



Universidad de Oviedo

Pliego de Condiciones- Planos Eléctricos del Trabajo Fin de Máster  
realizado por

ESTEBAN GIANCARLO BACILIO LOO

para la obtención del título de

Máster en Ingeniería de Automatización e Informática Industrial

**AUTOMATIZACIÓN DE LÍNEAS DE  
PASTEURIZACIÓN, SIEMBRA Y CULTIVO DE  
FERMENTOS PARA LA FABRICACIÓN DE YOGURT  
FIRME**

JULIO DE 2015

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# 1 INTRODUCCIÓN

## 1.1 Identificación del proyecto

Título: Automatización de Líneas de Pasteurización, Siembra y Cultivo de Fermentos para la Fabricación de Yogurt Firme.

Directores: Víctor Manuel González Suárez, Doctor Ingeniero Informático.

Autor: Esteban Giancarlo Bacilio Loo

Fecha: Junio de 2015

Financiación: Proyecto financiado por la empresa CAPSA FOOD.

## 1.2 Descripción del documento

El objetivo de este documento es suministrar información sobre el cableado y conexión de equipos de control y potencia involucrados en el desarrollo del proyecto. Otros detalles relacionados a la elaboración y estructura de los planos eléctricos pueden ser consultados en el documento “*Pliego de Condiciones*”

## 1.3 Ámbito del documento

Este documento “*Pliego de Condiciones-Planos Eléctricos*”, pertenece al trabajo final de master “***Automatización de Líneas de Pasteurización, Siembra y Cultivo de Fermentos para la Fabricación de Yogurt Firme***” cuyo autor es **Esteban Giancarlo Bacilio Loo**, alumno del Master en Automatización e Informática Industrial de la *Universidad de Oviedo- Campus Gijón*.

## 1.4 Referencias

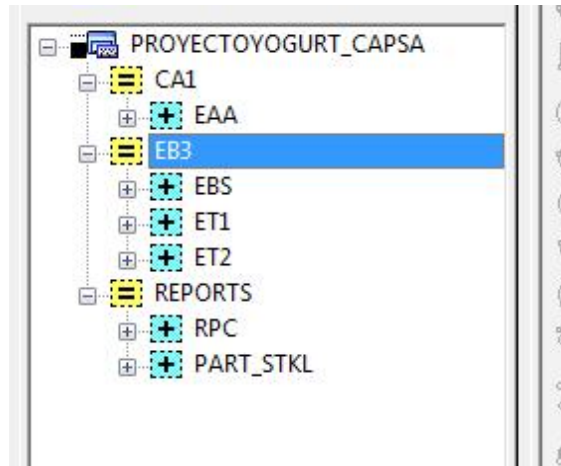
Textos referenciados en este documento:

- No se hace referencia a ningún documento.

## 2 DESCRIPCIÓN DE PLANOS ELECTRICOS

La documentación correspondiente a los planos eléctricos del proyecto se encuentra estructurada por el software Eplan Electric P8 de la siguiente forma:

- **Carpeta Principal del Proyecto:** tiene el nombre de *PROYECTOYOGURT\_CAPSA*.
  
- **Carpeta Secundaria CA1:** Contiene la sección de documentos EAA que en este caso corresponden a la portada e índice de la documentación.
  
- **Carpeta Secundaria EB3:** Contiene tres secciones que se catalogan en:
  - **EBS:** Corresponde a la documentación de Equipos PLC y Tarjetas de Acondicionamiento 4-20 mA.
  
  - **ET1:** Corresponde a la documentación de Equipos de Potencia, Control, Sensores y cableado E/S a instalar en el Armario Principal o Estación Maestra del proyecto desarrollado.
  
  - **ET2:** Corresponde a la documentación de Equipos de Potencia, Control, Sensores y cableado E/S a instalar en el Armario Secundario o Estación Remota del proyecto desarrollado.
  
- **Carpeta Secundaria EB3: Contiene tres secciones que se catalogan en:**
  - **RPC:** Corresponde a la documentación de conexión de borneras de proyecto desarrollado.
  
  - **PART\_STKL:** Corresponde al listado de equipos utilizados en el diseño de los planos eléctricos.



**Ilustración 1: Vista de Estructura del Proyecto con Eplan Electric P8**

Todos los equipos y cableado utilizado en el diseño de los planos eléctricos en Eplan Electric P8 representan una propuesta que puede ser consultada en este trabajo y que se trata de una propuesta basada en los requerimientos y especificaciones de diseño desarrollados para la implementación y puesta en marcha de este proyecto.

### **3 PLANOS ELÉCTRICOS**

A continuación se muestra la documentación generada luego de realizar el diseño en Eplan Electric P8 para este proyecto en específico. Al tratarse de una propuesta, se requiere una revisión de los mismos por parte del personal técnico cualificado en caso de ser utilizados para la implementación del proyecto. Se entrega a disposición de la empresa CAPSA Food, los ficheros generados por el software en caso que se requiera cualquier corrección, modificación o ampliación del proyecto presentado.





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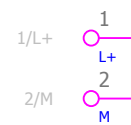
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+ET1/12.1  
Rack Y  
Slot 0  
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S7-300  
CPU 315-2 PN/DP

SIEMENS

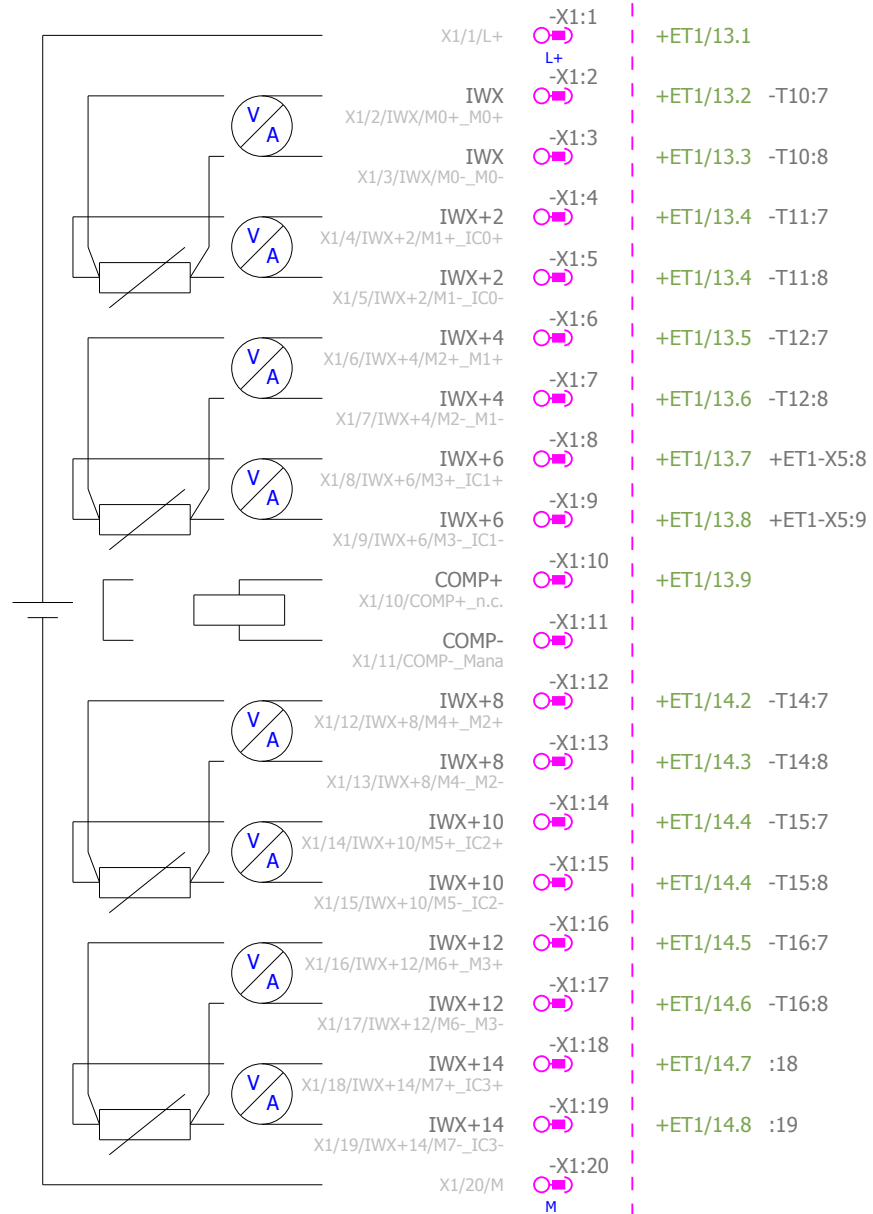


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S7-300  
SM 331 AI 8 x 12 BIT

SIEMENS



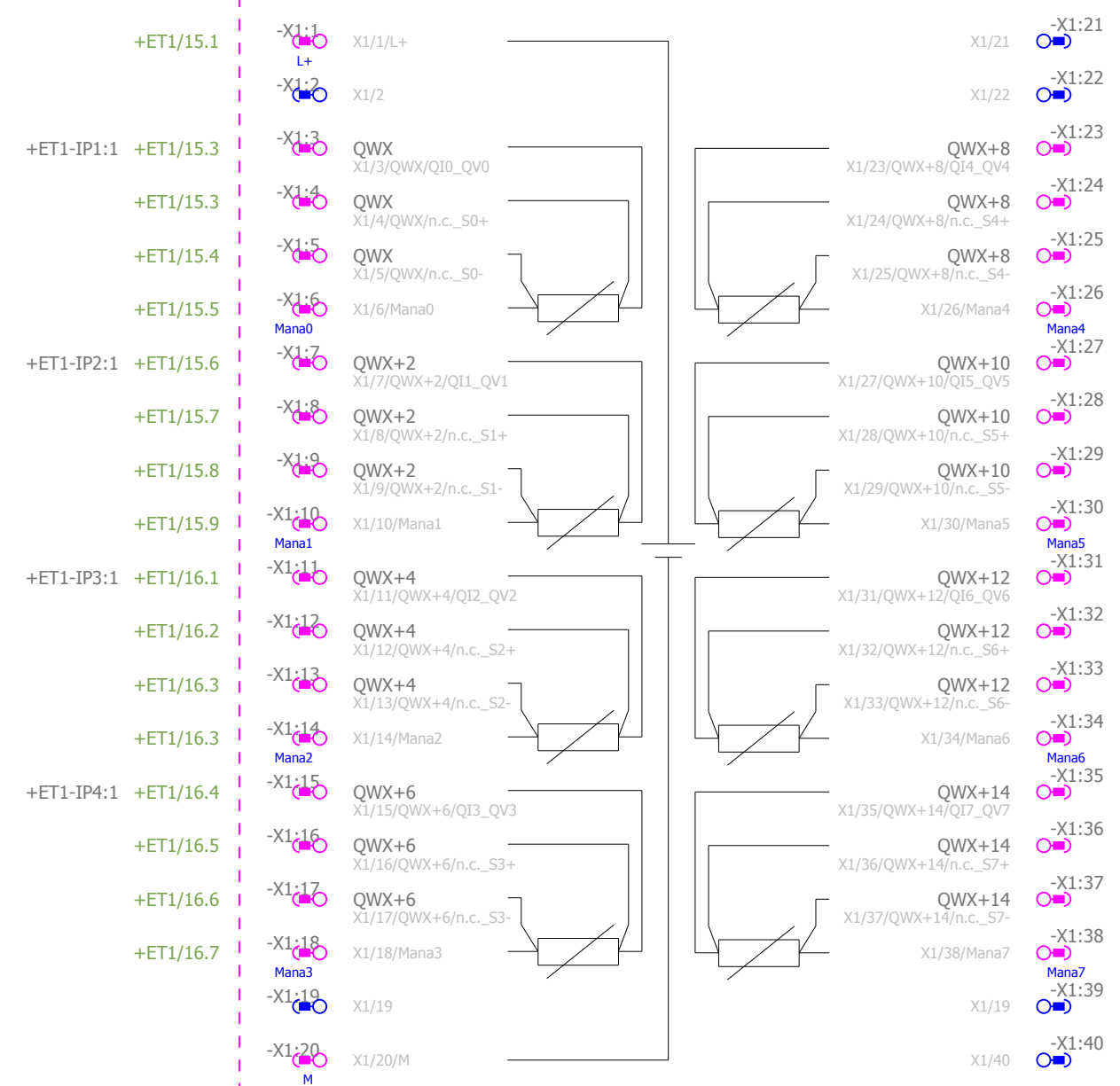
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 +ET1/15.0  
 +ET1/16.0  
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 Slot Y  
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S7-300  
 SM 332 AO 8 x 12 BIT

SIEMENS

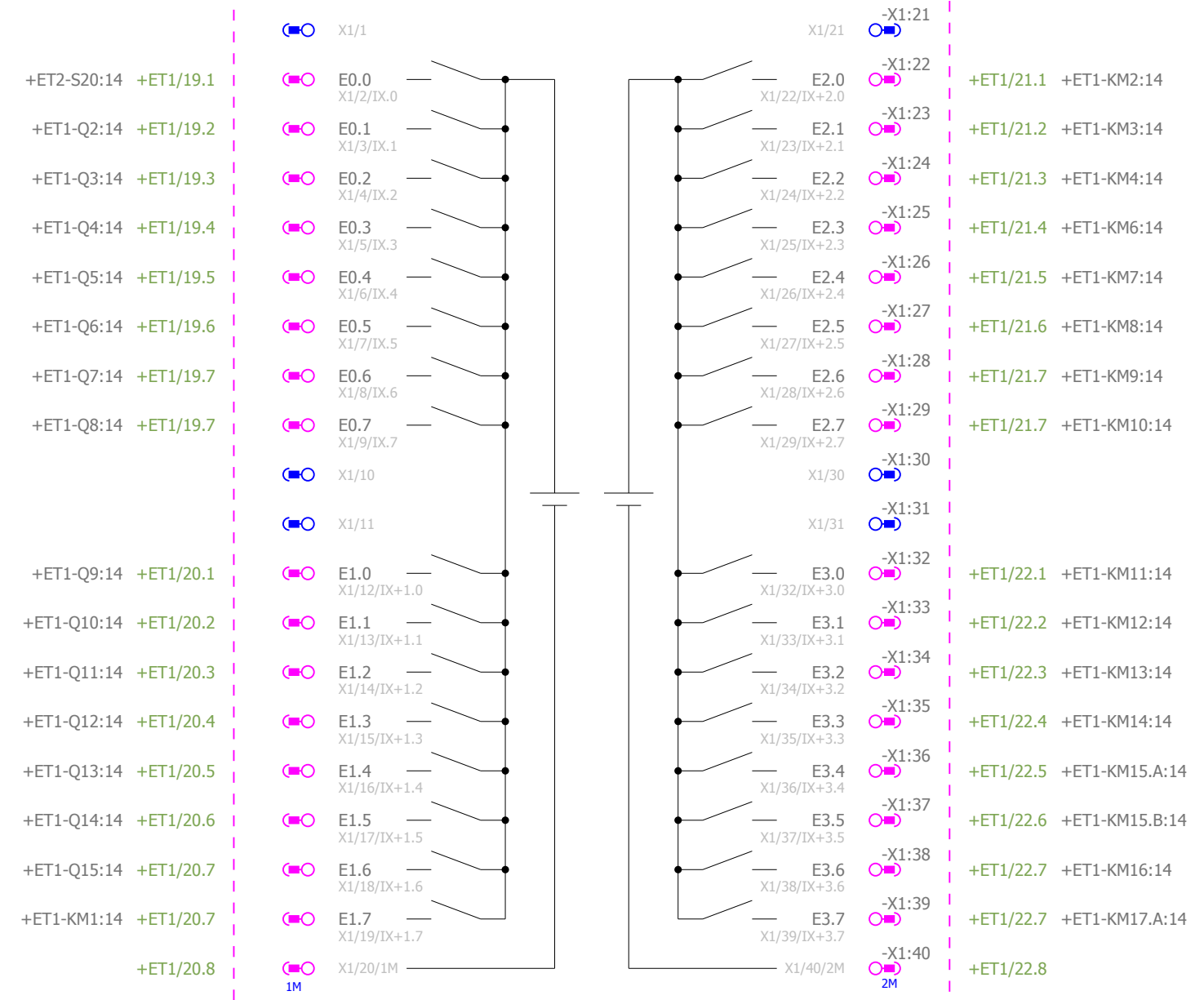


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S7-300  
 SM 321 DI 32 x DC24V

SIEMENS



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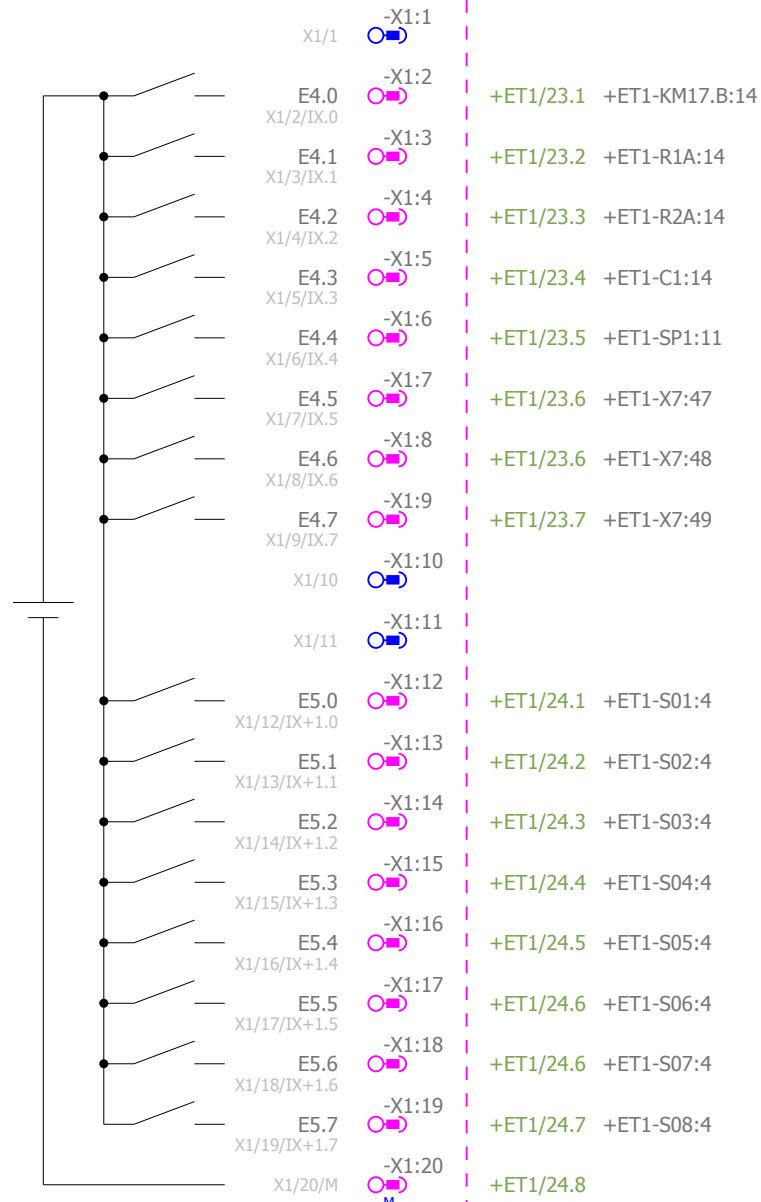
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 Slot Y  
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S7-300  
 SM 321 DI 16 x DC24V

SIEMENS

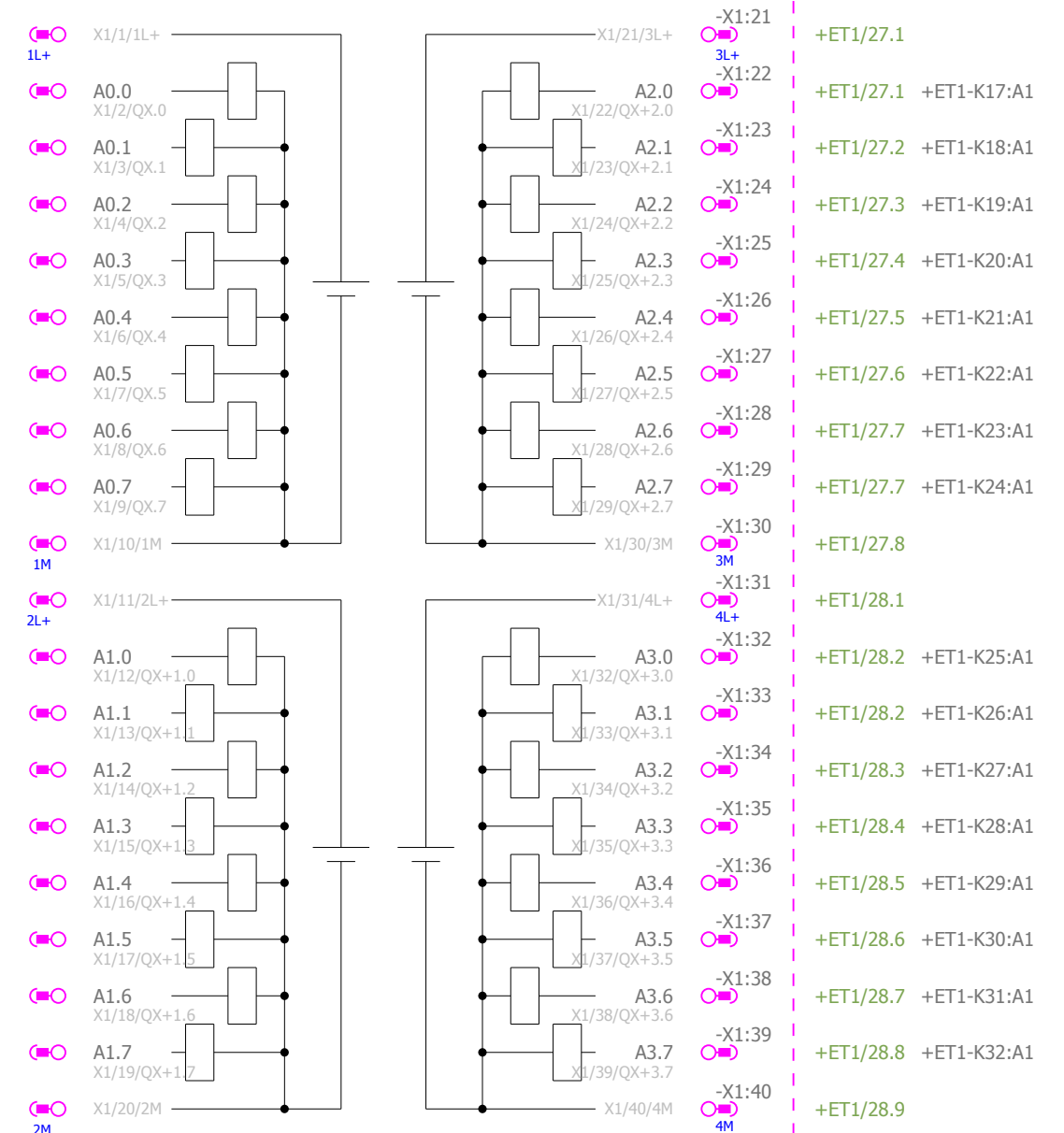


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SIEMENS



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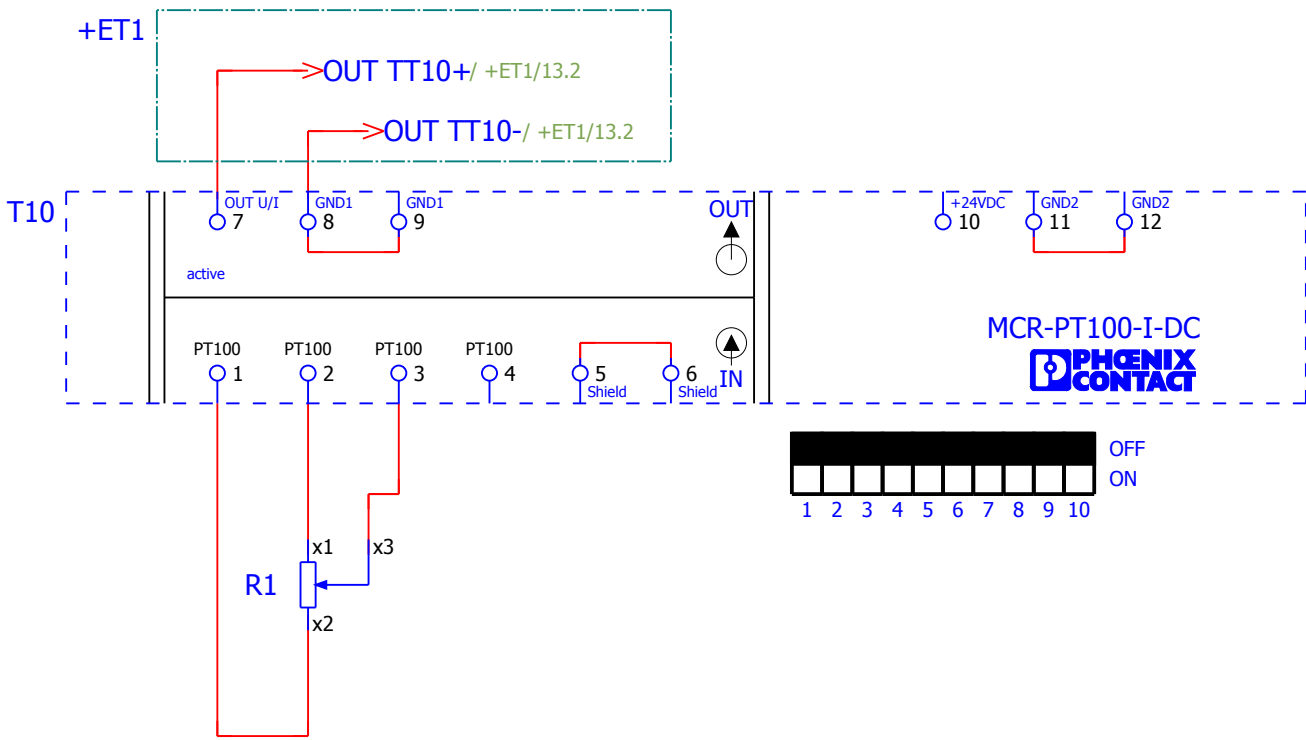
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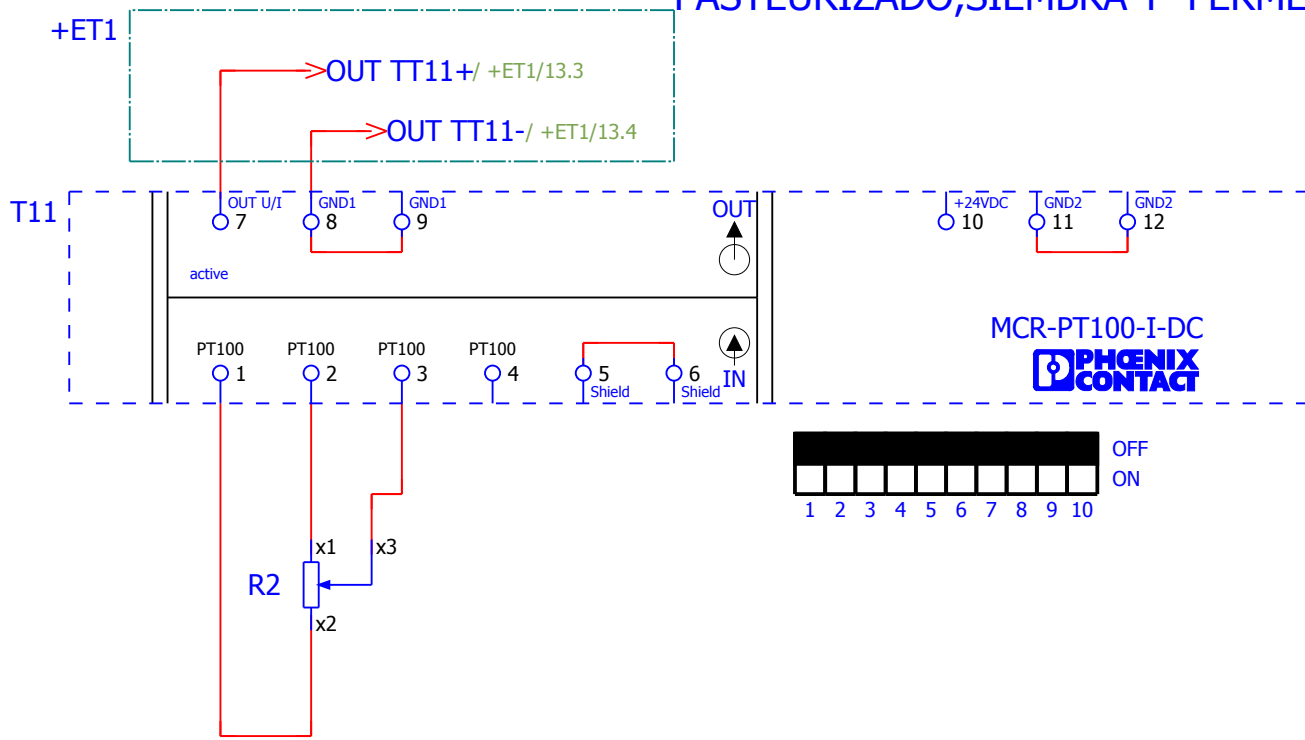
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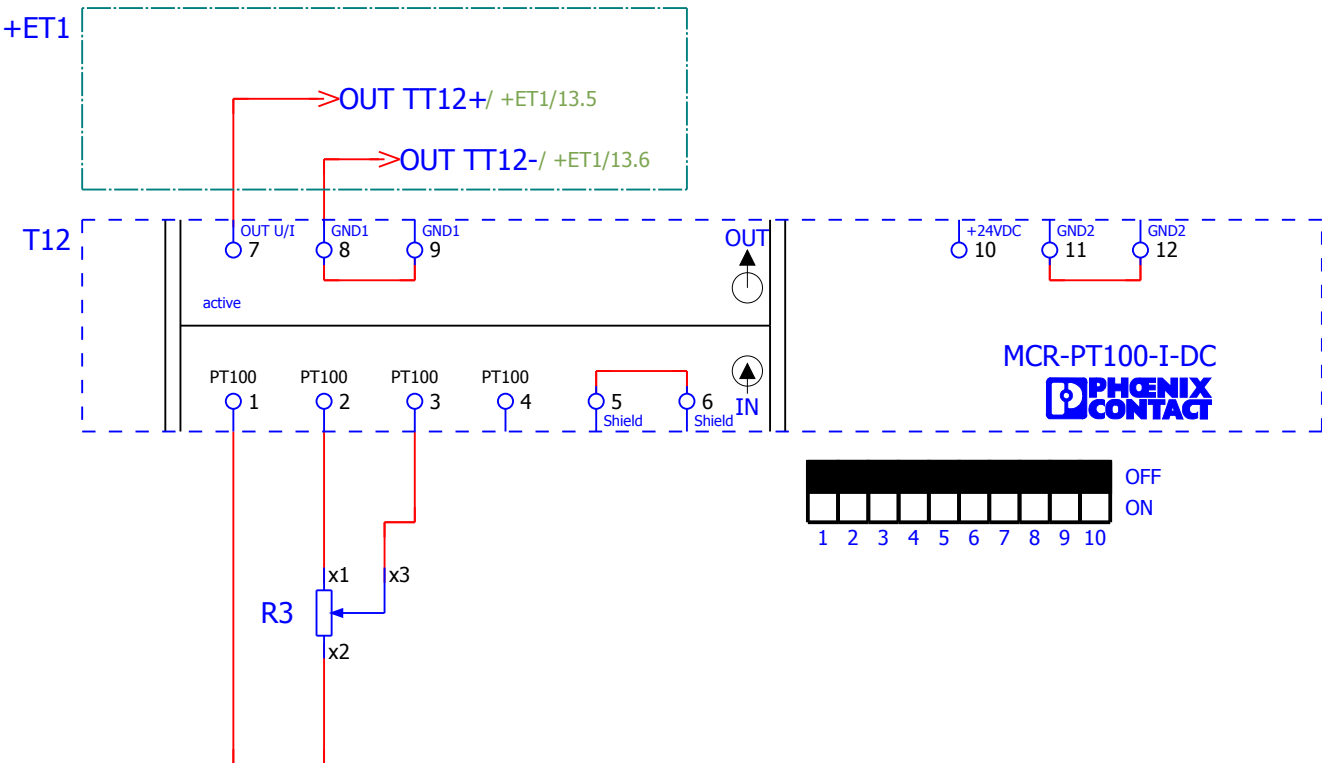
## PASTEURIZADO, SIEMBRA Y FERMENTOS



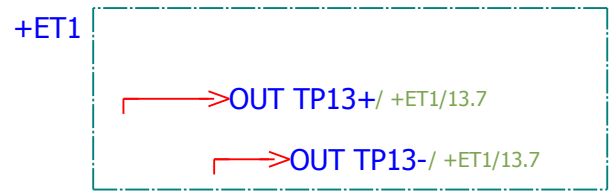
TRANSMISOR TEMPERATURA SALIDA DEL INTERCAMBIADOR PASTO1



TRANSMISOR TEMPERATURA AGUA CALIENTE PASTO1



TRANSMISOR TEMPERATURA TUBO MANTENIMIENTO PASTO1

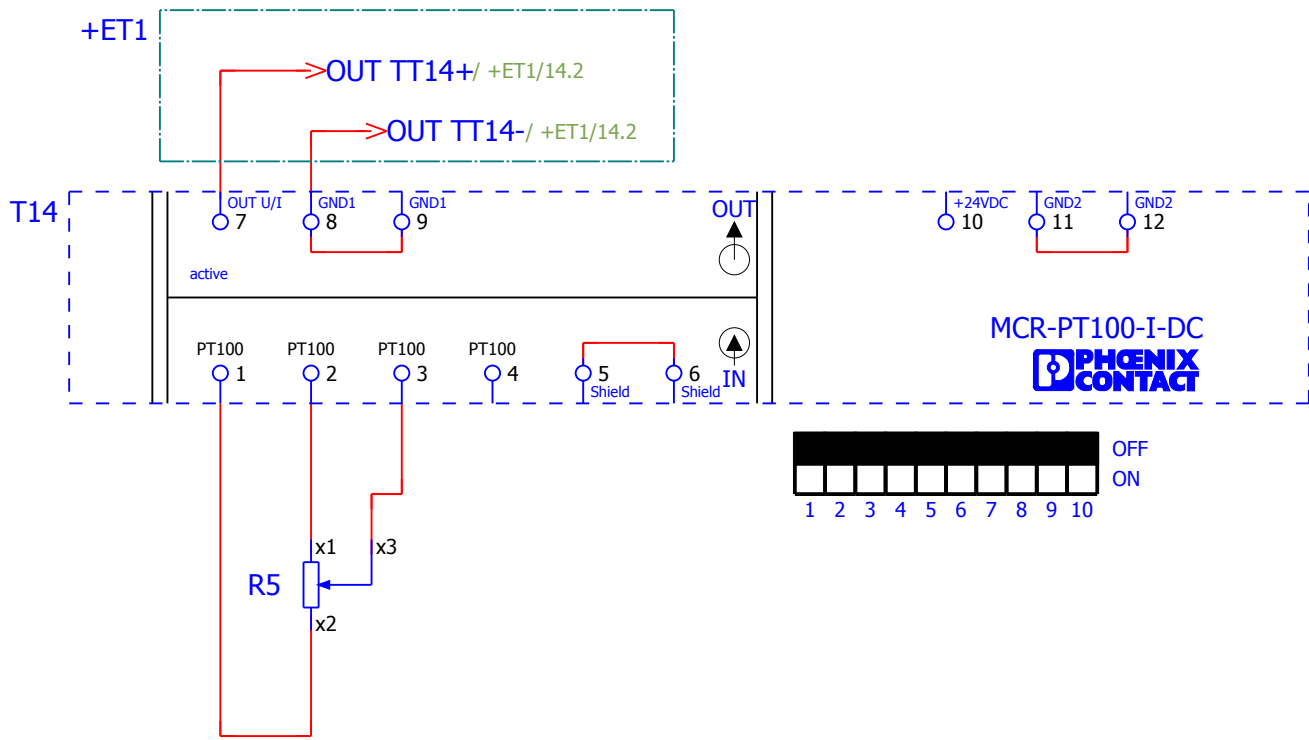


TRANSMISOR PRESION HOMOGENIZADOR PASTO 1

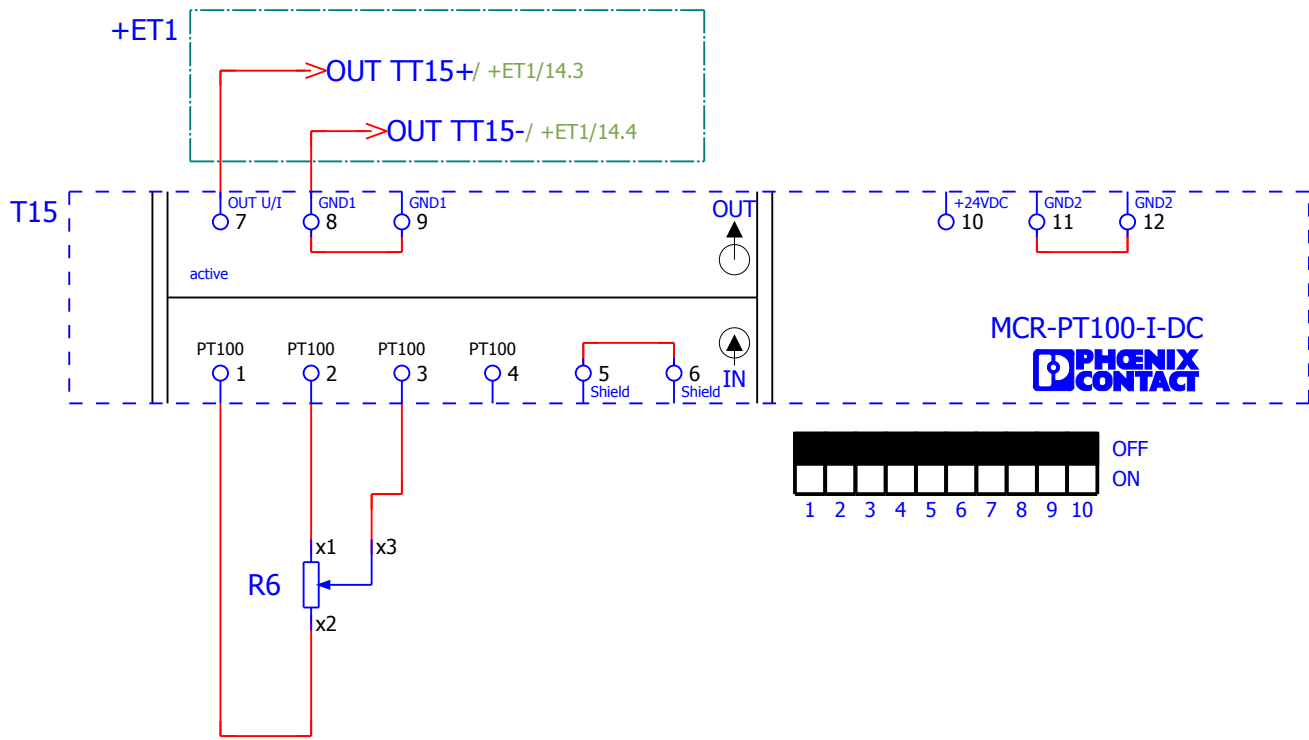


# ESTACION MAESTRA

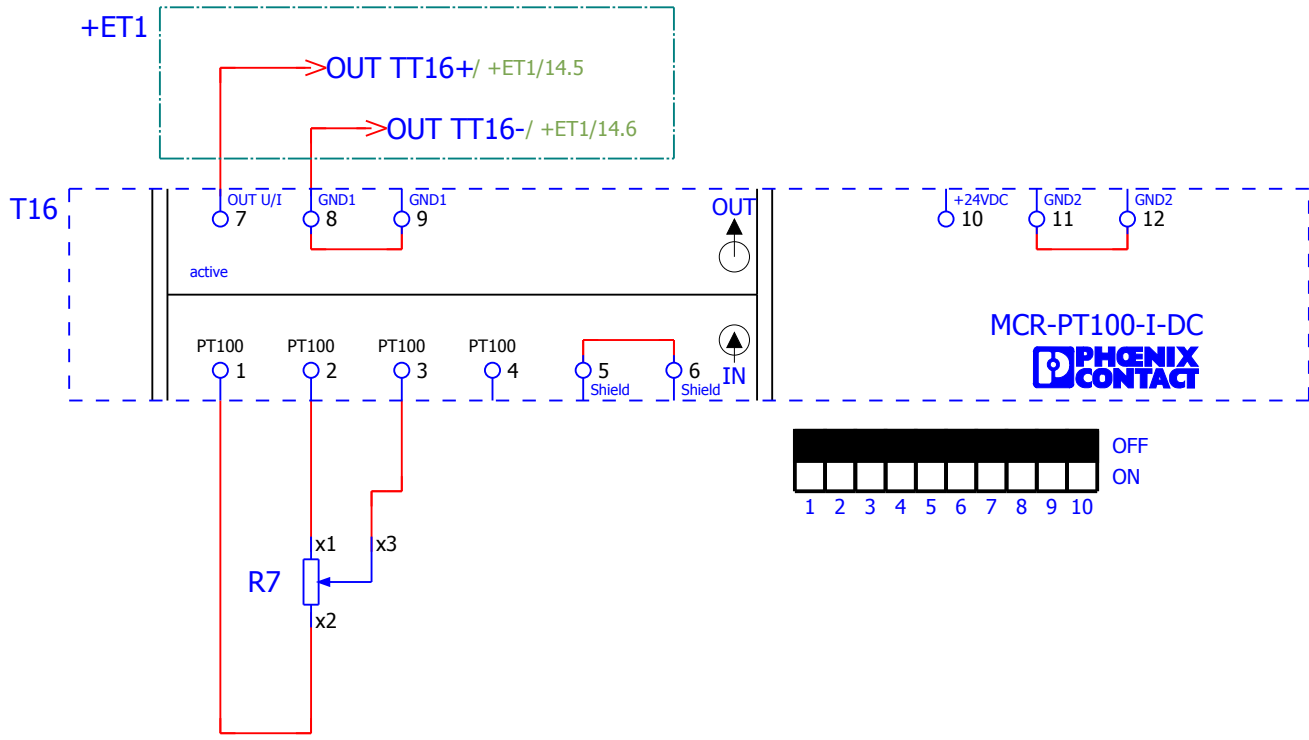
## PASTEURIZADO, SIEMBRA Y FERMENTOS



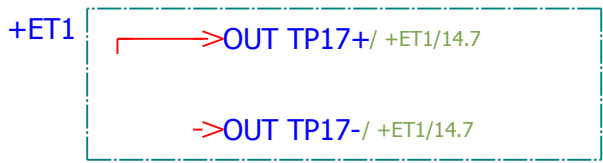
TRANSMISOR TEMPERATURA SALIDA DEL INTERCAMBIADOR/ENFRIADOR PASTO2



TRANSMISOR TEMPERATURA AGUA CALIENTE PASTO2



TRANSMISOR TEMPERATURA TUBO MANTENIMIENTO PASTO2



TRANSMISOR PRESION HOMOGENIZADOR PASTO 2



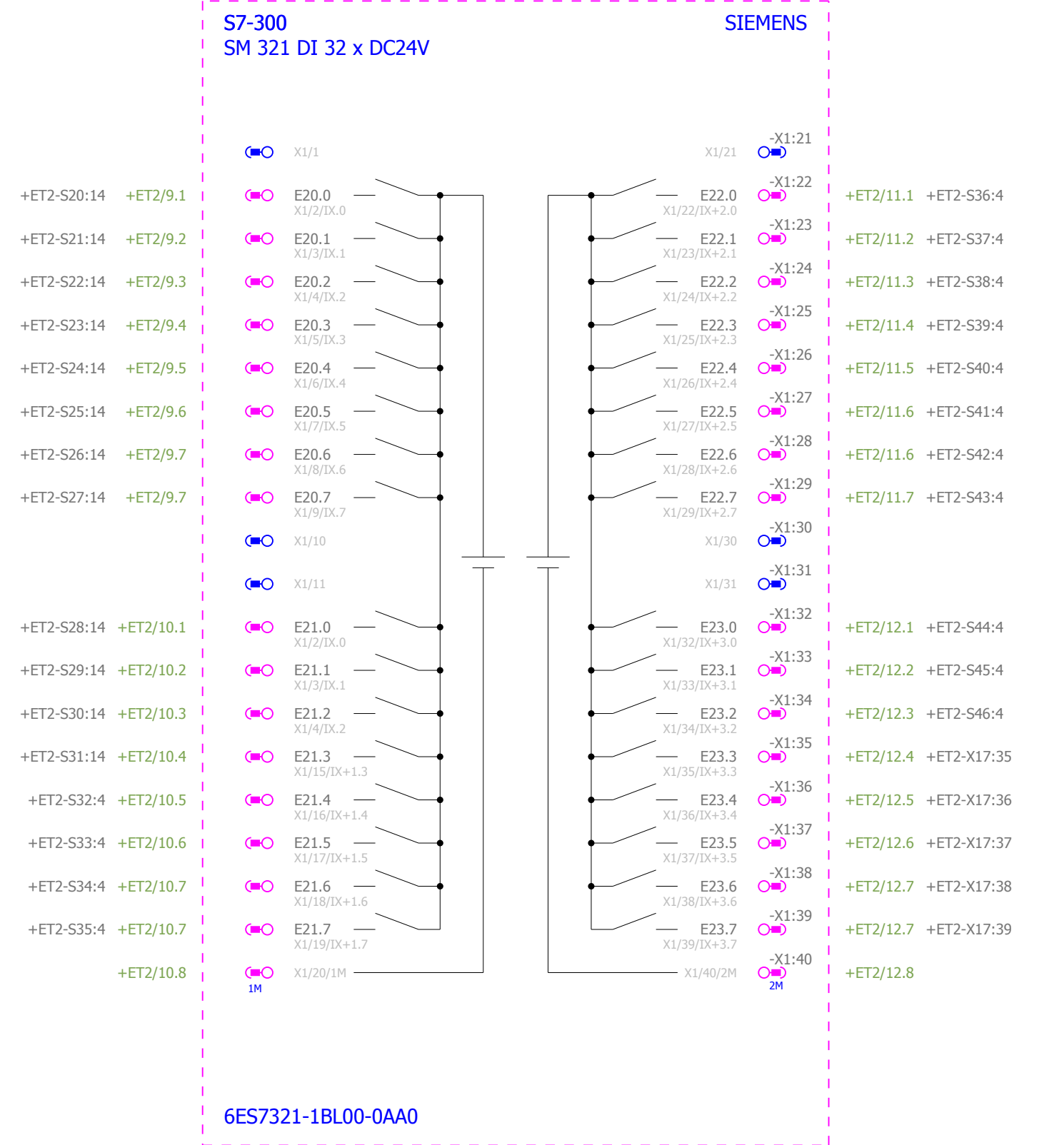
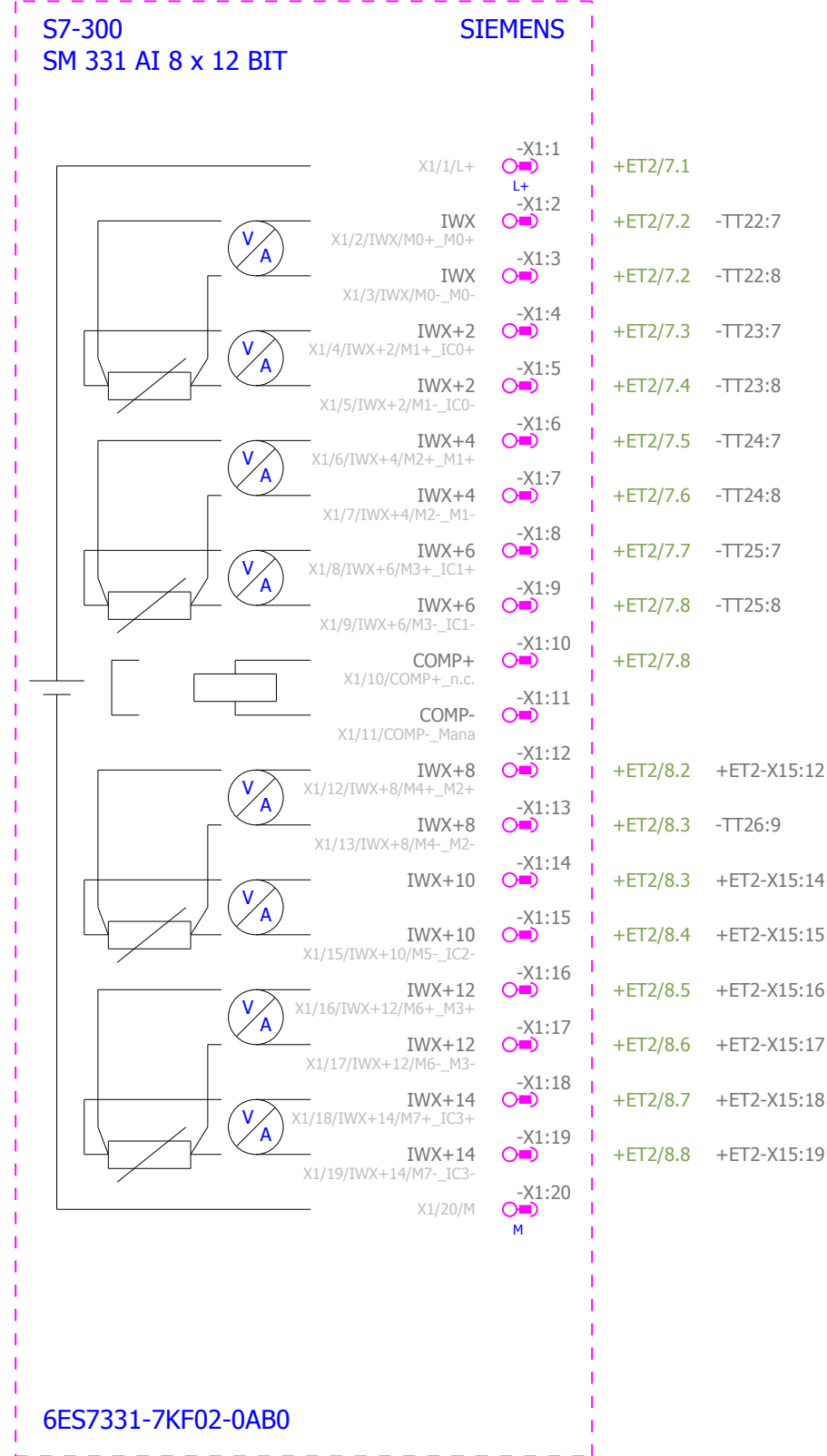
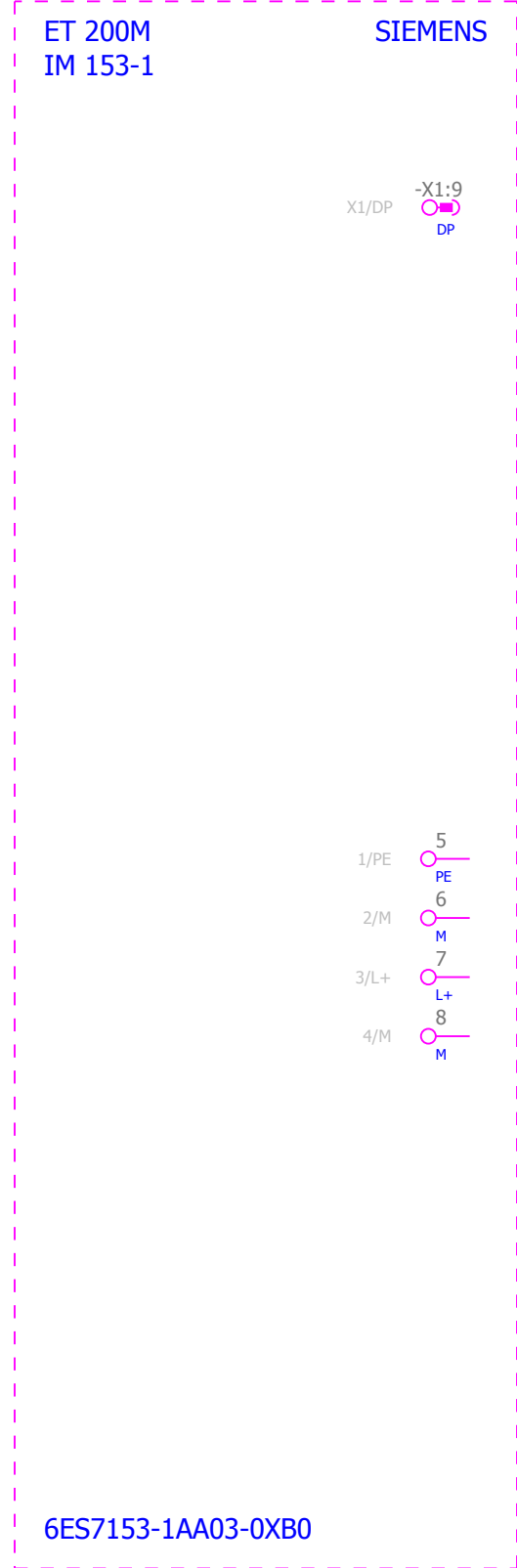
# ESTACION REMOTA

## SIEMBRA Y FERMENTOS

**+ET2-B0**  
 +ET2/6.2  
 CPU 315-2 DP  
 input 24VDC  
 Rack Y  
 Slot 00  
 SIE.6ES7153-1AA03-0XB0

**+ET2-B1**  
 /7.4  
 Rack Y  
 Slot 01

**+ET2-B2**  
 +ET2/9.0  
 +ET2/10.0  
 +ET2/11.0  
 +ET2/12.0  
 Rack Y  
 Slot 02  
 SIE.6ES7321-1BL00-0AA0



Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA DE YOGURT - TFM	ESTACION REMOTA (1)	= EB3
Ed.	Esteban				+ EBS
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN DE YOGURT - TFM			
Modification	Date	Name	Original	Replaced by	Replaced by



# ESTACION REMOTA

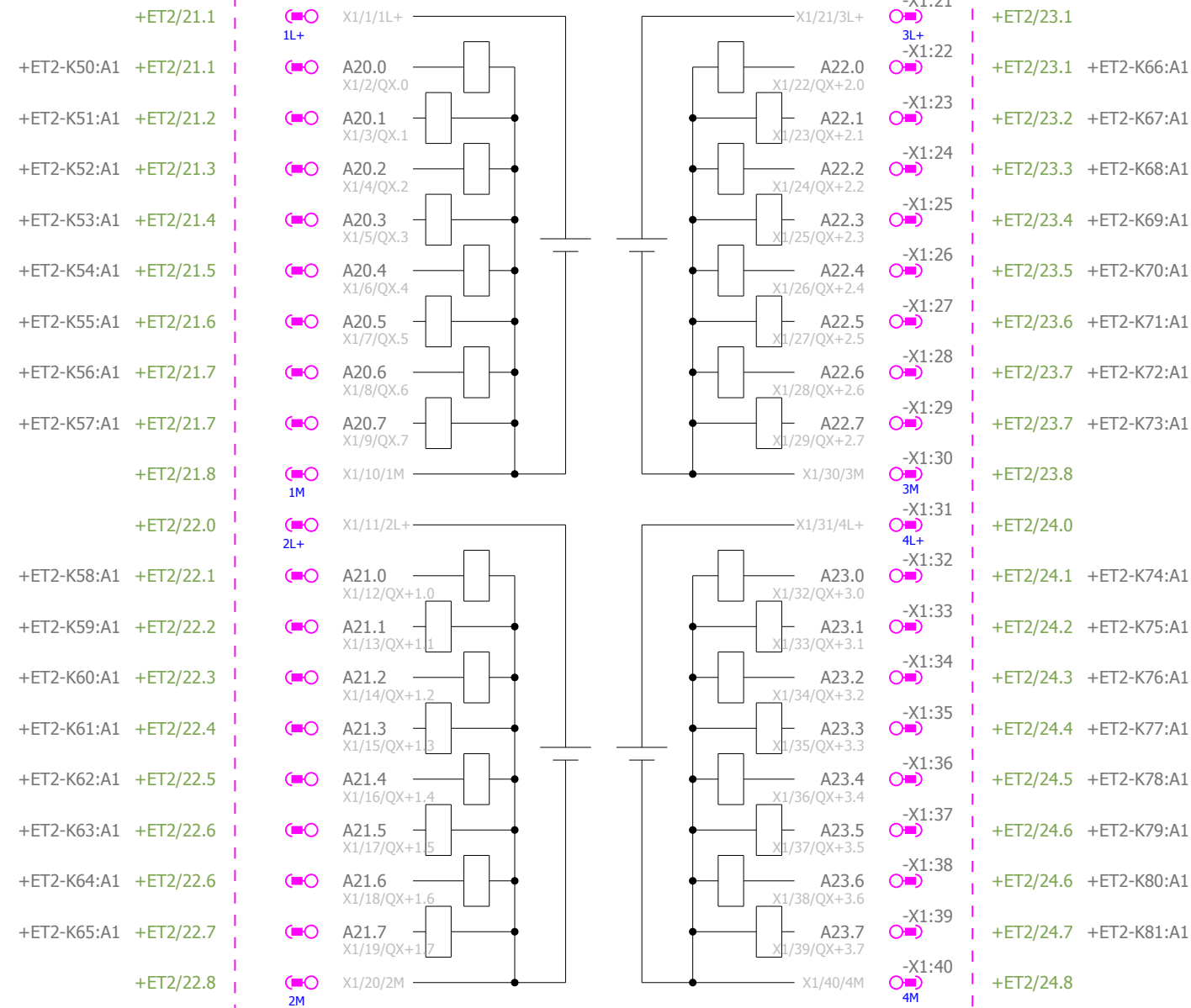
## SIEMBRA Y FERMENTOS

+ET2-B5  
 +ET2/21.0  
 +ET2/22.0  
 +ET2/23.0  
 +ET2/24.0  
 Rack Y  
 Slot 05  
 SIE.6ES7322-1BL00-0AA0

+ET2-B6  
 +ET2/28.0  
 +ET2/29.0  
 +ET2/30.0  
 +ET2/31.0  
 Rack Y  
 Slot 05  
 SIE.6ES7322-1BL00-0AA0

S7-300  
 SM 322 DO 32 x DC24V/0,5A

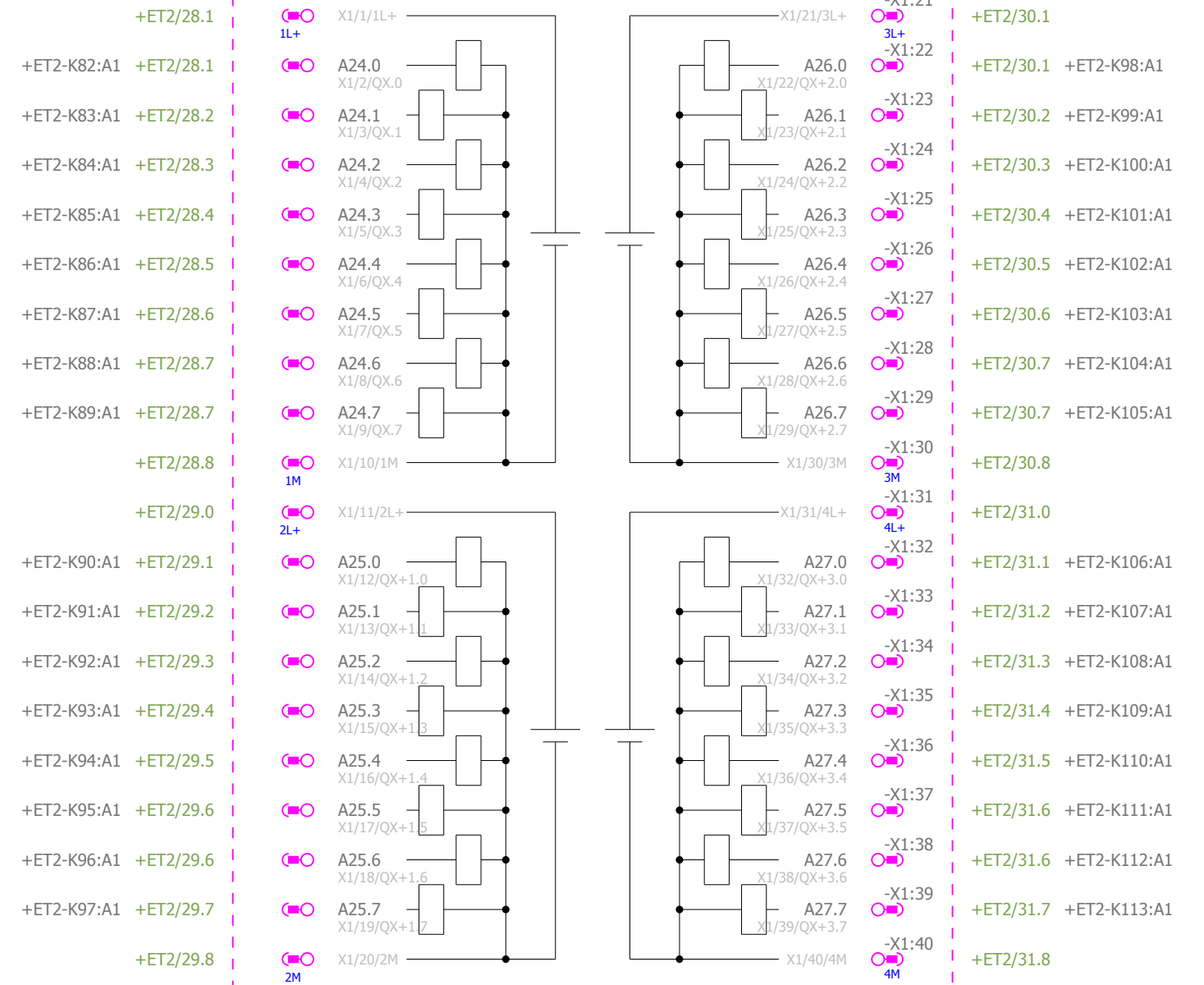
SIEMENS



6ES7322-1BL00-0AA0

S7-300  
 SM 322 DO 32 x DC24V/0,5A

SIEMENS



6ES7322-1BL00-0AA0

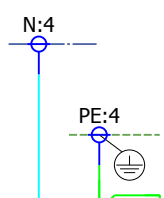
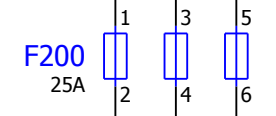
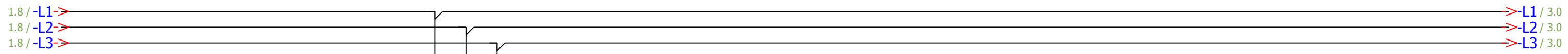
Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL	ESTACION REMOTA (3)	= EB3
Ed.	Esteban		LECHERA ASTURIANA		+ EBS
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN DE YOGURT - TFM			
Modification	Date	Name	Original	Replaced by	Replaced by
					Estándar IEC- 61346
					Page 9
					Page 132



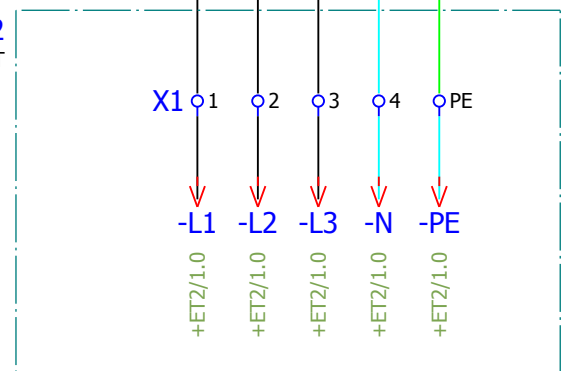








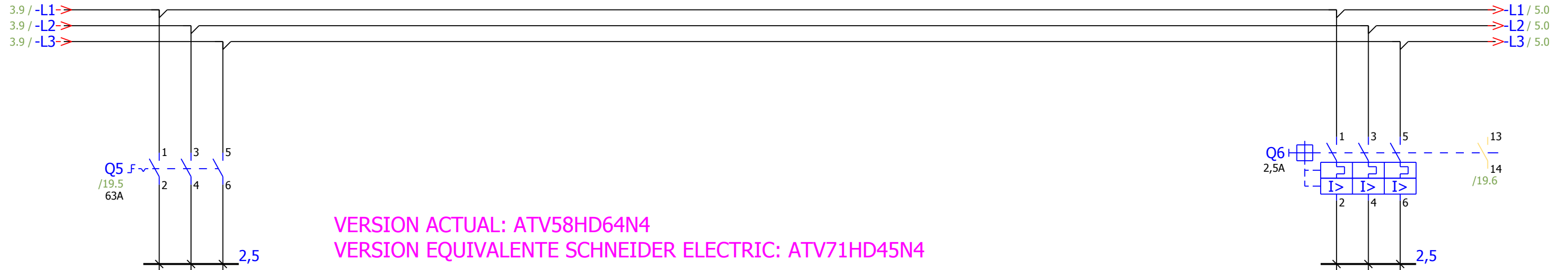
+ET2  
Periferia Descentralizada ET



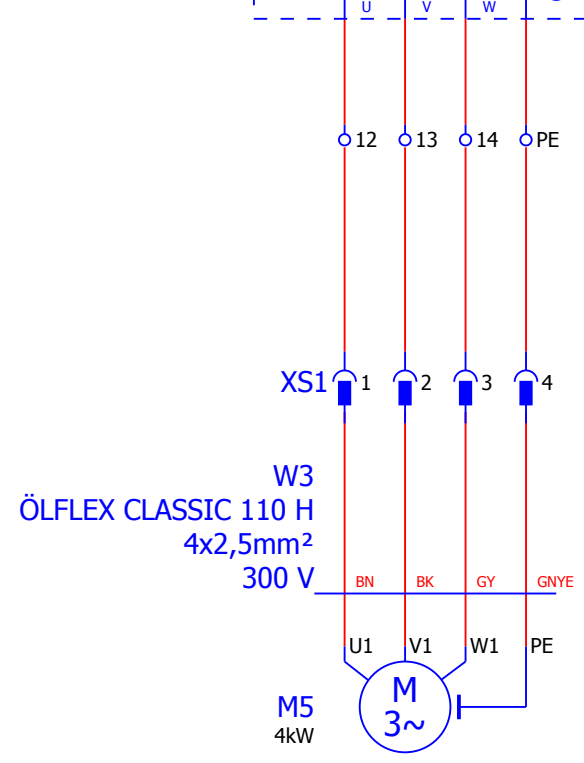
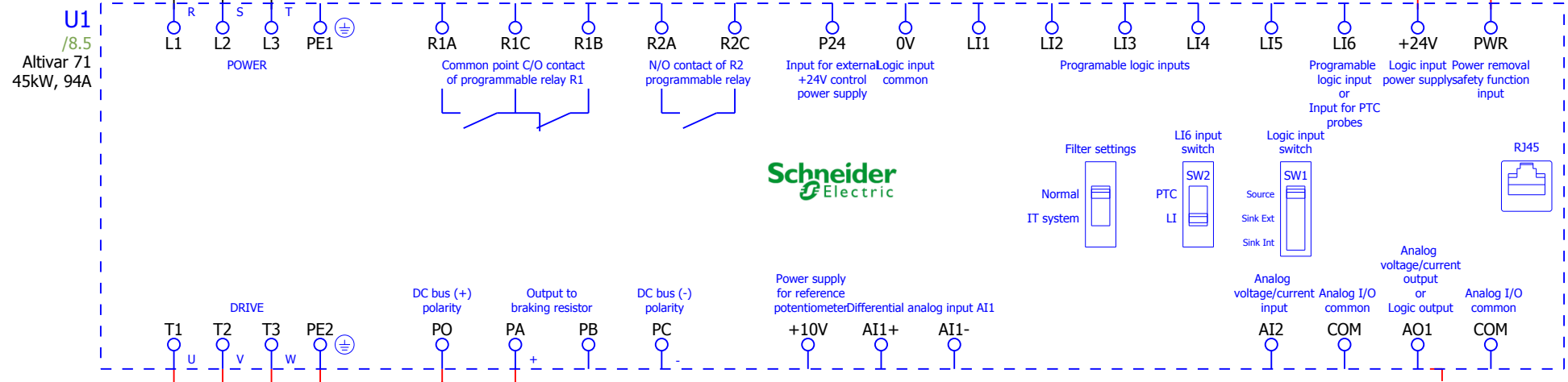
Suministro Estacion Remota

			Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL	Linea de Suministro-Estacion Remota	= EB3
			Ed.	Esteban		LECHERA ASTURIANA		+ ET1
			Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN DE YOGURT - TFM			
Modification	Date	Name	Original		Replaced by			Page 2
							Estándar IEC- 61346	Page 132

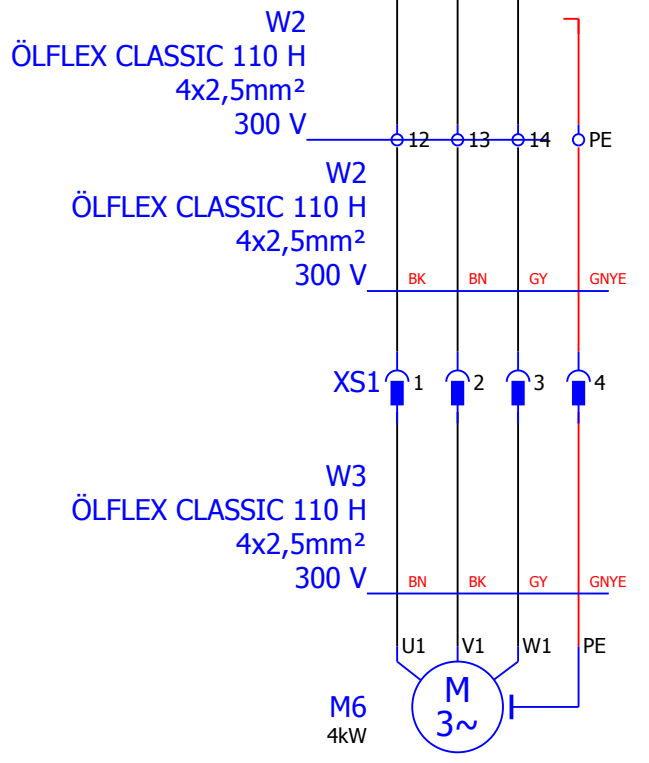




VERSION ACTUAL: ATV58HD64N4  
 VERSION EQUIVALENTE SCHNEIDER ELECTRIC: ATV71HD45N4

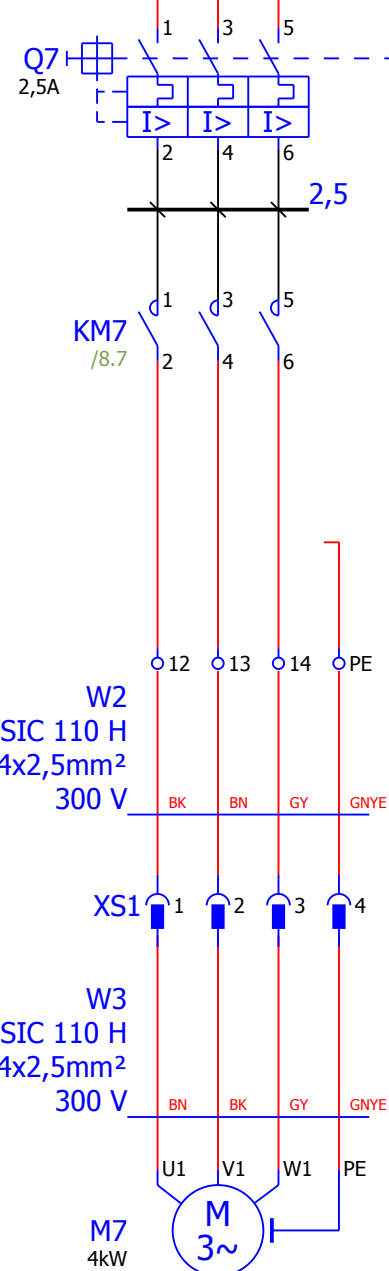
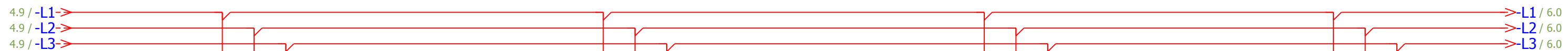


MOTOR HOMOGENIZADOR 1

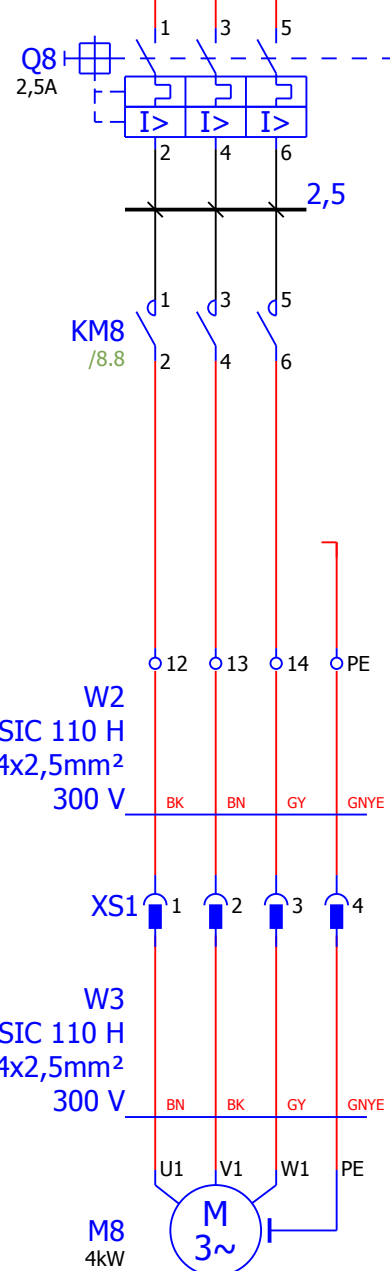


MOTOR HOMOGENIZADOR 2

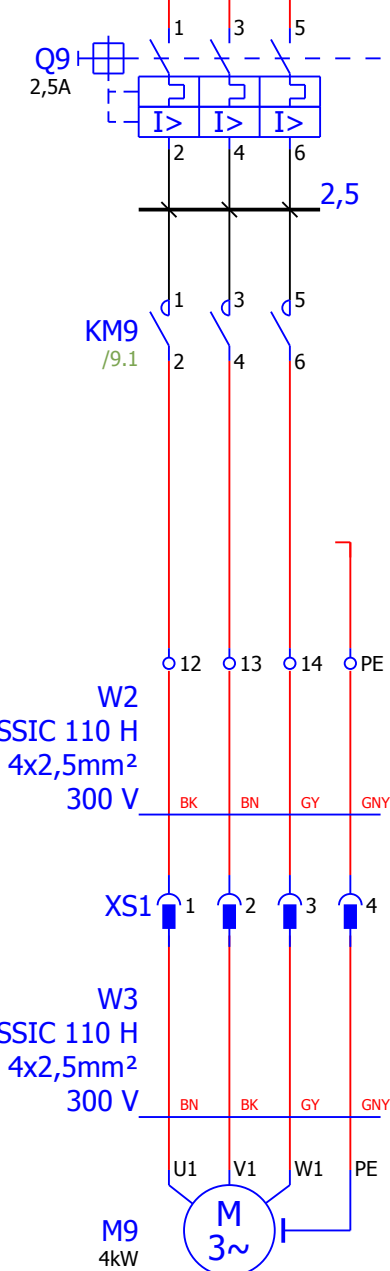
Date	08/01/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA	Bombas y Motores Pasteurizadores	= EB3
Ed.	DELL		DE YOGURT - TFM		+ ET1
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN			
Modification	Date	Name	Original	Replaced by	Replaced by
					Estándar IEC- 61346
					Page 4
					Page 132



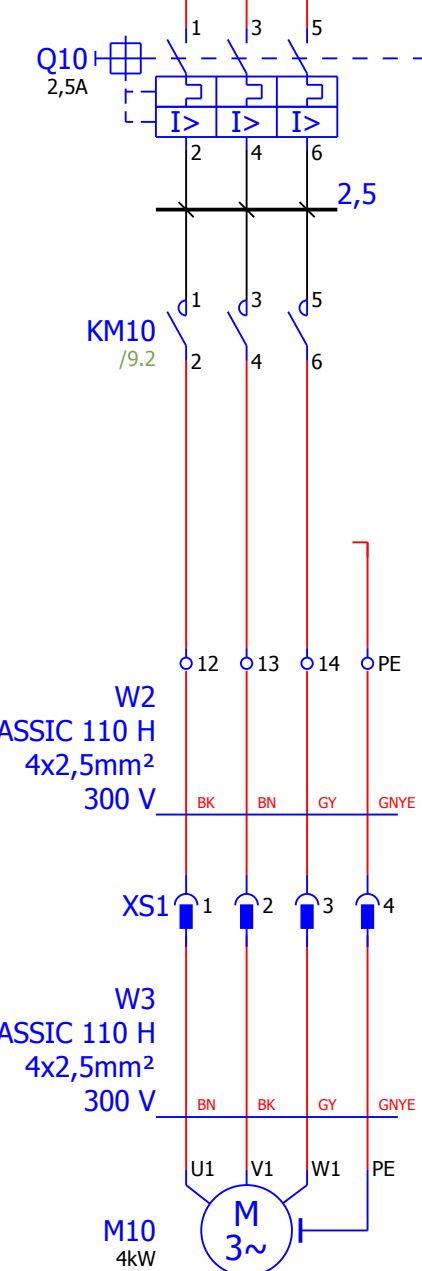
BOMBA AROMAS SIEMBRA 1



BOMBA CIP Y SIEMBRA



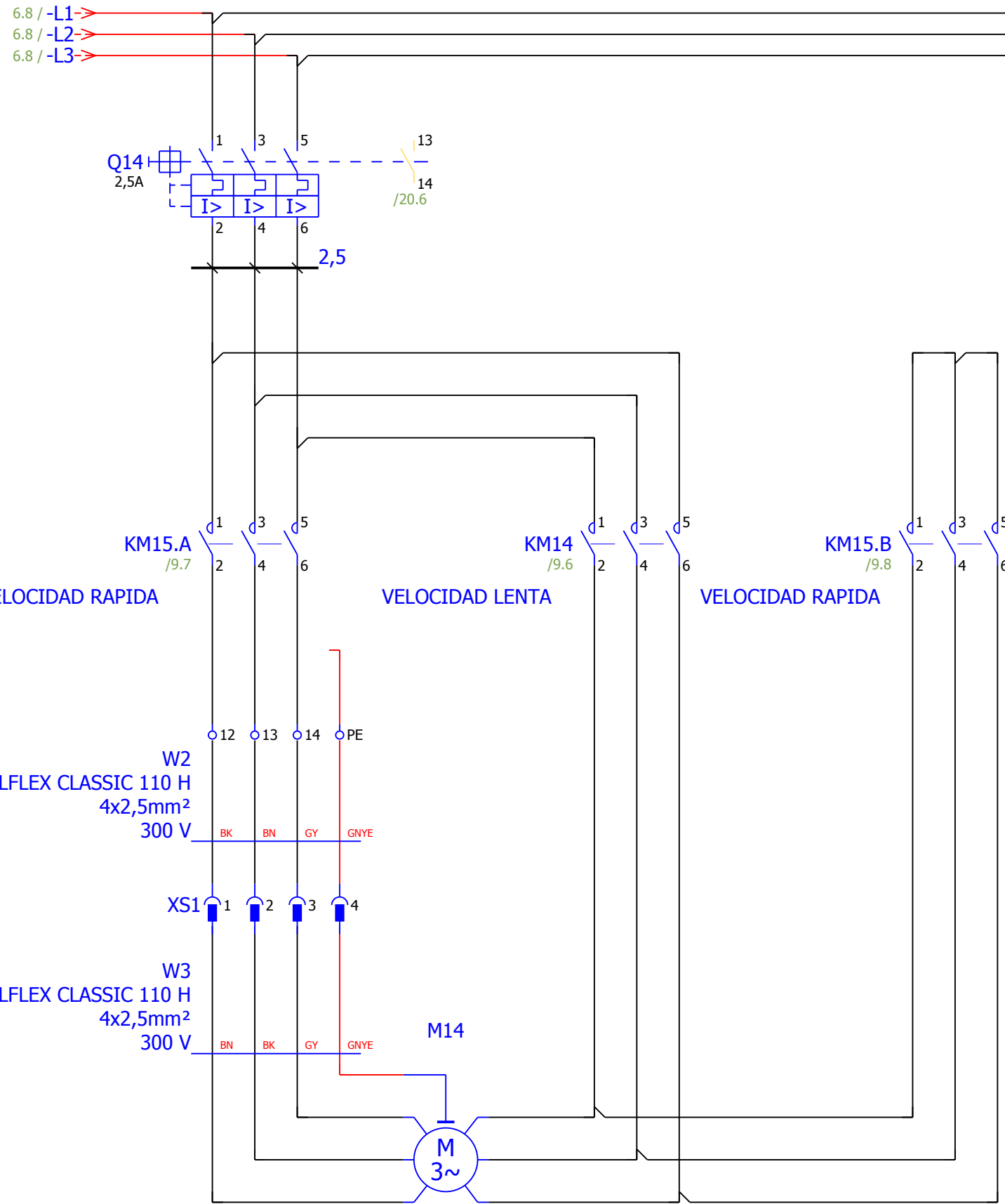
MOTOR AGITADOR SIEMBRA 1



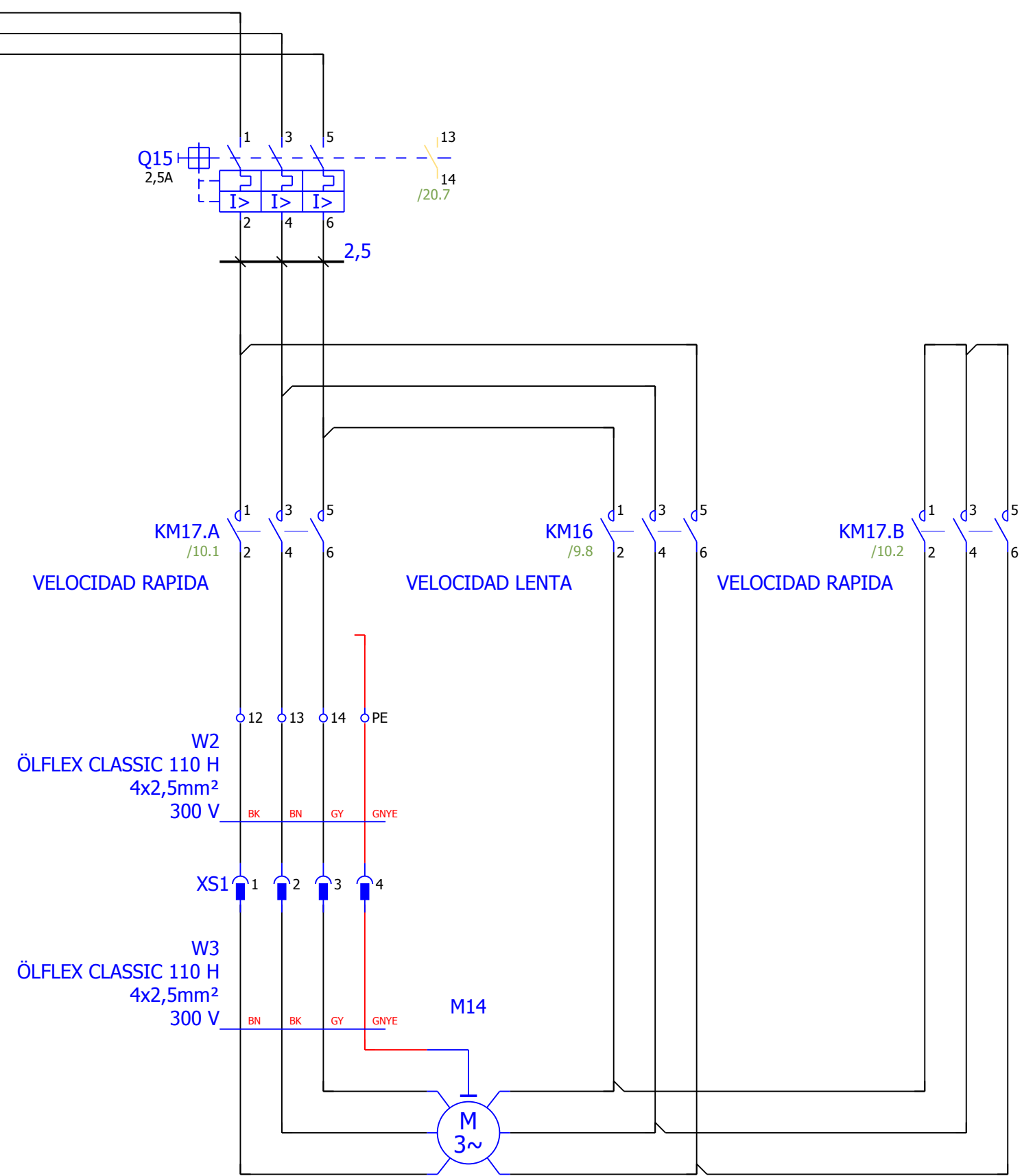
MOTOR AGITADOR SIEMBRA 2

4		6	
Date	06/06/2015	Ed.	Esteban Bacilio
Appr	Esteban	CAPSA FOOD- CENTRAL LECHERA ASTURIANA DE YOGURT - TFM	
Modification	Date	Name	Original
		Replaced by	Replaced by
		Bombas y Motores ERCAS y Fermentos	
		= EB3 + ET1	
		Estandar IEC- 61346	
		Page	5
		Page	132





MOTOR AGITADOR FERMENTOS 1  
CONEXION DAHLANDER



MOTOR AGITADOR FERMENTOS 2  
CONEXION DAHLANDER

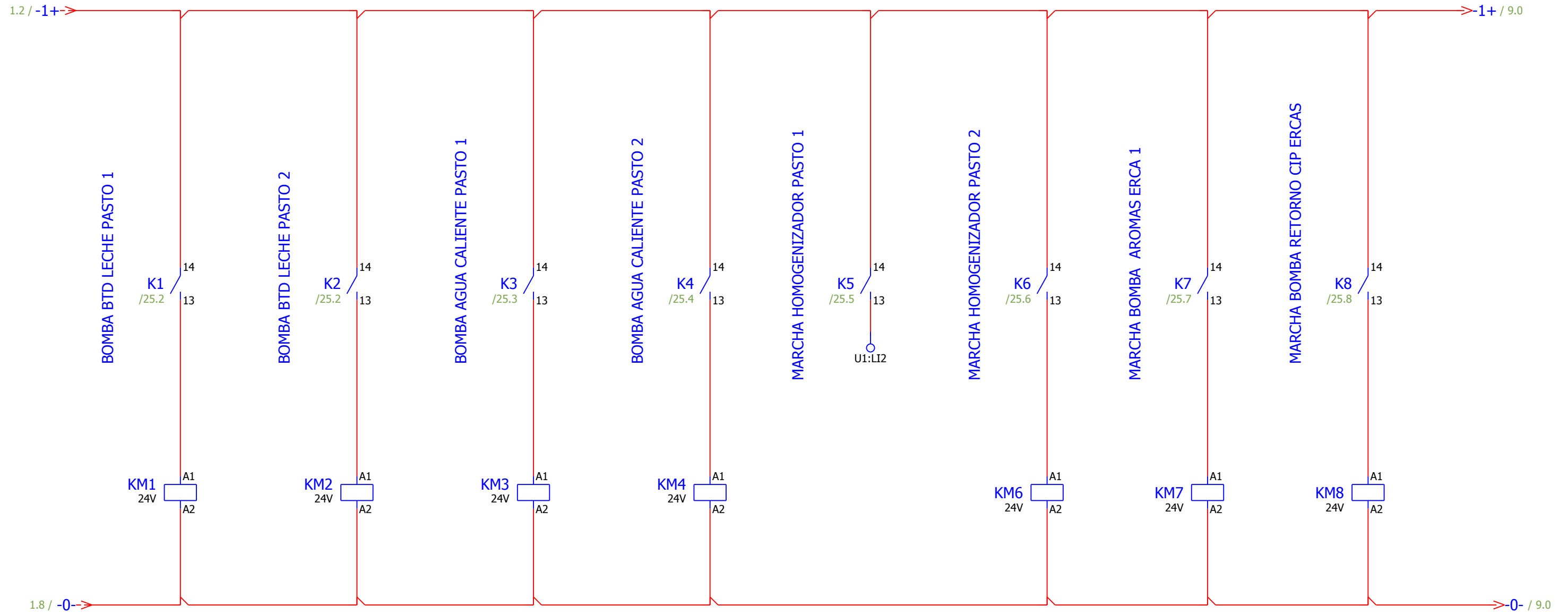


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 1 2 /3.1  
 3 4 /3.1  
 5 6 /3.2  
 13 14 /20.7

ABB.GJL1211001R0101  
 1 2 /3.3  
 3 4 /3.4  
 5 6 /3.4  
 13 14 /21.1

ABB.GJL1211001R0101  
 1 2 /3.6  
 3 4 /3.6  
 5 6 /3.6  
 13 14 /21.2

ABB.GJL1211001R0101  
 1 2 /3.8  
 3 4 /3.8  
 5 6 /3.8  
 13 14 /21.3

ABB.GJL1211001R0101  
 1 2 /4.8  
 3 4 /4.8  
 5 6 /4.8  
 13 14 /21.4

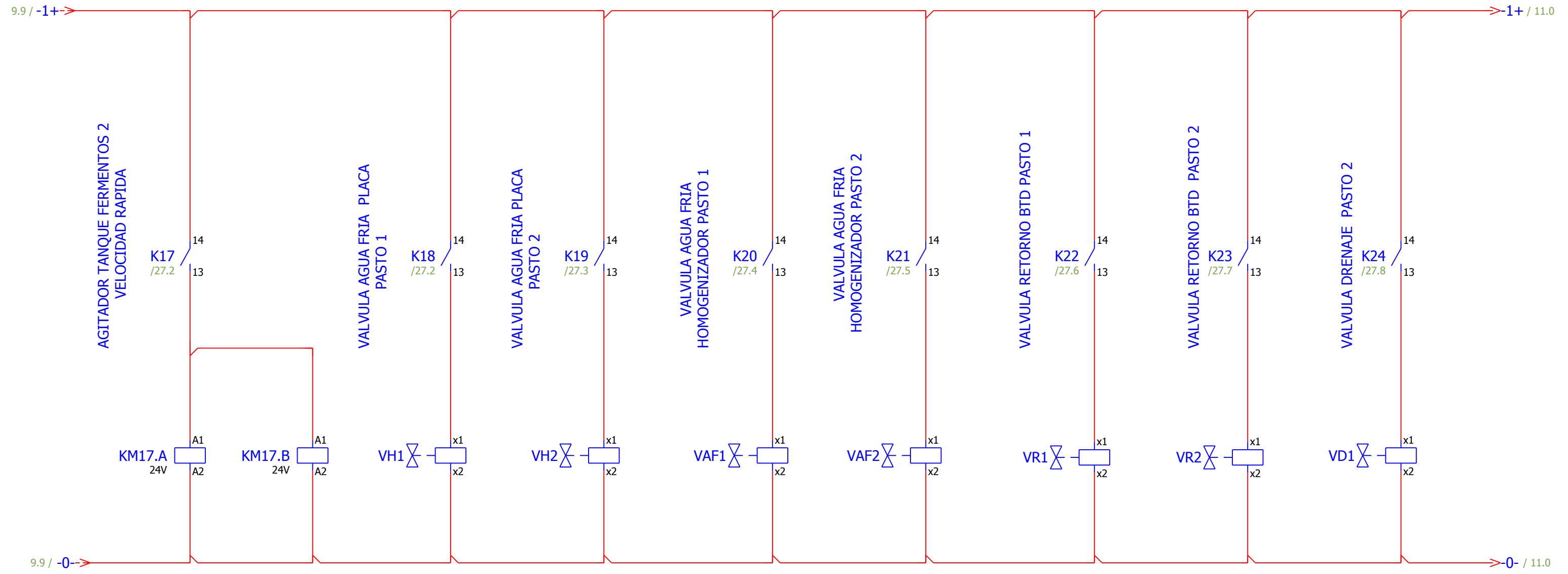
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 1 2 /5.1  
 3 4 /5.1  
 5 6 /5.2  
 13 14 /21.5

ABB.GJL1211001R0101  
 1 2 /5.3  
 3 4 /5.4  
 5 6 /5.4  
 13 14 /21.6

			Date	14/06/2015	Esteban Bacilio		CAPSA FOOD- CENTRAL LECHERA ASTURIANA DE YOGURT - TFM		Preaccionadores de Equipos de Potencia		= EB3 + ET1	
			Ed.	Esteban	AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN DE YOGURT - TFM						Estandar IEC- 61346	
			Appr		Replaced by		Replaced by				Page 8	
Modification	Date	Name	Original								Page 132	

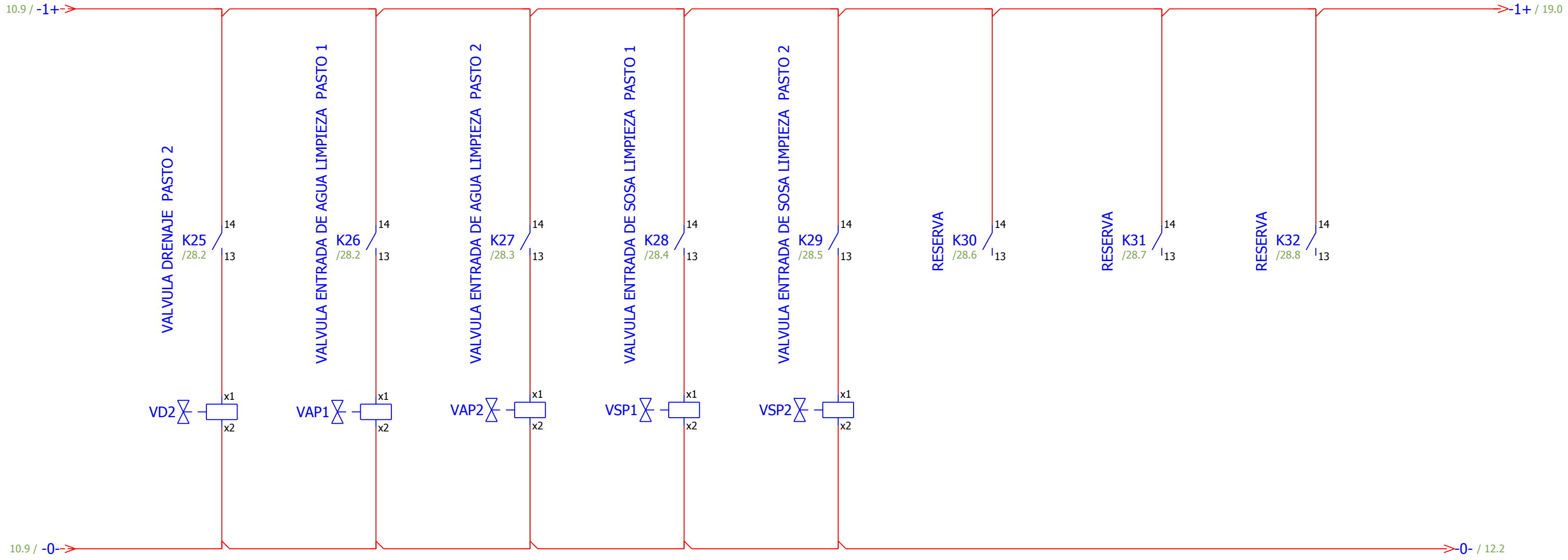






- |                     |                     |
|---------------------|---------------------|
| ABB.GJL1211001R0101 | ABB.GJL1211001R0101 |
| 1 2 /7.6            | 1 2 /7.9            |
| 3 4 /7.6            | 3 4 /7.9            |
| 5 6 /7.6            | 5 6 /7.9            |
| 13 14 /22.7         | 13 14 /23.1         |

Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA	Preaccionadores de Equipos de Potencia	= EB3
Ed.	Esteban		DE YOGURT - TFM		+ ET1
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN			
Modification	Date	Name	Original	Replaced by	Replaced by
					Estandar IEC- 61346
					Page 10
					Page 132

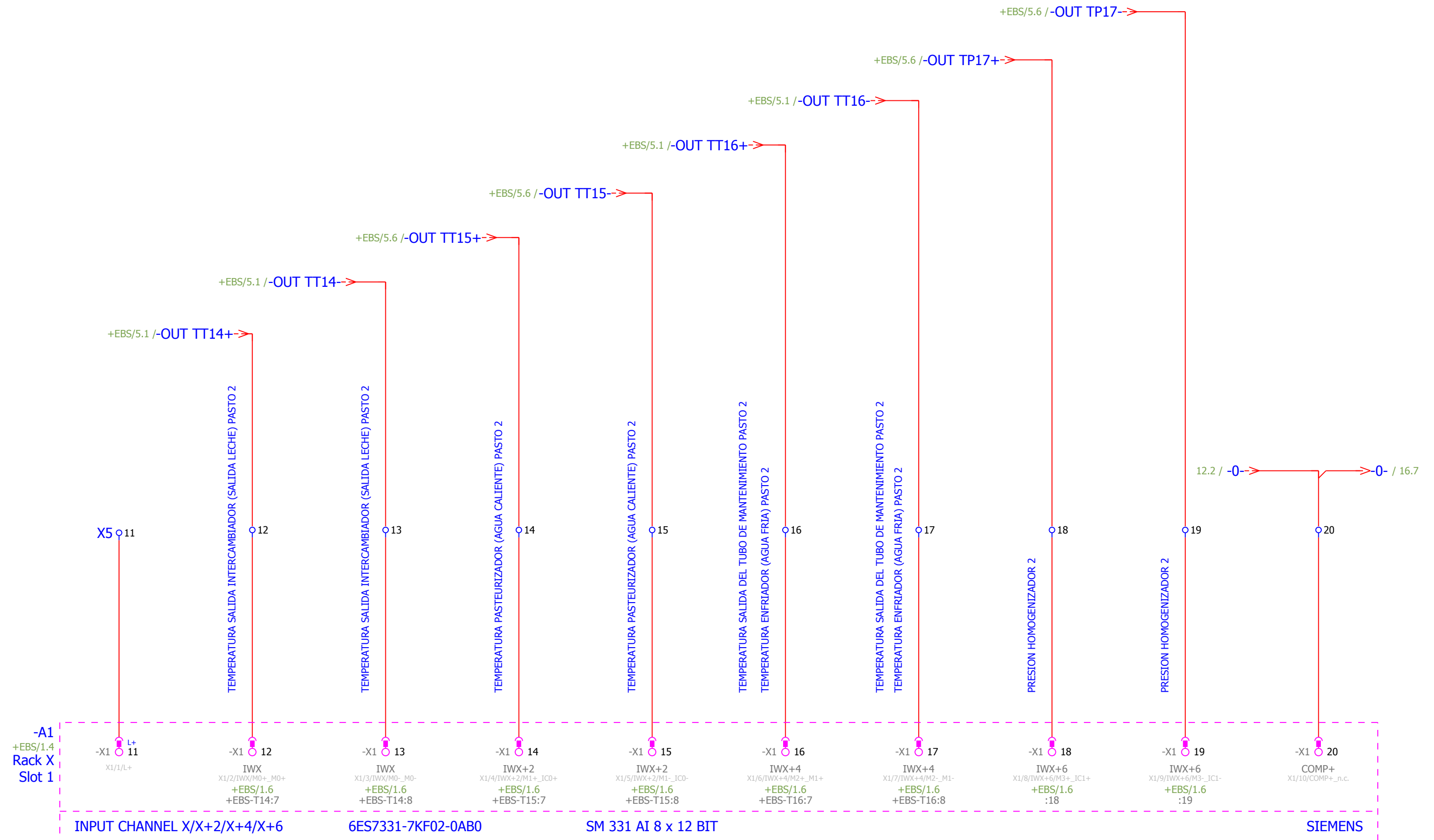


Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA	Preaccionadores de Equipos de Potencia	= EB3
Ed.	Esteban		DE YOGURT - TFM		+ ET1
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN			
Modification	Date	Name	Original	Replaced by	Replaced by
					Estándar IEC- 61346
					Page 11
					Page 132

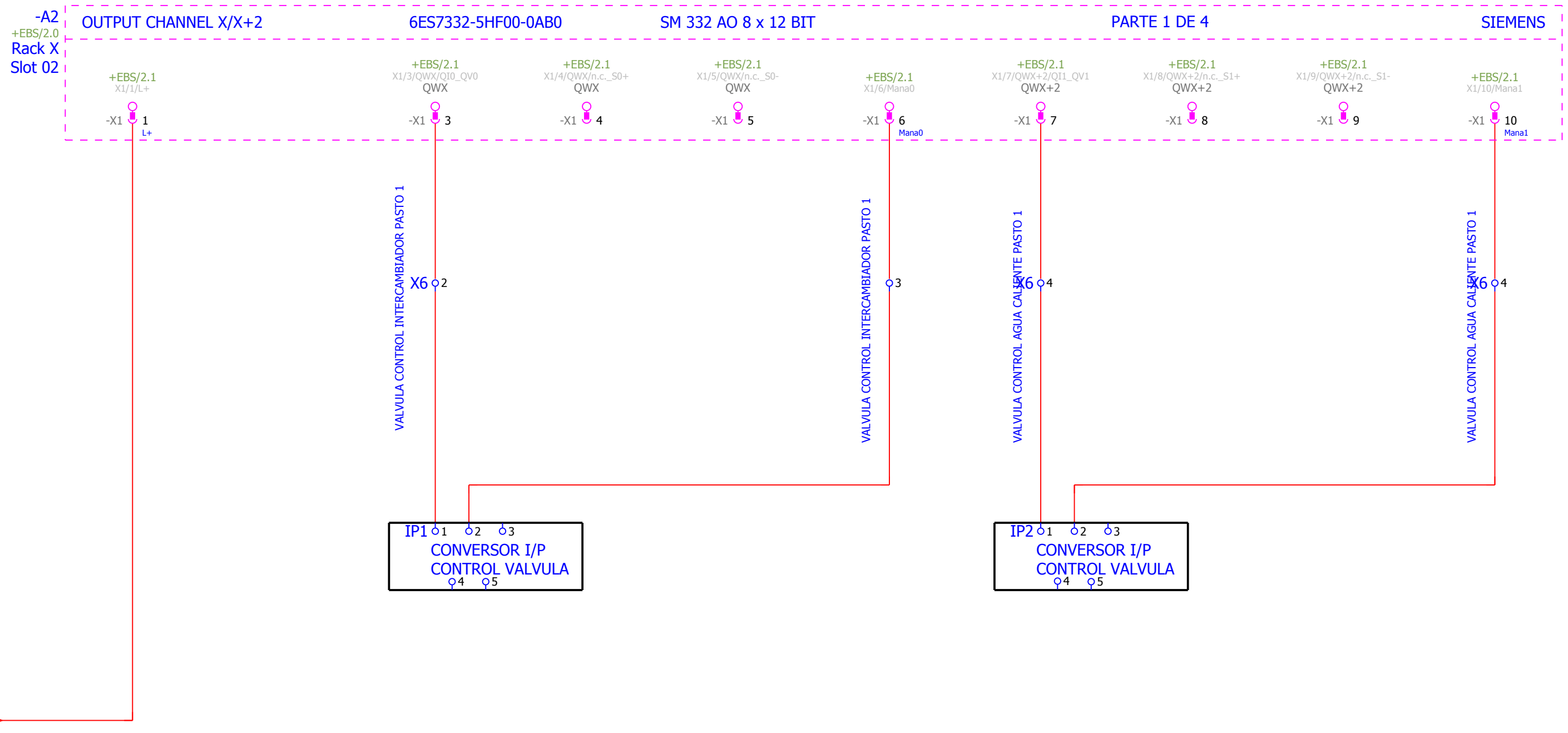




# SIEMENS MODULO DE ENTRADAS ANALOGICAS



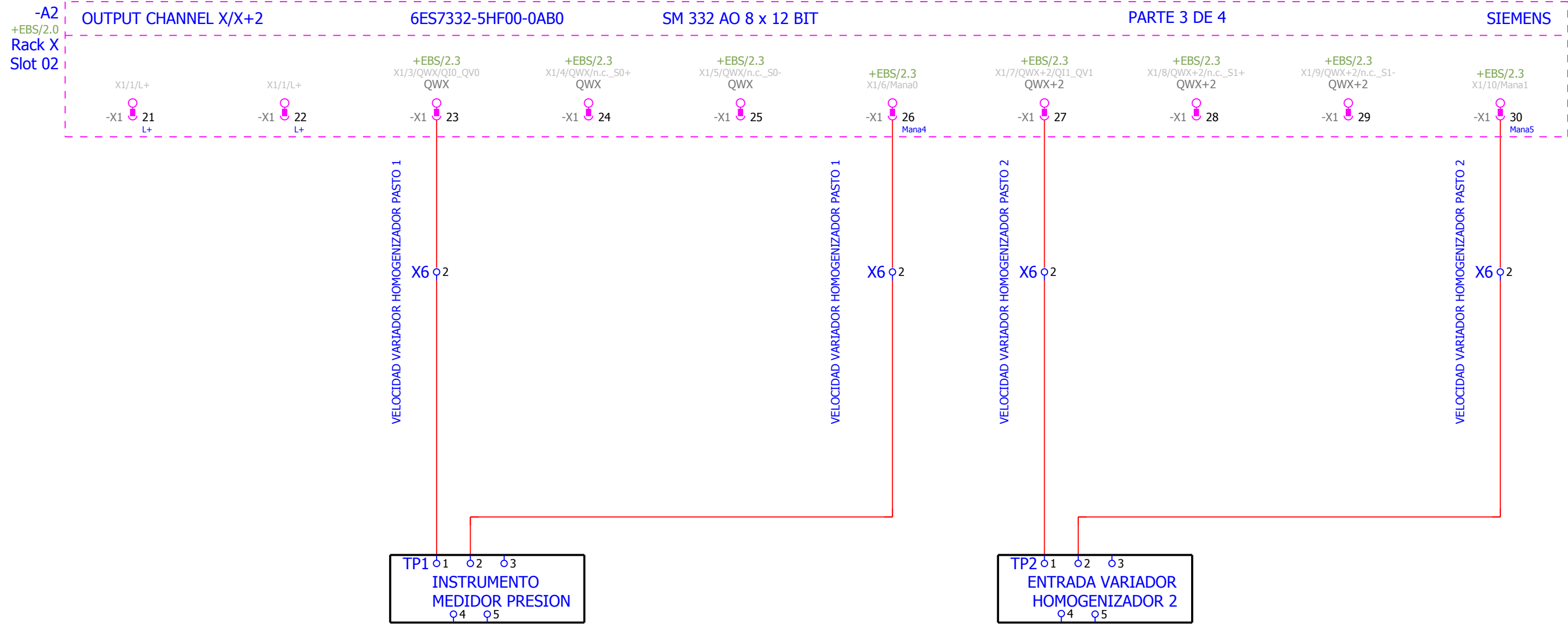
Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA	Entradas Analog.CPU S7-300	= EB3
Ed.	Esteban		DE YOGURT - TFM		+ ET1
Appr					
Modification	Date	Name	Original	Replaced by	Replaced by
					Estandar IEC- 61346
					Page 14
					Page 132



# SIEMENS MODULO DE SALIDAS ANALOGICAS

Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA	Salidas Analog.CPU S7-300	= EB3
Ed.	Esteban		DE YOGURT - TFM		+ ET1
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN			
Modification	Date	Name	Original	Replaced by	Replaced by
					Estándar IEC- 61346
					Page 15
					Page 132





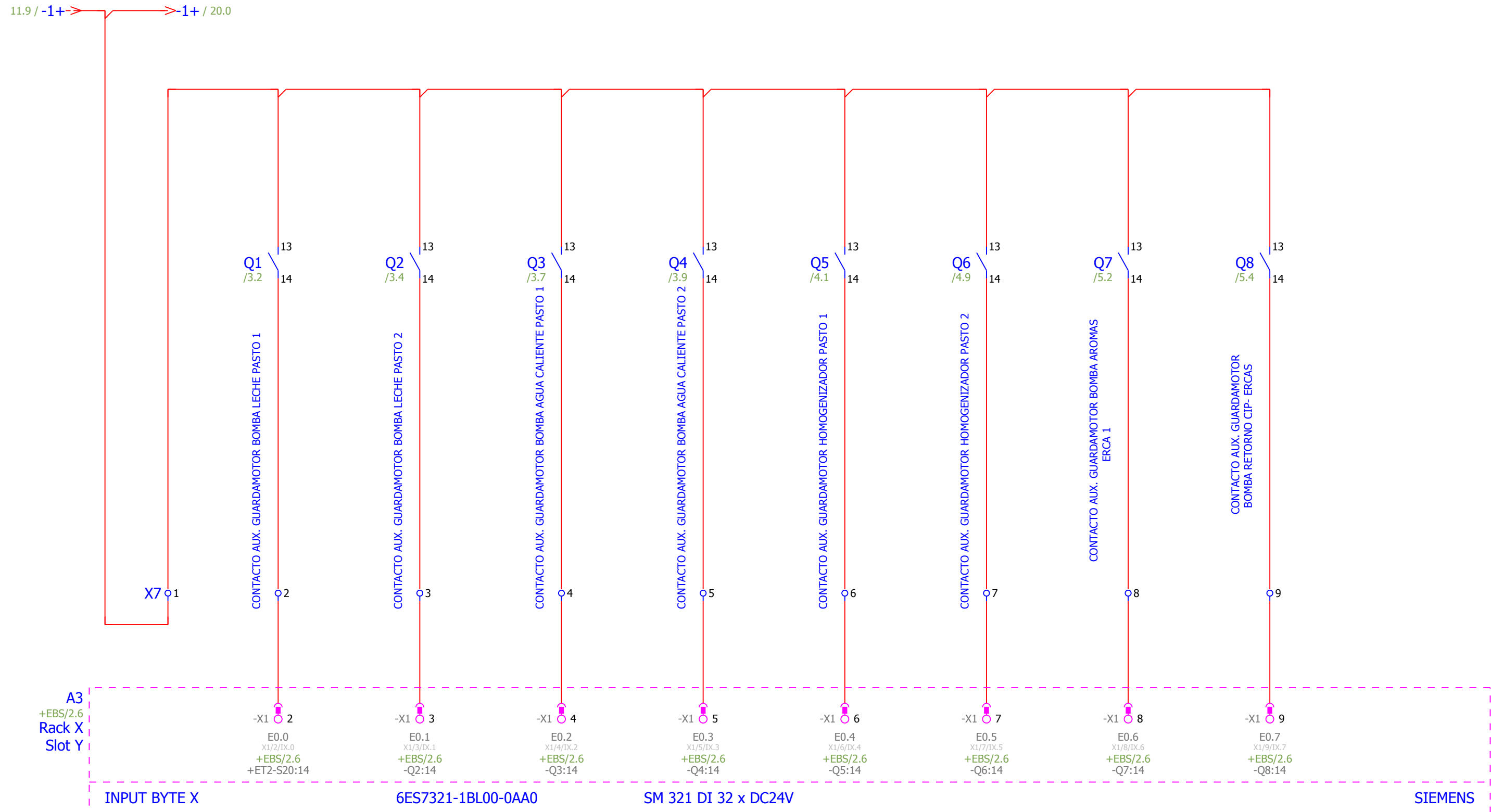
# SIEMENS MODULO DE SALIDAS ANALOGICAS

Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA	Salidas Analog.CPU S7-300	= EB3
Ed.	Esteban		DE YOGURT - TFM		+ ET1
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN			
Modification	Date	Name	Original	Replaced by	Replaced by
					Estándar IEC- 61346
					Page 17
					Page 132





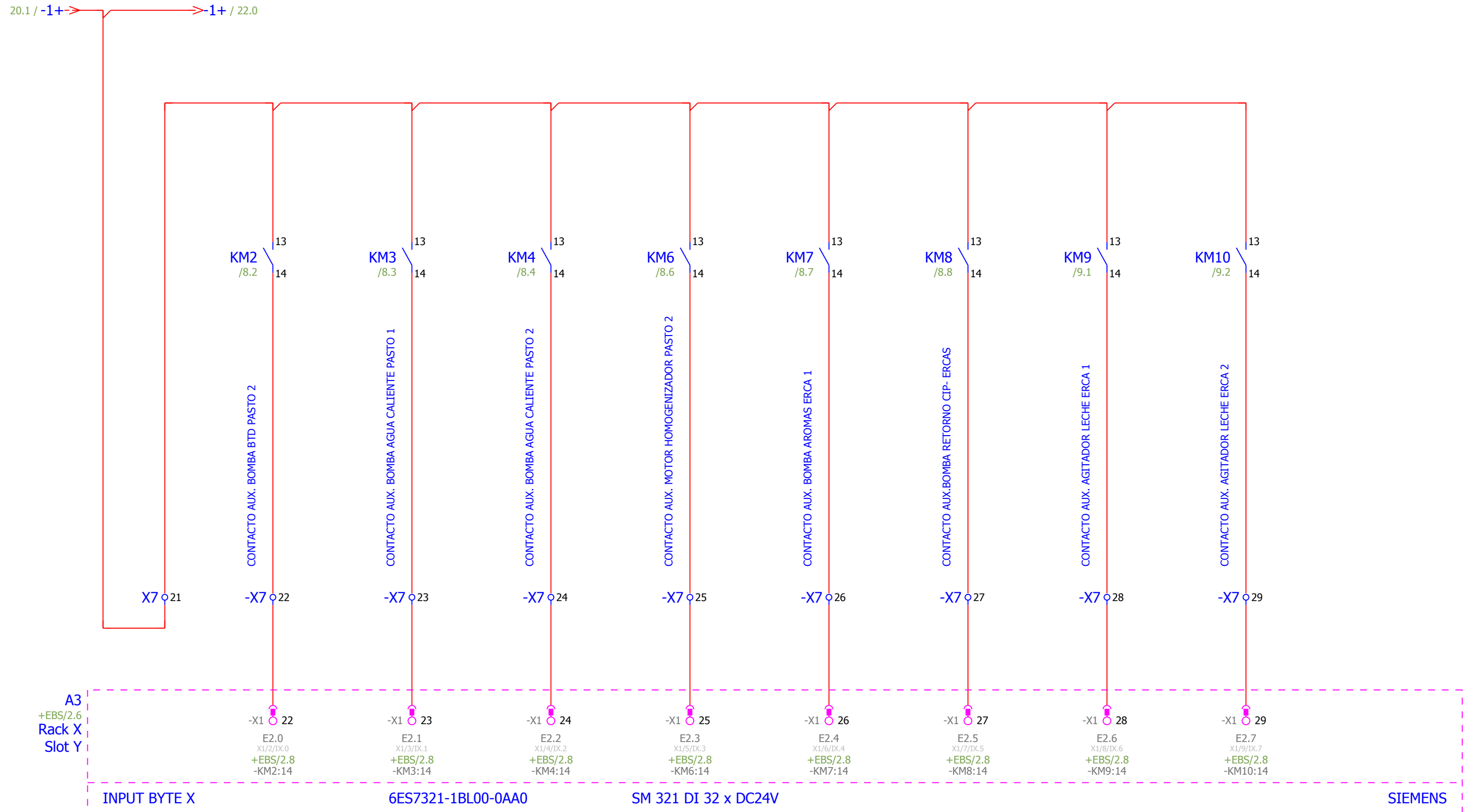
# SIEMENS MODULO DE ENTRADAS DIGITALES (A3)



Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA	Entradas Digitales Modulo (A3) S7-300	= EB3
Ed.	Esteban		DE YOGURT - TFM		+ ET1
Appr					
Modification	Date	Name	Original	Replaced by	Replaced by
					Estandar IEC- 61346
					Page 19
					Page 132



# SIEMENS MODULO DE ENTRADAS DIGITALES (A3)

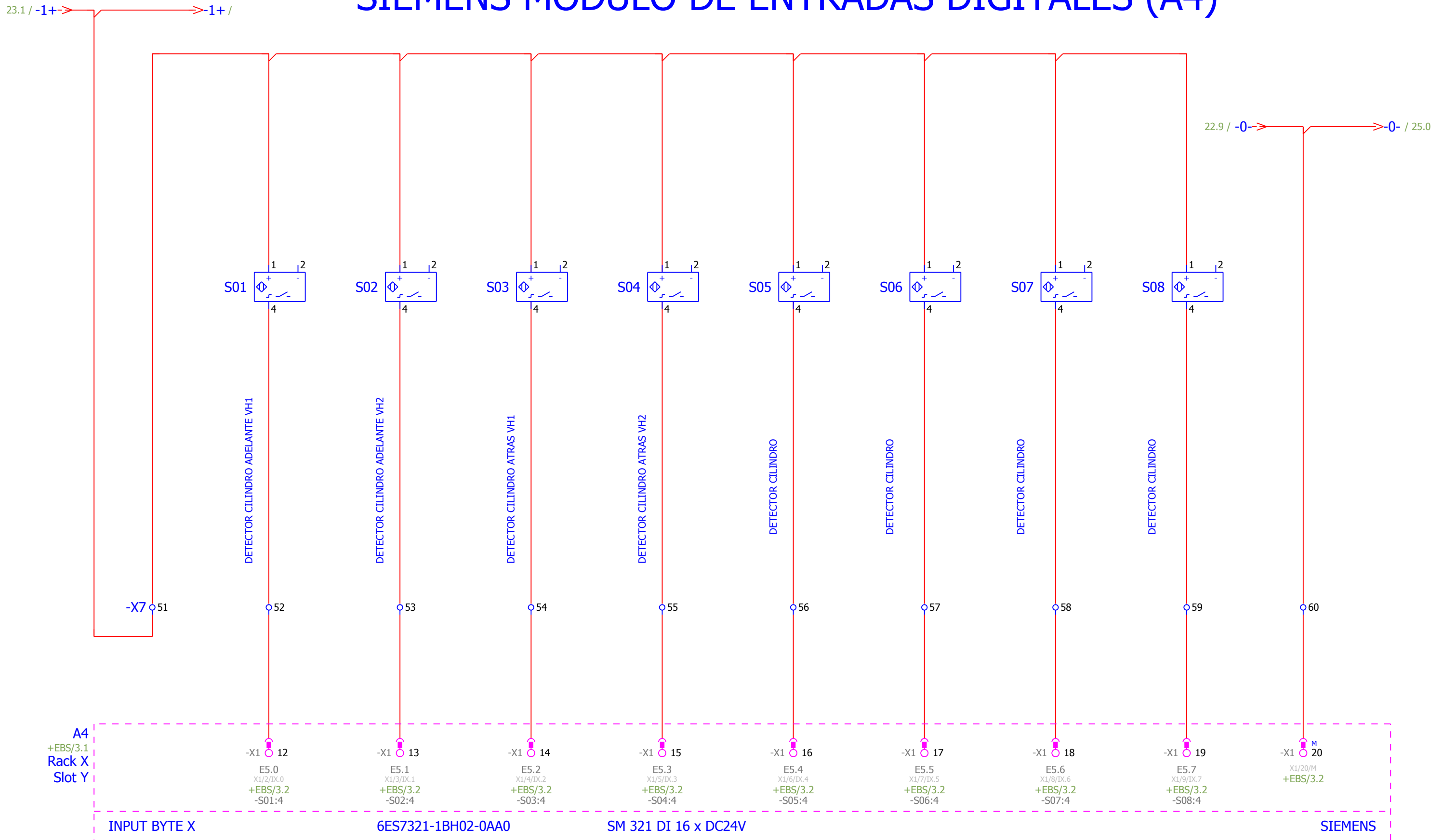


Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA	Entradas Digitales Modulo (A3) S7-300	= EB3
Ed.	Esteban		DE YOGURT - TFM		+ ET1
Appr					
Modification	Date	Name	Original	Replaced by	Replaced by
					Estandar IEC- 61346
					Page 21
					Page 132

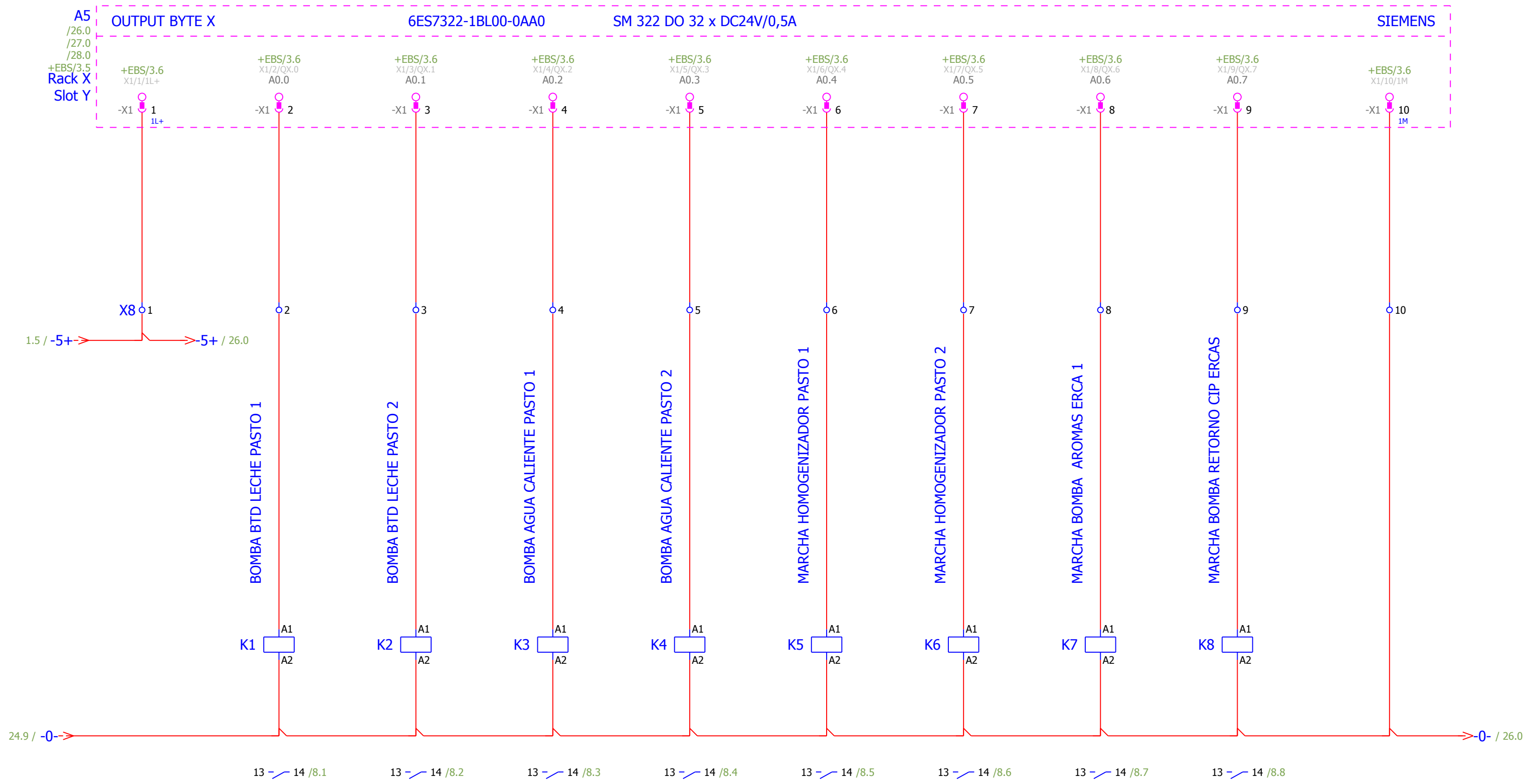




# SIEMENS MODULO DE ENTRADAS DIGITALES (A4)



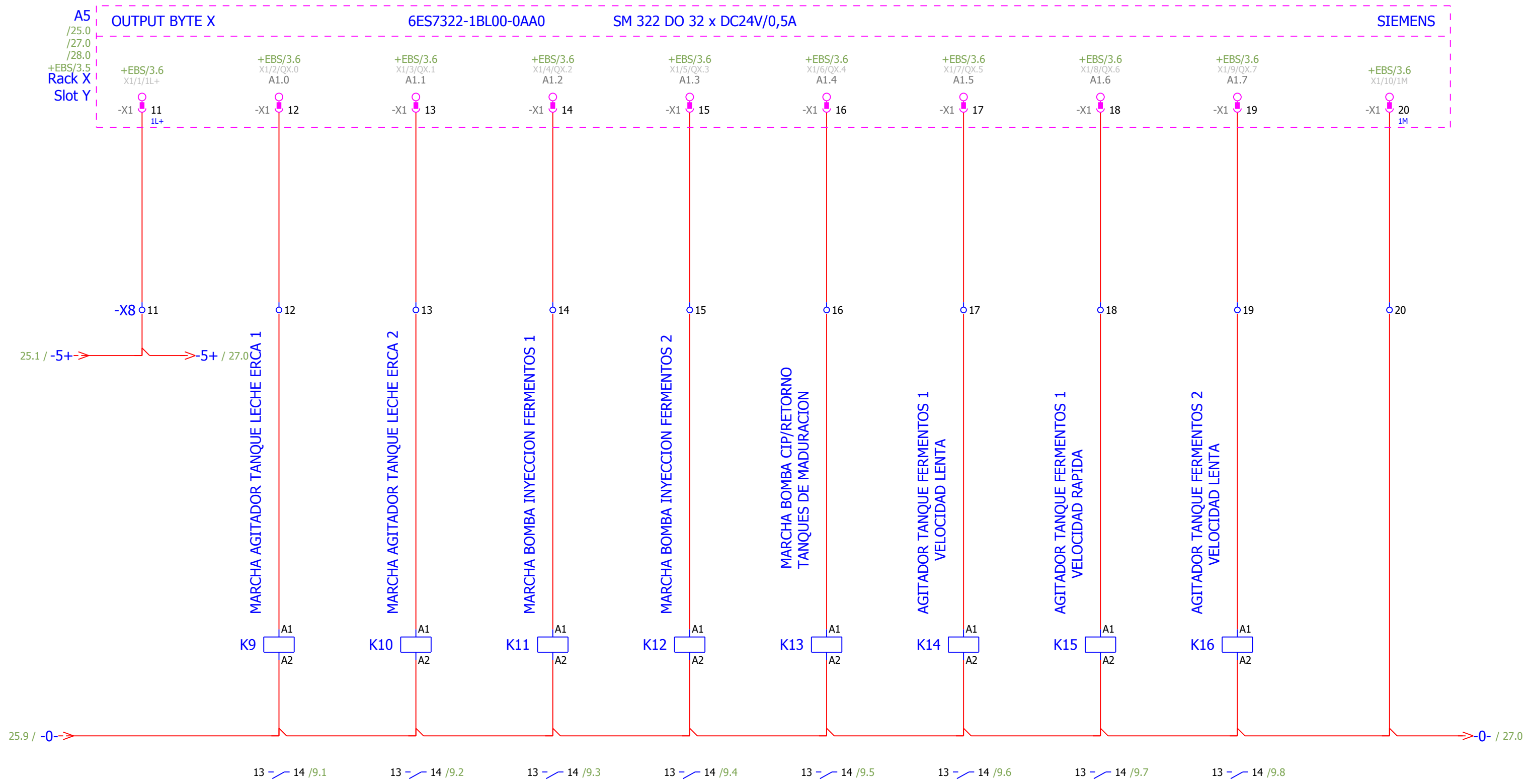
Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA	Entradas Digitales Modulo A4	= EB3
Ed.	Esteban		DE YOGURT - TFM		+ ET1
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN DE YOGURT - TFM			
Modification	Date	Name	Original	Replaced by	Replaced by
					Estándar IEC- 61346
					Page 24
					Page 132



# SIEMENS MODULO DE SALIDAS DIGITALES (A5)

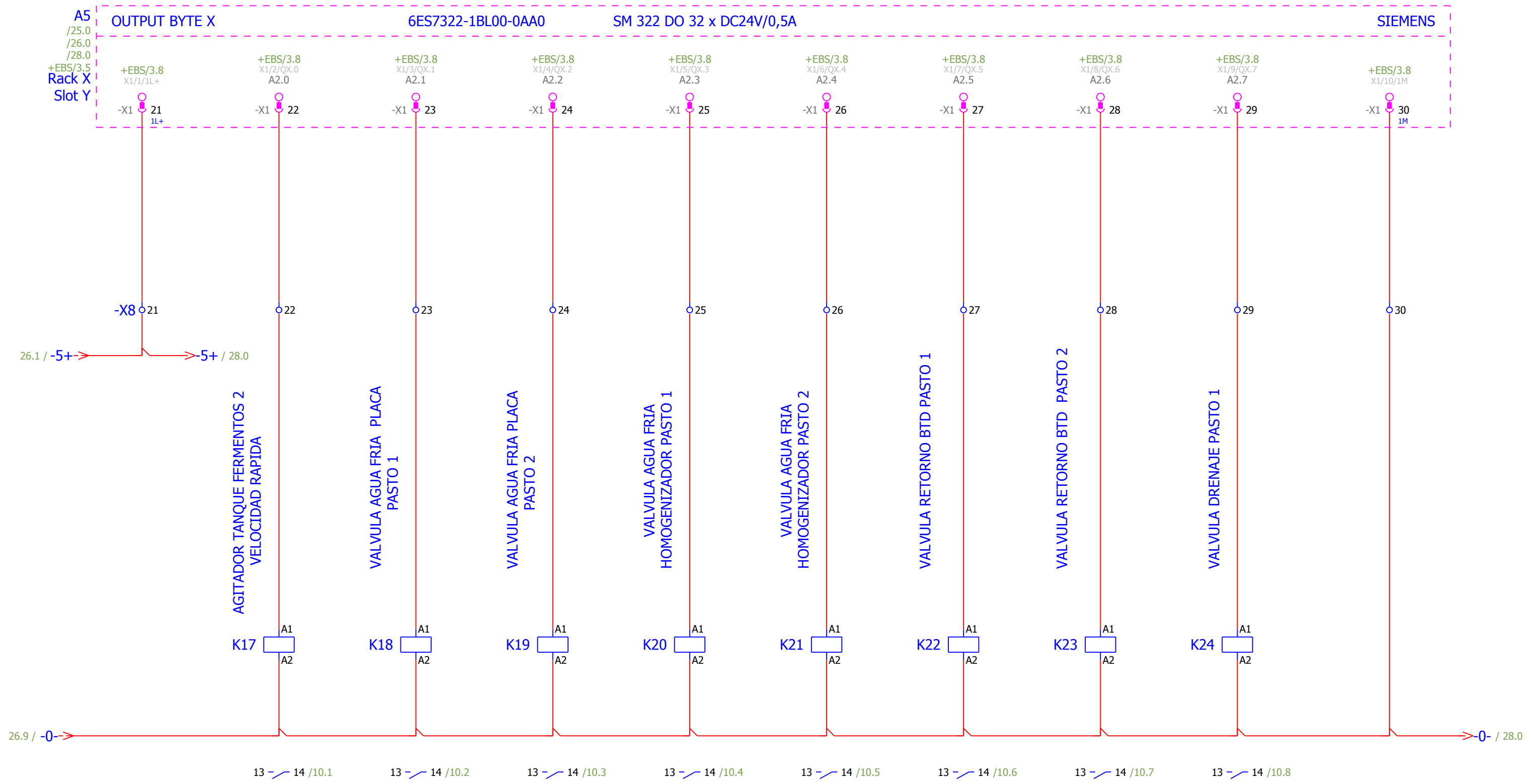
Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA	Salidas Digitales Modulo (A5) ET200M	= EB3
Ed.	Esteban		DE YOGURT - TFM		+ ET1
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN			
Modification	Date	Name	Original	Replaced by	Replaced by
					Estándar IEC- 61346
					Page 25
					Page 132





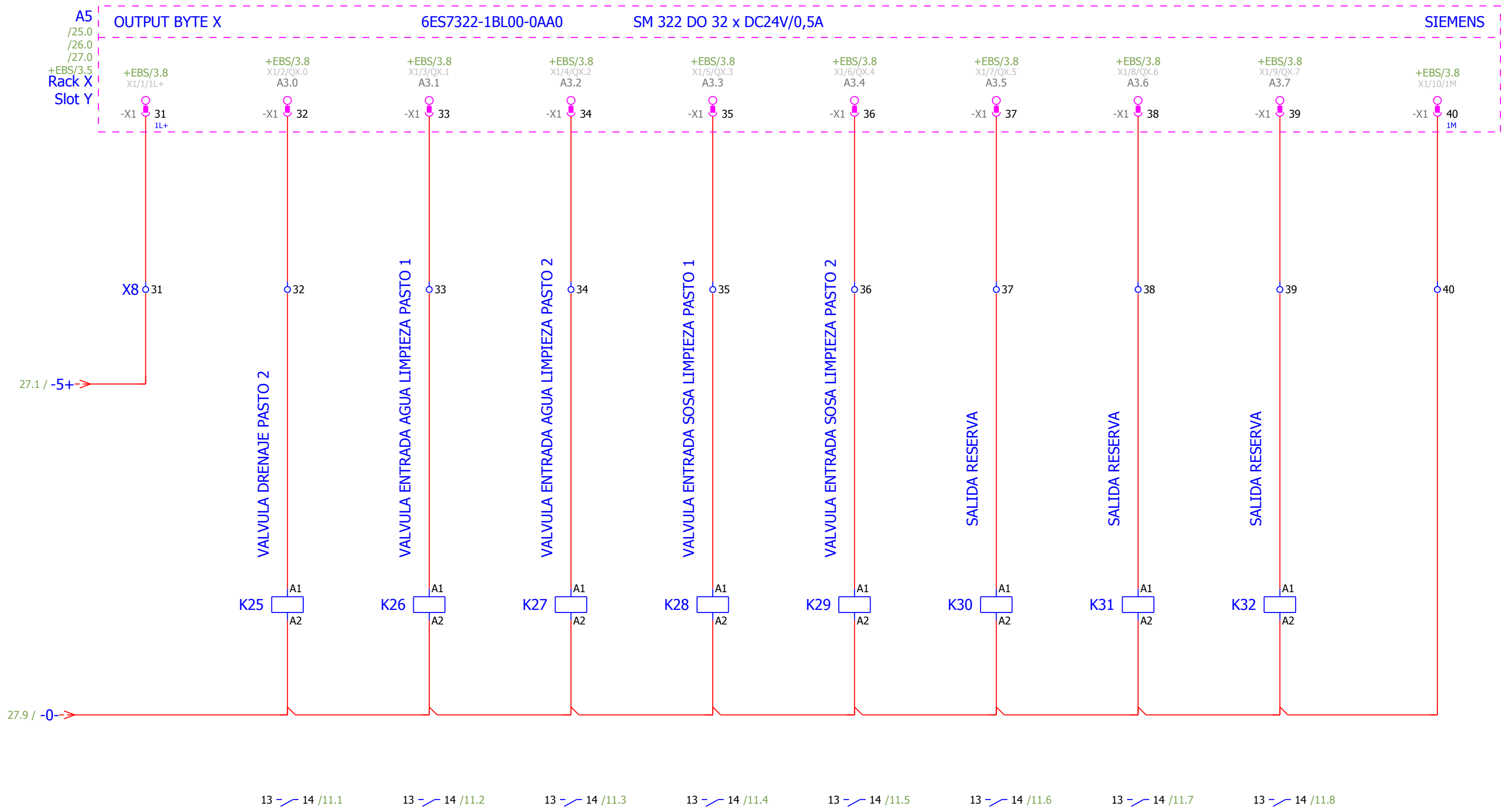
# SIEMENS MODULO DE SALIDAS DIGITALES (A5)

Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA	Salidas Digitales Modulo (A5) ET200M	= EB3
Ed.	Esteban		DE YOGURT - TFM		+ ET1
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN			
Modification	Date	Name	Original	Replaced by	Replaced by
					Estandar IEC- 61346
					Page 26
					Page 132



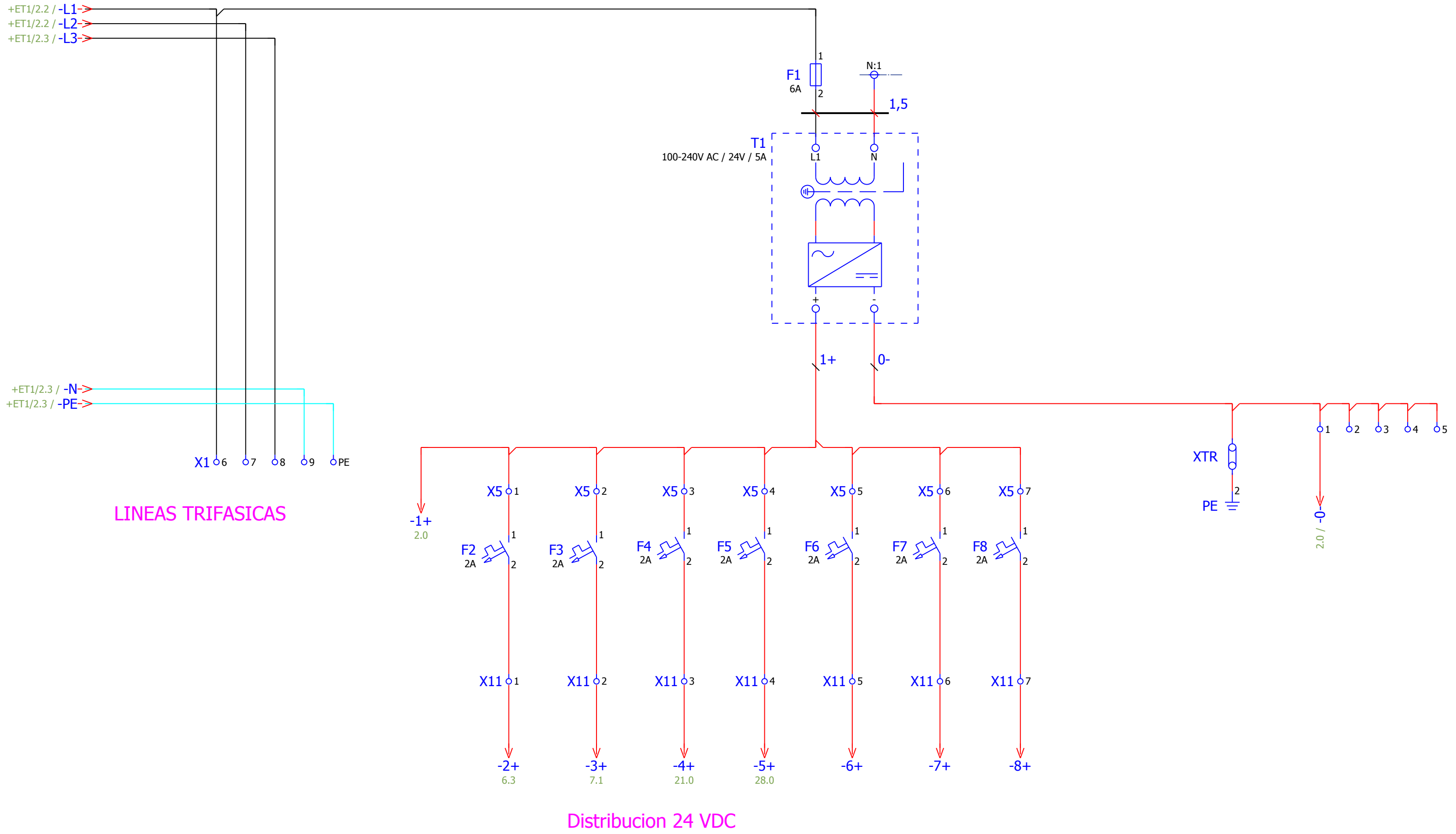
# SIEMENS MODULO DE SALIDAS DIGITALES (A5)

Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA DE YOGURT - TFM	Salidas Digitales Modulo (A5) ET200M	= EB3
Ed.	Esteban				+ ET1
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN DE YOGURT - TFM			
Modification	Date	Name	Original	Replaced by	Replaced by
					Estándar IEC- 61346
					Page 27
					Page 132



# SIEMENS MODULO DE SALIDAS DIGITALES (A5)

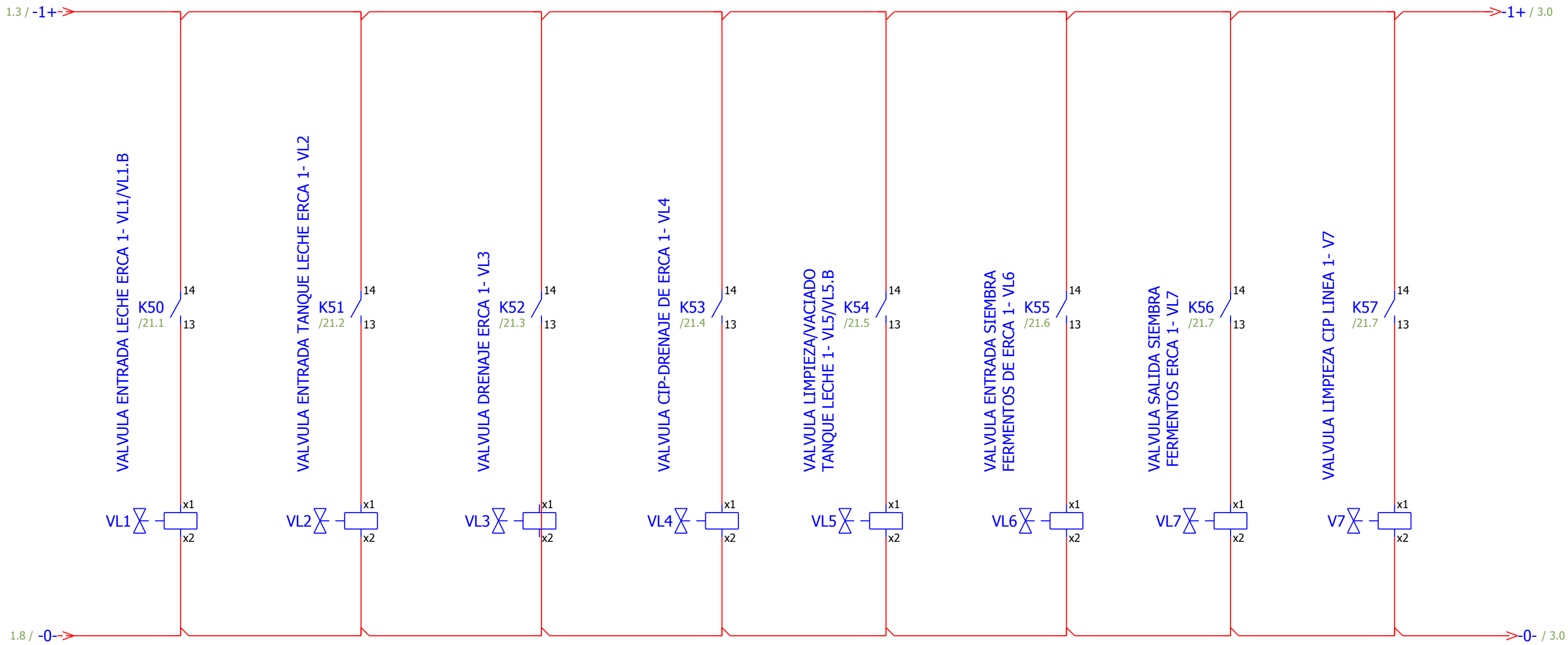
Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA	Salidas Digitales Modulo (A5) ET200M	= EB3
Ed.	Esteban		DE YOGURT - TFM		+ ET1
Appr					
Modification	Date	Name	Original	Replaced by	Replaced by
					Estandar IEC- 61346
					Page 28
					Page 132



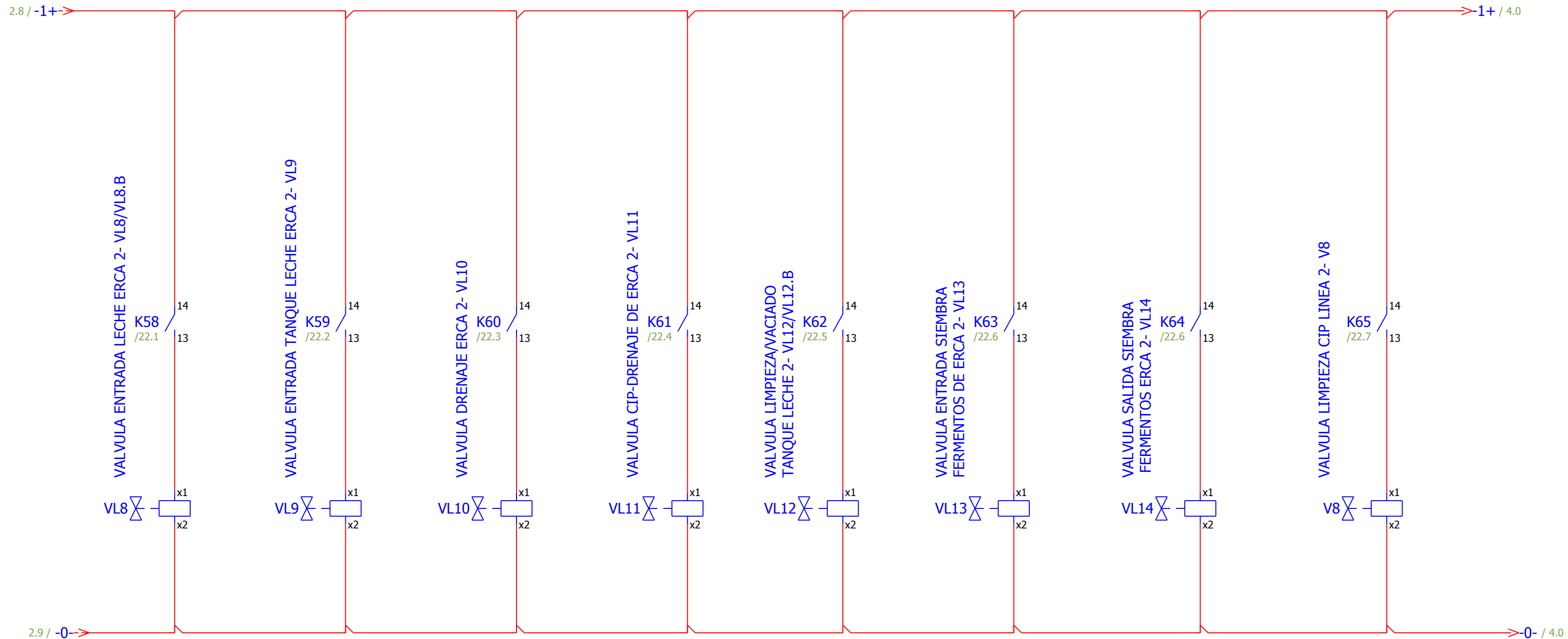
LINEAS TRIFASICAS

Distribucion 24 VDC

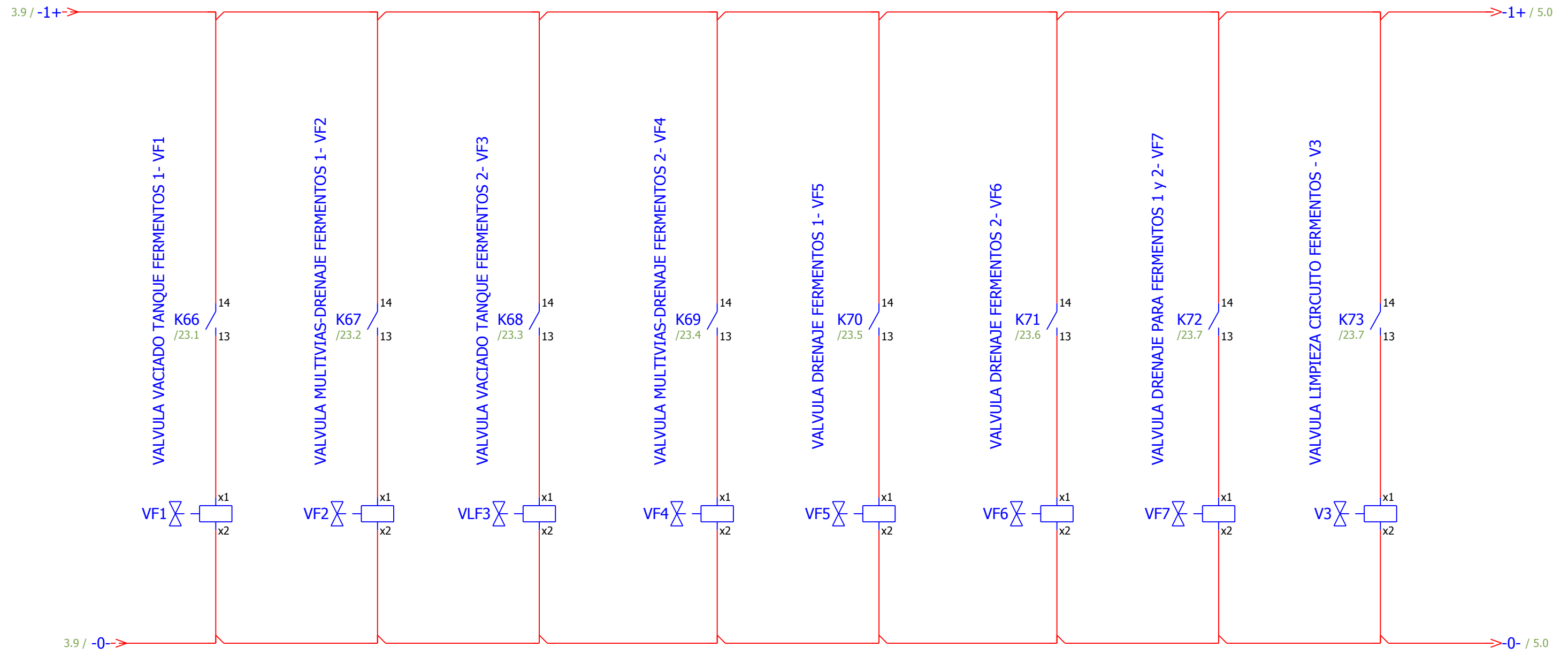
+ET1/28				Date: 14/06/2015		Esteban Bacilio		CAPSA FOOD- CENTRAL LECHERA ASTURIANA		Potencia Estacion Remota		= EB3	
				Ed.: Esteban				DE YOGURT - TFM				+ ET2	
				Appr:		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN						Estandar IEC- 61346	
Modification				Date		Name		Original		Replaced by		Page 1	
										Replaced by		Page 132	



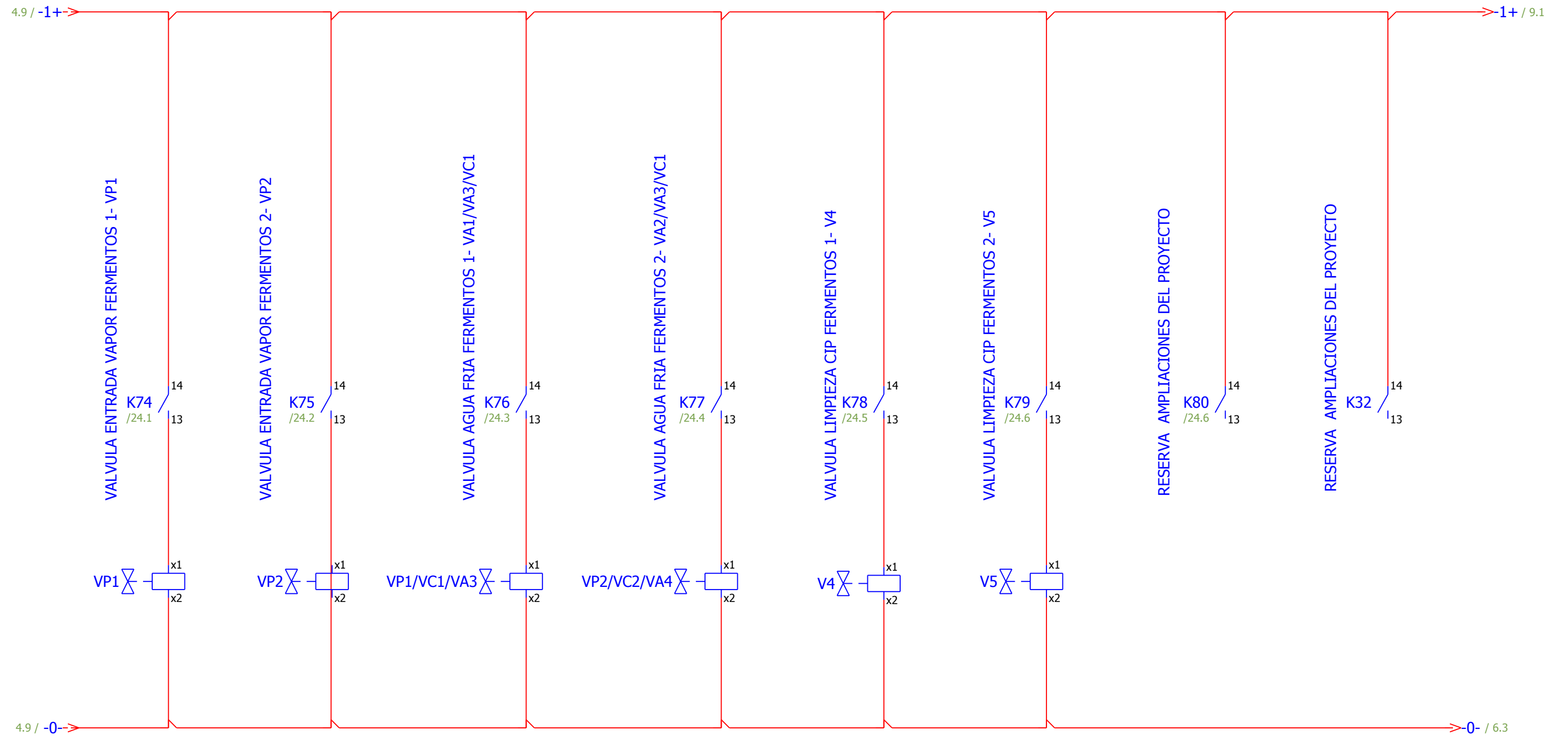
Date	14/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA	Preaccionadores de Equipos de Potencia	= EB3
Ed.	Esteban		DE YOGURT - TFM		+ ET2
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN			
Modification	Date	Name	Original	Replaced by	Replaced by
					Estandar IEC- 61346
					Page 2
					Page 132



		Date	14/06/2015	Esteban Bacilio		CAPSA FOOD- CENTRAL	Preaccionadores de Equipos de Potencia		= EB3	
		Ed.	Esteban			LECHERA ASTURIANA			+ ET2	
		Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN DE YOGURT - TFM				Estandar IEC- 61346		Page 3
Modification	Date	Name	Original	Replaced by	Replaced by					Page 132



		Date	14/06/2015	Esteban Bacilio		CAPSA FOOD- CENTRAL LECHERA ASTURIANA		Preaccionadores de Equipos de Potencia		= EB3	
		Ed.	Esteban	AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN DE YOGURT - TFM						+ ET2	
		Appr								Estandar IEC- 61346	
Modification	Date	Name	Original	Replaced by	Replaced by					Page	4
										Page	132



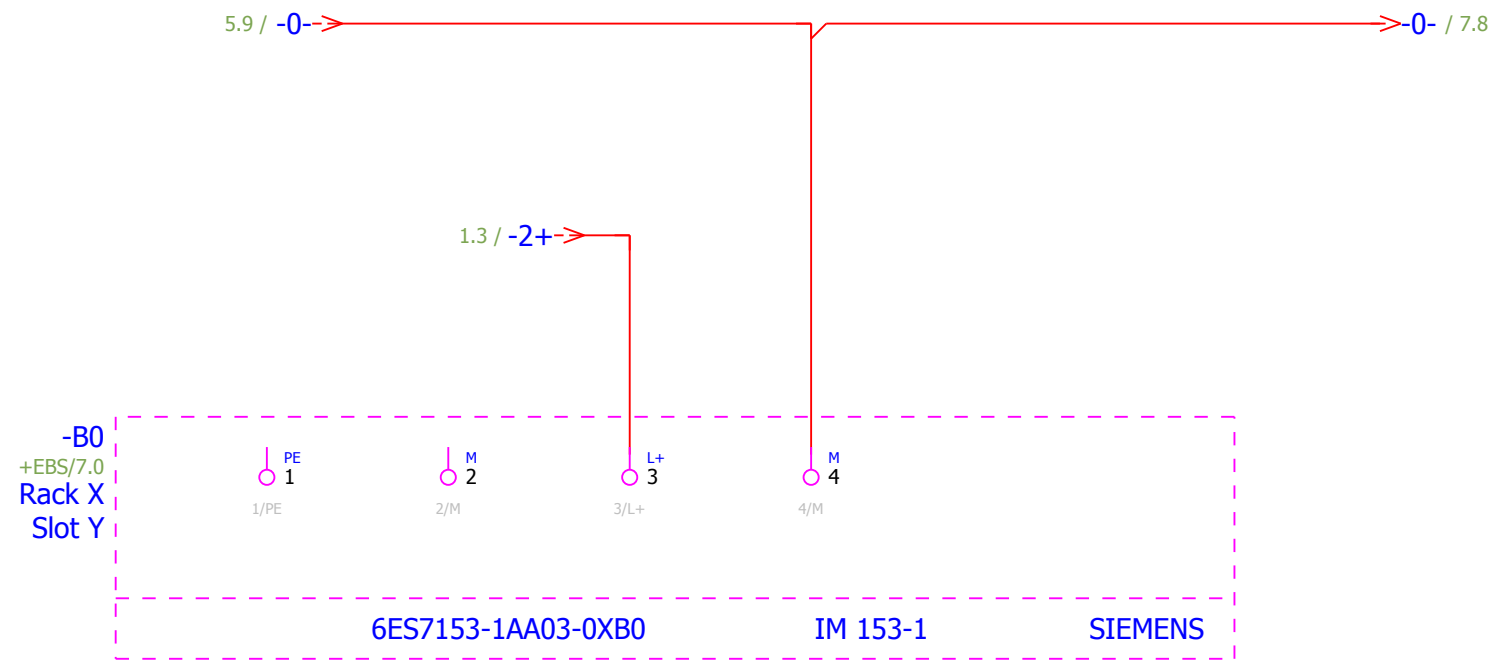
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		Ed.	Esteban	AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN DE YOGURT - TFM		DE YOGURT - TFM				+ ET2	
		Appr		Replaced by		Replaced by		Estandar IEC- 61346		Page	5
Modification	Date	Name	Original	Replaced by		Replaced by				Page	132



# ESTACION REMOTA

FERMENTOS Y SIEMBRA

## SIEMENS IM153-1 PERIFERIA DESCENTRALIZADA

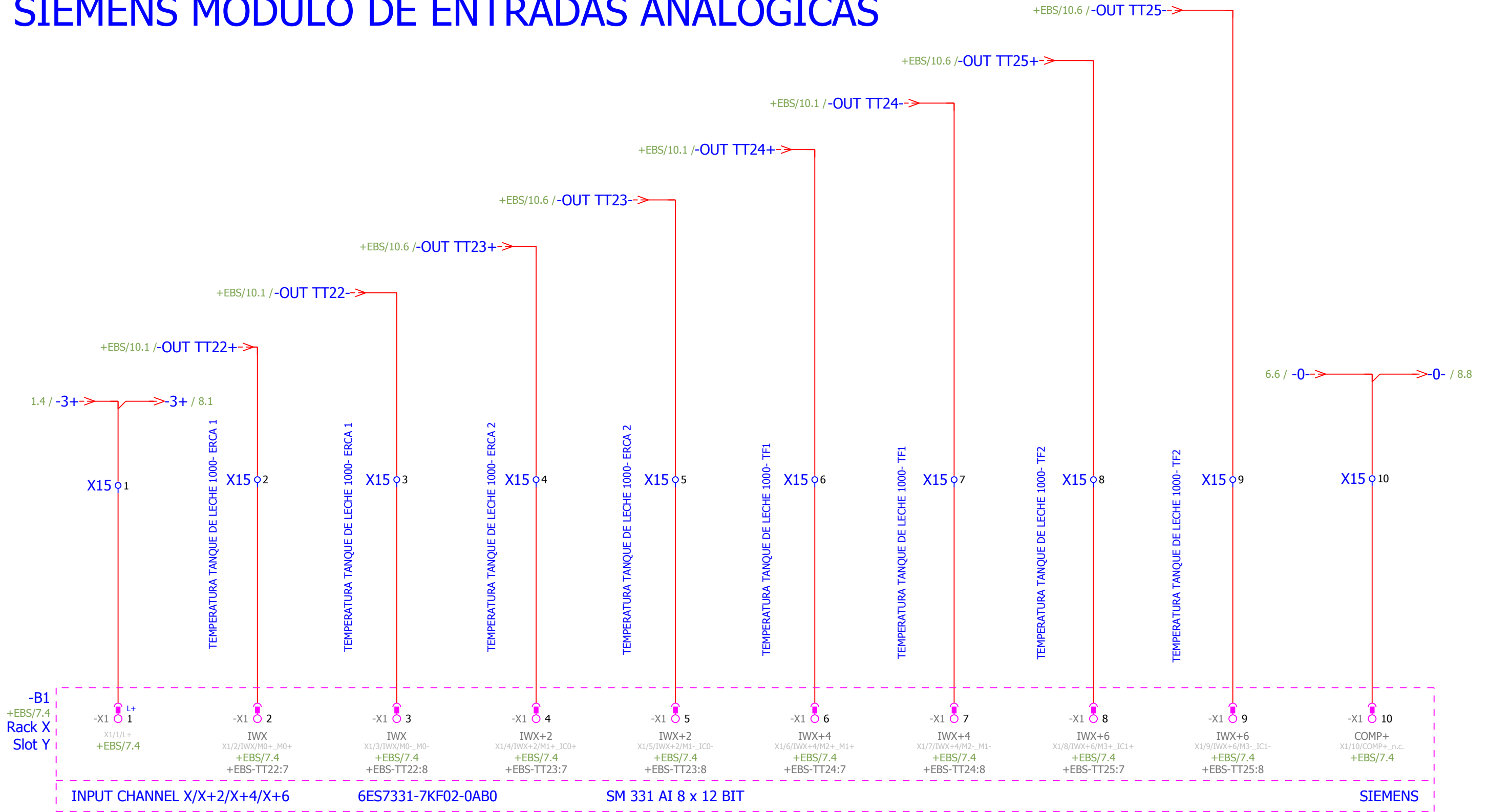


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			Ed.	Esteban		LECHERA ASTURIANA		+ ET2
			Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN DE YOGURT - TFM			
Modification	Date	Name	Original	Replaced by	Replaced by			Page 6
							Estandar IEC- 61346	Page 132

# ESTACION REMOTA

FERMENTOS Y SIEMBRA

## SIEMENS MODULO DE ENTRADAS ANALOGICAS

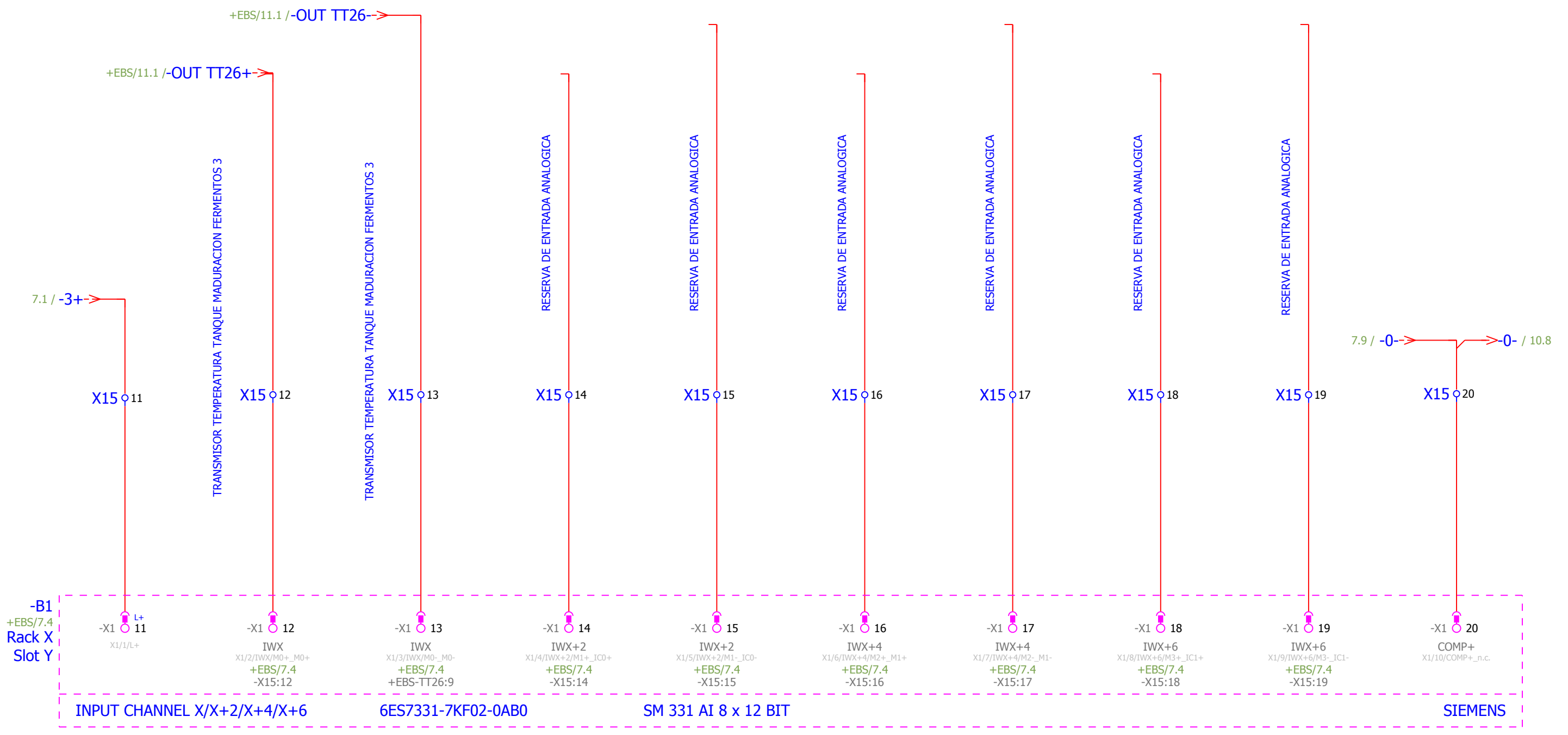


Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA DE YOGURT - TFM	Entradas Analog. Modulo ET200M	= EB3
Ed.	Esteban				+ ET2
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN DE YOGURT - TFM			
Modification	Date	Name	Original	Replaced by	Replaced by
					Estandar IEC- 61346
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# ESTACION REMOTA

FERMENTOS Y SIEMBRA

## SIEMENS MODULO DE ENTRADAS ANALOGICAS

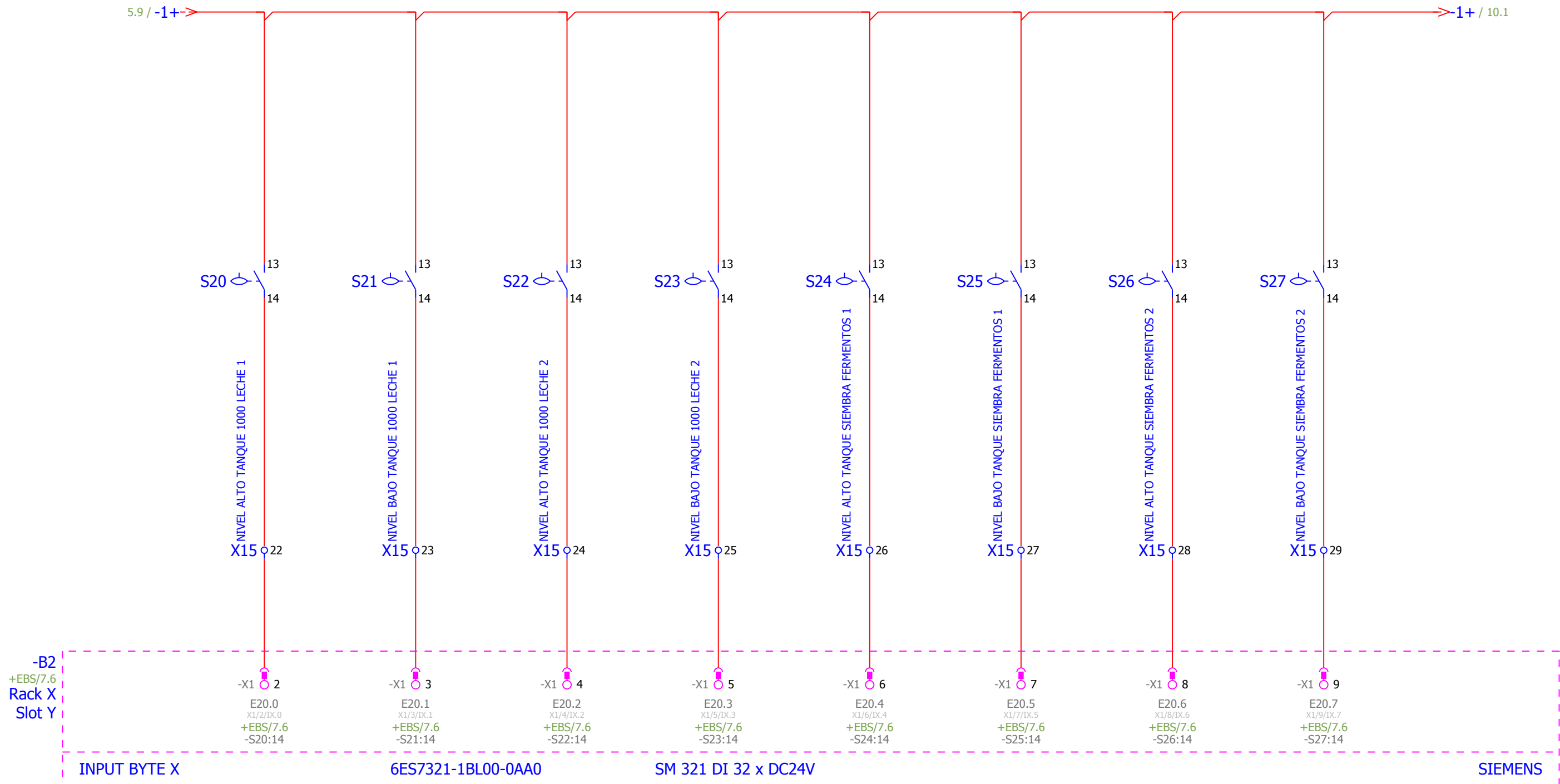


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Ed.	Esteban		DE YOGURT - TFM		+ ET2
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN DE YOGURT - TFM			
Modification	Date	Name	Original	Replaced by	Replaced by
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					Page 132

# ESTACION REMOTA

FERMENTOS Y SIEMBRA

## SIEMENS MODULO DE ENTRADAS DIGITALES (B2)

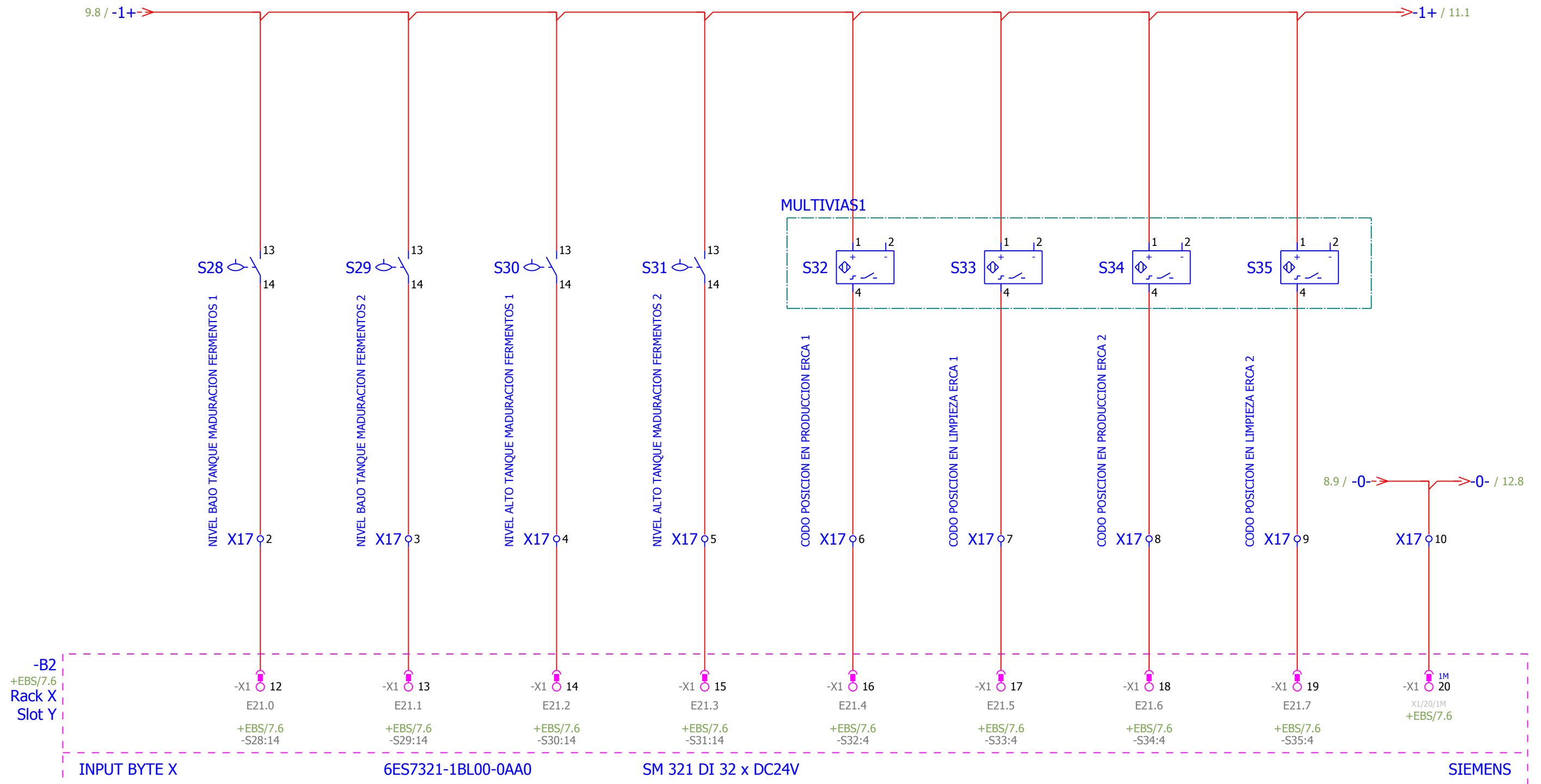


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Ed.	Esteban				
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN DE YOGURT			
Modification	Date	Name	Original	Replaced by	Replaced by
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# ESTACION REMOTA

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## SIEMENS MODULO DE ENTRADAS DIGITALES (B2)



Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA	Entradas Digitales (B2) Modulo ET200M	= EB3
Ed.	Esteban		DE YOGURT - TFM		+ ET2
Appr					
Modification	Date	Name	Original	Replaced by	Replaced by
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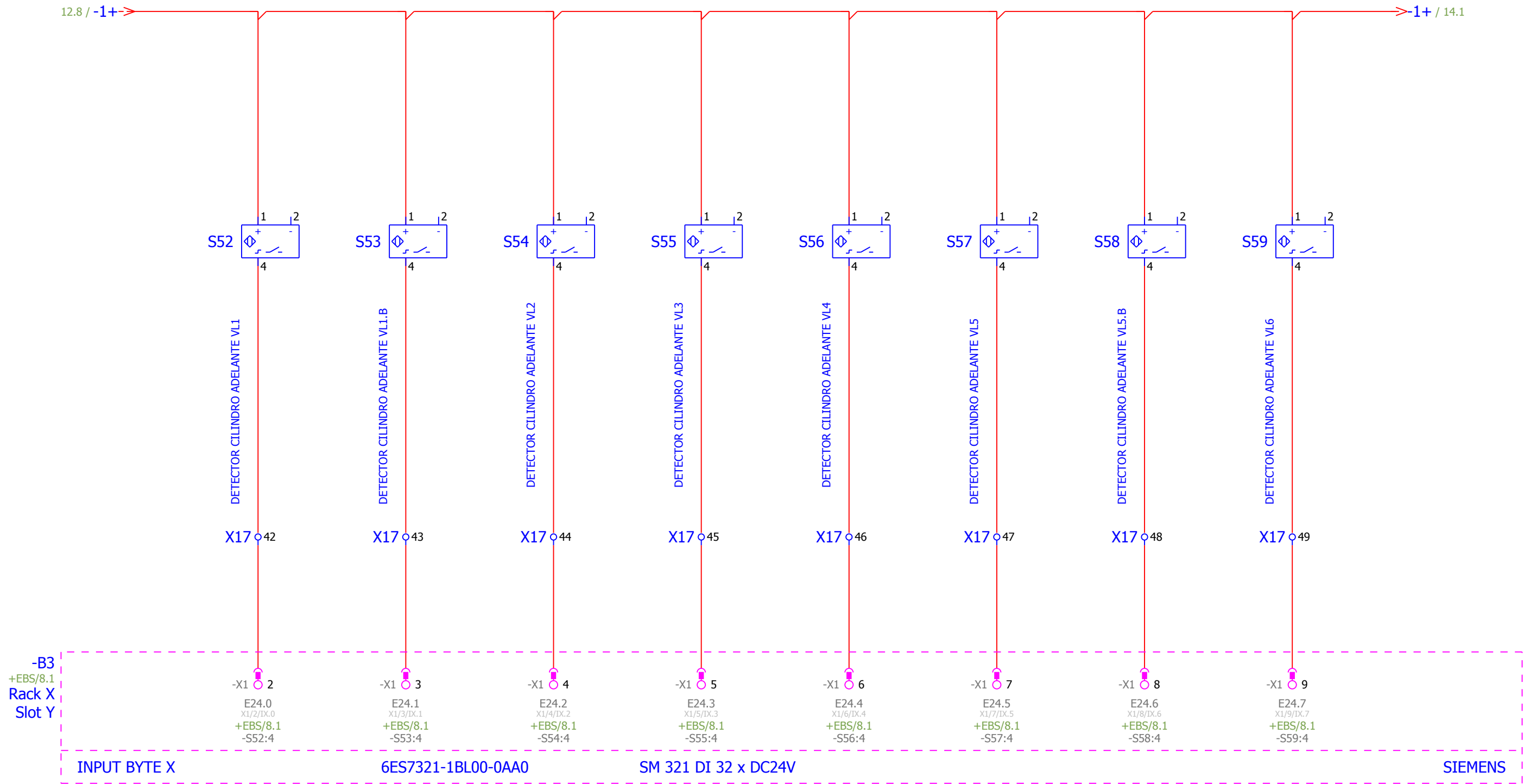




# ESTACION REMOTA

FERMENTOS Y SIEMBRA

## SIEMENS MODULO DE ENTRADAS DIGITALES (B3)



Date	14/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA DE YOGURT - TFM	Entradas Digitales Modulo (B3) ET200M	= EB3 + ET2
Ed.	Esteban				
Appr					
Modification	Date	Name	Original	Replaced by	Replaced by
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					Page 132

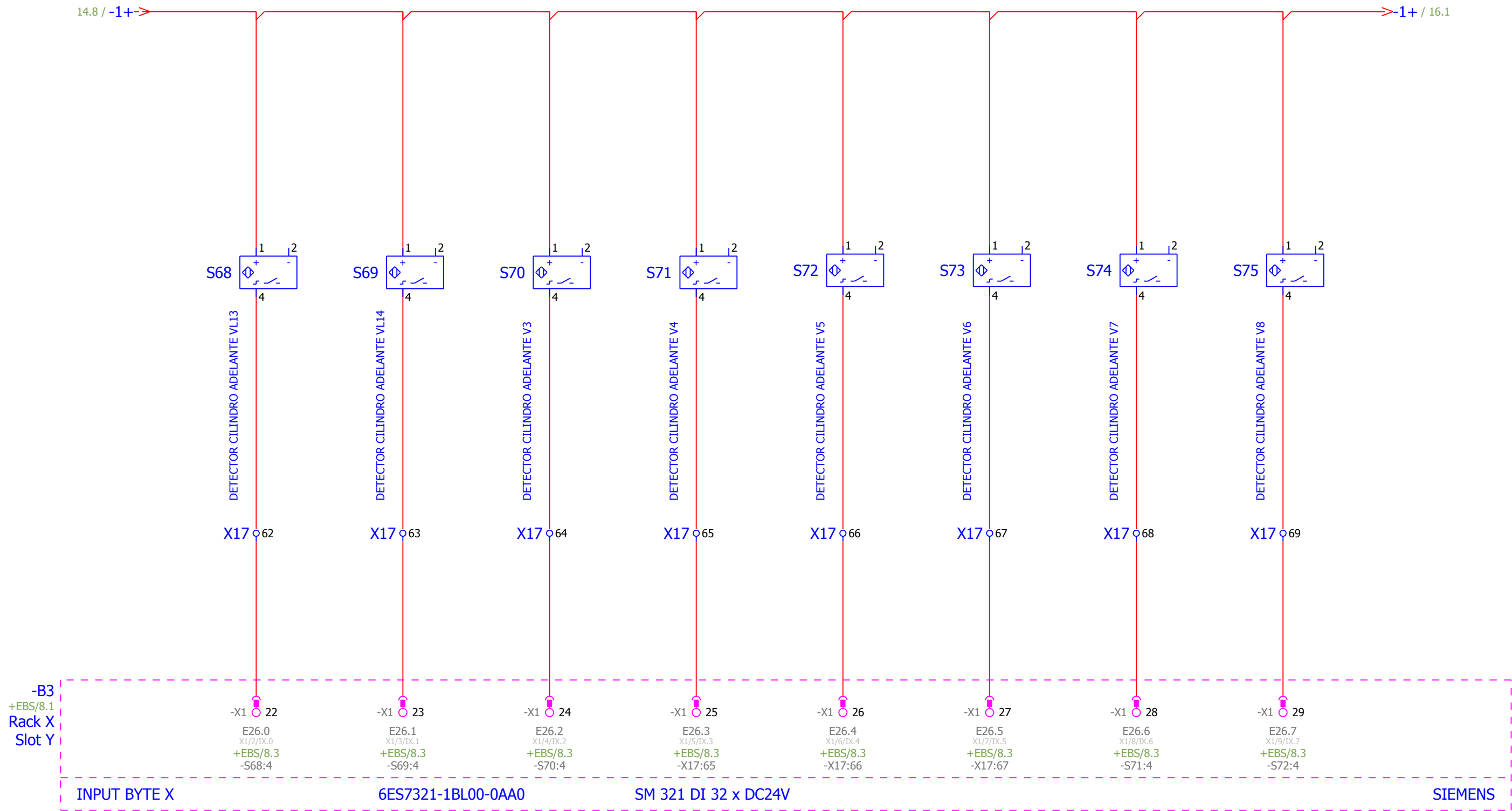




# ESTACION REMOTA

FERMENTOS Y SIEMBRA

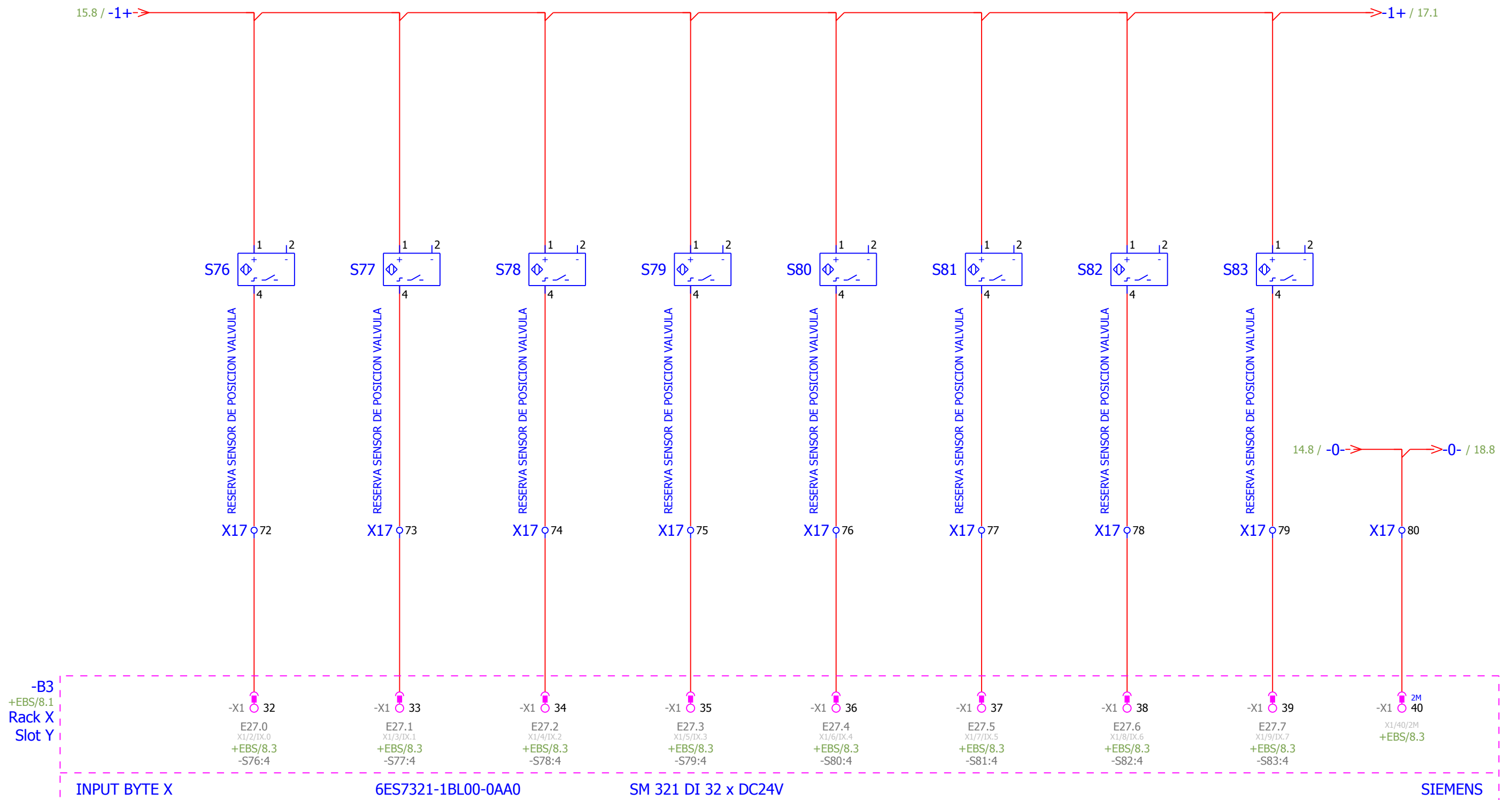
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Ed.	Esteban		DE YOGURT - TFM		+ ET2
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN DE YOGURT - TFM			
Modification	Date	Name	Original	Replaced by	Replaced by
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# ESTACION REMOTA

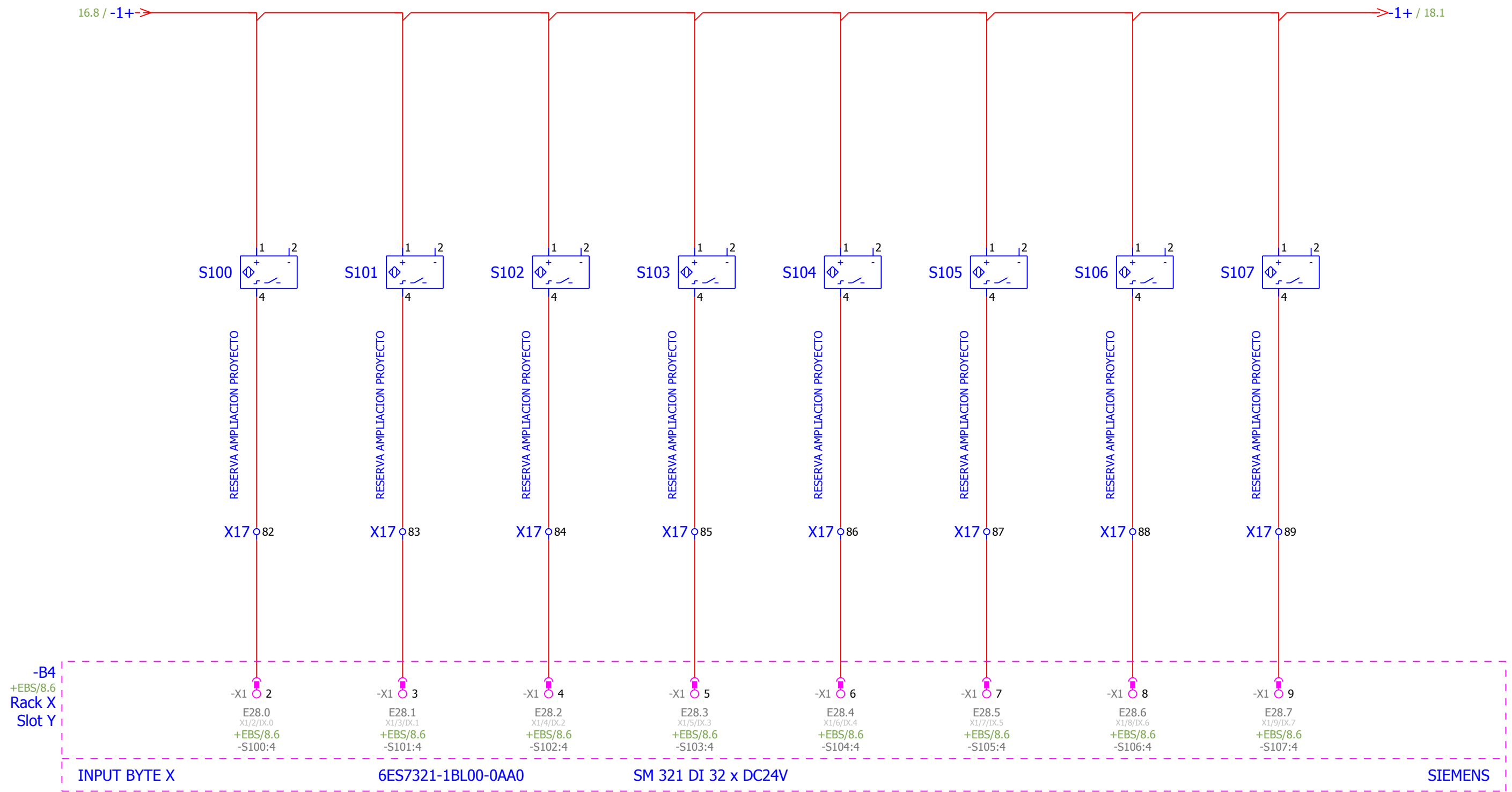
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Ed.	Esteban		DE YOGURT - TFM		+ ET2
Appr					
Modification	Date	Name	Original	Replaced by	Replaced by
					Estandar IEC- 61346
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# ESTACION REMOTA

## SIEMENS MODULO DE ENTRADAS DIGITALES (B4)

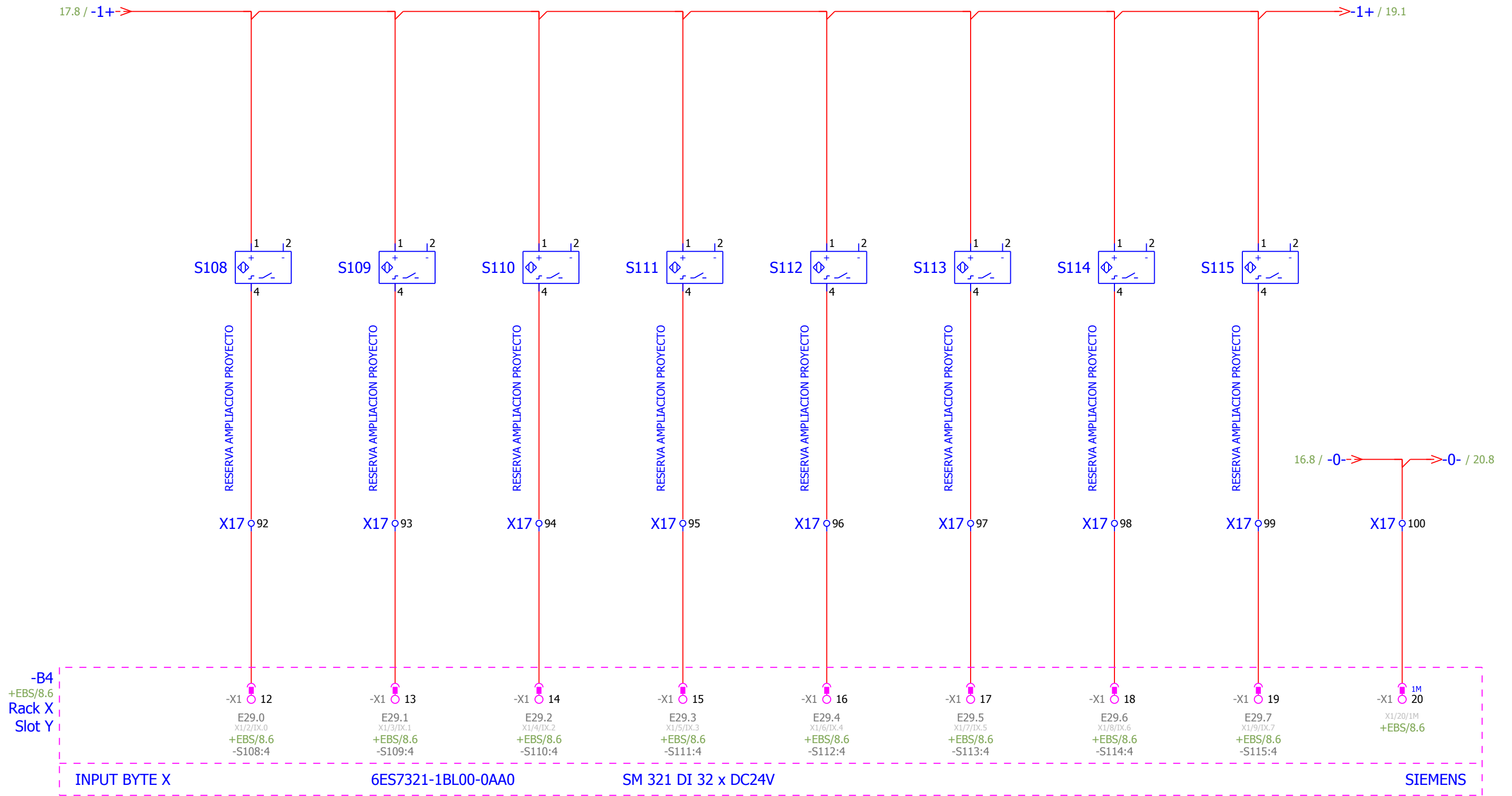


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Ed.	Esteban		DE YOGURT - TFM		+ ET2
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN			
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# ESTACION REMOTA

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## SIEMENS MODULO DE ENTRADAS DIGITALES (B4)



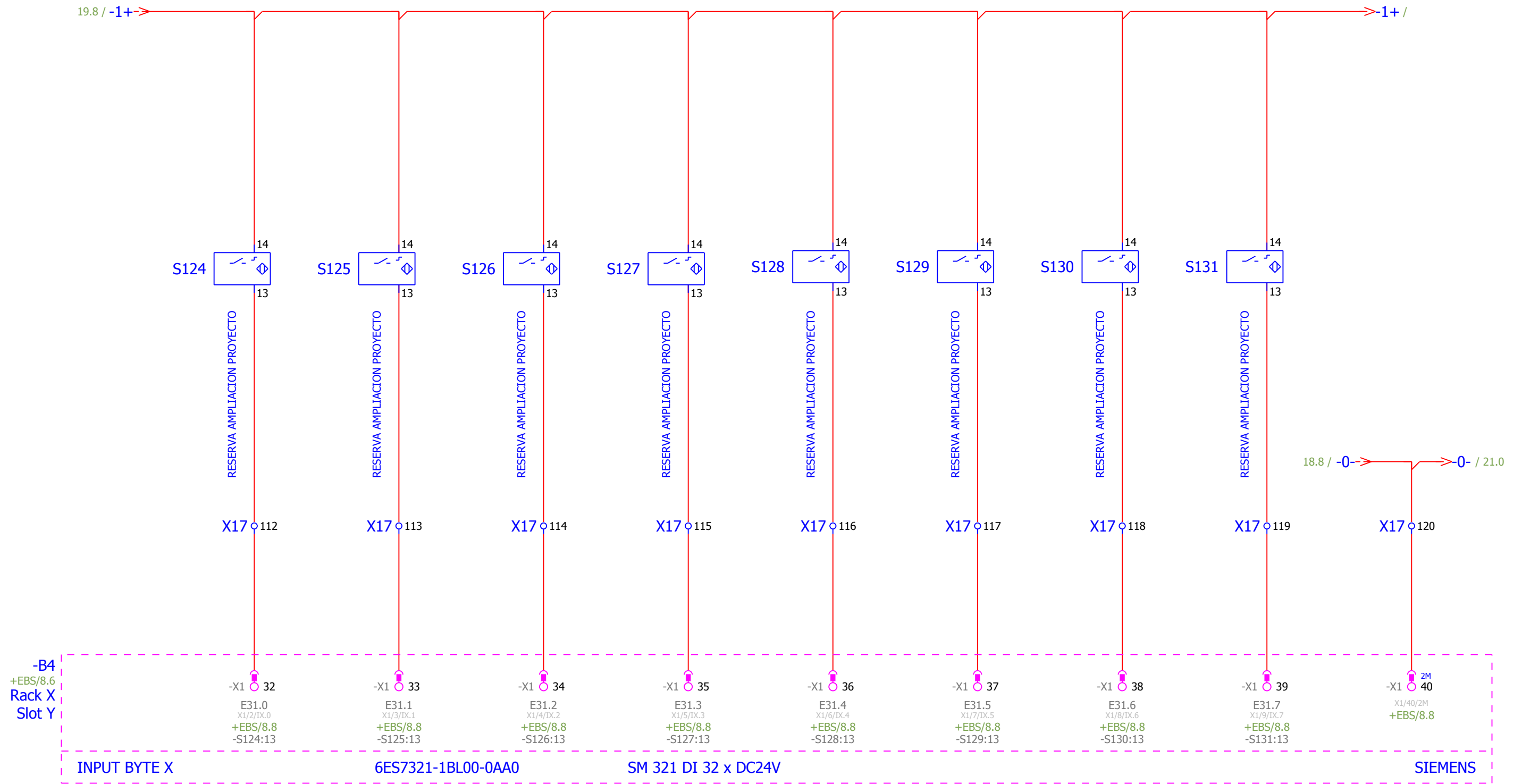
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Ed.	Esteban		DE YOGURT - TFM		+ ET2
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN			
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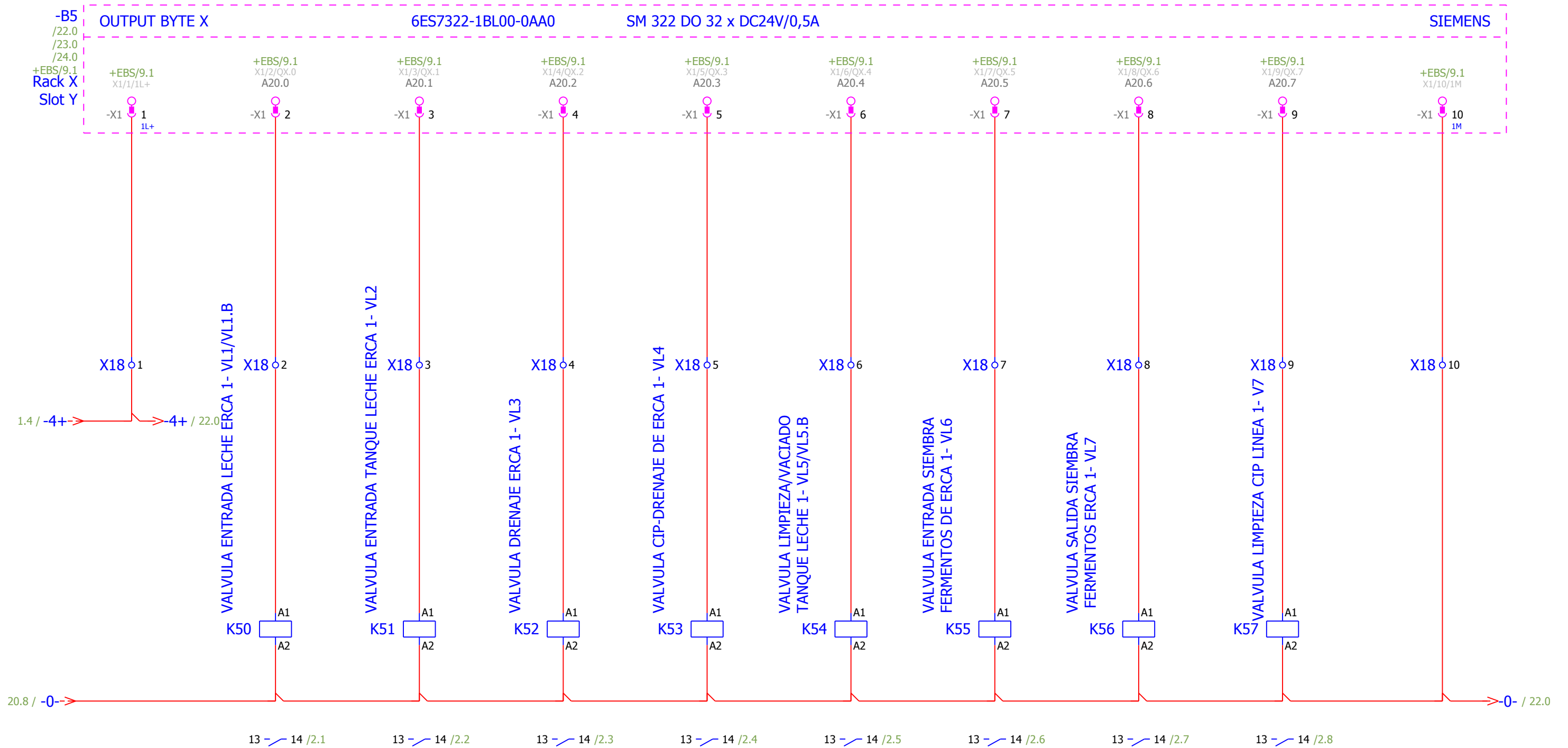
## SIEMENS MODULO DE ENTRADAS DIGITALES (B4)



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Ed.	Esteban		DE YOGURT - TFM		+ ET2
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN DE YOGURT - TFM			
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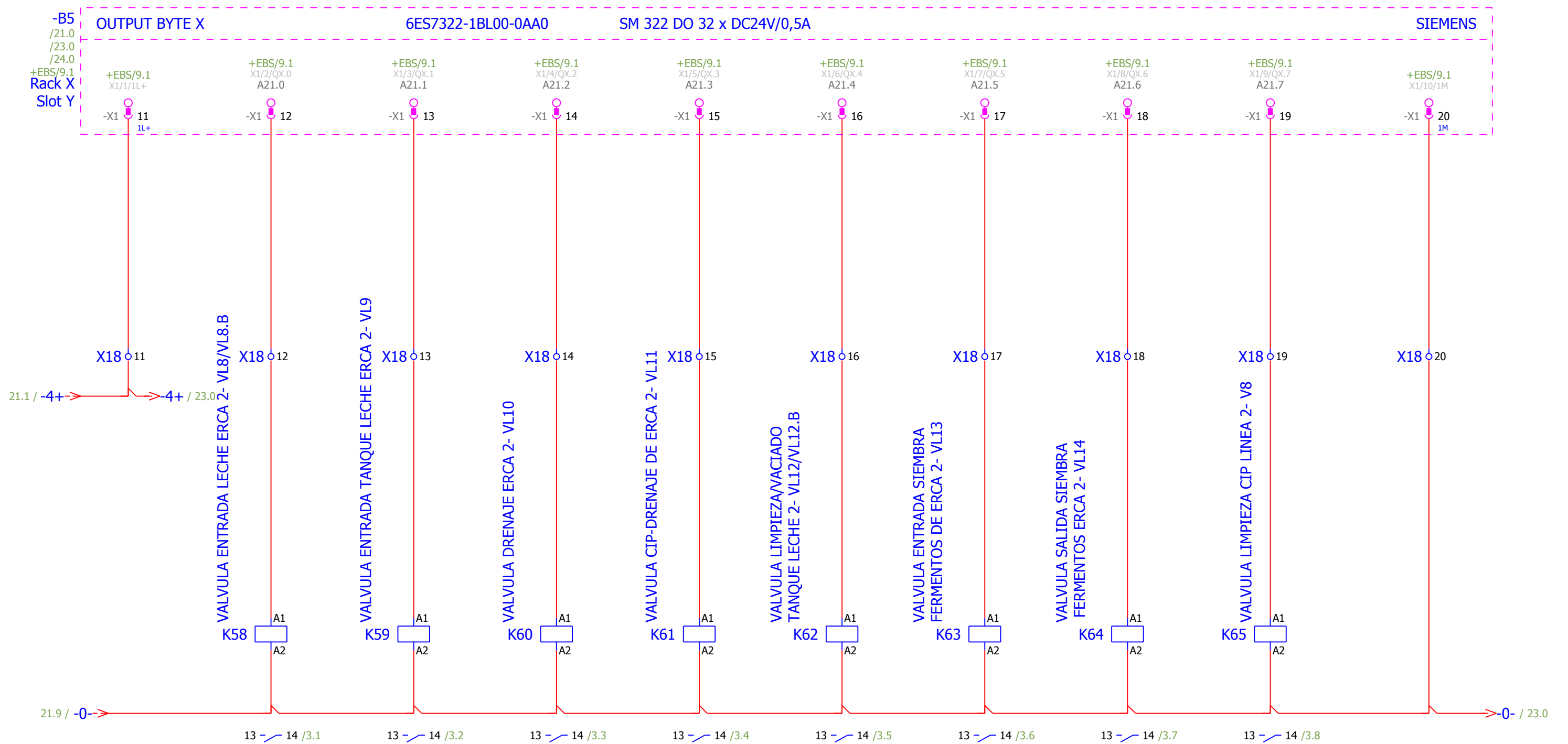
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Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA DE YOGURT - TFM	Salidas Digitales Modulo (B5) ET200M	= EB3
Ed.	Esteban				+ ET2
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN DE YOGURT			
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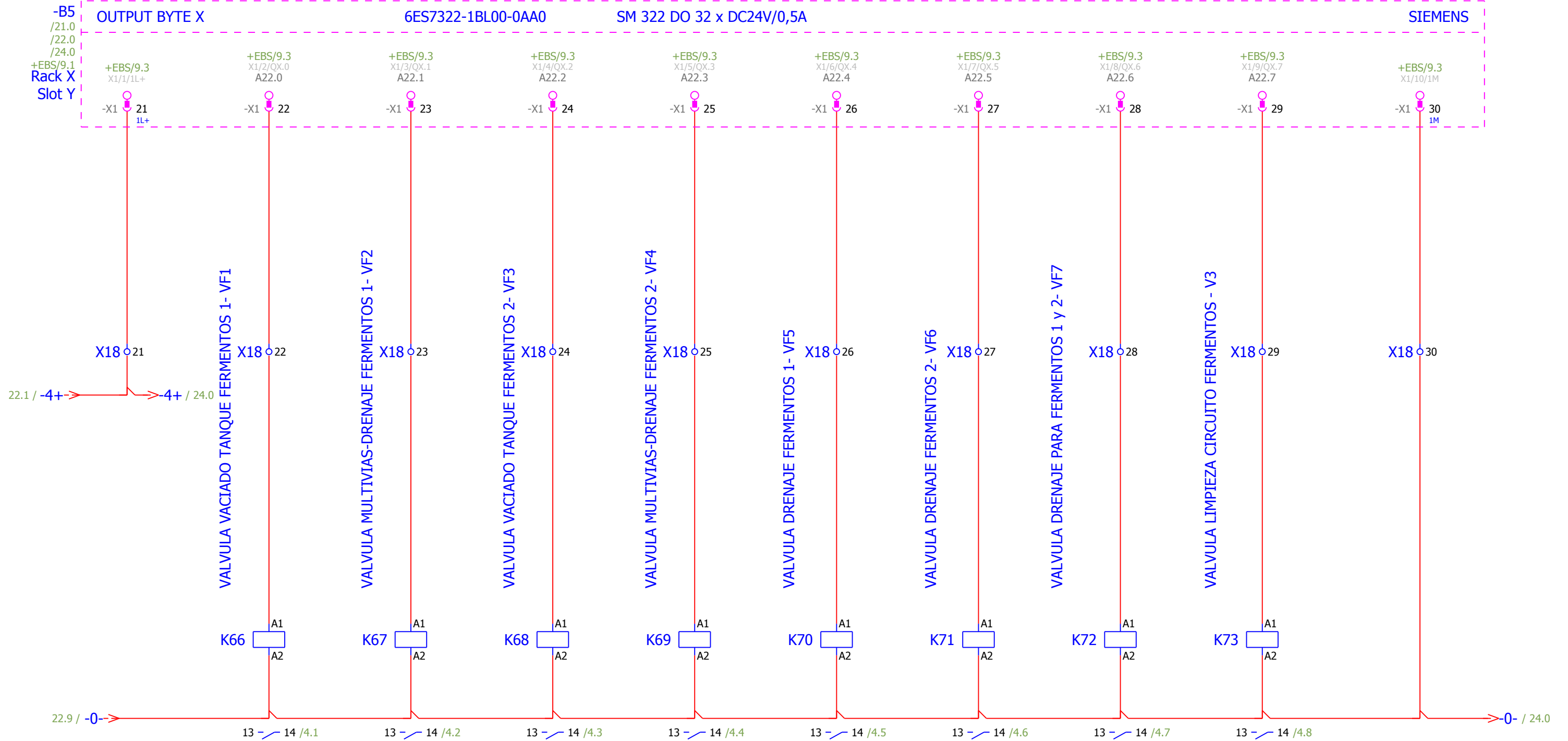


## SIEMENS MODULO DE SALIDAS DIGITALES (B5)

Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA DE YOGURT - TFM	Salidas Digitales Modulo (B5) ET200M	= EB3 + ET2
Ed.	Esteban				
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN DE YOGURT			
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# ESTACION REMOTA

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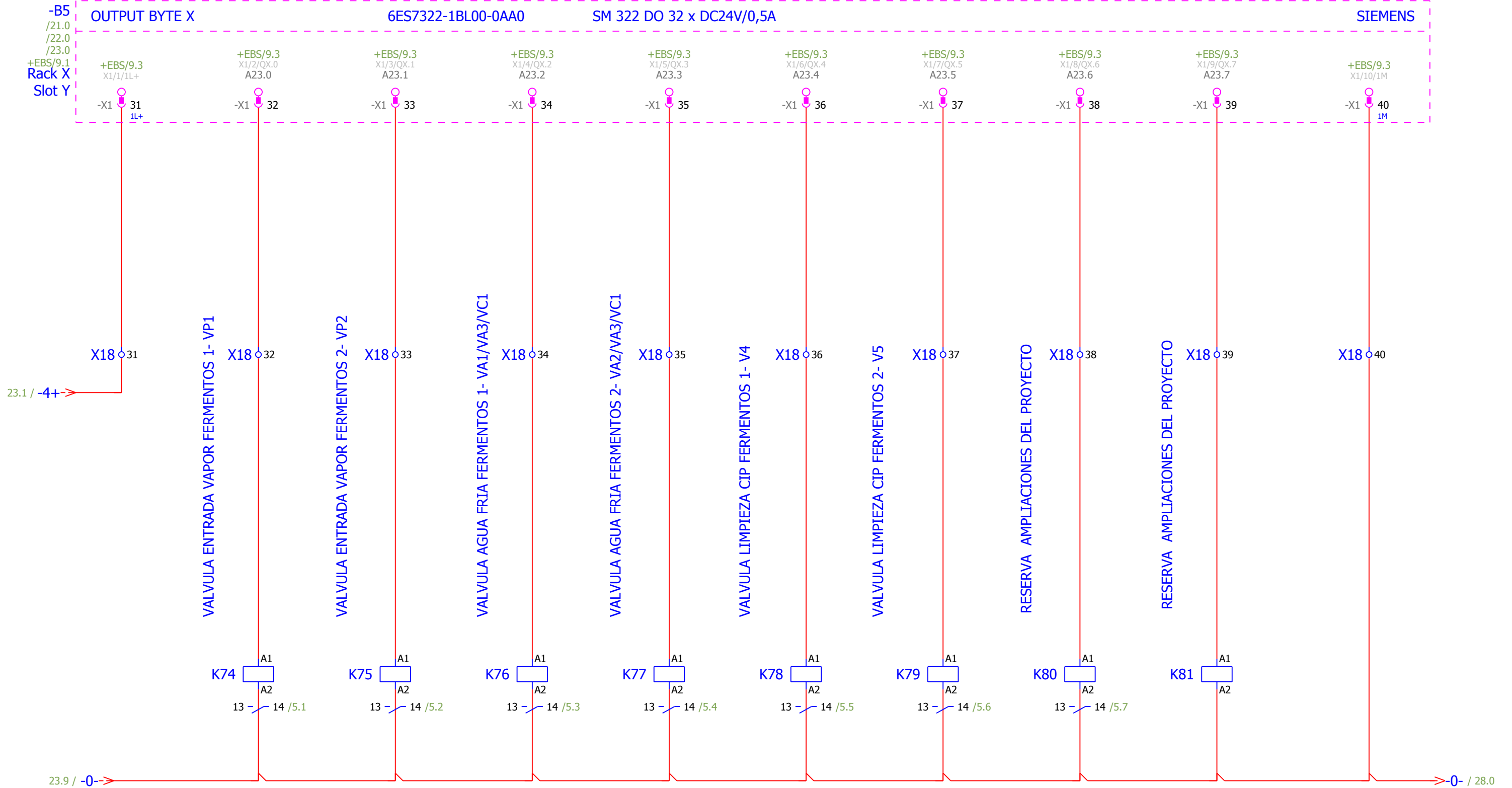


## SIEMENS MODULO DE SALIDAS DIGITALES (B5)

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Ed.	Esteban		DE YOGURT - TFM		+ ET2
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN			
Modification	Date	Name	Original	Replaced by	Replaced by
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# ESTACION REMOTA

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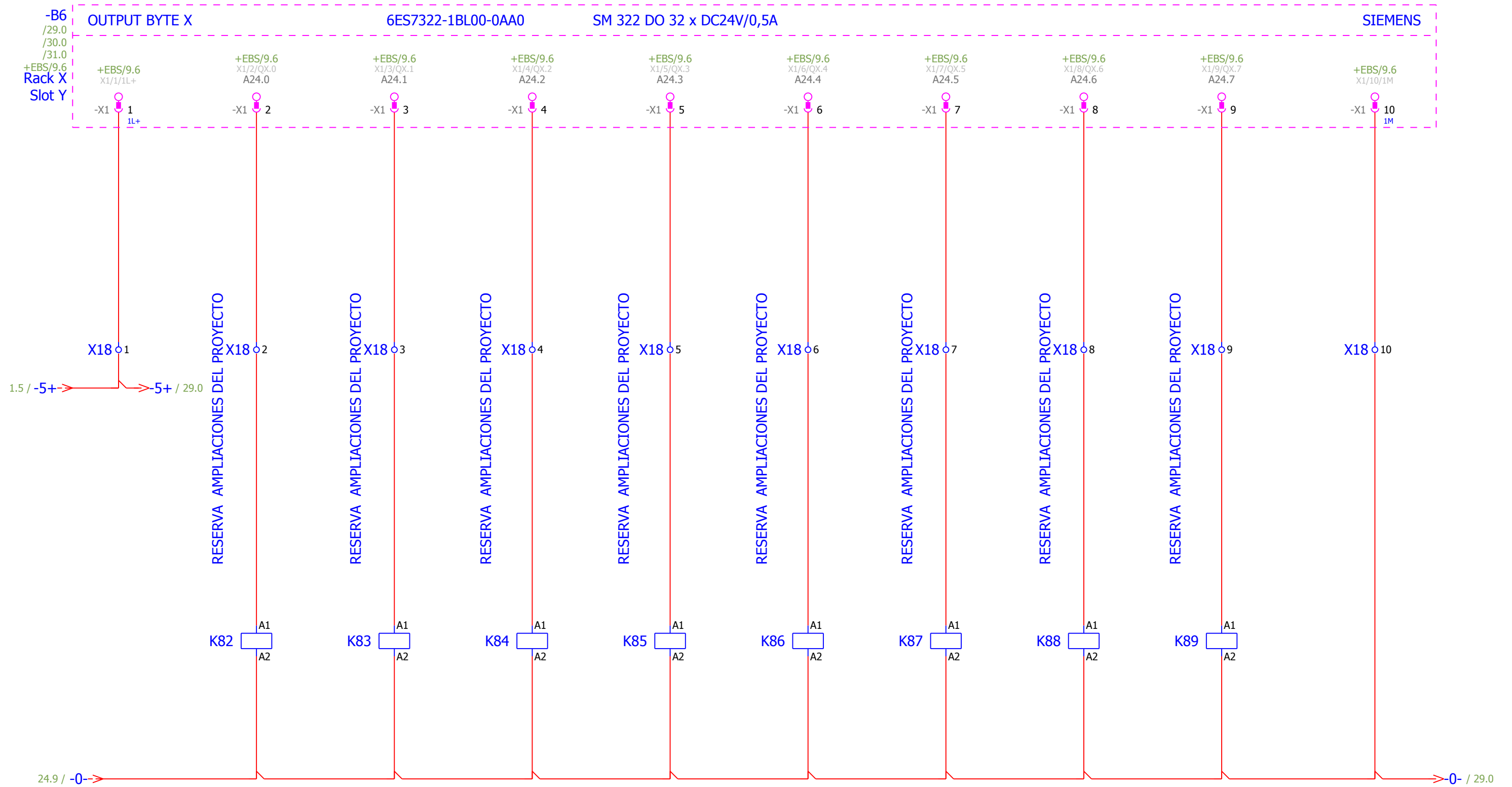


## SIEMENS MODULO DE SALIDAS DIGITALES (B5)

Date	07/06/2015	Esteban Bacilio	CAPSA FOOD- CENTRAL LECHERA ASTURIANA	Salidas Digitales Modulo (B5) ET200M	= EB3
Ed.	Esteban		DE YOGURT - TFM		+ ET2
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN			
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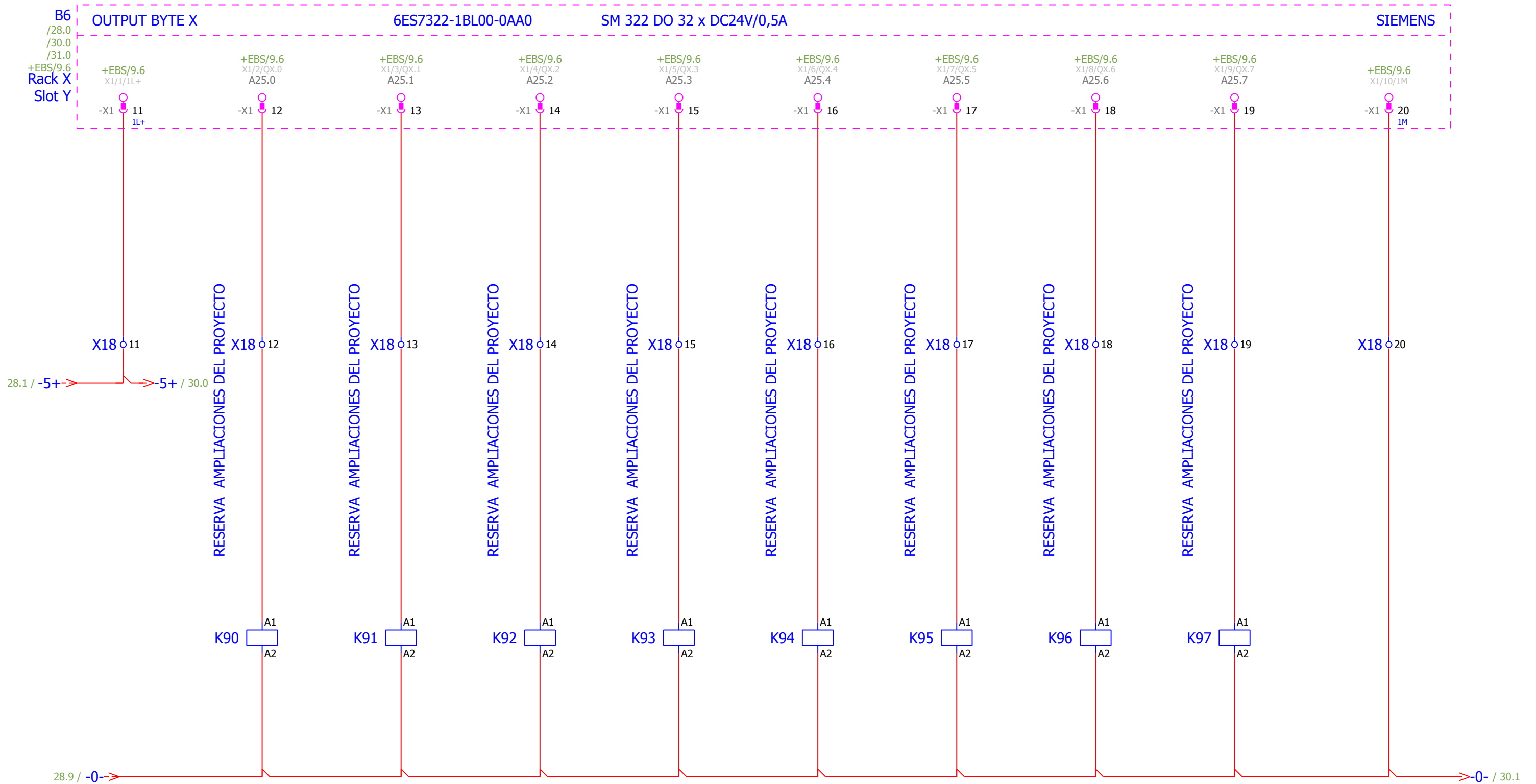


## SIEMENS MODULO DE SALIDAS DIGITALES (B6)

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Ed.	Esteban		DE YOGURT - TFM		+ ET2
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN			
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# ESTACION REMOTA

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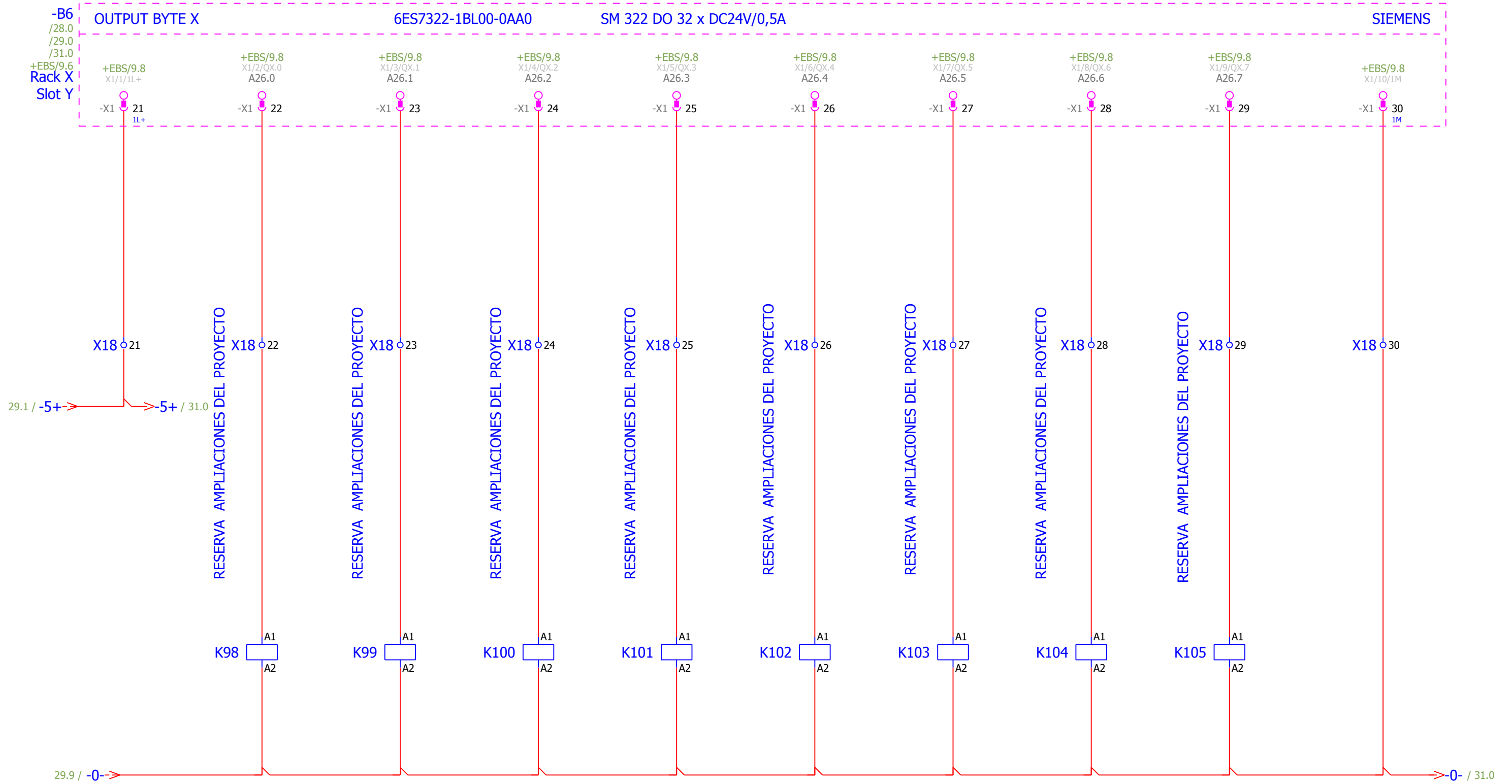


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Ed.	Esteban		DE YOGURT - TFM		+ ET2
Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN			
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# ESTACION REMOTA

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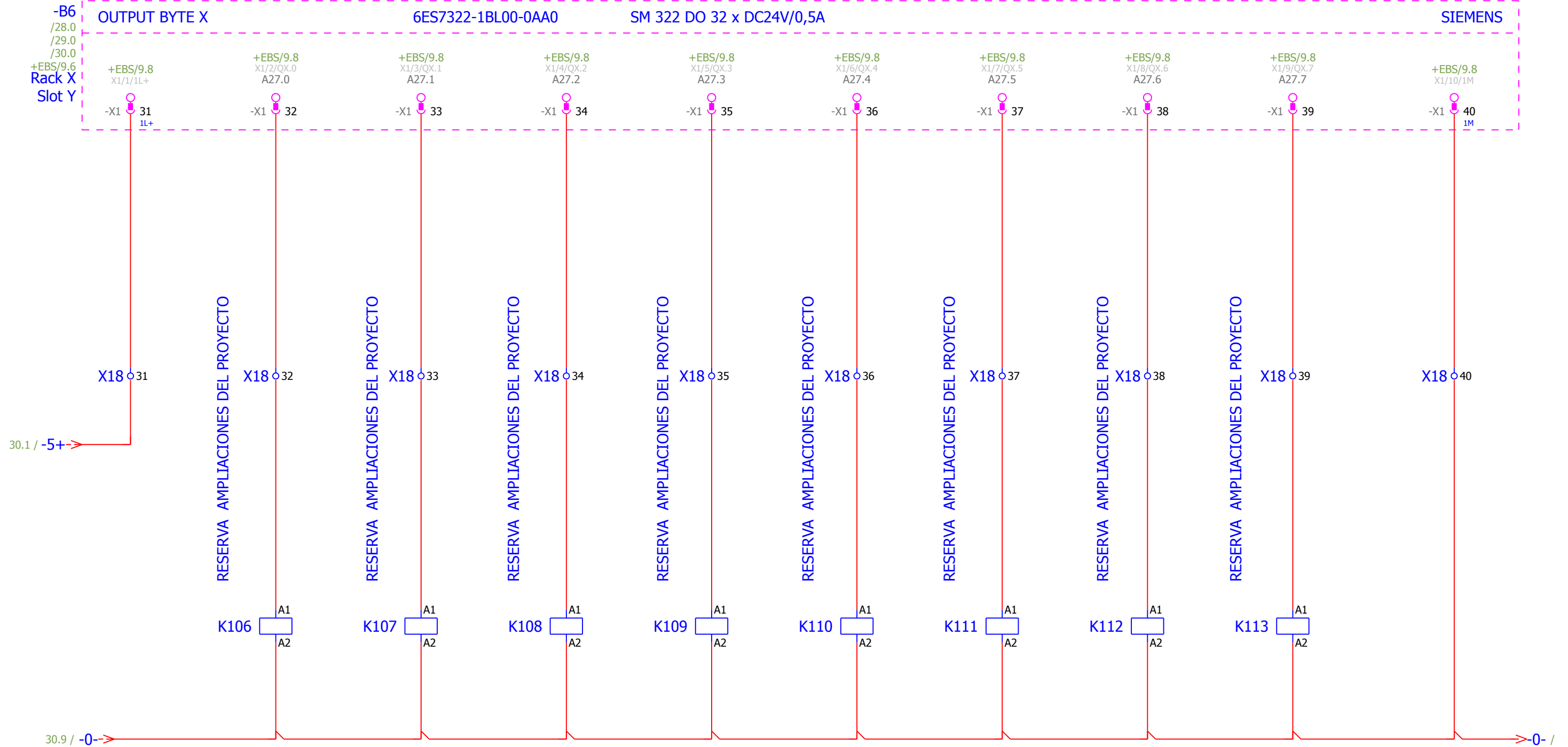


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Ed.	Esteban		DE YOGURT - TFM		+ ET2
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Original		Replaced by	Replaced by		Estandar IEC- 61346
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# ESTACION REMOTA

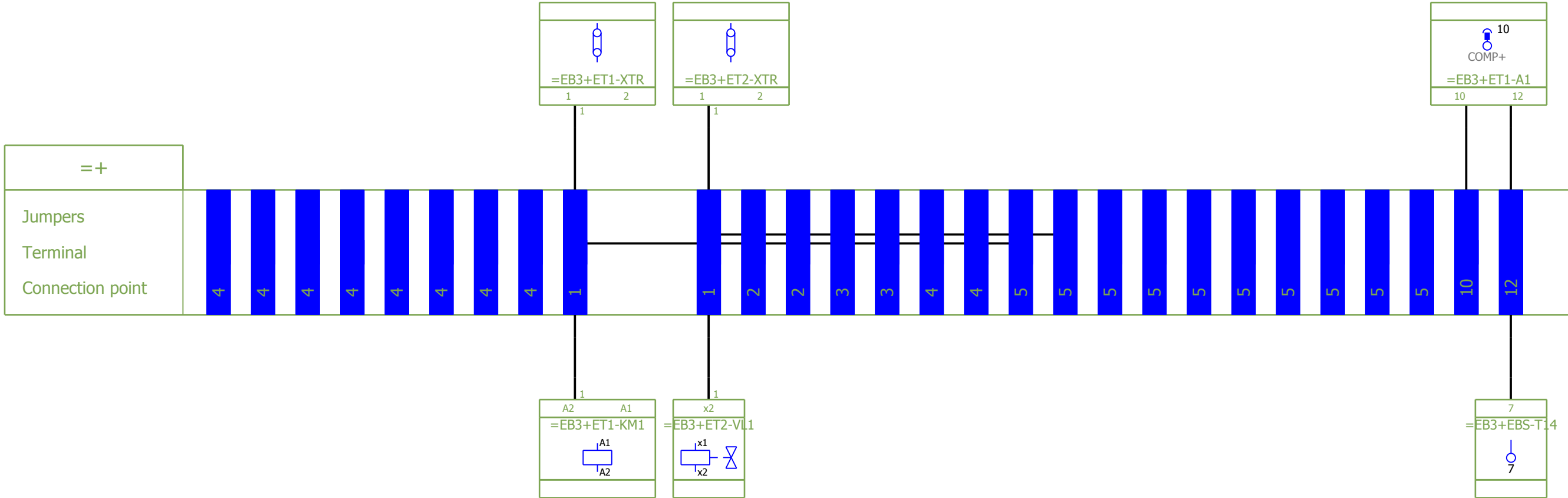
FERMENTOS Y SIEMBRA



## SIEMENS MODULO DE SALIDAS DIGITALES (B6)

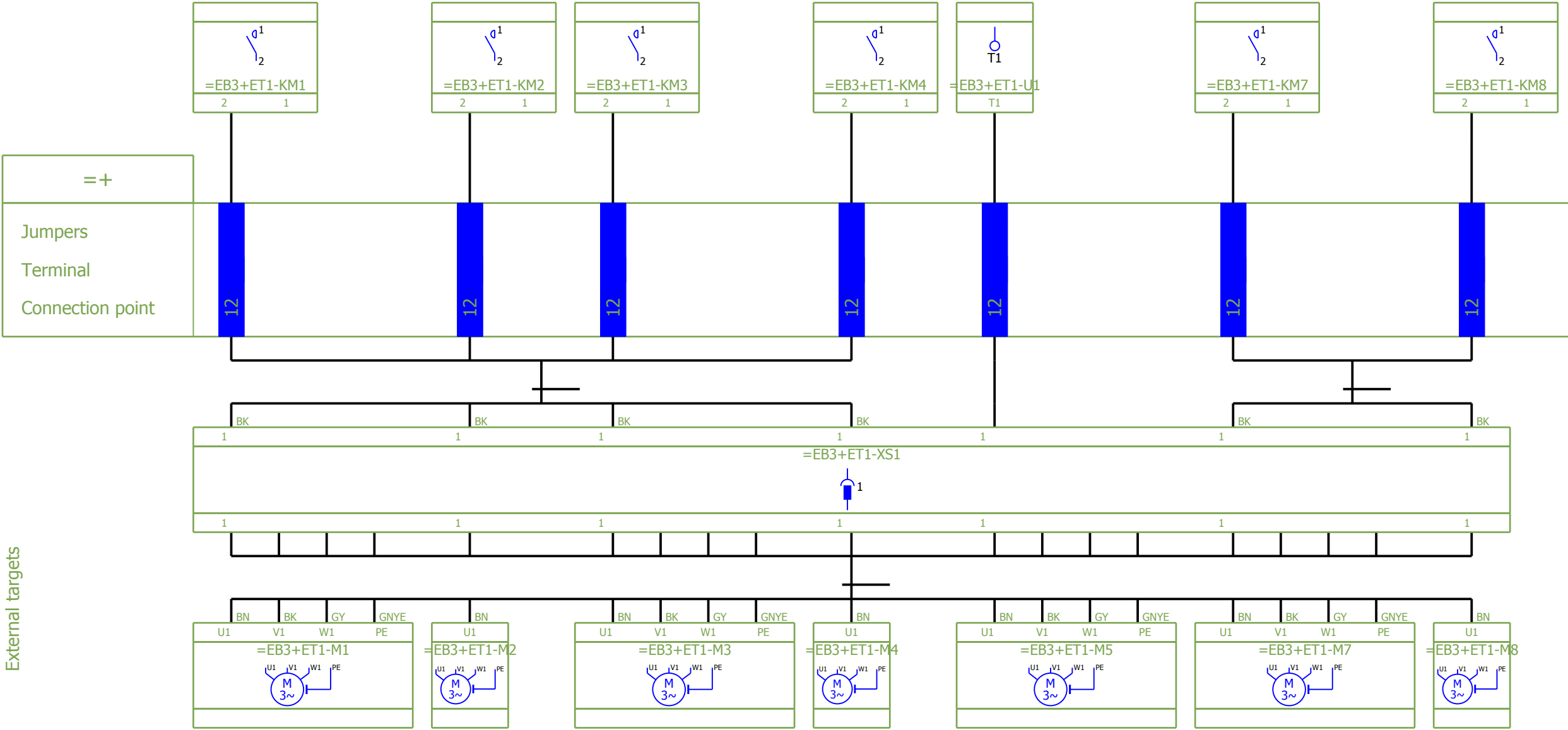
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Appr		AUTOMATIZACIÓN DE LINEAS DE PRODUCCIÓN			
Modification	Date	Name	Original	Replaced by	Replaced by
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IT

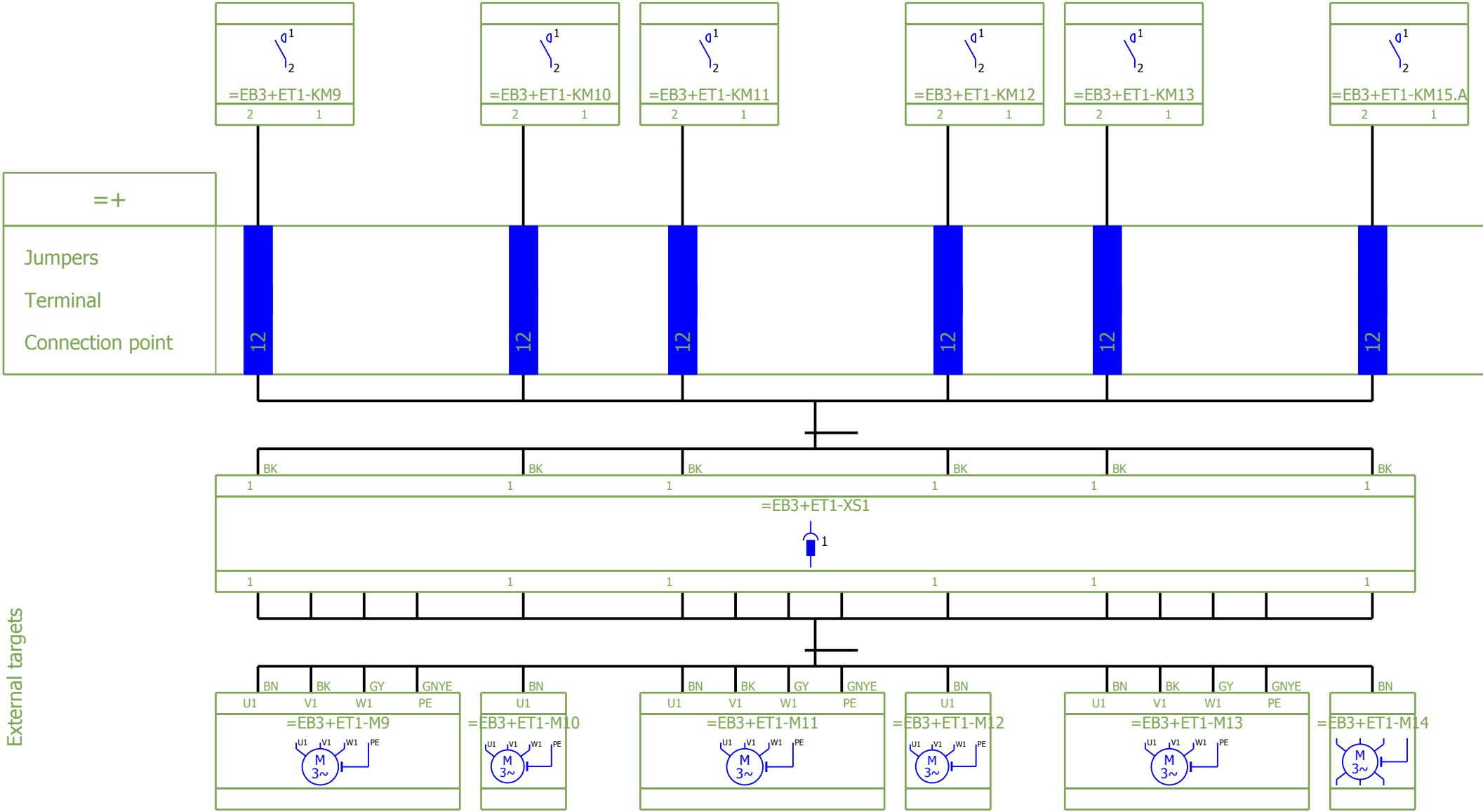


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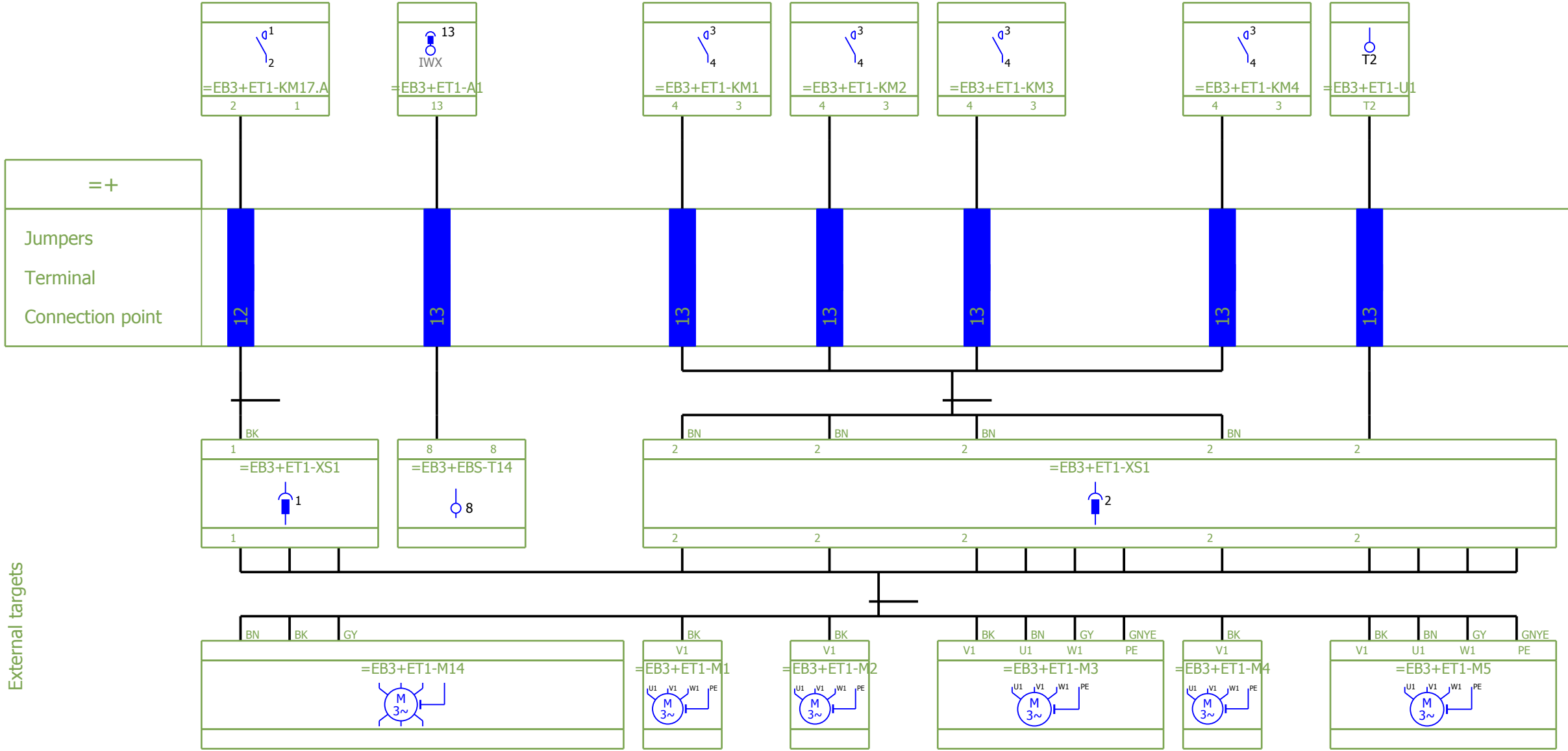




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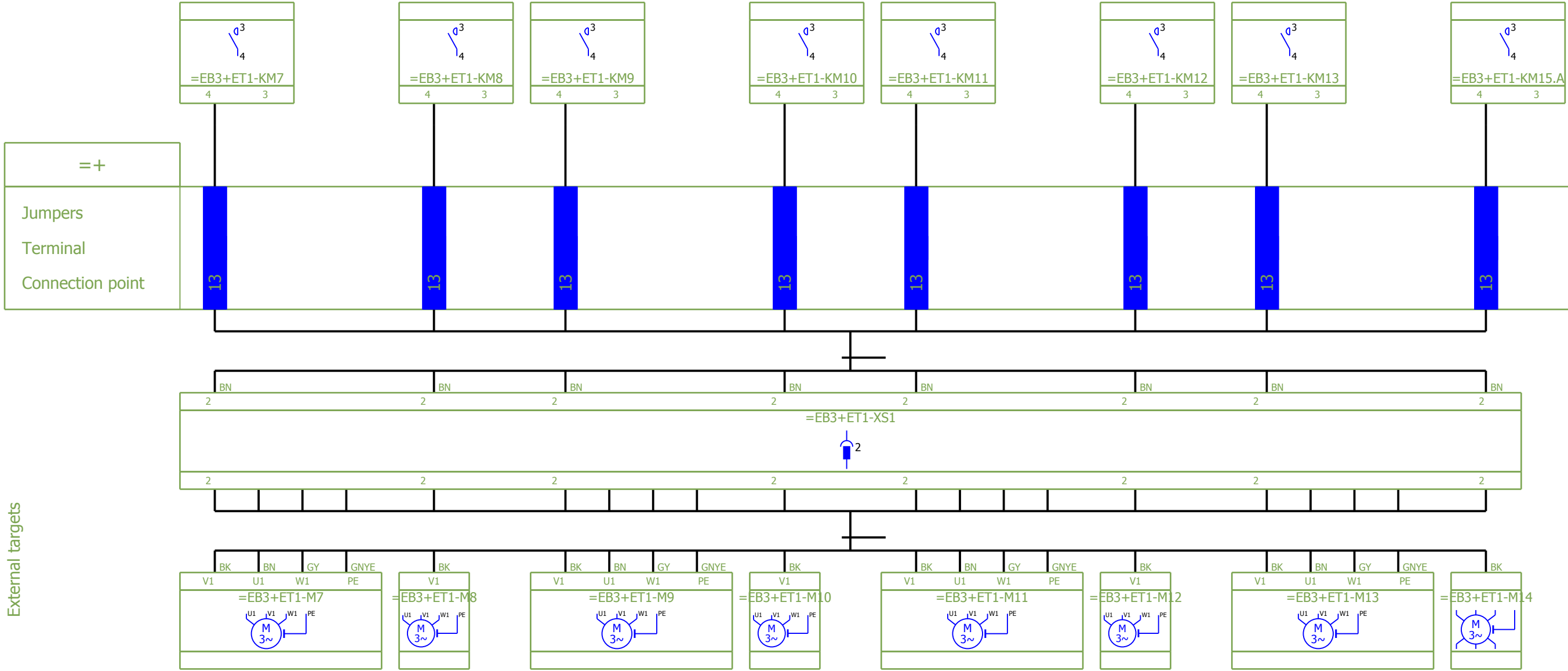


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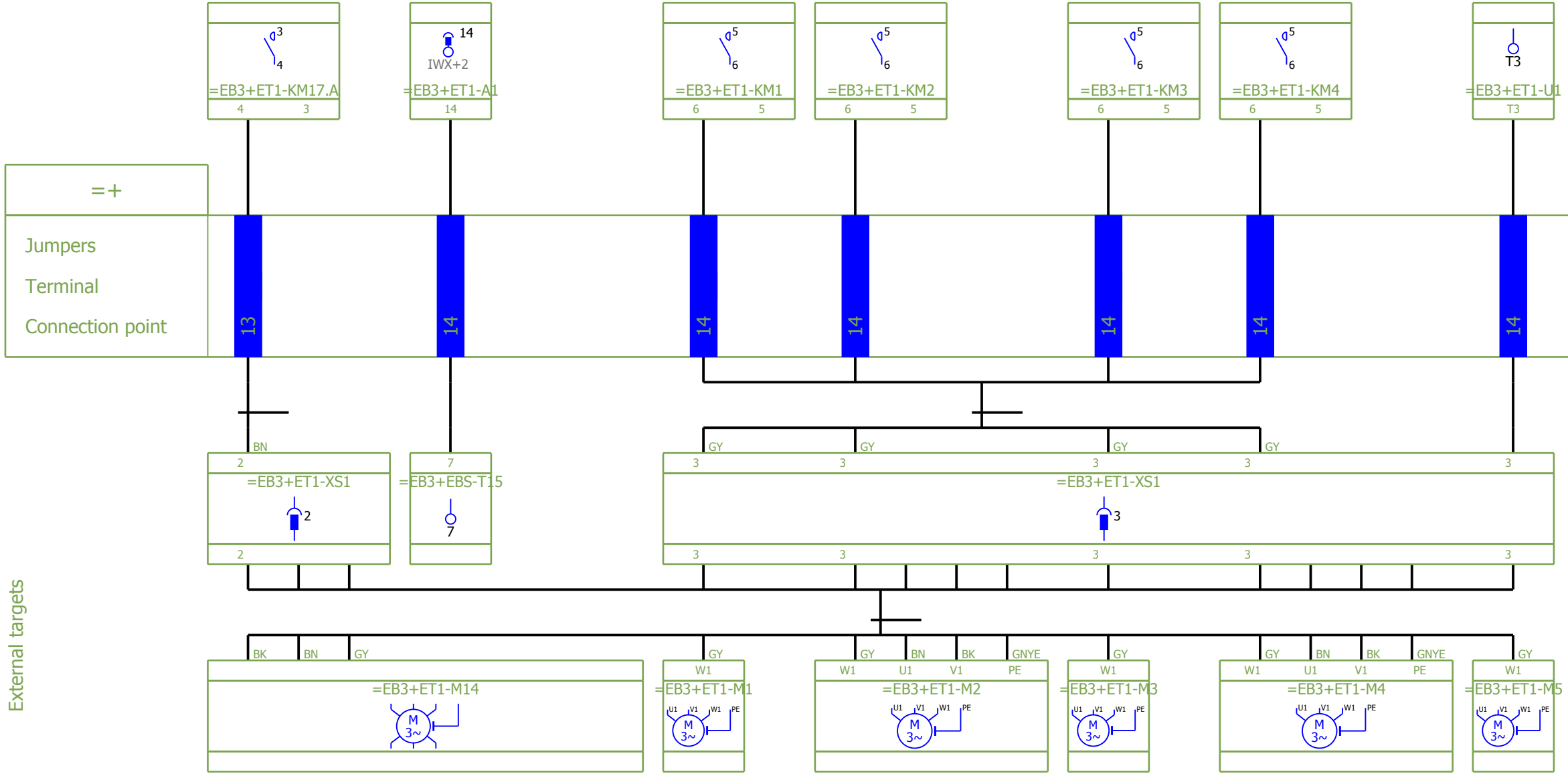


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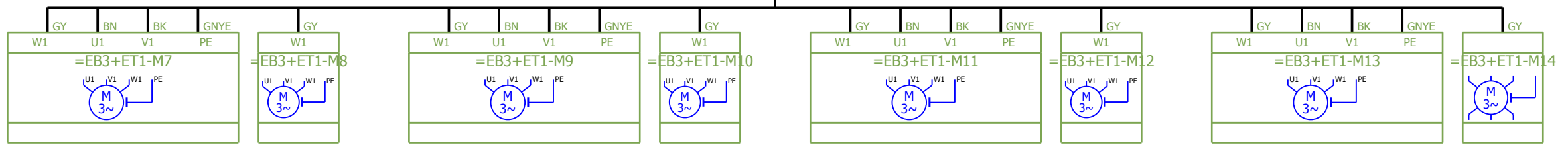
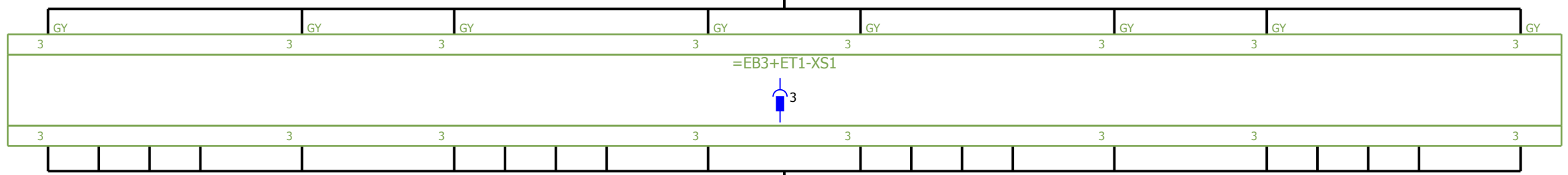
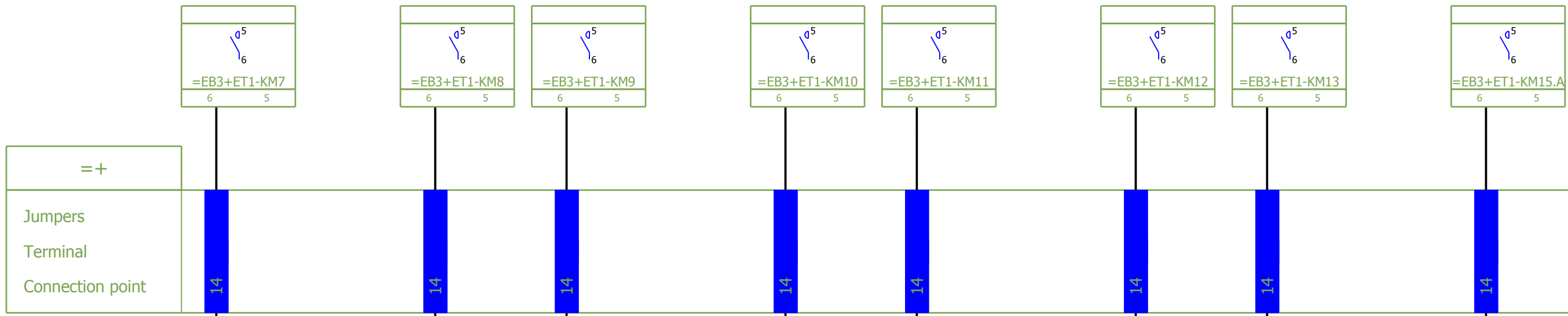
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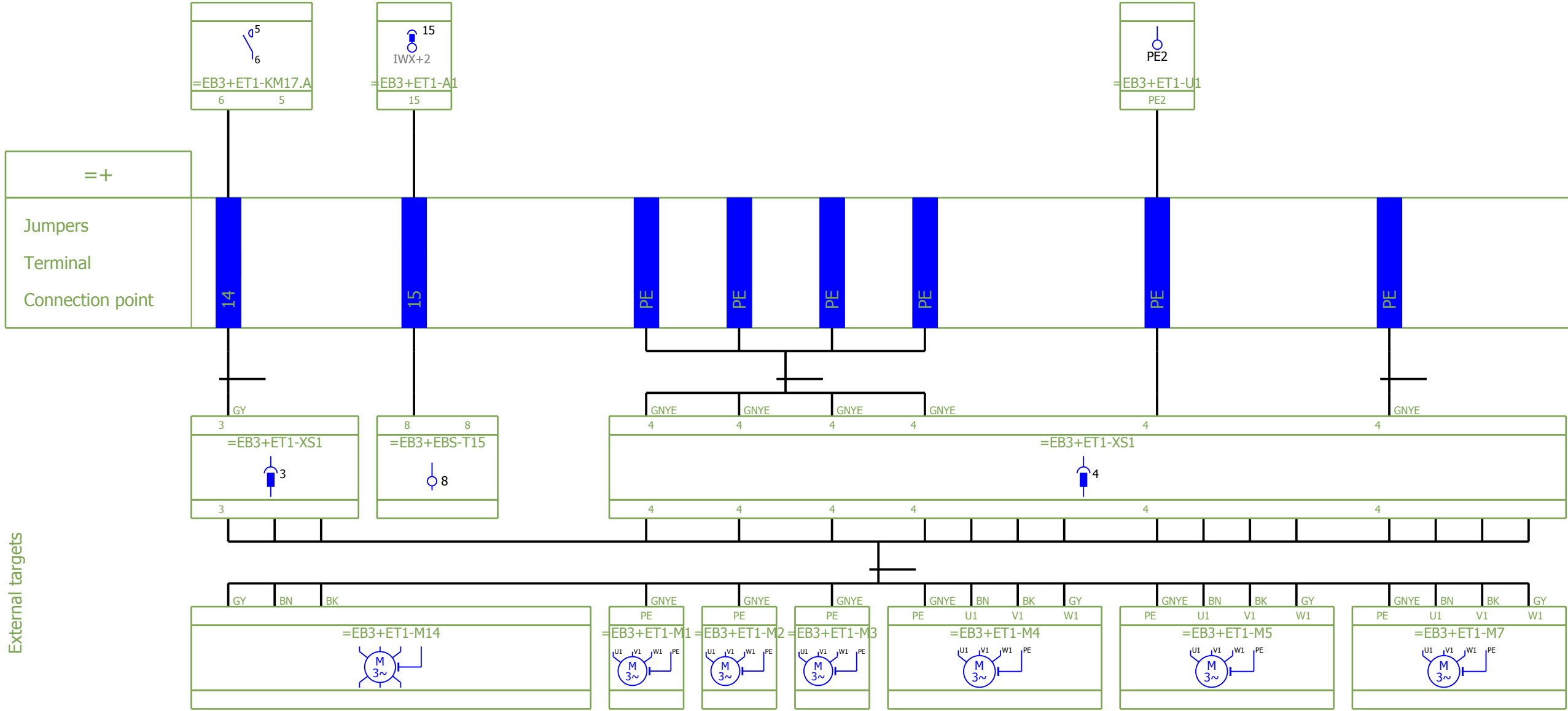


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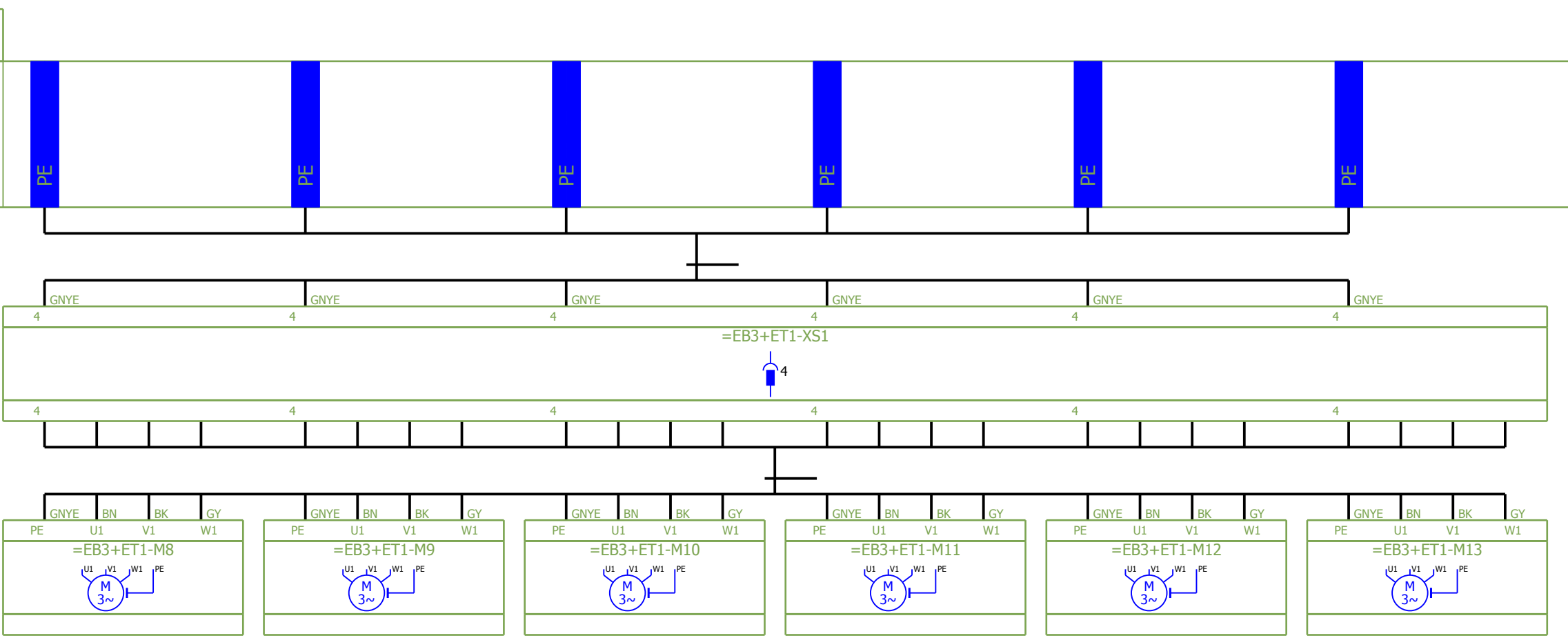
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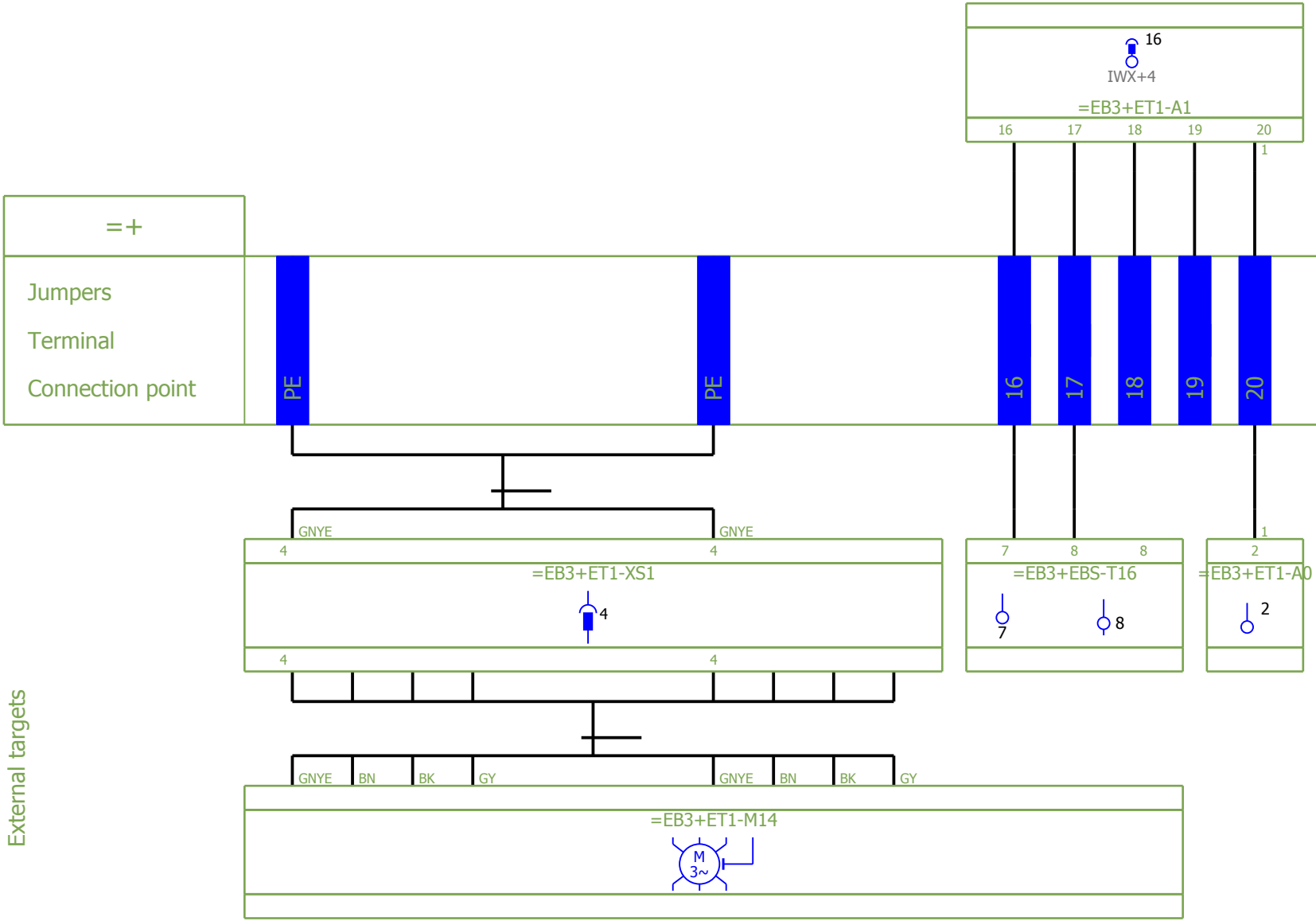
External targets

=+
Jumpers
Terminal
Connection point



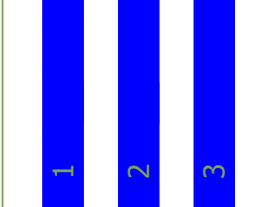
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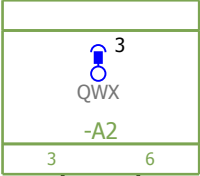
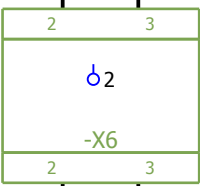


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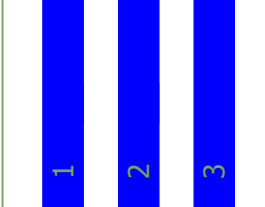
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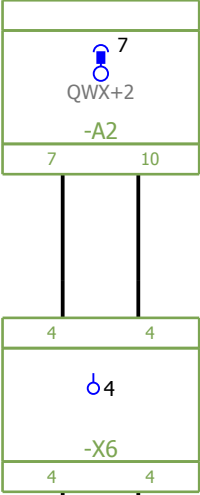
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External targets



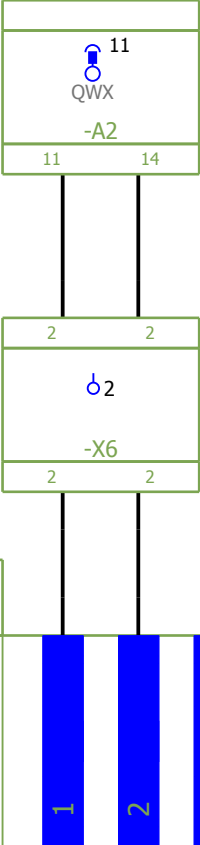
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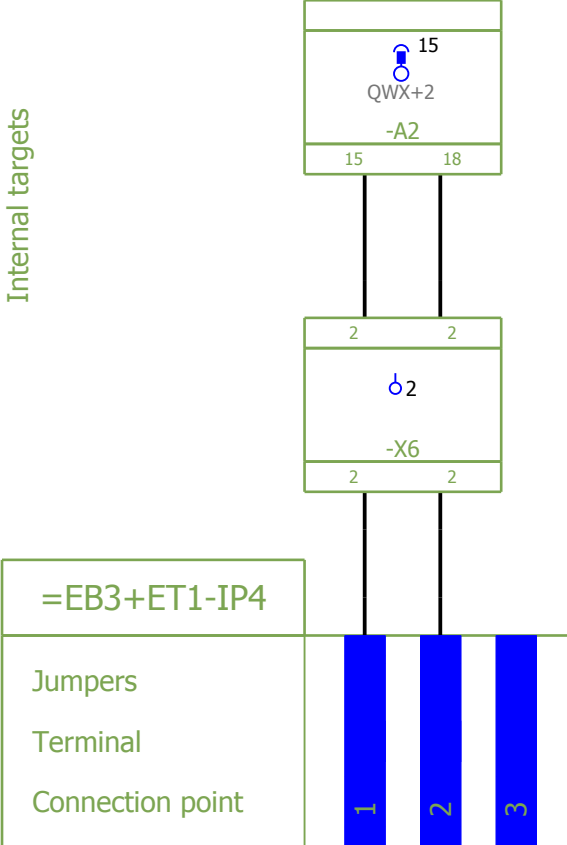
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Internal targets



Internal targets

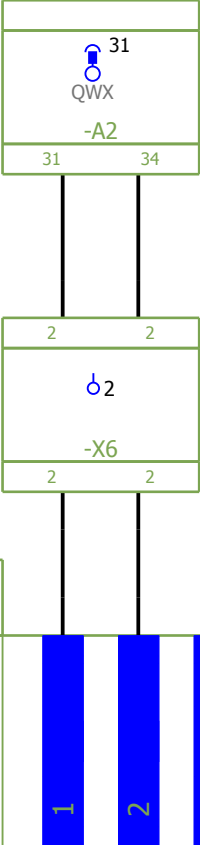


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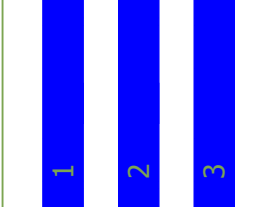
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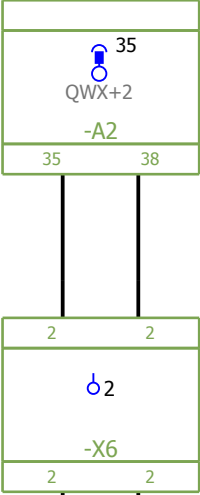
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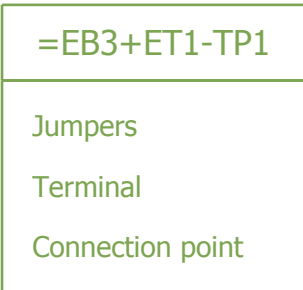
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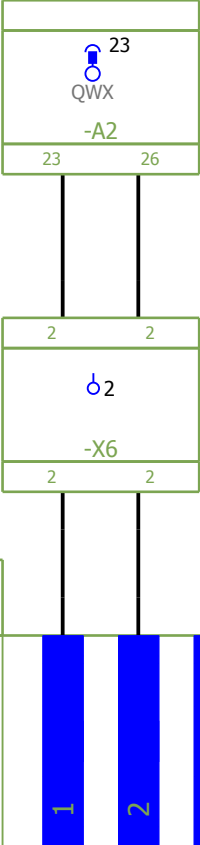
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External targets

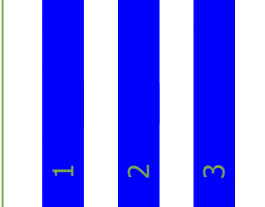
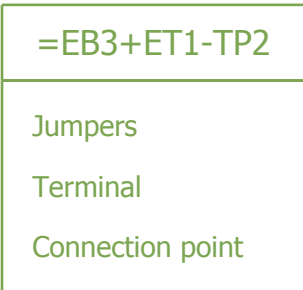


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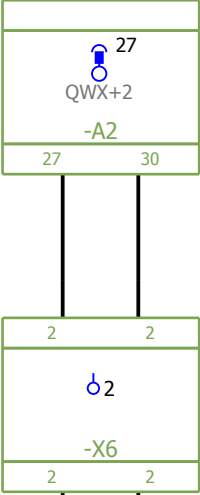




External targets



Internal targets

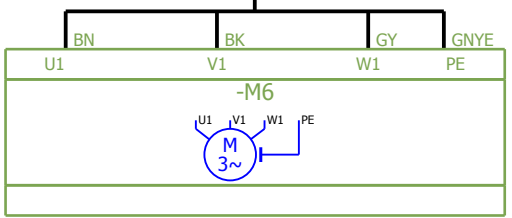
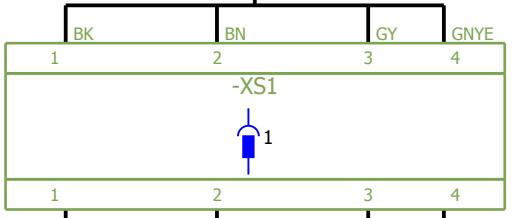
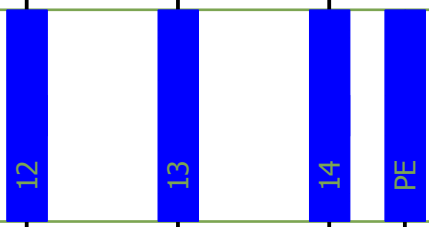
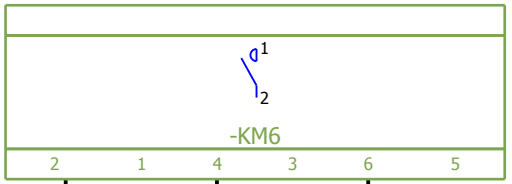


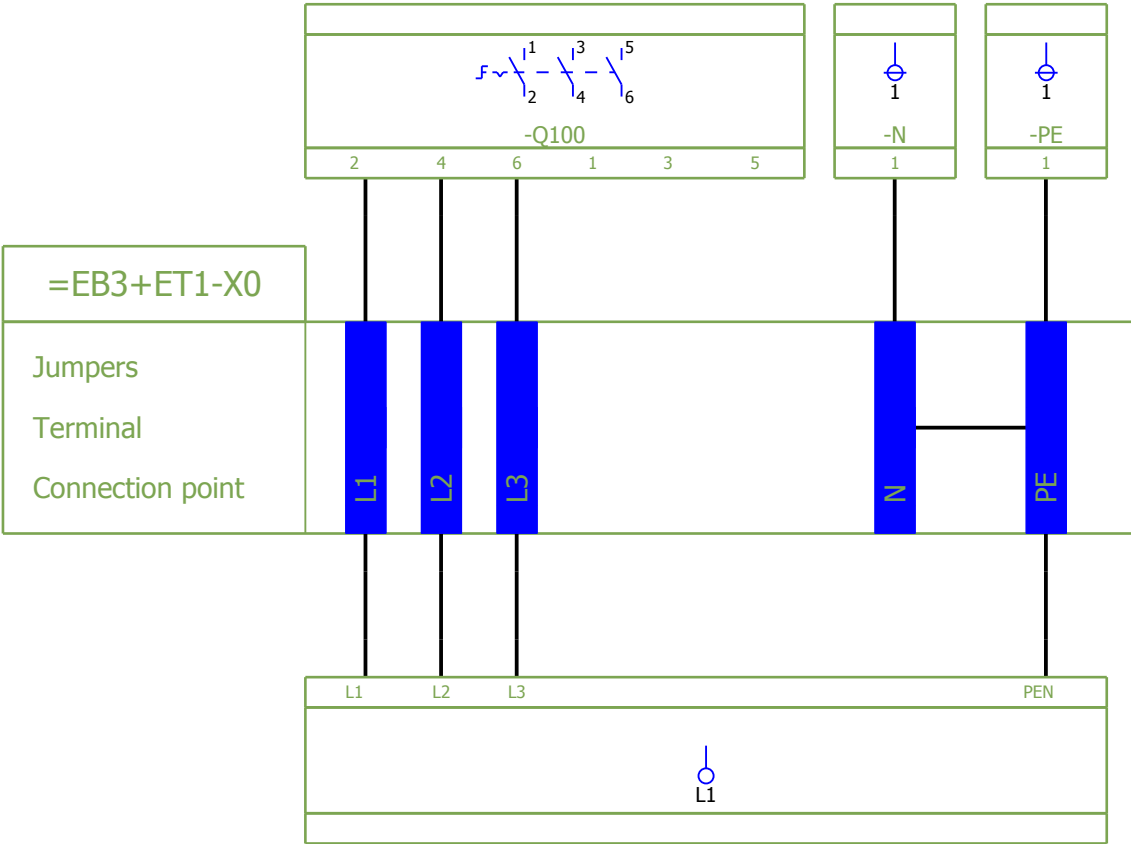
=EB3+ET1-W2

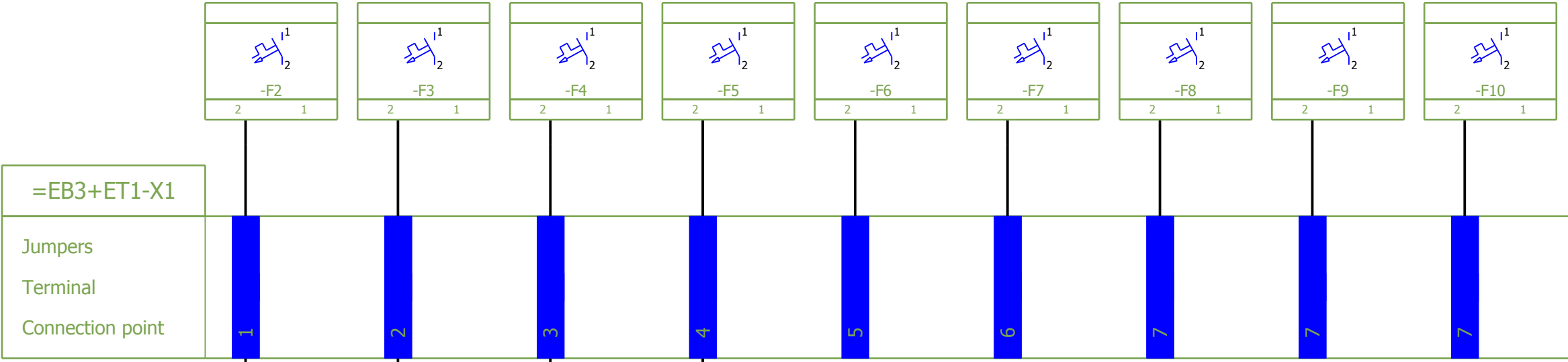
Jumpers

Terminal

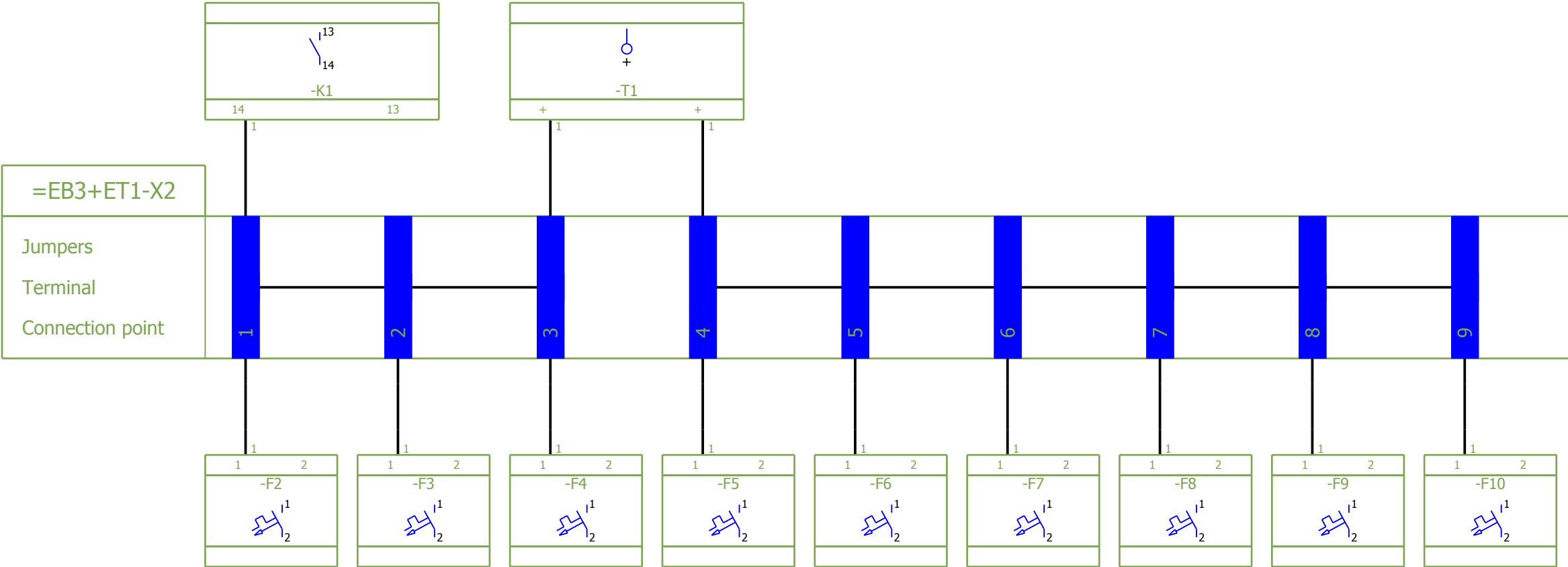
Connection point



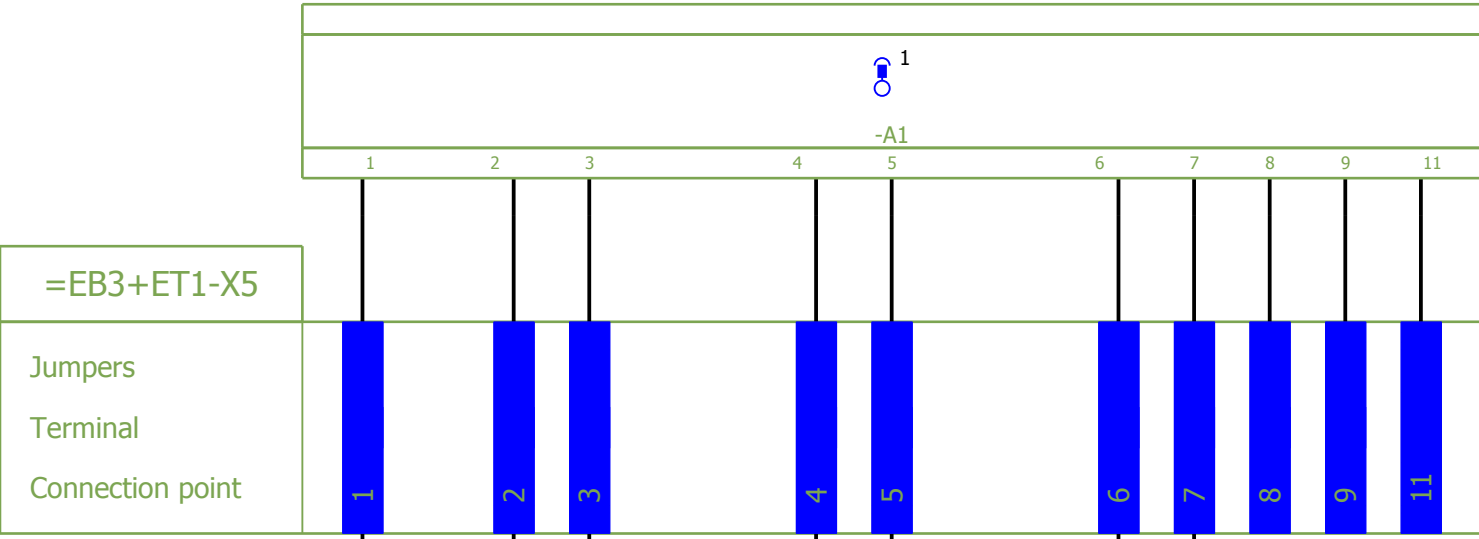




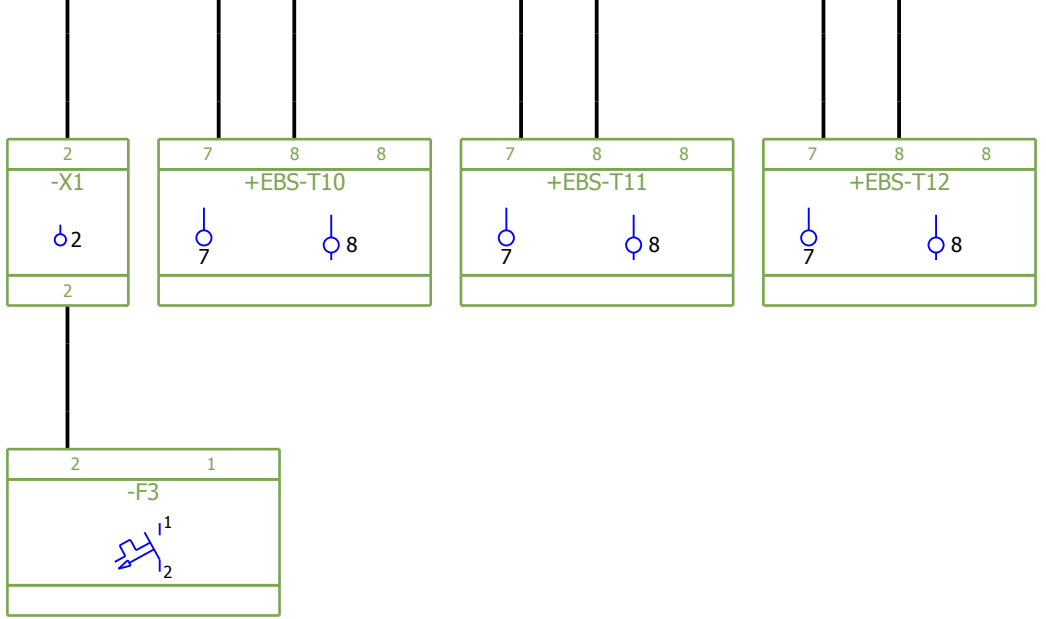
IT

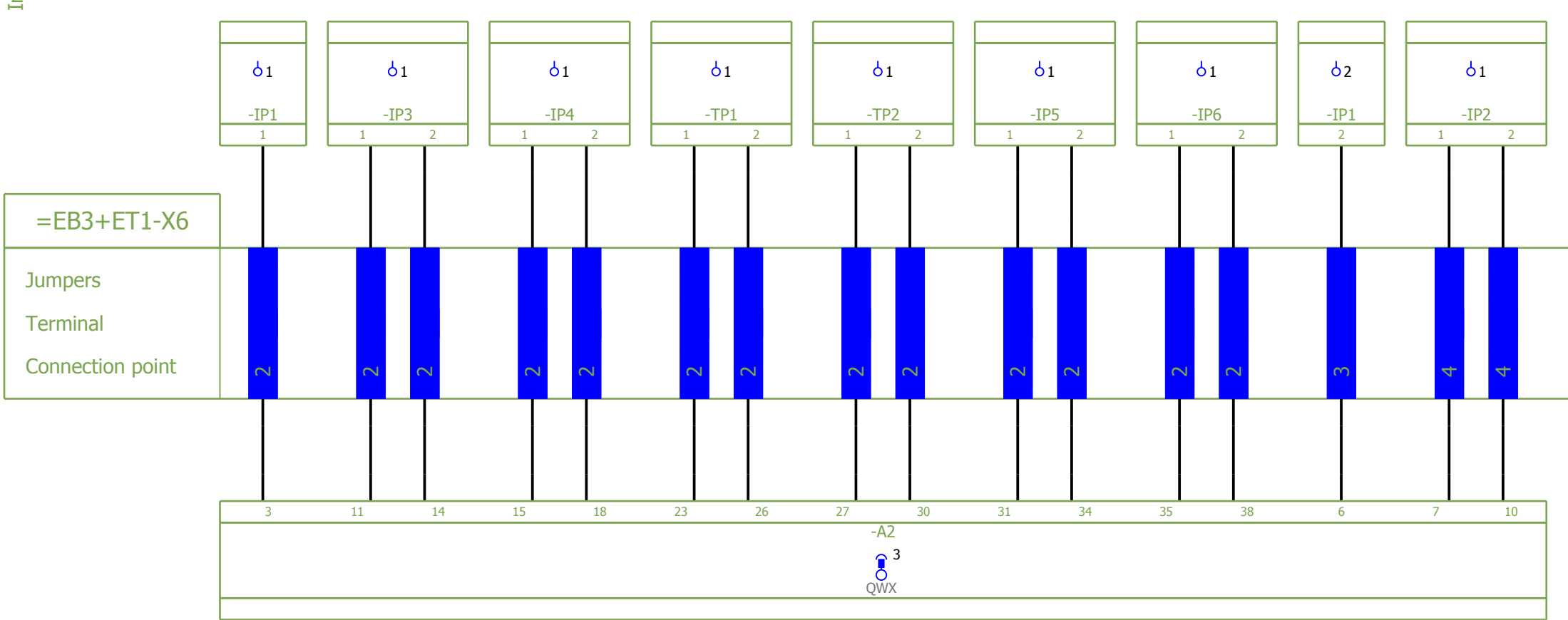


External targets



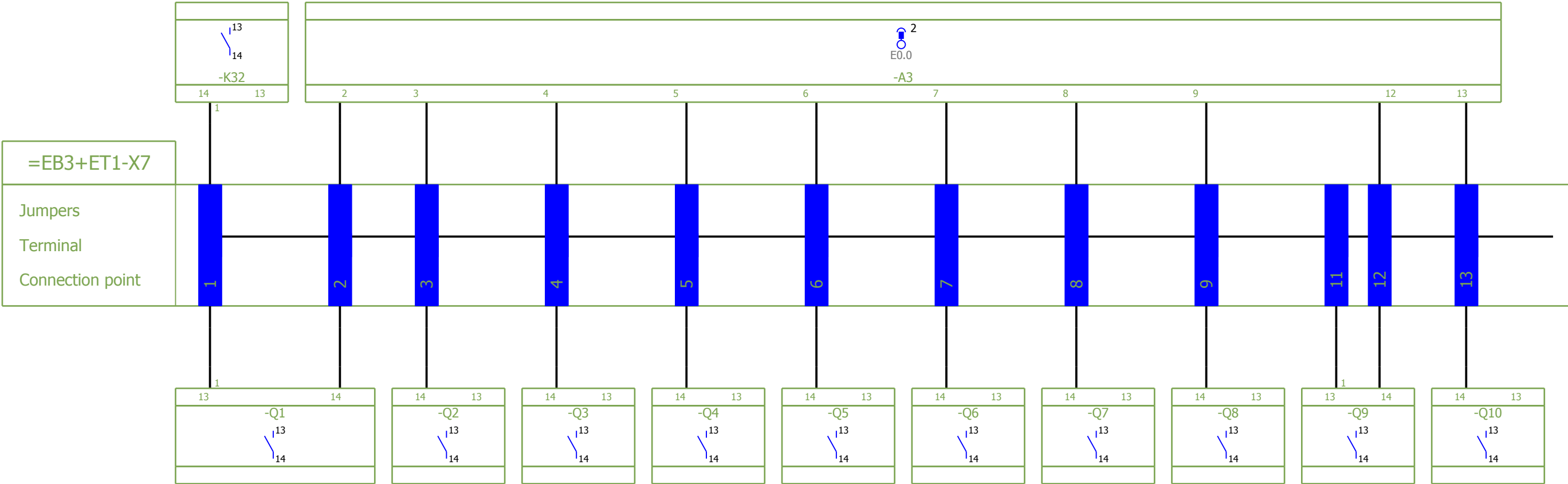
External targets





External targets

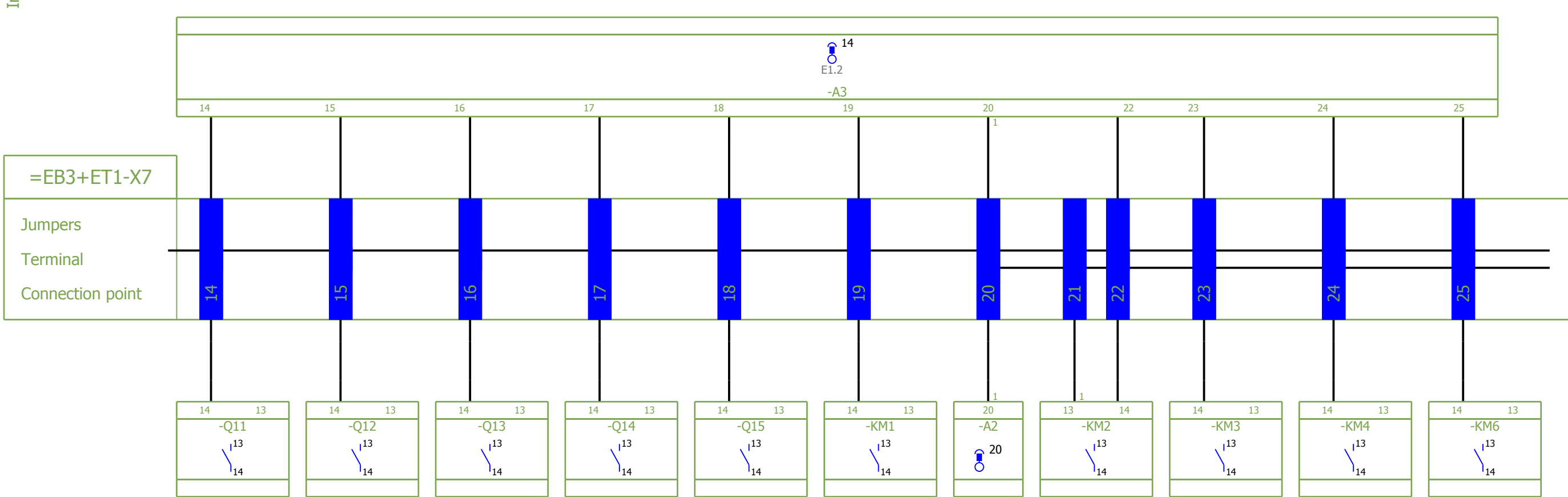
IT



External targets

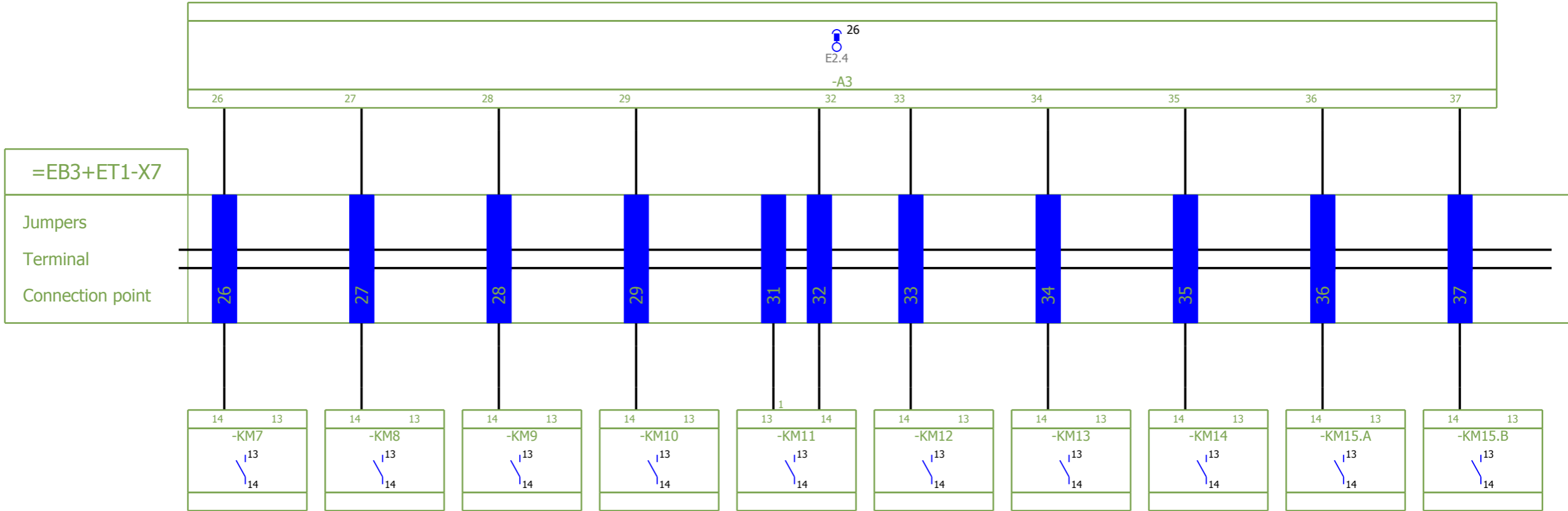
=EB3+ET1-X7  
Jumpers  
Terminal  
Connection point





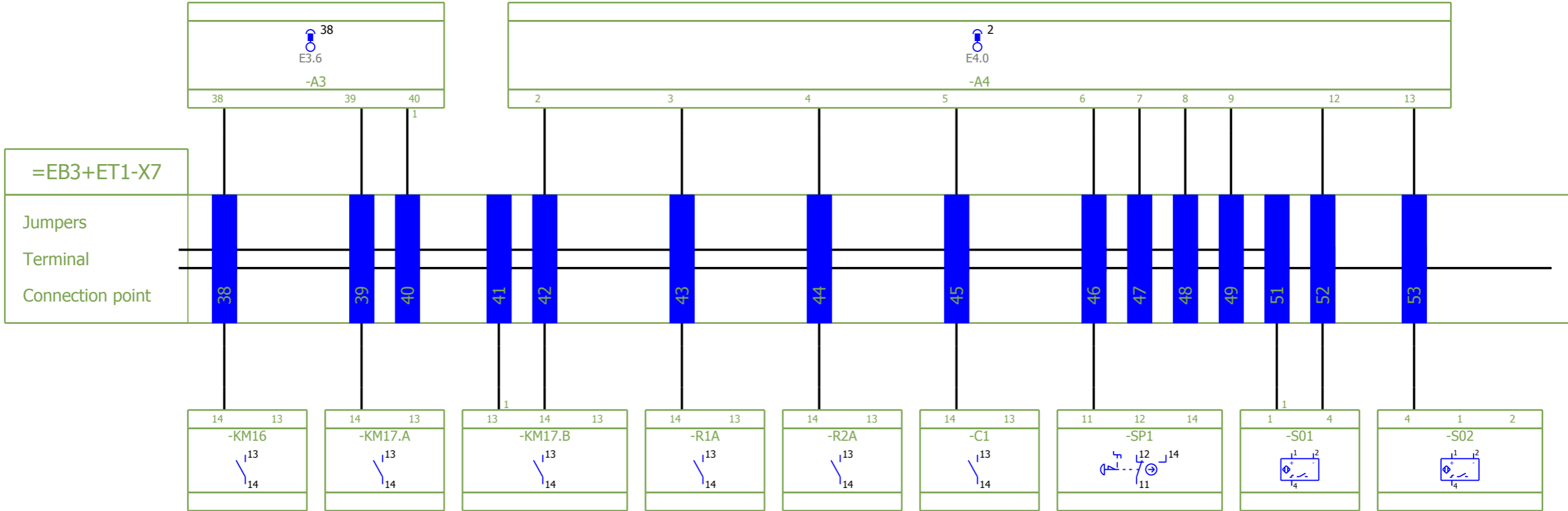
External targets

IT

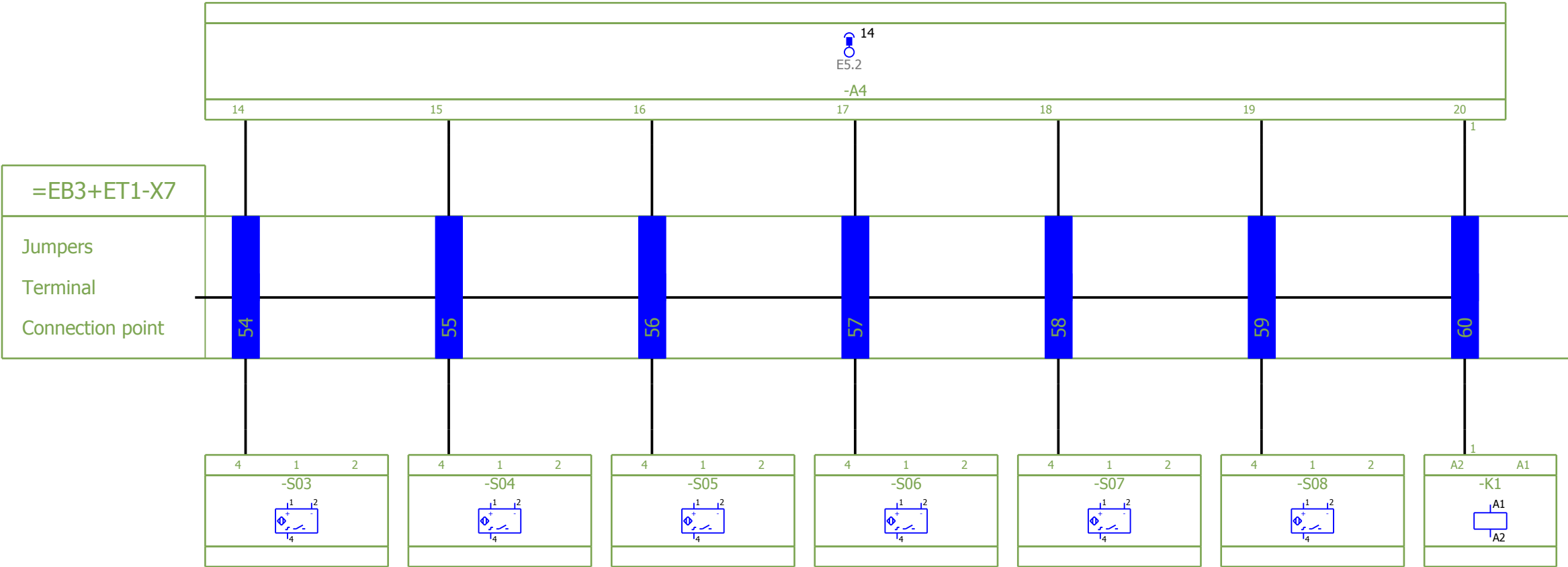


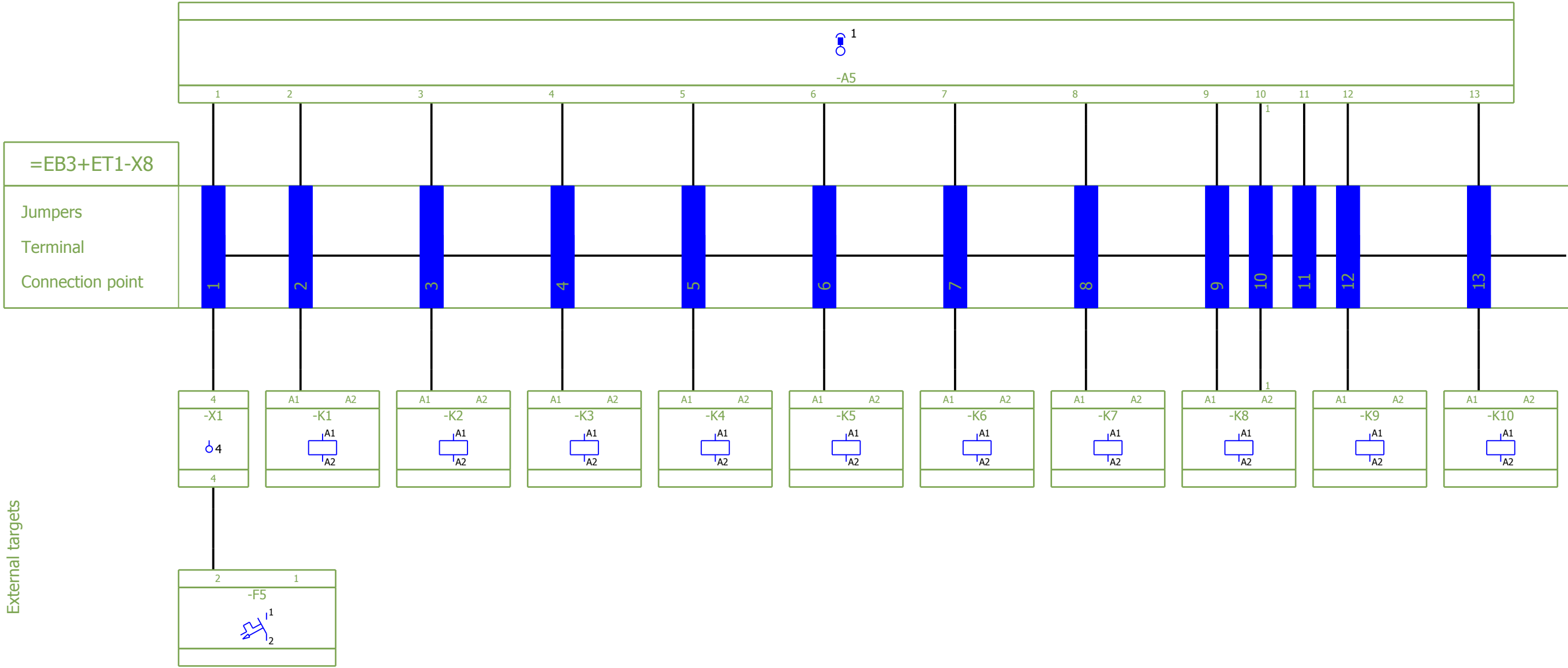
External targets

IT

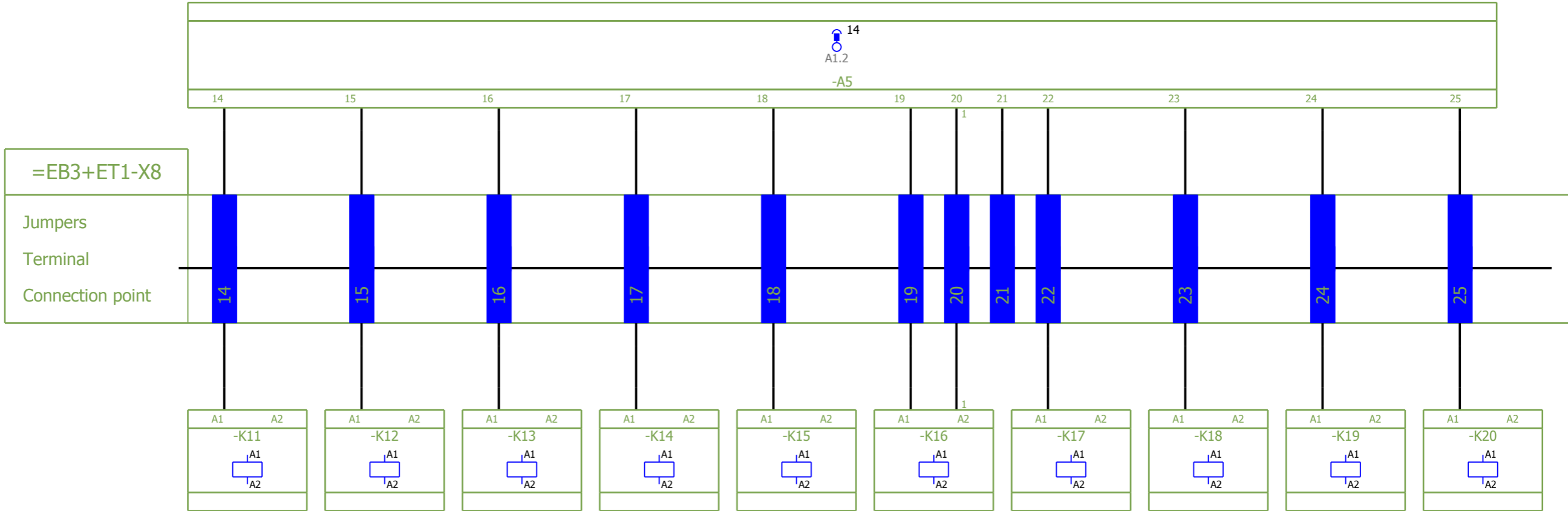


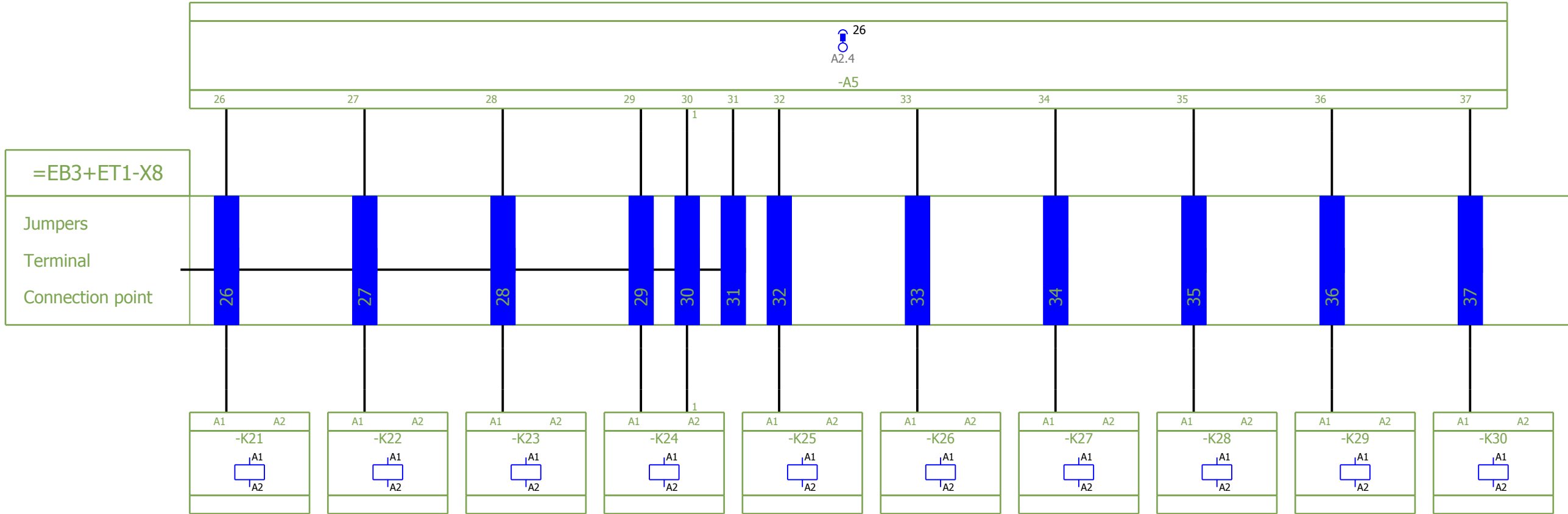
External targets



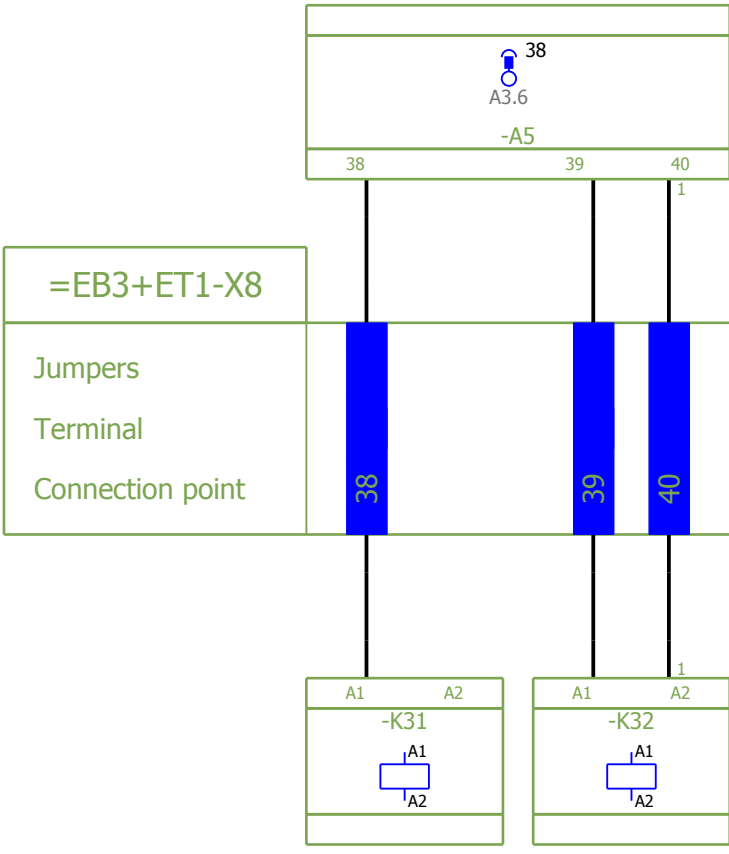


External targets





External targets





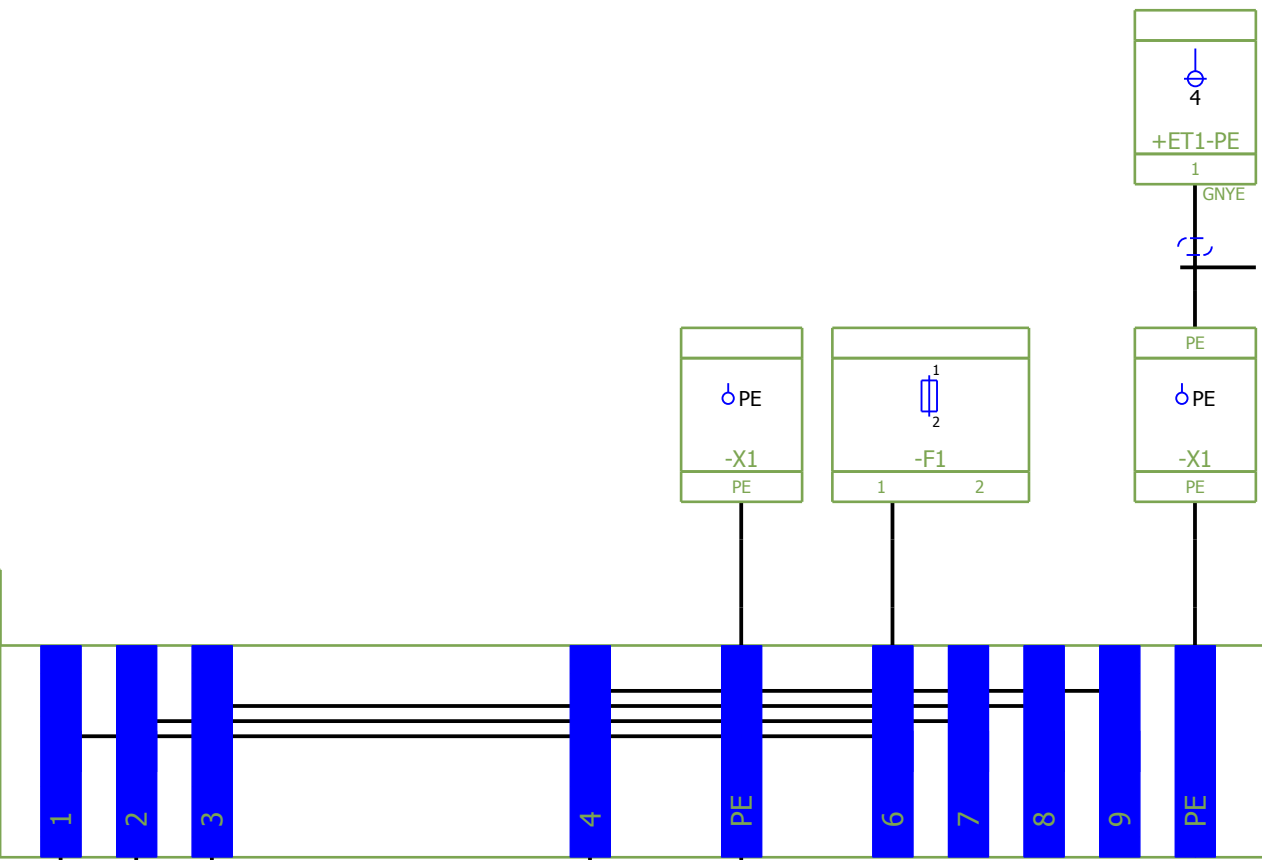
Internal targets

=EB3+ET2-X1

Jumpers

Terminal

Connection point



External targets

BK BN GY 1 3 5

+ET1-F200

1 2 3 4 5 6

BU 1

+ET1-N

4


GNYE 1


+ET1-PE

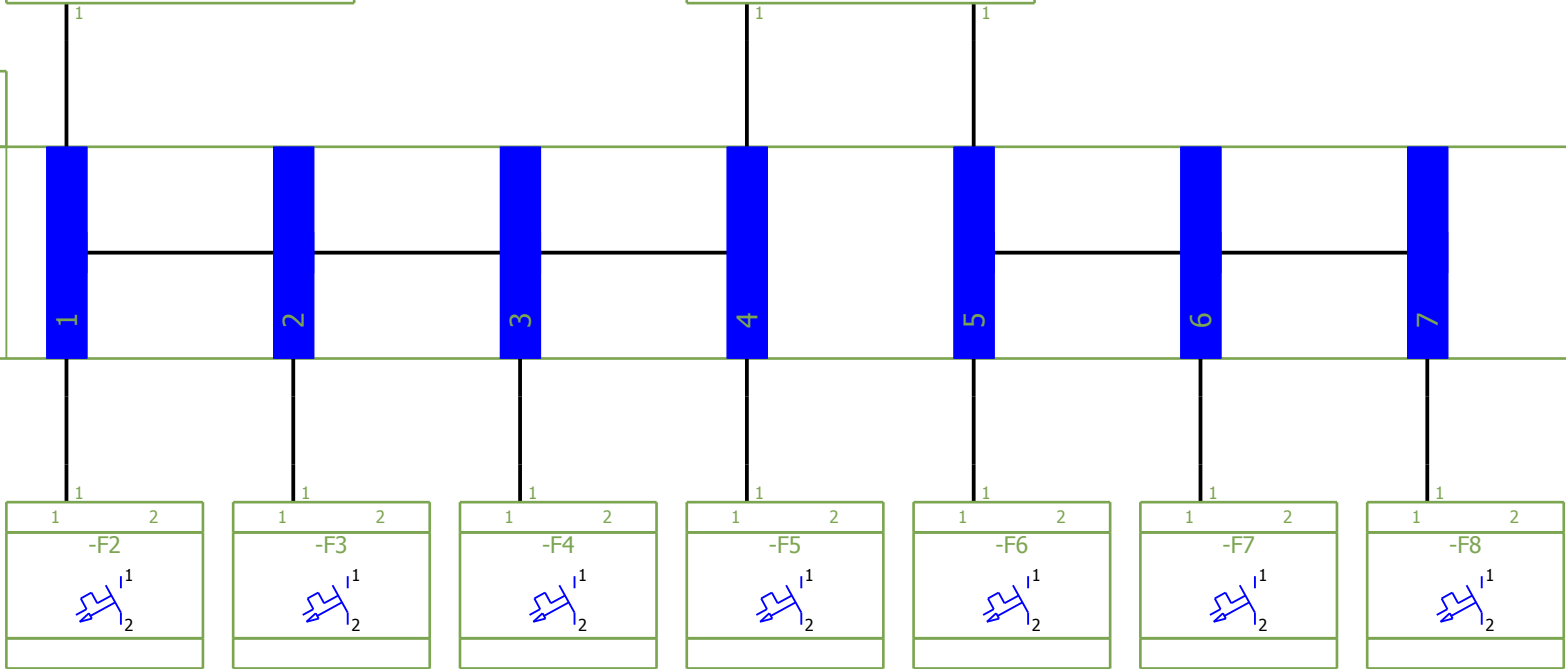
4

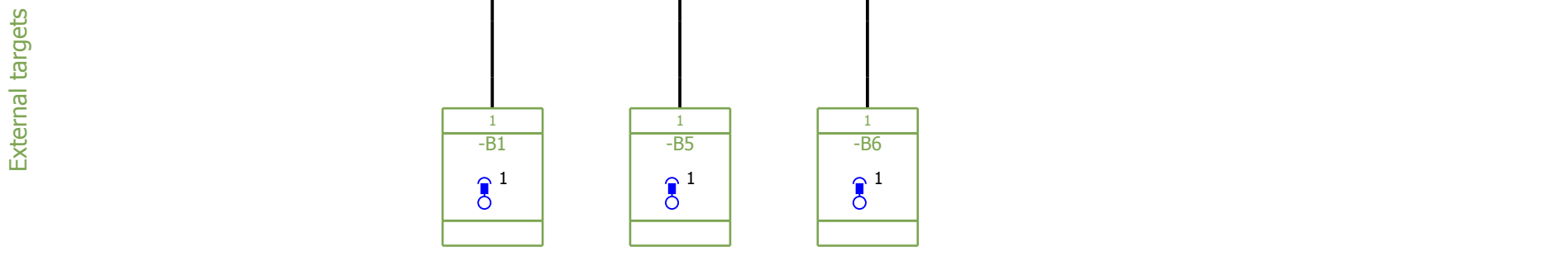
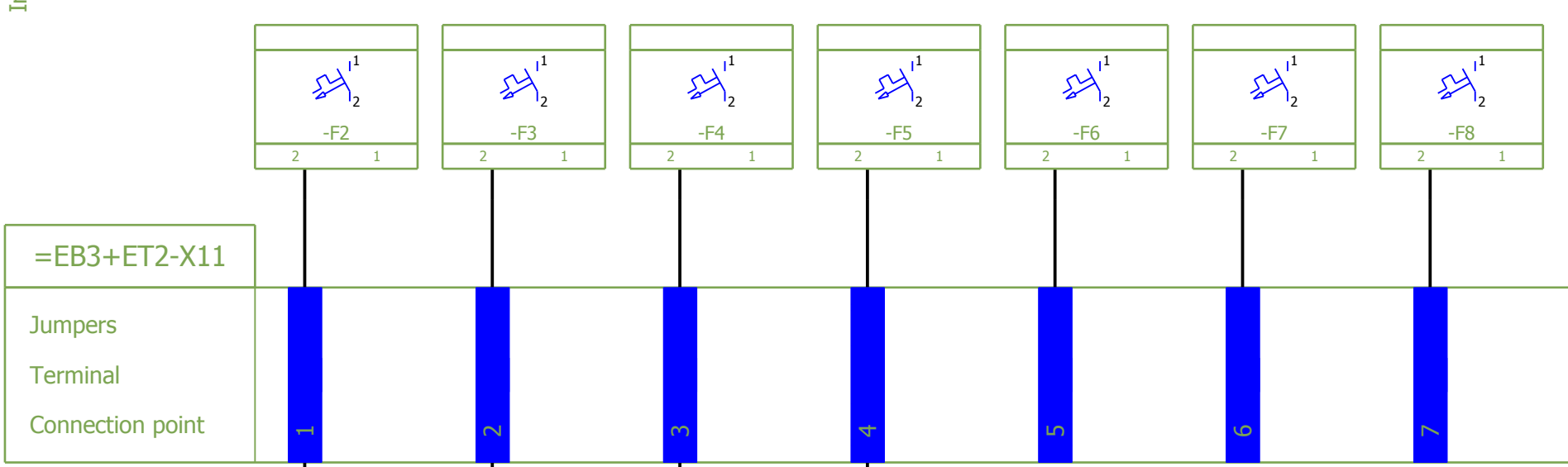
External targets

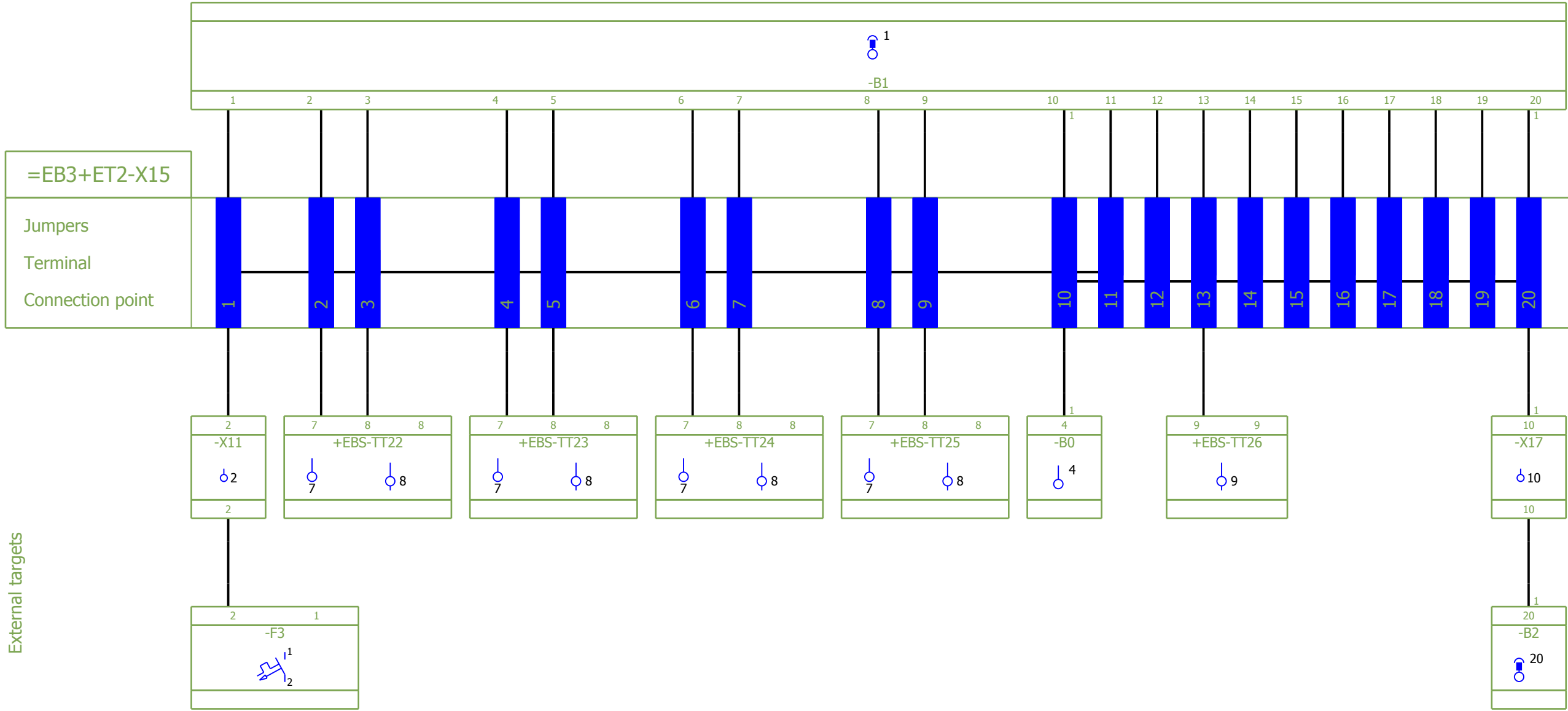
=EB3+ET2-X5
Jumpers
Terminal
Connection point


-K50
14                      13

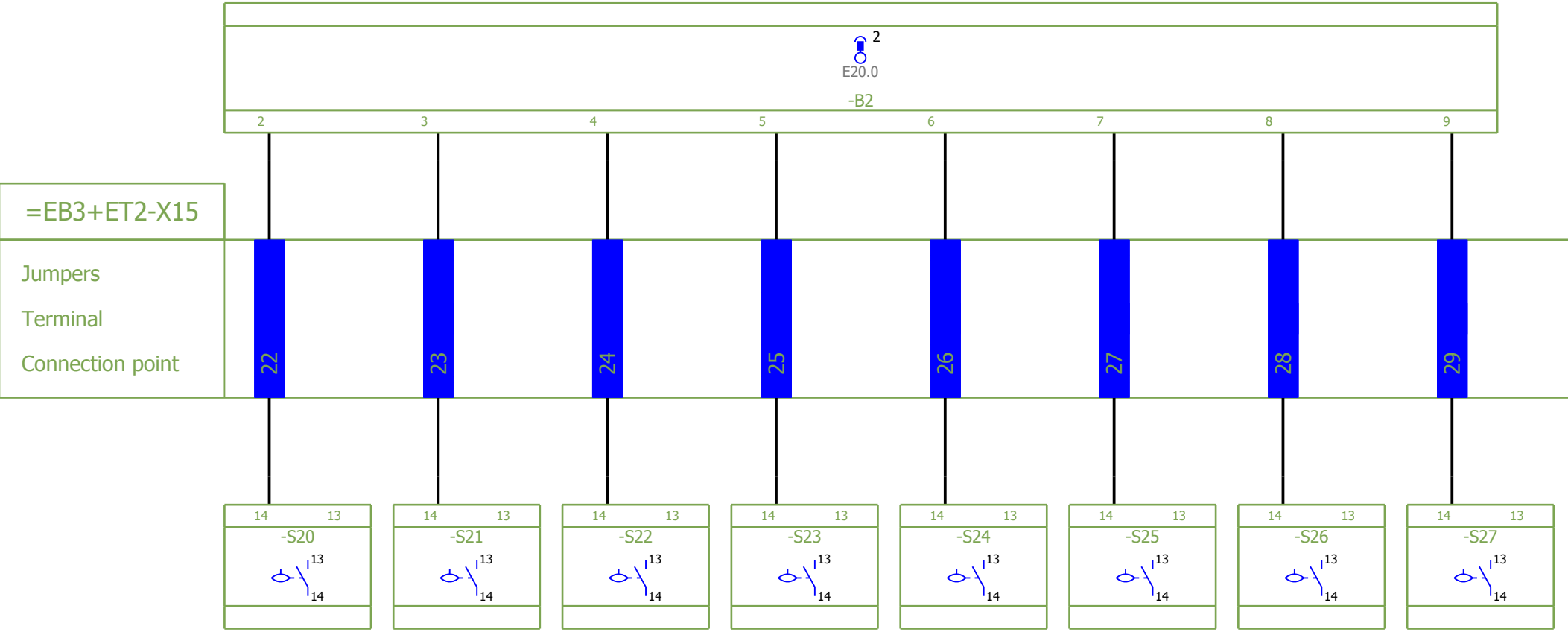

-T1
+                      +



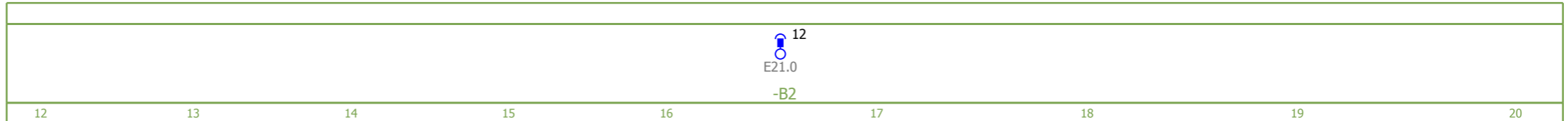




External targets



IT

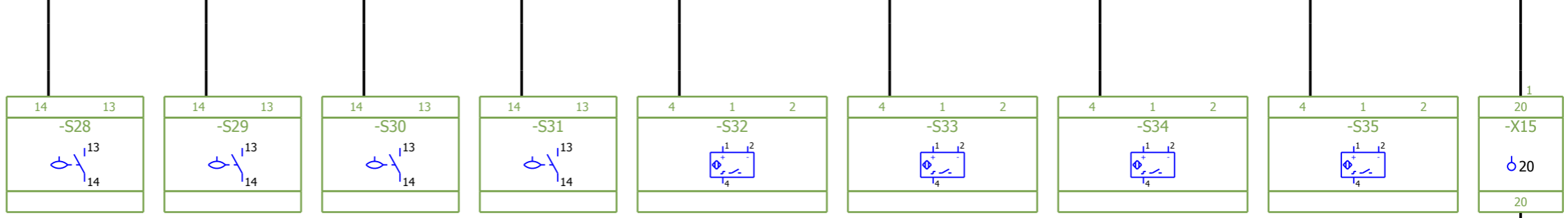
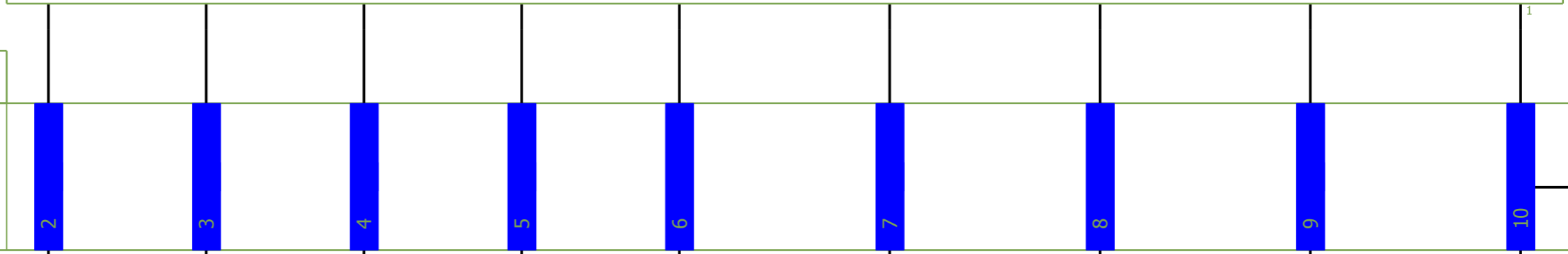


=EB3+ET2-X17

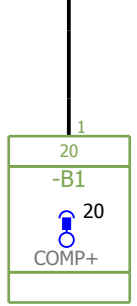
Jumpers

Terminal

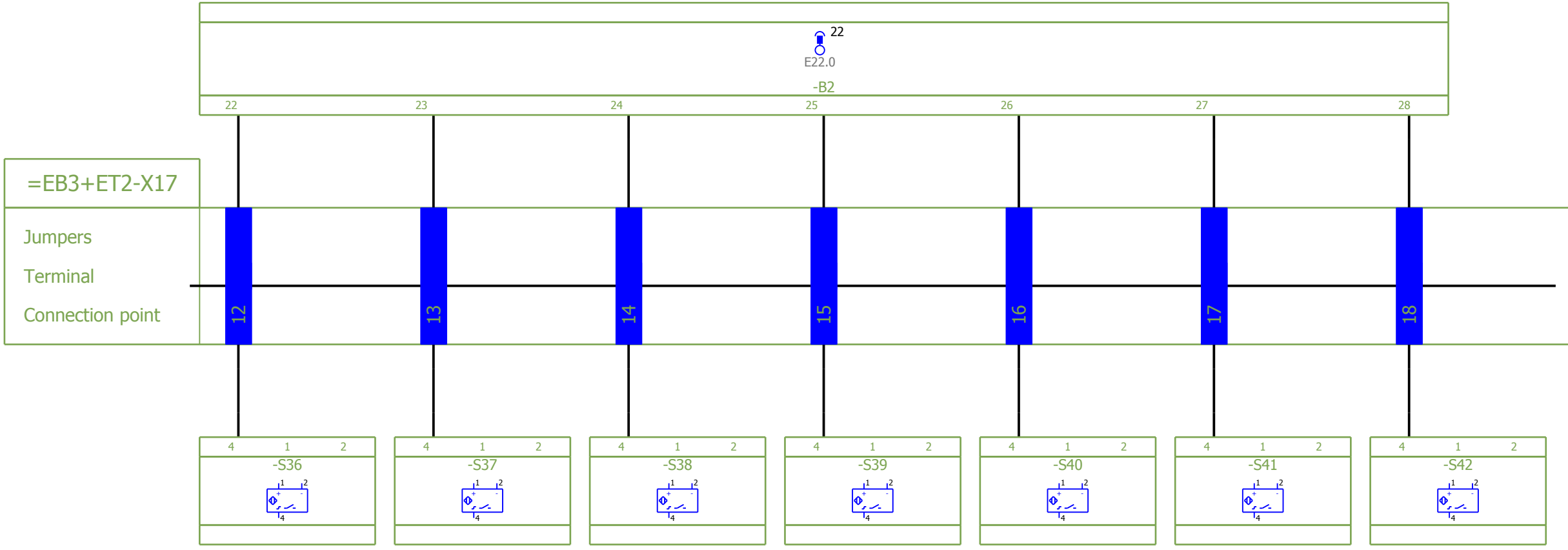
Connection point



External targets



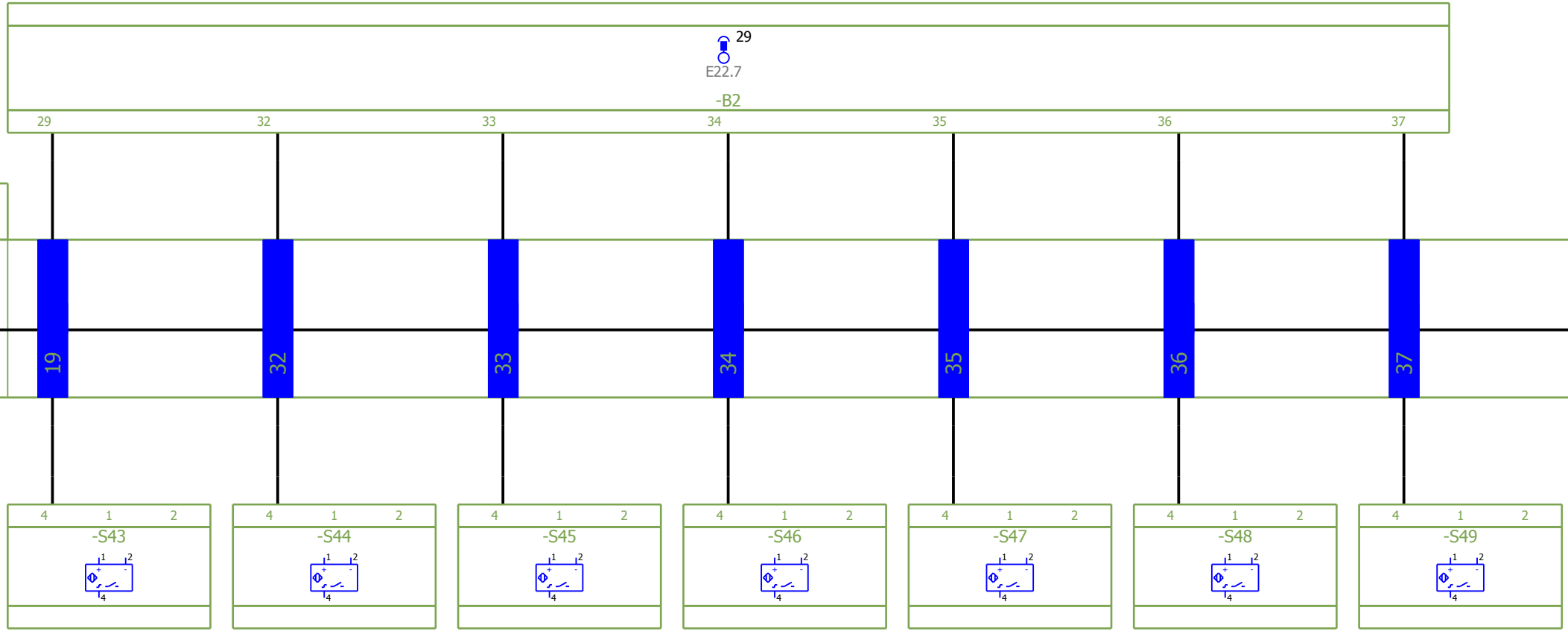
IT



External targets

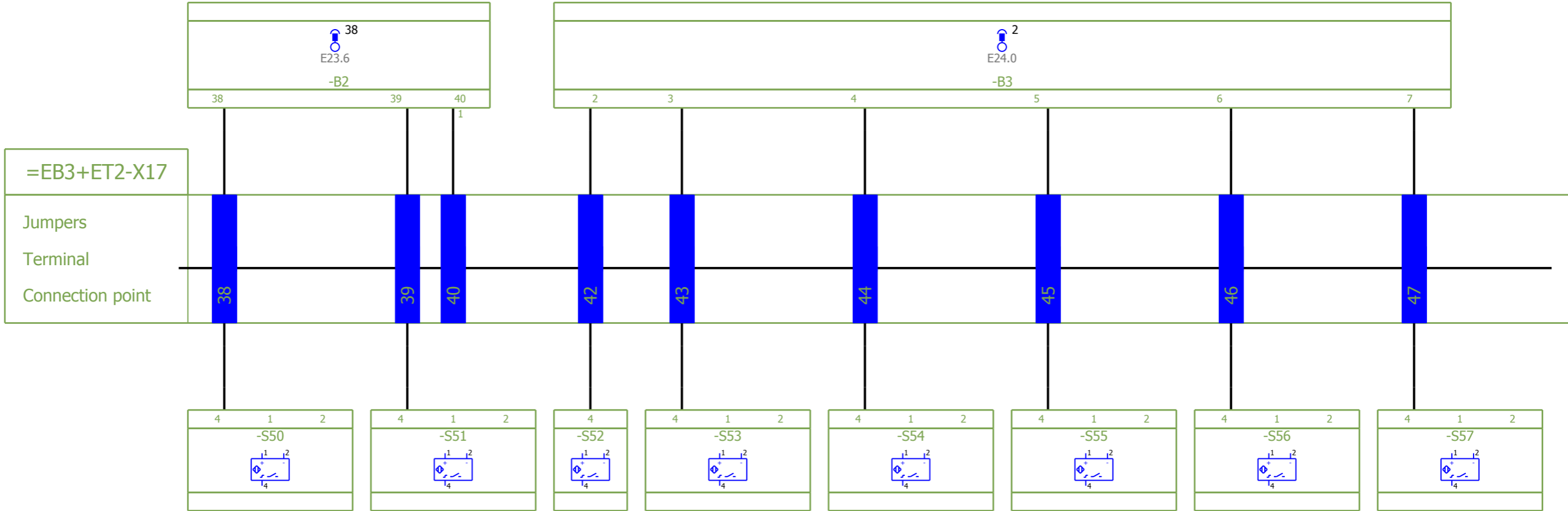
External targets

=EB3+ET2-X17  
Jumpers  
Terminal  
Connection point



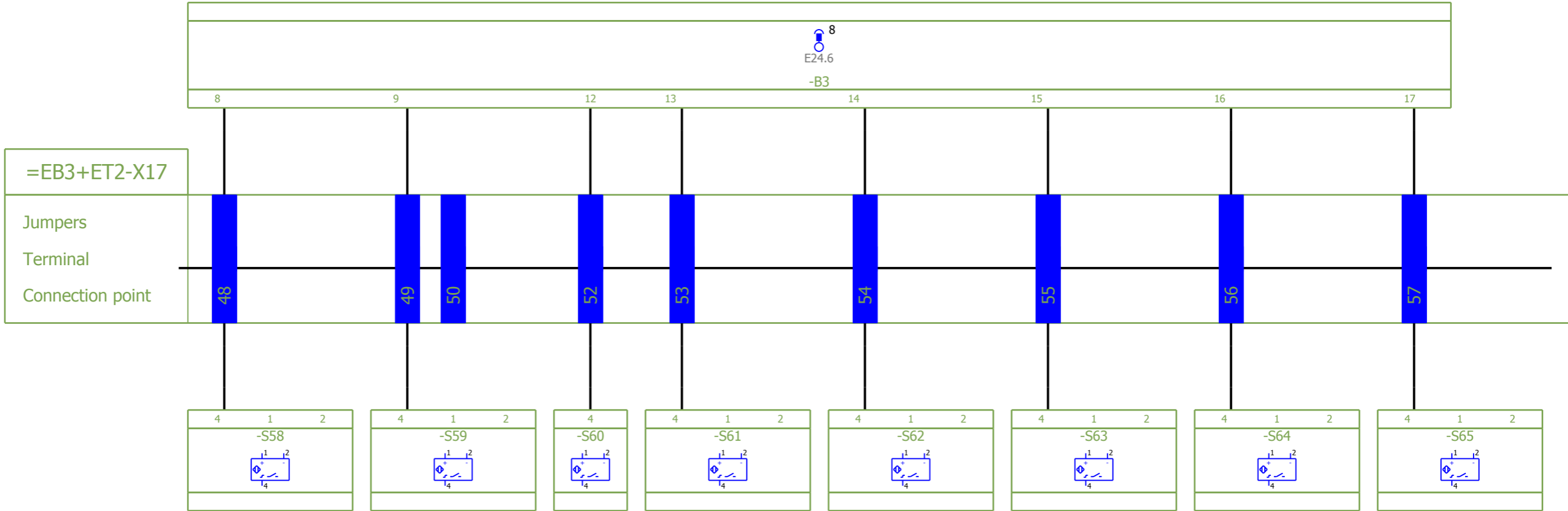


IT

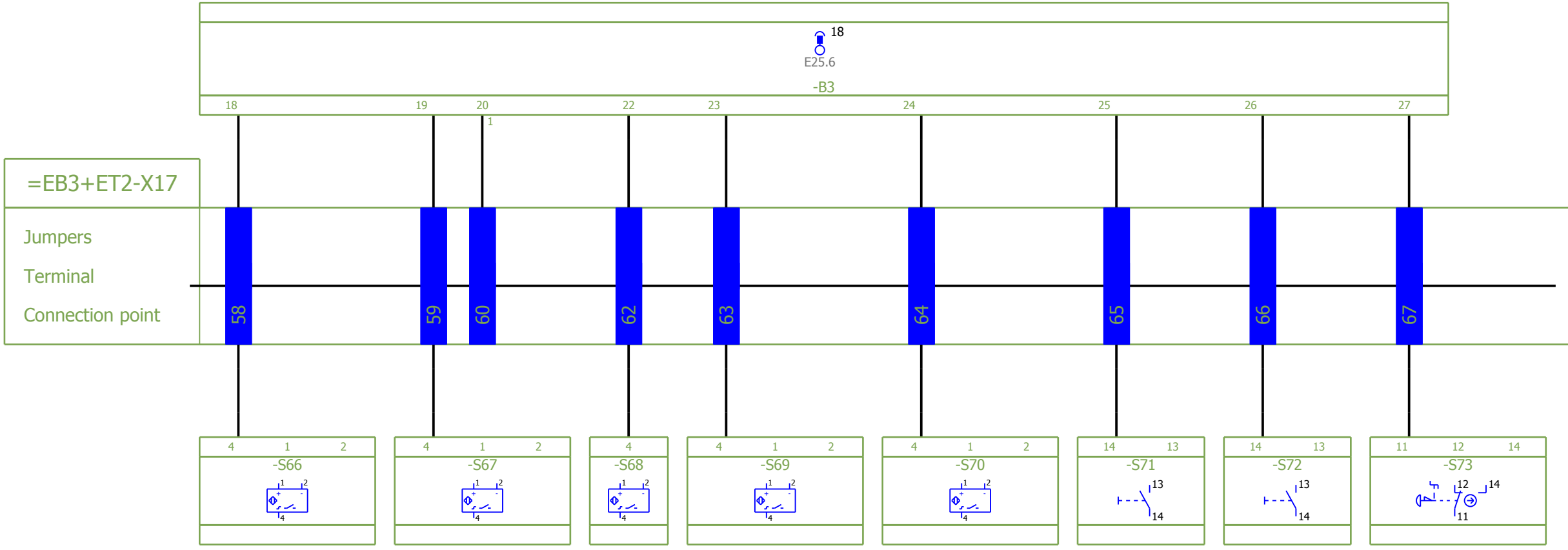


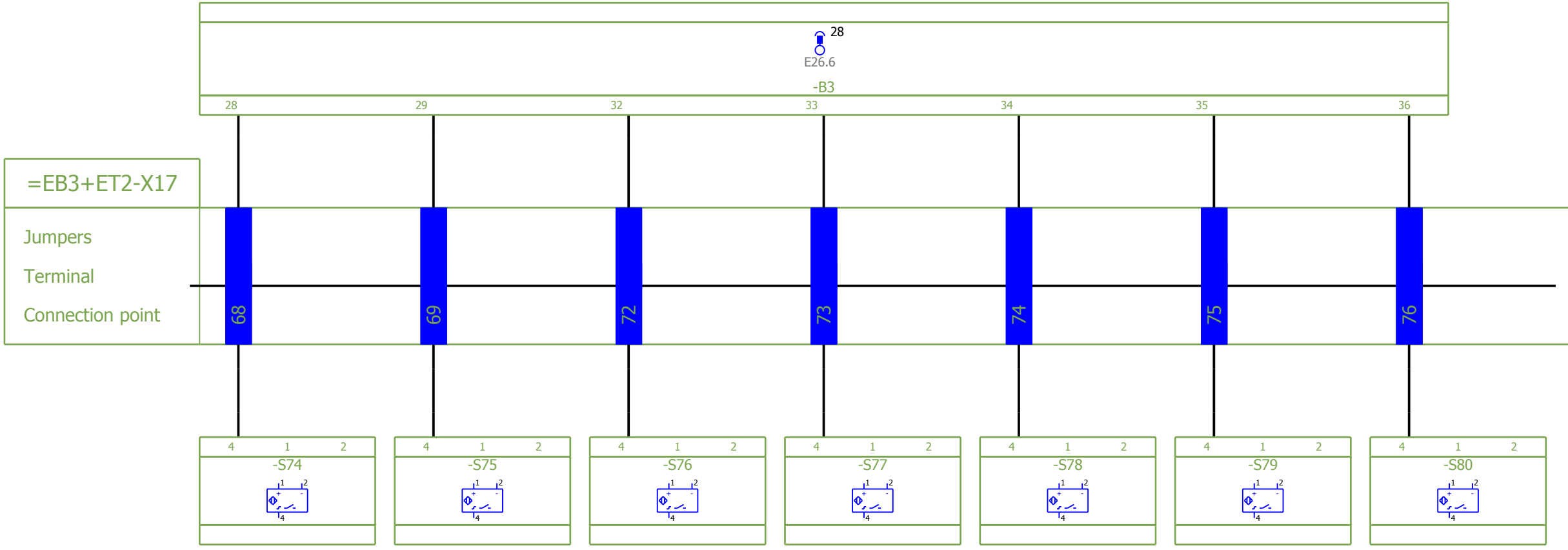
External targets

IT

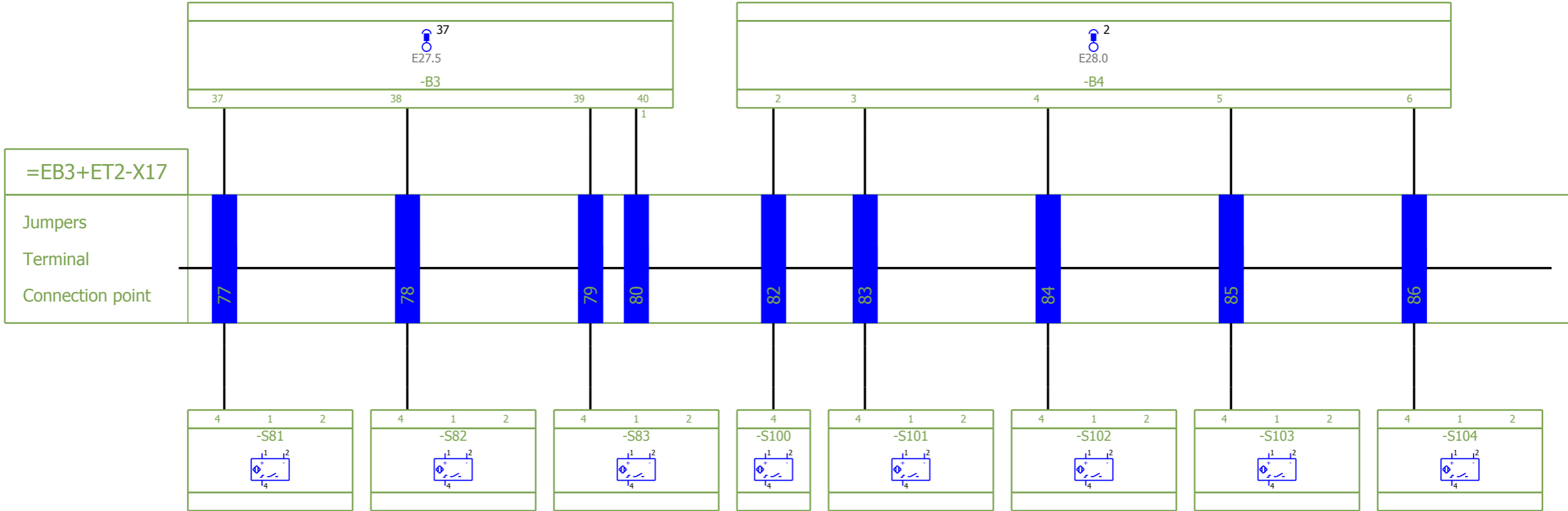


External targets



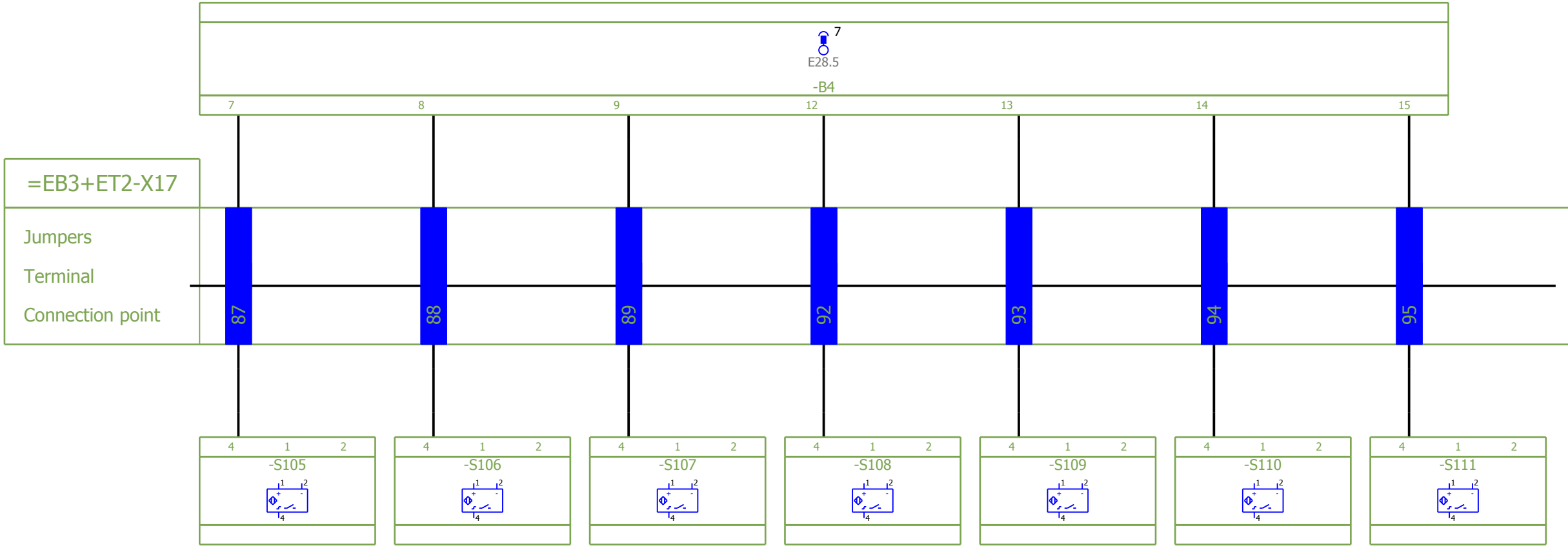


IT



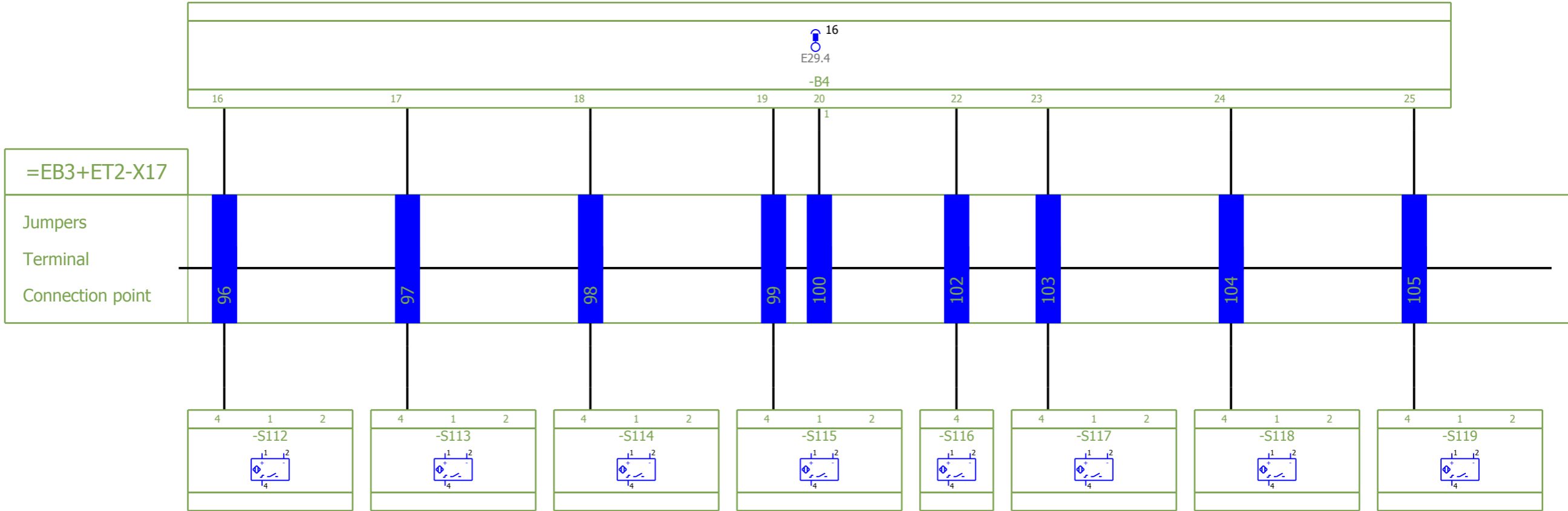
External targets

IT

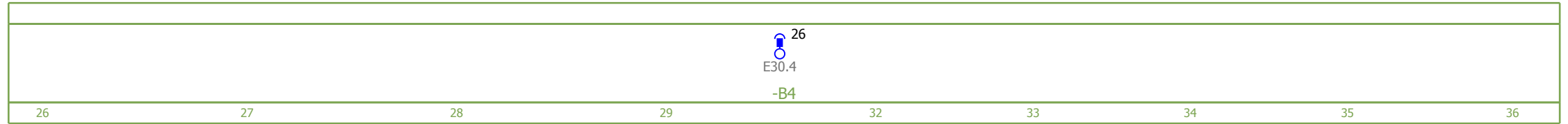


External targets

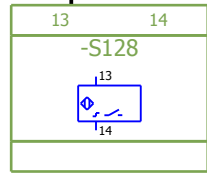
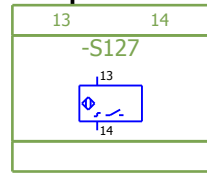
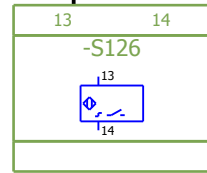
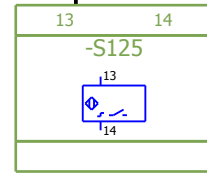
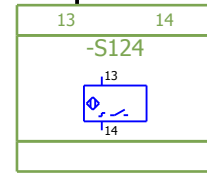
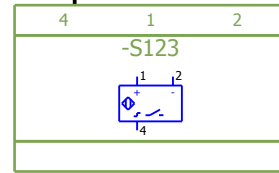
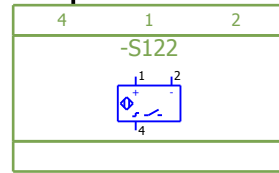
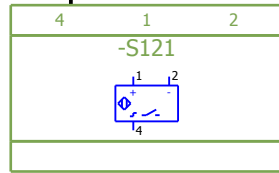
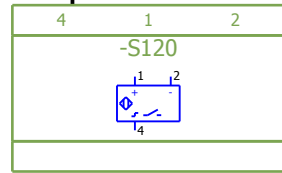
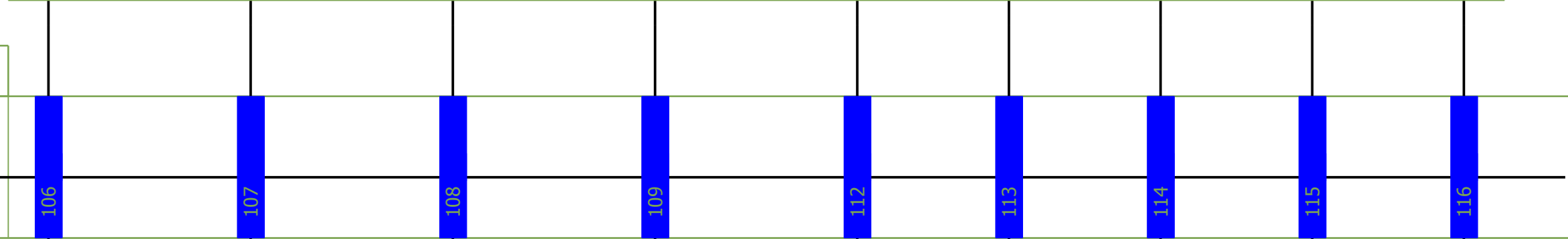
IT



External targets



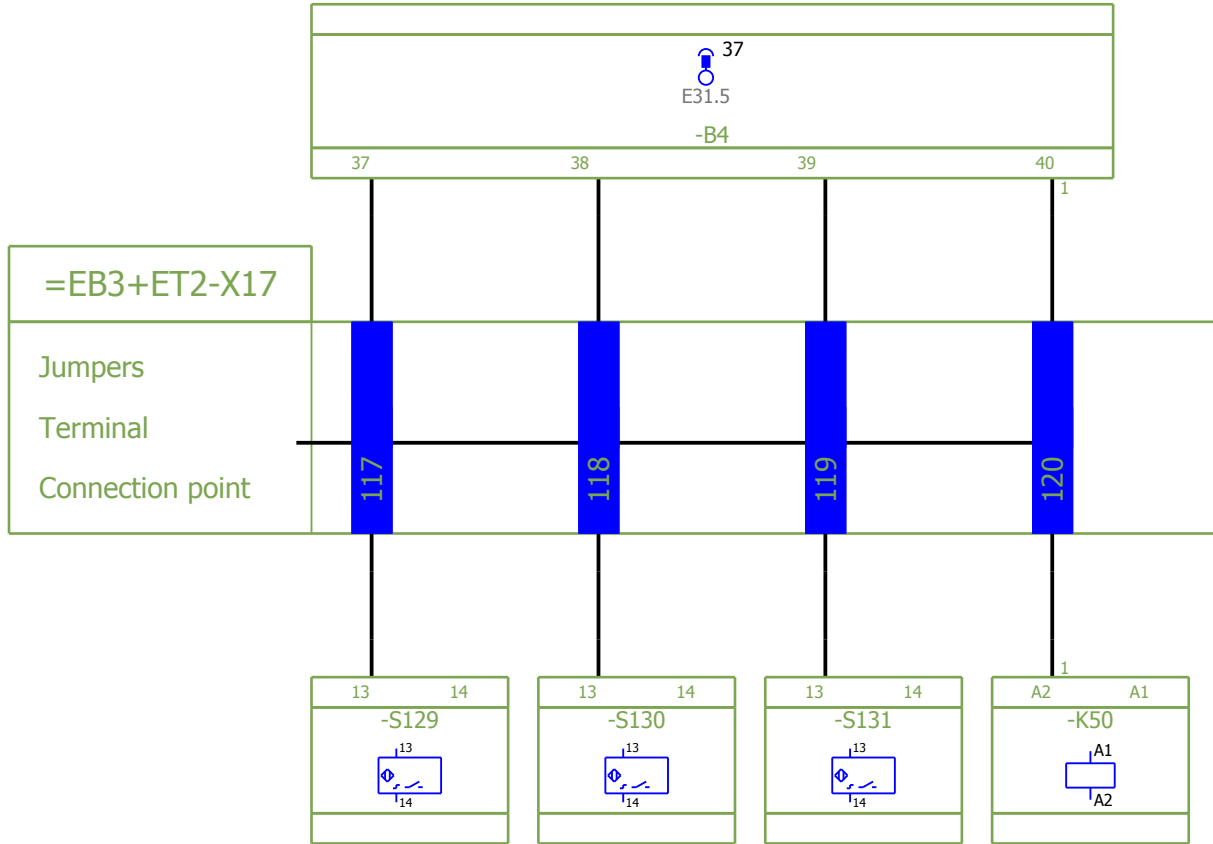
=EB3+ET2-X17  
Jumpers  
Terminal  
Connection point



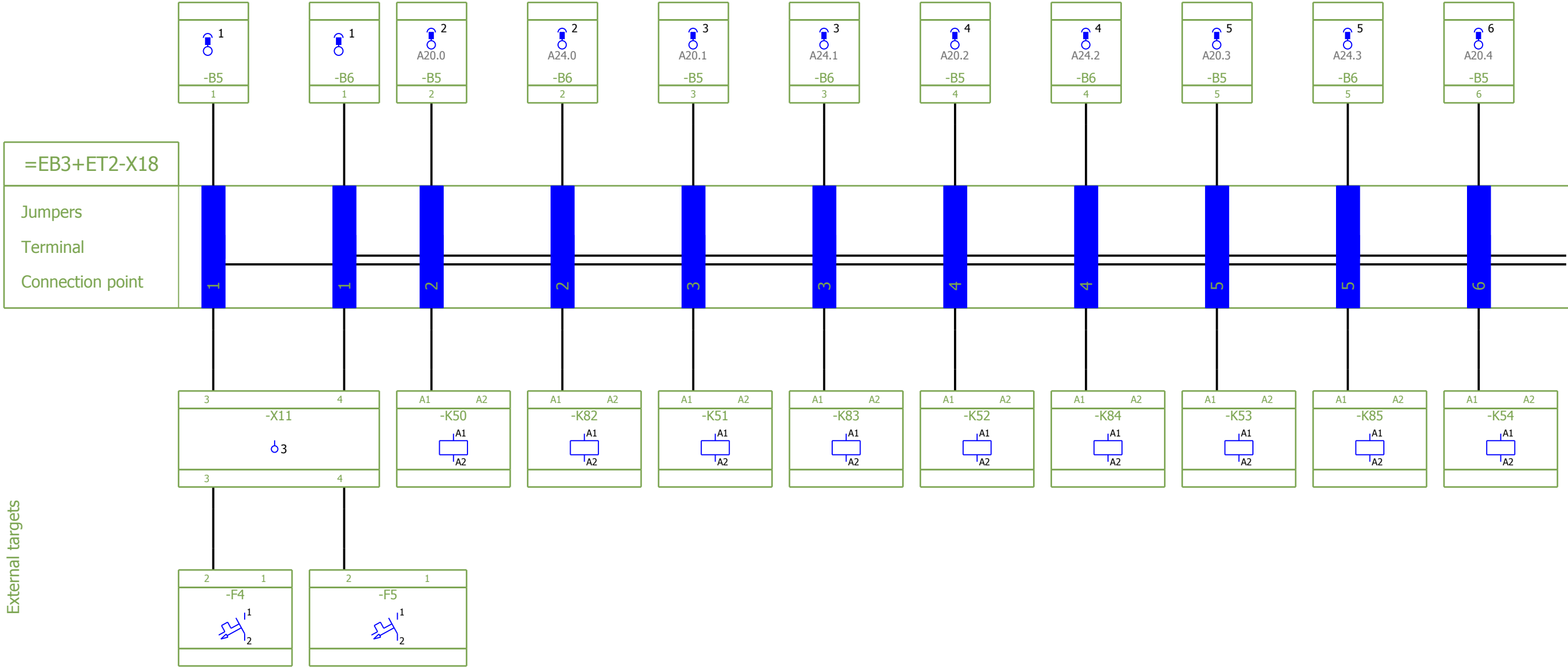
External targets



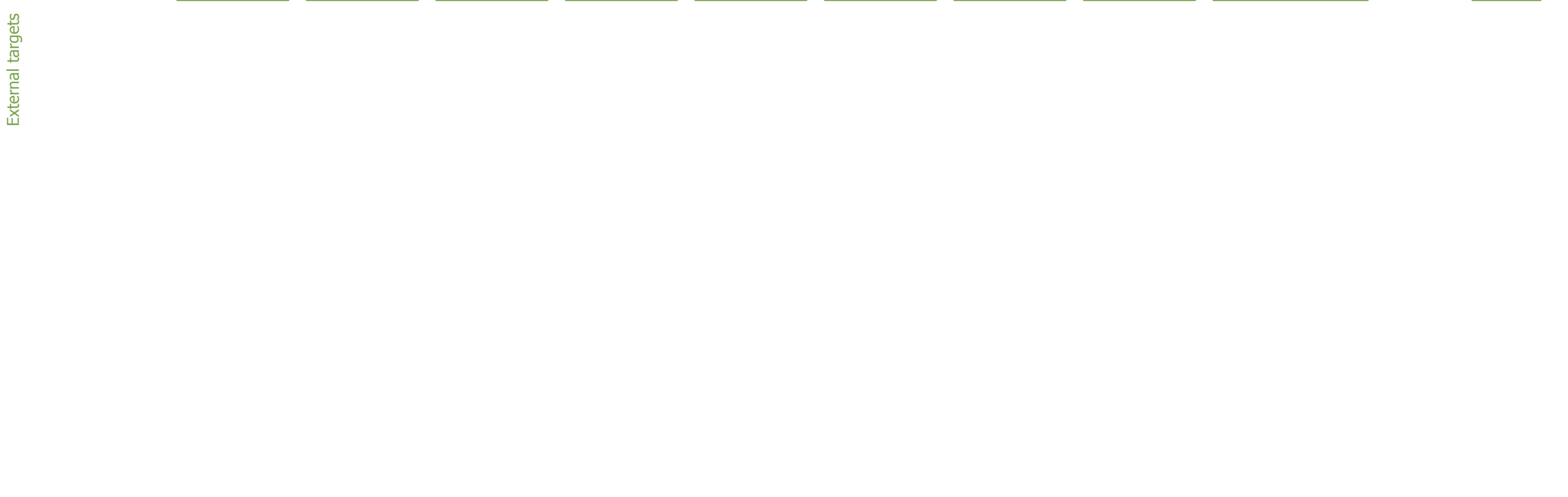
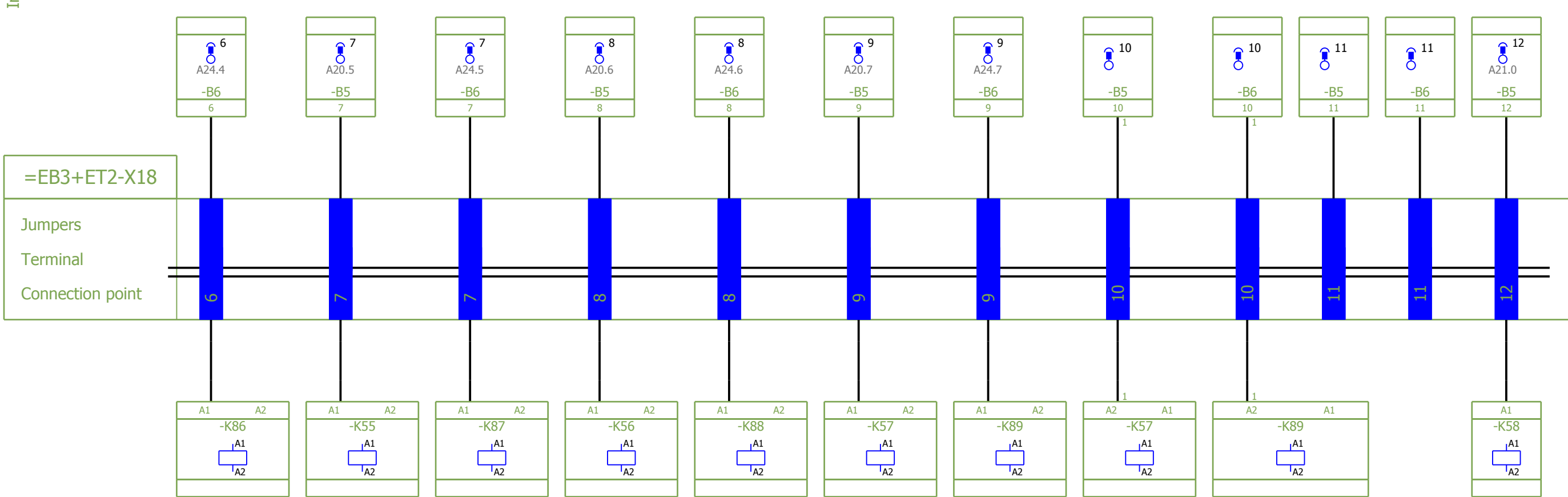
I



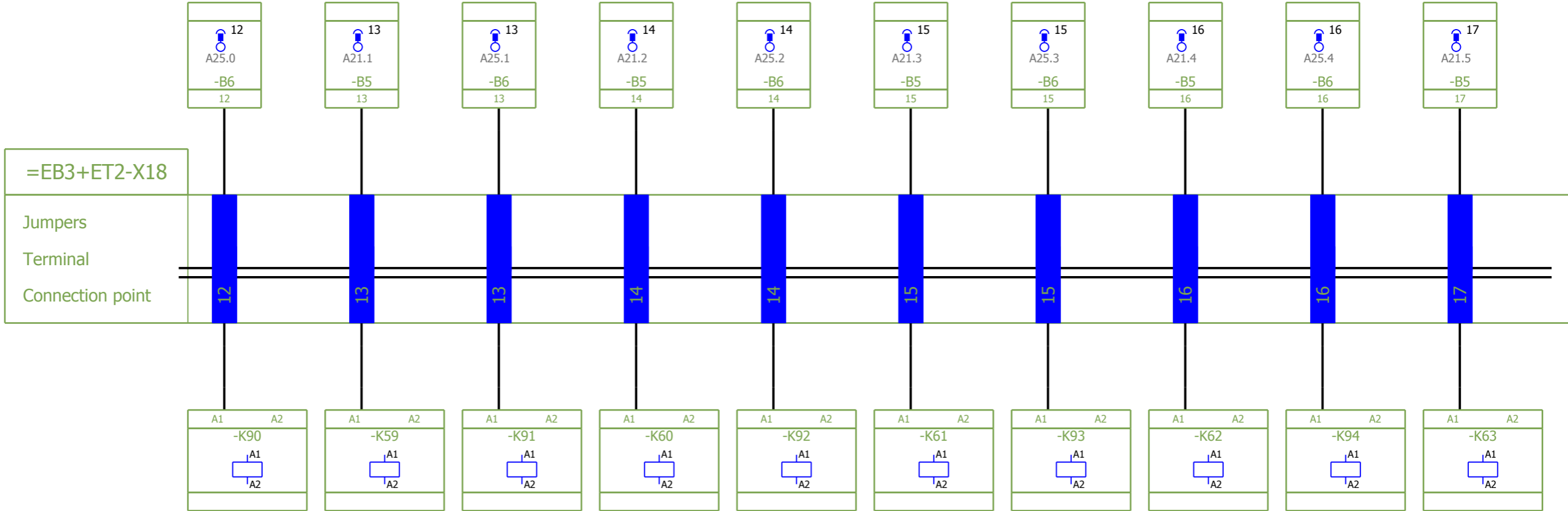
External targets



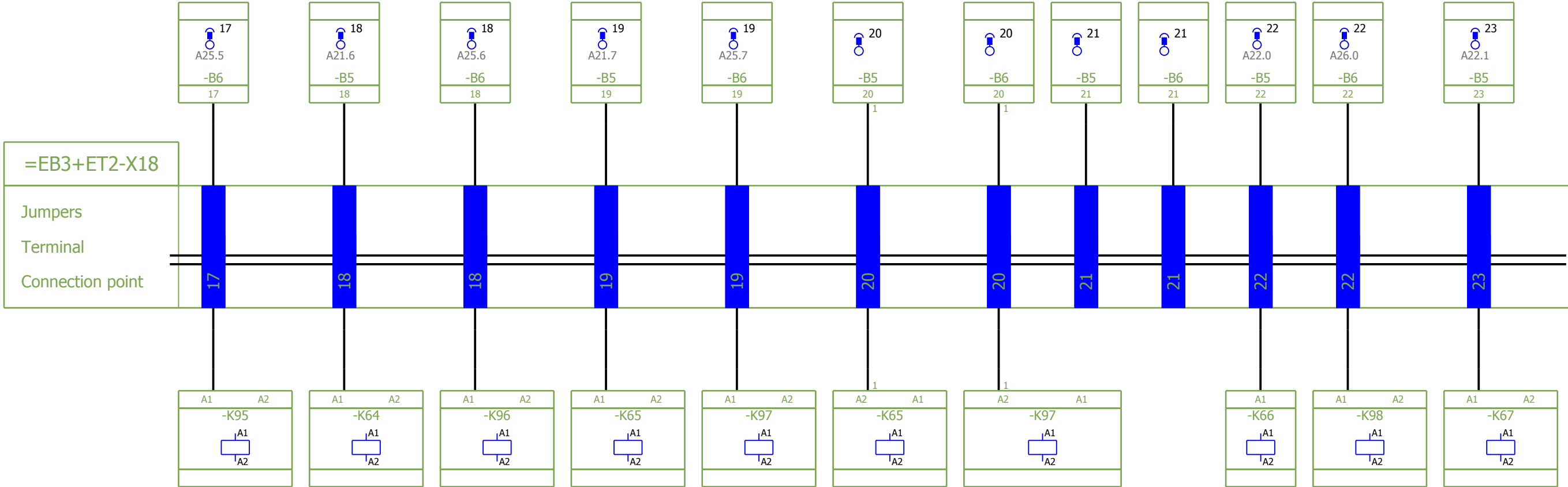
External targets

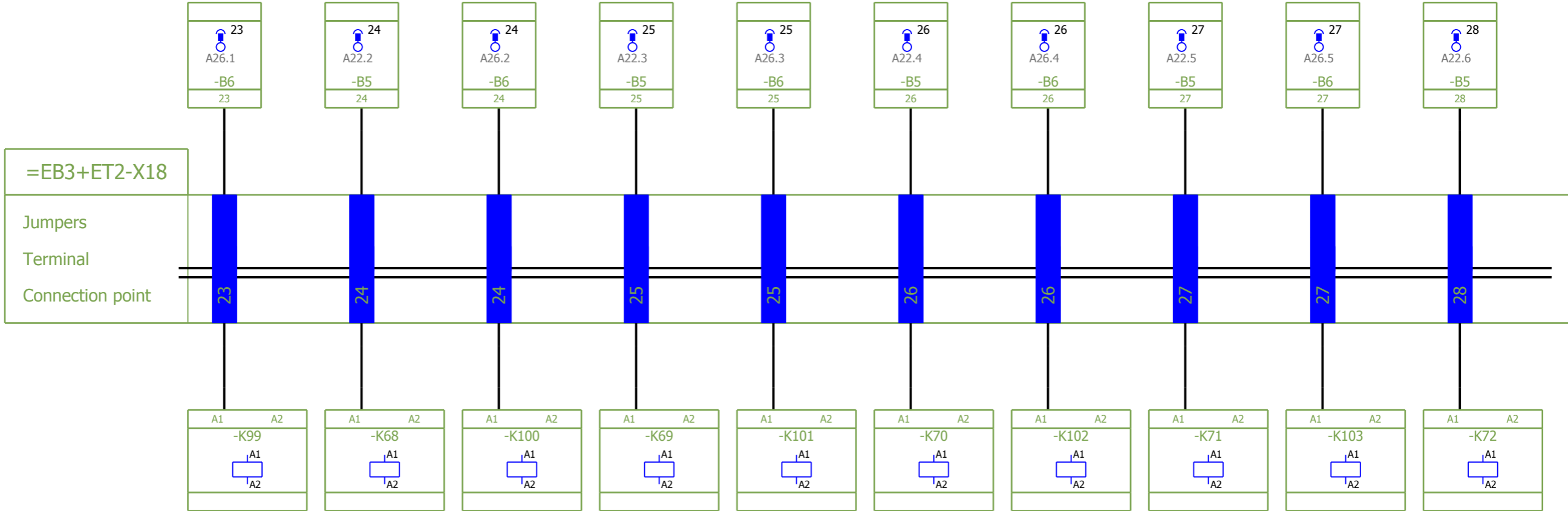


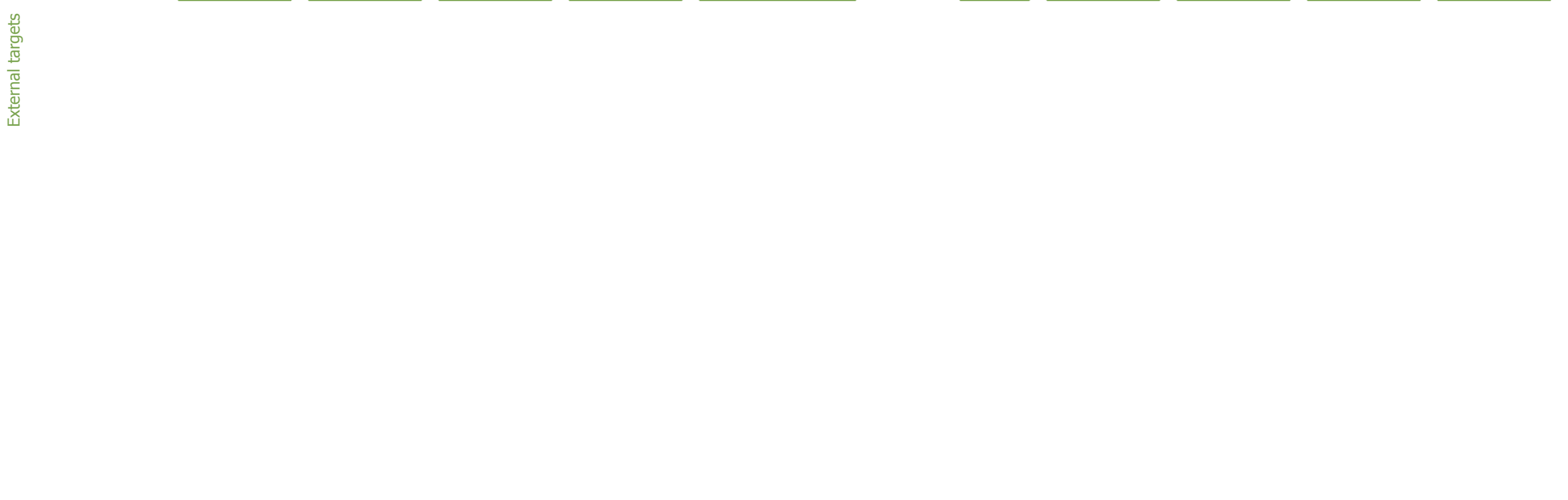
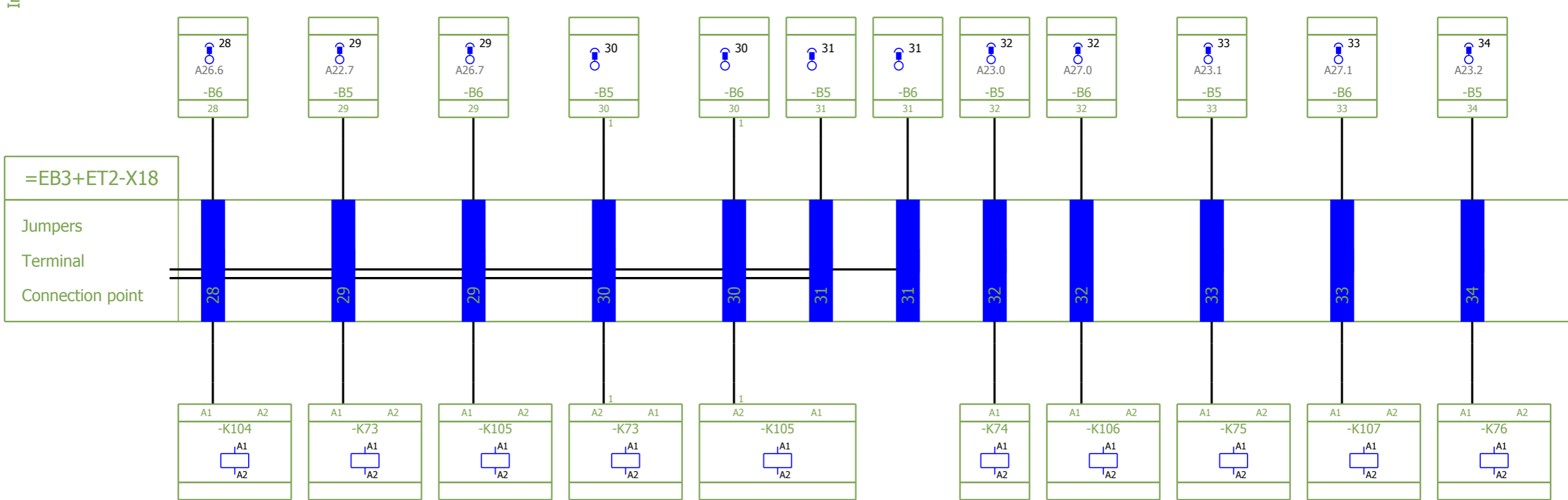
IT

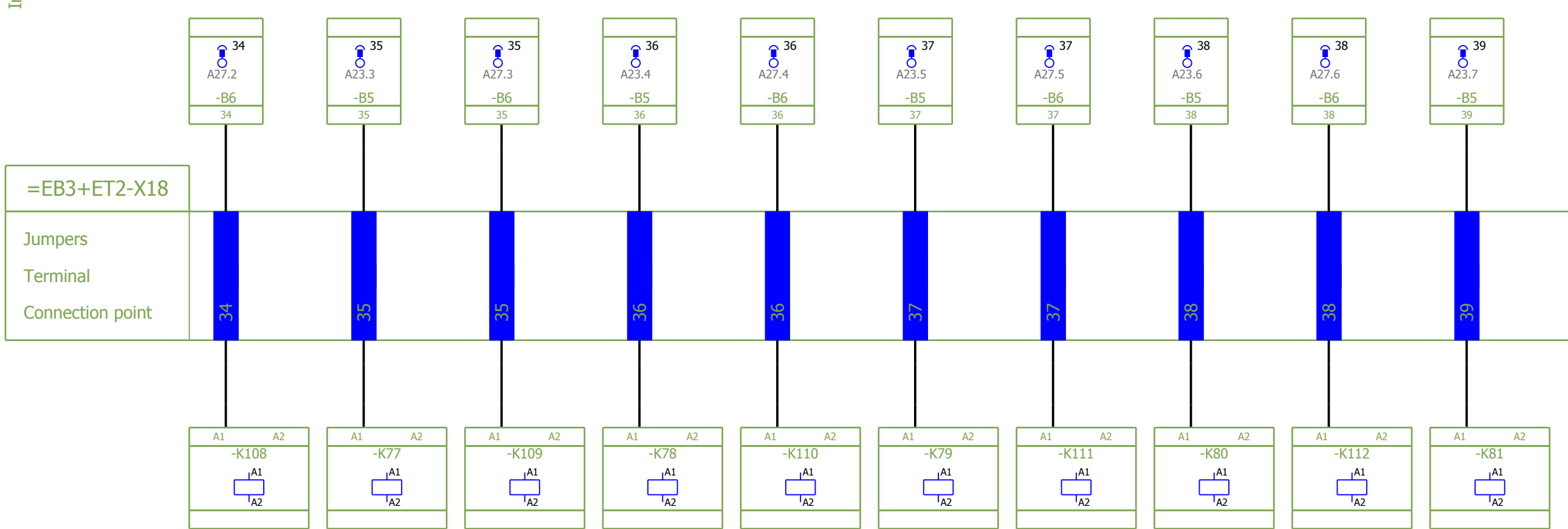


External targets



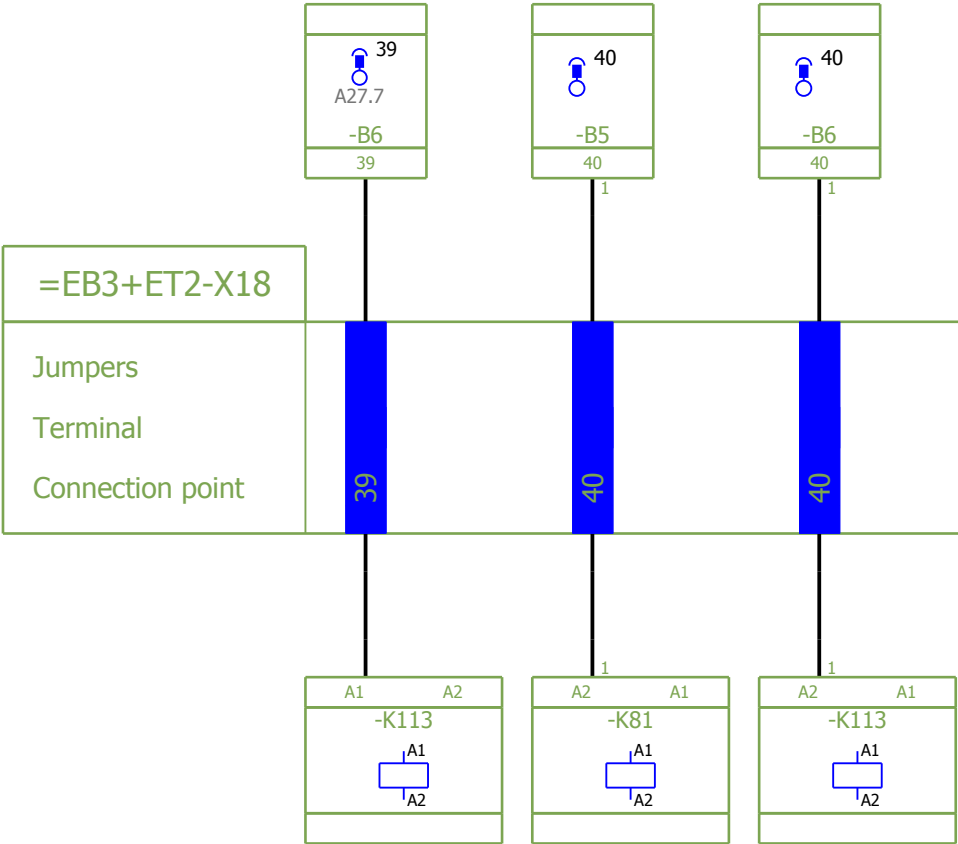






External targets





External targets

=EB3+EBS-T10	1	Resistance thermometer measuring transducer	MCR-PT100-I-DC	PXC	PXC.2810337
=EB3+EBS-T11	1	Resistance thermometer measuring transducer	MCR-PT100-I-DC	PXC	PXC.2810337
=EB3+EBS-T12	1	Resistance thermometer measuring transducer	MCR-PT100-I-DC	PXC	PXC.2810337
=EB3+EBS-T14	1	Resistance thermometer measuring transducer	MCR-PT100-I-DC	PXC	PXC.2810337
=EB3+EBS-T15	1	Resistance thermometer measuring transducer	MCR-PT100-I-DC	PXC	PXC.2810337
=EB3+EBS-T16	1	Resistance thermometer measuring transducer	MCR-PT100-I-DC	PXC	PXC.2810337
=EB3+EBS-T18	1	Resistance thermometer measuring transducer	MCR-PT100-I-DC	PXC	PXC.2810337
=EB3+EBS-T19	1	Resistance thermometer measuring transducer	MCR-PT100-I-DC	PXC	PXC.2810337
=EB3+EBS-TT22	1	Resistance thermometer measuring transducer	MCR-PT100-I-DC	PXC	PXC.2810337
=EB3+EBS-TT23	1	Resistance thermometer measuring transducer	MCR-PT100-I-DC	PXC	PXC.2810337
=EB3+EBS-TT24	1	Resistance thermometer measuring transducer	MCR-PT100-I-DC	PXC	PXC.2810337
=EB3+EBS-TT25	1	Resistance thermometer measuring transducer	MCR-PT100-I-DC	PXC	PXC.2810337
=EB3+EBS-TT26	1	Resistance thermometer measuring transducer	MCR-PT100-I-DC	PXC	PXC.2810337
=EB3+ET1-A0	1	CPU 315-2 PN/DP	6ES7315-2EH14-0AB0	SIE	SIE.6ES7315-2EH14-0AB0
=EB3+ET1-A1	1	SM 331, 8AI, 9/12/14BIT	6ES7331-7KF02-0AB0	Siemens AG	SIE.6ES7331-7KF02-0AB0
=EB3+ET1-A2	1	SIMATIC S7-300, analog output SM 332	S7	SIEMEN	SIE.6ES7332-5HF00-0AB0
=EB3+ET1-A3	1	SM 321, 32DI, DC 24V	6ES7321-1BL00-0AA0	Siemens AG	SIE.6ES7321-1BL00-0AA0
=EB3+ET1-A4	1	SIMATIC S7-300, digital input SM 321	S7	SIEMEN	SIE.6ES7321-1BH02-0AA0
=EB3+ET1-A5	1	SIMATIC S7-300, digital output SM 322	S7	SIEMEN	SIE.6ES7322-1BL00-0AA0
=EB3+ET1-F1	1	NEOZED fuse insert	S 6 A/380 V	PHÖNIX	PHO.0913032
=EB3+ET1-F2	1	Miniature circuit-breaker	5SX2102-8	SIEMEN	SIE.5SX2102-8
=EB3+ET1-F3	1	Miniature circuit-breaker	5SX2102-8	SIEMEN	SIE.5SX2102-8
=EB3+ET1-F4	1	Miniature circuit-breaker	5SX2102-8	SIEMEN	SIE.5SX2102-8
=EB3+ET1-F5	1	Miniature circuit-breaker	5SX2102-8	SIEMEN	SIE.5SX2102-8
=EB3+ET1-F6	1	Miniature circuit-breaker	5SX2102-8	SIEMEN	SIE.5SX2102-8
=EB3+ET1-F7	1	Miniature circuit-breaker	5SX2102-8	SIEMEN	SIE.5SX2102-8
=EB3+ET1-F8	1	Miniature circuit-breaker	5SX2102-8	SIEMEN	SIE.5SX2102-8
=EB3+ET1-F9	1	Miniature circuit-breaker	5SX2102-8	SIEMEN	SIE.5SX2102-8
=EB3+ET1-F10	1	Miniature circuit-breaker	5SX2102-8	SIEMEN	SIE.5SX2102-8
=EB3+ET1-F200	1	3-pole Neozed fuse 25A kpl.	3-polige Neozed-Sicherung 25A kpl.	SIEMEN	SIE.3-polige Neozed-Sicherung 25A
=EB3+ET1-KM1	1	Motor contactor	GJL1211001R0101	ABB	ABB.GJL1211001R0101
=EB3+ET1-KM2	1	Motor contactor	GJL1211001R0101	ABB	ABB.GJL1211001R0101
=EB3+ET1-KM3	1	Motor contactor	GJL1211001R0101	ABB	ABB.GJL1211001R0101
=EB3+ET1-KM4	1	Motor contactor	GJL1211001R0101	ABB	ABB.GJL1211001R0101
=EB3+ET1-KM6	1	Motor contactor	GJL1211001R0101	ABB	ABB.GJL1211001R0101
=EB3+ET1-KM7	1	Motor contactor	GJL1211001R0101	ABB	ABB.GJL1211001R0101
=EB3+ET1-KM8	1	Motor contactor	GJL1211001R0101	ABB	ABB.GJL1211001R0101
=EB3+ET1-KM9	1	Motor contactor	GJL1211001R0101	ABB	ABB.GJL1211001R0101
=EB3+ET1-KM10	1	Motor contactor	GJL1211001R0101	ABB	ABB.GJL1211001R0101
=EB3+ET1-KM11	1	Motor contactor	GJL1211001R0101	ABB	ABB.GJL1211001R0101
=EB3+ET1-KM12	1	Motor contactor	GJL1211001R0101	ABB	ABB.GJL1211001R0101
=EB3+ET1-KM13	1	Motor contactor	GJL1211001R0101	ABB	ABB.GJL1211001R0101
=EB3+ET1-KM14	1	Motor contactor	GJL1211001R0101	ABB	ABB.GJL1211001R0101
=EB3+ET1-KM15.A	1	Motor contactor	GJL1211001R0101	ABB	ABB.GJL1211001R0101
=EB3+ET1-KM15.B	1	Motor contactor	GJL1211001R0101	ABB	ABB.GJL1211001R0101
=EB3+ET1-KM16	1	Motor contactor	GJL1211001R0101	ABB	ABB.GJL1211001R0101
=EB3+ET1-KM17.A	1	Motor contactor	GJL1211001R0101	ABB	ABB.GJL1211001R0101
=EB3+ET1-KM17.B	1	Motor contactor	GJL1211001R0101	ABB	ABB.GJL1211001R0101
=EB3+ET1-M1	1	Three-phase motor	DV112M4	SEW	SEW.DV112M4
=EB3+ET1-M2	1	Three-phase motor	DV112M4	SEW	SEW.DV112M4
=EB3+ET1-M3	1	Three-phase motor	DV112M4	SEW	SEW.DV112M4
=EB3+ET1-M4	1	Three-phase motor	DV112M4	SEW	SEW.DV112M4
=EB3+ET1-M5	1	Three-phase motor	DV112M4	SEW	SEW.DV112M4
=EB3+ET1-M6	1	Three-phase motor	DV112M4	SEW	SEW.DV112M4
=EB3+ET1-M7	1	Three-phase motor	DV112M4	SEW	SEW.DV112M4
=EB3+ET1-M8	1	Three-phase motor	DV112M4	SEW	SEW.DV112M4

