original record
03.04.2023
TCN521TE
17.05.2023
TCN521TE
17.05.2023
TCN520HU

Document number
93630-5-201
Doc. part
002
Version
03
Status
RE
Id number
2815136

Sheet
95 of 111
Type
E1
Format
A3

1 2 3 4 5 6 7 8

+PC

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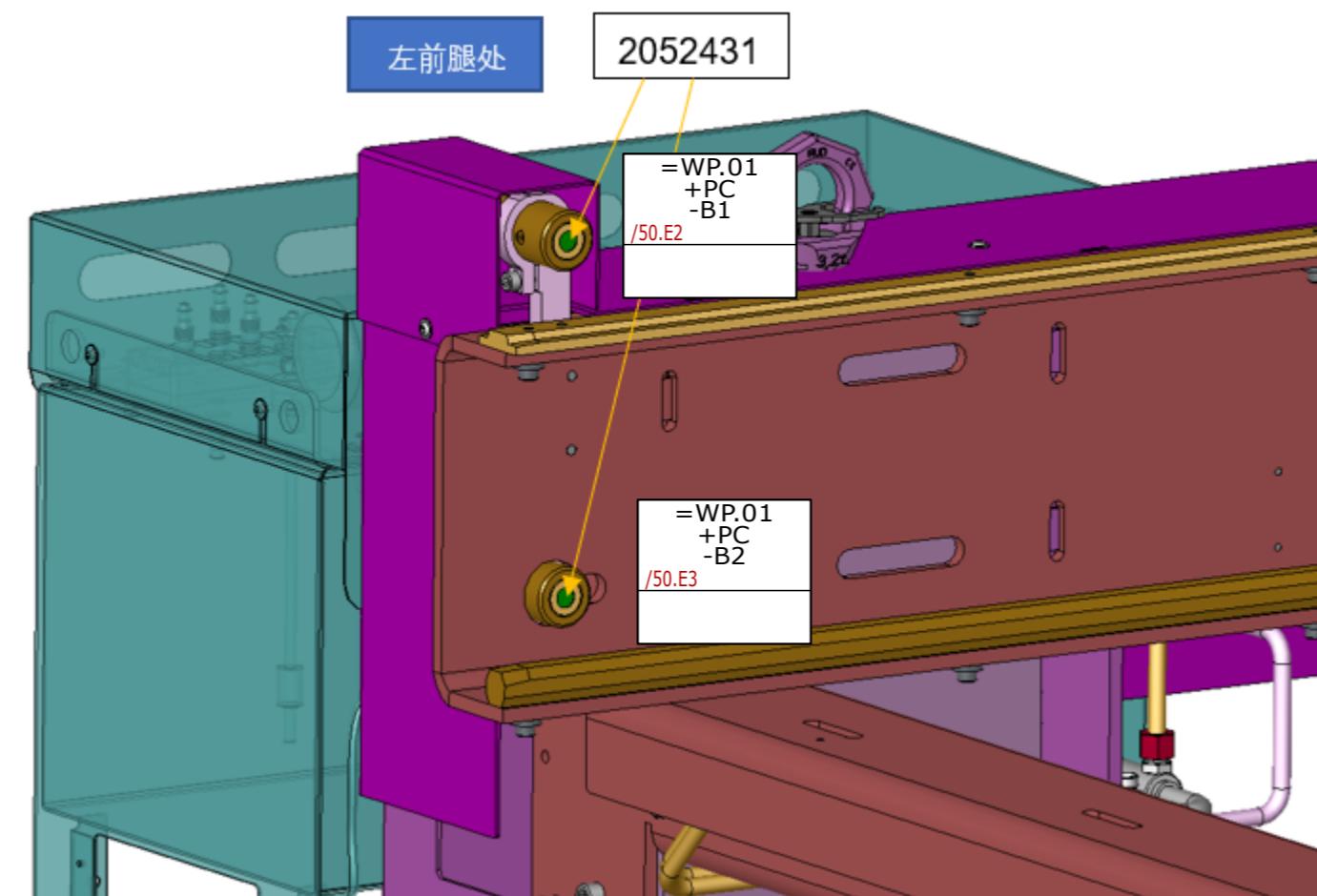
D

E

E

F

F



Option -5

/11.A2

one level hight pallet changer



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Project-designation
Set of schematics TruLaser 1000 fiber BE

Change number
34711-08

Edited

Reviewed

Approved

Designation
Circuit diagram TruLaser 1000 fiber BE

Contents Pallet A or B in pallet changer(option:
one level pallet)

Project number
93630-5-E1

Vers.proj.
03

Doc.type

E3S

Original record

03.04.2023

TCN521TE

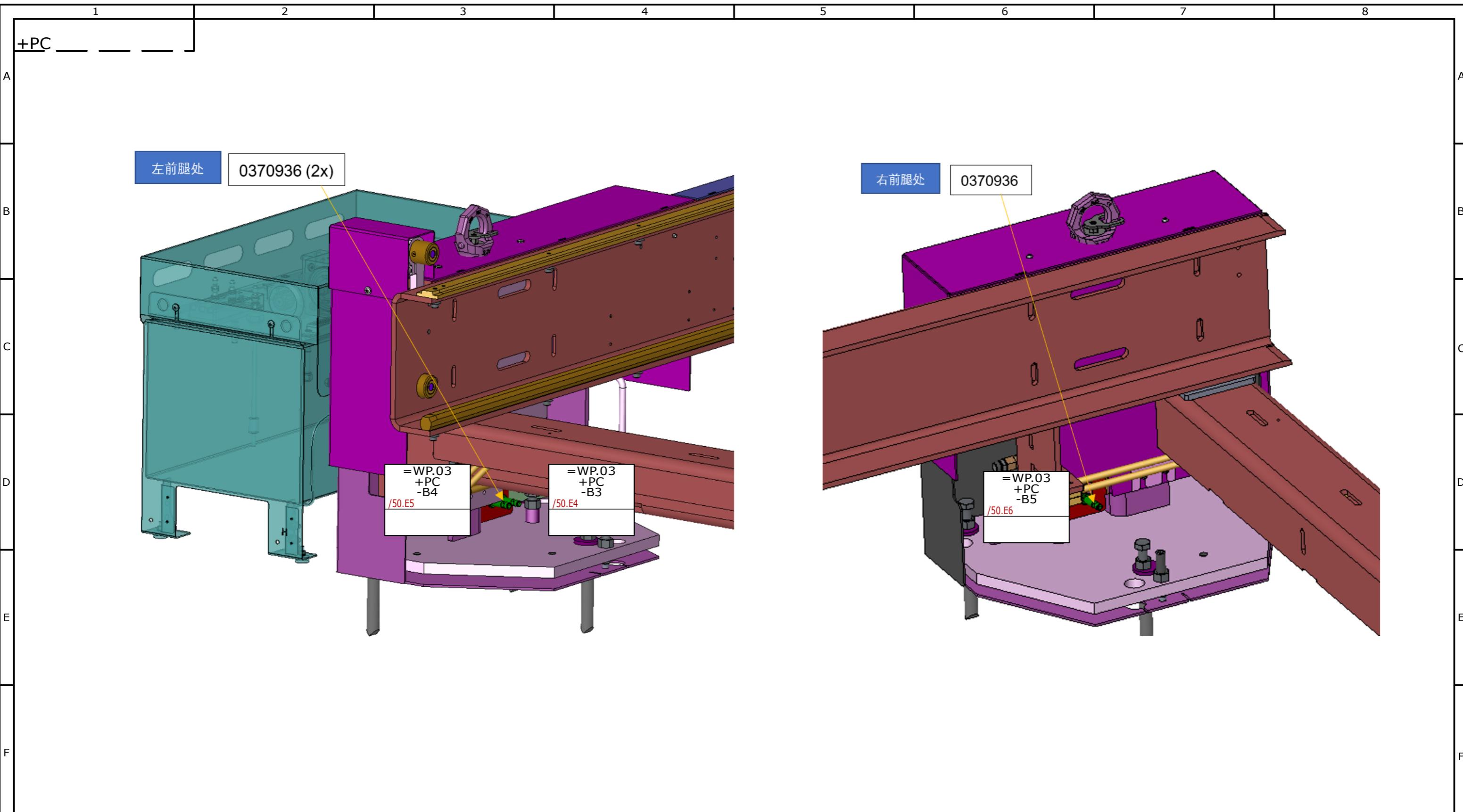
17.05.2023

TCN521TE

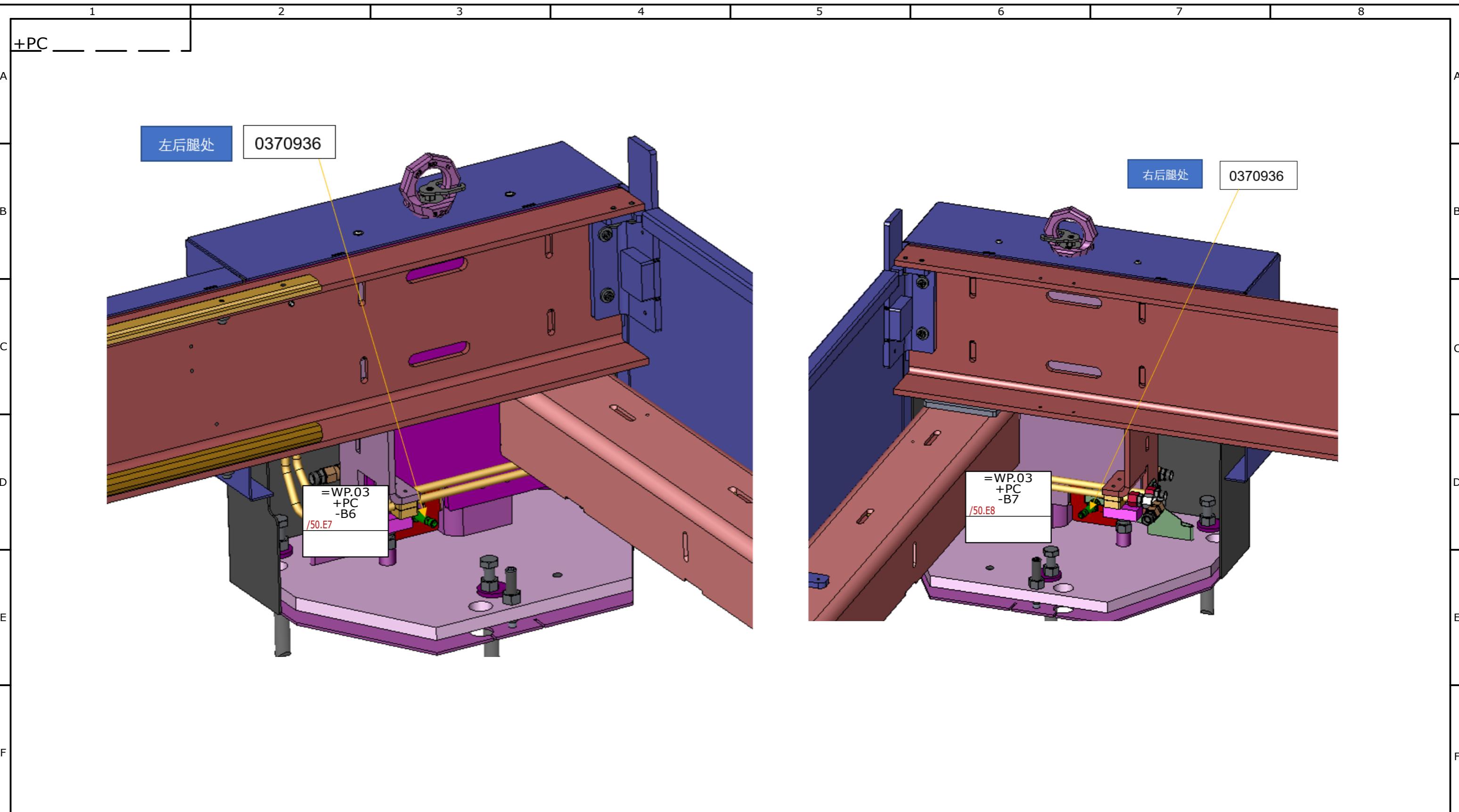
17.05.2023

TCN520HU

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93630-5-201Doc. part
002Version
03Status
REId number
2815136Sheet
96 of 111Type
E1Format
A3

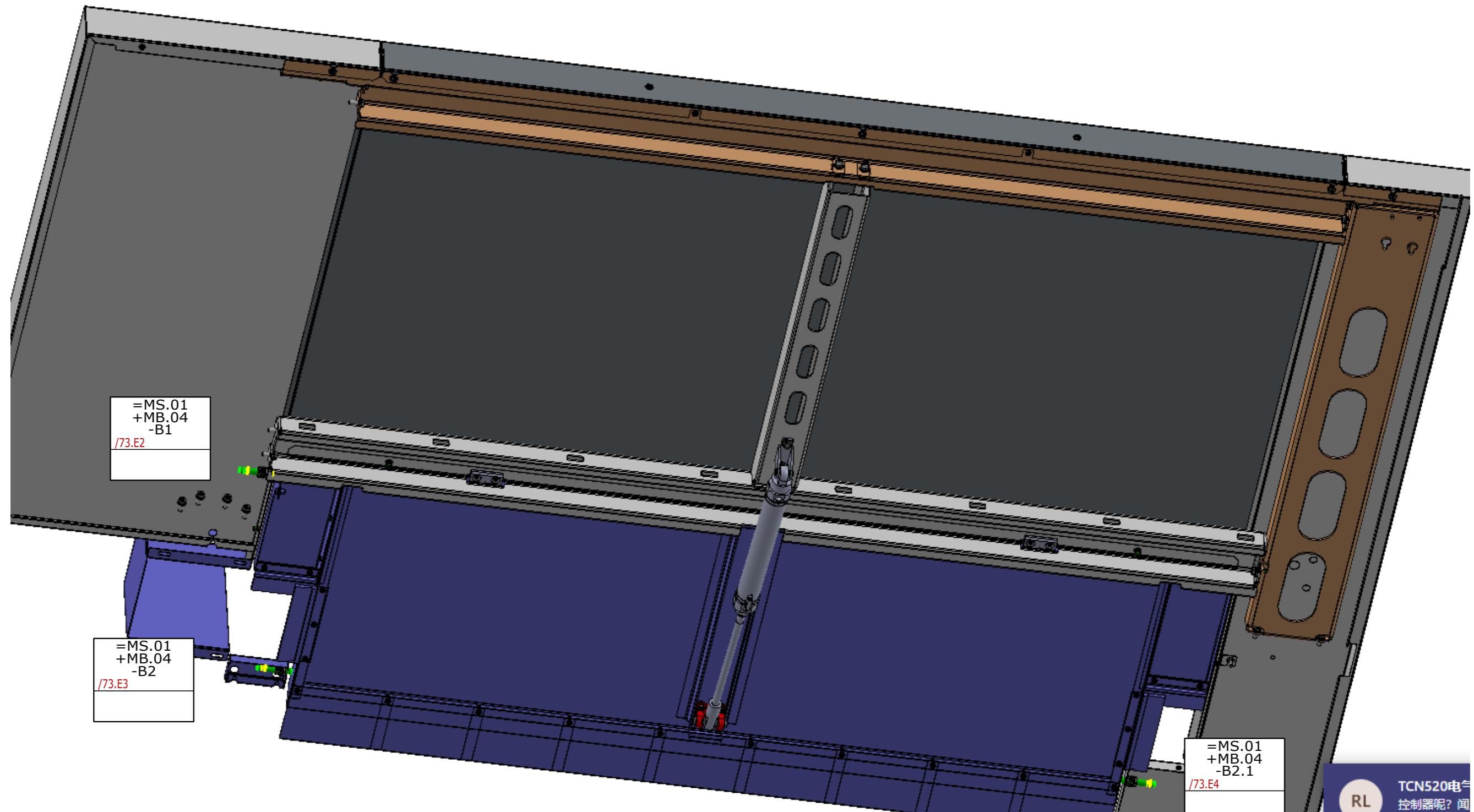


TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE	Change number	Edited	Reviewed	Approved	Designation		Contents					
		34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Circuit diagram TruLaser 1000 fiber BE		Document number	Doc. part	Version	Status	Id number	Sheet
	Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	93630-5-201	002	03	RE	2815136	97 of 111
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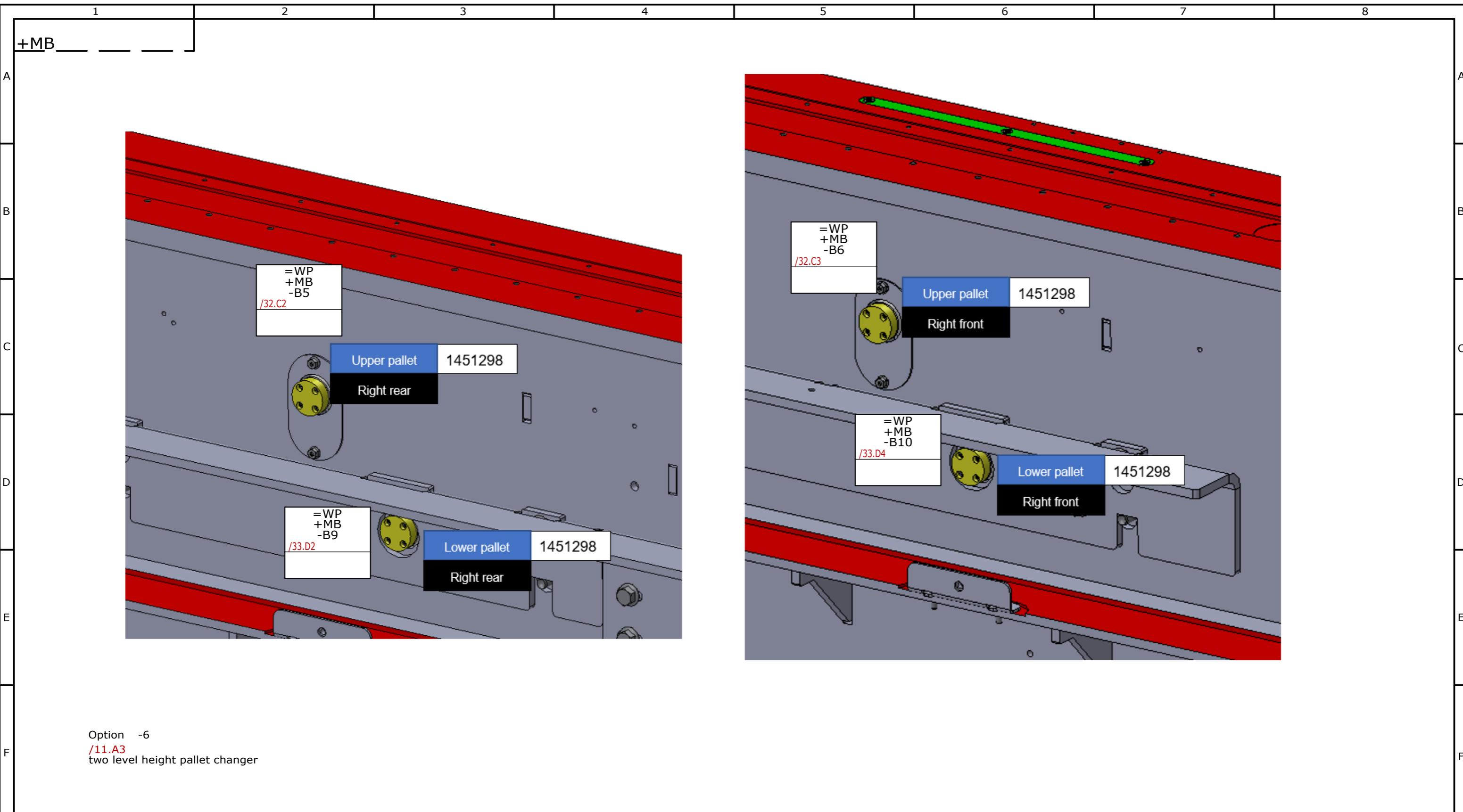


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Project number	Vers.proj.	Doc.type	34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format		
93630-5-E1		03	E3S	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	93630-5-201	002	03	RE	2815136	98	of 111	E1	A3

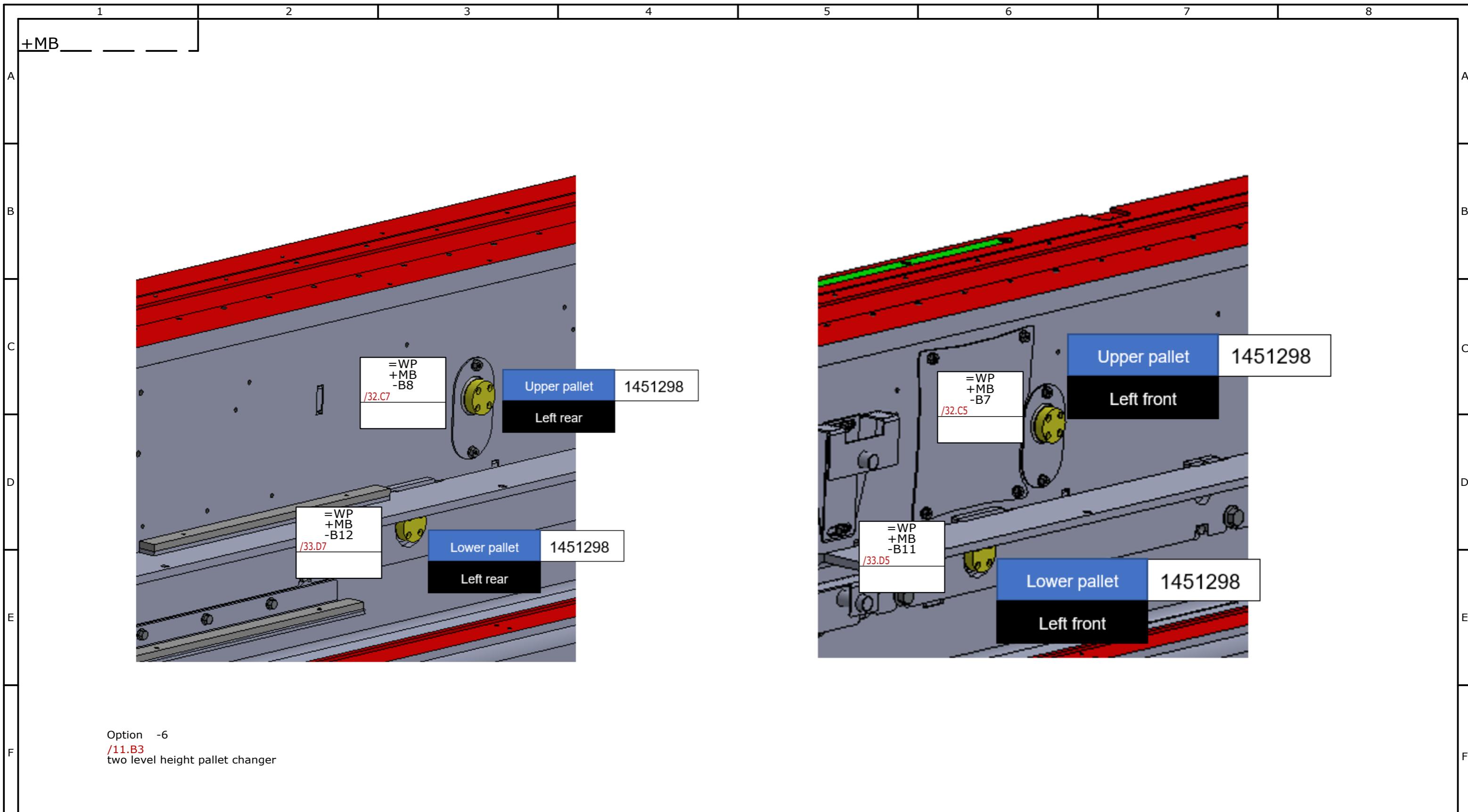
1 2 3 4 5 6 7 8

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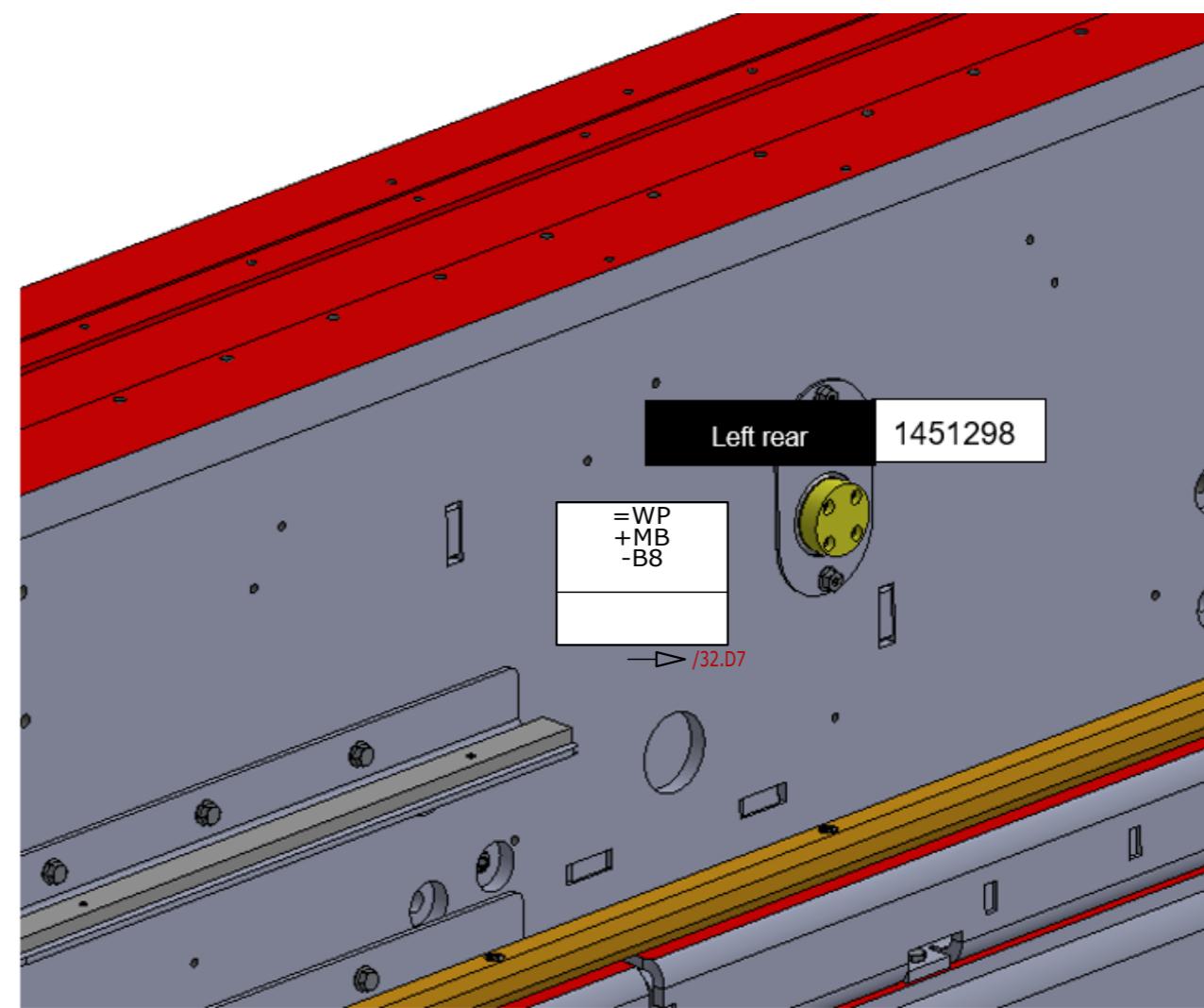
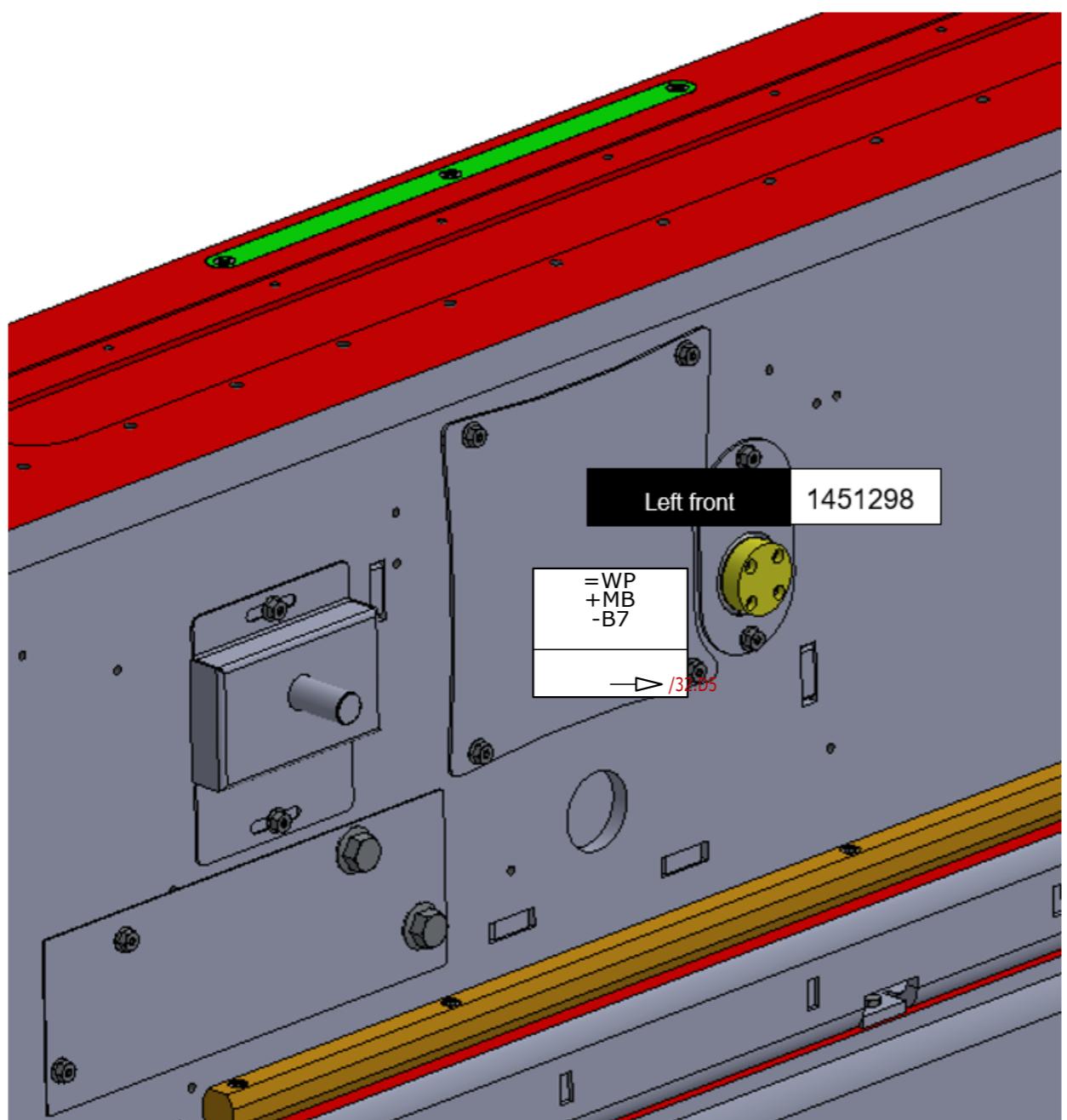
TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation			Change number	Edited	Reviewed	Approved	Designation			Contents Pallet changer door Sensors					
		Set of schematics TruLaser 1000 fiber BE			34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Circuit diagram TruLaser 1000 fiber BE			Document number	Doc. part	Version	Status	Id number	Sheet
Project number	Vers.proj.	Doc.type	Original record	03	E3S	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	93630-5-201	002	03	RE	2815136	99 of 111	E1	A3	



TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE			Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE			Contents Pallet clamping Sensors (option: two level pallet)				
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		Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU								

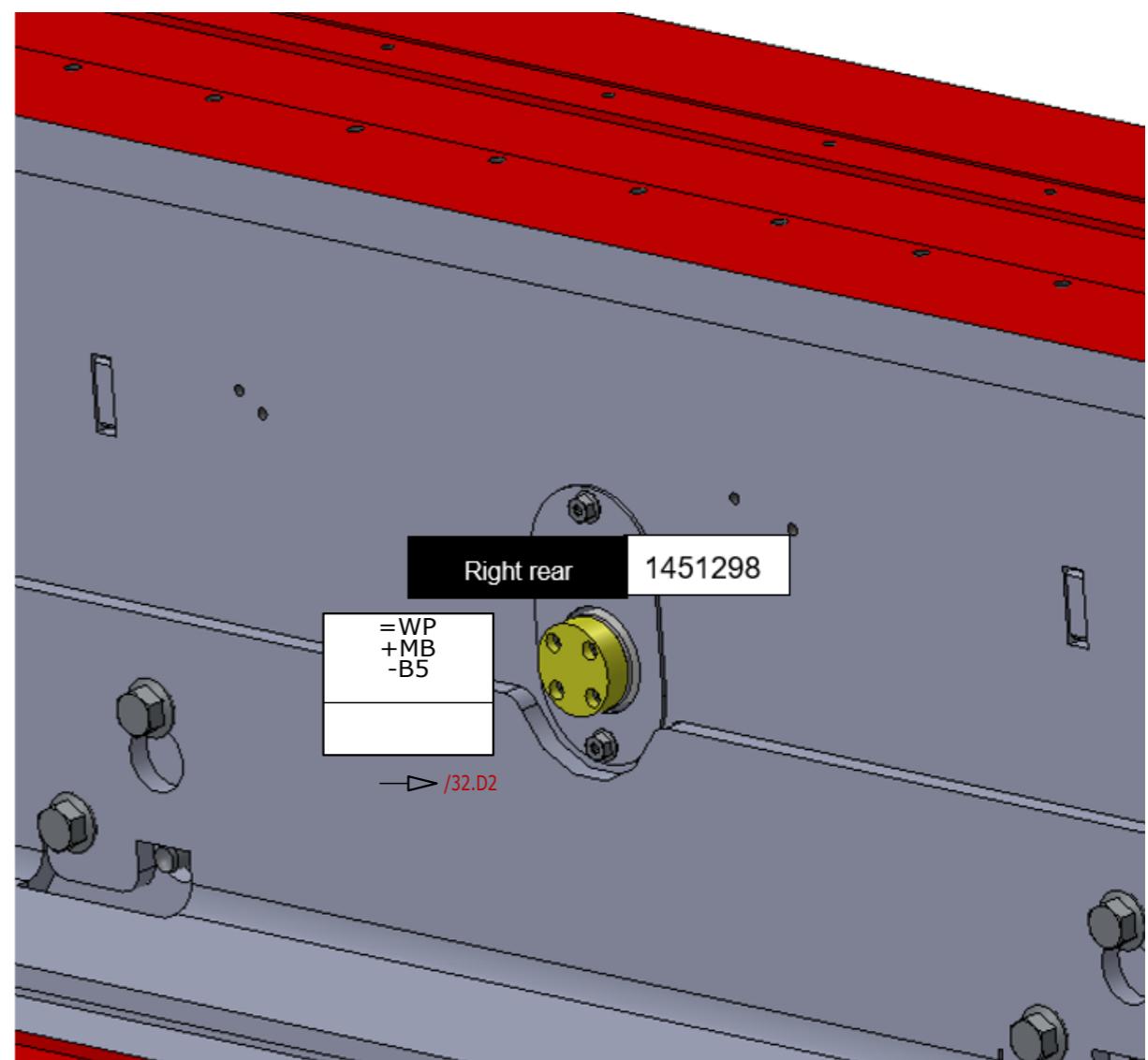
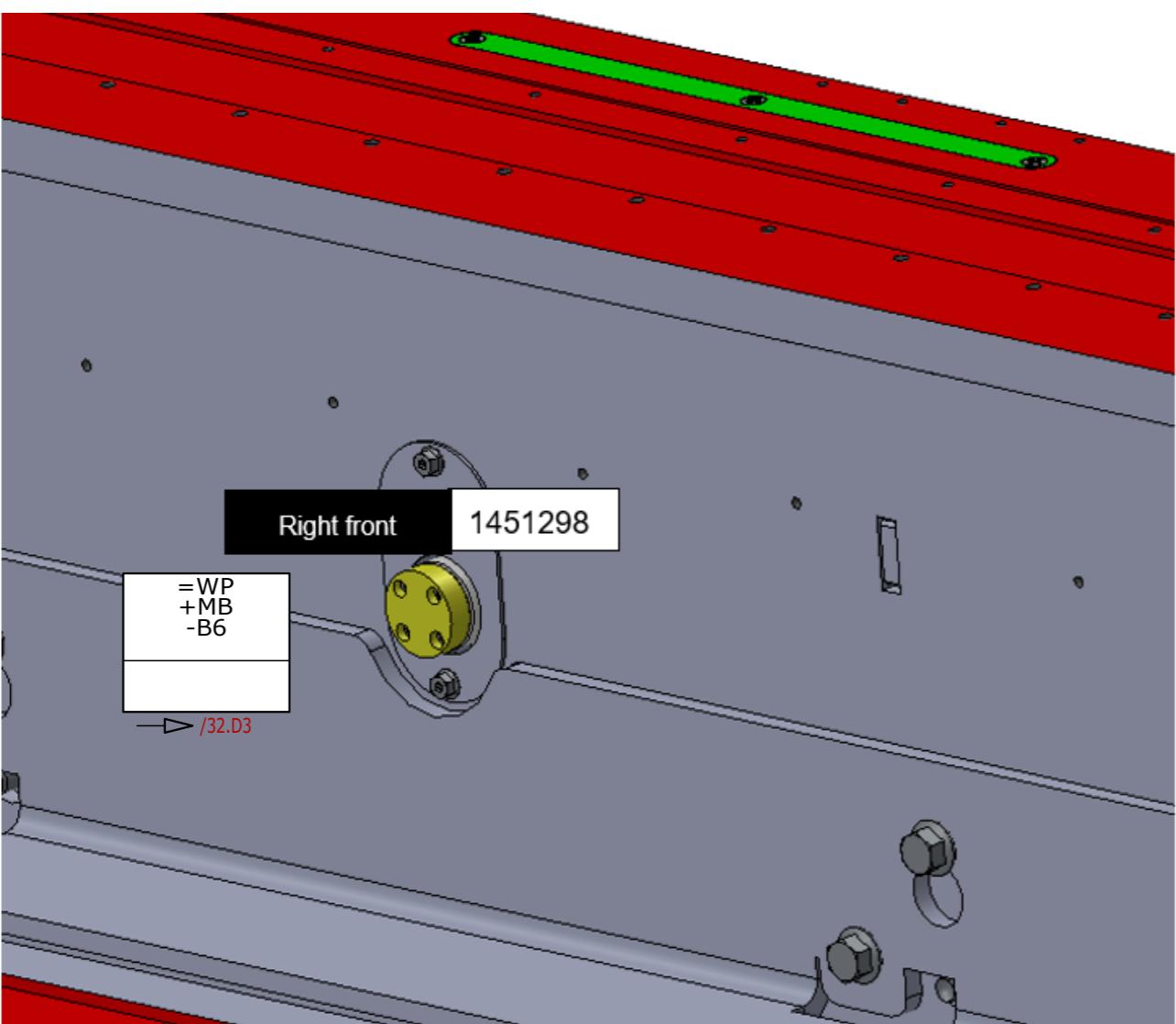


TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China	Project-designation Set of schematics TruLaser 1000 fiber BE			Change number	Edited	Reviewed	Approved	Designation			Contents Pallet clamping Sensors (option: two level pallet)				
					34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU	Circuit diagram TruLaser 1000 fiber BE			Document number	Doc. part	Version	Status	Id number
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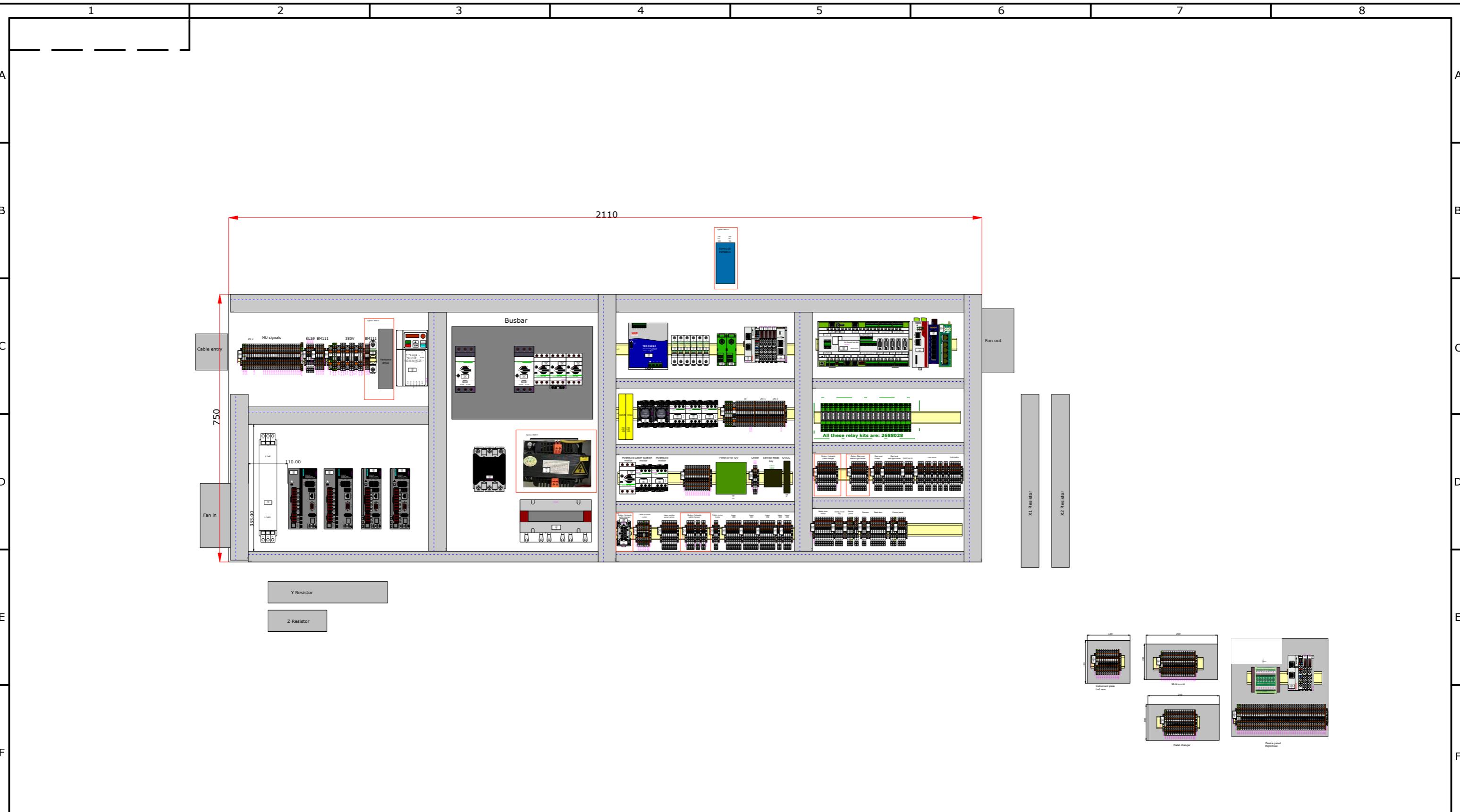
Option -5
/11.B2
one level hight pallet changer

TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project designation Set of schematics TruLaser 1000 fiber BE			Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE				Contents Pallet clamping Sensors (option: one level pallet)						
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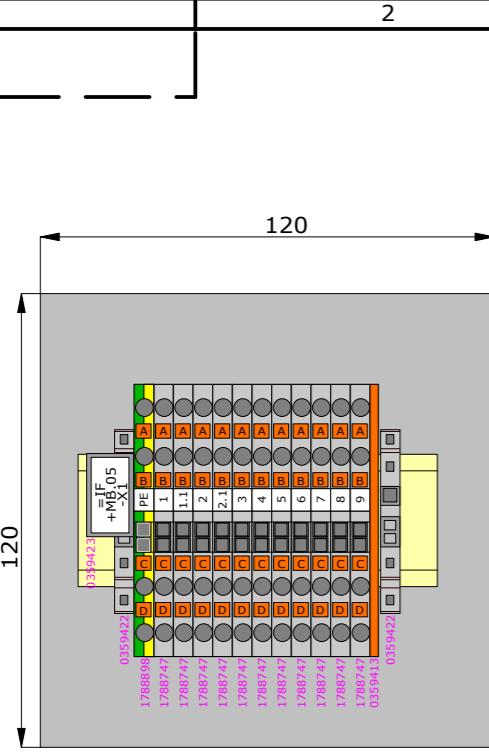


Option -5
/11.B2
 one level hight pallet changer

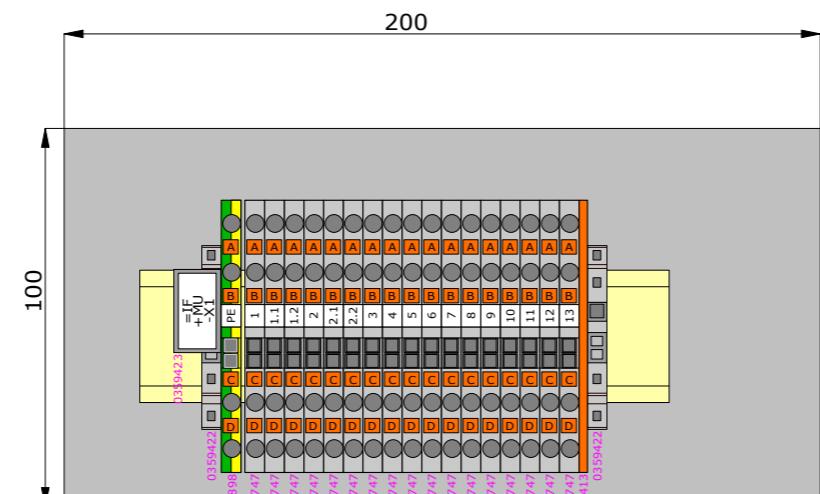
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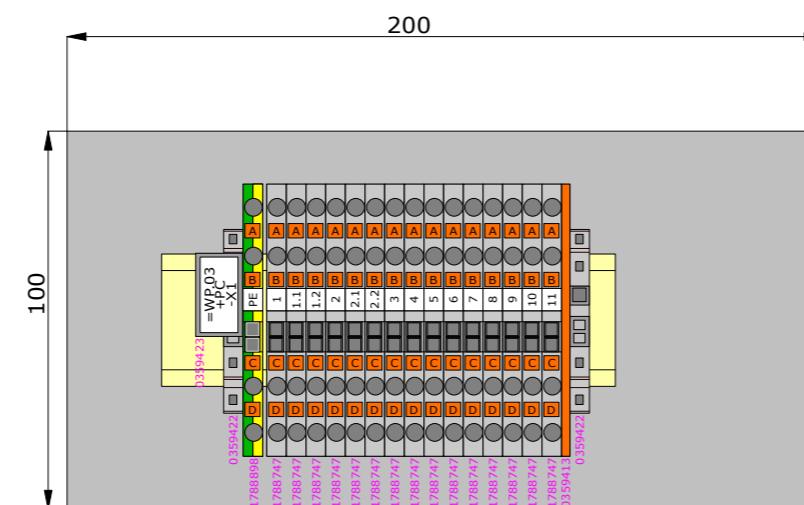
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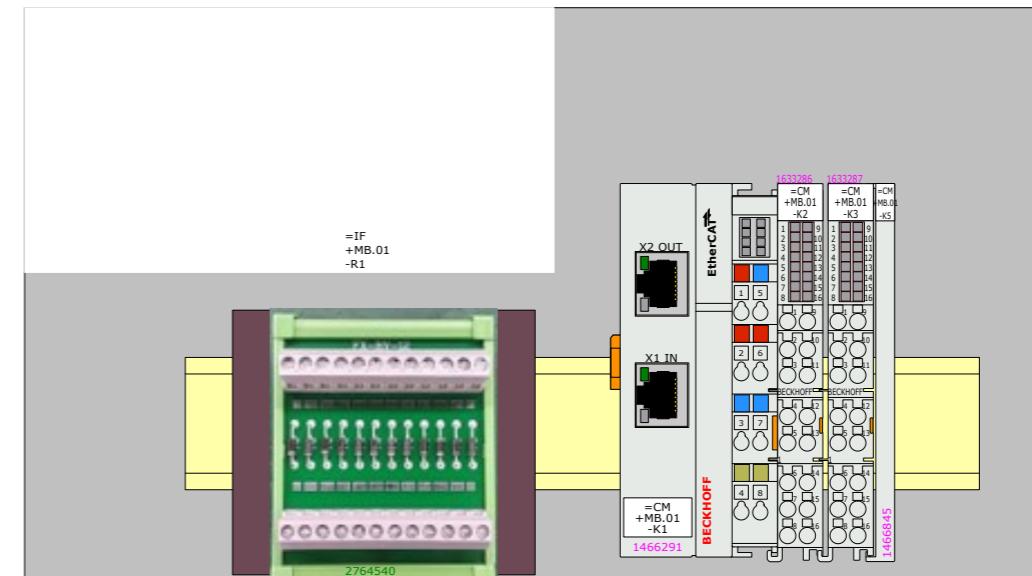
Instrument plate
Left rear



Motion unit



Pallet changer



Device panel
Right front

Setting values (sort ascending according to function)

&=logical AND, |=logical OR, !=NEGATION

Device name	Designation	Value	Var/Opt	Device function	Sheet ref.
=DV+SC-Q5		0 1			/29.B3
=HM.06+OP-A1	Subnet mask IP address	255.255.0.0 172.29.102.1			/55.B3
=IE.04+SC-A1.F1	Current [A]	37.00			/13.B2
=IE.05+SC-A1.F1	Current [A]	15.00			/13.B4
=IF.08+SC-A1.F1	Current [A]	22.00			/12.B5
=IF.09+SC-F1	Current [A]	9.00			/47.B2
=IL+TF-E1	Subnet mask IP address	255.255.0.0 172.29.3.1		Laser	/63.D1
=IL.02+SC-A1.F1	Current [A]	37.00			/12.B3
=MA+SC-K1	Switch 1 Switch 2 Subnet mask IP address	1 1 255.255.0.0 172.29.109.1		NC Controller	/36.C3
=RM.05+SC-A1.F1	Current [A]	18.00			/12.B6

 TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE	Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE	Contents	Setting values						
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	Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number 93630-5-201	Doc. part 002	Version 03	Status RE	Id number 2815136	Sheet 107 of 111	Type E1

EtherCAT bus overview

EtherCAT circuit	Device name	Device function	Sheet
0	=MA+SC-K1	NC Controller	/36.C3
0	=DV+SC-Q6	BM111 Focusing unit Driver	/35.B1
0	=MA+SC-K2		/39.B2
0	=MA+SC-K8		/39.B7
0	=IL+TF-E1	Laser	/63.D1
0	=TL.11+MU-Q1	Lanny valve	/71.C4
0	=CM+MB.01-K1		/78.B3
0	=DV+SC-Q1	X1 Axis Drive	/25.B3
0	=DV+SC-Q2	X2 Axis Drive	/26.A3
0	=DV+SC-Q3	Y Axis Drive	/27.B3
0	=DV+SC-Q4	Z Axis Drive	/28.B2
0	=HM.06+OP-A1		/55.B3
0	-Q1		
0	=MA+SC-K10	BM111 EtherCAT Coupler	/91.F4

 TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE	Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE	Contents								
		34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU		Document number	Doc. part	Version	Status	Id number				
	Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	93630-5-201	002	03	RE	2815136	Sheet 108 of 111	Type E1	Format A3

Ethernet bus overview

Ethernet circuit	IP address	Device name	Device function	Sheet
	172.29.102.1	=HM.06+OP-A1		/55.B3
	172.29.109.1	=MA+SC-K1	NC Controller	/36.C3
1		=HM.01+EN.01-B1	Camera	/81.E2
1	172.29.3.1	=IL+TF-E1	Laser	/63.D1

 TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE			Change number 34711-08	Edited 01.02.2024 TCN521ZX	Reviewed 01.02.2024 TCN521ZX	Approved 01.02.2024 TCN520HU	Designation Circuit diagram TruLaser 1000 fiber BE			Contents Ethernet bus overview				
	Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number 93630-5-201	Doc. part 002	Version 03	Status RE	Id number 2815136	Sheet 109 of 111	Type E1	Format A3

PLC I/O list Sorting A (Ascending address)

Address	PLC comment	Device name	Pin	Bus type	Sheet ref.	Sensor function
A001.0	Suction flap 2	=CM+MB.01-K3	9		/60.B3	
A001.0	Machine statue indicator: Red	=CM+MB.01-K3	1		/79.B3	
A001.0	Transversal blowing on	=MA+SC-K4	1		/43.A6	
A001.0	Lubrication change direction	=MA+SC-K4	9		/44.B7	
A001.0	Lower lifting unit	=MA+SC-K6	9		/47.B8	
A001.0	Laser suction clean filter Valve 1	=MA+SC-K6	1		/57.A2	
A001.1	Suction flap 3	=CM+MB.01-K3	10		/60.B4	
A001.1	Machine statue indicator: Yellow	=CM+MB.01-K3	2		/79.B4	
A001.1	KL59 Reinforce collision protection	=MA+SC-K4	2		/43.A6	
A001.1	Switch piercing and fly cut	=MA+SC-K4	10		/44.B8	
A001.1	Laser suction clean filter Valve 2	=MA+SC-K6	2		/57.A3	
A001.2	Suction flap 4	=CM+MB.01-K3	11		/60.B5	
A001.2	Machine statue indicator: Green	=CM+MB.01-K3	3		/79.B5	
A001.2	Cutting gas O2	=MA+SC-K4	3		/44.B2	
A001.2	Light barrier is ok/ Enable ready	=MA+SC-K4	11		/43.A7	
A001.2	Laser suction clean filter Valve 3	=MA+SC-K6	3		/57.A4	
A001.3	Suction flap 5	=CM+MB.01-K3	12		/60.B6	
A001.3	Machine statue indicator: Buzzle	=CM+MB.01-K3	4		/79.B6	
A001.3	Cutting gas N2	=MA+SC-K4	4		/44.B2	
A001.3	Laser standby	=MA+SC-K4	12		/62.B2	
A001.3	Laser suction clean filter Valve 4	=MA+SC-K6	4		/57.A5	
A001.4	Upper pallet clamp fixing device	=CM+MB.01-K3	5		/30.A2	
A001.4	Cutting gas Compressed air	=MA+SC-K4	5		/44.B3	
A001.4	Laser on	=MA+SC-K4	13		/62.B2	
A001.5	Upper pallet loose fixing device	=CM+MB.01-K3	6		/30.A4	
A001.5	Pallet flap door on	=MA+SC-K4	6		/44.B4	
A001.5	Laser reset	=MA+SC-K4	14		/62.B3	
A001.5	Start pierce detection	=MA+SC-K6	6		/62.B6	
A001.6	Lower pallet loose fixing device	=CM+MB.01-K3	7		/30.A6	
A001.6	Pallet flap door off	=MA+SC-K4	7		/44.B5	
A001.6	Laser lower power mode	=MA+SC-K4	15		/62.B4	
A001.6	switch on hydraulic pump	=MA+SC-K6	7		/47.B6	
A001.7	Suction flap 1	=CM+MB.01-K3	8		/60.B2	
A001.7	Lubrication pump	=MA+SC-K4	8		/44.B6	
A001.7	Laser varimode	=MA+SC-K4	16		/62.B5	
A001.7	Raise lifting unit	=MA+SC-K6	8		/47.B7	
E001.0	Lower pallet fixing device open sensor 1 (right rear)	=CM+MB.01-K2	9		/33.E2	
E001.0	Upper pallet forward slow switch	=CM+MB.01-K2	1		/31.E2	
E001.0		=IF.04+DP-B2	4		/75.D3	
E001.0	Laser standby	=MA+SC-K3	1		/61.B2	
E001.0	Lubrication low oil level	=MA+SC-K3	9		/74.B6	
E001.0	no excess temperature Hydraulic oil	=MA+SC-K5	9		/48.B4	

TRUMPF TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE	Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE	Contents PLC I/O list Sorting A (Ascending address) Page 1							
		34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU									
		Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record TCN521TE	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number 93630-5-201	Doc. part 002	Version 03	Status RE	Id number 2815136	Sheet 110 of 111

Address	PLC comment	Device name	Pin	Bus type	Sheet ref.	Sensor function
E001.0	Identifier Pallet A in changer	=MA+SC-K5	1		/46.A2	
E001.1	Lower pallet fixing device open sensor 2 (right front)	=CM+MB.01-K2	10		/33.E4	
E001.1	Upper pallet forward stop switch	=CM+MB.01-K2	2		/31.E4	
E001.1	Operating panel Enable switch 1	=MA+SC-K3	10		/53.A3	
E001.1	Laser on	=MA+SC-K3	2		/61.B2	
E001.1	Identifier Pallet B in changer	=MA+SC-K5	2		/46.A3	
E001.1	No excess temperature motor	=MA+SC-K5	10		/47.D4	
E001.2	Lower pallet fixing device open sensor 3 (left front)	=CM+MB.01-K2	11		/33.E5	
E001.2	Lower pallet forward slow switch	=CM+MB.01-K2	3		/31.E5	
E001.2	Laser Emission indicator	=MA+SC-K3	3		/61.B3	
E001.2	Operating panel Enable switch 2	=MA+SC-K3	11		/53.A4	
E001.2	Lift frame up cylinder 1	=MA+SC-K5	3		/46.A4	
E001.2	Circuit breaker ON (Hydraulic)	=MA+SC-K5	11		/47.D5	
E001.3	Lower pallet forward stop switch	=CM+MB.01-K2	4		/31.E7	
E001.3	Lower pallet fixing device open sensor 4 (left rear)	=CM+MB.01-K2	12		/33.E7	
E001.3	Suction filter no excess temp.	=MA+SC-K3	12		/58.B7	
E001.3	Laser alarm	=MA+SC-K3	4		/61.B4	
E001.3	Lift frame down Cylinder 1	=MA+SC-K5	4		/46.A5	
E001.4	Upper pallet fixing device open sensor 1 (right rear)	=CM+MB.01-K2	5		/32.E2	
E001.4	Front Lift Plate at bottom	=CM+MB.01-K2	13		/68.E6	
E001.4	Laser warning	=MA+SC-K3	5		/61.B5	
E001.4	Lift frame end position cylinder 2	=MA+SC-K5	5		/46.A6	
E001.5	Upper pallet fixing device open sensor 2 (right front)	=CM+MB.01-K2	6		/32.E4	
E001.5	Laser pierce detect flag	=MA+SC-K3	6		/61.B6	
E001.5	Lift frame end position cylinder 3	=MA+SC-K5	6		/46.A6	
E001.6	Upper pallet fixing device open sensor 3 (left front)	=CM+MB.01-K2	7		/32.E5	
E001.6	Laser reflection alarm	=MA+SC-K3	7		/61.B7	
E001.6	Lift frame end position cylinder 4	=MA+SC-K5	7		/46.A7	
E001.7	Upper pallet fixing device open sensor 4 (left rear)	=CM+MB.01-K2	8		/32.E7	
E001.7	Laser suction No excess temperature motor	=MA+SC-K3	8		/58.C3	
E001.7	Hydraulic oil level ok	=MA+SC-K5	8		/48.B3	

 TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China COPYRIGHT BY TRUMPF	Project-designation Set of schematics TruLaser 1000 fiber BE	Change number	Edited	Reviewed	Approved	Designation Circuit diagram TruLaser 1000 fiber BE	Contents PLC I/O list Sorting A (Ascending address) Page 2							
		34711-08	01.02.2024 TCN521ZX	01.02.2024 TCN521ZX	01.02.2024 TCN520HU									
		Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record	03.04.2023 TCN521TE	17.05.2023 TCN521TE	17.05.2023 TCN520HU	Document number 93630-5-201	Doc. part 002	Version 03	Status RE	Id number 2815136	Sheet 111 of 111

Overview

A

A

Sheet no.	Function group	Function group designation	Sheet no.	Function group	Function group designation
1		Contents			
B 3	1	Air provision			
4	2	Suction flaps control			
5	2	Suction flaps control			
6	4	Pallet changer door			
C 5		Deduster			
7	6	Collision protection			
7	7	Transversal blowing			
8	9.1	Upper pallet table clamping			
9	9.2	Lower pallet table clamping			
D					
E					
F					

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F

A

Line cross references

→ P1 / 10.F3 / 7.2-A

Symbol

- ▷ Source Pneumatics
- Target Pneumatics
- ▶ Source Hydraulics
- Target Hydraulics

Type of plan Plan number

If the source and destination are the same part document type, the planning type is not shown

P1: Pneumatic schematic
 H1: Hydraulic schematic
 L1: Lubrication schematic
 G1: Gas schematic
 W1: Cooling water schematic

Sheet reference

Page number . Page quadrant

Source or target identification

Device number - Connection name of the component

Standard reference:
Fluid schematics are to ISO 1219 and KRL1009-24 created.

Hose identification

12 / 9 BU -10 1000 mm

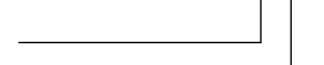
Outside diameter



Inside diameter



Hose color



Line type



Length (for technical parameters)

Frame 12 / 9 BU -10

This hose gets a label.

Hose color

Hose types

		Line type	Id.No	Øo / Øi	Color
BK	Black	6	1773697	6 / 4	BK
RD	Red	28	2263988	6 / 4	DBU
GN	Green	28	2263988	6 / 4	BU
BU	Blue	116	2263915	6 / 3,9	BU
N	Neutral	117	2263987	4 / 2,5	BU
SR	Silver	118	2263916	8 / 5,5	BU
YE	Yellow	119	2263985	10 / 7	BU
VT	Violet	130	2367226	Ø 12 x 1,5	BU
GY	Grey				
WH	White				

Shade light / dark
(f. e. Red)

LRD Light red
 DRD Dark red

Color combination
(f. e. Black and Red)

BK/RD Black/Red

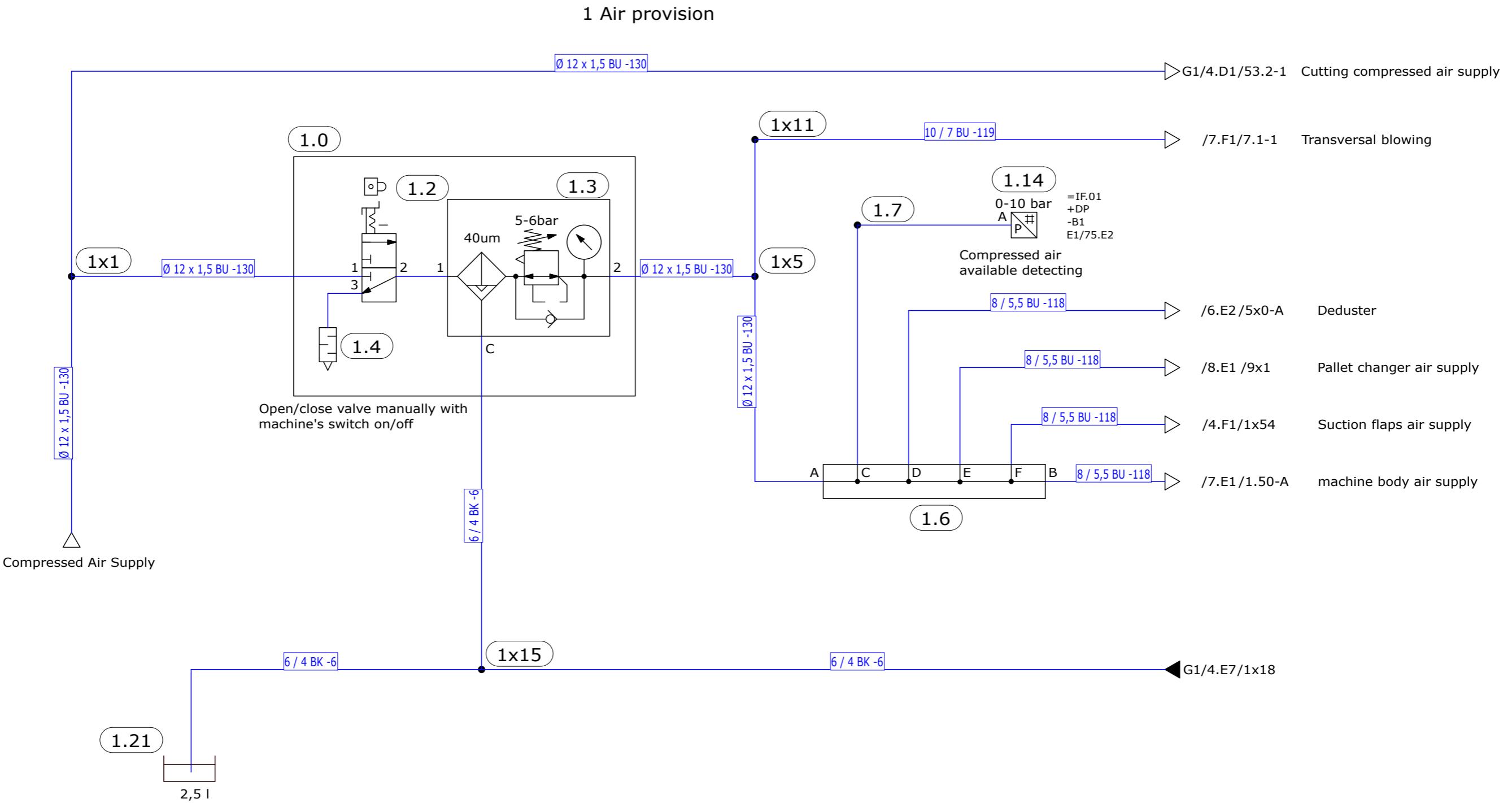


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Project-designation
Set of schematics TruLaser 1000 fiber BE

Change number	Edited	Reviewed	Approved
34711-08	01.02.2024 TCN511HZ	01.02.2024 TCN511HZ	01.02.2024 TCN511HZ

Designation				Contents						
Pneumatic schematic TruLaser 1000 fiber				Legend						
Document number				Doc. part	Version	Status	Id number	Sheet	Type	Format
93630-5-301				002	01	RE	2843707	2 of 9	P1	A3



1.3E	0364032	Filter cartridge 40us ms6	MS6-LFP-E,534500	1.14	2750646	Pressure sensor	ISE30A-01-P-L						
1.3		Filter regulator valve MS-6	MS6-LFR-1/2-D6-ERV-AS,529182	1.7	2462118	Reducing nipple	1/4-1/8-DE02,2531						
1.2		Manual on-off valve MS-6	MS6-EM1-1/2, 541267	1.6	1942845	Distributor block 3053-3/8-4L-1/4	3053-3/8-4L-1/4						
1.0	2750636	Air Preparing Unit	L99 MS-6	1.4	0079939	Silencer U-1/2	U-1/2, 2310	1.21	1629223	Canister 2,5L, 153x115x210mm	P5001		
DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type		

2 Suction Flaps Control

A

A

B

B

C

C

D

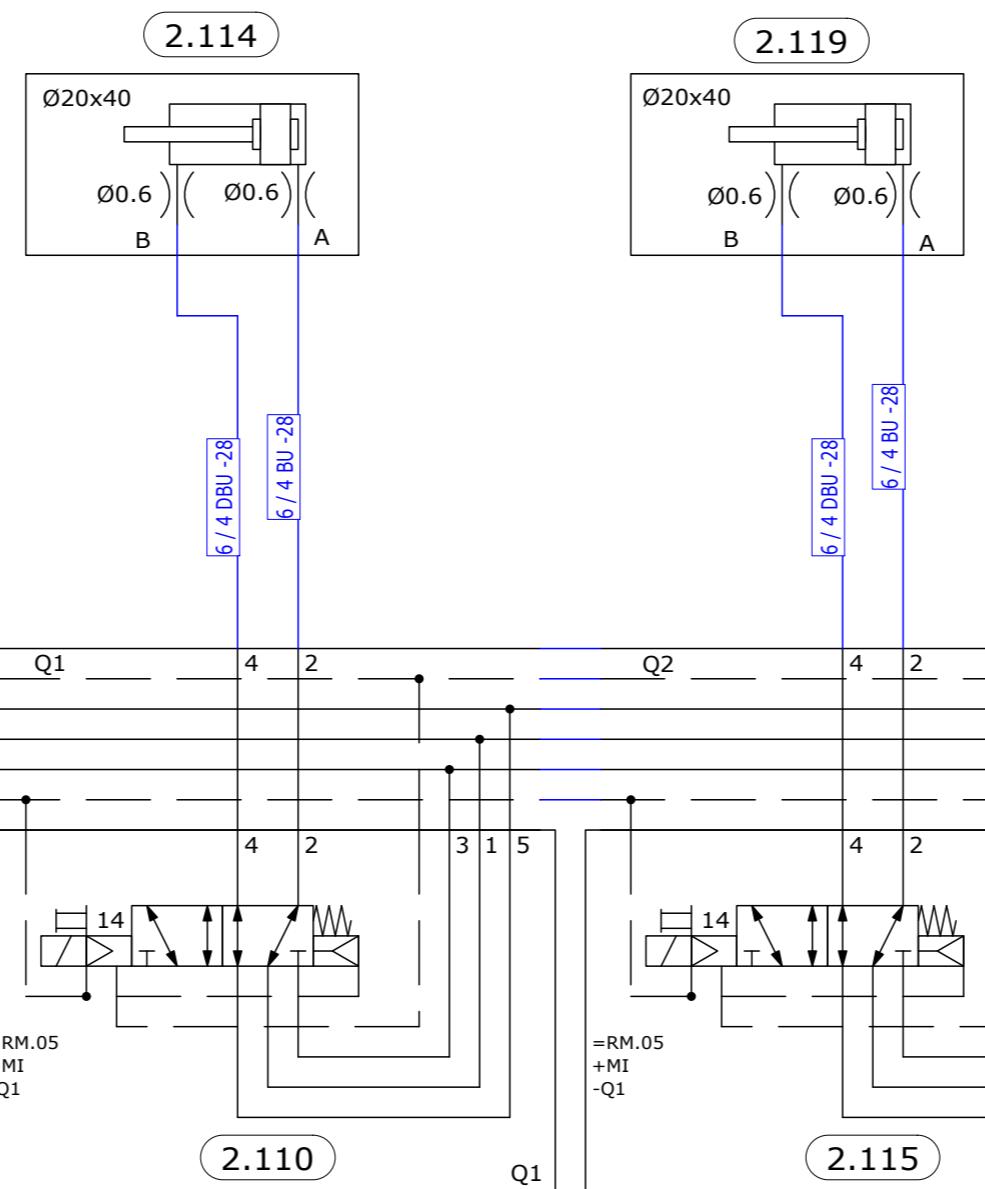
D

E

E

F

F

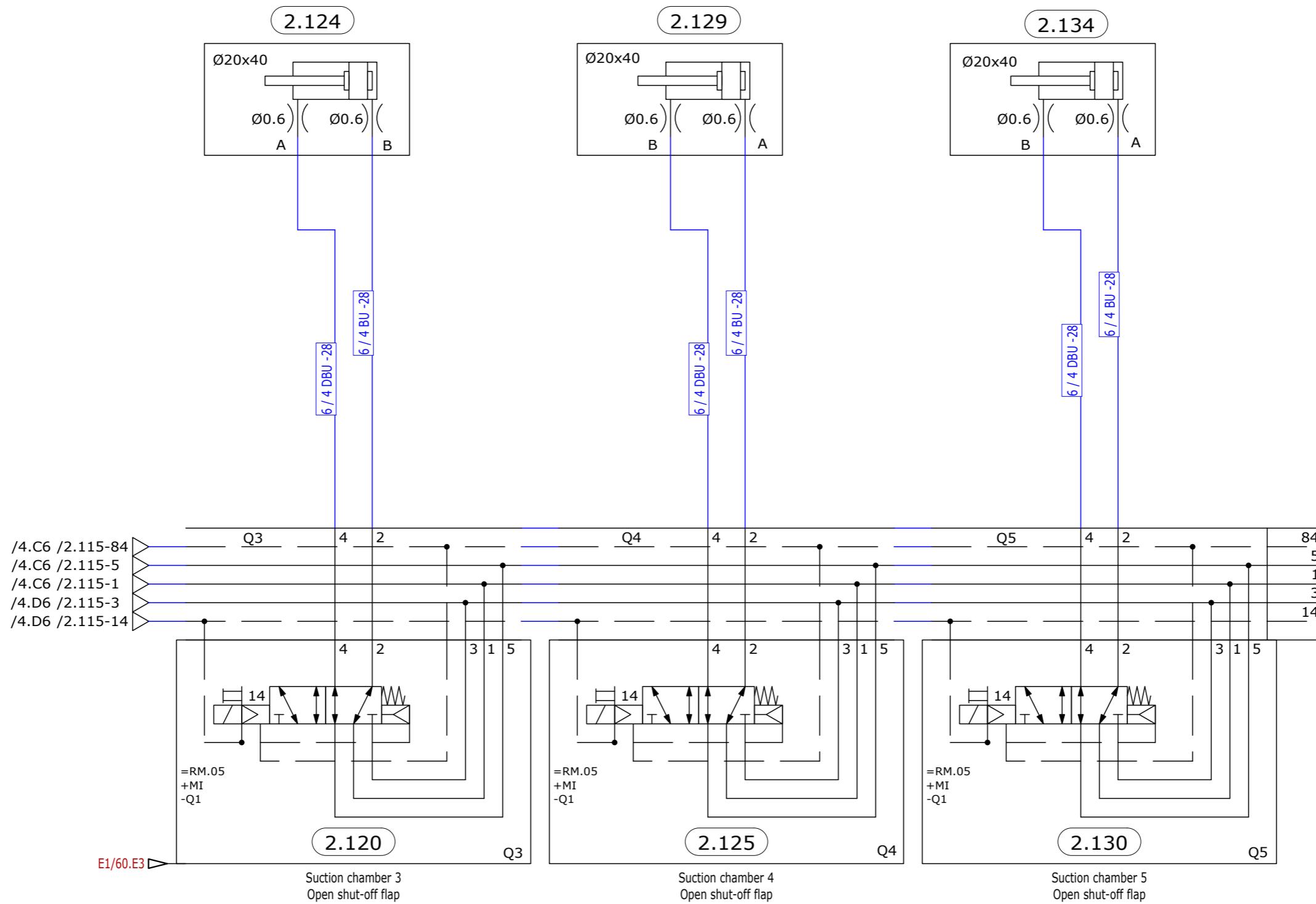


/5.D2/2-120-84
/5.D2/2.120-5
/5.D2/2.120-1
/5.D2/2.120-3
/5.D2/2.120-14

/3.C7 /1.6-F → 1x54 → 8 / 5,5 BU -118 → /6.E5 /4.1-1

DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type				
2.102	0072460	Silencer	U-1/8 , 2307	2.114	2826661	Pneumatic cylinder D20 H40	AirTAC ACE20X40B								
2.101	1938741	Silencer M5	40-503-M5	2.110	1883914	Solenoid valve 5/2	VUVG-B10-M52-RZT-F-1T1L	2.119	2826661	Pneumatic cylinder D20 H40	AirTAC ACE20x40B				
2.100	2750638	Valve terminal Multi-Pin VTUG	573606 VTUG-10-MSDR-...	2.103	0072460	Silencer	U-1/8 , 2307	2.115	1883914	Solenoid valve 5/2	VUVG-B10-M52-RZT-F-1T1L				
DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type				
TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China				Project-designation Set of schematics TruLaser 1000 fiber BE				Change number 34711-08							
				Edited 01.02.2024				Reviewed 01.02.2024							
				Approved TCN511HZ				Approved TCN511HZ							
				Original record 05.12.2023				Original record TCN511HZ							
Designation Pneumatic schematic TruLaser 1000 fiber															
Document number 93630-5-301								Doc. part 002	Version 01	Status RE	Id number 2843707				
								Sheet 4 of 9	Type P1	Format A3					

2 Suction Flaps Control



2.124	2826661	Pneumatic cylinder D20 H40	AirTAC ACE20x40B	2.129	2826661	Pneumatic cylinder D20 H40	AirTAC ACE20x40B	2.134	2826661	Pneumatic cylinder D20 H40	AirTAC ACE20x40B
2.120	1883914	Solenoid valve 5/2	VUVG-B10-M52-RZT-F-1T1L ,	2.125	1883914	Solenoid valve 5/2	VUVG-B10-M52-RZT-F-1T1L ,	2.130	1883914	Solenoid valve 5/2	VUVG-B10-M52-RZT-F-1T1L ,

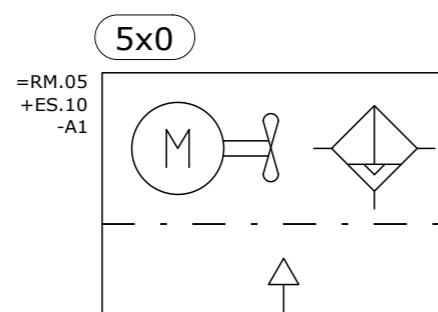
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TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China	Project-designation Set of schematics TruLaser 1000 fiber BE	Change number	Edited	Reviewed	Approved	Designation	Contents Suction flaps (x=3m)					
		34711-08	01.02.2024 TCN511HZ	01.02.2024 TCN511HZ	01.02.2024 TCN511HZ	Pneumatic schematic TruLaser 1000 fiber						
Project number 93630-5-E1				Vers.proj. 03	Doc.type E3S	Original record	Document number 93630-5-301	Doc. part 002	Version 01	Status RE	Id number 2843707	
								Sheet 5 of 9	Type P1	Format A3		

A

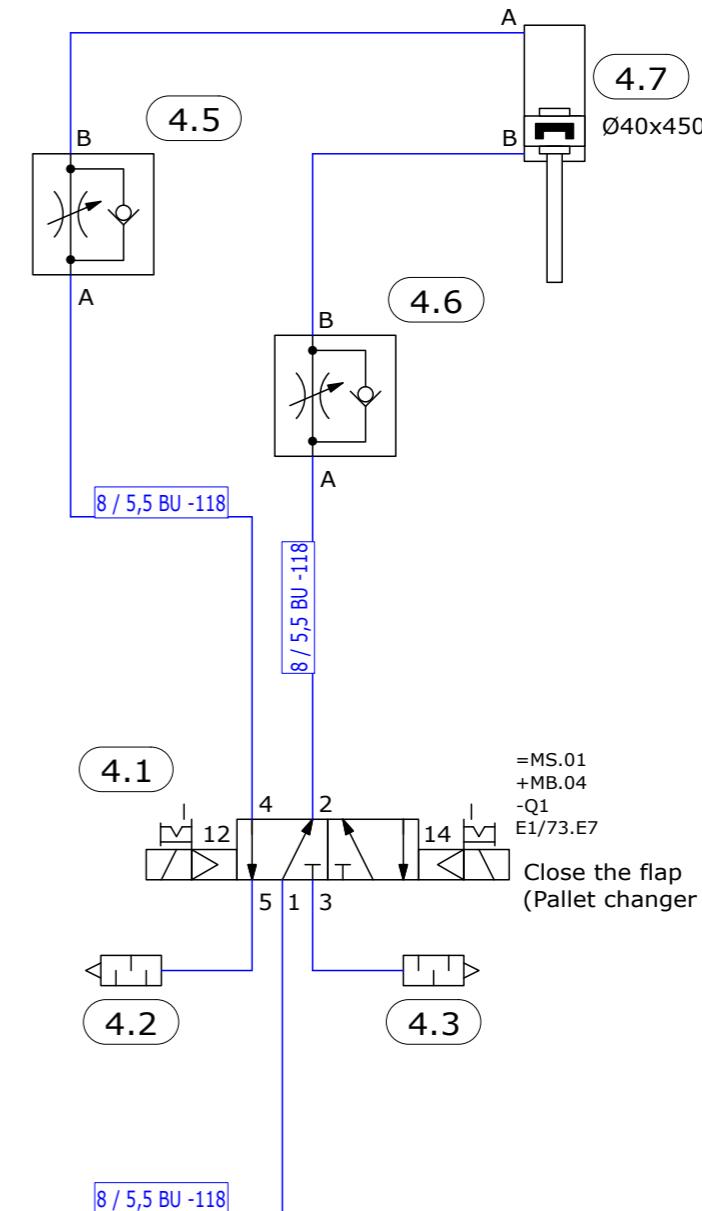
A

5 Deduster



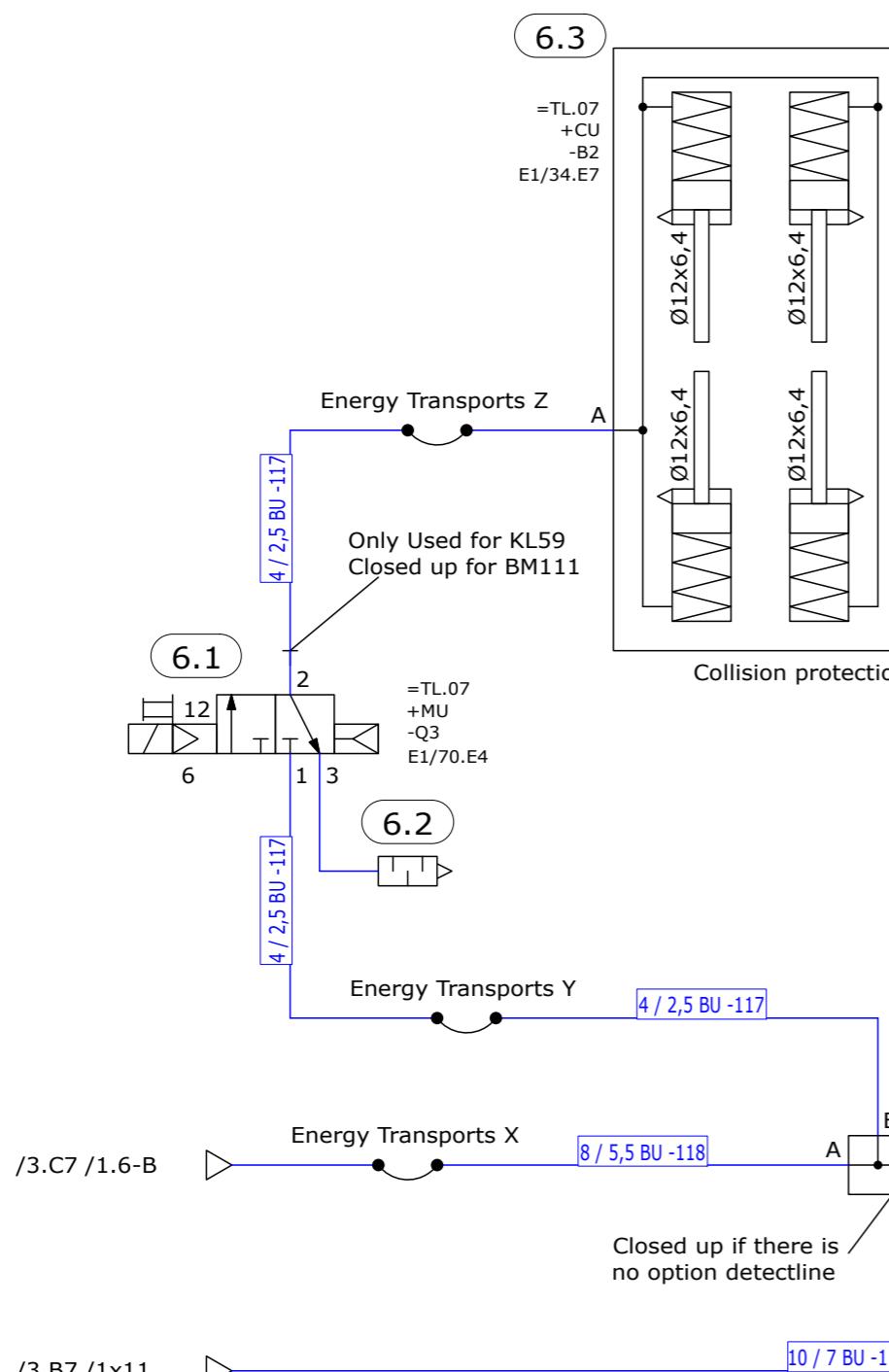
See
specific
documentation

4 Pallet changer door

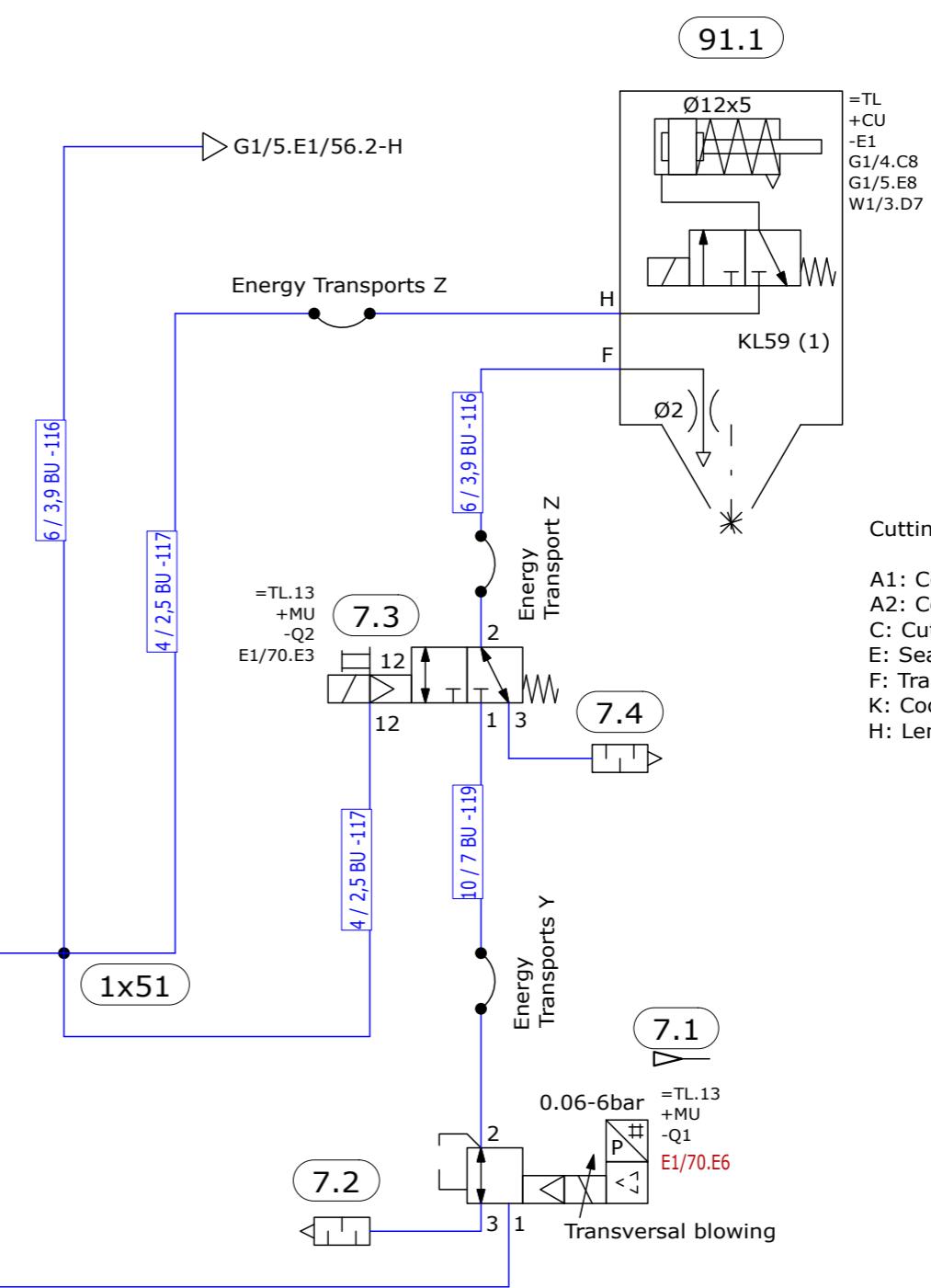


A

6 Collision protection



7 Transversal blowing

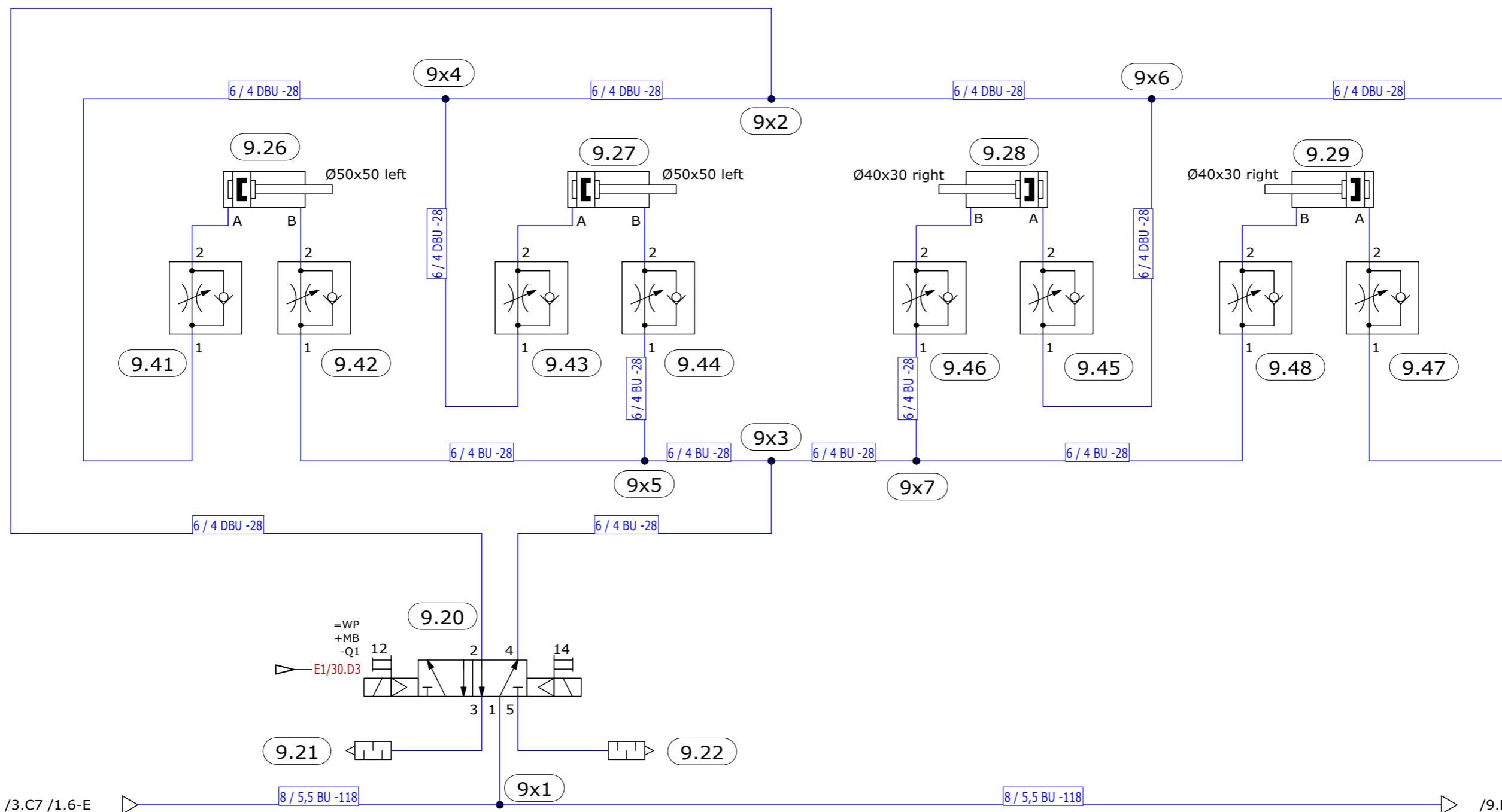


Cutting unit

A1: Cooling water-IN
 A2: Cooling water-OUT
 C: Cutting gas
 E: Sealing gas
 F: Transversal blowing
 K: CoolLine(Option)
 H: Lens pivot indexing

DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type
6.2	0143108	Silencer G1/8X6 with slotting	2922-1/8X6	7.2	0356125	Silencer 2931-1/8	2931-1/8"	91.1		CuttingUnit	KL59/BM111
6.1	2330912	3/2 directional control valve G1/	BM-01-310-HNT-N42	7.1	2787174	Pressure Regulator	557773 VPPE-3-1-1/8-10-010-E1	7.4	0143108	Silencer G1/8X6 with slotting	2922-1/8X6
1.50	0075302	Distributor part FR-4-1/8B	FR-4-1/8-B , 6701	6.3	1942321	Adapter flange		7.3	2331066	3/2 directional control valve G1/	BME-01-311-HNT-N42
DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type
TRUMPF TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China				Project-designation Set of schematics TruLaser 1000 fiber BE				Change number 34711-08			
				Edited 01.02.2024				Reviewed 01.02.2024			
				Approved TCN511HZ				Approved TCN511HZ			
Project number 93630-5-E1				Vers.proj. 03				Doc.type E3S			
Original record				Document number 93630-5-301				Doc. part 002			
				Version 01				Status RE			
				Id number 2843707				Sheet 7 of 9			
								Type P1			
								Format A3			

9.1 Upper pallet table clamping

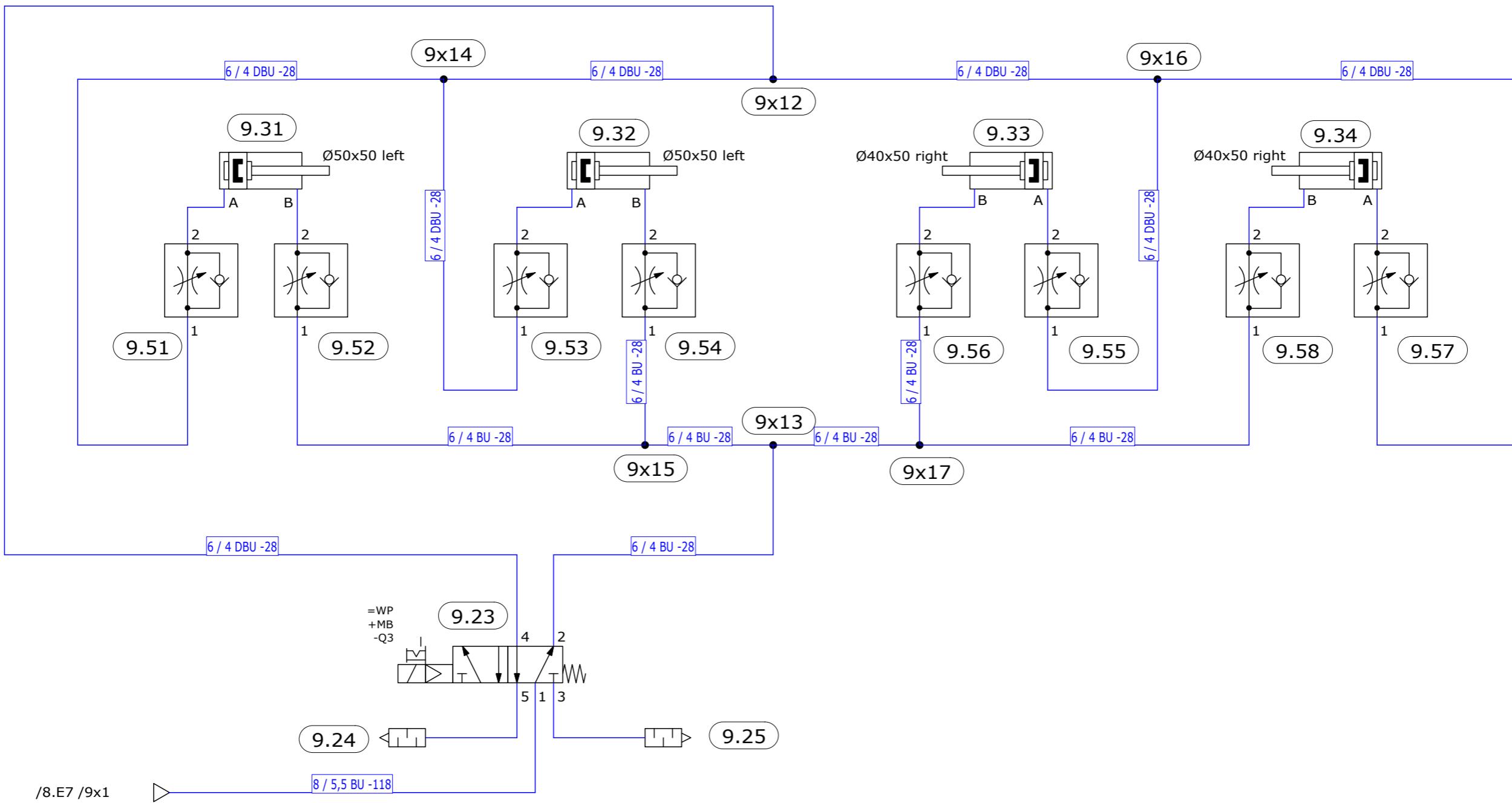


Note: please refer to this schematic for one level pallet.

DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type
9.27	2827083	Pneumatic cylinder D50 H50	AirTAC ACE50x50SG	9.43	2750647	Throttle valve	193144, GRLA-1/8-QS-6-D	9.48	2750647	Throttle valve	193144, GRLA-1/8-QS-6-D
9.26	2827083	Pneumatic cylinder D50 H50	AirTAC ACE50x50SG	9.42	2750647	Throttle valve	193144, GRLA-1/8-QS-6-D	9.47	2750647	Throttle valve	193144, GRLA-1/8-QS-6-D
9.22	0349420	Silencer G1/4x10 with slotting	2922-1/4X10	9.41	2750647	Throttle valve	193144, GRLA-1/8-QS-6-D	9.46	2750647	Throttle valve	193144, GRLA-1/8-QS-6-D
9.21	0349420	Silencer G1/4x10 with slotting	2922-1/4X10	9.29	2827236	Pneumatic cylinder D40 H30	AirTAC ACE40x30SG	9.45	2750647	Throttle valve	193144, GRLA-1/8-QS-6-D
9.20	2750641	Solenoid directional valve	8035190, VUVS-LT25-B52-...	9.28	2827236	Pneumatic cylinder D40 H30	AirTAC ACE40x30SG	9.44	2750647	Throttle valve	193144, GRLA-1/8-QS-6-D

TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China	Project-designation Set of schematics TruLaser 1000 fiber BE			Change number	Edited	Reviewed	Approved	Designation			Contents Pallet clamping				
					34711-08	01.02.2024 TCN511HZ	01.02.2024 TCN511HZ	01.02.2024 TCN511HZ	Pneumatic schematic TruLaser 1000 fiber							
Project number	Vers.proj.	Doc.type	Original record	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format	93630-5-301	002	01	RE	2843707
93630-5-E1	03	E3S	TCN511HZ	93630-5-301	002	01	RE	2843707	8	of	9	P1	A3			

9.2 Lower pallet table clamping



DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type
9.32	2827083	Pneumatic cylinder D50 H50	AirTAC ACE50x50SG	9.53	2750647	Throttle valve	193144, GRLA-1/8-QS-6-D	9.58	2750647	Throttle valve	193144, GRLA-1/8-QS-6-D
9.31	2827083	Pneumatic cylinder D50 H50	AirTAC ACE50x50SG	9.52	2750647	Throttle valve	193144, GRLA-1/8-QS-6-D	9.57	2750647	Throttle valve	193144, GRLA-1/8-QS-6-D
9.25	0349420	Silencer G1/4x10 with slotting	2922-1/4X10	9.51	2750647	Throttle valve	193144, GRLA-1/8-QS-6-D	9.56	2750647	Throttle valve	193144, GRLA-1/8-QS-6-D
9.24	0349420	Silencer G1/4x10 with slotting	2922-1/4X10	9.34	2827236	Pneumatic cylinder D40 H30	AirTAC ACE40x30SG	9.55	2750647	Throttle valve	193144, GRLA-1/8-QS-6-D
9.23	2750642	Solenoid directional valve	8035183, VUVS-LT25-M52-...	9.33	2827236	Pneumatic cylinder D40 H30	AirTAC ACE40x30SG	9.54	2750647	Throttle valve	193144, GRLA-1/8-QS-6-D

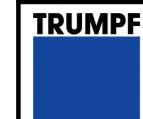
TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China				Project-designation Set of schematics TruLaser 1000 fiber BE				Change number	Edited	Reviewed	Approved	Designation Pneumatic schematic TruLaser 1000 fiber			Contents Pallet clamping					
				Project number	Vers.proj.	Doc.type	Original record	34711-08	01.02.2024 TCN511HZ	01.02.2024 TCN511HZ	01.02.2024 TCN511HZ	Document number 93630-5-301			Doc. part	Version	Status	Id number	Sheet	Type
COPYRIGHT BY TRUMPF	93630-5-E1	03	E3S									002	01	RE	2843707	9	of	9	P1	A3

Overview

A

A

Sheet no.	Function group	Function group designation	Sheet no.	Function group	Function group designation
1		Contents			
3	25	Hydraulics aggregate			
	26	Pallet changer 3m x 1.5m			
C					
D					
E					
F					



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Project-designation
Set of schematics TruLaser 1000 fiber BE

Change number	Edited	Reviewed	Approved
26235-28	25.12.2023 TCN511HZ	25.12.2023 TCN511HZ	25.12.2023 TCN511HZ
	25.12.2023 TCN511HZ	25.12.2023 TCN511HZ	25.12.2023 TCN511HZ

Designation				Contents						
Hydraulic schematic TruLaser 1000 fiber				Contents						
Document number				Doc. part	Version	Status	Id number	Sheet	Type	Format
93630-5-401				002	02	RE	2843734	1 of 3	H1	A3

A

Line cross references

→ P1 / 10.F3 / 7.2-A

B

Symbol

- ▷ Source Pneumatics
- Target Pneumatics
- ▶ Source Hydraulics
- Target Hydraulics

C

Type of plan Plan number

If the source and destination are the same part document type, the planning type is not shown

P1: Pneumatic schematic
 H1: Hydraulic schematic
 L1: Lubrication schematic
 G1: Gas schematic
 W1: Cooling water schematic

D

Sheet reference

Page number . Page quadrant

E

Source or target identification

Device number - Connection name of the component

F

Standard reference:

Fluid schematics are to ISO 1219 and KRL1009-24 created.

Hose identification

12 / 9 BU -10 1000 mm

Outside diameter



Inside diameter



Hose color



Line type



Length (for technical parameters)

Frame 12 / 9 BU -10

This hose gets a label.

Hose color

BK	Black
RD	Red
GN	Green
BU	Blue
N	Neutral
SR	Silver
YE	Yellow
VT	Violet
GY	Grey
WH	White

Shade light / dark (f. e. Red)

L RD	Light red
DRD	Dark red

Color combination (f. e. Black and Red)

BK/RD Black/Red



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Project-designation
Set of schematics TruLaser 1000 fiber BE

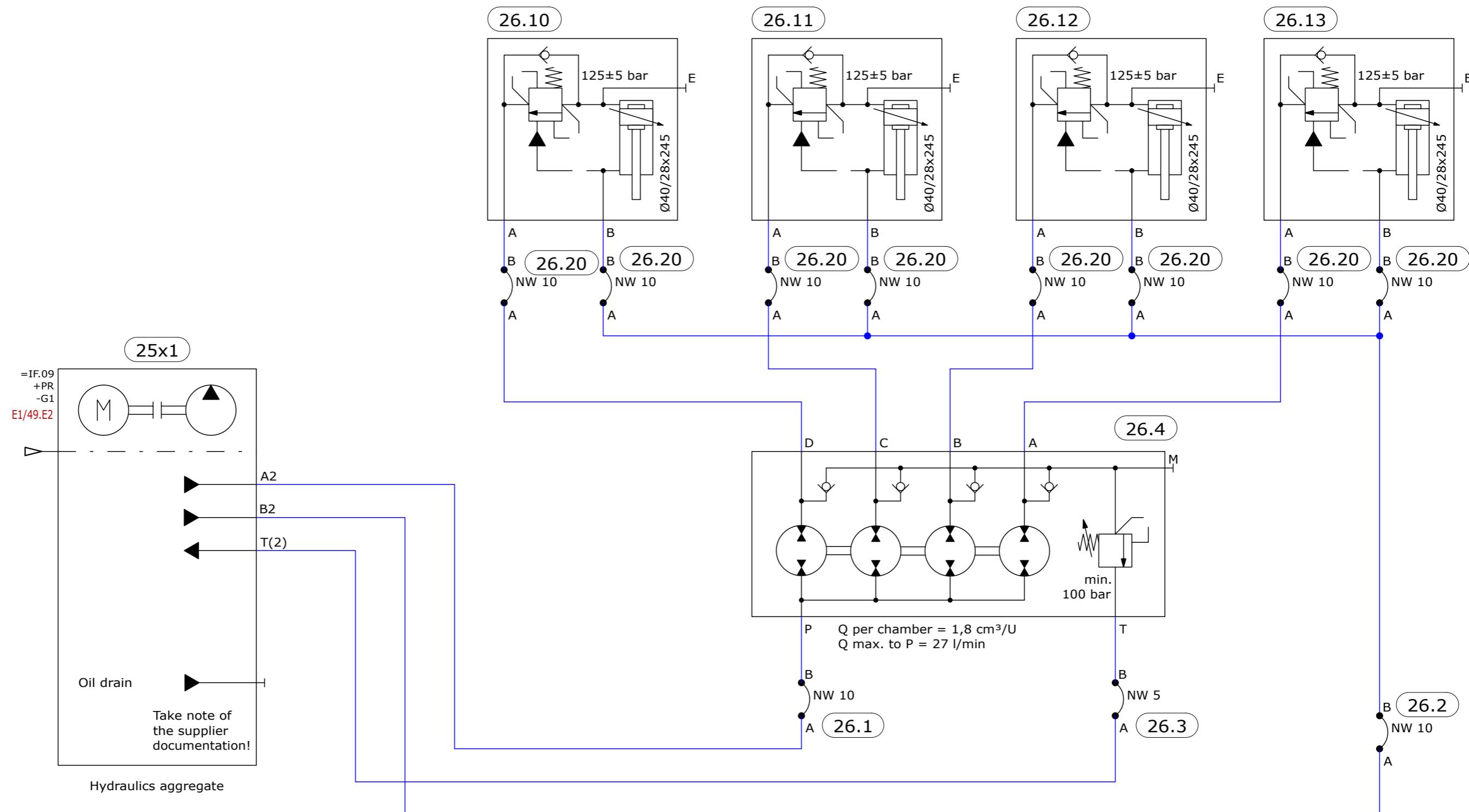
Change number	Edited	Reviewed	Approved
26235-28	25.12.2023 TCN511HZ	25.12.2023 TCN511HZ	25.12.2023 TCN511HZ
	Original record	25.12.2023 TCN511HZ	25.12.2023 TCN511HZ

Designation
Hydraulic schematic TruLaser 1000 fiber

Contents
Legend
Document number
93630-5-401
Doc. part
002
Version
02
Status
RE
Id number
2843734
Sheet
2 of 3
Type
H1
Format
A3

25 Hydraulics aggregate

26 Pallet changer 3m x 1.5m



DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type
26.10E	2647775	Valve 125bar	CLHV3T11ACB3NM-125BAR	26.12	2646208	Cylinder D40 Hub245mm	1098763				
26.4	0123230	Current divider	PR 202-59-T	26.12E	2647775	Valve 125bar	CLHV3T11ACB3NM-125BAR				
26.3	0354828	Hydraulic hose	HS 40/03 DN5 DKO-L/DKO-L L=	26.11	2646208	Cylinder D40 Hub245mm	1098763	26.20	0383938	Hydraulic hose D9,3x355	PKP 210 X 355 AOL AOL90
26.2	0354827	Hydraulic hose D9,3x2000	PKP 210 X 2000 AOL AOL90	26.11E	2647775	Valve 125bar	CLHV3T11ACB3NM-125BAR	26.13	2646208	Cylinder D40 Hub245mm	1098763
26.1	0354827	Hydraulic hose D9,3x2000	PKP 210 X 2000 AOL AOL90	26.10	2646208	Cylinder D40 Hub245mm	1098763	26.13E	2647775	Valve 125bar	CLHV3T11ACB3NM-125BAR

TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China	Project-designation Set of schematics TruLaser 1000 fiber BE			Change number 26235-28	Edited 25.12.2023 TCN511HZ	Reviewed 25.12.2023 TCN511HZ	Approved 25.12.2023 TCN511HZ	Designation Hydraulic schematic TruLaser 1000 fiber			Contents Hydraulics				
		Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S					Document number 93630-5-401	Doc. part 002	Version 02	Status RE	Id number 2843734	Sheet 3 of 3	Type H1	Format A3
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Overview

A	Sheet no.	Function group	Function group designation	Sheet no.	Function group	Function group designation	A
B	1		Contents				B
B	3	35	Lubrication provision				B
C		36	Lubrication X Axis				C
D		37	Lubrication Y Axis				D
E							E
F							F



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Set of schematics TruLaser 1000 fiber BE

	Change number	Edited	Reviewed	Approved
E	26235-26	26.12.2023 TCN511HZ	26.12.2023 TCN511HZ	26.12.2023 TCN511HZ
	Original record	26.12.2023 TCN511HZ	26.12.2023 TCN511HZ	26.12.2023 TCN511HZ
S				

Lubrication schematic TruLaser 1000 fiber

Contents

Document number 93630-5-501	Doc. part 002	Version 00	Status RE	Id number 2844057	Sheet 1 of 3	Type L1	Format A3
--------------------------------	------------------	---------------	--------------	----------------------	-----------------	------------	--------------

A

Line cross references

→ P1 / 10.F3 / 7.2-A

B

Symbol

- ▷ Source Pneumatics
- Target Pneumatics
- ▶ Source Hydraulics
- Target Hydraulics

C

Type of plan Plan number

If the source and destination are the same part document type, the planning type is not shown

P1: Pneumatic schematic
 H1: Hydraulic schematic
 L1: Lubrication schematic
 G1: Gas schematic
 W1: Cooling water schematic

D

Sheet reference

Page number . Page quadrant

E

Source or target identification

Device number - Connection name of the component

F

Standard reference:

Fluid schematics are to ISO 1219 and KRL1009-24 created.

Hose identification

12 / 9 BU -10 1000 mm

Outside diameter



Inside diameter



Hose color



Line type



Length (for technical parameters)

Frame 12 / 9 BU -10

This hose gets a label.

Hose color

Line type	Id.No	Øo / Øi	Color
13	0072028	4 / 2,5	N
BK	Black		
RD	Red		
GN	Green		
BU	Blue		
N	Neutral		
SR	Silver		
YE	Yellow		
VT	Violet		
GY	Grey		
WH	White		

Hose types

Shade light / dark
(f. e. Red)
LRD Light red
DRD Dark red

Color combination
(f. e. Black and Red)
BK/RD Black/Red



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Project-designation
Set of schematics TruLaser 1000 fiber BE

Change number	Edited	Reviewed	Approved
26235-26	26.12.2023 TCN511HZ	26.12.2023 TCN511HZ	26.12.2023 TCN511HZ
	Original record	26.12.2023 TCN511HZ	26.12.2023 TCN511HZ

Designation
Lubrication schematic TruLaser 1000 fibre

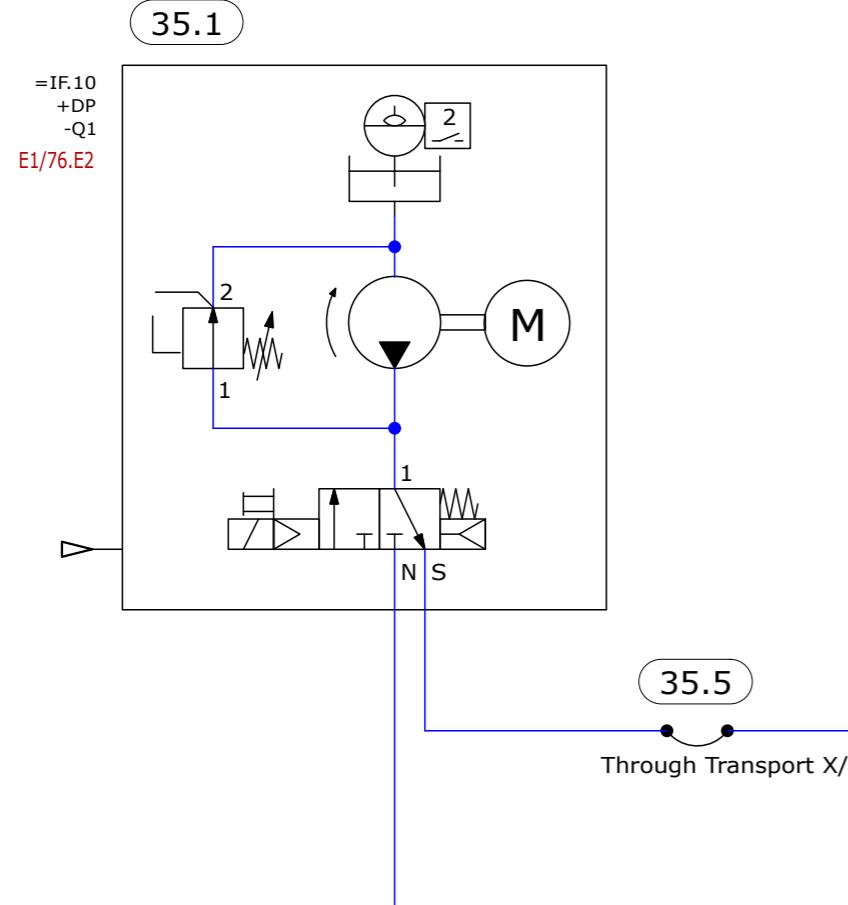
Contents	Legend				
Document number 93630-5-501	Doc. part 002	Version 00	Status RE	Id number 2844057	Sheet 2 of 3 Type L1 Format A3

A

- Z Axis Left Guide Carriage 2
- Z Axis Left Guide Carriage 1
- Z Axis Right Guide Carriage 2
- Z Axis Right Guide Carriage 1

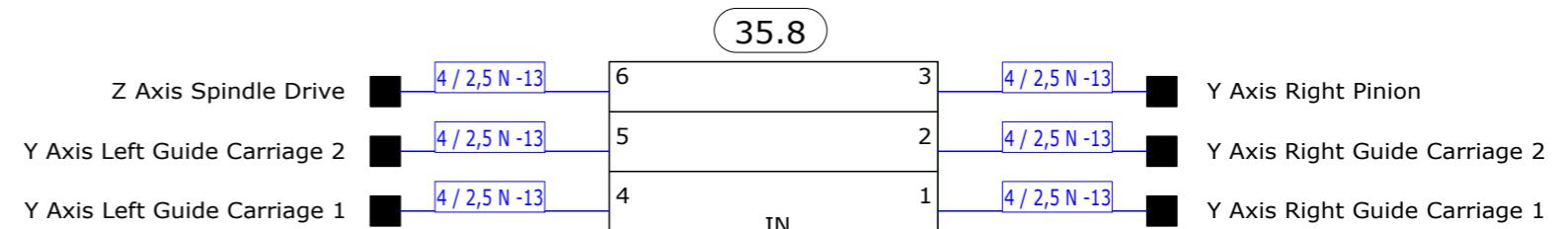
B

35 Lubrication provision

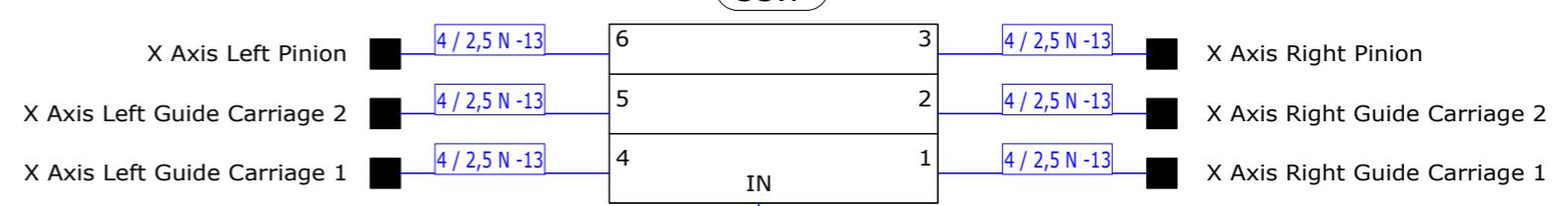


Lubrication Z Axis
Only for service

37 Lubrication Y Axis



36 Lubrication X Axis



35.6

Through Transport X

35.5	2868598	Hydraulic hose Ø6*8000	RG-KB6-8000	35.7	2750692	Lubrication Distributor	LIUBIAN 3PJPQ1-N/15T/15T/18T				
35.1	2809254	Lubrication Pump Electrical	DBD-J10/15EK	35.6	2769972	Hydraulic hose Ø6*6250	RG-JK6-6250	35.8	2750692	Lubrication Distributor	LIUBIAN 3PJPQ1-N/15T/15T/18T

DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type
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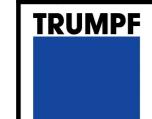
TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China	Project-designation Set of schematics TruLaser 1000 fiber BE	Change number	Edited	Reviewed	Approved	Designation	Contents Lubrication				
		26235-26	26.12.2023 TCN511HZ	26.12.2023 TCN511HZ	26.12.2023 TCN511HZ	Lubrication schematic TruLaser 1000 fibre					
Project number 93630-5-E1	Vers.proj. 03	Doc.type E3S	Original record	26.12.2023 TCN511HZ	26.12.2023 TCN511HZ	26.12.2023 TCN511HZ	Document number 93630-5-501	Doc. part 002	Version 00	Status RE	Id number 2844057
								Sheet 3 of 3	Type L1	Format A3	

Overview

A

A

Sheet no.	Function group	Function group designation	Sheet no.	Function group	Function group designation
1		Contents			
B 3	50	Gas provision			
4	53	Compressed air cutting			
	57	Cutting unit ventilation			
C 5	56	Gas control			
D					
E					
F					



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Project-designation
Set of schematics TruLaser 1000 fiber BE

Change number	Edited	Reviewed	Approved
34711-08	01.02.2024 TCN511HZ	01.02.2024 TCN511HZ	01.02.2024 TCN511HZ
	05.12.2023 TCN511HZ	05.12.2023 TCN511HZ	05.12.2023 TCN511HZ
Original record			

Designation
Gas schematic TruLaser 1000 fiber BE

Contents
Contents

Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
93630-5-601	002	01	RE	2844058	1 of 5	G1	A3

A

Line cross references

→ P1 / 10.F3 / 7.2-A

B

Symbol

- ▷ Source Pneumatics
- Target Pneumatics
- ▶ Source Hydraulics
- Target Hydraulics

C

Type of plan Plan number

If the source and destination are the same part document type, the planning type is not shown

P1: Pneumatic schematic
 H1: Hydraulic schematic
 L1: Lubrication schematic
 G1: Gas schematic
 W1: Cooling water schematic

D

Sheet reference

Page number . Page quadrant

E

Source or target identification

Device number - Connection name of the component

F

Standard reference:
Fluid schematics are to ISO 1219 and KRL1009-24 created.

Hose identification

12 / 9 BU -10 1000 mm

Outside diameter



Inside diameter



Hose color



Line type



Length (for technical parameters)

Frame

12 / 9 BU -10

This hose gets a label.

Hose color

		Line type	Id.No	Øo / Øi	Color
BK	Black	2	0365458	8 / 6	GN
RD	Red	5	0371686	6 / 4	GN
GN	Green	6	1773697	6 / 4	BK
BU	Blue	116	2263915	6 / 3,9	BU
N	Neutral	130	2367226	Ø 12 x 1,5	BU
SR	Silver	151	2610144	12 / 8	GN
YE	Yellow				
VT	Violet				
GY	Grey				
WH	White				

Shade light / dark
(f. e. Red)

LRD Light red
 DRD Dark red

Color combination
(f. e. Black and Red)

BK/RD Black/Red



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Project-designation
 Set of schematics TruLaser 1000 fiber BE

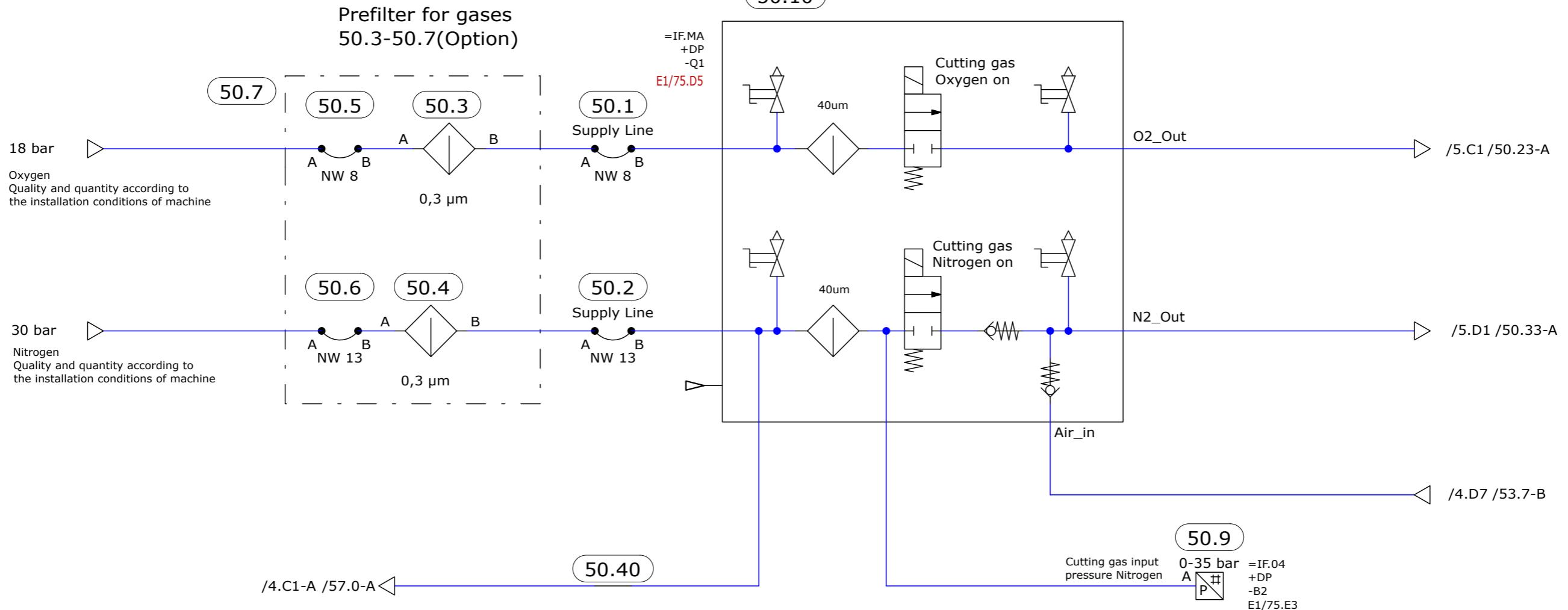
Change number	Edited	Reviewed	Approved
34711-08	01.02.2024 TCN511HZ	01.02.2024 TCN511HZ	01.02.2024 TCN511HZ
Project number	Vers.proj.	Doc.type	
93630-5-E1	03	E3S	Original record

Designation
 Gas schematic TruLaser 1000 fiber BE

Contents
 Legend

Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
93630-5-601	002	01	RE	2844058	2 of 5	G1	A3

50 Gas provision



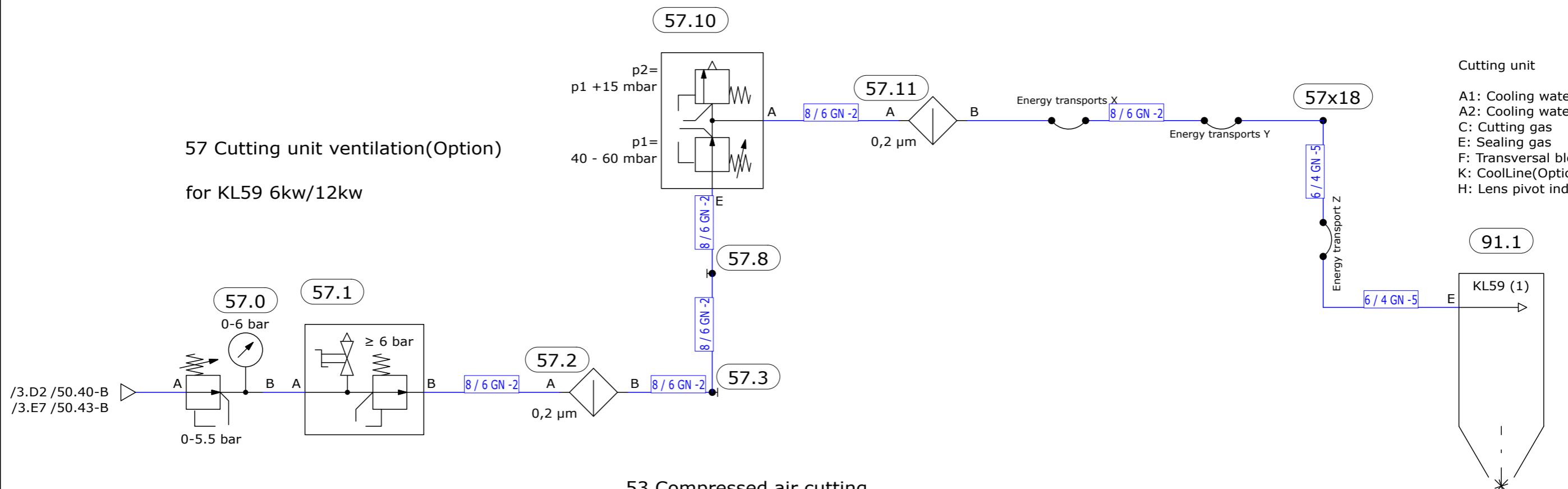
50.4	2472694	Filter housing cpl. IFG PEGF	IFG-AL-PEGF-40-110-30K-GE,	50.41	0349425	Gas hose N2 Ø13x1045	N2 PA-DN13X1045 BE12L/	50.10E	2808288	Filter Element	93630-1610-P109
50.4E	2472693	Filter cartridge microfilter	PEGF-40-110-30K-R , 801214	50.10	2750634	N2/O2 supply unit	SPCN-60541 REV-C	50.40	2759066	Pipe	93630-1610-P108
50.3	2472694	Filter housing cpl. IFG PEGF	IFG-AL-PEGF-40-110-30K-GE,	50.9	2750635	Pressure sensor 0-100bar	PK5522	50.44	2643732	Prefilter	
50.3E	2472693	Filter cartridge microfilter	PEGF-40-110-30K-R , 801214	50.7	2640947	Prefilter		50.43	0363791	Gas hose N2 Ø13x7000	N2 PA-DN13X7000 BE12L/BE12L
50.2	0363791	Gas hose N2 Ø13x7000	N2 PA-DN13X7000 BE12L/BE12L	50.6	0349425	Gas hose N2 Ø13x1045	N2 PA-DN13X1045 BE12L/	50.42	2472694	Filter housing cpl. IFG PEGF	IFG-AL-PEGF-40-110-30K-GE,
50.1	0144086	Gas hose O2 Ø8,0x7000	O2 DN8X7000 BE8L/BE8L	50.5	0349423	Gas hose o2 Ø8,0x1070	O2 DN8X1070 BE8L/BE8SV	50.42E	2472693	Filter cartridge microfilter	PEGF-40-110-30K-R , 801214
DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type

TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China	Project-designation Set of schematics TruLaser 1000 fiber BE			Change number	Edited	Reviewed	Approved	Designation			Contents Gas provision				
					34711-08	01.02.2024 TCN511HZ	01.02.2024 TCN511HZ	01.02.2024 TCN511HZ	Gas schematic TruLaser 1000 fiber BE							
Project number	Vers.proj.	Doc.type	Original record	Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format	/4.D7 /53.7-B	/5.C1 /50.23-A	/5.D1 /50.33-A	/4.C1-A	
COPYRIGHT BY TRUMPF	93630-5-E1	03	E3S	93630-5-601	002	01	RE	2844058	3	G1	A3					

A

A

57 Cutting unit ventilation(Option)
for KL59 6kw/12kw

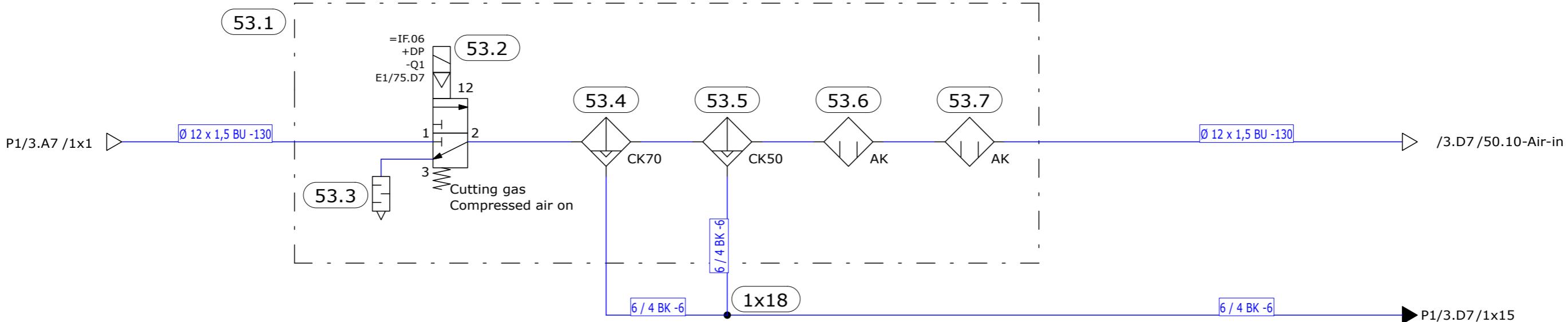


B

B

C

C

53 Compressed air cutting

D

D

53.5	0386588	Fine-mesh filter MS6-B (HA-NO)	MS6-LFM-1/2-BIRH , 570521	57.1	2353579	Pressure shut-off valve 6 bar	11030				
53.5E	0369321	Filter element B MS6	MS6-LFM-BI , 547923	57.1E	0351056	Purge valve g1/4	71019				
53.4	0386589	Fine-mesh filter MS6-C (HA-NO)	MS6-LFM-1/2-CIRH , 570522	57.0	2513986	Pressure regulator 40bar (N2) w.	10625	91.1	CuttingUnit	KL59/BM111	
53.4E	0369322	Filter element C MS6	MS6-LFM-CI , 547924	53.7	0369314	Active carbon filter ms6-1/2	MS6-LFX-1/2-AKIR , 547920	57.11	0373321	Polyglas-filter in-line	PEGF 12-53-30K
53.3	0079939	Silencer U-1/2	U-1/2 , 2310	53.7E	0369323	Filter element AK MS6	MS6-LFX-I , 547925	57.10	2488199	Pressure regulator preadjusted	10598
53.2	0369303	On-off valve ms6-1/2	MS6-EE-1/2-V24P-CS , 8088602	53.6	0369314	Active carbon filter ms6-1/2	MS6-LFX-1/2-AKIR , 547920	57.3	0067450	T-piece	1540-8/6-WGUG
53.1	0371539	Maintenance unit ms-6	571076	53.6E	0369323	Filter element AK MS6	MS6-LFX-I , 547925	57.2	0373321	Polyglas-filter in-line	PEGF 12-53-30K
DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type

E

E

TRUMPF	TRUMPF Machine Tools Co., Ltd Jiangsu 215400 Taicang China	Project-designation Set of schematics TruLaser 1000 fiber BE	Change number	Edited	Reviewed	Approved	Designation	Contents				
			34711-08	01.02.2024 TCN511HZ	01.02.2024 TCN511HZ	01.02.2024 TCN511HZ	Gas schematic TruLaser 1000 fiber BE	Compressed air supplySealing gas				
			Project number	Vers.proj.	Doc.type	Original record	Document number	Doc. part	Version	Status	Id number	Sheet
			93630-5-E1	03	E3S	TCN511HZ	93630-5-601	002	01	RE	2844058	4 of 5 G1 A3

A

A

B

B

C

C

D

D

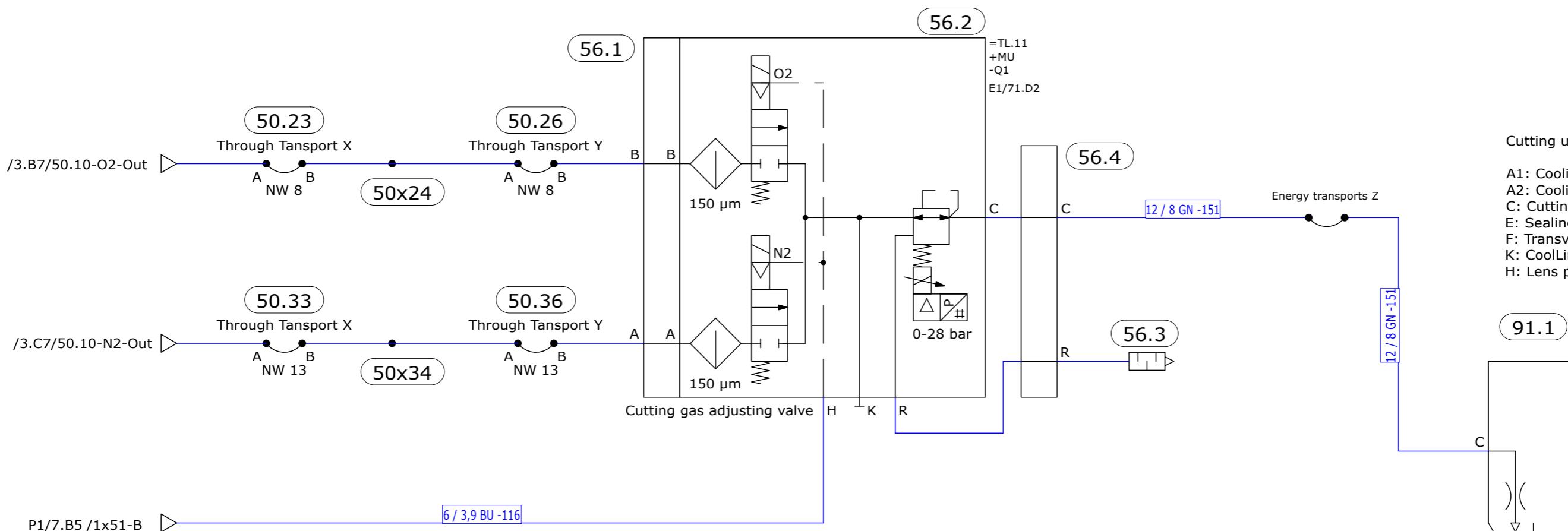
E

E

F

F

56 Gas control



50.36	1905761	Gas hose N2 D13x2800	N2 PA-DN13X2800 BE12L/BE12L	56.3	0349420	Silencer G1/4x10 with slotting	2922-1/4X10				
50.33	0380035	Gas hose N2 Ø13x4000	N2 PA-DN13X4000 BE12L/BE12L	56.2	2020865	Adjusting valve EtherCAT	T2EECB28M_TRU				
50.26	0114757	Gas hose O2 D8,0x2900	O2 DN8X2900 BE8L/BE8L	56.2E	2059156	Filter insert cpl.	90-38-1	91.1	CuttingUnit		KL59/BM111
50.23	0142317	Gas hose O2 D8,0x3900	O2 DN8X3900 BE8L/BE8L	56.1	2747361	Elbow conn. left	93630-415-P2	56.4	2747310	Elbow conn. right	93630-415-P1
DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type	DevNo	Id.No	Designation	Type

TRUMPF				Project-designation			Change number	Edited	Reviewed	Approved	Designation			Contents Gas control				
Machine Tools Co., Ltd				Set of schematics TruLaser 1000 fiber BE			34711-08	01.02.2024	01.02.2024	01.02.2024	Gas schematic TruLaser 1000 fiber BE							
Jiangsu								TCN511HZ	TCN511HZ	TCN511HZ								
215400 Taicang								05.12.2023	05.12.2023	05.12.2023								
China								TCN511HZ	TCN511HZ	TCN511HZ								
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Overview

A

A

Sheet no.	Function group	Function group designation			Sheet no.	Function group	Function group designation		
1		Contents							
3	70	Cooling water supply							
	71	Cooling laser							
	72	Cooling Motion Unit							
C									
D									
E									
F									



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Project-designation
Set of schematics TruLaser 1000 fiber BE

Change number	Edited	Reviewed	Approved
26235-26	01.12.2023 TCN511HZ	01.12.2023 TCN511HZ	01.12.2023 TCN511HZ
	01.12.2023 TCN511HZ	01.12.2023 TCN511HZ	01.12.2023 TCN511HZ

Designation				Contents			
Water cooling TruLaser 1000 fiber BE				Contents			
Document number				Doc. part	Version	Status	Id number
93630-5-701				002	00	RE	2844059
				1	of	3	W1 A3

A

Line cross references

→ P1 / 10.F3 / 7.2-A

B

Symbol

- ▷ Source Pneumatics
- Target Pneumatics
- ▶ Source Hydraulics
- Target Hydraulics

C

Type of plan Plan number

If the source and destination are the same part document type, the planning type is not shown

P1: Pneumatic schematic
 H1: Hydraulic schematic
 L1: Lubrication schematic
 G1: Gas schematic
 W1: Cooling water schematic

D

Sheet reference

Page number . Page quadrant

E

Source or target identification

Device number - Connection name of the component

F

Standard reference:

Fluid schematics are to ISO 1219 and KRL1009-24 created.

Hose identification

12 / 9 BU -10 1000 mm

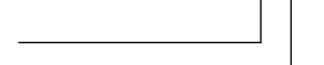
Outside diameter



Inside diameter



Hose color



Line type



Length (for technical parameters)

Frame 12 / 9 BU -10

This hose gets a label.

Hose color

Hose types

Line type	Id.No	Øo / Øi	Color
BK	Black	6	1773697
RD	Red	12	0374061
GN	Green	22	1829239
BU	Blue	23	1829240
N	Neutral		
SR	Silver		
YE	Yellow		
VT	Violet		
GY	Grey		
WH	White		

Shade light / dark
(f. e. Red)

LRD Light red
 DRD Dark red

Color combination
(f. e. Black and Red)

BK/RD Black/Red



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Project-designation
Set of schematics TruLaser 1000 fiber BE

Change number	Edited	Reviewed	Approved
26235-26	01.12.2023 TCN511HZ	01.12.2023 TCN511HZ	01.12.2023 TCN511HZ
	Original record	01.12.2023 TCN511HZ	01.12.2023 TCN511HZ

Designation
Water cooling TruLaser 1000 fiber BE

Contents
Legend

Document number	Doc. part	Version	Status	Id number	Sheet	Type	Format
93630-5-701	002	00	RE	2844059	2 of 3	W1	A3

A

B

C

D

E

F

A

B

C

D

E

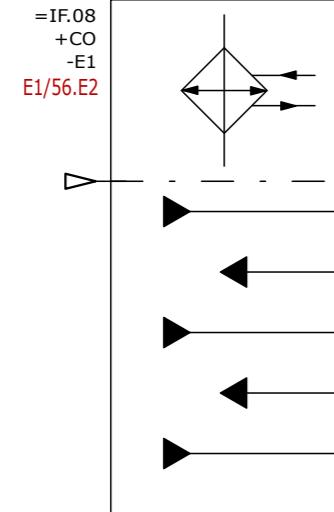
F

71 Cooling laser

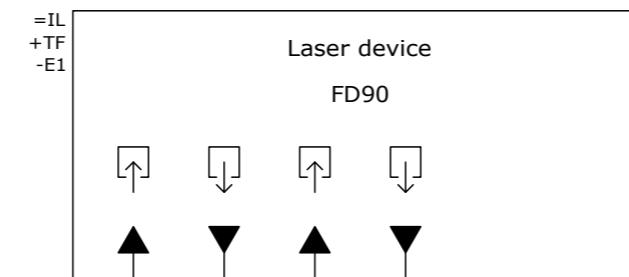
72 Cooling Motion Unit

70 Cooling water supply

70.1



Chiller:
1.TFLW-6000WDR FOR LASER POWER 3KW;
2.TFLW-8000WDR FOR LASER POWER 6KW;
3.TFLW-20000WDR FOR LASER POWER 12KW.



70.2

70x10

70.3

70x20

70x28

70x18

70x22

12 / 9 BK -12

12 / 9 BK -12