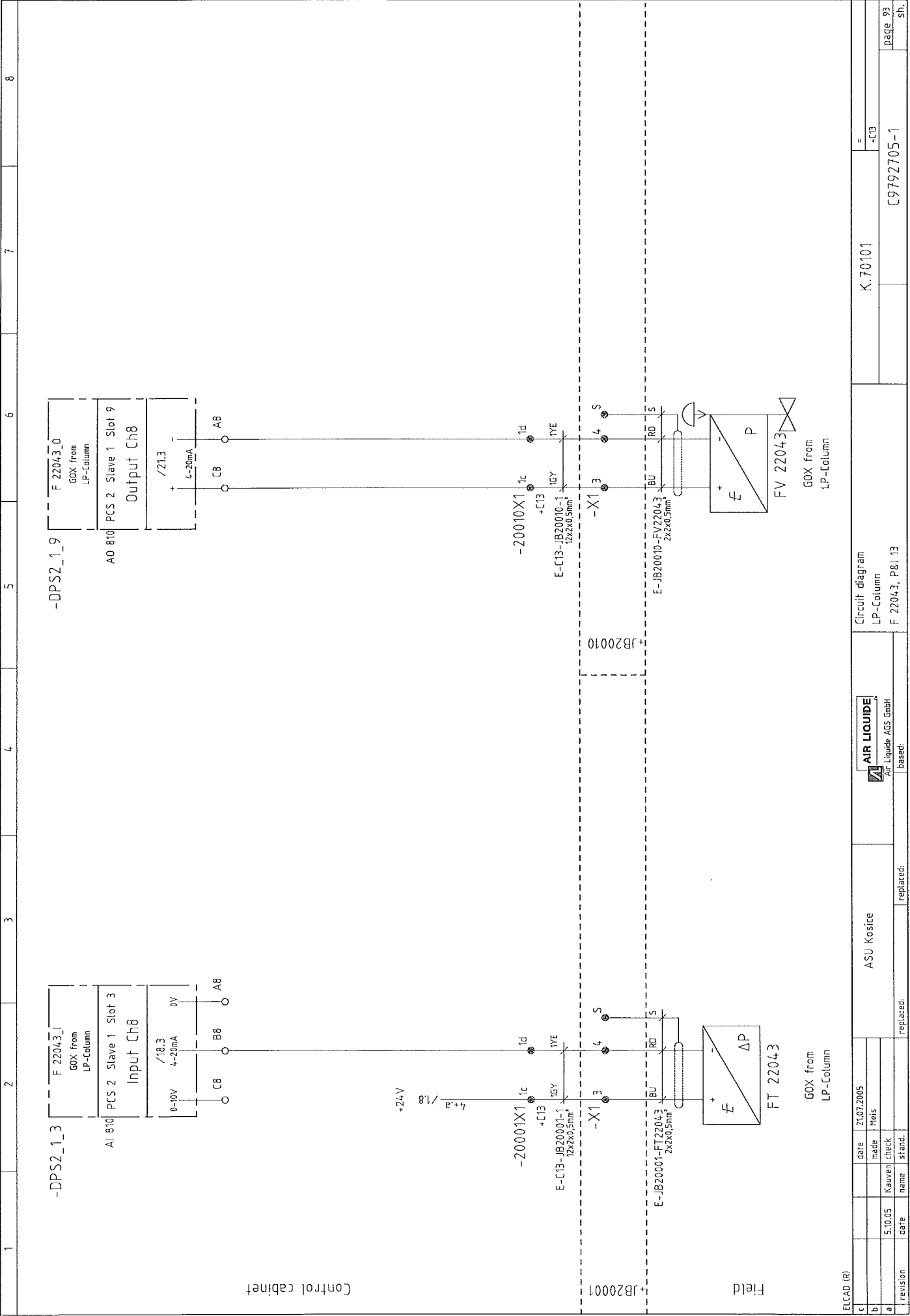
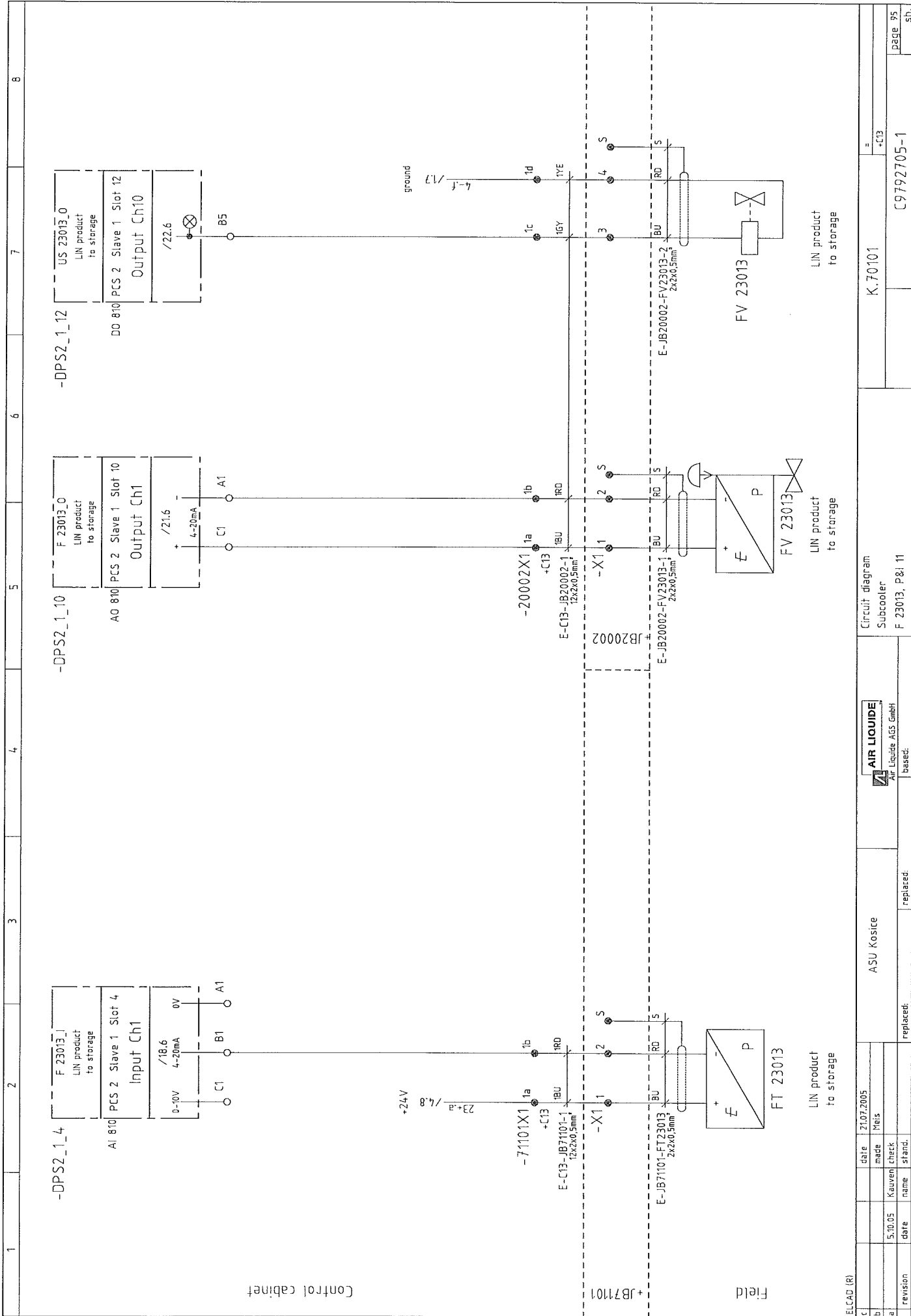


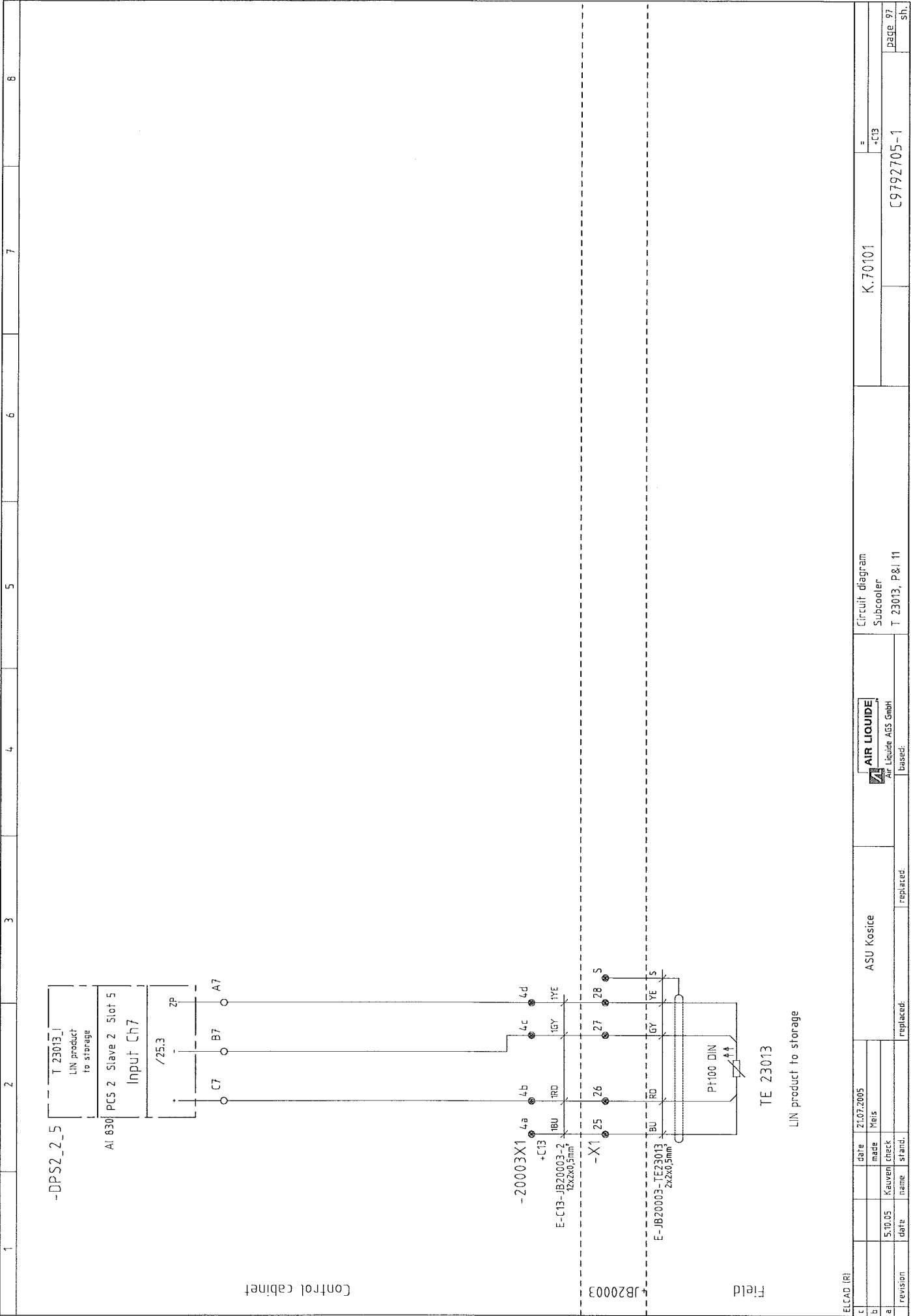
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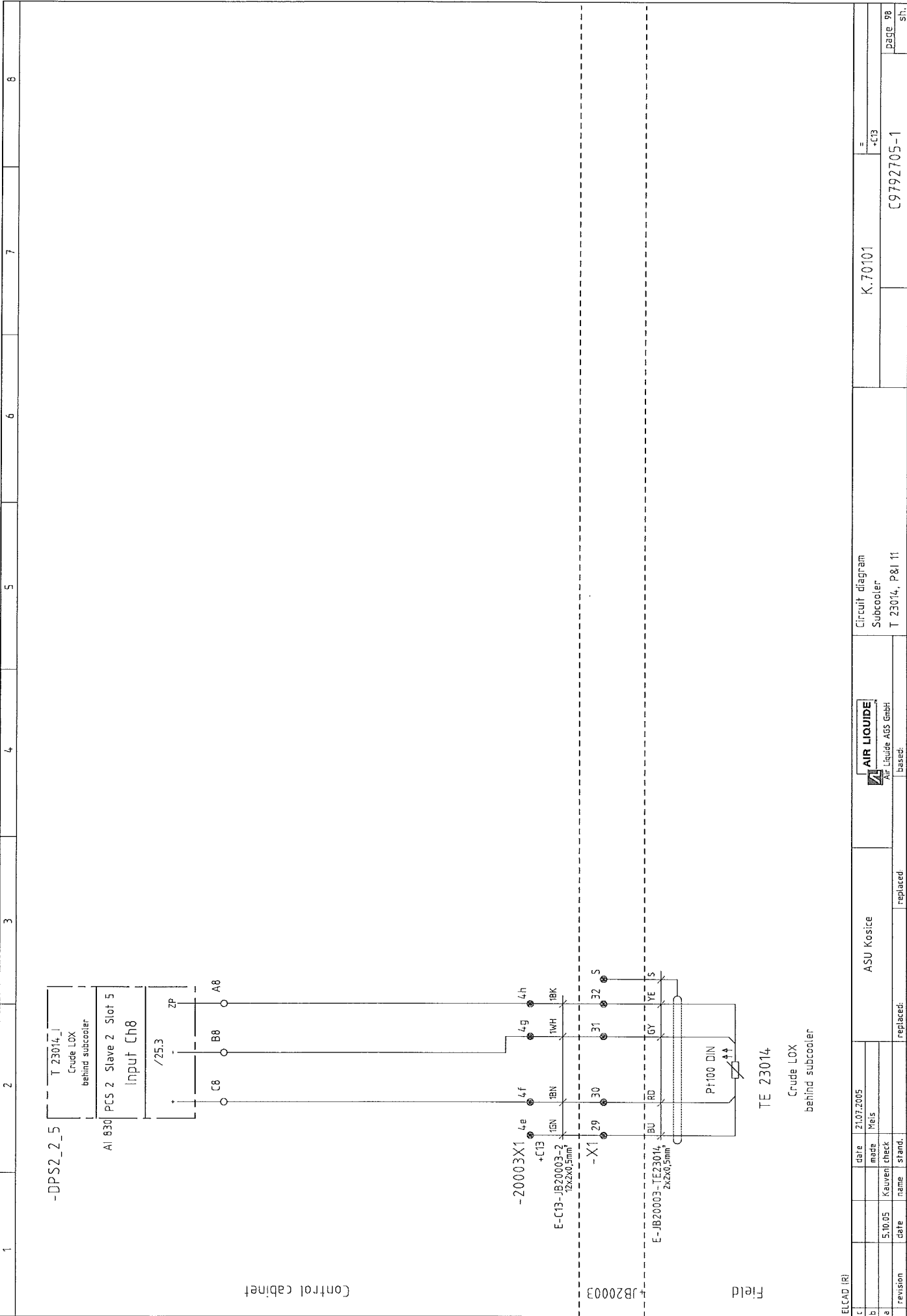


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ELCAD (R)		ASU Kosice		AIR LIQUIDE		Circuit diagram		K.70101		LIN product to storage	
c		date	21.07.2005	made	Meis		Subcooler				
b		date	5.10.05	check	Kaumen		F 23013, P&I 11				
a		date		stand.							
revision		replaced:		replaced:		based:		C9792705-1		page 95	
										sh.	








Liquid Air

ELCAD (R)

				ASU Kosice		 AIR LIQUIDE Air Liquide AGS GmbH		Circuit diagram Subcooler T 230'5, P&I 11		K.70101		=		+C13		page 99	
c			date	21.07.2005													
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a			Kauern check.	5.10.05													
	revision		name	date	replaced:												sh.
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-DPS2_1_4

LOX to storage

AI 810 PCS 2 Slave 1 Slot 4

Input Ch2

0-10V 4-20mA 0V

18.6

C2 B2 A2

Control cabinet

+24V

21+a / L4

-61101X1

1a 1b

+C13

E-C13-JB61101-1

12x2x0.5mm

1BU 1RD

-X1

1 2 S

E-JB61101-FT23016

2x2x0.5mm

BU RD S

FT 23016

E P

LOX to storage

Field

+JB61101

ELCAD (R)

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Circuit diagram

Subcooler

F 23016, P&I 11

K.70101

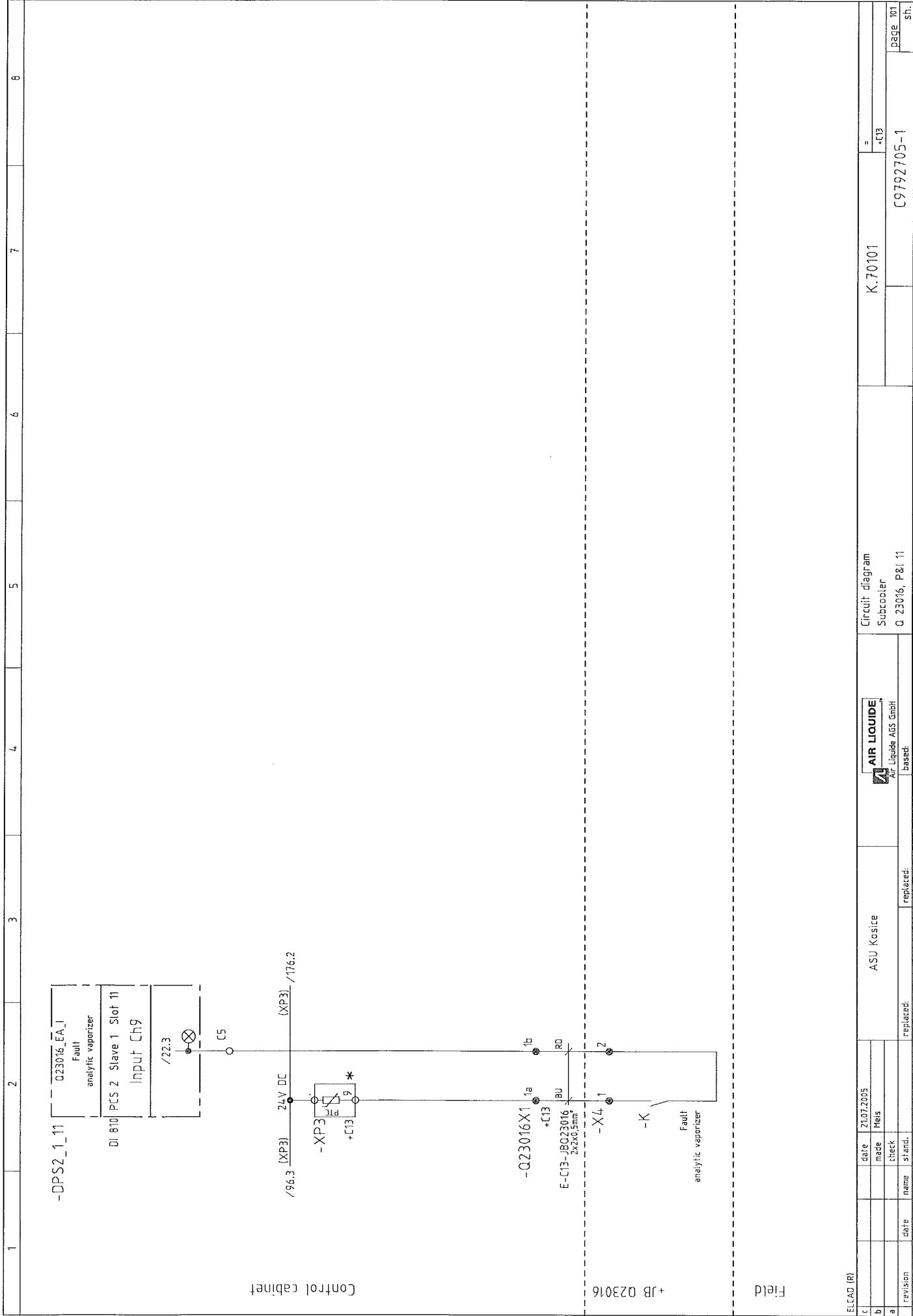
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The diagram illustrates the electrical circuit for a subcooler, divided into two main sections: 'Control cabinet' and 'Field'.

Control cabinet components:

- F 23073_0:** LIN product to dump.
- AO 810:** PCS 2 Slave 1 Slot 10 Output Ch2.
- Resistor:** 21.6, 4-20mA.
- Terminal A2:** Connected to the 4-20mA line.
- Terminal C2:** Connected to the 4-20mA line.

Field components:

- 20002X1:** 1e, 1f, 1BN, 1GN, 1XN, 1YX, 1Z.
- E-C13-JB20002-1:** 12X240.5mm.
- X1:** 5, 6, S.
- E-JB20002-FV23073:** 24X240.5mm.
- FV 23073:** LIN product to dump.

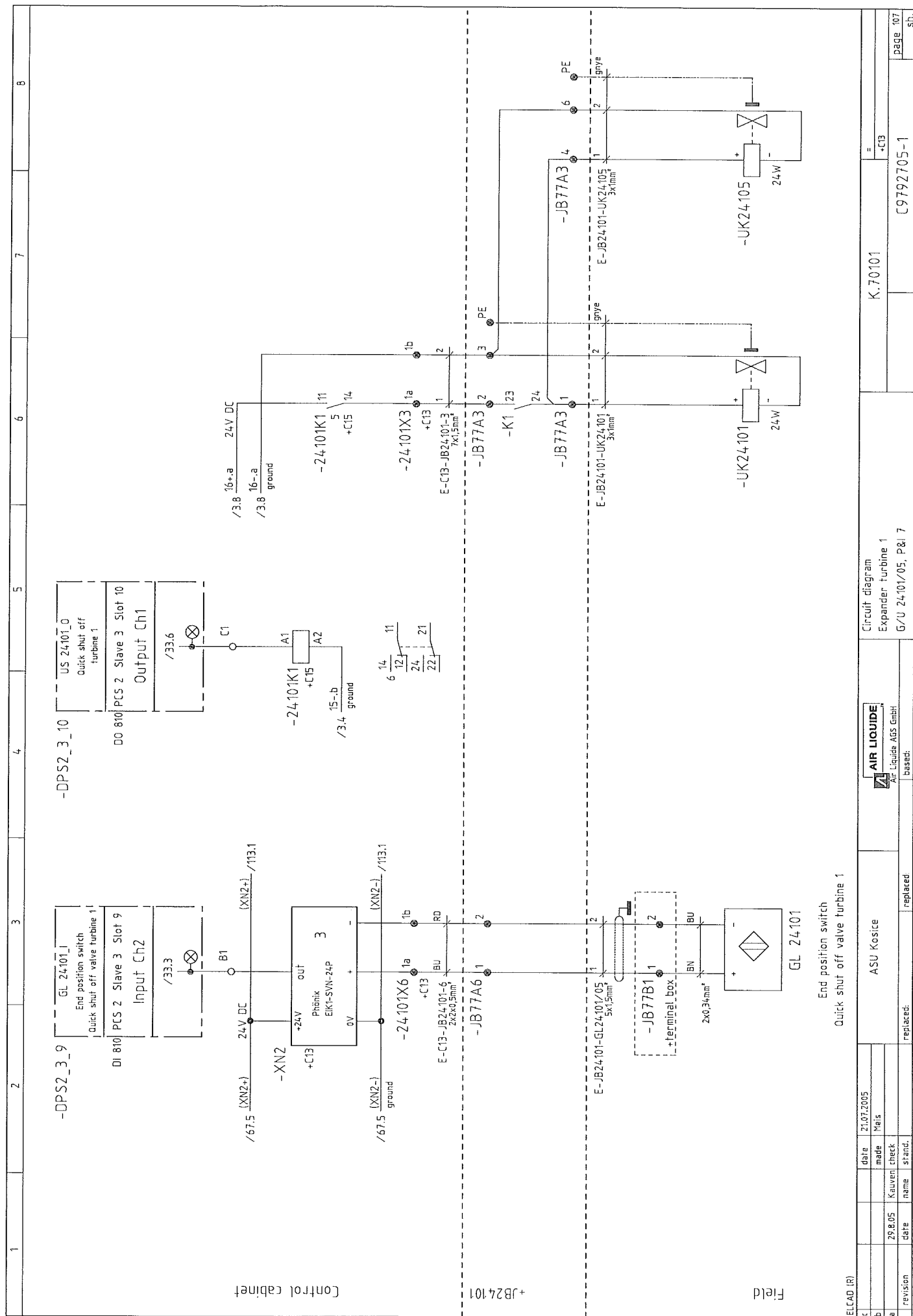
Connections:

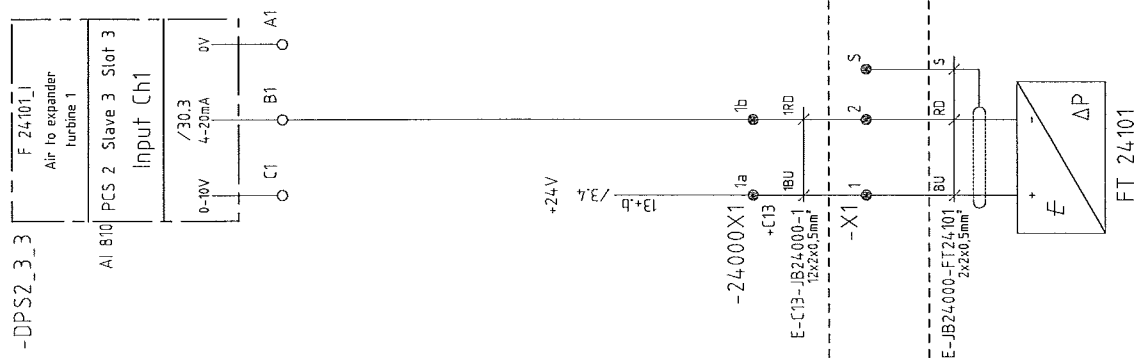
- The 4-20mA line from the control cabinet connects to the 1e terminal of -20002X1.
- The 1f terminal of -20002X1 connects to the 1BN terminal of E-C13-JB20002-1.
- The 1GN terminal of E-C13-JB20002-1 connects to the 1XN terminal of -X1.
- The 1YX terminal of -X1 connects to the 1Z terminal of E-JB20002-FV23073.
- The 5, 6, and S terminals of -X1 connect to the 5, 6, and S terminals of E-JB20002-FV23073.
- The 5, 6, and S terminals of E-JB20002-FV23073 connect to the 5, 6, and S terminals of FV 23073.

[illegible]

The diagram illustrates the electrical circuit for the Expander turbine 1. It begins with a power supply section labeled '14F2/2A L+' connected to a 'Control cabinet'. Inside the cabinet, the circuit passes through a '-DPS2_3_9' unit, then to 'HA 24-100_I Emergency stop Turbine 1', 'DI 810 PCS 2 Slave 3 Slot 9 Input Ch1', and a fuse '33.3'. The circuit then goes through a switch 'C1' to a '24V DC' supply. This supply is connected to a terminal block 'XP4' with terminals 118.3 and 24V DC. The circuit then splits into two main branches. The first branch goes through a 'spare' terminal block with terminals 5a, 5b, 5c, and 5d, then through a '24101X5' terminal block with terminals 2BU, 26U, 26Y, and 26E. The second branch goes through a '24101X5' terminal block with terminals 33, 34, 35, and 36, then through a 'JB77A5' terminal block with terminals 22, 21, 20, and 19. The circuit then goes through a 'Not-Aus' terminal block with terminals 42 and 41, and finally through a 'HZ24100' terminal block with terminals 22 and 21. The circuit is labeled 'Emergency stop turbine 1'.


[illegible]





Air to expander turbine 1

ELCAD (R)

			ASU Kosice		<div> AIR LIQUIDE AGS GmbH</div>		Circuit diagram Expander turbine 1 F 24-101, P&I 7		K.70101		=		-C13		page 108		sh.	
c			date	21.07.2005														
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The diagram illustrates the electrical control system for the Air to expander turbine 1. It is divided into three main sections: Control cabinet, JB24000, and Field.

- Control cabinet:** Contains the power supply section (P 24101_I, AI 810, PCS 2 Slave 3 Slot 3, Input Ch3) and the PT 24101 sensor. The power supply section includes a 24V source, a 3A fuse, and a 30.3 ohm resistor. The PT 24101 sensor is connected to the power supply section via a cable (X1).
- JB24000:** Contains the PT 24101 controller. The controller is connected to the power supply section via a cable (X1).
- Field:** Contains the PT 24101 sensor. The sensor is connected to the PT 24101 controller via a cable (X1).

The diagram shows the connection between the control cabinet and the field section through a cable (X1). The power supply section is connected to the PT 24101 sensor via a cable (X1). The PT 24101 controller is connected to the PT 24101 sensor via a cable (X1).

1	2	3	4	5	6	7	8
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-DPS2_3_6

T 24101_I
Air to expander turbine 1

AI 830 PCS 2 Slave 3 Slot 6
Input Ch1

/31.6 ZP

C1 B1 A1

-24000X1

+C13 1f 1g 1h

E-C13-JB24000-1 1BN 1WH 1BK
12x2x0.5mm

-X1 5 6 7 8 9

E-JB24000-TE24101 2x2x0.5mm

BU RD GY VE 1S

P100 DIN

TE 24101
Air to expander turbine 1

Control cabinet

Field

ELCAD (R)

revision	5.10.05	Kauven	date	21.07.2005
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AIR LIQUIDE
Air Liquide AGS GmbH
based:

replaced:

Circuit diagram
Expander turbine 1
T 24101, P&I 7

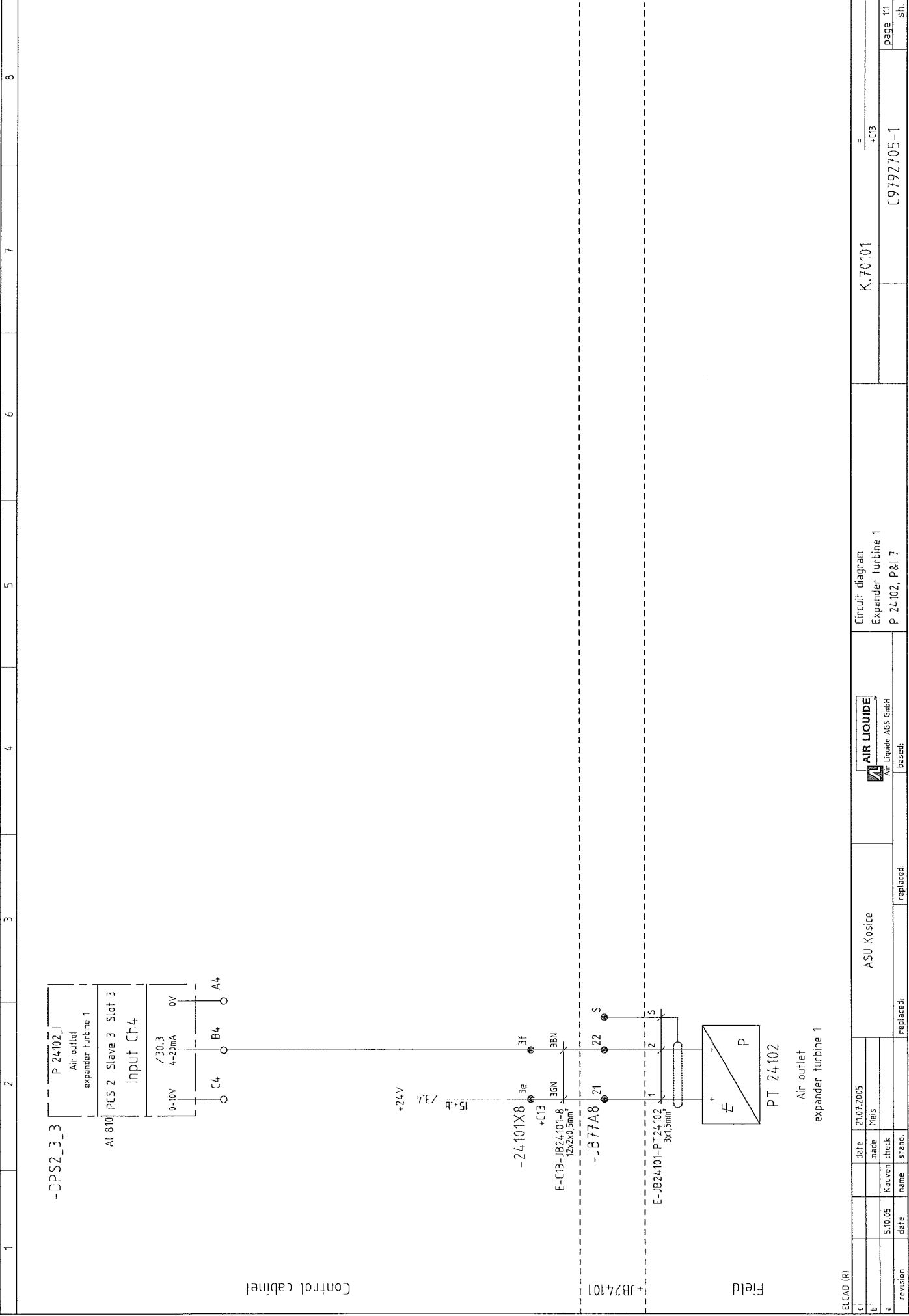
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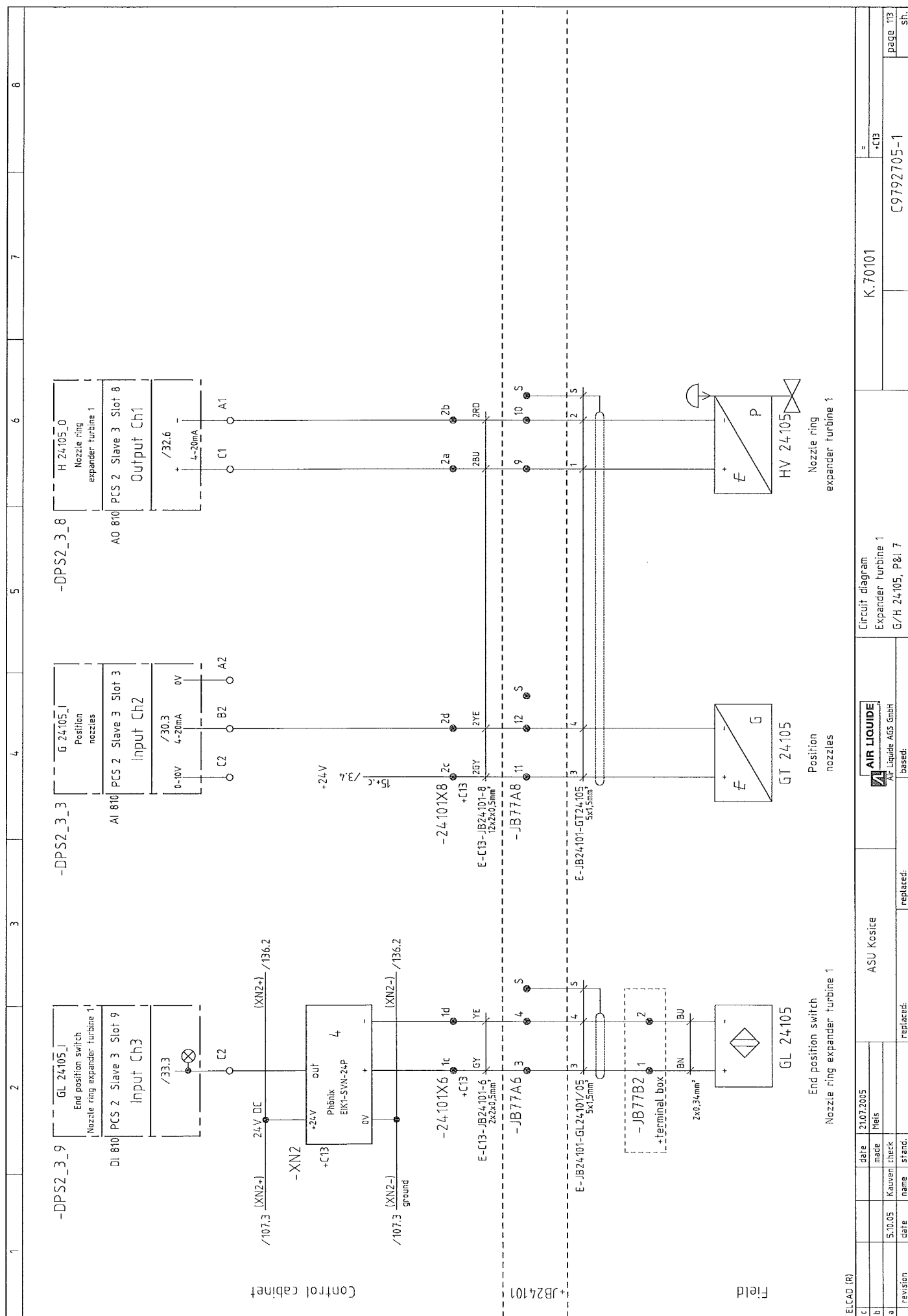
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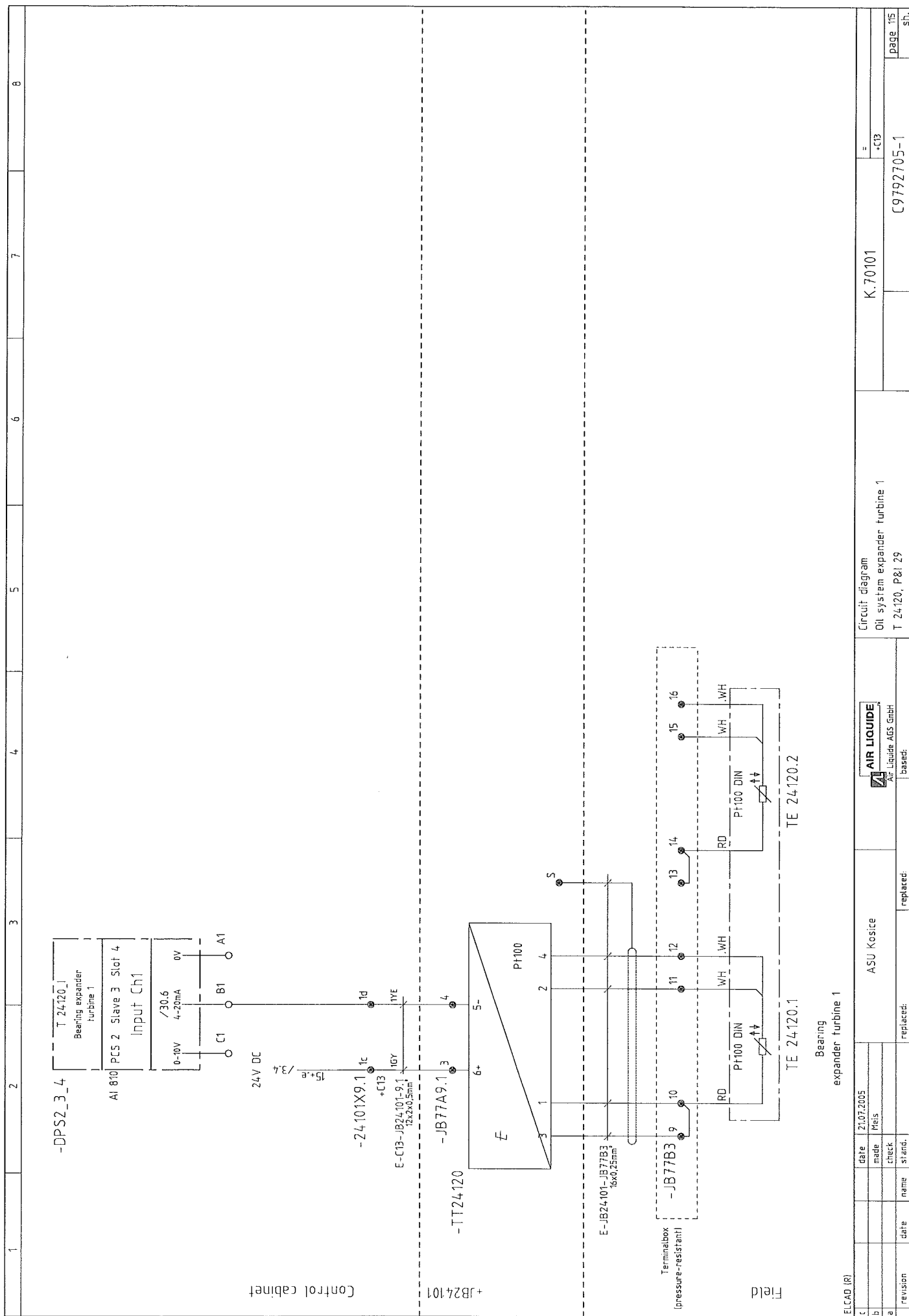
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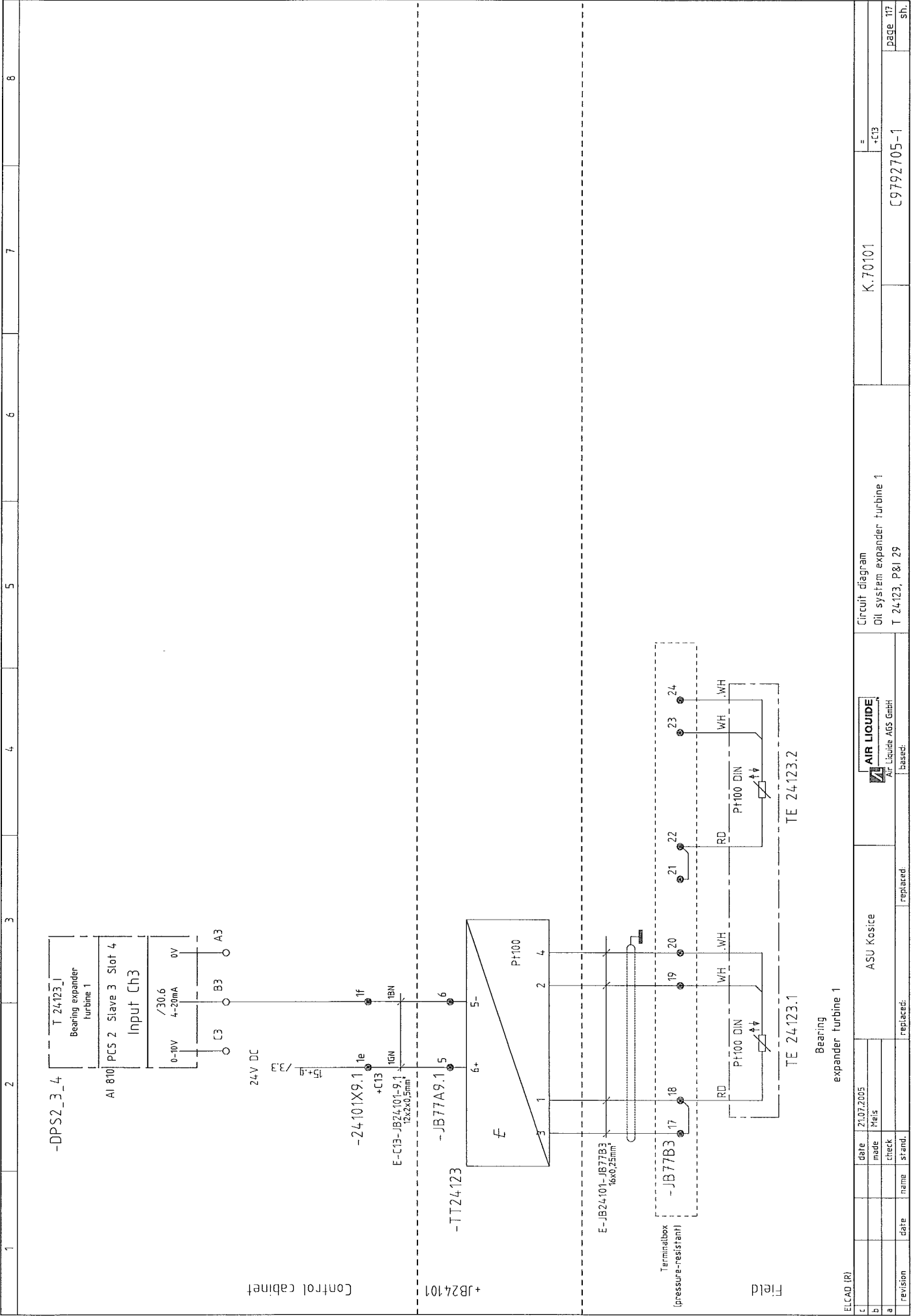


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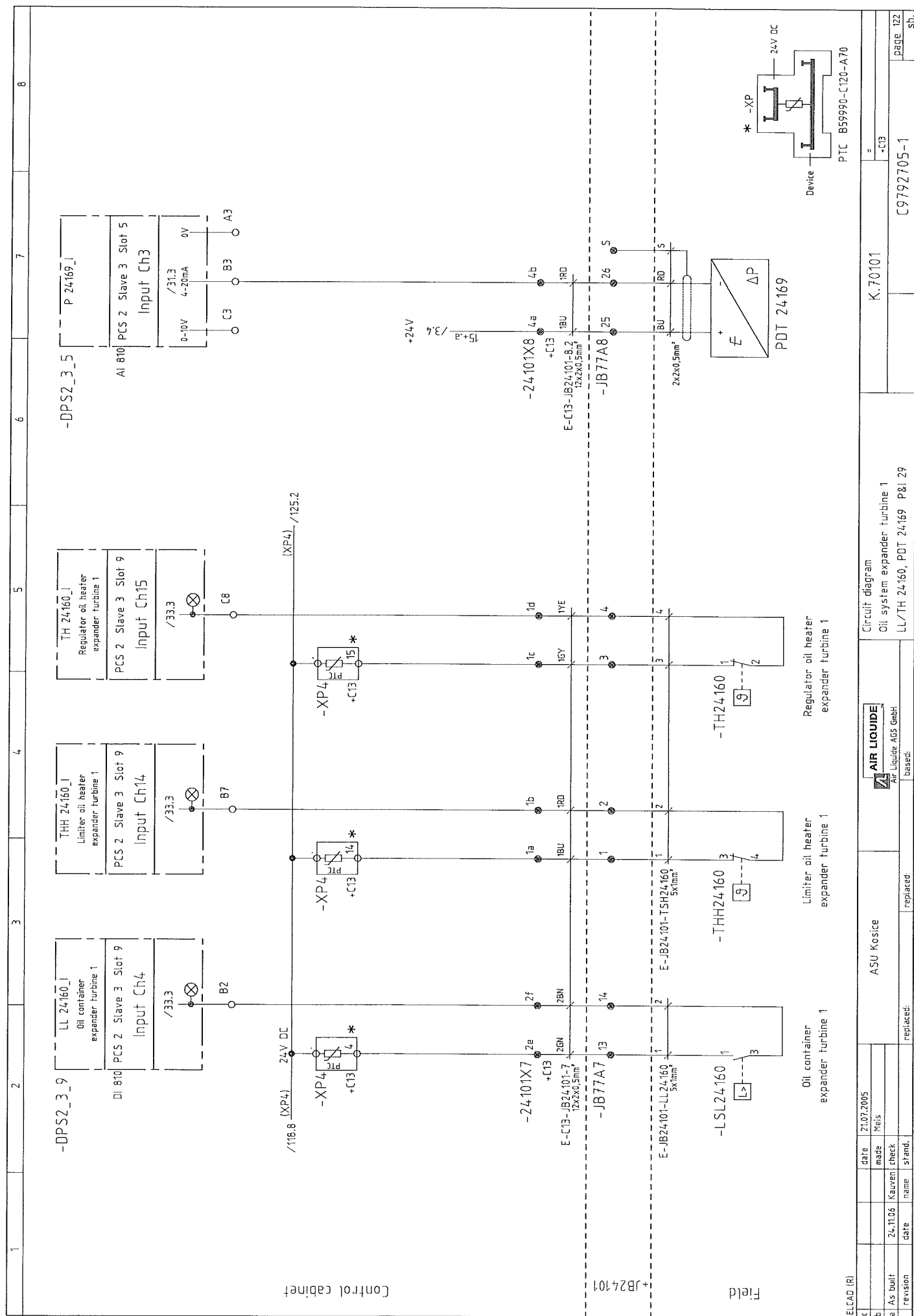




1	2	3	4	5	6	7	8																
<div style="display: flex; justify-content: space-between;"> <div> <p>-DPS2_3_4</p> <p>Control cabinet</p> </div> <div> <p>T 24121.1 Bearing expander turbine 1</p> <p>AI 810 PCS 2 Slave 3 Slot 4 Input Ch2</p> <p>0-10V 4-20mA 0V</p> <p>24V DC</p> <p>-24101X9.1</p> <p>E-C13-JB24101-9.1 12x2x0.5mm</p> <p>-JB77A9.1</p> <p>-TT24121</p> <p>+JB24101</p> </div> <div> <p>Field</p> <p>TE 24121.1</p> <p>TE 24121.2</p> <p>Bearing expander turbine 1</p> </div> </div>																							
<p>ELCAD (R)</p> <table border="1"> <tr> <td>c</td> <td>date</td> <td>21.07.2005</td> <td>made</td> <td>Yelis</td> <td>check</td> <td>stand.</td> <td>replaced:</td> </tr> <tr> <td>b</td> <td>revision</td> <td></td> <td>name</td> <td></td> <td>date</td> <td></td> <td></td> </tr> </table> <p>ASU Kostice</p> <p>AIR LIQUIDE Air Liquide AGS GmbH based:</p> <p>Circuit diagram Oil system expander turbine 1 T 24121, P&I 29</p> <p>K.70101</p> <p>= +C13</p> <p>C9792705-1</p> <p>page 1/6</p> <p>sh</p>								c	date	21.07.2005	made	Yelis	check	stand.	replaced:	b	revision		name		date		
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The diagram illustrates the electrical control system for an oil system expander turbine. It is divided into two main sections: the Control cabinet and the Field.

Control cabinet components:

- DPS2_3_6:** Power supply unit.
- T 24161_I:** Terminal block for the power supply.
- AI 830:** PLC (Programmable Logic Controller).
- T 24161_II:** Terminal block for the PLC.
- PCS 2 Slave 3 Slot 6:** PLC module.
- Input Ch8:** Input channel for the PLC.
- ZP:** Zero point terminal.
- A8, B8, C8:** Input terminals for the PLC.

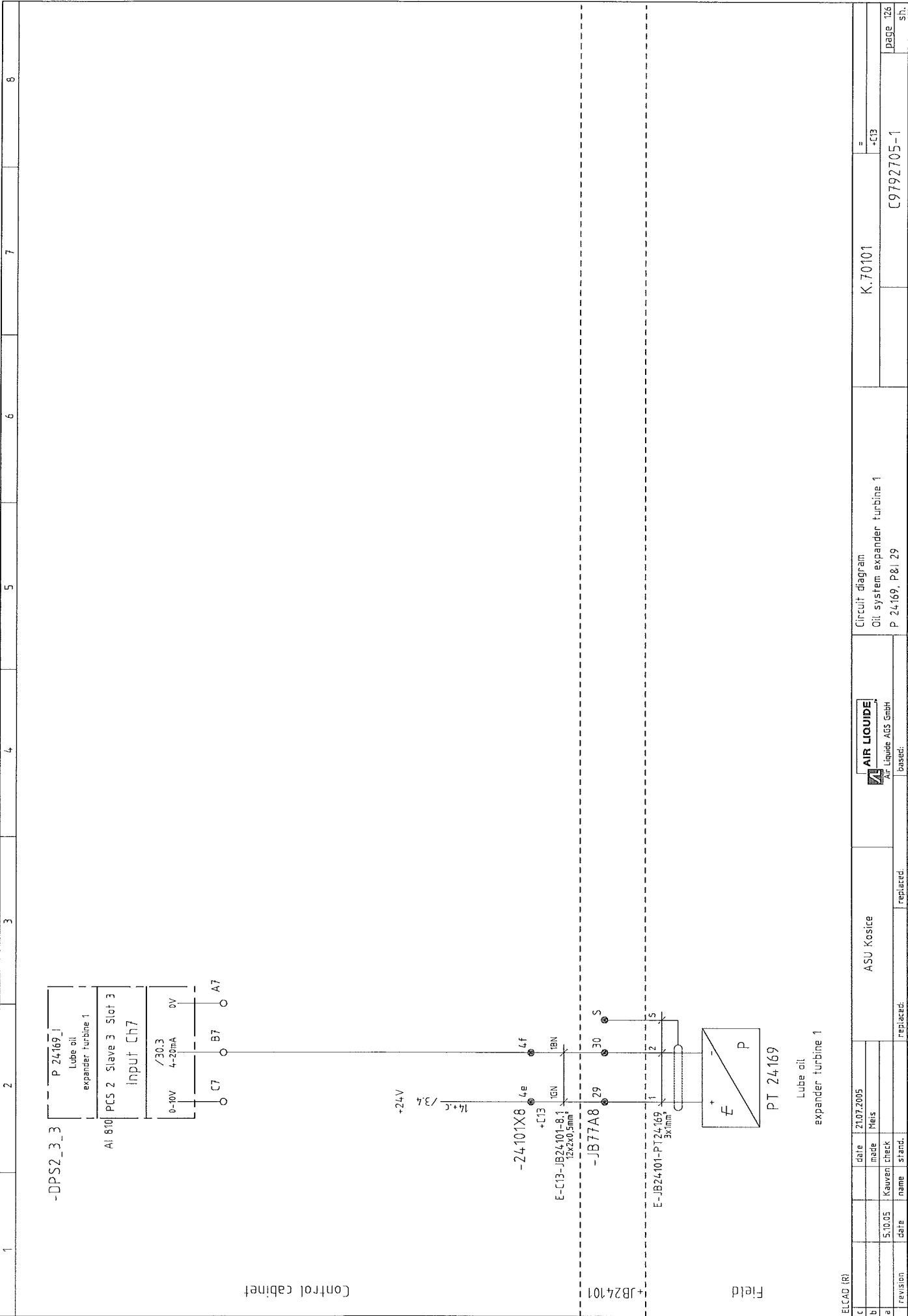
Field components:

- TE 24161:** Oil container expander turbine.
- 24101X9.1:** Turbine assembly.
- E-C13-JB24101-9.1:** Turbine assembly.
- JB77A9.1:** Turbine assembly.
- E-JB24101-TE24161:** Turbine assembly.
- 3BU, 3RD, 3BK, 3BH:** Turbine assembly components.
- PT100 DIN:** Temperature sensor.
- 5x1mm:** Turbine assembly component.

Wiring and Connections:

- The power supply (-DPS2_3_6) is connected to the terminal block T 24161_I.
- The PLC (AI 830) is connected to the terminal block T 24161_II.
- The PLC module (PCS 2 Slave 3 Slot 6) is connected to the terminal block T 24161_II.
- The input channel (Input Ch8) is connected to the terminal block T 24161_II.
- The turbine (TE 24161) is connected to the terminal block T 24161_II.
- The turbine assembly components (3BU, 3RD, 3BK, 3BH) are connected to the terminal block T 24161_II.
- The temperature sensor (PT100 DIN) is connected to the terminal block T 24161_II.
- The turbine assembly component (5x1mm) is connected to the terminal block T 24161_II.

1	2	3	4	5	6	7	8
Control cabinet							
+JB24701							
Field							
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				Air Liquide AGS GmbH		Oil system expander turbine 1	
				based:		Spare	
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[illegible]

Control cabinet

Generator junction box

Oil system expander turbine 1

TE 24173

Bearing generator turbine 1

ASU Kostice

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AIR LIQUIDE

Air Liquide AGS GmbH

based:

Circuit diagram

Oil system expander turbine 1

T 24173, P&I 29

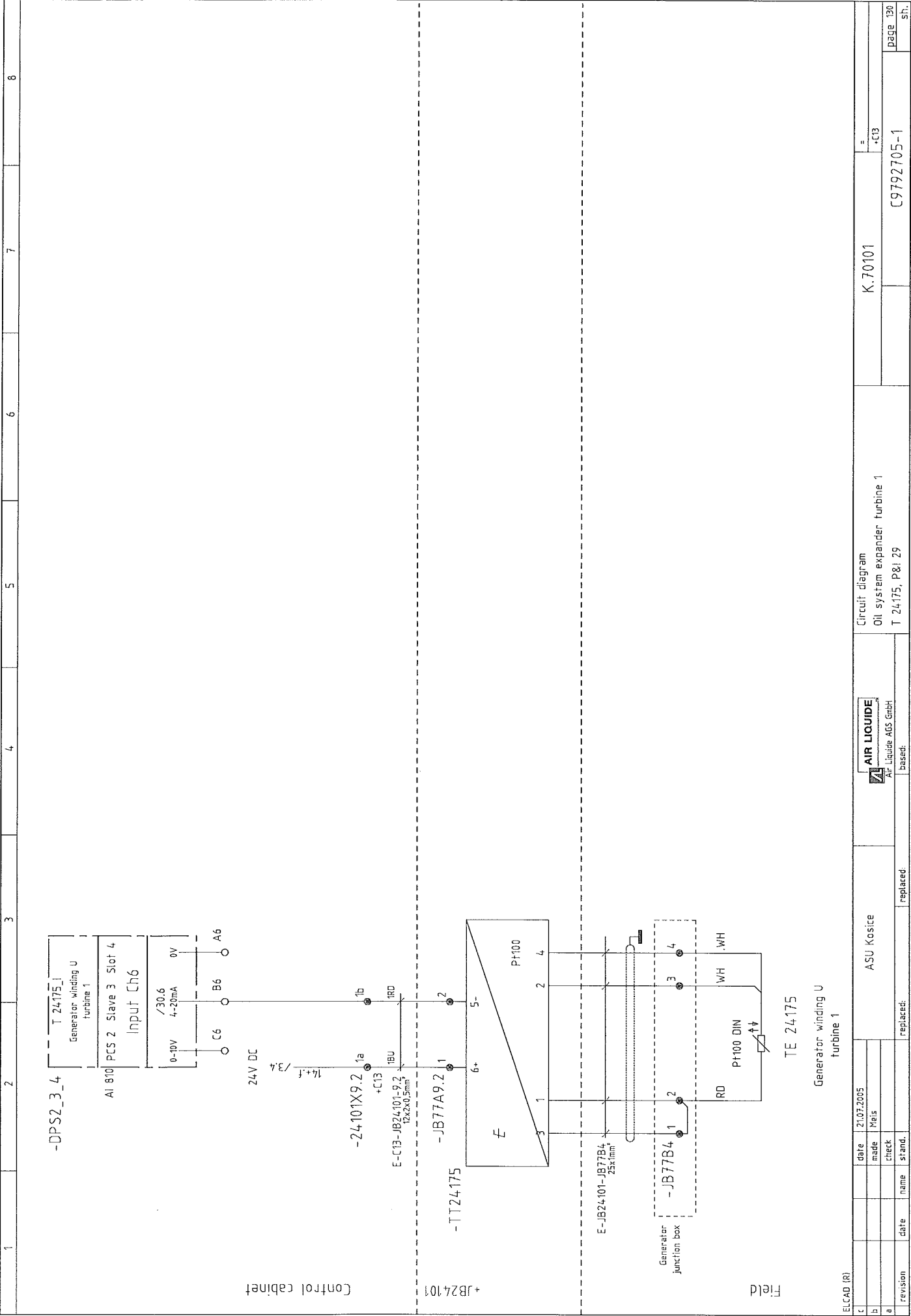
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page 29

sh



The diagram illustrates the electrical connections for the generator winding V of turbine 1. It is divided into three main sections: Control cabinet, Generator junction box, and Field.

Control cabinet: This section includes a terminal block labeled "T 24176_I" for "Generator winding V turbine 1". It is connected to a "PCS 2 Slave 3 Slot 4 Input Ch7" module. The module has a "0-10V" input (connected to terminal C7) and a "0V" output (connected to terminal A7). A "24V DC" supply is also shown, connected to terminal B7.

Generator junction box: This section contains a "Generator winding V" block with terminals 1, 2, 3, 4, 5, and 6. It is connected to a "Generator winding V" block with terminals 1, 2, 3, 4, 5, and 6. The connections are as follows:

- Terminal 1 is connected to terminal 1d.
- Terminal 2 is connected to terminal 1c.
- Terminal 3 is connected to terminal 1b.
- Terminal 4 is connected to terminal 1a.
- Terminal 5 is connected to terminal 1e.
- Terminal 6 is connected to terminal 1f.

Field: This section shows the "Generator winding V" block with terminals 1, 2, 3, 4, 5, and 6. It is connected to a "Generator winding V" block with terminals 1, 2, 3, 4, 5, and 6. The connections are as follows:

- Terminal 1 is connected to terminal 1d.
- Terminal 2 is connected to terminal 1c.
- Terminal 3 is connected to terminal 1b.
- Terminal 4 is connected to terminal 1a.
- Terminal 5 is connected to terminal 1e.
- Terminal 6 is connected to terminal 1f.

Legend:

- 1: Control cabinet
- 2: Generator junction box
- 3: Field

Notes:

- 1. The diagram is a simplified representation of the actual wiring.
- 2. The connections between the control cabinet and the generator junction box are made using a 12x2x0.5mm² cable.
- 3. The connections between the generator junction box and the field are made using a 25x1mm² cable.

[illegible]

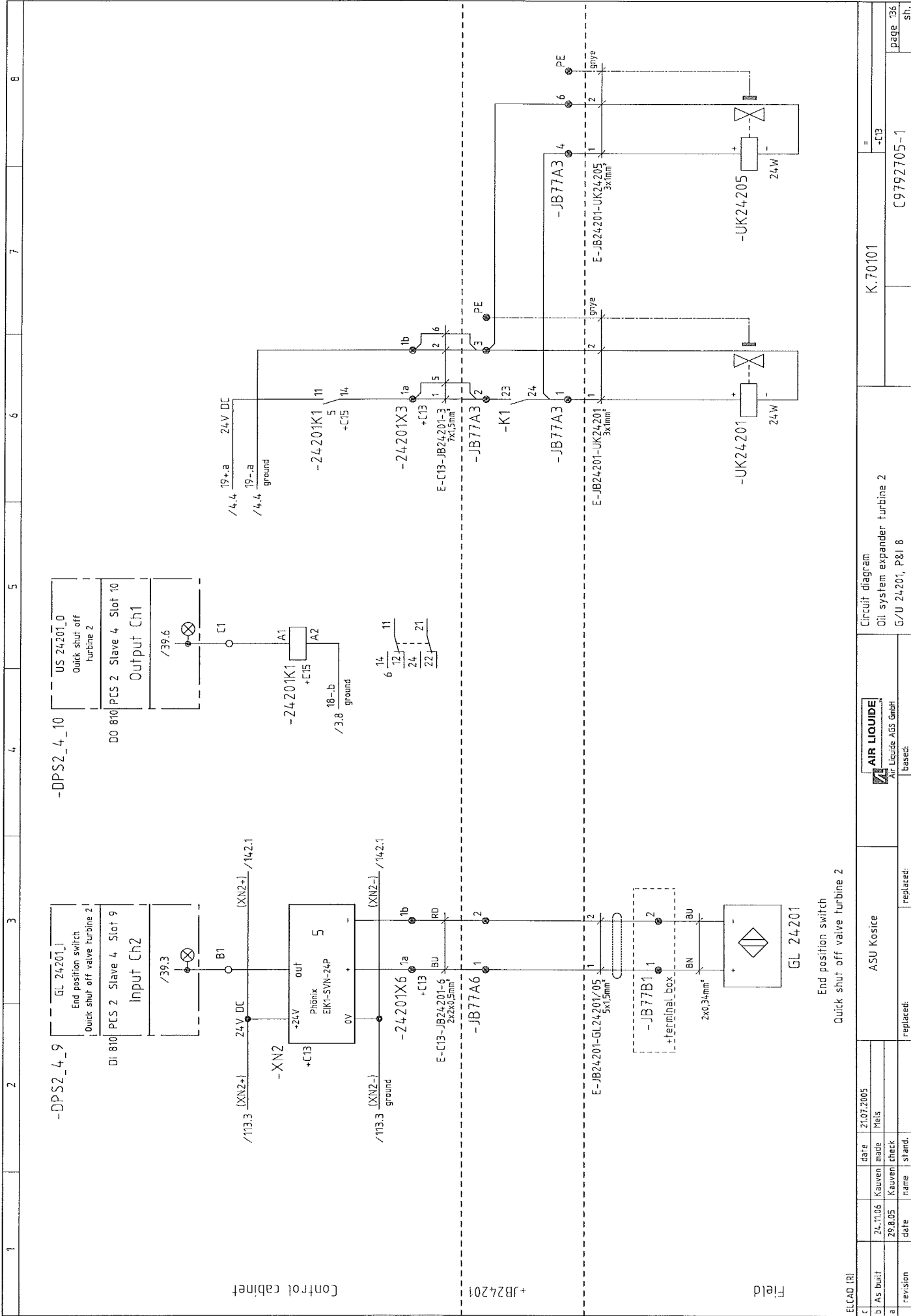
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The diagram illustrates the electrical control logic for the US 24200 interlocking generator MG 24201. It is divided into three horizontal sections by dashed lines, labeled 1, 2, and 3 at the bottom. The top section, labeled 'Control cabinet', contains the 'trip generator' and 'direct stop' logic. The 'trip generator' section includes components like -K1, -JB77A5, and -24201X5. The 'direct stop' section includes components like -JB77A3, -24201X3, and -92002K2. The bottom section, labeled 'US 24200 interlocking generator MG 24201', contains the generator's internal components and interlocking logic. The diagram shows the flow of electrical signals between these components, including trip signals, stop signals, and interlocking signals. The diagram is a schematic representation of the generator's control system, showing the electrical connections and components involved in its operation and safety.

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b	As built
a	
	revision



End position switch
Quick shut off valve turbine 2

ELCAD (R)		ASU Kostice		Circuit diagram		K.70101	
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a	revision	29.8.05	Kauven check	replaced:		C9792705-1	
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