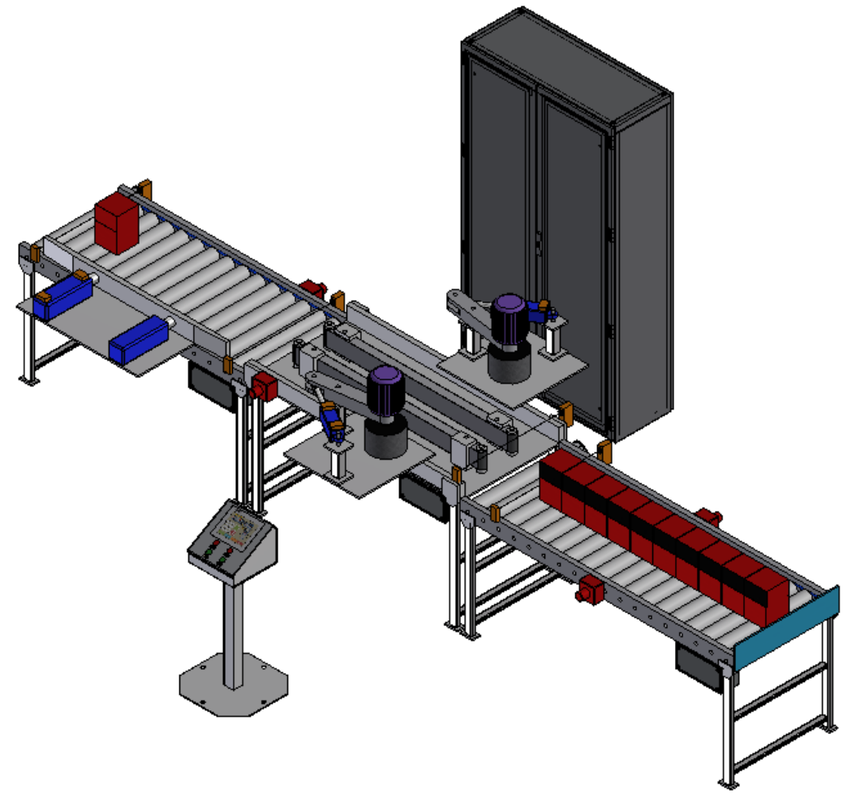
EPLAN GmbH & Co. KG

An der alten Ziegelei 2
40789 Monheim am Rhein
Phone. +49 (0)2173 - 39 64 - 0

Company / customer	Muster GmbH
Project description	Grinding machine
Job number	001
Commission	EPLAN

Project name	ESS_Sample_Project
Responsible for project	EPLAN
Last EPLAN version used	2022.0.3
Manufacturing date	2016/2017
Type	Grinding machine, Type 1
Place of installation	Hall 17 / Section B
Power supply	400 V 50 Hz 50 A
Input lead	NYM 5x6 mm²
Control voltage	24 V DC
Special customer regulations	No



Created on	12/8/2016		
Edit date	7/7/2025	by (short name) A	Number of pages 305

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TECHNICAL IMPLEMENTATION REGULATIONS

EPLAN GmbH & Co. KG
An der alten Ziegelei 2
D-40789 Monheim am Rhein / Germany

WIRING REGULATIONS

(Symbol in accordance with IEC 60757)

WIRING COLORS

Main current AC	Black (BK)	Control circuit AC > 50V	Red (RD)	External voltage	Orange (OG)
Main current DC	Black (BK)	Control circuit AC < 50V	Red (RD)	Interlock circuit	Orange (OG)
Neutral conductor	Blue (BU)	Control circuit DC	Gray (GY)	Measuring lines	Violet (VT)
Protective wire	Green-yellow (GNYE)			Current transformer	Brown (BN)

MINIMUM CROSS-SECTIONS

Main current	2,5 mm²
Protective wire	1,5 mm²
Control line	1,5 mm²
PLC wiring	0,75 mm²

WIRING

0.5 - 1.0 mm²	H05V-K PVC conductor line
1.5 - 150 mm²	H07V-K PVC conductor line

MATERIAL REGULATIONS

ENCLOSURES

Enclosures	RITTAL VX
Enclosure base	RITTAL VX
Enclosure color	RAL 9016
Degree of protection	IP43

TERMINALS

to 2.5 mm²	Terminal blocks Phoenix
4 to 150 mm²	Terminal blocks Phoenix

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SAFETY REGULATIONS

EPLAN GmbH & Co. KG

An der alten Ziegelei 2
D-40789 Monheim am Rhein / Germany

GENERAL SAFETY REGULATIONS



DANGER !

During plant operation certain items are under dangerous voltage! Non-observance of safety instructions can result in death, serious injuries or material damage.

Only specialist personnel may carry out transport, installation and commissioning work.

The applicable valid standards as well as the national and / or company-specific accident prevention regulations are to observed.

The following safety instructions are to be observed:

The erection, commissioning, troubleshooting as well as repair of the plant may only be carried out by qualified personnel that is familiar with the corresponding operating instructions.

Mounting of the devices has to be effected in accordance with the valid standards, state and local regulations.
Proper grounding and conductor dimensioning as well as proper short-circuit proofing have to be ensured.
These measures serve to ensure the safety of the plant and of the operating personnel.

Before carrying out safety checks, maintenance work and repair measures ensure that all the power supplies are switched off, are secured against being switched on unintentionally and are marked correspondingly.

Only test devices that are in a technically perfect condition and are suitable for the respective measurement may be used to carry out measurements!

The instructions specified in the respective operating instructions are to be followed strictly!
It is mandatory that hazard, warning and safety instructions be observed!

All doors and covers are to be kept closed during the plant operation.
If cooling devices are installed in the plant, ensure that these systems operate trouble-free.
These include the regular cleaning of the filters, in as far as they exist.

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	B2.Y1	1	Service unit mounting panel		05.08.2021	EPL
	B2.Y1	2	Enclosure legend : =GQA+B2.Y1-QM1 - =GQA+B2.Y1-RN2		23.12.2020	EPL
	B2.Y1	3	Housings		05.08.2021	EPL
EA	A1	1	Enclosure light		01.07.2021	EPL
	A2	1	Enclosure light		24.03.2021	EPL
F	A2	1	Control		24.03.2021	EPL
	A2	2	Emergency-stop switch		24.03.2021	EPL
	A2	3	Emergency-stop switch		24.03.2021	EPL
	A2	1	Safety supply terminal		24.03.2021	EPL
	A2	2	Safety digital inputs		24.03.2021	EPL
	A2	3	Safety digital inputs		24.03.2021	EPL
	A2	4	Safety digital outputs		24.03.2021	EPL
	A2	5	PLC diagram : =F+A2-KE2 - =F+A2-KE2		12.07.2021	EPL

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F	A2	6	PLC diagram : =F+A2-KE3 - =F+A2-KE3		12.07.2021	EPL
	A2	7	PLC diagram : =F+A2-KE4 - =F+A2-KE4		12.07.2021	EPL
EC1	A3	1	Air-conditioning unit		24.03.2021	EPL
K1	A2	1	Power supply PC		24.03.2021	EPL
	A2	2	Power supply I/O module		05.08.2021	EPL
	A2	1	Bus coupler		24.03.2021	EPL
	A2	2	Digital inputs		24.03.2021	EPL
	A2	3	Digital inputs		24.03.2021	EPL
	A2	4	Supply terminal digital outputs		24.03.2021	EPL
	A2	5	Digital outputs		24.03.2021	EPL
	A2	6	PLC diagram : =K1+A2-KE1 - =K1+A2-KE1		12.07.2021	EPL
	A2	7	PLC diagram : =K1+A2-KE2 - =K1+A2-KE2		12.07.2021	EPL
	A2	8	PLC diagram : =K1+A2-KE3 - =K1+A2-KE3		12.07.2021	EPL
	A2	9	PLC diagram : =K1+A2-KE5 - =K1+A2-KE5		12.07.2021	EPL
	B1.X1	1	Power supply I/O module		05.08.2021	EPL
	B1.X1	1	I/O module		24.03.2021	EPL
	B1.X1	2	PLC diagram : =K1+B1.X1-KE1 - =K1+B1.X1-KE1		12.07.2021	EPL
	B2.X1	1	Power supply I/O module		05.08.2021	EPL
	B2.X1	1	I/O module		24.03.2021	EPL
	B2.X1	2	Digital inputs		24.03.2021	EPL
	B2.X1	3	PLC diagram : =K1+B2.X1-KE1 - =K1+B2.X1-KE1		12.07.2021	EPL
	B2.X1	4	PLC diagram : =K1+B2.X1-KE2 - =K1+B2.X1-KE2		12.07.2021	EPL
	B3.X1	1	Power supply I/O module		05.08.2021	EPL
	B3.X1	1	I/O module		24.03.2021	EPL
	B3.X1	2	PLC diagram : =K1+B3.X1-KE1 - =K1+B3.X1-KE1		12.07.2021	EPL
K2	B2.Y1	1	Power supply overview fluid power		24.03.2021	EPL
	B2.Y1	3	Sub-plate module block 3.0 (spare)		24.03.2021	EPL
	B2.Y1	6	Sub-plate module block 6.0 (spare)		24.03.2021	EPL

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K2	B2.Y1	7	Sub-plate module block 7.0 (spare)		24.03.2021	EPL
	B2.Y1	8	Sub-plate module block 8.0 (spare)		24.03.2021	EPL
	B2.Y1	1	Overview fluid power		24.03.2021	EPL
	B2.Y1	1	Valve coils 1 - 8 (spare)		24.03.2021	EPL
	B2.Y1	2	Valve coils 9 - 12 (spare)		24.03.2021	EPL
	B2.Y1	3	Electrical power supply		24.03.2021	EPL
	B2.Y1	1	PLC diagram : =K2+B2.Y1-KE2 - =K2+B2.Y1-KE2		12.07.2021	EPL
	B2.Y1	2	PLC diagram : =K2+B2.Y1-KE3 - =K2+B2.Y1-KE3		12.07.2021	EPL
	B2.Y1	3	PLC diagram : =K2+B2.Y1-KE4 - =K2+B2.Y1-KE4		12.07.2021	EPL
	B2.Y1	4	PLC diagram : =K2+B2.Y1-KE5 - =K2+B2.Y1-KE5		12.07.2021	EPL
	B2.Y1	5	PLC diagram : =K2+B2.Y1-KE6 - =K2+B2.Y1-KE6		12.07.2021	EPL
	B2.Y1	1	CPX module 1		24.03.2021	EPL
	B2.Y1	2	CPX module 2		24.03.2021	EPL
	B2.Y1	3	CPX module 3 (spare)		24.03.2021	EPL
	B2.Y1	4	CPX module 4		24.03.2021	EPL
	B2.Y1	5	CPX module 5 (spare)		24.03.2021	EPL
	B2.Y1	6	Interface 1		24.03.2021	EPL
	B2.Y1	1	Panel layout		05.08.2021	EPL
	B2.Y1	2	Enclosure legend : +B2.Y1-U101 - =K2+B2.Y1-KE2		23.12.2020	EPL
	B2.Y1	2.1	Enclosure legend : =K2+B2.Y1-KE3 - =K2+B2.Y1-RN2		23.12.2020	EPL
	B2.Y1	3	Tubes		05.08.2021	EPL
	B2.Y1	4	Cable		05.08.2021	EPL
	B2.Y1	5	Flange plate		05.08.2021	EPL
	B2.Y1	6	Flange plate		05.08.2021	EPL
S1	A2	1	Power supply enclosure panel		24.03.2021	EPL
S2	C2	1	Power supply to panel of control panel		24.03.2021	EPL
GL1	A1	1	Actuator control		24.03.2021	EPL
	A2	1	Sensor control		24.03.2021	EPL

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MM1	B2.Y1	1	Actuator control		24.03.2021	EPL
	B2.Y1	1	Actuator / sensor control		24.03.2021	EPL
GL2	A1	1	Actuator control		24.03.2021	EPL
	A2	2	Sensor control		24.03.2021	EPL
MM2	B2.Y1	1	Actuator control		24.03.2021	EPL
	B2.Y1	1	Actuator / sensor control		24.03.2021	EPL
MM3	B2.Y1	1	Actuator control		24.03.2021	EPL
	B2.Y1	1	Actuator / sensor control		24.03.2021	EPL
TM1	A1	1	Actuator control		05.08.2021	EPL
	A2	2	Sensor control		24.03.2021	EPL
TM2	A1	1	Actuator control		05.08.2021	EPL
	A2	2	Sensor control		24.03.2021	EPL
GL3	A1	1	Actuator control		24.03.2021	EPL
	A2	2	Sensor control		24.03.2021	EPL
HK1		1	Paint workpiece		24.03.2021	EPL
		2	Piping definition		12.07.2021	EPL
		3	PCT loop overview		24.03.2021	EPL
		4	Device list		24.03.2021	EPL
		4.1	Device list		24.03.2021	EPL
		5	Assembly/Module overview		23.12.2020	EPL
		6	Assembly/Module overview		23.12.2020	EPL
		7	Properties list of the pipe class : RK A		23.12.2020	EPL
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		9	Properties list of the pipe class : RK C		23.12.2020	EPL
		10	Pre-planning: Pipe class overview : RK A - RK C		23.12.2020	EPL
		11	Properties list of the substance : 011		23.12.2020	EPL
		12	Properties list of the substance : 101		23.12.2020	EPL
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		15	Properties list of the substance : 1170		23.12.2020	EPL
		16	Properties list of the substance : E001		23.12.2020	EPL
		17	Properties list of the substance : E002		23.12.2020	EPL
		18	Pre-planning: Substance overview : 011 - E002		23.12.2020	EPL
		1	Cable pre-planning		24.03.2021	EPL
		2	Cable planning objects		24.03.2021	EPL
		2.1	Cable planning objects		24.03.2021	EPL
HK1.HW1		1	HK1 HW1 FC 1		23.12.2020	EPL
		2	HK1 HW1 FIRC 2		23.12.2020	EPL
		3	HK1 HW1 FIRC 3		23.12.2020	EPL
		4	HK1 HW1 GS 1		23.12.2020	EPL
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		6	HK1 HW1 LS++ 21		24.03.2021	EPL
		7	HK1 HW1 TIRCA+S++Z+++ 22		24.03.2021	EPL
HK1.HW2		1	HK1 HW2 FC 1		23.12.2020	EPL
		2	HK1 HW2 FIRC 2		23.12.2020	EPL
		3	HK1 HW2 FC 3		23.12.2020	EPL
		4	HK1 HW2 FIRC 4		23.12.2020	EPL
		5	HK1 HW2 LIR 20		23.12.2020	EPL
		6	HK1 HW2 LS++ 21		24.03.2021	EPL
HK1.HW3		1	HK1 HW3 LIR 20		23.12.2020	EPL
		2	HK1 HW3 LS++ 21		24.03.2021	EPL
HK1.HW4		1	HK1 HW4 LIR 20		23.12.2020	EPL
		2	HK1 HW4 LS++ 21		24.03.2021	EPL

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Structure identifier overview

F24_002

Full designation	Labeling	Structure description
=GAA	Function designation	400 V power supply
=GAB1	Function designation	24 V device power supply
=GAB2	Function designation	24 V supply PLC signals
=GQA	Function designation	Compressed air supply
=EA	Function designation	Lighting
=F	Function designation	Emergency-stop control
=EC1	Function designation	Cooling
=K1	Function designation	PLC controller
=K2	Function designation	Valve control
=S1	Function designation	Machine operation enclosure
=S2	Function designation	Machine operation control panel
=GL1	Function designation	Feed workpiece: Transport
=MM1	Function designation	Feed workpiece: Position
=GL2	Function designation	Work workpiece: Transport
=MM2	Function designation	Work workpiece: Position
=MM3	Function designation	Work workpiece: Position
=TM1	Function designation	Work workpiece: Grind
=TM2	Function designation	Work workpiece: Grind
=GL3	Function designation	Provide workpiece: Transport
=HK1	Function designation	Paint workpiece
=HK1.HW1	Function designation	Prepare basic color red
=HK1.HW2	Function designation	Mix paint color red
=HK1.HW3	Function designation	Feed process liquid
=HK1.HW4	Function designation	Feed additive
+A1	Location designation	Enclosure 1
+A2	Location designation	Enclosure 2
+A3	Location designation	Air-conditioning unit
+A4	Location designation	Enclosure 3

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Structure identifier overview

F24_002

Full designation	Labeling	Structure description
+A5	Location designation	Enclosure
+B1	Location designation	Station "Feed"
+B1.X1	Location designation	Station "Feed": Terminal box
+B2	Location designation	Station "Work"
+B2.X1	Location designation	Station "Work": Terminal box
+B2.Y1	Location designation	Station "Work": Pneumatic manifold
+B3	Location designation	Station "Provide"
+B3.X1	Location designation	Station "Provide": Terminal box
+C2	Location designation	Control panel
+B4	Location designation	Field
&AAA1	Document type	Title page / cover sheet
&AAB1	Document type	Table of contents
&ADB1	Document type	Structure description
&MFS11	Document type	Pneumatics schematic
&MFA11	Document type	Overview "Valve terminal pneumatics"
&EFS1	Document type	Electrical engineering schematic
&EFA1	Document type	Overview PLC
&EFA2	Document type	Overview "PROFINET"
&EFA3	Document type	Overview "Valve terminal electrical engineering"
&EFA4	Document type	Overview topology
&EPA1	Document type	Summarized parts list
&APB	Document type	Device tag list
&EMB1	Document type	Cable overview
&EMB2	Document type	Cable diagram
&EMA1	Document type	Terminal-strip overview
&EMA2	Document type	Terminal diagram
&EMA3	Document type	Connection list
&ETC1	Document type	Model view

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0	1	2	3	4	5	6	7	8	9

Structure identifier overview

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Full designation	Labeling	Structure description
&MTC1	Document type	Model view
&PFB	Document type	P&I diagrams
&EDB	Document type	Explanatory documents
&MPB1	Document type	Device tag list fluid power
&MMA1	Document type	Connection list fluid power

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Structure identifier overview		=	&ADB1
			Grinding machine	Drawing number					Structure description
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Modification	Date	Name	Creator EPL	Approved by		Date 12/23/2020	Ed. EPL		Page 17 from 305

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Range

+A1
Enclosure 1

+A2
Enclosure 2

+A3
Air-conditioning unit

+B1
+X1
Station "Feed":
Terminal box

+B2
+X1
Station "Work":
Terminal box

+Y1
Station "Work":
Pneumatic manifold

Station "Feed"

+B3
+X1
Station "Provide":
Terminal box

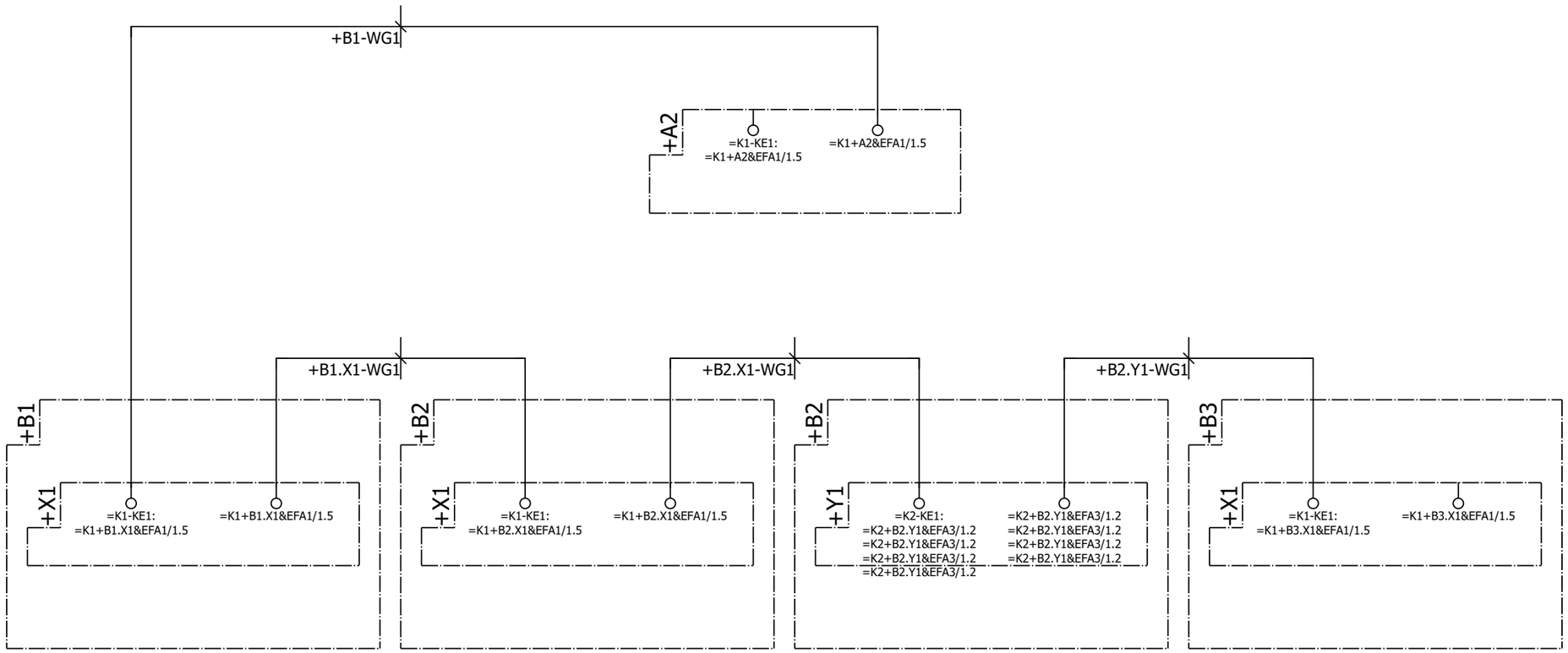
Station "Work"

Station "Provide"

+C2
Control panel

&EFA2/1

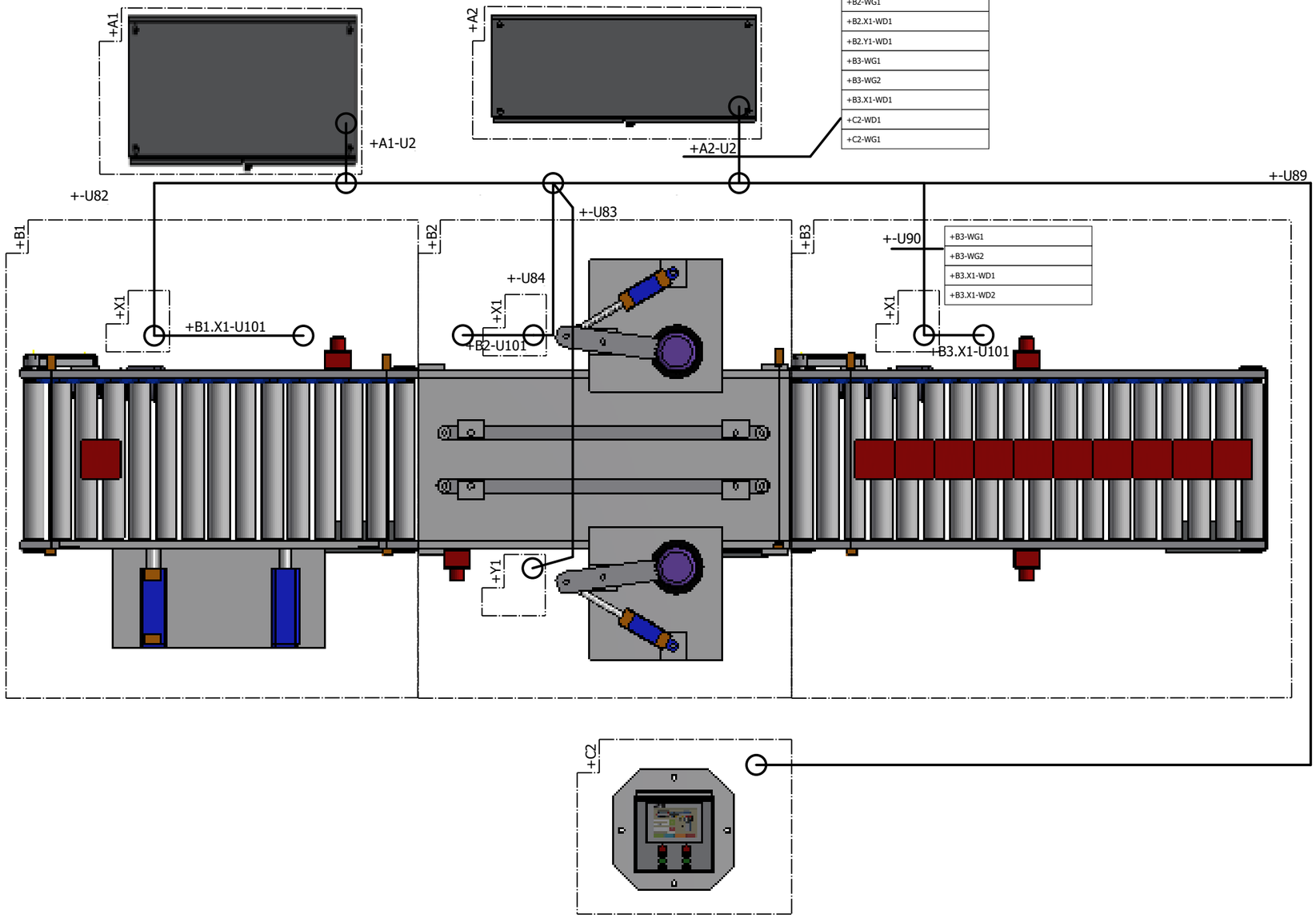
			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Location designation		=	&ADB1	
			Grinding machine	Drawing number					Structure description	
								+	Page	2
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+A1-WD1
+A2-WD1
+A2-WD2
+A2-WD3
+A2-WD4
+A2-WG1
+A2-WG2
+A2-WG3
+B1-WG2
+B1.X1-WD1
+B2-WG1
+B2.X1-WD1
+B2.Y1-WD1
+B3-WG1
+B3-WG2
+B3.X1-WD1
+C2-WD1
+C2-WG1



			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG		Overview topology		=	&EFA4
			Grinding machine	Drawing number						Overview topology
									+	Page 1
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Topology: Routed cables / connections

F36_001

Designation	Part number	Type number	Length [m]	Source	Source connection length [m]	Routing track	Target	Target connection length [m]
+A1-WD1	ESS.2x6CABLE	NYY-O	2,47	+A1-WE2;+A1-WE1	0,038	+A1-U2;+-U85;+-U87;+A2-U2	+A2-WE2;+A2-WE1	0,284
+A2-WD1	LAPP.00100664	ÖLFLEX® CLASSIC 100	2,24	+A2-XD1	0,047	+-U133;+A1-U2;+-U85;+-U87;+A2-U2;+-U140	+A1-XD3	0,047
+A2-WD2	LAPP.00100654	ÖLFLEX® CLASSIC 100	2,24	+A2-XD1	0,047	+-U133;+A1-U2;+-U85;+-U87;+A2-U2;+-U140	+A1-XD3	0,047
+A2-WD3	LAPP.0010064	ÖLFLEX® CLASSIC 100	2,24	+A2-XD5	0,047	+-U132;+A1-U2;+-U85;+-U87;+A2-U2;+-U143	+A1-XD2	0,047
+A2-WD4	LAPP.0010064	ÖLFLEX® CLASSIC 100	2,24	+A2-XD5	0,047	+-U132;+A1-U2;+-U85;+-U87;+A2-U2;+-U143	+A1-XD2	0,047
+A2-WG1	LAPP.0010036	ÖLFLEX® CLASSIC 100	2,24	+A1-XG1	0,047	+-U135;+A1-U2;+-U85;+-U87;+A2-U2;+-U141	+A2-XG1	0,047
+A2-WG2	LAPP.00100224	ÖLFLEX® CLASSIC 100	2,24	+A1-XG1	0,047	+-U135;+A1-U2;+-U85;+-U87;+A2-U2;+-U142	+A2-XG5	0,047
+A2-WG3	LAPP.00100224	ÖLFLEX® CLASSIC 100	2,24	+A1-XG1	0,047	+-U135;+A1-U2;+-U85;+-U87;+A2-U2;+-U142	+A2-XG5	0,047
+B1-WG2	LAPP.00101264	ÖLFLEX® CLASSIC 100	4,02	=F+B1-SG1	0,051	+-U144;+A2-U2;+-U87;+-U85;+-U82;+B1.X1-U101;+-U149	+A2-XG4	0,047
+B1.X1-WD1	LAPP.0011028	ÖLFLEX® 140	3,40	+B1.X1-XD1	0,047	+-U145;+A2-U2;+-U87;+-U85;+-U82;+-U94	+A2-XD7	0,047
+B1.X1-WD2	LAPP.0014159	ÖLFLEX® CLASSIC 100 H	1,78	+A1-XD4	0,047	+-U134;+A1-U2;+-U82;+-U93	+B1.X1-XZ1	0,091
+B1.X1-WG2	LAPP.22260257	AB-C3-2,0PUR-M12FS	0,66	+B1.X1-XZ1	0,047	+-U93;+B1.X1-U101;+-U150	=GL1+B1-BG1	
+B1.X1-WZ1	LAPP.0036026	ÖLFLEX® SERVO 700	0,66	+B1.X1-XZ1	0,047	+-U93;+B1.X1-U101;+-U151	=GL1+B1-MA1	
+B2-WG1	LAPP.00101264	ÖLFLEX® CLASSIC 100	2,16	=F+B2-SG1	0,051	+-U144;+A2-U2;+-U87;+-U84;+B2-U101;+-U158	+A2-XG4	0,047
+B2.X1-WD1	LAPP.0011028	ÖLFLEX® 140	1,86	+B2.X1-XD1	0,047	+-U145;+A2-U2;+-U87;+-U84;+-U96	+A2-XD7	0,047
+B2.X1-WD2	LAPP.0014159	ÖLFLEX® CLASSIC 100 H	1,92	+A1-XD4	0,047	+-U134;+A1-U2;+-U85;+-U84;+-U95	+B2.X1-XZ1	0,091
+B2.X1-WG2	LAPP.22260257	AB-C3-2,0PUR-M12FS	0,34	+B2.X1-XZ1	0,047	+-U95;+B2-U101;+-U159	=GL2+B2-BG1	
+B2.X1-WG3	LAPP.22260257	AB-C3-2,0PUR-M12FS	0,34	+B2.X1-XZ1	0,047	+-U95;+B2-U101;+-U165	=TM1+B2-BG1	
+B2.X1-WG4	LAPP.22260257	AB-C3-2,0PUR-M12FS	0,34	+B2.X1-XZ1	0,047	+-U95;+B2-U101;+-U167	=TM2+B2-BG1	
+B2.X1-WZ1	LAPP.0036026	ÖLFLEX® SERVO 700	0,34	+B2.X1-XZ1	0,047	+-U95;+B2-U101;+-U160	=GL2+B2-MA1	
+B2.X1-WZ2	LAPP.0036061	ÖLFLEX® ROBUST FD 756 C	2,17	+B2.X1-XZ1	0,091	+-U95;+-U84;+-U85;+A1-U2;+-U136	=TM1+A1-TA1	0,303
+B2.X1-WZ3	LAPP.0036061	ÖLFLEX® ROBUST FD 756 C	0,34	+B2.X1-XZ1	0,047	+-U95;+B2-U101;+-U166	=TM1+B2-MA1	
+B2.X1-WZ4	LAPP.0036061	ÖLFLEX® ROBUST FD 756 C	2,17	+B2.X1-XZ1	0,091	+-U95;+-U84;+-U85;+A1-U2;+-U137	=TM2+A1-TA1	0,303
+B2.X1-WZ5	LAPP.0036061	ÖLFLEX® ROBUST FD 756 C	0,34	+B2.X1-XZ1	0,047	+-U95;+B2-U101;+-U168	=TM2+B2-MA1	
+B2.Y1-WD1	LAPP.00100234	ÖLFLEX® CLASSIC 100	2,88	+B2.Y1-XD1	0,047	+-U145;+A2-U2;+-U87;+-U83;+-U97	+A2-XD7	0,047
+B3-WG1	LAPP.00101264	ÖLFLEX® CLASSIC 100	2,02	+A2-XG4	0,047	+-U144;+A2-U2;+-U90;+B3.X1-U101;+-U169	=F+B3-SG1	0,051
+B3-WG2	LAPP.00101264	ÖLFLEX® CLASSIC 100	2,02	+A2-XG4	0,047	+-U144;+A2-U2;+-U90;+B3.X1-U101;+-U170	=F+B3-SG2	0,051
+B3.X1-WD1	LAPP.0011028	ÖLFLEX® 140	1,77	+B3.X1-XD1	0,047	+-U145;+A2-U2;+-U90;+-U129	+A2-XD7	0,047
+B3.X1-WD2	LAPP.0014159	ÖLFLEX® CLASSIC 100 H	3,35	+A1-XD4	0,047	+-U134;+A1-U2;+-U85;+-U87;+-U90;+-U128	+B3.X1-XZ1	0,091
+B3.X1-WG1	LAPP.22260257	AB-C3-2,0PUR-M12FS	0,29	+B3.X1-XZ1	0,047	+-U128;+B3.X1-U101;+-U171	=GL3+B3-BG1	

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Topology: Routed cables / connections		=	&EFA4
			Grinding machine	Drawing number					Overview topology
								+	Page 2
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL		Page 21 from 305

0	1	2	3	4	5	6	7	8	9

Topology: Routed cables / connections

F36_001

Designation	Part number	Type number	Length [m]	Source	Source connection length [m]	Routing track	Target	Target connection length [m]
+B3.X1-WZ1	LAPP.0036026	ÖLFLEX® SERVO 700	0,29	+B3.X1-XZ1	0,047	+-U128;+B3.X1-U101;+-U172	=GL3+B3-MA1	
+C2-WD1	LAPP.00100224	ÖLFLEX® CLASSIC 100	7,36	+C2-XD1	0,047	+-U145;+A2-U2;+-U89;+-U91	+A2-XD7	0,047
+C2-WG1	LAPP.00101264	ÖLFLEX® CLASSIC 100	7,32	=F+C2-SG1	0,051	+-U146;+A2-U2;+-U89;+-U92	+A2-XGA1	
14-ø			4,62	=MM1+B1-XM1	0,000	+-U156;+B1.X1-U101;+-U82;+-U85;+-U83;+-U122	=MM1+B2.Y1-XM1	0,052
16-ø			4,62	=MM1+B1-XM2	0,000	+-U157;+B1.X1-U101;+-U82;+-U85;+-U83;+-U123	=MM1+B2.Y1-XM2	0,052
22-ø			2,75	=MM2+B2-RN1	0,000	+-U161;+B2-U101;+-U84;+-U83;+-U124	=MM2+B2.Y1-XM1	0,040
24-ø			2,75	=MM2+B2-RN2	0,000	+-U162;+B2-U101;+-U84;+-U83;+-U125	=MM2+B2.Y1-XM2	0,040
26-ø			2,75	=MM3+B2-RN1	0,000	+-U163;+B2-U101;+-U84;+-U83;+-U126	=MM3+B2.Y1-XM1	0,040
28-ø			2,75	=MM3+B2-RN2	0,000	+-U164;+B2-U101;+-U84;+-U83;+-U127	=MM3+B2.Y1-XM2	0,040

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Cutting list

F01_007

Legend item	Part number	Type number	Function	Designation	DT	Length	Pos.
14	RIT.2313150	SZ.2313150	Mounting rail	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	+A1-U16	189 mm	1
15	RIT.2313150	SZ.2313150	Mounting rail	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	+A1-U15	235 mm	2
17	RIT.2313150	SZ.2313150	Mounting rail	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	+A1-U17	349 mm	3
13	RIT.2313150	SZ.2313150	Mounting rail	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	+A1-U14	579 mm	4
18	RIT.2313150	SZ.2313150	Mounting rail	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	+A1-U18	579 mm	5
19	RIT.2313150	SZ.2313150	Mounting rail	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	+A1-U19	579 mm	6
10778	RIT.8800750	TS.8800750	Wire duct	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	+A1-U10	349 mm	7
10777	RIT.8800750	TS.8800750	Wire duct	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	+A1-U9	490 mm	8
10776	RIT.8800750	TS.8800750	Wire duct	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	+A1-U7	579 mm	9
10775	RIT.8800750	TS.8800750	Wire duct	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	+A1-U8	579 mm	10
10774	RIT.8800750	TS.8800750	Wire duct	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	+A1-U11	579 mm	11
10773	RIT.8800750	TS.8800750	Wire duct	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	+A1-U12	579 mm	12
10770	RIT.8800752	TS.8800752	Wire duct	TS Cable duct for mounting plate, WHD: 60x2000x80 mm	+A1-U13	698,9 mm	13
10769	RIT.8800752	TS.8800752	Wire duct	TS Cable duct for mounting plate, WHD: 60x2000x80 mm	+A1-U4	699 mm	14
10771	RIT.8800752	TS.8800752	Wire duct	TS Cable duct for mounting plate, WHD: 60x2000x80 mm	+A1-U5	1470 mm	15
10772	RIT.8800752	TS.8800752	Wire duct	TS Cable duct for mounting plate, WHD: 60x2000x80 mm	+A1-U6	1470 mm	16

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Summarized parts list cable lengths

F02_008

Order number	Description Designation	Type number Part number	Manufacturer Supplier	Quantity / packaging Total length	Total number of units	Serial no.
ESS.2x6CABLE	NYY-O 2X6	NYY-O ESS.2x6CABLE	ESS ESS	1,00 2,47	3	1
00100664	ÖLFLEX® CLASSIC 100 5G1,5	ÖLFLEX® CLASSIC 100 LAPP.00100664	LAPP LAPP	1,00 2,24	3	2
00100654	ÖLFLEX® CLASSIC 100 4G1,5	ÖLFLEX® CLASSIC 100 LAPP.00100654	LAPP LAPP	1,00 2,24	3	3
0010064	ÖLFLEX® CLASSIC 100 3G1,5	ÖLFLEX® CLASSIC 100 LAPP.0010064	LAPP LAPP	1,00 4,49	5	4
0010036	ÖLFLEX® CLASSIC 100 40G0,75	ÖLFLEX® CLASSIC 100 LAPP.0010036	LAPP LAPP	1,00 2,24	3	5
00100224	ÖLFLEX® CLASSIC 100 3G0,75	ÖLFLEX® CLASSIC 100 LAPP.00100224	LAPP LAPP	1,00 11,85	12	6
2832629	Patch cable	FL CAT5 PATCH 10,0 PXC.2832629	PXC PXC	10,00 0,00	0	7
00101264	ÖLFLEX® CLASSIC 100 4X0,75	ÖLFLEX® CLASSIC 100 LAPP.00101264	LAPP LAPP	1,00 17,53	18	8
0011028	ÖLFLEX 140 5G1,5	ÖLFLEX® 140 LAPP.0011028	LAPP LAPP	1,00 7,04	8	9
0014159	ÖLFLEX® CLASSIC 100 H 5G2,5	ÖLFLEX® CLASSIC 100 H LAPP.0014159	LAPP LAPP	1,00 7,04	8	10
0036026	ÖLFLEX® SERVO 700 4G2,5+(2x0,75)FDF	ÖLFLEX® SERVO 700 LAPP.0036026	LAPP LAPP	1,00 1,28	2	11
0036061	ÖLFLEX® FD ROBUST 756 C 4 G 2,5+(2x1)	ÖLFLEX® ROBUST FD 756 C LAPP.0036061	LAPP LAPP	1,00 5,02	6	12
00100234	ÖLFLEX CLASSIC 100 4G0,75	ÖLFLEX® CLASSIC 100 LAPP.00100234	LAPP LAPP	1,00 3,12	4	13
151688	Plug socket with cable	KMEB-1-24-2,5-LED FES.151688	FES FES	1,00 2,50	3	14
570734	Connecting cable	NEBU-M12W5-K-2-M12W5 FES.570734	FES FES	1,00 0,49	1	15
541349	Connecting cable	NEBU-M8G3-K-5-M8G3 FES.541349	FES FES	1,00 30,00	30	16

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Summarized parts list cable duct lengths

F02_009

Order number	Quantity	Description Designation	Type number Part number	Manufacturer Supplier	Delivery length Total length	Total number of units	Serial no.
8800752	12 pc(s).	TS Cable duct for mounting plate, WHD: 60x2000x80 mm	TS.8800752 RIT.8800752	RIT RIT	2000,00 mm 10,57 m	6	1
8800750	19 pc(s).	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750 RIT.8800750	RIT RIT	2000,00 mm 7,158 m	4	2
8800753	2 pc(s).	TS Cable duct for mounting plate, WHD: 80x2000x80 mm	TS.8800753 RIT.8800753	RIT RIT	2000,00 mm 3 m	2	3

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Summarized parts list

F02_006

Order number	Quantity	Designation	Type number	Supplier	Pos.
197387	3	Plastic tubing	PUN-H-12X2-BL	FES	1
159666	15	Plastic tubing	PUN-8X1,25-BL	FES	2
159668	11	Plastic tubing	PUN-10X1,5-BL	FES	3
	3				4
	3				5
	17				6
	2				7
	2				8
	3				9
	3				10
	2				11
	6				12
	6				13
	2				14
	2				15
	1				16
	1				17
	1				18
	1				19
	1				20
	2				21

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Summarized parts list total weight

F02_007

Carry over

Order number	Quantity	Description Designation	Type number Part number	Manufacturer Supplier	Individual weight	Total weight	Serial no.
8886000	1 pc(s).	VX Baying enclosure system, WHD: 800x1800x600 mm, single door	VX.8886000 RIT.8886000	RIT RIT	0,00 kg	0,00	1
4568000	4 pc(s).	SZ Eyebolt, for TS, SE, Sheet steel, zinc-plated	PS.4568000 RIT.4568000	RIT RIT	0,61 kg	0,61	2
8186245	2 pc(s).	VX Side panel, screw-fastened, for HD: 1800x600 mm	VX.8186245 RIT.8186245	RIT RIT	0,00 kg	0,00	3
8620003	2 pc(s).	VX Base/plinth with trim panel, front/rear, H: 100 mm, for W: 800 mm	VX.8620003 RIT.8620003	RIT RIT	0,00 kg	0,00	4
8620033	2 pc(s).	VX Base/plinth trim panel, side, H: 100 mm, for D: 600 mm	VX.8620033 RIT.8620033	RIT RIT	0,00 kg	0,00	5
3581000	2 pc(s).	SV Busbar E-Cu, WH: 15x5 mm, L: 2400 mm	SV.3581000 RIT.3581000	RIT RIT	12,66 kg	4,22	6
9340030	4 pc(s).	SV Busbar support, 1-pole, for busbar WH: 12x5-30x10 mm	SV.9340030 RIT.9340030	RIT RIT	0,23 kg	0,23	7
3451500	6 pc(s).	SV Conductor connection clamp, 2,5-16 mm², clamping area WH: 8x8 mm	SV.3451500 RIT.3451500	RIT RIT	0,42 kg	0,17	8
3450500	8 pc(s).	SV Conductor connection clamp, 1-4 mm², for bar thickness 5 mm	SV.3450500 RIT.3450500	RIT RIT	0,27 kg	0,14	9
3VA1032-2ED32-0AA0	1 Piece	MCCB_IEC_FS100_32A_3P_16KA_TM_ FTFM	3VA1032-2ED32-0AA0 SIE.3VA1032-2ED32-0AA0	SIE SIE	0,90 kg	0,90	10
3VA9157-0FK25	1	DOOR MOUNTED ROTARY OPERATOR, EM	3VA9157-0FK25 SIE.3VA9157-0FK25	SIE SIE	0,53 kg	0,53	11
5SY4106-5	3 Piece	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, A, 6A, D=70MM	5SY4106-5 SIE.5SY4106-5	SIE SIE	0,17 kg	0,51	12
5SY4116-6	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, B, 16A, D=70MM	5SY4116-6 SIE.5SY4116-6	SIE SIE	0,15 kg	0,15	13
2901362	1 Piece	Measuring instrument	EEM-MA200 PXC.2901362	PXC PXC	0,30 kg	0,30	14
3SU1401-1BF60-1AA0	3	LED MODULE, WHITE	3SU1401-1BF60-1AA0 SIE.3SU1401-1BF60-1AA0	SIE SIE	0,01 kg	0,03	15
3SU1500-0AA10-0AA0	3	HOLDER	3SU1500-0AA10-0AA0 SIE.3SU1500-0AA10-0AA0	SIE SIE	0,02 kg	0,06	16
3SU1001-6AA60-0AA0	3	INDICATOR LIGHT, WHITE	3SU1001-6AA60-0AA0 SIE.3SU1001-6AA60-0AA0	SIE SIE	0,00 kg	0,00	17
2277019	3 Stück	Current transformer	PACT MCR-V1-21-44- 50-5A-1 PXC.2277019	PXC PXC	0,19 kg	0,57	18
3RV2011-1GA15	2	CIRCUIT-BREAKER SCREW CONNECTION 6.3A	3RV2011-1GA15 SIE.3RV2011-1GA15	SIE SIE	0,36 kg		19

Subtotal 8,42

Total weight

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Summarized parts list total weight

F02_007

Carry over 8,42

Order number	Quantity	Description / Designation	Type number / Part number	Manufacturer / Supplier	Individual weight	Total weight	Serial no.
2500210	1 pc(s).	LED system light	SZ.2500210 RIT.2500210	RIT RIT	0,61 kg	0,61	20
5SU1356-6KK16	4	RCBO elm	5SU1356-6KK16 SIE.5SU1356-6KK16	SIE SIE	0,27 kg	1,08	21
2506100	1 pc(s).	SZ Socket for mounting on support rails, Schuko, CEE 7/4	SZ.2506100 RIT.2506100	RIT RIT	0,14 kg	0,07	22
3RV2011-1BA25	1 Piece	CIRCUIT-BREAKER SPRING-L. CONN. 2A	3RV2011-1BA25 SIE.3RV2011-1BA25	SIE SIE	0,38 kg	0,38	23
3RT2015-1BB41-1AA0	6	CONTACTOR,AC3:3KW 1NO DC24V	3RT2015-1BB41-1AA0 SIE.3RT2015-1BB41-1AA0	SIE SIE	0,00 kg	0,00	24
3RH2911-1FA22-0MA0	6	AUX. SWITCH BLOCK, 2NO+2NC	3RH2911-1FA22-0MA0 SIE.3RH2911-1FA22-0MA0	SIE SIE	0,06 kg	0,36	25
3RV2011-1EA25	2	CIRCUIT-BREAKER SPRING-L. CONN. 4A	3RV2011-1EA25 SIE.3RV2011-1EA25	SIE SIE	0,38 kg		26
3RV2011-4AA10	2	CIRCUIT-BREAKER SCREW CONNECTION 16A	3RV2011-4AA10 SIE.3RV2011-4AA10	SIE SIE	0,36 kg		27
3RV29011E	2	TRANSVERSE AUX. SWITCH, 1NO+1NC, SCREW CONNECTION,	3RV2901-1E SIE.3RV2901-1E	SIE SIE	0,02 kg		28
828 520 9	2 Piece	Vector oriented drive inverter	MC07B0015-5A3-4-00 SEW.MC07B0015-5A3-4-00	SEW SEW	1,50 kg	3,00	29

Subtotal	13,92
Total weight	13,92

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0	1	2	3	4	5	6	7	8	9

Connection list

F27_002

Connection	Target 1	Target 2	Color	Cross-section
	+A1-XD1:1	=GAA+A1-FC1:1	BK	6
	=GAA+A1-FC1:1	=EA+A1-FB1:1	OG	6
	=EA+A1-FB1:1	=EA+A1-FB3:1	OG	6
	=GAA+A1-FC1:2	=GAA+A1-FC2:1	BK	4
	=GAA+A1-FC2:1	=GAB1+A1-FC1:1/L1	BK	4
	=GAB1+A1-FC1:1/L1	=GAB2+A1-FC1:1/L1	BK	4
	=GAB2+A1-FC1:1/L1	=GL1+A1-FC1:1/L1	BK	4
	=GL1+A1-FC1:1/L1	=GL2+A1-FC1:1/L1	BK	4
	=GL2+A1-FC1:1/L1	=TM1+A1-FC1:1/L1	BK	4
	=TM1+A1-FC1:1/L1	=TM2+A1-FC1:1/L1	BK	4
	=TM2+A1-FC1:1/L1	=GL3+A1-FC1:1/L1	BK	4
	+A1-XD1:2	=GAA+A1-FC1:3	BK	6
	=GAA+A1-FC1:3	=EA+A1-FB2:1	OG	6
	=EA+A1-FB2:1	=EA+A1-FB4:1	OG	6
	=GAA+A1-FC1:4	=GAA+A1-FC3:1	BK	4
	=GAA+A1-FC3:1	=GAB1+A1-FC1:3/L2	BK	4
	=GAB1+A1-FC1:3/L2	=GAB2+A1-FC1:3/L2	BK	4
	=GAB2+A1-FC1:3/L2	=GL1+A1-FC1:3/L2	BK	4
	=GL1+A1-FC1:3/L2	=GL2+A1-FC1:3/L2	BK	4
	=GL2+A1-FC1:3/L2	=TM1+A1-FC1:3/L2	BK	4
	=TM1+A1-FC1:3/L2	=TM2+A1-FC1:3/L2	BK	4
	=TM2+A1-FC1:3/L2	=GL3+A1-FC1:3/L2	BK	4
	+A1-XD1:3	=GAA+A1-FC1:5	BK	6
	=GAA+A1-FC1:5	=GAA+A1-FC5:1	OG	6
	=GAA+A1-FC1:6	=GAA+A1-FC4:1	BK	4
	=GAA+A1-FC4:1	=GAB1+A1-FC1:5/L3	BK	4
	=GAB1+A1-FC1:5/L3	=GAB2+A1-FC1:5/L3	BK	4
	=GAB2+A1-FC1:5/L3	=GL1+A1-FC1:5/L3	BK	4
	=GL1+A1-FC1:5/L3	=GL2+A1-FC1:5/L3	BK	4
	=GL2+A1-FC1:5/L3	=TM1+A1-FC1:5/L3	BK	4
	=TM1+A1-FC1:5/L3	=TM2+A1-FC1:5/L3	BK	4
	=TM2+A1-FC1:5/L3	=GL3+A1-FC1:5/L3	BK	4
	+A1-XD5:6	=GAA+A1-TA3:k	BN	1,5
	+A1-XD5:5	=GAA+A1-TA3:l	BN	1,5
	+A1-XD5:4	=GAA+A1-TA2:k	BN	1,5
	+A1-XD5:3	=GAA+A1-TA2:l	BN	1,5
	+A1-XD5:2	=GAA+A1-TA1:k	BN	1,5
	+A1-XD5:1	=GAA+A1-TA1:l	BN	1,5
	+A1-WE2:1	+A1-XD1:7	BU	6
	+A1-XD5:6	=GAA+A1-PF1:I3:11	BN	1,5
	+A1-XD5:5	=GAA+A1-PF1:I3:9	BN	1,5
	+A1-XD5:4	=GAA+A1-PF1:I2:7	BN	1,5
	+A1-XD5:3	=GAA+A1-PF1:I2:5	BN	1,5
	+A1-XD5:2	=GAA+A1-PF1:I1:3	BN	1,5
	+A1-XD5:1	=GAA+A1-PF1:I1:1	BN	1,5
	+A1-WE1:1	+A1-XD1:8	GNYE	6
	=GAA+A1-FC5:2	=GAA+A1-PF1:AUX SUPPLY:20	BK	1,5
	+A1-WE2:9	=GAA+A1-PF1:AUX SUPPLY:22	BU	1,5
	+A1-FC2:1	+A1-XD1:4	OG	6
	+A1-FC2:1	=GAA+A1-PF1:I3:12	BK	1,5
	+A1-FC2:2	+A1-XD1:5	OG	6
	+A1-FC2:2	=GAA+A1-PF1:I3:14	BK	1,5
	+A1-FC2:3	+A1-XD1:6	OG	6
	+A1-FC2:3	=GAA+A1-PF1:I3:16	BK	1,5
	+A1-WE2:2	=GAA+A1-PF1:I3:2	BU	1,5
	+A1-WE1:2	=GAA+A1-PF1:I3:18	GNYE	1,5
	=GAA+A1-PF1:x2	=GAA+A1-PF1:RS485:17		
	=GAA+A1-PF1:x1	=GAA+A1-PF1:RS485:15		
	=GAA+A1-FC2:2	=GAA+A1-PF2:X1	BK	1,5

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Connection list

F27_002

Connection	Target 1	Target 2	Color	Cross-section
	+A1-WE2:8	=GAA+A1-PF2:X2	BU	1,5
	=GAA+A1-PF2:X2	=GAA+A1-PF3:X2	BU	1,5
	=GAA+A1-PF3:X2	=GAA+A1-PF4:X2	BU	1,5
	=GAA+A1-FC3:2	=GAA+A1-PF3:X1	BK	1,5
	=GAA+A1-FC4:2	=GAA+A1-PF4:X1	BK	1,5
	+A1-XD3:1	=GAB1+A1-FC1:2/T1	BK	1,5
	+A1-XD3:2	=GAB1+A1-FC1:4/T2	BK	1,5
	+A1-XD3:3	=GAB1+A1-FC1:6/T3	BK	1,5
	+A1-XD3:6	=GAB2+A1-FC1:2/T1	BK	1,5
	+A1-XD3:7	=GAB2+A1-FC1:4/T2	BK	1,5
	+A1-XD3:8	=GAB2+A1-FC1:6/T3	BK	1,5
	+A1-XG1:1	=GAB2+A1-FC1:14	GY	0,75
	+A1-XG1:2	=GAB2+A1-FC1:13	GY	0,75
	+A1-XD2:1	=EA+A1-FB1:2	BK	1,5
	+A1-WE2:4	=EA+A1-FB1:N	BU	1,5
	+A1-XD2:3	=EA+A1-FB1:N.	BU	1,5
	+A1-XD2:4	=EA+A1-XD1:L	BK	1,5
	+A1-XD2:4	=EA+A1-FB2:2	BK	1,5
	+A1-XD2:5	=EA+A1-XD1:PE	GNYE	1,5
	+A1-WE2:5	=EA+A1-FB2:N	BU	1,5
	+A1-XD2:6	=EA+A1-XD1:N	BU	1,5
	+A1-XD2:6	=EA+A1-FB2:N.	BU	1,5
	+A1-XD2:7	=EA+A1-FB3:2	BK	1,5
	+A1-WE2:6	=EA+A1-FB3:N	BU	1,5
	+A1-XD2:9	=EA+A1-FB3:N.	BU	1,5
	+A1-XD2:10	=EA+A1-FB4:2	BK	1,5
	+A1-WE2:7	=EA+A1-FB4:N	BU	1,5
	+A1-XD2:12	=EA+A1-FB4:N.	BU	1,5
	+A1-XD4:1	=GL1+A1-QA1:2/T1	BK	2,5
	=GL1+A1-QA1:2/T1	=GL1+A1-QA2:2/T1	BK	2,5
	=GL1+A1-FC1:2/T1	=GL1+A1-QA1:1/L1	BK	2,5
	=GL1+A1-QA1:1/L1	=GL1+A1-QA2:5/L3	BK	2,5
	+A1-XD4:2	=GL1+A1-QA1:4/T2	BK	2,5
	=GL1+A1-QA1:4/T2	=GL1+A1-QA2:4/T2	BK	2,5
	=GL1+A1-FC1:4/T2	=GL1+A1-QA1:3/L2	BK	2,5
	=GL1+A1-QA1:3/L2	=GL1+A1-QA2:3/L2	BK	2,5
	+A1-XD4:3	=GL1+A1-QA1:6/T3	BK	2,5
	=GL1+A1-QA1:6/T3	=GL1+A1-QA2:6/T3	BK	2,5
	=GL1+A1-FC1:6/T3	=GL1+A1-QA1:5/L3	BK	2,5
	=GL1+A1-QA1:5/L3	=GL1+A1-QA2:1/L1	BK	2,5
	+A1-XG1:3	=GL1+A1-FC1:14	GY	0,75
	+A1-XG1:4	=GL1+A1-FC1:13	GY	0,75
	=GL1+A1-QA1:A1	=GL1+A1-QA2:12	GY	0,75
	+A1-XG1:5	=GL1+A1-QA2:11	GY	0,75
	+A1-XG1:6	=GL1+A1-QA1:A2	GY	0,75
	=GL1+A1-QA1:12	=GL1+A1-QA2:A1	GY	0,75
	+A1-XG1:7	=GL1+A1-QA1:11	GY	0,75
	+A1-XG1:8	=GL1+A1-QA2:A2	GY	0,75
	+A1-XG1:9	=GL1+A1-QA1:14	GY	0,75
	+A1-XG1:10	=GL1+A1-QA1:13	GY	0,75
	+A1-XG1:11	=GL1+A1-QA2:14	GY	0,75
	+A1-XG1:12	=GL1+A1-QA2:13	GY	0,75
	+A1-XD4:6	=GL2+A1-QA1:2/T1	BK	2,5
	=GL2+A1-QA1:2/T1	=GL2+A1-QA2:2/T1	BK	2,5
	=GL2+A1-FC1:2/T1	=GL2+A1-QA1:1/L1	BK	2,5
	=GL2+A1-QA1:1/L1	=GL2+A1-QA2:5/L3	BK	2,5
	+A1-XD4:7	=GL2+A1-QA1:4/T2	BK	2,5
	=GL2+A1-QA1:4/T2	=GL2+A1-QA2:4/T2	BK	2,5
	=GL2+A1-FC1:4/T2	=GL2+A1-QA1:3/L2	BK	2,5

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Connection list

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Connection	Target 1	Target 2	Color	Cross-section
	=GL2+A1-QA1:3/L2	=GL2+A1-QA2:3/L2	BK	2,5
	+A1-XD4:8	=GL2+A1-QA1:6/T3	BK	2,5
	=GL2+A1-QA1:6/T3	=GL2+A1-QA2:6/T3	BK	2,5
	=GL2+A1-FC1:6/T3	=GL2+A1-QA1:5/L3	BK	2,5
	=GL2+A1-QA1:5/L3	=GL2+A1-QA2:1/L1	BK	2,5
	+A1-XG1:13	=GL2+A1-FC1:14	GY	0,75
	+A1-XG1:14	=GL2+A1-FC1:13	GY	0,75
	=GL2+A1-QA1:A1	=GL2+A1-QA2:12	GY	0,75
	+A1-XG1:15	=GL2+A1-QA2:11	GY	0,75
	+A1-XG1:16	=GL2+A1-QA1:A2	GY	0,75
	=GL2+A1-QA1:12	=GL2+A1-QA2:A1	GY	0,75
	+A1-XG1:17	=GL2+A1-QA1:11	GY	0,75
	+A1-XG1:18	=GL2+A1-QA2:A2	GY	0,75
	+A1-XG1:19	=GL2+A1-QA1:14	GY	0,75
	+A1-XG1:20	=GL2+A1-QA1:13	GY	0,75
	+A1-XG1:21	=GL2+A1-QA2:14	GY	0,75
	+A1-XG1:22	=GL2+A1-QA2:13	GY	0,75
	=TM1+A1-FC1:2/T1	=TM1+A1-TA1:X1:1	BK	2,5
	=TM1+A1-FC1:4/T2	=TM1+A1-TA1:X1:2	BK	2,5
	=TM1+A1-FC1:6/T3	=TM1+A1-TA1:X1:3	BK	2,5
	+A1-WE1:4	=TM1+A1-TA1:X1:PE1	GNYE	6
	+A1-XG1:23	=TM1+A1-FC1:14	GY	0,75
	+A1-XG1:24	=TM1+A1-FC1:13	GY	0,75
	+A1-XG1:25	=TM1+A1-TA1:X12:1	GY	0,75
	+A1-XG1:26	=TM1+A1-TA1:X12:9	GY	0,75
	=TM2+A1-FC1:2/T1	=TM2+A1-TA1:X1:1	BK	2,5
	=TM2+A1-FC1:4/T2	=TM2+A1-TA1:X1:2	BK	2,5
	=TM2+A1-FC1:6/T3	=TM2+A1-TA1:X1:3	BK	2,5
	+A1-WE1:5	=TM2+A1-TA1:X1:PE1	GNYE	6
	+A1-XG1:27	=TM2+A1-FC1:14	GY	0,75
	+A1-XG1:28	=TM2+A1-FC1:13	GY	0,75
	+A1-XG1:29	=TM2+A1-TA1:X12:1	GY	0,75
	+A1-XG1:30	=TM2+A1-TA1:X12:9	GY	0,75
	+A1-XD4:11	=GL3+A1-QA1:2/T1	BK	2,5
	=GL3+A1-QA1:2/T1	=GL3+A1-QA2:2/T1	BK	2,5
	=GL3+A1-FC1:2/T1	=GL3+A1-QA1:1/L1	BK	2,5
	=GL3+A1-QA1:1/L1	=GL3+A1-QA2:5/L3	BK	2,5
	+A1-XD4:12	=GL3+A1-QA1:4/T2	BK	2,5
	=GL3+A1-QA1:4/T2	=GL3+A1-QA2:4/T2	BK	2,5
	=GL3+A1-FC1:4/T2	=GL3+A1-QA1:3/L2	BK	2,5
	=GL3+A1-QA1:3/L2	=GL3+A1-QA2:3/L2	BK	2,5
	+A1-XD4:13	=GL3+A1-QA1:6/T3	BK	2,5
	=GL3+A1-QA1:6/T3	=GL3+A1-QA2:6/T3	BK	2,5
	=GL3+A1-FC1:6/T3	=GL3+A1-QA1:5/L3	BK	2,5
	=GL3+A1-QA1:5/L3	=GL3+A1-QA2:1/L1	BK	2,5
	+A1-XG1:31	=GL3+A1-FC1:14	GY	0,75
	+A1-XG1:32	=GL3+A1-FC1:13	GY	0,75
	=GL3+A1-QA1:A1	=GL3+A1-QA2:12	GY	0,75
	+A1-XG1:33	=GL3+A1-QA2:11	GY	0,75
	+A1-XG1:34	=GL3+A1-QA1:A2	GY	0,75
	=GL3+A1-QA1:12	=GL3+A1-QA2:A1	GY	0,75
	+A1-XG1:35	=GL3+A1-QA1:11	GY	0,75
	+A1-XG1:36	=GL3+A1-QA2:A2	GY	0,75
	+A1-XG1:37	=GL3+A1-QA1:14	GY	0,75
	+A1-XG1:38	=GL3+A1-QA1:13	GY	0,75
	+A1-XG1:39	=GL3+A1-QA2:14	GY	0,75
	+A1-XG1:40	=GL3+A1-QA2:13	GY	0,75
	+A2-XD2:1	=K1+A2-FC1:1	GY	1,5
	=K1+A2-FC1:1	=K1+A2-FC2:1	GY	1,5

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Connection	Target 1	Target 2	Color	Cross-section
	=K1+A2-FC2:1	=K1+A2-FC5:1	GY	1,5
	=K1+A2-FC5:1	=K1+A2-FC7:1	GY	1,5
	=K1+A2-FC7:1	=K1+A2-FC9:1	GY	1,5
	=K1+A2-FC9:1	=K2+A2-FC1:1	GY	1,5
	=K2+A2-FC1:1	=S1+A2-FC2:1	GY	1,5
	=S1+A2-FC2:1	=S2+A2-FC1:1	GY	1,5
	+A2-XD2:1	=GAB1+A2-FC1:2	GY	1,5
	=GAB1+A2-FC1:1	=GAB1+A2-TB1:OutDC:+	GY	1,5
	+A2-XD1:1	=GAB1+A2-TB1:InAC:L1/+	BK	1,5
	+A2-XD2:2	=GAB1+A2-PF1:X1	GY	1,5
	=GAB1+A2-TB1:OutDC	=GAB1+A2-TB1:OutDC	BK	1,5
	+A2-XD1:2	=GAB1+A2-TB1:InAC:L2	BK	1,5
	+A2-XD2:3	+A2-XD6:2	BU	1,5
	+A2-XD2:3	=GAB1+A2-TB1:OutDC:-	BU	1,5
	+A2-XD1:3	=GAB1+A2-TB1:InAC:L3/-	BK	1,5
	+A2-XD2:4	=GAB1+A2-PF1:X2	BU	1,5
	+A2-XD2:4	+A2-XD2:5	BK	1,5
	=GAB1+A2-TB1:OutDC	=GAB1+A2-TB1:OutDC	BK	1,5
	=GAB1+A2-TB1:OutDC	=GAB1+A2-TB1:OutDC	BK	1,5
	+A2-XD1:5	=GAB1+A2-TB1:InAC:PE	GNYE	1,5
	+A2-XD4:1	=K1+A2-FC3:1	GY	1,5
	=F+A2-FC1:1	=K1+A2-FC3:1	GY	1,5
	=F+A2-FC1:1	=K1+A2-FC4:1	GY	1,5
	=K1+A2-FC4:1	=K1+A2-FC6:1	BU	1,5
	=K1+A2-FC6:1	=K1+A2-FC8:1	GY	1,5
	=K1+A2-FC8:1	=K1+A2-FC10:1	GY	1,5
	+A2-XD4:1	=GAB2+A2-FC1:2	GY	1,5
	=GAB2+A2-FC1:1	=GAB2+A2-TB1:OutDC:+	GY	1,5
	+A2-XD1:6	=GAB2+A2-TB1:InAC:L1/+	BK	1,5
	+A2-XD4:2	=GAB2+A2-PF1:X1	GY	1,5
	=GAB2+A2-TB1:OutDC	=GAB2+A2-TB1:OutDC	BK	1,5
	+A2-XD1:7	=GAB2+A2-TB1:InAC:L2	BK	1,5
	+A2-XD4:3	=K1+A2-KE1:1:2.3	BU	1,5
	=F+A2-KE1:1:2.3	=K1+A2-KE1:1:2.3	BU	1,5
	=F+A2-KE1:1:2.3	=K1+A2-KE4:1:2.3	BU	1,5
	+A2-XD7:5	=K1+A2-KE4:1:2.3	GY	1,5
	+A2-XD7:5	+A2-XD7:10	BU	1,5
	+A2-XD7:10	+A2-XD7:15	BU	1,5
	+A2-XD4:3	=GAB2+A2-TB1:OutDC:-	BU	1,5
	+A2-XD1:8	=GAB2+A2-TB1:InAC:L3/-	BK	1,5
	+A2-XD4:4	=GAB2+A2-PF1:X2	BU	1,5
	+A2-XD4:4	+A2-XD4:5	BK	1,5
	=GAB2+A2-TB1:OutDC	=GAB2+A2-TB1:OutDC	BK	1,5
	=GAB2+A2-TB1:OutDC	=GAB2+A2-TB1:OutDC	BK	1,5
	+A2-XD1:9	=GAB2+A2-TB1:InAC:PE	GNYE	1,5
	+A2-XG5:1	=K1+A2-KE1:4:4.1	GY	0,75
	+A2-XG1:1	+A2-XG5:1	GY	0,75
	+A2-XG1:1	=GAB2+A2-TB1:Signal:14	GY	0,75
	+A2-XG5:2	=K1+A2-KE1:4:4.2	GY	0,75
	+A2-XG1:2	+A2-XG5:2	GY	0,75
	+A2-XG1:2	=GAB2+A2-TB1:Signal:13	GY	0,75
	+A2-XG5:3	=K1+A2-KE1:4:4.3	GY	0,75
	+A2-XG1:3	+A2-XG5:3	GY	0,75
	+A2-XG5:4	=K1+A2-KE1:4:3.1	GY	0,75
	+A2-XG1:4	+A2-XG5:4	GY	0,75
	+A2-XG5:5	=K1+A2-KE1:4:3.2	GY	0,75
	+A2-XG1:5	+A2-XG5:5	GY	0,75
	+A2-XG5:6	=K1+A2-KE1:4:3.3	GY	0,75
	+A2-XG1:6	+A2-XG5:6	GY	0,75

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Connection	Target 1	Target 2	Color	Cross-section
	+A2-XD5:4	=EA+A2-XD1:L	BK	1,5
	+A2-XD5:5	=EA+A2-XD1:PE	GNYE	1,5
	+A2-XD5:6	=EA+A2-XD1:N	BU	1,5
	+A2-XG2:1	=F+A2-KF1:A1	GY	0,75
	+A2-XG2:1	=F+A2-KE4:1:1.1	GY	0,75
	+A2-XG2:2	=F+A2-KE4:1:1.2	GY	0,75
	+A2-XG2:3	=F+A2-KF1:A2	GY	0,75
	+A2-XG2:3	=F+A2-KE4:1:1.3	GY	0,75
	+A2-XG2:4	=F+A2-KE4:1:1.4	GY	0,75
	+A2-XG2:17	=F+A2-KF2:A1	GY	0,75
	+A2-XG2:17	=F+A2-KE4:3:5.1	GY	0,75
	+A2-XG2:18	=F+A2-KE4:3:5.2	GY	0,75
	+A2-XG2:19	=F+A2-KF2:A2	GY	0,75
	+A2-XG2:19	=F+A2-KE4:3:5.3	GY	0,75
	+A2-XG2:20	=F+A2-KE4:3:5.4	GY	0,75
	+A2-XG3:49	=F+A2-KE3:4:7.1	GY	0,75
	+A2-XG3:49	=F+A2-KF1:44	GY	0,75
	+A2-XG3:50	=F+A2-KE3:4:7.2	GY	0,75
	+A2-XG3:50	=F+A2-KF1:43	GY	0,75
	+A2-XG3:51	=F+A2-KE3:4:7.3	GY	0,75
	+A2-XG3:52	=F+A2-KE3:4:7.4	GNYE	0,75
	+A2-XG3:53	=F+A2-KE3:4:8.1	GY	0,75
	+A2-XG3:53	=F+A2-KF2:44	GY	0,75
	+A2-XG3:54	=F+A2-KE3:4:8.2	GY	0,75
	+A2-XG3:54	=F+A2-KF2:43	GY	0,75
	+A2-XG3:55	=F+A2-KE3:4:8.3	GY	0,75
	+A2-XG3:56	=F+A2-KE3:4:8.4	GNYE	0,75
	+A2-XG2:5	=F+A2-PF1:X1	GY	0,75
	+A2-XG2:5	=F+A2-KE4:1:2.1	GY	0,75
	+A2-XG2:6	=F+A2-KE4:1:2.2	GY	0,75
	+A2-XG2:7	=F+A2-PF1:X2	GY	0,75
	+A2-XG2:7	=F+A2-KE4:1:2.3	GY	0,75
	+A2-XG2:8	=F+A2-KE4:1:2.4	GY	0,75
	+A2-XG2:9	=F+A2-PF2:X1	GY	0,75
	+A2-XG2:9	=F+A2-KE4:2:3.1	GY	0,75
	+A2-XG2:10	=F+A2-KE4:2:3.2	GY	0,75
	+A2-XG2:11	=F+A2-PF2:X2	GY	0,75
	+A2-XG2:11	=F+A2-KE4:2:3.3	GY	0,75
	+A2-XG2:12	=F+A2-KE4:2:3.4	GY	0,75
	+A2-XG2:13	=F+A2-PF3:X1	GY	0,75
	+A2-XG2:13	=F+A2-KE4:2:4.1	GY	0,75
	+A2-XG2:14	=F+A2-KE4:2:4.2	GY	0,75
	+A2-XG2:15	=F+A2-PF3:X2	GY	0,75
	+A2-XG2:15	=F+A2-KE4:2:4.3	GY	0,75
	+A2-XG2:16	=F+A2-KE4:2:4.4	GY	0,75
	+A2-XG3:1	=F+A2-KE3:1:1.1	GY	0,75
	+A2-XG3:1	=F+A2-SG1:12	GY	0,75
	+A2-XG3:2	=F+A2-KE3:1:1.2	GY	0,75
	+A2-XG3:2	=F+A2-SG1:11	GY	0,75
	+A2-XG3:3	=F+A2-KE3:1:1.3	GY	0,75
	+A2-XG3:4	=F+A2-KE3:1:1.4	GNYE	0,75
	+A2-XG3:5	=F+A2-KE3:1:2.1	GY	0,75
	+A2-XG3:5	=F+A2-SG1:24	GY	0,75
	+A2-XG3:6	=F+A2-KE3:1:2.2	GY	0,75
	+A2-XG3:6	=F+A2-SG1:23	GY	0,75
	+A2-XG3:7	=F+A2-KE3:1:2.3	GY	0,75
	+A2-XG3:8	=F+A2-KE3:1:2.4	GNYE	0,75
	+A2-XG3:9	=F+A2-KE3:2:3.1	GY	0,75
	+A2-XG3:9	+A2-XGA2:1	GY	0,75

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Connection list

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Connection	Target 1	Target 2	Color	Cross-section
	+A2-XGA1:1	+A2-XGA2:1		
	+A2-XG3:10	=F+A2-KE3:2:3.2	GY	0,75
	+A2-XG3:10	+A2-XGA2:2	GY	0,75
	+A2-XGA1:2	+A2-XGA2:2		
	+A2-XG3:11	=F+A2-KE3:2:3.3	GY	0,75
	+A2-XG3:12	=F+A2-KE3:2:3.4	GNYE	0,75
	+A2-XG3:13	=F+A2-KE3:2:4.1	GY	0,75
	+A2-XG3:13	+A2-XGA2:3	GY	0,75
	+A2-XGA1:3	+A2-XGA2:3		
	+A2-XG3:14	=F+A2-KE3:2:4.2	GY	0,75
	+A2-XG3:14	+A2-XGA2:4	GY	0,75
	+A2-XGA1:4	+A2-XGA2:4		
	+A2-XG3:15	=F+A2-KE3:2:4.3	GY	0,75
	+A2-XG3:16	=F+A2-KE3:2:4.4	GNYE	0,75
	+A2-XG3:17	=F+A2-KE3:3:5.1	GY	0,75
	+A2-XG3:17	+A2-XG4:1	GY	0,75
	+A2-XG3:18	=F+A2-KE3:3:5.2	GY	0,75
	+A2-XG3:18	+A2-XG4:2	GY	0,75
	+A2-XG3:19	=F+A2-KE3:3:5.3	GY	0,75
	+A2-XG3:20	=F+A2-KE3:3:5.4	GNYE	0,75
	+A2-XG3:21	=F+A2-KE3:3:6.1	GY	0,75
	+A2-XG3:21	+A2-XG4:3	GY	0,75
	+A2-XG3:22	=F+A2-KE3:3:6.2	GY	0,75
	+A2-XG3:22	+A2-XG4:4	GY	0,75
	+A2-XG3:23	=F+A2-KE3:3:6.3	GY	0,75
	+A2-XG3:24	=F+A2-KE3:3:6.4	GNYE	0,75
	+A2-XG3:25	=F+A2-KE2:1:1.1	GY	0,75
	+A2-XG3:25	+A2-XG4:5	GY	0,75
	+A2-XG3:26	=F+A2-KE2:1:1.2	GY	0,75
	+A2-XG3:26	+A2-XG4:6	GY	0,75
	+A2-XG3:27	=F+A2-KE2:1:1.3	GY	0,75
	+A2-XG3:28	=F+A2-KE2:1:1.4	GNYE	0,75
	+A2-XG3:29	=F+A2-KE2:1:2.1	GY	0,75
	+A2-XG3:29	+A2-XG4:7	GY	0,75
	+A2-XG3:30	=F+A2-KE2:1:2.2	GY	0,75
	+A2-XG3:30	+A2-XG4:8	GY	0,75
	+A2-XG3:31	=F+A2-KE2:1:2.3	GY	0,75
	+A2-XG3:32	=F+A2-KE2:1:2.4	GNYE	0,75
	+A2-XG3:33	=F+A2-KE2:2:3.1	GY	0,75
	+A2-XG3:33	+A2-XG4:9	GY	0,75
	+A2-XG3:34	=F+A2-KE2:2:3.2	GY	0,75
	+A2-XG3:34	+A2-XG4:10	GY	0,75
	+A2-XG3:35	=F+A2-KE2:2:3.3	GY	0,75
	+A2-XG3:36	=F+A2-KE2:2:3.4	GNYE	0,75
	+A2-XG3:37	=F+A2-KE2:2:4.1	GY	0,75
	+A2-XG3:37	+A2-XG4:11	GY	0,75
	+A2-XG3:38	=F+A2-KE2:2:4.2	GY	0,75
	+A2-XG3:38	+A2-XG4:12	GY	0,75
	+A2-XG3:39	=F+A2-KE2:2:4.3	GY	0,75
	+A2-XG3:40	=F+A2-KE2:2:4.4	GNYE	0,75
	+A2-XG3:41	=F+A2-KE2:3:5.1	GY	0,75
	+A2-XG3:41	+A2-XG4:13	GY	0,75
	+A2-XG3:42	=F+A2-KE2:3:5.2	GY	0,75
	+A2-XG3:42	+A2-XG4:14	GY	0,75
	+A2-XG3:43	=F+A2-KE2:3:5.3	GY	0,75
	+A2-XG3:44	=F+A2-KE2:3:5.4	GNYE	0,75
	+A2-XG3:45	=F+A2-KE2:3:6.1	GY	0,75
	+A2-XG3:45	+A2-XG4:15	GY	0,75
	+A2-XG3:46	=F+A2-KE2:3:6.2	GY	0,75

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Connection list

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Connection	Target 1	Target 2	Color	Cross-section
	+A2-XG3:46	+A2-XG4:16	GY	0,75
	+A2-XG3:47	=F+A2-KE2:3:6.3	GY	0,75
	+A2-XG3:48	=F+A2-KE2:3:6.4	GNYE	0,75
	+A2-XD6:1	=K1+A2-KEB1:X1:+	GY	1,5
	+A2-XD6:1	=K1+A2-FC1:2	GY	1,5
	+A2-XD6:2	=K1+A2-KEB1:X1:-	BU	1,5
	+A2-XD6:3	=K1+A2-KE1:1:1.3	BU	1,5
	+A2-XD7:2	=K1+A2-KE1:1:1.3	BU	1,5
	+A2-XD7:2	+A2-XD7:7	BU	1,5
	+A2-XD7:7	+A2-XD7:12	BU	1,5
	+A2-XD7:12	+A2-XD7:18	BU	1,5
	+A2-XD7:18	=S1+A2-PH1:X1:X1.2	BU	1,5
	+A2-XD7:21	=S1+A2-PH1:X1:X1.2	BU	1,5
	+A2-XD6:4	=K1+A2-KEB1:X1:PE	GNYE	1,5
	+A2-WE1:2	+A2-XD6:4	GNYE	1,5
	=K1+A2-KE1:1:1.1	=K1+A2-KE1:1:2.1	GY	1,5
	=K1+A2-FC2:2	=K1+A2-KE1:1:1.2	GY	1,5
	+A2-WE1:3	=K1+A2-KE1:1:1.4	GNYE	1,5
	=K1+A2-KE1:1:1.4	=K1+A2-KE1:1:2.4	GNYE	1,5
	=K1+A2-FC3:2	=K1+A2-KE1:1:2.2	GY	1,5
	=F+A2-FC1:2	=F+A2-KE1:1:2.1	GY	1,5
	+A2-WE1:4	=F+A2-KE1:1:2.4	GNYE	1,5
	=F+A2-KF2:14	=K1+A2-KE4:1:2.1	GY	1,5
	+A2-XD7:17	=F+A2-KF2:14	GY	1,5
	=F+A2-KF1:14	=F+A2-KF2:13	GY	1,5
	=F+A2-KF1:13	=K1+A2-FC4:2	GY	1,5
	+A2-WE1:5	=K1+A2-KE4:1:2.4	GNYE	1,5
	+A2-XD7:1	=K1+A2-FC5:2	GY	1,5
	+A2-XD7:4	=K1+A2-FC6:2	GY	1,5
	+A2-XG5:7	=K1+A2-KE2:4:7.1	GY	0,75
	+A2-XG5:7	=K1+A2-FC5:14	GY	0,75
	+A2-XG5:8	=K1+A2-KE2:4:7.2	GY	0,75
	+A2-XG5:8	=K1+A2-FC5:13	GY	0,75
	+A2-XG5:9	=K1+A2-KE2:4:7.3	GY	0,75
	+A2-XG5:10	=K1+A2-KE2:3:6.4	GY	0,75
	+A2-XG5:10	=K1+A2-FC6:14	GY	0,75
	+A2-XG5:11	=K1+A2-KE2:3:6.5	GY	0,75
	+A2-XG5:11	=K1+A2-FC6:13	GY	0,75
	+A2-XG5:12	=K1+A2-KE2:3:6.6	GY	0,75
	+A2-XD7:6	=K1+A2-FC7:2	GY	1,5
	+A2-XD7:9	=K1+A2-FC8:2	GY	1,5
	+A2-XG5:13	=K1+A2-KE3:1:1.1	GY	0,75
	+A2-XG5:13	=K1+A2-FC7:14	GY	0,75
	+A2-XG5:14	=K1+A2-KE3:1:1.2	GY	0,75
	+A2-XG5:14	=K1+A2-FC7:13	GY	0,75
	+A2-XG5:15	=K1+A2-KE3:1:1.3	GY	0,75
	+A2-XG5:16	=K1+A2-KE3:1:1.4	GY	0,75
	+A2-XG5:16	=K1+A2-FC8:14	GY	0,75
	+A2-XG5:17	=K1+A2-KE3:1:1.5	GY	0,75
	+A2-XG5:17	=K1+A2-FC8:13	GY	0,75
	+A2-XG5:18	=K1+A2-KE3:1:1.6	GY	0,75
	+A2-XD7:11	=K1+A2-FC9:2	GY	1,5
	+A2-XD7:14	=K1+A2-FC10:2	GY	1,5
	+A2-XG5:19	=K1+A2-KE3:1:2.1	GY	0,75
*	+A2-XG5:19	=K1+A2-FC9:14	GY	0,75
	+A2-XG5:20	=K1+A2-KE3:1:2.2	GY	0,75
*	+A2-XG5:20	=K1+A2-FC9:13	GY	0,75
	+A2-XG5:21	=K1+A2-KE3:1:2.3	GY	0,75
	+A2-XG5:22	=K1+A2-KE3:1:2.4	GY	0,75

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Connection list

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Connection	Target 1	Target 2	Color	Cross-section
*	+A2-XG5:22	=K1+A2-FC10:14	GY	0,75
	+A2-XG5:23	=K1+A2-KE3:1:2.5	GY	0,75
*	+A2-XG5:23	=K1+A2-FC10:13	GY	0,75
	+A2-XG5:24	=K1+A2-KE3:1:2.6	GY	0,75
	+A2-XD7:16	=K2+A2-FC1:2	GY	1,5
	+A2-XG5:25	=K1+A2-KE2:4:7.4	GY	0,75
	+A2-XG5:25	=K2+A2-FC1:14	GY	0,75
	+A2-XG5:26	=K1+A2-KE2:4:7.5	GY	0,75
	+A2-XG5:26	=K2+A2-FC1:13	GY	0,75
	+A2-XG5:27	=K1+A2-KE2:4:7.6	GY	0,75
	=S1+A2-FC2:2	=S1+A2-PH1:X1:X1.1	GY	1,5
	+A2-XD7:20	=S2+A2-FC1:2	GY	1,5
	+A2-XG5:28	=K1+A2-KE2:1:1.4	GY	0,75
	+A2-XG1:7	+A2-XG5:28	GY	0,75
	+A2-XG5:29	=K1+A2-KE2:1:1.5	GY	0,75
	+A2-XG1:8	+A2-XG5:29	GY	0,75
	+A2-XG5:30	=K1+A2-KE2:1:1.6	GY	0,75
	+A2-XG1:9	=K1+A2-KE5:3:5.1	GY	0,75
	+A2-XG1:10	=K1+A2-KE5:3:5.2	GY	0,75
	+A2-XG1:11	=K1+A2-KE5:3:5.3	GY	0,75
	+A2-XG1:12	=K1+A2-KE5:3:6.1	GY	0,75
	+A2-XG1:13	=K1+A2-KE5:3:6.2	GY	0,75
	+A2-XG1:14	=K1+A2-KE5:3:6.3	GY	0,75
	+A2-XG5:31	=K1+A2-KE2:1:1.1	GY	0,75
	+A2-XG1:15	+A2-XG5:31	GY	0,75
	+A2-XG5:32	=K1+A2-KE2:1:1.2	GY	0,75
	+A2-XG1:16	+A2-XG5:32	GY	0,75
	+A2-XG5:33	=K1+A2-KE2:1:1.3	GY	0,75
	+A2-XG5:34	=K1+A2-KE2:1:2.1	GY	0,75
	+A2-XG1:17	+A2-XG5:34	GY	0,75
	+A2-XG5:35	=K1+A2-KE2:1:2.2	GY	0,75
	+A2-XG1:18	+A2-XG5:35	GY	0,75
	+A2-XG5:36	=K1+A2-KE2:1:2.3	GY	0,75
	+A2-XG5:37	=K1+A2-KE2:3:5.1	GY	0,75
	+A2-XG1:19	+A2-XG5:37	GY	0,75
	+A2-XG5:38	=K1+A2-KE2:3:5.2	GY	0,75
	+A2-XG1:20	+A2-XG5:38	GY	0,75
	+A2-XG5:39	=K1+A2-KE2:3:5.3	GY	0,75
	+A2-XG1:21	=K1+A2-KE5:1:1.1	GY	0,75
	+A2-XG1:22	=K1+A2-KE5:1:1.2	GY	0,75
	+A2-XG1:23	=K1+A2-KE5:1:1.3	GY	0,75
	+A2-XG1:24	=K1+A2-KE5:1:2.1	GY	0,75
	+A2-XG1:25	=K1+A2-KE5:1:2.2	GY	0,75
	+A2-XG1:26	=K1+A2-KE5:1:2.3	GY	0,75
	+A2-XG5:40	=K1+A2-KE2:3:5.4	GY	0,75
	+A2-XG1:27	+A2-XG5:40	GY	0,75
	+A2-XG5:41	=K1+A2-KE2:3:5.5	GY	0,75
	+A2-XG1:28	+A2-XG5:41	GY	0,75
	+A2-XG5:42	=K1+A2-KE2:3:5.6	GY	0,75
	+A2-XG5:43	=K1+A2-KE2:3:6.1	GY	0,75
	+A2-XG1:29	+A2-XG5:43	GY	0,75
	+A2-XG5:44	=K1+A2-KE2:3:6.2	GY	0,75
	+A2-XG1:30	+A2-XG5:44	GY	0,75
	+A2-XG5:45	=K1+A2-KE2:3:6.3	GY	0,75
	+A2-XG5:46	=K1+A2-KE2:1:2.4	GY	0,75
	+A2-XG1:31	+A2-XG5:46	GY	0,75
	+A2-XG5:47	=K1+A2-KE2:1:2.5	GY	0,75
	+A2-XG1:32	+A2-XG5:47	GY	0,75
	+A2-XG5:48	=K1+A2-KE2:1:2.6	GY	0,75

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Connection list

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Connection	Target 1	Target 2	Color	Cross-section
	+A2-XG5:49	=K1+A2-KE1:2:1.1	GY	0,75
	+A2-XG5:50	=K1+A2-KE1:2:1.2	GY	0,75
	+A2-XG5:51	=K1+A2-KE1:2:1.3	GNYE	0,75
	+A2-XG1:33	=TM1+A2-PF1:X1	GY	0,75
	+A2-XG1:33	=K1+A2-KE5:4:7.1	GY	0,75
	+A2-XG1:34	=K1+A2-KE5:4:7.2	GY	0,75
	+A2-XG1:35	=TM1+A2-PF1:X2	GY	0,75
	+A2-XG1:35	=K1+A2-KE5:4:7.3	GY	0,75
	+A2-XG5:52	=K1+A2-KE2:2:3.1	GY	0,75
	+A2-XG1:36	+A2-XG5:52	GY	0,75
	+A2-XG5:53	=K1+A2-KE2:2:3.2	GY	0,75
	+A2-XG1:37	+A2-XG5:53	GY	0,75
	+A2-XG5:54	=K1+A2-KE2:2:3.3	GY	0,75
	+A2-XG5:55	=K1+A2-KE1:2:2.1	GY	0,75
	+A2-XG5:56	=K1+A2-KE1:2:2.2	GY	0,75
	+A2-XG5:57	=K1+A2-KE1:2:2.3	GY	0,75
	+A2-XG1:38	=TM2+A2-PF1:X1	GY	0,75
	+A2-XG1:38	=K1+A2-KE5:4:8.1	GY	0,75
	+A2-XG1:39	=K1+A2-KE5:4:8.2	GY	0,75
	+A2-XG1:40	=TM2+A2-PF1:X2	GY	0,75
	+A2-XG1:40	=K1+A2-KE5:4:8.3	GY	0,75
	+A2-XG5:58	=K1+A2-KE2:2:3.4	GY	0,75
	+A2-XG1:41	+A2-XG5:58	GY	0,75
	+A2-XG5:59	=K1+A2-KE2:2:3.5	GY	0,75
	+A2-XG1:42	+A2-XG5:59	GY	0,75
	+A2-XG5:60	=K1+A2-KE2:2:3.6	GY	0,75
	+A2-XG1:43	=K1+A2-KE5:2:3.1	GY	0,75
	+A2-XG1:44	=K1+A2-KE5:2:3.2	GY	0,75
	+A2-XG1:45	=K1+A2-KE5:2:3.3	GY	0,75
	+A2-XG1:46	=K1+A2-KE5:2:4.1	GY	0,75
	+A2-XG1:47	=K1+A2-KE5:2:4.2	GY	0,75
	+A2-XG1:48	=K1+A2-KE5:2:4.3	GY	0,75
	+A2-XG5:61	=K1+A2-KE2:2:4.1	GY	0,75
	+A2-XG1:49	+A2-XG5:61	GY	0,75
	+A2-XG5:62	=K1+A2-KE2:2:4.2	GY	0,75
	+A2-XG1:50	+A2-XG5:62	GY	0,75
	+A2-XG5:63	=K1+A2-KE2:2:4.3	GY	0,75
	+A2-XG5:64	=K1+A2-KE2:2:4.4	GY	0,75
	+A2-XG1:51	+A2-XG5:64	GY	0,75
	+A2-XG5:65	=K1+A2-KE2:2:4.5	GY	0,75
	+A2-XG1:52	+A2-XG5:65	GY	0,75
	+A2-XG5:66	=K1+A2-KE2:2:4.6	GY	0,75
	=MM1+B1-BG1	=MM1+B1-BG1	BK	1,5
	=MM1+B1-BG1	=MM1+B1-BG1	BK	1,5
	=MM1+B1-BG1	=MM1+B1-BG1	BK	1,5
	=MM1+B1-BG2	=MM1+B1-BG2	BK	1,5
	=MM1+B1-BG2	=MM1+B1-BG2	BK	1,5
	=MM1+B1-BG2	=MM1+B1-BG2	BK	1,5
	=K1+B1.X1-KE1:1:1.1	=K1+B1.X1-KE1:1:2.1	GY	1,5
	+B1.X1-XD1:1	=K1+B1.X1-KE1:1:1.2	GY	1,5
	+B1.X1-XD1:2	=K1+B1.X1-KE1:1:1.3	BU	1,5
	+B1.X1-XD1:3	=K1+B1.X1-KE1:1:1.4	GNYE	1,5
	=K1+B1.X1-KE1:1:1.4	=K1+B1.X1-KE1:1:2.4	GNYE	1,5
	+B1.X1-XD1:4	=K1+B1.X1-KE1:1:2.2	GY	1,5
	+B1.X1-XD1:5	=K1+B1.X1-KE1:1:2.3	BU	1,5
	+B1.X1-XZ1:6	=K1+B1.X1-KE1:3:1.2	GY	0,75
	+B1.X1-XZ1:7	=K1+B1.X1-KE1:3:1.1	GY	0,75
	+B1.X1-XZ1:9	=K1+B1.X1-KE1:3:2.1	GY	0,75
	+B1.X1-XZ1:10	=K1+B1.X1-KE1:3:2.2	GY	0,75

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Connection list

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Connection	Target 1	Target 2	Color	Cross-section
	+B1.X1-XZ1:11	=K1+B1.X1-KE1:3:2.3	GY	0,75
	=MM2+B2-BG1	=MM2+B2-BG1	BK	1,5
	=MM2+B2-BG1	=MM2+B2-BG1	BK	1,5
	=MM2+B2-BG1	=MM2+B2-BG1	BK	1,5
	=MM2+B2-BG2	=MM2+B2-BG2	BK	1,5
	=MM2+B2-BG2	=MM2+B2-BG2	BK	1,5
	=MM2+B2-BG2	=MM2+B2-BG2	BK	1,5
	=MM3+B2-BG1	=MM3+B2-BG1	BK	1,5
	=MM3+B2-BG1	=MM3+B2-BG1	BK	1,5
	=MM3+B2-BG1	=MM3+B2-BG1	BK	1,5
	=MM3+B2-BG2	=MM3+B2-BG2	BK	1,5
	=MM3+B2-BG2	=MM3+B2-BG2	BK	1,5
	=MM3+B2-BG2	=MM3+B2-BG2	BK	1,5
	=K1+B2.X1-KE1:1:1.1	=K1+B2.X1-KE1:1:2.1	GY	1,5
	+B2.X1-XD1:1	=K1+B2.X1-KE1:1:1.2	GY	1,5
	+B2.X1-XD1:2	=K1+B2.X1-KE1:1:1.3	BU	1,5
	+B2.X1-XD1:3	=K1+B2.X1-KE1:1:1.4	GNYE	1,5
	=K1+B2.X1-KE1:1:1.4	=K1+B2.X1-KE1:1:2.4	GNYE	1,5
	+B2.X1-XD1:4	=K1+B2.X1-KE1:1:2.2	GY	1,5
	+B2.X1-XD1:5	=K1+B2.X1-KE1:1:2.3	BU	1,5
	+B2.X1-XZ1:6	=K1+B2.X1-KE2:1:1.2	GY	0,75
	+B2.X1-XZ1:7	=K1+B2.X1-KE2:1:1.1	GY	0,75
	+B2.X1-XZ1:9	=K1+B2.X1-KE2:1:1.4	GY	0,75
	+B2.X1-XZ1:10	=K1+B2.X1-KE2:1:1.5	GY	0,75
	+B2.X1-XZ1:11	=K1+B2.X1-KE2:1:1.6	GY	0,75
	+B2.X1-XZ1:20	=K1+B2.X1-KE1:3:2.1	GY	0,75
	+B2.X1-XZ1:21	=K1+B2.X1-KE1:3:2.2	GY	0,75
	+B2.X1-XZ1:22	=K1+B2.X1-KE1:3:2.3	GY	0,75
	+B2.X1-XZ1:31	=K1+B2.X1-KE1:4:4.1	GY	0,75
	+B2.X1-XZ1:32	=K1+B2.X1-KE1:4:4.2	GY	0,75
	+B2.X1-XZ1:33	=K1+B2.X1-KE1:4:4.3	GY	0,75
	=GQA+B2.Y1-QM2-MB1	=GQA+B2.Y1-QM2-MB1:x1	BK	1,5
	=GQA+B2.Y1-QM2-MB1	=GQA+B2.Y1-QM2-MB1:x2	BK	1,5
	=GQA+B2.Y1-BP1-S1	=GQA+B2.Y1-BP1-S1:13	BK	1,5
	=GQA+B2.Y1-BP1-S1	=GQA+B2.Y1-BP1-S1:14	BK	1,5
	=GQA+B2.Y1-BP1-S1:13	=GQA+B2.Y1-BP1-S1:21	BK	1,5
	=GQA+B2.Y1-BP1-S1	=GQA+B2.Y1-BP1-S1:22	BK	1,5
	=K2+B2.Y1-KE6:-X0:3	=K2+B2.Y1-QM2-MB1:x1	BK	1,5
	=K2+B2.Y1-KE6:-X0:4	=K2+B2.Y1-QM2-MB2:x1	BK	1,5
	=K2+B2.Y1-KE6:-X0:9	=K2+B2.Y1-QM5-MB1:x1	BK	1,5
	=K2+B2.Y1-KE6:-X0:10	=K2+B2.Y1-QM5-MB2:x1	BK	1,5
	=K2+B2.Y1-KE6:-X0:11	=K2+B2.Y1-QM6-MB1:x1	BK	1,5
	=K2+B2.Y1-KE6:-X0:12	=K2+B2.Y1-QM6-MB2:x1	BK	1,5
	+B2.Y1-XD1:5	=K2+B2.Y1-XD1:PE	GNYE	0,75
	+B2.Y1-XDB1:1:1 female	=K2+B2.Y1-KE1:-X20:1		
	+B2.Y1-XDB1:2:2 female	=K2+B2.Y1-KE1:-X20:2		
	+B2.Y1-XDB1:3:3 female	=K2+B2.Y1-KE1:-X20:3		
	+B2.Y1-XDB1:PE: PE female	=K2+B2.Y1-KE1:-X20:4		
	=K2+B2.Y1-KE6:-X0:1	=K2+B2.Y1-QM1-MB1:x1	BK	1,5
	=K2+B2.Y1-KE6:-X0:2	=K2+B2.Y1-QM1-MB2:x1	BK	1,5
	=K2+B2.Y1-KE6:-X0:5	=K2+B2.Y1-QM3-MB1:x1	BK	1,5
	=K2+B2.Y1-KE6:-X0:6	=K2+B2.Y1-QM3-MB2:x1	BK	1,5
	=K2+B2.Y1-KE6:-X0:7	=K2+B2.Y1-QM4-MB1:x1	BK	1,5
	=K2+B2.Y1-KE6:-X0:8	=K2+B2.Y1-QM4-MB2:x1	BK	1,5
	=K1+B3.X1-KE1:1:1.1	=K1+B3.X1-KE1:1:2.1	GY	1,5
	+B3.X1-XD1:1	=K1+B3.X1-KE1:1:1.2	GY	1,5
	+B3.X1-XD1:2	=K1+B3.X1-KE1:1:1.3	BU	1,5
	+B3.X1-XD1:3	=K1+B3.X1-KE1:1:1.4	GNYE	1,5
	=K1+B3.X1-KE1:1:1.4	=K1+B3.X1-KE1:1:2.4	GNYE	1,5

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0	1	2	3	4	5	6	7	8	9

Connection list

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Connection	Target 1	Target 2	Color	Cross-section
	+B3.X1-XD1:4	=K1+B3.X1-KE1:1:2.2	GY	1,5
	+B3.X1-XD1:5	=K1+B3.X1-KE1:1:2.3	BU	1,5
	+B3.X1-XZ1:6	=K1+B3.X1-KE1:3:1.2	GY	0,75
	+B3.X1-XZ1:7	=K1+B3.X1-KE1:3:1.1	GY	0,75
	+B3.X1-XZ1:9	=K1+B3.X1-KE1:3:2.1	GY	0,75
	+B3.X1-XZ1:10	=K1+B3.X1-KE1:3:2.2	GY	0,75
	+B3.X1-XZ1:11	=K1+B3.X1-KE1:3:2.3	GY	0,75
	+C2-XD1:1	=S2+C2-PH1:X1:X1.1	GY	1,5
	+C2-XD1:2	=S2+C2-PH1:X1:X1.2	BU	1,5

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Wires parts list

F27_004

Source	Target	Part number	Cross-section	Color	Length	Bundle	Bundle groups	Conductor end source	Conductor end target	Routing direction source	Routing direction target	Routing track
+A1-XD1:1	=GAA+A1-FC1:1	LAPP.4150701	6	BK	2,328 m	7		Stripping	End sleeve	Move up, to the left	Move up, to the right	+A1-U12;+A1-U5;+A1-U11;+A1-U9;+A1-U10;+A1-U32;+A1-U30 +A1-U31;+A1-U8;+A1-U6;+A1-U7
=GAA+A1-FC1:1	=EA+A1-FB1:1	LAPP.4150709	6	OG	0,534 m	5		End sleeve	End sleeve	Move up, to the left	Move up, to the right	+A1-U7
=EA+A1-FB1:1	=EA+A1-FB3:1	LAPP.4150709	6	OG	0,369 m	5		End sleeve	End sleeve	Move up, to the right	Move up, to the left	+A1-U7
=GAA+A1-FC1:2	=GAA+A1-FC2:1	LAPP.4150601	4	BK	1,066 m	6		End sleeve	End sleeve	Move down, to the left	Move up, to the left	+A1-U8;+A1-U5;+A1-U7
=GAA+A1-FC2:1	=GAB1+A1-FC1:1/L1	LAPP.4150601	4	BK	1,499 m	6		End sleeve	End sleeve	Move up, to the left	Move up, to the left	+A1-U7;+A1-U5;+A1-U8;+A1-U9;+A1-U10
=GAB1+A1-FC1:1/L1	=GAB2+A1-FC1:1/L1	LAPP.4150601	4	BK	0,339 m	13		End sleeve	End sleeve	Move up, to the right	Move up, to the left	+A1-U10
=GAB2+A1-FC1:1/L1	=GL1+A1-FC1:1/L1	LAPP.4150601	4	BK	1,798 m	2		End sleeve	Stripping	Move up, to the left	Move up, to the left	+A1-U10;+A1-U9;+A1-U8;+A1-U5;+A1-U4
=GL1+A1-FC1:1/L1	=GL2+A1-FC1:1/L1	LAPP.4150601	4	BK	0,473 m	2		Stripping	Stripping	Move up, to the right	Move up, to the left	+A1-U4
=GL2+A1-FC1:1/L1	=TM1+A1-FC1:1/L1	LAPP.4150601	4	BK	0,486 m	2		Stripping	End sleeve	Move up, to the right	Move up, to the left	+A1-U4
=TM1+A1-FC1:1/L1	=TM2+A1-FC1:1/L1	LAPP.4150601	4	BK	0,42 m	3		End sleeve	End sleeve	Move up, to the right	Move up, to the left	+A1-U4
=TM2+A1-FC1:1/L1	=GL3+A1-FC1:1/L1	LAPP.4150601	4	BK	0,486 m	2		End sleeve	Stripping	Move up, to the left	Move up, to the right	+A1-U4
+A1-XD1:2	=GAA+A1-FC1:3	LAPP.4150701	6	BK	2,319 m	7		Stripping	End sleeve	Move up, to the left	Move up, to the right	+A1-U12;+A1-U5;+A1-U11;+A1-U9;+A1-U10;+A1-U35;+A1-U33 +A1-U34;+A1-U8;+A1-U6;+A1-U7
=GAA+A1-FC1:3	=EA+A1-FB2:1	LAPP.4150709	6	OG	0,524 m	5		End sleeve	End sleeve	Move up, to the left	Move up, to the right	+A1-U7
=EA+A1-FB2:1	=EA+A1-FB4:1	LAPP.4150709	6	OG	0,369 m	5		End sleeve	End sleeve	Move up, to the right	Move up, to the left	+A1-U7
=GAA+A1-FC1:4	=GAA+A1-FC3:1	LAPP.4150601	4	BK	1,109 m	6		End sleeve	End sleeve	Move down, to the left	Move up, to the left	+A1-U8;+A1-U5;+A1-U7
=GAA+A1-FC3:1	=GAB1+A1-FC1:3/L2	LAPP.4150601	4	BK	1,484 m	6		End sleeve	End sleeve	Move up, to the right	Move up, to the right	+A1-U7;+A1-U6;+A1-U10
=GAB1+A1-FC1:3/L2	=GAB2+A1-FC1:3/L2	LAPP.4150601	4	BK	0,339 m	13		End sleeve	End sleeve	Move up, to the right	Move up, to the left	+A1-U10
=GAB2+A1-FC1:3/L2	=GL1+A1-FC1:3/L2	LAPP.4150601	4	BK	1,827 m	2		End sleeve	Stripping	Move up, to the left	Move up, to the left	+A1-U10;+A1-U9;+A1-U8;+A1-U5;+A1-U4
=GL1+A1-FC1:3/L2	=GL2+A1-FC1:3/L2	LAPP.4150601	4	BK	0,473 m	2		Stripping	Stripping	Move up, to the right	Move up, to the left	+A1-U4
=GL2+A1-FC1:3/L2	=TM1+A1-FC1:3/L2	LAPP.4150601	4	BK	0,486 m	2		Stripping	End sleeve	Move up, to the right	Move up, to the left	+A1-U4
=TM1+A1-FC1:3/L2	=TM2+A1-FC1:3/L2	LAPP.4150601	4	BK	0,42 m	3		End sleeve	End sleeve	Move up, to the right	Move up, to the left	+A1-U4
=TM2+A1-FC1:3/L2	=GL3+A1-FC1:3/L2	LAPP.4150601	4	BK	0,486 m	2		End sleeve	Stripping	Move up, to the left	Move up, to the right	+A1-U4
+A1-XD1:3	=GAA+A1-FC1:5	LAPP.4150701	6	BK	2,309 m	7		Stripping	End sleeve	Move up, to the left	Move up, to the right	+A1-U12;+A1-U5;+A1-U11;+A1-U9;+A1-U10;+A1-U38;+A1-U36 +A1-U37;+A1-U8;+A1-U6;+A1-U7
=GAA+A1-FC1:5	=GAA+A1-FC5:1	LAPP.4150709	6	OG	0,393 m	6		End sleeve	End sleeve	Move up, to the left	Move up, to the right	+A1-U7
=GAA+A1-FC1:6	=GAA+A1-FC4:1	LAPP.4150601	4	BK	1,152 m	6		End sleeve	End sleeve	Move down, to the left	Move up, to the left	+A1-U8;+A1-U5;+A1-U7
=GAA+A1-FC4:1	=GAB1+A1-FC1:5/L3	LAPP.4150601	4	BK	1,452 m	6		End sleeve	End sleeve	Move up, to the right	Move up, to the right	+A1-U7;+A1-U6;+A1-U10
=GAB1+A1-FC1:5/L3	=GAB2+A1-FC1:5/L3	LAPP.4150601	4	BK	0,339 m	13		End sleeve	End sleeve	Move up, to the right	Move up, to the left	+A1-U10
=GAB2+A1-FC1:5/L3	=GL1+A1-FC1:5/L3	LAPP.4150601	4	BK	1,856 m	2		End sleeve	Stripping	Move up, to the left	Move up, to the left	+A1-U10;+A1-U9;+A1-U8;+A1-U5;+A1-U4
=GL1+A1-FC1:5/L3	=GL2+A1-FC1:5/L3	LAPP.4150601	4	BK	0,473 m	2		Stripping	Stripping	Move up, to the right	Move up, to the left	+A1-U4
=GL2+A1-FC1:5/L3	=TM1+A1-FC1:5/L3	LAPP.4150601	4	BK	0,486 m	2		Stripping	End sleeve	Move up, to the right	Move up, to the left	+A1-U4
=GL1+A1-FC1:5/L3	=GL2+A1-FC1:5/L3	LAPP.4150601	4	BK	0,473 m	2		Stripping	Stripping	Move up, to the right	Move up, to the left	+A1-U4
=GL2+A1-FC1:5/L3	=TM1+A1-FC1:5/L3	LAPP.4150601	4	BK	0,486 m	2		Stripping	End sleeve	Move up, to the right	Move up, to the left	+A1-U4
=TM1+A1-FC1:5/L3	=TM2+A1-FC1:5/L3	LAPP.4150601	4	BK	0,42 m	3		End sleeve	End sleeve	Move up, to the right	Move up, to the left	+A1-U4
=TM2+A1-FC1:5/L3	=GL3+A1-FC1:5/L3	LAPP.4150601	4	BK	0,486 m	2		End sleeve	Stripping	Move up, to the left	Move up, to the right	+A1-U4
+A1-XD5:6	=GAA+A1-TA3:k	LAPP.4150403	1,5	BN	1,011 m	15		Stripping	End sleeve	Move up, to the right	Move down, to the left	+A1-U11;+A1-U9;+A1-U10
+A1-XD5:5	=GAA+A1-TA3:l	LAPP.4150403	1,5	BN	1,039 m	15		Stripping	End sleeve	Move up, to the right	Move down, to the left	+A1-U11;+A1-U9;+A1-U10
+A1-XD5:4	=GAA+A1-TA2:k	LAPP.4150403	1,5	BN	0,925 m	15		Stripping	End sleeve	Move up, to the right	Move down, to the left	+A1-U11;+A1-U9;+A1-U10
+A1-XD5:3	=GAA+A1-TA2:l	LAPP.4150403	1,5	BN	0,953 m	15		Stripping	End sleeve	Move up, to the right	Move down, to the left	+A1-U11;+A1-U9;+A1-U10
+A1-XD5:2	=GAA+A1-TA1:k	LAPP.4150403	1,5	BN	0,839 m	15		Stripping	End sleeve	Move up, to the right	Move down, to the left	+A1-U11;+A1-U9;+A1-U10
+A1-XD5:1	=GAA+A1-TA1:l	LAPP.4150403	1,5	BN	0,867 m	15		Stripping	End sleeve	Move up, to the right	Move down, to the left	+A1-U11;+A1-U9;+A1-U10
+A1-WE2:1	+A1-XD1:7	LAPP.4150702	6	BU	1,078 m	15		End sleeve	Stripping	To the right	Move up, to the left	+A1-U48;+A1-U49;+A1-U50;+A1-U46;+A1-U40;+A1-U13;+A1-U5 +A1-U12
+A1-XD5:6	=GAA+A1-PF1:I3:11	LAPP.4150403	1,5	BN	1,822 m	4		Stripping	End sleeve	Move down, to the left	Move down, to the left	+A1-U12;+A1-U5;+A1-U7
+A1-XD5:5	=GAA+A1-PF1:I3:9	LAPP.4150403	1,5	BN	1,809 m	4		Stripping	End sleeve	Move down, to the left	Move down, to the left	+A1-U12;+A1-U5;+A1-U7
+A1-XD5:4	=GAA+A1-PF1:I2:7	LAPP.4150403	1,5	BN	1,797 m	4		Stripping	End sleeve	Move down, to the left	Move down, to the left	+A1-U12;+A1-U5;+A1-U7
+A1-XD5:3	=GAA+A1-PF1:I2:5	LAPP.4150403	1,5	BN	1,784 m	4		Stripping	End sleeve	Move down, to the left	Move down, to the left	+A1-U12;+A1-U5;+A1-U7
+A1-XD5:2	=GAA+A1-PF1:I1:3	LAPP.4150403	1,5	BN	1,772 m	4		Stripping	End sleeve	Move down, to the left	Move down, to the left	+A1-U12;+A1-U5;+A1-U7
+A1-XD5:1	=GAA+A1-PF1:I1:1	LAPP.4150403	1,5	BN	1,759 m	4		Stripping	End sleeve	Move down, to the left	Move down, to the left	+A1-U12;+A1-U5;+A1-U7
+A1-WE1:1	+A1-XD1:8	LAPP.4150700	6	GNYE	0,96 m	15		End sleeve	Stripping	To the right	Move up, to the left	+A1-U47;+A1-U50;+A1-U46;+A1-U40;+A1-U13;+A1-U5;+A1-U12
=GAA+A1-FC5:2	=GAA+A1-PF1:AUX SUPPLY:20	LAPP.4150401	1,5	BK	1,54 m	4		End sleeve	End sleeve	Move down, to the right	Move up, to the right	+A1-U8;+A1-U6;+A1-U4
+A1-WE2:9	=GAA+A1-PF1:AUX SUPPLY:22	LAPP.4150402	1,5	BU	2,799 m	4		End sleeve	End sleeve	To the right	Move up, to the left	+A1-U48;+A1-U49;+A1-U50;+A1-U46;+A1-U40;+A1-U13;+A1-U5 +A1-U4
+A1-FC2:1	+A1-XD1:4	LAPP.4150709	6	OG	1,751 m	15		Stripping	Stripping	Move down, to the left	Move up, to the left	+A1-U7;+A1-U5;+A1-U12
+A1-FC2:1	=GAA+A1-PF1:I3:12	LAPP.4150401	1,5	BK	0,444 m	4		Stripping	End sleeve	Move up, to the right	Move up, to the left	+A1-U4
+A1-FC2:2	+A1-XD1:5	LAPP.4150709	6	OG	1,773 m	15		Stripping	Stripping	Move down, to the left	Move up, to the left	+A1-U7;+A1-U5;+A1-U12
+A1-FC2:2	=GAA+A1-PF1:I3:14	LAPP.4150401	1,5	BK	0,446 m	4		Stripping	End sleeve	Move up, to the right	Move up, to the left	+A1-U4
+A1-FC2:3	+A1-XD1:6	LAPP.4150709	6	OG	1,796 m	15		Stripping	Stripping	Move down, to the left	Move up, to the left	+A1-U7;+A1-U5;+A1-U12
+A1-FC2:3	=GAA+A1-PF1:I3:16	LAPP.4150401	1,5	BK	0,447 m	4		Stripping	End sleeve	Move up, to the right	Move up, to the left	+A1-U4
+A1-WE2:2	=GAA+A1-PF1:I3:2	LAPP.4150402	1,5	BU	2,738 m	4		End sleeve	End sleeve	To the right	Move up, to the left	+A1-U48;+A1-U49;+A1-U50;+A1-U46;+A1-U40;+A1-U13;+A1-U5 +A1-U4
+A1-WE1:2	=GAA+A1-PF1:I3:18	LAPP.4150400	1,5	GNYE	2,618 m	4		End sleeve	End sleeve	To the right	Move up, to the left	+A1-U47;+A1-U50;+A1-U46;+A1-U40;+A1-U13;+A1-U5;+A1-U4
=GAA+A1-FC2:2	=GAA+A1-PF2:X1	LAPP.4150401	1,5	BK	1,699 m	1		End sleeve	End sleeve	Move down, to the right	Move up, to the left	+A1-U8;+A1-U6;+A1-U57;+A1-U44;+A1-U45;+A1-U42

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Wires parts list

F27_004

Source	Target	Part number	Cross-section	Color	Length	Bundle	Bundle groups	Conductor end source	Conductor end target	Routing direction source	Routing direction target	Routing track
+A1-WE2:8	=GAA+A1-PF2:X2	LAPP.4150402	1,5	BU	2,803 m	1		End sleeve	End sleeve	To the right	Move down, to the left	+A1-U48;+A1-U49;+A1-U50;+A1-U46;+A1-U40;+A1-U13;+A1-U6 +A1-U57;+A1-U44;+A1-U43
=GAA+A1-PF2:X2	=GAA+A1-PF3:X2	LAPP.4150402	1,5	BU	0,18 m	1		End sleeve	End sleeve	Move down, to the left	Move down, to the right	+A1-U43
=GAA+A1-PF3:X2	=GAA+A1-PF4:X2	LAPP.4150402	1,5	BU	0,18 m	1		End sleeve	End sleeve	Move down, to the left	Move down, to the right	+A1-U43
=GAA+A1-FC3:2	=GAA+A1-PF3:X1	LAPP.4150401	1,5	BK	1,622 m	1		End sleeve	End sleeve	Move down, to the right	Move up, to the left	+A1-U8;+A1-U6;+A1-U57;+A1-U44;+A1-U45;+A1-U42
=GAA+A1-FC4:2	=GAA+A1-PF4:X1	LAPP.4150401	1,5	BK	1,544 m	1		End sleeve	End sleeve	Move down, to the right	Move up, to the left	+A1-U8;+A1-U6;+A1-U57;+A1-U44;+A1-U45;+A1-U42
+A1-XD3:1	=GAB1+A1-FC1:2/T1	LAPP.4150401	1,5	BK	0,439 m	13		Stripping	End sleeve	Move up, to the right	Move down, to the left	+A1-U11
+A1-XD3:2	=GAB1+A1-FC1:4/T2	LAPP.4150401	1,5	BK	0,445 m	13		Stripping	End sleeve	Move up, to the right	Move down, to the left	+A1-U11
+A1-XD3:3	=GAB1+A1-FC1:6/T3	LAPP.4150401	1,5	BK	0,451 m	13		Stripping	End sleeve	Move up, to the right	Move down, to the left	+A1-U11
+A1-XD3:6	=GAB2+A1-FC1:2/T1	LAPP.4150401	1,5	BK	0,441 m	14		Stripping	End sleeve	Move up, to the right	Move down, to the left	+A1-U11
+A1-XD3:7	=GAB2+A1-FC1:4/T2	LAPP.4150401	1,5	BK	0,447 m	14		Stripping	End sleeve	Move up, to the right	Move down, to the left	+A1-U11
+A1-XD3:8	=GAB2+A1-FC1:6/T3	LAPP.4150401	1,5	BK	0,454 m	14		Stripping	End sleeve	Move up, to the right	Move down, to the left	+A1-U11
+A1-XG1:1	=GAB2+A1-FC1:14	LAPP.4150206	0,75	GY	1,307 m	14		Stripping	End sleeve	Move up, to the right	Move up, to the right	+A1-U12;+A1-U6;+A1-U10
+A1-XG1:2	=GAB2+A1-FC1:13	LAPP.4150206	0,75	GY	1,307 m	14		Stripping	End sleeve	Move up, to the right	Move up, to the right	+A1-U12;+A1-U6;+A1-U10
+A1-XD2:1	=EA+A1-EA1:L		1,5	BK	2,359 m	15		Stripping	Stripping	Move down, to the left	Move down, to the right	+A1-U12;+A1-U5;+A1-U4;+A1-U39;+A1-U55;+A1-U54;+A1-U56 +A1-U53
+A1-XD2:1	=EA+A1-FB1:2	LAPP.4150401	1,5	BK	1,02 m	5		Stripping	End sleeve	Move up, to the left	Move down, to the left	+A1-U11;+A1-U5;+A1-U8
+A1-WE2:4	=EA+A1-FB1:N	LAPP.4150402	1,5	BU	2,01 m	5		End sleeve	End sleeve	To the right	Move up, to the left	+A1-U48;+A1-U49;+A1-U50;+A1-U46;+A1-U40;+A1-U13;+A1-U5 +A1-U7
+A1-XD2:2	=EA+A1-EA1:PE		1,5	GNYE	2,372 m	15		Stripping	Stripping	Move down, to the left	Move down, to the right	+A1-U12;+A1-U5;+A1-U4;+A1-U39;+A1-U55;+A1-U54;+A1-U56 +A1-U53
+A1-XD2:3	=EA+A1-EA1:N		1,5	BU	2,384 m	15		Stripping	Stripping	Move down, to the left	Move down, to the right	+A1-U12;+A1-U5;+A1-U4;+A1-U39;+A1-U55;+A1-U54;+A1-U56 +A1-U53
+A1-XD2:3	=EA+A1-FB1:N.	LAPP.4150402	1,5	BU	1,053 m	5		Stripping	End sleeve	Move up, to the left	Move down, to the left	+A1-U11;+A1-U5;+A1-U8
+A1-XD2:4	=EA+A1-XD1:L	LAPP.4150401	1,5	BK	1,882 m	4		Stripping	End sleeve	Move down, to the right	Move down, to the right	+A1-U12;+A1-U6;+A1-U7
+A1-XD2:4	=EA+A1-FB2:2	LAPP.4150401	1,5	BK	1,043 m	5		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U11;+A1-U9;+A1-U8
+A1-XD2:5	=EA+A1-XD1:PE	LAPP.4150400	1,5	GNYE	1,855 m	4		Stripping	End sleeve	Move down, to the right	Move down, to the right	+A1-U12;+A1-U6;+A1-U7
+A1-WE2:5	=EA+A1-FB2:N	LAPP.4150402	1,5	BU	2,056 m	5		End sleeve	End sleeve	To the right	Move up, to the left	+A1-U48;+A1-U49;+A1-U50;+A1-U46;+A1-U40;+A1-U13;+A1-U5 +A1-U7
+A1-XD2:6	=EA+A1-XD1:N	LAPP.4150402	1,5	BU	1,856 m	4		Stripping	End sleeve	Move down, to the right	Move down, to the right	+A1-U12;+A1-U6;+A1-U7
+A1-XD2:6	=EA+A1-FB2:N.	LAPP.4150402	1,5	BU	1,009 m	5		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U11;+A1-U9;+A1-U8
+A1-XD2:7	=EA+A1-FB3:2	LAPP.4150401	1,5	BK	0,981 m	5		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U11;+A1-U9;+A1-U8
+A1-WE2:6	=EA+A1-FB3:N	LAPP.4150402	1,5	BU	2,059 m	5		End sleeve	End sleeve	To the right	Move up, to the left	+A1-U48;+A1-U49;+A1-U50;+A1-U46;+A1-U40;+A1-U13;+A1-U5 +A1-U7
+A1-XD2:9	=EA+A1-FB3:N.	LAPP.4150402	1,5	BU	0,947 m	5		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U11;+A1-U9;+A1-U8
+A1-XD2:10	=EA+A1-FB4:2	LAPP.4150401	1,5	BK	0,92 m	5		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U11;+A1-U9;+A1-U8
+A1-WE2:7	=EA+A1-FB4:N	LAPP.4150402	1,5	BU	2,105 m	5		End sleeve	End sleeve	To the right	Move up, to the left	+A1-U48;+A1-U49;+A1-U50;+A1-U46;+A1-U40;+A1-U13;+A1-U5 +A1-U7
+A1-XD2:12	=EA+A1-FB4:N.	LAPP.4150402	1,5	BU	0,914 m	5		Stripping	End sleeve	Move up, to the left	Move down, to the right	+A1-U11;+A1-U9;+A1-U8
+A1-XD4:1	=GL1+A1-QA1:2/T1	LAPP.4150501	2,5	BK	1,237 m	8		Stripping	End sleeve	Move up, to the left	Move down, to the left	+A1-U11;+A1-U9;+A1-U8
=GL1+A1-QA1:2/T1	=GL1+A1-QA2:2/T1	LAPP.4150501	2,5	BK	0,463 m	8		End sleeve	End sleeve	Move down, to the right	Move down, to the left	+A1-U8
=GL1+A1-FC1:2/T1	=GL1+A1-QA1:1/L1	LAPP.4150501	2,5	BK	0,795 m	2		Stripping	End sleeve	Move down, to the right	Move up, to the left	+A1-U7
=GL1+A1-QA1:1/L1	=GL1+A1-QA2:5/L3	LAPP.4150501	2,5	BK	0,486 m	8		End sleeve	End sleeve	Move up, to the right	Move up, to the left	+A1-U7
+A1-XD4:2	=GL1+A1-QA1:4/T2	LAPP.4150501	2,5	BK	1,254 m	8		Stripping	End sleeve	Move up, to the left	Move down, to the left	+A1-U11;+A1-U9;+A1-U8
=GL1+A1-QA1:4/T2	=GL1+A1-QA2:4/T2	LAPP.4150501	2,5	BK	0,462 m	8		End sleeve	End sleeve	Move down, to the right	Move down, to the left	+A1-U8
=GL1+A1-FC1:4/T2	=GL1+A1-QA1:3/L2	LAPP.4150501	2,5	BK	0,789 m	2		Stripping	End sleeve	Move down, to the right	Move up, to the left	+A1-U7
=GL1+A1-QA1:3/L2	=GL1+A1-QA2:3/L2	LAPP.4150501	2,5	BK	0,469 m	8		End sleeve	End sleeve	Move up, to the right	Move up, to the left	+A1-U7
+A1-XD4:3	=GL1+A1-QA1:6/T3	LAPP.4150501	2,5	BK	1,268 m	8		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U11;+A1-U6;+A1-U8
=GL1+A1-QA1:6/T3	=GL1+A1-QA2:6/T3	LAPP.4150501	2,5	BK	0,462 m	8		End sleeve	End sleeve	Move down, to the right	Move down, to the left	+A1-U8
=GL1+A1-FC1:6/T3	=GL1+A1-QA1:5/L3	LAPP.4150501	2,5	BK	0,783 m	2		Stripping	End sleeve	Move down, to the right	Move up, to the left	+A1-U7
=GL1+A1-QA1:5/L3	=GL1+A1-QA2:1/L1	LAPP.4150501	2,5	BK	0,452 m	8		End sleeve	End sleeve	Move up, to the right	Move up, to the left	+A1-U7
+A1-XG1:3	=GL1+A1-FC1:14	LAPP.4150206	0,75	GY	2,035 m	2		Stripping	Stripping	Move up, to the left	Move up, to the left	+A1-U12;+A1-U5;+A1-U4
+A1-XG1:4	=GL1+A1-FC1:13	LAPP.4150206	0,75	GY	2,034 m	2		Stripping	Stripping	Move up, to the left	Move up, to the left	+A1-U12;+A1-U5;+A1-U4
=GL1+A1-QA1:A1	=GL1+A1-QA2:12	LAPP.4150206	0,75	GY	1,103 m	8		End sleeve	End sleeve	Move up, to the right	Move down, to the right	+A1-U7;+A1-U6;+A1-U8
+A1-XG1:5	=GL1+A1-QA2:11	LAPP.4150206	0,75	GY	1,951 m	8		Stripping	End sleeve	Move up, to the right	Move up, to the right	+A1-U12;+A1-U6;+A1-U7
+A1-XG1:6	=GL1+A1-QA1:A2	LAPP.4150206	0,75	GY	1,615 m	8		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U12;+A1-U6;+A1-U8
=GL1+A1-QA1:12	=GL1+A1-QA2:A1	LAPP.4150206	0,75	GY	1,103 m	8		End sleeve	End sleeve	Move down, to the right	Move up, to the right	+A1-U8;+A1-U6;+A1-U7
+A1-XG1:7	=GL1+A1-QA1:11	LAPP.4150206	0,75	GY	1,979 m	8		Stripping	End sleeve	Move up, to the right	Move up, to the right	+A1-U12;+A1-U6;+A1-U7
+A1-XG1:8	=GL1+A1-QA2:A2	LAPP.4150206	0,75	GY	1,554 m	8		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U12;+A1-U6;+A1-U8
+A1-XG1:9	=GL1+A1-QA1:14	LAPP.4150206	0,75	GY	1,599 m	8		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U12;+A1-U6;+A1-U8
+A1-XG1:10	=GL1+A1-QA1:13	LAPP.4150206	0,75	GY	1,898 m	8		Stripping	End sleeve	Move up, to the right	Move up, to the right	+A1-U12;+A1-U6;+A1-U7
+A1-XG1:11	=GL1+A1-QA2:14	LAPP.4150206	0,75	GY	1,538 m	8		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U12;+A1-U6;+A1-U8
+A1-XG1:12	=GL1+A1-QA2:13	LAPP.4150206	0,75	GY	1,836 m	8		Stripping	End sleeve	Move up, to the right	Move up, to the right	+A1-U12;+A1-U6;+A1-U7
+A1-XD4:6	=GL2+A1-QA1:2/T1	LAPP.4150501	2,5	BK	0,441 m	11		Stripping	End sleeve	Move up, to the left	Move down, to the right	+A1-U11
=GL2+A1-QA1:2/T1	=GL2+A1-QA2:2/T1	LAPP.4150501	2,5	BK	0,412 m	11		End sleeve	End sleeve	Move down, to the right	Move down, to the left	+A1-U11

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Wires parts list

F27_004

Source	Target	Part number	Cross-section	Color	Length	Bundle	Bundle groups	Conductor end source	Conductor end target	Routing direction source	Routing direction target	Routing track
=GL2+A1-FC1:2/T1	=GL2+A1-QA1:1/L1	LAPP.4150501	2,5	BK	1,405 m	2		Stripping	End sleeve	Move down, to the left	Move up, to the left	+A1-U7;+A1-U5;+A1-U8;+A1-U9;+A1-U10
=GL2+A1-QA1:1/L1	=GL2+A1-QA2:5/L3	LAPP.4150501	2,5	BK	0,436 m	11		End sleeve	End sleeve	Move up, to the right	Move up, to the left	+A1-U10
+A1-XD4:7	=GL2+A1-QA1:4/T2	LAPP.4150501	2,5	BK	0,44 m	11		Stripping	End sleeve	Move up, to the left	Move down, to the right	+A1-U11
=GL2+A1-QA1:4/T2	=GL2+A1-QA2:4/T2	LAPP.4150501	2,5	BK	0,412 m	11		End sleeve	End sleeve	Move down, to the right	Move down, to the left	+A1-U11
=GL2+A1-FC1:4/T2	=GL2+A1-QA1:3/L2	LAPP.4150501	2,5	BK	1,428 m	2		Stripping	End sleeve	Move down, to the left	Move up, to the left	+A1-U7;+A1-U5;+A1-U8;+A1-U9;+A1-U10
=GL2+A1-QA1:3/L2	=GL2+A1-QA2:3/L2	LAPP.4150501	2,5	BK	0,419 m	11		End sleeve	End sleeve	Move up, to the right	Move up, to the left	+A1-U10
+A1-XD4:8	=GL2+A1-QA1:6/T3	LAPP.4150501	2,5	BK	0,44 m	11		Stripping	End sleeve	Move up, to the left	Move down, to the right	+A1-U11
=GL2+A1-QA1:6/T3	=GL2+A1-QA2:6/T3	LAPP.4150501	2,5	BK	0,412 m	11		End sleeve	End sleeve	Move down, to the right	Move down, to the left	+A1-U11
=GL2+A1-FC1:6/T3	=GL2+A1-QA1:5/L3	LAPP.4150501	2,5	BK	1,451 m	2		Stripping	End sleeve	Move down, to the left	Move up, to the left	+A1-U7;+A1-U5;+A1-U8;+A1-U9;+A1-U10
=GL2+A1-QA1:5/L3	=GL2+A1-QA2:1/L1	LAPP.4150501	2,5	BK	0,402 m	11		End sleeve	End sleeve	Move up, to the right	Move up, to the left	+A1-U10
+A1-XG1:13	=GL2+A1-FC1:14	LAPP.4150206	0,75	GY	2,166 m	2		Stripping	Stripping	Move up, to the left	Move up, to the left	+A1-U12;+A1-U5;+A1-U4
+A1-XG1:14	=GL2+A1-FC1:13	LAPP.4150206	0,75	GY	2,166 m	2		Stripping	Stripping	Move up, to the left	Move up, to the left	+A1-U12;+A1-U5;+A1-U4
=GL2+A1-QA1:A1	=GL2+A1-QA2:12	LAPP.4150206	0,75	GY	1,002 m	11		End sleeve	End sleeve	Move up, to the left	Move down, to the left	+A1-U10;+A1-U9;+A1-U11
+A1-XG1:15	=GL2+A1-QA2:11	LAPP.4150206	0,75	GY	1,347 m	12		Stripping	End sleeve	Move up, to the right	Move up, to the right	+A1-U12;+A1-U6;+A1-U10
+A1-XG1:16	=GL2+A1-QA1:A2	LAPP.4150206	0,75	GY	1,061 m	11		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U12;+A1-U6;+A1-U11
=GL2+A1-QA1:12	=GL2+A1-QA2:A1	LAPP.4150206	0,75	GY	1,002 m	11		End sleeve	End sleeve	Move down, to the left	Move up, to the left	+A1-U11;+A1-U9;+A1-U10
+A1-XG1:17	=GL2+A1-QA1:11	LAPP.4150206	0,75	GY	1,375 m	11		Stripping	End sleeve	Move up, to the right	Move up, to the right	+A1-U12;+A1-U6;+A1-U10
+A1-XG1:18	=GL2+A1-QA2:A2	LAPP.4150206	0,75	GY	0,999 m	12		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U12;+A1-U6;+A1-U11
+A1-XG1:19	=GL2+A1-QA1:14	LAPP.4150206	0,75	GY	1,045 m	11		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U12;+A1-U6;+A1-U11
+A1-XG1:20	=GL2+A1-QA1:13	LAPP.4150206	0,75	GY	1,294 m	11		Stripping	End sleeve	Move up, to the right	Move up, to the right	+A1-U12;+A1-U6;+A1-U10
+A1-XG1:21	=GL2+A1-QA2:14	LAPP.4150206	0,75	GY	0,983 m	12		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U12;+A1-U6;+A1-U11
+A1-XG1:22	=GL2+A1-QA2:13	LAPP.4150206	0,75	GY	1,233 m	12		Stripping	End sleeve	Move up, to the right	Move up, to the right	+A1-U12;+A1-U6;+A1-U10
=TM1+A1-FC1:2/T1	=TM1+A1-TA1:X1:1	LAPP.4150501	2,5	BK	0,862 m	3		End sleeve	End sleeve	Move down, to the left	Move up, to the left	+A1-U7;+A1-U5;+A1-U8
=TM1+A1-FC1:4/T2	=TM1+A1-TA1:X1:2	LAPP.4150501	2,5	BK	0,881 m	3		End sleeve	End sleeve	Move down, to the left	Move up, to the left	+A1-U7;+A1-U5;+A1-U8
=TM1+A1-FC1:6/T3	=TM1+A1-TA1:X1:3	LAPP.4150501	2,5	BK	0,901 m	3		End sleeve	End sleeve	Move down, to the left	Move up, to the left	+A1-U7;+A1-U5;+A1-U8
+A1-WE1:4	=TM1+A1-TA1:X1:PE1	LAPP.4150700	6	GNYE	1,589 m	10		End sleeve	End sleeve	To the right	Move up, to the left	+A1-U47;+A1-U50;+A1-U46;+A1-U40;+A1-U13;+A1-U5;+A1-U8
+A1-XG1:23	=TM1+A1-FC1:14	LAPP.4150206	0,75	GY	2,302 m	3		Stripping	End sleeve	Move up, to the left	Move up, to the left	+A1-U12;+A1-U5;+A1-U4
+A1-XG1:24	=TM1+A1-FC1:13	LAPP.4150206	0,75	GY	2,302 m	3		Stripping	End sleeve	Move up, to the left	Move up, to the left	+A1-U12;+A1-U5;+A1-U4
+A1-XG1:25	=TM1+A1-TA1:X12:1	LAPP.4150206	0,75	GY	1,196 m	10		Stripping	End sleeve	Move up, to the left	Move down, to the left	+A1-U12;+A1-U5;+A1-U11
+A1-XG1:26	=TM1+A1-TA1:X12:9	LAPP.4150206	0,75	GY	1,204 m	10		Stripping	End sleeve	Move up, to the left	Move down, to the left	+A1-U12;+A1-U5;+A1-U11
=TM2+A1-FC1:2/T1	=TM2+A1-TA1:X1:1	LAPP.4150501	2,5	BK	1,007 m	3		End sleeve	End sleeve	Move down, to the left	Move up, to the left	+A1-U7;+A1-U5;+A1-U8
=TM2+A1-FC1:4/T2	=TM2+A1-TA1:X1:2	LAPP.4150501	2,5	BK	1,026 m	3		End sleeve	End sleeve	Move down, to the left	Move up, to the left	+A1-U7;+A1-U5;+A1-U8
=TM2+A1-FC1:6/T3	=TM2+A1-TA1:X1:3	LAPP.4150501	2,5	BK	1,045 m	3		End sleeve	End sleeve	Move down, to the left	Move up, to the left	+A1-U7;+A1-U5;+A1-U8
+A1-WE1:5	=TM2+A1-TA1:X1:PE1	LAPP.4150700	6	GNYE	1,675 m	10		End sleeve	End sleeve	To the right	Move up, to the left	+A1-U47;+A1-U50;+A1-U46;+A1-U40;+A1-U13;+A1-U5;+A1-U8
+A1-XG1:27	=TM2+A1-FC1:14	LAPP.4150206	0,75	GY	2,29 m	3		Stripping	End sleeve	Move up, to the right	Move up, to the right	+A1-U12;+A1-U6;+A1-U4
+A1-XG1:28	=TM2+A1-FC1:13	LAPP.4150206	0,75	GY	2,29 m	3		Stripping	End sleeve	Move up, to the right	Move up, to the right	+A1-U12;+A1-U6;+A1-U4
+A1-XG1:29	=TM2+A1-TA1:X12:1	LAPP.4150206	0,75	GY	1,329 m	10		Stripping	End sleeve	Move up, to the left	Move down, to the left	+A1-U12;+A1-U5;+A1-U11
+A1-XG1:30	=TM2+A1-TA1:X12:9	LAPP.4150206	0,75	GY	1,337 m	10		Stripping	End sleeve	Move up, to the left	Move down, to the left	+A1-U12;+A1-U5;+A1-U11
+A1-XD4:11	=GL3+A1-QA1:2/T1	LAPP.4150501	2,5	BK	1,126 m	9		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U11;+A1-U6;+A1-U8
=GL3+A1-QA1:2/T1	=GL3+A1-QA2:2/T1	LAPP.4150501	2,5	BK	0,463 m	9		End sleeve	End sleeve	Move down, to the right	Move down, to the left	+A1-U8
=GL3+A1-FC1:2/T1	=GL3+A1-QA1:1/L1	LAPP.4150501	2,5	BK	0,79 m	2		Stripping	End sleeve	Move down, to the right	Move up, to the left	+A1-U7
=GL3+A1-QA1:1/L1	=GL3+A1-QA2:5/L3	LAPP.4150501	2,5	BK	0,486 m	9		End sleeve	End sleeve	Move up, to the right	Move up, to the left	+A1-U7
+A1-XD4:12	=GL3+A1-QA1:4/T2	LAPP.4150501	2,5	BK	1,11 m	9		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U11;+A1-U6;+A1-U8
=GL3+A1-QA1:4/T2	=GL3+A1-QA2:4/T2	LAPP.4150501	2,5	BK	0,463 m	9		End sleeve	End sleeve	Move down, to the right	Move down, to the left	+A1-U8
=GL3+A1-FC1:4/T2	=GL3+A1-QA1:3/L2	LAPP.4150501	2,5	BK	0,784 m	2		Stripping	End sleeve	Move down, to the right	Move up, to the left	+A1-U7
=GL3+A1-QA1:3/L2	=GL3+A1-QA2:3/L2	LAPP.4150501	2,5	BK	0,469 m	9		End sleeve	End sleeve	Move up, to the right	Move up, to the left	+A1-U7
+A1-XD4:13	=GL3+A1-QA1:6/T3	LAPP.4150501	2,5	BK	1,093 m	9		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U11;+A1-U6;+A1-U8
=GL3+A1-QA1:6/T3	=GL3+A1-QA2:6/T3	LAPP.4150501	2,5	BK	0,462 m	9		End sleeve	End sleeve	Move down, to the right	Move down, to the left	+A1-U8
=GL3+A1-FC1:6/T3	=GL3+A1-QA1:5/L3	LAPP.4150501	2,5	BK	0,778 m	2		Stripping	End sleeve	Move down, to the right	Move up, to the left	+A1-U7
=GL3+A1-QA1:5/L3	=GL3+A1-QA2:1/L1	LAPP.4150501	2,5	BK	0,452 m	9		End sleeve	End sleeve	Move up, to the right	Move up, to the left	+A1-U7
+A1-XG1:31	=GL3+A1-FC1:14	LAPP.4150206	0,75	GY	2,358 m	2		Stripping	Stripping	Move up, to the left	Move up, to the left	+A1-U12;+A1-U5;+A1-U4
+A1-XG1:32	=GL3+A1-FC1:13	LAPP.4150206	0,75	GY	2,358 m	2		Stripping	Stripping	Move up, to the left	Move up, to the left	+A1-U12;+A1-U5;+A1-U4
=GL3+A1-QA1:A1	=GL3+A1-QA2:12	LAPP.4150206	0,75	GY	0,923 m	9		End sleeve	End sleeve	Move up, to the right	Move down, to the right	+A1-U7;+A1-U6;+A1-U8
+A1-XG1:33	=GL3+A1-QA2:11	LAPP.4150206	0,75	GY	1,632 m	9		Stripping	End sleeve	Move up, to the right	Move up, to the right	+A1-U12;+A1-U6;+A1-U7
+A1-XG1:34	=GL3+A1-QA1:A2	LAPP.4150206	0,75	GY	1,297 m	9		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U12;+A1-U6;+A1-U8
=GL3+A1-QA1:12	=GL3+A1-QA2:A1	LAPP.4150206	0,75	GY	0,923 m	9		End sleeve	End sleeve	Move down, to the right	Move up, to the right	+A1-U8;+A1-U6;+A1-U7
+A1-XG1:35	=GL3+A1-QA1:11	LAPP.4150206	0,75	GY	1,661 m	9		Stripping	End sleeve	Move up, to the right	Move up, to the right	+A1-U12;+A1-U6;+A1-U7

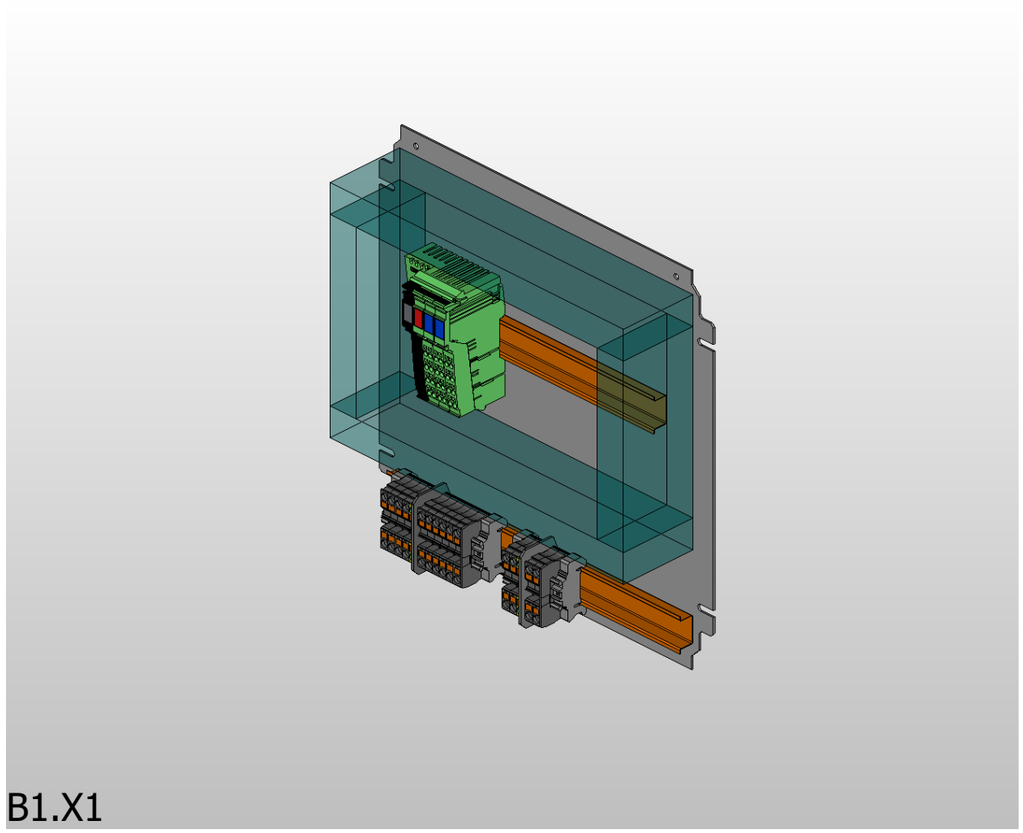
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Wires parts list

F27_004

Source	Target	Part number	Cross-section	Color	Length	Bundle	Bundle groups	Conductor end source	Conductor end target	Routing direction source	Routing direction target	Routing track
+A1-XG1:36	=GL3+A1-QA2:A2	LAPP.4150206	0,75	GY	1,235 m	9		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U12;+A1-U6;+A1-U8
+A1-XG1:37	=GL3+A1-QA1:14	LAPP.4150206	0,75	GY	1,281 m	9		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U12;+A1-U6;+A1-U8
+A1-XG1:38	=GL3+A1-QA1:13	LAPP.4150206	0,75	GY	1,579 m	9		Stripping	End sleeve	Move up, to the right	Move up, to the right	+A1-U12;+A1-U6;+A1-U7
+A1-XG1:39	=GL3+A1-QA2:14	LAPP.4150206	0,75	GY	1,219 m	9		Stripping	End sleeve	Move up, to the right	Move down, to the right	+A1-U12;+A1-U6;+A1-U8
+A1-XG1:40	=GL3+A1-QA2:13	LAPP.4150206	0,75	GY	1,518 m	9		Stripping	End sleeve	Move up, to the right	Move up, to the right	+A1-U12;+A1-U6;+A1-U7

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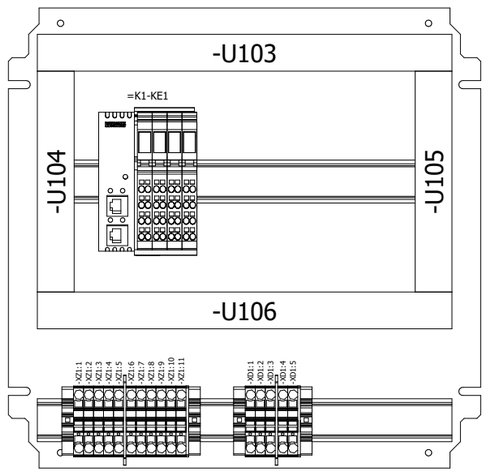


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Enclosure legend

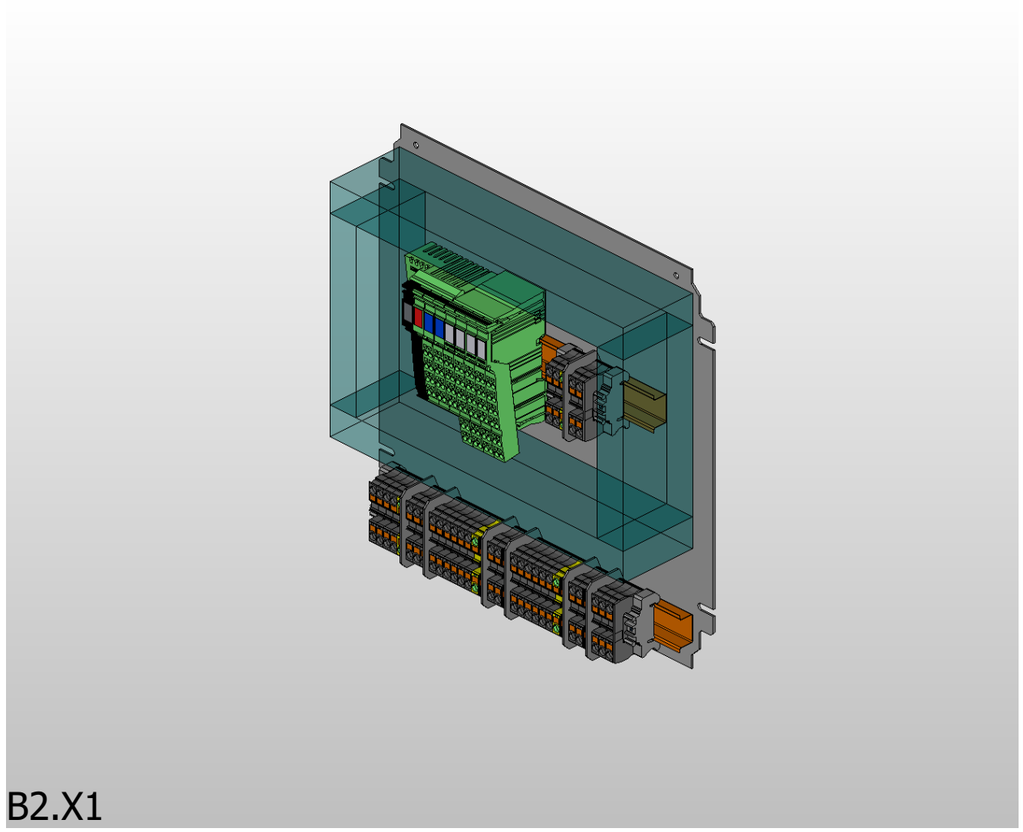
F18_005

Item number	Device tag	Type number
16	KE1	IL PN BK DI8 DO4 2TX-PAC
51	XZ1	CLIPFIX 35
52	XZ1	PT 6
53	XZ1	PT 6
54	XZ1	PT 6
55	XZ1	PT 6
56	XZ1	PT 6-PE
57	XZ1	ATP-ST 6
58	XZ1	PT 6
59	XZ1	PT 6
60	XZ1	PT 6
61	XZ1	PT 6
62	XZ1	PT 6
63	XZ1	PT 6
65	XZ1	D-PT 6
66	XZ1	CLIPFIX 35
67	XD1	CLIPFIX 35
68	XD1	PT 6
69	XD1	PT 6
70	XD1	PT 6-PE
71	XD1	ATP-ST 6
72	XD1	PT 6
73	XD1	PT 6
74	XD1	D-PT 6
75	XD1	CLIPFIX 35

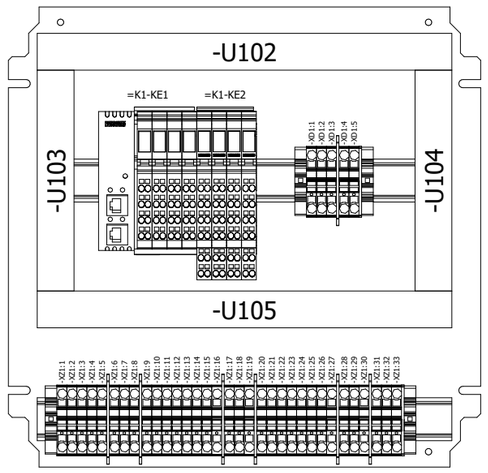


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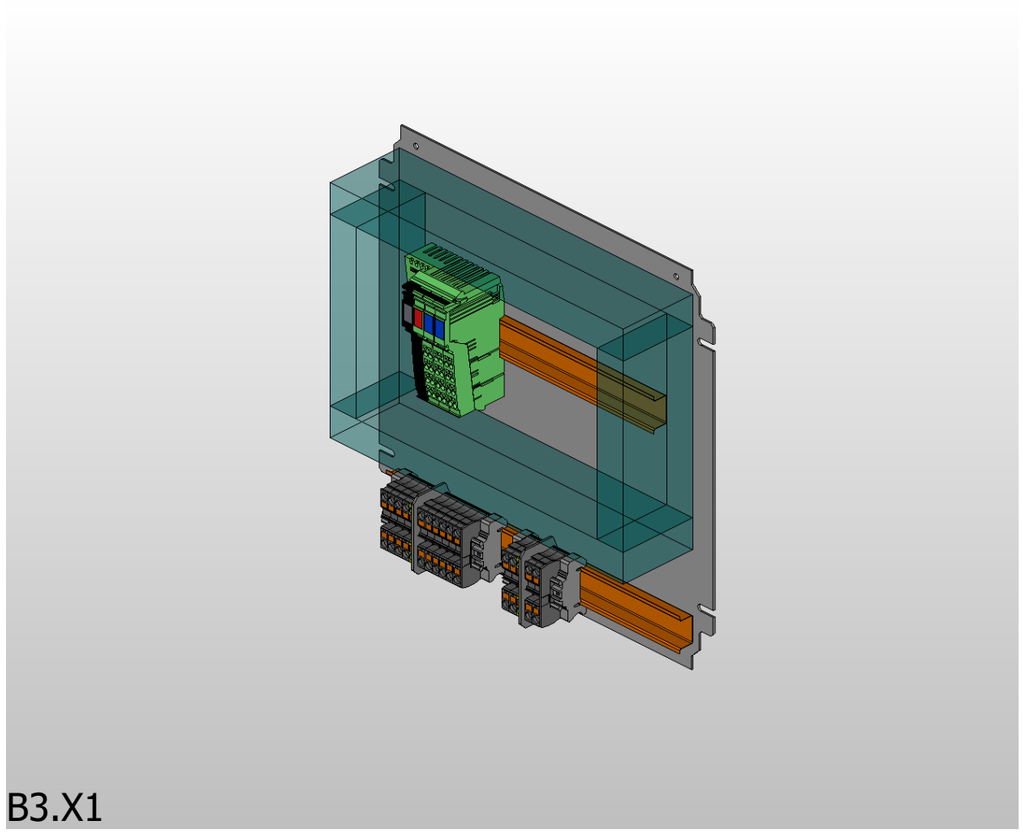
Enclosure legend

F18_005

Item number	Device tag	Type number
16	KE2	IB IL 24 DI 16-PAC
97	KE1	IL PN BK DI8 DO4 2TX-PAC
185	XD1	CLIPFIX 35
186	XD1	PT 6
187	XD1	PT 6
188	XD1	PT 6-PE
189	XD1	ATP-ST 6
190	XD1	PT 6
191	XD1	PT 6
192	XD1	D-PT 6
193	XD1	CLIPFIX 35
194	XZ1	CLIPFIX 35
195	XZ1	PT 6
196	XZ1	PT 6
197	XZ1	PT 6
198	XZ1	PT 6
199	XZ1	PT 6-PE
200	XZ1	ATP-ST 6
201	XZ1	PT 6
202	XZ1	PT 6
203	XZ1	PT 6
204	XZ1	ATP-ST 6
205	XZ1	PT 6
206	XZ1	PT 6
207	XZ1	PT 6
209	XZ1	PT 6
210	XZ1	PT 6
211	XZ1	PT 6
212	XZ1	PT 6-PE
213	XZ1	PT 6 BK
214	XZ1	ATP-ST 6
215	XZ1	PT 6
216	XZ1	PT 6
217	XZ1	PT 6 BK
218	XZ1	ATP-ST 6
219	XZ1	PT 6
220	XZ1	PT 6
221	XZ1	PT 6
223	XZ1	PT 6
224	XZ1	PT 6
225	XZ1	PT 6
226	XZ1	PT 6-PE
227	XZ1	PT 6 BK
228	XZ1	ATP-ST 6
229	XZ1	PT 6
230	XZ1	PT 6
231	XZ1	PT 6 BK
232	XZ1	ATP-ST 6
233	XZ1	PT 6
234	XZ1	PT 6
235	XZ1	PT 6
237	XZ1	D-PT 6
238	XZ1	CLIPFIX 35

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			Grinding machine	Drawing number					Model view
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Modification	Date	Name	Creator EPL	Approved by		Date 8/5/2021	Ed. EPL		Page 45 from 305

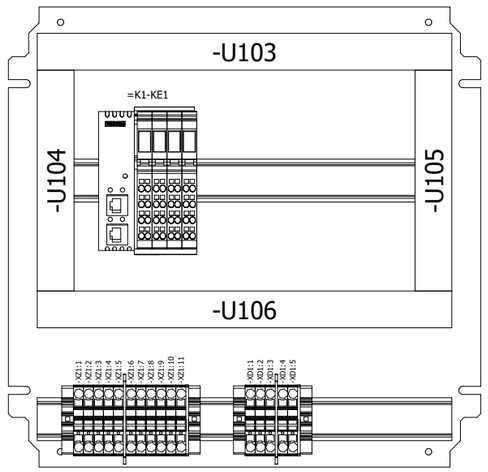


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Enclosure legend

F18_005

Item number	Device tag	Type number
54	KE1	IL PN BK DI8 DO4 2TX-PAC
76	XZ1	CLIPFIX 35
77	XZ1	PT 6
78	XZ1	PT 6
79	XZ1	PT 6
80	XZ1	PT 6
81	XZ1	PT 6-PE
82	XZ1	ATP-ST 6
83	XZ1	PT 6
84	XZ1	PT 6
85	XZ1	PT 6
86	XZ1	PT 6
87	XZ1	PT 6
88	XZ1	PT 6
90	XZ1	D-PT 6
91	XZ1	CLIPFIX 35
92	XD1	CLIPFIX 35
93	XD1	PT 6
94	XD1	PT 6
95	XD1	PT 6-PE
96	XD1	ATP-ST 6
97	XD1	PT 6
98	XD1	PT 6
99	XD1	D-PT 6
100	XD1	CLIPFIX 35

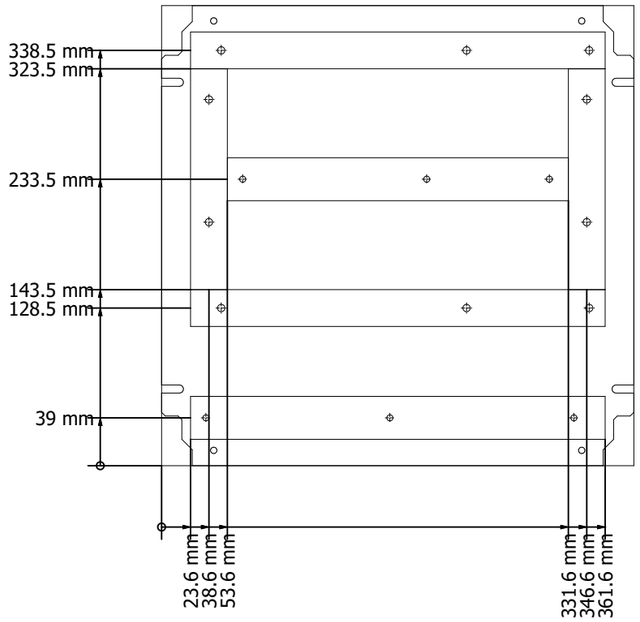


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			Grinding machine	Drawing number					Model view	
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Modification	Date	Name	Creator EPL	Approved by		Date 8/5/2021	Ed. EPL		Page 46 from 305	

Drilling view

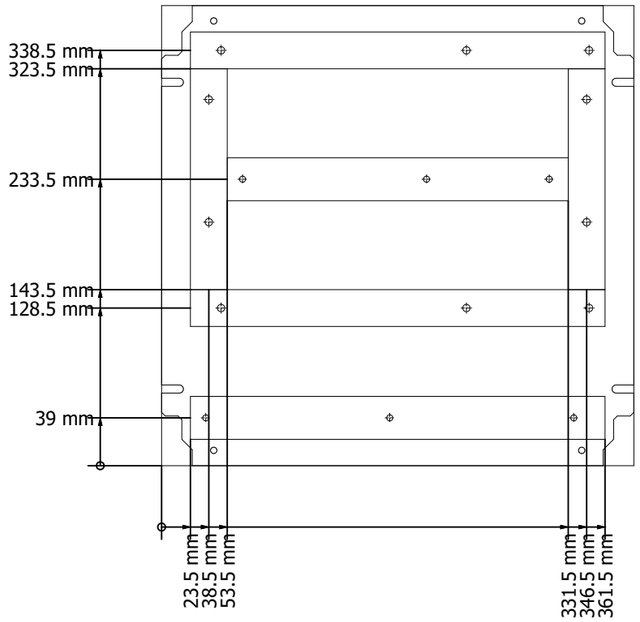


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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Drilling view layout space		=	&ETC1
			Grinding machine	Drawing number					Model view
								+	Page 4
Modification	Date	Name	Creator EPL	Approved by		Date 8/5/2021	Ed. EPL		Page 47 from 305

Drilling view

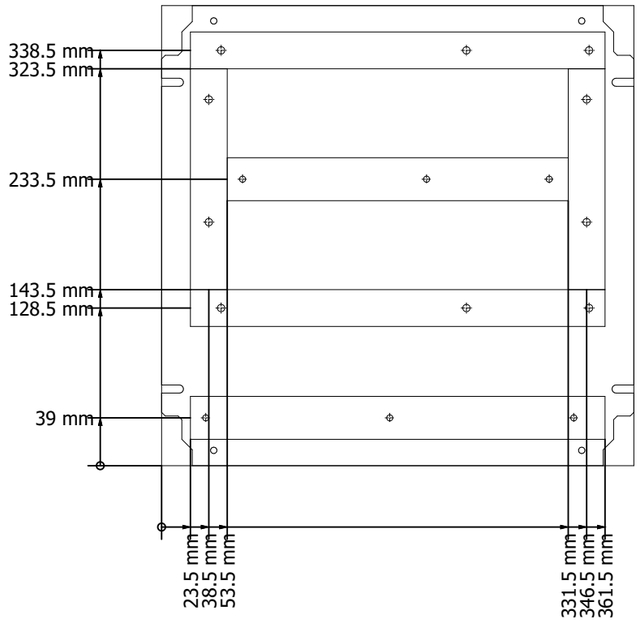


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			Grinding machine	Drawing number					Model view	
								+	Page 5	
Modification	Date	Name	Creator EPL	Approved by		Date 8/5/2021	Ed. EPL		Page 48 from 305	

Drilling view



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Summarized parts list

F02_006

Order number	Quantity	Designation	Type number	Supplier	Pos.
3022218	14	End clamp	CLIPFIX 35	PXC	1
3036563	3	Fuse modular terminal block	ST 4-HESILA 250 (5X20)	PXC	2
3212044	6	End cover	D-PT 6	PXC	3
8886000	1	VX Baying enclosure system, WHD: 800x1800x600 mm, single door	VX.8886000	RIT	4
8800752	4	TS Cable duct for mounting plate, WHD: 60x2000x80 mm	TS.8800752	RIT	5
8800750	6	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	6
2313150	6	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	7
4568000	4	SZ Eyebolt, for TS, SE, Sheet steel, zinc-plated	PS.4568000	RIT	8
8186245	2	VX Side panel, screw-fastened, for HD: 1800x600 mm	VX.8186245	RIT	9
8620003	2	VX Base/plinth with trim panel, front/rear, H: 100 mm, for W: 800 mm	VX.8620003	RIT	10
8620033	2	VX Base/plinth trim panel, side, H: 100 mm, for D: 600 mm	VX.8620033	RIT	11
ESS.2x6CABLE	2,47	NYY-O 2X6	NYY-O	ESS	12
2500400	1	Connection cable for LED system light	SZ.2500400	RIT	13
3581000	2	SV Busbar E-Cu, WH: 15x5 mm, L: 2400 mm	SV.3581000	RIT	14
9340030	4	SV Busbar support, 1-pole, for busbar WH: 12x5-30x10 mm	SV.9340030	RIT	15
3451500	6	SV Conductor connection clamp, 2,5-16 mm², clamping area WH: 8x8 mm	SV.3451500	RIT	16
3450500	8	SV Conductor connection clamp, 1-4 mm², for bar thickness 5 mm	SV.3450500	RIT	17
3211813	69	Feed-through terminal block	PT 6	PXC	18
3024481	8	Partition plate	ATP-ST 6	PXC	19
3211819	5	Feed-through terminal block	PT 6 BU	PXC	20
3211822	10	Ground modular terminal block	PT 6-PE	PXC	21
3212140	6	Test disconnect terminal block	PTME 4 WH	PXC	22
3212167	1	End cover	D-PTME 4	PXC	23
3VA1032-2ED32-0AA0	1	MCCB_IEC_FS100_32A_3P_16KA_TM_ FTFM	3VA1032-2ED32-0AA0	SIE	24
3VA9157-0FK25	1	DOOR MOUNTED ROTARY OPERATOR, EM	3VA9157-0FK25	SIE	25
5SY4106-5	3	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, A, 6A, D=70MM	5SY4106-5	SIE	26
5SY4116-6	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, B, 16A, D=70MM	5SY4116-6	SIE	27
2901362	1	Measuring instrument	EEM-MA200	PXC	28

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Summarized parts list

F02_006

Order number	Quantity	Designation	Type number	Supplier	Pos.
3SU1401-1BF60-1AA0	3	LED MODULE, WHITE	3SU1401-1BF60-1AA0	SIE	29
3SU1500-0AA10-0AA0	3	HOLDER	3SU1500-0AA10-0AA0	SIE	30
3SU1001-6AA60-0AA0	3	INDICATOR LIGHT, WHITE	3SU1001-6AA60-0AA0	SIE	31
2277019	3	Current transformer	PACT MCR-V1-21-44- 50-5A-1	PXC	32
3RV2011-1GA15	2	CIRCUIT-BREAKER SCREW CONNECTION 6.3A	3RV2011-1GA15	SIE	33
2500210	1	LED system light	SZ.2500210	RIT	34
5SU1356-6KK16	4	RCBO elm	5SU1356-6KK16	SIE	35
2506100	1	SZ Socket for mounting on support rails, Schuko, CEE 7/4	SZ.2506100	RIT	36
3RV2011-1BA25	1	CIRCUIT-BREAKER SPRING-L. CONN. 2A	3RV2011-1BA25	SIE	37
3RT2015-1BB41-1AA0	6	CONTACTOR,AC3:3KW 1NO DC24V	3RT2015-1BB41-1AA0	SIE	38
3RH2911-1FA22-0MA0	6	AUX. SWITCH BLOCK, 2NO+2NC	3RH2911-1FA22-0MA0	SIE	39
3RV2011-1EA25	2	CIRCUIT-BREAKER SPRING-L. CONN. 4A	3RV2011-1EA25	SIE	40
3RV2011-4AA10	2	CIRCUIT-BREAKER SCREW CONNECTION 16A	3RV2011-4AA10	SIE	41
3RV29011E	2	TRANSVERSE AUX. SWITCH, 1NO+1NC, SCREW CONNECTION,	3RV2901-1E	SIE	42
828 520 9	2	Vector oriented drive inverter	MC07B0015-5A3-4-00	SEW	43

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+A1-U3	1	VX Baying enclosure system, WHD: 800x1800x600 mm, single door	VX.8886000	RIT	RIT.8886000
+A1-U4	1	TS Cable duct for mounting plate, WHD: 60x2000x80 mm	TS.8800752	RIT	RIT.8800752
+A1-U5	1	TS Cable duct for mounting plate, WHD: 60x2000x80 mm	TS.8800752	RIT	RIT.8800752
+A1-U6	1	TS Cable duct for mounting plate, WHD: 60x2000x80 mm	TS.8800752	RIT	RIT.8800752
+A1-U7	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	RIT.8800750
+A1-U8	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	RIT.8800750
+A1-U9	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	RIT.8800750
+A1-U10	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	RIT.8800750
+A1-U11	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	RIT.8800750
+A1-U12	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	RIT.8800750
+A1-U13	1	TS Cable duct for mounting plate, WHD: 60x2000x80 mm	TS.8800752	RIT	RIT.8800752
+A1-U14	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+A1-U15	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+A1-U16	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+A1-U17	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+A1-U18	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+A1-U19	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+A1-U20	1	SZ Eyebolt, for TS, SE, Sheet steel, zinc-plated	PS.4568000	RIT	RIT.4568000
+A1-U21	1	SZ Eyebolt, for TS, SE, Sheet steel, zinc-plated	PS.4568000	RIT	RIT.4568000
+A1-U22	1	SZ Eyebolt, for TS, SE, Sheet steel, zinc-plated	PS.4568000	RIT	RIT.4568000
+A1-U23	1	SZ Eyebolt, for TS, SE, Sheet steel, zinc-plated	PS.4568000	RIT	RIT.4568000
+A1-U24	1	VX Side panel, screw-fastened, for HD: 1800x600 mm	VX.8186245	RIT	RIT.8186245
+A1-U25	1	VX Side panel, screw-fastened, for HD: 1800x600 mm	VX.8186245	RIT	RIT.8186245
+A1-U26	1	VX Base/plinth with trim panel, front/rear, H: 100 mm, for W: 800 mm	VX.8620003	RIT	RIT.8620003
+A1-U27	1	VX Base/plinth trim panel, side, H: 100 mm, for D: 600 mm	VX.8620033	RIT	RIT.8620033
+A1-U28	1	VX Base/plinth trim panel, side, H: 100 mm, for D: 600 mm	VX.8620033	RIT	RIT.8620033
+A1-U29	1	VX Base/plinth with trim panel, front/rear, H: 100 mm, for W: 800 mm	VX.8620003	RIT	RIT.8620003
+A1-WD1	1	NYY-O 2X6	NYY-O	ESS	ESS.2x6CABLE
+A1-WD2	1	Connection cable for LED system light	SZ.2500400	RIT	RIT.2500400

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+A1-WE1	1	SV Busbar E-Cu, WH: 15x5 mm, L: 2400 mm	SV.3581000	RIT	RIT.3581000
+A1-WE2	1	SV Busbar E-Cu, WH: 15x5 mm, L: 2400 mm	SV.3581000	RIT	RIT.3581000
=GAA+A1-FC1	1	MCCB_IEC_FS100_32A_3P_16KA_TM_ FTFM	3VA1032-2ED32-0AA0	SIE	SIE.3VA1032-2ED32-0AA0
=GAA+A1-FC2	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, A, 6A, D=70MM	5SY4106-5	SIE	SIE.5SY4106-5
=GAA+A1-FC3	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, A, 6A, D=70MM	5SY4106-5	SIE	SIE.5SY4106-5
=GAA+A1-FC4	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, A, 6A, D=70MM	5SY4106-5	SIE	SIE.5SY4106-5
=GAA+A1-FC5	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, B, 16A, D=70MM	5SY4116-6	SIE	SIE.5SY4116-6
=GAA+A1-PF1	1	Measuring instrument	EEM-MA200	PXC	PXC.2901362
=GAA+A1-PF2	1	LED MODULE, WHITE	3SU1401-1BF60-1AA0	SIE	SIE.3SU1401-1BF60-1AA0
=GAA+A1-PF3	1	LED MODULE, WHITE	3SU1401-1BF60-1AA0	SIE	SIE.3SU1401-1BF60-1AA0
=GAA+A1-PF4	1	LED MODULE, WHITE	3SU1401-1BF60-1AA0	SIE	SIE.3SU1401-1BF60-1AA0
=GAA+A1-TA1	1	Current transformer	PACT MCR-V1-21-44- 50-5A-1	PXC	PXC.2277019
=GAA+A1-TA2	1	Current transformer	PACT MCR-V1-21-44- 50-5A-1	PXC	PXC.2277019
=GAA+A1-TA3	1	Current transformer	PACT MCR-V1-21-44- 50-5A-1	PXC	PXC.2277019
=GAB1+A1-FC1	1	CIRCUIT-BREAKER SCREW CONNECTION 6.3A	3RV2011-1GA15	SIE	SIE.3RV2011-1GA15
=GAB2+A1-FC1	1	CIRCUIT-BREAKER SCREW CONNECTION 6.3A	3RV2011-1GA15	SIE	SIE.3RV2011-1GA15
=EA+A1-EA1	1	LED system light	SZ.2500210	RIT	RIT.2500210
=EA+A1-FB1	1	RCBO elm	5SU1356-6KK16	SIE	SIE.5SU1356-6KK16
=EA+A1-FB2	1	RCBO elm	5SU1356-6KK16	SIE	SIE.5SU1356-6KK16
=EA+A1-FB3	1	RCBO elm	5SU1356-6KK16	SIE	SIE.5SU1356-6KK16
=EA+A1-FB4	1	RCBO elm	5SU1356-6KK16	SIE	SIE.5SU1356-6KK16
=GL1+A1-FC1	1	CIRCUIT-BREAKER SPRING-L. CONN. 2A	3RV2011-1BA25	SIE	SIE.3RV2011-1BA25
=GL1+A1-QA1	1		3RH2911-1FA22-0MA0 + 3RH2911-1FA22-0MA0	SIE	3RT2015-1BB41+1FA22
=GL1+A1-QA2	1		3RH2911-1FA22-0MA0 + 3RH2911-1FA22-0MA0	SIE	3RT2015-1BB41+1FA22
=GL2+A1-FC1	1	CIRCUIT-BREAKER SPRING-L. CONN. 4A	3RV2011-1EA25	SIE	SIE.3RV2011-1EA25
=GL2+A1-QA1	1	CONTACTOR,AC3:3KW 1NO DC24V	3RT2015-1BB41-1AA0	SIE	SIE.3RT2015-1BB41-1AA0
=GL2+A1-QA2	1		3RH2911-1FA22-0MA0 + 3RH2911-1FA22-0MA0	SIE	3RT2015-1BB41+1FA22
=TM1+A1-FC1	1	CIRCUIT-BREAKER SCREW CONNECTION 16A	3RV2011-4AA10	SIE	SIE.3RV2011-4AA10
=TM1+A1-TA1	1	Vector oriented drive inverter	MC07B0015-5A3-4-00	SEW	SEW.MC07B0015-5A3-4-00

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
=TM2+A1-FC1	1	CIRCUIT-BREAKER SCREW CONNECTION 16A	3RV2011-4AA10	SIE	SIE.3RV2011-4AA10
=TM2+A1-TA1	1	Vector oriented drive inverter	MC07B0015-5A3-4-00	SEW	SEW.MC07B0015-5A3-4-00
=GL3+A1-FC1	1	CIRCUIT-BREAKER SPRING-L. CONN. 4A	3RV2011-1EA25	SIE	SIE.3RV2011-1EA25
=GL3+A1-QA1	1		3RH2911-1FA22-0MA0 + 3RH2911-1FA22-0MA0	SIE	3RT2015-1BB41+1FA22
=GL3+A1-QA2	1		3RH2911-1FA22-0MA0 + 3RH2911-1FA22-0MA0	SIE	3RT2015-1BB41+1FA22

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Cable overview

F10_003

Cable designation	from	to	Cable type	Conductors	ø	Length	Function text
+A1-WD1	+A1-WE2	+A2-WE2	NYY-O	2X	6	2,472	Power supply
	+A1-WE1	+A2-WE1					
+A1-WD2	+A1-XD2	=EA+A1-EA1		3G	1,5	2,384	Enclosure light 1

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Cable diagram

F09_002

Cable name	+A1-WD1		Cable type	NYY-O					
Function text	Power supply		No. of conductors	2X		Cross-section	6	Cable length	2,472
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Busbar connection point	=GAA+A1&EFS1/1.6	+A1-WE2	3	BU	+A2-WE2	1	=GAA+A1&EFS1/1.8	Busbar connection point	
=	=GAA+A1&EFS1/1.7	+A1-WE1	3	GNYE	+A2-WE1	1	=GAA+A1&EFS1/1.8	=	

Cable name	+A1-WD2		Cable type						
Function text	Enclosure light 1		No. of conductors	3G		Cross-section	1,5	Cable length	2,384
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Enclosure light 1	=EA+A1&EFS1/1.2	+A1-XD2	1	BK	=EA+A1-EA1	L	=EA+A1&EFS1/1.2	Enclosure light 1	
=	=EA+A1&EFS1/1.2	+A1-XD2	3	BU	=EA+A1-EA1	N	=EA+A1&EFS1/1.2	=	
=	=EA+A1&EFS1/1.2	+A1-XD2	2	GNYE	=EA+A1-EA1	PE	=EA+A1&EFS1/1.2	=	

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Terminal-strip overview

F14_002

Terminal strip	Function text	Terminals					Terminal diagram page
		first	last	Total PE	Total N	Total number	
+A1-FC2		1	3	0	0	3	+A1&EMA2/1
+A1-XD1	Power supply	1	8	1	1	8	+A1&EMA2/2
+A1-XD2	Enclosure "Infrastructure"	1	12	4	4	12	+A1&EMA2/3
+A1-XD3	400 V supply rectifier	1	9	2	0	9	+A1&EMA2/4
+A1-XD4	Motor terminals	1	15	3	0	15	+A1&EMA2/5
+A1-XD5	Current transformer terminals	1	6	0	0	6	+A1&EMA2/6
+A1-XG1	Interface PLC	1	40	0	0	40	+A1&EMA2/7

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Terminal diagram

F13_008

1
2
3
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7
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9
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11

Strip

+A1-FC2

1
2
3
4
5
6
7
8
9
10
11

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Power supply												+A1-XD1	4	1	'		=GAA+A1-PF1	I3:12												=GAA+A1&EFS1/1.6
=												+A1-XD1	5	2	'		=GAA+A1-PF1	I3:14												=GAA+A1&EFS1/1.6
=												+A1-XD1	6	3	'		=GAA+A1-PF1	I3:16												=GAA+A1&EFS1/1.6

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +A1-FC2	= &EMA2
			Grinding machine	Drawing number			Terminal diagram
						+A1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL	Enclosure 1 Page 58 from 305

Terminal diagram

F13_008

Strip

+A1-XD1

Power supply

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Power supply														1			=GAA+A1-FC1	1												=GAA+A1&EFS1/1.2
=														4			+A1-FC2	1												=GAA+A1&EFS1/1.2
=														2			=GAA+A1-FC1	3												=GAA+A1&EFS1/1.2
=														5			+A1-FC2	2												=GAA+A1&EFS1/1.2
=														3			=GAA+A1-FC1	5												=GAA+A1&EFS1/1.2
=														6			+A1-FC2	3												=GAA+A1&EFS1/1.3
=														7			+A1-WE2	1												=GAA+A1&EFS1/1.3
=														8 ⏚			+A1-WE1	1												=GAA+A1&EFS1/1.3

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +A1-XD1	= / &EMA2
			Grinding machine	Drawing number			Terminal diagram
						+A1	Page 2
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Terminal diagram

F13_008

1	+A1-WD2	3G1,5 mm² 2,384 m
2	+A2-WD3	ÖLFLEX® CLASSIC 100 3G1,5 mm² 2,244 m
3	+A2-WD4	ÖLFLEX® CLASSIC 100 3G1,5 mm² 2,244 m
4		
5		
6		
7		
8		
9		
10		
11		

Strip

+A1-XD2

Enclosure "Infrastructure"

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Enclosure light 1	BK											=EA+A1-EA1	L	1	'		=EA+A1-FB1	2												=EA+A1&EFS1/1.2
=	GNYE											=EA+A1-EA1	PE	2 ⏚	'																=EA+A1&EFS1/1.2
=	BU											=EA+A1-EA1	N	3	'		=EA+A1-FB1	N.												=EA+A1&EFS1/1.2
Female receptacle												=EA+A1-XD1	L	4	'		=EA+A1-FB2	2												=EA+A1&EFS1/1.4
=												=EA+A1-XD1	PE	5 ⏚	'																=EA+A1&EFS1/1.4
=												=EA+A1-XD1	N	6	'		=EA+A1-FB2	N.												=EA+A1&EFS1/1.4
Enclosure light 1		BN										+A2-XD5	1	7	'		=EA+A1-FB3	2												=EA+A2&EFS1/1.2
=		GNYE										+A2-XD5	2	8 ⏚	'																=EA+A2&EFS1/1.2
=		BU										+A2-XD5	3	9	'		=EA+A1-FB3	N.												=EA+A2&EFS1/1.2
Female receptacle			BN									+A2-XD5	4	10	'		=EA+A1-FB4	2												=EA+A2&EFS1/1.4
=			GNYE									+A2-XD5	5	11 ⏚	'																=EA+A2&EFS1/1.4
=			BU									+A2-XD5	6	12	'		=EA+A1-FB4	N.												=EA+A2&EFS1/1.4

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +A1-XD2	= / &EMA2
			Grinding machine	Drawing number			Terminal diagram
							+A1 / Page 3
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Terminal diagram

F13_008

1	+A2-WD1	ÖLFLEX® CLASSIC 100 5G1,5 mm² 2,244 m
2	+A2-WD2	ÖLFLEX® CLASSIC 100 4G1,5 mm² 2,244 m
3		
4		
5		
6		
7		
8		
9		
10		
11		

Strip

+A1-XD3

400 V supply rectifier

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
24 V device power supply	BN											+A2-XD1	1	1	'		=GAB1+A1-FC1	2/T1												=GAB1+A2&EFS1/1.1
=	BK											+A2-XD1	2	2	'		=GAB1+A1-FC1	4/T2												=GAB1+A2&EFS1/1.1
=	GY											+A2-XD1	3	3	'		=GAB1+A1-FC1	6/T3												=GAB1+A2&EFS1/1.1
=	BU											+A2-XD1	4	4	'															=GAB1+A2&EFS1/1.1
=	GNYE											+A2-XD1	5	5 ⏚	'															=GAB1+A2&EFS1/1.1
24 V input / output supply		BN										+A2-XD1	6	6	'		=GAB2+A1-FC1	2/T1												=GAB2+A2&EFS1/1.1
=		BK										+A2-XD1	7	7	'		=GAB2+A1-FC1	4/T2												=GAB2+A2&EFS1/1.1
=		GY										+A2-XD1	8	8	'		=GAB2+A1-FC1	6/T3												=GAB2+A2&EFS1/1.1
=		GNYE										+A2-XD1	9	9 ⏚	'															=GAB2+A2&EFS1/1.1

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +A1-XD3	= &EMA2
			Grinding machine	Drawing number			Terminal diagram
						+A1	Page 4
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Terminal diagram

F13_008

1	+B1.X1-WD2	ÖLFLEX® CLASSIC 100 H 5G2,5 mm² 1,778 m
2	+B2.X1-WD2	ÖLFLEX® CLASSIC 100 H 5G2,5 mm² 1,918 m
3	+B3.X1-WD2	ÖLFLEX® CLASSIC 100 H 5G2,5 mm² 3,348 m
4		
5		
6		
7		
8		
9		
10		
11		

Strip

+A1-XD4

Motor terminals

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Drive "Feed"	BU											+B1.X1-XZ1	1	1	'		=GL1+A1-QA1	2/T1												=GL1+A1&EFS1/1.1
=	BN											+B1.X1-XZ1	2	2	'		=GL1+A1-QA1	4/T2												=GL1+A1&EFS1/1.1
=	GY											+B1.X1-XZ1	3	3	'		=GL1+A1-QA1	6/T3												=GL1+A1&EFS1/1.1
=	BK											+B1.X1-XZ1	4	4	'															=GL1+A1&EFS1/1.1
=	GNYE											+B1.X1-XZ1	5	5 ⏚																=GL1+A1&EFS1/1.1
Drive "Work"		BU										+B2.X1-XZ1	1	6	'		=GL2+A1-QA1	2/T1												=GL2+A1&EFS1/1.1
=		BN										+B2.X1-XZ1	2	7	'		=GL2+A1-QA1	4/T2												=GL2+A1&EFS1/1.1
=		GY										+B2.X1-XZ1	3	8	'		=GL2+A1-QA1	6/T3												=GL2+A1&EFS1/1.1
=		BK										+B2.X1-XZ1	4	9	'															=GL2+A1&EFS1/1.1
=		GNYE										+B2.X1-XZ1	5	10 ⏚																=GL2+A1&EFS1/1.1
Drive "Provide"			BN									+B3.X1-XZ1	1	11	'		=GL3+A1-QA1	2/T1												=GL3+A1&EFS1/1.1
=			BK									+B3.X1-XZ1	2	12	'		=GL3+A1-QA1	4/T2												=GL3+A1&EFS1/1.1
=			GY									+B3.X1-XZ1	3	13	'		=GL3+A1-QA1	6/T3												=GL3+A1&EFS1/1.1
=			BU									+B3.X1-XZ1	4	14	'															=GL3+A1&EFS1/1.1
=			GNYE									+B3.X1-XZ1	5	15 ⏚																=GL3+A1&EFS1/1.1

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +A1-XD4	= / &EMA2
			Grinding machine	Drawing number			Terminal diagram
						+A1	Page 5
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Terminal diagram

F13_008

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

Strip

+A1-XD5

Current transformer terminals

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Power supply												=GAA+A1-PF1	I1:1	1	'		=GAA+A1-TA1	l												=GAA+A1&EFS1/1.3
=												=GAA+A1-PF1	I1:3	2	'		=GAA+A1-TA1	k												=GAA+A1&EFS1/1.3
=												=GAA+A1-PF1	I2:5	3	'		=GAA+A1-TA2	l												=GAA+A1&EFS1/1.3
=												=GAA+A1-PF1	I2:7	4	'		=GAA+A1-TA2	k												=GAA+A1&EFS1/1.3
=												=GAA+A1-PF1	I3:9	5	'		=GAA+A1-TA3	l												=GAA+A1&EFS1/1.3
=												=GAA+A1-PF1	I3:11	6	'		=GAA+A1-TA3	k												=GAA+A1&EFS1/1.3

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +A1-XD5	= &EMA2
			Grinding machine	Drawing number			Terminal diagram
						+A1	Page 6
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Terminal diagram

F13_008

1	+A2-WG1	ÖLFLEX® CLASSIC 100 40G0,75 mm² 2,244 m
2	+A2-WG2	ÖLFLEX® CLASSIC 100 3G0,75 mm² 2,244 m
3	+A2-WG3	ÖLFLEX® CLASSIC 100 3G0,75 mm² 2,244 m
4		
5		
6		
7		
8		
9		
10		
11		

Strip

+A1-XG1

Interface PLC

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Malfunction 24 V input / output supply	WH											+A2-XG1	4	1	'	%IX2.4	=GAB2+A1-FC1	14												=GAB2+A2&EFS1/1.6
=	BK											+A2-XG1	5	2	'		=GAB2+A1-FC1	13												=GAB2+A2&EFS1/1.7
Overload protection "Feed"	BU											+A2-XG1	7	3	'	%IX3.2	=GL1+A1-FC1	14												=GL1+A1&EFS1/1.5
=	BN											+A2-XG1	8	4	'		=GL1+A1-FC1	13												=GL1+A1&EFS1/1.6
Drive "Feed, forward"	GY											+A2-XG1	9	5	'	%QX4.4	=GL1+A1-QA2	11												=GL1+A1&EFS1/1.7
=	RD											+A2-XG1	11	6	'		=GL1+A1-QA1	A2												=GL1+A1&EFS1/1.8
Drive "Feed, reverse"	VT											+A2-XG1	12	7	'	%QX4.5	=GL1+A1-QA1	11												=GL1+A1&EFS1/1.9
=	PK											+A2-XG1	14	8	'		=GL1+A1-QA2	A2												=GL1+A1&EFS1/1.9
Drive "Feed, forward"	OG											+A2-XG1	15	9	'	%IX3.0	=GL1+A1-QA1	14												=GL1+A2&EFS1/1.3
=	TR											+A2-XG1	16	10	'		=GL1+A1-QA1	13												=GL1+A2&EFS1/1.3
Drive "Feed, reverse"	BG											+A2-XG1	17	11	'	%IX3.1	=GL1+A1-QA2	14												=GL1+A2&EFS1/1.5
=	BKWH											+A2-XG1	18	12	'		=GL1+A1-QA2	13												=GL1+A2&EFS1/1.5
Overload protection Drive "Work"	BUWH											+A2-XG1	19	13	'	%IX4.0	=GL2+A1-FC1	14												=GL2+A1&EFS1/1.5
=	BNWH											+A2-XG1	20	14	'		=GL2+A1-FC1	13												=GL2+A1&EFS1/1.6
Drive "Work, forward"	GYWH											+A2-XG1	21	15	'	%QX4.0	=GL2+A1-QA2	11												=GL2+A1&EFS1/1.7
=	RDWH											+A2-XG1	23	16	'		=GL2+A1-QA1	A2												=GL2+A1&EFS1/1.8
Drive "Work, reverse"	VTWH											+A2-XG1	24	17	'	%QX4.1	=GL2+A1-QA1	11												=GL2+A1&EFS1/1.9
=	PKWH											+A2-XG1	26	18	'		=GL2+A1-QA2	A2												=GL2+A1&EFS1/1.9
Drive "Work, forward"	OGWH											+A2-XG1	27	19	'	%IX4.2	=GL2+A1-QA1	14												=GL2+A2&EFS1/2.3
=	TRWH											+A2-XG1	28	20	'		=GL2+A1-QA1	13												=GL2+A2&EFS1/2.3
Drive "Work, reverse"	BGWH											+A2-XG1	29	21	'	%IX4.1	=GL2+A1-QA2	14												=GL2+A2&EFS1/2.5
=	BUBK											+A2-XG1	30	22	'		=GL2+A1-QA2	13												=GL2+A2&EFS1/2.5
Overload protection "Grinding, left"	BNBK											+A2-XG1	31	23	'	%IX3.3	=TM1+A1-FC1	14												=TM1+A1&EFS1/1.7
=	GYBK											+A2-XG1	32	24	'		=TM1+A1-FC1	13												=TM1+A1&EFS1/1.7
Start "Grinding, left"		BN										+A2-XG5	49	25	'	%QX2.0	=TM1+A1-TA1	X12:1												=TM1+A1&EFS1/1.9
=		BU										+A2-XG5	50	26	'		=TM1+A1-TA1	X12:9												=TM1+A1&EFS1/1.9
Overload protection "Grinding, right"	RDBK											+A2-XG1	36	27	'	%IX3.4	=TM2+A1-FC1	14												=TM2+A1&EFS1/1.7
=	VTBK											+A2-XG1	37	28	'		=TM2+A1-FC1	13												=TM2+A1&EFS1/1.7
Start "Grinding, right"			BN									+A2-XG5	55	29	'	%QX2.2	=TM2+A1-TA1	X12:1												=TM2+A1&EFS1/1.9
=			BU									+A2-XG5	56	30	'		=TM2+A1-TA1	X12:9												=TM2+A1&EFS1/1.9

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +A1-XG1
			Grinding machine	Drawing number		
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL

	=	&EMA2
		Terminal diagram
	+A1	Page 7
	Enclosure 1	Page 64 from 305

Terminal diagram

F13_008

1	+A2-WG1 ÖLFLEX® CLASSIC 100 40G0,75 mm² 2,244 m
2	
3	
4	
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9	
10	
11	

Strip

+A1-XG1

Interface PLC

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Overload protection Drive "Provide"	PKBK											+A2-XG1	41	31	'	%IX3.6	=GL3+A1-FC1	14												=GL3+A1&EFS1/1.5
=	OGBK											+A2-XG1	42	32	'		=GL3+A1-FC1	13												=GL3+A1&EFS1/1.6
Drive "Provide, forward"	TRBK											+A2-XG1	43	33	'	%QX4.2	=GL3+A1-QA2	11												=GL3+A1&EFS1/1.7
=	BGBK											+A2-XG1	45	34	'		=GL3+A1-QA1	A2												=GL3+A1&EFS1/1.8
Drive "Provide, reverse"	BNBU											+A2-XG1	46	35	'	%QX4.3	=GL3+A1-QA1	11												=GL3+A1&EFS1/1.9
=	GYBU											+A2-XG1	48	36	'		=GL3+A1-QA2	A2												=GL3+A1&EFS1/1.9
Drive "Provide, forward"	RDBU											+A2-XG1	49	37	'	%IX3.5	=GL3+A1-QA1	14												=GL3+A2&EFS1/2.3
=	PKBU											+A2-XG1	50	38	'		=GL3+A1-QA1	13												=GL3+A2&EFS1/2.3
Drive "Provide, reverse"	OGBU											+A2-XG1	51	39	'	%IX3.7	=GL3+A1-QA2	14												=GL3+A2&EFS1/2.5
=	TRBU											+A2-XG1	52	40	'		=GL3+A1-QA2	13												=GL3+A2&EFS1/2.5

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +A1-XG1	= / &EMA2
			Grinding machine	Drawing number			Terminal diagram
						+A1	Page 7.1
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL	Enclosure 1 / Page 65 from 305

Summarized parts list

F02_006

Order number	Quantity	Designation	Type number	Supplier	Pos.
8084000	1	VX Baying enclosure system, WHD: 1000x1800x400 mm, single door	VX.8084000	RIT	1
8800752	8	TS Cable duct for mounting plate, WHD: 60x2000x80 mm	TS.8800752	RIT	2
8800753	2	TS Cable duct for mounting plate, WHD: 80x2000x80 mm	TS.8800753	RIT	3
2313150	7	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	4
8800750	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	5
8184245	2	VX Side panel, screw-fastened, for HD: 1800x400 mm	VX.8184245	RIT	6
8620005	2	VX Base/plinth with trim panel, front/rear, H: 100 mm, for W: 1000 mm	VX.8620005	RIT	7
8620031	2	VX Base/plinth trim panel, side, H: 100 mm, for D: 400 mm	VX.8620031	RIT	8
00100664	2,24	ÖLFLEX® CLASSIC 100 5G1,5	ÖLFLEX® CLASSIC 100	LAPP	9
00100654	2,24	ÖLFLEX® CLASSIC 100 4G1,5	ÖLFLEX® CLASSIC 100	LAPP	10
0010064	4,49	ÖLFLEX® CLASSIC 100 3G1,5	ÖLFLEX® CLASSIC 100	LAPP	11
2500400	1	Connection cable for LED system light	SZ.2500400	RIT	12
3581000	2	SV Busbar E-Cu, WH: 15x5 mm, L: 2400 mm	SV.3581000	RIT	13
9340030	4	SV Busbar support, 1-pole, for busbar WH: 12x5-30x10 mm	SV.9340030	RIT	14
3450500	4	SV Conductor connection clamp, 1-4 mm², for bar thickness 5 mm	SV.3450500	RIT	15
3451500	2	SV Conductor connection clamp, 2,5-16 mm², clamping area WH: 8x8 mm	SV.3451500	RIT	16
0010036	2,24	ÖLFLEX® CLASSIC 100 40G0,75	ÖLFLEX® CLASSIC 100	LAPP	17
00100224	4,49	ÖLFLEX® CLASSIC 100 3G0,75	ÖLFLEX® CLASSIC 100	LAPP	18
3211813	233	Feed-through terminal block	PT 6	PXC	19
3022218	22	End clamp	CLIPFIX 35	PXC	20
3211822	26	Ground modular terminal block	PT 6-PE	PXC	21
3024481	23	Partition plate	ATP-ST 6	PXC	22
3212044	11	End cover	D-PT 6	PXC	23
3211819	2	Feed-through terminal block	PT 6 BU	PXC	24
09150006171	4	Contact	Han D®	HAR	25
09120073001	1	Insert	Han® Q	HAR	26
19370031440	1	Housing	Han® M	HAR	27
09150006271	4	Contact	Han D®	HAR	28

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Summarized parts list

F02_006

Order number	Quantity	Designation	Type number	Supplier	Pos.
09120073101	1	Insert	Han® Q	HAR	29
09620030301	1	Housing	Han® EMV	HAR	30
5SY4116-5	2	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, A, 16A, D=70MM	5SY4116-5	SIE	31
3SU1401-1BB50-1AA0	4	LED MODULE, BLUE	3SU1401-1BB50-1AA0	SIE	32
3SU1500-0AA10-0AA0	7	HOLDER	3SU1500-0AA10-0AA0	SIE	33
3SU1001-6AA50-0AA0	4	INDICATOR LIGHT, BLUE	3SU1001-6AA50-0AA0	SIE	34
2904622	2	Power supply unit	QUINT4-PS/3AC/24DC/20	PXC	35
2500210	1	LED system light	SZ.2500210	RIT	36
2506100	1	SZ Socket for mounting on support rails, Schuko, CEE 7/4	SZ.2506100	RIT	37
5SY4106-7	12	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, C, 6A, D=70MM	5SY4106-7	SIE	38
5ST3010	11	AUXILIARY SWITCH 1S1OE	5ST3010	SIE	39
2861344	2	Inline terminal	IB IL 24 SEG-PAC	PXC	40
2985688	2	Safety module	IB IL 24 PSDI 8-PAC	PXC	41
2985631	1	Safety module	IB IL 24 PSDO 8-PAC	PXC	42
3RH21221HB40	2	COUPLING CONTACTOR RELAY, 2NO+2NC	3RH2122-1HB40	SIE	43
3SU1401-1BB20-1AA0	3	LED MODULE, RED	3SU1401-1BB20-1AA0	SIE	44
3SU1051-6AA20-0AA0	3	INDICATOR LIGHT, RED	3SU1051-6AA20-0AA0	SIE	45
3SB30001HA20	1	22MM PLASTIC ROUND ACTUATOR:	3SB3000-1HA20	SIE	46
3SB34000B	1	ACTUATOR-/INDICATOR COMPONENT CONTACT BLOCK	3SB3400-0B	SIE	47
3SB34000C	1	ACTUATOR-/INDICATOR COMPONENT CONTACT BLOCK	3SB3400-0C	SIE	48
3SB3901-0AB	1	ACCESSORY / SPARE PART FOR PLASTIC-/METAL PROGRAM	3SB3901-0AB	SIE	49
3SU1900-0DY30-0AA0	1	PROTECTIVE COLLAR	3SU1900-0DY30-0AA0	SIE	50
2703994	1	Bus coupler	IL PN BK DI8 DO4 2TX-PAC	PXC	51
2861250	2	Inline terminal	IB IL 24 DI 16-PAC	PXC	52
2861289	1	Inline terminal	IB IL 24 DO 8-PAC	PXC	53
2701290	1	Industrial PC	VL BPC 1001	PXC	54
5SY4106-5	2	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, A, 6A, D=70MM	5SY4106-5	SIE	55

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0	1	2	3	4	5	6	7	8	9

Summarized parts list

F02_006

Order number	Quantity	Designation	Type number	Supplier	Pos.
2403107	1	Touch panel	TP 5170S	PXC	56

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+A2-U3	1	VX Baying enclosure system, WHD: 1000x1800x400 mm, single door	VX.8084000	RIT	RIT.8084000
+A2-U4	1	TS Cable duct for mounting plate, WHD: 60x2000x80 mm	TS.8800752	RIT	RIT.8800752
+A2-U5	1	TS Cable duct for mounting plate, WHD: 80x2000x80 mm	TS.8800753	RIT	RIT.8800753
+A2-U6	1	TS Cable duct for mounting plate, WHD: 80x2000x80 mm	TS.8800753	RIT	RIT.8800753
+A2-U7	1	TS Cable duct for mounting plate, WHD: 60x2000x80 mm	TS.8800752	RIT	RIT.8800752
+A2-U8	1	TS Cable duct for mounting plate, WHD: 60x2000x80 mm	TS.8800752	RIT	RIT.8800752
+A2-U9	1	TS Cable duct for mounting plate, WHD: 60x2000x80 mm	TS.8800752	RIT	RIT.8800752
+A2-U10	1	TS Cable duct for mounting plate, WHD: 60x2000x80 mm	TS.8800752	RIT	RIT.8800752
+A2-U11	1	TS Cable duct for mounting plate, WHD: 60x2000x80 mm	TS.8800752	RIT	RIT.8800752
+A2-U12	1	TS Cable duct for mounting plate, WHD: 60x2000x80 mm	TS.8800752	RIT	RIT.8800752
+A2-U13	1	TS Cable duct for mounting plate, WHD: 60x2000x80 mm	TS.8800752	RIT	RIT.8800752
+A2-U14	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+A2-U15	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+A2-U16	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+A2-U17	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+A2-U18	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+A2-U19	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+A2-U20	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+A2-U21	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	RIT.8800750
+A2-U22	1	VX Side panel, screw-fastened, for HD: 1800x400 mm	VX.8184245	RIT	RIT.8184245
+A2-U23	1	VX Side panel, screw-fastened, for HD: 1800x400 mm	VX.8184245	RIT	RIT.8184245
+A2-U24	1	VX Base/plinth with trim panel, front/rear, H: 100 mm, for W: 1000 mm	VX.8620005	RIT	RIT.8620005
+A2-U25	1	VX Base/plinth trim panel, side, H: 100 mm, for D: 400 mm	VX.8620031	RIT	RIT.8620031
+A2-U26	1	VX Base/plinth trim panel, side, H: 100 mm, for D: 400 mm	VX.8620031	RIT	RIT.8620031
+A2-U27	1	VX Base/plinth with trim panel, front/rear, H: 100 mm, for W: 1000 mm	VX.8620005	RIT	RIT.8620005
+A2-WD1	1	ÖLFLEX® CLASSIC 100 5G1,5	ÖLFLEX® CLASSIC 100	LAPP	LAPP.00100664
+A2-WD2	1	ÖLFLEX® CLASSIC 100 4G1,5	ÖLFLEX® CLASSIC 100	LAPP	LAPP.00100654
+A2-WD3	1	ÖLFLEX® CLASSIC 100 3G1,5	ÖLFLEX® CLASSIC 100	LAPP	LAPP.0010064
+A2-WD4	1	ÖLFLEX® CLASSIC 100 3G1,5	ÖLFLEX® CLASSIC 100	LAPP	LAPP.0010064

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+A2-WD5	1	Connection cable for LED system light	SZ.2500400	RIT	RIT.2500400
+A2-WE1	1	SV Busbar E-Cu, WH: 15x5 mm, L: 2400 mm	SV.3581000	RIT	RIT.3581000
+A2-WE2	1	SV Busbar E-Cu, WH: 15x5 mm, L: 2400 mm	SV.3581000	RIT	RIT.3581000
+A2-WG1	1	ÖLFLEX® CLASSIC 100 40G0,75	ÖLFLEX® CLASSIC 100	LAPP	LAPP.0010036
+A2-WG2	1	ÖLFLEX® CLASSIC 100 3G0,75	ÖLFLEX® CLASSIC 100	LAPP	LAPP.00100224
+A2-WG3	1	ÖLFLEX® CLASSIC 100 3G0,75	ÖLFLEX® CLASSIC 100	LAPP	LAPP.00100224
=GAB1+A2-FC1	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, A, 16A, D=70MM	5SY4116-5	SIE	SIE.5SY4116-5
=GAB1+A2-PF1	1	LED MODULE, BLUE	3SU1401-1BB50-1AA0	SIE	SIE.3SU1401-1BB50-1AA0
=GAB1+A2-TB1	1	Power supply unit	QUINT4-PS/3AC/24DC/20	PXC	PXC.2904622
=GAB2+A2-FC1	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, A, 16A, D=70MM	5SY4116-5	SIE	SIE.5SY4116-5
=GAB2+A2-PF1	1	LED MODULE, BLUE	3SU1401-1BB50-1AA0	SIE	SIE.3SU1401-1BB50-1AA0
=GAB2+A2-TB1	1	Power supply unit	QUINT4-PS/3AC/24DC/20	PXC	PXC.2904622
=EA+A2-EA1	1	LED system light	SZ.2500210	RIT	RIT.2500210
=F+A2-FC1	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, C, 6A, D=70MM	5SY4106-7	SIE	SIE.5SY4106-7
=F+A2-KE1	1	Inline terminal	IB IL 24 SEG-PAC	PXC	PXC.2861344
=F+A2-KE2	1	Safety module	IB IL 24 PSDI 8-PAC	PXC	PXC.2985688
=F+A2-KE3	1	Safety module	IB IL 24 PSDI 8-PAC	PXC	PXC.2985688
=F+A2-KE4	1	Safety module	IB IL 24 PSDO 8-PAC	PXC	PXC.2985631
=F+A2-KF1	1	COUPLING CONTACTOR RELAY, 2NO+2NC	3RH2122-1HB40	SIE	SIE.3RH2122-1HB40
=F+A2-KF2	1	COUPLING CONTACTOR RELAY, 2NO+2NC	3RH2122-1HB40	SIE	SIE.3RH2122-1HB40
=F+A2-PF1	1	LED MODULE, RED	3SU1401-1BB20-1AA0	SIE	SIE.3SU1401-1BB20-1AA0
=F+A2-PF2	1	LED MODULE, RED	3SU1401-1BB20-1AA0	SIE	SIE.3SU1401-1BB20-1AA0
=F+A2-PF3	1	LED MODULE, RED	3SU1401-1BB20-1AA0	SIE	SIE.3SU1401-1BB20-1AA0
=F+A2-SG1	1	22MM PLASTIC ROUND ACTUATOR:	3SB3000-1HA20	SIE	SIE.3SB3000-1HA20
=K1+A2-FC1	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, C, 6A, D=70MM	5SY4106-7	SIE	SIE.5SY4106-7
=K1+A2-FC2	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, C, 6A, D=70MM	5SY4106-7	SIE	SIE.5SY4106-7
=K1+A2-FC3	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, C, 6A, D=70MM	5SY4106-7	SIE	SIE.5SY4106-7
=K1+A2-FC4	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, C, 6A, D=70MM	5SY4106-7	SIE	SIE.5SY4106-7
=K1+A2-FC5	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, C, 6A, D=70MM	5SY4106-7	SIE	SIE.5SY4106-7

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
=K1+A2-FC6	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, C, 6A, D=70MM	5SY4106-7	SIE	SIE.5SY4106-7
=K1+A2-FC7	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, C, 6A, D=70MM	5SY4106-7	SIE	SIE.5SY4106-7
=K1+A2-FC8	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, C, 6A, D=70MM	5SY4106-7	SIE	SIE.5SY4106-7
=K1+A2-FC9	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, C, 6A, D=70MM	5SY4106-7	SIE	SIE.5SY4106-7
=K1+A2-FC10	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, C, 6A, D=70MM	5SY4106-7	SIE	SIE.5SY4106-7
=K1+A2-KE1	1	Bus coupler	IL PN BK DI8 DO4 2TX-PAC	PXC	PXC.2703994
=K1+A2-KE2	1	Inline terminal	IB IL 24 DI 16-PAC	PXC	PXC.2861250
=K1+A2-KE3	1	Inline terminal	IB IL 24 DI 16-PAC	PXC	PXC.2861250
=K1+A2-KE4	1	Inline terminal	IB IL 24 SEG-PAC	PXC	PXC.2861344
=K1+A2-KE5	1	Inline terminal	IB IL 24 DO 8-PAC	PXC	PXC.2861289
=K1+A2-KEB1	1	Industrial PC	VL BPC 1001	PXC	PXC.2701290
=K2+A2-FC1	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, C, 6A, D=70MM	5SY4106-7	SIE	SIE.5SY4106-7
=S1+A2-FC2	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, A, 6A, D=70MM	5SY4106-5	SIE	SIE.5SY4106-5
=S1+A2-PH1	1	Touch panel	TP 5170S	PXC	PXC.2403107
=S2+A2-FC1	1	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, A, 6A, D=70MM	5SY4106-5	SIE	SIE.5SY4106-5
=TM1+A2-PF1	1	LED MODULE, BLUE	3SU1401-1BB50-1AA0	SIE	SIE.3SU1401-1BB50-1AA0
=TM2+A2-PF1	1	LED MODULE, BLUE	3SU1401-1BB50-1AA0	SIE	SIE.3SU1401-1BB50-1AA0

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Cable overview

F10_003

Cable designation	from	to	Cable type	Conductors	ø	Length	Function text
+A2-WD1	+A2-XD1	+A1-XD3	ÖLFLEX® CLASSIC 100	5G	1,5	2,244	24 V device power supply
+A2-WD2	+A2-XD1	+A1-XD3	ÖLFLEX® CLASSIC 100	4G	1,5	2,244	24 V input / output supply
+A2-WD3	+A2-XD5	+A1-XD2	ÖLFLEX® CLASSIC 100	3G	1,5	2,244	Enclosure light 1
+A2-WD4	+A2-XD5	+A1-XD2	ÖLFLEX® CLASSIC 100	3G	1,5	2,244	Female receptacle
+A2-WD5	+A2-XD5	=EA+A2-EA1		3G	1,5	2,502	Enclosure light 1
+A2-WG1	+A1-XG1	+A2-XG1	ÖLFLEX® CLASSIC 100	40G	0,75	2,244	Malfunction 24 V input / output supply
+A2-WG2	+A1-XG1	+A2-XG5	ÖLFLEX® CLASSIC 100	3G	0,75	2,244	Start "Grinding, left"
+A2-WG3	+A1-XG1	+A2-XG5	ÖLFLEX® CLASSIC 100	3G	0,75	2,244	Start "Grinding, right"

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Cable diagram

F09_002

Cable name	+A2-WD1		Cable type	ÖLFLEX® CLASSIC 100					
Function text	24 V device power supply		No. of conductors	5G		Cross-section 1,5		Cable length 2,244	
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
24 V device power supply	=GAB1+A2&EFS1/1.1	+A2-XD1	4	BU	+A1-XD3	4	=GAB1+A2&EFS1/1.1	24 V device power supply	
=	=GAB1+A2&EFS1/1.1	+A2-XD1	1	BN	+A1-XD3	1	=GAB1+A2&EFS1/1.1	=	
=	=GAB1+A2&EFS1/1.1	+A2-XD1	2	BK	+A1-XD3	2	=GAB1+A2&EFS1/1.1	=	
=	=GAB1+A2&EFS1/1.1	+A2-XD1	3	GY	+A1-XD3	3	=GAB1+A2&EFS1/1.1	=	
=	=GAB1+A2&EFS1/1.1	+A2-XD1	5	GNYE	+A1-XD3	5	=GAB1+A2&EFS1/1.1	=	

Cable name	+A2-WD2		Cable type	ÖLFLEX® CLASSIC 100					
Function text	24 V input / output supply		No. of conductors	4G		Cross-section 1,5		Cable length 2,244	
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
24 V input / output supply	=GAB2+A2&EFS1/1.1	+A2-XD1	6	BN	+A1-XD3	6	=GAB2+A2&EFS1/1.1	24 V input / output supply	
=	=GAB2+A2&EFS1/1.1	+A2-XD1	7	BK	+A1-XD3	7	=GAB2+A2&EFS1/1.1	=	
=	=GAB2+A2&EFS1/1.1	+A2-XD1	8	GY	+A1-XD3	8	=GAB2+A2&EFS1/1.1	=	
=	=GAB2+A2&EFS1/1.1	+A2-XD1	9	GNYE	+A1-XD3	9	=GAB2+A2&EFS1/1.1	=	

Cable name	+A2-WD3		Cable type	ÖLFLEX® CLASSIC 100					
Function text	Enclosure light 1		No. of conductors	3G		Cross-section 1,5		Cable length 2,244	
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Enclosure light 1	=EA+A2&EFS1/1.2	+A2-XD5	1	BN	+A1-XD2	7	=EA+A2&EFS1/1.2	Enclosure light 1	
=	=EA+A2&EFS1/1.2	+A2-XD5	3	BU	+A1-XD2	9	=EA+A2&EFS1/1.2	=	
=	=EA+A2&EFS1/1.2	+A2-XD5	2	GNYE	+A1-XD2	8	=EA+A2&EFS1/1.2	=	

Cable name	+A2-WD4		Cable type	ÖLFLEX® CLASSIC 100					
Function text	Female receptacle		No. of conductors	3G		Cross-section 1,5		Cable length 2,244	
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Female receptacle	=EA+A2&EFS1/1.4	+A2-XD5	4	BN	+A1-XD2	10	=EA+A2&EFS1/1.4	Female receptacle	
=	=EA+A2&EFS1/1.4	+A2-XD5	6	BU	+A1-XD2	12	=EA+A2&EFS1/1.4	=	
=	=EA+A2&EFS1/1.4	+A2-XD5	5	GNYE	+A1-XD2	11	=EA+A2&EFS1/1.4	=	

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Cable diagram

F09_002

Cable name	+A2-WD5		Cable type					
Function text	Enclosure light 1		No. of conductors	3G		Cross-section	1,5	Cable length 2,502
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text
Enclosure light 1	=EA+A2&EFS1/1.2	+A2-XD5	1	BK	=EA+A2-EA1	L	=EA+A2&EFS1/1.2	Enclosure light 1
=	=EA+A2&EFS1/1.2	+A2-XD5	3	BU	=EA+A2-EA1	N	=EA+A2&EFS1/1.2	=
=	=EA+A2&EFS1/1.2	+A2-XD5	2	GNYE	=EA+A2-EA1	PE	=EA+A2&EFS1/1.2	=

Cable name	+A2-WG1		Cable type	ÖLFLEX® CLASSIC 100				
Function text	Malfunction 24 V input / output supply		No. of conductors	40G		Cross-section	0,75	Cable length 2,244
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text
Malfunction 24 V input / output supply	=GAB2+A2&EFS1/1.6	+A1-XG1	1	WH	+A2-XG1	4	=GAB2+A2&EFS1/1.6	Malfunction 24 V input / output supply
=	=GAB2+A2&EFS1/1.7	+A1-XG1	2	BK	+A2-XG1	5	=GAB2+A2&EFS1/1.7	=
Overload protection "Feed"	=GL1+A1&EFS1/1.5	+A1-XG1	3	BU	+A2-XG1	7	=GL1+A1&EFS1/1.5	Overload protection "Feed"
=	=GL1+A1&EFS1/1.6	+A1-XG1	4	BN	+A2-XG1	8	=GL1+A1&EFS1/1.6	=
Drive "Feed, forward"	=GL1+A1&EFS1/1.7	+A1-XG1	5	GY	+A2-XG1	9	=GL1+A1&EFS1/1.7	Drive "Feed, forward"
=	=GL1+A1&EFS1/1.8	+A1-XG1	6	RD	+A2-XG1	11	=GL1+A1&EFS1/1.8	=
Drive "Feed, reverse"	=GL1+A1&EFS1/1.9	+A1-XG1	7	VT	+A2-XG1	12	=GL1+A1&EFS1/1.9	Drive "Feed, reverse"
=	=GL1+A1&EFS1/1.9	+A1-XG1	8	PK	+A2-XG1	14	=GL1+A1&EFS1/1.9	=
Drive "Feed, forward"	=GL1+A2&EFS1/1.3	+A1-XG1	9	OG	+A2-XG1	15	=GL1+A2&EFS1/1.3	Drive "Feed, forward"
=	=GL1+A2&EFS1/1.3	+A1-XG1	10	TR	+A2-XG1	16	=GL1+A2&EFS1/1.3	=
Drive "Feed, reverse"	=GL1+A2&EFS1/1.5	+A1-XG1	11	BG	+A2-XG1	17	=GL1+A2&EFS1/1.5	Drive "Feed, reverse"
=	=GL1+A2&EFS1/1.5	+A1-XG1	12	BKWH	+A2-XG1	18	=GL1+A2&EFS1/1.5	=
Overload protection Drive "Work"	=GL2+A1&EFS1/1.5	+A1-XG1	13	BUWH	+A2-XG1	19	=GL2+A1&EFS1/1.5	Overload protection Drive "Work"
=	=GL2+A1&EFS1/1.6	+A1-XG1	14	BNWH	+A2-XG1	20	=GL2+A1&EFS1/1.6	=
Drive "Work, forward"	=GL2+A1&EFS1/1.7	+A1-XG1	15	GYWH	+A2-XG1	21	=GL2+A1&EFS1/1.7	Drive "Work, forward"
=	=GL2+A1&EFS1/1.8	+A1-XG1	16	RDWH	+A2-XG1	23	=GL2+A1&EFS1/1.8	=
Drive "Work, reverse"	=GL2+A1&EFS1/1.9	+A1-XG1	17	VTWH	+A2-XG1	24	=GL2+A1&EFS1/1.9	Drive "Work, reverse"
=	=GL2+A1&EFS1/1.9	+A1-XG1	18	PKWH	+A2-XG1	26	=GL2+A1&EFS1/1.9	=
Drive "Work, forward"	=GL2+A2&EFS1/2.3	+A1-XG1	19	OGWH	+A2-XG1	27	=GL2+A2&EFS1/2.3	Drive "Work, forward"
=	=GL2+A2&EFS1/2.3	+A1-XG1	20	TRWH	+A2-XG1	28	=GL2+A2&EFS1/2.3	=

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Cable diagram

F09_002

Cable name	+A2-WG1	Cable type	ÖLFLEX® CLASSIC 100					
Function text	Malfunction 24 V input / output supply	No. of conductors	40G			Cross-section 0,75		Cable length 2,244
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text
Drive "Work, reverse"	=GL2+A2&EFS1/2.5	+A1-XG1	21	BGWH	+A2-XG1	29	=GL2+A2&EFS1/2.5	Drive "Work, reverse"
=	=GL2+A2&EFS1/2.5	+A1-XG1	22	BUBK	+A2-XG1	30	=GL2+A2&EFS1/2.5	=
Overload protection "Grinding, left"	=TM1+A1&EFS1/1.7	+A1-XG1	23	BNBK	+A2-XG1	31	=TM1+A1&EFS1/1.7	Overload protection "Grinding, left"
=	=TM1+A1&EFS1/1.7	+A1-XG1	24	GYBK	+A2-XG1	32	=TM1+A1&EFS1/1.7	=
Overload protection "Grinding, right"	=TM2+A1&EFS1/1.7	+A1-XG1	27	RDBK	+A2-XG1	36	=TM2+A1&EFS1/1.7	Overload protection "Grinding, right"
=	=TM2+A1&EFS1/1.7	+A1-XG1	28	VTBK	+A2-XG1	37	=TM2+A1&EFS1/1.7	=
Overload protection Drive "Provide"	=GL3+A1&EFS1/1.5	+A1-XG1	31	PKBK	+A2-XG1	41	=GL3+A1&EFS1/1.5	Overload protection Drive "Provide"
=	=GL3+A1&EFS1/1.6	+A1-XG1	32	OGBK	+A2-XG1	42	=GL3+A1&EFS1/1.6	=
Drive "Provide, forward"	=GL3+A1&EFS1/1.7	+A1-XG1	33	TRBK	+A2-XG1	43	=GL3+A1&EFS1/1.7	Drive "Provide, forward"
=	=GL3+A1&EFS1/1.8	+A1-XG1	34	BGBK	+A2-XG1	45	=GL3+A1&EFS1/1.8	=
Drive "Provide, reverse"	=GL3+A1&EFS1/1.9	+A1-XG1	35	BNBU	+A2-XG1	46	=GL3+A1&EFS1/1.9	Drive "Provide, reverse"
=	=GL3+A1&EFS1/1.9	+A1-XG1	36	GYBU	+A2-XG1	48	=GL3+A1&EFS1/1.9	=
Drive "Provide, forward"	=GL3+A2&EFS1/2.3	+A1-XG1	37	RDBU	+A2-XG1	49	=GL3+A2&EFS1/2.3	Drive "Provide, forward"
=	=GL3+A2&EFS1/2.3	+A1-XG1	38	PKBU	+A2-XG1	50	=GL3+A2&EFS1/2.3	=
Drive "Provide, reverse"	=GL3+A2&EFS1/2.5	+A1-XG1	39	OGBU	+A2-XG1	51	=GL3+A2&EFS1/2.5	Drive "Provide, reverse"
=	=GL3+A2&EFS1/2.5	+A1-XG1	40	TRBU	+A2-XG1	52	=GL3+A2&EFS1/2.5	=
				BGBU				
				GYBN				
				RDBN				
				GNYE				

Cable name	+A2-WG2	Cable type	ÖLFLEX® CLASSIC 100					
Function text	Start "Grinding, left"	No. of conductors	3G			Cross-section 0,75		Cable length 2,244
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text
Start "Grinding, left"	=TM1+A1&EFS1/1.9	+A1-XG1	25	BN	+A2-XG5	49	=TM1+A1&EFS1/1.9	Start "Grinding, left"
=	=TM1+A1&EFS1/1.9	+A1-XG1	26	BU	+A2-XG5	50	=TM1+A1&EFS1/1.9	=
				GNYE				

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Cable diagram

F09_002

Cable name	+A2-WG3		Cable type	ÖLFLEX® CLASSIC 100				
Function text	Start "Grinding, right"		No. of conductors	3G		Cross-section	0,75	Cable length 2,244
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text
Start "Grinding, right"	=TM2+A1&EFS1/1.9	+A1-XG1	29	BN	+A2-XG5	55	=TM2+A1&EFS1/1.9	Start "Grinding, right"
=	=TM2+A1&EFS1/1.9	+A1-XG1	30	BU	+A2-XG5	56	=TM2+A1&EFS1/1.9	=
				GNYE				

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Terminal-strip overview

F14_002

Terminal strip	Function text	Terminals					Terminal diagram page
		first	last	Total PE	Total N	Total number	
+A2-XD1	400 V supply rectifier	1	9	2	0	9	+A2&EMA2/1
+A2-XD2	24 V device power supply	1	5	1	0	5	+A2&EMA2/2
+A2-XD4	24 V input / output supply	1	5	1	0	5	+A2&EMA2/3
+A2-XD5	Enclosure "Infrastructure"	1	6	2	2	6	+A2&EMA2/4
+A2-XD6	Industrial PC	1	4	1	0	4	+A2&EMA2/5
+A2-XD7	Power supply PLC	1	22	5	0	22	+A2&EMA2/6
+A2-XG1	Interface PLC	1	52	0	0	52	+A2&EMA2/7
+A2-XG2	Jumpering safety PLC	1	20	0	0	20	+A2&EMA2/8
+A2-XG3	=	1	56	14	0	56	+A2&EMA2/9
+A2-XG4	Interface safety PLC	1	16	0	0	16	+A2&EMA2/10
+A2-XG5	Matrix patch board PLC	1	66	0	0	66	+A2&EMA2/11

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Terminal diagram

F13_008

1	+A2-WD1	ÖLFLEX® CLASSIC 100 5G1,5 mm² 2,244 m
2	+A2-WD2	ÖLFLEX® CLASSIC 100 4G1,5 mm² 2,244 m
3		
4		
5		
6		
7		
8		
9		
10		
11		

Strip

+A2-XD1

400 V supply rectifier

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
24 V device power supply	BN											+A1-XD3	1	1	'		=GAB1+A2-TB1	InAC:L1/+												=GAB1+A2&EFS1/1.1
=	BK											+A1-XD3	2	2	'		=GAB1+A2-TB1	InAC:L2												=GAB1+A2&EFS1/1.1
=	GY											+A1-XD3	3	3	'		=GAB1+A2-TB1	InAC:L3/+												=GAB1+A2&EFS1/1.1
=	BU											+A1-XD3	4	4	'															=GAB1+A2&EFS1/1.1
=	GNYE											+A1-XD3	5	5 ⏚	'		=GAB1+A2-TB1	InAC:PE												=GAB1+A2&EFS1/1.1
24 V input / output supply		BN										+A1-XD3	6	6	'		=GAB2+A2-TB1	InAC:L1/+												=GAB2+A2&EFS1/1.1
=		BK										+A1-XD3	7	7	'		=GAB2+A2-TB1	InAC:L2												=GAB2+A2&EFS1/1.1
=		GY										+A1-XD3	8	8	'		=GAB2+A2-TB1	InAC:L3/+												=GAB2+A2&EFS1/1.1
=		GNYE										+A1-XD3	9	9 ⏚	'		=GAB2+A2-TB1	InAC:PE												=GAB2+A2&EFS1/1.1

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Terminal diagram

F13_008

Strip

+A2-XD2

24 V device power supply

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
24 V device power supply												=K1+A2-FC1	1	1			=GAB1+A2-FC1	2												=GAB1+A2&EFS1/1.1
=												=GAB1+A2-PF1	X1	2																=GAB1+A2&EFS1/1.1
=												+A2-XD6	2	3			=GAB1+A2-TB1	OutDC:-												=GAB1+A2&EFS1/1.1
=												=GAB1+A2-PF1	X2	4																=GAB1+A2&EFS1/1.1
=														5 ⏚																=GAB1+A2&EFS1/1.1

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Terminal diagram

F13_008

Strip

+A2-XD4

24 V input / output supply

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
24 V input / output supply												=K1+A2-FC3	1	1			=GAB2+A2-FC1	2												=GAB2+A2&EFS1/1.1
=												=GAB2+A2-PF1	X1	2																=GAB2+A2&EFS1/1.1
=												=K1+A2-KE1	1:2.3	3			=GAB2+A2-TB1	OutDC:-												=GAB2+A2&EFS1/1.1
=												=GAB2+A2-PF1	X2	4																=GAB2+A2&EFS1/1.1
=														5 ⏚																=GAB2+A2&EFS1/1.1

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +A2-XD4
			Grinding machine	Drawing number		
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL

=	&EMA2	
	Terminal diagram	
+A2	Page	3
Enclosure 2	Page 80	from 305

Terminal diagram

F13_008

1	+A2-WD3	ÖLFLEX® CLASSIC 100 3G1,5 mm² 2,244 m
2	+A2-WD4	ÖLFLEX® CLASSIC 100 3G1,5 mm² 2,244 m
3		
4		
5		
6		
7		
8		
9		
10		
11		

Strip

+A2-XD5

Enclosure "Infrastructure"

1	+A2-WD5	3G1,5 mm² 2,502 m
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Enclosure light 1	BN											+A1-XD2	7	1	'		=EA+A2-EA1	L											BK	=EA+A2&EFS1/1.2
=	GNYE											+A1-XD2	8	2 ⏚	'		=EA+A2-EA1	PE											GNYE	=EA+A2&EFS1/1.2
=	BU											+A1-XD2	9	3	'		=EA+A2-EA1	N											BU	=EA+A2&EFS1/1.2
Female receptacle		BN										+A1-XD2	10	4	'		=EA+A2-XD1	L												=EA+A2&EFS1/1.4
=		GNYE										+A1-XD2	11	5 ⏚	'		=EA+A2-XD1	PE												=EA+A2&EFS1/1.4
=		BU										+A1-XD2	12	6	'		=EA+A2-XD1	N												=EA+A2&EFS1/1.4

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +A2-XD5	= &EMA2
			Grinding machine	Drawing number			Terminal diagram
						+A2	Page 4
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL	Enclosure 2 Page 81 from 305

Terminal diagram

F13_008

1
2
3
4
5
6
7
8
9
10
11

Strip

+A2-XD6

Industrial PC

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Industrial PC												=K1+A2-KEB1	X1:+	1			=K1+A2-FC1	2												=K1+A2&EFS1/1.1
=												=K1+A2-KEB1	X1:-	2			+A2-XD2	3												=K1+A2&EFS1/1.1
=														3			=K1+A2-KE1	1:1.3												=K1+A2&EFS1/1.1
=												=K1+A2-KEB1	X1:PE	4 ⏚			+A2-WE1	2												=K1+A2&EFS1/1.2

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Terminal diagram

F13_008

1	+B1.X1-WD1	ÖLFLEX® 140 5x1,5 mm² 3,404 m
2	+B2.X1-WD1	ÖLFLEX® 140 5x1,5 mm² 1,864 m
3	+B3.X1-WD1	ÖLFLEX® 140 5x1,5 mm² 1,774 m
4	+B2.Y1-WD1	ÖLFLEX® CLASSIC 100 4G0.75 mm 2,884 m
5	+C2-WD1	ÖLFLEX® CLASSIC 100 3G0,75 mm² 7,364 m
6		
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Strip

+A2-XD7

Power supply PLC

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Device power supply	1											+B1.X1-XD1	1	1			=K1+A2-FC5	2												=K1+B1.X1&EFS1/1.2
=	2											+B1.X1-XD1	2	2			=K1+A2-KE1;+A2-XD7	7:1.3;7												=K1+B1.X1&EFS1/1.2
=	GNYE											+B1.X1-XD1	3	3 ⏚																=K1+B1.X1&EFS1/1.2
24 V PLC inputs	3											+B1.X1-XD1	4	4			=K1+A2-FC6	2												=K1+B1.X1&EFS1/1.3
=	4											+B1.X1-XD1	5	5			=K1+A2-KE4;+A2-XD7	7:2.3;10												=K1+B1.X1&EFS1/1.3
Device power supply		1										+B2.X1-XD1	1	6			=K1+A2-FC7	2												=K1+B2.X1&EFS1/1.2
=		2										+B2.X1-XD1	2	7			+A2-XD7;+A2-XD7	2;12												=K1+B2.X1&EFS1/1.2
=		GNYE										+B2.X1-XD1	3	8 ⏚																=K1+B2.X1&EFS1/1.2
24 V PLC inputs		3										+B2.X1-XD1	4	9			=K1+A2-FC8	2												=K1+B2.X1&EFS1/1.3
=		4										+B2.X1-XD1	5	10			+A2-XD7;+A2-XD7	5;15												=K1+B2.X1&EFS1/1.3
Device power supply			1									+B3.X1-XD1	1	11			=K1+A2-FC9	2												=K1+B3.X1&EFS1/1.2
=			2									+B3.X1-XD1	2	12			+A2-XD7;+A2-XD7	7;18												=K1+B3.X1&EFS1/1.2
=			GNYE									+B3.X1-XD1	3	13 ⏚																=K1+B3.X1&EFS1/1.2
24 V PLC inputs			3									+B3.X1-XD1	4	14			=K1+A2-FC10	2												=K1+B3.X1&EFS1/1.3
=			4									+B3.X1-XD1	5	15			+A2-XD7	10												=K1+B3.X1&EFS1/1.3
Power supply valve terminal				BK								+B2.Y1-XD1	1	16			=K2+A2-FC1	2												=K2+B2.Y1&EFS1/3.3
=				BN								+B2.Y1-XD1	2	17			=F+A2-KF2	14												=K2+B2.Y1&EFS1/3.3
=				GY								+B2.Y1-XD1	3	18			+A2-XD7;=S1+A2-PH1	12;X1:X1.2												=K2+B2.Y1&EFS1/3.3
=				GNYE								+B2.Y1-XD1	4	19 ⏚																=K2+B2.Y1&EFS1/3.3
Power supply control panel					BN							+C2-XD1	1	20			=S2+A2-FC1	2												=S2+C2&EFS1/1.1
=					BU							+C2-XD1	2	21			=S1+A2-PH1	X1:X1.2												=S2+C2&EFS1/1.1
=					GNYE							+C2-XD1	3	22 ⏚																=S2+C2&EFS1/1.1

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +A2-XD7	= / &EMA2
			Grinding machine	Drawing number			Terminal diagram
						+A2	Page 6
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL	Enclosure 2 / Page 83 from 305

Terminal diagram

F13_008

1	+A2-WG1 ÖLFLEX® CLASSIC 100 40G0,75 mm² 2,244 m
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Strip

+A2-XG1

Interface PLC

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Malfunction 24 V input / output supply												=GAB2+A2-TB1	Signal:14	1	,	%IX2.6	+A2-XG5	1												=GAB2+A2&EFS1/1.5
=												=GAB2+A2-TB1	Signal:13	2	,		+A2-XG5	2												=GAB2+A2&EFS1/1.5
=														3	,		+A2-XG5	3												=GAB2+A2&EFS1/1.5
=	WH											+A1-XG1	1	4	,	%IX2.4	+A2-XG5	4												=GAB2+A2&EFS1/1.6
=	BK											+A1-XG1	2	5	,		+A2-XG5	5												=GAB2+A2&EFS1/1.7
=														6	,		+A2-XG5	6												=GAB2+A2&EFS1/1.7
Overload protection "Feed"	BU											+A1-XG1	3	7	,	%IX3.2	+A2-XG5	28												=GL1+A1&EFS1/1.5
=	BN											+A1-XG1	4	8	,		+A2-XG5	29												=GL1+A1&EFS1/1.6
Drive "Feed, forward"	GY											+A1-XG1	5	9	,	%QX4.4	=K1+A2-KE5	3:5.1												=GL1+A1&EFS1/1.7
=														10	,		=K1+A2-KE5	3:5.2												=GL1+A1&EFS1/1.7
=	RD											+A1-XG1	6	11	,		=K1+A2-KE5	3:5.3												=GL1+A1&EFS1/1.8
Drive "Feed, reverse"	VT											+A1-XG1	7	12	,	%QX4.5	=K1+A2-KE5	3:6.1												=GL1+A1&EFS1/1.9
=														13	,		=K1+A2-KE5	3:6.2												=GL1+A1&EFS1/1.9
=	PK											+A1-XG1	8	14	,		=K1+A2-KE5	3:6.3												=GL1+A1&EFS1/1.9
Drive "Feed, forward"	OG											+A1-XG1	9	15	,	%IX3.0	+A2-XG5	31												=GL1+A2&EFS1/1.3
=	TR											+A1-XG1	10	16	,		+A2-XG5	32												=GL1+A2&EFS1/1.3
Drive "Feed, reverse"	BG											+A1-XG1	11	17	,	%IX3.1	+A2-XG5	34												=GL1+A2&EFS1/1.5
=	BKWH											+A1-XG1	12	18	,		+A2-XG5	35												=GL1+A2&EFS1/1.5
Overload protection Drive "Work"	BUWH											+A1-XG1	13	19	,	%IX4.0	+A2-XG5	37												=GL2+A1&EFS1/1.5
=	BNWH											+A1-XG1	14	20	,		+A2-XG5	38												=GL2+A1&EFS1/1.6
Drive "Work, forward"	GYWH											+A1-XG1	15	21	,	%QX4.0	=K1+A2-KE5	1:1.1												=GL2+A1&EFS1/1.7
=														22	,		=K1+A2-KE5	1:1.2												=GL2+A1&EFS1/1.7
=	RDWH											+A1-XG1	16	23	,		=K1+A2-KE5	1:1.3												=GL2+A1&EFS1/1.8
Drive "Work, reverse"	VTWH											+A1-XG1	17	24	,	%QX4.1	=K1+A2-KE5	1:2.1												=GL2+A1&EFS1/1.9
=														25	,		=K1+A2-KE5	1:2.2												=GL2+A1&EFS1/1.9
=	PKWH											+A1-XG1	18	26	,		=K1+A2-KE5	1:2.3												=GL2+A1&EFS1/1.9
Drive "Work, forward"	OGWH											+A1-XG1	19	27	,	%IX4.2	+A2-XG5	40												=GL2+A2&EFS1/2.3
=	TRWH											+A1-XG1	20	28	,		+A2-XG5	41												=GL2+A2&EFS1/2.3
Drive "Work, reverse"	BGWH											+A1-XG1	21	29	,	%IX4.1	+A2-XG5	43												=GL2+A2&EFS1/2.5
=	BUBK											+A1-XG1	22	30	,		+A2-XG5	44												=GL2+A2&EFS1/2.5

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Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +A2-XG1		=	&EMA2
Grinding machine	Drawing number					Terminal diagram
					+A2	Page 7
Modification / Date / Name	Creator EPL	Approved by	Date 7/12/2021	Ed. EPL	Enclosure 2	Page 84 from 305

Terminal diagram

F13_008

1	+A2-WG1 ÖLFLEX® CLASSIC 100 40G0,75 mm² 2,244 m
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Strip

+A2-XG1

Interface PLC

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Overload protection "Grinding, left"	BNBK											+A1-XG1	23	31	'	%IX3.3	+A2-XG5	46												=TM1+A1&EFS1/1.7
=	GYBK											+A1-XG1	24	32	'		+A2-XG5	47												=TM1+A1&EFS1/1.7
Workpiece available: Grind. left												=TM1+A2-PF1	X1	33	'	%QX4.6	=K1+A2-KE5	4:7.1												=TM1+A2&EFS1/2.3
=														34	'		=K1+A2-KE5	4:7.2												=TM1+A2&EFS1/2.3
=												=TM1+A2-PF1	X2	35	'		=K1+A2-KE5	4:7.3												=TM1+A2&EFS1/2.4
Overload protection "Grinding, right"	RDBK											+A1-XG1	27	36	'	%IX3.4	+A2-XG5	52												=TM2+A1&EFS1/1.7
=	VTBK											+A1-XG1	28	37	'		+A2-XG5	53												=TM2+A1&EFS1/1.7
Workpiece available: Grind. right												=TM2+A2-PF1	X1	38	'	%QX4.7	=K1+A2-KE5	4:8.1												=TM2+A2&EFS1/2.3
=														39	'		=K1+A2-KE5	4:8.2												=TM2+A2&EFS1/2.3
=												=TM2+A2-PF1	X2	40	'		=K1+A2-KE5	4:8.3												=TM2+A2&EFS1/2.4
Overload protection Drive "Provide"	PKBK											+A1-XG1	31	41	'	%IX3.6	+A2-XG5	58												=GL3+A1&EFS1/1.5
=	OGBK											+A1-XG1	32	42	'		+A2-XG5	59												=GL3+A1&EFS1/1.6
Drive "Provide, forward"	TRBK											+A1-XG1	33	43	'	%QX4.2	=K1+A2-KE5	2:3.1												=GL3+A1&EFS1/1.7
=														44	'		=K1+A2-KE5	2:3.2												=GL3+A1&EFS1/1.7
=	BGBK											+A1-XG1	34	45	'		=K1+A2-KE5	2:3.3												=GL3+A1&EFS1/1.8
Drive "Provide, reverse"	BNBU											+A1-XG1	35	46	'	%QX4.3	=K1+A2-KE5	2:4.1												=GL3+A1&EFS1/1.9
=														47	'		=K1+A2-KE5	2:4.2												=GL3+A1&EFS1/1.9
=	GYBU											+A1-XG1	36	48	'		=K1+A2-KE5	2:4.3												=GL3+A1&EFS1/1.9
Drive "Provide, forward"	RDBU											+A1-XG1	37	49	'	%IX3.5	+A2-XG5	61												=GL3+A2&EFS1/2.3
=	PKBU											+A1-XG1	38	50	'		+A2-XG5	62												=GL3+A2&EFS1/2.3
Drive "Provide, reverse"	OGBU											+A1-XG1	39	51	'	%IX3.7	+A2-XG5	64												=GL3+A2&EFS1/2.5
=	TRBU											+A1-XG1	40	52	'		+A2-XG5	65												=GL3+A2&EFS1/2.5

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +A2-XG1	= &EMA2
			Grinding machine	Drawing number			Terminal diagram
						+A2	Page 7.1
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Terminal diagram

F13_008

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Strip

+A2-XG2

Jumpering safety PLC

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Emergency-stop triggered 1												=F+A2-KF1	A1	1	'	%QX3.0	=F+A2-KE4	1:1.1												=F+A2&EFS1/1.0
=														2	'		=F+A2-KE4	1:1.2												=F+A2&EFS1/1.0
Emergency-stop triggered 2												=F+A2-KF1	A2	3	'		=F+A2-KE4	1:1.3												=F+A2&EFS1/1.1
=														4	'		=F+A2-KE4	1:1.4												=F+A2&EFS1/1.1
Emergency-stop "Feed" triggered												=F+A2-PF1	X1	5	'	%QX3.1	=F+A2-KE4	1:2.1												=F+A2&EFS1/1.6
Emergency-stop "Work" triggered														6	'		=F+A2-KE4	1:2.2												=F+A2&EFS1/1.7
=												=F+A2-PF1	X2	7	'		=F+A2-KE4	1:2.3												=F+A2&EFS1/1.7
=														8	'		=F+A2-KE4	1:2.4												=F+A2&EFS1/1.7
=												=F+A2-PF2	X1	9	'	%QX3.2	=F+A2-KE4	2:3.1												=F+A2&EFS1/1.7
Emergency-stop "Provide" triggered														10	'		=F+A2-KE4	2:3.2												=F+A2&EFS1/1.8
=												=F+A2-PF2	X2	11	'		=F+A2-KE4	2:3.3												=F+A2&EFS1/1.8
=														12	'		=F+A2-KE4	2:3.4												=F+A2&EFS1/1.8
=												=F+A2-PF3	X1	13	'	%QX3.3	=F+A2-KE4	2:4.1												=F+A2&EFS1/1.8
=														14	'		=F+A2-KE4	2:4.2												=F+A2&EFS1/1.9
=												=F+A2-PF3	X2	15	'		=F+A2-KE4	2:4.3												=F+A2&EFS1/1.9
=														16	'		=F+A2-KE4	2:4.4												=F+A2&EFS1/1.9
Emergency-stop triggered 2												=F+A2-KF2	A1	17	'	%QX3.4	=F+A2-KE4	3:5.1												=F+A2&EFS1/1.1
=														18	'		=F+A2-KE4	3:5.2												=F+A2&EFS1/1.1
=												=F+A2-KF2	A2	19	'		=F+A2-KE4	3:5.3												=F+A2&EFS1/1.2
=														20	'		=F+A2-KE4	3:5.4												=F+A2&EFS1/1.2

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG
			Grinding machine	Drawing number	
Modification	Date	Name	Creator EPL	Approved by	

Terminal diagram +A2-XG2

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	=	&EMA2
		Terminal diagram
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Terminal diagram

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Strip

+A2-XG3

Jumpering safety PLC

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Emergency-stop "Enclosure"												=F+A2-SG1	12	1	'	%IX8.0	=F+A2-KE3	1:1.1												=F+A2&EFS1/2.1
=												=F+A2-SG1	11	2	'		=F+A2-KE3	1:1.2												=F+A2&EFS1/2.1
=														3	'		=F+A2-KE3	1:1.3												=F+A2&EFS1/2.1
=														4 ⏚	'		=F+A2-KE3	1:1.4												=F+A2&EFS1/2.1
=												=F+A2-SG1	24	5	'	%IX8.1	=F+A2-KE3	1:2.1												=F+A2&EFS1/2.2
=												=F+A2-SG1	23	6	'		=F+A2-KE3	1:2.2												=F+A2&EFS1/2.2
=														7	'		=F+A2-KE3	1:2.3												=F+A2&EFS1/2.2
=														8 ⏚	'		=F+A2-KE3	1:2.4												=F+A2&EFS1/2.2
Emergency-stop "Control panel"												+A2-XGA2	1	9	'	%IX8.2	=F+A2-KE3	2:3.1												=F+A2&EFS1/2.4
=												+A2-XGA2	2	10	'		=F+A2-KE3	2:3.2												=F+A2&EFS1/2.4
=														11	'		=F+A2-KE3	2:3.3												=F+A2&EFS1/2.4
=														12 ⏚	'		=F+A2-KE3	2:3.4												=F+A2&EFS1/2.4
=												+A2-XGA2	3	13	'	%IX8.3	=F+A2-KE3	2:4.1												=F+A2&EFS1/2.5
=												+A2-XGA2	4	14	'		=F+A2-KE3	2:4.2												=F+A2&EFS1/2.5
=														15	'		=F+A2-KE3	2:4.3												=F+A2&EFS1/2.5
=														16 ⏚	'		=F+A2-KE3	2:4.4												=F+A2&EFS1/2.5
Emergency-stop "Work"												+A2-XG4	1	17	'	%IX8.4	=F+A2-KE3	3:5.1												=F+A2&EFS1/2.7
=												+A2-XG4	2	18	'		=F+A2-KE3	3:5.2												=F+A2&EFS1/2.7
=														19	'		=F+A2-KE3	3:5.3												=F+A2&EFS1/2.7
=														20 ⏚	'		=F+A2-KE3	3:5.4												=F+A2&EFS1/2.7
=												+A2-XG4	3	21	'	%IX8.5	=F+A2-KE3	3:6.1												=F+A2&EFS1/2.8
=												+A2-XG4	4	22	'		=F+A2-KE3	3:6.2												=F+A2&EFS1/2.8
=														23	'		=F+A2-KE3	3:6.3												=F+A2&EFS1/2.8
=														24 ⏚	'		=F+A2-KE3	3:6.4												=F+A2&EFS1/2.8
Emergency-stop "Feed"												+A2-XG4	5	25	'	%IX7.0	=F+A2-KE2	1:1.1												=F+A2&EFS1/3.1
=												+A2-XG4	6	26	'		=F+A2-KE2	1:1.2												=F+A2&EFS1/3.1
=														27	'		=F+A2-KE2	1:1.3												=F+A2&EFS1/3.1
=														28 ⏚	'		=F+A2-KE2	1:1.4												=F+A2&EFS1/3.1
=												+A2-XG4	7	29	'	%IX7.1	=F+A2-KE2	1:2.1												=F+A2&EFS1/3.2
=												+A2-XG4	8	30	'		=F+A2-KE2	1:2.2												=F+A2&EFS1/3.2

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +A2-XG3
			Grinding machine	Drawing number		
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL

	=	&EMA2
		Terminal diagram
	+A2	Page 9
	Enclosure 2	Page 87 from 305

Terminal diagram

F13_008

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Strip

+A2-XG3

Jumpering safety PLC

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Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Emergency-stop "Feed"														31			=F+A2-KE2	1:2.3												=F+A2&EFS1/3.2
=														32			=F+A2-KE2	1:2.4												=F+A2&EFS1/3.2
Emergency stop "Provide"												+A2-XG4	9	33		%IX7.2	=F+A2-KE2	2:3.1												=F+A2&EFS1/3.4
=												+A2-XG4	10	34			=F+A2-KE2	2:3.2												=F+A2&EFS1/3.4
=														35			=F+A2-KE2	2:3.3												=F+A2&EFS1/3.4
=														36			=F+A2-KE2	2:3.4												=F+A2&EFS1/3.4
=												+A2-XG4	11	37		%IX7.3	=F+A2-KE2	2:4.1												=F+A2&EFS1/3.5
=												+A2-XG4	12	38			=F+A2-KE2	2:4.2												=F+A2&EFS1/3.5
=														39			=F+A2-KE2	2:4.3												=F+A2&EFS1/3.5
=														40			=F+A2-KE2	2:4.4												=F+A2&EFS1/3.5
=												+A2-XG4	13	41		%IX7.4	=F+A2-KE2	3:5.1												=F+A2&EFS1/3.7
=												+A2-XG4	14	42			=F+A2-KE2	3:5.2												=F+A2&EFS1/3.7
=														43			=F+A2-KE2	3:5.3												=F+A2&EFS1/3.7
=														44			=F+A2-KE2	3:5.4												=F+A2&EFS1/3.7
=												+A2-XG4	15	45		%IX7.5	=F+A2-KE2	3:6.1												=F+A2&EFS1/3.8
=												+A2-XG4	16	46			=F+A2-KE2	3:6.2												=F+A2&EFS1/3.8
=														47			=F+A2-KE2	3:6.3												=F+A2&EFS1/3.8
=														48			=F+A2-KE2	3:6.4												=F+A2&EFS1/3.8
Emergency-stop triggered 2												=F+A2-KF1	44	49		%IX8.6	=F+A2-KE3	4:7.1												=F+A2&EFS1/1.2
=												=F+A2-KF1	43	50			=F+A2-KE3	4:7.2												=F+A2&EFS1/1.3
=														51			=F+A2-KE3	4:7.3												=F+A2&EFS1/1.3
=														52			=F+A2-KE3	4:7.4												=F+A2&EFS1/1.3
=												=F+A2-KF2	44	53		%IX8.7	=F+A2-KE3	4:8.1												=F+A2&EFS1/1.4
=												=F+A2-KF2	43	54			=F+A2-KE3	4:8.2												=F+A2&EFS1/1.4
=														55			=F+A2-KE3	4:8.3												=F+A2&EFS1/1.4
=														56			=F+A2-KE3	4:8.4												=F+A2&EFS1/1.4

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +A2-XG3	= / &EMA2
			Grinding machine	Drawing number			Terminal diagram
						+A2	Page 9.1
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL	Enclosure 2 / Page 88 from 305

Terminal diagram

F13_008

1	+B1-WG2	ÖLFLEX® CLASSIC 100 4X0,75 mm² 4,018 m
2	+B2-WG1	ÖLFLEX® CLASSIC 100 4X0,75 mm² 2,158 m
3	+B3-WG1	ÖLFLEX® CLASSIC 100 4X0,75 mm² 2,018 m
4	+B3-WG2	ÖLFLEX® CLASSIC 100 4X0,75 mm² 2,018 m
5		
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11		

Strip

+A2-XG4

Interface safety PLC

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Emergency-stop "Work"	BU											=F+B1-SG1	12	1	'	%IX8.4	+A2-XG3	17												=F+A2&EFS1/2.7
=	BN											=F+B1-SG1	11	2	'		+A2-XG3	18												=F+A2&EFS1/2.7
=	BK											=F+B1-SG1	24	3	'	%IX8.5	+A2-XG3	21												=F+A2&EFS1/2.8
=	GY											=F+B1-SG1	23	4	'		+A2-XG3	22												=F+A2&EFS1/2.8
Emergency-stop "Feed"		BU										=F+B2-SG1	12	5	'	%IX7.0	+A2-XG3	25												=F+A2&EFS1/3.1
=		BN										=F+B2-SG1	11	6	'		+A2-XG3	26												=F+A2&EFS1/3.1
=		BK										=F+B2-SG1	24	7	'	%IX7.1	+A2-XG3	29												=F+A2&EFS1/3.2
=		GY										=F+B2-SG1	23	8	'		+A2-XG3	30												=F+A2&EFS1/3.2
Emergency stop "Provide"			BU									=F+B3-SG1	12	9	'	%IX7.2	+A2-XG3	33												=F+A2&EFS1/3.4
=			BN									=F+B3-SG1	11	10	'		+A2-XG3	34												=F+A2&EFS1/3.4
=			BK									=F+B3-SG1	24	11	'	%IX7.3	+A2-XG3	37												=F+A2&EFS1/3.5
=			GY									=F+B3-SG1	23	12	'		+A2-XG3	38												=F+A2&EFS1/3.5
=				BU								=F+B3-SG2	12	13	'	%IX7.4	+A2-XG3	41												=F+A2&EFS1/3.7
=				BN								=F+B3-SG2	11	14	'		+A2-XG3	42												=F+A2&EFS1/3.7
=				BK								=F+B3-SG2	24	15	'	%IX7.5	+A2-XG3	45												=F+A2&EFS1/3.8
=				GY								=F+B3-SG2	23	16	'		+A2-XG3	46												=F+A2&EFS1/3.8

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +A2-XG4
			Grinding machine	Drawing number		
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL

=	&EMA2	
	Terminal diagram	
+A2	Page	10
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Terminal diagram

F13_008

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Strip

+A2-XG5

Matrix patch board PLC

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Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Malfunction 24 V input / output supply												+A2-XG1	1	1	'	%IX2.6	=K1+A2-KE1	4:4.1												=GAB2+A2&EFS1/1.5
=												+A2-XG1	2	2	'		=K1+A2-KE1	4:4.2												=GAB2+A2&EFS1/1.5
=												+A2-XG1	3	3	'		=K1+A2-KE1	4:4.3												=GAB2+A2&EFS1/1.5
=												+A2-XG1	4	4	'	%IX2.4	=K1+A2-KE1	4:3.1												=GAB2+A2&EFS1/1.6
=												+A2-XG1	5	5	'		=K1+A2-KE1	4:3.2												=GAB2+A2&EFS1/1.7
=												+A2-XG1	6	6	'		=K1+A2-KE1	4:3.3												=GAB2+A2&EFS1/1.7
Malfunction 24 V device power supply												=K1+A2-FC5	14	7	'	%IX4.4	=K1+A2-KE2	4:7.1												=K1+B1.X1&EFS1/1.6
=												=K1+A2-FC5	13	8	'		=K1+A2-KE2	4:7.2												=K1+B1.X1&EFS1/1.6
=														9	'		=K1+A2-KE2	4:7.3												=K1+B1.X1&EFS1/1.6
=												=K1+A2-FC6	14	10	'	%IX4.3	=K1+A2-KE2	3:6.4												=K1+B1.X1&EFS1/1.8
=												=K1+A2-FC6	13	11	'		=K1+A2-KE2	3:6.5												=K1+B1.X1&EFS1/1.8
=														12	'		=K1+A2-KE2	3:6.6												=K1+B1.X1&EFS1/1.8
=												=K1+A2-FC7	14	13	'	%IX5.0	=K1+A2-KE3	1:1.1												=K1+B2.X1&EFS1/1.6
=												=K1+A2-FC7	13	14	'		=K1+A2-KE3	1:1.2												=K1+B2.X1&EFS1/1.6
=														15	'		=K1+A2-KE3	1:1.3												=K1+B2.X1&EFS1/1.6
=												=K1+A2-FC8	14	16	'	%IX5.2	=K1+A2-KE3	1:1.4												=K1+B2.X1&EFS1/1.8
=												=K1+A2-FC8	13	17	'		=K1+A2-KE3	1:1.5												=K1+B2.X1&EFS1/1.8
=														18	'		=K1+A2-KE3	1:1.6												=K1+B2.X1&EFS1/1.8
=												=K1+A2-FC9	14	19	'	%IX5.1	=K1+A2-KE3	1:2.1												=K1+B3.X1&EFS1/1.6
=												=K1+A2-FC9	13	20	'		=K1+A2-KE3	1:2.2												=K1+B3.X1&EFS1/1.6
=														21	'		=K1+A2-KE3	1:2.3												=K1+B3.X1&EFS1/1.6
=												=K1+A2-FC10	14	22	'	%IX5.3	=K1+A2-KE3	1:2.4												=K1+B3.X1&EFS1/1.8
=												=K1+A2-FC10	13	23	'		=K1+A2-KE3	1:2.5												=K1+B3.X1&EFS1/1.8
=														24	'		=K1+A2-KE3	1:2.6												=K1+B3.X1&EFS1/1.8
Malfunction 24 V valve terminal												=K2+A2-FC1	14	25	'	%IX4.6	=K1+A2-KE2	4:7.4												=K2+B2.Y1&EFS1/3.5
=												=K2+A2-FC1	13	26	'		=K1+A2-KE2	4:7.5												=K2+B2.Y1&EFS1/3.5
=														27	'		=K1+A2-KE2	4:7.6												=K2+B2.Y1&EFS1/3.5
Overload protection "Feed"												+A2-XG1	7	28	'	%IX3.2	=K1+A2-KE2	1:1.4												=GL1+A1&EFS1/1.5
=												+A2-XG1	8	29	'		=K1+A2-KE2	1:1.5												=GL1+A1&EFS1/1.6
=														30	'		=K1+A2-KE2	1:1.6												=GL1+A1&EFS1/1.6

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +A2-XG5	= &EMA2
			Grinding machine	Drawing number			Terminal diagram
						+A2	Page 11
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL	Enclosure 2 Page 90 from 305

Terminal diagram

F13_008

1	+A2-WG2	ÖLFLEX® CLASSIC 100 3G0,75 mm² 2,244 m
2	+A2-WG3	ÖLFLEX® CLASSIC 100 3G0,75 mm² 2,244 m
3		
4		
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7		
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9		
10		
11		

Strip

+A2-XG5

Matrix patch board PLC

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Drive "Feed, forward"												+A2-XG1	15	31	'	%IX3.0	=K1+A2-KE2	1:1.1												=GL1+A2&EFS1/1.3
=												+A2-XG1	16	32	'		=K1+A2-KE2	1:1.2												=GL1+A2&EFS1/1.3
=														33	'		=K1+A2-KE2	1:1.3												=GL1+A2&EFS1/1.3
Drive "Feed, reverse"												+A2-XG1	17	34	'	%IX3.1	=K1+A2-KE2	1:2.1												=GL1+A2&EFS1/1.5
=												+A2-XG1	18	35	'		=K1+A2-KE2	1:2.2												=GL1+A2&EFS1/1.5
=														36	'		=K1+A2-KE2	1:2.3												=GL1+A2&EFS1/1.5
Overload protection Drive "Work"												+A2-XG1	19	37	'	%IX4.0	=K1+A2-KE2	3:5.1												=GL2+A1&EFS1/1.5
=												+A2-XG1	20	38	'		=K1+A2-KE2	3:5.2												=GL2+A1&EFS1/1.6
=														39	'		=K1+A2-KE2	3:5.3												=GL2+A1&EFS1/1.6
Drive "Work, forward"												+A2-XG1	27	40	'	%IX4.2	=K1+A2-KE2	3:5.4												=GL2+A2&EFS1/2.3
=												+A2-XG1	28	41	'		=K1+A2-KE2	3:5.5												=GL2+A2&EFS1/2.3
=														42	'		=K1+A2-KE2	3:5.6												=GL2+A2&EFS1/2.3
Drive "Work, reverse"												+A2-XG1	29	43	'	%IX4.1	=K1+A2-KE2	3:6.1												=GL2+A2&EFS1/2.5
=												+A2-XG1	30	44	'		=K1+A2-KE2	3:6.2												=GL2+A2&EFS1/2.5
=														45	'		=K1+A2-KE2	3:6.3												=GL2+A2&EFS1/2.5
Overload protection "Grinding, left"												+A2-XG1	31	46	'	%IX3.3	=K1+A2-KE2	1:2.4												=TM1+A1&EFS1/1.7
=												+A2-XG1	32	47	'		=K1+A2-KE2	1:2.5												=TM1+A1&EFS1/1.7
=														48	'		=K1+A2-KE2	1:2.6												=TM1+A1&EFS1/1.7
Start "Grinding, left"	BN											+A1-XG1	25	49	'	%QX2.0	=K1+A2-KE1	2:1.1												=TM1+A1&EFS1/1.9
=	BU											+A1-XG1	26	50	'		=K1+A2-KE1	2:1.2												=TM1+A1&EFS1/1.9
=														51	'		=K1+A2-KE1	2:1.3												=TM1+A1&EFS1/1.9
Overload protection "Grinding, right"												+A2-XG1	36	52	'	%IX3.4	=K1+A2-KE2	2:3.1												=TM2+A1&EFS1/1.7
=												+A2-XG1	37	53	'		=K1+A2-KE2	2:3.2												=TM2+A1&EFS1/1.7
=														54	'		=K1+A2-KE2	2:3.3												=TM2+A1&EFS1/1.7
Start "Grinding, right"		BN										+A1-XG1	29	55	'	%QX2.2	=K1+A2-KE1	2:2.1												=TM2+A1&EFS1/1.9
=		BU										+A1-XG1	30	56	'		=K1+A2-KE1	2:2.2												=TM2+A1&EFS1/1.9
=														57	'		=K1+A2-KE1	2:2.3												=TM2+A1&EFS1/1.9
Overload protection Drive "Provide"												+A2-XG1	41	58	'	%IX3.6	=K1+A2-KE2	2:3.4												=GL3+A1&EFS1/1.5
=												+A2-XG1	42	59	'		=K1+A2-KE2	2:3.5												=GL3+A1&EFS1/1.6
=														60	'		=K1+A2-KE2	2:3.6												=GL3+A1&EFS1/1.6

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +A2-XG5	= &EMA2
			Grinding machine	Drawing number			Terminal diagram
							+A2 Page 11.1
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL	Enclosure 2 Page 91 from 305

Terminal diagram

F13_008

1	
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Strip

+A2-XG5

Matrix patch board PLC

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Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Drive "Provide, forward"												+A2-XG1	49	61	'	%IX3.5	=K1+A2-KE2	2:4.1												=GL3+A2&EFS1/2.3
=												+A2-XG1	50	62	'		=K1+A2-KE2	2:4.2												=GL3+A2&EFS1/2.3
=														63	'		=K1+A2-KE2	2:4.3												=GL3+A2&EFS1/2.3
Drive "Provide, reverse"												+A2-XG1	51	64	'	%IX3.7	=K1+A2-KE2	2:4.4												=GL3+A2&EFS1/2.5
=												+A2-XG1	52	65	'		=K1+A2-KE2	2:4.5												=GL3+A2&EFS1/2.5
=														66	'		=K1+A2-KE2	2:4.6												=GL3+A2&EFS1/2.5

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +A2-XG5	= / &EMA2
			Grinding machine	Drawing number			Terminal diagram
						+A2	Page 11.2
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL	Enclosure 2 / Page 92 from 305

Summarized parts list

F02_006

Order number	Quantity	Designation	Type number	Supplier	Pos.
9686080	13	End cover for busbar supports	VX.9686080		1
9677265	1	NH slimline switch disconnector size 2, 400 A, 690 V, 3-pole bolt M12, 185 mm	SV.9677265		2
9677365	2	NH slimline switch disconnector size 3, 630 A, 690 V, 3-pole bolt M12, 185 mm	SV.9677365		3
9677025	1	SV NH slimline fuse-switch disconnector, size 00, 160 A, 690 V, 3-pole	SV.9677025		4
9677100	1	SV NH slimline fuse-switch disconnector, size 1, 250 A, 690 V, 3-pole	SV.9677100		5
3WL1106-2BB62-1AA2	1	Fixed-mounted circuit breaker 3-pole	3WL1106-2BB62-1AA2	SIE	6
3244100	1	SK TopTherm fan-and-filter unit, 700/770 m³/h, 230 V, 1~, 50/60 Hz	SK.3244100		7
8806000	1	VX Baying enclosure system, WHD: 800x2000x600 mm, single door	VX.8806000		8
9681886	1	VX Roof plate, WD: 800x600 mm, IP 2X, H: 72 mm, with ventilation hole	VX.9681886		9
9686040	9	Busbar support for busbar entry (roof section), For width: 50 x 10,Bar centre distance: 80 mm	VX.9686040		10
9686250	9	Longitudinal connector E-Cu for busbars, Cross-section E-Cu busbars: 10 x 100 mm	VX.9686250		11
9686030	5	Busbar support for busbar baying (roof section), for busbars: 50 x 10,Bar centre distance: 80 mm	VX.9686030		12
9686495	4	Angle bracket for support set (stabiliser)	9686495	RIT	13
9660205	12	To support the connector kits top/bottom for air circuit-breakers (ACB)	VX.9660205		14
9683326	2	Mounting bracket for air circuit-breaker support rail, To fit depth: 600 mm	VX.9683326		15
9683308	2	Air circuit-breaker support bar Length: 696 mm, To fit width: 800 mm	VX.9683308		16
9683200	2	Retaining plate for cable connection space, To fit depth 600 mm	VX.9683200		17
9659010	6	SV End support, Maxi-PLS 3200	SV.9659010		18
8106245	2	VX Side panel, screw-fastened, for HD: 2000x600 mm	VX.8106245		19
8640003	2	VX Base/plinth with trim panel, front/rear, H: 100 mm, for W: 800 mm	VX.8640003		20
8640033	8	VX Base/plinth trim panel, side, H: 100 mm, for D: 600 mm	VX.8640033		21
9680606	1	VX Modular enclosure, WHD: 600x2000x600 mm, sheet steel	VX.9680606		22
9681866	1	VX Roof plate, WD: 600x600 mm, IP 2X, H: 72 mm, with ventilation hole	VX.9681866		23
8617502	12	VX Baying connector, external, sheet steel	VX.8617502	RIT	24
9683016	2	Compartment side panel for VX For busbars in the roof section, To fit: 2000 x 600 mm	VX.9683016		25
9683662	2	Partial mounting plate for compartment side panel, For width: 600, For compartment height: 200, Solid	VX.9683662		26
9683663	2	Partial mounting plate for compartment side panel, For width: 600, For compartment height: 300, Solid	VX.9683663		27
9683664	1	Partial mounting plate for compartment side panel, For width: 600, For compartment height: 400, Solid	VX.9683664		28

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Summarized parts list

F02_006

Order number	Quantity	Designation	Type number	Supplier	Pos.
9683466	6	Compartment divider for VX, To fit enclosure width/depth: 600 x 600 mm	VX.9683466		29
9683506	6	Plastic gland plate for compartment divider, Dimensions (W x D): 450 x 251 mm	VX.9683506		30
9682162	2	VX Partial door, WH: 600x200 mm	VX.9682162		31
9682163	2	VX Partial door, WH: 600x300 mm	VX.9682163		32
9682164	1	VX Partial door, WH: 600x400 mm	VX.9682164		33
9682326	1	VX Front trim panel, top, IP 54, WH: 600x300 mm	VX.9682326		34
9682356	1	VX Front trim panel, bottom, IP 2X, WH: 600x300 mm	VX.9682356		35
8100742	6	VX Mounting chassis 23 x 64 mm, Suitable for W x H x D: 600 mm	VX.8100742		36
9686100	6	Busbar support 4-pole, 70 mm, for E-Cu 30x5/10 mm	VX.9686100		37
8620002	2				38
8406000	1	VX Baying enclosure system, WHD: 400x2000x600 mm, single door	VX.8406000		39
9681846	1	VX Roof plate, WD: 400x600 mm, IP 2X, H: 72 mm, with ventilation hole	VX.9681846		40
8617110	8	VX Punched section 23 x 64 mm, for inner mounting level	VX.8617110	RIT	41
8617130	6	VX Punched section 23 x 64 mm, for inner mounting level, B/H/T: 600 mm	VX.8617130	RIT	42
8620001	2				43
8206000	1	VX Baying enclosure system, WHD: 1200x2000x600 mm, two doors	VX.8206000		44
9681826	1	VX Roof plate, WD: 1200x600 mm, IP 2X, H: 72 mm, with ventilation hole	VX.9681826		45
9686060	1	Busbar support for busbar entry (rear section), For width: 1000, For compartment height: 600, mm	VX.9686060		46
9686070	2	Busbar support for busbar entry (rear section), For width: 50 x 10,For compartment height: 185mm	VX.9686070		47
9686810	15	Connection set for Flat-PLS, Thread M10	VX.9686810		48
9686800	3	Connection set for Flat-PLS, Thread M8	VX.9686800		49
9677900	1	Connection adaptor 800 A, 690 V, 3-pole, 185 mm cable outet bottom	SV.9677900		50
8620007	2				51
9683006	2	Compartment side panel for VX For busbars in the roof section, To fit: 2000 x 600 mm	VX.9683006		52
9684008	6	SV Busbar E-Cu, WH: 50x10 mm, L: 785 mm	SV.9684008	RIT	53
9650232	3	SV Maxi-PLS busbar E-Cu, L: 651 mm, Maxi-PLS 3200	SV.9650232	RIT	54
3589005	30	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	55
9684006	6	Sammelschiene E-Cu 50x10 mm, L=585 mm	SV.9684006	RIT	56

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Summarized parts list

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Order number	Quantity	Designation	Type number	Supplier	Pos.
3586005	3	SV Busbar E-Cu, WH: 30x10 mm, L: 2400 mm	SV.3586005	RIT	57
3584000	3	SV Busbar E-Cu, WH: 30x5 mm, L: 2400 mm	SV.3584000		58
9684004	6	Sammelschiene E-Cu 50x10 mm, L=385 mm	SV.9684004	RIT	59
3588005	6	SV Busbar E-Cu, WH: 50x10 mm, L: 2400 mm	SV.3588005		60
3590015	3	SV Busbar E-Cu, WH: 100x10 mm, L: 2400 mm	SV.3590015		61
9684012	12	SV Busbar E-Cu, WH: 50x10 mm, L: 1185 mm	SV.9684012	RIT	62
9677705	1	SV Component adaptor, 1000 A, 690 V, 3-pole, 185 mm, screw attachment	SV.9677705		63
9677740	1	SV Connector kit, for component adaptor, SV 9677700/705, (Eaton NZM, Siemens VL)	SV.9677740		64

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Device tag list

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Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+A4-F1	1	End cover for busbar supports	VX.9686080	RIT	RIT.9686080
+A4-F2	1	End cover for busbar supports	VX.9686080	RIT	RIT.9686080
+A4-F3	1	End cover for busbar supports	VX.9686080	RIT	RIT.9686080
+A4-F4	1	End cover for busbar supports	VX.9686080	RIT	RIT.9686080
+A4-F5	1	End cover for busbar supports	VX.9686080	RIT	RIT.9686080
+A4-F6	1	End cover for busbar supports	VX.9686080	RIT	RIT.9686080
+A4-F7	1	End cover for busbar supports	VX.9686080	RIT	RIT.9686080
+A4-F8	1	End cover for busbar supports	VX.9686080	RIT	RIT.9686080
+A4-F9	1	End cover for busbar supports	VX.9686080	RIT	RIT.9686080
+A4-F10	1	End cover for busbar supports	VX.9686080	RIT	RIT.9686080
+A4-F11	1	End cover for busbar supports	VX.9686080	RIT	RIT.9686080
+A4-F12	1	End cover for busbar supports	VX.9686080	RIT	RIT.9686080
+A4-F13	1	End cover for busbar supports	VX.9686080	RIT	RIT.9686080
=+A4-F14	1	NH slimline switch disconnector size 2, 400 A, 690 V, 3-pole bolt M12, 185 mm	SV.9677265	RIT	RIT.9677265
=+A4-F15	1	NH slimline switch disconnector size 3, 630 A, 690 V, 3-pole bolt M12, 185 mm	SV.9677365	RIT	RIT.9677365
=+A4-F16	1	NH slimline switch disconnector size 3, 630 A, 690 V, 3-pole bolt M12, 185 mm	SV.9677365	RIT	RIT.9677365
=+A4-F17	1	SV NH slimline fuse-switch disconnector, size 00, 160 A, 690 V, 3-pole	SV.9677025	RIT	RIT.9677025
=+A4-F18	1	SV NH slimline fuse-switch disconnector, size 1, 250 A, 690 V, 3-pole	SV.9677100	RIT	RIT.9677100
=+A4-FC1	1	Fixed-mounted circuit breaker 3-pole	3WL1106-2BB62-1AA2	SIE	SIE.3WL1106-2BB62-1AA2
=+A4-FC2	1	SK TopTherm fan-and-filter unit, 700/770 m³/h, 230 V, 1~, 50/60 Hz	SK.3244100	RIT	RIT.3244100
+A4-U81	1	VX Baying enclosure system, WHD: 800x2000x600 mm, single door	VX.8806000	RIT	RIT.8806000
+A4-U82	1	VX Roof plate, WD: 800x600 mm, IP 2X, H: 72 mm, with ventilation hole	VX.9681886	RIT	RIT.9681886
+A4-U83	1	Busbar support for busbar entry (roof section), For width: 50 x 10,Bar centre distance: 80 mm	VX.9686040	RIT	RIT.9686040
+A4-U84	1	Busbar support for busbar entry (roof section), For width: 50 x 10,Bar centre distance: 80 mm	VX.9686040	RIT	RIT.9686040
+A4-U85	1	Longitudinal connector E-Cu for busbars, Cross-section E-Cu busbars: 10 x 100 mm	VX.9686250	RIT	RIT.9686250
+A4-U86	1	Longitudinal connector E-Cu for busbars, Cross-section E-Cu busbars: 10 x 100 mm	VX.9686250	RIT	RIT.9686250
+A4-U87	1	Longitudinal connector E-Cu for busbars, Cross-section E-Cu busbars: 10 x 100 mm	VX.9686250	RIT	RIT.9686250
+A4-U88	1	Busbar support for busbar baying (roof section), for busbars: 50 x 10,Bar centre distance: 80 mm	VX.9686030	RIT	RIT.9686030
+A4-U89	1	Angle bracket for support set (stabiliser)	9686495	RIT	RIT.9686495

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Device tag list

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Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+A4-U91	1	To support the connector kits top/bottom for air circuit-breakers (ACB)	VX.9660205	RIT	RIT.9660205
+A4-U92	1	Angle bracket for support set (stabiliser)	9686495	RIT	RIT.9686495
+A4-U93	1	To support the connector kits top/bottom for air circuit-breakers (ACB)	VX.9660205	RIT	RIT.9660205
+A4-U94	1	Mounting bracket for air circuit-breaker support rail, To fit depth: 600 mm	VX.9683326	RIT	RIT.9683326
+A4-U95	1	Air circuit-breaker support bar Length: 696 mm, To fit width: 800 mm	VX.9683308	RIT	RIT.9683308
+A4-U96	1	Air circuit-breaker support bar Length: 696 mm, To fit width: 800 mm	VX.9683308	RIT	RIT.9683308
+A4-U97	1	Retaining plate for cable connection space, To fit depth 600 mm	VX.9683200	RIT	RIT.9683200
+A4-U98	1	SV End support, Maxi-PLS 3200	SV.9659010	RIT	RIT.9659010
+A4-U99	1	SV End support, Maxi-PLS 3200	SV.9659010	RIT	RIT.9659010
+A4-U100	1	SV End support, Maxi-PLS 3200	SV.9659010	RIT	RIT.9659010
+A4-U101	1	Mounting bracket for air circuit-breaker support rail, To fit depth: 600 mm	VX.9683326	RIT	RIT.9683326
+A4-U102	1	Angle bracket for support set (stabiliser)	9686495	RIT	RIT.9686495
+A4-U103	1	Angle bracket for support set (stabiliser)	9686495	RIT	RIT.9686495
+A4-U104	1	Retaining plate for cable connection space, To fit depth 600 mm	VX.9683200	RIT	RIT.9683200
+A4-U105	1	SV End support, Maxi-PLS 3200	SV.9659010	RIT	RIT.9659010
+A4-U106	1	SV End support, Maxi-PLS 3200	SV.9659010	RIT	RIT.9659010
+A4-U107	1	SV End support, Maxi-PLS 3200	SV.9659010	RIT	RIT.9659010
+A4-U108	1	VX Side panel, screw-fastened, for HD: 2000x600 mm	VX.8106245	RIT	RIT.8106245
+A4-U109	1	VX Base/plinth with trim panel, front/rear, H: 100 mm, for W: 800 mm	VX.8640003	RIT	RIT.8640003
+A4-U110	1	VX Base/plinth trim panel, side, H: 100 mm, for D: 600 mm	VX.8640033	RIT	RIT.8640033
+A4-U111	1	VX Base/plinth trim panel, side, H: 100 mm, for D: 600 mm	VX.8640033	RIT	RIT.8640033
+A4-U112	1	VX Base/plinth with trim panel, front/rear, H: 100 mm, for W: 800 mm	VX.8640003	RIT	RIT.8640003
+A4-U113	1	To support the connector kits top/bottom for air circuit-breakers (ACB)	VX.9660205	RIT	RIT.9660205
+A4-U114	1	To support the connector kits top/bottom for air circuit-breakers (ACB)	VX.9660205	RIT	RIT.9660205
+A4-U115	1	To support the connector kits top/bottom for air circuit-breakers (ACB)	VX.9660205	RIT	RIT.9660205
+A4-U116	1	To support the connector kits top/bottom for air circuit-breakers (ACB)	VX.9660205	RIT	RIT.9660205
+A4-U117	1	To support the connector kits top/bottom for air circuit-breakers (ACB)	VX.9660205	RIT	RIT.9660205
+A4-U118	1	To support the connector kits top/bottom for air circuit-breakers (ACB)	VX.9660205	RIT	RIT.9660205
+A4-U119	1	To support the connector kits top/bottom for air circuit-breakers (ACB)	VX.9660205	RIT	RIT.9660205

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Device tag list

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Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+A4-U120	1	To support the connector kits top/bottom for air circuit-breakers (ACB)	VX.9660205	RIT	RIT.9660205
+A4-U121	1	VX Modular enclosure, WHD: 600x2000x600 mm, sheet steel	VX.9680606	RIT	RIT.9680606
+A4-U122	1	VX Roof plate, WD: 600x600 mm, IP 2X, H: 72 mm, with ventilation hole	VX.9681866	RIT	RIT.9681866
+A4-U123	1	Busbar support for busbar baying (roof section), for busbars: 50 x 10,Bar centre distance: 80 mm	VX.9686030	RIT	RIT.9686030
+A4-U124	1	Longitudinal connector E-Cu for busbars, Cross-section E-Cu busbars: 10 x 100 mm	VX.9686250	RIT	RIT.9686250
+A4-U125	1	Longitudinal connector E-Cu for busbars, Cross-section E-Cu busbars: 10 x 100 mm	VX.9686250	RIT	RIT.9686250
+A4-U126	1	Longitudinal connector E-Cu for busbars, Cross-section E-Cu busbars: 10 x 100 mm	VX.9686250	RIT	RIT.9686250
+A4-U127	1	Busbar support for busbar baying (roof section), for busbars: 50 x 10,Bar centre distance: 80 mm	VX.9686030	RIT	RIT.9686030
+A4-U128	1	VX Baying connector, external, sheet steel	VX.8617502	RIT	RIT.8617502
+A4-U129	1	VX Baying connector, external, sheet steel	VX.8617502	RIT	RIT.8617502
+A4-U130	1	VX Baying connector, external, sheet steel	VX.8617502	RIT	RIT.8617502
+A4-U131	1	Compartment side panel for VX For busbars in the roof section, To fit: 2000 x 600 mm	VX.9683016	RIT	RIT.9683016
+A4-U132	1	Partial mounting plate for compartment side panel, For width: 600, For compartment height: 200, Solid	VX.9683662	RIT	RIT.9683662
+A4-U133	1	Partial mounting plate for compartment side panel, For width: 600, For compartment height: 300, Solid	VX.9683663	RIT	RIT.9683663
+A4-U134	1	Partial mounting plate for compartment side panel, For width: 600, For compartment height: 200, Solid	VX.9683662	RIT	RIT.9683662
+A4-U135	1	Partial mounting plate for compartment side panel, For width: 600, For compartment height: 300, Solid	VX.9683663	RIT	RIT.9683663
+A4-U136	1	Partial mounting plate for compartment side panel, For width: 600, For compartment height: 400, Solid	VX.9683664	RIT	RIT.9683664
+A4-U137	1	Compartment divider for VX, To fit enclosure width/depth: 600 x 600 mm	VX.9683466	RIT	RIT.9683466
+A4-U138	1	Plastic gland plate for compartment divider, Dimensions (W x D): 450 x 251 mm	VX.9683506	RIT	RIT.9683506
+A4-U139	1	Compartment divider for VX, To fit enclosure width/depth: 600 x 600 mm	VX.9683466	RIT	RIT.9683466
+A4-U140	1	Plastic gland plate for compartment divider, Dimensions (W x D): 450 x 251 mm	VX.9683506	RIT	RIT.9683506
+A4-U141	1	Compartment divider for VX, To fit enclosure width/depth: 600 x 600 mm	VX.9683466	RIT	RIT.9683466
+A4-U142	1	Plastic gland plate for compartment divider, Dimensions (W x D): 450 x 251 mm	VX.9683506	RIT	RIT.9683506
+A4-U143	1	Compartment divider for VX, To fit enclosure width/depth: 600 x 600 mm	VX.9683466	RIT	RIT.9683466
+A4-U144	1	Plastic gland plate for compartment divider, Dimensions (W x D): 450 x 251 mm	VX.9683506	RIT	RIT.9683506
+A4-U145	1	Compartment divider for VX, To fit enclosure width/depth: 600 x 600 mm	VX.9683466	RIT	RIT.9683466
+A4-U146	1	Plastic gland plate for compartment divider, Dimensions (W x D): 450 x 251 mm	VX.9683506	RIT	RIT.9683506
+A4-U147	1	Compartment divider for VX, To fit enclosure width/depth: 600 x 600 mm	VX.9683466	RIT	RIT.9683466
+A4-U148	1	Plastic gland plate for compartment divider, Dimensions (W x D): 450 x 251 mm	VX.9683506	RIT	RIT.9683506

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Device tag list

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Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+A4-U149	1	VX Partial door, WH: 600x200 mm	VX.9682162	RIT	RIT.9682162
+A4-U150	1	VX Partial door, WH: 600x300 mm	VX.9682163	RIT	RIT.9682163
+A4-U151	1	VX Partial door, WH: 600x200 mm	VX.9682162	RIT	RIT.9682162
+A4-U152	1	VX Partial door, WH: 600x300 mm	VX.9682163	RIT	RIT.9682163
+A4-U153	1	VX Partial door, WH: 600x400 mm	VX.9682164	RIT	RIT.9682164
+A4-U156	1	VX Baying connector, external, sheet steel	VX.8617502	RIT	RIT.8617502
+A4-U157	1	VX Baying connector, external, sheet steel	VX.8617502	RIT	RIT.8617502
+A4-U158	1	VX Baying connector, external, sheet steel	VX.8617502	RIT	RIT.8617502
+A4-U159	1	VX Mounting chassis 23 x 64 mm, Suitable for W x H x D: 600 mm	VX.8100742	RIT	RIT.8100742
+A4-U160	1	Busbar support 4-pole, 70 mm, for E-Cu 30x5/10 mm	VX.9686100	RIT	RIT.9686100
+A4-U161	1	VX Mounting chassis 23 x 64 mm, Suitable for W x H x D: 600 mm	VX.8100742	RIT	RIT.8100742
+A4-U162	1	Busbar support 4-pole, 70 mm, for E-Cu 30x5/10 mm	VX.9686100	RIT	RIT.9686100
+A4-U163	1	VX Mounting chassis 23 x 64 mm, Suitable for W x H x D: 600 mm	VX.8100742	RIT	RIT.8100742
+A4-U164	1	Busbar support 4-pole, 70 mm, for E-Cu 30x5/10 mm	VX.9686100	RIT	RIT.9686100
+A4-U165	1	VX Mounting chassis 23 x 64 mm, Suitable for W x H x D: 600 mm	VX.8100742	RIT	RIT.8100742
+A4-U166	1	Busbar support 4-pole, 70 mm, for E-Cu 30x5/10 mm	VX.9686100	RIT	RIT.9686100
+A4-U167	1	VX Mounting chassis 23 x 64 mm, Suitable for W x H x D: 600 mm	VX.8100742	RIT	RIT.8100742
+A4-U168	1	Busbar support 4-pole, 70 mm, for E-Cu 30x5/10 mm	VX.9686100	RIT	RIT.9686100
+A4-U169	1	VX Mounting chassis 23 x 64 mm, Suitable for W x H x D: 600 mm	VX.8100742	RIT	RIT.8100742
+A4-U170	1	Busbar support 4-pole, 70 mm, for E-Cu 30x5/10 mm	VX.9686100	RIT	RIT.9686100
+A4-U171	1	Compartment side panel for VX For busbars in the roof section, To fit: 2000 x 600 mm	VX.9683016	RIT	RIT.9683016
+A4-U172	1	VX Baying connector, external, sheet steel	VX.8617502	RIT	RIT.8617502
+A4-U173	1	VX Baying connector, external, sheet steel	VX.8617502	RIT	RIT.8617502
+A4-U174	1	VX Baying connector, external, sheet steel	VX.8617502	RIT	RIT.8617502
+A4-U175	1	VX Baying connector, external, sheet steel	VX.8617502	RIT	RIT.8617502
+A4-U176	1			RIT	RIT.8640002
+A4-U177	1	VX Base/plinth trim panel, side, H: 100 mm, for D: 600 mm	VX.8640033	RIT	RIT.8640033
+A4-U178	1	VX Base/plinth trim panel, side, H: 100 mm, for D: 600 mm	VX.8640033	RIT	RIT.8640033
+A4-U179	1			RIT	RIT.8640002

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Device tag list

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Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+A4-U181	1	VX Baying enclosure system, WHD: 400x2000x600 mm, single door	VX.8406000	RIT	RIT.8406000
+A4-U182	1	VX Roof plate, WD: 400x600 mm, IP 2X, H: 72 mm, with ventilation hole	VX.9681846	RIT	RIT.9681846
+A4-U183	1	Busbar support for busbar baying (roof section), for busbars: 50 x 10,Bar centre distance: 80 mm	VX.9686030	RIT	RIT.9686030
+A4-U184	1	Busbar support for busbar baying (roof section), for busbars: 50 x 10,Bar centre distance: 80 mm	VX.9686030	RIT	RIT.9686030
+A4-U185	1	VX Punched section 23 x 64 mm, for inner mounting level	VX.8617110	RIT	RIT.8617110
+A4-U186	1	VX Punched section 23 x 64 mm, for inner mounting level	VX.8617110	RIT	RIT.8617110
+A4-U187	1	VX Punched section 23 x 64 mm, for inner mounting level	VX.8617110	RIT	RIT.8617110
+A4-U188	1	VX Punched section 23 x 64 mm, for inner mounting level	VX.8617110	RIT	RIT.8617110
+A4-U189	1	VX Punched section 23 x 64 mm, for inner mounting level	VX.8617110	RIT	RIT.8617110
+A4-U190	1	VX Punched section 23 x 64 mm, for inner mounting level	VX.8617110	RIT	RIT.8617110
+A4-U191	1	VX Punched section 23 x 64 mm, for inner mounting level	VX.8617110	RIT	RIT.8617110
+A4-U192	1	VX Punched section 23 x 64 mm, for inner mounting level	VX.8617110	RIT	RIT.8617110
+A4-U193	1	VX Baying connector, external, sheet steel	VX.8617502	RIT	RIT.8617502
+A4-U194	1	VX Baying connector, external, sheet steel	VX.8617502	RIT	RIT.8617502
+A4-U195	1	VX Punched section 23 x 64 mm, for inner mounting level, B/H/T: 600 mm	VX.8617130	RIT	RIT.8617130
+A4-U196	1	Busbar support for busbar entry (roof section), For width: 50 x 10,Bar centre distance: 80 mm	VX.9686040	RIT	RIT.9686040
+A4-U197	1	VX Punched section 23 x 64 mm, for inner mounting level, B/H/T: 600 mm	VX.8617130	RIT	RIT.8617130
+A4-U198	1	Busbar support for busbar entry (roof section), For width: 50 x 10,Bar centre distance: 80 mm	VX.9686040	RIT	RIT.9686040
+A4-U199	1	VX Punched section 23 x 64 mm, for inner mounting level, B/H/T: 600 mm	VX.8617130	RIT	RIT.8617130
+A4-U200	1	Busbar support for busbar entry (roof section), For width: 50 x 10,Bar centre distance: 80 mm	VX.9686040	RIT	RIT.9686040
+A4-U201	1	VX Punched section 23 x 64 mm, for inner mounting level, B/H/T: 600 mm	VX.8617130	RIT	RIT.8617130
+A4-U202	1	Busbar support for busbar entry (roof section), For width: 50 x 10,Bar centre distance: 80 mm	VX.9686040	RIT	RIT.9686040
+A4-U203	1	Busbar support for busbar entry (roof section), For width: 50 x 10,Bar centre distance: 80 mm	VX.9686040	RIT	RIT.9686040
+A4-U204	1	VX Punched section 23 x 64 mm, for inner mounting level, B/H/T: 600 mm	VX.8617130	RIT	RIT.8617130
+A4-U205	1	Busbar support for busbar entry (roof section), For width: 50 x 10,Bar centre distance: 80 mm	VX.9686040	RIT	RIT.9686040
+A4-U206	1	VX Punched section 23 x 64 mm, for inner mounting level, B/H/T: 600 mm	VX.8617130	RIT	RIT.8617130
+A4-U207	1	Busbar support for busbar entry (roof section), For width: 50 x 10,Bar centre distance: 80 mm	VX.9686040	RIT	RIT.9686040
+A4-U208	1			RIT	RIT.8640001
+A4-U209	1	VX Base/plinth trim panel, side, H: 100 mm, for D: 600 mm	VX.8640033	RIT	RIT.8640033

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+A4-U210	1	VX Base/plinth trim panel, side, H: 100 mm, for D: 600 mm	VX.8640033	RIT	RIT.8640033
+A4-U211	1			RIT	RIT.8640001
+A4-U212	1	Longitudinal connector E-Cu for busbars, Cross-section E-Cu busbars: 10 x 100 mm	VX.9686250	RIT	RIT.9686250
+A4-U213	1	Longitudinal connector E-Cu for busbars, Cross-section E-Cu busbars: 10 x 100 mm	VX.9686250	RIT	RIT.9686250
+A4-U214	1	Longitudinal connector E-Cu for busbars, Cross-section E-Cu busbars: 10 x 100 mm	VX.9686250	RIT	RIT.9686250
+A4-U215	1	VX Baying enclosure system, WHD: 1200x2000x600 mm, two doors	VX.8206000	RIT	RIT.8206000
+A4-U216	1	VX Roof plate, WD: 1200x600 mm, IP 2X, H: 72 mm, with ventilation hole	VX.9681826	RIT	RIT.9681826
+A4-U217	1	Busbar support for busbar entry (rear section), For width: 1000, For compartment height: 600, mm	VX.9686060	RIT	RIT.9686060
+A4-U218	1	Busbar support for busbar entry (rear section), For width: 50 x 10,For compartment height: 185mm	VX.9686070	RIT	RIT.9686070
+A4-U219	1	Connection set for Flat-PLS, Thread M10	VX.9686810	RIT	RIT.9686810
+A4-U220	1	Connection set for Flat-PLS, Thread M10	VX.9686810	RIT	RIT.9686810
+A4-U221	1	Connection set for Flat-PLS, Thread M8	VX.9686800	RIT	RIT.9686800
+A4-U222	1	Connection adaptor 800 A, 690 V, 3-pole, 185 mm cable outet bottom	SV.9677900	RIT	RIT.9677900
+A4-U223	1	Connection set for Flat-PLS, Thread M10	VX.9686810	RIT	RIT.9686810
+A4-U224	1	Connection set for Flat-PLS, Thread M10	VX.9686810	RIT	RIT.9686810
+A4-U225	1	Connection set for Flat-PLS, Thread M10	VX.9686810	RIT	RIT.9686810
+A4-U226	1	Connection set for Flat-PLS, Thread M10	VX.9686810	RIT	RIT.9686810
+A4-U227	1	Connection set for Flat-PLS, Thread M10	VX.9686810	RIT	RIT.9686810
+A4-U228	1	Connection set for Flat-PLS, Thread M10	VX.9686810	RIT	RIT.9686810
+A4-U229	1	Connection set for Flat-PLS, Thread M10	VX.9686810	RIT	RIT.9686810
+A4-U230	1	Connection set for Flat-PLS, Thread M10	VX.9686810	RIT	RIT.9686810
+A4-U231	1	Connection set for Flat-PLS, Thread M10	VX.9686810	RIT	RIT.9686810
+A4-U232	1	Connection set for Flat-PLS, Thread M10	VX.9686810	RIT	RIT.9686810
+A4-U233	1	Connection set for Flat-PLS, Thread M10	VX.9686810	RIT	RIT.9686810
+A4-U234	1	Connection set for Flat-PLS, Thread M10	VX.9686810	RIT	RIT.9686810
+A4-U235	1	Connection set for Flat-PLS, Thread M10	VX.9686810	RIT	RIT.9686810
+A4-U236	1	Busbar support for busbar entry (rear section), For width: 50 x 10,For compartment height: 185mm	VX.9686070	RIT	RIT.9686070
+A4-U237	1	Connection set for Flat-PLS, Thread M8	VX.9686800	RIT	RIT.9686800
+A4-U238	1	Connection set for Flat-PLS, Thread M8	VX.9686800	RIT	RIT.9686800

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Device tag list

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Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+A4-U239	1	VX Side panel, screw-fastened, for HD: 2000x600 mm	VX.8106245	RIT	RIT.8106245
+A4-U240	1			RIT	RIT.8640007
+A4-U241	1	VX Base/plinth trim panel, side, H: 100 mm, for D: 600 mm	VX.8640033	RIT	RIT.8640033
+A4-U242	1	VX Base/plinth trim panel, side, H: 100 mm, for D: 600 mm	VX.8640033	RIT	RIT.8640033
+A4-U243	1			RIT	RIT.8640007
+A4-U244	1	Compartment side panel for VX For busbars in the roof section, To fit: 2000 x 600 mm	VX.9683006	RIT	RIT.9683006
+A4-U245	1	Compartment side panel for VX For busbars in the roof section, To fit: 2000 x 600 mm	VX.9683006	RIT	RIT.9683006
+A4-U246	1	To support the connector kits top/bottom for air circuit-breakers (ACB)	VX.9660205	RIT	RIT.9660205
+A4-U247	1	To support the connector kits top/bottom for air circuit-breakers (ACB)	VX.9660205	RIT	RIT.9660205
+A4-W1	1	SV Busbar E-Cu, WH: 50x10 mm, L: 785 mm	SV.9684008	RIT	RIT.9684008_V
+A4-W2	1	SV Busbar E-Cu, WH: 50x10 mm, L: 785 mm	SV.9684008	RIT	RIT.9684008_V
+A4-W3	1	SV Busbar E-Cu, WH: 50x10 mm, L: 785 mm	SV.9684008	RIT	RIT.9684008_V
+A4-W4	1	SV Busbar E-Cu, WH: 50x10 mm, L: 785 mm	SV.9684008	RIT	RIT.9684008_V
+A4-W5	1	SV Busbar E-Cu, WH: 50x10 mm, L: 785 mm	SV.9684008	RIT	RIT.9684008_V
+A4-W6	1	SV Busbar E-Cu, WH: 50x10 mm, L: 785 mm	SV.9684008	RIT	RIT.9684008_V
+A4-W7	1	SV Maxi-PLS busbar E-Cu, L: 651 mm, Maxi-PLS 3200	SV.9650232	RIT	RIT.9650232
+A4-W8	1	SV Maxi-PLS busbar E-Cu, L: 651 mm, Maxi-PLS 3200	SV.9650232	RIT	RIT.9650232
+A4-W9	1	SV Maxi-PLS busbar E-Cu, L: 651 mm, Maxi-PLS 3200	SV.9650232	RIT	RIT.9650232
+A4-W10	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W11	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W12	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W13	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W14	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W15	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W16	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W17	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W18	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W19	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W20	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005

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Device tag list

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Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+A4-W21	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W22	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W23	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W24	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W25	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W26	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W27	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W28	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W29	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W30	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W31	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W32	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W33	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W34	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W35	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W36	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W37	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W38	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W39	1	SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm	SV.3589005	RIT	RIT.3589005
+A4-W40	1	Sammelschiene E-Cu 50x10 mm, L=585 mm	SV.9684006	RIT	RIT.9684006_V
+A4-W41	1	Sammelschiene E-Cu 50x10 mm, L=585 mm	SV.9684006	RIT	RIT.9684006_V
+A4-W42	1	Sammelschiene E-Cu 50x10 mm, L=585 mm	SV.9684006	RIT	RIT.9684006_V
+A4-W43	1	Sammelschiene E-Cu 50x10 mm, L=585 mm	SV.9684006	RIT	RIT.9684006_V
+A4-W44	1	Sammelschiene E-Cu 50x10 mm, L=585 mm	SV.9684006	RIT	RIT.9684006_V
+A4-W45	1	Sammelschiene E-Cu 50x10 mm, L=585 mm	SV.9684006	RIT	RIT.9684006_V
+A4-W46	1	SV Busbar E-Cu, WH: 30x10 mm, L: 2400 mm	SV.3586005	RIT	RIT.3586005
+A4-W47	1	SV Busbar E-Cu, WH: 30x5 mm, L: 2400 mm	SV.3584000	RIT	RIT.3584000
+A4-W48	1	SV Busbar E-Cu, WH: 30x10 mm, L: 2400 mm	SV.3586005	RIT	RIT.3586005
+A4-W49	1	SV Busbar E-Cu, WH: 30x5 mm, L: 2400 mm	SV.3584000	RIT	RIT.3584000

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Device tag list

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Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+A4-W50	1	SV Busbar E-Cu, WH: 30x10 mm, L: 2400 mm	SV.3586005	RIT	RIT.3586005
+A4-W51	1	SV Busbar E-Cu, WH: 30x5 mm, L: 2400 mm	SV.3584000	RIT	RIT.3584000
+A4-W52	1	Sammelschiene E-Cu 50x10 mm, L=385 mm	SV.9684004	RIT	RIT.9684004_V
+A4-W53	1	Sammelschiene E-Cu 50x10 mm, L=385 mm	SV.9684004	RIT	RIT.9684004_V
+A4-W54	1	Sammelschiene E-Cu 50x10 mm, L=385 mm	SV.9684004	RIT	RIT.9684004_V
+A4-W55	1	SV Busbar E-Cu, WH: 50x10 mm, L: 2400 mm	SV.3588005	RIT	RIT.3588005
+A4-W56	1	SV Busbar E-Cu, WH: 50x10 mm, L: 2400 mm	SV.3588005	RIT	RIT.3588005
+A4-W57	1	SV Busbar E-Cu, WH: 50x10 mm, L: 2400 mm	SV.3588005	RIT	RIT.3588005
+A4-W58	1	SV Busbar E-Cu, WH: 50x10 mm, L: 2400 mm	SV.3588005	RIT	RIT.3588005
+A4-W59	1	SV Busbar E-Cu, WH: 50x10 mm, L: 2400 mm	SV.3588005	RIT	RIT.3588005
+A4-W60	1	SV Busbar E-Cu, WH: 50x10 mm, L: 2400 mm	SV.3588005	RIT	RIT.3588005
+A4-W61	1	Sammelschiene E-Cu 50x10 mm, L=385 mm	SV.9684004	RIT	RIT.9684004_V
+A4-W62	1	Sammelschiene E-Cu 50x10 mm, L=385 mm	SV.9684004	RIT	RIT.9684004_V
+A4-W63	1	Sammelschiene E-Cu 50x10 mm, L=385 mm	SV.9684004	RIT	RIT.9684004_V
+A4-W64	1	SV Busbar E-Cu, WH: 100x10 mm, L: 2400 mm	SV.3590015	RIT	RIT.3590015
+A4-W65	1	SV Busbar E-Cu, WH: 100x10 mm, L: 2400 mm	SV.3590015	RIT	RIT.3590015
+A4-W66	1	SV Busbar E-Cu, WH: 100x10 mm, L: 2400 mm	SV.3590015	RIT	RIT.3590015
+A4-W67	1	SV Busbar E-Cu, WH: 50x10 mm, L: 1185 mm	SV.9684012	RIT	RIT.9684012
+A4-W68	1	SV Busbar E-Cu, WH: 50x10 mm, L: 1185 mm	SV.9684012	RIT	RIT.9684012
+A4-W69	1	SV Busbar E-Cu, WH: 50x10 mm, L: 1185 mm	SV.9684012	RIT	RIT.9684012
+A4-W70	1	SV Busbar E-Cu, WH: 50x10 mm, L: 1185 mm	SV.9684012	RIT	RIT.9684012
+A4-W71	1	SV Busbar E-Cu, WH: 50x10 mm, L: 1185 mm	SV.9684012	RIT	RIT.9684012
+A4-W72	1	SV Busbar E-Cu, WH: 50x10 mm, L: 1185 mm	SV.9684012	RIT	RIT.9684012
+A4-W73	1	SV Busbar E-Cu, WH: 50x10 mm, L: 1185 mm	SV.9684012	RIT	RIT.9684012
+A4-W74	1	SV Busbar E-Cu, WH: 50x10 mm, L: 1185 mm	SV.9684012	RIT	RIT.9684012
+A4-W75	1	SV Busbar E-Cu, WH: 50x10 mm, L: 1185 mm	SV.9684012	RIT	RIT.9684012
+A4-W76	1	SV Busbar E-Cu, WH: 50x10 mm, L: 1185 mm	SV.9684012	RIT	RIT.9684012
+A4-W77	1	SV Busbar E-Cu, WH: 50x10 mm, L: 1185 mm	SV.9684012	RIT	RIT.9684012
+A4-W78	1	SV Busbar E-Cu, WH: 50x10 mm, L: 1185 mm	SV.9684012	RIT	RIT.9684012

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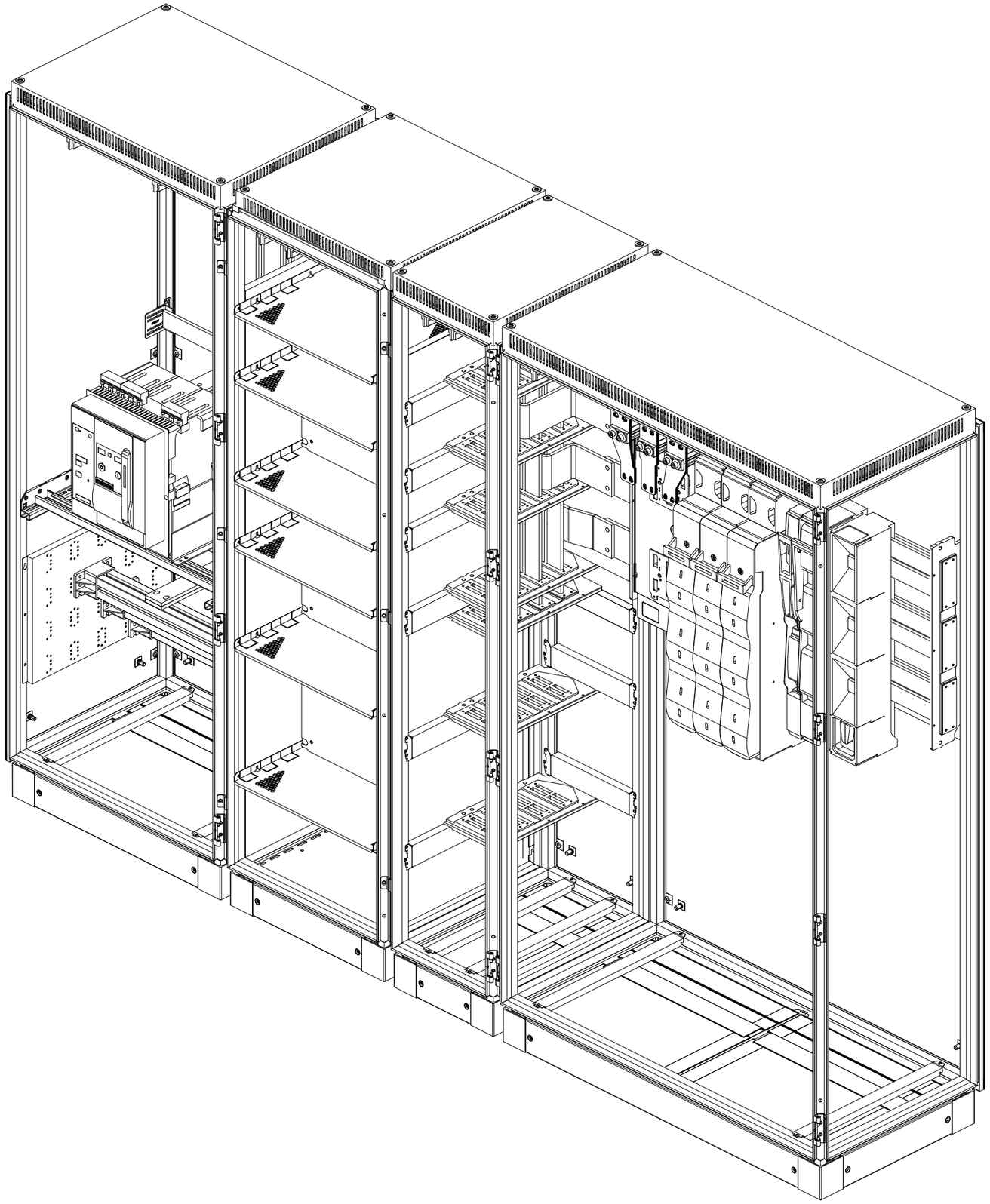
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Device tag list

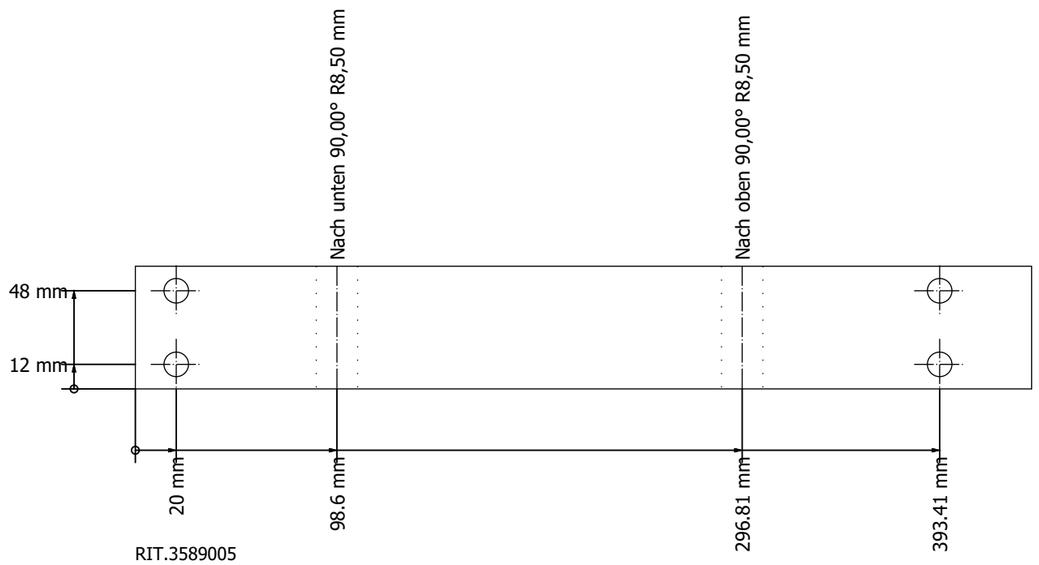
F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+A4-W80	1	SV Connector kit, for component adaptor, SV 9677700/705, (Eaton NZM, Siemens VL)	SV.9677740	RIT	RIT.9677740

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RIT.3589005
SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm
+A4-W10
438 mm

S9_Busbars - general_W10

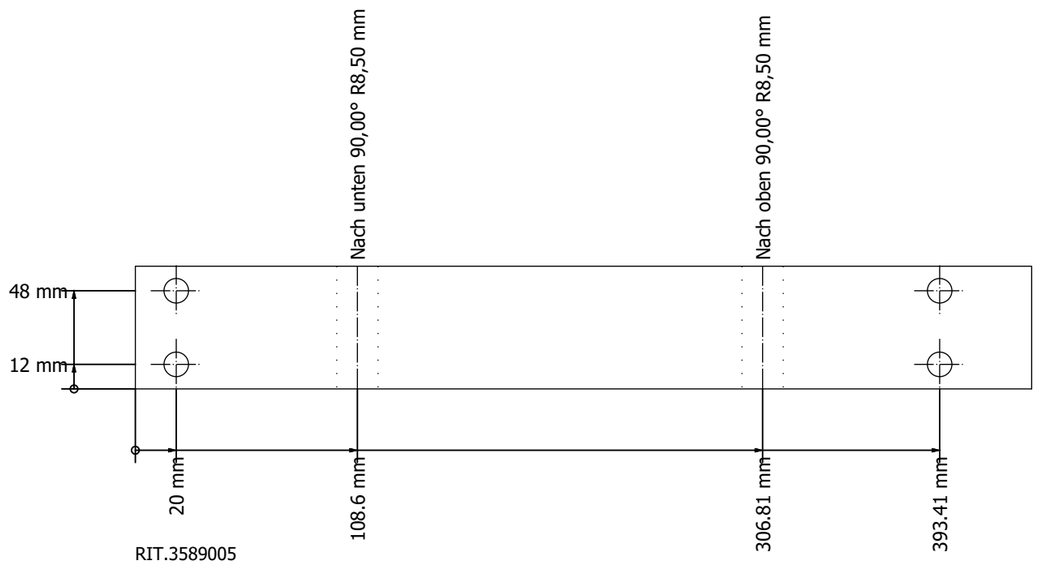
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3

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG		S9_Busbars - general_W10		=	&ETC1	
			Grinding machine	Drawing number						Model view	
									+A4	Page	2
Modification	Date	Name	Creator EPL	Approved by			Date 8/5/2021	Ed. EPL	Enclosure 3	Page 107 from 305	



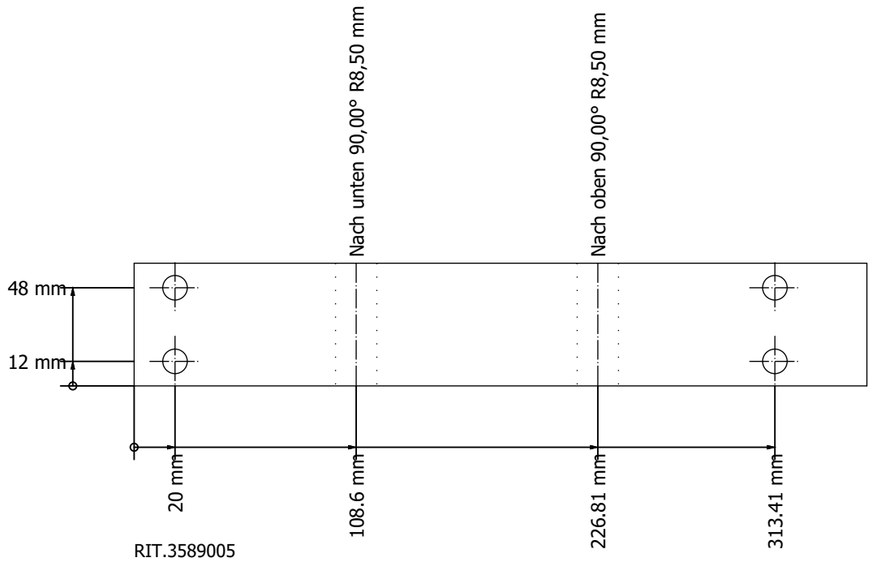
RIT.3589005
SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm
+A4-W11
438 mm

S9_Busbars - general_W11

2 1:3

4

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RIT.3589005
SV Busbar E-Cu, WH: 60x10 mm, L: 2400 mm
+A4-W12
358 mm

S9_Busbars - general_W12

3 1:3

+B1&EPA1/1

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Summarized parts list

F02_006

Order number	Quantity	Designation	Type number	Supplier	Pos.
2832629	1	Patch cable	FL CAT5 PATCH 10,0	PXC	1
00101264	4,02	ÖLFLEX® CLASSIC 100 4X0,75	ÖLFLEX® CLASSIC 100	LAPP	2
3SB30001HA20	1	22MM PLASTIC ROUND ACTUATOR:	3SB3000-1HA20	SIE	3
3SB34000B	1	ACTUATOR-/INDICATOR COMPONENT CONTACT BLOCK	3SB3400-0B	SIE	4
3SB34000C	1	ACTUATOR-/INDICATOR COMPONENT CONTACT BLOCK	3SB3400-0C	SIE	5
3SB3801-0AD3	1	ENCLOSURE FOR COMMAND DEVICES	3SB3801-0AD3	SIE	6
3SB3901-0AB	1	ACCESSORY / SPARE PART FOR PLASTIC-/METAL PROGRAM	3SB3901-0AB	SIE	7
1023958	1	Photoelectric retro-reflective sensor	WL9L-P430	SICK	8
K19DRS71M4/TH	1	Three-phase motor	K19DRS71M4/TH	SEW	9
543861	2	Proximity Sensor	SME-8M-DS-24V-K-0,3-M8D	FES	10
1376911	2	Standard cylinder	DSBC-40-250-PPSA-N3	FES	11
32964	2	Coupling piece	KSG-M12X1,25	FES	12
174370	2	Foot mounting	HNC-40	FES	13
9262	2	Rod eye	SGS-M12X1,25	FES	14
193148	4	One-way flow control valve	GRLA-1/4-QS-10-D	FES	15
153131	2	Push-in T connector	QST-10	FES	16

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+B1-WG1	1	Patch cable	FL CAT5 PATCH 10,0	PXC	PXC.2832629
+B1-WG2	1	ÖLFLEX® CLASSIC 100 4X0,75	ÖLFLEX® CLASSIC 100	LAPP	LAPP.00101264
=F+B1-SG1	1	22MM PLASTIC ROUND ACTUATOR:	3SB3000-1HA20	SIE	SIE.3SB3000-1HA20
=GL1+B1-BG1	1	Photoelectric retro-reflective sensor	WL9L-P430	SICK	SICK.1023958
=GL1+B1-MA1	1	Three-phase motor	K19DRS71M4/TH	SEW	SEW.K19DRS71M4/TH
=MM1+B1-BG1	1	Proximity Sensor	SME-8M-DS-24V-K-0,3-M8D	FES	FES.543861
=MM1+B1-BG2	1	Proximity Sensor	SME-8M-DS-24V-K-0,3-M8D	FES	FES.543861
=MM1+B1-MM1	1	Standard cylinder	DSBC-40-250-PPSA-N3	FES	FES.1376911
=MM1+B1-MM2	1	Standard cylinder	DSBC-40-250-PPSA-N3	FES	FES.1376911
=MM1+B1-RN1	1	One-way flow control valve	GRLA-1/4-QS-10-D	FES	FES.193148
=MM1+B1-RN2	1	One-way flow control valve	GRLA-1/4-QS-10-D	FES	FES.193148
=MM1+B1-RN3	1	One-way flow control valve	GRLA-1/4-QS-10-D	FES	FES.193148
=MM1+B1-RN4	1	One-way flow control valve	GRLA-1/4-QS-10-D	FES	FES.193148
=MM1+B1-XM1	1	Push-in T connector	QST-10	FES	FES.153131
=MM1+B1-XM2	1	Push-in T connector	QST-10	FES	FES.153131

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Cable overview

F10_003

Cable designation	from	to	Cable type	Conductors	ø	Length	Function text
+B1-WG1	=K1+B1.X1-KE1	=K1+A2-KE1	FL CAT5 PATCH 10,0	2x2			
+B1-WG2	=F+B1-SG1	+A2-XG4	ÖLFLEX® CLASSIC 100	4X	0,75	4,018	Emergency-stop "Work"

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Cable diagram

F09_002

Cable name	+B1-WG1		Cable type	FL CAT5 PATCH 10,0					
Function text			No. of conductors	2x2		Cross-section		Cable length	
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
				cable					

Cable name	+B1-WG2		Cable type	ÖLFLEX® CLASSIC 100					
Function text	Emergency-stop "Work"		No. of conductors	4X		Cross-section	0,75	Cable length	4,018
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Emergency-stop "Work"	=F+A2&EFS1/2.7	=F+B1-SG1	12	BU	+A2-XG4	1	=F+A2&EFS1/2.7	Emergency-stop "Work"	
=	=F+A2&EFS1/2.7	=F+B1-SG1	11	BN	+A2-XG4	2	=F+A2&EFS1/2.7	=	
=	=F+A2&EFS1/2.8	=F+B1-SG1	24	BK	+A2-XG4	3	=F+A2&EFS1/2.8	=	
=	=F+A2&EFS1/2.8	=F+B1-SG1	23	GY	+A2-XG4	4	=F+A2&EFS1/2.8	=	

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
=MM1+B1-MM1	1	Standard cylinder	DSBC-40-250-PPSA-N3	FES	FES.1376911
=MM1+B1-MM2	1	Standard cylinder	DSBC-40-250-PPSA-N3	FES	FES.1376911
=MM1+B1-RN1	1	One-way flow control valve	GRLA-1/4-QS-10-D	FES	FES.193148
=MM1+B1-RN2	1	One-way flow control valve	GRLA-1/4-QS-10-D	FES	FES.193148
=MM1+B1-RN3	1	One-way flow control valve	GRLA-1/4-QS-10-D	FES	FES.193148
=MM1+B1-RN4	1	One-way flow control valve	GRLA-1/4-QS-10-D	FES	FES.193148
=MM1+B1-XM1	1	Push-in T connector	QST-10	FES	FES.153131
=MM1+B1-XM2	1	Push-in T connector	QST-10	FES	FES.153131

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0	1	2	3	4	5	6	7	8	9

Connection list

F27_002

Connection	Target 1	Target 2	Color	Cross-section
17-ø	=MM1+B1-RN1:1	=MM1+B1-XM1:1	BU	10mm
18-ø	=MM1+B1-RN2:1	=MM1+B1-XM2:1	BU	10mm
14-ø	=MM1+B1-XM1:2	=MM1+B2.Y1-XM1:2	BU	10mm
16-ø	=MM1+B1-XM2:2	=MM1+B2.Y1-XM2:2	BU	10mm
19-ø	=MM1+B1-RN3:1	=MM1+B1-XM1:3	BU	10mm
20-ø	=MM1+B1-RN4:1	=MM1+B1-XM2:3	BU	10mm

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Summarized parts list

F02_006

Order number	Quantity	Designation	Type number	Supplier	Pos.
1539000	1	KX Terminal box, WHD: 400x400x120 mm, sheet steel	KX.1539000	RIT	1
8800750	4	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	2
2313150	2	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	3
1571800	1	KX Mounting plate, for KX, WH: 400x400 mm	KX.1571800	RIT	4
0011028	3,40	ÖLFLEX 140 5G1,5	ÖLFLEX® 140	LAPP	5
0014159	1,78	ÖLFLEX® CLASSIC 100 H 5G2,5	ÖLFLEX® CLASSIC 100 H	LAPP	6
2832629	1	Patch cable	FL CAT5 PATCH 10,0	PXC	7
22260257	1	S/A cable: M12 socket on free conductor end	AB-C3-2,0PUR-M12FS	LAPP	8
0036026	0,66	ÖLFLEX® SERVO 700 4G2,5+(2x0,75)FDF	ÖLFLEX® SERVO 700	LAPP	9
3022218	4	End clamp	CLIPFIX 35	PXC	10
3211813	14	Feed-through terminal block	PT 6	PXC	11
3211822	2	Ground modular terminal block	PT 6-PE	PXC	12
3024481	2	Partition plate	ATP-ST 6	PXC	13
3212044	2	End cover	D-PT 6	PXC	14
2703994	1	Bus coupler	IL PN BK DI8 DO4 2TX-PAC	PXC	15

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+B1.X1-U1	1	KX Terminal box, WHD: 400x400x120 mm, sheet steel	KX.1539000	RIT	RIT.1539000
+B1.X1-U103	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	RIT.8800750
+B1.X1-U104	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	RIT.8800750
+B1.X1-U105	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	RIT.8800750
+B1.X1-U106	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	RIT.8800750
+B1.X1-U107	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+B1.X1-U108	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+B1.X1-U109	1	KX Mounting plate, for KX, WH: 400x400 mm	KX.1571800	RIT	RIT.1571800
+B1.X1-WD1	1	ÖLFLEX 140 5G1,5	ÖLFLEX® 140	LAPP	LAPP.0011028
+B1.X1-WD2	1	ÖLFLEX® CLASSIC 100 H 5G2,5	ÖLFLEX® CLASSIC 100 H	LAPP	LAPP.0014159
+B1.X1-WG1	1	Patch cable	FL CAT5 PATCH 10,0	PXC	PXC.2832629
+B1.X1-WG2	1	S/A cable: M12 socket on free conductor end	AB-C3-2,0PUR-M12FS	LAPP	LAPP.22260257
+B1.X1-WZ1	1	ÖLFLEX® SERVO 700 4G2,5+(2x0,75)FDF	ÖLFLEX® SERVO 700	LAPP	LAPP.0036026
=K1+B1.X1-KE1	1	Bus coupler	IL PN BK DI8 DO4 2TX-PAC	PXC	PXC.2703994

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Cable overview

F10_003

Cable designation	from	to	Cable type	Conductors	ø	Length	Function text
+B1.X1-WD1	+B1.X1-XD1	+A2-XD7	ÖLFLEX® 140	5	1,5	3,404	Device power supply
+B1.X1-WD2	+A1-XD4	+B1.X1-XZ1	ÖLFLEX® CLASSIC 100 H	5G	2,5	1,778	Drive "Feed"
+B1.X1-WG2	+B1.X1-XZ1	=GL1+B1-BG1	ÖLFLEX® CLASSIC 100	3	0,34	0,657	Workpiece available: Feed
+B1.X1-WZ1	+B1.X1-XZ1	=GL1+B1-MA1	ÖLFLEX® SERVO 700	6G	2,5/0,75	0,657	Drive "Feed"

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Cable diagram

F09_002

Cable name	+B1.X1-WD1		Cable type	ÖLFLEX® 140					
Function text	Device power supply		No. of conductors	5		Cross-section	1,5	Cable length	3,404
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Device power supply	=K1+B1.X1&EFS1/1.2	+B1.X1-XD1	3	GNYE	+A2-XD7	3	=K1+B1.X1&EFS1/1.2	Device power supply	
=	=K1+B1.X1&EFS1/1.2	+B1.X1-XD1	1	1	+A2-XD7	1	=K1+B1.X1&EFS1/1.2	=	
=	=K1+B1.X1&EFS1/1.2	+B1.X1-XD1	2	2	+A2-XD7	2	=K1+B1.X1&EFS1/1.2	=	
24 V PLC inputs	=K1+B1.X1&EFS1/1.3	+B1.X1-XD1	4	3	+A2-XD7	4	=K1+B1.X1&EFS1/1.3	24 V PLC inputs	
=	=K1+B1.X1&EFS1/1.3	+B1.X1-XD1	5	4	+A2-XD7	5	=K1+B1.X1&EFS1/1.3	=	

Cable name	+B1.X1-WD2		Cable type	ÖLFLEX® CLASSIC 100 H					
Function text	Drive "Feed"		No. of conductors	5G		Cross-section	2,5	Cable length	1,778
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Drive "Feed"	=GL1+A1&EFS1/1.1	+A1-XD4	1	BU	+B1.X1-XZ1	1	=GL1+A1&EFS1/1.1	Drive "Feed"	
=	=GL1+A1&EFS1/1.1	+A1-XD4	2	BN	+B1.X1-XZ1	2	=GL1+A1&EFS1/1.1	=	
=	=GL1+A1&EFS1/1.1	+A1-XD4	4	BK	+B1.X1-XZ1	4	=GL1+A1&EFS1/1.1	=	
=	=GL1+A1&EFS1/1.1	+A1-XD4	3	GY	+B1.X1-XZ1	3	=GL1+A1&EFS1/1.1	=	
=	=GL1+A1&EFS1/1.1	+A1-XD4	5	GNYE	+B1.X1-XZ1	5	=GL1+A1&EFS1/1.1	=	

Cable name	+B1.X1-WG2		Cable type	ÖLFLEX® CLASSIC 100					
Function text	Workpiece available: Feed		No. of conductors	3		Cross-section	0,34	Cable length	0,657
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Workpiece available: Feed	=GL1+A2&EFS1/1.7	+B1.X1-XZ1	10	BN	=GL1+B1-BG1	1	=GL1+A2&EFS1/1.7	Workpiece available: Feed	
=	=GL1+A2&EFS1/1.7	+B1.X1-XZ1	9	BK	=GL1+B1-BG1	4	=GL1+A2&EFS1/1.7	=	
=	=GL1+A2&EFS1/1.8	+B1.X1-XZ1	11	BU	=GL1+B1-BG1	3	=GL1+A2&EFS1/1.7	=	

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Cable diagram

F09_002

Cable name	+B1.X1-WZ1			Cable type	ÖLFLEX® SERVO 700				
Function text	Drive "Feed"			No. of conductors	6G		Cross-section	2,5/0,75	Cable length 0,657
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Drive "Feed"	=GL1+A1&EFS1/1.1	+B1.X1-XZ1	1	3	=GL1+B1-MA1	U1	=GL1+A1&EFS1/1.1	Drive "Feed"	
=	=GL1+A1&EFS1/1.1	+B1.X1-XZ1	2	4	=GL1+B1-MA1	V1	=GL1+A1&EFS1/1.1	=	
=	=GL1+A1&EFS1/1.1	+B1.X1-XZ1	3	5	=GL1+B1-MA1	W1	=GL1+A1&EFS1/1.1	=	
=	=GL1+A1&EFS1/1.1	+B1.X1-XZ1	5	GNYE	=GL1+B1-MA1	PE	=GL1+A1&EFS1/1.1	=	
=	=GL1+A1&EFS1/1.2	+B1.X1-XZ1	6	1	=GL1+B1-MA1	11	=GL1+A1&EFS1/1.2		
=	=GL1+A1&EFS1/1.2	+B1.X1-XZ1	7	2	=GL1+B1-MA1	12	=GL1+A1&EFS1/1.2		
=	=GL1+A1&EFS1/1.2	+B1.X1-XZ1	8	SH1	+B1.X1-WZ1	SH1	=GL1+A1&EFS1/1.1	Drive "Feed"	

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Terminal-strip overview

F14_002

Terminal strip	Function text	Terminals					Terminal diagram page
		first	last	Total PE	Total N	Total number	
+B1.X1-XD1	Power supply PLC	1	5	1	0	5	+B1.X1&EMA2/1
+B1.X1-XZ1	Motor terminals	1	11	1	0	11	+B1.X1&EMA2/2

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Terminal diagram

F13_008

1	+B1.X1-WD1 ÖLFLEX® 140 5x1,5 mm² 3,404 m
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

Strip

+B1.X1-XD1

Power supply PLC

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Device power supply	1											+A2-XD7	1	1	'		=K1+B1.X1-KE1	1:1.2												=K1+B1.X1&EFS1/1.2
=	2											+A2-XD7	2	2	'		=K1+B1.X1-KE1	1:1.3												=K1+B1.X1&EFS1/1.2
=	GNYE											+A2-XD7	3	3 ⏚	'		=K1+B1.X1-KE1	1:1.4												=K1+B1.X1&EFS1/1.2
24 V PLC inputs	3											+A2-XD7	4	4	'		=K1+B1.X1-KE1	1:2.2												=K1+B1.X1&EFS1/1.3
=	4											+A2-XD7	5	5	'		=K1+B1.X1-KE1	1:2.3												=K1+B1.X1&EFS1/1.3

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +B1.X1-XD1	= / &EMA2
			Grinding machine	Drawing number			Terminal diagram
							+B1.X1 / Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL	Station "Feed" / Page 122 from 305

Terminal diagram

F13_008

1	+B1.X1-WZ1	ÖLFLEX® SERVO 700 6G2,5/0,75 mm² 0,657 m
2	+B1.X1-WG2	ÖLFLEX® CLASSIC 100 3x0,34 mm² 0,657 m
3		
4		
5		
6		
7		
8		
9		
10		
11		

Strip

+B1.X1-XZ1

Motor terminals

1	+B1.X1-WD2	ÖLFLEX® CLASSIC 100 H 5G2,5 mm² 1,778 m
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Drive "Feed"	3											=GL1+B1-MA1	U1	1	'		+A1-XD4	1											BU	=GL1+A1&EFS1/1.1
=	4											=GL1+B1-MA1	V1	2	'		+A1-XD4	2											BN	=GL1+A1&EFS1/1.1
=	5											=GL1+B1-MA1	W1	3	'		+A1-XD4	3											GY	=GL1+A1&EFS1/1.1
=														4	'		+A1-XD4	4											BK	=GL1+A1&EFS1/1.1
=	GNYE											=GL1+B1-MA1	PE	5 ⏚			+A1-XD4	5											GNYE	=GL1+A1&EFS1/1.1
=	1											=GL1+B1-MA1	11	6	'		=K1+B1.X1-KE1	3:1.2												=GL1+A1&EFS1/1.2
=	2											=GL1+B1-MA1	12	7	'	%IX7.0	=K1+B1.X1-KE1	3:1.1												=GL1+A1&EFS1/1.2
=	SH1											+B1.X1-WZ1	SH1	8	'															=GL1+A1&EFS1/1.2
Workpiece available: Feed		BK										=GL1+B1-BG1	4	9	'	%IX7.2	=K1+B1.X1-KE1	3:2.1												=GL1+A2&EFS1/1.7
=		BN										=GL1+B1-BG1	1	10	'		=K1+B1.X1-KE1	3:2.2												=GL1+A2&EFS1/1.7
=		BU										=GL1+B1-BG1	3	11	'		=K1+B1.X1-KE1	3:2.3												=GL1+A2&EFS1/1.8

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +B1.X1-XZ1	= / &EMA2
			Grinding machine	Drawing number			Terminal diagram
							+B1.X1 / Page 2
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL	Station "Feed" / Page 123 from 305

Summarized parts list

F02_006

Order number	Quantity	Designation	Type number	Supplier	Pos.
00101264	2,16	ÖLFLEX® CLASSIC 100 4X0,75	ÖLFLEX® CLASSIC 100	LAPP	1
3SB30001HA20	1	22MM PLASTIC ROUND ACTUATOR:	3SB3000-1HA20	SIE	2
3SB34000B	1	ACTUATOR-/INDICATOR COMPONENT CONTACT BLOCK	3SB3400-0B	SIE	3
3SB34000C	1	ACTUATOR-/INDICATOR COMPONENT CONTACT BLOCK	3SB3400-0C	SIE	4
3SB3801-0AD3	1	ENCLOSURE FOR COMMAND DEVICES	3SB3801-0AD3	SIE	5
3SB3901-0AB	1	ACCESSORY / SPARE PART FOR PLASTIC-/METAL PROGRAM	3SB3901-0AB	SIE	6
1023958	3	Photoelectric retro-reflective sensor	WL9L-P430	SICK	7
DRN90L4/FE/TH	1	Three-phase motor	DRN90L4/FE/TH	SEW	8
543861	4	Proximity Sensor	SME-8M-DS-24V-K-0,3-M8D	FES	9
1376911	2	Standard cylinder	DSBC-40-250-PPSA-N3	FES	10
32964	2	Coupling piece	KSG-M12X1,25	FES	11
174370	2	Foot mounting	HNC-40	FES	12
9262	2	Rod eye	SGS-M12X1,25	FES	13
193147	4	One-way flow control valve	GRLA-1/4-QS-8-D	FES	14
K19DRS71M4/TH	2	Three-phase motor	K19DRS71M4/TH	SEW	15

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+B2-WG1	1	ÖLFLEX® CLASSIC 100 4X0,75	ÖLFLEX® CLASSIC 100	LAPP	LAPP.00101264
=F+B2-SG1	1	22MM PLASTIC ROUND ACTUATOR:	3SB3000-1HA20	SIE	SIE.3SB3000-1HA20
=GL2+B2-BG1	1	Photoelectric retro-reflective sensor	WL9L-P430	SICK	SICK.1023958
=GL2+B2-MA1	1	Three-phase motor	DRN90L4/FE/TH	SEW	SEW.DRN90L4/FE/TH
=MM2+B2-BG1	1	Proximity Sensor	SME-8M-DS-24V-K-0,3-M8D	FES	FES.543861
=MM2+B2-BG2	1	Proximity Sensor	SME-8M-DS-24V-K-0,3-M8D	FES	FES.543861
=MM2+B2-MM1	1	Standard cylinder	DSBC-40-250-PPSA-N3	FES	FES.1376911
=MM2+B2-RN1	1	One-way flow control valve	GRLA-1/4-QS-8-D	FES	FES.193147
=MM2+B2-RN2	1	One-way flow control valve	GRLA-1/4-QS-8-D	FES	FES.193147
=MM3+B2-BG1	1	Proximity Sensor	SME-8M-DS-24V-K-0,3-M8D	FES	FES.543861
=MM3+B2-BG2	1	Proximity Sensor	SME-8M-DS-24V-K-0,3-M8D	FES	FES.543861
=MM3+B2-MM1	1	Standard cylinder	DSBC-40-250-PPSA-N3	FES	FES.1376911
=MM3+B2-RN1	1	One-way flow control valve	GRLA-1/4-QS-8-D	FES	FES.193147
=MM3+B2-RN2	1	One-way flow control valve	GRLA-1/4-QS-8-D	FES	FES.193147
=TM1+B2-BG1	1	Photoelectric retro-reflective sensor	WL9L-P430	SICK	SICK.1023958
=TM1+B2-MA1	1	Three-phase motor	K19DRS71M4/TH	SEW	SEW.K19DRS71M4/TH
=TM2+B2-BG1	1	Photoelectric retro-reflective sensor	WL9L-P430	SICK	SICK.1023958
=TM2+B2-MA1	1	Three-phase motor	K19DRS71M4/TH	SEW	SEW.K19DRS71M4/TH

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Cable overview

F10_003

Cable designation	from	to	Cable type	Conductors	ø	Length	Function text
+B2-WG1	=F+B2-SG1	+A2-XG4	ÖLFLEX® CLASSIC 100	4X	0,75	2,158	Emergency-stop "Feed"

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Cable diagram

F09_002

Cable name	+B2-WG1		Cable type	ÖLFLEX® CLASSIC 100					
Function text	Emergency-stop "Feed"		No. of conductors	4X		Cross-section 0,75		Cable length 2,158	
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Emergency-stop "Feed"	=F+A2&EFS1/3.1	=F+B2-SG1	12	BU	+A2-XG4	5	=F+A2&EFS1/3.1	Emergency-stop "Feed"	
=	=F+A2&EFS1/3.1	=F+B2-SG1	11	BN	+A2-XG4	6	=F+A2&EFS1/3.1	=	
=	=F+A2&EFS1/3.2	=F+B2-SG1	24	BK	+A2-XG4	7	=F+A2&EFS1/3.2	=	
=	=F+A2&EFS1/3.2	=F+B2-SG1	23	GY	+A2-XG4	8	=F+A2&EFS1/3.2	=	

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
=MM2+B2-MM1	1	Standard cylinder	DSBC-40-250-PPSA-N3	FES	FES.1376911
=MM2+B2-RN1	1	One-way flow control valve	GRLA-1/4-QS-8-D	FES	FES.193147
=MM2+B2-RN2	1	One-way flow control valve	GRLA-1/4-QS-8-D	FES	FES.193147
=MM3+B2-MM1	1	Standard cylinder	DSBC-40-250-PPSA-N3	FES	FES.1376911
=MM3+B2-RN1	1	One-way flow control valve	GRLA-1/4-QS-8-D	FES	FES.193147
=MM3+B2-RN2	1	One-way flow control valve	GRLA-1/4-QS-8-D	FES	FES.193147

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0	1	2	3	4	5	6	7	8	9

Connection list

F27_002

Connection	Target 1	Target 2	Color	Cross-section
22-ø	=MM2+B2-RN1:1	=MM2+B2.Y1-XM1:2	BU	8mm
24-ø	=MM2+B2-RN2:1	=MM2+B2.Y1-XM2:2	BU	8mm
26-ø	=MM3+B2-RN1:1	=MM3+B2.Y1-XM1:2	BU	8mm
28-ø	=MM3+B2-RN2:1	=MM3+B2.Y1-XM2:2	BU	8mm

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Summarized parts list

F02_006

Order number	Quantity	Designation	Type number	Supplier	Pos.
1511000	1	KX Terminal box, WHD: 400x400x120 mm, sheet steel	KX.1511000	RIT	1
8800750	4	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	2
2313150	2	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	3
1571800	1	KX Mounting plate, for KX, WH: 400x400 mm	KX.1571800	RIT	4
0011028	1,86	ÖLFLEX 140 5G1,5	ÖLFLEX® 140	LAPP	5
0014159	1,92	ÖLFLEX® CLASSIC 100 H 5G2,5	ÖLFLEX® CLASSIC 100 H	LAPP	6
1404303	1	Network cable	VS-MSD-IP20-93E/10,0	PXC	7
22260257	3	S/A cable: M12 socket on free conductor end	AB-C3-2,0PUR-M12FS	LAPP	8
0036026	0,34	ÖLFLEX® SERVO 700 4G2,5+(2x0,75)FDF	ÖLFLEX® SERVO 700	LAPP	9
0036061	5,02	ÖLFLEX® FD ROBUST 756 C 4 G 2,5+(2x1)	ÖLFLEX® ROBUST FD 756 C	LAPP	10
3211813	30	Feed-through terminal block	PT 6	PXC	11
3022218	4	End clamp	CLIPFIX 35	PXC	12
3211822	4	Ground modular terminal block	PT 6-PE	PXC	13
3024481	7	Partition plate	ATP-ST 6	PXC	14
3212044	2	End cover	D-PT 6	PXC	15
3211814	4	Feed-through terminal block	PT 6 BK	PXC	16
2703994	1	Bus coupler	IL PN BK DI8 DO4 2TX-PAC	PXC	17
2861250	1	Inline terminal	IB IL 24 DI 16-PAC	PXC	18

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+B2.X1-U1	1	KX Terminal box, WHD: 400x400x120 mm, sheet steel	KX.1511000	RIT	RIT.1511000
+B2.X1-U102	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	RIT.8800750
+B2.X1-U103	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	RIT.8800750
+B2.X1-U104	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	RIT.8800750
+B2.X1-U105	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	RIT.8800750
+B2.X1-U106	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+B2.X1-U107	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+B2.X1-U108	1	KX Mounting plate, for KX, WH: 400x400 mm	KX.1571800	RIT	RIT.1571800
+B2.X1-WD1	1	ÖLFLEX 140 5G1,5	ÖLFLEX® 140	LAPP	LAPP.0011028
+B2.X1-WD2	1	ÖLFLEX® CLASSIC 100 H 5G2,5	ÖLFLEX® CLASSIC 100 H	LAPP	LAPP.0014159
+B2.X1-WG1	1	Network cable	VS-MSD-IP20-93E/10,0	PXC	PXC.1404303
+B2.X1-WG2	1	S/A cable: M12 socket on free conductor end	AB-C3-2,0PUR-M12FS	LAPP	LAPP.22260257
+B2.X1-WG3	1	S/A cable: M12 socket on free conductor end	AB-C3-2,0PUR-M12FS	LAPP	LAPP.22260257
+B2.X1-WG4	1	S/A cable: M12 socket on free conductor end	AB-C3-2,0PUR-M12FS	LAPP	LAPP.22260257
+B2.X1-WZ1	1	ÖLFLEX® SERVO 700 4G2,5+(2x0,75)FDF	ÖLFLEX® SERVO 700	LAPP	LAPP.0036026
+B2.X1-WZ2	1	ÖLFLEX® FD ROBUST 756 C 4 G 2,5+(2x1)	ÖLFLEX® ROBUST FD 756 C	LAPP	LAPP.0036061
+B2.X1-WZ3	1	ÖLFLEX® FD ROBUST 756 C 4 G 2,5+(2x1)	ÖLFLEX® ROBUST FD 756 C	LAPP	LAPP.0036061
+B2.X1-WZ4	1	ÖLFLEX® FD ROBUST 756 C 4 G 2,5+(2x1)	ÖLFLEX® ROBUST FD 756 C	LAPP	LAPP.0036061
+B2.X1-WZ5	1	ÖLFLEX® FD ROBUST 756 C 4 G 2,5+(2x1)	ÖLFLEX® ROBUST FD 756 C	LAPP	LAPP.0036061
=K1+B2.X1-KE1	1	Bus coupler	IL PN BK DI8 DO4 2TX-PAC	PXC	PXC.2703994
=K1+B2.X1-KE2	1	Inline terminal	IB IL 24 DI 16-PAC	PXC	PXC.2861250

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Cable overview

F10_003

Cable designation	from	to	Cable type	Conductors	ø	Length	Function text
+B2.X1-WD1	+B2.X1-XD1	+A2-XD7	ÖLFLEX® 140	5	1,5	1,864	Device power supply
+B2.X1-WD2	+A1-XD4	+B2.X1-XZ1	ÖLFLEX® CLASSIC 100 H	5G	2,5	1,918	Drive "Work"
+B2.X1-WG2	+B2.X1-XZ1	=GL2+B2-BG1	ÖLFLEX® CLASSIC 100	3	0,34	0,337	Workpiece available: Work
+B2.X1-WG3	+B2.X1-XZ1	=TM1+B2-BG1	ÖLFLEX® CLASSIC 100	3	0,34	0,337	Workpiece available: Grind. left
+B2.X1-WG4	+B2.X1-XZ1	=TM2+B2-BG1	ÖLFLEX® CLASSIC 100	3	0,34	0,337	Workpiece available: Grind. right
+B2.X1-WZ1	+B2.X1-XZ1	=GL2+B2-MA1	ÖLFLEX® SERVO 700	6G	2,5/0,75	0,337	Drive "Work"
+B2.X1-WZ2	+B2.X1-XZ1	=TM1+A1-TA1	ÖLFLEX® ROBUST FD 756 C	6G	2,5/1	2,173	Drive "Grinding, left"
+B2.X1-WZ3	+B2.X1-XZ1	=TM1+B2-MA1	ÖLFLEX® ROBUST FD 756 C	6G	2,5/1	0,337	=
+B2.X1-WZ4	+B2.X1-XZ1	=TM2+A1-TA1	ÖLFLEX® ROBUST FD 756 C	6G	2,5/1	2,173	Drive, "Grinding, right"
+B2.X1-WZ5	+B2.X1-XZ1	=TM2+B2-MA1	ÖLFLEX® ROBUST FD 756 C	6G	2,5/1	0,337	=

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Cable diagram

F09_002

Cable name	+B2.X1-WD1		Cable type	ÖLFLEX® 140					
Function text	Device power supply		No. of conductors	5		Cross-section	1,5	Cable length	1,864
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Device power supply	=K1+B2.X1&EFS1/1.2	+B2.X1-XD1	3	GNYE	+A2-XD7	8	=K1+B2.X1&EFS1/1.2	Device power supply	
=	=K1+B2.X1&EFS1/1.2	+B2.X1-XD1	1	1	+A2-XD7	6	=K1+B2.X1&EFS1/1.2	=	
=	=K1+B2.X1&EFS1/1.2	+B2.X1-XD1	2	2	+A2-XD7	7	=K1+B2.X1&EFS1/1.2	=	
24 V PLC inputs	=K1+B2.X1&EFS1/1.3	+B2.X1-XD1	4	3	+A2-XD7	9	=K1+B2.X1&EFS1/1.3	24 V PLC inputs	
=	=K1+B2.X1&EFS1/1.3	+B2.X1-XD1	5	4	+A2-XD7	10	=K1+B2.X1&EFS1/1.3	=	

Cable name	+B2.X1-WD2		Cable type	ÖLFLEX® CLASSIC 100 H					
Function text	Drive "Work"		No. of conductors	5G		Cross-section	2,5	Cable length	1,918
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Drive "Work"	=GL2+A1&EFS1/1.1	+A1-XD4	6	BU	+B2.X1-XZ1	1	=GL2+A1&EFS1/1.1	Drive "Work"	
=	=GL2+A1&EFS1/1.1	+A1-XD4	7	BN	+B2.X1-XZ1	2	=GL2+A1&EFS1/1.1	=	
=	=GL2+A1&EFS1/1.1	+A1-XD4	9	BK	+B2.X1-XZ1	4	=GL2+A1&EFS1/1.1	=	
=	=GL2+A1&EFS1/1.1	+A1-XD4	8	GY	+B2.X1-XZ1	3	=GL2+A1&EFS1/1.1	=	
=	=GL2+A1&EFS1/1.1	+A1-XD4	10	GNYE	+B2.X1-XZ1	5	=GL2+A1&EFS1/1.1	=	

Cable name	+B2.X1-WG2		Cable type	ÖLFLEX® CLASSIC 100					
Function text	Workpiece available: Work		No. of conductors	3		Cross-section	0,34	Cable length	0,337
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Workpiece available: Work	=GL2+A2&EFS1/2.7	+B2.X1-XZ1	10	BN	=GL2+B2-BG1	1	=GL2+A2&EFS1/2.7	Workpiece available: Work	
=	=GL2+A2&EFS1/2.7	+B2.X1-XZ1	9	BK	=GL2+B2-BG1	4	=GL2+A2&EFS1/2.7	=	
=	=GL2+A2&EFS1/2.8	+B2.X1-XZ1	11	BU	=GL2+B2-BG1	3	=GL2+A2&EFS1/2.7	=	

Cable name	+B2.X1-WG3		Cable type	ÖLFLEX® CLASSIC 100					
Function text	Workpiece available: Grind. left		No. of conductors	3		Cross-section	0,34	Cable length	0,337
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Workpiece available: Grind. left	=TM1+A2&EFS1/2.1	+B2.X1-XZ1	21	BN	=TM1+B2-BG1	1	=TM1+A2&EFS1/2.1	Workpiece available: Grind. left	
=	=TM1+A2&EFS1/2.1	+B2.X1-XZ1	20	BK	=TM1+B2-BG1	4	=TM1+A2&EFS1/2.1	=	
=	=TM1+A2&EFS1/2.1	+B2.X1-XZ1	22	BU	=TM1+B2-BG1	3	=TM1+A2&EFS1/2.1	=	

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Cable diagram

F09_002

Cable name	+B2.X1-WG4		Cable type	ÖLFLEX® CLASSIC 100					
Function text	Workpiece available: Grind. right		No. of conductors	3		Cross-section	0,34	Cable length	0,337
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Workpiece available: Grind. right	=TM2+A2&EFS1/2.1	+B2.X1-XZ1	32	BN	=TM2+B2-BG1	1	=TM2+A2&EFS1/2.1	Workpiece available: Grind. right	
=	=TM2+A2&EFS1/2.1	+B2.X1-XZ1	31	BK	=TM2+B2-BG1	4	=TM2+A2&EFS1/2.1	=	
=	=TM2+A2&EFS1/2.1	+B2.X1-XZ1	33	BU	=TM2+B2-BG1	3	=TM2+A2&EFS1/2.1	=	

Cable name	+B2.X1-WZ1		Cable type	ÖLFLEX® SERVO 700					
Function text	Drive "Work"		No. of conductors	6G		Cross-section	2,5/0,75	Cable length	0,337
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Drive "Work"	=GL2+A1&EFS1/1.1	+B2.X1-XZ1	1	3	=GL2+B2-MA1	U1	=GL2+A1&EFS1/1.1	Drive "Work"	
=	=GL2+A1&EFS1/1.1	+B2.X1-XZ1	2	4	=GL2+B2-MA1	V1	=GL2+A1&EFS1/1.1	=	
=	=GL2+A1&EFS1/1.1	+B2.X1-XZ1	3	5	=GL2+B2-MA1	W1	=GL2+A1&EFS1/1.1	=	
=	=GL2+A1&EFS1/1.1	+B2.X1-XZ1	5	GNYE	=GL2+B2-MA1	PE	=GL2+A1&EFS1/1.1	=	
=	=GL2+A1&EFS1/1.2	+B2.X1-XZ1	6	1	=GL2+B2-MA1	11	=GL2+A1&EFS1/1.2		
=	=GL2+A1&EFS1/1.2	+B2.X1-XZ1	7	2	=GL2+B2-MA1	12	=GL2+A1&EFS1/1.2		
=	=GL2+A1&EFS1/1.2	+B2.X1-XZ1	8	SH1	+B2.X1-WZ1	SH1	=GL2+A1&EFS1/1.1	Drive "Work"	

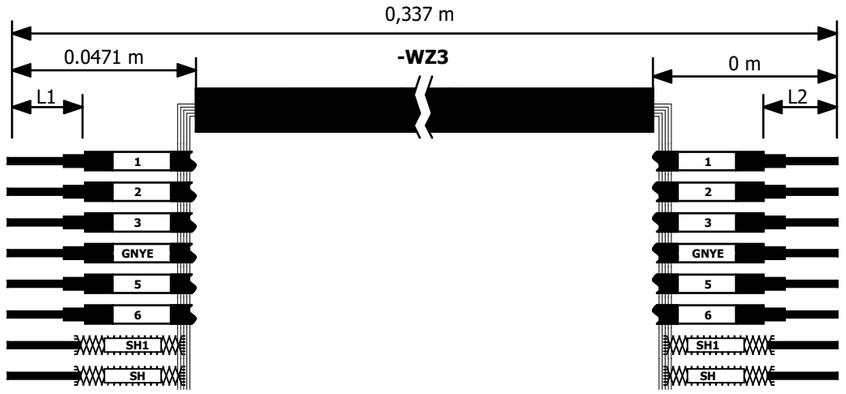
Cable name	+B2.X1-WZ2		Cable type	ÖLFLEX® ROBUST FD 756 C					
Function text	Drive "Grinding, left"		No. of conductors	6G		Cross-section	2,5/1	Cable length	2,173
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Drive "Grinding, left"	=TM1+A1&EFS1/1.1	+B2.X1-XZ1	12	1	=TM1+A1-TA1	X2:U	=TM1+A1&EFS1/1.1	Drive "Grinding, left"	
=	=TM1+A1&EFS1/1.1	+B2.X1-XZ1	13	2	=TM1+A1-TA1	X2:V	=TM1+A1&EFS1/1.1	=	
=	=TM1+A1&EFS1/1.1	+B2.X1-XZ1	14	3	=TM1+A1-TA1	X2:W	=TM1+A1&EFS1/1.1	=	
=	=TM1+A1&EFS1/1.1	+B2.X1-XZ1	15	GNYE	=TM1+A1-TA1	X2:PE3	=TM1+A1&EFS1/1.1	=	
=	=TM1+A1&EFS1/1.2	+B2.X1-XZ1	17	5	=TM1+A1-TA1	X12:6	=TM1+A1&EFS1/1.2		
=	=TM1+A1&EFS1/1.2	+B2.X1-XZ1	18	6	=TM1+A1-TA1	X12:7	=TM1+A1&EFS1/1.2		
=	=TM1+A1&EFS1/1.2	+B2.X1-XZ1	16	SH1	=TM1+A1-TA1	X2:PE3	=TM1+A1&EFS1/1.1	Drive "Grinding, left"	
=	=TM1+A1&EFS1/1.2	+B2.X1-XZ1	19	SH	=TM1+A1-TA1	X2:PE3	=TM1+A1&EFS1/1.1	=	

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0	1	2	3	4	5	6	7	8	9

Cable name +B2.X1-WZ3
Cable type ÖLFLEX® ROBUST FD 756 C 6G2,5/1 mm²
Free conductors

Cable parts LAPP.0036061
Order number 0036061



Location designation	Source	Function text source	Stopper	L1 [mm]	Part number
Station "Work"	+B2.X1-XZ1:12	Drive "Grinding, left"		10 mm	
Station "Work"	+B2.X1-XZ1:13	=		10 mm	
Station "Work"	+B2.X1-XZ1:14	=		10 mm	
Station "Work"	+B2.X1-XZ1:15	=		10 mm	
Station "Work"	+B2.X1-XZ1:17	=			
Station "Work"	+B2.X1-XZ1:18	=			
Station "Work"	+B2.X1-XZ1:16	=			
Station "Work"	+B2.X1-XZ1:19	=			

Part number	L2 [mm]	Stopper	Function text target	Target	Location designation
	10 mm		Drive "Grinding, left"	=TM1+B2-MA1:U1	*Station "Work"*
	10 mm		=	=TM1+B2-MA1:V1	*Station "Work"*
	10 mm		=	=TM1+B2-MA1:W1	*Station "Work"*
	10 mm		=	=TM1+B2-MA1:PE	*Station "Work"*
			=	=TM1+B2-MA1:11	*Station "Work"*
			=	=TM1+B2-MA1:12	*Station "Work"*
			=	+B2.X1-WZ3:SH1	*Station "Work"*
			=	+B2.X1-WZ3:SH	*Station "Work"*

F09_004

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Cable diagram:WZ3		=	&EMB2
			Grinding machine	Drawing number					Cable diagram
								+B2.X1	Page 2
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Station "Work"	Page 135 from 305

Cable diagram

F09_002

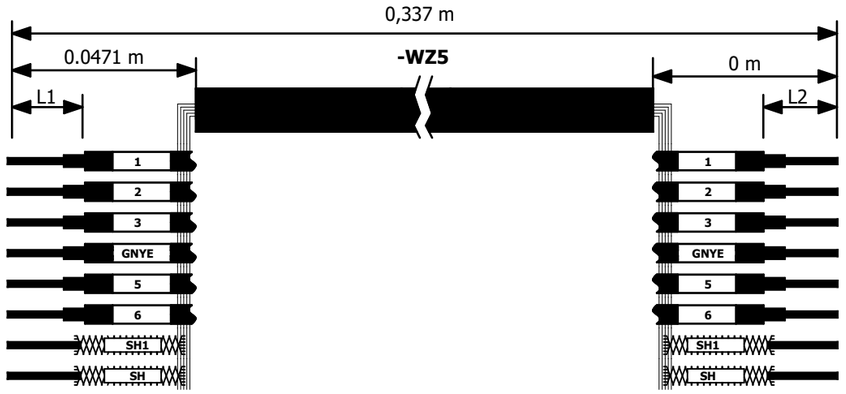
Cable name	+B2.X1-WZ4		Cable type	ÖLFLEX® ROBUST FD 756 C					
Function text	Drive, "Grinding, right"		No. of conductors	6G		Cross-section	2,5/1	Cable length	2,173
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Drive, "Grinding, right"	=TM2+A1&EFS1/1.1	+B2.X1-XZ1	23	1	=TM2+A1-TA1	X2:U	=TM2+A1&EFS1/1.1	Drive, "Grinding, right"	
=	=TM2+A1&EFS1/1.1	+B2.X1-XZ1	24	2	=TM2+A1-TA1	X2:V	=TM2+A1&EFS1/1.1	=	
=	=TM2+A1&EFS1/1.1	+B2.X1-XZ1	25	3	=TM2+A1-TA1	X2:W	=TM2+A1&EFS1/1.1	=	
=	=TM2+A1&EFS1/1.1	+B2.X1-XZ1	26	GNYE	=TM2+A1-TA1	X2:PE3	=TM2+A1&EFS1/1.1	=	
=	=TM2+A1&EFS1/1.2	+B2.X1-XZ1	28	5	=TM2+A1-TA1	X12:6	=TM2+A1&EFS1/1.2		
=	=TM2+A1&EFS1/1.2	+B2.X1-XZ1	29	6	=TM2+A1-TA1	X12:7	=TM2+A1&EFS1/1.2		
=	=TM2+A1&EFS1/1.2	+B2.X1-XZ1	27	SH1	=TM2+A1-TA1	X2:PE3	=TM2+A1&EFS1/1.1	Drive, "Grinding, right"	
=	=TM2+A1&EFS1/1.2	+B2.X1-XZ1	30	SH	=TM2+A1-TA1	X2:PE3	=TM2+A1&EFS1/1.1	=	

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0	1	2	3	4	5	6	7	8	9

Cable name +B2.X1-WZ5
Cable type ÖLFLEX® ROBUST FD 756 C 6G2,5/1 mm²
Free conductors

Cable parts LAPP.0036061
Order number 0036061



Location designation	Source	Function text source	Stopper	L1 [mm]	Part number
Station "Work"	+B2.X1-XZ1:23	Drive, "Grinding, right"		10 mm	
Station "Work"	+B2.X1-XZ1:24	=		10 mm	
Station "Work"	+B2.X1-XZ1:25	=		10 mm	
Station "Work"	+B2.X1-XZ1:26	=		10 mm	
Station "Work"	+B2.X1-XZ1:28	=			
Station "Work"	+B2.X1-XZ1:29	=			
Station "Work"	+B2.X1-XZ1:27	=			
Station "Work"	+B2.X1-XZ1:30	=			

Part number	L2 [mm]	Stopper	Function text target	Target	Location designation
	10 mm		Drive, "Grinding, right"	=TM2+B2-MA1:U1	Station "Work"
	10 mm		=	=TM2+B2-MA1:V1	Station "Work"
	10 mm		=	=TM2+B2-MA1:W1	Station "Work"
	10 mm		=	=TM2+B2-MA1:PE	Station "Work"
			=	=TM2+B2-MA1:11	Station "Work"
			=	=TM2+B2-MA1:12	Station "Work"
			=	+B2.X1-WZ5:SH1	Station "Work"
			=	+B2.X1-WZ5:SH	Station "Work"

F09_004

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Cable diagram:WZ5		=	&EMB2
			Grinding machine	Drawing number					Cable diagram
								+B2.X1	Page 4
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Station "Work"	Page 137 from 305

Terminal-strip overview

F14_002

Terminal strip	Function text	Terminals					Terminal diagram page
		first	last	Total PE	Total N	Total number	
+B2.X1-XD1	Power supply PLC	1	5	1	0	5	+B2.X1&EMA2/1
+B2.X1-XZ1	Motor terminals	1	33	3	0	33	+B2.X1&EMA2/2

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Terminal diagram

F13_008

1	+B2.X1-WD1 ÖLFLEX® 140 5x1,5 mm² 1,864 m
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

Strip

+B2.X1-XD1

Power supply PLC

1
2
3
4
5
6
7
8
9
10
11

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Device power supply	1											+A2-XD7	6	1	'		=K1+B2.X1-KE1	1:1.2												=K1+B2.X1&EFS1/1.2
=	2											+A2-XD7	7	2	'		=K1+B2.X1-KE1	1:1.3												=K1+B2.X1&EFS1/1.2
=	GNYE											+A2-XD7	8	3 ⏚	'		=K1+B2.X1-KE1	1:1.4												=K1+B2.X1&EFS1/1.2
24 V PLC inputs	3											+A2-XD7	9	4	'		=K1+B2.X1-KE1	1:2.2												=K1+B2.X1&EFS1/1.3
=	4											+A2-XD7	10	5	'		=K1+B2.X1-KE1	1:2.3												=K1+B2.X1&EFS1/1.3

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +B2.X1-XD1	= / &EMA2
			Grinding machine	Drawing number			Terminal diagram
						+B2.X1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL	Station "Work" / Page 139 from 305

Terminal diagram

F13_008

1	+B2.X1-WZ1	ÖLFLEX® SERVO 700 6G2,5/0,75 mm² 0,337 m
2	+B2.X1-WG2	ÖLFLEX® CLASSIC 100 3x0,34 mm² 0,337 m
3	+B2.X1-WZ3	ÖLFLEX® ROBUST FD 756 C 6G2,5/1 mm² 0,337 m
4	+B2.X1-WG3	ÖLFLEX® CLASSIC 100 3x0,34 mm² 0,337 m
5	+B2.X1-WZ5	ÖLFLEX® ROBUST FD 756 C 6G2,5/1 mm² 0,337 m
6		
7		
8		
9		
10		
11		

Strip

+B2.X1-XZ1

Motor terminals

1	+B2.X1-WD2	ÖLFLEX® CLASSIC 100 H 5G2,5 mm² 1,918 m
2	+B2.X1-WZ2	ÖLFLEX® ROBUST FD 756 C 6G2,5/1 mm² 2,173 m
3	+B2.X1-WZ4	ÖLFLEX® ROBUST FD 756 C 6G2,5/1 mm² 2,173 m
4		
5		
6		
7		
8		
9		
10		
11		

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Drive "Work"	3											=GL2+B2-MA1	U1	1			+A1-XD4	6											BU	=GL2+A1&EFS1/1.1
=	4											=GL2+B2-MA1	V1	2			+A1-XD4	7											BN	=GL2+A1&EFS1/1.1
=	5											=GL2+B2-MA1	W1	3			+A1-XD4	8											GY	=GL2+A1&EFS1/1.1
=														4			+A1-XD4	9											BK	=GL2+A1&EFS1/1.1
=	GNYE											=GL2+B2-MA1	PE	5 ⏚			+A1-XD4	10											GNYE	=GL2+A1&EFS1/1.1
=	1											=GL2+B2-MA1	11	6			=K1+B2.X1-KE2	1:1.2												=GL2+A1&EFS1/1.2
=	2											=GL2+B2-MA1	12	7		%IX2.0	=K1+B2.X1-KE2	1:1.1												=GL2+A1&EFS1/1.2
=	SH1											+B2.X1-WZ1	SH1	8																=GL2+A1&EFS1/1.2
Workpiece available: Work		BK										=GL2+B2-BG1	4	9		%IX2.2	=K1+B2.X1-KE2	1:1.4												=GL2+A2&EFS1/2.7
=		BN										=GL2+B2-BG1	1	10			=K1+B2.X1-KE2	1:1.5												=GL2+A2&EFS1/2.7
=		BU										=GL2+B2-BG1	3	11			=K1+B2.X1-KE2	1:1.6												=GL2+A2&EFS1/2.8
Drive "Grinding, left"			1									=TM1+B2-MA1	U1	12			=TM1+A1-TA1	X2:U										1		=TM1+A1&EFS1/1.1
=			2									=TM1+B2-MA1	V1	13			=TM1+A1-TA1	X2:V										2		=TM1+A1&EFS1/1.1
=			3									=TM1+B2-MA1	W1	14			=TM1+A1-TA1	X2:W										3		=TM1+A1&EFS1/1.1
=			GNYE									=TM1+B2-MA1	PE	15 ⏚			=TM1+A1-TA1	X2:PE3										GNYE		=TM1+A1&EFS1/1.1
=			SH1									+B2.X1-WZ3	SH1	16			=TM1+A1-TA1	X2:PE3										SH1		=TM1+A1&EFS1/1.2
=			5									=TM1+B2-MA1	11	17			=TM1+A1-TA1	X12:6										5		=TM1+A1&EFS1/1.2
=			6									=TM1+B2-MA1	12	18			=TM1+A1-TA1	X12:7										6		=TM1+A1&EFS1/1.2
=			SH									+B2.X1-WZ3	SH	19			=TM1+A1-TA1	X2:PE3										SH		=TM1+A1&EFS1/1.2
Workpiece available: Grind. left				BK								=TM1+B2-BG1	4	20		%IX8.2	=K1+B2.X1-KE1	3:2.1												=TM1+A2&EFS1/2.1
=				BN								=TM1+B2-BG1	1	21			=K1+B2.X1-KE1	3:2.2												=TM1+A2&EFS1/2.1
=				BU								=TM1+B2-BG1	3	22			=K1+B2.X1-KE1	3:2.3												=TM1+A2&EFS1/2.1
Drive, "Grinding, right"					1							=TM2+B2-MA1	U1	23			=TM2+A1-TA1	X2:U									1			=TM2+A1&EFS1/1.1
=					2							=TM2+B2-MA1	V1	24			=TM2+A1-TA1	X2:V									2			=TM2+A1&EFS1/1.1
=					3							=TM2+B2-MA1	W1	25			=TM2+A1-TA1	X2:W									3			=TM2+A1&EFS1/1.1
=					GNYE							=TM2+B2-MA1	PE	26 ⏚			=TM2+A1-TA1	X2:PE3								GNYE				=TM2+A1&EFS1/1.1
=					SH1							+B2.X1-WZ5	SH1	27			=TM2+A1-TA1	X2:PE3								SH1				=TM2+A1&EFS1/1.2
=					5							=TM2+B2-MA1	11	28			=TM2+A1-TA1	X12:6								5				=TM2+A1&EFS1/1.2
=					6							=TM2+B2-MA1	12	29			=TM2+A1-TA1	X12:7								6				=TM2+A1&EFS1/1.2
=					SH							+B2.X1-WZ5	SH	30			=TM2+A1-TA1	X2:PE3								SH				=TM2+A1&EFS1/1.2

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +B2.X1-XZ1	= &EMA2
			Grinding machine	Drawing number			Terminal diagram
							+B2.X1 Page 2
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL	Station "Work" Page 140 from 305

Terminal diagram

F13_008

1	+B2.X1-WG4 ÖLFLEX® CLASSIC 100 3x0,34 mm² 0,337 m
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

Strip

+B2.X1-XZ1

Motor terminals

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Workpiece available: Grind. right	BK											=TM2+B2-BG1	4	31	'	%IX8.6	=K1+B2.X1-KE1	4:4.1												=TM2+A2&EFS1/2.1
=	BN											=TM2+B2-BG1	1	32	'		=K1+B2.X1-KE1	4:4.2												=TM2+A2&EFS1/2.1
=	BU											=TM2+B2-BG1	3	33	'		=K1+B2.X1-KE1	4:4.3												=TM2+A2&EFS1/2.1

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +B2.X1-XZ1	= &EMA2
			Grinding machine	Drawing number			Terminal diagram
							+B2.X1 Page 2.1
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL	Station "Work" Page 141 from 305

Summarized parts list

F02_006

Order number	Quantity	Designation	Type number	Supplier	Pos.
1100000	1	AX Compact enclosure, WHD: 1000x760x210 mm, sheet steel	AX.1100000	RIT	1
2313150	2	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	2
2400920	7	SZ Sealing modules for sealing frames, size: 20x20 mm, for sealing range 4-6 mm	SZ.2400920	RIT	3
2400970	13	SZ Sealing modules for sealing frames, size: 20x20 mm, Solid	SZ.2400970	RIT	4
2400900	2	SZ Sealing frame for sealing modules, for cut-out 24-pole	SZ.2400900	RIT	5
00100234	3,12	ÖLFLEX CLASSIC 100 4G0,75	ÖLFLEX® CLASSIC 100	LAPP	6
151688	2,50	Plug socket with cable	KMEB-1-24-2,5-LED	FES	7
1404303	1	Network cable	VS-MSD-IP20-93E/10,0	PXC	8
570734	0,49	Connecting cable	NEBU-M12W5-K-2-M12W5	FES	9
541349	30,00	Connecting cable	NEBU-M8G3-K-5-M8G3	FES	10
3211813	3	Feed-through terminal block	PT 6	PXC	11
3022218	2	End clamp	CLIPFIX 35	PXC	12
3211822	2	Ground modular terminal block	PT 6-PE	PXC	13
3212044	1	End cover	D-PT 6	PXC	14
18527	1	Socket connector	NTSD-WD-9	FES	15
192488	1	Pressure switch	PEV-1/4-B-M12	FES	16
	1				17
529184	1	Filter regulator	MS6-LFR-1/2-D7-CRM-AS	FES	18
532799	4	Module connector	MS6-MV	FES	19
541267	1	start valve	MS6-EM1-1/2	FES	20
532195	3	Mounting bracket	MS6-WP	FES	21
526082	2	Sub-base-SET	MS6-AGD	FES	22
542582	1	start valve	MS6-EE-1/2-10V24	FES	23
	1				24
529817	1	Pressure build-up valve	MS6-DL-1/2	FES	25
529993	1	Pressure regulator	MS6-LR-1/2-D7-AS	FES	26
1205863	2	Silencer	AMTE-M-LH-G12	FES	27
529853	1	Branching module	MS6-FRM-1/2	FES	28

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Summarized parts list

F02_006

Order number	Quantity	Designation	Type number	Supplier	Pos.
534149	1	Double nipple	E-1/4-1/2-MS	FES	29
130644	1	Push-in bulkhead connector	QSS-12-F	FES	30
186104	3	Push-in fitting	QS-G1/2-12	FES	31
130642	11	Push-in bulkhead connector	QSS-8-F	FES	32
195746	1	Interlinking block	CPX-GE-EV-S	FES	33
548755	1	Bus node	CPX-FB33	FES	34
195742	4	Interlinking block	CPX-GE-EV	FES	35
195750	2	Input module	CPX-8DE	FES	36
195704	2	Manifold block	CPX-AB-4-M12X2-5POL	FES	37
543815	2	Input module	CPX-16DE	FES	38
541256	2	Manifold block	CPX-AB-8-M8X2-4POL	FES	39
570783	1	End plate	VMPAL-EPL-CPX	FES	40
8022037	2	Solenoid valve	VMPA2-M1BH-G-PI	FES	41
8022038	4	Solenoid valve	VMPA2-M1BH-E-PI	FES	42
537962	1	Blanking plate	VMPA2-RP	FES	43
174309	1	Blanking plug	B-M7	FES	44
560956	1	Plate	VMPAL-EG	FES	45
161418	1	Silencer	UC-M7	FES	46
165004	2	Silencer	UC-1/4	FES	47
195716	1	End plate	CPX-EPL-EV	FES	48
560950	1	Feed module	VMPAL-SP-0	FES	49
560974	6	Sub-base	VMPAL-AP-20	FES	50
560966	7	Electrical interlinking module	VMPAL-EVAP-20-2	FES	51
560980	1	Sub-base	VMPAL-AP-20-T135	FES	52
560947	1	End plate	VMPAL-EPR-SP	FES	53
132856	1	Cartridge	QSPLKG20-10	FES	54
132635	1	Cartridge	QSPKG20-12	FES	55
186112	1	Push-in fitting	QS-G1/4-10-I	FES	56

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0	1	2	3	4	5	6	7	8	9

Summarized parts list

F02_006

Order number	Quantity	Designation	Type number	Supplier	Pos.
132951	2	Cartridge	QSPLLKG18-10	FES	57
132947	2	Cartridge	QSPLKG18-10	FES	58
132950	5	Cartridge	QSPLLKG18-8	FES	59
132946	5	Cartridge	QSPLKG18-8	FES	60
130643	5	Push-in bulkhead connector	QSS-10-F	FES	61
	1				62

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+B2.Y1-U1	1	AX Compact enclosure, WHD: 1000x760x210 mm, sheet steel	AX.1100000	RIT	RIT.1100000
+B2.Y1-U101	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+B2.Y1-U102	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+B2.Y1-U109	1	SZ Sealing modules for sealing frames, size: 20x20 mm, for sealing range 4-6 mm	SZ.2400920	RIT	RIT.2400920
+B2.Y1-U110	1	SZ Sealing modules for sealing frames, size: 20x20 mm, for sealing range 4-6 mm	SZ.2400920	RIT	RIT.2400920
+B2.Y1-U111	1	SZ Sealing modules for sealing frames, size: 20x20 mm, for sealing range 4-6 mm	SZ.2400920	RIT	RIT.2400920
+B2.Y1-U112	1	SZ Sealing modules for sealing frames, size: 20x20 mm, for sealing range 4-6 mm	SZ.2400920	RIT	RIT.2400920
+B2.Y1-U113	1	SZ Sealing modules for sealing frames, size: 20x20 mm, for sealing range 4-6 mm	SZ.2400920	RIT	RIT.2400920
+B2.Y1-U114	1	SZ Sealing modules for sealing frames, size: 20x20 mm, for sealing range 4-6 mm	SZ.2400920	RIT	RIT.2400920
+B2.Y1-U115	1	SZ Sealing modules for sealing frames, size: 20x20 mm, for sealing range 4-6 mm	SZ.2400920	RIT	RIT.2400920
+B2.Y1-U116	1	SZ Sealing modules for sealing frames, size: 20x20 mm, Solid	SZ.2400970	RIT	RIT.2400970
+B2.Y1-U117	1	SZ Sealing modules for sealing frames, size: 20x20 mm, Solid	SZ.2400970	RIT	RIT.2400970
+B2.Y1-U118	1	SZ Sealing modules for sealing frames, size: 20x20 mm, Solid	SZ.2400970	RIT	RIT.2400970
+B2.Y1-U119	1	SZ Sealing modules for sealing frames, size: 20x20 mm, Solid	SZ.2400970	RIT	RIT.2400970
+B2.Y1-U120	1	SZ Sealing modules for sealing frames, size: 20x20 mm, Solid	SZ.2400970	RIT	RIT.2400970
+B2.Y1-U121	1	SZ Sealing modules for sealing frames, size: 20x20 mm, Solid	SZ.2400970	RIT	RIT.2400970
+B2.Y1-U122	1	SZ Sealing modules for sealing frames, size: 20x20 mm, Solid	SZ.2400970	RIT	RIT.2400970
+B2.Y1-U123	1	SZ Sealing modules for sealing frames, size: 20x20 mm, Solid	SZ.2400970	RIT	RIT.2400970
+B2.Y1-U124	1	SZ Sealing modules for sealing frames, size: 20x20 mm, Solid	SZ.2400970	RIT	RIT.2400970
+B2.Y1-U125	1	SZ Sealing modules for sealing frames, size: 20x20 mm, Solid	SZ.2400970	RIT	RIT.2400970
+B2.Y1-U126	1	SZ Sealing modules for sealing frames, size: 20x20 mm, Solid	SZ.2400970	RIT	RIT.2400970
+B2.Y1-U127	1	SZ Sealing modules for sealing frames, size: 20x20 mm, Solid	SZ.2400970	RIT	RIT.2400970
+B2.Y1-U128	1	SZ Sealing modules for sealing frames, size: 20x20 mm, Solid	SZ.2400970	RIT	RIT.2400970
+B2.Y1-U135	1	SZ Sealing frame for sealing modules, for cut-out 24-pole	SZ.2400900	RIT	RIT.2400900
+B2.Y1-U136	1	SZ Sealing frame for sealing modules, for cut-out 24-pole	SZ.2400900	RIT	RIT.2400900
+B2.Y1-WD1	1	ÖLFLEX CLASSIC 100 4G0,75	ÖLFLEX® CLASSIC 100	LAPP	LAPP.00100234
+B2.Y1-WD2	1	Plug socket with cable	KMEB-1-24-2,5-LED	FES	FES.151688
+B2.Y1-WD3	1	ÖLFLEX CLASSIC 100 4G0,75	ÖLFLEX® CLASSIC 100	LAPP	LAPP.00100234
+B2.Y1-WG1	1	Network cable	VS-MSD-IP20-93E/10,0	PXC	PXC.1404303

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+B2.Y1-WG2	1	Connecting cable	NEBU-M12W5-K-2-M12W5	FES	FES.570734
+B2.Y1-WG3	1	Connecting cable	NEBU-M8G3-K-5-M8G3	FES	FES.541349
+B2.Y1-WG4	1	Connecting cable	NEBU-M8G3-K-5-M8G3	FES	FES.541349
+B2.Y1-WG5	1	Connecting cable	NEBU-M8G3-K-5-M8G3	FES	FES.541349
+B2.Y1-WG6	1	Connecting cable	NEBU-M8G3-K-5-M8G3	FES	FES.541349
+B2.Y1-WG7	1	Connecting cable	NEBU-M8G3-K-5-M8G3	FES	FES.541349
+B2.Y1-WG8	1	Connecting cable	NEBU-M8G3-K-5-M8G3	FES	FES.541349
=GQA+B2.Y1-BP1	1	Pressure switch	PEV-1/4-B-M12	FES	FES.192488
=GQA+B2.Y1-BP1-S1	1				FES.192488_DUMMY_PART
=GQA+B2.Y1-KH1	1	Filter regulator	MS6-LFR-1/2-D7-CRM-AS	FES	FES.529184
=GQA+B2.Y1-QM1	1	start valve	MS6-EM1-1/2	FES	FES.541267
=GQA+B2.Y1-QM2	1	start valve	MS6-EE-1/2-10V24	FES	FES.542582
=GQA+B2.Y1-QM2-MB1	1				FES.542582_DUMMY_PART
=GQA+B2.Y1-QM3	1	Pressure build-up valve	MS6-DL-1/2	FES	FES.529817
=GQA+B2.Y1-RN2	1	Mounting bracket	MS6-WP	FES	FES.532195
=GQA+B2.Y1-RQ1	1	Silencer	AMTE-M-LH-G12	FES	FES.1205863
=GQA+B2.Y1-RQ2	1	Silencer	AMTE-M-LH-G12	FES	FES.1205863
=GQA+B2.Y1-XL1	1	Branching module	MS6-FRM-1/2	FES	FES.529853
=GQA+B2.Y1-XL2	1	Double nipple	E-1/4-1/2-MS	FES	FES.534149
=GQA+B2.Y1-XM1	1	Push-in bulkhead connector	QSS-12-F	FES	FES.130644
=GQA+B2.Y1-XM2	1	Push-in fitting	QS-G1/2-12	FES	FES.186104
=GQA+B2.Y1-XM3	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=GQA+B2.Y1-XM4	1	Push-in fitting	QS-G1/2-12	FES	FES.186104
=GQA+B2.Y1-XM5	1	Push-in fitting	QS-G1/2-12	FES	FES.186104
=K2+B2.Y1-KE1	1	Interlinking block	CPX-GE-EV-S	FES	FES.195746
=K2+B2.Y1-KE2	1	Interlinking block	CPX-GE-EV	FES	FES.195742
=K2+B2.Y1-KE3	1	Interlinking block	CPX-GE-EV	FES	FES.195742
=K2+B2.Y1-KE4	1	Interlinking block	CPX-GE-EV	FES	FES.195742
=K2+B2.Y1-KE5	1	Interlinking block	CPX-GE-EV	FES	FES.195742

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Device tag list

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Device tag	Quantity	Designation	Type number	Manufacturer	Part number
=K2+B2.Y1-KE6	1	End plate	VMPAL-EPL-CPX	FES	FES.570783
=K2+B2.Y1-QM1	1	Solenoid valve	VMPA2-M1BH-G-PI	FES	FES.8022037
=K2+B2.Y1-QM2	1	Solenoid valve	VMPA2-M1BH-G-PI	FES	FES.8022037
=K2+B2.Y1-QM3	1	Solenoid valve	VMPA2-M1BH-E-PI	FES	FES.8022038
=K2+B2.Y1-QM4	1	Solenoid valve	VMPA2-M1BH-E-PI	FES	FES.8022038
=K2+B2.Y1-QM5	1	Solenoid valve	VMPA2-M1BH-E-PI	FES	FES.8022038
=K2+B2.Y1-QM6	1	Solenoid valve	VMPA2-M1BH-E-PI	FES	FES.8022038
=K2+B2.Y1-RN1	1	Blanking plate	VMPA2-RP	FES	FES.537962
=K2+B2.Y1-RN2	1	Blanking plug	B-M7	FES	FES.174309
=K2+B2.Y1-RQ1	1	Plate	VMPAL-EG	FES	FES.560956
=K2+B2.Y1-RQ2	1	Silencer	UC-M7	FES	FES.161418
=K2+B2.Y1-RQ3	1	Silencer	UC-1/4	FES	FES.165004
=K2+B2.Y1-RQ4	1	Silencer	UC-1/4	FES	FES.165004
=K2+B2.Y1-XD1	1	End plate	CPX-EPL-EV	FES	FES.195716
=K2+B2.Y1-XL1	1	Feed module	VMPAL-SP-0	FES	FES.560950
=K2+B2.Y1-XL2	1	Sub-base	VMPAL-AP-20	FES	FES.560974
=K2+B2.Y1-XL3	1	Sub-base	VMPAL-AP-20-T135	FES	FES.560980
=K2+B2.Y1-XL4	1	Sub-base	VMPAL-AP-20	FES	FES.560974
=K2+B2.Y1-XL5	1	Sub-base	VMPAL-AP-20	FES	FES.560974
=K2+B2.Y1-XL6	1	Sub-base	VMPAL-AP-20	FES	FES.560974
=K2+B2.Y1-XL7	1	Sub-base	VMPAL-AP-20	FES	FES.560974
=K2+B2.Y1-XL8	1	Sub-base	VMPAL-AP-20	FES	FES.560974
=K2+B2.Y1-XL9	1	End plate	VMPAL-EPR-SP	FES	FES.560947
=K2+B2.Y1-XM1	1	Cartridge	QSPLKG20-10	FES	FES.132856
=K2+B2.Y1-XM2	1	Cartridge	QSPKG20-12	FES	FES.132635
=K2+B2.Y1-XM3	1	Push-in fitting	QS-G1/4-10-I	FES	FES.186112
=K2+B2.Y1-XM4	1	Cartridge	QSPLLKG18-10	FES	FES.132951
=K2+B2.Y1-XM5	1	Cartridge	QSPLKG18-10	FES	FES.132947
=K2+B2.Y1-XM6	1	Cartridge	QSPLLKG18-8	FES	FES.132950

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
=K2+B2.Y1-XM7	1	Cartridge	QSPLKG18-8	FES	FES.132946
=K2+B2.Y1-XM8	1	Cartridge	QSPLLKG18-8	FES	FES.132950
=K2+B2.Y1-XM9	1	Cartridge	QSPLKG18-8	FES	FES.132946
=K2+B2.Y1-XM10	1	Cartridge	QSPLLKG18-8	FES	FES.132950
=K2+B2.Y1-XM11	1	Cartridge	QSPLKG18-8	FES	FES.132946
=K2+B2.Y1-XM12	1	Push-in bulkhead connector	QSS-10-F	FES	FES.130643
=K2+B2.Y1-XM13	1	Push-in bulkhead connector	QSS-10-F	FES	FES.130643
=K2+B2.Y1-XM14	1	Push-in bulkhead connector	QSS-10-F	FES	FES.130643
=K2+B2.Y1-XM15	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=K2+B2.Y1-XM16	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=K2+B2.Y1-XM17	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=K2+B2.Y1-XM18	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=K2+B2.Y1-XM19	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=K2+B2.Y1-XM20	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=K2+B2.Y1-XM21	1	Cartridge	QSPLLKG18-10	FES	FES.132951
=K2+B2.Y1-XM22	1	Cartridge	QSPLKG18-10	FES	FES.132947
=K2+B2.Y1-XM23	1	Cartridge	QSPLLKG18-8	FES	FES.132950
=K2+B2.Y1-XM24	1	Cartridge	QSPLKG18-8	FES	FES.132946
=K2+B2.Y1-XM25	1	Cartridge	QSPLLKG18-8	FES	FES.132950
=K2+B2.Y1-XM26	1	Cartridge	QSPLKG18-8	FES	FES.132946
=K2+B2.Y1-XZ1	1				FES.569926
=MM1+B2.Y1-XM1	1	Push-in bulkhead connector	QSS-10-F	FES	FES.130643
=MM1+B2.Y1-XM2	1	Push-in bulkhead connector	QSS-10-F	FES	FES.130643
=MM2+B2.Y1-XM1	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=MM2+B2.Y1-XM2	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=MM3+B2.Y1-XM1	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=MM3+B2.Y1-XM2	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642

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Cable overview

F10_003

Cable designation	from	to	Cable type	Conductors	ø	Length	Function text
+B2.Y1-WD1	+B2.Y1-XD1	+A2-XD7	ÖLFLEX® CLASSIC 100	4G	0.75	2,884	Power supply valve terminal
+B2.Y1-WD2	+B2.Y1-XD1	=GQA+B2.Y1-QM2-MB1	KMEB-1-24-2,5-LED	3	0,5	2,5	Connect compressed air
+B2.Y1-WD3	+B2.Y1-XDB1	+B2.Y1-XD1	ÖLFLEX® CLASSIC 100	4G	0.75	0,239	Power supply valve terminal
+B2.Y1-WG2	=GQA+B2.Y1-BP1-S1	=K2+B2.Y1-KE2	NEBU-M12W5-K-2-M12W5	5	0,25	0,491	Connect compressed air
+B2.Y1-WG3	=K2+B2.Y1-KE4	=MM1+B1-BG1	NEBU-M8G3-K-5-M8G3	3	0,25	5	End position rear
+B2.Y1-WG4	=K2+B2.Y1-KE4	=MM1+B1-BG2	NEBU-M8G3-K-5-M8G3	3	0,25	5	End position front
+B2.Y1-WG5	=K2+B2.Y1-KE4	=MM2+B2-BG1	NEBU-M8G3-K-5-M8G3	3	0,25	5	End position rear
+B2.Y1-WG6	=K2+B2.Y1-KE4	=MM2+B2-BG2	NEBU-M8G3-K-5-M8G3	3	0,25	5	End position front
+B2.Y1-WG7	=K2+B2.Y1-KE4	=MM3+B2-BG1	NEBU-M8G3-K-5-M8G3	3	0,25	5	End position rear
+B2.Y1-WG8	=K2+B2.Y1-KE4	=MM3+B2-BG2	NEBU-M8G3-K-5-M8G3	3	0,25	5	End position front

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Cable diagram

F09_002

Cable name	+B2.Y1-WD1		Cable type	ÖLFLEX® CLASSIC 100					
Function text	Power supply valve terminal		No. of conductors	4G		Cross-section	0.75	Cable length	2,884
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Power supply valve terminal	=K2+B2.Y1&EFS1/3.3	+B2.Y1-XD1	2	BN	+A2-XD7	17	=K2+B2.Y1&EFS1/3.3	Power supply valve terminal	
=	=K2+B2.Y1&EFS1/3.3	+B2.Y1-XD1	1	BK	+A2-XD7	16	=K2+B2.Y1&EFS1/3.3	=	
=	=K2+B2.Y1&EFS1/3.3	+B2.Y1-XD1	3	GY	+A2-XD7	18	=K2+B2.Y1&EFS1/3.3	=	
=	=K2+B2.Y1&EFS1/3.3	+B2.Y1-XD1	4	GNYE	+A2-XD7	19	=K2+B2.Y1&EFS1/3.3	=	

Cable name	+B2.Y1-WD2		Cable type	KMEB-1-24-2,5-LED					
Function text	Connect compressed air		No. of conductors	3		Cross-section	0,5	Cable length	2,5
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Power supply valve terminal	=K2+B2.Y1&EFS1/3.3	+B2.Y1-XD1	2	BK1	=GQA+B2.Y1-QM2-MB1	1	=GQA+B2.Y1&EFS1/1.1	Connect compressed air	
=	=K2+B2.Y1&EFS1/3.3	+B2.Y1-XD1	3	BK2	=GQA+B2.Y1-QM2-MB1	2	=GQA+B2.Y1&EFS1/1.1	=	
				GNYE					

Cable name	+B2.Y1-WD3		Cable type	ÖLFLEX® CLASSIC 100					
Function text	Power supply valve terminal		No. of conductors	4G		Cross-section	0.75	Cable length	0,239
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Power supply valve terminal	=K2+B2.Y1&EFS1/3.3	+B2.Y1-XDB1	2:2	BN	+B2.Y1-XD1	2	=K2+B2.Y1&EFS1/3.3	Power supply valve terminal	
=	=K2+B2.Y1&EFS1/3.3	+B2.Y1-XDB1	1:1	BK	+B2.Y1-XD1	1	=K2+B2.Y1&EFS1/3.3	=	
=	=K2+B2.Y1&EFS1/3.3	+B2.Y1-XDB1	3:3	GY	+B2.Y1-XD1	3	=K2+B2.Y1&EFS1/3.3	=	
=	=K2+B2.Y1&EFS1/3.3	+B2.Y1-XDB1	PE:PE	GNYE	+B2.Y1-XD1	4	=K2+B2.Y1&EFS1/3.3	=	

Cable name	+B2.Y1-WG2		Cable type	NEBU-M12W5-K-2-M12W5					
Function text	Connect compressed air		No. of conductors	5		Cross-section	0,25	Cable length	0,491
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
	=GQA+B2.Y1&EFS1/1.2	=GQA+B2.Y1-BP1-S1	1	BN	=K2+B2.Y1-KE2	X1:1	=GQA+B2.Y1&EFS1/1.2		
Working pressure	=GQA+B2.Y1&EFS1/1.3	=GQA+B2.Y1-BP1-S1	2	WH	=K2+B2.Y1-KE2	X1:2	=GQA+B2.Y1&EFS1/1.3	Working pressure	
=	=GQA+B2.Y1&EFS1/1.3	=GQA+B2.Y1-BP1-S1	3	BU	=K2+B2.Y1-KE2	X1:3	=GQA+B2.Y1&EFS1/1.3	=	
Vacuum	=GQA+B2.Y1&EFS1/1.4	=GQA+B2.Y1-BP1-S1	4	BK	=K2+B2.Y1-KE2	X1:4	=GQA+B2.Y1&EFS1/1.4	Vacuum	
				GY					

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Cable diagram

F09_002

Cable name	+B2.Y1-WG3		Cable type	NEBU-M8G3-K-5-M8G3					
Function text	End position rear		No. of conductors	3		Cross-section	0,25	Cable length	5
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
End position rear	=MM1+B2.Y1&EFS1/1.1	=K2+B2.Y1-KE4	X1:1	BN	=MM1+B1-BG1	1	=MM1+B2.Y1&EFS1/1.1	End position rear	
=	=MM1+B2.Y1&EFS1/1.1	=K2+B2.Y1-KE4	X1:3	BU	=MM1+B1-BG1	3	=MM1+B2.Y1&EFS1/1.1	=	
=	=MM1+B2.Y1&EFS1/1.1	=K2+B2.Y1-KE4	X1:2	BK	=MM1+B1-BG1	4	=MM1+B2.Y1&EFS1/1.1	=	

Cable name	+B2.Y1-WG4		Cable type	NEBU-M8G3-K-5-M8G3					
Function text	End position front		No. of conductors	3		Cross-section	0,25	Cable length	5
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
End position front	=MM1+B2.Y1&EFS1/1.3	=K2+B2.Y1-KE4	X2:1	BN	=MM1+B1-BG2	1	=MM1+B2.Y1&EFS1/1.3	End position front	
=	=MM1+B2.Y1&EFS1/1.3	=K2+B2.Y1-KE4	X2:3	BU	=MM1+B1-BG2	3	=MM1+B2.Y1&EFS1/1.3	=	
=	=MM1+B2.Y1&EFS1/1.3	=K2+B2.Y1-KE4	X2:2	BK	=MM1+B1-BG2	4	=MM1+B2.Y1&EFS1/1.3	=	

Cable name	+B2.Y1-WG5		Cable type	NEBU-M8G3-K-5-M8G3					
Function text	End position rear		No. of conductors	3		Cross-section	0,25	Cable length	5
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
End position rear	=MM2+B2.Y1&EFS1/1.1	=K2+B2.Y1-KE4	X3:1	BN	=MM2+B2-BG1	1	=MM2+B2.Y1&EFS1/1.1	End position rear	
=	=MM2+B2.Y1&EFS1/1.1	=K2+B2.Y1-KE4	X3:3	BU	=MM2+B2-BG1	3	=MM2+B2.Y1&EFS1/1.1	=	
=	=MM2+B2.Y1&EFS1/1.1	=K2+B2.Y1-KE4	X3:2	BK	=MM2+B2-BG1	4	=MM2+B2.Y1&EFS1/1.1	=	

Cable name	+B2.Y1-WG6		Cable type	NEBU-M8G3-K-5-M8G3					
Function text	End position front		No. of conductors	3		Cross-section	0,25	Cable length	5
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
End position front	=MM2+B2.Y1&EFS1/1.3	=K2+B2.Y1-KE4	X4:1	BN	=MM2+B2-BG2	1	=MM2+B2.Y1&EFS1/1.3	End position front	
=	=MM2+B2.Y1&EFS1/1.3	=K2+B2.Y1-KE4	X4:3	BU	=MM2+B2-BG2	3	=MM2+B2.Y1&EFS1/1.3	=	
=	=MM2+B2.Y1&EFS1/1.3	=K2+B2.Y1-KE4	X4:2	BK	=MM2+B2-BG2	4	=MM2+B2.Y1&EFS1/1.3	=	

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Cable diagram

F09_002

Cable name	+B2.Y1-WG7		Cable type	NEBU-M8G3-K-5-M8G3					
Function text	End position rear		No. of conductors	3		Cross-section	0,25	Cable length	5
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
End position rear	=MM3+B2.Y1&EFS1/1.1	=K2+B2.Y1-KE4	X5:1	BN	=MM3+B2-BG1	1	=MM3+B2.Y1&EFS1/1.1	End position rear	
=	=MM3+B2.Y1&EFS1/1.1	=K2+B2.Y1-KE4	X5:3	BU	=MM3+B2-BG1	3	=MM3+B2.Y1&EFS1/1.1	=	
=	=MM3+B2.Y1&EFS1/1.1	=K2+B2.Y1-KE4	X5:2	BK	=MM3+B2-BG1	4	=MM3+B2.Y1&EFS1/1.1	=	

Cable name	+B2.Y1-WG8		Cable type	NEBU-M8G3-K-5-M8G3					
Function text	End position front		No. of conductors	3		Cross-section	0,25	Cable length	5
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
End position front	=MM3+B2.Y1&EFS1/1.3	=K2+B2.Y1-KE4	X6:1	BN	=MM3+B2-BG2	1	=MM3+B2.Y1&EFS1/1.3	End position front	
=	=MM3+B2.Y1&EFS1/1.3	=K2+B2.Y1-KE4	X6:3	BU	=MM3+B2-BG2	3	=MM3+B2.Y1&EFS1/1.3	=	
=	=MM3+B2.Y1&EFS1/1.3	=K2+B2.Y1-KE4	X6:2	BK	=MM3+B2-BG2	4	=MM3+B2.Y1&EFS1/1.3	=	

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Terminal-strip overview

F14_002

Terminal strip	Function text	Terminals					Terminal diagram page
		first	last	Total PE	Total N	Total number	
+B2.Y1-XD1	Power supply pneumatics	1	5	2	0	5	+B2.Y1&EMA2/1

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Terminal diagram

F13_008

1	+B2.Y1-WD1 ÖLFLEX® CLASSIC 100 4G0.75 mm 2,884 m
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

Strip

+B2.Y1-XD1

Power supply pneumatics

1	+B2.Y1-WD3 ÖLFLEX® CLASSIC 100 4G0.75 mm 0,239 m
2	+B2.Y1-WD2 KMEB-1-24-2,5-LED 3x0,5 mm² 2,5 m
3	
4	
5	
6	
7	
8	
9	
10	
11	

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Power supply valve terminal	BK											+A2-XD7	16	1			+B2.Y1-XDB1	1:1											BK	=K2+B2.Y1&EFS1/3.3
=	BN											+A2-XD7	17	2			+B2.Y1-XDB1;=GQA+B2.Y1-QM2-MB1	2:1										BK1	BN	=K2+B2.Y1&EFS1/3.3
=	GY											+A2-XD7	18	3			+B2.Y1-XDB1;=GQA+B2.Y1-QM2-MB1	3:1										BK2	GY	=K2+B2.Y1&EFS1/3.3
=	GNYE											+A2-XD7	19	4 ⏚			+B2.Y1-XDB1	PE:PE											GNYE	=K2+B2.Y1&EFS1/3.3
														5 ⏚			=K2+B2.Y1-XD1	PE												=K2+B2.Y1&EFS1/3.2

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
=GQA+B2.Y1-BP1	1	Pressure switch	PEV-1/4-B-M12	FES	FES.192488
=GQA+B2.Y1-KH1	1	Filter regulator	MS6-LFR-1/2-D7-CRM-AS	FES	FES.529184
=GQA+B2.Y1-QM1	1	start valve	MS6-EM1-1/2	FES	FES.541267
=GQA+B2.Y1-QM2	1	start valve	MS6-EE-1/2-10V24	FES	FES.542582
=GQA+B2.Y1-QM3	1	Pressure build-up valve	MS6-DL-1/2	FES	FES.529817
=GQA+B2.Y1-RN2	1	Mounting bracket	MS6-WP	FES	FES.532195
=GQA+B2.Y1-RQ1	1	Silencer	AMTE-M-LH-G12	FES	FES.1205863
=GQA+B2.Y1-RQ2	1	Silencer	AMTE-M-LH-G12	FES	FES.1205863
=GQA+B2.Y1-XL1	1	Branching module	MS6-FRM-1/2	FES	FES.529853
=GQA+B2.Y1-XL2	1	Double nipple	E-1/4-1/2-MS	FES	FES.534149
=GQA+B2.Y1-XM1	1	Push-in bulkhead connector	QSS-12-F	FES	FES.130644
=GQA+B2.Y1-XM2	1	Push-in fitting	QS-G1/2-12	FES	FES.186104
=GQA+B2.Y1-XM3	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=GQA+B2.Y1-XM4	1	Push-in fitting	QS-G1/2-12	FES	FES.186104
=GQA+B2.Y1-XM5	1	Push-in fitting	QS-G1/2-12	FES	FES.186104
=K2+B2.Y1-QM1	1	Solenoid valve	VMPA2-M1BH-G-PI	FES	FES.8022037
=K2+B2.Y1-QM2	1	Solenoid valve	VMPA2-M1BH-G-PI	FES	FES.8022037
=K2+B2.Y1-QM3	1	Solenoid valve	VMPA2-M1BH-E-PI	FES	FES.8022038
=K2+B2.Y1-QM4	1	Solenoid valve	VMPA2-M1BH-E-PI	FES	FES.8022038
=K2+B2.Y1-QM5	1	Solenoid valve	VMPA2-M1BH-E-PI	FES	FES.8022038
=K2+B2.Y1-QM6	1	Solenoid valve	VMPA2-M1BH-E-PI	FES	FES.8022038
=K2+B2.Y1-RN1	1	Blanking plate	VMPA2-RP	FES	FES.537962
=K2+B2.Y1-RN2	1	Blanking plug	B-M7	FES	FES.174309
=K2+B2.Y1-RQ1	1	Plate	VMPAL-EG	FES	FES.560956
=K2+B2.Y1-RQ2	1	Silencer	UC-M7	FES	FES.161418
=K2+B2.Y1-RQ3	1	Silencer	UC-1/4	FES	FES.165004
=K2+B2.Y1-RQ4	1	Silencer	UC-1/4	FES	FES.165004
=K2+B2.Y1-XL1	1	Feed module	VMPAL-SP-0	FES	FES.560950
=K2+B2.Y1-XL2	1	Sub-base	VMPAL-AP-20	FES	FES.560974

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
=K2+B2.Y1-XL3	1	Sub-base	VMPAL-AP-20-T135	FES	FES.560980
=K2+B2.Y1-XL4	1	Sub-base	VMPAL-AP-20	FES	FES.560974
=K2+B2.Y1-XL5	1	Sub-base	VMPAL-AP-20	FES	FES.560974
=K2+B2.Y1-XL6	1	Sub-base	VMPAL-AP-20	FES	FES.560974
=K2+B2.Y1-XL7	1	Sub-base	VMPAL-AP-20	FES	FES.560974
=K2+B2.Y1-XL8	1	Sub-base	VMPAL-AP-20	FES	FES.560974
=K2+B2.Y1-XL9	1	End plate	VMPAL-EPR-SP	FES	FES.560947
=K2+B2.Y1-XM1	1	Cartridge	QSPLKG20-10	FES	FES.132856
=K2+B2.Y1-XM2	1	Cartridge	QSPKG20-12	FES	FES.132635
=K2+B2.Y1-XM3	1	Push-in fitting	QS-G1/4-10-I	FES	FES.186112
=K2+B2.Y1-XM4	1	Cartridge	QSPLLKG18-10	FES	FES.132951
=K2+B2.Y1-XM5	1	Cartridge	QSPLKG18-10	FES	FES.132947
=K2+B2.Y1-XM6	1	Cartridge	QSPLLKG18-8	FES	FES.132950
=K2+B2.Y1-XM7	1	Cartridge	QSPLKG18-8	FES	FES.132946
=K2+B2.Y1-XM8	1	Cartridge	QSPLLKG18-8	FES	FES.132950
=K2+B2.Y1-XM9	1	Cartridge	QSPLKG18-8	FES	FES.132946
=K2+B2.Y1-XM10	1	Cartridge	QSPLLKG18-8	FES	FES.132950
=K2+B2.Y1-XM11	1	Cartridge	QSPLKG18-8	FES	FES.132946
=K2+B2.Y1-XM12	1	Push-in bulkhead connector	QSS-10-F	FES	FES.130643
=K2+B2.Y1-XM13	1	Push-in bulkhead connector	QSS-10-F	FES	FES.130643
=K2+B2.Y1-XM14	1	Push-in bulkhead connector	QSS-10-F	FES	FES.130643
=K2+B2.Y1-XM15	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=K2+B2.Y1-XM16	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=K2+B2.Y1-XM17	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=K2+B2.Y1-XM18	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=K2+B2.Y1-XM19	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=K2+B2.Y1-XM20	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=K2+B2.Y1-XM21	1	Cartridge	QSPLLKG18-10	FES	FES.132951
=K2+B2.Y1-XM22	1	Cartridge	QSPLKG18-10	FES	FES.132947

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
=K2+B2.Y1-XM23	1	Cartridge	QSPLLKG18-8	FES	FES.132950
=K2+B2.Y1-XM24	1	Cartridge	QSPLKG18-8	FES	FES.132946
=K2+B2.Y1-XM25	1	Cartridge	QSPLLKG18-8	FES	FES.132950
=K2+B2.Y1-XM26	1	Cartridge	QSPLKG18-8	FES	FES.132946
=MM1+B2.Y1-XM1	1	Push-in bulkhead connector	QSS-10-F	FES	FES.130643
=MM1+B2.Y1-XM2	1	Push-in bulkhead connector	QSS-10-F	FES	FES.130643
=MM2+B2.Y1-XM1	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=MM2+B2.Y1-XM2	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=MM3+B2.Y1-XM1	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642
=MM3+B2.Y1-XM2	1	Push-in bulkhead connector	QSS-8-F	FES	FES.130642

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Connection list

F27_002

Connection	Target 1	Target 2	Color	Cross-section
0-ø	=GQA+B2.Y1-XM1:1	=GQA+B2.Y1-XM2:1	BU	12mm
1-ø	=GQA+B2.Y1-KH1:3	=GQA+B2.Y1-XM3:1	BU	8mm
2-ø	=GQA+B2.Y1-XM4:1	=K2+B2.Y1-XM2:2	BU	12mm
3-ø	=GQA+B2.Y1-XM5:1	=K2+B2.Y1-XM3:2	BU	12mm
4-ø	=K2+B2.Y1-XM1:2	=K2+B2.Y1-XM12:1	BU	10mm
5-ø	=K2+B2.Y1-XM4:2	=K2+B2.Y1-XM13:1	BU	10mm
6-ø	=K2+B2.Y1-XM5:2	=K2+B2.Y1-XM14:1	BU	10mm
7-ø	=K2+B2.Y1-XM6:2	=K2+B2.Y1-XM15:1	BU	8mm
8-ø	=K2+B2.Y1-XM7:2	=K2+B2.Y1-XM16:1	BU	8mm
9-ø	=K2+B2.Y1-XM8:2	=K2+B2.Y1-XM17:1	BU	8mm
10-ø	=K2+B2.Y1-XM9:2	=K2+B2.Y1-XM18:1	BU	8mm
11-ø	=K2+B2.Y1-XM10:2	=K2+B2.Y1-XM19:1	BU	8mm
12-ø	=K2+B2.Y1-XM11:2	=K2+B2.Y1-XM20:1	BU	8mm
13-ø	=K2+B2.Y1-XM21:2	=MM1+B2.Y1-XM1:1	BU	10mm
15-ø	=K2+B2.Y1-XM22:2	=MM1+B2.Y1-XM2:1	BU	10mm
21-ø	=K2+B2.Y1-XM23:2	=MM2+B2.Y1-XM1:1	BU	8mm
23-ø	=K2+B2.Y1-XM24:2	=MM2+B2.Y1-XM2:1	BU	8mm
25-ø	=K2+B2.Y1-XM25:2	=MM3+B2.Y1-XM1:1	BU	8mm
27-ø	=K2+B2.Y1-XM26:2	=MM3+B2.Y1-XM2:1	BU	8mm

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Summarized parts list

F02_006

Order number	Quantity	Designation	Type number	Supplier	Pos.
00101264	4,04	ÖLFLEX® CLASSIC 100 4X0,75	ÖLFLEX® CLASSIC 100	LAPP	1
3SB30001HA20	2	22MM PLASTIC ROUND ACTUATOR:	3SB3000-1HA20	SIE	2
3SB34000B	2	ACTUATOR-/INDICATOR COMPONENT CONTACT BLOCK	3SB3400-0B	SIE	3
3SB34000C	2	ACTUATOR-/INDICATOR COMPONENT CONTACT BLOCK	3SB3400-0C	SIE	4
3SB3801-0AD3	2	ENCLOSURE FOR COMMAND DEVICES	3SB3801-0AD3	SIE	5
3SB3901-0AB	2	ACCESSORY / SPARE PART FOR PLASTIC-/METAL PROGRAM	3SB3901-0AB	SIE	6
1023958	1	Photoelectric retro-reflective sensor	WL9L-P430	SICK	7
DRN90L4/FE/TH	1	Three-phase motor	DRN90L4/FE/TH	SEW	8

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+B3-WG1	1	ÖLFLEX® CLASSIC 100 4X0,75	ÖLFLEX® CLASSIC 100	LAPP	LAPP.00101264
+B3-WG2	1	ÖLFLEX® CLASSIC 100 4X0,75	ÖLFLEX® CLASSIC 100	LAPP	LAPP.00101264
=F+B3-SG1	1	22MM PLASTIC ROUND ACTUATOR:	3SB3000-1HA20	SIE	SIE.3SB3000-1HA20
=F+B3-SG2	1	22MM PLASTIC ROUND ACTUATOR:	3SB3000-1HA20	SIE	SIE.3SB3000-1HA20
=GL3+B3-BG1	1	Photoelectric retro-reflective sensor	WL9L-P430	SICK	SICK.1023958
=GL3+B3-MA1	1	Three-phase motor	DRN90L4/FE/TH	SEW	SEW.DRN90L4/FE/TH

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0	1	2	3	4	5	6	7	8	9

Cable overview

F10_003

Cable designation	from	to	Cable type	Conductors	ø	Length	Function text
+B3-WG1	+A2-XG4	=F+B3-SG1	ÖLFLEX® CLASSIC 100	4X	0,75	2,018	Emergency stop "Provide"
+B3-WG2	+A2-XG4	=F+B3-SG2	ÖLFLEX® CLASSIC 100	4X	0,75	2,018	=

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Cable diagram

F09_002

Cable name	+B3-WG1		Cable type	ÖLFLEX® CLASSIC 100					
Function text	Emergency stop "Provide"		No. of conductors	4X		Cross-section	0,75	Cable length	2,018
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Emergency stop "Provide"	=F+A2&EFS1/3.4	+A2-XG4	9	BU	=F+B3-SG1	12	=F+A2&EFS1/3.4	Emergency stop "Provide"	
=	=F+A2&EFS1/3.4	+A2-XG4	10	BN	=F+B3-SG1	11	=F+A2&EFS1/3.4	=	
=	=F+A2&EFS1/3.5	+A2-XG4	11	BK	=F+B3-SG1	24	=F+A2&EFS1/3.5	=	
=	=F+A2&EFS1/3.5	+A2-XG4	12	GY	=F+B3-SG1	23	=F+A2&EFS1/3.5	=	

Cable name	+B3-WG2		Cable type	ÖLFLEX® CLASSIC 100					
Function text	Emergency stop "Provide"		No. of conductors	4X		Cross-section	0,75	Cable length	2,018
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Emergency stop "Provide"	=F+A2&EFS1/3.7	+A2-XG4	13	BU	=F+B3-SG2	12	=F+A2&EFS1/3.7	Emergency stop "Provide"	
=	=F+A2&EFS1/3.7	+A2-XG4	14	BN	=F+B3-SG2	11	=F+A2&EFS1/3.7	=	
=	=F+A2&EFS1/3.8	+A2-XG4	15	BK	=F+B3-SG2	24	=F+A2&EFS1/3.8	=	
=	=F+A2&EFS1/3.8	+A2-XG4	16	GY	=F+B3-SG2	23	=F+A2&EFS1/3.8	=	

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Summarized parts list

F02_006

Order number	Quantity	Designation	Type number	Supplier	Pos.
1511000	1	KX Terminal box, WHD: 400x400x120 mm, sheet steel	KX.1511000	RIT	1
8800750	4	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	2
2313150	2	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	3
1571800	1	KX Mounting plate, for KX, WH: 400x400 mm	KX.1571800	RIT	4
0011028	1,77	ÖLFLEX 140 5G1,5	ÖLFLEX® 140	LAPP	5
0014159	3,35	ÖLFLEX® CLASSIC 100 H 5G2,5	ÖLFLEX® CLASSIC 100 H	LAPP	6
22260257	1	S/A cable: M12 socket on free conductor end	AB-C3-2,0PUR-M12FS	LAPP	7
0036026	0,29	ÖLFLEX® SERVO 700 4G2,5+(2x0,75)FDF	ÖLFLEX® SERVO 700	LAPP	8
3211813	14	Feed-through terminal block	PT 6	PXC	9
3022218	4	End clamp	CLIPFIX 35	PXC	10
3211822	2	Ground modular terminal block	PT 6-PE	PXC	11
3024481	2	Partition plate	ATP-ST 6	PXC	12
3212044	2	End cover	D-PT 6	PXC	13
2703994	1	Bus coupler	IL PN BK DI8 DO4 2TX-PAC	PXC	14

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+B3.X1-U1	1	KX Terminal box, WHD: 400x400x120 mm, sheet steel	KX.1511000	RIT	RIT.1511000
+B3.X1-U103	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	RIT.8800750
+B3.X1-U104	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	RIT.8800750
+B3.X1-U105	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	RIT.8800750
+B3.X1-U106	1	TS Cable duct for mounting plate, WHD: 30x2000x80 mm	TS.8800750	RIT	RIT.8800750
+B3.X1-U107	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+B3.X1-U108	1	SZ Support rail to EN 60 715, version TS 35/15, L: 2000 mm	SZ.2313150	RIT	RIT.2313150
+B3.X1-U109	1	KX Mounting plate, for KX, WH: 400x400 mm	KX.1571800	RIT	RIT.1571800
+B3.X1-WD1	1	ÖLFLEX 140 5G1,5	ÖLFLEX® 140	LAPP	LAPP.0011028
+B3.X1-WD2	1	ÖLFLEX® CLASSIC 100 H 5G2,5	ÖLFLEX® CLASSIC 100 H	LAPP	LAPP.0014159
+B3.X1-WG1	1	S/A cable: M12 socket on free conductor end	AB-C3-2,0PUR-M12FS	LAPP	LAPP.22260257
+B3.X1-WZ1	1	ÖLFLEX® SERVO 700 4G2,5+(2x0,75)FDF	ÖLFLEX® SERVO 700	LAPP	LAPP.0036026
=K1+B3.X1-KE1	1	Bus coupler	IL PN BK DI8 DO4 2TX-PAC	PXC	PXC.2703994

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Cable overview

F10_003

Cable designation	from	to	Cable type	Conductors	ø	Length	Function text
+B3.X1-WD1	+B3.X1-XD1	+A2-XD7	ÖLFLEX® 140	5	1,5	1,774	Device power supply
+B3.X1-WD2	+A1-XD4	+B3.X1-XZ1	ÖLFLEX® CLASSIC 100 H	5G	2,5	3,348	Drive "Provide"
+B3.X1-WG1	+B3.X1-XZ1	=GL3+B3-BG1	ÖLFLEX® CLASSIC 100	3	0,34	0,287	Workpiece available: Provide
+B3.X1-WZ1	+B3.X1-XZ1	=GL3+B3-MA1	ÖLFLEX® SERVO 700	6G	2,5/0,75	0,287	Drive "Provide"

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Cable diagram

F09_002

Cable name	+B3.X1-WD1		Cable type	ÖLFLEX® 140					
Function text	Device power supply		No. of conductors	5		Cross-section	1,5	Cable length	1,774
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Device power supply	=K1+B3.X1&EFS1/1.2	+B3.X1-XD1	3	GNYE	+A2-XD7	13	=K1+B3.X1&EFS1/1.2	Device power supply	
=	=K1+B3.X1&EFS1/1.2	+B3.X1-XD1	1	1	+A2-XD7	11	=K1+B3.X1&EFS1/1.2	=	
=	=K1+B3.X1&EFS1/1.2	+B3.X1-XD1	2	2	+A2-XD7	12	=K1+B3.X1&EFS1/1.2	=	
24 V PLC inputs	=K1+B3.X1&EFS1/1.3	+B3.X1-XD1	4	3	+A2-XD7	14	=K1+B3.X1&EFS1/1.3	24 V PLC inputs	
=	=K1+B3.X1&EFS1/1.3	+B3.X1-XD1	5	4	+A2-XD7	15	=K1+B3.X1&EFS1/1.3	=	

Cable name	+B3.X1-WD2		Cable type	ÖLFLEX® CLASSIC 100 H					
Function text	Drive "Provide"		No. of conductors	5G		Cross-section	2,5	Cable length	3,348
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Drive "Provide"	=GL3+A1&EFS1/1.1	+A1-XD4	14	BU	+B3.X1-XZ1	4	=GL3+A1&EFS1/1.1	Drive "Provide"	
=	=GL3+A1&EFS1/1.1	+A1-XD4	11	BN	+B3.X1-XZ1	1	=GL3+A1&EFS1/1.1	=	
=	=GL3+A1&EFS1/1.1	+A1-XD4	12	BK	+B3.X1-XZ1	2	=GL3+A1&EFS1/1.1	=	
=	=GL3+A1&EFS1/1.1	+A1-XD4	13	GY	+B3.X1-XZ1	3	=GL3+A1&EFS1/1.1	=	
=	=GL3+A1&EFS1/1.1	+A1-XD4	15	GNYE	+B3.X1-XZ1	5	=GL3+A1&EFS1/1.1	=	

Cable name	+B3.X1-WG1		Cable type	ÖLFLEX® CLASSIC 100					
Function text	Workpiece available: Provide		No. of conductors	3		Cross-section	0,34	Cable length	0,287
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Workpiece available: Provide	=GL3+A2&EFS1/2.7	+B3.X1-XZ1	10	BN	=GL3+B3-BG1	1	=GL3+A2&EFS1/2.7	Workpiece available: Provide	
=	=GL3+A2&EFS1/2.7	+B3.X1-XZ1	9	BK	=GL3+B3-BG1	4	=GL3+A2&EFS1/2.7	=	
=	=GL3+A2&EFS1/2.8	+B3.X1-XZ1	11	BU	=GL3+B3-BG1	3	=GL3+A2&EFS1/2.7	=	

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Cable diagram

F09_002

Cable name	+B3.X1-WZ1		Cable type	ÖLFLEX® SERVO 700				
Function text	Drive "Provide"		No. of conductors	6G		Cross-section	2,5/0,75	Cable length 0,287
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text
Drive "Provide"	=GL3+A1&EFS1/1.1	+B3.X1-XZ1	1	3	=GL3+B3-MA1	U1	=GL3+A1&EFS1/1.1	Drive "Provide"
=	=GL3+A1&EFS1/1.1	+B3.X1-XZ1	2	4	=GL3+B3-MA1	V1	=GL3+A1&EFS1/1.1	=
=	=GL3+A1&EFS1/1.1	+B3.X1-XZ1	3	5	=GL3+B3-MA1	W1	=GL3+A1&EFS1/1.1	=
=	=GL3+A1&EFS1/1.1	+B3.X1-XZ1	5	GNYE	=GL3+B3-MA1	PE	=GL3+A1&EFS1/1.1	=
=	=GL3+A1&EFS1/1.2	+B3.X1-XZ1	6	1	=GL3+B3-MA1	11	=GL3+A1&EFS1/1.2	
=	=GL3+A1&EFS1/1.2	+B3.X1-XZ1	7	2	=GL3+B3-MA1	12	=GL3+A1&EFS1/1.2	
=	=GL3+A1&EFS1/1.2	+B3.X1-XZ1	8	SH1	+B3.X1-WZ1	SH1	=GL3+A1&EFS1/1.1	Drive "Provide"

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Terminal-strip overview

F14_002

Terminal strip	Function text	Terminals					Terminal diagram page
		first	last	Total PE	Total N	Total number	
+B3.X1-XD1	Power supply PLC	1	5	1	0	5	+B3.X1&EMA2/1
+B3.X1-XZ1	Motor terminals	1	11	1	0	11	+B3.X1&EMA2/2

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Terminal diagram

F13_008

1	+B3.X1-WD1 ÖLFLEX® 140 5x1,5 mm² 1,774 m
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

Strip

+B3.X1-XD1

Power supply PLC

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Device power supply	1											+A2-XD7	11	1	•		=K1+B3.X1-KE1	1:1.2												=K1+B3.X1&EFS1/1.2
=	2											+A2-XD7	12	2	•		=K1+B3.X1-KE1	1:1.3												=K1+B3.X1&EFS1/1.2
=	GNYE											+A2-XD7	13	3 ⏚	•		=K1+B3.X1-KE1	1:1.4												=K1+B3.X1&EFS1/1.2
24 V PLC inputs	3											+A2-XD7	14	4	•		=K1+B3.X1-KE1	1:2.2												=K1+B3.X1&EFS1/1.3
=	4											+A2-XD7	15	5	•		=K1+B3.X1-KE1	1:2.3												=K1+B3.X1&EFS1/1.3

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +B3.X1-XD1	= / &EMA2
			Grinding machine	Drawing number			Terminal diagram
						+B3.X1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL	Station "Provide" / Page 169 from 305

Terminal diagram

F13_008

1	+B3.X1-WZ1	ÖLFLEX® SERVO 700 6G2,5/0,75 mm² 0,287 m
2	+B3.X1-WG1	ÖLFLEX® CLASSIC 100 3x0,34 mm² 0,287 m
3		
4		
5		
6		
7		
8		
9		
10		
11		

Strip

+B3.X1-XZ1

Motor terminals

1	+B3.X1-WD2	ÖLFLEX® CLASSIC 100 H 5G2,5 mm² 3,348 m
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Drive "Provide"	3											=GL3+B3-MA1	U1	1	'		+A1-XD4	11											BN	=GL3+A1&EFS1/1.1
=	4											=GL3+B3-MA1	V1	2	'		+A1-XD4	12											BK	=GL3+A1&EFS1/1.1
=	5											=GL3+B3-MA1	W1	3	'		+A1-XD4	13											GY	=GL3+A1&EFS1/1.1
=														4	'		+A1-XD4	14											BU	=GL3+A1&EFS1/1.1
=	GNYE											=GL3+B3-MA1	PE	5 ⏚			+A1-XD4	15											GNYE	=GL3+A1&EFS1/1.1
=	1											=GL3+B3-MA1	11	6	'		=K1+B3.X1-KE1	3:1.2												=GL3+A1&EFS1/1.2
=	2											=GL3+B3-MA1	12	7	'	%IX9.0	=K1+B3.X1-KE1	3:1.1												=GL3+A1&EFS1/1.2
=	SH1											+B3.X1-WZ1	SH1	8	'															=GL3+A1&EFS1/1.2
Workpiece available: Provide		BK										=GL3+B3-BG1	4	9	'	%IX9.2	=K1+B3.X1-KE1	3:2.1												=GL3+A2&EFS1/2.7
=		BN										=GL3+B3-BG1	1	10	'		=K1+B3.X1-KE1	3:2.2												=GL3+A2&EFS1/2.7
=		BU										=GL3+B3-BG1	3	11	'		=K1+B3.X1-KE1	3:2.3												=GL3+A2&EFS1/2.8

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Terminal diagram +B3.X1-XZ1	= &EMA2
			Grinding machine	Drawing number			Terminal diagram
							+B3.X1 Page 2
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL	Station "Provide" Page 170 from 305

Summarized parts list

F02_006

Order number	Quantity	Designation	Type number	Supplier	Pos.
00100224	7,36	ÖLFLEX® CLASSIC 100 3G0,75	ÖLFLEX® CLASSIC 100	LAPP	1
00101264	7,32	ÖLFLEX® CLASSIC 100 4X0,75	ÖLFLEX® CLASSIC 100	LAPP	2
3211813	2	Feed-through terminal block	PT 6	PXC	3
3022218	2	End clamp	CLIPFIX 35	PXC	4
3211822	1	Ground modular terminal block	PT 6-PE	PXC	5
3212044	1	End cover	D-PT 6	PXC	6
3SB30001HA20	1	22MM PLASTIC ROUND ACTUATOR:	3SB3000-1HA20	SIE	7
3SB34000B	1	ACTUATOR-/INDICATOR COMPONENT CONTACT BLOCK	3SB3400-0B	SIE	8
3SB34000C	1	ACTUATOR-/INDICATOR COMPONENT CONTACT BLOCK	3SB3400-0C	SIE	9
3SB3801-0AD3	1	ENCLOSURE FOR COMMAND DEVICES	3SB3801-0AD3	SIE	10
3SB3901-0AB	1	ACCESSORY / SPARE PART FOR PLASTIC-/METAL PROGRAM	3SB3901-0AB	SIE	11
2403107	1	Touch panel	TP 5170S	PXC	12

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Device tag list

F03_002

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+C2-WD1	1	ÖLFLEX® CLASSIC 100 3G0,75	ÖLFLEX® CLASSIC 100	LAPP	LAPP.00100224
+C2-WG1	1	ÖLFLEX® CLASSIC 100 4X0,75	ÖLFLEX® CLASSIC 100	LAPP	LAPP.00101264
=F+C2-SG1	1	22MM PLASTIC ROUND ACTUATOR:	3SB3000-1HA20	SIE	SIE.3SB3000-1HA20
=S2+C2-PH1	1	Touch panel	TP 5170S	PXC	PXC.2403107

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Cable overview

F10_003

Cable designation	from	to	Cable type	Conductors	ø	Length	Function text
+C2-WD1	+C2-XD1	+A2-XD7	ÖLFLEX® CLASSIC 100	3G	0,75	7,364	Power supply control panel
+C2-WG1	=F+C2-SG1	+A2-XGA1	ÖLFLEX® CLASSIC 100	4X	0,75	7,321	Emergency-stop "Control panel"

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Cable diagram

F09_002

Cable name	+C2-WD1		Cable type	ÖLFLEX® CLASSIC 100					
Function text	Power supply control panel		No. of conductors	3G		Cross-section	0,75	Cable length	7,364
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Power supply control panel	=S2+C2&EFS1/1.1	+C2-XD1	1	BN	+A2-XD7	20	=S2+C2&EFS1/1.1	Power supply control panel	
=	=S2+C2&EFS1/1.1	+C2-XD1	2	BU	+A2-XD7	21	=S2+C2&EFS1/1.1	=	
=	=S2+C2&EFS1/1.1	+C2-XD1	3	GNYE	+A2-XD7	22	=S2+C2&EFS1/1.1	=	

Cable name	+C2-WG1		Cable type	ÖLFLEX® CLASSIC 100					
Function text	Emergency-stop "Control panel"		No. of conductors	4X		Cross-section	0,75	Cable length	7,321
Function text	Page / column	Target designation from	Connection point	Conductor	Target designation to	Connection point	Page / column	Function text	
Emergency-stop "Control panel"	=F+A2&EFS1/2.4	=F+C2-SG1	12	BU	+A2-XGA1	1	=F+A2&EFS1/2.4	Emergency-stop "Control panel"	
=	=F+A2&EFS1/2.4	=F+C2-SG1	11	BN	+A2-XGA1	2	=F+A2&EFS1/2.4	=	
=	=F+A2&EFS1/2.5	=F+C2-SG1	24	BK	+A2-XGA1	3	=F+A2&EFS1/2.5	=	
=	=F+A2&EFS1/2.5	=F+C2-SG1	23	GY	+A2-XGA1	4	=F+A2&EFS1/2.5	=	

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Terminal-strip overview

F14_002

Terminal strip	Function text	Terminals					Terminal diagram page
		first	last	Total PE	Total N	Total number	
+C2-XD1	Power supply control panel	1	3	1	0	3	+C2&EMA2/1

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Terminal diagram

F13_008

1	+C2-WD1 ÖLFLEX® CLASSIC 100 3G0,75 mm² 7,364 m
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

Strip

+C2-XD1

Power supply control panel

Function text	1	2	3	4	5	6	7	8	9	10	11	Target designation	Connection point	Terminal designation	Jumpers	PLC connection point	Target designation	Connection point	11	10	9	8	7	6	5	4	3	2	1	Page / column
Power supply control panel	BN											+A2-XD7	20	1	'		=S2+C2-PH1	X1:X1.1												=S2+C2&EFS1/1.1
=	BU											+A2-XD7	21	2	'		=S2+C2-PH1	X1:X1.2												=S2+C2&EFS1/1.1
=	GNYE											+A2-XD7	22	3 ⏚	'															=S2+C2&EFS1/1.1

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Summarized parts list

F02_006

Order number	Quantity	Designation	Type number	Supplier	Pos.
	10				1
	29				2
	1	Temperature measurement with resistance thermometer 1- and 2-fold		ESS	3
	13	Measuring set-up for filling level: measurement triggered by float with contact		ESS	4

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CAUTION!



Remains energized when main switch is opened

-FC1
In = 32A

-2L1 / 2.0
-2L2 / 2.0
-2L3 / 2.0

-1L1 / =EA/1.0
-1L2 / =EA/1.0

-FC5
16 A

-WE2:9

-PF1
/1.8
AUX SUPPLY

-XD5

-TA1
50 / 5 A

-TA2
50 / 5 A

-TA3
50 / 5 A

-FC2

-F1

-PF1
/1.4

-WE1:1 -WE1 = Busbar PE -WE1:2 -WE1:3

-WE2:1 -WE2 = Busbar N -WE2:2 -WE2:3

+A2-WE1:1 +A2-WE1 = Busbar PE

+A2-WE2:1 +A2-WE2 = Busbar N

-WD1
2X6

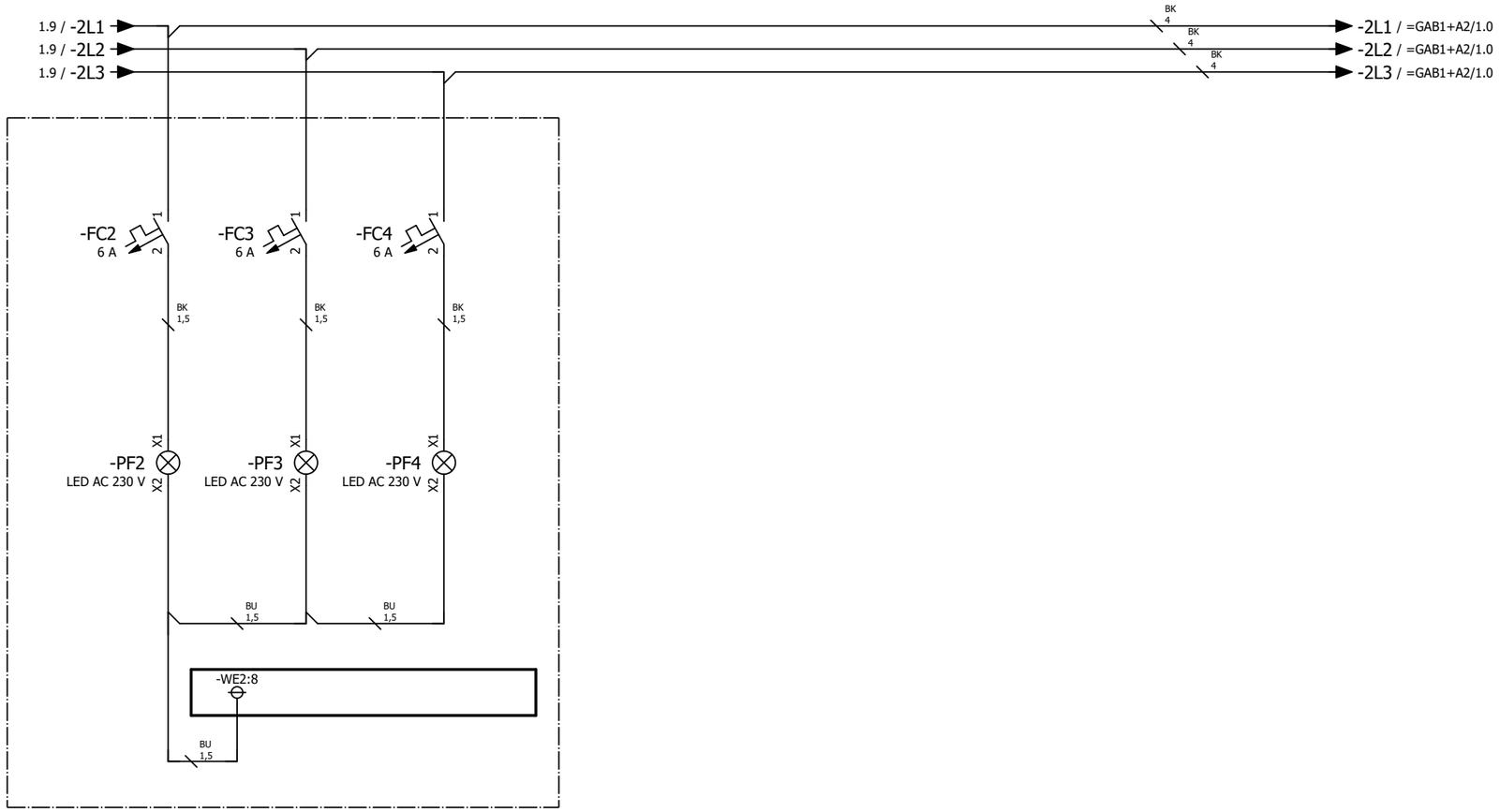
-XD1

Power supply

=+B4&EPA1/1

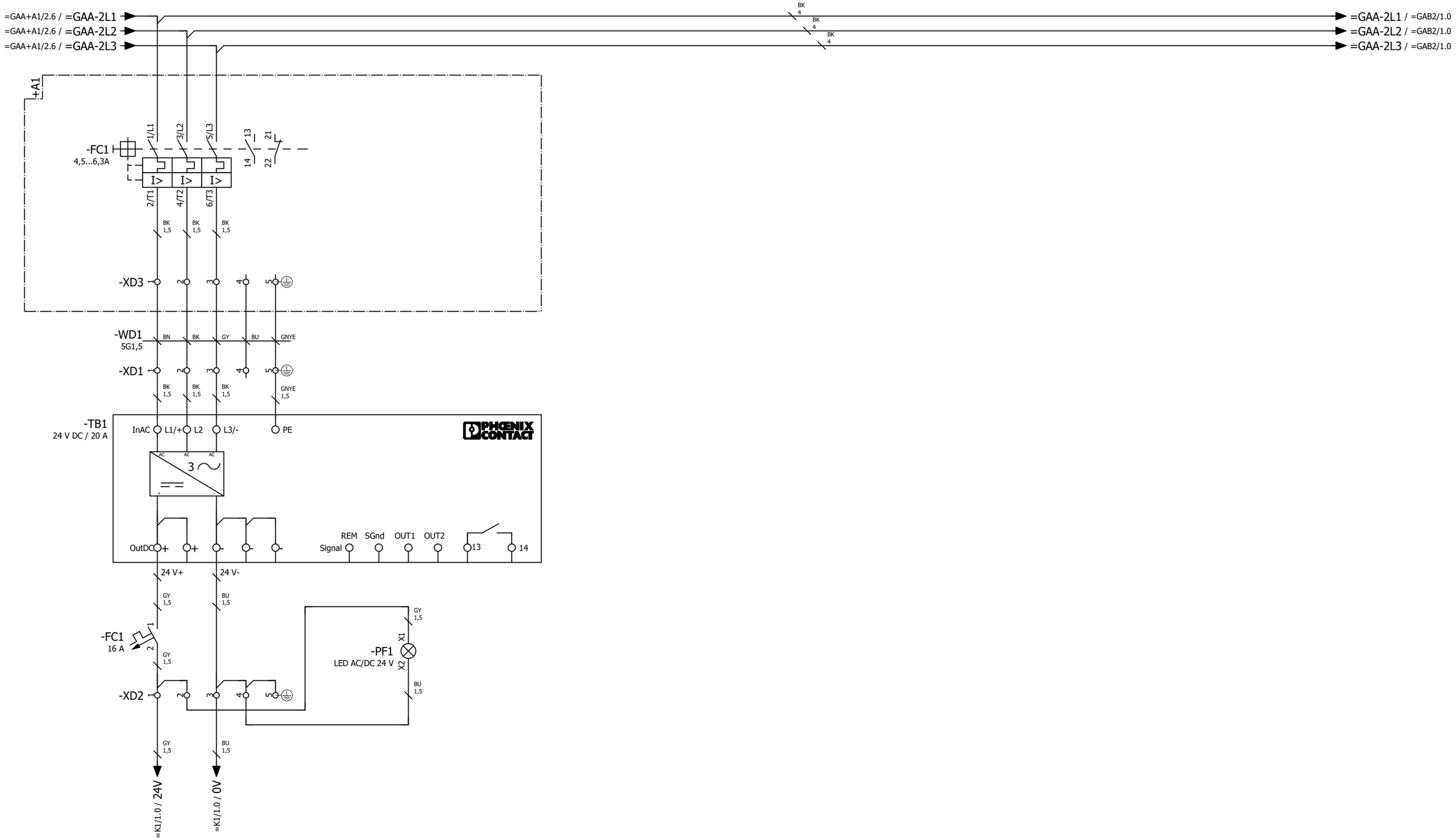
2

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	400 / 230 V power supply		=GAA	&EFS1
			Grinding machine	Drawing number				400 V power supply	Electrical engineering schematic
								+A1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 7/7/2025	Ed. A	Enclosure 1	Page 178 from 305



Network L1/L2/L3

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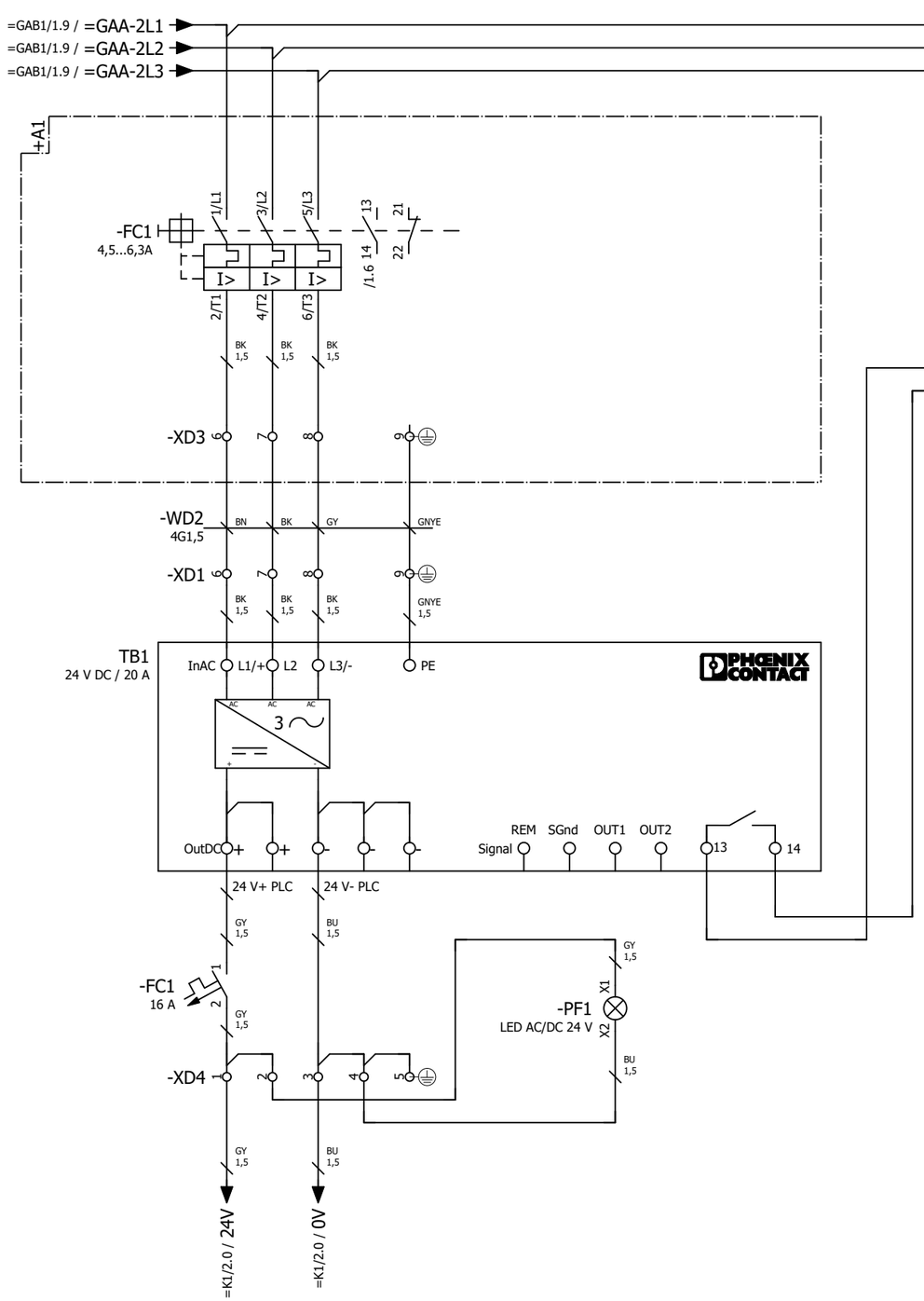
24 V device power supply

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=GAB1/1

=GQA+B2.Y1&MFS11/1



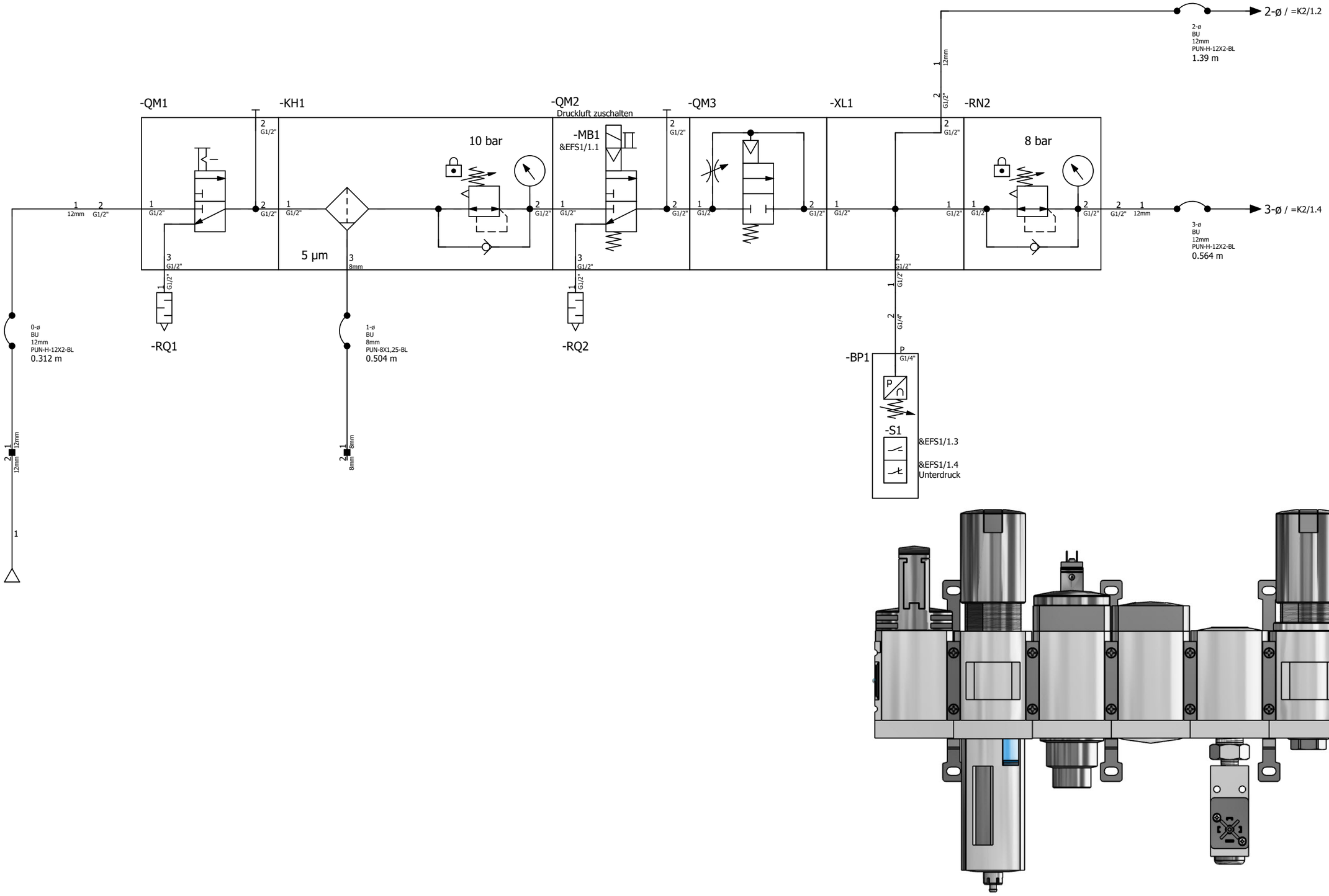
24 V input / output supply

Malfunction 24 V input / output supply

Malfunction 24 V input / output supply

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	24 V supply PLC signals		=GAB2	&EFS1
			Grinding machine	Drawing number				24 V supply PLC signals	Electrical engineering schematic
								+A2	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Enclosure 2	Page 181 from 305

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=GAB2+A2&EFS1/1

&EFS1/1

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Service unit	=GQA	&MFS11
			Grinding machine	Drawing number			Compressed air supply	Pneumatics schematic
							+B2.Y1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021 Ed. EPL	Station "Work"	Page 182 from 305

0	1	2	3	4	5	6	7	8	9

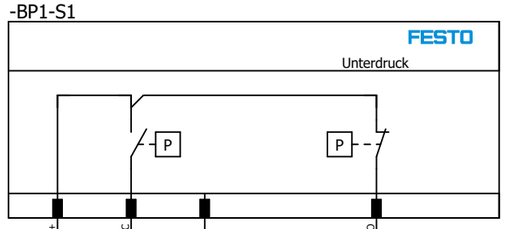
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=K2/3.9 / =K2-24V

=K2/3.9 / =K2-0V

&MFS11/1.6

-BP1-S1



-WD2
3x0,5mm²
/1.1

BK1
1.057 m

BK2
1.066 m

-WG2
5x0,25mm²
/1.2

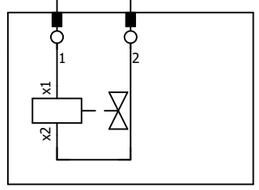
BN
0.491 m

WH
0.491 m

BU
0.491 m

BK
0.491 m

-QM2-MB1
Druckluftaufbereitung

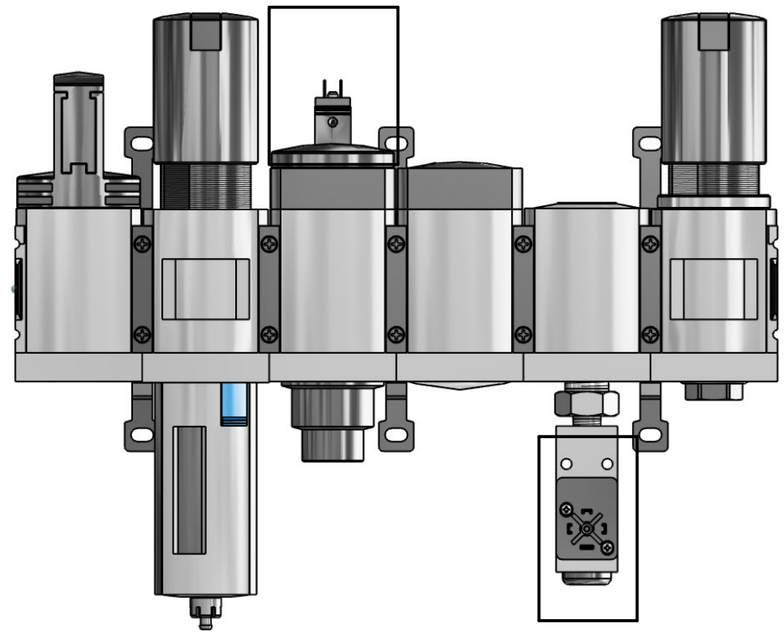


1	2	3	4
X1	X1		
24 VSEN x	Input x+1	0 VSEN x	Input x
=K2-KE2			
=K2&EFA3/2.2			=K2&EFA3/2.2
%IX200.0			%IX200.1
%IX200.0			%IX200.1
Working pressure			Vacuum

Connect compressed air

Working pressure

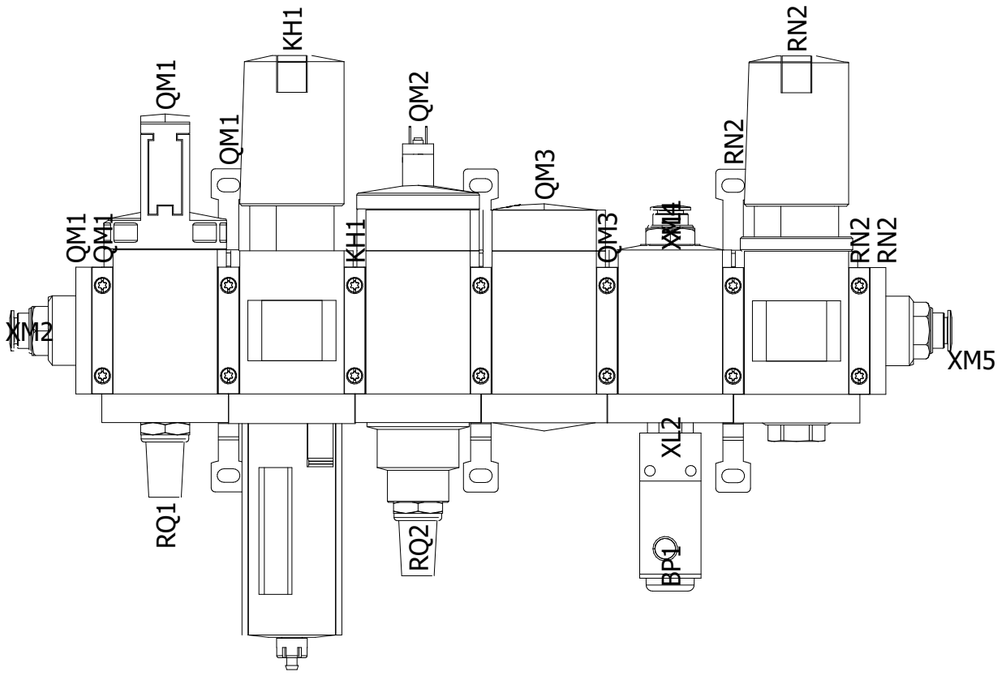
Vacuum

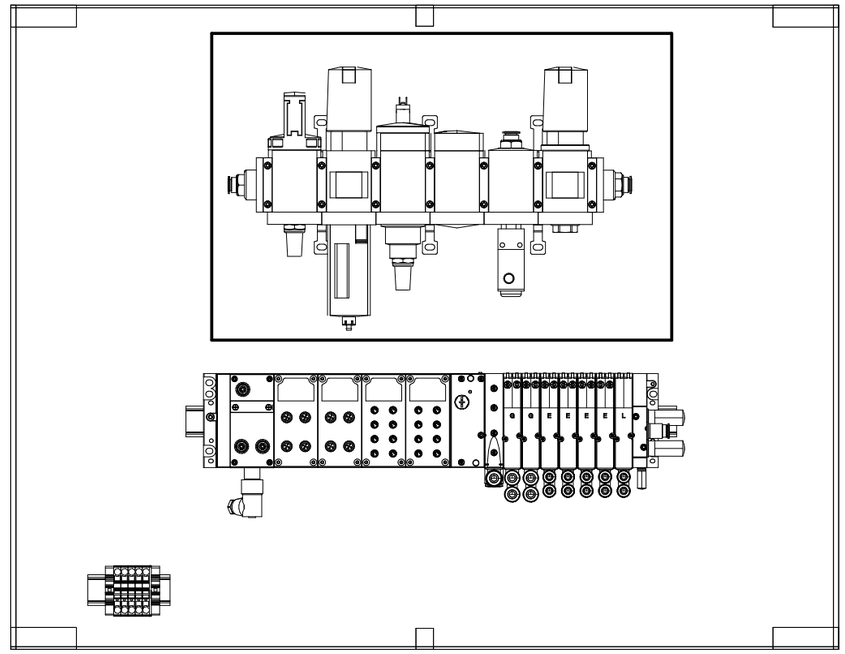


&MTC1/1

&MFS11/1

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Actuator / sensor control		=GQA / &EFS1
			Grinding machine	Drawing number				Compressed air supply / Electrical engineering schematic
								+B2.Y1 / Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021 Ed. EPL		Station "Work" / Page 183 from 305





Service unit

Service unit

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Service unit mounting panel		=GQA	&MTC1
			Grinding machine	Drawing number				Compressed air supply	Model view
								+B2.Y1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 8/5/2021	Ed. EPL	Station "Work"	Page 184 from 305

Enclosure legend

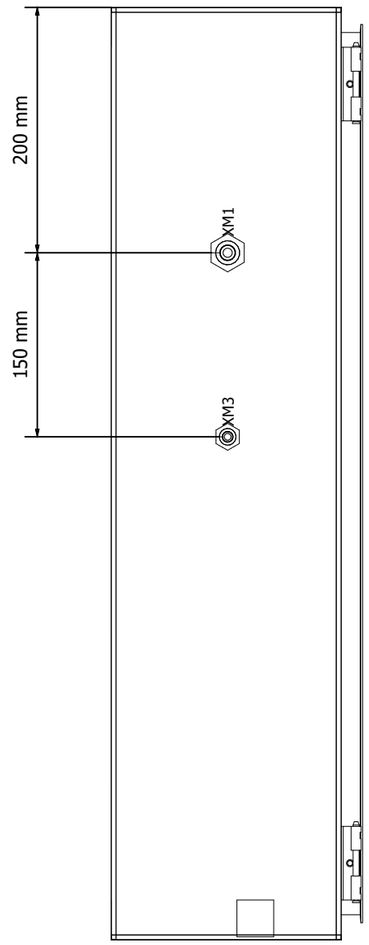
F18_001

Item number	Device tag	Type number	Part number	Manufacturer	Function text
106	QM1	MS6-WP	FES.532195	FES	
107	QM1	MS6-EM1-1/2	FES.541267	FES	
108	XM2	QS-G1/2-12	FES.186104	FES	
109	RQ1	AMTE-M-LH-G12	FES.1205863	FES	
110	KH1	MS6-LFR-1/2-D7-CRM-AS	FES.529184	FES	
111	KH1	MS6-MV	FES.532799	FES	
126	RN2	MS6-WP	FES.532195	FES	
127	RN2	MS6-LR-1/2-D7-AS	FES.529993	FES	
128	XM5	QS-G1/2-12	FES.186104	FES	
164	QM3	MS6-WP	FES.532195	FES	
165	QM3	MS6-DL-1/2	FES.529817	FES	
166	QM3	MS6-MV	FES.532799	FES	
167	XL1	MS6-FRM-1/2	FES.529853	FES	
168	XL2	E-1/4-1/2-MS	FES.534149	FES	
170	XM4	QS-G1/2-12	FES.186104	FES	
171	QM2	MS6-EE-1/2-10V24	FES.542582	FES	
172	RQ2	AMTE-M-LH-G12	FES.1205863	FES	
177	BP1	PEV-1/4-B-M12	FES.192488	FES	
183	QM1	MS6-MV	FES.532799	FES	
185	RN2	MS6-MV	FES.532799	FES	
187	QM1	MS6-AGD	FES.526082	FES	
188	RN2	MS6-AGD	FES.526082	FES	

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Enclosure legend : =GQA+B2.Y1-QM1 - =GQA+B2.Y1-RN2		=GQA	&MTC1	
			Grinding machine	Drawing number				Compressed air supply	Model view	
								+B2.Y1	Page	2
Modification	Date	Name	Creator EPL	Approved by		Date 12/23/2020	Ed. EPL	Station "Work"	Page 185 from 305	

Enclosure legend



Item number	Device tag	Type number
129	XM3	QSS-8-F
159	XM1	QSS-12-F
193	U1	
199	U1	
200	U1	
201	U1	
202	U1	

Housings

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=GAA/1.9 / =GAA-1L1
=GAA/1.9 / =GAA-1L2

OG 6
OG 6

=GAA-1L1 / +A2/1.0
=GAA-1L2 / +A2/1.0

-WE2:4
BU 1,5

-FB1
1
N
2
N.
1

BK 1,5
BU 1,5
-XD2
1
2
3

-WD2
BK
GNYE
BU
L
PE
N
-EA1
14 W

-WE2:5
BU 1,5

-FB2
1
N
2
N.
1

BK 1,5
BU 1,5
4
5
6

BK 1,5
GNYE 1,5
BU 1,5
L
PE
N
-XD1
16 A

CAUTION!



Remains energized when main switch is opened

Enclosure light 1

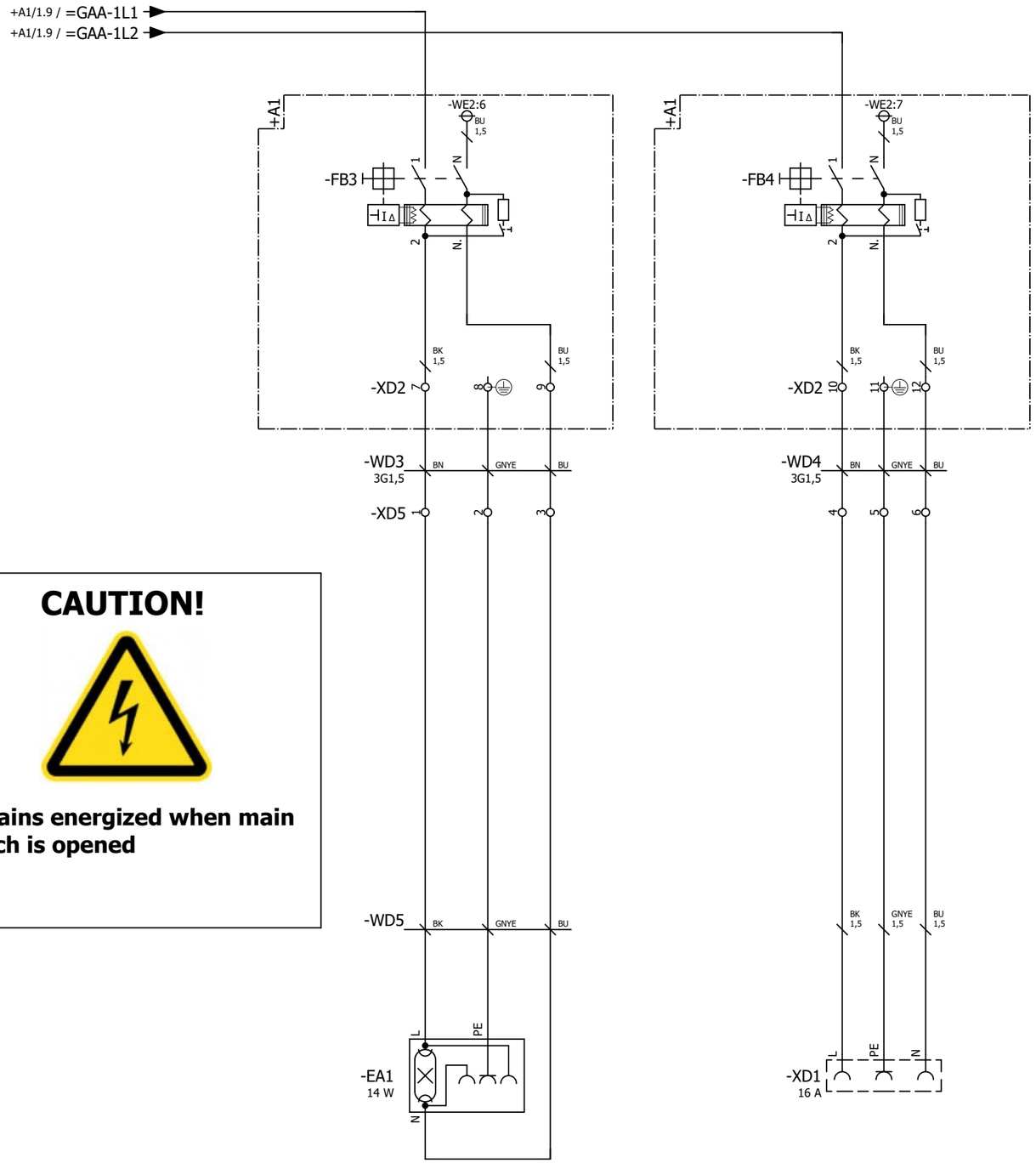
Female receptacle

=GQA+B2.Y1&MTC1/3

+A2/1

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Enclosure light		=EA	&EFS1
			Grinding machine	Drawing number				Lighting	Electrical engineering schematic
								+A1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 7/1/2021	Ed. EPL	Enclosure 1	Page 187 from 305

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CAUTION!

Remains energized when main switch is opened

Enclosure light 1

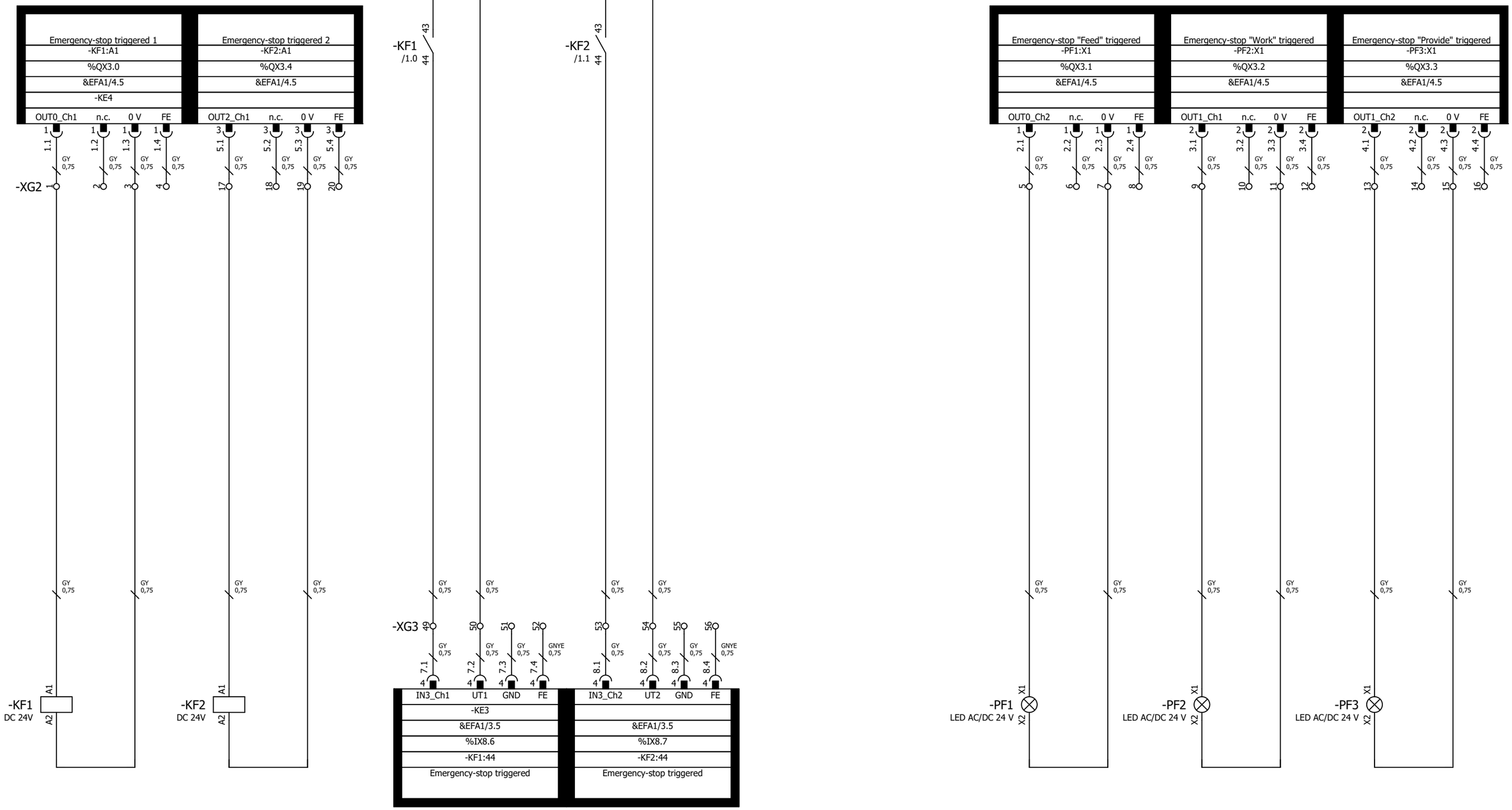
Female receptacle

+A1/1

=F/1

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Enclosure light		=EA	&EFS1
			Grinding machine	Drawing number				Lighting	Electrical engineering schematic
								+A2	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Enclosure 2	Page 188 from 305

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Emergency-stop triggered 1

13 14 =K1/2.8
21 22
31 32
43 44 /1.2

Emergency-stop triggered 2

13 14 =K1/2.8
21 22
31 32
43 44 /1.4

Emergency-stop "Feed" triggered

Emergency-stop "Work" triggered

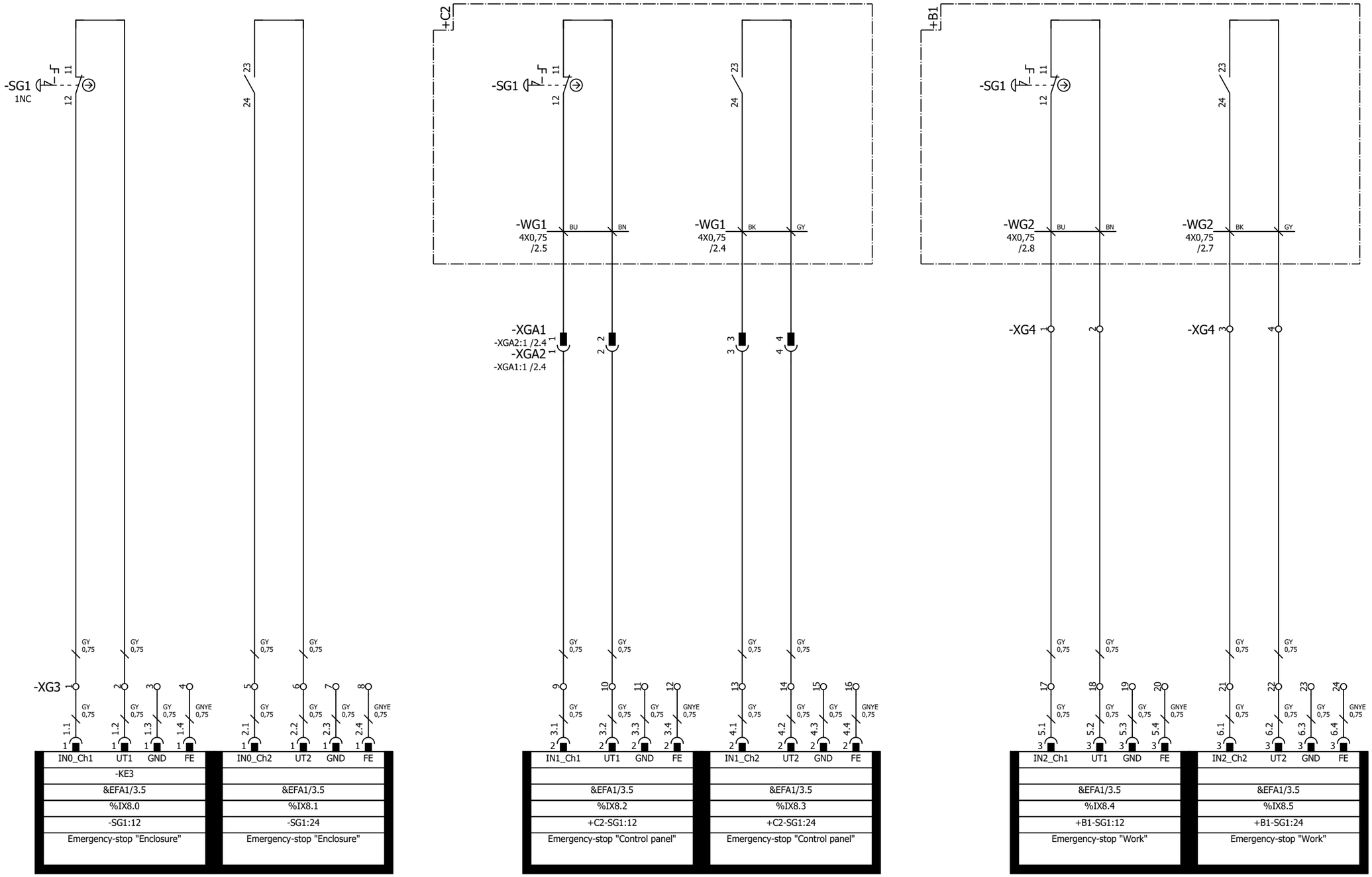
Emergency-stop "Provide" triggered

=EA/1

2

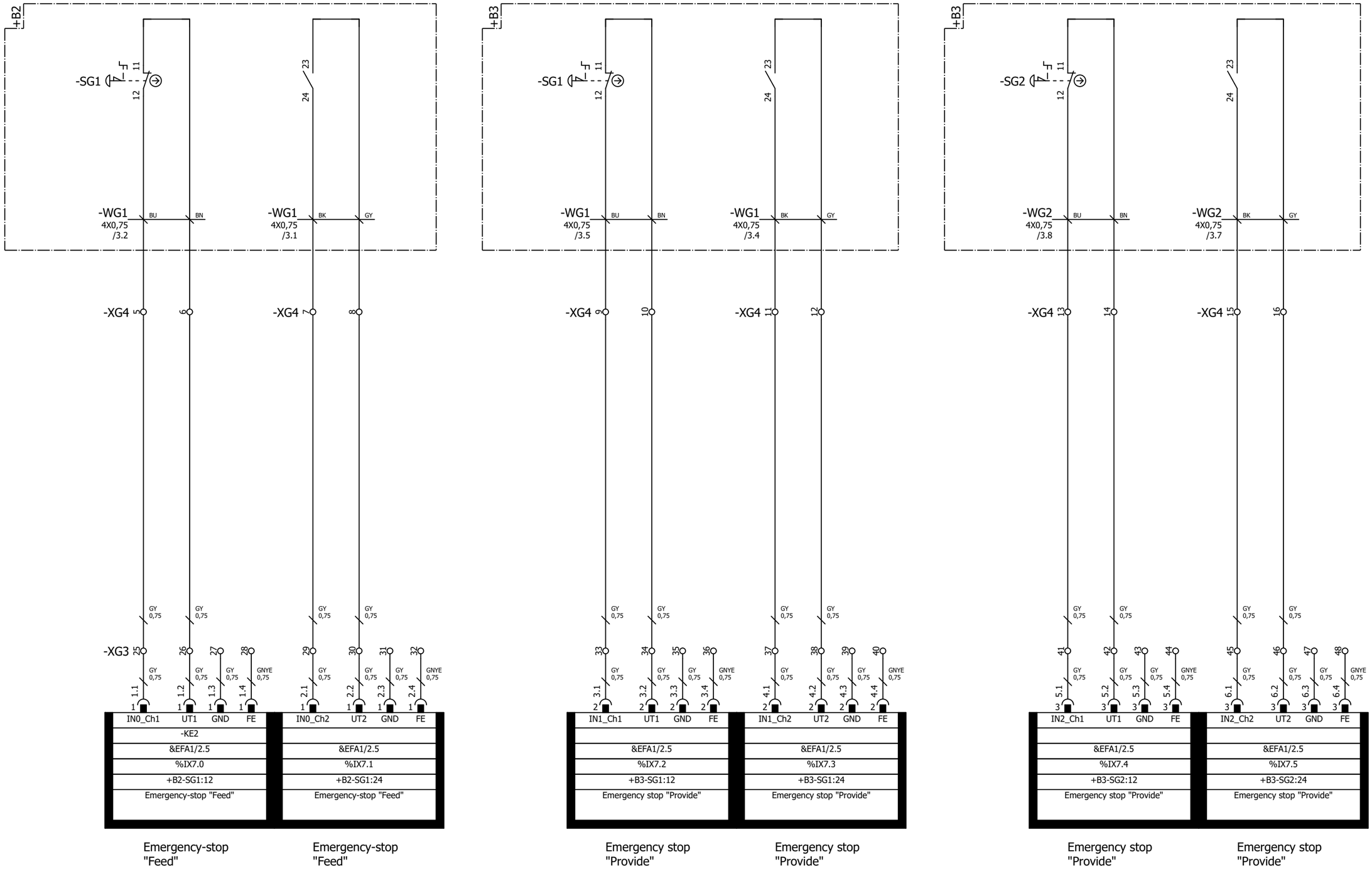
			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Control		=F	&EFS1
			Grinding machine	Drawing number				Emergency-stop control	Electrical engineering schematic
								+A2	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Enclosure 2	Page 189 from 305

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Emergency-stop switch		=F	&EFS1
			Grinding machine	Drawing number				Emergency-stop control	Electrical engineering schematic
								+A2	Page 2
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Enclosure 2	Page 190 from 305

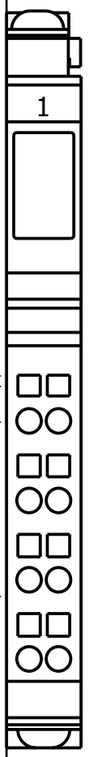
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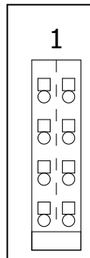
			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Emergency-stop switch		=F	&EFS1
			Grinding machine	Drawing number				Emergency-stop control	Electrical engineering schematic
								+A2	Page 3
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Enclosure 2	Page 191 from 305

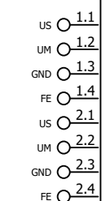
PHOENIX CONTACT

-KE1



IB IL 24 SEG-PAC





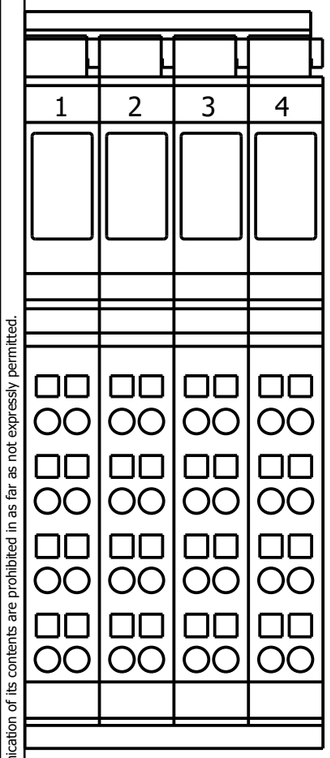
Address:	Function text:	Symbolic address:	Cross-reference:
	Voltage US		
	Voltage UM		
	Voltage US		
	Voltage UM		

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG		Safety supply terminal		=F	&EFA1	
			Grinding machine	Drawing number					Emergency-stop control	Overview PLC	
									+A2	Page 1	
Modification	Date	Name	Creator EPL	Approved by			Date 3/24/2021	Ed. EPL	Enclosure 2	Page 192 from 305	

PHOENIX CONTACT

-KE2



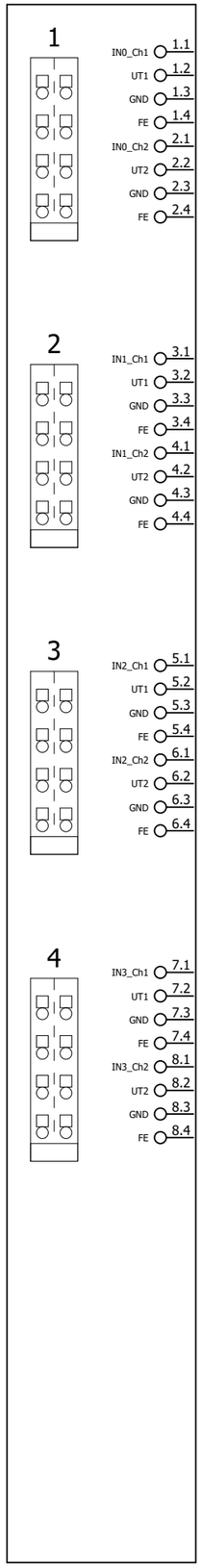
DIP A

500KBD 4W
2MBD 3W

DIP B



IB IL 24 PSDI 8-PAC



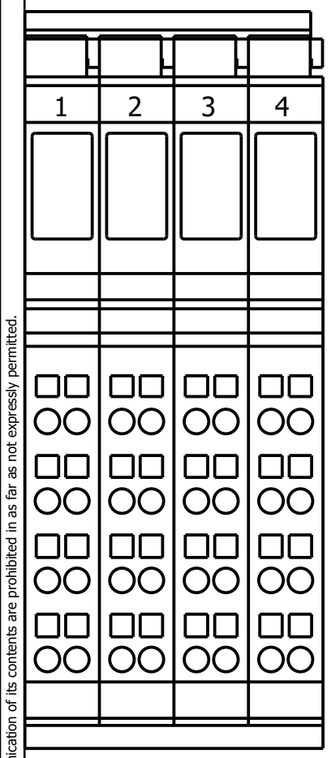
Address:	Function text:	Symbolic address:	Cross-reference:
%IX7.0	Emergency-stop "Feed"	+B2-SG1:12	
	Emergency-stop "Feed"		
	Emergency-stop "Feed"		
	Emergency-stop "Feed"		
%IX7.1	Emergency-stop "Feed"	+B2-SG1:24	
	Emergency-stop "Feed"		
	Emergency-stop "Feed"		
	Emergency-stop "Feed"		
%IX7.2	Emergency stop "Provide"	+B3-SG1:12	
	Emergency stop "Provide"		
	Emergency stop "Provide"		
	Emergency stop "Provide"		
%IX7.3	Emergency stop "Provide"	+B3-SG1:24	
	Emergency stop "Provide"		
	Emergency stop "Provide"		
	Emergency stop "Provide"		
%IX7.4	Emergency stop "Provide"	+B3-SG2:12	
	Emergency stop "Provide"		
	Emergency stop "Provide"		
	Emergency stop "Provide"		
%IX7.5	Emergency stop "Provide"	+B3-SG2:24	
	Emergency stop "Provide"		
	Emergency stop "Provide"		
	Emergency stop "Provide"		
%IX7.6			
%IX7.7			

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Safety digital inputs		=F	&EFA1
			Grinding machine	Drawing number				Emergency-stop control	Overview PLC
								+A2	Page 2
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Enclosure 2	Page 193 from 305

PHOENIX CONTACT

-KE3



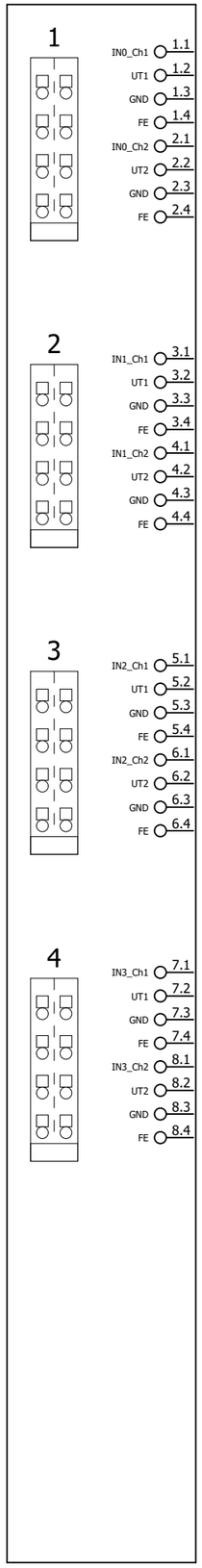
DIP A

500KBD 4W
2MBD 3W

DIP B



IB IL 24 PSDI 8-PAC



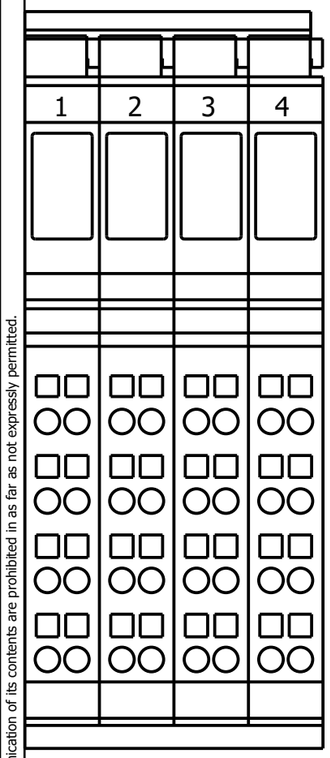
Address:	Function text:	Symbolic address:	Cross-reference:
%IX8.0	Emergency-stop "Enclosure"	-SG1:12	
	Emergency-stop "Enclosure"		
	Emergency-stop "Enclosure"		
	Emergency-stop "Enclosure"		
%IX8.1	Emergency-stop "Enclosure"	-SG1:24	
	Emergency-stop "Enclosure"		
	Emergency-stop "Enclosure"		
	Emergency-stop "Enclosure"		
%IX8.2	Emergency-stop "Control panel"	+C2-SG1:12	
	Emergency-stop "Control panel"		
	Emergency-stop "Control panel"		
	Emergency-stop "Control panel"		
%IX8.3	Emergency-stop "Control panel"	+C2-SG1:24	
	Emergency-stop "Control panel"		
	Emergency-stop "Control panel"		
	Emergency-stop "Control panel"		
%IX8.4	Emergency-stop "Work"	+B1-SG1:12	
	Emergency-stop "Work"		
	Emergency-stop "Work"		
	Emergency-stop "Work"		
%IX8.5	Emergency-stop "Work"	+B1-SG1:24	
	Emergency-stop "Work"		
	Emergency-stop "Work"		
	Emergency-stop "Work"		
%IX8.6	Emergency-stop triggered	-KF1:44	
%IX8.7	Emergency-stop triggered	-KF2:44	

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Safety digital inputs		=F	&EFA1
			Grinding machine	Drawing number				Emergency-stop control	Overview PLC
								+A2	Page 3
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Enclosure 2	Page 194 from 305

PHOENIX CONTACT

-KE4



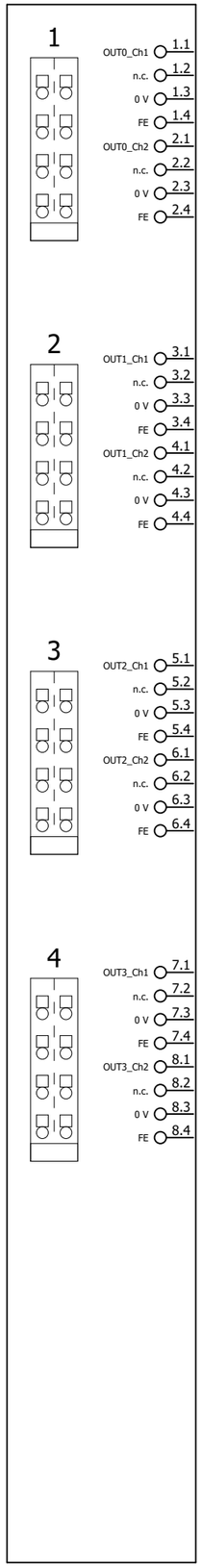
DIP A

500KBD 4W
2MBD 3W

DIP B



IB IL 24 PSDO 8-PAC



Address:	Function text:	Symbolic address:	Cross-reference:
%QX3.0	Emergency-stop triggered 1	-KF1:A1	
	Emergency-stop triggered 1		
	Emergency-stop triggered 2		
	Emergency-stop triggered 2		
%QX3.1	Emergency-stop "Feed" triggered	-PF1:X1	
	Emergency-stop "Work" triggered		
	Emergency-stop "Work" triggered		
	Emergency-stop "Work" triggered		
%QX3.2	Emergency-stop "Work" triggered	-PF2:X1	
	Emergency-stop "Provide" triggered		
	Emergency-stop "Provide" triggered		
	Emergency-stop "Provide" triggered		
%QX3.3	Emergency-stop "Provide" triggered	-PF3:X1	
%QX3.4	Emergency-stop triggered 2	-KF2:A1	
	Emergency-stop triggered 2		
%QX3.5			
%QX3.6			
%QX3.7			

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Safety digital outputs		=F	&EFA1
			Grinding machine	Drawing number				Emergency-stop control	Overview PLC
								+A2	Page 4
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Enclosure 2	Page 195 from 305

PLC diagram

F19_001

Project name ESS_Sample_Project							
Device tag PLC	Address	Placement	Function text	Rack	Module	Symbolic address	Terminal
=F+A2-KE2	%IX7.0	=F+A2&EFS1/3.1	Emergency-stop "Feed"	0	4	=F+B2-SG1:12	1.1
	%IX7.1	=F+A2&EFS1/3.2	=			=F+B2-SG1:24	2.1
	%IX7.2	=F+A2&EFS1/3.4	Emergency stop "Provide"			=F+B3-SG1:12	3.1
	%IX7.3	=F+A2&EFS1/3.5	=			=F+B3-SG1:24	4.1
	%IX7.4	=F+A2&EFS1/3.7	=			=F+B3-SG2:12	5.1
	%IX7.5	=F+A2&EFS1/3.8	=			=F+B3-SG2:24	6.1
	%IX7.6	=F+A2&EFA1/2.5					7.1
	%IX7.7	=F+A2&EFA1/2.5					8.1

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	PLC diagram : =F+A2-KE2 - =F+A2-KE2		=F	&EFA1
			Grinding machine	Drawing number				Emergency-stop control	Overview PLC
								+A2	Page 5
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021	Ed. EPL	Enclosure 2	Page 196 from 305

PLC diagram

F19_001

Project name ESS_Sample_Project

Device tag PLC	Address	Placement	Function text	Rack	Module	Symbolic address	Terminal
=F+A2-KE3	%IX8.0	=F+A2&EFS1/2.1	Emergency-stop "Enclosure"	0	5	=F+A2-SG1:12	1.1
	%IX8.1	=F+A2&EFS1/2.2	=			=F+A2-SG1:24	2.1
	%IX8.2	=F+A2&EFS1/2.4	Emergency-stop "Control panel"			=F+C2-SG1:12	3.1
	%IX8.3	=F+A2&EFS1/2.5	=			=F+C2-SG1:24	4.1
	%IX8.4	=F+A2&EFS1/2.7	Emergency-stop "Work"			=F+B1-SG1:12	5.1
	%IX8.5	=F+A2&EFS1/2.8	=			=F+B1-SG1:24	6.1
	%IX8.6	=F+A2&EFS1/1.2	Emergency-stop triggered			=F+A2-KF1:44	7.1
	%IX8.7	=F+A2&EFS1/1.4	=			=F+A2-KF2:44	8.1

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PLC diagram

F19_001

Project name ESS_Sample_Project							
Device tag PLC	Address	Placement	Function text	Rack	Module	Symbolic address	Terminal
=F+A2-KE4	%QX3.0	=F+A2&EFS1/1.0	Emergency-stop triggered 1	0	6	=F+A2-KF1:A1	1.1
		=F+A2&EFS1/1.0	=				1.2
	%QX3.1	=F+A2&EFS1/1.6	Emergency-stop "Feed" triggered			=F+A2-PF1:X1	2.1
		=F+A2&EFS1/1.7	Emergency-stop "Work" triggered				2.2
	%QX3.2	=F+A2&EFS1/1.7	=			=F+A2-PF2:X1	3.1
		=F+A2&EFS1/1.8	Emergency-stop "Provide" triggered				3.2
	%QX3.3	=F+A2&EFS1/1.8	=			=F+A2-PF3:X1	4.1
		=F+A2&EFS1/1.9					4.2
	%QX3.4	=F+A2&EFS1/1.1	Emergency-stop triggered 2			=F+A2-KF2:A1	5.1
		=F+A2&EFS1/1.1	=				5.2
	%QX3.5	=F+A2&EFA1/4.5					6.1
		=F+A2&EFA1/4.5					6.2
	%QX3.6	=F+A2&EFA1/4.5					7.1
		=F+A2&EFA1/4.5					7.2
	%QX3.7	=F+A2&EFA1/4.5					8.1
		=F+A2&EFA1/4.5					8.2

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-EC1
Air-conditioning unit

-BT1 NTC
-AA2 BMS input
-AA1 Control panel
-QA1 K1 A2 A1 V1
-XD100 -XD101 -XD102 -XD103 -XD104

001 BK 002 BN
003 BK 004 BN
005 BK 006 BN
007 BK 008 BN 009 GY
016 BK 017 BN 018 GY 019 BU 020 OG 021 RD 022 YE 023 GN
031 BU 032 OG 033 BK 034 BU 035 OG 036 BK
044 BK 045 GY
043 BU 046 GY

-XD1 -XD2 -XD3 -XD4 -XD5 -XD6
-KK1
I/O Board
X12 External sensors Remote maintenance Additional external sensors Alarm 1 Alarm 2
X97
X1413
X16.2 +24 V DC
X7
PS
PE

-MA2 Condenser fan
M 3~
-XD27
072 GY 073 BN 074 BK 075 BU
-XD28 -XD29

X1 -XD7
Pump alarm -XD105 -XD106 -PF1
010 RD 011 GN
Monitoring water level -XD107 -QM1
012 BN 013 BK
X18 -XD8
Flow rate sensor -XD108 -FL1
024 BU 025 BN 026 BK
0.5 V ... 3.5 V
5 V DC
Q
2 l/min ... 40 l/min
X3 -XD9
S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12
X11 -XD10
PK 0,5
GY 0,5
YE 0,5
GN 0,5
BN 0,5
WH 0,5
-WD2
Flachband Typ D
6x0,5
500 V

-KK2
Inverter
PE1
-XD11
-Bus 2
-M2
-XD15
052 BK 053 BK 056 BK 057 BK 058 BK 059 BK
-Y1
-XD16
060 BK 061 BK 062 BK 063 BK 064 BK 065 BK

-M1 -XD12
PE2
-XD13
-F2 -XD14
W1
4G1,5
1.000 V
1 1,5 2 1,5 3 1,5 GNYE 1,5
-XD19 -MA3
U1 V1 W1 PE
M 3~
Air compressor
054 GY 055 BK
-XD23 -QR1
P
High-pressure switch
-XD25
066 BK 067 GY 068 BU 069 BN 070 BK 071 GN
-XD26 -MA1
TCE
Electronic expansion valve

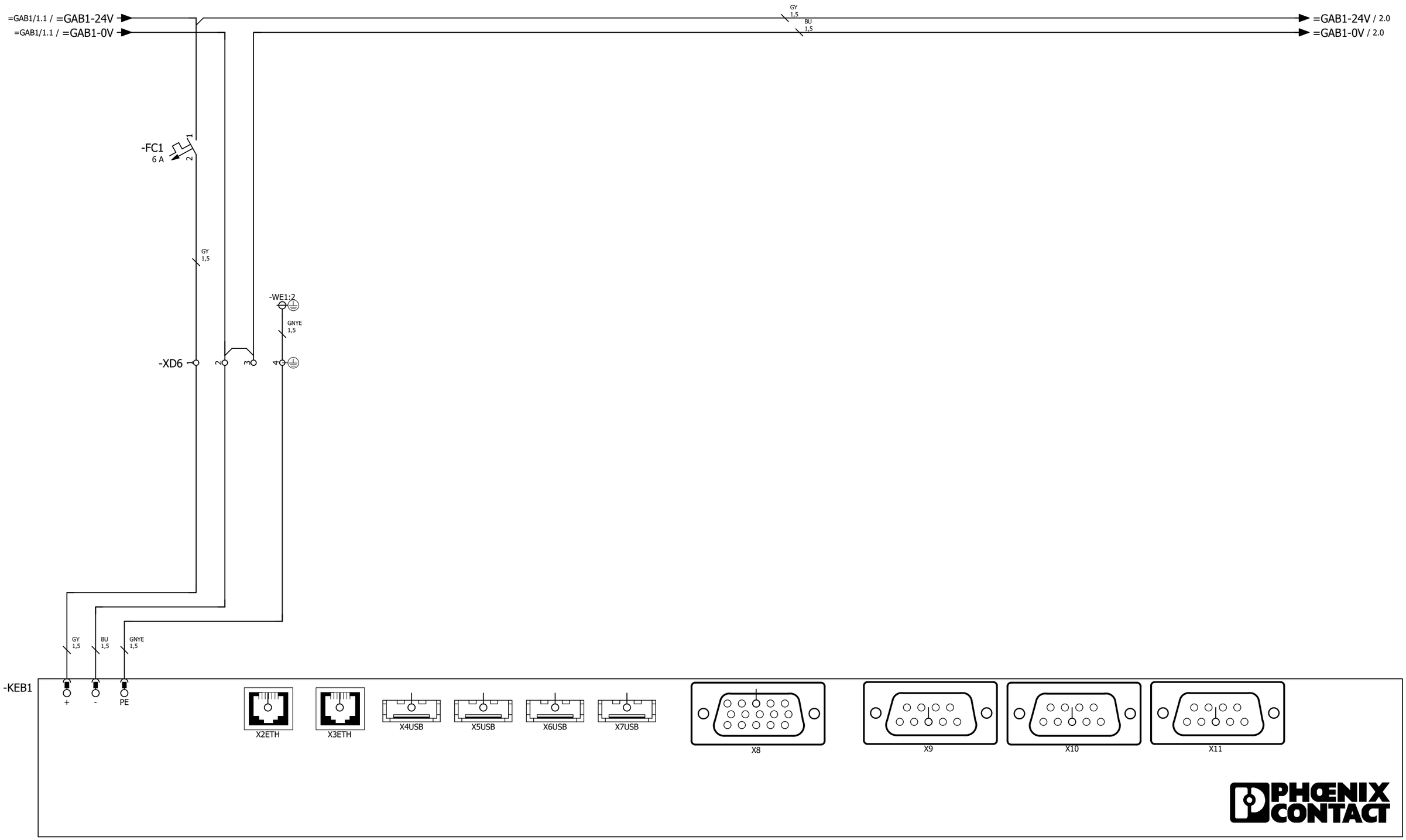
-WD3 2x 24 V GN 0,25 RD 0,25
Environment temperature -XG1 -BT2 NTC1
-WD4 2x 24 V
Suction temperature of the compressor -XG2 -BT3 NTC2
-WD5 2x 24 V
Evaporating temperature -XG3 -BT4 NTC3
-WD6 2x 24 V
Condensation temperature -XG4 -BT5 NTC4
-WD7 2x 24 V
Water inflow temperature -XG5 -BT6 NTC5
-WD8 2x 24 V
Water discharge temperature -XG6 -BT7 NTC6

=F+A2&EFA1/7
=K1+A2/1

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Air-conditioning unit	=EC1	&EFS1
			Grinding machine	Drawing number			Cooling	Electrical engineering schematic
							+A3	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021 Ed. EPL	Air-conditioning unit	Page 199 from 305

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0	1	2	3	4	5	6	7	8	9

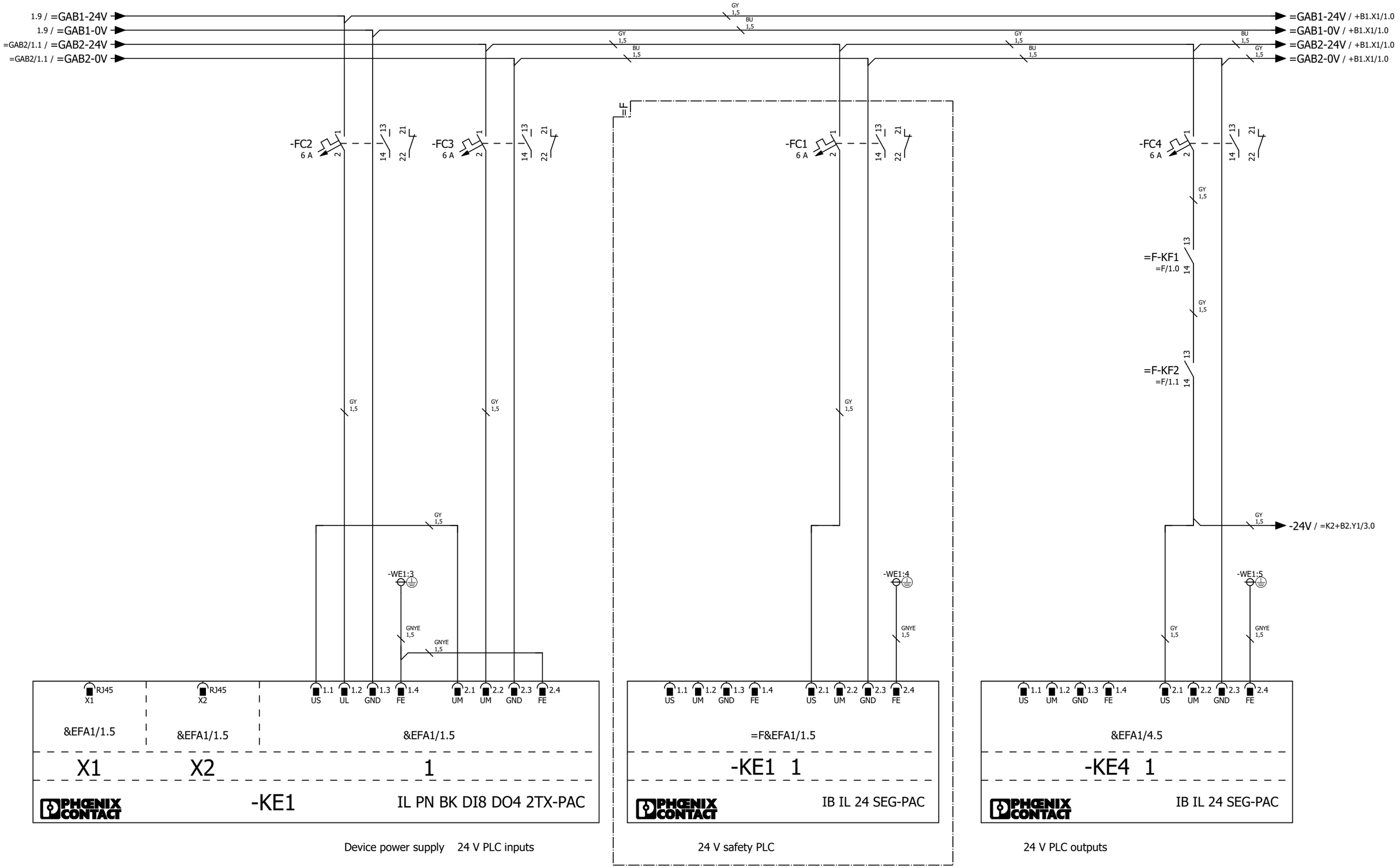


Industrial PC

=EC1+A3/1

2

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Power supply PC		=K1	&EFS1
			Grinding machine	Drawing number				PLC controller	Electrical engineering schematic
								+A2	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Enclosure 2	Page 200 from 305



Device power supply 24 V PLC inputs

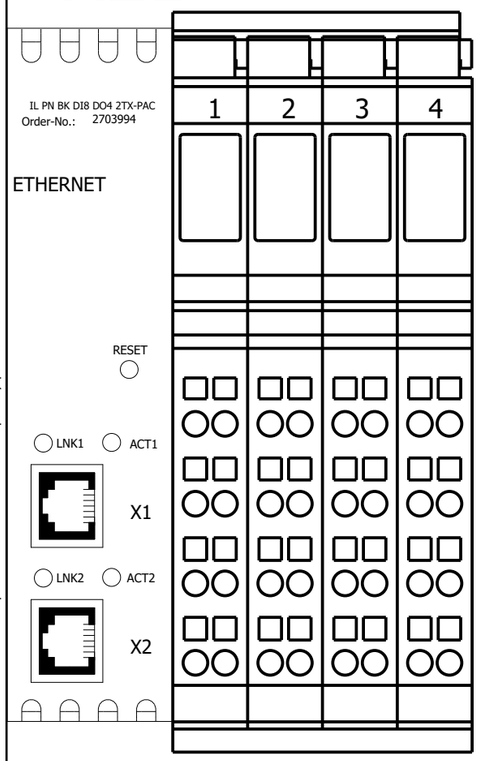
24 V safety PLC

24 V PLC outputs

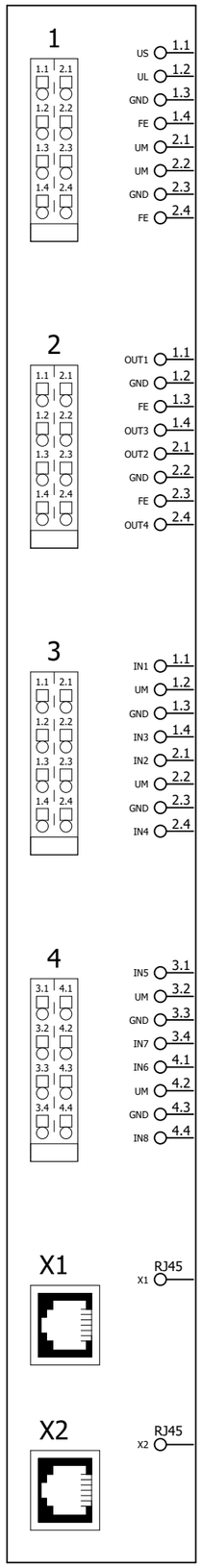
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PHOENIX CONTACT

-KE1



IL PN BK DI8 DO4 2TX-PAC



Address:	Function text:	Symbolic address:	Cross-reference:
	Voltage US		
	Voltage UL		
	Voltage UM		
	Voltage UM		

%QX2.0	Start "Grinding, left"	%QX2.0	
	Start "Grinding, left"		
	Start "Grinding, left"		
%QX2.1			
%QX2.2	Start "Grinding, right"	%QX2.2	
	Start "Grinding, right"		
	Start "Grinding, right"		
%QX2.3			

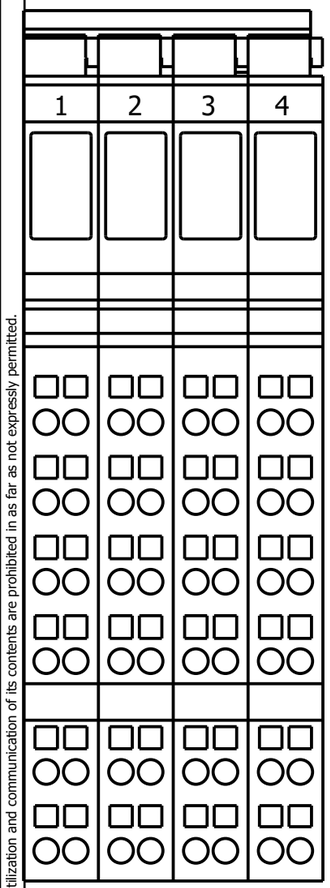
%IX2.0			
%IX2.1			
%IX2.2			
%IX2.3			

%IX2.4	Malfunction 24 V input / output supply	=GAB2+A1-FC1:14	
%IX2.5			
%IX2.6	Malfunction 24 V input / output supply	%IX2.6	
	Malfunction 24 V input / output supply		
	Malfunction 24 V input / output supply		
%IX2.7			

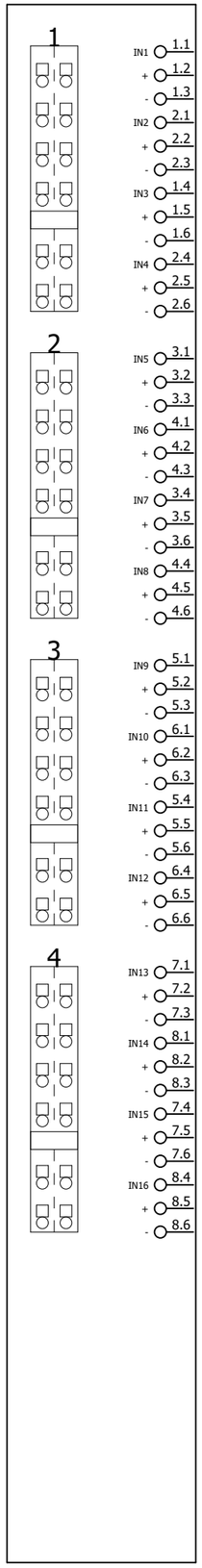
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PHOENIX CONTACT

-KE2



IB IL 24 DI 16-PAC



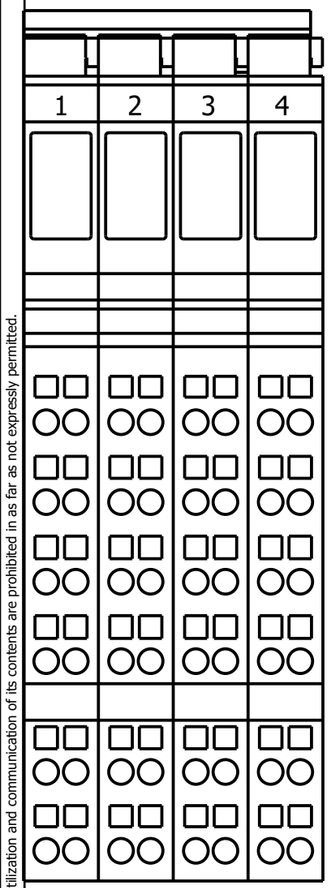
Address:	Function text:	Symbolic address:	Cross-reference:
%IX3.0	Drive "Feed, forward"	=GL1+A1-QA1:14	
	Drive "Feed, forward"		
	Drive "Feed, forward"		
%IX3.1	Drive "Feed, reverse"	=GL1+A1-QA2:14	
	Drive "Feed, reverse"		
	Drive "Feed, reverse"		
%IX3.2	Overload protection "Feed"	=GL1+A1-FC1:14	
%IX3.3	Overload protection "Grinding, left"	=TM1+A1-FC1:14	
	Overload protection "Grinding, left"		
	Overload protection "Grinding, left"		
%IX3.4	Overload protection "Grinding, right"	=TM2+A1-FC1:14	
	Overload protection "Grinding, right"		
	Overload protection "Grinding, right"		
%IX3.5	Drive "Provide, forward"	=GL3+A1-QA1:14	
	Drive "Provide, forward"		
	Drive "Provide, forward"		
%IX3.6	Overload protection Drive "Provide"	=GL3+A1-FC1:14	
%IX3.7	Drive "Provide, reverse"	=GL3+A1-QA2:14	
	Drive "Provide, reverse"		
	Drive "Provide, reverse"		
%IX4.0	Overload protection Drive "Work"	=GL2+A1-FC1:14	
%IX4.1	Drive "Work, reverse"	=GL2+A1-QA2:14	
	Drive "Work, reverse"		
	Drive "Work, reverse"		
%IX4.2	Drive "Work, forward"	=GL2+A1-QA1:14	
	Drive "Work, forward"		
	Drive "Work, forward"		
%IX4.3	Malfunction 24 V device power supply	-FC6:14	
	Malfunction 24 V device power supply		
	Malfunction 24 V device power supply		
%IX4.4	Malfunction 24 V device power supply	-FC5:14	
	Malfunction 24 V device power supply		
	Malfunction 24 V device power supply		
%IX4.5			
%IX4.6	Malfunction 24 V valve terminal	=K2-FC1:14	
	Malfunction 24 V valve terminal		
	Malfunction 24 V valve terminal		
%IX4.7			

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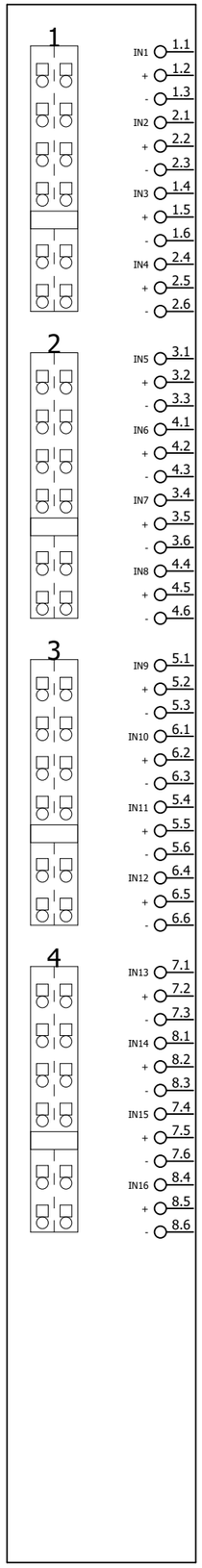
			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Digital inputs	=K1	&EFA1
			Grinding machine	Drawing number			PLC controller	Overview PLC
							+A2	Page 2
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021 Ed. EPL	Enclosure 2	Page 203 from 305

PHOENIX CONTACT

-KE3



IB IL 24 DI 16-PAC



Address:	Function text:	Symbolic address:	Cross-reference:
%IX5.0	Malfunction 24 V device power supply	-FC7:14	
	Malfunction 24 V device power supply		
	Malfunction 24 V device power supply		
%IX5.1	Malfunction 24 V device power supply	-FC9:14	
	Malfunction 24 V device power supply		
	Malfunction 24 V device power supply		
%IX5.2	Malfunction 24 V device power supply	-FC8:14	
	Malfunction 24 V device power supply		
	Malfunction 24 V device power supply		
%IX5.3	Malfunction 24 V device power supply	-FC10:14	
	Malfunction 24 V device power supply		
	Malfunction 24 V device power supply		

%IX5.4			
%IX5.5			
%IX5.6			
%IX5.7			

%IX6.0			
%IX6.1			
%IX6.2			
%IX6.3			

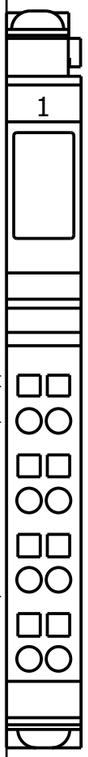
%IX6.4			
%IX6.5			
%IX6.6			
%IX6.7			

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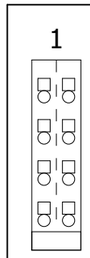
			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Digital inputs		=K1	&EFA1
			Grinding machine	Drawing number				PLC controller	Overview PLC
								+A2	Page 3
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Enclosure 2	Page 204 from 305

PHOENIX CONTACT

-KE4



IB IL 24 SEG-PAC



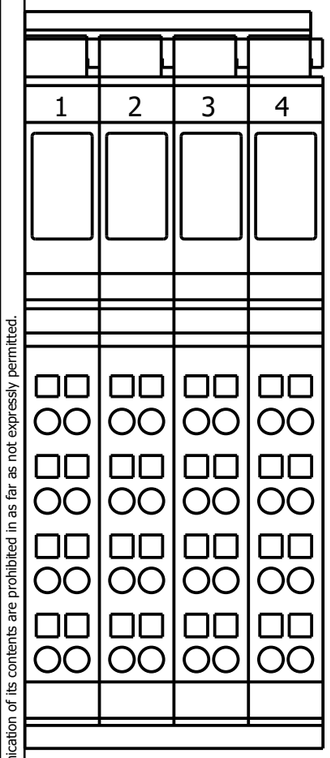
Address:	Function text:	Symbolic address:	Cross-reference:
	Voltage US		
	Voltage UM		
	Voltage US		
	Voltage UM		

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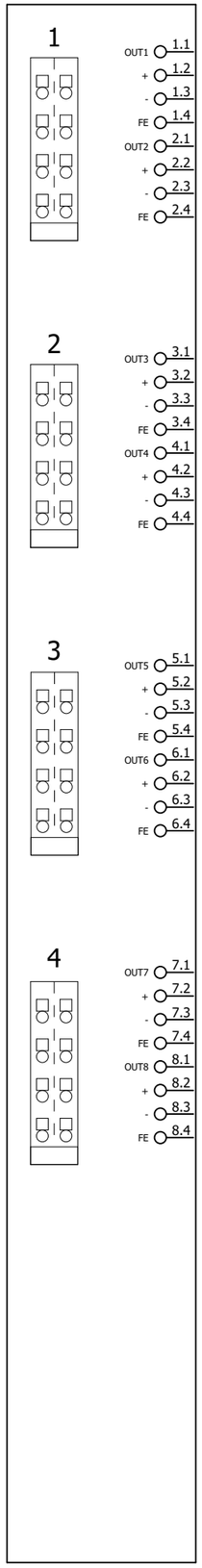
			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Supply terminal digital outputs		=K1	&EFA1
			Grinding machine	Drawing number				PLC controller	Overview PLC
								+A2	Page 4
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Enclosure 2	Page 205 from 305

PHOENIX CONTACT

-KE5



IB IL 24 DO 8-PAC



Address:	Function text:	Symbolic address:	Cross-reference:
%QX4.0	Drive "Work, forward"	=GL2+A1-QA1:A1	
	Drive "Work, forward"		
%QX4.1	Drive "Work, reverse"	=GL2+A1-QA2:A1	
	Drive "Work, reverse"		
%QX4.2	Drive "Provide, forward"	=GL3+A1-QA1:A1	
	Drive "Provide, forward"		
%QX4.3	Drive "Provide, reverse"	=GL3+A1-QA2:A1	
	Drive "Provide, reverse"		
%QX4.4	Drive "Feed, forward"	=GL1+A1-QA1:A1	
	Drive "Feed, forward"		
%QX4.5	Drive "Feed, reverse"	=GL1+A1-QA2:A1	
	Drive "Feed, reverse"		
%QX4.6	Workpiece available: Grind. left	=TM1-PF1:X1	
	Workpiece available: Grind. left		
%QX4.7	Workpiece available: Grind. right	=TM2-PF1:X1	
	Workpiece available: Grind. right		

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Digital outputs		=K1	&EFA1
			Grinding machine	Drawing number				PLC controller	Overview PLC
								+A2	Page 5
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Enclosure 2	Page 206 from 305

PLC diagram

F19_001

Project name ESS_Sample_Project							
Device tag PLC	Address	Placement	Function text	Rack	Module	Symbolic address	Terminal
=K1+A2-KE1	%QX2.0	=TM1+A1&EFS1/1.9	Start "Grinding, left"			%QX2.0	1.1
	%QX2.1	=K1+A2&EFA1/1.5					1.4
	%QX2.2	=TM2+A1&EFS1/1.9	Start "Grinding, right"			%QX2.2	2.1
	%QX2.3	=K1+A2&EFA1/1.5					2.4
	%IX2.0	=K1+A2&EFA1/1.5					1.1
	%IX2.1	=K1+A2&EFA1/1.5					1.4
	%IX2.2	=K1+A2&EFA1/1.5					2.1
	%IX2.3	=K1+A2&EFA1/1.5					2.4
	%IX2.4	=GAB2+A2&EFS1/1.6	Malfunction 24 V input / output supply			=GAB2+A1-FC1:14	3.1
	%IX2.5	=K1+A2&EFA1/1.5					3.4
	%IX2.6	=GAB2+A2&EFS1/1.5	Malfunction 24 V input / output supply			%IX2.6	4.1
	%IX2.7	=K1+A2&EFA1/1.5					4.4

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	PLC diagram : =K1+A2-KE1 - =K1+A2-KE1		=K1	&EFA1
			Grinding machine	Drawing number				PLC controller	Overview PLC
								+A2	Page 6
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021	Ed. EPL	Enclosure 2	Page 207 from 305

PLC diagram

F19_001

Project name ESS_Sample_Project

Device tag PLC	Address	Placement	Function text	Rack	Module	Symbolic address	Terminal
=K1+A2-KE2	%IX3.0	=GL1+A2&EFS1/1.3	Drive "Feed, forward"	0	1	=GL1+A1-QA1:14	1.1
	%IX3.2	=GL1+A1&EFS1/1.5	Overload protection "Feed"			=GL1+A1-FC1:14	1.4
	%IX3.1	=GL1+A2&EFS1/1.5	Drive "Feed, reverse"			=GL1+A1-QA2:14	2.1
	%IX3.3	=TM1+A1&EFS1/1.7	Overload protection "Grinding, left"			=TM1+A1-FC1:14	2.4
	%IX3.4	=TM2+A1&EFS1/1.7	Overload protection "Grinding, right"			=TM2+A1-FC1:14	3.1
	%IX3.6	=GL3+A1&EFS1/1.5	Overload protection Drive "Provide"			=GL3+A1-FC1:14	3.4
	%IX3.5	=GL3+A2&EFS1/2.3	Drive "Provide, forward"			=GL3+A1-QA1:14	4.1
	%IX3.7	=GL3+A2&EFS1/2.5	Drive "Provide, reverse"			=GL3+A1-QA2:14	4.4
	%IX4.0	=GL2+A1&EFS1/1.5	Overload protection Drive "Work"			=GL2+A1-FC1:14	5.1
	%IX4.2	=GL2+A2&EFS1/2.3	Drive "Work, forward"			=GL2+A1-QA1:14	5.4
	%IX4.1	=GL2+A2&EFS1/2.5	Drive "Work, reverse"			=GL2+A1-QA2:14	6.1
	%IX4.3	=K1+B1.X1&EFS1/1.8	Malfunction 24 V device power supply			=K1+A2-FC6:14	6.4
	%IX4.4	=K1+B1.X1&EFS1/1.6	=			=K1+A2-FC5:14	7.1
	%IX4.6	=K2+B2.Y1&EFS1/3.5	Malfunction 24 V valve terminal			=K2+A2-FC1:14	7.4
	%IX4.5	=K1+A2&EFA1/2.5					8.1
	%IX4.7	=K1+A2&EFA1/2.5					8.4

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PLC diagram

F19_001

Project name ESS_Sample_Project							
Device tag PLC	Address	Placement	Function text	Rack	Module	Symbolic address	Terminal
=K1+A2-KE3	%IX5.0	=K1+B2.X1&EFS1/1.6	Malfunction 24 V device power supply	0	2	=K1+A2-FC7:14	1.1
	%IX5.2	=K1+B2.X1&EFS1/1.8	=			=K1+A2-FC8:14	1.4
	%IX5.1	=K1+B3.X1&EFS1/1.6	=			=K1+A2-FC9:14	2.1
	%IX5.3	=K1+B3.X1&EFS1/1.8	=			=K1+A2-FC10:14	2.4
	%IX5.4	=K1+A2&EFA1/3.5					3.1
	%IX5.6	=K1+A2&EFA1/3.5					3.4
	%IX5.5	=K1+A2&EFA1/3.5					4.1
	%IX5.7	=K1+A2&EFA1/3.5					4.4
	%IX6.0	=K1+A2&EFA1/3.5					5.1
	%IX6.2	=K1+A2&EFA1/3.5					5.4
	%IX6.1	=K1+A2&EFA1/3.5					6.1
	%IX6.3	=K1+A2&EFA1/3.5					6.4
	%IX6.4	=K1+A2&EFA1/3.5					7.1
	%IX6.6	=K1+A2&EFA1/3.5					7.4
	%IX6.5	=K1+A2&EFA1/3.5					8.1
	%IX6.7	=K1+A2&EFA1/3.5					8.4

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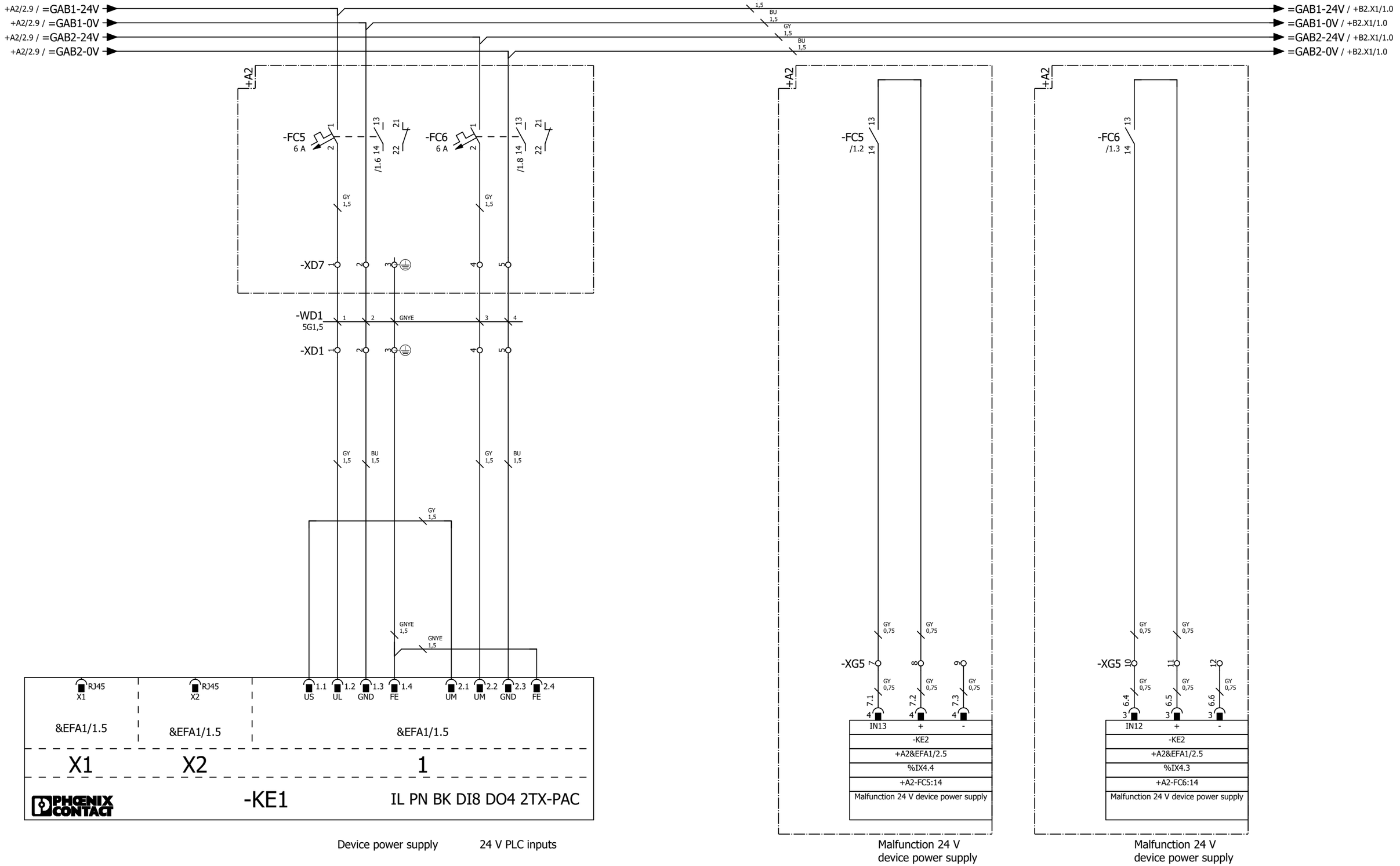
			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	PLC diagram : =K1+A2-KE3 - =K1+A2-KE3		=K1	&EFA1
			Grinding machine	Drawing number				PLC controller	Overview PLC
								+A2	Page 8
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PLC diagram

F19_001

Project name ESS_Sample_Project							
Device tag PLC	Address	Placement	Function text	Rack	Module	Symbolic address	Terminal
=K1+A2-KE5	%QX4.0	=GL2+A1&EFS1/1.7	Drive "Work, forward"	0	8	=GL2+A1-QA1:A1	1.1
	%QX4.1	=GL2+A1&EFS1/1.9	Drive "Work, reverse"			=GL2+A1-QA2:A1	2.1
	%QX4.2	=GL3+A1&EFS1/1.7	Drive "Provide, forward"			=GL3+A1-QA1:A1	3.1
	%QX4.3	=GL3+A1&EFS1/1.9	Drive "Provide, reverse"			=GL3+A1-QA2:A1	4.1
	%QX4.4	=GL1+A1&EFS1/1.7	Drive "Feed, forward"			=GL1+A1-QA1:A1	5.1
	%QX4.5	=GL1+A1&EFS1/1.9	Drive "Feed, reverse"			=GL1+A1-QA2:A1	6.1
	%QX4.6	=TM1+A2&EFS1/2.3	Workpiece available: Grind. left			=TM1+A2-PF1:X1	7.1
	%QX4.7	=TM2+A2&EFS1/2.3	Workpiece available: Grind. right			=TM2+A2-PF1:X1	8.1

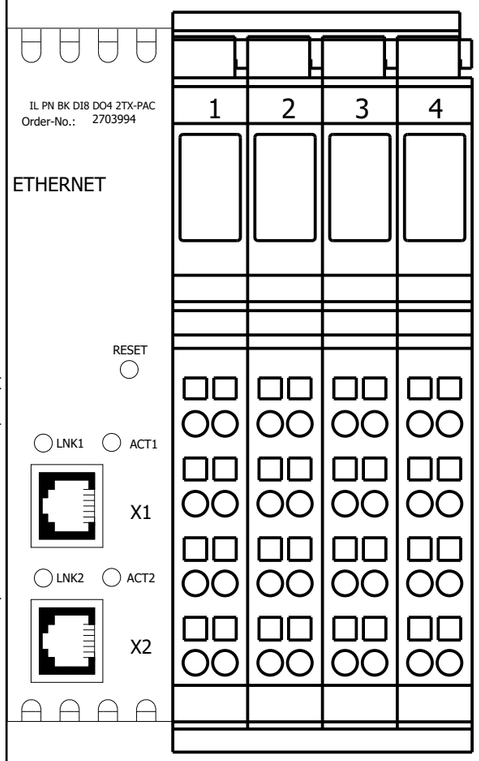
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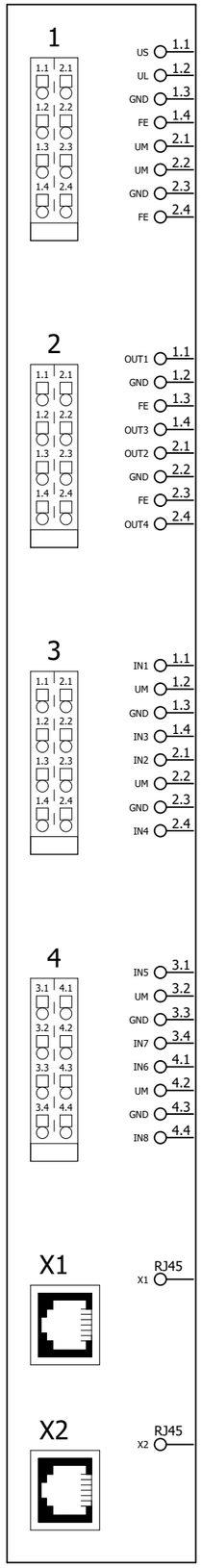
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PHOENIX CONTACT

-KE1



IL PN BK DI8 DO4 2TX-PAC



Address:	Function text:	Symbolic address:	Cross-reference:
	Voltage US		
	Voltage UL		
	Voltage UM		
	Voltage UM		

%QX4.0			
%QX4.1			
%QX4.2			
%QX4.3			

%IX7.0	Excess temperature "Feed"	=GL1+B1-MA1:12	
%IX7.1			
%IX7.2	Workpiece available: Feed	=GL1+B1-BG1:4	
	Workpiece available: Feed		
%IX7.3			

%IX7.4			
%IX7.5			
%IX7.6			
%IX7.7			

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PLC diagram

F19_001

Project name ESS_Sample_Project							
Device tag PLC	Address	Placement	Function text	Rack	Module	Symbolic address	Terminal
=K1+B1.X1-KE1	%QX4.0	=K1+B1.X1&EFA1/1.5					1.1
	%QX4.1	=K1+B1.X1&EFA1/1.5					1.4
	%QX4.2	=K1+B1.X1&EFA1/1.5					2.1
	%QX4.3	=K1+B1.X1&EFA1/1.5					2.4
	%IX7.0	=GL1+A1&EFS1/1.3	Excess temperature "Feed"			=GL1+B1-MA1:12	1.1
	%IX7.1	=K1+B1.X1&EFA1/1.5					1.4
	%IX7.2	=GL1+A2&EFS1/1.7	Workpiece available: Feed			=GL1+B1-BG1:4	2.1
	%IX7.3	=K1+B1.X1&EFA1/1.5					2.4
	%IX7.4	=K1+B1.X1&EFA1/1.5					3.1
	%IX7.5	=K1+B1.X1&EFA1/1.5					3.4
	%IX7.6	=K1+B1.X1&EFA1/1.5					4.1
	%IX7.7	=K1+B1.X1&EFA1/1.5					4.4

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+B1.X1/1.9 / =GAB1-24V
+B1.X1/1.9 / =GAB1-0V
+B1.X1/1.9 / =GAB2-24V
+B1.X1/1.9 / =GAB2-0V

=GAB1-24V / +B3.X1/1.0
=GAB1-0V / +B3.X1/1.0
=GAB2-24V / +B3.X1/1.0
=GAB2-0V / +B3.X1/1.0

+A2

-FC7 6 A
-FC8 6 A
/1.6
/1.8

-XD7
-WD1 5G1,5
-XD1

GNYE

GY 1,5
BU 1,5
GNYE 1,5

RJ45 X1
RJ45 X2
1.1 US
1.2 UL
1.3 GND
1.4 FE
2.1 UM
2.2 UM
2.3 GND
2.4 FE

&EFA1/1.5

X1 X2 1

-KE1 IL PN BK DI8 DO4 2TX-PAC

Device power supply

24 V PLC inputs

-FC7 /1.2
-FC8 /1.3

-XG5

GY 0,75

IN1 + -
IN3 + -

-KE3
+A2&EFA1/3.5
%IX5.0
%IX5.2
+A2-FC7:14
+A2-FC8:14
Malfunction 24 V device power supply

Malfunction 24 V device power supply

Malfunction 24 V device power supply

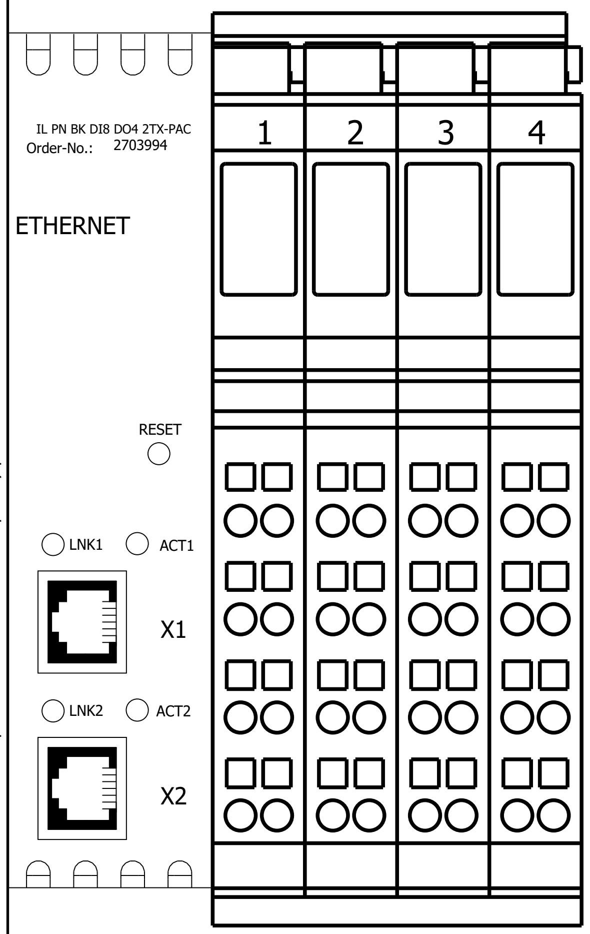
+B1.X1&EFA1/2

&EFA1/1

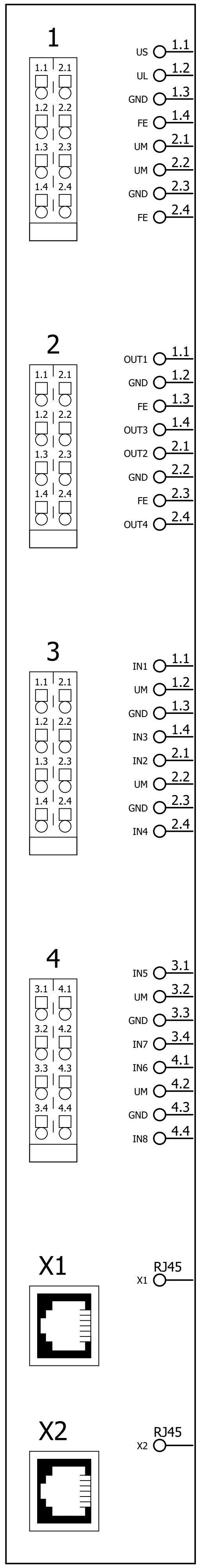
			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Power supply I/O module	=K1	&EFS1
			Grinding machine	Drawing number			PLC controller	Electrical engineering schematic
							+B2.X1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 8/5/2021 Ed. EPL	Station "Work"	Page 214 from 305

PHOENIX CONTACT

-KE1



IL PN BK DI8 DO4 2TX-PAC



Address:	Function text:	Symbolic address:	Cross-reference:
	Voltage US		
	Voltage UL		
	Voltage UM		
	Voltage UM		

%QX5.0			
%QX5.1			
%QX5.2			
%QX5.3			

%IX8.0			
%IX8.1			
%IX8.2	Workpiece available: Grind. left	=TM1+B2-BG1:4	
	Workpiece available: Grind. left		
	Workpiece available: Grind. left		
%IX8.3			

%IX8.4			
%IX8.5			
%IX8.6	Workpiece available: Grind. right	=TM2+B2-BG1:4	
	Workpiece available: Grind. right		
	Workpiece available: Grind. right		
%IX8.7			

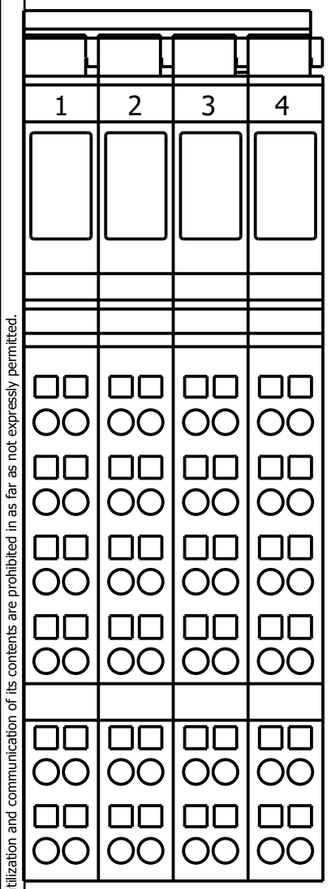
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&EFS1/1

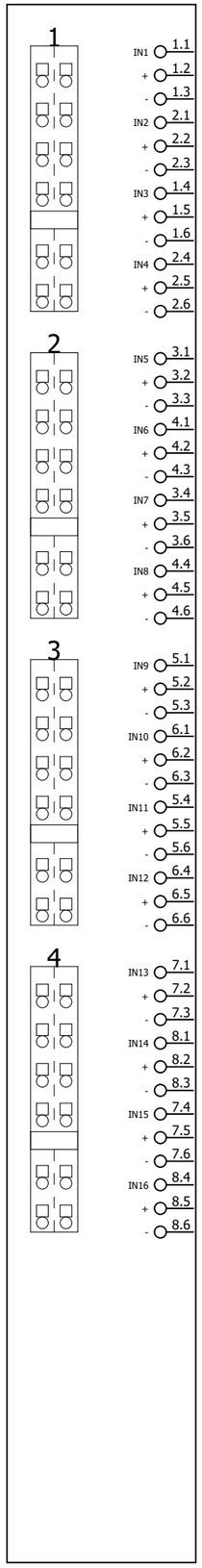
2

PHOENIX CONTACT

-KE2



IB IL 24 DI 16-PAC



Address:	Function text:	Symbolic address:	Cross-reference:
%IX2.0	Excess temperature Drive "Work"	=GL2+B2-MA1:12	
%IX2.1			
%IX2.2	Workpiece available: Work	=GL2+B2-BG1:4	
	Workpiece available: Work		
%IX2.3			

%IX2.4			
%IX2.5			
%IX2.6			
%IX2.7			

%IX3.0			
%IX3.1			
%IX3.2			
%IX3.3			

%IX3.4			
%IX3.5			
%IX3.6			
%IX3.7			

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Digital inputs	=K1	&EFA1
			Grinding machine	Drawing number			PLC controller	Overview PLC
							+B2.X1	Page 2
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021 Ed. EPL	Station "Work"	Page 216 from 305

PLC diagram

F19_001

Project name ESS_Sample_Project							
Device tag PLC	Address	Placement	Function text	Rack	Module	Symbolic address	Terminal
=K1+B2.X1-KE1	%QX5.0	=K1+B2.X1&EFA1/1.5					1.1
	%QX5.1	=K1+B2.X1&EFA1/1.5					1.4
	%QX5.2	=K1+B2.X1&EFA1/1.5					2.1
	%QX5.3	=K1+B2.X1&EFA1/1.5					2.4
	%IX8.0	=K1+B2.X1&EFA1/1.5					1.1
	%IX8.1	=K1+B2.X1&EFA1/1.5					1.4
	%IX8.2	=TM1+A2&EFS1/2.1	Workpiece available: Grind. left			=TM1+B2-BG1:4	2.1
	%IX8.3	=K1+B2.X1&EFA1/1.5					2.4
	%IX8.4	=K1+B2.X1&EFA1/1.5					3.1
	%IX8.5	=K1+B2.X1&EFA1/1.5					3.4
	%IX8.6	=TM2+A2&EFS1/2.1	Workpiece available: Grind. right			=TM2+B2-BG1:4	4.1
	%IX8.7	=K1+B2.X1&EFA1/1.5					4.4

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	PLC diagram : =K1+B2.X1-KE1 - =K1+B2.X1-KE1		=K1	&EFA1
			Grinding machine	Drawing number				PLC controller	Overview PLC
								+B2.X1	Page 3
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021	Ed. EPL	Station "Work"	Page 217 from 305

PLC diagram

F19_001

Project name ESS_Sample_Project							
Device tag PLC	Address	Placement	Function text	Rack	Module	Symbolic address	Terminal
=K1+B2.X1-KE2	%IX2.0	=GL2+A1&EFS1/1.3	Excess temperature Drive "Work"	0	1	=GL2+B2-MA1:12	1.1
	%IX2.2	=GL2+A2&EFS1/2.7	Workpiece available: Work			=GL2+B2-BG1:4	1.4
	%IX2.1	=K1+B2.X1&EFA1/2.5					2.1
	%IX2.3	=K1+B2.X1&EFA1/2.5					2.4
	%IX2.4	=K1+B2.X1&EFA1/2.5					3.1
	%IX2.6	=K1+B2.X1&EFA1/2.5					3.4
	%IX2.5	=K1+B2.X1&EFA1/2.5					4.1
	%IX2.7	=K1+B2.X1&EFA1/2.5					4.4
	%IX3.0	=K1+B2.X1&EFA1/2.5					5.1
	%IX3.2	=K1+B2.X1&EFA1/2.5					5.4
	%IX3.1	=K1+B2.X1&EFA1/2.5					6.1
	%IX3.3	=K1+B2.X1&EFA1/2.5					6.4
	%IX3.4	=K1+B2.X1&EFA1/2.5					7.1
	%IX3.6	=K1+B2.X1&EFA1/2.5					7.4
	%IX3.5	=K1+B2.X1&EFA1/2.5					8.1
	%IX3.7	=K1+B2.X1&EFA1/2.5					8.4

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+B2.X1/1.9 / =GAB1-24V
+B2.X1/1.9 / =GAB1-0V
+B2.X1/1.9 / =GAB2-24V
+B2.X1/1.9 / =GAB2-0V

GY 1,5
BU 1,5

=GAB1-24V / =K2+B2.Y1/3.0
=GAB1-0V / =K2+B2.Y1/3.0

+A2

-FC9 6 A
-FC10 6 A
/1.6
/1.8

GY 1,5

-XD7

-WD1 5G1,5 GNYE

-XD1

GY 1,5 BU 1,5

GY 1,5

GNYE 1,5

RJ45 X1
RJ45 X2
1.1 US 1.2 UL 1.3 GND 1.4 FE
2.1 UM 2.2 UM 2.3 GND 2.4 FE

&EFA1/1.5

X1 X2 1

-KE1 IL PN BK DI8 DO4 2TX-PAC

Device power supply

24 V PLC inputs

+A2

-FC9 /1.2

-XG5

GY 0,75

IN2 + -
-KE3
+A2&EFA1/3.5
%IX5.1
+A2-FC9:14
Malfunction 24 V device power supply

Malfunction 24 V device power supply

+A2

-FC10 /1.3

-XG5

GY 0,75

IN4 + -
-KE3
+A2&EFA1/3.5
%IX5.3
+A2-FC10:14
Malfunction 24 V device power supply

Malfunction 24 V device power supply

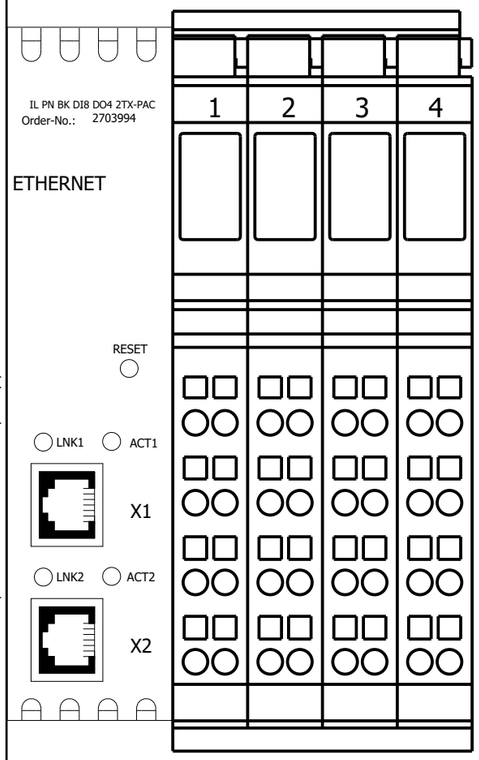
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&EFA1/1

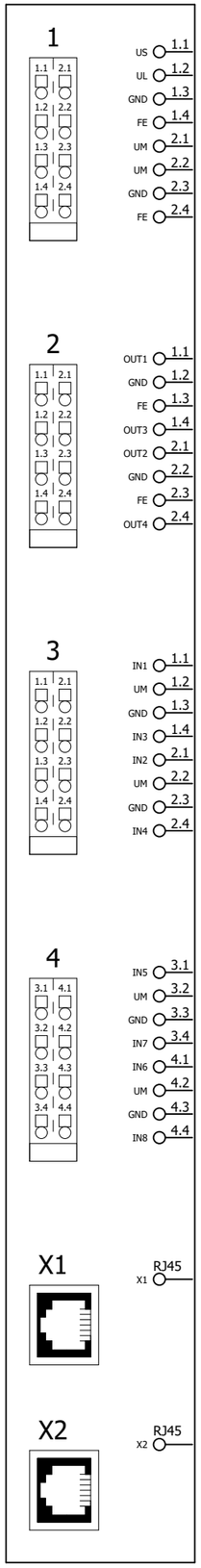
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			Grinding machine	Drawing number			PLC controller	Electrical engineering schematic
							+B3.X1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 8/5/2021 Ed. EPL	Station "Provide"	Page 219 from 305

PHOENIX CONTACT

-KE1



IL PN BK DI8 DO4 2TX-PAC



Address:	Function text:	Symbolic address:	Cross-reference:
	Voltage US		
	Voltage UL		
	Voltage UM		
	Voltage UM		

%QX6.0			
%QX6.1			
%QX6.2			
%QX6.3			

%IX9.0	Excess temperature Drive "Provide"	=GL3+B3-MA1:12	
%IX9.1			
%IX9.2	Workpiece available: Provide	=GL3+B3-BG1:4	
	Workpiece available: Provide		
%IX9.3			

%IX9.4			
%IX9.5			
%IX9.6			
%IX9.7			

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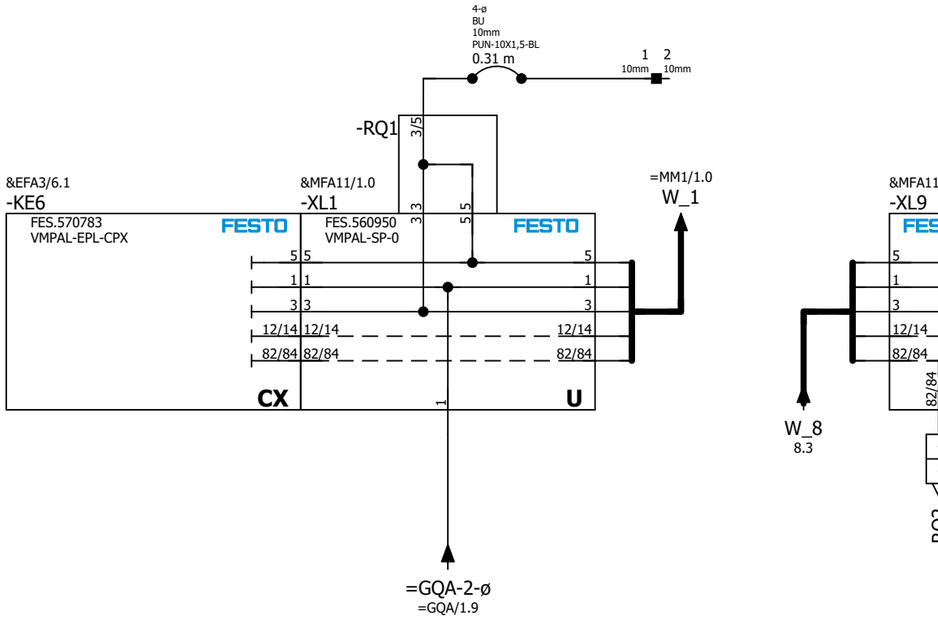
PLC diagram

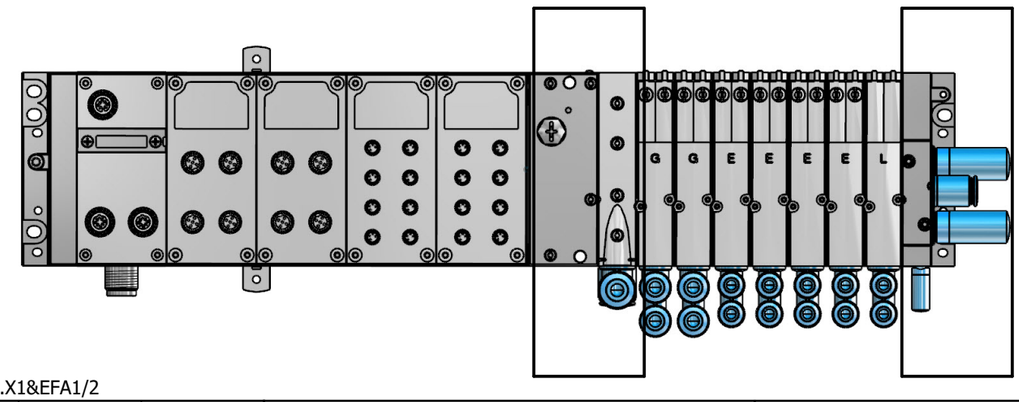
F19_001

Project name ESS_Sample_Project							
Device tag PLC	Address	Placement	Function text	Rack	Module	Symbolic address	Terminal
=K1+B3.X1-KE1	%QX6.0	=K1+B3.X1&EFA1/1.5					1.1
	%QX6.1	=K1+B3.X1&EFA1/1.5					1.4
	%QX6.2	=K1+B3.X1&EFA1/1.5					2.1
	%QX6.3	=K1+B3.X1&EFA1/1.5					2.4
	%IX9.0	=GL3+A1&EFS1/1.3	Excess temperature Drive "Provide"			=GL3+B3-MA1:12	1.1
	%IX9.1	=K1+B3.X1&EFA1/1.5					1.4
	%IX9.2	=GL3+A2&EFS1/2.7	Workpiece available: Provide			=GL3+B3-BG1:4	2.1
	%IX9.3	=K1+B3.X1&EFA1/1.5					2.4
	%IX9.4	=K1+B3.X1&EFA1/1.5					3.1
	%IX9.5	=K1+B3.X1&EFA1/1.5					3.4
	%IX9.6	=K1+B3.X1&EFA1/1.5					4.1
	%IX9.7	=K1+B3.X1&EFA1/1.5					4.4

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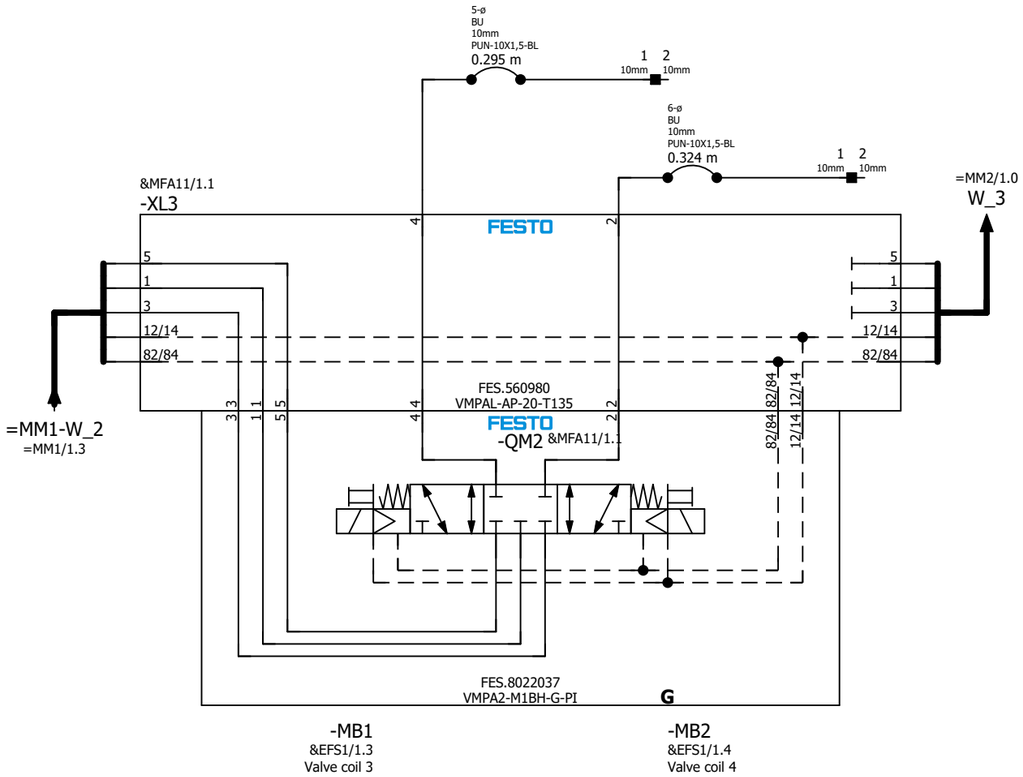


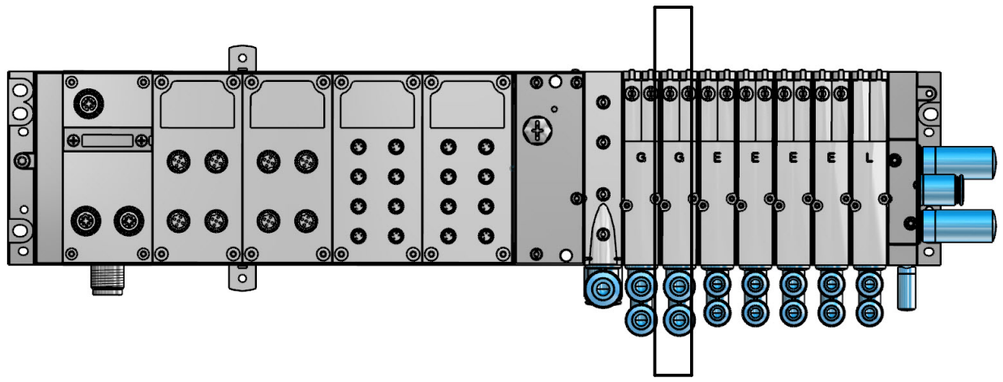
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=K1+B3.X1&EFA1/2

3

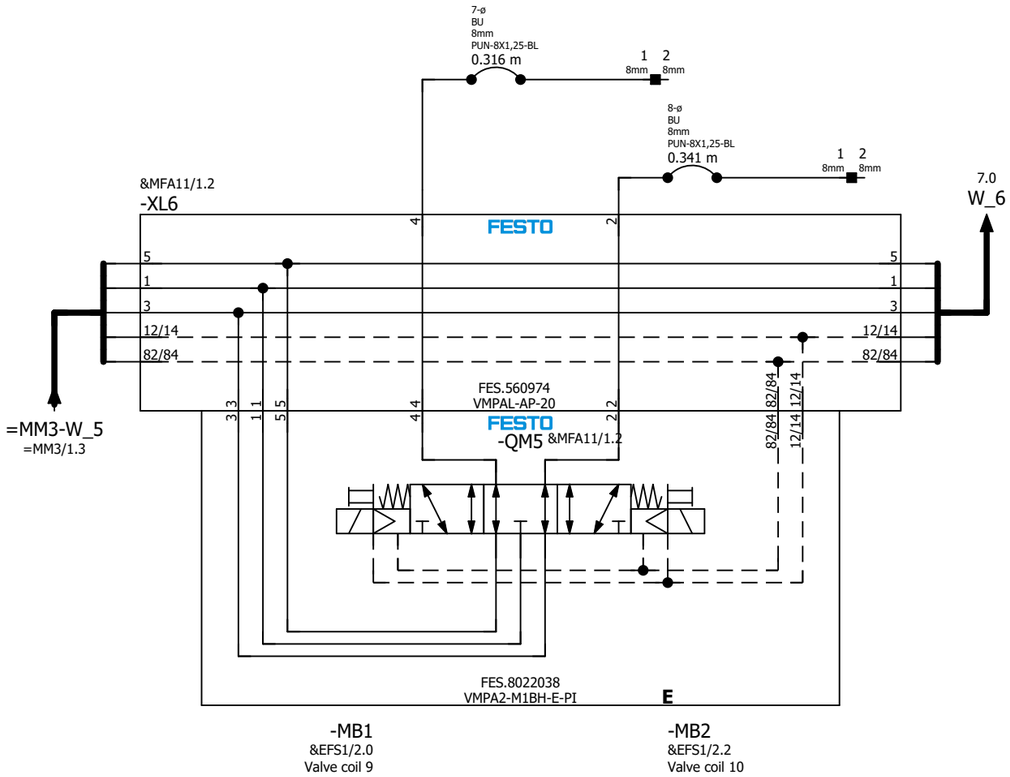
			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Power supply overview fluid power		=K2	&MFS11
			Grinding machine	Drawing number				Valve control	Pneumatics schematic
								+B2.Y1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Station "Work"	Page 222 from 305

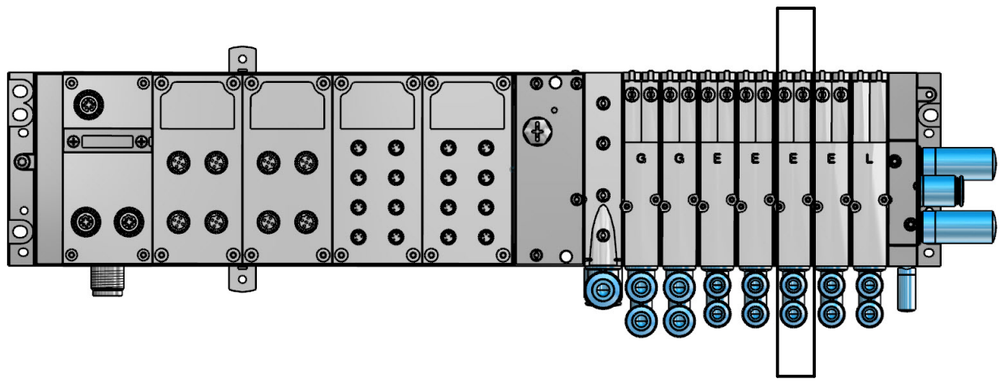




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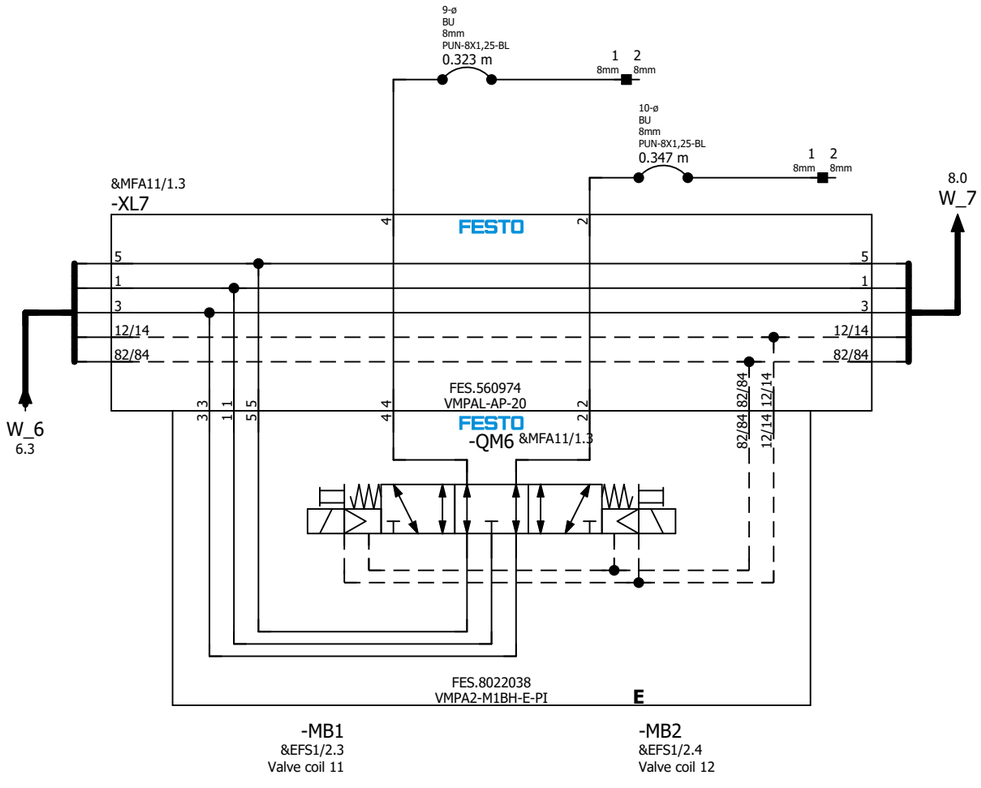
			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Sub-plate module block 3.0 (spare)		=K2	&MFS11
			Grinding machine	Drawing number				Valve control	Pneumatics schematic
								+B2.Y1	Page 3
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Station "Work"	Page 223 from 305

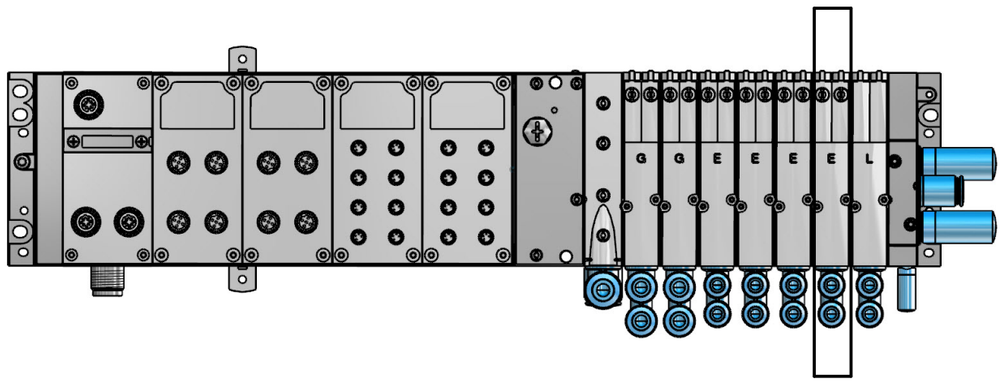




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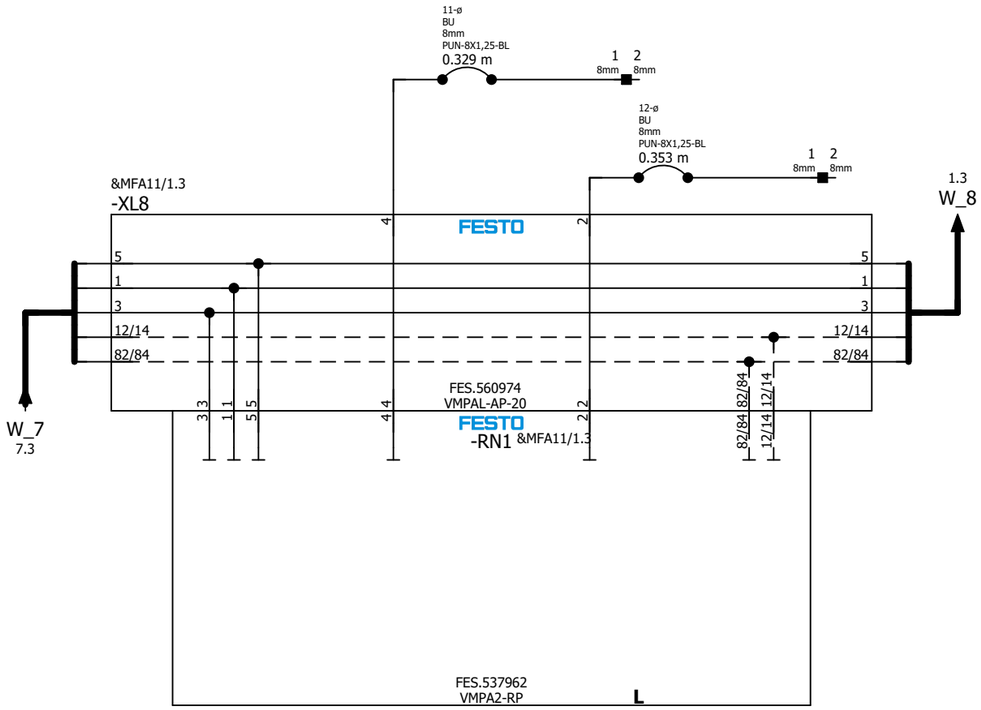
			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Sub-plate module block 6.0 (spare)	=K2	&MFS11
			Grinding machine	Drawing number			Valve control	Pneumatics schematic
							+B2.Y1	Page 6
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021 Ed. EPL	Station "Work"	Page 224 from 305

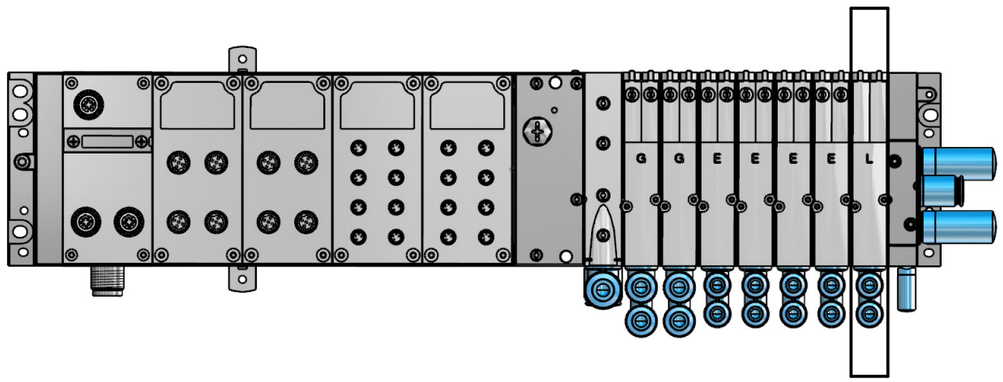




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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Sub-plate module block 7.0 (spare)		=K2	&MFS11
			Grinding machine	Drawing number				Valve control	Pneumatics schematic
								+B2.Y1	Page 7
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Station "Work"	Page 225 from 305

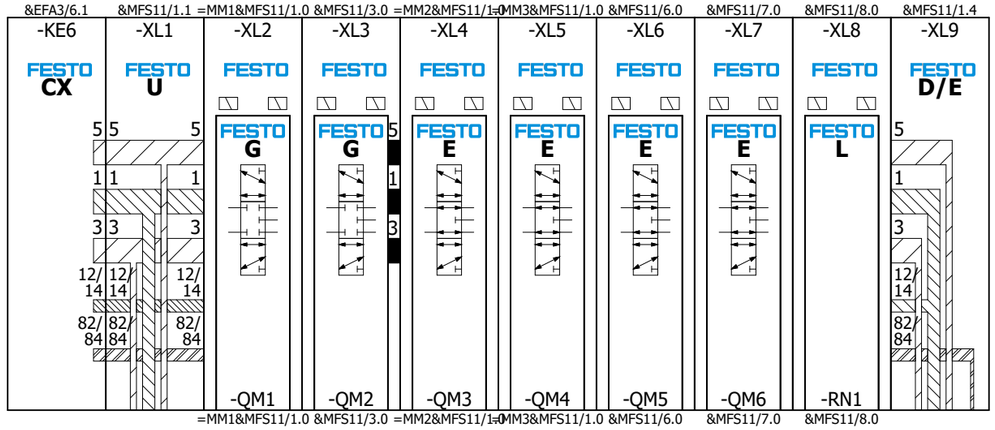


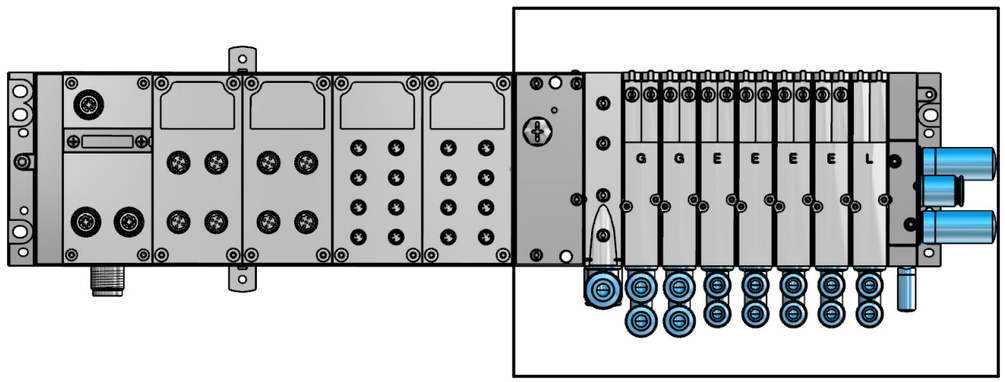


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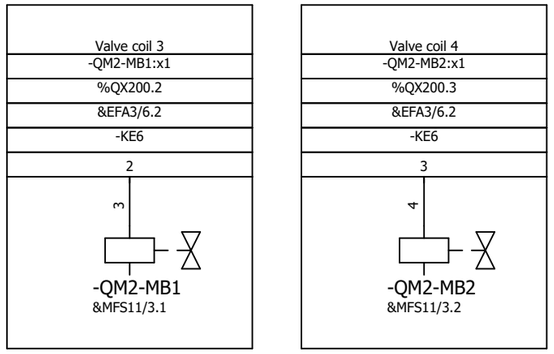


&MFS11/8

&EFS1/1

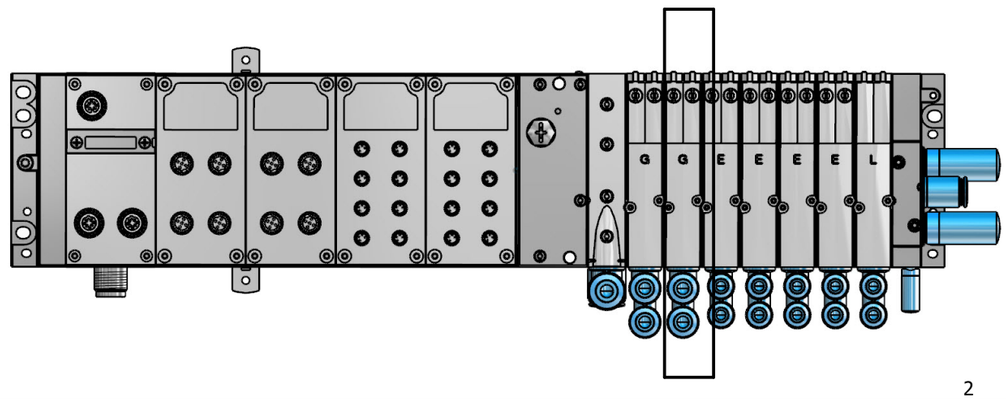
			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Overview fluid power		=K2	&MFA11
			Grinding machine	Drawing number				Valve control	Overview "Valve terminal pneumatics"
								+B2.Y1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Station "Work"	Page 227 from 305

0	1	2	3	4	5	6	7	8	9



Valve coil 3

Valve coil 4



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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Valve coils 1 - 8 (spare)		=K2	&EFS1
			Grinding machine	Drawing number				Valve control	Electrical engineering schematic
								+B2.Y1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Station "Work"	Page 228 from 305

0	1	2	3	4	5	6	7	8	9

Valve coil 9
-QM5-MB1:x1
%QX201.0
&EFA3/6.2
-KE6
8
9
-QM5-MB1
&MFS11/6.1

Valve coil 10
-QM5-MB2:x1
%QX201.1
&EFA3/6.2
-KE6
9
10
-QM5-MB2
&MFS11/6.2

Valve coil 11
-QM6-MB1:x1
%QX201.2
&EFA3/6.2
-KE6
10
11
-QM6-MB1
&MFS11/7.1

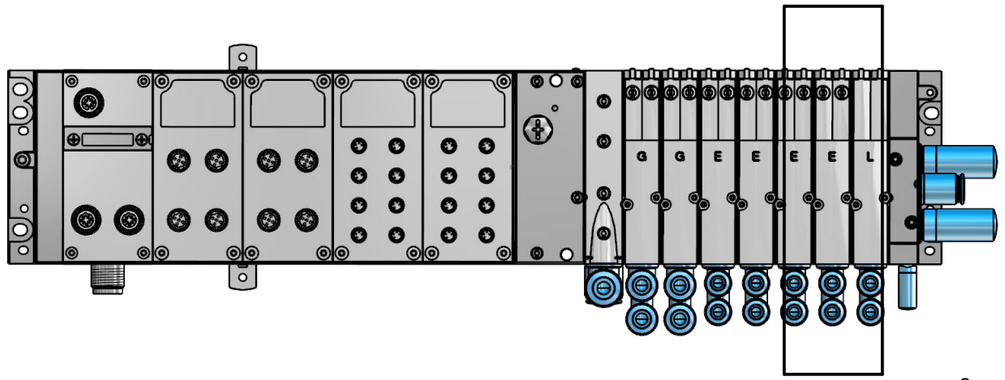
Valve coil 12
-QM6-MB2:x1
%QX201.3
&EFA3/6.2
-KE6
11
12
-QM6-MB2
&MFS11/7.2

Valve coil 9

Valve coil 10

Valve coil 11

Valve coil 12



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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Valve coils 9 - 12 (spare)		=K2	&EFS1
			Grinding machine	Drawing number				Valve control	Electrical engineering schematic
								+B2.Y1	Page 2
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Station "Work"	Page 229 from 305

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0	1	2	3	4	5	6	7	8	9

=K1+B3.X1/1.9 / =GAB1-24V
=K1+B3.X1/1.9 / =GAB1-0V
=K1+A2/2.9 / =K1-24V

GY 1,5
BU 1,5

=GAB1-24V / =S1+A2/1.0
=GAB1-0V / =S1+A2/1.0

+A2

-FC1 /3.5 6 A
1
2

GY 1,5

-FC1 /3.3
13
14

-XD7 16 17 18 19

-WD1 4G0,75
BK BN GY GNYE

-XD1 1 2 3 4

-24V / =GQA/1.0
-0V / =GQA/1.0

-XD1 5

GNYE 0,75

PE

FES.195716
CPX-EPL-EV

FESTO

-XD1

-WD3 4G0,75
BK BN GY GNYE

-XDB1 1 2 3 PE

QS

-X20 1 2 3 4

24V El./Sen.
24V Out./Val.
0V
FE

FES.195746
CPX-GE-EV-S

FESTO

-KE1
&EFA3/1.1

Power supply valve terminal

=K1+A2

GY 0,75 GY 0,75

-XG5 25 26 27

GY 0,75 GY 0,75 GY 0,75

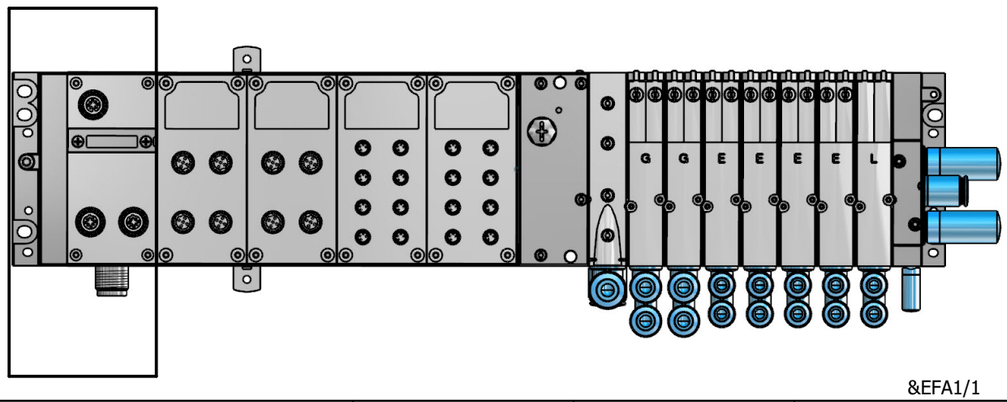
7.4 7.5 7.6

4 4 4

IN15 + -

-KE2
=K1+A2&EFA1/2.5
%IX4.6
+A2-FC1:14
Malfunction 24 V valve terminal

Malfunction 24 V valve terminal



&EFA1/1

2

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Electrical power supply		=K2	&EFS1
			Grinding machine	Drawing number				Valve control	Electrical engineering schematic
								+B2.Y1	Page 3
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Station "Work"	Page 230 from 305

PLC diagram

F19_001

Project name ESS_Sample_Project							
Device tag PLC	Address	Placement	Function text	Rack	Module	Symbolic address	Terminal
=K2+B2.Y1-KE2	%IX200.0	=GQA+B2.Y1&EFS1/1.3	Working pressure			%IX200.0	2
	%IX200.1	=GQA+B2.Y1&EFS1/1.4	Vacuum			%IX200.1	4
	%IX200.2	=K2+B2.Y1&EFA3/2.2					2
	%IX200.3	=K2+B2.Y1&EFA3/2.2					4
	%IX200.4	=K2+B2.Y1&EFA3/2.2					2
	%IX200.5	=K2+B2.Y1&EFA3/2.2					4
	%IX200.6	=K2+B2.Y1&EFA3/2.2					2
	%IX200.7	=K2+B2.Y1&EFA3/2.2					4

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PLC diagram

F19_001

Project name ESS_Sample_Project							
Device tag PLC	Address	Placement	Function text	Rack	Module	Symbolic address	Terminal
=K2+B2.Y1-KE3	%IX201.0	=K2+B2.Y1&EFA3/3.2					2
	%IX201.1	=K2+B2.Y1&EFA3/3.2					4
	%IX201.2	=K2+B2.Y1&EFA3/3.2					2
	%IX201.3	=K2+B2.Y1&EFA3/3.2					4
	%IX201.4	=K2+B2.Y1&EFA3/3.2					2
	%IX201.5	=K2+B2.Y1&EFA3/3.2					4
	%IX201.6	=K2+B2.Y1&EFA3/3.2					2
	%IX201.7	=K2+B2.Y1&EFA3/3.2					4

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	PLC diagram : =K2+B2.Y1-KE3 - =K2+B2.Y1-KE3		=K2	&EFA1
			Grinding machine	Drawing number				Valve control	Overview PLC
								+B2.Y1	Page 2
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021	Ed. EPL	Station "Work"	Page 232 from 305

PLC diagram

F19_001

Project name ESS_Sample_Project

Device tag PLC	Address	Placement	Function text	Rack	Module	Symbolic address	Terminal
=K2+B2.Y1-KE4	%IX202.0	=MM1+B2.Y1&EFS1/1.1	End position rear			%IX202.0	2
	%IX202.1	=K2+B2.Y1&EFA3/4.2					4
	%IX202.2	=MM1+B2.Y1&EFS1/1.3	End position front			%IX202.2	2
	%IX202.3	=K2+B2.Y1&EFA3/4.2					4
	%IX202.4	=MM2+B2.Y1&EFS1/1.1	End position rear			%IX202.4	2
	%IX202.5	=K2+B2.Y1&EFA3/4.2					4
	%IX202.6	=MM2+B2.Y1&EFS1/1.3	End position front			%IX202.6	2
	%IX202.7	=K2+B2.Y1&EFA3/4.2					4
	%IX203.0	=MM3+B2.Y1&EFS1/1.1	End position rear			%IX203.0	2
	%IX203.1	=K2+B2.Y1&EFA3/4.2					4
	%IX203.2	=MM3+B2.Y1&EFS1/1.3	End position front			%IX203.2	2
	%IX203.3	=K2+B2.Y1&EFA3/4.2					4
	%IX203.4	=K2+B2.Y1&EFA3/4.2					2
	%IX203.5	=K2+B2.Y1&EFA3/4.2					4
	%IX203.6	=K2+B2.Y1&EFA3/4.2					2
	%IX203.7	=K2+B2.Y1&EFA3/4.2					4

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PLC diagram

F19_001

Project name ESS_Sample_Project

Device tag PLC	Address	Placement	Function text	Rack	Module	Symbolic address	Terminal
=K2+B2.Y1-KE5	%IX204.0	=K2+B2.Y1&EFA3/5.2					2
	%IX204.1	=K2+B2.Y1&EFA3/5.2					4
	%IX204.2	=K2+B2.Y1&EFA3/5.2					2
	%IX204.3	=K2+B2.Y1&EFA3/5.2					4
	%IX204.4	=K2+B2.Y1&EFA3/5.2					2
	%IX204.5	=K2+B2.Y1&EFA3/5.2					4
	%IX204.6	=K2+B2.Y1&EFA3/5.2					2
	%IX204.7	=K2+B2.Y1&EFA3/5.2					4
	%IX205.0	=K2+B2.Y1&EFA3/5.2					2
	%IX205.1	=K2+B2.Y1&EFA3/5.2					4
	%IX205.2	=K2+B2.Y1&EFA3/5.2					2
	%IX205.3	=K2+B2.Y1&EFA3/5.2					4
	%IX205.4	=K2+B2.Y1&EFA3/5.2					2
	%IX205.5	=K2+B2.Y1&EFA3/5.2					4
	%IX205.6	=K2+B2.Y1&EFA3/5.2					2
	%IX205.7	=K2+B2.Y1&EFA3/5.2					4

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	PLC diagram : =K2+B2.Y1-KE5 - =K2+B2.Y1-KE5		=K2	&EFA1	
			Grinding machine	Drawing number				Valve control	Overview PLC	
								+B2.Y1	Page 4	
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021	Ed. EPL	Station "Work"	Page 234 from 305	

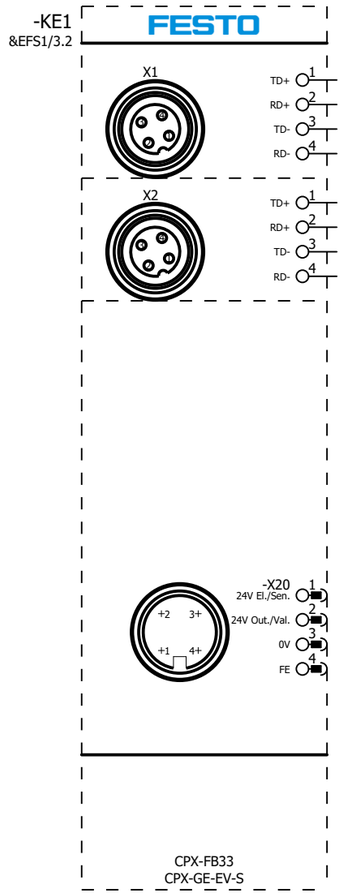
PLC diagram

F19_001

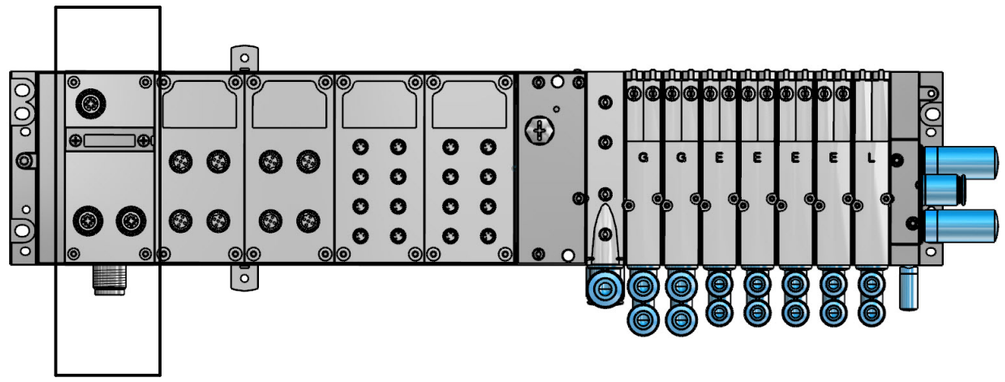
Project name ESS_Sample_Project							
Device tag PLC	Address	Placement	Function text	Rack	Module	Symbolic address	Terminal
=K2+B2.Y1-KE6	%QX200.0	=MM1+B2.Y1&EFS1/1.6	Valve coil 1			=K2+B2.Y1-QM1-MB1:x1	1
	%QX200.1	=MM1+B2.Y1&EFS1/1.7	Valve coil 2			=K2+B2.Y1-QM1-MB2:x1	2
	%QX200.2	=K2+B2.Y1&EFS1/1.3	Valve coil 3			=K2+B2.Y1-QM2-MB1:x1	3
	%QX200.3	=K2+B2.Y1&EFS1/1.4	Valve coil 4			=K2+B2.Y1-QM2-MB2:x1	4
	%QX200.4	=MM2+B2.Y1&EFS1/1.6	Valve coil 5			=K2+B2.Y1-QM3-MB1:x1	5
	%QX200.5	=MM2+B2.Y1&EFS1/1.7	Valve coil 6			=K2+B2.Y1-QM3-MB2:x1	6
	%QX200.6	=MM3+B2.Y1&EFS1/1.6	Valve coil 7			=K2+B2.Y1-QM4-MB1:x1	7
	%QX200.7	=MM3+B2.Y1&EFS1/1.7	Valve coil 8			=K2+B2.Y1-QM4-MB2:x1	8
	%QX201.0	=K2+B2.Y1&EFS1/2.0	Valve coil 9			=K2+B2.Y1-QM5-MB1:x1	9
	%QX201.1	=K2+B2.Y1&EFS1/2.2	Valve coil 10			=K2+B2.Y1-QM5-MB2:x1	10
	%QX201.2	=K2+B2.Y1&EFS1/2.3	Valve coil 11			=K2+B2.Y1-QM6-MB1:x1	11
	%QX201.3	=K2+B2.Y1&EFS1/2.4	Valve coil 12			=K2+B2.Y1-QM6-MB2:x1	12

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Power supply valve terminal
Power supply valve terminal
Power supply valve terminal
Power supply valve terminal

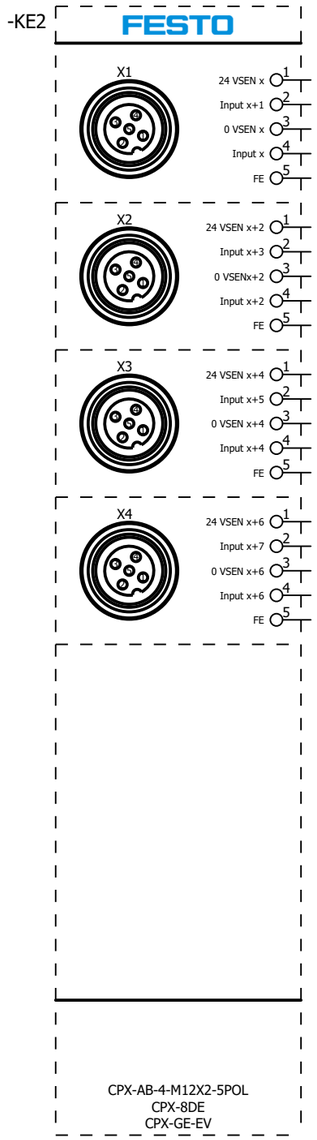


			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	CPX module 1		=K2	&EFA3
			Grinding machine	Drawing number				Valve control	Overview "Valve terminal electrical engineering"
								+B2.Y1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Station "Work"	Page 236 from 305

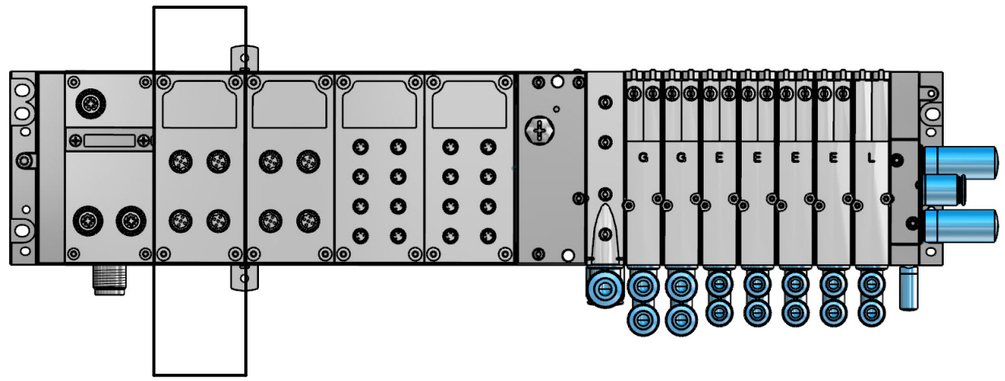
0	1	2	3	4	5	6	7	8	9

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-KE2



%IX200.0	%IX200.0	Working pressure
		Working pressure
%IX200.1	%IX200.1	Vacuum
%IX200.2		
%IX200.3		
%IX200.4		
%IX200.5		
%IX200.6		
%IX200.7		



1

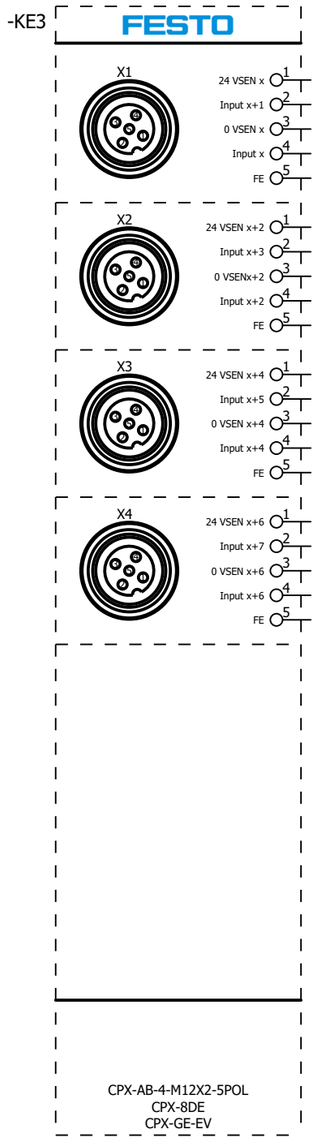
3

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	CPX module 2		=K2	&EFA3
			Grinding machine	Drawing number				Valve control	Overview "Valve terminal electrical engineering"
								+B2.Y1	Page 2
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Station "Work"	Page 237 from 305

0	1	2	3	4	5	6	7	8	9

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-KE3



%IX201.0

%IX201.1

%IX201.2

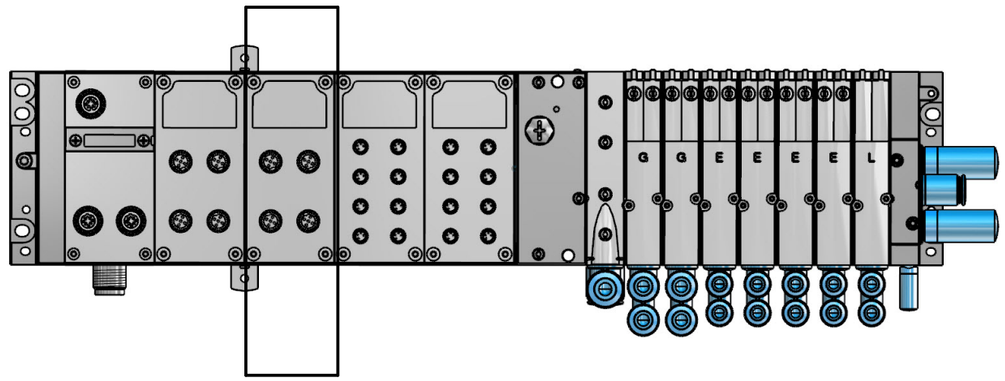
%IX201.3

%IX201.4

%IX201.5

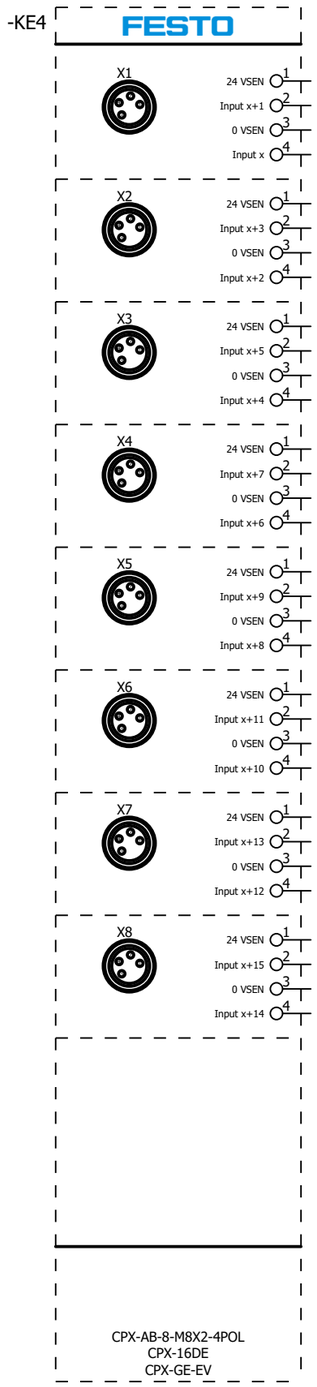
%IX201.6

%IX201.7

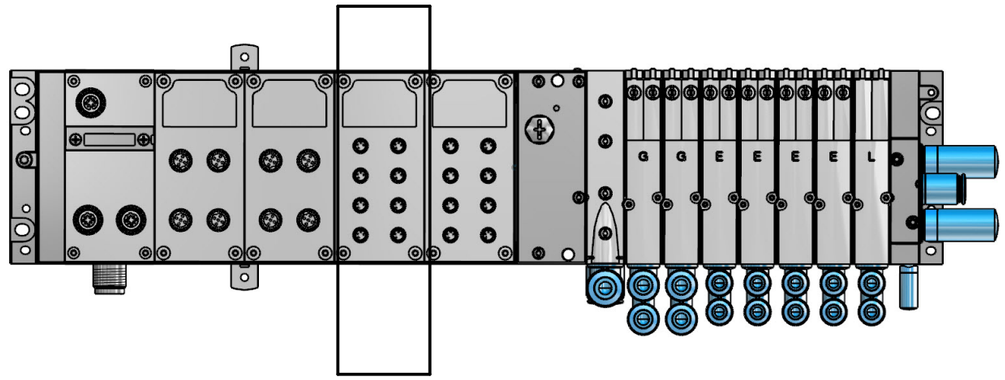


			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	CPX module 3 (spare)		=K2	&EFA3
			Grinding machine	Drawing number				Valve control	Overview "Valve terminal electrical engineering"
								+B2.Y1	Page 3
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Station "Work"	Page 238 from 305

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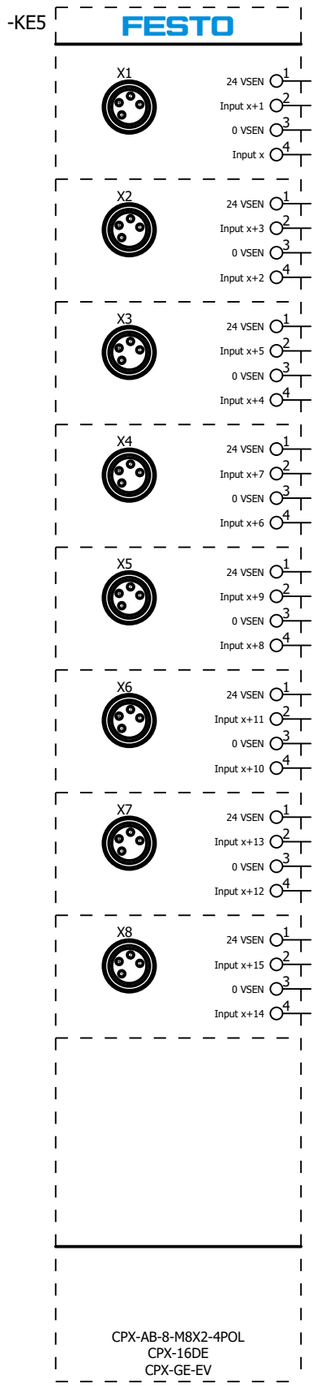


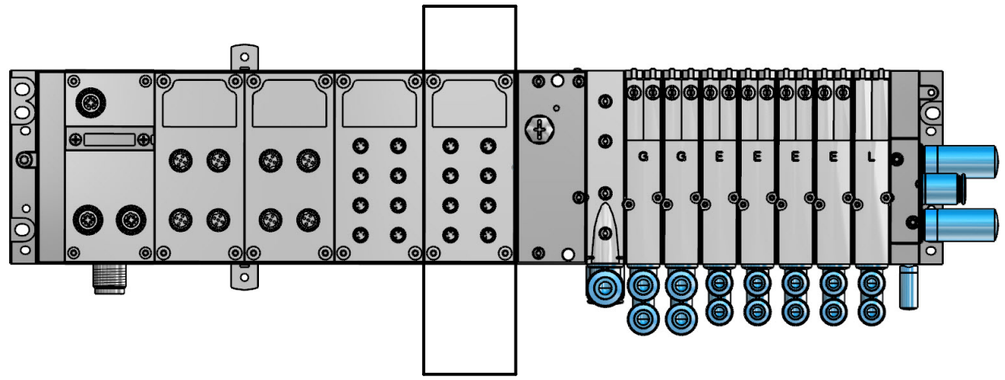
	%IX202.0	%IX202.0	End position rear
			End position rear
	%IX202.1		
			End position front
	%IX202.2	%IX202.2	End position front
			End position front
	%IX202.3		
			End position rear
	%IX202.4	%IX202.4	End position rear
			End position rear
	%IX202.5		
			End position front
	%IX202.6	%IX202.6	End position front
			End position front
	%IX202.7		
			End position rear
	%IX203.0	%IX203.0	End position rear
			End position rear
	%IX203.1		
			End position front
	%IX203.2	%IX203.2	End position front
			End position front
	%IX203.3		
	%IX203.4		
	%IX203.5		
	%IX203.6		
	%IX203.7		



			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	CPX module 4		=K2	&EFA3
			Grinding machine	Drawing number				Valve control	Overview "Valve terminal electrical engineering"
								+B2.Y1	Page 4
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4

6

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	CPX module 5 (spare)		=K2	&EFA3
			Grinding machine	Drawing number				Valve control	Overview "Valve terminal electrical engineering"
								+B2.Y1	Page 5
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Station "Work"	Page 240 from 305

0	1	2	3	4	5	6	7	8	9

-KE6
&MFS11/1.0

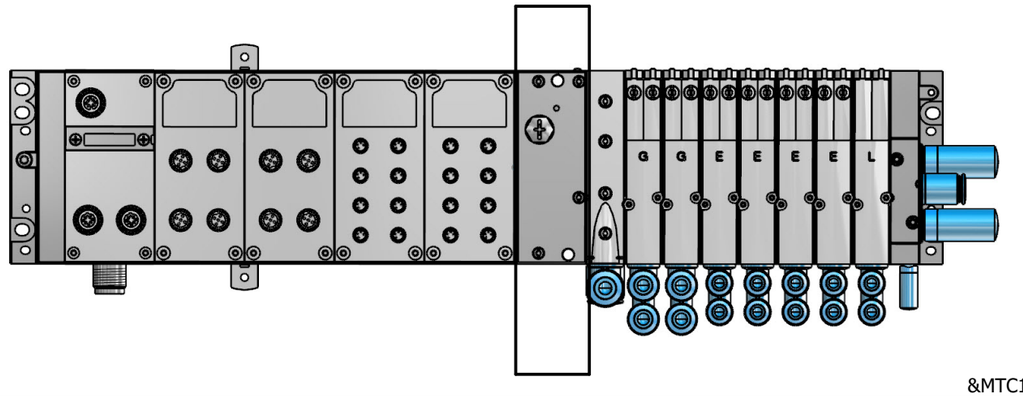
FESTO

-X0

0	1	%QX200.0	-QM1-MB1:x1	Valve coil 1
1	2	%QX200.1	-QM1-MB2:x1	Valve coil 2
2	3	%QX200.2	-QM2-MB1:x1	Valve coil 3
3	4	%QX200.3	-QM2-MB2:x1	Valve coil 4
4	5	%QX200.4	-QM3-MB1:x1	Valve coil 5
5	6	%QX200.5	-QM3-MB2:x1	Valve coil 6
6	7	%QX200.6	-QM4-MB1:x1	Valve coil 7
7	8	%QX200.7	-QM4-MB2:x1	Valve coil 8
8	9	%QX201.0	-QM5-MB1:x1	Valve coil 9
9	10	%QX201.1	-QM5-MB2:x1	Valve coil 10
10	11	%QX201.2	-QM6-MB1:x1	Valve coil 11
11	12	%QX201.3	-QM6-MB2:x1	Valve coil 12

CX

FES.570783
VMPAL-EPL-CPX



&MTC1/1

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Interface 1		=K2	&EFA3
			Grinding machine	Drawing number				Valve control	Overview "Valve terminal electrical engineering"
								+B2.Y1	Page 6
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Station "Work"	Page 241 from 305

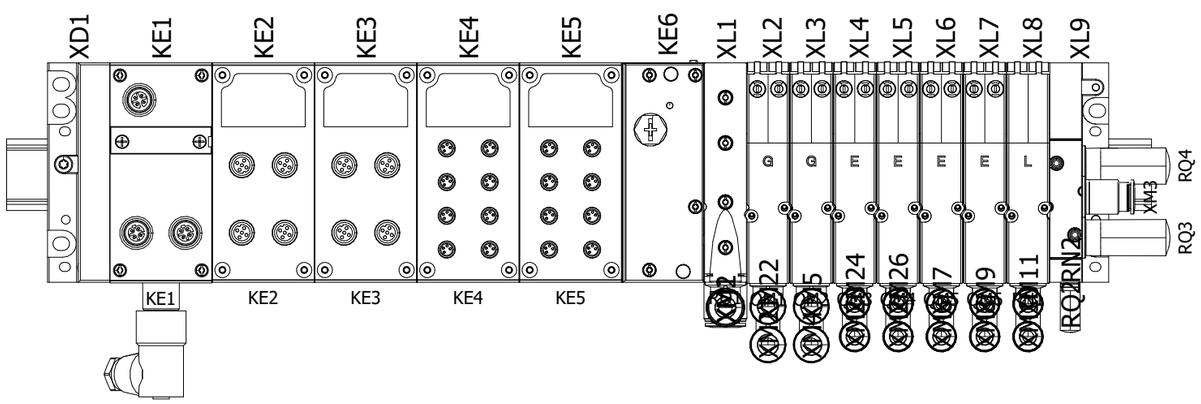
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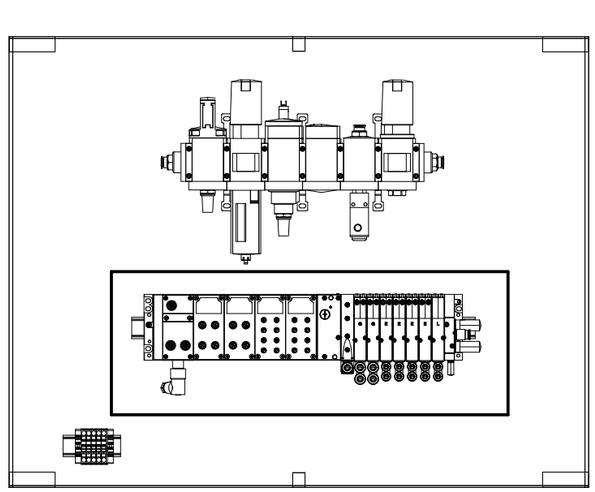
-XZ1

ID1: 34P-CX-D-UKFGLFRBKERLERBTSKERLERBKDRLDRBKDRLDRBKDRLDRBKDRLDRBKDRLDR-GG4EL

ID2: 50E-F33GCQSEXEXMGQMGQ-L+HN



Overview "Valve terminal pneumatics"



Overview "Valve terminal pneumatics"

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Panel layout		=K2	&MTC1
			Grinding machine	Drawing number				Valve control	Model view
								+B2.Y1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 8/5/2021	Ed. EPL	Station "Work"	Page 242 from 305

Enclosure legend

F18_001

Item number	Device tag	Type number	Part number	Manufacturer	Function text
22	U101	SZ.2313150	RIT.2313150	RIT	
23	XD1	CPX-EPL-EV	FES.195716	FES	
24	KE1	CPX-GE-EV-S	FES.195746	FES	
25	KE1	CPX-FB33	FES.548755	FES	
27	KE2	CPX-GE-EV	FES.195742	FES	
28	KE2	CPX-8DE	FES.195750	FES	
30	KE3	CPX-GE-EV	FES.195742	FES	
31	KE3	CPX-8DE	FES.195750	FES	
33	KE4	CPX-GE-EV	FES.195742	FES	
34	KE4	CPX-16DE	FES.543815	FES	
35	KE4	CPX-AB-8-M8X2-4POL	FES.541256	FES	
36	KE5	CPX-GE-EV	FES.195742	FES	
37	KE5	CPX-16DE	FES.543815	FES	
38	KE5	CPX-AB-8-M8X2-4POL	FES.541256	FES	
39	KE6	VMPAL-EPL-CPX	FES.570783	FES	
40	XL1	VMPAL-SP-0	FES.560950	FES	
41	RQ1	VMPAL-EG	FES.560956	FES	
43	XM2	QSPKG20-12	FES.132635	FES	
44	XL2	VMPAL-AP-20	FES.560974	FES	
45	XL2	VMPAL-EVAP-20-2	FES.560966	FES	
46	QM1	VMPA2-M1BH-G-PI	FES.8022037	FES	
47	XM21	QSPLLKG18-10	FES.132951	FES	
48	XM22	QSPLKG18-10	FES.132947	FES	
49	XL3	VMPAL-AP-20-T135	FES.560980	FES	
50	XL3	VMPAL-EVAP-20-2	FES.560966	FES	
51	XM4	QSPLLKG18-10	FES.132951	FES	
52	XM5	QSPLKG18-10	FES.132947	FES	
53	QM2	VMPA2-M1BH-G-PI	FES.8022037	FES	
54	XL4	VMPAL-AP-20	FES.560974	FES	
55	XL4	VMPAL-EVAP-20-2	FES.560966	FES	
56	QM3	VMPA2-M1BH-E-PI	FES.8022038	FES	
57	XM23	QSPLLKG18-8	FES.132950	FES	
58	XM24	QSPLKG18-8	FES.132946	FES	
59	XL5	VMPAL-AP-20	FES.560974	FES	
60	XL5	VMPAL-EVAP-20-2	FES.560966	FES	
61	QM4	VMPA2-M1BH-E-PI	FES.8022038	FES	
62	XM25	QSPLLKG18-8	FES.132950	FES	
63	XM26	QSPLKG18-8	FES.132946	FES	
64	XL6	VMPAL-AP-20	FES.560974	FES	
65	XL6	VMPAL-EVAP-20-2	FES.560966	FES	
66	QM5	VMPA2-M1BH-E-PI	FES.8022038	FES	
67	XM6	QSPLLKG18-8	FES.132950	FES	
68	XM7	QSPLKG18-8	FES.132946	FES	
69	XL7	VMPAL-AP-20	FES.560974	FES	
70	XL7	VMPAL-EVAP-20-2	FES.560966	FES	
71	QM6	VMPA2-M1BH-E-PI	FES.8022038	FES	
72	XM8	QSPLLKG18-8	FES.132950	FES	
73	XM9	QSPLKG18-8	FES.132946	FES	
74	XL8	VMPAL-AP-20	FES.560974	FES	
75	XL8	VMPAL-EVAP-20-2	FES.560966	FES	
76	RN1	VMPA2-RP	FES.537962	FES	
77	XM10	QSPLLKG18-8	FES.132950	FES	
78	XM11	QSPLKG18-8	FES.132946	FES	
79	XL9	VMPAL-EPR-SP	FES.560947	FES	
158	XM1	QSPLKG20-10	FES.132856	FES	
161	XDB1	NTSD-WD-9	FES.18527	FES	
175	KE2	CPX-AB-4-M12X2-5POL	FES.195704	FES	

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Enclosure legend : +B2.Y1-U101 - =K2+B2.Y1-KE2		=K2	&MTC1	
			Grinding machine	Drawing number				Valve control	Model view	
								+B2.Y1	Page	2
Modification	Date	Name	Creator EPL	Approved by		Date 12/23/2020	Ed. EPL	Station "Work"	Page 243 from 305	

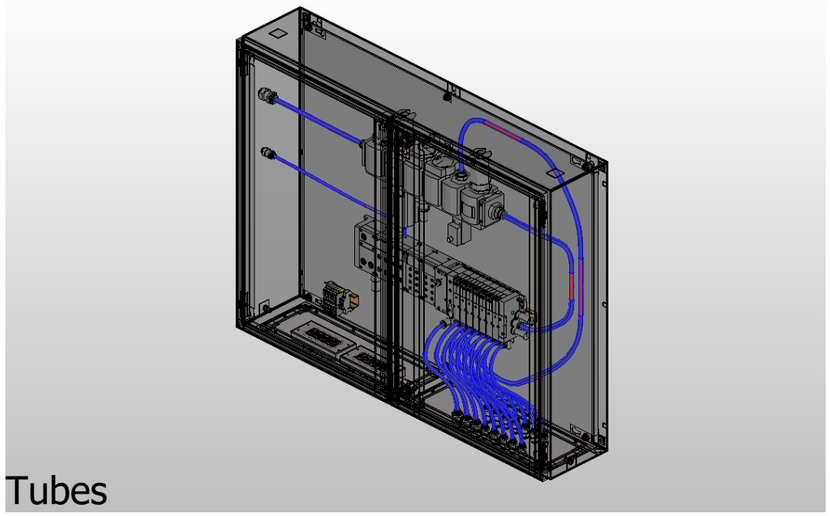
Enclosure legend

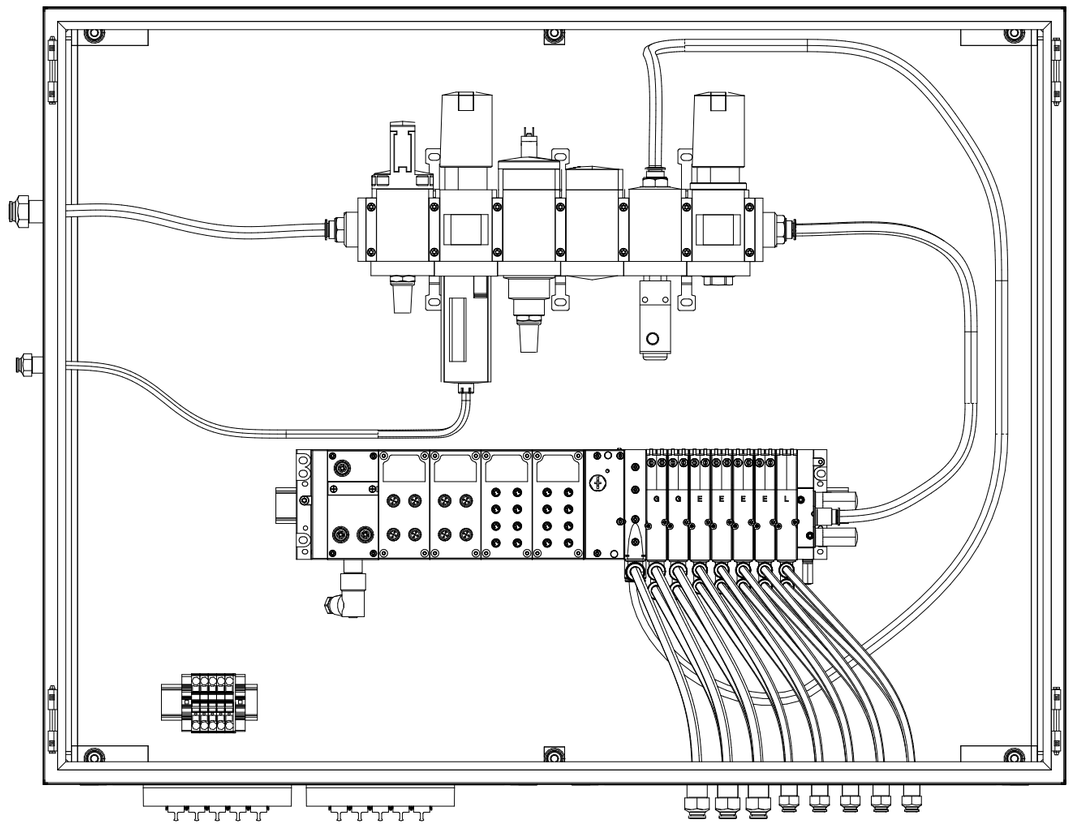
F18_001

Item number	Device tag	Type number	Part number	Manufacturer	Function text
176	KE3	CPX-AB-4-M12X2-5POL	FES.195704	FES	
178	RQ3	UC-1/4	FES.165004	FES	
179	RQ4	UC-1/4	FES.165004	FES	
180	XM3	QS-G1/4-10-I	FES.186112	FES	
181	RQ2	UC-M7	FES.161418	FES	
182	RN2	B-M7	FES.174309	FES	

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Enclosure legend : =K2+B2.Y1-KE3 - =K2+B2.Y1-RN2		=K2	&MTC1	
			Grinding machine	Drawing number				Valve control	Model view	
								+B2.Y1	Page 2.1	
Modification	Date	Name	Creator EPL	Approved by		Date 12/23/2020	Ed. EPL	Station "Work"	Page 244 from 305	





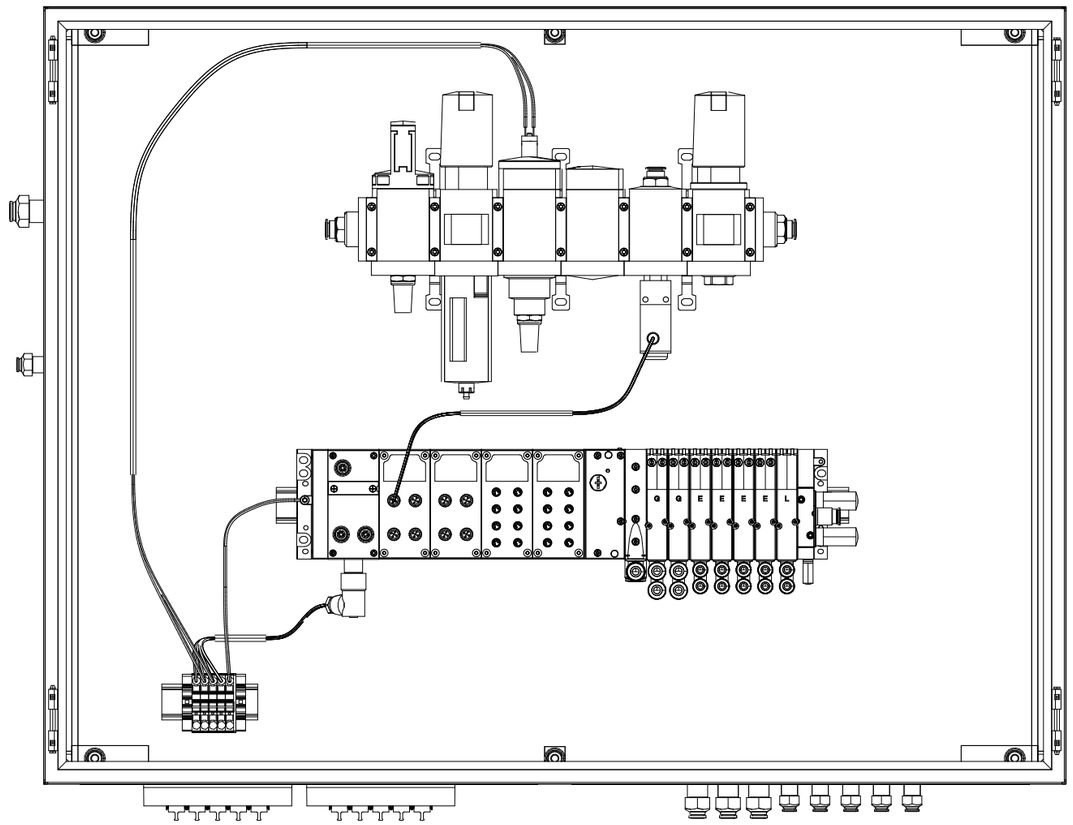
Tubes

Connection list

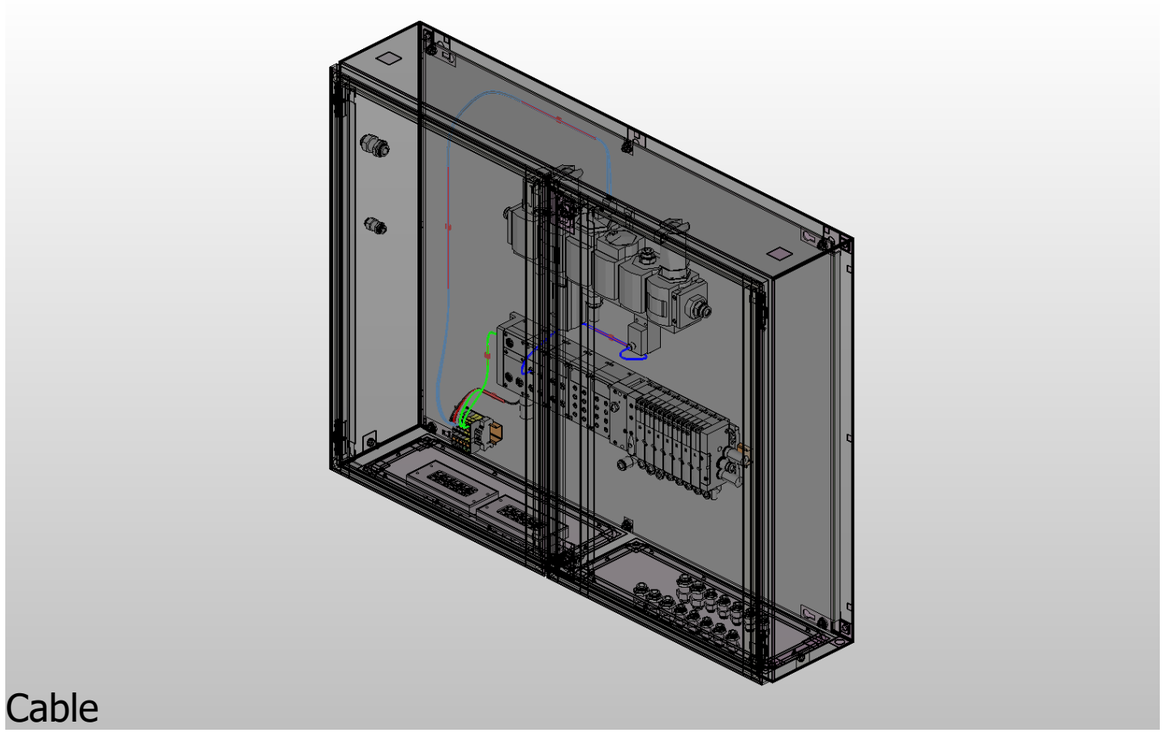
Connection	Target 1	Target 2	Color	Cross-section
0-ø	=GQA+B2.Y1-XM1:1	=GQA+B2.Y1-XM2:1	BU	12mm
1-ø	=GQA+B2.Y1-KH1:3	=GQA+B2.Y1-XM3:1	BU	8mm
2-ø	=GQA+B2.Y1-XM4:1	=K2+B2.Y1-XM2:2	BU	12mm
3-ø	=GQA+B2.Y1-XM5:1	=K2+B2.Y1-XM3:2	BU	12mm
4-ø	=K2+B2.Y1-XM1:2	=K2+B2.Y1-XM12:1	BU	10mm
5-ø	=K2+B2.Y1-XM4:2	=K2+B2.Y1-XM13:1	BU	10mm
6-ø	=K2+B2.Y1-XM5:2	=K2+B2.Y1-XM14:1	BU	10mm
7-ø	=K2+B2.Y1-XM6:2	=K2+B2.Y1-XM15:1	BU	8mm
8-ø	=K2+B2.Y1-XM7:2	=K2+B2.Y1-XM16:1	BU	8mm
9-ø	=K2+B2.Y1-XM8:2	=K2+B2.Y1-XM17:1	BU	8mm
10-ø	=K2+B2.Y1-XM9:2	=K2+B2.Y1-XM18:1	BU	8mm
11-ø	=K2+B2.Y1-XM10:2	=K2+B2.Y1-XM19:1	BU	8mm
12-ø	=K2+B2.Y1-XM11:2	=K2+B2.Y1-XM20:1	BU	8mm
13-ø	=K2+B2.Y1-XM21:2	=MM1+B2.Y1-XM1:1	BU	10mm
15-ø	=K2+B2.Y1-XM22:2	=MM1+B2.Y1-XM2:1	BU	10mm
21-ø	=K2+B2.Y1-XM23:2	=MM2+B2.Y1-XM1:1	BU	8mm
23-ø	=K2+B2.Y1-XM24:2	=MM2+B2.Y1-XM2:1	BU	8mm
25-ø	=K2+B2.Y1-XM25:2	=MM3+B2.Y1-XM1:1	BU	8mm
27-ø	=K2+B2.Y1-XM26:2	=MM3+B2.Y1-XM2:1	BU	8mm

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0	1	2	3	4	5	6	7	8	9



Cable



Cable

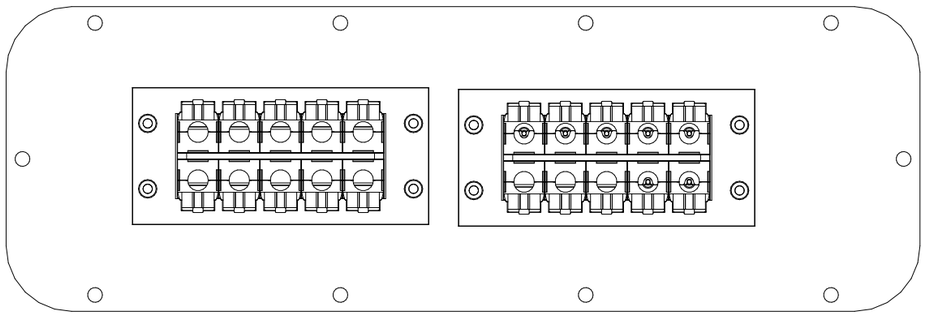
Connection list

Connection	Target 1	Target 2	Color	Cross-section
	+B2.Y1-XD1:2	=GQA+B2.Y1-QM2-MB1:1	BK1	0,5
	+B2.Y1-XD1:2	+B2.Y1-XDB1:2:2	BN	0.75
	+B2.Y1-XD1:3	=GQA+B2.Y1-QM2-MB1:2	BK2	0,5
	+B2.Y1-XD1:3	+B2.Y1-XDB1:3:3	GY	0.75
	=GQA+B2.Y1-BP1-S1:1	=K2+B2.Y1-KE2:X1:1	BN	0,25
	=GQA+B2.Y1-BP1-S1:2	=K2+B2.Y1-KE2:X1:2	WH	0,25
	=GQA+B2.Y1-BP1-S1:3	=K2+B2.Y1-KE2:X1:3	BU	0,25
	=GQA+B2.Y1-BP1-S1:4	=K2+B2.Y1-KE2:X1:4	BK	0,25
	+B2.Y1-XD1:5	=K2+B2.Y1-XD1:PE	GNYE	0,75
	+B2.Y1-XD1:1	+B2.Y1-XDB1:1:1	BK	0.75
	+B2.Y1-XD1:4	+B2.Y1-XDB1:PE:PE	GNYE	0.75

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Cable		=K2	&MTC1
			Grinding machine	Drawing number				Valve control	Model view
								+B2.Y1	Page 4
Modification	Date	Name	Creator EPL	Approved by		Date 8/5/2021	Ed. EPL	Station "Work"	Page 246 from 305

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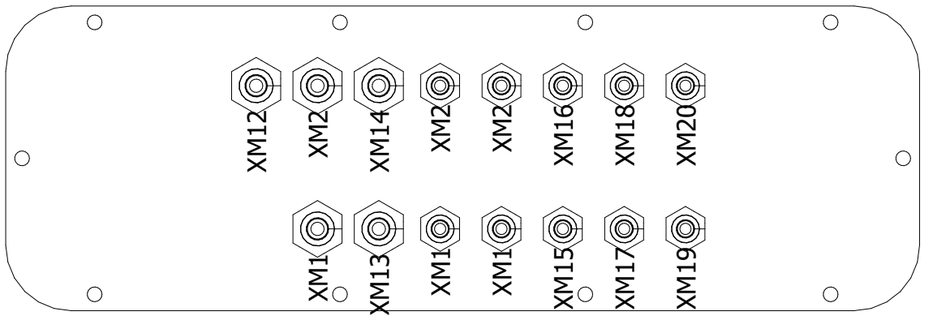


Flange plate

Enclosure legend

Item number	Device tag	Type number
130	U135	SZ.2400900
131	U136	SZ.2400900
132	U109	SZ.2400920
133	U110	SZ.2400920
134	U111	SZ.2400920
135	U112	SZ.2400920
136	U113	SZ.2400920
137	U114	SZ.2400920
138	U115	SZ.2400920
139	U116	SZ.2400970
140	U117	SZ.2400970
141	U118	SZ.2400970
142	U119	SZ.2400970
143	U120	SZ.2400970
144	U121	SZ.2400970
145	U122	SZ.2400970
146	U123	SZ.2400970
147	U124	SZ.2400970
148	U125	SZ.2400970
149	U126	SZ.2400970
150	U127	SZ.2400970
151	U128	SZ.2400970
196	U1	

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Flange plate

Enclosure legend

Item number	Device tag	Type number
83	XM12	QSS-10-F
84	XM1	QSS-10-F
85	XM2	QSS-10-F
86	XM13	QSS-10-F
87	XM14	QSS-10-F
88	XM1	QSS-8-F
89	XM2	QSS-8-F
90	XM1	QSS-8-F
91	XM2	QSS-8-F
152	XM20	QSS-8-F
153	XM19	QSS-8-F
154	XM18	QSS-8-F
155	XM17	QSS-8-F
156	XM16	QSS-8-F
157	XM15	QSS-8-F
197	U1	

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0	1	2	3	4	5	6	7	8	9

=K2+B2.Y1/3.9 / =GAB1-24V

=K2+B2.Y1/3.9 / =GAB1-0V

GY 1,5

BU 1,5

=GAB1-24V / =S2+C2/1.0

=GAB1-0V / =S2+C2/1.0

-FC2
6 A

1

2

GY 1,5

-PH1

X1.1 +24 V DC

X1.2 0 V (-)

X1.3 485V (A)

X1.4 485V (B)

X2ETH

X3ETH

X4USB

X5USB

X6USB

X7USB

Control panel enclosure 2

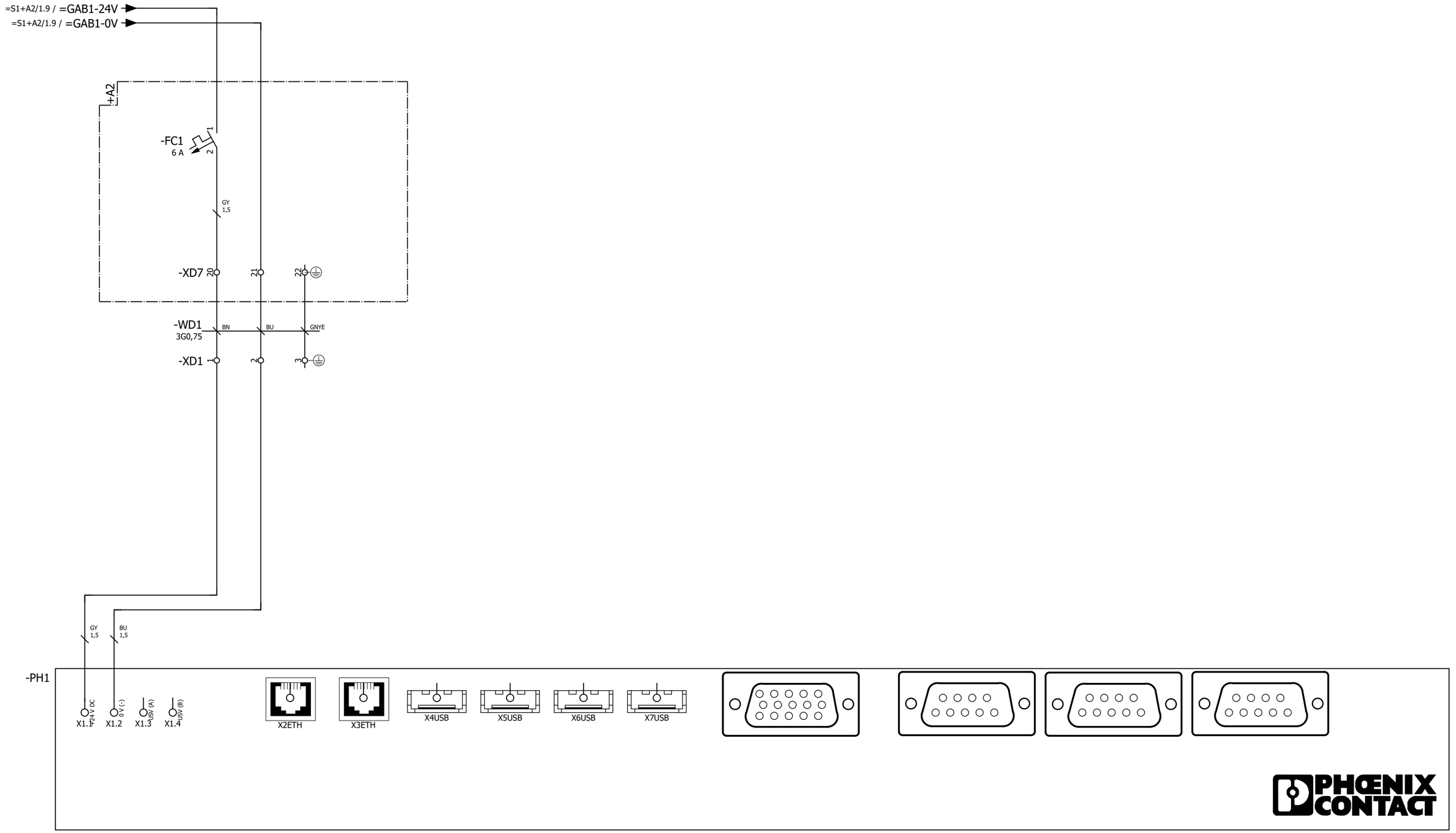
Power supply control panel enclosure 2

=K2+B2.Y1&MTC1/6

=S2+C2/1

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Power supply enclosure panel		=S1	&EFS1
			Grinding machine	Drawing number				Machine operation enclosure	Electrical engineering schematic
								+A2	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Enclosure 2	Page 249 from 305

0	1	2	3	4	5	6	7	8	9



Control panel

Power supply control panel

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=S1+A2/1

=GL1+A1/1

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Power supply to panel of control panel		=S2	&EFS1
			Grinding machine	Drawing number				Machine operation control panel	Electrical engineering schematic
								+C2	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Control panel	Page 250 from 305

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=GAB2+A2/1.9 / =GAA-2L1
=GAB2+A2/1.9 / =GAA-2L2
=GAB2+A2/1.9 / =GAA-2L3

BK 4 BK 4 BK 4

=GAA-2L1 / =GL2/1.0
=GAA-2L2 / =GL2/1.0
=GAA-2L3 / =GL2/1.0

-FC1
1,4...2A, N: 26A
1/L1 3/L2 5/L3 13 21
I> I> I>
2/T1 4/T2 6/T3 14 22
/1.5

BK 2,5

-QA1 /1.7
-QA2 /1.9

-XD4

+B1 +X1

-WD2 5G2,5 BU BN GY BK GNYE

-XZ1

-WZ1 4G2,5+(2x0,75) /1.2 3 4 5 GNYE 1 2 SH1

U1 V1 W1 PE
M 3 ~
-MA1 0,55 kW

11 12

11 12 /1.2

Drive "Feed"

=K1+B1.X1

GY 0,75

1.1 1.2 1.3
IN1 UM GND
-KE1
=K1+B1.X1&EFA1/1.5
%IX7.0
+B1-MA1:12
Excess temperature "Feed"

Excess temperature "Feed"

-FC1 /1.1 13 14

-XG1 3 4

=K1+A2

-WG1 40G0,75 =GAB2+A2/1.6 BU BN

-XG1 7 8

-XG5 28 29 30

1.4 1.5 1.6
IN3 + -
-KE2
=K1+A2&EFA1/2.5
%IX3.2
-FC1:14
Overload protection "Feed"

Overload protection "Feed"

=K1+A2

Drive "Feed, forward"
-QA1:A1
%QX4.4
=K1+A2&EFA1/5.5
-KE5
OUT5 + -

5.1 5.2 5.3

-XG1 9 10 11

-WG1 40G0,75 =GAB2+A2/1.6 GY RD

-XG1 5 6

-QA2 /1.9 11 12

-QA1 DC 24V A1 A2

Drive "Feed, forward"

1/L1 2/T1 /1.1
3/L2 4/T2 /1.1
5/L3 6/T3 /1.1
13 14 +A2/1.3
23 24
33 34
11 12 /1.9
21 22

=K1+A2

Drive "Feed, reverse"
-QA2:A1
%QX4.5
=K1+A2&EFA1/5.5
-KE5
OUT6 + -

6.1 6.2 6.3

-XG1 12 13 14

-WG1 40G0,75 =GAB2+A2/1.6 VT PK

-XG1 7 8

-QA1 /1.7 11 12

-QA2 DC 24V A1 A2

Drive "Feed, reverse"

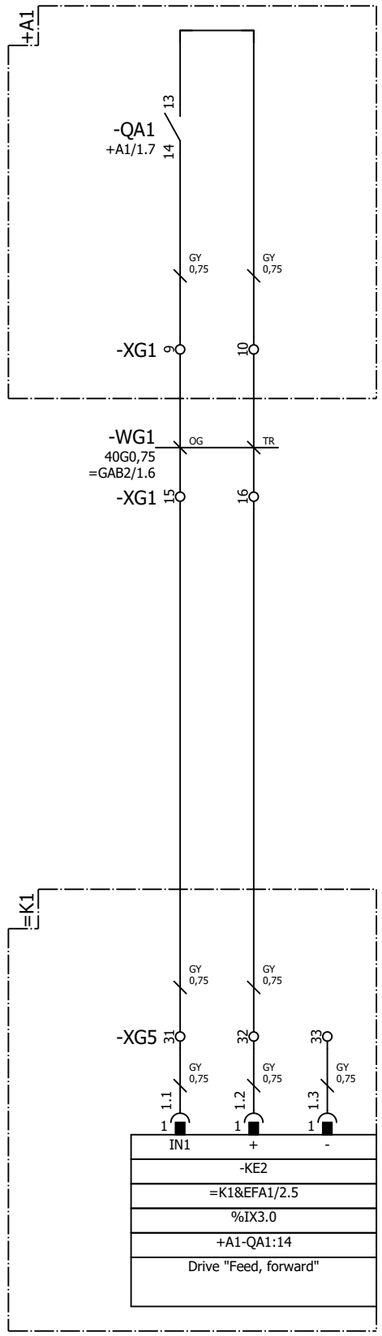
1/L1 2/T1 /1.2
3/L2 4/T2 /1.2
5/L3 6/T3 /1.2
13 14 +A2/1.5
23 24
33 34
11 12 /1.7
21 22

+A2/1

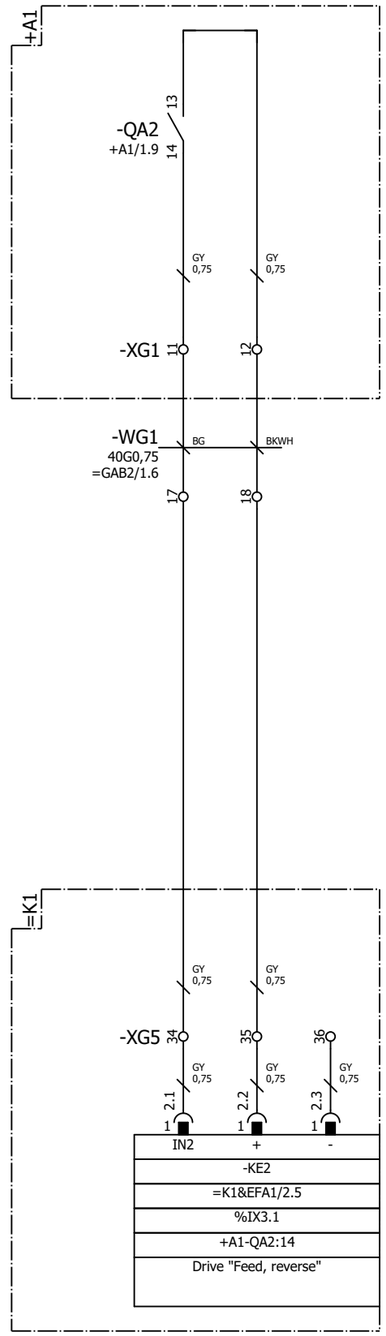
=S2+C2/1

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Actuator control		=GL1	&EFS1
			Grinding machine	Drawing number				Feed workpiece: Transport	Electrical engineering schematic
								+A1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Enclosure 1	Page 251 from 305

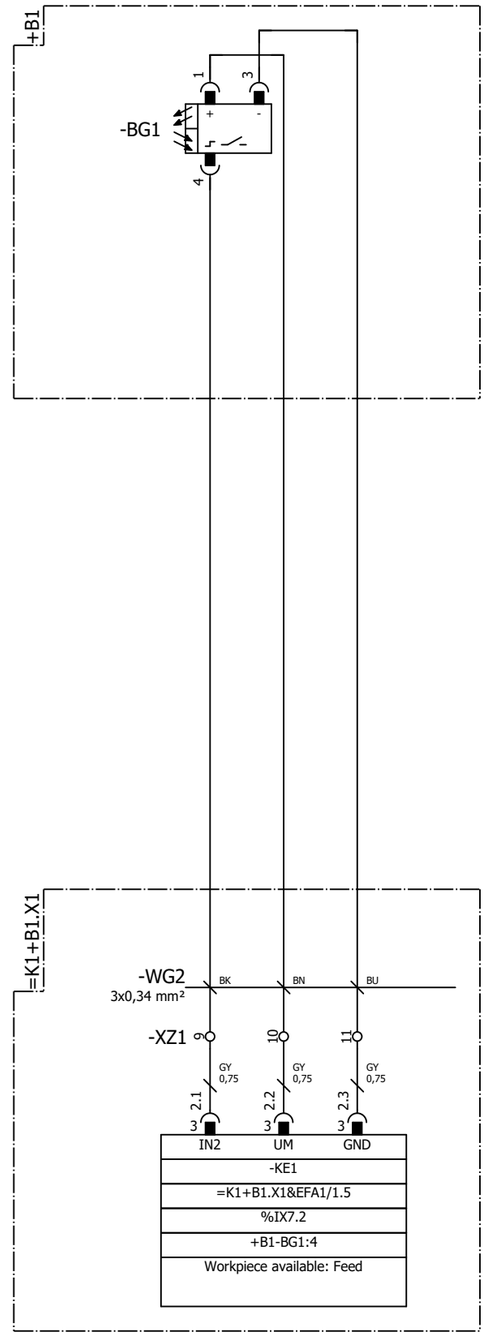
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Drive "Feed, forward"

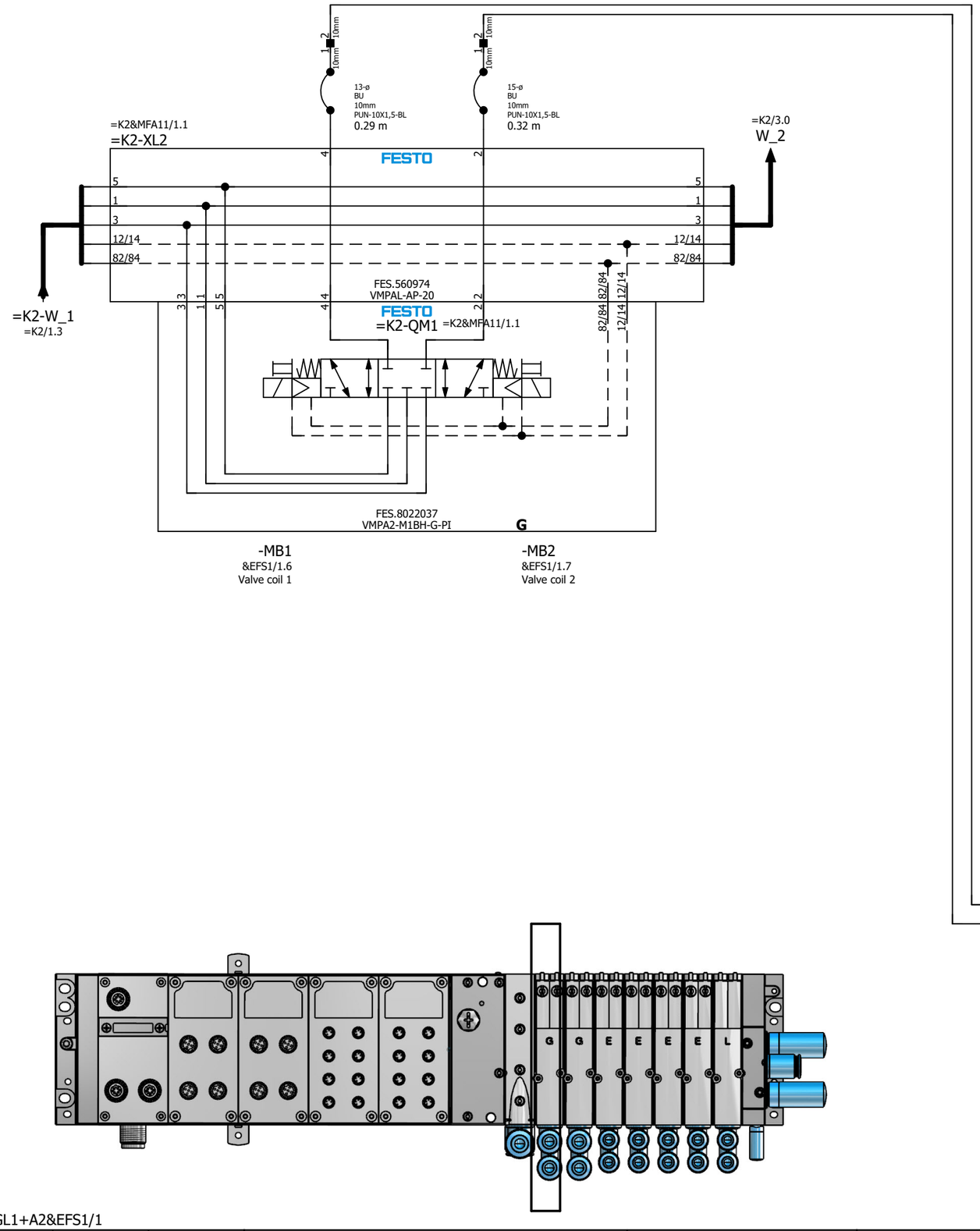


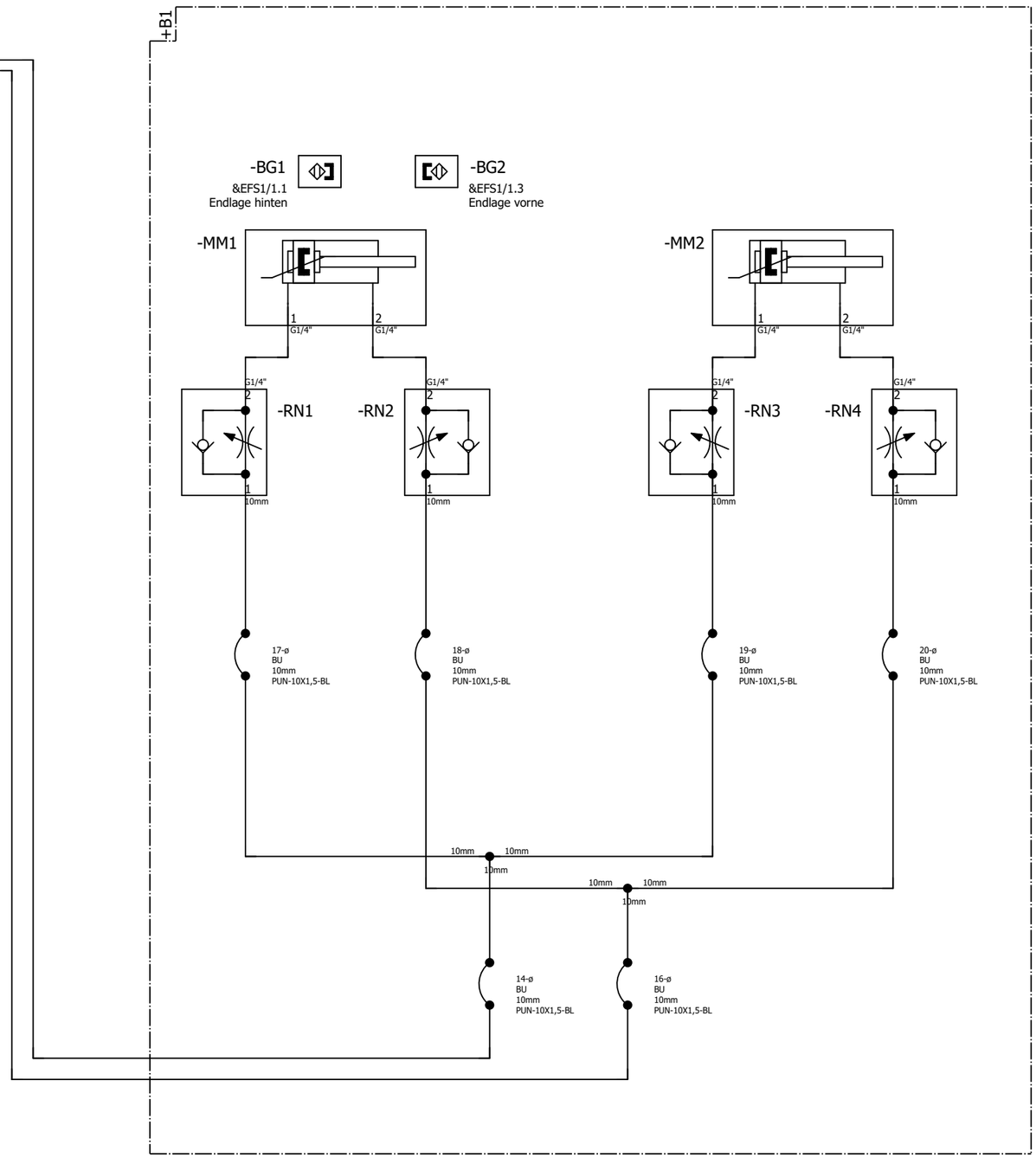
Drive "Feed, reverse"



Workpiece available:
Feed

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Sensor control		=GL1	&EFS1
			Grinding machine	Drawing number				Feed workpiece: Transport	Electrical engineering schematic
								+A2	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Enclosure 2	Page 252 from 305





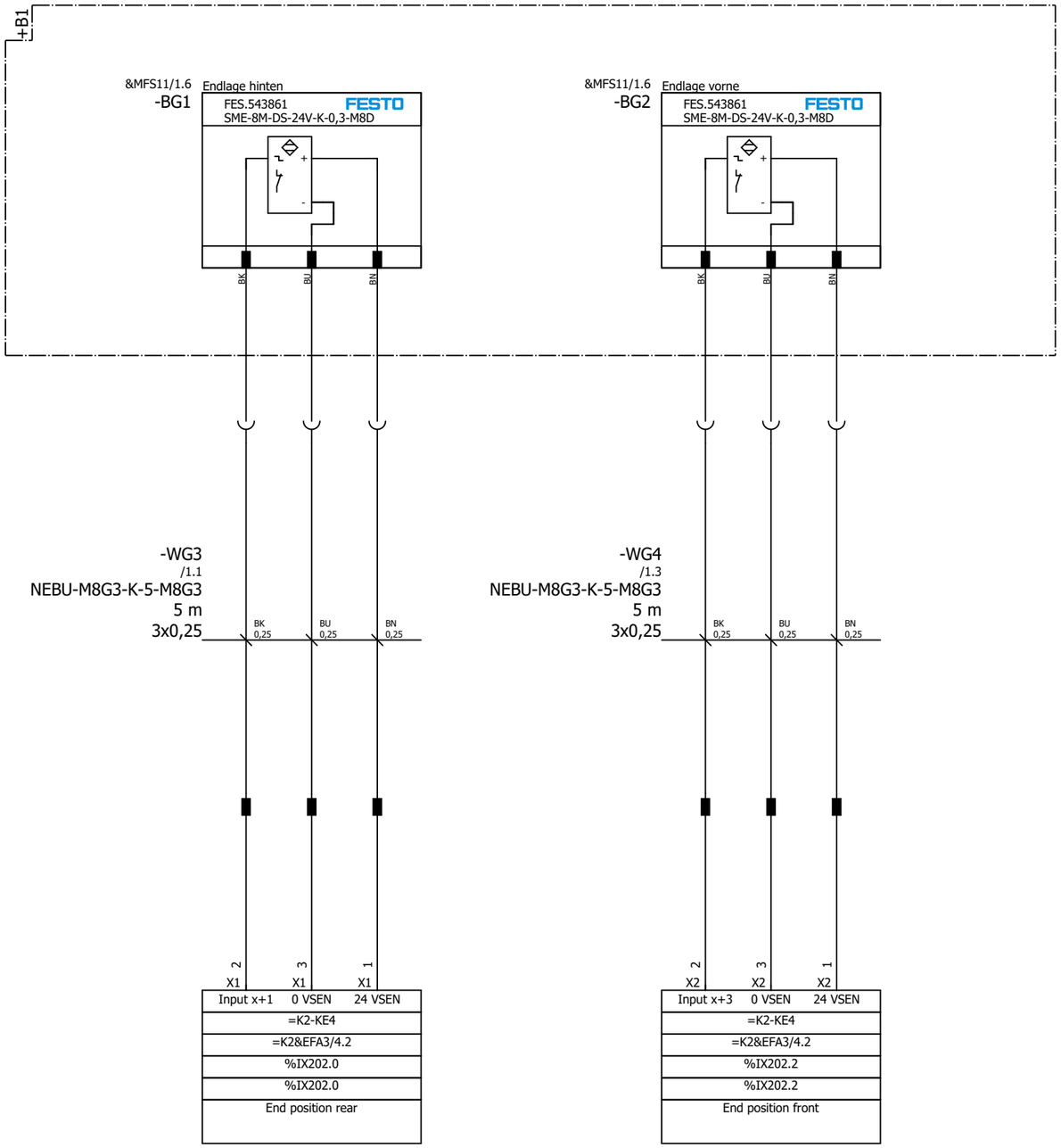
=GL1+A2&EFS1/1

&EFS1/1

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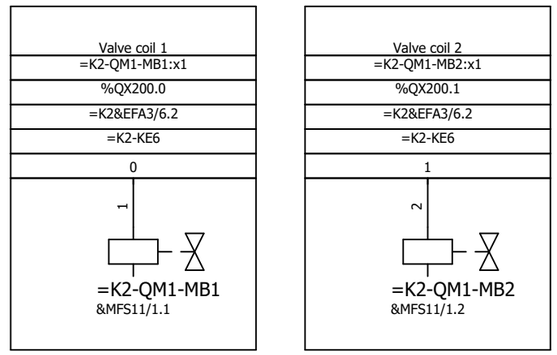
			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Actuator control		=MM1	&MFS11
			Grinding machine	Drawing number				Feed workpiece: Position	Pneumatics schematic
								+B2.Y1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Station "Work"	Page 253 from 305

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End position rear

End position front



Valve coil 1

Valve coil 2

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0	1	2	3	4	5	6	7	8	9

=GL1/1.9 / =GAA-2L1
=GL1/1.9 / =GAA-2L2
=GL1/1.9 / =GAA-2L3

BK 4 BK 4 BK 4

=GAA-2L1 / =TM1/1.0
=GAA-2L2 / =TM1/1.0
=GAA-2L3 / =TM1/1.0

-FC1
2,8...4A
1/L1 3/L2 5/L3 13 21
I> I> I>
2/T1 4/T2 6/T3 14 22
/1.5

BK 2,5 BK 2,5 BK 2,5

-QA1
/1.7
1/L1 3/L2 5/L3
2/T1 4/T2 6/T3

-QA2
/1.9
1/L1 3/L2 5/L3
2/T1 4/T2 6/T3

BK 2,5 BK 2,5 BK 2,5 BK 2,5 BK 2,5 BK 2,5 BK 2,5 BK 2,5 BK 2,5

-XD4 6 7 8 9 10

+B2
+X1

-WD2
5G2,5
BU BN GY BK GNYE

-XZ1 1 2 3 4 5

-WZ1
4G2,5+(2x0,75)
/1.2
3 4 5 GNYE 1 2 SH1

U1 V1 W1 PE
-MA1
1,5 kW
M
3 ~

11 12

Drive "Work"

11 12 /1.2

=K1+B2.X1

GY 0,75 GY 0,75
1.1 1.2 1.3
1 1 1
IN1 + -
-KE2
=K1+B2.X1&EFA1/2.5
%IX2.0
+B2-MA1:12
Excess temperature Drive "Work"

Excess temperature
Drive "Work"

-FC1
/1.5
NO 13
NC 14

GY 0,75 GY 0,75

-XG1 13 14

=K1+A2

-WG1
40G0,75
=GAB2+A2/1.6
BUWH BNWH

-XG1 19 20

-XG5 37 38 39

GY 0,75 GY 0,75 GY 0,75 GY 0,75 GY 0,75 GY 0,75
5.1 5.2 5.3
3 3 3
IN9 + -
-KE2
=K1+A2&EFA1/2.5
%IX4.0
-FC1:14
Overload protection Drive "Work"

Overload protection
Drive "Work"

=K1+A2

Drive "Work, forward"
-QA1:A1
%QX4.0
=K1+A2&EFA1/5.5
-KE5
OUT1 + -
1
GY 0,75 GY 0,75 GY 0,75
1.1 1.2 1.3

-XG1 21 22 23

-WG1
40G0,75
=GAB2+A2/1.6
GYWH RDWH

-XG1 15 16

GY 0,75 GY 0,75
-QA2
/1.9
11 12
GY 0,75
+ A1
-QA1
A2 -

Drive "Work, forward"

1/L1 2/T1 /1.1
3/L2 4/T2 /1.1
5/L3 6/T3 /1.1
13 14 +A2/2.3
23 24
33 34
11 12 /1.9
21 22

=K1+A2

Drive "Work, reverse"
-QA2:A1
%QX4.1
=K1+A2&EFA1/5.5
-KE5
OUT2 + -
1
GY 0,75 GY 0,75 GY 0,75
2.1 2.2 2.3

-XG1 24 25 26

-WG1
40G0,75
=GAB2+A2/1.6
VTWH PKWH

-XG1 17 18

GY 0,75 GY 0,75
-QA1
/1.7
11 12
GY 0,75
+ A1
-QA2
A2 -

Drive "Work, reverse"

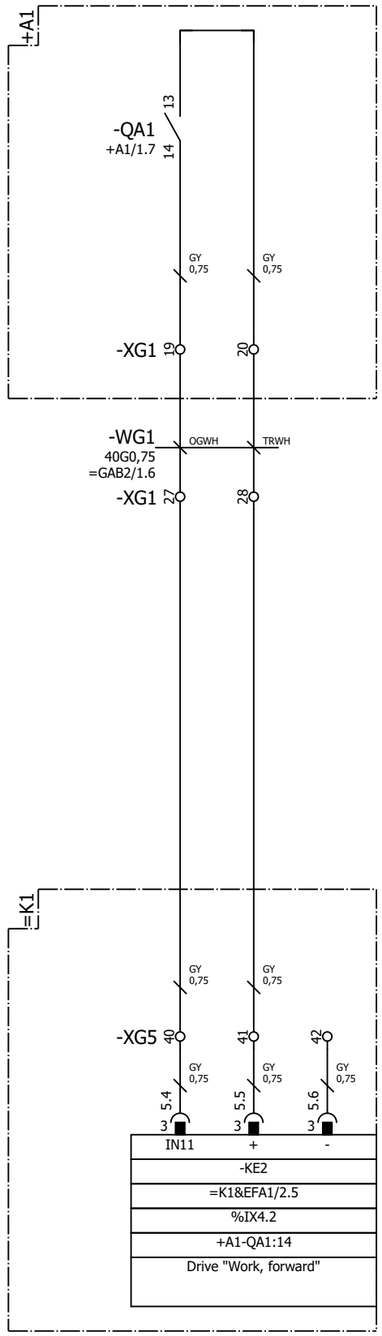
1/L1 2/T1 /1.2
3/L2 4/T2 /1.2
5/L3 6/T3 /1.2
13 14 +A2/2.5
23 24
33 34
11 12 /1.7
21 22

+A2/2

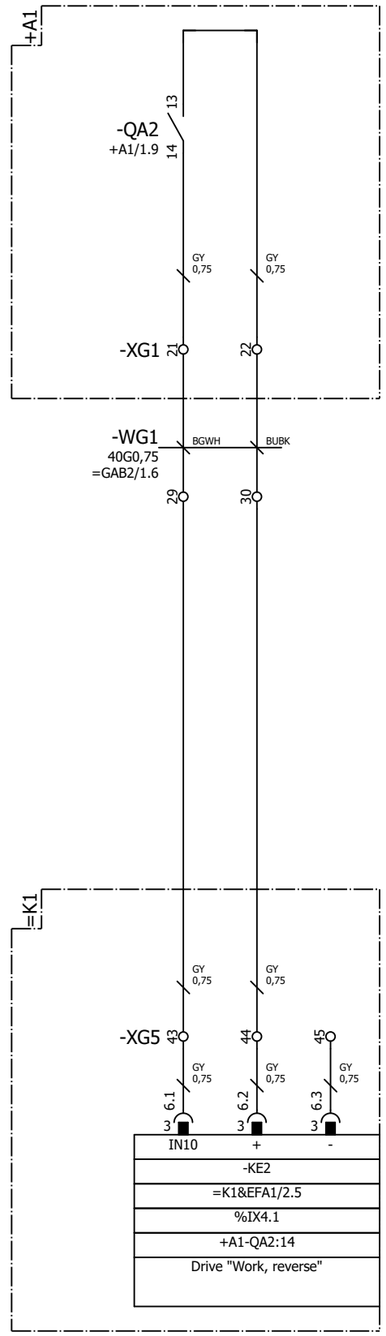
=MM1+B2.Y1/1

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Actuator control	=GL2	&EFS1
			Grinding machine	Drawing number			Work workpiece: Transport	Electrical engineering schematic
							+A1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021 Ed. EPL	Enclosure 1	Page 255 from 305

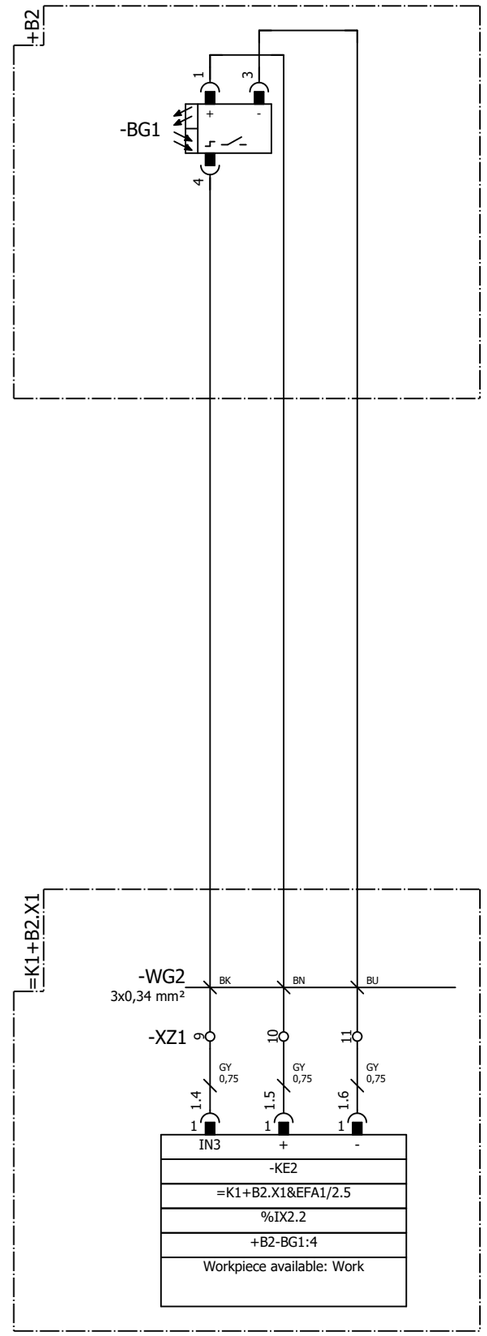
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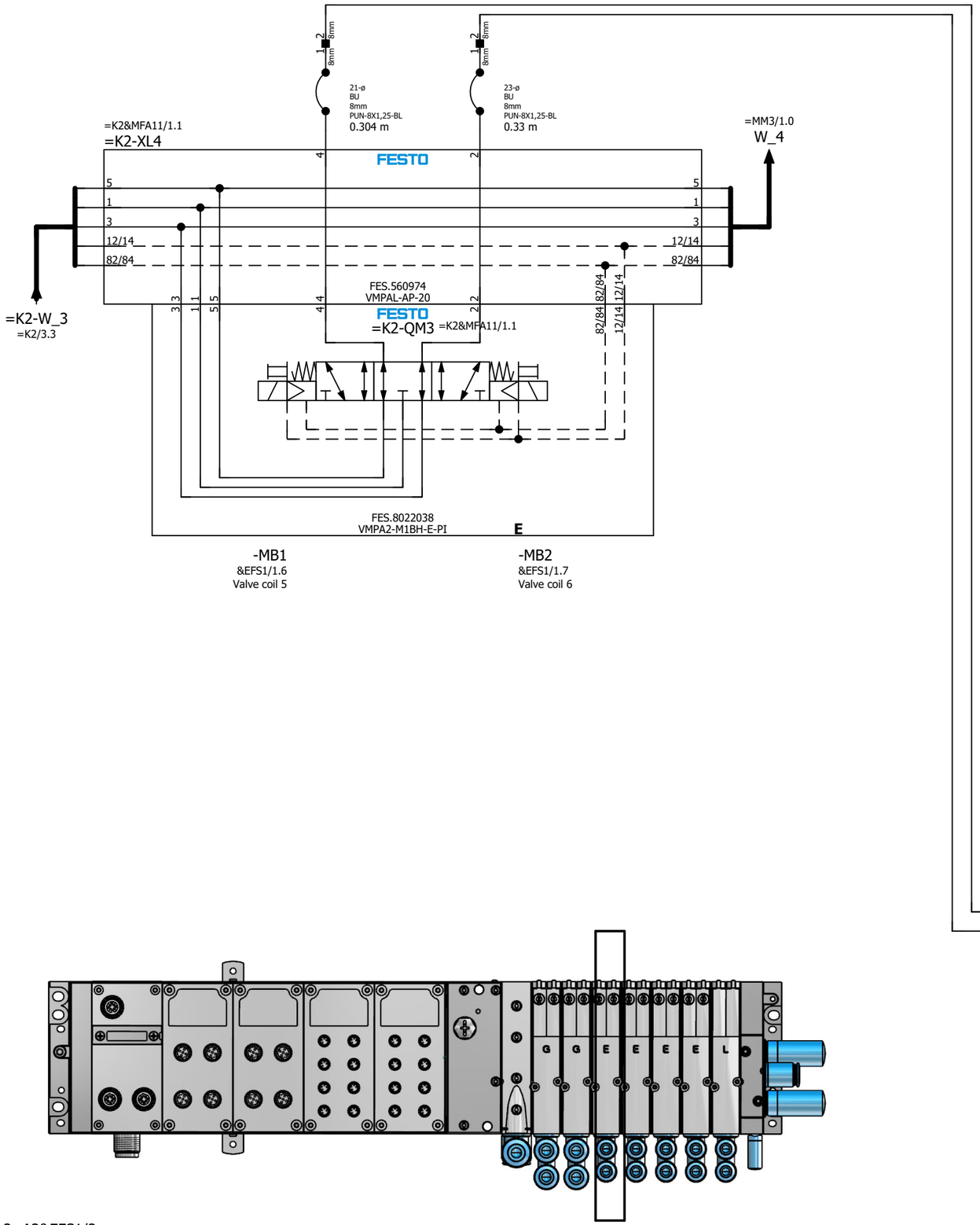
Drive "Work, forward"

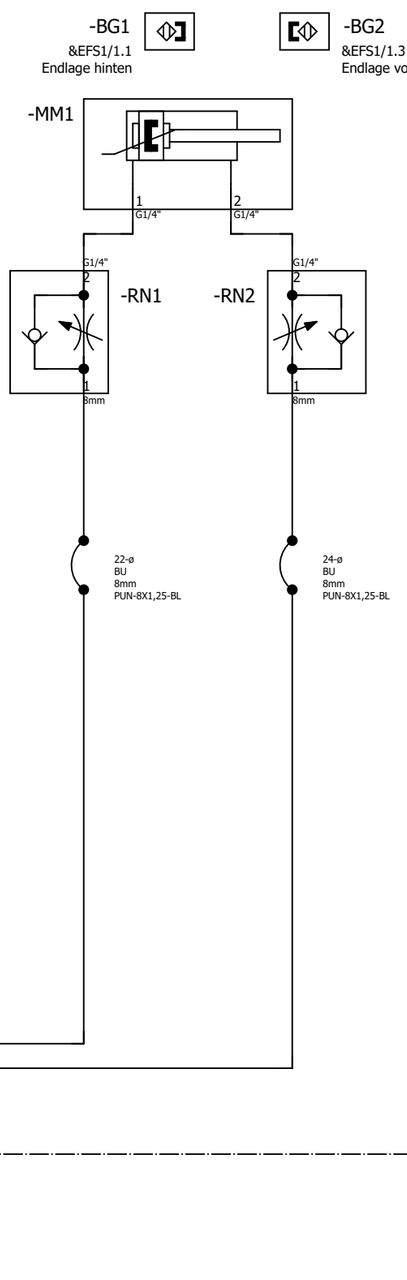


Drive "Work, reverse"



Workpiece available: Work





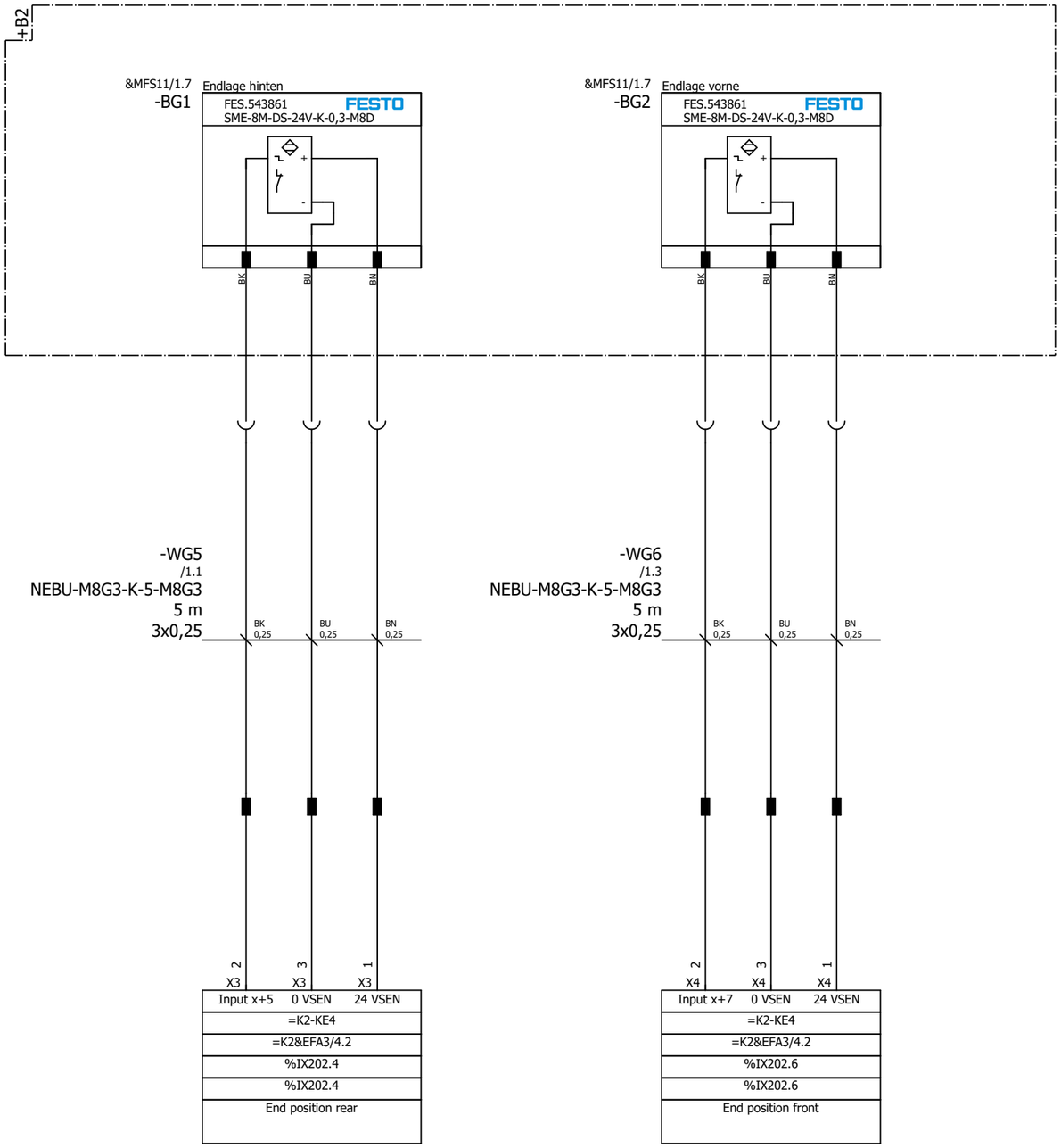
=GL2+A2&EFS1/2

&EFS1/1

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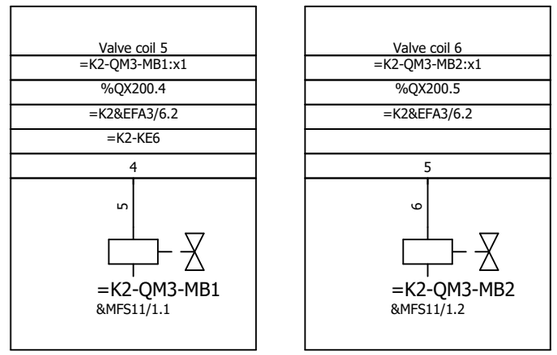
			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Actuator control		=MM2	&MFS11
			Grinding machine	Drawing number				Work workpiece: Position	Pneumatics schematic
								+B2.Y1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Station "Work"	Page 257 from 305

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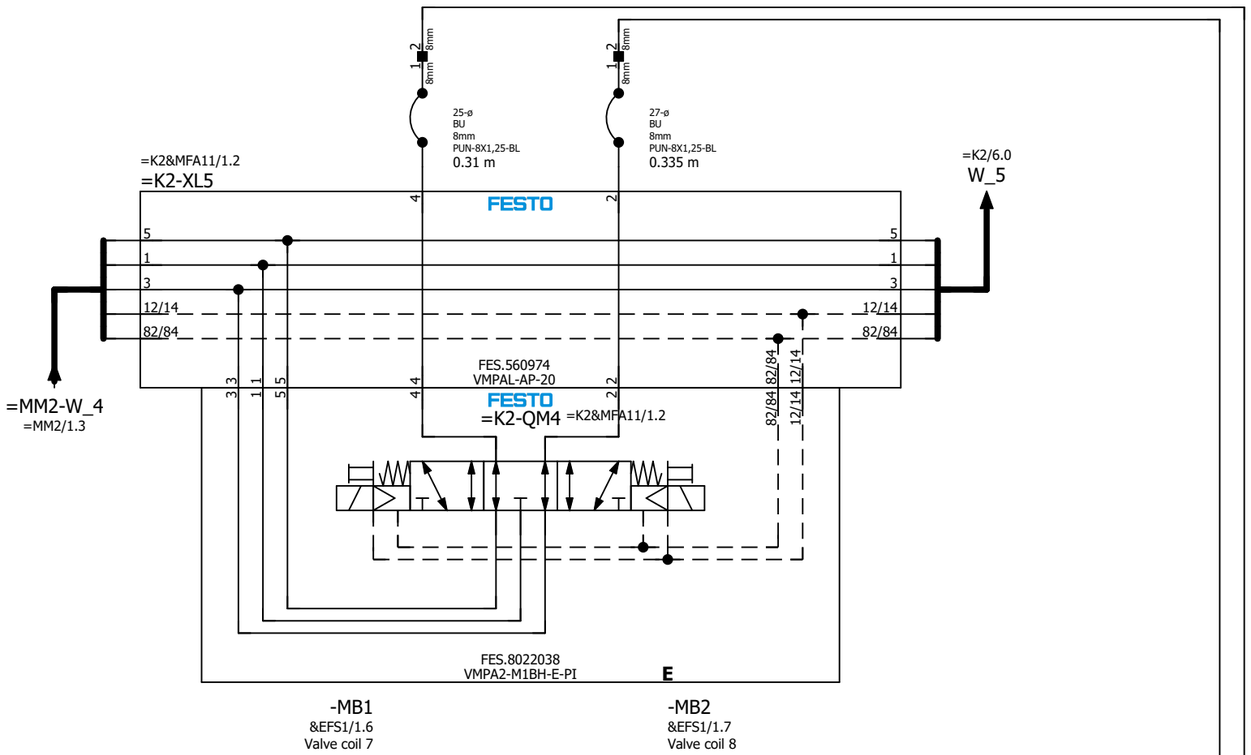
End position rear

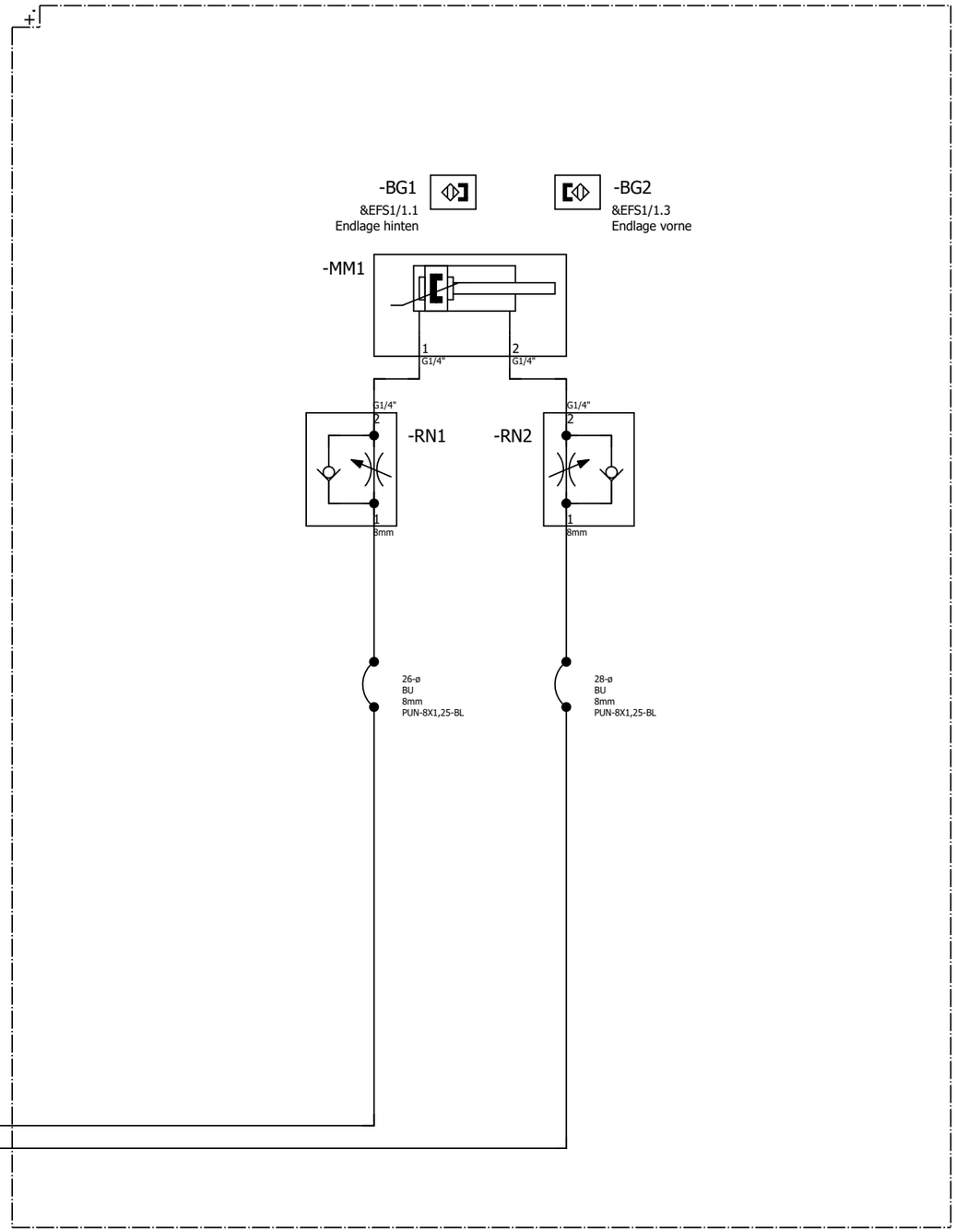
End position front

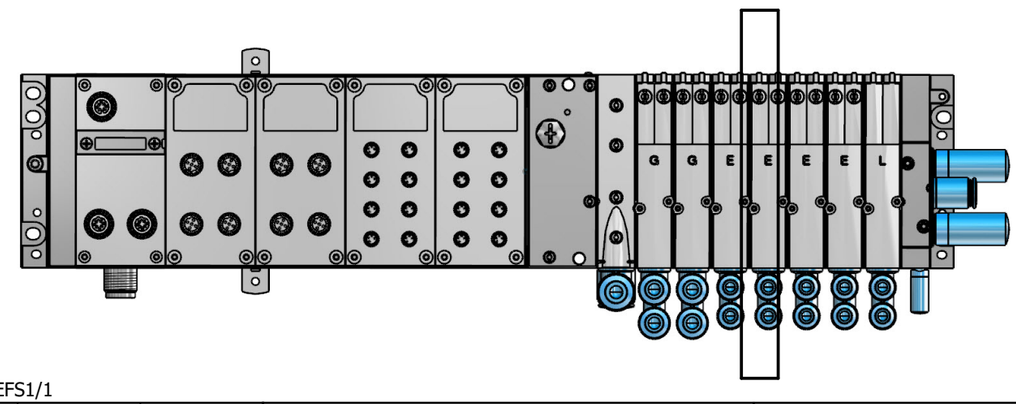


Valve coil 5

Valve coil 6





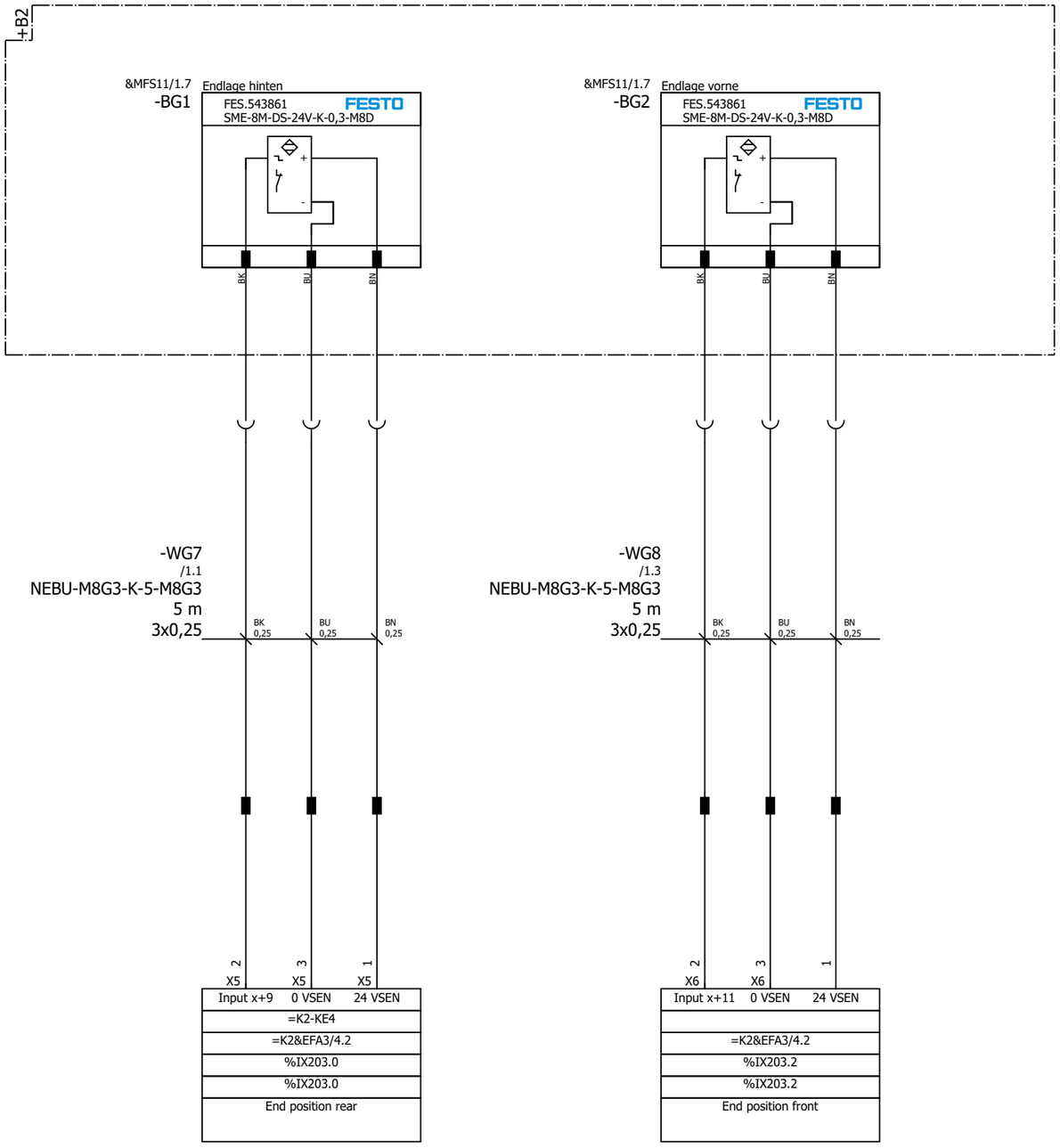


=MM2&EFS1/1

&EFS1/1

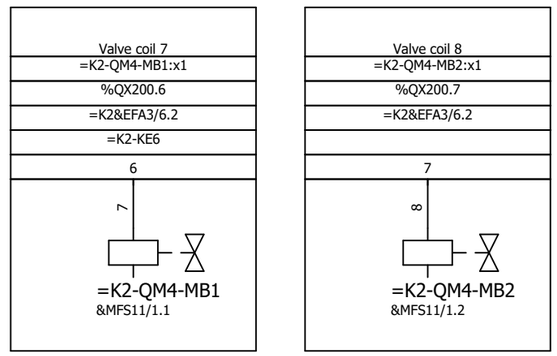
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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG		Actuator control		=MM3	&MFS11
			Grinding machine	Drawing number					Work workpiece: Position	Pneumatics schematic
									+B2.Y1	Page 1
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End position rear

End position front



Valve coil 7

Valve coil 8

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=GL2/1.9 / =GAA-2L1
=GL2/1.9 / =GAA-2L2
=GL2/1.9 / =GAA-2L3

BK 4
BK 4
BK 4

=GAA-2L1 / =TM2/1.0
=GAA-2L2 / =TM2/1.0
=GAA-2L3 / =TM2/1.0

-FC1
10...16A
1/L1 3/L2 5/L3 13 21
I> I> I>
2/T1 4/T2 6/T3 14 22
/1.7

-WE1:4

BK 2,5 BK 2,5 BK 2,5 GNYE 6

-TA1-XG12.1 / 1.9
-TA1-XG12.9 / 1.9

GY 0,75
GY 0,75

-TA1
1,5kW

X1: 1 L1, 2 L2, 3 L3, PE, PE — Network
X10: 1 REF1, 2 AI11, 3 AI12, 4 GND — Setpoint input
X12: 1 DI00, 2 DI01, 3 DI02, 4 DI03, 5 DI04, 8 24VIO, 9 GND — Binary inputs

3x 380VAC -10% ...
3x 500VAC +10%

SEW EURODRIVE MC07B0015-5A3-4-00 1,5kW

S11

X2: U, V, W, PE — Motor
X12: DI05TF 6, VOTF 7 — TF / TH input
X2: +R, -R, PE — Brake resistor
X13: GND 1, DO02 2, DO03 3, GND 4, DO01-C 5, DO01-NO 6, DO01-NC 7 — Binary outputs

+B2
+X1
-WZ2 4G2,5+(2x1) /1.2
-XZ1
-WZ3 4G2,5+(2x1) /1.2
1 2 3 GNYE SH1 5 6 SH
12 13 14 15 16 17 18 19
U1 V1 W1 PE
-MA1
0,55 kW
M 3 ~
11 12

Drive "Grinding, left"

11 12 /1.2

-FC1
/1.1
13 14

GY 0,75 GY 0,75

-XG1 23 24

=K1+A2
-WG1 40G0,75 =GAB2+A2/1.6 BNBK GYBK
-XG1 31 32

GY 0,75 GY 0,75 GY 0,75

-XG5 46 47 48

2.4 2.5 2.6

IN4 + -
-KE2
=K1+A2&EFA1/2.5
%IX3.3
-FC1:14
Overload protection "Grinding, left"

Overload protection
"Grinding, left"

=K1+A2
Start "Grinding, left"
%QX2.0
%QX2.0
=K1+A2&EFA1/2.5
-KE1
OUT1 GND FE

2 2 2
1.1 1.2 1.3
GY 0,75 GY 0,75 GNYE 0,75

-XG5 49 50 51

-WG2 3G0,75 BN BU
-XG1 25 26

1.3 / -TA1-XG12.1
1.4 / -TA1-XG12.9

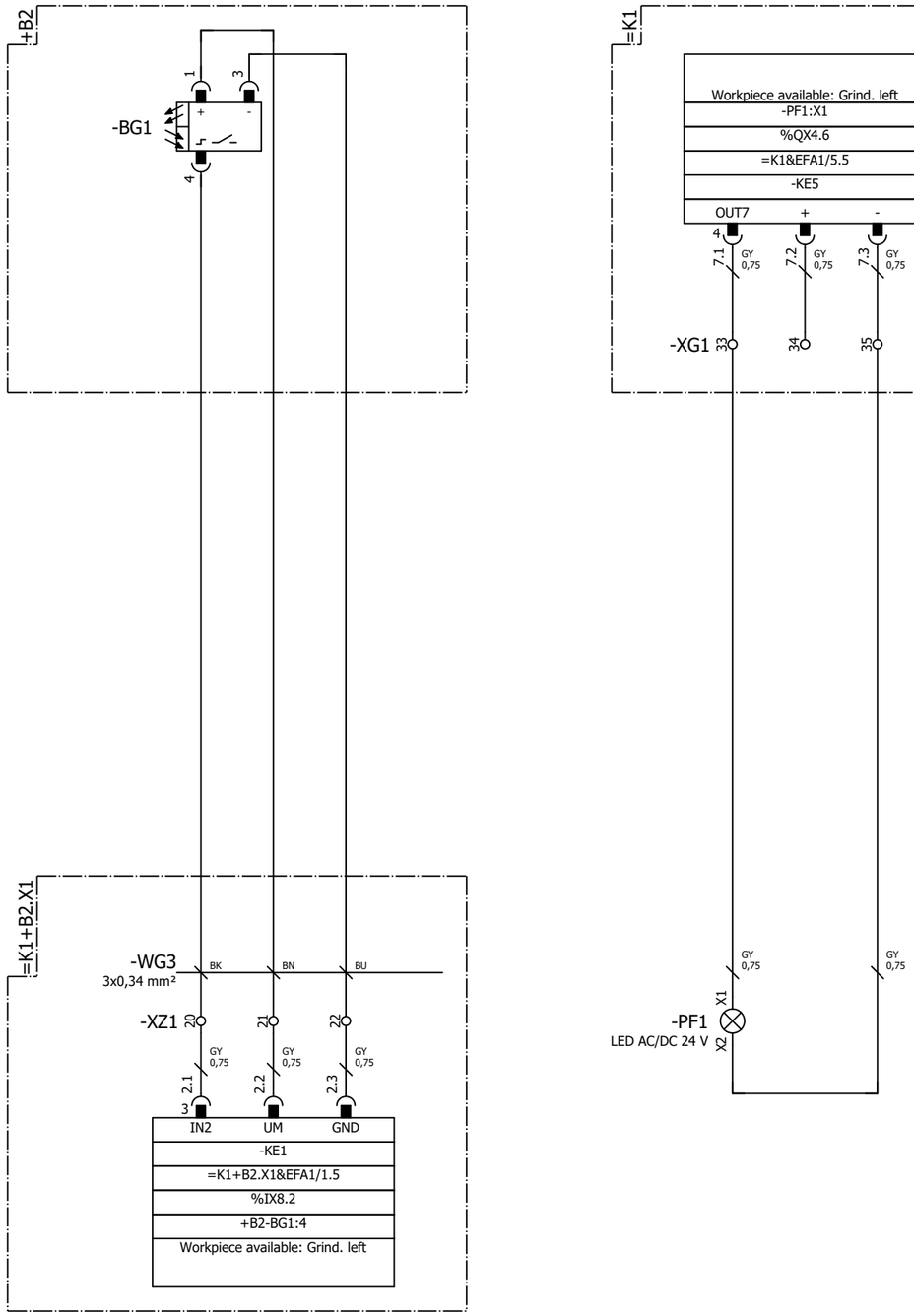
Start "Grinding, left"

=MM3+B2.Y1/1

+A2/2

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Actuator control	=TM1	&EFS1
			Grinding machine	Drawing number			Work workpiece: Grind	Electrical engineering schematic
							+A1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 8/5/2021 Ed. EPL	Enclosure 1	Page 261 from 305

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Workpiece available:
Grind. left

Workpiece available:
Grind. left

+A1/1

=TM2+A1/1

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Sensor control		=TM1	&EFS1
			Grinding machine	Drawing number				Work workpiece: Grind	Electrical engineering schematic
								+A2	Page 2
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Enclosure 2	Page 262 from 305

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=TM1/1.9 / =GAA-2L1
=TM1/1.9 / =GAA-2L2
=TM1/1.9 / =GAA-2L3

BK 4
BK 4
BK 4

=GAA-2L1 / =GL3/1.0
=GAA-2L2 / =GL3/1.0
=GAA-2L3 / =GL3/1.0

-FC1
10...16A
1/L1 3/L2 5/L3 13 21
I> I> I> /1.7 14 22
2/T1 4/T2 6/T3

-WE1:5

BK 2,5 BK 2,5 BK 2,5 GNYE 6

-TA1-XG12.1 / 1.9
-TA1-XG12.9 / 1.9

GY 0,75 GY 0,75

-TA1
1,5kW

X1 1 L1 2 L2 3 L3 PE PE — Network
X10 1 REF1 2 AI11 3 AI12 4 GND — Setpoint input
X12 1 DI00 2 DI01 2 DI02 3 DI03 4 DI04 5 24VIO 8 GND 9 — Binary inputs

3x 380VAC -10% ...
3x 500VAC +10%

SEW EURODRIVE MC07B0015-5A3-4-00 1,5kW

S11

Motor: X2 U V W PE
TF / TH input: X12 DI05TF 6 VOTF 7
Brake resistor: X2 +R -R PE
Binary outputs: X13 GND 1 DO02 2 DO03 3 GND 4 DO01-C 5 DO01-NO 6 DO01-NC 7

+B2
+X1

-WZ4
4G2,5+(2x1)
/1.2
1 2 3 GNYE SH1 5 6 SH
SH1

-XZ1
23 24 25 26 27 28 29 30

-WZ5
4G2,5+(2x1)
/1.2
1 2 3 GNYE SH1 5 6 SH

U1 V1 W1 PE

-MA1
0,55 kW
M
3 ~

11 12

11 /1.2
12 /1.2

Drive, "Grinding, right"

-FC1
/1.1
13
14

GY 0,75 GY 0,75

-XG1 27 28

=K1+A2
-WG1
40G0,75
=GAB2+A2/1.6
RDBK VTBK
-XG1 36 37

GY 0,75 GY 0,75 GY 0,75

-XG5 52 53 54

GY 0,75 GY 0,75 GY 0,75

3.1 3.2 3.3

2 IN5 + -
-KE2
=K1+A2&EFA1/2.5
%IX3.4
-FC1:14
Overload protection "Grinding, right"

Overload protection
"Grinding, right"

=K1+A2
Start "Grinding, right"
%QX2.2
%QX2.2
=K1+A2&EFA1/1.5
-KE1
OUT2 GND FE
2 2 2

2.1 GY 0,75
2.2 GY 0,75
2.3 GY 0,75

-XG5 55 56 57

-WG3
3G0,75
BN BU

-XG1 29 30

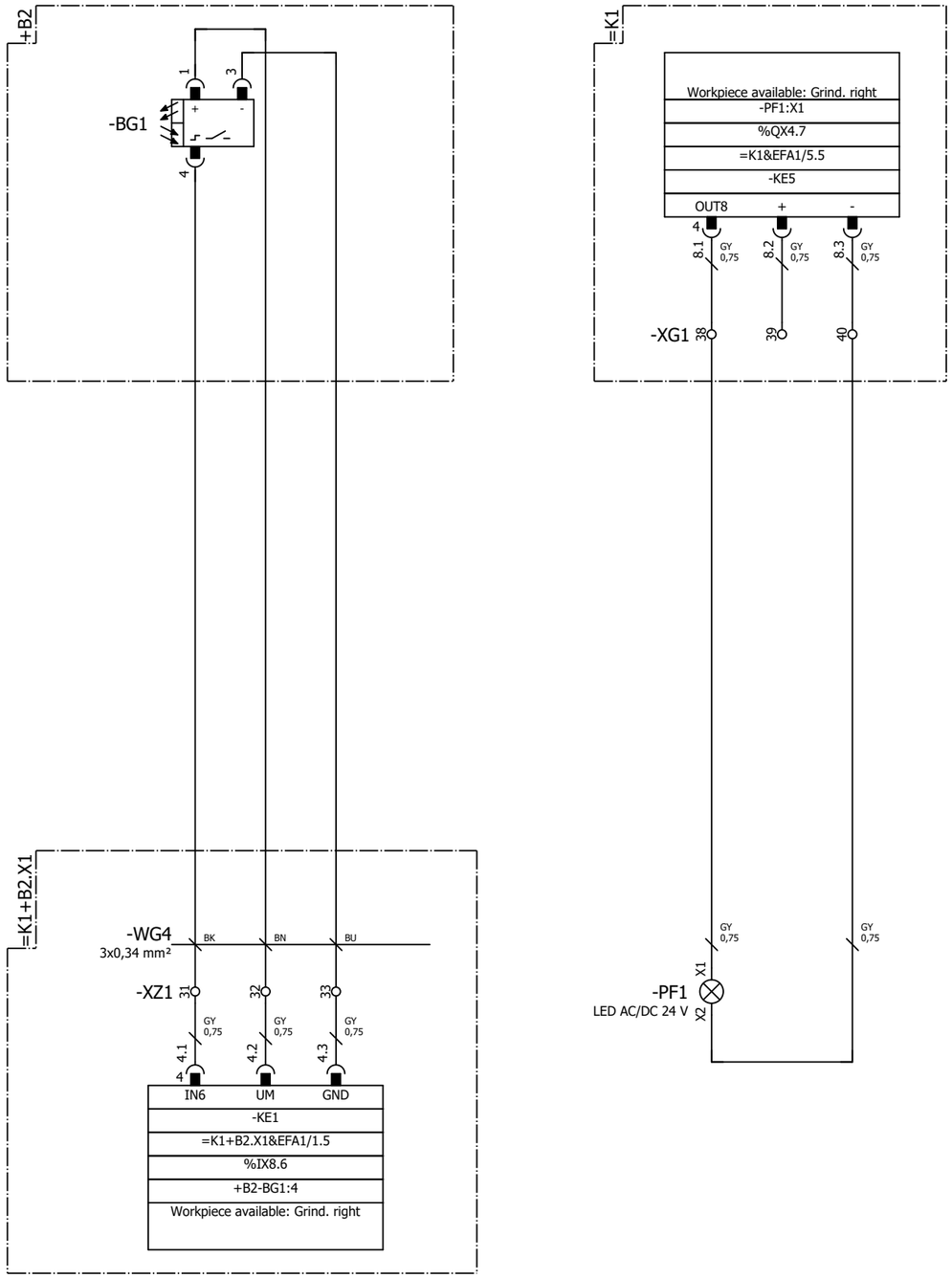
1.3 / -TA1-XG12.1
1.4 / -TA1-XG12.9

Start "Grinding, right"

=TM1+A2/2

+A2/2

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Actuator control		=TM2	&EFS1
			Grinding machine	Drawing number				Work workpiece: Grind	Electrical engineering schematic
								+A1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 8/5/2021	Ed. EPL	Enclosure 1	Page 263 from 305



Workpiece available:
Grind. right

Workpiece available:
Grind. right

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0	1	2	3	4	5	6	7	8	9

=TM2/1.9 / =GAA-2L1
=TM2/1.9 / =GAA-2L2
=TM2/1.9 / =GAA-2L3

-FC1
2,8...4A
1/L1 3/L2 5/L3 13 21
14 22 /1.5
I> I> I>
2/T1 4/T2 6/T3

BK 2,5

-QA1
/1.7
-QA2
/1.9

-XD4 11 12 13 14 15

+B3
+X1

-WD2
5G2,5
BN BK GY BU GNYE

-XZ1 1 2 3 4 5 6 7 8

-WZ1
4G2,5+(2x0,75)
/1.2
3 4 5 GNYE 1 SH1

U1 V1 W1 PE
-MA1
1,5 kW
M
3 ~

11 12

Drive "Provide"

=K1+B3.X1

GY 0,75

IN1 UM GND
-KE1
=K1+B3.X1&EFA1/1.5
%IX9.0
+B3-MA1:12
Excess temperature Drive "Provide"

Excess temperature
Drive "Provide"

-FC1
/1.5
NO 13
NC 14

GY 0,75

-XG1 31 32

=K1+A2

-WG1
40G0,75
=GAB2+A2/1.6
PKBK OGBK

-XG1 41 42

-XG5 58 59 60

IN7 + -
-KE2
=K1+A2&EFA1/2.5
%IX3.6
-FC1:14
Overload protection Drive "Provide"

Overload protection
Drive "Provide"

=K1+A2

Drive "Provide, forward"
-QA1:A1
%QX4.2
=K1+A2&EFA1/5.5
-KE5
OUT3 + -

2
3.1 3.2 3.3
GY 0,75

-XG1 43 44 45

-WG1
40G0,75
=GAB2+A2/1.6
TRBK BGBK

-XG1 33 34

-QA2
/1.9
11 12

-QA1
DC 24V
A1 A2

Drive "Provide, forward"

1/L1 2/T1 /1.1
3/L2 4/T2 /1.1
5/L3 6/T3 /1.1
13 14 +A2/2.3
23 24
33 34
11 12 /1.9
21 22

=K1+A2

Drive "Provide, reverse"
-QA2:A1
%QX4.3
=K1+A2&EFA1/5.5
-KE5
OUT4 + -

2
4.1 4.2 4.3
GY 0,75

-XG1 46 47 48

-WG1
40G0,75
=GAB2+A2/1.6
BNBU GYBU

-XG1 35 36

-QA1
/1.7
11 12

-QA2
DC 24V
A1 A2

Drive "Provide, reverse"

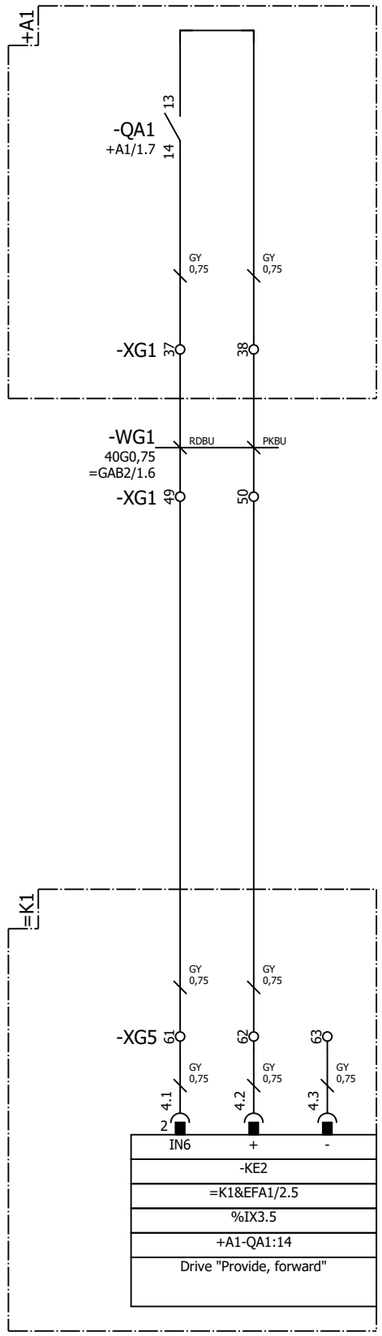
1/L1 2/T1 /1.2
3/L2 4/T2 /1.2
5/L3 6/T3 /1.2
13 14 +A2/2.5
23 24
33 34
11 12 /1.7
21 22

=TM2+A2/2

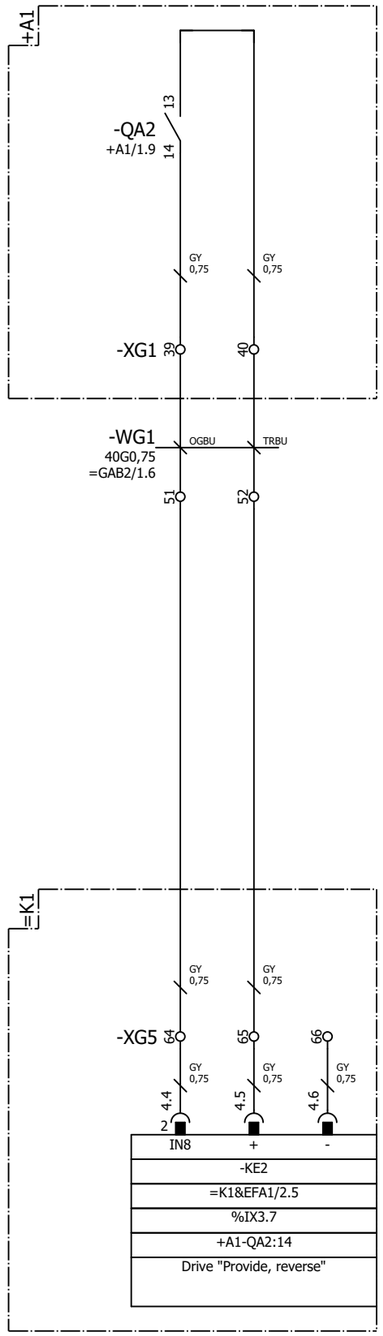
+A2/2

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Actuator control		=GL3	&EFS1
			Grinding machine	Drawing number				Provide workpiece: Transport	Electrical engineering schematic
								+A1	Page 1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021	Ed. EPL	Enclosure 1	Page 265 from 305

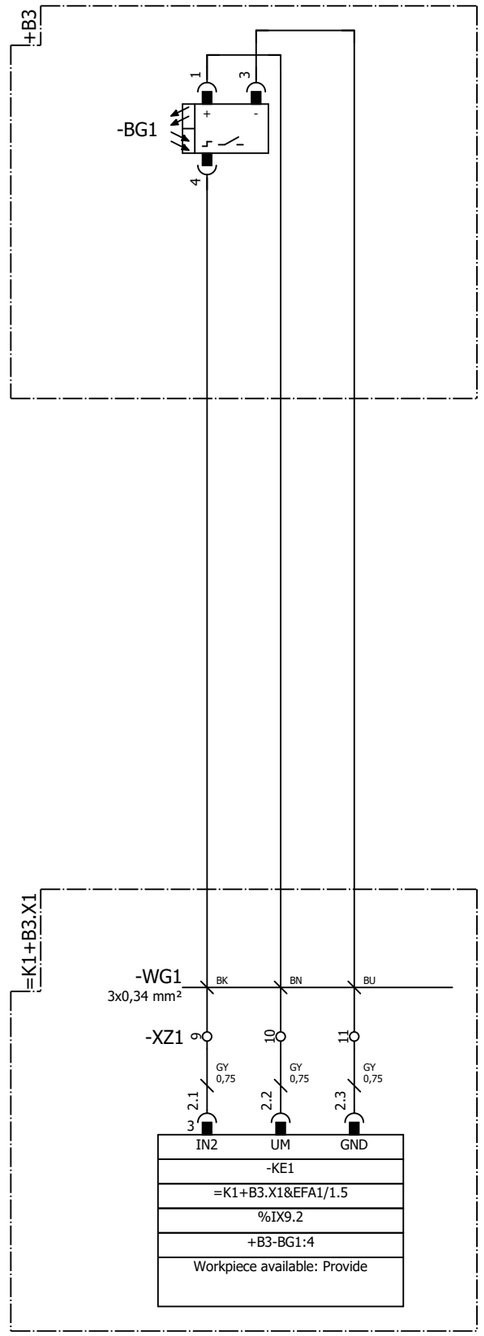
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Drive "Provide, forward"

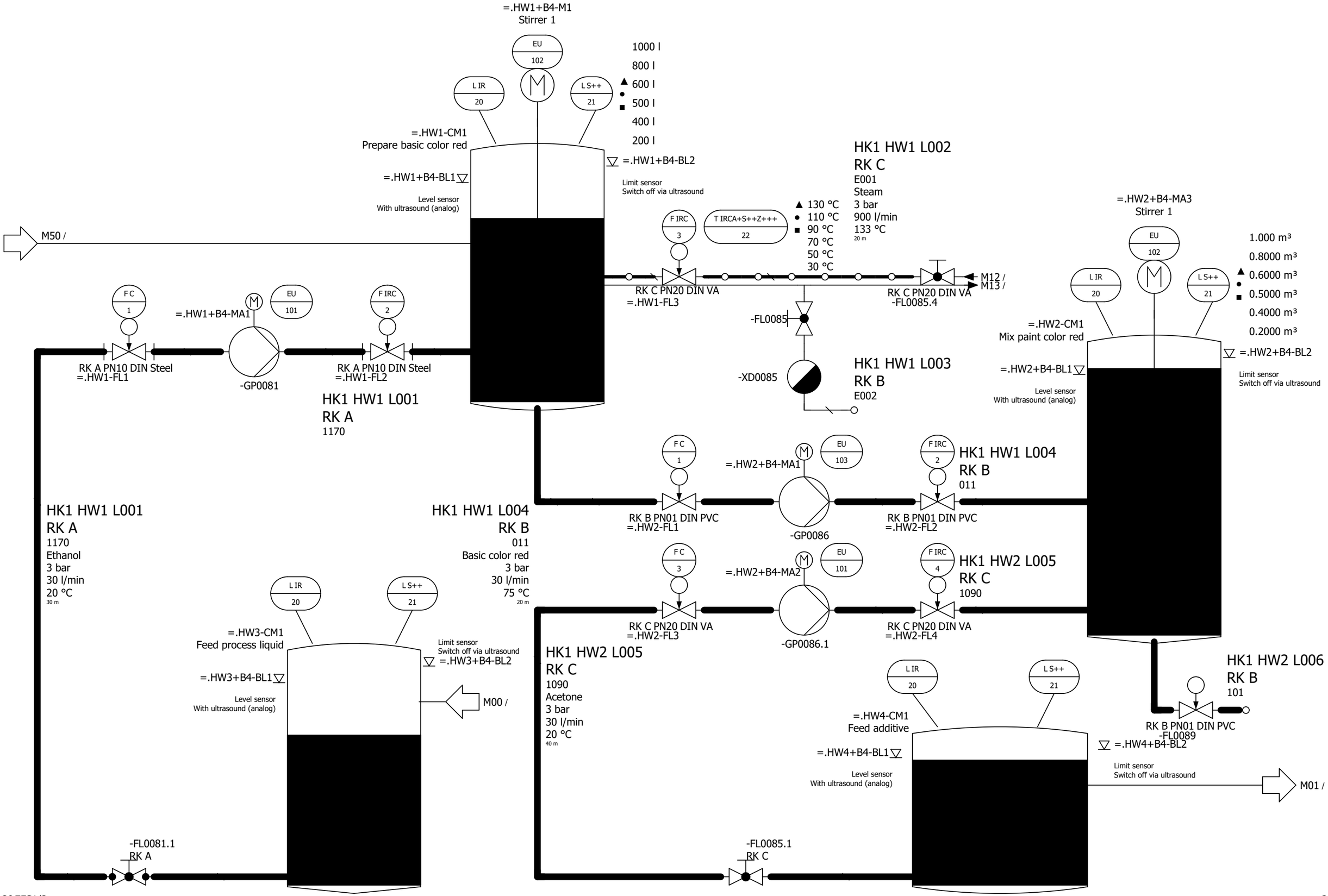


Drive "Provide, reverse"



Workpiece available: Provide

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=GL3+A2&EFS1/2

2

			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Paint workpiece		=HK1	&PFB
			Grinding machine	Drawing number				Paint workpiece	P&I diagrams
								+	Page 1
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P&I diagram: Piping overview

F37_003

Substance number	Formula	Pipe class	Pressure	Cross-section	Length	Expenditure planning	Expenditure construction	Expenditure software	Price	Source	Target	Pipeline parts	Pipes	Piping definition	Placement
1170	C2H5OH	RK A	3 bar	DN40	30 m	1h	10h	0,5h	0,00	=HK1.HW1+-CM1	=HK1.HW3+-CM1	=HK1.HW1+-FL1	Product line	HK1 HW1 L001	=HK1&PFB/1.0
												=HK1+-FL0081.1			
												=HK1+-GP0081			
												=HK1.HW1+-FL2			
E001	H2O	RK C	3 bar		20 m	1h	30h	0,5h	0,00		=HK1.HW1+-CM1-EB0084	=HK1.HW1+-FL3	Steam line	HK1 HW1 L002	=HK1&PFB/1.5
												=HK1+-FL0085.4			
E002	H2O	RK B	0,1 bar		5 m	1h	10h	0,5h	0,00			=HK1+-FL0085	Condensate line	HK1 HW1 L003	=HK1&PFB/1.6
												=HK1+-XD0085			
011		RK B	3 bar		20 m	1h	50h	0,5h	0,00	=HK1.HW2+-CM1	=HK1.HW1+-CM1	=HK1.HW2+-FL1	Product line	HK1 HW1 L004	=HK1&PFB/1.4
												=HK1+-GP0086			
												=HK1.HW2+-FL2			
1090	CH3COCH3	RK C	3 bar		40 m	1h	10h	0,5h	0,00	=HK1.HW4+-CM1	=HK1.HW2+-CM1	=HK1.HW2+-FL3	Product line	HK1 HW2 L005	=HK1&PFB/1.4
												=HK1+-FL0085.1			
												=HK1+-GP0086.1			
												=HK1.HW2+-FL4			
101		RK B	3 bar		30 m	1h	10h	0,5h	0,00		=HK1.HW2+-CM1	=HK1+-FL0089	End product line	HK1 HW2 L006	=HK1&PFB/1.9

Carry over:

Total:	6,00	120,00	3,00	0,00

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Piping definition	=HK1	&PFB
			Grinding machine	Drawing number			Paint workpiece	P&I diagrams
							+	Page 2
Modification	Date	Name	Creator EPL	Approved by		Date 7/12/2021 Ed. EPL		Page 268 from 305

Pre-planning: Planning object overview

F40_008

		Planning object	Description / Remark	Digital PLC outputs (DO)	Analog PLC outputs (AO)	Digital PLC inputs (DI)	Analog PLC inputs (AI)	PLC counter inputs		Total work [h] Planning	Construction	Software	Total power consumption [kW]	Total price [€]	Linked with superior segments	Linked segments
1	3	HK1 HW1 EU 101	Feed medium	2		1				5,5	8,0	4,5	0,6	3650,00	HK1 HW1 LS++ 21	
2	3	HK1 HW1 EU 102	Mix media	2		1				5,5	9,0	4,5	0,6	3650,00		
3	3	HK1 HW1 FC 1	Flow valve control				1			1,2	3,0	0,3	0,0	650,00		
4	3	HK1 HW1 FIRC 2	Flow valve control: Open and closed		1	2				3,2	7,0	0,3	0,0	950,00		
5	3	HK1 HW1 FIRC 3	Flow valve control: Closed		1	1				2,2	5,0	0,3	0,0	800,00		
6	3	HK1 HW1 GS 1	Light barrier	3		2				1,2	3,0	0,3	0,0	650,00		
7	3	HK1 HW1 LIR 20	Measure filling level	3		2				1,7	4,5	0,8	0,0	1450,00		
8	3	HK1 HW1 LS++ 21	Switch off medium feed	3		2				1,7	5,0	0,8	0,0	1450,00		HK1 HW1 EU 101
9	3	HK1 HW1 TIRCA+S++Z+++ 22	Measure temperature				1			1,7	4,5	0,8	0,0	1750,00		
10	3	HK1 HW2 EU 101	Feed medium	2		1				5,5	8,0	4,5	0,6	3650,00	HK1 HW2 LS++ 21	
11	3	HK1 HW2 EU 102	Mix media	2		1				5,5	9,0	4,5	1,5	3650,00		
12	3	HK1 HW2 EU 103	Feed medium	2		1				5,5	7,0	4,5	1,5	3650,00	HK1 HW2 LS++ 21	
13	3	HK1 HW2 FC 1	Flow valve control				1			1,2	3,0	0,3	0,0	650,00		
14	3	HK1 HW2 FIRC 2	Flow valve control: Open and closed		1	2				3,2	7,0	0,3	0,0	950,00		
15	3	HK1 HW2 FC 3	Flow valve control				1			1,2	3,0	0,3	0,0	650,00		
16	3	HK1 HW2 FIRC 4	Flow valve control: Open and closed		1	2				3,2	7,0	0,3	0,0	950,00		
17	3	HK1 HW2 LIR 20	Measure filling level	3		2				1,7	5,0	0,8	0,0	1450,00		
18	3	HK1 HW2 LS++ 21	Switch off medium feed	3		2				1,7	5,5	0,8	0,0	1450,00		HK1 HW2 EU 101;HK1 HW2 EU 103
19	3	HK1 HW3 LIR 20	Measure filling level	3		2				1,7	5,5	0,8	0,0	1450,00		
20	3	HK1 HW3 LS++ 21	Switch off medium feed	3		2				1,7	6,5	0,8	0,0	1450,00		
21	3	HK1 HW4 LIR 20	Measure filling level	3		2				1,7	4,5	0,8	0,0	1450,00		
22	3	HK1 HW4 LS++ 21	Switch off medium feed	3		2				1,7	5,0	0,8	0,0	1450,00		

	DO	AO	DI	AI	Z						
Carry over:											
Total:	37	4	30	4			59,4	125,0	32,1	4,8	37850,00

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Pre-planning: Planning object overview

F40_005

		Planning object	Description / Remark	Digital PLC outputs (DO)	Analog PLC outputs (AO)	Digital PLC inputs (DI)	Analog PLC inputs (AI)	PLC counter inputs	Total work [h] Planning	Construction	Software	Total power consumption [kW]	Total price [€]	Activation site	Implementation	Documentation
1	4	HK1 HW1 EU 101MA1	Pump 1						3,0	5,0	2,0	0,6	1150,00	On-site	General	
2	4	HK1 HW1 EU 102MA2	Stirrer 1						3,0	6,0	2,0	0,6	1150,00	On-site	General	
3	4	HK1 HW1 FC 1BL1	Flow rate sensor						1,2	3,0	0,3	0,0	650,00	On-site	General	
4	4	HK1 HW1 FC 1FL1	Shut-off valve						0,0	0,0	0,0	0,0	0,00	On-site	General	
5	4	HK1 HW1 FIRC 2BL1	Valve						1,2	3,0	0,3	0,0	650,00	On-site	General	
6	4	HK1 HW1 FIRC 2FL1	Shut-off valve						0,0	0,0	0,0	0,0	0,00	On-site	General	
7	4	HK1 HW1 FIRC 2SF1	Switch / pushbutton						1,0	2,0	0,0	0,0	150,00	On-site	General	
8	4	HK1 HW1 FIRC 2SF2	Switch / pushbutton						1,0	2,0	0,0	0,0	150,00	On-site	General	
9	4	HK1 HW1 FIRC 3BL1	Valve						1,2	3,0	0,3	0,0	650,00	On-site	General	
10	4	HK1 HW1 FIRC 3FL1	Shut-off valve						0,0	0,0	0,0	0,0	0,00	On-site	General	
11	4	HK1 HW1 FIRC 3SF1	Switch / pushbutton						1,0	2,0	0,0	0,0	150,00	On-site	General	
12	4	HK1 HW1 GS 1BL1	Level sensor						1,2	3,0	0,3	0,0	650,00	On-site	General	
13	4	HK1 HW1 LIR 20BL1	Level sensor						1,2	3,0	0,3	0,0	650,00	On-site	General	
14	4	HK1 HW1 LIR 20UA1	Converter						0,0	0,0	0,0	0,0	0,00	On-site	General	
15	4	HK1 HW1 LS++ 21BL2	Limit sensor						1,2	3,5	0,3	0,0	650,00	On-site	General	
16	4	HK1 HW1 TIRCA+S++Z+++ 22BL1	Temperature sensor						1,2	3,0	0,3	0,0	650,00	On-site	General	
17	4	HK1 HW2 EU 101MA1	Pump 1						3,0	5,0	2,0	0,6	1150,00	On-site	General	
18	4	HK1 HW2 EU 102MA2	Stirrer 1						3,0	6,0	2,0	1,5	1150,00	On-site	General	
19	4	HK1 HW2 EU 103MA1	Pump 2						3,0	4,0	2,0	1,5	1150,00	On-site	General	
20	4	HK1 HW2 FC 1BL1	Flow rate sensor						1,2	3,0	0,3	0,0	650,00	On-site	General	
21	4	HK1 HW2 FC 1FL1	Shut-off valve						0,0	0,0	0,0	0,0	0,00	On-site	General	
22	4	HK1 HW2 FIRC 2BL1	Valve						1,2	3,0	0,3	0,0	650,00	On-site	General	
23	4	HK1 HW2 FIRC 2FL1	Shut-off valve						0,0	0,0	0,0	0,0	0,00	On-site	General	
24	4	HK1 HW2 FIRC 2SF1	Switch / pushbutton						1,0	2,0	0,0	0,0	150,00	On-site	General	
25	4	HK1 HW2 FIRC 2SF2	Switch / pushbutton						1,0	2,0	0,0	0,0	150,00	On-site	General	
				DO	AO	DI	AI	Z								
			Carry over:													
			Total:						30,8	63,5	12,7	4,8	12350,00			

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Pre-planning: Planning object overview

F40_005

		Planning object	Description / Remark	Digital PLC outputs (DO)	Analog PLC outputs (AO)	Digital PLC inputs (DI)	Analog PLC inputs (AI)	PLC counter inputs	Total work [h] Planning	Construction	Software	Total power consumption [kW]	Total price [€]	Activation site	Implementation	Documentation
26	4	HK1 HW2 FC 3BL1	Flow rate sensor						1,2	3,0	0,3	0,0	650,00	On-site	General	
27	4	HK1 HW2 FC 3FL1	Shut-off valve						0,0	0,0	0,0	0,0	0,00	On-site	General	
28	4	HK1 HW2 FIRC 4BL1	Valve						1,2	3,0	0,3	0,0	650,00	On-site	General	
29	4	HK1 HW2 FIRC 4FL1	Shut-off valve						0,0	0,0	0,0	0,0	0,00	On-site	General	
30	4	HK1 HW2 FIRC 4SF1	Switch / pushbutton						1,0	2,0	0,0	0,0	150,00	On-site	General	
31	4	HK1 HW2 FIRC 4SF2	Switch / pushbutton						1,0	2,0	0,0	0,0	150,00	On-site	General	
32	4	HK1 HW2 LIR 20BL1	Level sensor						1,2	3,5	0,3	0,0	650,00	On-site	General	
33	4	HK1 HW2 LS++ 21BL2	Limit sensor						1,2	4,0	0,3	0,0	650,00	On-site	General	
34	4	HK1 HW3 LIR 20BL1	Level sensor						1,2	4,0	0,3	0,0	650,00	On-site	General	
35	4	HK1 HW3 LS++ 21BL2	Limit sensor						1,2	5,0	0,3	0,0	650,00	On-site	General	
36	4	HK1 HW4 LIR 20BL1	Level sensor						1,2	3,0	0,3	0,0	650,00	On-site	General	
37	4	HK1 HW4 LS++ 21BL2	Limit sensor						1,2	3,5	0,3	0,0	650,00	On-site	General	

	DO	AO	DI	AI	Z						
Carry over:							30,8	63,5	12,7	4,8	12350,00
Total:							42,4	96,5	15,1	4,8	17850,00

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Device list	=HK1	&PFB
			Grinding machine	Drawing number			Paint workpiece	P&I diagrams
							+	Page 4.1
Modification	Date	Name	Creator EPL	Approved by		Date 3/24/2021 Ed. EPL		Page 271 from 305

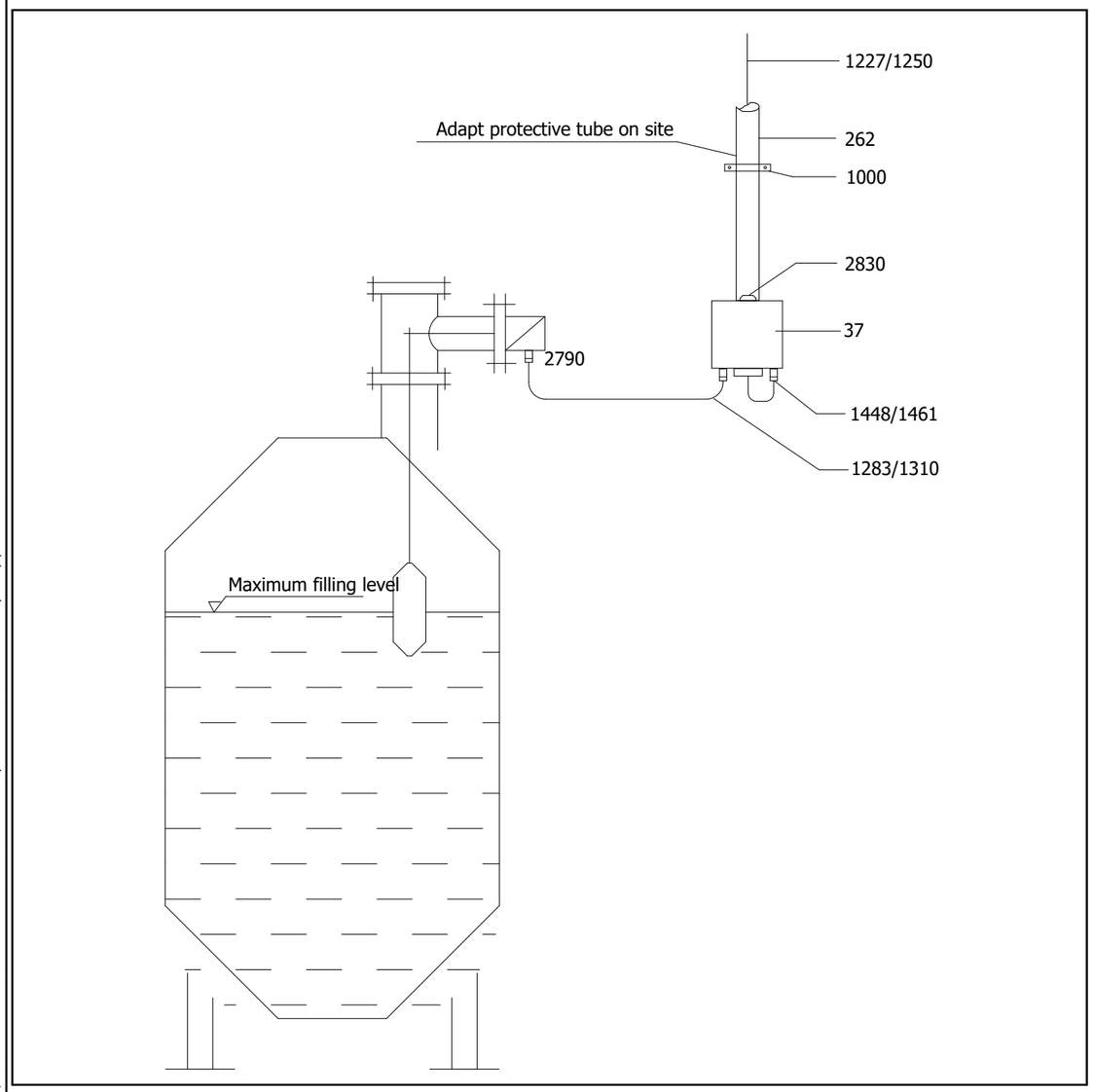
F44_001

Assembly/Module overview

LW 001

Measuring set-up for filling level: measurement triggered by float with contact

In 2 and 3 wire circuit or 1-way in 4 wire circuit



Section number	Quantity	Part number	Designation	Description
1250	1	23 05 033	Insulating sheath , intrinsically safe	15000mm NYM-0 4 x 1,5mm² blue DIN 47705
262	1	12 22 126	Pipe	5000mm 33,7 x 2,6 -ST 35 calmed DIN 2448
1000	1	12 84 672	Screw connection	MAV 12-LR .1/2 -ST
2830	1	67 69 651	Measuring instruments mount	Projection 100mm AL DIN 16281
37	4	Supply 9	Electric display device	
1461	1	21 18 153	Nut	B PG 13,5 gray DIN 46258-Makrolon
1310	1	23 02 316	GL hose line, intrinsically safe	2000mm H05RN-F 4 x 1,0mm² blue UV-resistant
131	1	10 20 206	Angular steel L	3000mm 30 x 4 DIN 1028-RST37-2
2790	1	21 36 009	Cable tie	2,4 x 92mm NF
2730	1	21 38 200	Stirrup bolt large foot	1 line 8-12mm ST

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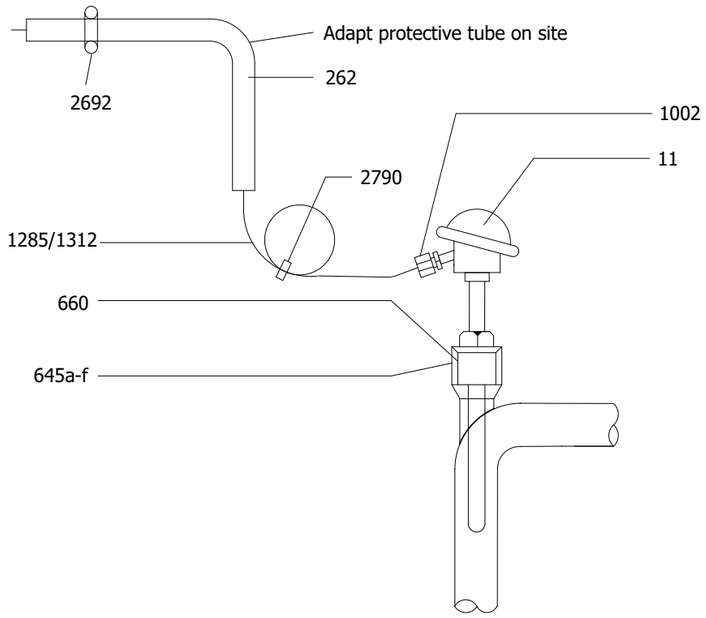
			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Assembly/Module overview		=HK1	&PFB	
			Grinding machine	Drawing number				Paint workpiece	P&I diagrams	
								+	Page 5	
Modification	Date	Name	Creator EPL	Approved by		Date 12/23/2020	Ed. EPL		Page 272 from 305	

Assembly/Module overview

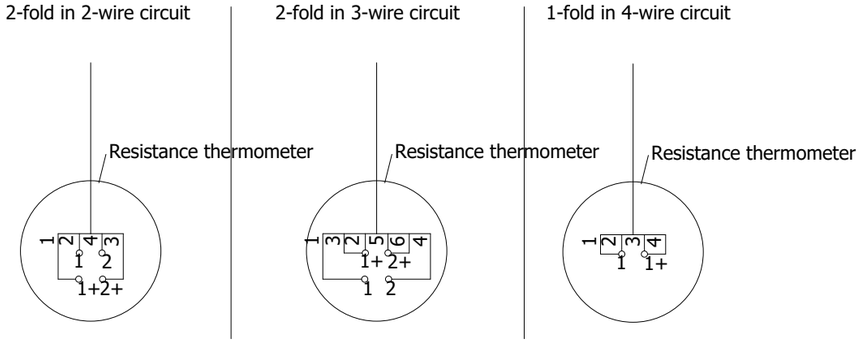
TW 004

Temperature measurement with resistance thermometer 1- and 2-fold

In 2 and 3 wire circuit or 1-way in 4 wire circuit



Connection diagram for resistance thermometer



Section number	Quantity	Part number	Designation	Description
11	1	Supply 8	Resistance thermometer	
1002	1	12 84 675	Screw connection	MAV 12-LR .1/2 -1.4571
2770	1	21 38 616	C profile	1000mm 35 x 18 x 2,0mm slot 16mm ST
2790	1	21 36 009	Cable tie	2,4 x 92mm NF
2692	4	12 90 654	U-bolt pipe hanger	A 38 DIN 3570-UST 37-1
1312	1	23 02 306	GL hose line, intrinsically safe	30000mm similar to H05RN-F 6 x 0,5mm² blue UV-resistant
1285	1	20 35 606	C profile	15000mm similar to H05RN-F 6 x 0,5mm² blk UV-resistant
660	1	Supply 4	Seals	46 x 34 x 2 IT 400 DIN 3754
645	1	Supply 3	Thermal weld-in nozzle	Rizoll design A-F
262	1	12 22 126	Pipe	5000mm 33,7 x 2,6 -ST 35 calmed DIN 2448

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Assembly/Module overview		=HK1	&PFB
			Grinding machine	Drawing number				Paint workpiece	P&I diagrams
								+	Page 6
Modification	Date	Name	Creator EPL	Approved by		Date 12/23/2020	Ed. EPL		Page 273 from 305

Pre-planning: Properties list of the pipe class

F49_002

Pipe class	RK A
Description	Steel line
Standard	DIN
Material	Steel
Nominal pressure level	PN10

User supplementary field 1	
User supplementary field 2	
User supplementary field 3	
User supplementary field 4	
User supplementary field 5	
User supplementary field 6	
User supplementary field 7	
User supplementary field 8	
User supplementary field 9	
User supplementary field 10	
User supplementary field 11	
User supplementary field 12	
User supplementary field 13	
User supplementary field 14	
User supplementary field 15	
User supplementary field 16	
User supplementary field 17	
User supplementary field 18	
User supplementary field 19	
User supplementary field 20	

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Pre-planning: Properties list of the pipe class

F49_002

Pipe class	RK B
Description	PVC line
Standard	DIN
Material	PVC
Nominal pressure level	PN01

User supplementary field 1	
User supplementary field 2	
User supplementary field 3	
User supplementary field 4	
User supplementary field 5	
User supplementary field 6	
User supplementary field 7	
User supplementary field 8	
User supplementary field 9	
User supplementary field 10	
User supplementary field 11	
User supplementary field 12	
User supplementary field 13	
User supplementary field 14	
User supplementary field 15	
User supplementary field 16	
User supplementary field 17	
User supplementary field 18	
User supplementary field 19	
User supplementary field 20	

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Pre-planning: Properties list of the pipe class

F49_002

Pipe class	RK C
Description	VA line
Standard	DIN
Material	VA
Nominal pressure level	PN20

User supplementary field 1	
User supplementary field 2	
User supplementary field 3	
User supplementary field 4	
User supplementary field 5	
User supplementary field 6	
User supplementary field 7	
User supplementary field 8	
User supplementary field 9	
User supplementary field 10	
User supplementary field 11	
User supplementary field 12	
User supplementary field 13	
User supplementary field 14	
User supplementary field 15	
User supplementary field 16	
User supplementary field 17	
User supplementary field 18	
User supplementary field 19	
User supplementary field 20	

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Pre-planning: Pipe class overview

F49_001

Pipe class		Description	Standard	Nominal pressure level	Material
1	RK A	Steel line	DIN	PN10	Steel
2	RK B	PVC line	DIN	PN01	PVC
3	RK C	VA line	DIN	PN20	VA

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			Project name ESS_Sample_Project	Job number 001	EPLAN GmbH & Co. KG	Pre-planning: Pipe class overview : RK A - RK C		=HK1	&PFB	
			Grinding machine	Drawing number				Paint workpiece	P&I diagrams	
								+	Page 10	
Modification	Date	Name	Creator EPL	Approved by		Date 12/23/2020	Ed. EPL		Page 277 from 305	

Pre-planning: Properties list of the substance

F51_002

Substance	011
Description	Basic color red
CAS Number	
AEGL	
Formula	

User supplementary field 1	
User supplementary field 2	
User supplementary field 3	
User supplementary field 4	
User supplementary field 5	
User supplementary field 6	
User supplementary field 7	
User supplementary field 8	
User supplementary field 9	
User supplementary field 10	
User supplementary field 11	
User supplementary field 12	
User supplementary field 13	
User supplementary field 14	
User supplementary field 15	
User supplementary field 16	
User supplementary field 17	
User supplementary field 18	
User supplementary field 19	
User supplementary field 20	

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Pre-planning: Properties list of the substance

F51_002

Substance	101
Description	Paint color red
CAS Number	
AEGL	
Formula	

User supplementary field 1	
User supplementary field 2	
User supplementary field 3	
User supplementary field 4	
User supplementary field 5	
User supplementary field 6	
User supplementary field 7	
User supplementary field 8	
User supplementary field 9	
User supplementary field 10	
User supplementary field 11	
User supplementary field 12	
User supplementary field 13	
User supplementary field 14	
User supplementary field 15	
User supplementary field 16	
User supplementary field 17	
User supplementary field 18	
User supplementary field 19	
User supplementary field 20	

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Pre-planning: Properties list of the substance

F51_002

Substance	1017
Description	Chlorine
CAS Number	7782-50-5
AEGL	1
Formula	CL2

User supplementary field 1	
User supplementary field 2	
User supplementary field 3	
User supplementary field 4	
User supplementary field 5	
User supplementary field 6	
User supplementary field 7	
User supplementary field 8	
User supplementary field 9	
User supplementary field 10	
User supplementary field 11	
User supplementary field 12	
User supplementary field 13	
User supplementary field 14	
User supplementary field 15	
User supplementary field 16	
User supplementary field 17	
User supplementary field 18	
User supplementary field 19	
User supplementary field 20	

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Pre-planning: Properties list of the substance

F51_002

Substance	1090
Description	Acetone
CAS Number	67-64-1
AEGL	500
Formula	CH3COCH3

User supplementary field 1	
User supplementary field 2	
User supplementary field 3	
User supplementary field 4	
User supplementary field 5	
User supplementary field 6	
User supplementary field 7	
User supplementary field 8	
User supplementary field 9	
User supplementary field 10	
User supplementary field 11	
User supplementary field 12	
User supplementary field 13	
User supplementary field 14	
User supplementary field 15	
User supplementary field 16	
User supplementary field 17	
User supplementary field 18	
User supplementary field 19	
User supplementary field 20	

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Pre-planning: Properties list of the substance

F51_002

Substance	1170
Description	Ethanol
CAS Number	64-17-5
AEGL	3000
Formula	C2H5OH

User supplementary field 1	
User supplementary field 2	
User supplementary field 3	
User supplementary field 4	
User supplementary field 5	
User supplementary field 6	
User supplementary field 7	
User supplementary field 8	
User supplementary field 9	
User supplementary field 10	
User supplementary field 11	
User supplementary field 12	
User supplementary field 13	
User supplementary field 14	
User supplementary field 15	
User supplementary field 16	
User supplementary field 17	
User supplementary field 18	
User supplementary field 19	
User supplementary field 20	

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Pre-planning: Properties list of the substance

F51_002

Substance	E001
Description	Steam
CAS Number	7732-18-5
AEGL	
Formula	H2O

User supplementary field 1	
User supplementary field 2	
User supplementary field 3	
User supplementary field 4	
User supplementary field 5	
User supplementary field 6	
User supplementary field 7	
User supplementary field 8	
User supplementary field 9	
User supplementary field 10	
User supplementary field 11	
User supplementary field 12	
User supplementary field 13	
User supplementary field 14	
User supplementary field 15	
User supplementary field 16	
User supplementary field 17	
User supplementary field 18	
User supplementary field 19	
User supplementary field 20	

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Pre-planning: Properties list of the substance

F51_002

Substance	E002
Description	Water
CAS Number	7732-18-5
AEGL	
Formula	H2O

User supplementary field 1	
User supplementary field 2	
User supplementary field 3	
User supplementary field 4	
User supplementary field 5	
User supplementary field 6	
User supplementary field 7	
User supplementary field 8	
User supplementary field 9	
User supplementary field 10	
User supplementary field 11	
User supplementary field 12	
User supplementary field 13	
User supplementary field 14	
User supplementary field 15	
User supplementary field 16	
User supplementary field 17	
User supplementary field 18	
User supplementary field 19	
User supplementary field 20	

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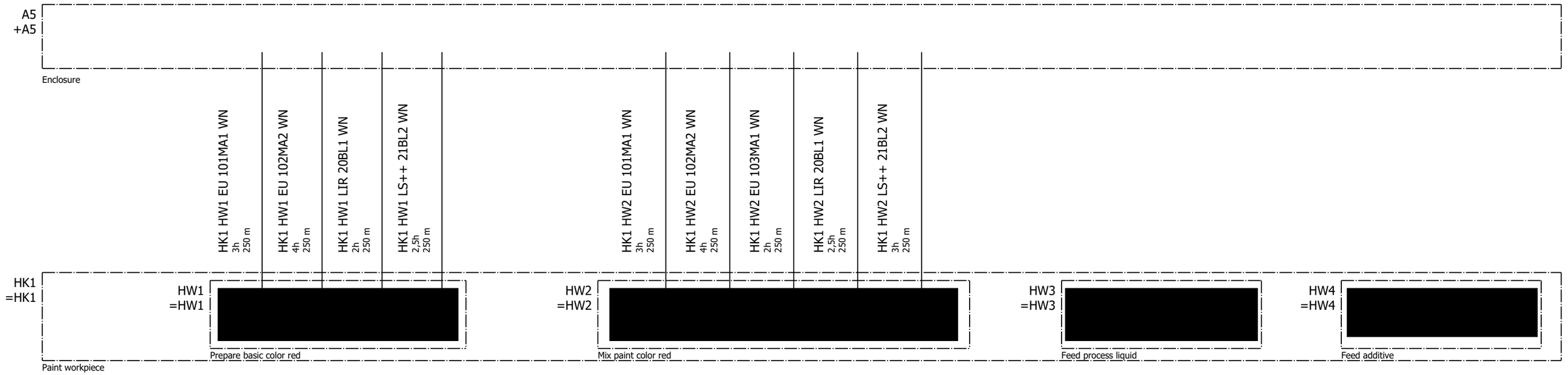
Pre-planning: Substance overview

F51_001

	Substance	Description	User supplementary field 1	User supplementary field 2	User supplementary field 3
1	011	Basic color red			
2	101	Paint color red			
3	1017	Chlorine			
4	1090	Acetone			
5	1170	Ethanol			
6	E001	Steam			
7	E002	Water			

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Cable pre-planning



Pre-planning: Cable planning object overview

PCT loop			Description Remark	Length	Part number Part: Designation 1	Total work [h]			Total power consumption [kW]	Total price [€]	Source segment	Target segment
						Planning	Construction	Software				
1	5	HK1 HW1 EU 101MA1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	3,0	0,0	0,0	150,00	A5	HK1 HW1
2	5	HK1 HW1 EU 102MA2 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	4,0	0,0	0,0	150,00	A5	HK1 HW1
3	5	HK1 HW1 LIR 20BL1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW1
4	5	HK1 HW1 LS++ 21BL2 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	2,5	0,0	0,0	150,00	A5	HK1 HW1
5	5	HK1 HW2 EU 101MA1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	3,0	0,0	0,0	150,00	A5	HK1 HW2
6	5	HK1 HW2 EU 102MA2 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	4,0	0,0	0,0	150,00	A5	HK1 HW2
7	5	HK1 HW2 EU 103MA1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW2
8	5	HK1 HW2 LIR 20BL1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	2,5	0,0	0,0	150,00	A5	HK1 HW2
9	5	HK1 HW2 LS++ 21BL2 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	3,0	0,0	0,0	150,00	A5	HK1 HW2

Carry over:					
Total:	9,0	26,0	0,0	0,0	1350,00

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Pre-planning: Cable planning object overview

F40_006

PCT loop			Description Remark	Length	Part number Part: Designation 1	Total work [h]			Total power consumption [kW]	Total price [€]	Source segment	Target segment
						Planning	Construction	Software				
1	5	HK1 HW1 EU 101MA1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	3,0	0,0	0,0	150,00	A5	HK1 HW1
2	5	HK1 HW1 EU 102MA2 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	4,0	0,0	0,0	150,00	A5	HK1 HW1
3	5	HK1 HW1 FC 1BL1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW1
4	5	HK1 HW1 FIRC 2BL1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW1
5	5	HK1 HW1 FIRC 2SF1 WN	Cable Location designation of the cable at	350 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW1
6	5	HK1 HW1 FIRC 2SF2 WN	Cable Location designation of the cable at	400 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW1
7	5	HK1 HW1 FIRC 3BL1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW1
8	5	HK1 HW1 FIRC 3SF1 WN	Cable Location designation of the cable at	350 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW1
9	5	HK1 HW1 GS 1BL1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW1
10	5	HK1 HW1 LIR 20BL1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW1
11	5	HK1 HW1 LS++ 21BL2 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	2,5	0,0	0,0	150,00	A5	HK1 HW1
12	5	HK1 HW1 TIRCA+S++Z+++ 22BL1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW1
13	5	HK1 HW2 EU 101MA1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	3,0	0,0	0,0	150,00	A5	HK1 HW2
14	5	HK1 HW2 EU 102MA2 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	4,0	0,0	0,0	150,00	A5	HK1 HW2
15	5	HK1 HW2 EU 103MA1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW2
16	5	HK1 HW2 FC 1BL1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW1
17	5	HK1 HW2 FIRC 2BL1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW1
18	5	HK1 HW2 FIRC 2SF1 WN	Cable Location designation of the cable at	350 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW1
19	5	HK1 HW2 FIRC 2SF2 WN	Cable Location designation of the cable at	400 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW1
20	5	HK1 HW2 FC 3BL1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW1
21	5	HK1 HW2 FIRC 4BL1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW1
22	5	HK1 HW2 FIRC 4SF1 WN	Cable Location designation of the cable at	350 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW1
23	5	HK1 HW2 FIRC 4SF2 WN	Cable Location designation of the cable at	400 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW1
24	5	HK1 HW2 LIR 20BL1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	2,5	0,0	0,0	150,00	A5	HK1 HW2
25	5	HK1 HW2 LS++ 21BL2 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	3,0	0,0	0,0	150,00	A5	HK1 HW2
Carry over:												
Total:						25,0	58,0	0,0	0,0	3750,00		

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Pre-planning: Cable planning object overview

F40_006

PCT loop			Description Remark	Length	Part number Part: Designation 1	Total work [h]			Total power consumption [kW]	Total price [€]	Source segment	Target segment
						Planning	Construction	Software				
26	5	HK1 HW3 LIR 20BL1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	3,0	0,0	0,0	150,00	A5	HK1 HW3
27	5	HK1 HW3 LS++ 21BL2 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	4,0	0,0	0,0	150,00	A5	HK1 HW2
28	5	HK1 HW4 LIR 20BL1 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	2,0	0,0	0,0	150,00	A5	HK1 HW2
29	5	HK1 HW4 LS++ 21BL2 WN	Cable Location designation of the cable at	250 m	not yet known	1,0	2,5	0,0	0,0	150,00	A5	HK1 HW2
Carry over:						25,0	58,0	0,0	0,0	3750,00		
Total:						29,0	69,5	0,0	0,0	4350,00		

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Data sheet

PCT loops

PCT loop designation

Flow valve control

Remark

PCT loop number

FC 1

Layer 1	Paint workpiece
Layer 2	Prepare basic color red
Layer 3	
Layer 4	
Layer 5	
Layer 6	
Layer 7	

Page 1 **from** 7

1		**Measured medium**						21		**Width rating DN**	25
2		**Composition**						22		**Piping inner diameter**	27,2
3		**Corrosive components**	No					23		**Pressure rating / flange ra**	**DN**
4		**Suspended matter**	No					24		**Material**	
5		**State of aggregation**	liquid					25		**Level of insulation**	
6		**Behavior in sampling line**						26		**Distance between suppor**	
7								27		**Mounting support below**	**DN** Yes
8			**minimum**	**normal**	**maximum**			28		**Mounting support above**	**DN** No
9		**Working temperature**		25 - 40 °C				29		**Degree of protection**	IP55
10		**Working pressure (absolute)**		2 bar				30		**Connection point**	**DN** 25
11								31		**Mounting length**	100
12		**Measurand** **Measuring range**		0 - 100 °C				32		**Support / installation**	**DN** Yes
13			**LLL**	**LL**	**L**	**H**	**HH** **HHH**	33		**Mounting/assembly**	**AB 51 -** No
14		**Limit value**						34		**Environment temperatur**	20 - 35 °C
15								35			
16		**Input signal**						36			
17		**Density in normal state**						37			
18		**Density at working conditions**						38			
19		**Dynamic viscosity**						39			
20		**Compressibility factor / isentr**						40			

		Data type	**Direction**	**Symbolic addresses**	**PLC addresses**	**CPU**	**Function text**
41							
42		BYTE	Input	HK1HW1I1			
43							
44							
45							
46							
47							
48							
49							
50							
51							

		Device tag	**Segment template**	**Full designation**	**Description (Segment)**
				HK1 HW1 FC 1	Flow valve control

		Requirem	**Con**	**Planning**	**Software**	**Power consumpti**	**Price**	**Macro**
52								
53							0,00	$(MD_MACROS)\ESS_Macro\203_Electrical_Engine\202_PCT-Loop\Flow_ V

protection

method

construction

=HK1&EDB/2.1

2

			Job number	001		=HK1.HW1	&PFB
			Project name	ESS_Sample_Project		Paint workpiece	P&I diagrams
			HK1 HW1 FC 1			+	Page 1
Modification	Date	Name					Page 289 from 305
Creator	EPL	Approved by		Drawing number			Format A4

Data sheet

PCT loops

PCT loop designation

Flow valve control: Open and closed

Remark

PCT loop number

FIRC 2

Layer 1	Paint workpiece
Layer 2	Prepare basic color red
Layer 3	
Layer 4	
Layer 5	
Layer 6	
Layer 7	

Page 2 **from** 7

1	**Measured medium**							21	**Width rating DN**	25	
2	**Composition**							22	**Piping inner diameter**	27,2	
3	**Corrosive components**	No						23	**Pressure rating / flange ra**	**DN**	
4	**Suspended matter**	No						24	**Material**		
5	**State of aggregation**	liquid						25	**Level of insulation**		
6	**Behavior in sampling line**							26	**Distance between suppor**		
7								27	**Mounting support below**	**DN** Yes	
8		**minimum**		**normal**		**maximum**		28	**Mounting support above**	**DN** No	
9	**Working temperature**			25 - 40 °C				29	**Degree of protection**	IP55	
10	**Working pressure (absolute)**			2 bar				30	**Connection point**	**DN** 25	
11								31	**Mounting length**	100	
12	**Measurand** **Measuring range**			0 - 100 °C				32	**Support / installation**	**DN** Yes	
13		**LLL**	**LL**	**L**	**H**	**HH**	**HHH**	33	**Mounting/assembly**	**AB 51 -** No	
14	**Limit value**							34	**Environment temperatur**	20 - 35 °C	
15								35			
16	**Input signal**							36			
17	**Density in normal state**							37			
18	**Density at working conditions**							38			
19	**Dynamic viscosity**							39			
20	**Compressibility factor / isentr**							40			

		Data type	**Direction**	**Symbolic addresses**	**PLC addresses**	**CPU**	**Function text**
41							
42		BYTE	Output	HK1HW1I1			
43		BOOL	Input	HK1HW1I1			
44		BOOL	Input	HK1HW1I1			
45							
46							
47							
48							
49							
50							
51							

		Device tag	**Segment template**	**Full designation**	**Description (Segment)**
				HK1 HW1 FIRC 2	Flow valve control: Open and closed

		Requirem	**Con**	**Planning**	**Software**	**Power consumpti**	**Price**	**Macro**
52								
53							0,00	$(MD_MACROS)\ESS_Macro\203_Electrical_Engine\202_PCT-Loop\Flow_Va

protection

method

construction

construction

construction

Data sheet

PCT loops

PCT loop designation

Flow valve control: Closed

Remark

PCT loop number

FIRC 3

Layer 1	Paint workpiece
Layer 2	Prepare basic color red
Layer 3	
Layer 4	
Layer 5	
Layer 6	
Layer 7	

Page 3 **from** 7

1	**Measured medium**							21	**Width rating DN**	25	
2	**Composition**							22	**Piping inner diameter**	27,2	
3	**Corrosive components**	No						23	**Pressure rating / flange ra**	**DN**	
4	**Suspended matter**	No						24	**Material**		
5	**State of aggregation**	liquid						25	**Level of insulation**		
6	**Behavior in sampling line**							26	**Distance between suppor**		
7								27	**Mounting support below**	**DN** Yes	
8		**minimum**	**normal**	**maximum**				28	**Mounting support above**	**DN** No	
9	**Working temperature**		25 - 40 °C					29	**Degree of protection**	IP55	
10	**Working pressure (absolute)**		2 bar					30	**Connection point**	**DN** 25	
11								31	**Mounting length**	100	
12	**Measurand** **Measuring range**		0 - 100 °C					32	**Support / installation**	**DN** Yes	
13		**LLL**	**LL**	**L**	**H**	**HH**	**HHH**	33	**Mounting/assembly**	**AB 51 -** No	
14	**Limit value**							34	**Environment temperatur**	20 - 35 °C	
15								35			
16	**Input signal**							36			
17	**Density in normal state**							37			
18	**Density at working conditions**							38			
19	**Dynamic viscosity**							39			
20	**Compressibility factor / isentr**							40			

		Data type	**Direction**	**Symbolic addresses**	**PLC addresses**	**CPU**	**Function text**
41							
42		BYTE	Output	HK1HW1I1			
43		BOOL	Input	HK1HW1I1			
44							
45							
46							
47							
48							
49							
50							
51							

		Device tag	**Segment template**	**Full designation**	**Description (Segment)**
				HK1 HW1 FIRC 3	Flow valve control: Closed

		Requirem	**Con**	**Planning**	**Software**	**Power consumpti**	**Price**	**Macro**
52								
53							0,00	$(MD_MACROS)\ESS_Macro\203_Electrical_Engine\202_PCT-Loop\Flow_Va

protection

construction

construction

method

			Job number	001		=HK1.HW1	&PFB
			Project name	ESS_Sample_Project		Paint workpiece	P&I diagrams
			HK1 HW1 FIRC 3			+	Page 3
Modification	Date	Name					Page 291 from 305
Creator	EPL	Approved by		Drawing number			Format A4

Data sheet

PCT loops

PCT loop designation

Light barrier

Remark

PCT loop number

GS 1

Layer 1	Paint workpiece
Layer 2	Prepare basic color red
Layer 3	
Layer 4	
Layer 5	
Layer 6	
Layer 7	

Page 4 **from** 7

1	**Measured medium**							21	**Width rating DN**	
2	**Composition**							22	**Piping inner diameter**	
3	**Corrosive components**							23	**Pressure rating / flange ra**	**DN**
4	**Suspended matter**							24	**Material**	
5	**State of aggregation**							25	**Level of insulation**	
6	**Behavior in sampling line**							26	**Distance between suppor**	
7								27	**Mounting support below**	**DN**
8		**minimum**		**normal**		**maximum**		28	**Mounting support above**	**DN**
9	**Working temperature**							29	**Degree of protection**	
10	**Working pressure (absolute)**							30	**Connection point**	**DN**
11								31	**Mounting length**	
12	**Measurand** **Measuring range**							32	**Support / installation**	**DN**
13		**LLL**	**LL**	**L**	**H**	**HH**	**HHH**	33	**Mounting/assembly**	**AB 51 -**
14	**Limit value**							34	**Environment temperatur**	
15								35		
16	**Input signal**							36		
17	**Density in normal state**							37		
18	**Density at working conditions**							38		
19	**Dynamic viscosity**							39		
20	**Compressibility factor / isentr**							40		

		Data type	**Direction**	**Symbolic addresses**	**PLC addresses**	**CPU**	**Function text**
41							
42		BOOL	Input	HK1HW1I1			Roller conveyor free
43		BOOL	Input	HK1HW1I2			Roller conveyor occupied
44		BOOL	Output	HK1HW1O1			Roller conveyor running
45		BOOL	Output	HK1HW1O2			Roller conveyor running
46		BOOL	Output	HK1HW1O3			Roller conveyor occupied
47							
48							
49							
50							
51							

		Device tag	**Segment template**	**Full designation**	**Description (Segment)**
				HK1 HW1 GS 1	Light barrier

		Requirem	**Con**	**Planning**	**Software**	**Power consumpti**	**Price**	**Macro**
52								
53							0,00	$(MD_MACROS)\ESS_Macro\203_Electrical_Engine\202_PCT-Loop\Light_ba

protection method

3 5

			Job number	001		=HK1.HW1	&PFB
			Project name	ESS_Sample_Project		Paint workpiece	P&I diagrams
			HK1 HW1 GS 1			+	Page 4
Modification	Date	Name					Page 292 from 305
Creator	EPL	Approved by		Drawing number			Format A4

Data sheet

PCT loops

PCT loop designation

Measure filling level

Remark

PCT loop number

LIR 20

Layer 1	Paint workpiece
Layer 2	Prepare basic color red
Layer 3	
Layer 4	
Layer 5	
Layer 6	
Layer 7	

Page 5 **from** 7

1	**Measured medium**	Color						21	**Width rating DN**	25
2	**Composition**	Containing oil						22	**Piping inner diameter**	27,2
3	**Corrosive components**	No						23	**Pressure rating / flange ra**	**DN**
4	**Suspended matter**	No						24	**Material**	
5	**State of aggregation**	liquid						25	**Level of insulation**	
6	**Behavior in sampling line**							26	**Distance between suppor**	
7								27	**Mounting support below**	**DN** Yes
8		**minimum**		**normal**		**maximum**		28	**Mounting support above**	**DN** No
9	**Working temperature**			75 °C				29	**Degree of protection**	IP55
10	**Working pressure (absolute)**			2 bar				30	**Connection point**	**DN** 25
11								31	**Mounting length**	100
12	**Measurand** **Measuring range**							32	**Support / installation**	**DN** Yes
13		**LLL**	**LL**	**L**	**H**	**HH**	**HHH**	33	**Mounting/assembly**	**AB 51 -** No
14	**Limit value**							34	**Environment temperatur**	20 - 35 °C
15								35		
16	**Input signal**							36		
17	**Density in normal state**							37		
18	**Density at working conditions**							38		
19	**Dynamic viscosity**	10^2 mPas						39		
20	**Compressibility factor / isentr**							40		

		Data type	**Direction**	**Symbolic addresses**	**PLC addresses**	**CPU**	**Function text**
41							
42		BOOL	Input	HK1HW1MS5I1			Filling level "Full"
43		BOOL	Input	HK1HW1MS5I2			Filling level 1/2
44		BOOL	Output	HK1HW1MS5O1			Filling level "Full"
45		BOOL	Output	HK1HW1MS5O2			Pump running
46		BOOL	Output	HK1HW1MS5O3			Fault pump
47							
48							
49							
50							
51							

		Device tag	**Segment template**	**Full designation**	**Description (Segment)**
				HK1 HW1 LIR 20	Measure filling level

		Requirem	**Con**	**Planning**	**Software**	**Power consumpti**	**Price**	**Macro**
52								
53		1,5h		0,5h	0,5h		800,00	$(MD_MACROS)\ESS_Macro\203_Electrical_Engine\202_PCT-Loop\Level_M

protection

method

protection

method

4

6

			Job number	001		=HK1.HW1	&PFB
			Project name	ESS_Sample_Project		Paint workpiece	P&I diagrams
			HK1 HW1 LIR 20			+	Page 5
Modification	Date	Name					Page 293 from 305
Creator	EPL	Approved by		Drawing number			Format A4

Data sheet

PCT loops

PCT loop designation

Switch off medium feed

Remark

PCT loop number

LS++ 21

Layer 1	Paint workpiece
Layer 2	Prepare basic color red
Layer 3	
Layer 4	
Layer 5	
Layer 6	
Layer 7	

1	**Measured medium**							21	**Width rating DN**	25
2	**Composition**							22	**Piping inner diameter**	27,2
3	**Corrosive components**	No						23	**Pressure rating / flange ra**	**DN**
4	**Suspended matter**	No						24	**Material**	
5	**State of aggregation**	liquid						25	**Level of insulation**	
6	**Behavior in sampling line**							26	**Distance between suppor**	
7								27	**Mounting support below**	**DN** Yes
8		**minimum**		**normal**		**maximum**		28	**Mounting support above**	**DN** No
9	**Working temperature**			75 °C				29	**Degree of protection**	IP55
10	**Working pressure (absolute)**			2 bar				30	**Connection point**	**DN** 25
11								31	**Mounting length**	100
12	**Measurand** **Measuring range**				0-1000 l			32	**Support / installation**	**DN** Yes
13		**LLL**	**LL**	**L**	**H**	**HH**	**HHH**	33	**Mounting/assembly**	**AB 51 -** No
14	**Limit value**	200 l	400 l	500 l	600 l	800 l	1000 l	34	**Environment temperatur**	20 - 35 °C
15								35		
16	**Input signal**							36		
17	**Density in normal state**							37		
18	**Density at working conditions**							38		
19	**Dynamic viscosity**	10^2 mPas						39		
20	**Compressibility factor / isentr**							40		

	Data type	**Direction**	**Symbolic addresses**	**PLC addresses**	**CPU**	**Function text**
41						
42	BOOL	Input	HK1HW1MS6I1			Filling level "Full"
43	BOOL	Input	HK1HW1MS6I2			Filling level 1/2
44	BOOL	Output	HK1HW1MS6O1			Filling level "Full"
45	BOOL	Output	HK1HW1MS6O2			Pump running
46	BOOL	Output	HK1HW1MS6O3			Fault pump
47						
48						
49						
50						
51						

	Device tag	**Segment template**	**Full designation**	**Description (Segment)**
			HK1 HW1 LS++ 21	Switch off medium feed

	Requirem	**Con**	**Planning**	**Software**	**Power consumpti**	**Price**	**Macro**
52							
53	1,5h		0,5h	0,5h		800,00	$(MD_MACROS)\ESS_Macro\203_Electrical_Engine\202_PCT-Loop\Level_M

protection method

Data sheet

PCT loops

PCT loop designation

Measure temperature

Remark

PCT loop number

TIRCA+S++Z+++ 22

Layer 1	Paint workpiece
Layer 2	Prepare basic color red
Layer 3	
Layer 4	
Layer 5	
Layer 6	
Layer 7	

Page 7 **from** 7

1	**Measured medium**	Color						21	**Width rating DN**	
2	**Composition**							22	**Piping inner diameter**	
3	**Corrosive components**	No						23	**Pressure rating / flange ra**	**DN**
4	**Suspended matter**	Yes						24	**Material**	
5	**State of aggregation**	liquid						25	**Level of insulation**	
6	**Behavior in sampling line**							26	**Distance between suppor**	
7								27	**Mounting support below**	**DN**
8		**minimum**		**normal**		**maximum**		28	**Mounting support above**	**DN**
9	**Working temperature**			up to 130 °C				29	**Degree of protection**	
10	**Working pressure (absolute)**							30	**Connection point**	**DN**
11								31	**Mounting length**	
12	**Measurand** **Measuring range**	0 - 250 °C						32	**Support / installation**	**DN**
13		**LLL**	**LL**	**L**	**H**	**HH**	**HHH**	33	**Mounting/assembly**	**AB 51 -**
14	**Limit value**	30 °C	50 °C	70 °C	90 °C	110 °C	130 °C	34	**Environment temperatur**	
15								35		
16	**Input signal**							36		
17	**Density in normal state**							37		
18	**Density at working conditions**							38		
19	**Dynamic viscosity**							39		
20	**Compressibility factor / isentr**							40		

		Data type	**Direction**	**Symbolic addresses**	**PLC addresses**	**CPU**	**Function text**
41							
42		WORD	Input	HK1HW1MS7I1			
43							
44							
45							
46							
47							
48							
49							
50							
51							

		Device tag	**Segment template**	**Full designation**	**Description (Segment)**
				HK1 HW1 TIRCA+S++Z+++ 22	Measure temperature

		Requirem	**Con**	**Planning**	**Software**	**Power consumpti**	**Price**	**Macro**
52								
53		1,5h		0,5h	0,5h		1100,00	$(MD_MACROS)\ESS_Macro\203_Electrical_Engine\202_PCT-Loop\Temper

protection method

=.HW2/1

6

			Job number	001		=HK1.HW1	&PFB
			Project name	ESS_Sample_Project		Paint workpiece	P&I diagrams
			HK1 HW1 TIRCA+S++Z+++ 22			+	Page 7
Modification	Date	Name					Page 295 from 305
Creator	EPL	Approved by		Drawing number			Format A4

Data sheet

PCT loops

PCT loop designation

Flow valve control

Remark

PCT loop number

FC 1

Layer 1	Paint workpiece
Layer 2	Mix paint color red
Layer 3	
Layer 4	
Layer 5	
Layer 6	
Layer 7	

Page 1 **from** 6

1	**Measured medium**							21	**Width rating DN**	25	
2	**Composition**							22	**Piping inner diameter**	27,2	
3	**Corrosive components**	No						23	**Pressure rating / flange ra**	**DN**	
4	**Suspended matter**	No						24	**Material**		
5	**State of aggregation**	liquid						25	**Level of insulation**		
6	**Behavior in sampling line**							26	**Distance between suppor**		
7								27	**Mounting support below**	**DN** Yes	
8		**minimum**		**normal**		**maximum**		28	**Mounting support above**	**DN** No	
9	**Working temperature**			25 - 40 °C				29	**Degree of protection**	IP55	
10	**Working pressure (absolute)**			2 bar				30	**Connection point**	**DN** 25	
11								31	**Mounting length**	100	
12	**Measurand** **Measuring range**			0 - 100 °C				32	**Support / installation**	**DN** Yes	
13		**LLL**	**LL**	**L**	**H**	**HH**	**HHH**	33	**Mounting/assembly**	**AB 51 -** No	
14	**Limit value**							34	**Environment temperatur**	20 - 35 °C	
15								35			
16	**Input signal**							36			
17	**Density in normal state**							37			
18	**Density at working conditions**							38			
19	**Dynamic viscosity**							39			
20	**Compressibility factor / isentr**							40			

		Data type	**Direction**	**Symbolic addresses**	**PLC addresses**	**CPU**	**Function text**
41							
42		BYTE	Input	HK1HW2I1			
43							
44							
45							
46							
47							
48							
49							
50							
51							

		Device tag	**Segment template**	**Full designation**	**Description (Segment)**
				HK1 HW2 FC 1	Flow valve control

		Requirem	**Con**	**Planning**	**Software**	**Power consumpti**	**Price**	**Macro**
52								
53							0,00	$(MD_MACROS)\ESS_Macro\203_Electrical_Engine\202_PCT-Loop\Flow_ V

protection

method

construction

=.HW1/7

2

			Job number	001		=HK1.HW2	&PFB
			Project name	ESS_Sample_Project		Paint workpiece	P&I diagrams
			HK1 HW2 FC 1			+	Page 1
Modification	Date	Name					Page 296 from 305
Creator	EPL	Approved by		Drawing number			Format A4

Data sheet

PCT loops

PCT loop designation

Flow valve control: Open and closed

Remark

PCT loop number

FIRC 2

Layer 1	Paint workpiece
Layer 2	Mix paint color red
Layer 3	
Layer 4	
Layer 5	
Layer 6	
Layer 7	

		minimum	normal	maximum
1	**Measured medium**			
2	**Composition**			
3	**Corrosive components**	No		
4	**Suspended matter**	No		
5	**State of aggregation**	liquid		
6	**Behavior in sampling line**			
7				
8		**minimum**	**normal**	**maximum**
9	**Working temperature**		25 - 40 °C	
10	**Working pressure (absolute)**		2 bar	
11				
12	**Measurand** **Measuring range**		0 - 100 °C	

		LLL	LL	L	H	HH	HHH
13		**LLL**	**LL**	**L**	**H**	**HH**	**HHH**
14	**Limit value**						
15							
16	**Input signal**						
17	**Density in normal state**						
18	**Density at working conditions**						
19	**Dynamic viscosity**						
20	**Compressibility factor / isentr**						

21	**Width rating DN**	25
22	**Piping inner diameter**	27,2
23	**Pressure rating / flange ra**	**DN**
24	**Material**	
25	**Level of insulation**	
26	**Distance between suppor**	
27	**Mounting support below**	**DN** Yes
28	**Mounting support above**	**DN** No
29	**Degree of protection**	IP55
30	**Connection point**	**DN** 25
31	**Mounting length**	100
32	**Support / installation**	**DN** Yes
33	**Mounting/assembly**	**AB 51 -** No
34	**Environment temperatur**	20 - 35 °C
35		
36		
37		
38		
39		
40		

	Data type	Direction	Symbolic addresses	PLC addresses	CPU	Function text
41	**Data type**	**Direction**	**Symbolic addresses**	**PLC addresses**	**CPU**	**Function text**
42	BYTE	Output	HK1HW2I1			
43	BOOL	Input	HK1HW2I1			
44	BOOL	Input	HK1HW2I1			
45						
46						
47						
48						
49						
50						
51						

		Device tag	Segment template	Full designation	Description (Segment)
		Device tag	**Segment template**	**Full designation**	**Description (Segment)**
				HK1 HW2 FIRC 2	Flow valve control: Open and closed

		Requirem	Con	Planning	Software	Power consumpti	Price	Macro
52		**Requirem**	**Con**	**Planning**	**Software**	**Power consumpti**	**Price**	**Macro**
53							0,00	$(MD_MACROS)\ESS_Macro\203_Electrical_Engine\202_PCT-Loop\Flow_Va

protection

method

construction

construction

construction

Data sheet

PCT loops

PCT loop designation

Flow valve control

Remark

PCT loop number

FC 3

Layer 1	Paint workpiece
Layer 2	Mix paint color red
Layer 3	
Layer 4	
Layer 5	
Layer 6	
Layer 7	

Page 3 **from** 6

Measured medium				
Composition				
Corrosive components	No			
Suspended matter	No			
State of aggregation	liquid			
Behavior in sampling line				
	minimum	**normal**	**maximum**	
Working temperature		25 - 40 °C		
Working pressure (absolute)		2 bar		
Measurand **Measuring range**		0 - 100 °C		

	LLL	**LL**	**L**	**H**	**HH**	**HHH**
Limit value						

Input signal	
Density in normal state	
Density at working conditions	
Dynamic viscosity	
Compressibility factor / isentr	

Width rating DN	25
Piping inner diameter	27,2
Pressure rating / flange ra	**DN**
Material	
Level of insulation	
Distance between suppor	
Mounting support below	**DN** Yes
Mounting support above	**DN** No
Degree of protection	IP55
Connection point	**DN** 25
Mounting length	100
Support / installation	**DN** Yes
Mounting/assembly	**AB 51 -** No
Environment temperatur	20 - 35 °C

Data type	**Direction**	**Symbolic addresses**	**PLC addresses**	**CPU**	**Function text**
BYTE	Input	HK1HW2I1			

Device tag	**Segment template**	**Full designation**	**Description (Segment)**
		HK1 HW2 FC 3	Flow valve control

Requirem	**Con**	**Planning**	**Software**	**Power consumpti**	**Price**	**Macro**
					0,00	$(MD_MACROS)\ESS_Macro\203_Electrical_Engine\202_PCT-Loop\Flow_ V

protection

method

construction

Data sheet

PCT loops

PCT loop designation

Flow valve control: Open and closed

Remark

PCT loop number

FIRC 4

Layer 1	Paint workpiece
Layer 2	Mix paint color red
Layer 3	
Layer 4	
Layer 5	
Layer 6	
Layer 7	

Page 4 **from** 6

1	**Measured medium**							21	**Width rating DN**	25	
2	**Composition**							22	**Piping inner diameter**	27,2	
3	**Corrosive components**	No						23	**Pressure rating / flange ra**	**DN**	
4	**Suspended matter**	No						24	**Material**		
5	**State of aggregation**	liquid						25	**Level of insulation**		
6	**Behavior in sampling line**							26	**Distance between suppor**		
7								27	**Mounting support below**	**DN** Yes	
8		**minimum**		**normal**		**maximum**		28	**Mounting support above**	**DN** No	
9	**Working temperature**			25 - 40 °C				29	**Degree of protection**	IP55	
10	**Working pressure (absolute)**			2 bar				30	**Connection point**	**DN** 25	
11								31	**Mounting length**	100	
12	**Measurand** **Measuring range**			0 - 100 °C				32	**Support / installation**	**DN** Yes	
13		**LLL**	**LL**	**L**	**H**	**HH**	**HHH**	33	**Mounting/assembly**	**AB 51 -** No	
14	**Limit value**							34	**Environment temperatur**	20 - 35 °C	
15								35			
16	**Input signal**							36			
17	**Density in normal state**							37			
18	**Density at working conditions**							38			
19	**Dynamic viscosity**							39			
20	**Compressibility factor / isentr**							40			

		Data type	**Direction**	**Symbolic addresses**	**PLC addresses**	**CPU**	**Function text**
41							
42		BYTE	Output	HK1HW2I1			
43		BOOL	Input	HK1HW2I1			
44		BOOL	Input	HK1HW2I1			
45							
46							
47							
48							
49							
50							
51							

		Device tag	**Segment template**	**Full designation**	**Description (Segment)**
				HK1 HW2 FIRC 4	Flow valve control: Open and closed

		Requirem	**Con**	**Planning**	**Software**	**Power consumpti**	**Price**	**Macro**
52								
53							0,00	$(MD_MACROS)\ESS_Macro\203_Electrical_Engine\202_PCT-Loop\Flow_Va

protection

method

construction

construction

construction

Data sheet

PCT loops

PCT loop designation

Measure filling level

Remark

PCT loop number

LIR 20

Layer 1	Paint workpiece
Layer 2	Mix paint color red
Layer 3	
Layer 4	
Layer 5	
Layer 6	
Layer 7	

Page 5 **from** 6

1	**Measured medium**	Mixed color red						21	**Width rating DN**	25
2	**Composition**							22	**Piping inner diameter**	27,2
3	**Corrosive components**	No						23	**Pressure rating / flange ra**	**DN**
4	**Suspended matter**	No						24	**Material**	
5	**State of aggregation**	liquid						25	**Level of insulation**	
6	**Behavior in sampling line**							26	**Distance between suppor**	
7								27	**Mounting support below**	**DN** Yes
8		**minimum**		**normal**		**maximum**		28	**Mounting support above**	**DN** No
9	**Working temperature**			75 °C				29	**Degree of protection**	IP55
10	**Working pressure (absolute)**			2 bar				30	**Connection point**	**DN** 25
11								31	**Mounting length**	100
12	**Measurand** **Measuring range**							32	**Support / installation**	**DN** Yes
13		**LLL**	**LL**	**L**	**H**	**HH**	**HHH**	33	**Mounting/assembly**	**AB 51 -** No
14	**Limit value**							34	**Environment temperatur**	20 - 35 °C
15								35		
16	**Input signal**							36		
17	**Density in normal state**							37		
18	**Density at working conditions**							38		
19	**Dynamic viscosity**	10^2 mPas						39		
20	**Compressibility factor / isentr**							40		

		Data type	**Direction**	**Symbolic addresses**	**PLC addresses**	**CPU**	**Function text**
41							
42		BOOL	Input	HK1HW2MS8I1			Filling level "Full"
43		BOOL	Input	HK1HW2MS8I2			Filling level 1/2
44		BOOL	Output	HK1HW2MS8O1			Filling level "Full"
45		BOOL	Output	HK1HW2MS8O2			Pump running
46		BOOL	Output	HK1HW2MS8O3			Fault pump
47							
48							
49							
50							
51							

		Device tag	**Segment template**	**Full designation**	**Description (Segment)**
				HK1 HW2 LIR 20	Measure filling level

		Requirem	**Con**	**Planning**	**Software**	**Power consumpti**	**Price**	**Macro**
52								
53		1,5h		0,5h	0,5h		800,00	$(MD_MACROS)\ESS_Macro\203_Electrical_Engine\202_PCT-Loop\Level_M

protection method

Data sheet

PCT loops

PCT loop designation

Switch off medium feed

Remark

PCT loop number

LS++ 21

Layer 1	Paint workpiece
Layer 2	Mix paint color red
Layer 3	
Layer 4	
Layer 5	
Layer 6	
Layer 7	

Page 6 **from** 6

1	**Measured medium**	Mixed color red						21	**Width rating DN**	25
2	**Composition**							22	**Piping inner diameter**	27,2
3	**Corrosive components**	No						23	**Pressure rating / flange ra**	**DN**
4	**Suspended matter**	No						24	**Material**	
5	**State of aggregation**	liquid						25	**Level of insulation**	
6	**Behavior in sampling line**							26	**Distance between suppor**	
7								27	**Mounting support below**	**DN** Yes
8		**minimum**		**normal**		**maximum**		28	**Mounting support above**	**DN** No
9	**Working temperature**			75 °C				29	**Degree of protection**	IP55
10	**Working pressure (absolute)**			2 bar				30	**Connection point**	**DN** 25
11								31	**Mounting length**	100
12	**Measurand** **Measuring range**				0-1000 l			32	**Support / installation**	**DN** Yes
13		**LLL**	**LL**	**L**	**H**	**HH**	**HHH**	33	**Mounting/assembly**	**AB 51 -** No
14	**Limit value**	200 l	400 l	500 l	600 l	800 l	1000 l	34	**Environment temperatur**	20 - 35 °C
15								35		
16	**Input signal**							36		
17	**Density in normal state**							37		
18	**Density at working conditions**							38		
19	**Dynamic viscosity**	10^2 mPas						39		
20	**Compressibility factor / isentr**							40		

		Data type	**Direction**	**Symbolic addresses**	**PLC addresses**	**CPU**	**Function text**
41							
42		BOOL	Input	HK1HW2MS9I1			Filling level "Full"
43		BOOL	Input	HK1HW2MS9I2			Filling level 1/2
44		BOOL	Output	HK1HW2MS9O1			Filling level "Full"
45		BOOL	Output	HK1HW2MS9O2			Pump running
46		BOOL	Output	HK1HW2MS9O3			Fault pump
47							
48							
49							
50							
51							

		Device tag	**Segment template**	**Full designation**	**Description (Segment)**
				HK1 HW2 LS++ 21	Switch off medium feed

		Requirem	**Con**	**Planning**	**Software**	**Power consumpti**	**Price**	**Macro**
52								
53		1,5h		0,5h	0,5h		800,00	$(MD_MACROS)\ESS_Macro\203_Electrical_Engine\202_PCT-Loop\Level_M

protection method

=.HW3/1

5

			Job number	001		=HK1.HW2	&PFB
			Project name	ESS_Sample_Project		Paint workpiece	P&I diagrams
			HK1 HW2 LS++ 21			+	Page 6
Modification	Date	Name					Page 301 from 305
Creator	EPL	Approved by		Drawing number			Format A4

Data sheet

PCT loops

PCT loop designation

Measure filling level

Remark

PCT loop number

LIR 20

Layer 1	Paint workpiece
Layer 2	Feed process liquid
Layer 3	
Layer 4	
Layer 5	
Layer 6	
Layer 7	

Measured medium				
Composition				
Corrosive components	No			
Suspended matter	No			
State of aggregation	liquid			
Behavior in sampling line				
	minimum	**normal**	**maximum**	
Working temperature		75 °C		
Working pressure (absolute)		2 bar		

Measurand	**Measuring range**					
	LLL	**LL**	**L**	**H**	**HH**	**HHH**
Limit value						

Input signal	
Density in normal state	
Density at working conditions	
Dynamic viscosity	10^2 mPas
Compressibility factor / isentr	

Width rating DN	25
Piping inner diameter	27,2
Pressure rating / flange ra	**DN**
Material	
Level of insulation	
Distance between suppor	
Mounting support below	**DN** Yes
Mounting support above	**DN** No
Degree of protection	IP55
Connection point	**DN** 25
Mounting length	100
Support / installation	**DN** Yes
Mounting/assembly	**AB 51 -** No
Environment temperatur	20 - 35 °C

Data type	**Direction**	**Symbolic addresses**	**PLC addresses**	**CPU**	**Function text**
BOOL	Input	HK1HW3MS1I1			Filling level "Full"
BOOL	Input	HK1HW3MS1I2			Filling level 1/2
BOOL	Output	HK1HW3MS1O1			Filling level "Full"
BOOL	Output	HK1HW3MS1O2			Pump running
BOOL	Output	HK1HW3MS1O3			Fault pump

Device tag	**Segment template**	**Full designation**	**Description (Segment)**
		HK1 HW3 LIR 20	Measure filling level

Requirem	**Con**	**Planning**	**Software**	**Power consumpti**	**Price**	**Macro**
1,5h		0,5h	0,5h		800,00	$(MD_MACROS)\ESS_Macro\203_Electrical_Engine\202_PCT-Loop\Level_M

protection

method

=.HW2/6

2

			Job number	001		=HK1.HW3	&PFB
			Project name	ESS_Sample_Project		Paint workpiece	P&I diagrams
			HK1 HW3 LIR 20			+	Page 1
Modification	Date	Name					Page 302 from 305
Creator	EPL	Approved by		Drawing number			Format A4

Data sheet

PCT loops

PCT loop designation

Switch off medium feed

Remark

PCT loop number

LS++ 21

Layer 1	Paint workpiece
Layer 2	Feed process liquid
Layer 3	
Layer 4	
Layer 5	
Layer 6	
Layer 7	

Page 2 **from** 2

1	**Measured medium**							21	**Width rating DN**	25
2	**Composition**							22	**Piping inner diameter**	27,2
3	**Corrosive components**	No						23	**Pressure rating / flange ra**	**DN**
4	**Suspended matter**	No						24	**Material**	
5	**State of aggregation**	liquid						25	**Level of insulation**	
6	**Behavior in sampling line**							26	**Distance between suppor**	
7								27	**Mounting support below**	**DN** Yes
8		**minimum**		**normal**		**maximum**		28	**Mounting support above**	**DN** No
9	**Working temperature**			75 °C				29	**Degree of protection**	IP55
10	**Working pressure (absolute)**			2 bar				30	**Connection point**	**DN** 25
11								31	**Mounting length**	100
12	**Measurand** **Measuring range**				0-1000 l			32	**Support / installation**	**DN** Yes
13		**LLL**	**LL**	**L**	**H**	**HH**	**HHH**	33	**Mounting/assembly**	**AB 51 -** No
14	**Limit value**	200 l	400 l	500 l	600 l	800 l	1000 l	34	**Environment temperatur**	20 - 35 °C
15								35		
16	**Input signal**							36		
17	**Density in normal state**							37		
18	**Density at working conditions**							38		
19	**Dynamic viscosity**	10^2 mPas						39		
20	**Compressibility factor / isentr**							40		

		Data type	**Direction**	**Symbolic addresses**	**PLC addresses**	**CPU**	**Function text**
41							
42		BOOL	Input	HK1HW3MS2I1			Filling level "Full"
43		BOOL	Input	HK1HW3MS2I2			Filling level 1/2
44		BOOL	Output	HK1HW3MS2O1			Filling level "Full"
45		BOOL	Output	HK1HW3MS2O2			Pump running
46		BOOL	Output	HK1HW3MS2O3			Fault pump
47							
48							
49							
50							
51							

		Device tag	**Segment template**	**Full designation**	**Description (Segment)**
				HK1 HW3 LS++ 21	Switch off medium feed

		Requirem	**Con**	**Planning**	**Software**	**Power consumpti**	**Price**	**Macro**
52								
53		1,5h		0,5h	0,5h		800,00	$(MD_MACROS)\ESS_Macro\203_Electrical_Engine\202_PCT-Loop\Level_M

protection method

=.HW4/1

1

			Job number	001		=HK1.HW3	&PFB
			Project name	ESS_Sample_Project		Paint workpiece	P&I diagrams
			HK1 HW3 LS++ 21			+	Page 2
Modification	Date	Name					Page 303 from 305
Creator	EPL	Approved by		Drawing number			Format A4

Data sheet

PCT loops

PCT loop designation

Measure filling level

Remark

PCT loop number

LIR 20

Layer 1	Paint workpiece
Layer 2	Feed additive
Layer 3	
Layer 4	
Layer 5	
Layer 6	
Layer 7	

Measured medium				
Composition				
Corrosive components	No			
Suspended matter	No			
State of aggregation	liquid			
Behavior in sampling line				
	minimum	**normal**	**maximum**	
Working temperature		75 °C		
Working pressure (absolute)		2 bar		

Measurand	**Measuring range**					
	LLL	**LL**	**L**	**H**	**HH**	**HHH**
Limit value						

Input signal	
Density in normal state	
Density at working conditions	
Dynamic viscosity	10^2 mPas
Compressibility factor / isentr	

Width rating DN	25
Piping inner diameter	27,2
Pressure rating / flange ra	**DN**
Material	
Level of insulation	
Distance between suppor	
Mounting support below	**DN** Yes
Mounting support above	**DN** No
Degree of protection	IP55
Connection point	**DN** 25
Mounting length	100
Support / installation	**DN** Yes
Mounting/assembly	**AB 51 -** No
Environment temperatur	20 - 35 °C

Data type	**Direction**	**Symbolic addresses**	**PLC addresses**	**CPU**	**Function text**
BOOL	Input	HK1HW4MS3I1			Filling level "Full"
BOOL	Input	HK1HW4MS3I2			Filling level 1/2
BOOL	Output	HK1HW4MS3O1			Filling level "Full"
BOOL	Output	HK1HW4MS3O2			Pump running
BOOL	Output	HK1HW4MS3O3			Fault pump

Device tag	**Segment template**	**Full designation**	**Description (Segment)**
		HK1 HW4 LIR 20	Measure filling level

Requirem	**Con**	**Planning**	**Software**	**Power consumpti**	**Price**	**Macro**
1,5h		0,5h	0,5h		800,00	$(MD_MACROS)\ESS_Macro\203_Electrical_Engine\202_PCT-Loop\Level_M

protection

method

=.HW3/2

2

			Job number	001		=HK1.HW4	&PFB
			Project name	ESS_Sample_Project		Paint workpiece	P&I diagrams
			HK1 HW4 LIR 20			+	Page 1
Modification	Date	Name					Page 304 from 305
Creator	EPL	Approved by		Drawing number			Format A4

Data sheet

PCT loops

PCT loop designation

Switch off medium feed

Remark

PCT loop number

LS++ 21

Layer 1	Paint workpiece
Layer 2	Feed additive
Layer 3	
Layer 4	
Layer 5	
Layer 6	
Layer 7	

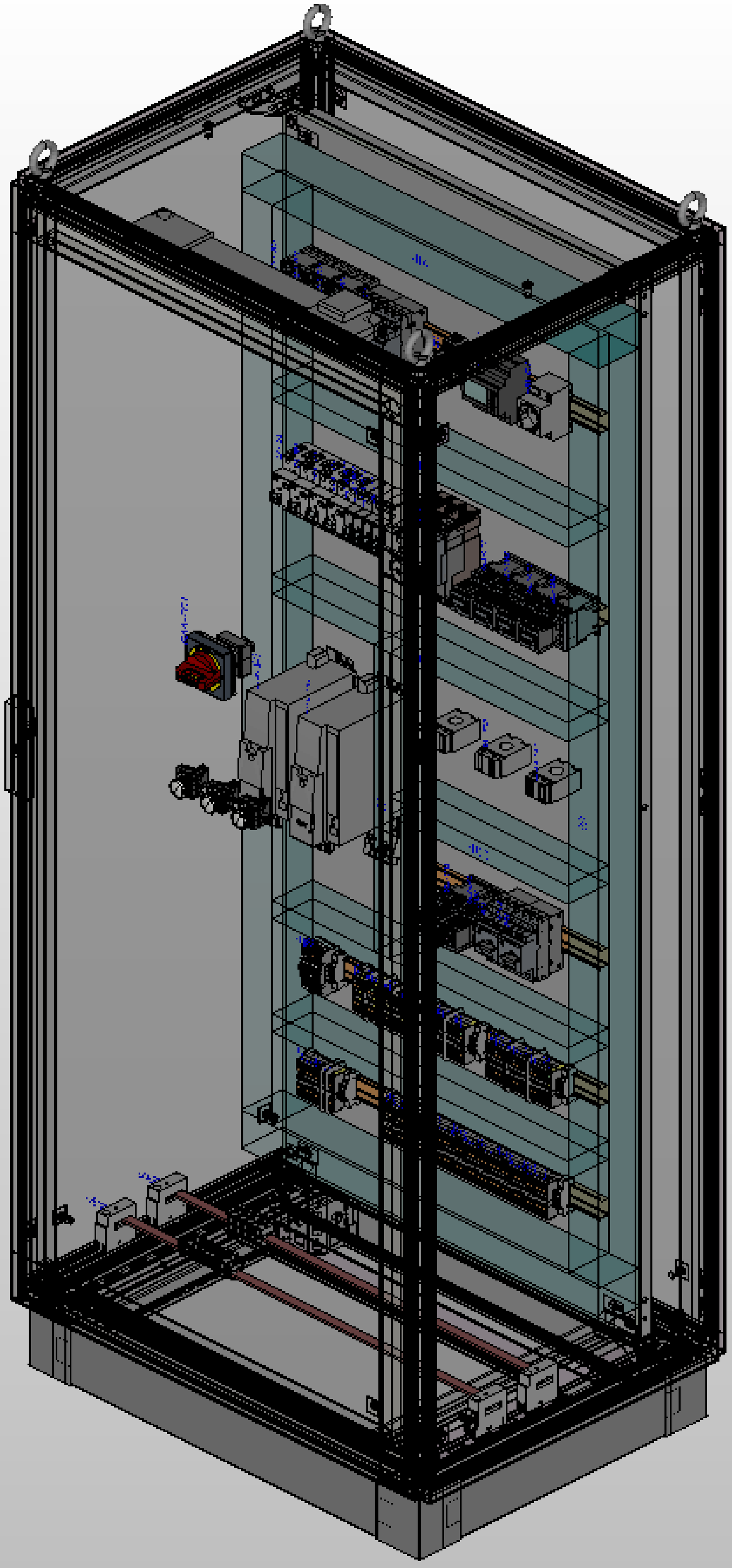
1	**Measured medium**							21	**Width rating DN**	25	
2	**Composition**							22	**Piping inner diameter**	27,2	
3	**Corrosive components**	No						23	**Pressure rating / flange ra**	**DN**	
4	**Suspended matter**	No						24	**Material**		
5	**State of aggregation**	liquid						25	**Level of insulation**		
6	**Behavior in sampling line**							26	**Distance between suppor**		
7								27	**Mounting support below**	**DN** Yes	
8		**minimum**		**normal**		**maximum**		28	**Mounting support above**	**DN** No	
9	**Working temperature**			75 °C				29	**Degree of protection**	IP55	
10	**Working pressure (absolute)**			2 bar				30	**Connection point**	**DN** 25	
11								31	**Mounting length**	100	
12	**Measurand** **Measuring range**				0-1000 l			32	**Support / installation**	**DN** Yes	
13		**LLL**	**LL**	**L**	**H**	**HH**	**HHH**	33	**Mounting/assembly**	**AB 51 -** No	
14	**Limit value**	200 l	400 l	500 l	600 l	800 l	1000 l	34	**Environment temperatur**	20 - 35 °C	
15								35			
16	**Input signal**							36			
17	**Density in normal state**							37			
18	**Density at working conditions**							38			
19	**Dynamic viscosity**	10^2 mPas						39			
20	**Compressibility factor / isentr**							40			

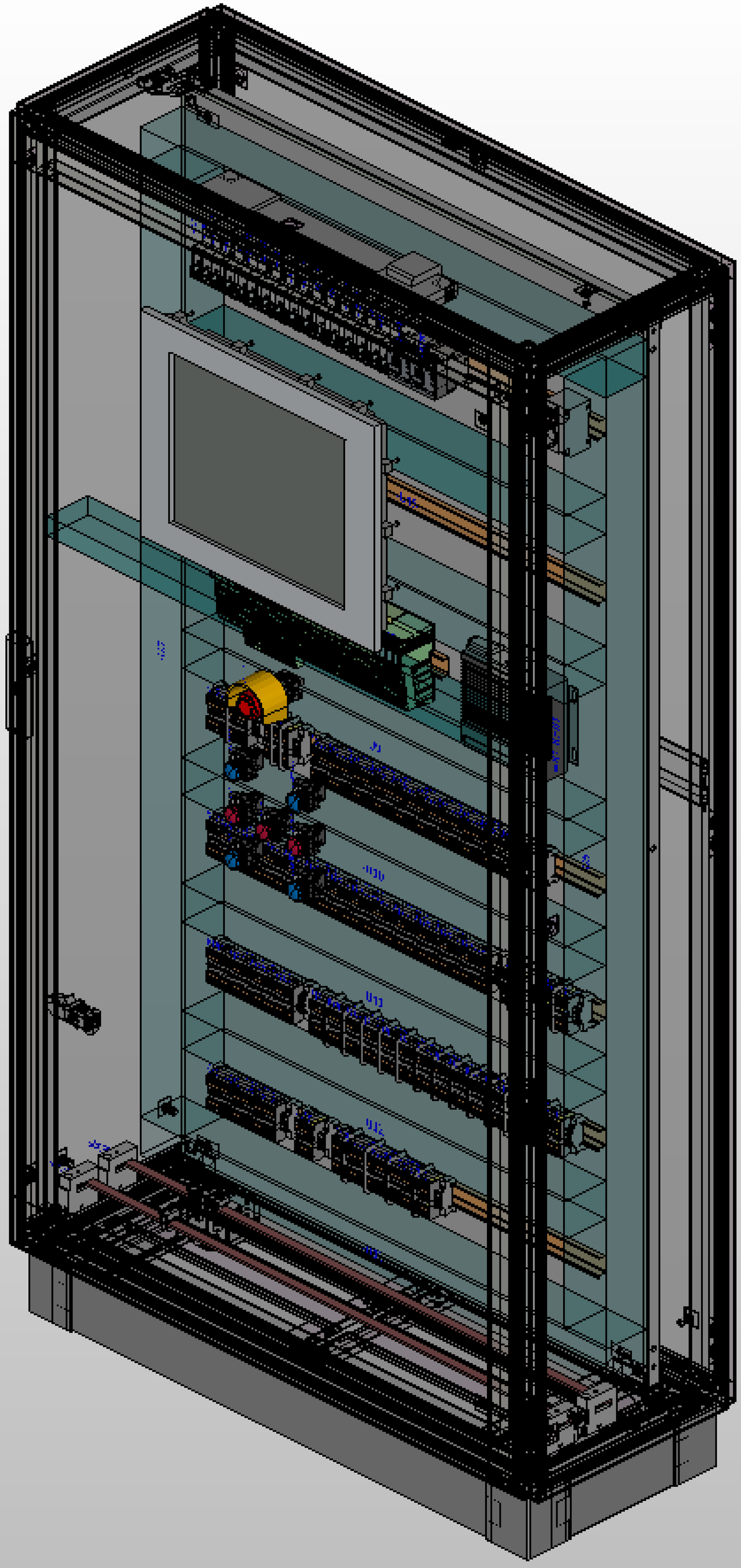
		Data type	**Direction**	**Symbolic addresses**	**PLC addresses**	**CPU**	**Function text**
41							
42		BOOL	Input	HK1HW4MS4I1			Filling level "Full"
43		BOOL	Input	HK1HW4MS4I2			Filling level 1/2
44		BOOL	Output	HK1HW4MS4O1			Filling level "Full"
45		BOOL	Output	HK1HW4MS4O2			Pump running
46		BOOL	Output	HK1HW4MS4O3			Fault pump
47							
48							
49							
50							
51							

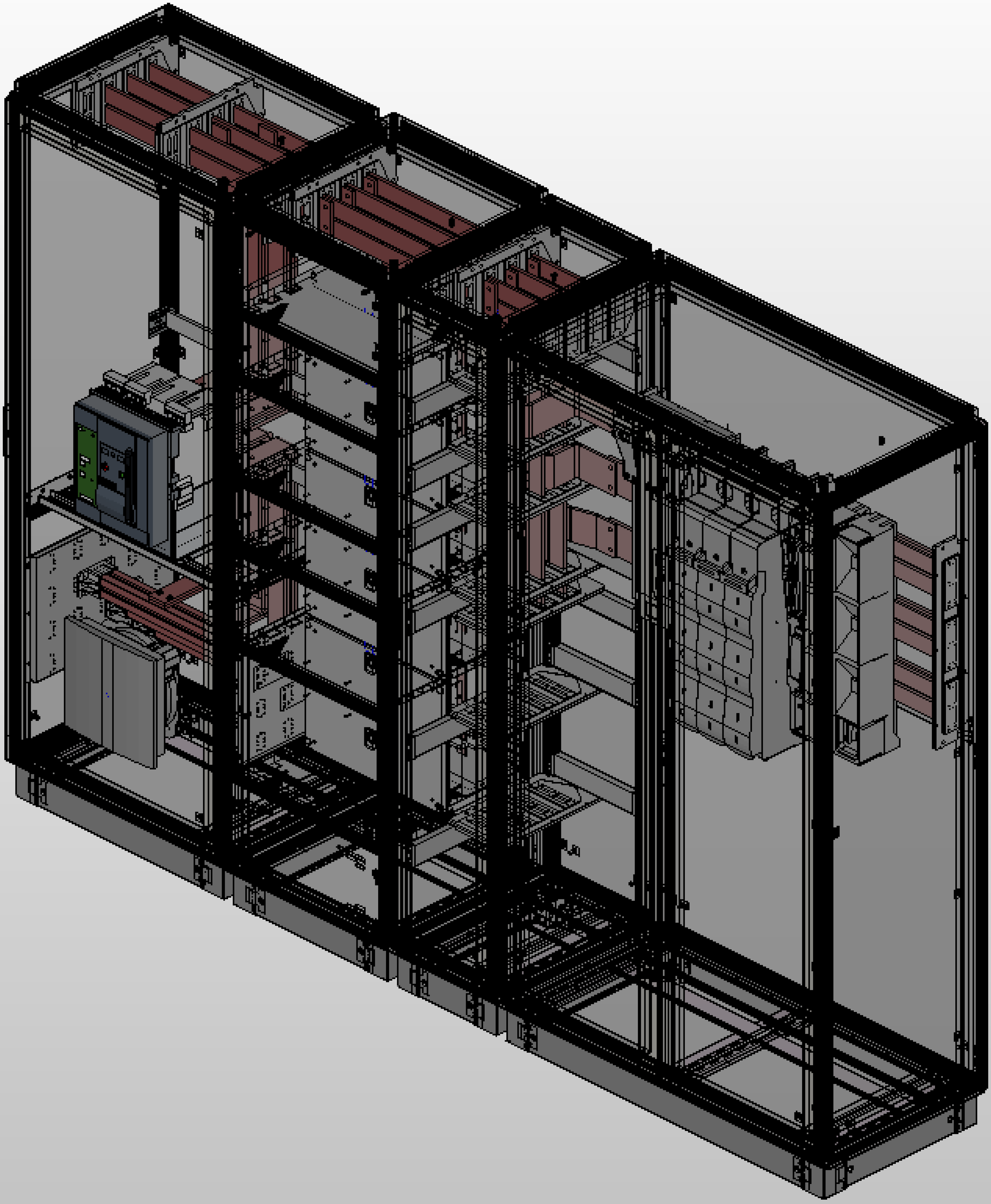
		Device tag	**Segment template**	**Full designation**	**Description (Segment)**
				HK1 HW4 LS++ 21	Switch off medium feed

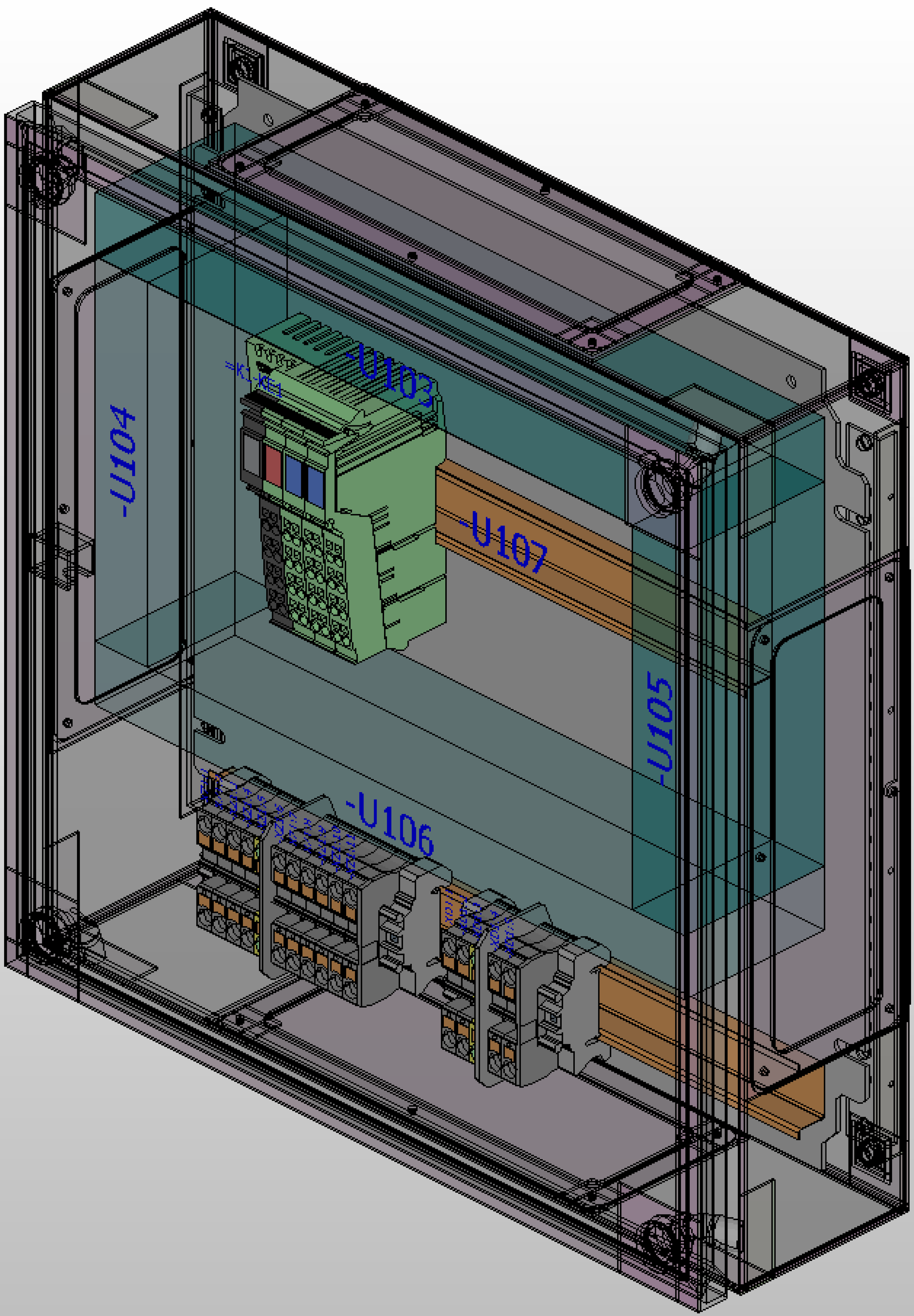
		Requirem	**Con**	**Planning**	**Software**	**Power consumpti**	**Price**	**Macro**
52								
53		1,5h		0,5h	0,5h		800,00	$(MD_MACROS)\ESS_Macro\203_Electrical_Engine\202_PCT-Loop\Level_M

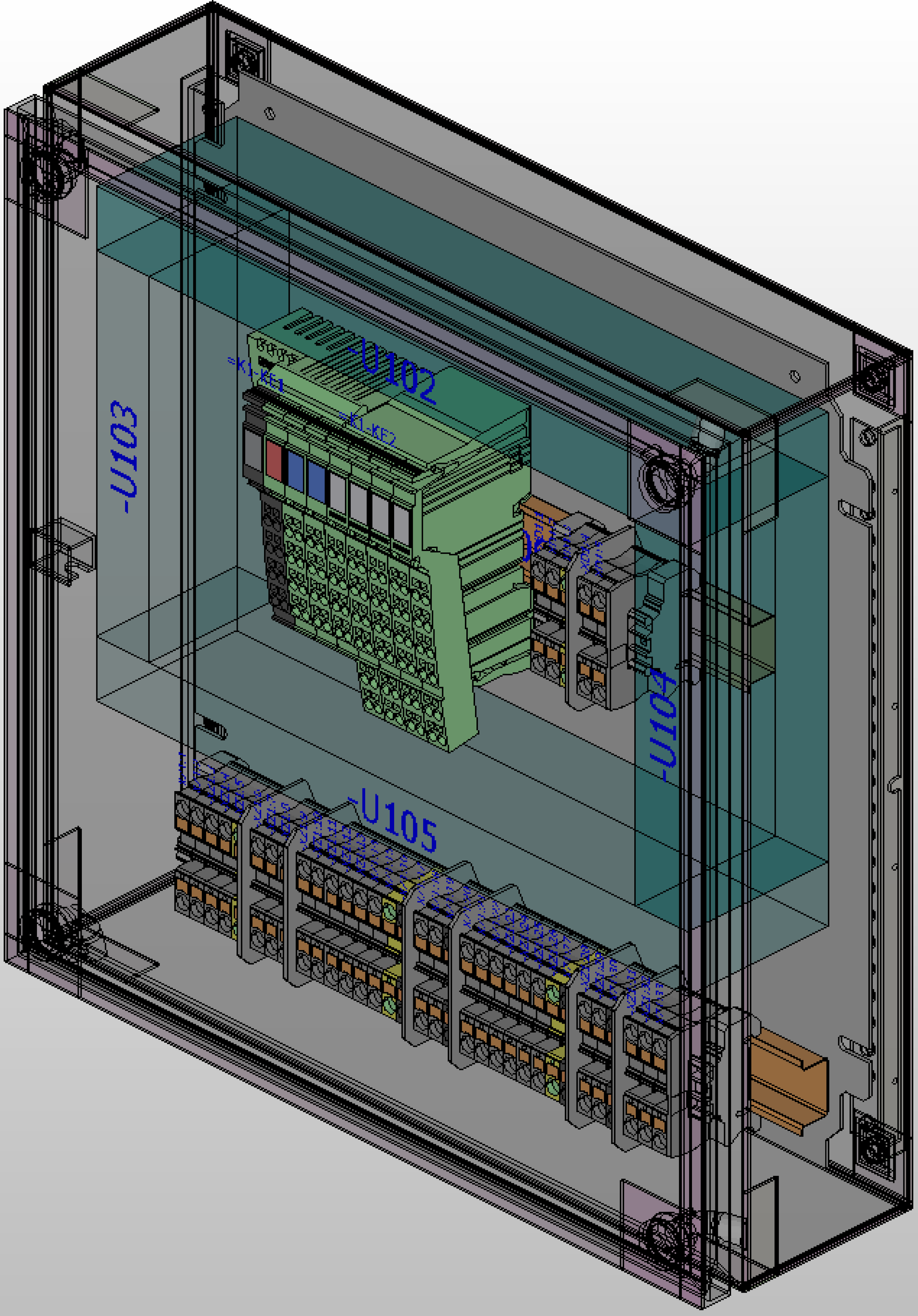
protection method

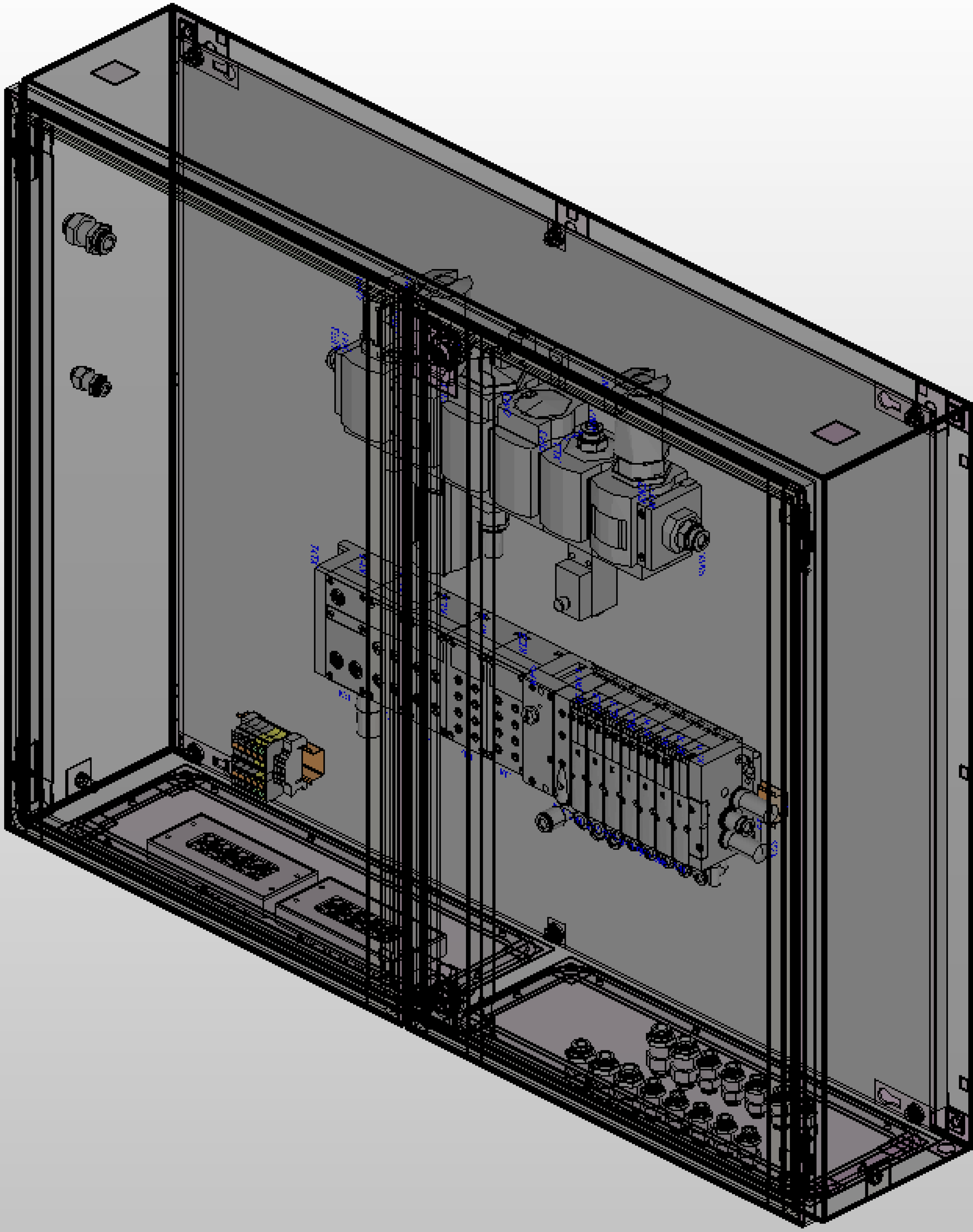


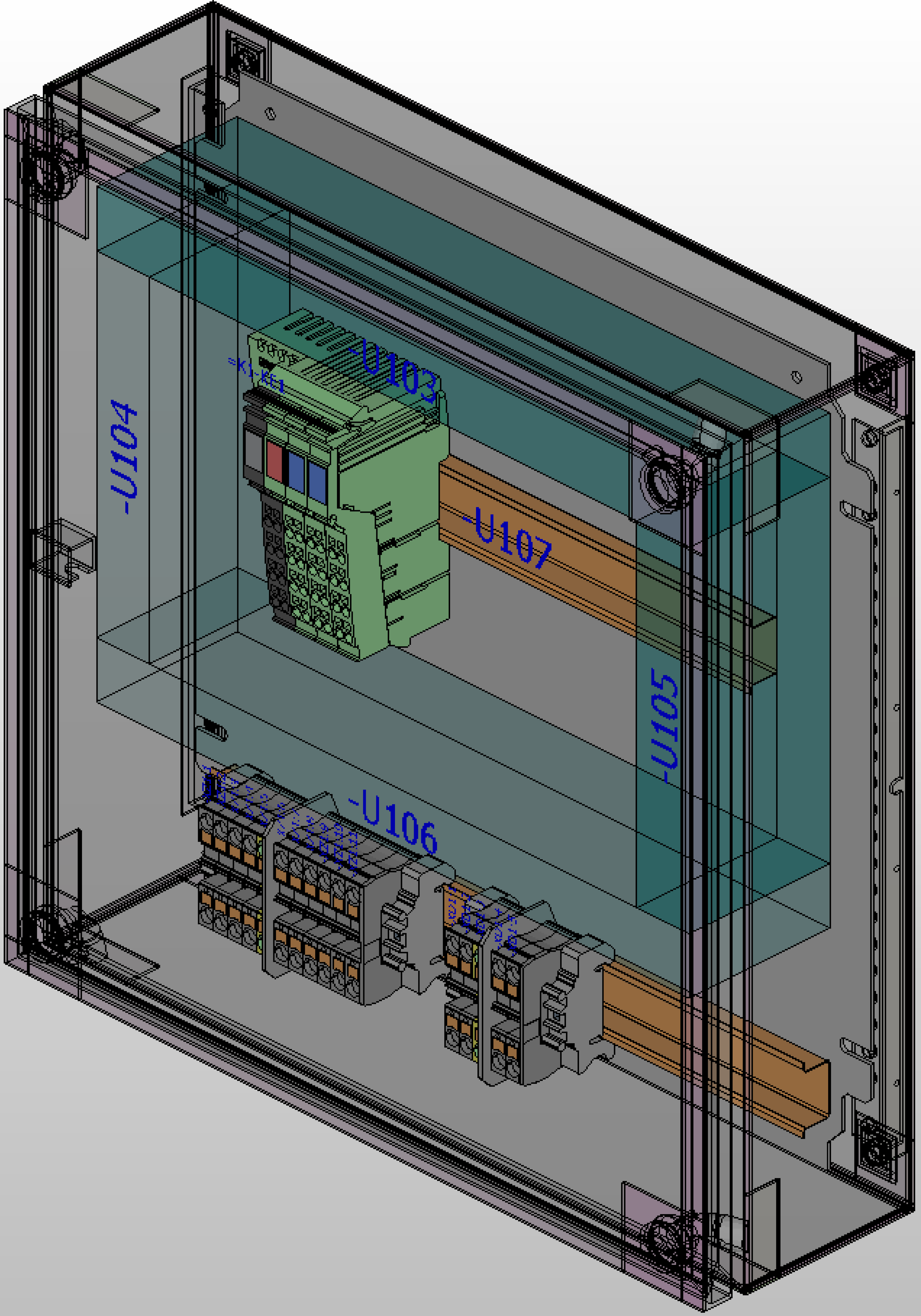





-U104
=K1-KE1
-U103
-U107
-U105
-U106


-U102
-U103
-U105
-U10
=K1-KE1
=K1-KE2




-U103
-K1-KE1
-U104
-U107
-U105
-U106