

Installation and Operation Manual

KEMPER system 8000

Extraction and filter unit with automatic filter cleaning

Ref. 80 050

5.000 m³/h

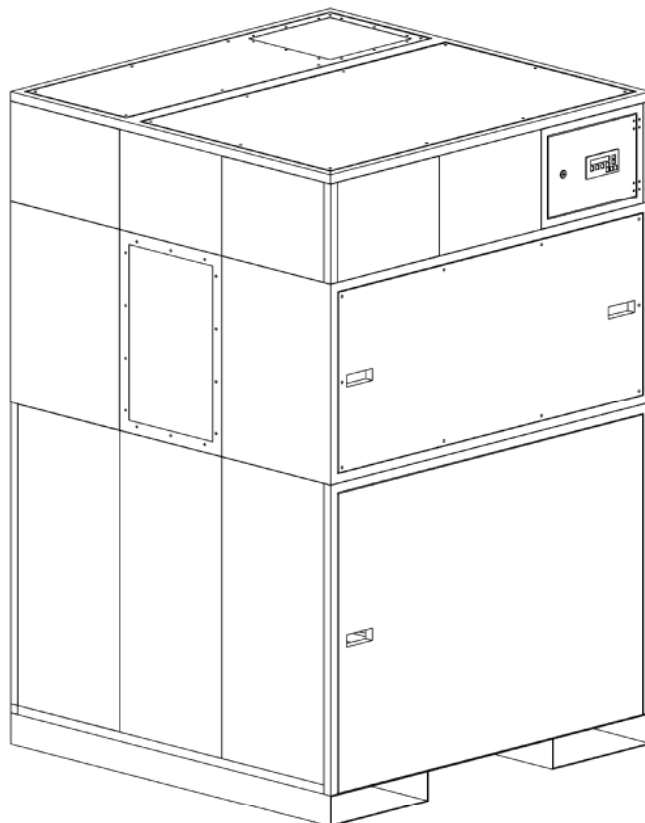


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A. Application and Operation

KEMPER-Cartridge filters are mainly used for the extraction and filtering of welding smoke, dust and harmful substances created during the process of plasma and flame cutting operations. To capture all these harmful substances the following capture devices are used:

- Exhaust hoods
- Down-draft tables
- Exhaust arms and cranes
- Suction nozzles

Via these capturing devices, the polluted air is led into the filter unit through a duct system. Through the air circulation coarse particles are separated in the first section.

The separation of the polluted air works according to the principle of surface filtration by means of cartridges with Teflonmembrane.

This membrane has a very homogeneous pore structure and is permeable to air. However, it retains even the smallest particles. Thus the welding smoke is separated at the surface of the filter cartridges. The cleaned air flows up wards inside the filter cartridges and reaches the clean air section of the filter unit. From there it is led to the ventilator and then back to the workroom or via a duct system to atmosphere.

Due to the continuous settling of particles on the surface a resistance is set up. Once the allowed air resistance is reached the cleaning process starts automatically. This is done through rotating nozzles by means of compressed air. The compressed air reservoir is installed in the filter aggregate. Through the rotating nozzles the compressed air works from the inside on the whole surface of the respective filter cartridge.

The filter cartridges are cleaned individually in turn. Thus permanent running is guaranteed during cleaning. Further more, every time the machine is switched off the described cleaning process starts automatically.

After the separated dust has been blown off the cartridges it falls down to the collecting box which is mounted underneath the cartridges. To remove the collecting container it can be lowered very easily by using the compressor air lift.

All main functions of the unit are permanently controlled by the electronic control system. The display gives information of Filters, Motors, Airflow and working hours etc. Also it helps to find and avoid possible malfunctions.

All information is automatically shown on the cleartext display.

B. Safety Information

Caution:

When using electrical devices the following basic safety measures must be followed to prevent shock, injury or fire!

Read and follow these instructions carefully before using the filter unit!

- * Keep this Installation and Operation Manual handy.
- * Read data on Typeplate
- * Before opening the maintenance door switch off the machine.
- * Don't use this Filter unit for the extraction of flammable or explosive substances (e.g. solvents).
- * Don't use this Filter unit for the extraction of explosive dusts (e.g. aluminium powder).
- * Don't use this Filter unit for the extraction of aggressive substances (e.g. acids).
- * Don't use the Filter unit without Filter inserts.
- * Always use original spare parts.
- * Keep the machine dry.
- * Connect the machine to power only by authorized electrician.

Caution:

Check direction of rotation of the ventilator

C. Positioning and installation

The unit can be lifted easily from the shipping palet and brought to site of installation. To carry the unit you should lift it at the outer fork lift bags at the front side of the unit. Furthermore the unit can be lifted by an elevating truck which should be positioned at the recess clearance in the middle of the basic frame of the unit.

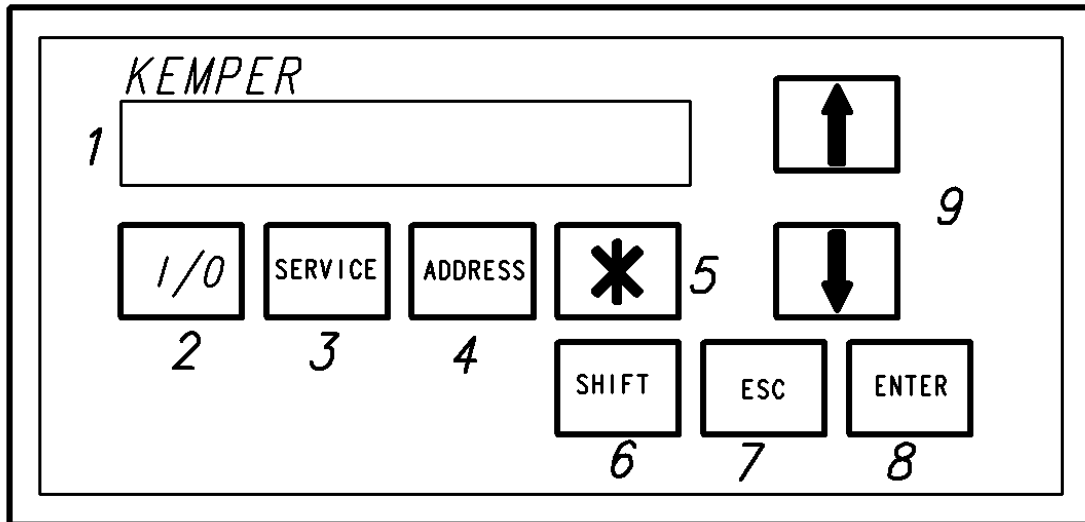
The unit can be installed and adjusted uprightly at the working station by putting some metal plates under the unit. After this, the ducting has to be connected to the orange panel with the rectangular hole by an adequate transition piece. In case the purified air may not or shall not be led back into the working area, you have to connect a second transition piece and a ducting to outside to the designated outlet opening in the upper sections of the filter unit.

The filter unit will be connected to the pressure air supply by means of a pressure reducer and a pressure air filter. To operate the unit you will need pressure air which is clean, dry and free of oil with a pressure of 5 to 6 bar. For this purpose the unit is supplied with a nipple for connection of pressure air to which the pressure air hose (diameter: 9 mm) can be connected.

In a final step the unit has to be connected to the power supply system. This should only be undertaken by an autorised electrician to ensure that the input supply voltage is corresponding to the details on the type plate of the machine. Furthermore you have to be sure that the connection of the power supply will be undertaken accordingly. The units for the most current input supply voltages are supplied with a connection plug. This plug can be found in the upper area of the unit at one side. An appropriate coupler will be attached to the plug. The unit can be operated immediately after inserting the power supply plug.

D. Control panel and selfdiagnostic system

D-1 Putting filter unit into operation



1 Cleartext display

2 On/Off switch

To switch the machine on and off.

3 SERVICE switch

Shows how many working hours are left before the next service.

4 ADDRESS switch

Shows the adress of the manufacturer (and telephone, telefax and website).

5 Conformation switch

Confirmation switch (for service)

6 SHIFT switch

Not needed for normal use of the unit.

7 ESC switch

Not needed for normal use of the unit.

8 ENTER switch

Confirmation switch

9 Scroll switch

To scroll messages on the display

D-2 Messages and information of control device

By use of the control unit with cleartext display the settings and parameters of the unit can be changed or called up. All readings and functions are described below.

M	A	C	H	I	N	E		O	P	E	R	A	T	I	N	G		B	Y
				I	/	0		-		S	W	I	T	C	H				

As soon as the unit is connected to the power and switched on by the main-switch (main switch only at series 9000 units) the display shows this message. Now the unit can be started by using the on/off switch and switched off as well. If the unit is not used for a longer period eg. on weekends, we recommend not to use the main-switch (series 9000) and to keep the machine off-line. Even if the machine is in an off-line modus an after cleaning cycle is started.

M	A	C	H	I	N	E		O	P	E	R	A	T	I	N	G		B	Y
		E	X	T	E	R	N	A	L		S	W	I	T	C	H			

As an option the unit can be switched on and off via an external on/off switch or a potential free contact. (For example welding robots, cutting machines etc.) If the unit is equipped with this option and was started by the on/off switch the above message will be shown on the display. As soon as the external switch is connected to the unit it will start up automatically.

Programme Point

Y	O	U	R		K	E	M	P	E	R		S	Y	S	T	E	M		
O	P	E	R	A	T	E	S		C	O	R	R	E	C	T	L	Y		

After the machine has been switched on, this message will come up on the display. The control unit will always return to this message from other programme points after approx 3 min. Any operation fault which appear will be shown automatically . By using the scroll function you can get to other programme points.

Programme Point 1

0	1		W	O	R	K	.	H	R	S	.	:	0	0	0	0	0	0	
			C	L	E	A	N	I	N	G		:	0	0	0	0	0	0	

Indicates the total working hours of the machine regarding the operating time of the ventilator and the number of completed cleaning cycles. The number of cleaning cycles indicates the actual cleaning cycles that have been undertaken during operation and also after cleaning cycles after switching of the unit.

Programme Point 2

0	2		C	A	R	T	R	I	D	G	E		F	I	L	T	E	R	
			T	O	T	A	L			:				0					

This indicates the number of filter cartridges installed.

„SERVICE“ – switch

	N	E	X	T															
	S	E	R	V	I	C	E		I	N	:	1	6	0	0		H	R	S

This KEMPER filter unit is a unit with vital function and may only be operated unit regarding to certain aspects of reliability. It is regulated by law that the unit has to be checked regularly and necessary maintenance work has to be undertaken. The frequency of maintenance works is depending on the working hours of the unit. This reading indicates how many working hours are left until the next service should be carried out. By pressing the service button again you will get back to the start display.

„ADDRESS“ – switch

K	E	M	P	E	R		L	T	D										

By pressing this button you are able to read the complete manufacturer address.

By using the scroll function the display scrolls down to telephone, telefax, website and the following message.

S	O	F	T	W	.	V	.	:	0	0	0	/	B	J	:				
M	A	C	H	.	N	R	.												

Indicates which software version was used, when the machine was built, the year of construction and month of delivery and serial number of the machine. If a visit of a service technician is required please pass on the information of that reading to our service department, they can identify the unit by these information.

D-3 System information and malfunction

During operation the standard reading will change to the following if there are malfunctions.

Maintenance

S	E	R	V	I	C	E	N	E	C	E	S	S	A	R	Y
							0	0	0	0		H	R	S	

With this reading the machine informs the user about an overdue service, which is also regulated by law. Please contact Kemper to make an appointment for the service to be undertaken (contact details see button „Address“). By pressing the „Enter“-Button this reading can be confirmed. The reading will come up after short time. The filter unit will work correctly during this time.

Maintenance

S	E	R	V	I	C	E	O	V	E	R	D	U	E			
S	I	N	C	E			0	0	0	0		H	R	S		

With this message indicates that the overdue maintenance has not been undertaken, yet. This maintenance is regulated by law and essential for the operational safety of the machine. The maintenance should be undertaken directly by our KEMPER service engineers.

Malfunction 1

E	-	0	1	M	O	T	O	R								
				P	R	O	T	E	C	T	I	O	N	F	A	N

This reading informs about a malfunction of the motor protection switch of the fan due to excessive power supply resulting our of changes in voltage or faults in the motor. If the motor potection switch is tripped out, please check if all 3 phases are connected. Please contact Kemper to check the unit if this reading appears again.

Malfunction 2

E	-	0	2		R	O	T	A	T	I	N	G		F	A	N			
					I	N	C	O	R	R	E	C	T						

The unit has to be connected that way that a right hand rotary field is generated in order to get the full output of the machine. If this rotary field is not generated the above reading is indicated. The correct rotary field can be achieved by changing 2 phases with each other. The electrical connection of the unit may only be undertaken by our service engineers or a qualified electrician.

Malfunction 3

E	-	0	3		M	O	T	O	R	T	E	M	P	E	R	A	T		
					T	O	O		H	I	G	H							

An optional accessory are temperature sensors in the motor. If the motor is getting too warm the machine switches off automatically and the above reading appears. The motor temperature of the machine is too high and the unit has been switched of because of security aspects. Please contact KEMPER (contact details see button „Adress“).

Malfunction 4

E	-	0	4		D	U	S	T		C	O	L	L	E	C	T	I	N	G
					C	O	N	T	A	I	N	E	R		O	P	E	N	

The dust collecting container will be lifted upwards to seal the container. If this reading appears the dust collecting container is lifted down. The unit can not be operated in this case and will be switched off or can not be switched on. Lift the container by shifting the hand valve.

Malfunction 5

E	-	0	5		C	O	N	T	A	C	T	O	R		O	P	E	R	.
					I	N	C	O	R	R	E	C	T						

The unit controls also the function of the main motor protection switch and the star or delta switch. Appears the above described malfunction, please contact an electrician or the KEMPER service department (contact details see button „Address“).

E. Maintenance

E-1 Emptying of the dust collecting container

The dust collecting container should be emptied regularly. The intervals should be specified with respect to the amount of dust created by the process. If very light dusts are created the intervals should be shorter.

To discharge the dust collecting container:

- Open the maintenance door of the filter unit
- Lower the collecting container by shifting the pneumatic valve to left hand side. The filter unit will switch of automatically. (The pneumatic valve can be found on the left hand side behind the maintenance door.)

Danach erscheint folgende Meldung:

E	-	0	4		D	U	S	T		C	O	L	L	E	C	T	I	N	G
					C	O	N	T	A	I	N	E	R		O	P	E	N	

- Remove the container from the filter unit and close this container with the lid that has been delivered together with the container and fix it with the toggle tip fastener.

Please note:

The collected dust has to be recycled according to public regulations.

- Put the container back on the pneumatic lift.
- Lift the container by shifting the pneumatic valve.

Please note:

Please pay attention that no objects are between sealing of the container and filter unit

The following reading appears in the display:

S	W	I	T	C	H	I	N	G		O	N		V	I	A				
				I	/	0		-		S	W	I	T	C	H				

- Close the maintenance door of the filter unit
- Switch the unit on via the 1/0-switch

E-2 Drain of condensate

The condensate should be drained regularly every month. The drain valve is located next to the pressure air maintenance unit. Put a suitable container below the drain valve and open the valve. Close the valve after all moisture has been drained and only air is purging out of the valve.

E-3 Tensioning the belt-drive (not for type 80030)

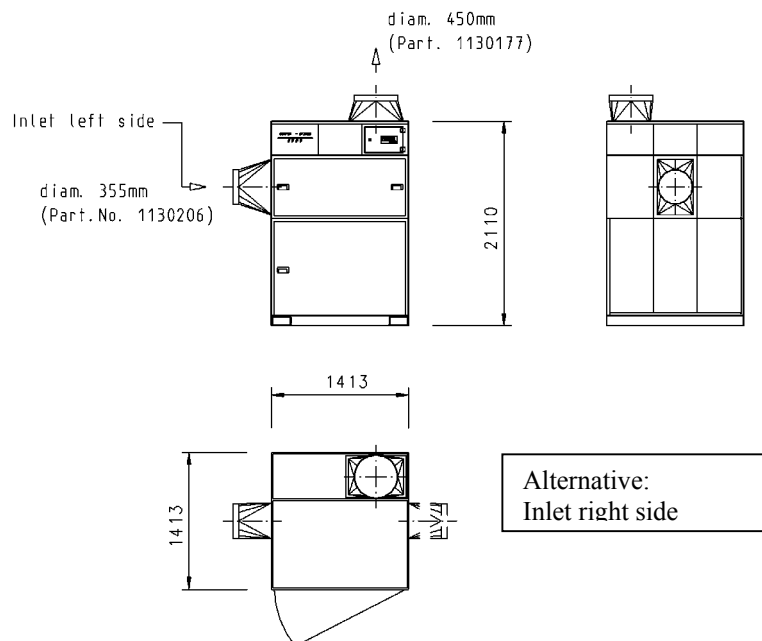
After about 50 working hours the belt-drive of the ventilator needs to be checked and the tension of the belt should be re-adjusted first time. After that approx. every 3 to 4 months the belt drive should be checked. The depth of indentation of the belt between both belt pulleys should be approx. 8 mm at a test force of 11 Newton.

Procedure:

- Switch the unit off by using the main switch and take the power plug out.
- Open the maintenance door of the fan unit.
- If the belt drive is too loose you can tension it by moving the complete motor backwards. The motor is installed on a frame with 4 bolts. Open those bolts and move the motor backwards by using the two adjustment bolts on the motor frame.
- Close the maintenance door of the fan unit.
- Switch the machine on by using the main switch.

F. Technical specification / Data sheet

Cartridge filter unit	Part. no. 80 050 - 2.940 cfm - 5.000 m³/h
Customer :	
Technical specification of the filter unit :	
Filter surface :	6 cartridges each 10 m ² = 60 m ²
Filter type :	Filtercartridge with PTFE-coating
Dimensions of each cartridge :	diam. 327 mm x 600 mm
Rotating nozzles :	length 600 mm
Dimensions of the filter unit :	w=1.413 mm x d=1.413 mm x h=2.110 mm
Air intake :	diam. 355 mm x 1
Air outlet :	diam. 450 mm x 1
Compressed air :	5,0 – 6,0 bar; clean, dry and free of oil
Fan performance :	2.940 cfm or 5.000 m ³ /h at 2.500 Pa
Ventilator type :	centrifugal fan
Motor performance :	1 x 5,5 kW
Power supply :	3 x 400 V, 50 Hz
Amperage :	11,6 A
Weight :	620 kg
Dimension of dust collecting container	2 x 34 ltr.
X 1 Connection pieces are not included.	



G. Spare Part List**Suction and Filter Unit Type 80050**

Item	Description	Part.No.
1	Filtercartridge with PTFE Membrane Filtersurface 10 m ² , incl. gasket	109 0300
2	Filtercartridge without Membrane For applications with high oil mist content, Filtersurface 12 m ² , incl. gasket	109 0301
3	Motor 230/400 Volt – 5,5 kW	130 0176
4	Ventilator RZR 11-0355	121 0252
5	Rotation nozzle, complete , without solenoid valve	77 600 000 21
6	Solenoid valve 1“ , 24 V, AC	128 0140
7	Compressed air fabric tube 1“	128 0071
8	Hose clamp 1“	115 0020
9	Sparefilter set for compressed air maintenance unit	132 0017
10	Motor protection relais	118 0296
11	Contacteur	118 0250
12	Drive belt SPZ 1287 (2 pcs. required)	117 0273
13	V-belt pulley- Ventilator 2 x SPZ 125	117 0145
14	V-belt pulley – Motor 2 x SPZ 150	117 0269
15	Dust collecting container 30 L	149 0089


KEMPER GMBH

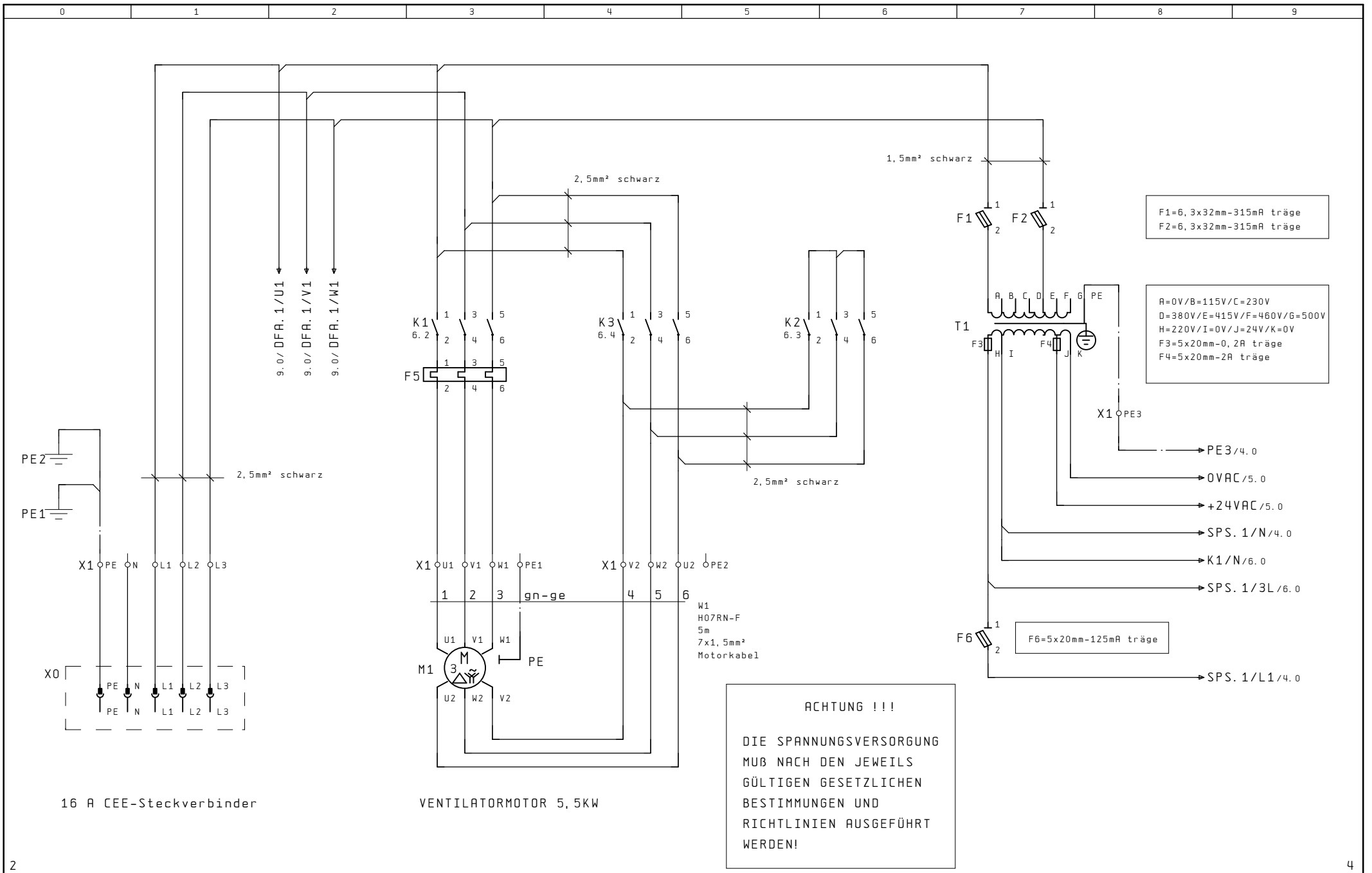
Von Siemensstraße 20 - 21 Fax.: 0049(0)2564/68-120
 D-48691 Vreden http://www.kemper.de
 Tel.: 0049(0)2564/68-0 e-mail: mail@kemper.de

Kunde :
 Anlagenbezeichnung: Zentrale Absauganlage
 Zeichnungsnummer : 02-E-498-1-11/3
 Kommission :

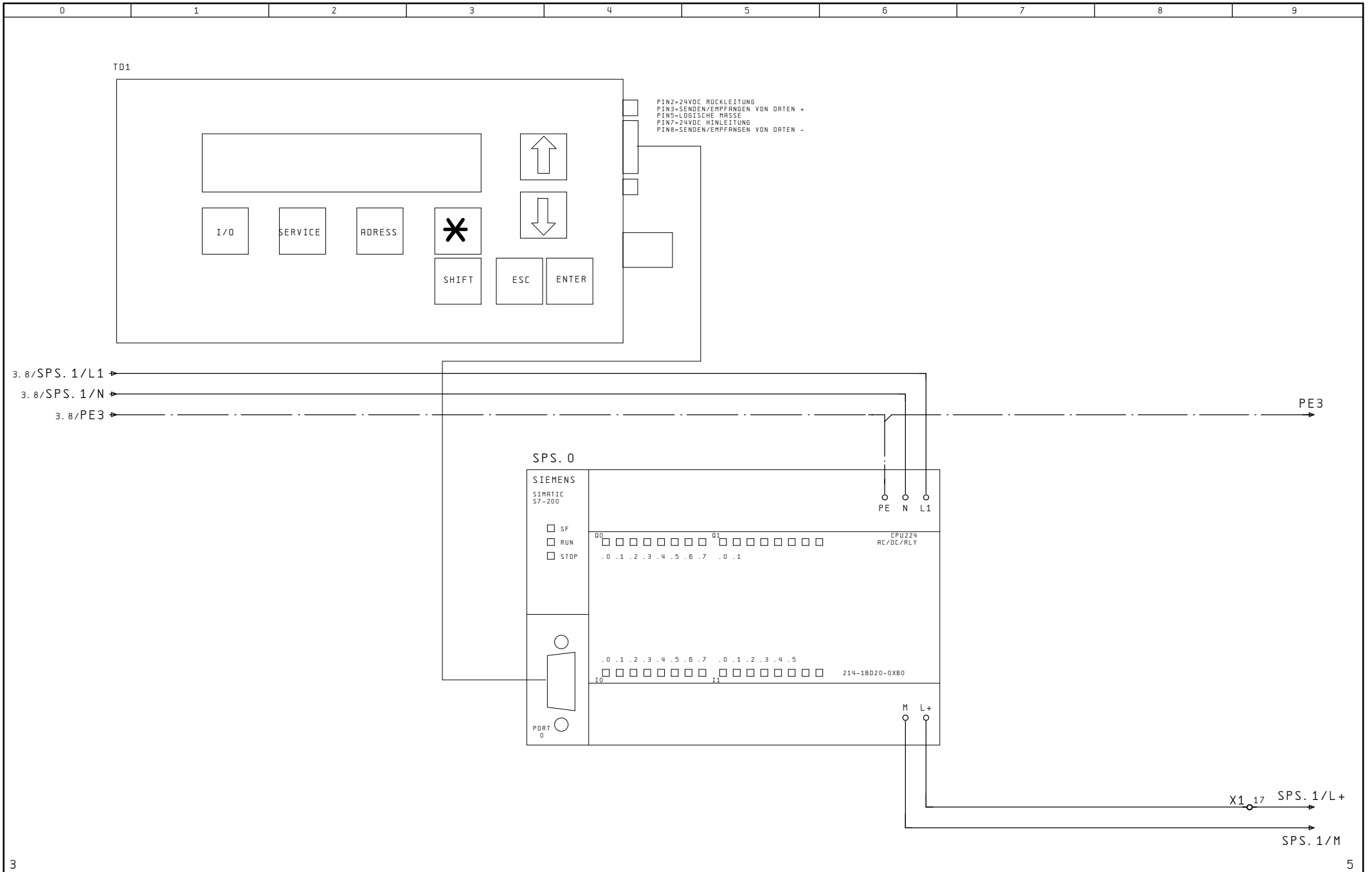
Hersteller-Firma 1:	KEMPER GMBH	Schaltschränke	:	integriert
	VON-SIEMENS-STR.18-20	Einspeisung	:	3 x 400V/AC/50Hz + PE
Hersteller-Firma 2:	48691 VREDEN	Zuleitung	:	4(5) x 1,5mm ² / 11,6 A (I-Nenn)
		Steuerspannung	:	230V/AC + 24V/AC
Fabrikat	: System 8000	Baujahr	:	siehe Typenschild
Type	: 80050			
Installationsort	: -			
Teilebesonderheit	: mit Stern-Dreieck-Anlauf			
Sonderumwelt	: -			
Standort	: -			
Vorschrift	: -			
Schutzart	: Vorabsicherung: 3 x 16 A (min. Kat. C)			

Projekt Beginn	:	18. Feb. 2002		
Projektverantwortlicher	:			
Letzte Änderung	:	20. Nov. 2003	Höchste Seitenzahl:	11
Letzter Bearbeiter	:	GHK	Anzahl der Seiten:	11

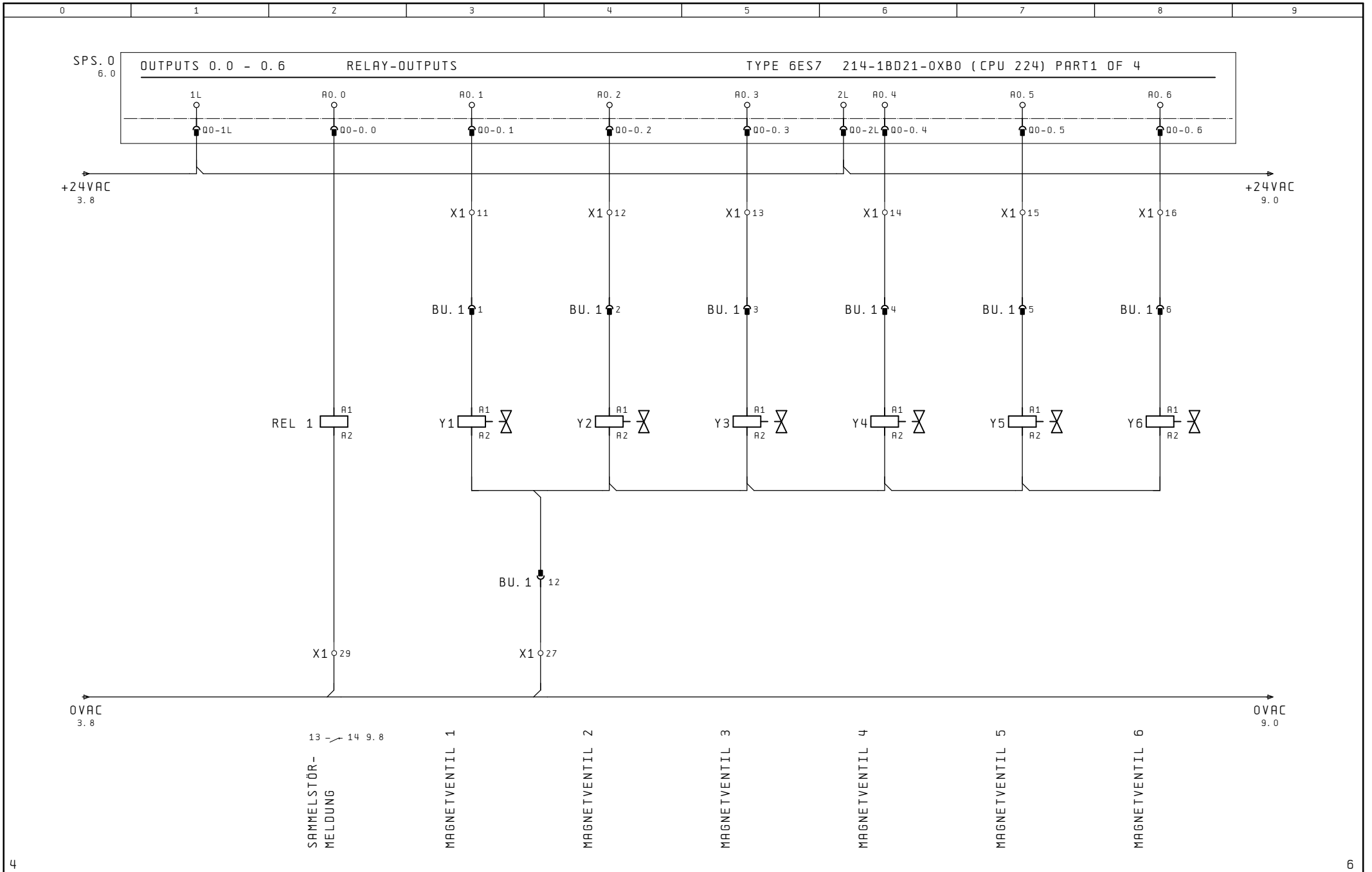
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			Gepr.	20. Nov. 2003	Zentrale Absauganlage					B1. 1
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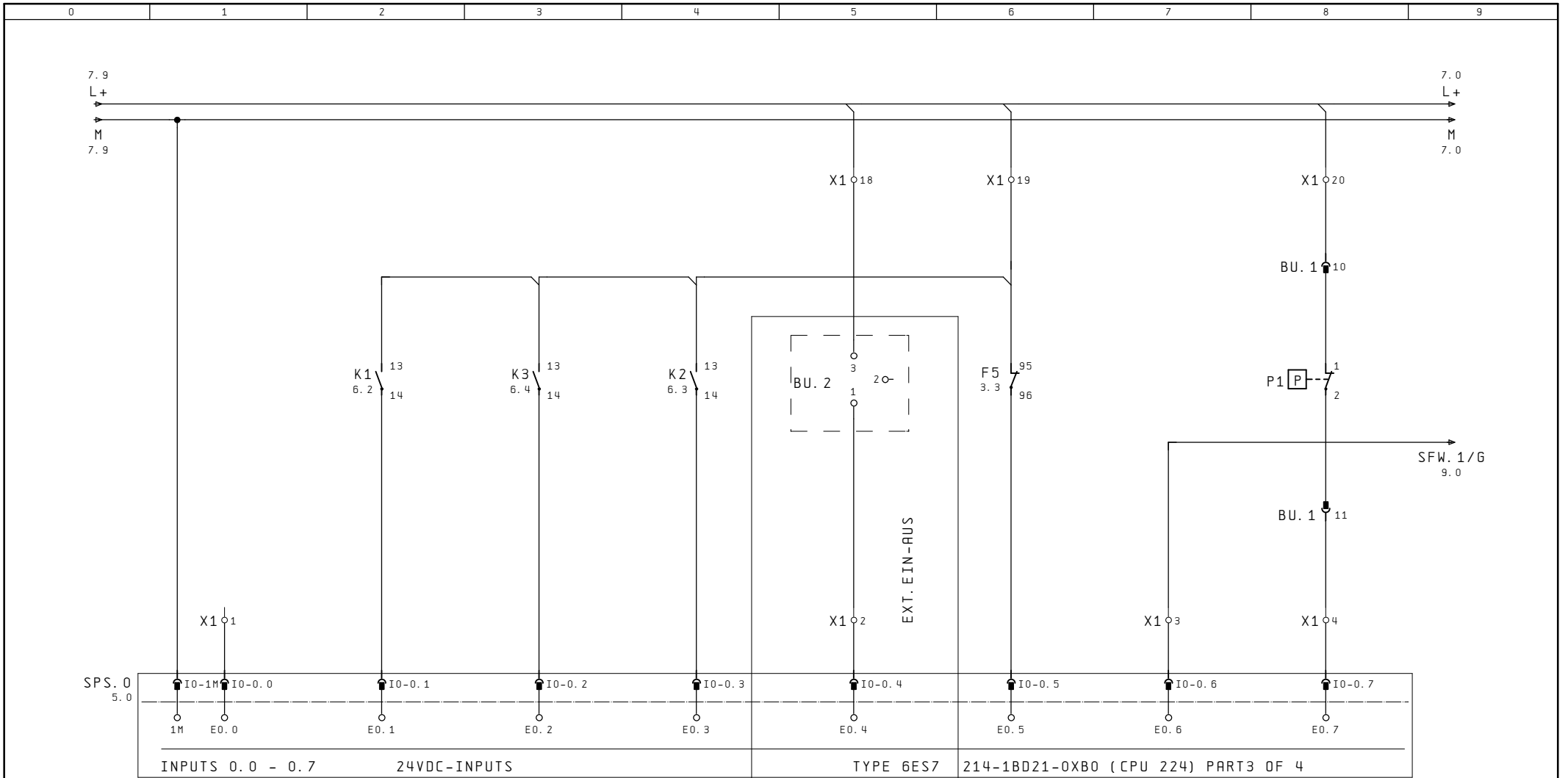
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Zentrale Absauganlage		B1. 3	
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Urspr.	Ers. f.	Ers. d.	11 Bl.



3										5	
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INPUTS 0.0 - 0.7 24VDC-INPUTS TYPE 6ES7 214-1BD21-0XB0 (CPU 224) PART3 OF 4

RESERVE

RÜCKMELDUNG
NETZSCHÜTZ

RÜCKMELDUNG
DREIECKSCHÜTZ

RÜCKMELDUNG
STERNSCHÜTZ

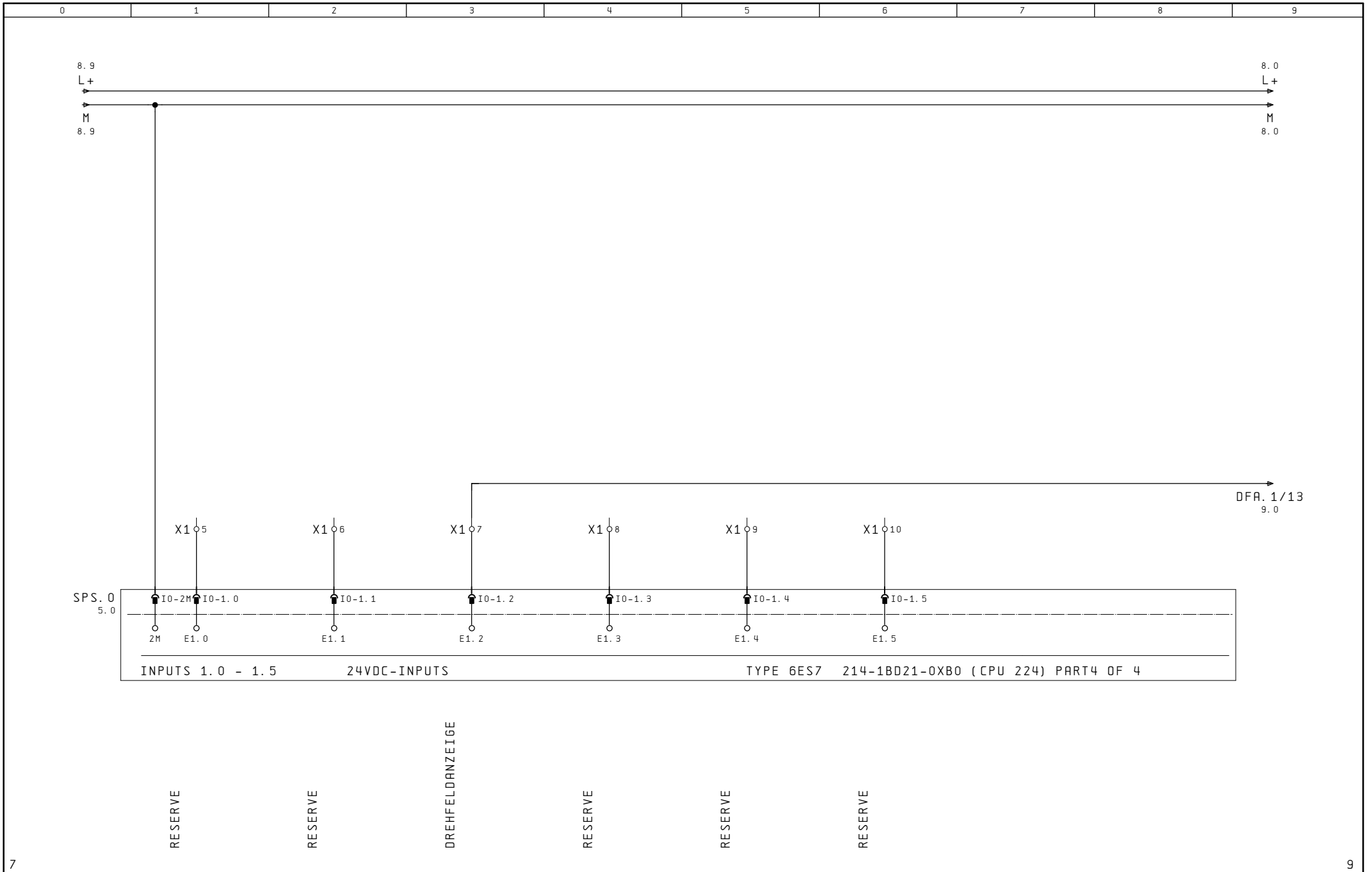
EXTERN-EIN-AUS
(BU.2 = 3-polige Buchse an der Aussenseite der Zentralen Filteranlage. An Pin 1 und Pin 3 muss ein potentialfreier Schliesser angeschlossen werden. Ausserdem ist ein Freigabecode erforderlich um diese Funktion zu aktivieren.)

MOTORSCHUTZRELAIS

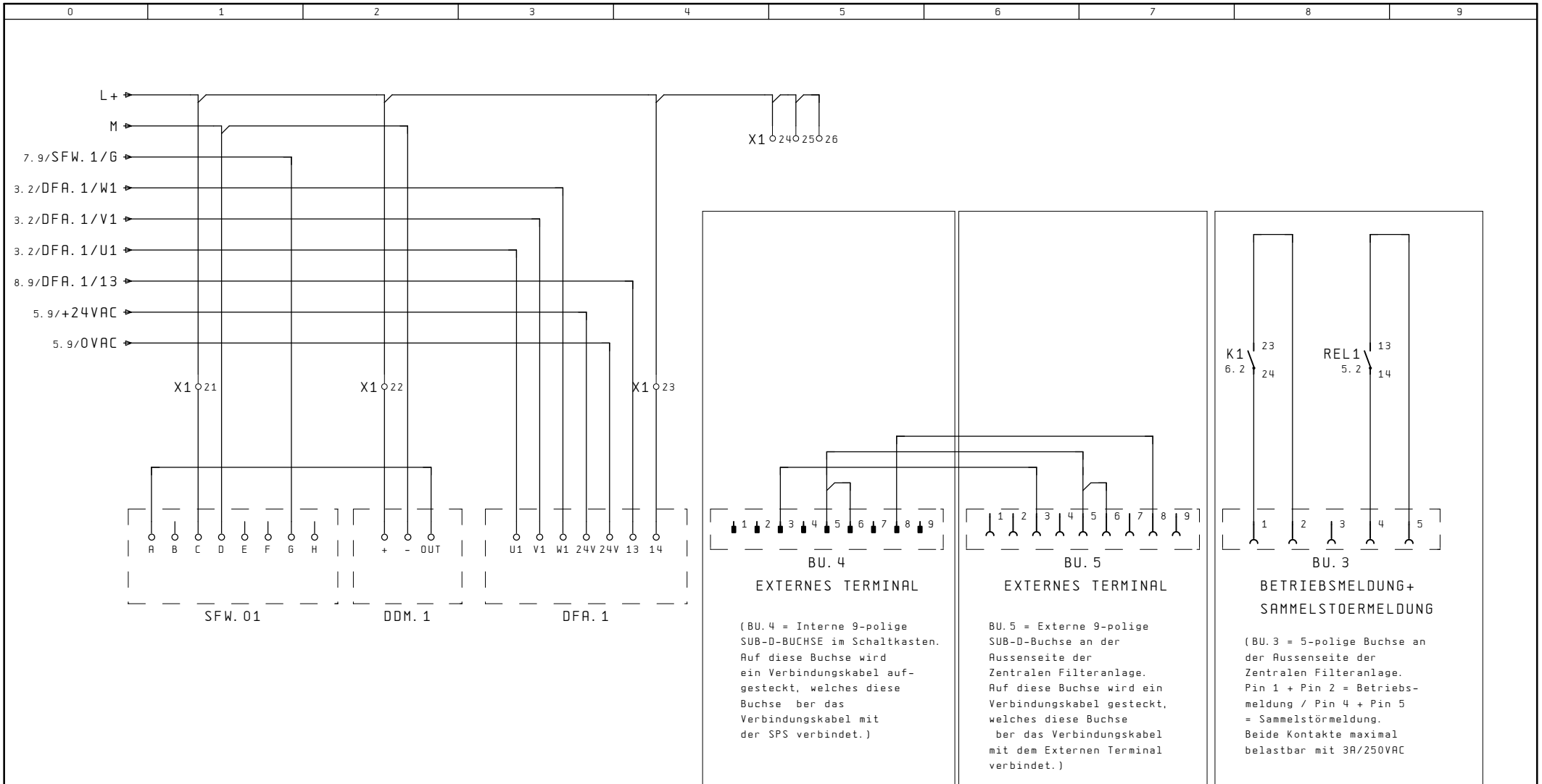
SPANNUNGS-
FREQUENZWANDLER

STAUBSAMMEL-
BEHÄLTER

6		8	
Datum		SPS-Steuerung Eingänge	
Bearb.	GHK	02-E-498-1-11/3	
Gepr.	20. Nov. 2003	80050	
Zentrale Absauganlage		B1. 7	
nderung	Datum	Name	Norm
Urspr.	Ers. f.	Ers. d.	11 B1.



7		9							
Datum		Zentrale Absauganlage	SPS-Steuerung Eingänge	02-E-498-1-11/3	=				
Bearb.	GHK								
Gepr.	20. Nov. 2003								
nderung	Datum	Name	Norm	Urspr.	Ers. f.	Ers. d.		80050	B1. 8
11 Bl.									



			Datum				STEUERSTROMKREIS	02-E-498-1-11/3	=
			Bearb.	GHK					+
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nderung	Datum	Name	Norm	Urspr.	Ers. f.	Ers. d.		80050	B1. 9
									11 Bl.



0	1	2	3	4	5	6	7	8	9
PE2	1						FRONTTÜRERDUNG		
PE1	1						GEH. USERDUNG		
X0	1	Wandgerätesteckdose		3601231			PCE. WANDGER. STECK. 515-6		
X0	1	CEE-Kupplung		3600268			MEN. PROTOP15A/5P/6H/400V		
F5	1	Elektronisches Motorschutzrelais		1180296			SIE. 3RB 1016-1S80		
M1	1	Motor-2polig		1300176			LAM. 7AA112M02V		
F1	1	Sicherungsklemme		3601558			PH0. UK6, 3-HESI		
F1	1	Feinsicherung 6,3 x 32mm / 315mA		3601559			SCH. 6, 3X32MM/315MA		
T1	1	TRANSFORMATOR		1180028			TRAF0. 90VA/1XPRIM/2XSEC		
F6	1	Sicherungsklemme		3601373			PH0. UK5-HESI		
F6	1	Feinsicherung 5 x 20mm / 125mA / Träge		3600493			BÖH. 5X20MM/125MA		
F2	1	Sicherungsklemme		3601558			PH0. UK6, 3-HESI		
F2	1	Feinsicherung 6,3 x 32mm / 315mA		3601559			SCH. 6, 3X32MM/315MA		
SPS. 0	1	SPS		3601563			SIE. 6ES7 214-1BD21-0XB0		
Y1	1	MAGNETVENTIL		1280140			IMI. 24VAC-1ZOLL		
Y2	1	MAGNETVENTIL		1280140			IMI. 24VAC-1ZOLL		
Y3	1	MAGNETVENTIL		1280140			IMI. 24VAC-1ZOLL		
Y4	1	MAGNETVENTIL		1280140			IMI. 24VAC-1ZOLL		
Y5	1	MAGNETVENTIL		1280140			IMI. 24VAC-1ZOLL		
Y6	1	MAGNETVENTIL		1280140			IMI. 24VAC-1ZOLL		
K1	1	Sch tz		1180250			SIE. 3RT1015-1AP01		
K2	1	Sch tz		1180276			SIE. 3RT1015-1AP02		
K3	1	Sch tz		1180276			SIE. 3RT1015-1AP02		
BU. 2	1	BUCHSE Typ: Binder 723		3601229			BIN. 723. 3POLIG-BUCHSE		
P1	1	Druckschalter		3600777			RIE. DS4025		
SFW. 01	1	Spannungsfrequenzwandler		3601382			TR. SFW01		
DDM. 1	1	Differenzdruckmodul		9155000018			KEM. DDM. 1		
DFA. 1	1	Drehfeldanzeige		9155000017			KEM. DFA. 1		
BU. 4	1	9-polige Sub-D Buchse		3601385			CON. 9-POL-BUCHSE		
BU. 5	1	9-polige Sub-D Stiftstecker		3601386			CON. 9-POL-STIFT		
BU. 3	1	BUCHSE Typ: Binder 723		3601230			BIN. 723. 5POLIG-BUCHSE		
BU. 3	1						BIN. 723. 5POLIG		
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Y10	1	Druckminderer		1320005			TIM. DRUCKREGLER		
Y9	1	Sicherheitsventil		1670069			HERO. SICHERH. VENT.		
Y11	1	KUGELHAHN		1040186			END. KUGELHAHN		
Y13	1	Druckschalter		3600777			RIE. DS4025		
Y12	1	BALGZYLINDER		1280078			ENI. BALGZYLINDER		

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European Community Declaration of Conformity

according to European Community machine standard 89/392/EWG, appendix II A

We herewith confirm that the construction of

KEMPER system 8000

Extraction and filter unit with automatic filter cleaning

Part-No. 80 050

is confirm with the following regulations:

91/368/EWG	European Community machine standard, appendix I No. 1
89/336/EWG	EMV standard version


Applicable harmonized standards, especially

EN 292 part 1 and part 2	security of machinery
EMVG	law referring to the electromagnetic consistency of devices
EG 87/404	regulation for compressed air reservoirs

Applicable national and technical specifications, especially

VDE 0100	construction of power plants with a nominal voltage of up to 1000V
VDE 0113	electrical equipment of industrial machines
UVV VBG 1	general regulations

Vreden, 07.07.1998



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