

Installation and Operation Manual

KEMPER system 9000

Extraction and filter unit with automatic filter cleaning

Ref. 90 050

5.000 m³/h

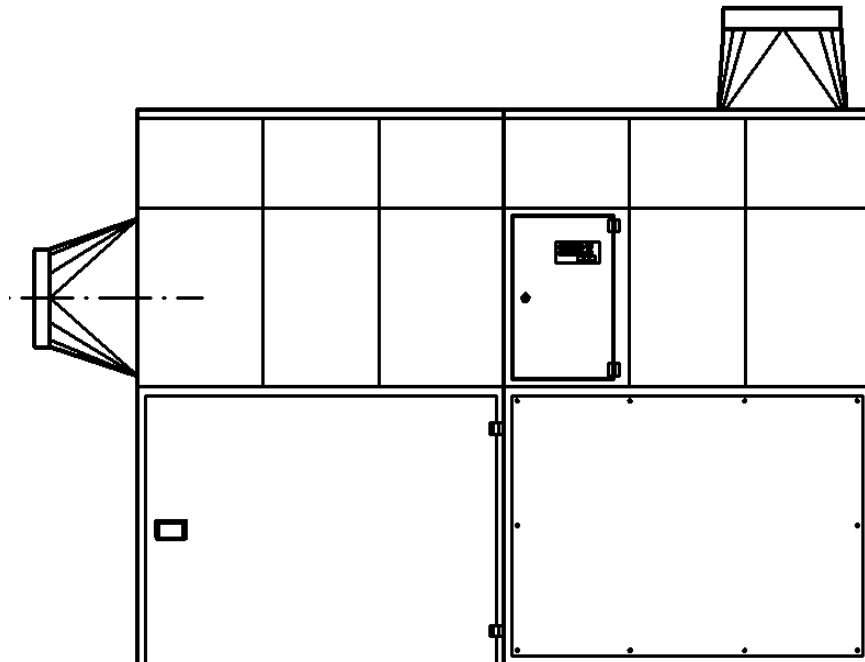


Table of Contents

- A. Application and Operation
 - B. Safety Information
 - C. Control panel and self diagnostic control system
 - C-1 Putting Filter unit into operation
 - C-2 Message and information of control device
 - C-3 System Information and malfunction
 - D. Maintenance
 - D-1 Emptying of dust collecting container
 - D-2 Drain condensate
 - D-3 Tensioning of belt-drive
 - D-4 Tensioning the belt-drive / lubrication of bearing
 - E. Technical specifications and data-sheet
 - F. Spare part list
 - G. EC declaration of conformity
 - H. Wiring diagramm
- Adress list

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
- etc.

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 easy 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:***

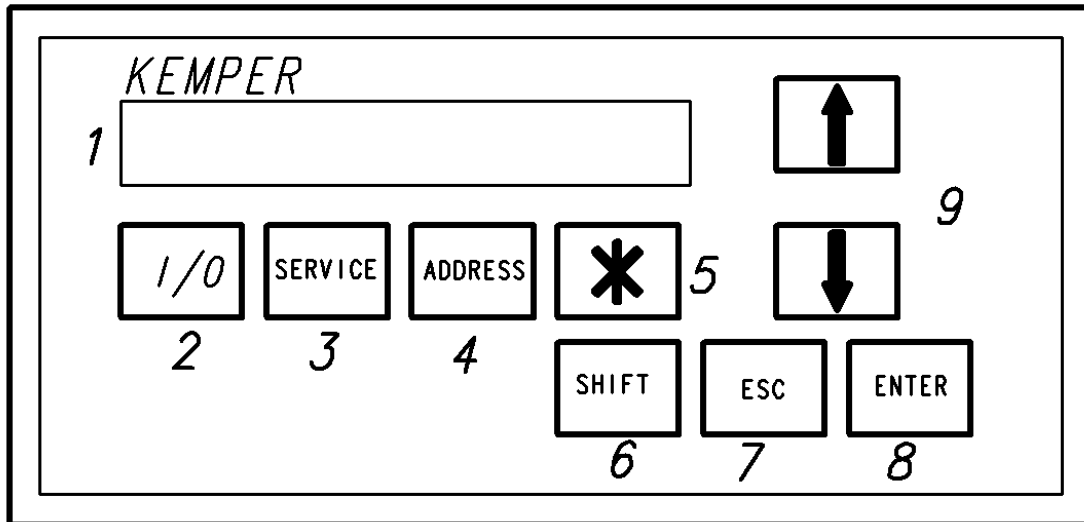
When using electrical devices the following basic safety measures must be followed to prevent shock, injury or fire!

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.
- * Check direction of rotation of the ventilator

C. Control panel and selfdiagnostic system

C-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

C-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	/	O		-		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		(U	.	K	.)	L	T	D				
V	E	N	T	U	R	E		C	O	U	R	T							

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.

C.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	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 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	O	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“).

D. Maintenance

D-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:

- Switch off the filter unit by using the main switch
- Open the maintenance door of the filter unit
- Lower the collecting container by shifting the pneumatic valve to left hand side. (The pneumatic valve is on the left hand side of the dust collecting container)

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

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

D-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.

D-3. Tensioning the belt-drive

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. The power supply is disconnected. Secure the switch with a pad lock.
- 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.

D-4. Tensioning the belt-drive / lubrication of bearing (only for high vacuum units)

After about 50 working hours the belt-drive needs to be checked and the tension of the belt should be re-adjusted first time. After that the bearing of the turbine has to be lubricated and also the belt-drive has to be checked regularly (Parameters see maintenance sticker on the turbine).

Procedure:

- Switch the unit off by using the main switch. The power supply is disconnected. Secure the switch with a pad lock.
- Open the maintenance door of the fan unit.
- The maintenance work has to be undertaken according to the instructions on the maintenance sticker of the turbine.
- Close the maintenance door of the fan unit.
- Switch the machine on by using the main switch.

Technical specification / Data sheet

Cartidge Filter Unit	Part. No. 90 050 - 2.920 cfm - 5.000 m³/h
Customer :	
Technical specification Filter unit :	
Filter surface :	6 cartrigdes each 10 m ² = 60 m ²
Filter type :	Filtercartridge with PTFE-Coating
Dimensions of each cartrigde :	diam. 327 mm x 600 mm
Rotating nozzles :	lenght 600 mm
Dimensions of the Filter Unit :	W=1.413 mm x D=1.413 mm x H=2.015 mm
Air intake :	diam. 355 mm
Air outlet :	diam. 450 mm
Commpressed air :	5,0 – 6,0 bar; clean, dry and free of oil
Dimension of dust collecting container	192 ltr.

G. Spare Part List**Suction and Filter Unit Type 90050**

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 400/690 Volt – 7,5 kW	130 0119
4	Ventilator RZR 19-0250	121 0215
5	Rotation nozzle, complete , without solenoid valve	77 600 000 19
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 0251
12	Drive belt SPZ 1400 (2 pcs. required)	117 0117
13	V-belt pulley- Ventilator 2 x SPZ 106	117 0272
14	V-belt pulley – Motor 2 x SPZ 180	117 0146
15	Dust bin liners, 10 per set	119 0139

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

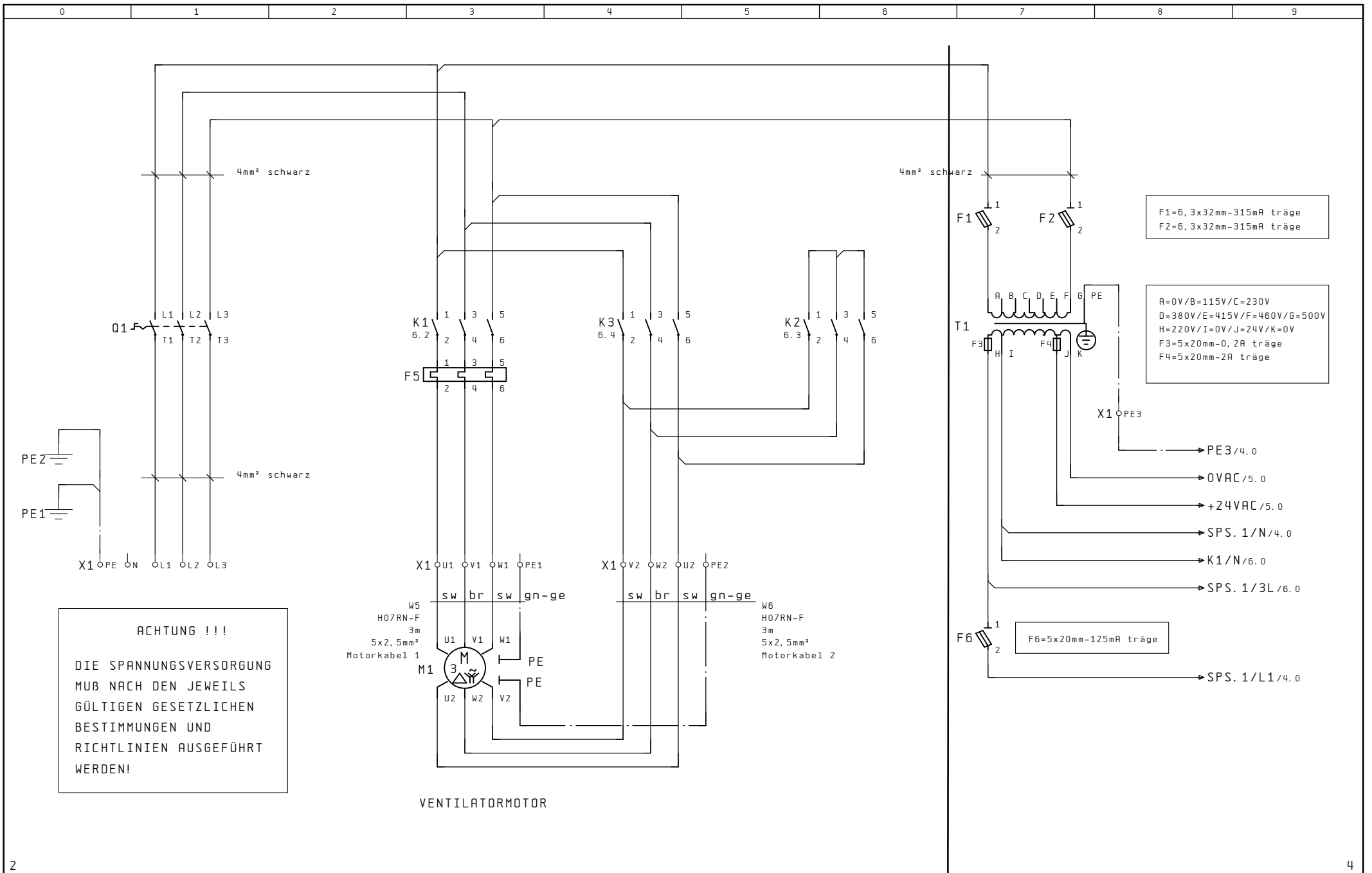
Kunde :
 Anlagenbezeichnung: Zentrale Absauganlage
 Zeichnungsnummer : 02-E-503-1-11/3
 Kommission :

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 6mm ² / 14 A (I-Nenn)
		Steuerspannung	:	230V/AC + 24V/AC
Fabrikat	: System 9000	Baujahr	:	siehe Typenschild
Type	: 90050			
Installationsort	: -			
Teilebesonderheit	: mit Stern-Dreieck-Anlauf			
Sonderumwelt	: -			
Standort	: -			
Vorschrift	: -			
Schutzart	: Vorabsicherung: 3 x 20 A (min. Kat. C)			

Projekt Beginn : 02. Feb. 2003
 Projektverantwortlicher :
 Letzte Änderung : 20. Aug. 2003
 Letzter Bearbeiter : GHK

Höchste Seitenzahl: 11
 Anzahl der Seiten : 11

			Datum				DECKBLATT	02-E-503-1-11/3	=	
			Bearb.	GHK					+	
			Gepr.	02. Dez. 2003	Zentrale Absauganlage					B1. 1
nderung	Datum	Name	Norm	Urspr.	Ers. f.	Ers. d.		90050		11 Bl.



F1=6, 3x32mm-315mA träge
F2=6, 3x32mm-315mA träge

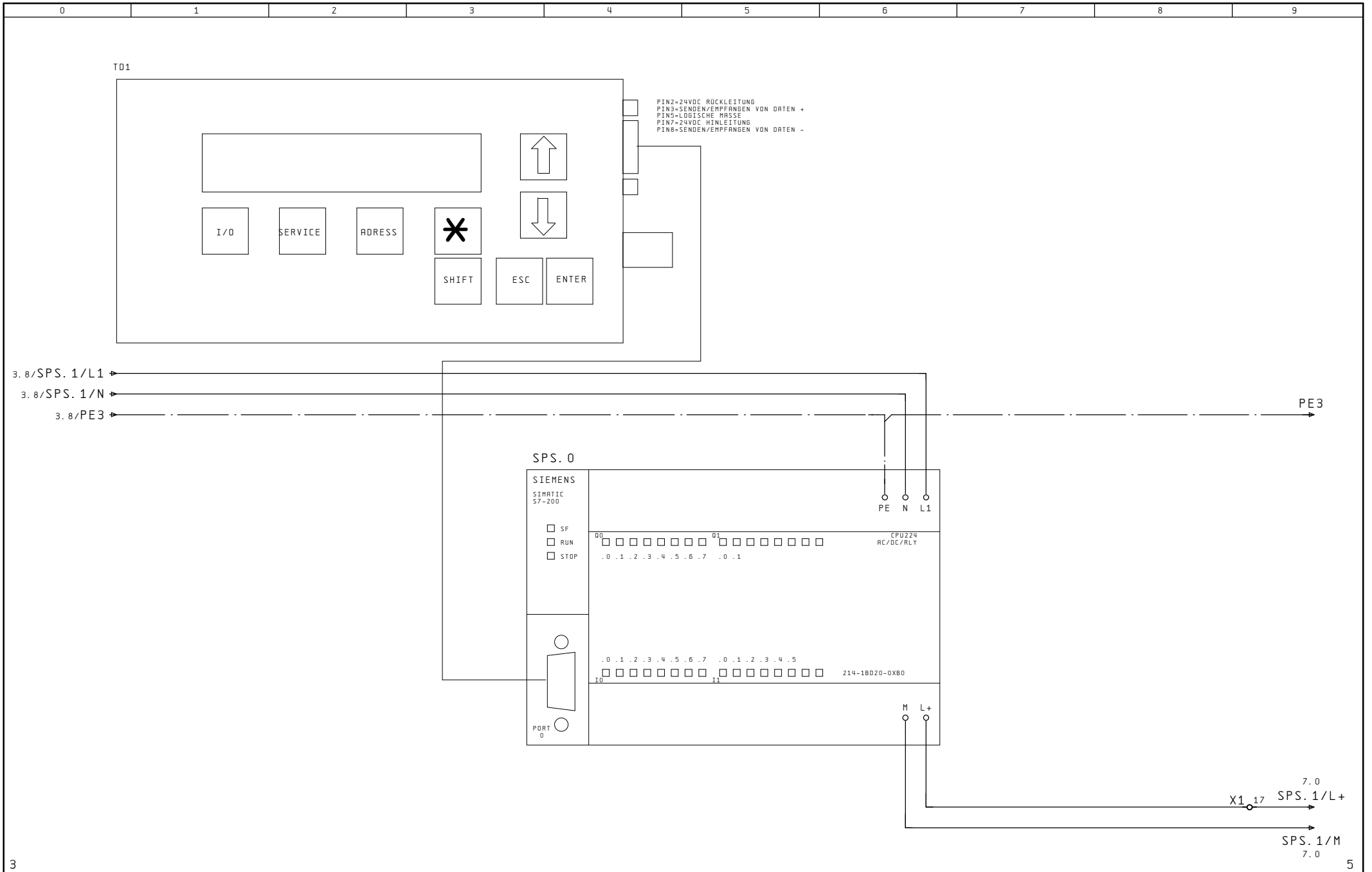
A=0V/B=115V/C=230V
D=380V/E=415V/F=460V/G=500V
H=220V/I=0V/J=24V/K=0V
F3=5x20mm-0, 2A träge
F4=5x20mm-2A träge

F6=5x20mm-125mA träge

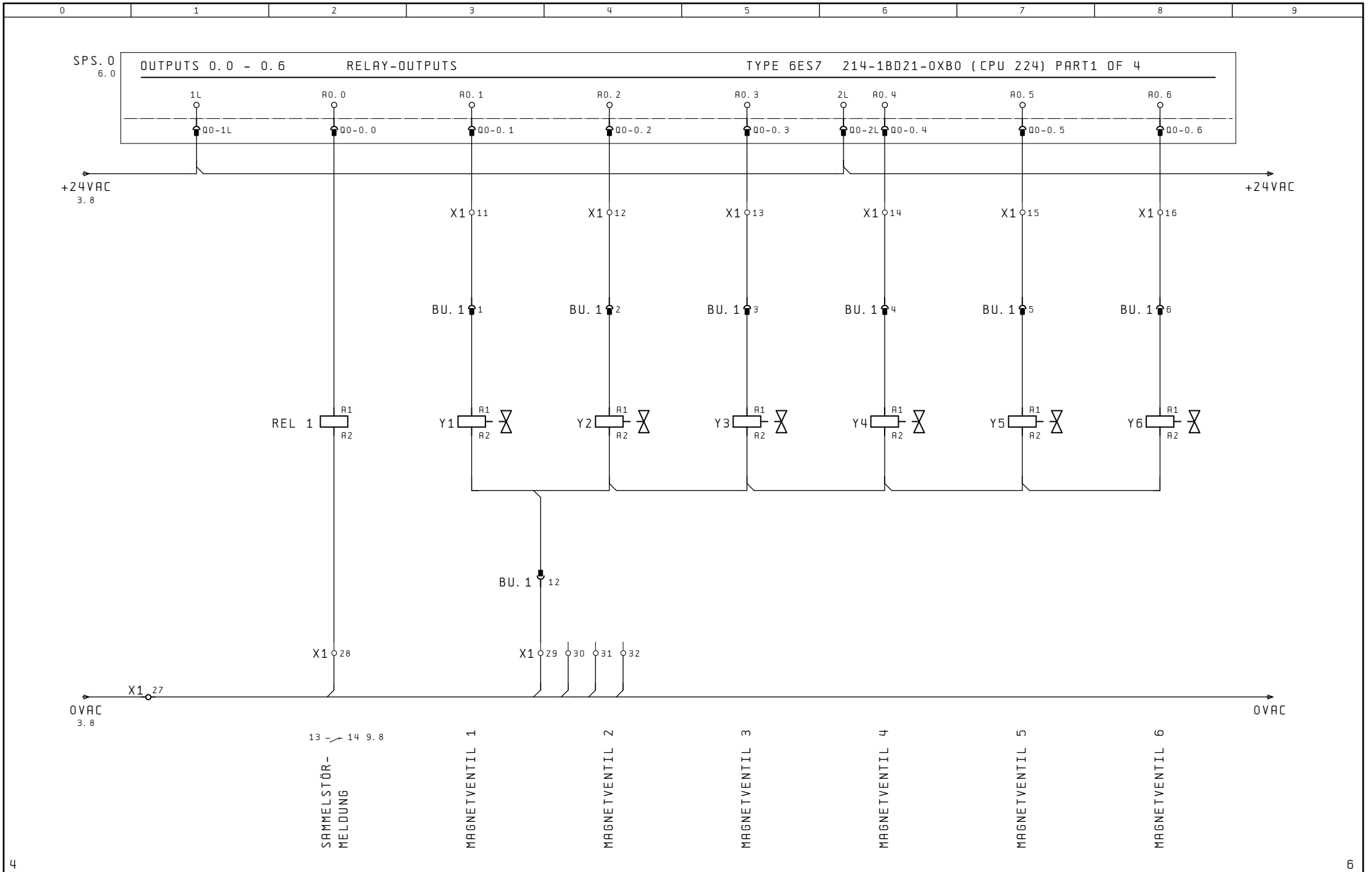
ACHTUNG !!!
DIE SPANNUNGSVERSORUNG
MUß NACH DEN JEWEILS
GÜLTIGEN GESETZLICHEN
BESTIMMUNGEN UND
RICHTLINIEN AUSGEFÜHRT
WERDEN!

VENTILATORMOTOR

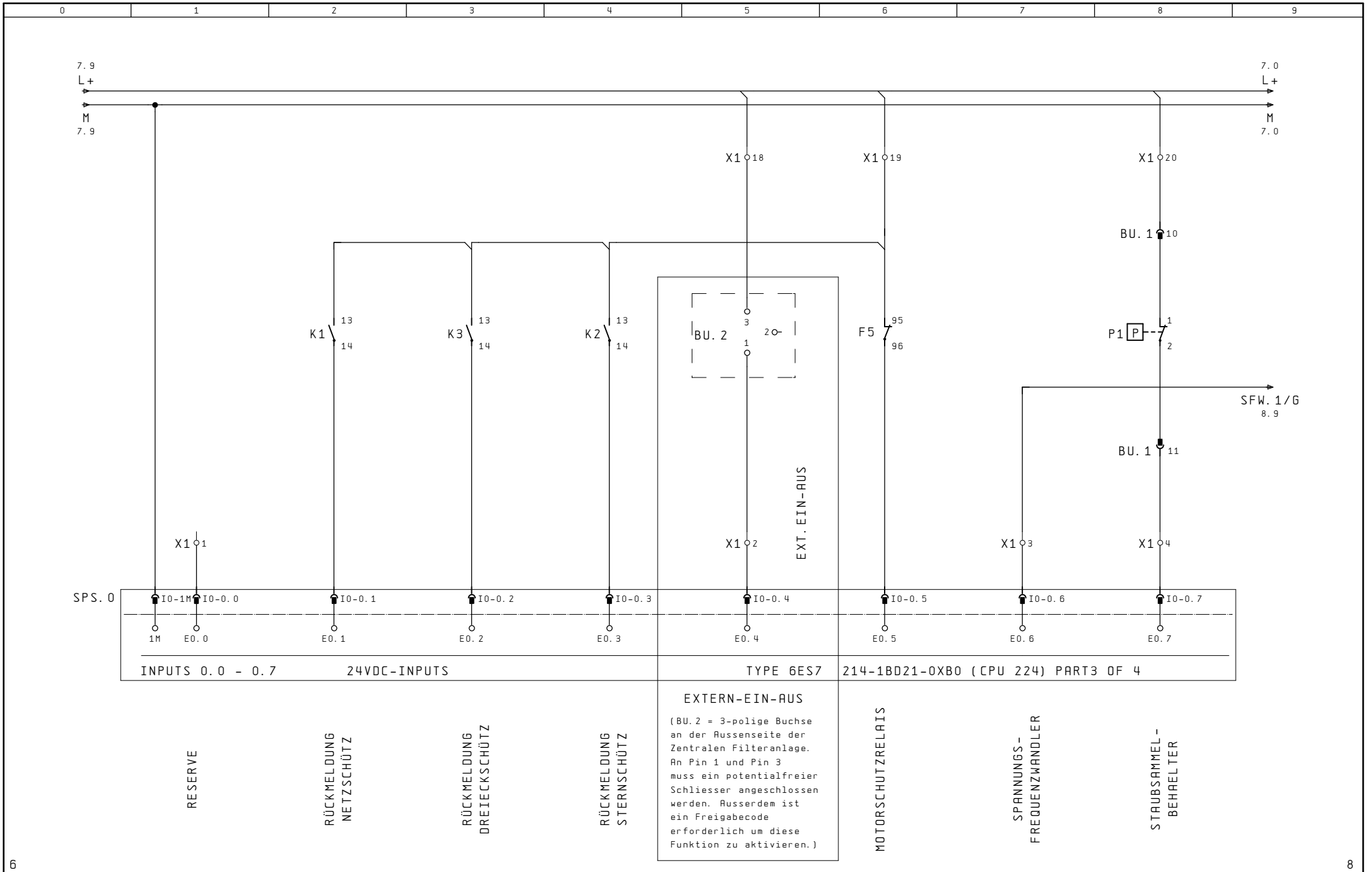
2		4	
Datum		LEISTUNGSTEIL	
Bearb.	GHK	02-E-503-1-11/3	
Gepr.	02. Dez. 2003	90050	
Zentrale Absauganlage		B1. 3	
nderung	Datum	Name	Norm
Urspr.	Ers. f.	Ers. d.	11 Bl.



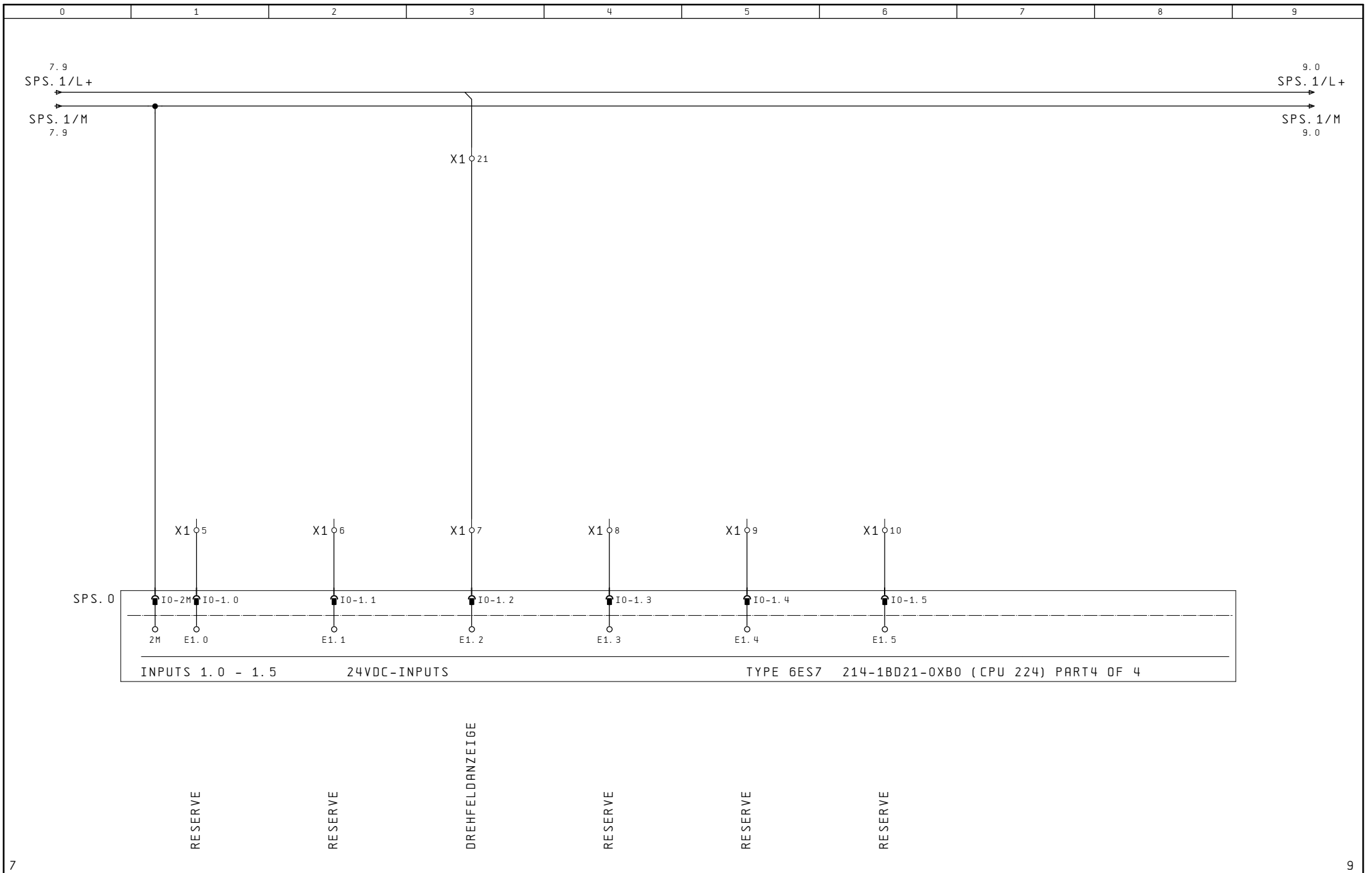
3		Datum		Zentrale Absauganlage		SPS-STEUERUNG KOMPONENTEN		02-E-503-1-11/3		=	
		Bearb. GHK								+	
		Gepr. 02. Dez. 2003						90050		B1. 4	
nderung	Datum	Name	Norm	Urspr.	Ers. f.	Ers. d.					11 Bl.



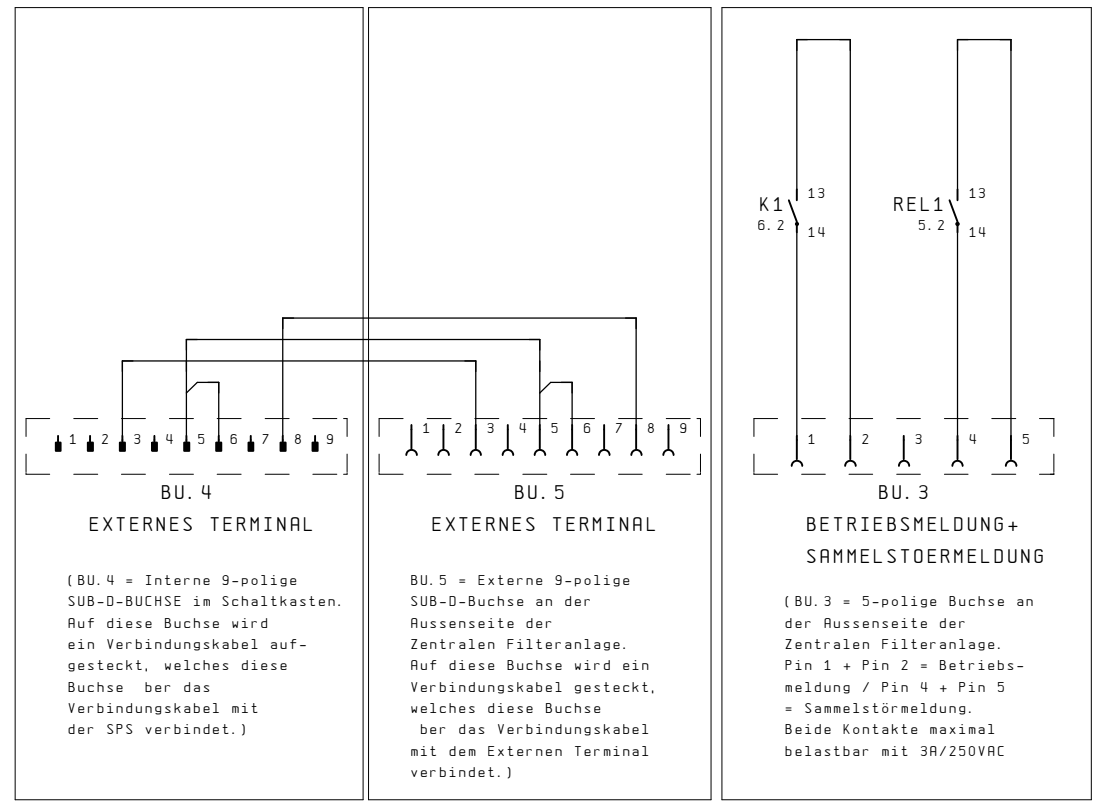
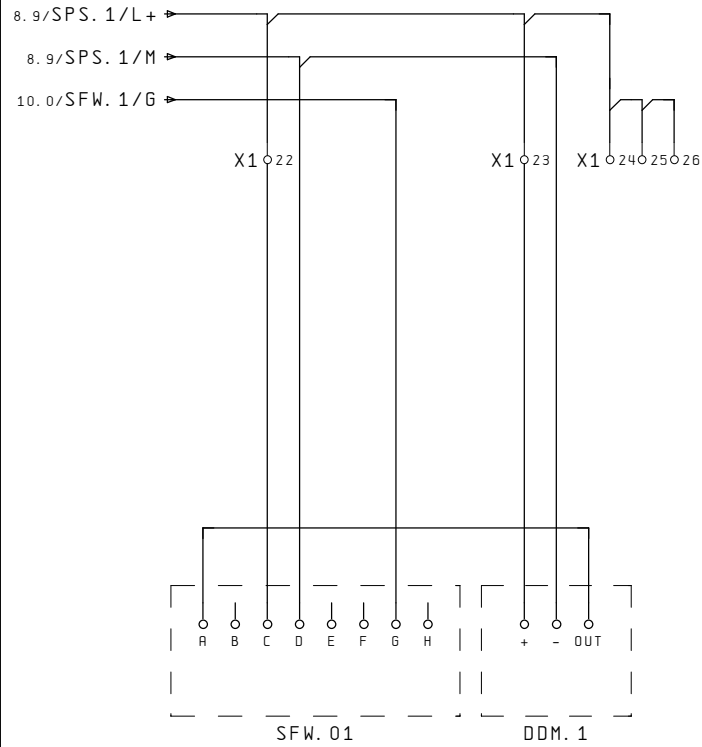
4										6	
Datum		Bearb.	GHK	Zentrale Absauganlage		SPS-STEUERUNG AUSGRENZE		02-E-503-1-11/3			
Gepr.	02. Dez. 2003	Urspr.		Ers. f.		Ers. d.		90050			B1. 5
nderung	Datum	Name	Norm								11 B1.



6		8							
Datum		Zentrale Absauganlage	SPS-Steuerung Eingänge	02-E-503-1-11/3	=	+			
Bearb.	GHK								
Gepr.	02. Dez. 2003								
nderung	Datum	Name	Norm	Urspr.	Ers. f.	Ers. d.	90050	B1. 7	11 Bl.



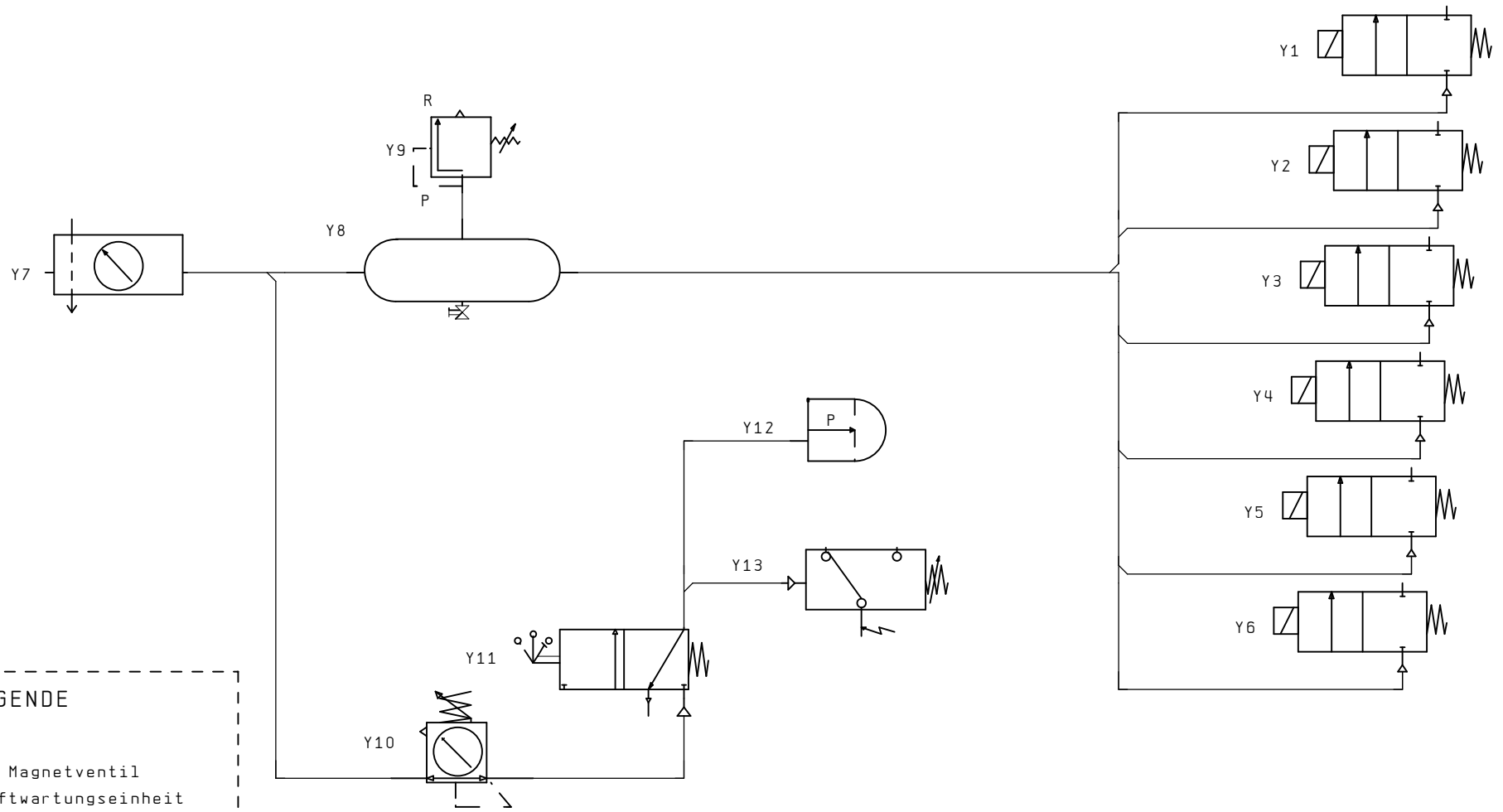
7		9	
Datum		SPS-STEUERUNG EINGANGS	
Bearb.	GHK	02-E-503-1-11/3	
Gepr.	02. Dez. 2003	90050	
Zentrale Absauganlage		B1. 8	
nderung	Datum	Name	Norm
Urspr.	Ers. f.	Ers. d.	11 B1.



(BU. 4 = Interne 9-polige SUB-D-BUCHSE im Schaltkasten. Auf diese Buchse wird ein Verbindungskabel aufgesteckt, welches diese Buchse über das Verbindungskabel mit der SPS verbindet.)

BU. 5 = Externe 9-polige SUB-D-Buchse an der Aussenseite der Zentralen Filteranlage. Auf diese Buchse wird ein Verbindungskabel gesteckt, welches diese Buchse über das Verbindungskabel mit dem Externen Terminal verbindet.)

(BU. 3 = 5-polige Buchse an der Aussenseite der Zentralen Filteranlage. Pin 1 + Pin 2 = Betriebsmeldung / Pin 4 + Pin 5 = Sammelstörungsmeldung. Beide Kontakte maximal belastbar mit 3A/250VAC)



LEGENDE

Y1 bis Y6 = Magnetventil
 Y7= Druckluftwartungseinheit
 Y8 = Drucklufttank (25 L)
 Y9 = Sicherheitsventil (7 bar)
 Y10 = Druckregler
 Y11 = Handhebelventil
 (Hebevorrichtung f r
 Staubsammelbehälter)
 Y12 = Druckluftbalg
 Y13 = Druckschalter

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 9000

Extraction and filter unit with automatic filter cleaning

Ref. 90 050

5.000 m³/h

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

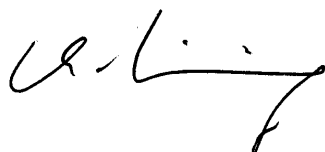
EN 292 part 1 and part 2 security of machinery
EMVG law referring to the electromagnetic consistency of devices
EG 87/404 regulation for compressed air reservoirs

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

i. V. Dipl.-Ing. Manfred Könning



Deutschland/Germany

KEMPER GmbH
Von-Siemens-Str. 20
D-48691 Vreden
Tel.: 0 25 64/68 - 0
Fax: 0 25 64/68 - 120
mail@kemper.de
www.kemper.de

Frankreich/France

KEMPER sàrl
ZI du Ried
F-67590 Schweighouse Sur Moder
Tel.: 03 88 07 29 80
Fax: 03 88 07 20 10
mail@kemper.fr
www.kemper.fr

Tschechien/Czech Republic

KEMPER spol. s r.o.
Zděbradská 78
CZ-251 01 Říčany-Jažlovice
Tel.: 323 616 631
Fax: 323 616 630
mail@kemper.cz
www.kemper.cz

Polen/Polen

KEMPER Polska Sp. z o.o.
Al. Korfanteo 2
PL 40-004 Katowice
mail@kemper.com.pl
www.kemper.com.pl

Niederlande/Netherlands

KEMPER BV
Hartebroekseweg 58
NL-7141 VE Groenlo Verkoopkantoor
Tel.: 0049-2564-68152
Fax: 0049-2564-68120
mail@kemper-bv.nl
www.kemper-bv.nl

Großbritannien/Great Britain

KEMPER U. K. Ltd.
Venture Court
Debdale Road / Wellingborough
Northamptonshire, NN8 5AA
Tel.: 01327/872909
Fax: 01327/872181
mail@kemper.co.uk
www.kemper.co.uk

USA

KEMPER America
6659 Peachtree
Industrial Blvd S
Suite C
Norcross, GA 30092
Tel.: 770/416 7070
Fax: 770/416 7306
mail@kemper-usa.com
www.kemper-usa.com

España / Spain

KEMPER IBÉRICA, S.L.
C/ Ferrer y Guardia n°1
Local 4 y 5
E-08110 Montcada i Reixac
(Barcelona)
Tel.: (93) 572 62 90
Fax: (93) 572 62 93
mail@kemperiberica.es
www.kemperiberica.es