GETINGE

GETINGE 86-SERIES
TECHNICAL MANUAL
502606900

SEV0725001-

GETINGE

Contents

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FOREWORD

This service manual is intended for maintenance and service personnel working with Getinge 86-series washer disinfectors.
The service manual is divided into the following sections:

- Safety regulations
- Introduction to the machine
- Preventive maintenance
- Fault indications and troubleshooting
- Software description and menu tree
- Repair and adjustments
- Electrical diagram of the washer disinfector
- Monitoring system (option)
- Electrical diagram of the monitoring system

The purpose of the service manual is to provide information for the maintenance and service personnel whose job it is to ensure safe operation with optimum efficiency.
Before starting work on the machine, the maintenance and service personnel must have read the safety instructions in this manual and familiarised themselves with the operation of the machine and its safety instructions.

Read the safety instructions in the service manual before starting work on the machine.

The information in this manual describes the machine as dispatched from Getinge. There may be differences due to customization.
The machine is accompanied by the following documentation:

- User manual
- Installation manual
- Technical manual (this book)
- Spare parts list
- Goods positioning instructions

The goods positioning instructions supplied must be put up in a clearly visible position at the time of installation.
Getinge reserves the right to change the specification and design without prior notice.
The information in this manual was up to date on the date of issue of the manual.

SAFETY REGULATIONS

This machine has been designed with a number of built-in safety devices.
To avoid injury, it is highly important not to bypass or disable these safety devices.

NOTE:
Before starting any servicing or maintenance work on the machine, isolate it from the incoming electrical supply and shut off water and steam supplies.

Important

- Take care when handling the process chemicals used in the machine. Read the details on the container or contact the manufacturer:
  - if the agent comes into contact with the operator's eyes or skin or if the vapors are breathed in, etc.
  - about storing the agent and disposing of empty containers.
- The machine must be connected in accordance with the installation instructions. (Check against the rating plate)
- The machine may only be operated by adults.
- Installation and service work must be done by personnel trained in the use of this machine.
- Never bypass the door switch of the machine.
- Leakage in the system, due to a worn door seal for example, must be repaired without delay.
- Before doing any repair and service work, the personnel concerned must study the relevant handbooks and service manuals.
- Before welding begins on or close to the machine, all wiring connected by plugs and sockets must be disconnected from all circuit boards in the machine.
- The machine must not be hosed down with water.
- Take care when using corrosive detergents.
- Precautions must be taken with hot water and steam.
- Run a program with disinfection before starting servicing work. If this is not possible, disinfect the machine with disinfectant before starting servicing work.
- Before starting servicing work on the machine, make sure that the machine (booster tank and chamber) does not contain any water.
- Before starting any servicing or maintenance work on the machine, isolate it from the incoming electrical supply and shut off water and steam supplies.
- Spare parts must be obtained only via Getinge EDC.

In an emergency

- Switch off the main switch
- Close stopcocks in the water and (where present) steam supply lines.

Product liability

Any modification or incorrect use of the equipment without the approval of Getinge Disinfection AB invalidates Getinge Disinfection AB's product liability.
This product was manufactured by:
GETINGE DISINFECTION AB
Ljungadalsgatan 11, Box 1505
351 15 Växjö, Sweden

CE 0413

Isolating device

The machine must be fitted with a separate isolating device in the electric power supply.
The isolating device must be easily accessible on a wall close to the machine.

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INTRODUCTION

Intended use of the machine

Getinge 86-series washer disinfectors are intended for cleaning, disinfecting and drying surgical instruments (solid and tubular), dishes, hand bowls and baby feeding bottles, containers, anesthesia equipment (critical objects such as surgical instruments and anesthesia equipment must also be sterilized before use), laboratory glass and OP shoes.

The items must be placed in the proper accessories, recommended by Getinge Disinfection AB.

The customer is responsible for ensuring that an Installation Qualification and a Performance Qualification according to ISO 15883 are carried out before the product goes into service.

Incorrect use may result in damage and injury.

Attention symbols

Some of the warnings, instructions and advice in this manual are so important that we use the following special symbols to draw attention to them. The symbols and designs used are:

This symbol indicates a warning in the service manual. It warns of a hazard that may lead to more or less severe injury and in certain cases mortal danger.
It also highlights warnings to avoid damage to equipment.

This symbol highlights a warning in the text of the service manual dealing with the handling of components sensitive to ESD. The hazard that it warns about may result in damage to hardware and/or circuit boards.

This symbol highlights the risk of injury by burning. The part or the surface may be very hot.

This symbol shows that voltage is or may be present in the machine or parts of the machine.

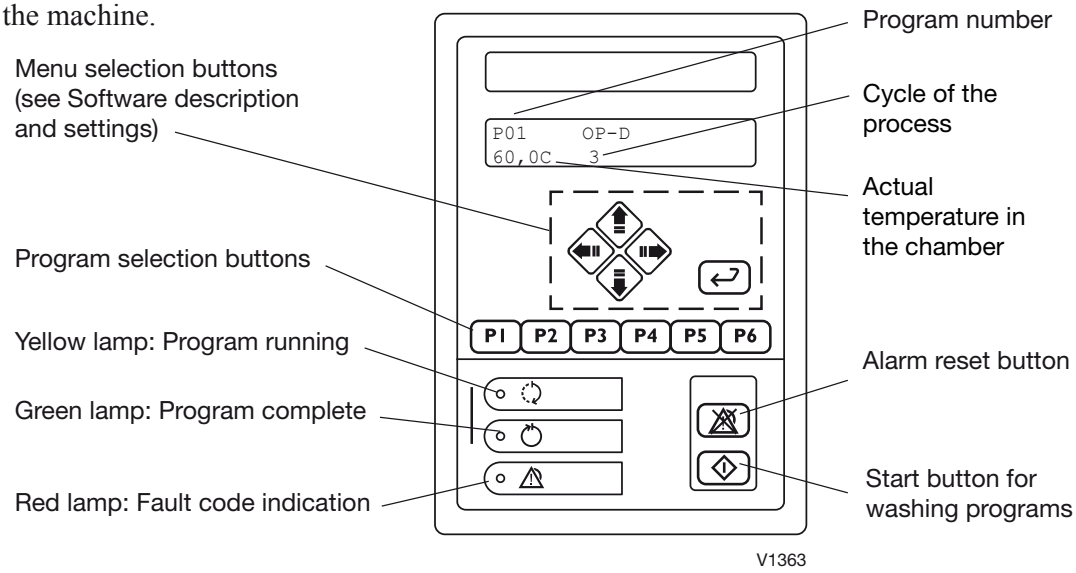
Description

General

A description of the mechanical design and general functions of the machine is given the instruction manual. This section contains a general description of the control system For detailed information about the software and its settings, see Chapter 4, Software description and settings.

Control system

The machine has an electronically programmable control system which can hold 12 programs. The control system is operated from the control panel above the door of the machine.



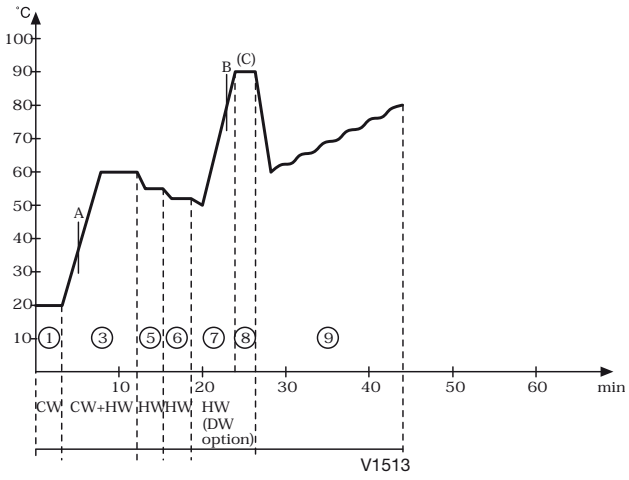
Six of these programs can be started with the program selection buttons. With P1-P6 you can choose up to six programs. If the control system has more programs, the subsequent ones are chosen from a scrollable list. You can reach the list of available programs (from standby mode), by pressing ↵ twice and choosing a program with ◈ or ◈. Confirm the chosen program with ↵ .

The machine comes with a number of standard programs in the programmer (see the appendix for Standard programs). Parameters in these programs can be modified to suit the needs of individual users. Individual programs can be created with a PC. An entire standard program or parts of one can be used as a starting point for programming. Programming may only be done by an authorized service technician.

Programs are chosen with the program selection buttons and the program is started with ◈ (starting of a program is indicated by the yellow lamp at ↻ flashing for ten seconds and then going out).

When the program is complete, the green lamp at ⏻ lights up and the door can be opened manually (on a machine with manual door). With an automatic door, the door opens automatically when the program is complete.

The illustration on the next page shows the program sequence in the OP-D program.



Program cycles

①	Pre-rinse 1	A	Alkaline detergent
②	Pre-rinse 2	B	Neutralisation
③	Wash	C	Instrument milk **(extra equipment)** If instrument milk is dosed, neutralisation is not dosed.
④	Neutralize		
⑤	Post-rinse 1		
⑥	Post-rinse 2		
⑦	Final rinse		
⑧	Disinfection		
⑨	Drying		

Aborting program start

A started program can be aborted within ten seconds of the door being locked. To abort a started program, press ◇ again. During the period when the program can be aborted, a yellow lamp flashes at ↻. The door is unlocked and opened automatically and the machine can be restarted in the usual way.

Aborting a running program

While a program is running, the machine can be stopped with the main switch.
If the power is switched on again within 60 seconds, the program continues until the end. If the power is switched back on after more than 60 seconds, fault code `F00 PWR FAILURE` is displayed. To acknowledge the alarm, first silence the audible signal by pressing ⊠. When the fault has been corrected, enter the password and confirm by pressing ↵. All liquid is drained from the machine and the soiled-side door is unlocked and goes down.

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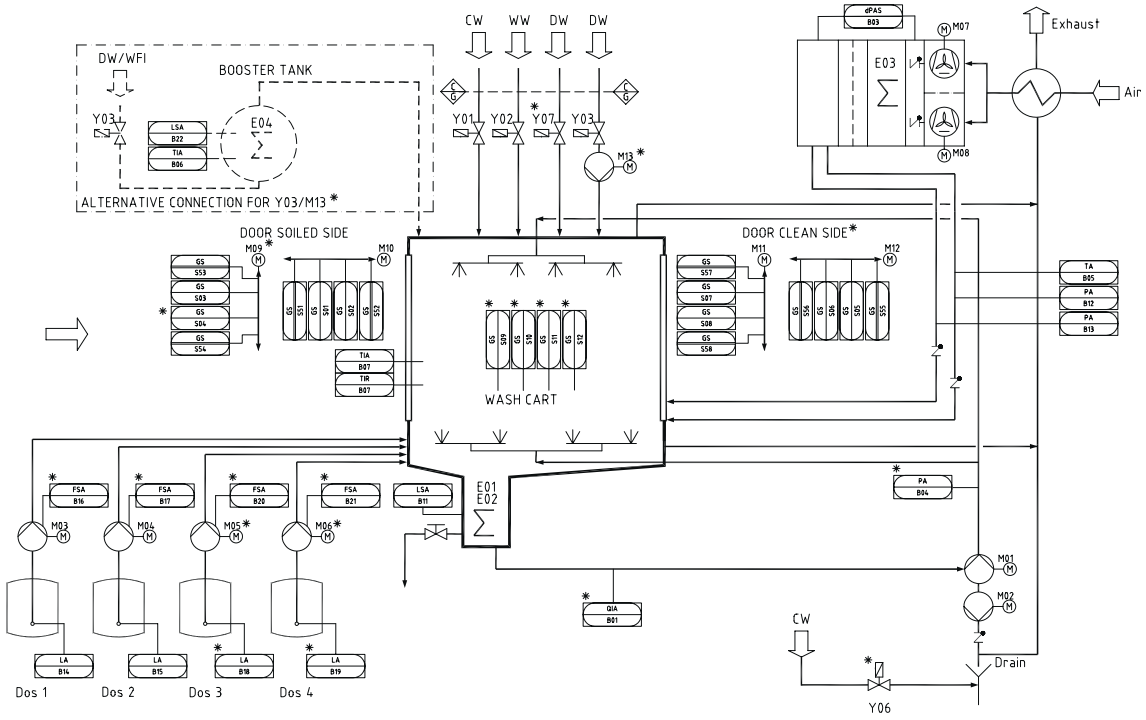
Schematic diagram

Electric heating



Explanation of symbols

Connection lines etc.

- Main flow line
- Subsidiary flow line
- Optionel equipment
- Optionel equipment
- DN15 — Dimension of piping
- Connections
- No connections
- Getinge / Customer — Limits of supply with identification code
- Flow direction
- Spray Nozzle

Heat exchangers

- Heat exchanger air/air

Valves

- Valve manually activated
- Valve solenoid activated
- Valve pneumatic activated

Motor Objects

- Pump
- Blower/Fan
- Electric heater
- Electric motor

Filters

- Filter air
- Filter liquid

Motor Objects

- Pump
- Blower/Fan
- Electric heater
- Electric motor

Auxilliary

- Check valve
- Steam trap
- Drain
- Hose

Instrument functions

- Control system connected instr.
- Local control (Hardware)
- Local
- LSA B11 — Instrument function / Tag number

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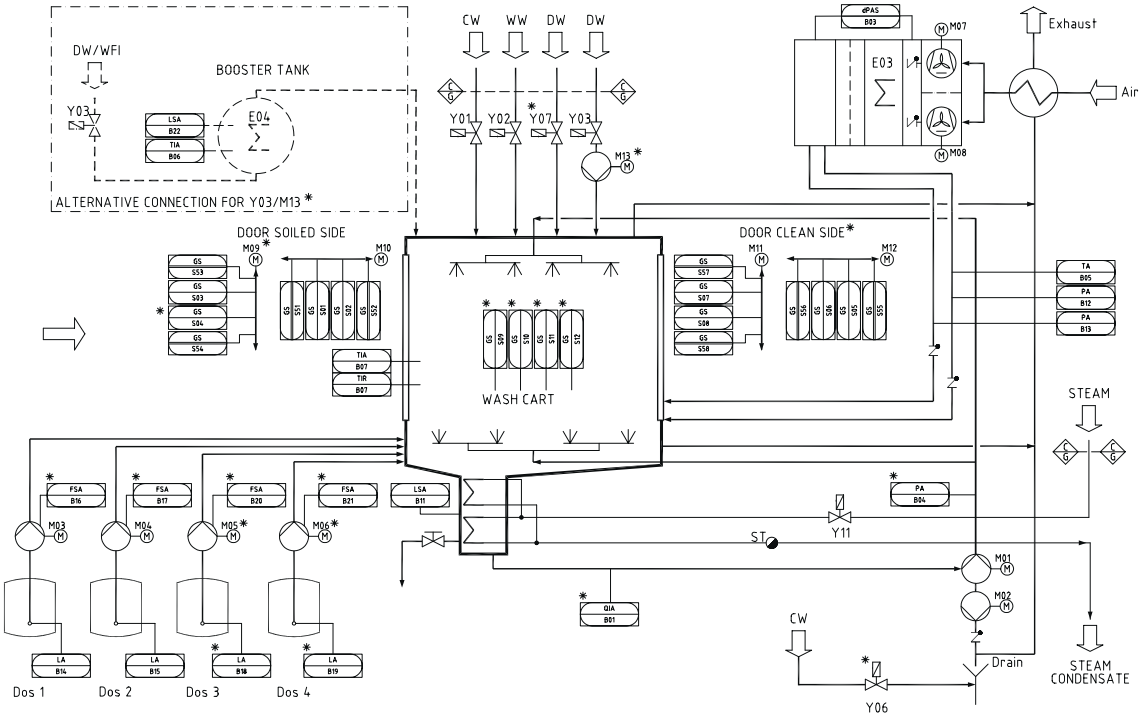
Steam heating



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Explanation of symbols

Connection lines etc.

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Instrument functions

- Control system connected instr.
- Local control (Hardware)
- Local
- LSA B11 Instrument function / Tag number

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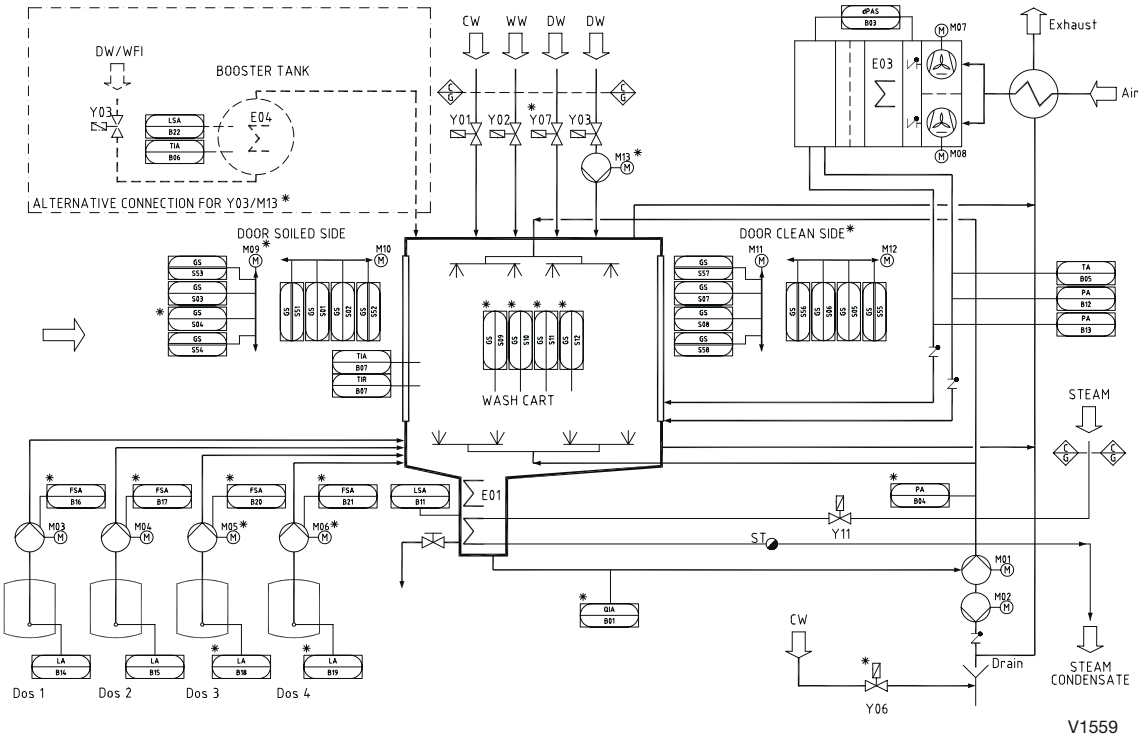
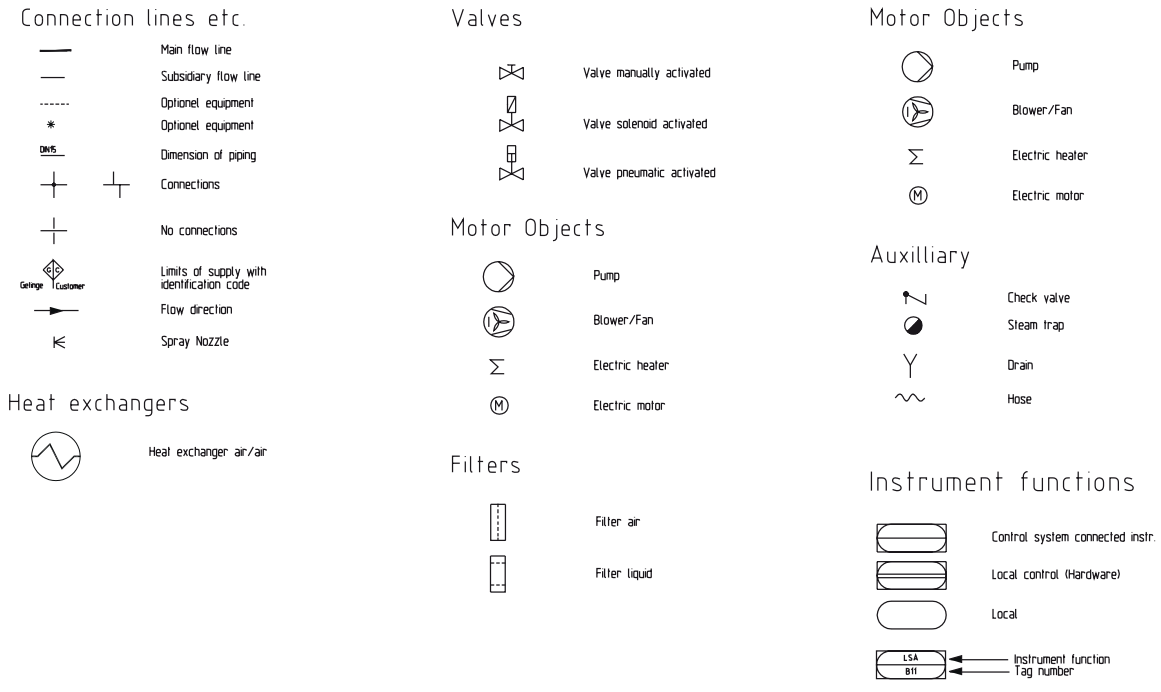
Steam and electric heating



Explanation of symbols



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Software description and settings

Description

This section describes the PACS 300 control and monitoring system. The purpose of the control system is to issue orders and send them to the executive components of the washer-disinfector so that a number of process steps can be performed in accordance with a predetermined template. The order signals are worked out by the computer program of the control unit in conjunction with measurements of actual parameter values for the current program. These are usually times, temperatures and pressures.

Several different pieces of equipment can be connected to the control unit for programming, monitoring and documenting the disinfection processes.

The operator communicates with the control unit via a control panel or an ordinary PC. All operator panels can be used to monitor the processes, since they display all the set parameter values as well as actual values on request. All relevant data associated with a given process, such as batch number, operator number, date, etc., can be entered by the operator.

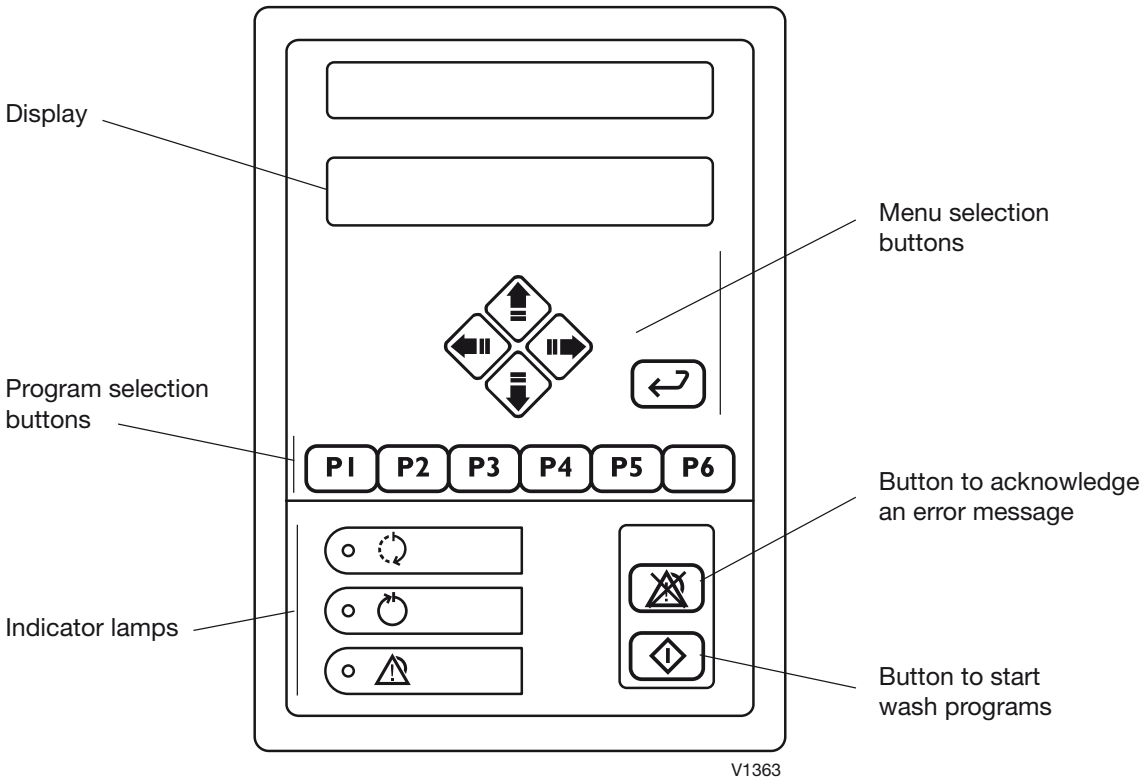
Programs, system definitions and process data can be documented by connecting a printer to the unit. A host computer can also be connected directly to the CPU of the control system.

When the need arises, a measuring and monitoring system entirely independent of the control system can be set up by connecting a PACS MONITORING SYSTEM, consisting of CPU, operator panel and connections to the control unit CPU. The measurements of the MONITORING SYSTEM are done by its own separate temperature and pressure sensors.

The computer contains programs for automatic calibration of the temperature and pressure sensors. Where alternative correction constants are known, they can be entered manually. The testing functions include means of activating analog and digital outputs and for monitoring analog and digital inputs.

Control panel

The buttons on the control panel are used to choose programs, navigate the menu tree, acknowledge fault codes, etc.



Display

The display has two lines, each with a capacity of 20 characters.

```
P01 OP-SHORT-D
47.0 °C
```

Information or error messages appear on the bottom line and replace the text that would otherwise appear here.

Program selection buttons

With P1-P6 you can choose up to six programs. If the control system has more programs, the subsequent ones are chosen from a scrollable list. You can reach the list of available programs (from standby mode), by pressing ↵ twice and choosing a program with ◇ or ◇. Confirm the chosen program with ↵.

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Menu selection buttons

The are five buttons for navigating the panel. These fixed buttons are four arrow buttons that control the cursor ( ,  ,  and ) and .

-  Used to go back one step (up one level) in menus. If the button is held down for a little longer, you are returned to the main menu.
-  Not used in menus and lists.
-  Shows the next object in the list.
-  Shows the previous object in the list.
-  Goes to the chosen object in the list or opens a field for editing if there is an editable field.

Scrolling in menus and lists

You can use ◄, ►, ▼ and ▲ to scroll through menus and lists. You can scroll either line by line or two lines at a time, depending on what is displayed. The top line of the list may look like the example below.

```
>PRINT LAST PRG.
 SYSTEM              V
```

The angle bracket ">" to the left of the top line shows which object will be chosen if you press ↵. Bottom right there is a "v" indicating that there are more objects in the list which are displayed if you press ▼.
This is what you see if you are in a list. The "arrows" to the right show that there are objects both above and below the displayed line.

```
>SYSTEM                  ^
 APPLIANCE INFO
```

When you reach the end of the object list, only one up-arrow appears at the right edge of the display. Menus and lists are "endless"; you can reach the top of the list by pressing ▼ at the end of the list.

```
 SYSTEM                  ^
>APPLIANCE INFO
```

Field editing

↵ opens the chosen field for editing. Use ▲ or ▼ to change the content of the field These arrow keys scroll in an endless list containing numbers. When a field is opened for editing, the first character is highlighted. To move the cursor use ◄ or ►.
Entered values are saved when you press ↵. On saving, the system checks that the value is in the permitted range.

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Passwords

There are four passwords with different levels of authorization in the system program. The operator password has the lowest authority; the programming password has full authority.

The following password levels are as follows:

- Operator - code 558387.
- Supervisor - contact service for code.
- Service - contact service for code.
- Programming - contact service for code.

Note: In the menu tree, where a password must be entered, there is a letter code (between PW: A-K) which indicates which function the respective password level gives authorisation for.

When a password is being entered, the top line shows “ENTER PASSWORD”. Press ↵ to open the entry field for editing . Each digit can be changed with ◆ and ◆. ◆ and ◆ toggle between the digits. Press ↵ to confirm the entered password. If the wrong password is entered, “WRONG PASSWORD” appears on the first line. Press ↵ to return to the display that shows “ENTER PASSWORD”.

Note: The password cannot be changed.

Operator

Code in menu tree	Authority to change
A	Parameters of type A and to see parameters of type I.
D	acknowledge alarms

Supervisor

Code in menu tree	Authority to change
A	Parameters
B	Calendar (time and date)
C	Sensor calibration
D	Acknowledge alarms
H	Process-critical configurations, parameters of type P
J	Password configuration
K	Documentation

Service

Code in menu tree	Authority to change
A	Parameters:
B	Calendar (time and date)
C	Sensor calibration
D	Acknowledge alarms
E	Service messages
F	DIP switches
G	Non-critical system configurations.
H	Process-critical configurations, parameters of type P
J	Password configuration
K	Documentation

Programming

Code in menu tree	Authority to change
A	Parameters:
B	Calendar (time and date)
C	Sensor calibration
D	acknowledge alarms
E	Service messages
F	DIP switches
G	Non-critical system configurations.
H	Process-critical configurations, parameters of type P
I	Programming (phases and programs)
J	Password configuration
K	Documentation

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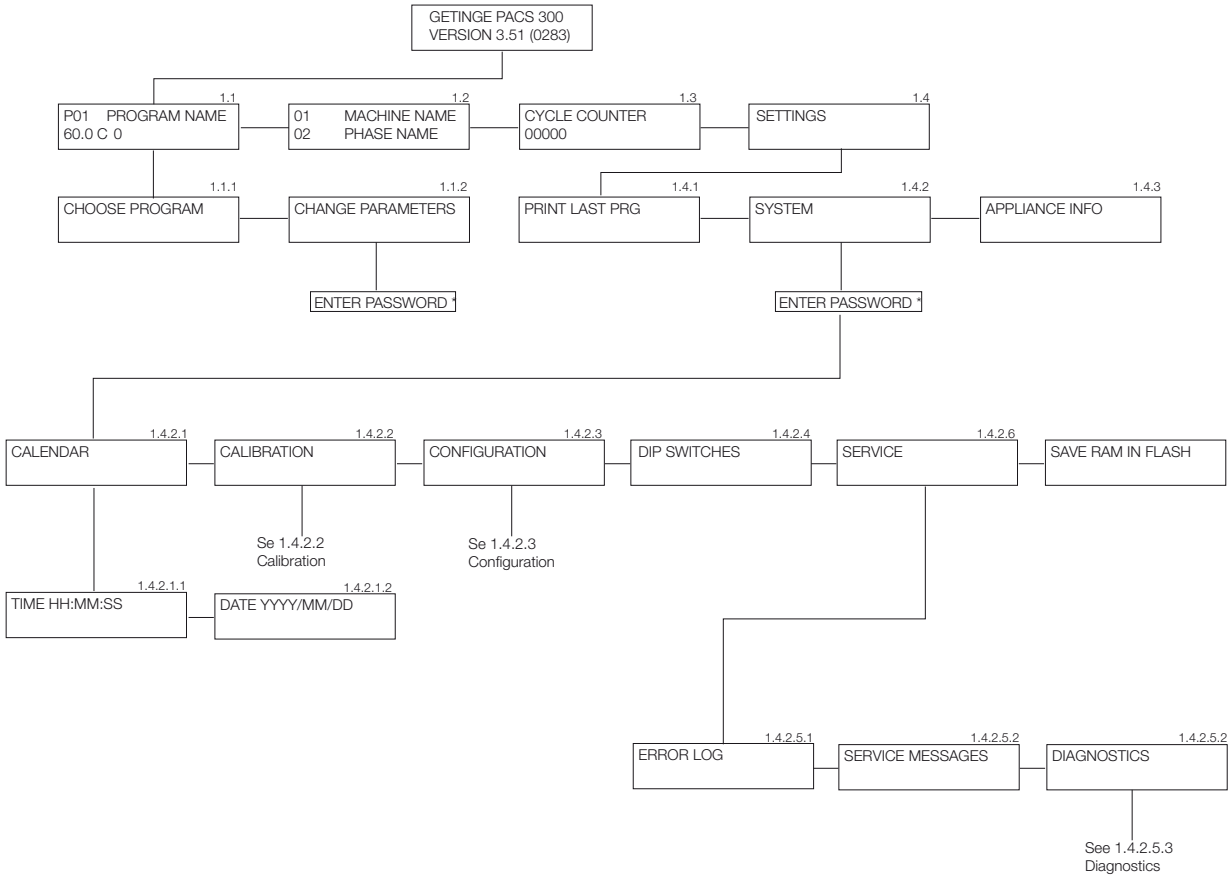
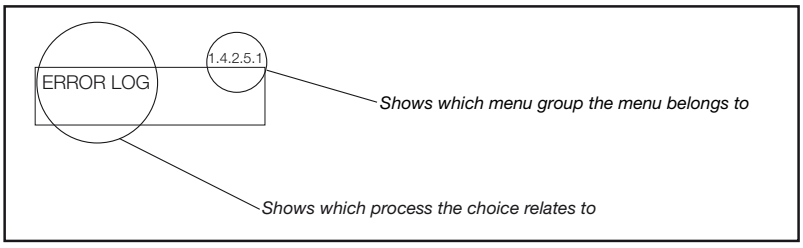
Menu tree

Menu tree



* Operator password required
** Service personnel password required



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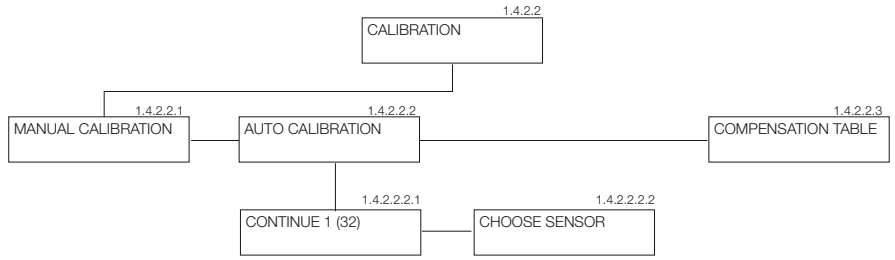
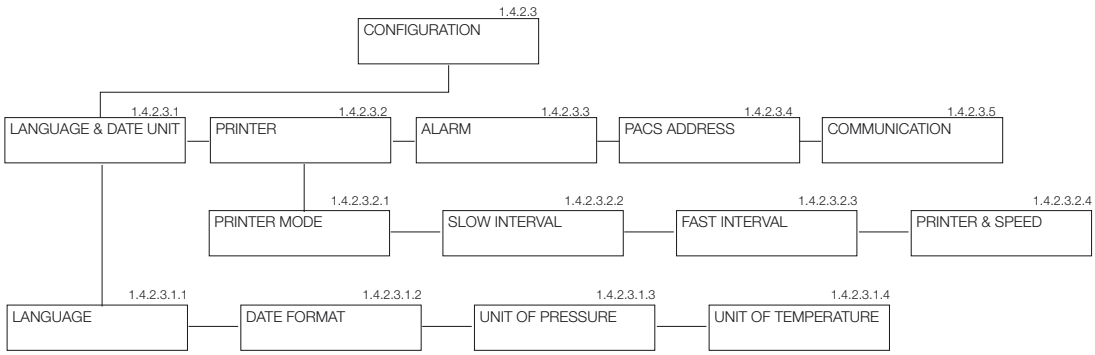
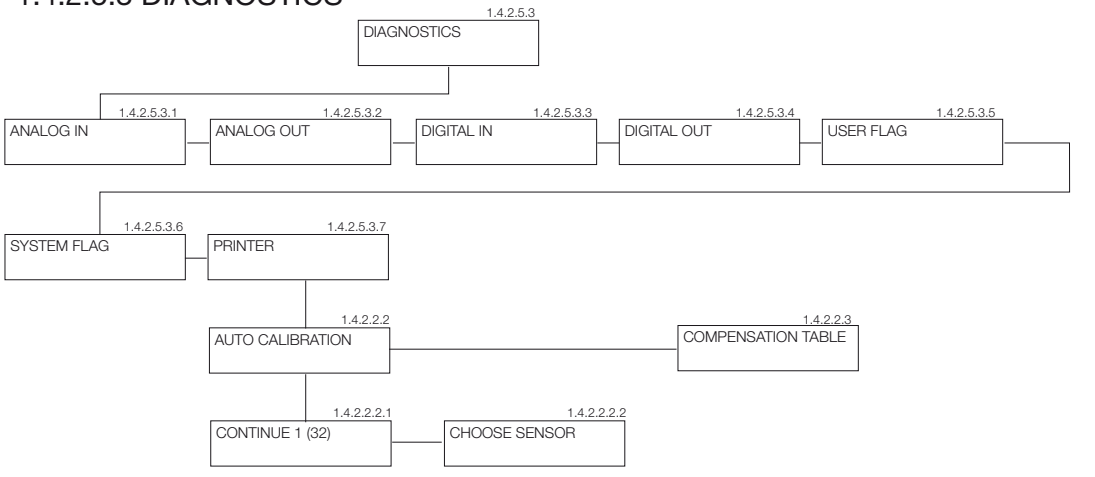
1.4.2.2 CALIBRATION



1.4.2.3 CONFIGURATION



1.4.2.5.3 DIAGNOSTICS



Main menu 1, Program name (1.1)

In standby mode the top line of the display shows the name of the last cycle chosen. The second row shows two preselected values. Normally the temperature in the machine and the cycle counter are displayed. The main purpose of this menu is to choose a wash cycle and to be able to change parameters.

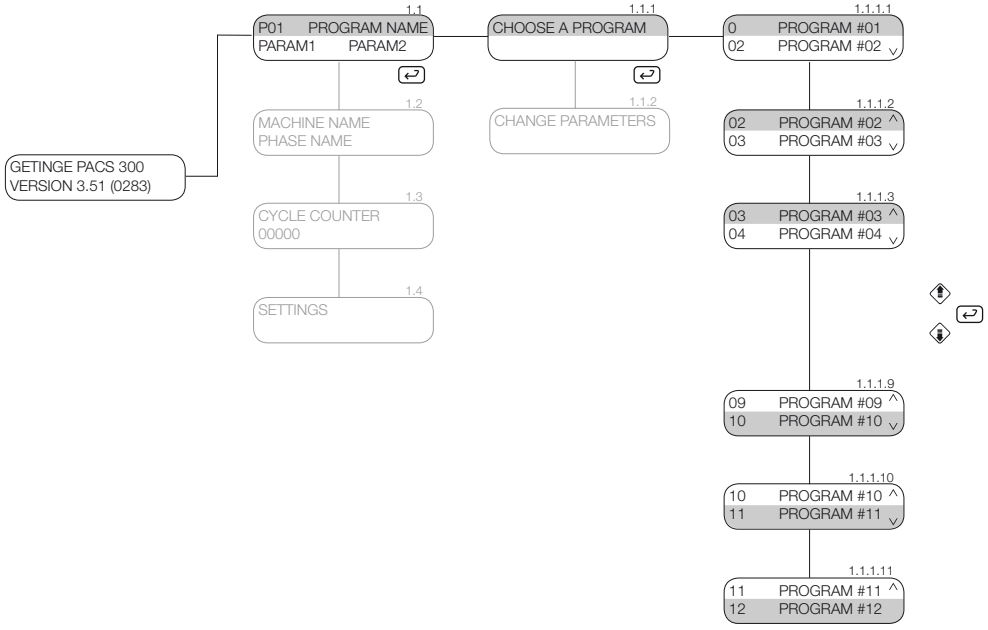
This menu has two submenus.

SELECT PROGRAM (1.1.1)

CHANGE PARAMETERS (1.1.2)

Choose program

In main menu 1, press ↵ to go to the SELECT PROGRAM menu. Then press Enter again to reach the various programs. Use the ◈ and ◈ buttons to highlight the program you want to use. To select a program press ↵. The cycles are pre-configured in the program and cannot be changed by the operator.



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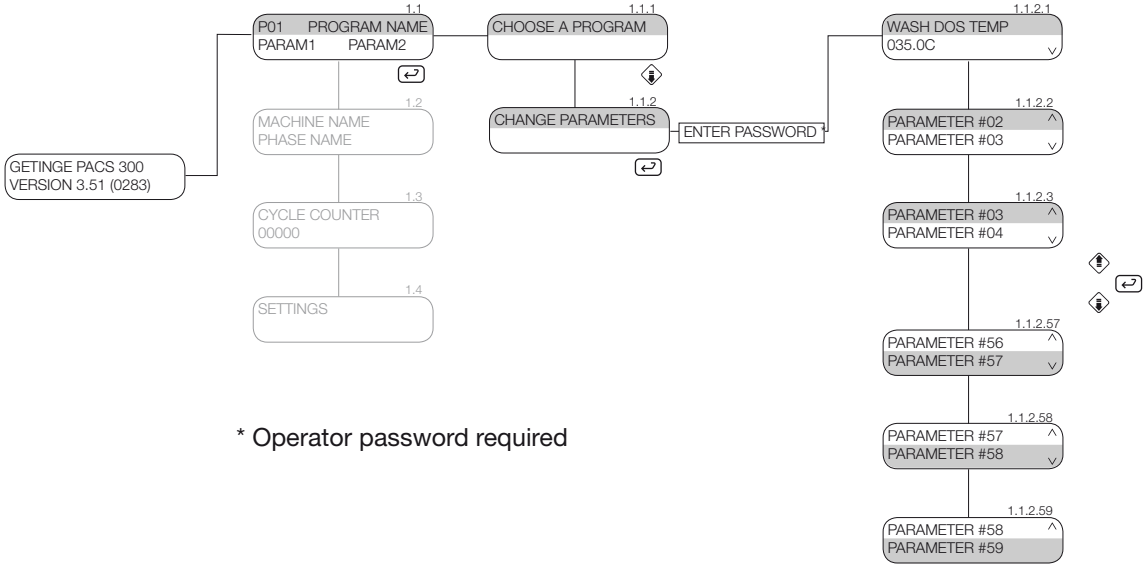
Change parameters (1.1.2)

In main menu 1, press ⏎ to go to the SELECT PROGRAM menu. Then press ◈ to activate “CHANGE PARAMETERS”. To select a program, press ⏎ again.

Every cycle has a set of preset parameters. When a cycle has been chosen as explained in the previous section, the parameters appear on the display. The number of the parameter depends on how the cycle was configured when it was created in the program.

The parameters that have an “A” indication in the bottom right corner are adjustable. With a class A password, the value can be changed by pressing ⏎.

If there is a letter “I” at the same place, the parameters are only for information. P parameters can only be changed with class A + H passwords.



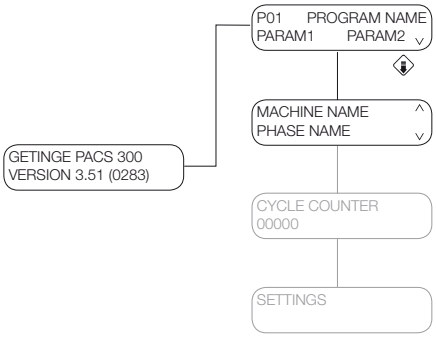
* Operator password required

Main menu 2, Machine name (1.2)

Main menu 2 shows information about the machine and the current phase. The information cannot be changed.

Machine information (1.2)

The top line shows name/ID of the disinfection program and the bottom line shows the current phase.

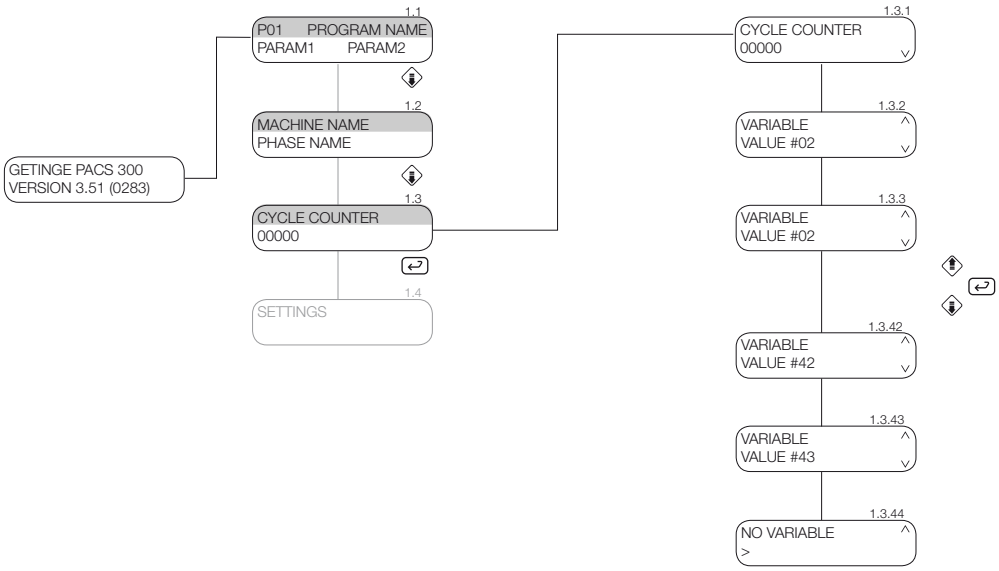


Main menu 3, Cycle counter (1.3)

In this menu, a selectable variable can be displayed. The top line shows the name of the variable and the bottom line shows the value of the variable.

Variable list (1.3.1...)

There is a configured number of variables for every cycle. This list is only for information about the variables. To choose the variable you want to see, press ◈ or ◈, then press ↵ to display the chosen variable.



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Main menu 4, Settings (1.4)

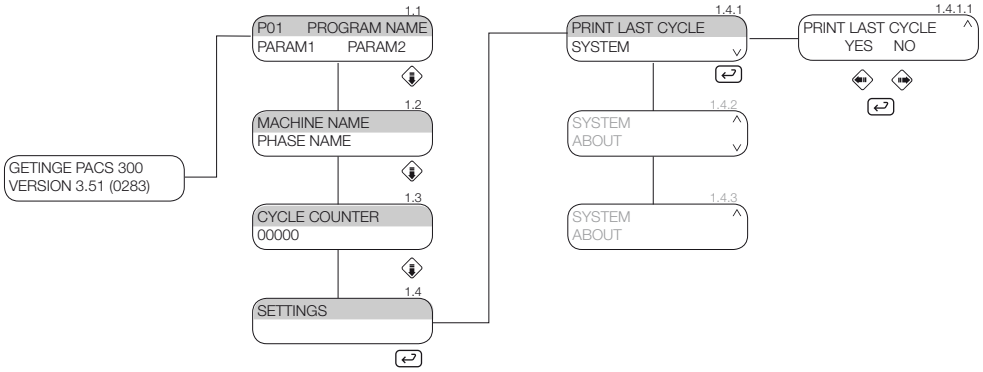
Main menu 4 is the settings menu for the machine. The settings menu has three submenus.

Print the parameters of the chosen cycle	(1.4.1)
System setting menus.	(1.4.2)
Appliance information.	(1.4.3)

Print parameters of the chosen cycle (1.4.1)

When a cycle has been chosen in main menu 1, the parameters of that cycle can be printed out.

Press ◈ three times to reach the settings menu, then press ↵ to choose settings. Pressing ↵ once more brings up the printing screen. Use ◈ or ◈ to choose “YES” to start printing or “NO” if you do not want to print the chosen cycle.



System menu (1.4.2)

The system settings menu has six submenus.

A calendar where you can enter the date and time.	(1.4.2.1)
Calibration of analog entry values.	(1.4.2.2)
Configuration of devices such as printer, alarms, alarm clocks and node addresses.	(1.4.2.3)
DIP switches.	(1.4.2.4)
Service menu with fault message, service message and diagnostics.	(1.4.2.5)
Save RAM in flash.	(1.4.2.6)

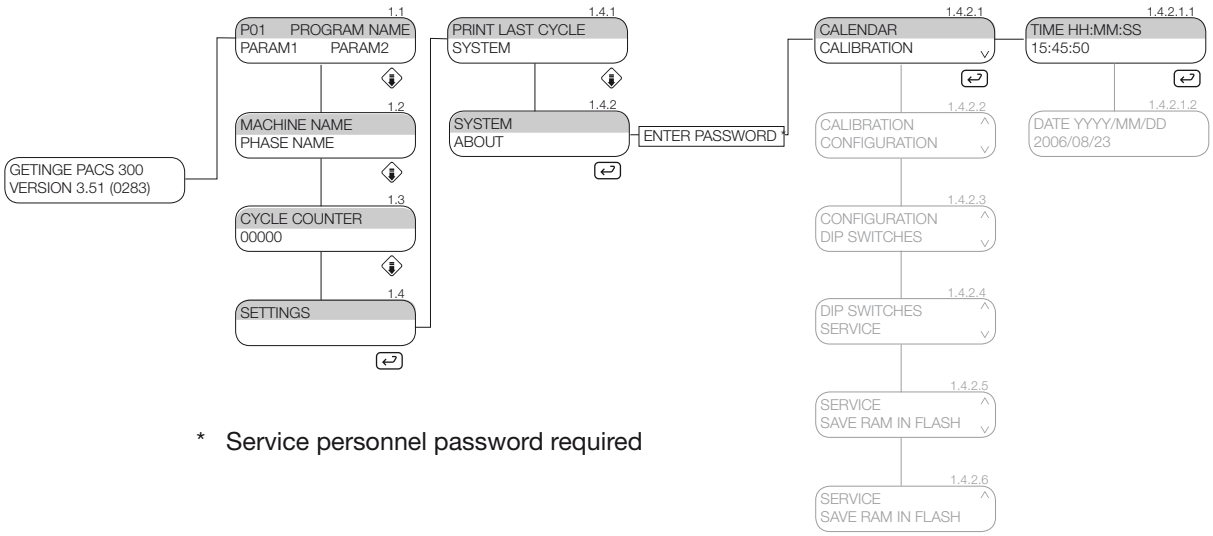
Calendar menu (1.4.2.1)

The time and date can be set in this menu. There is a submenu for each function.

Set time.	(1.4.2.1.1)
Set date.	(1.4.2.1.2)

Time menu (1.4.2.1.1)

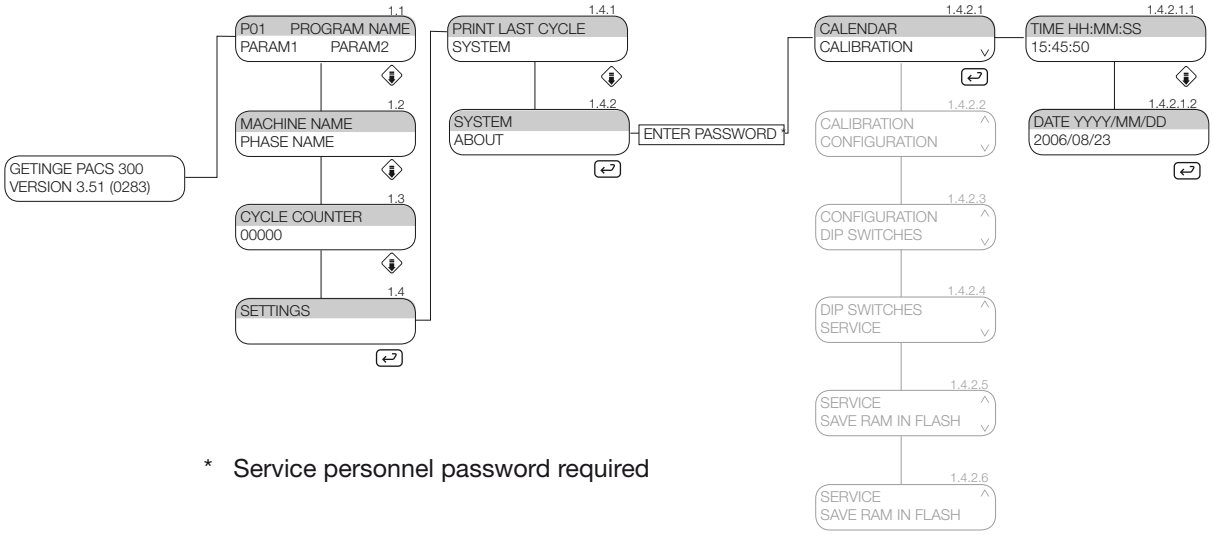
To set the time, follow the instructions in the menu tree below. Enter password and press ⏎ when the calendar menu has been chosen. To set the time, press ⏎. To change the time press ▲ and ▼ until the desired time is displayed. Then use ◀ or ▶ to change field. When the value is correctly set, press ⏎ to confirm the change.



* Service personnel password required

Date menu (1.4.2.1.2)

To set the date, follow the instructions in the menu tree below. Enter password and press ⏎ when the calendar menu has been chosen. To set the date, press ⏎. To change the time press ▲ and ▼ until the desired date is displayed. Then use ◀ or ▶ to change field. When the value is correctly set, press ⏎ to confirm the change.



* Service personnel password required

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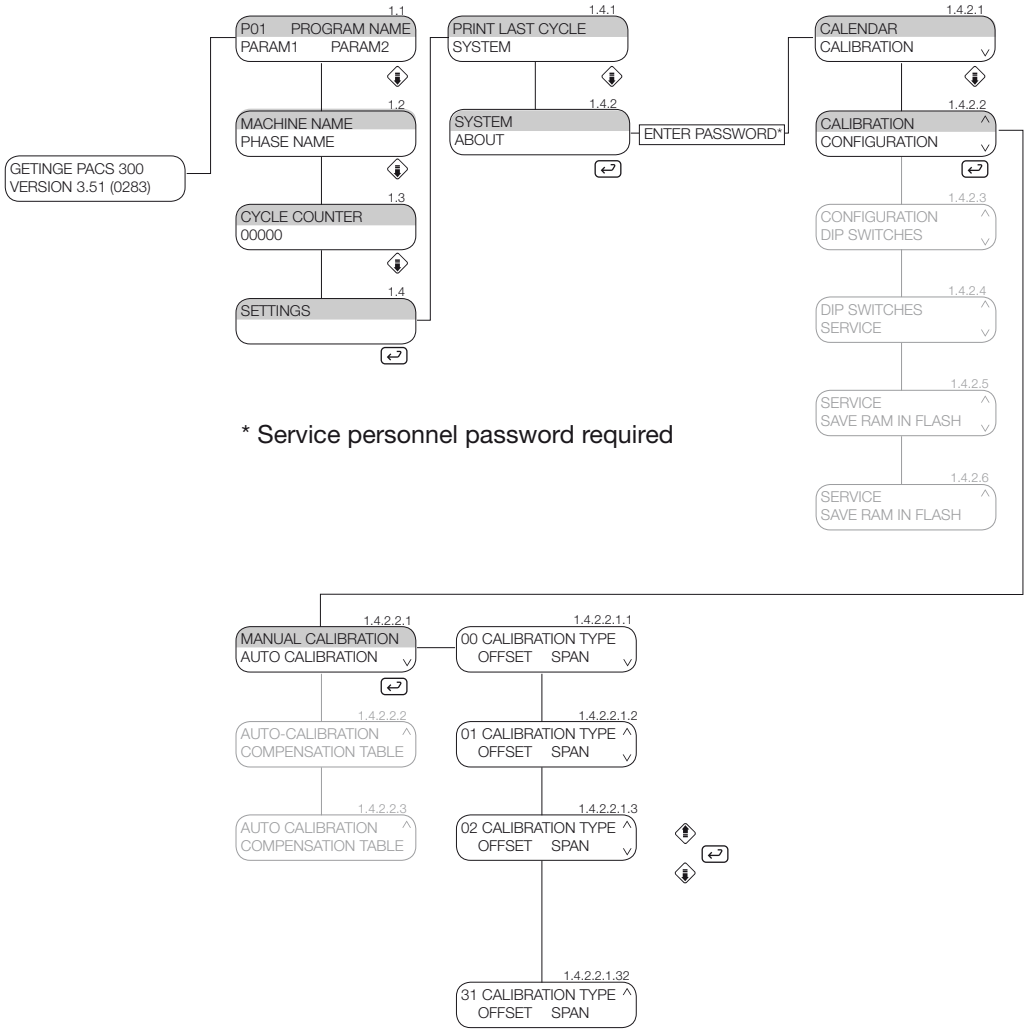
Calibration menu (1.4.2.2)

The calibration menu is used to calibrate analog entry values. There are three submenus for calibration.

Manual calibration.	(1.4.2.2.1)
Automatic calibration.	(1.4.2.2.2)
Adjusting the compensation table.	(1.4.2.2.3)

Manual calibration menu (1.4.2.2.1)

In manual calibration, two values for A-Gain and B-offset can be entered manually. To access manual calibration, follow the instructions in the menu tree below. To change values, press ◈ and ◈. Then use ◈ or ◈ to change field. When the time is correctly set, press ↵ to confirm the change.



Automatic calibration menu (1.4.2.2.2)

This menu has two submenus.

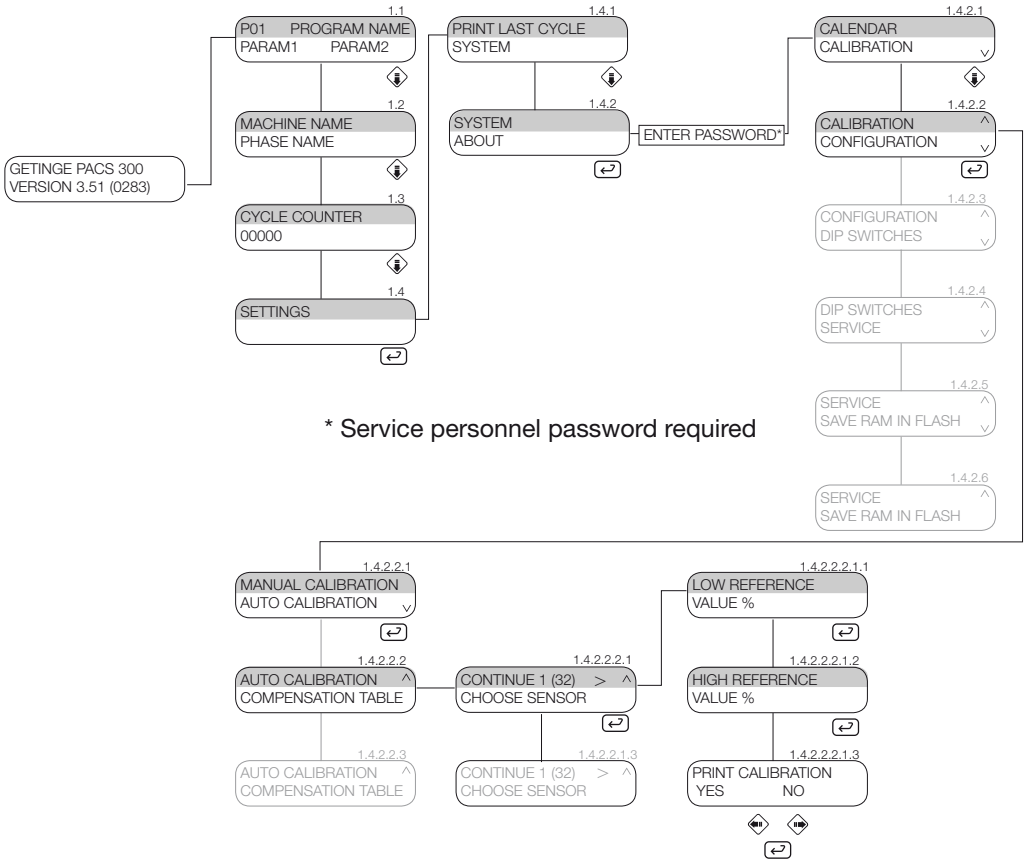
Continue. (1.4.2.2.2.1)

Choose a sensor. (1.4.2.2.2.2)

With automatic calibration, you must choose a sensor for calibration. Do this in the Choose a sensor menu. When one or more sensors have been chosen for calibration, the Continue menu shows how many sensors have been chosen and an arrow appears on the right of the display. When you quit the calibration menu, all chosen sensors are deselected.

Calibrate the chosen sensor (1.4.2.2.2.1)

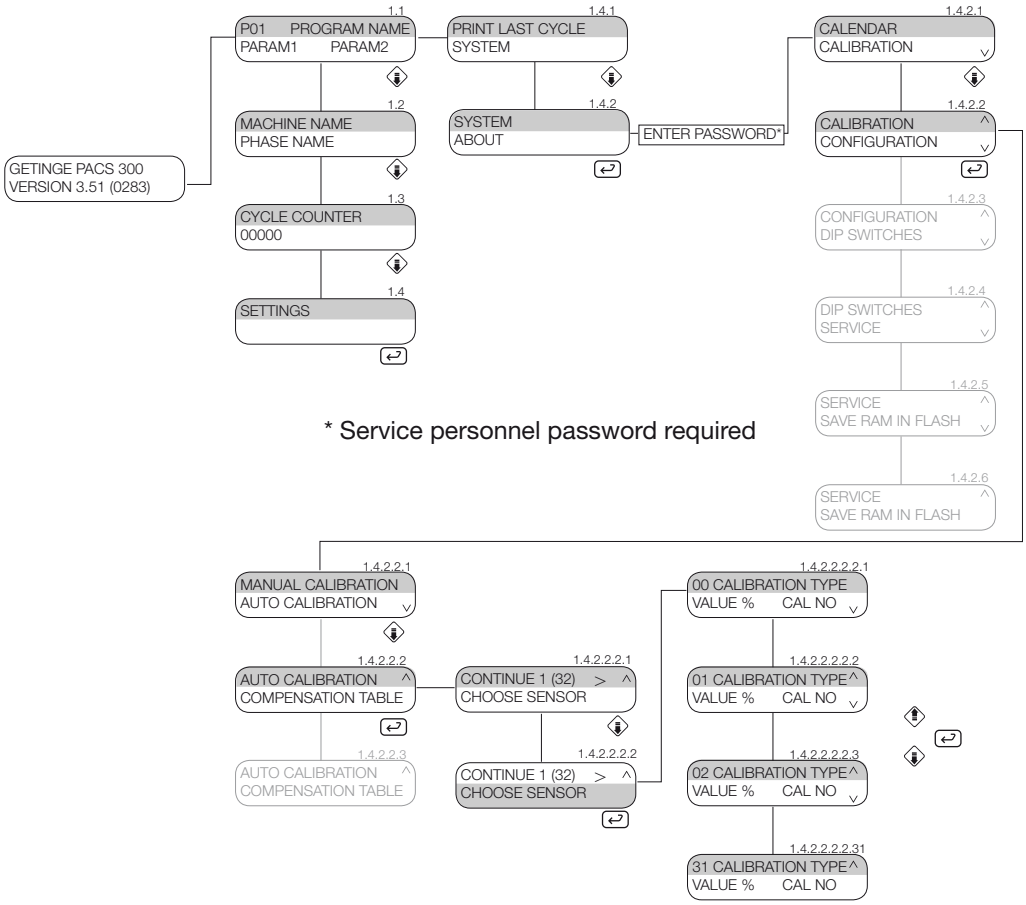
When one or more similar sensors have been chosen (see 1.4.2.2.2.2), this is shown by an arrow at the right-hand edge of the display, beside the word “Continue” on the first line. Pressing ↵ displays the low reference value. When the value is stable, press ↵ to confirm it. Now the high reference value is displayed. When the value is stable, press ↵ to confirm it. Now you have the option of printing out the calibration value by highlighting “YES” for printout or “NO” for no printout.



GETINGE

Choose a sensor (1.4.2.2.2.2)

Press ↵ when Choose sensor is highlighted under automatic calibration. Confirm the choice by placing the cursor on “YES” and pressing ↵ again. The sensor has now been chosen. Note that more than one sensor can be chosen at the same time. If more than one sensor is chosen at the same time, they must be of a similar type.



Compensation table menu (1.4.2.2.3)

This menu is not applicable on this machine.

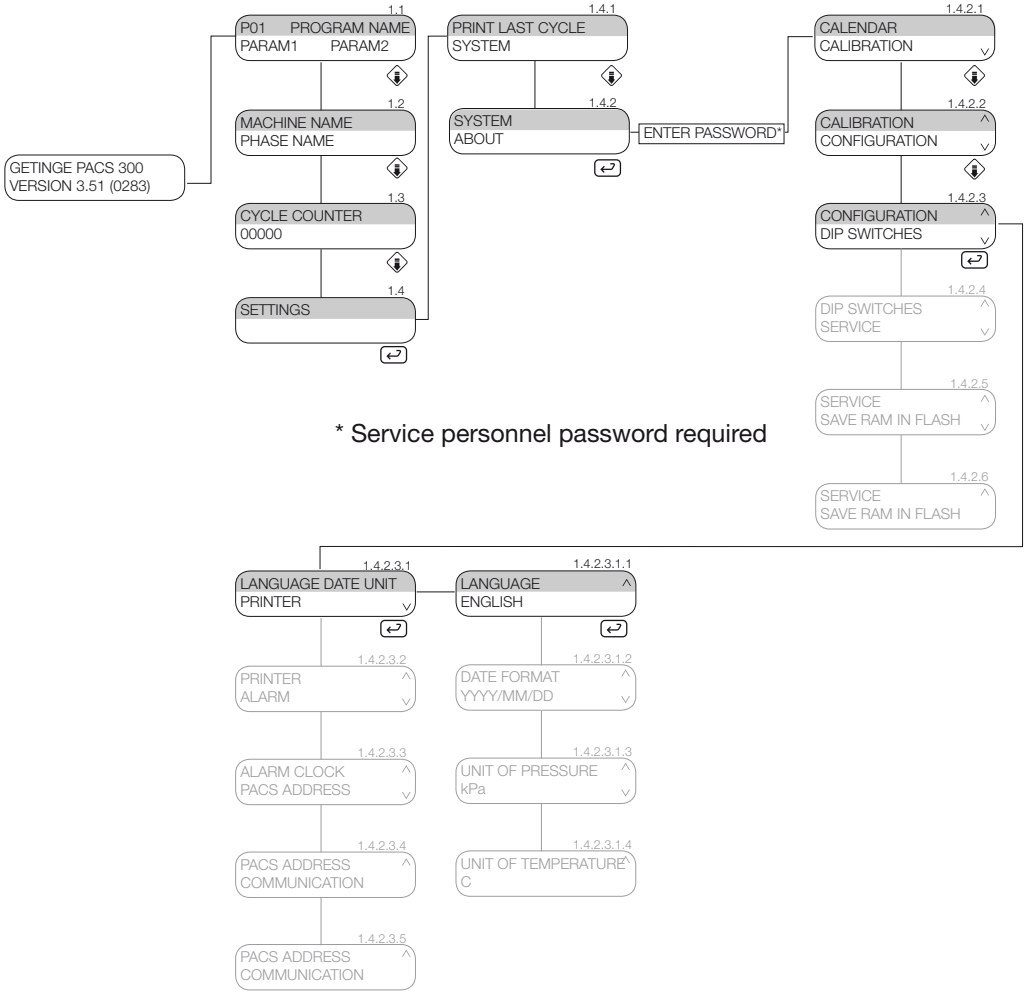
Configuration menu (1.4.2.3)

The configuration display is used to set language, and units. The printer is also set here. The alarm clock and PACS addresses are also set here. There are four submenus.

Language.	(1.4.2.3.1)
Date format.	(1.4.2.3.2)
Unit of pressure.	(1.4.2.3.3)
Unit of temperature	(1.4.2.3.4)

Language menu (1.4.2.3.1)

Language settings for the various displays can be accessed in this menu. Press ↵ and choose the required language. To confirm, press ↵.



GETINGE

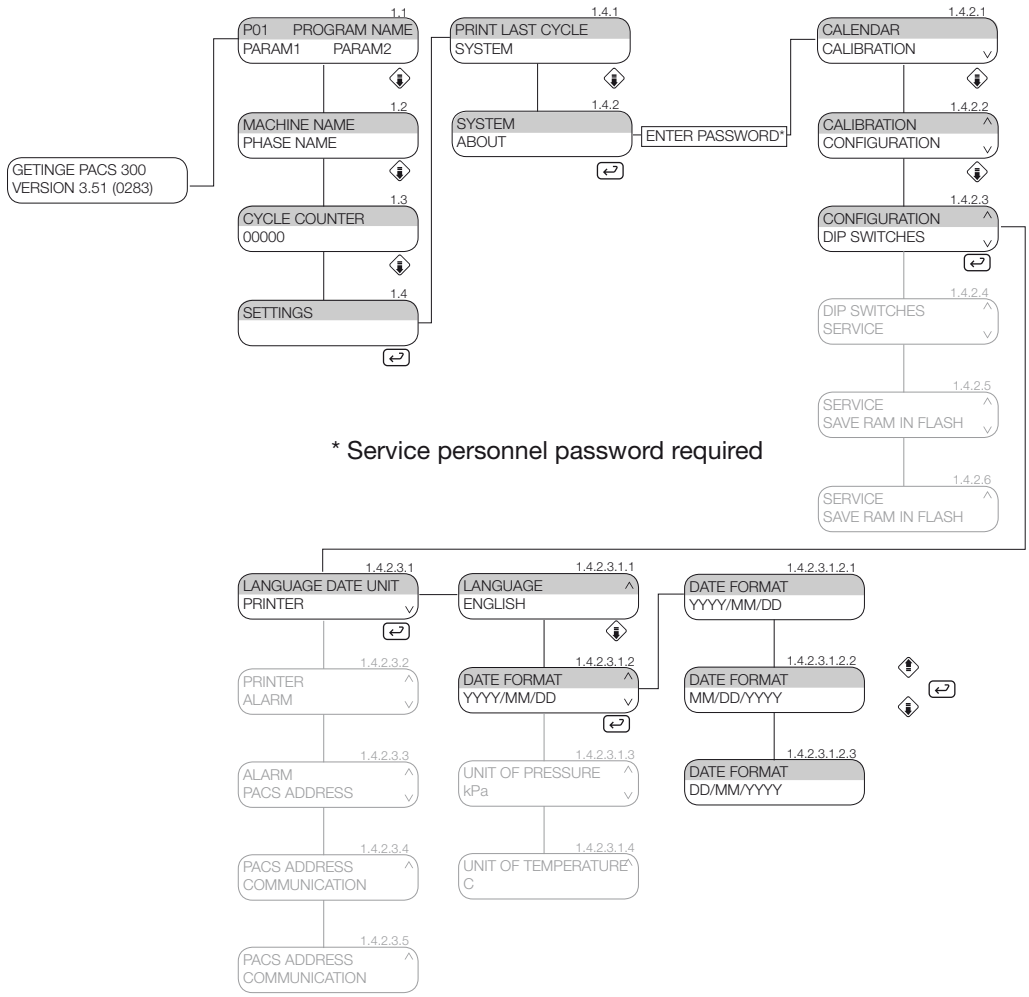
Date format menu (1.4.2.3.2)

The date format is chosen from this menu. There are three date formats: To change format, press ⏎ to see the different formats. Then choose the date format you want. To confirm, press ⏎.

YYYY/MM/DD (1.4.2.3.2.1)

MM/DD/YYYY (1.4.2.3.2.2)

DD/MM/YYYY (1.4.2.3.2.3)



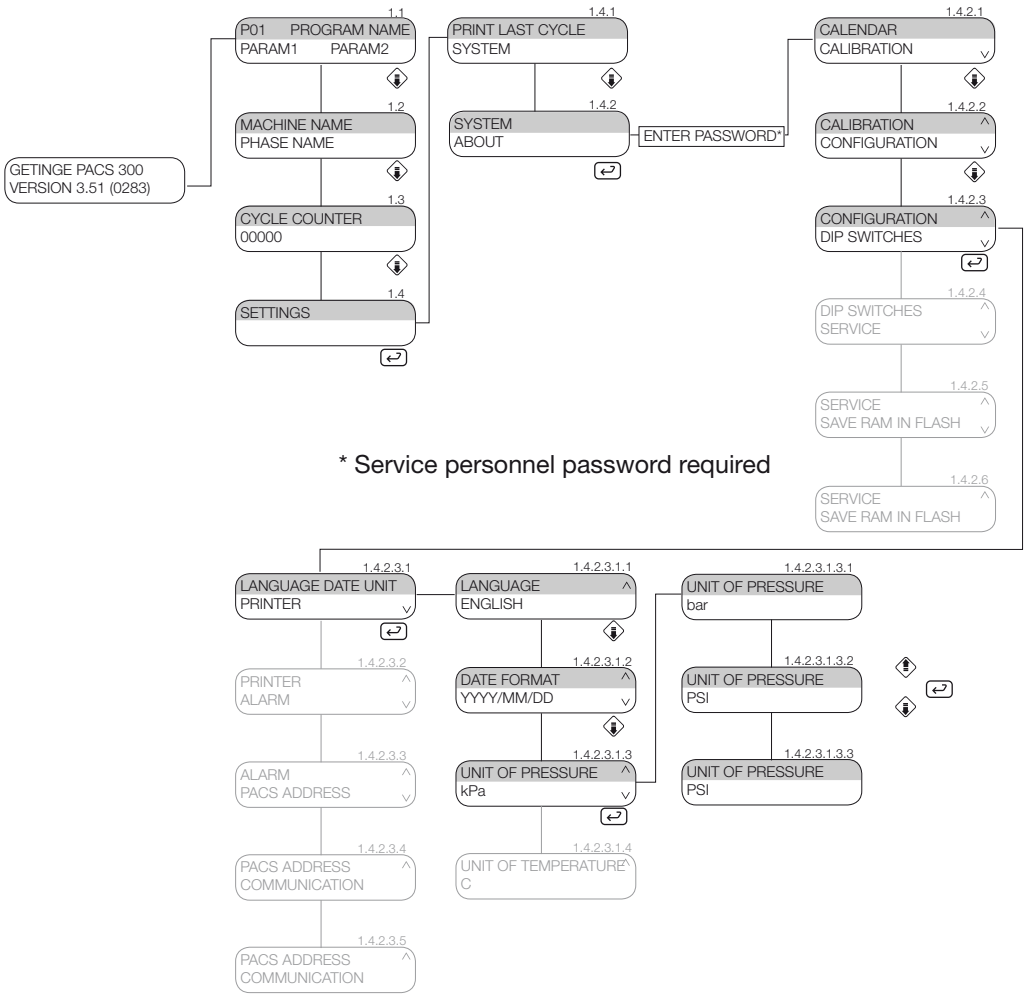
Unit of pressure menu (1.4.2.3.1.3)

Three units of pressure are available: Press ↵ to access the menu with the various units, then choose the unit you want. To confirm, press ↵. NOTE: This only shows the available units. The value of these units is not converted.

BAR (1.4.2.3.1.3.1)

KPA (1.4.2.3.1.3.2)

PSI (1.4.2.3.1.3.3)



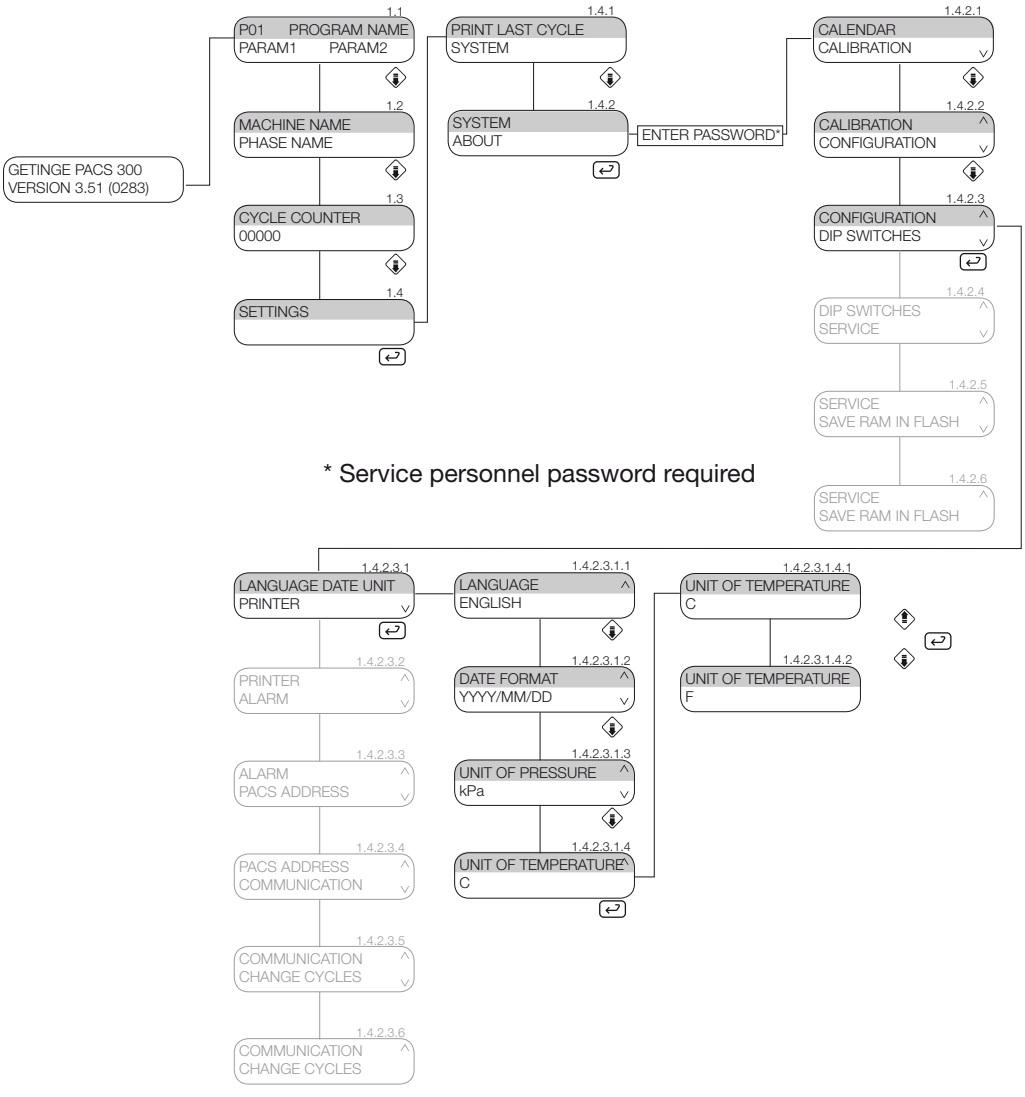
GETINGE

Unit of temp menu (1.4.2.3.1.4)

There is a choice of two units of temperature. Press ↵ to see the two units. Choose the unit you want to use and press ↵ to confirm. NOTE: This only shows the available units. The value of these units is not converted.

Celsius. (1.4.2.3.1.4.1)

Fahrenheit. (1.4.2.3.1.4.2)



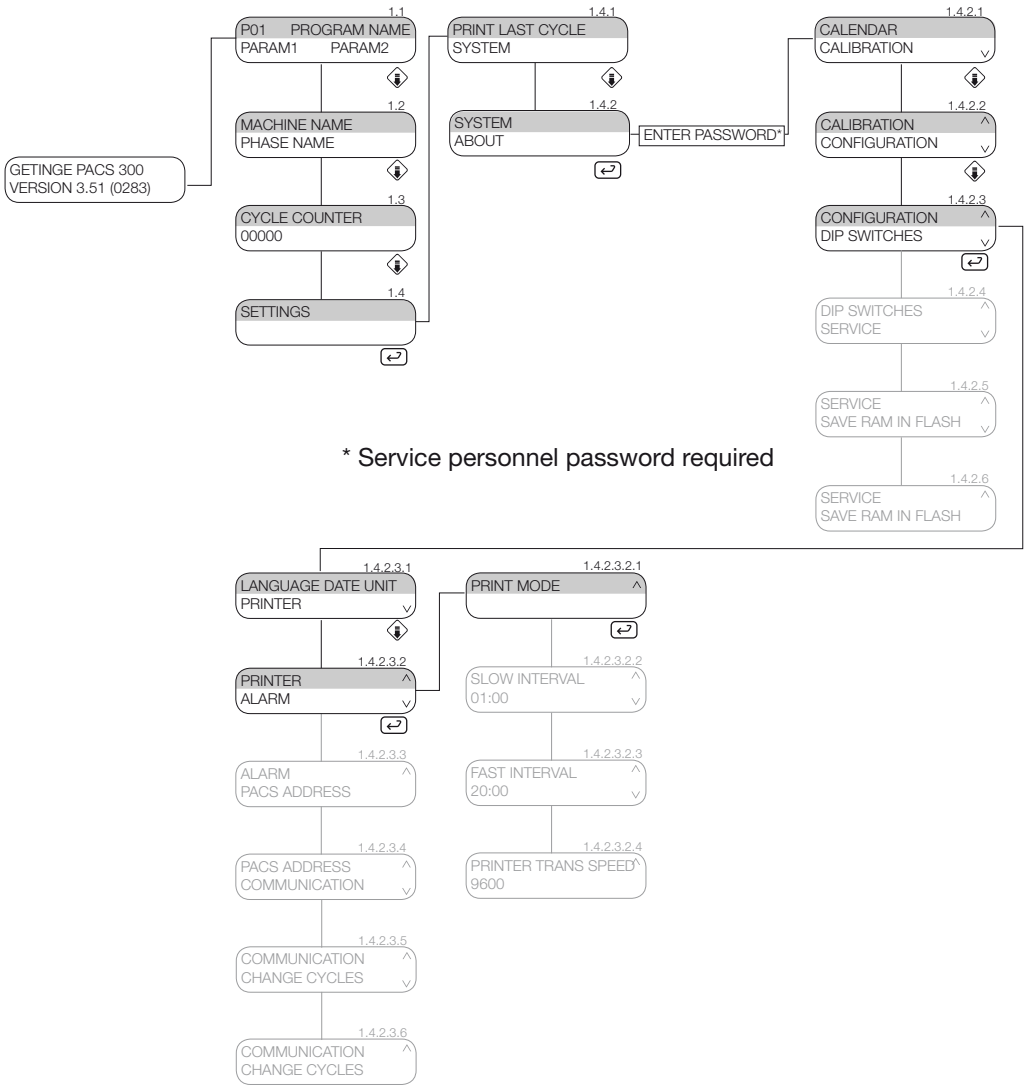
Printer menu (1.4.2.3.2)

All settings for printer and logs are made in this section. There are four submenus:

Printer mode	(1.4.2.3.2.1)
Slow interval	(1.4.2.3.2.2)
Fast interval	(1.4.2.3.2.3)
Printer transfer speed	(1.4.2.3.2.4)

Print mode menu (1.4.2.3.2.1)

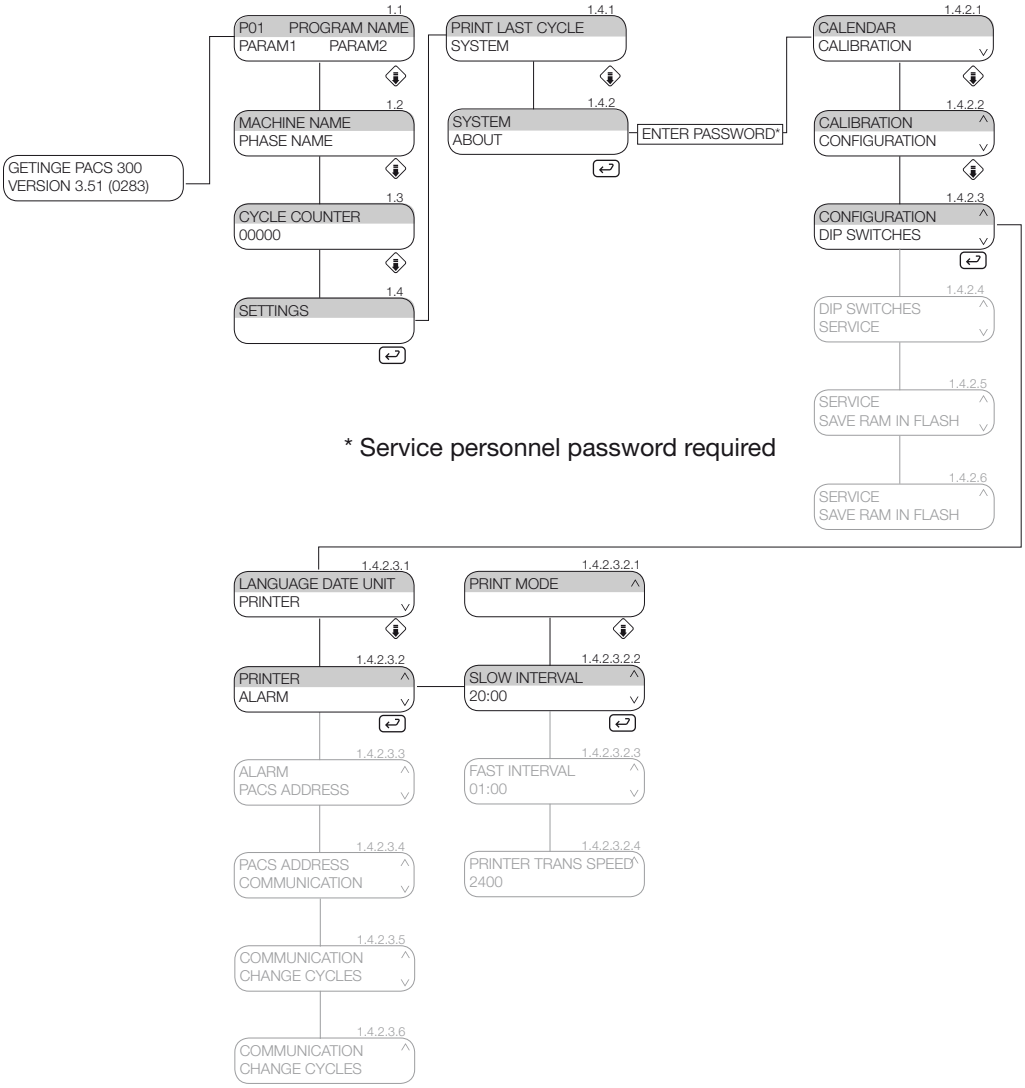
This menu has only one option. Only process values are printed out.



GETINGE

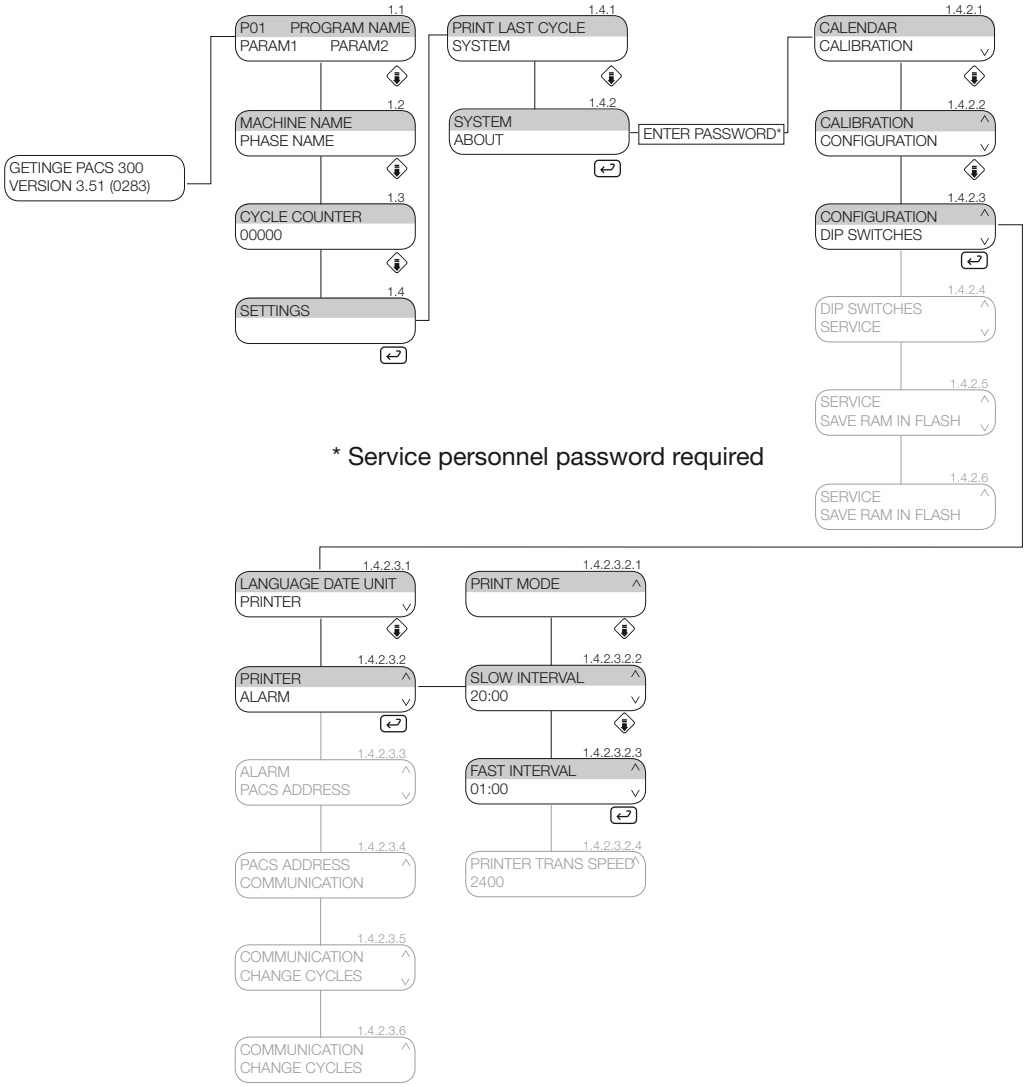
Slow interval menu(1.4.2.3.2.2)

The speed of the slow interval log times is shown here. The phases that use this time speed are pre-configured in the program for each phase.



Fast interval menu(1.4.2.3.2.3)

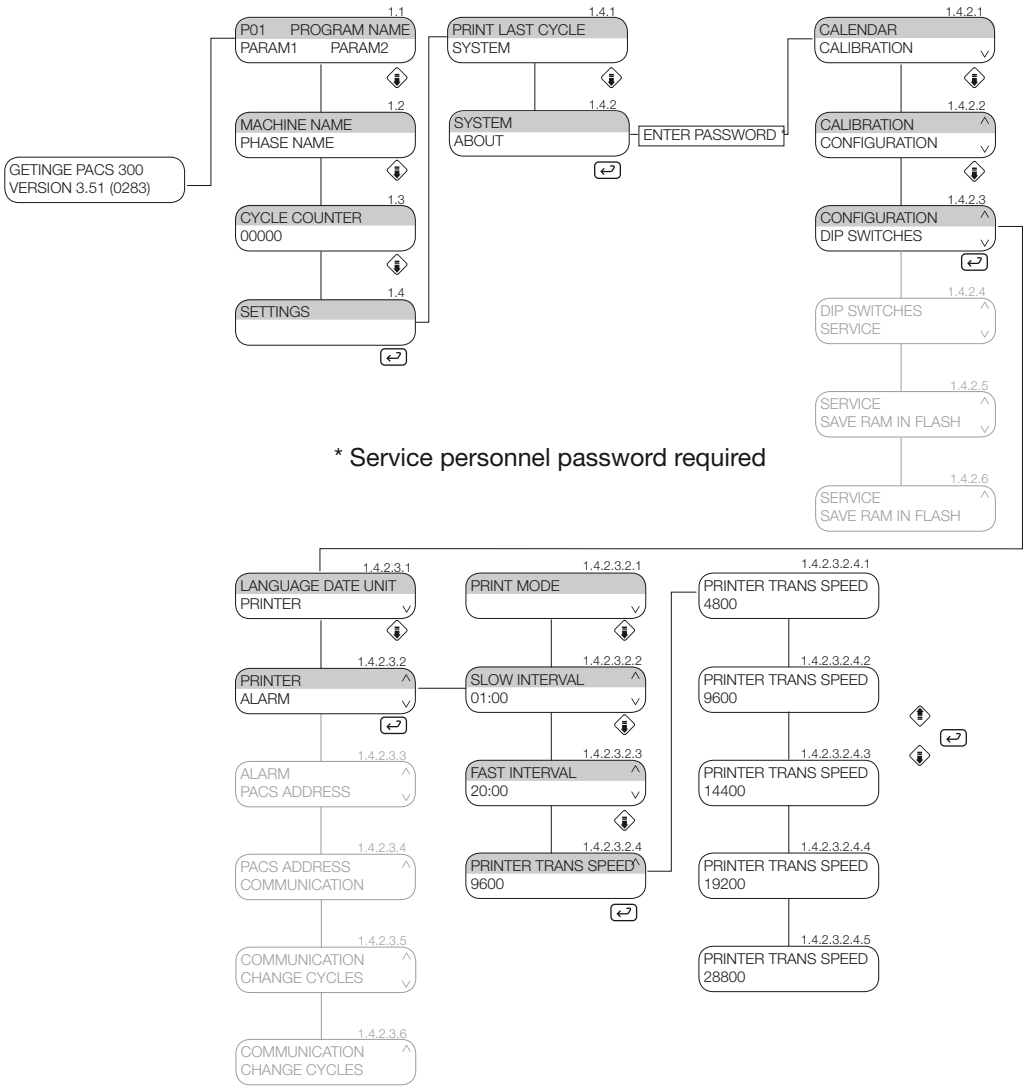
The speed of the fast interval log times is shown here. The phases that use this time speed are pre-configured in the program for each phase.



Transfer speed menu (1.4.2.3.2.4)

You can choose the transfer speed for the printer in this menu. There are five transfer speeds:

4800	(1.4.2.3.2.4.1)
9600	(1.4.2.3.2.4.2)
14400	(1.4.2.3.2.4.3)
19200	(1.4.2.3.2.4.4)
28800	(1.4.2.3.2.4.5)

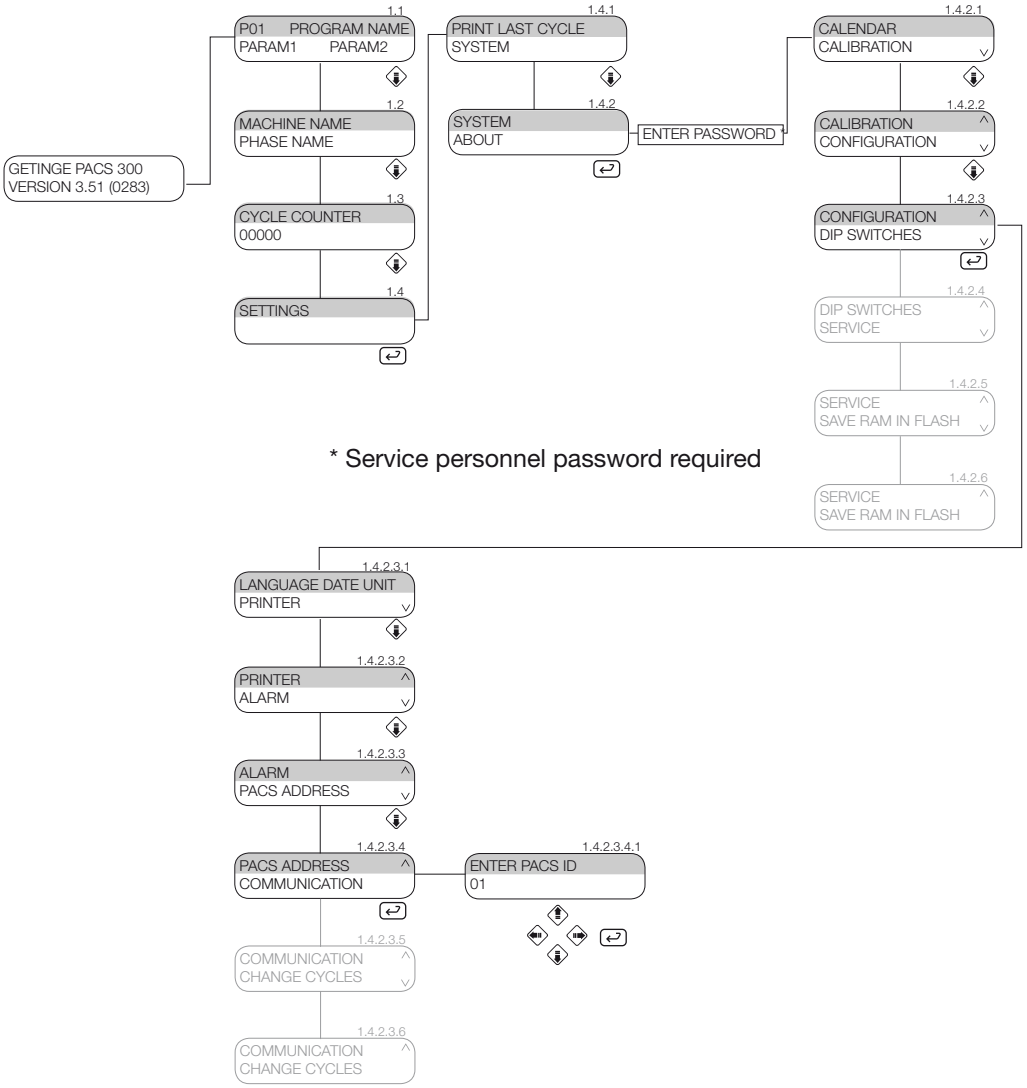


Alarm clock menu (1.4.2.3.3)

This function is not used on this machine.

PACS address menu (1.4.2.3.4)

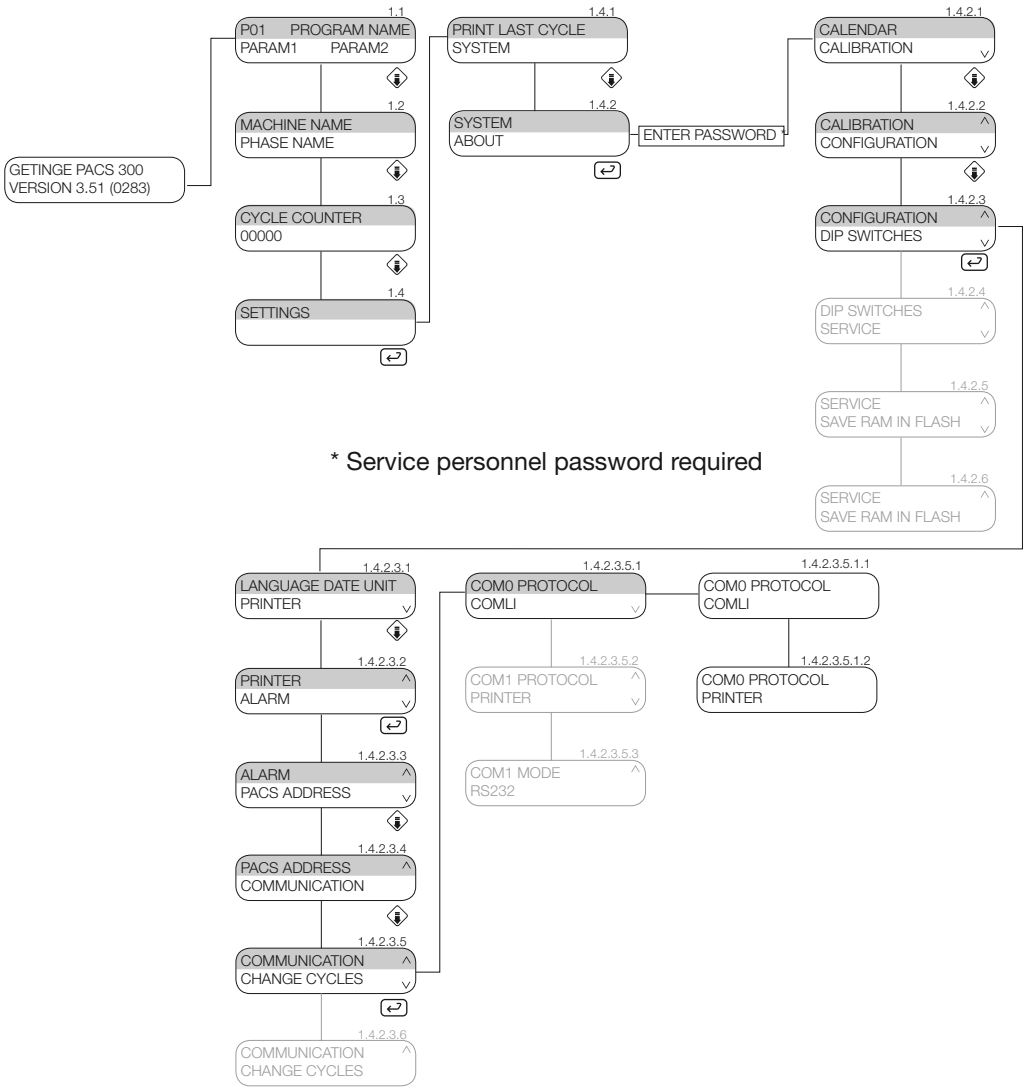
The node address for PACS is entered in this menu.



GETINGE

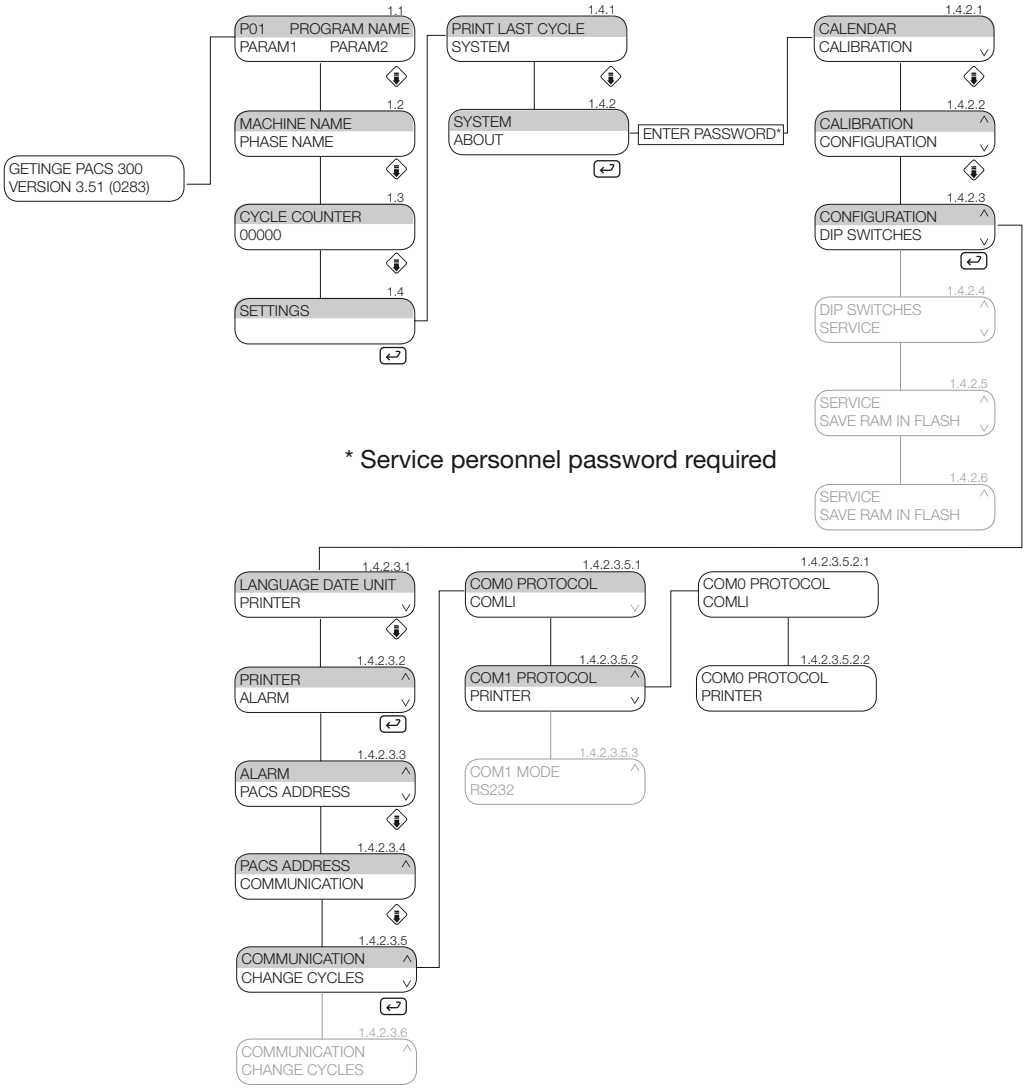
Communication settings COM0 (1.4.2.3.5.1)

Protocol type and communication mode are entered in this menu.



Communication settings COM1 (1.4.2.3.5.2)

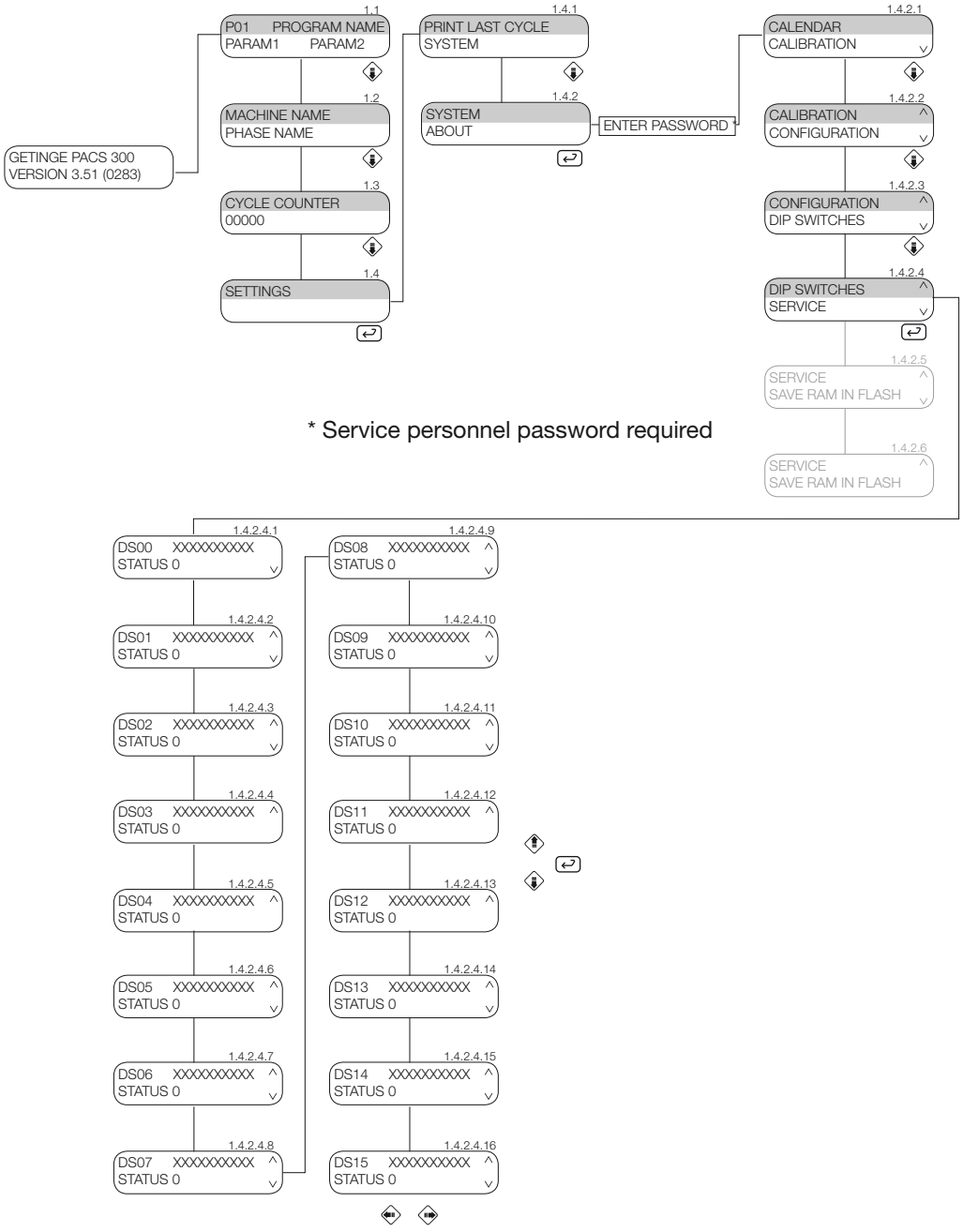
Protocol type is entered in this menu.



GETINGE

DIP switch menu (1.4.2.4)

The DIP switches are used to switch various options on and off. The various options are pre-configured in the program. There are 16 DIP switches in all. See Section 2.3.1



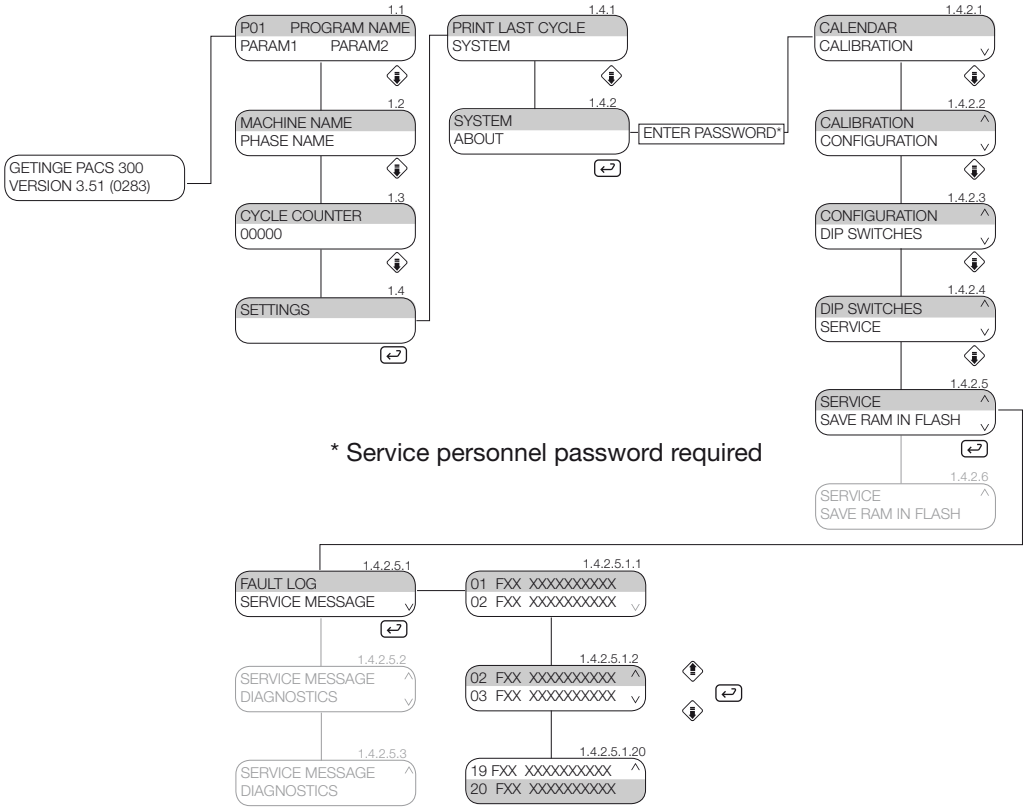
Service menu (1.4.2.5)

The service menu shows the various fault messages, service messages and diagnostics.

Fault log.	(1.4.2.5.1)
Service messages.	(1.4.2.5.2)
Diagnostics.	(1.4.2.5.3)

Fault log menu (1.4.2.5.1)

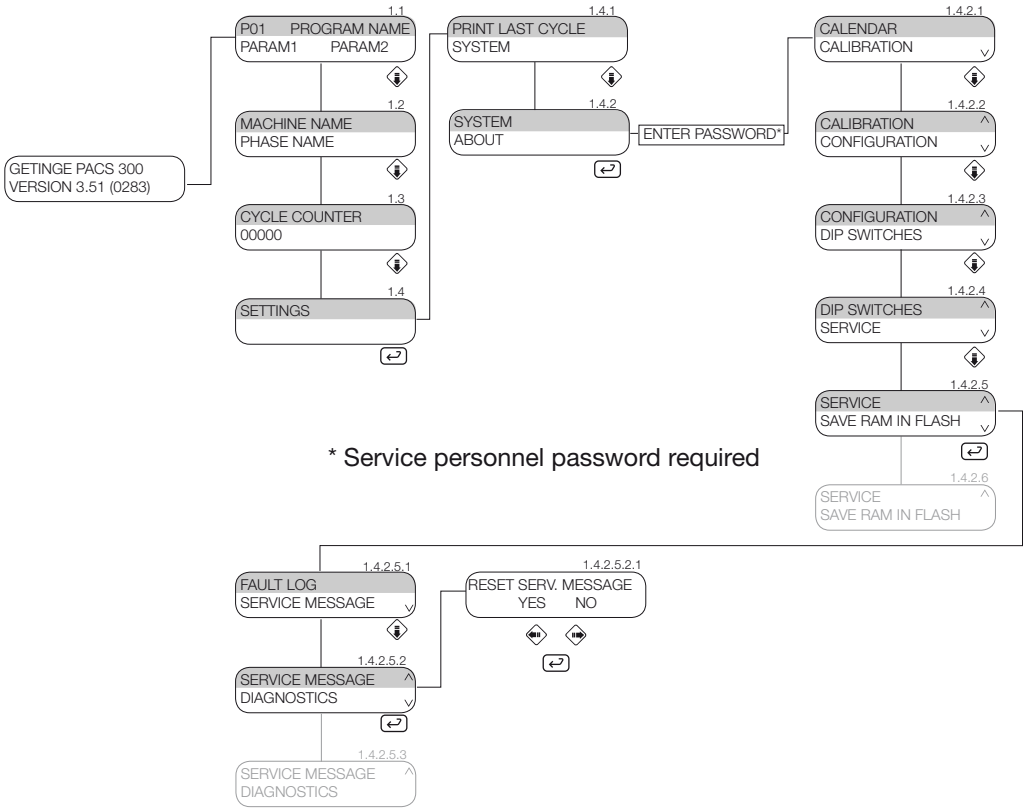
The last 20 fault messages are displayed. The faults are confirmed with the Enter button on the PACS. The fault messages can be found on pages 18-19.



GETINGE

Service message menu (1.4.2.5)

Service messages attract the operator's attention if something needs to be done. The service messages can be found on pages 16-17.



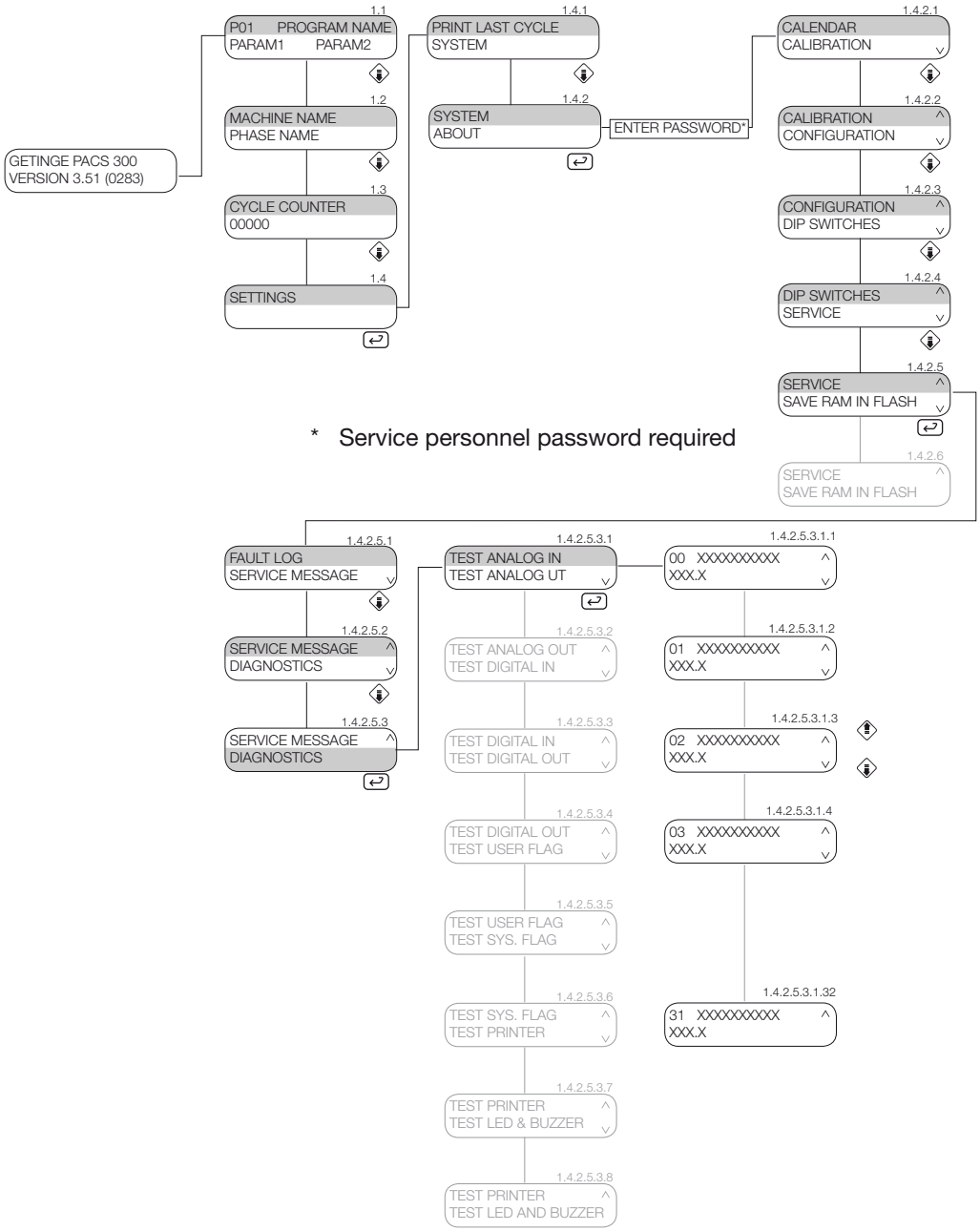
Diagnostics menu (1.4.2.5.3)

The diagnostics menu is used to test input and output data and flags. There are eight submenus:

Test analog in	(1.4.2.5.3.1)
Test analog out	(1.4.2.5.3.2)
Test digital in	(1.4.2.5.3.3)
Test digital out	(1.4.2.5.3.4)
Test user flag	(1.4.2.5.3.5)
Test system flag	(1.4.2.5.3.6)
Test printer	(1.4.2.5.3.7)
Test LED and buzzer	(1.4.2.5.3.8)

Test analog in menu (1.4.2.5.3.1)

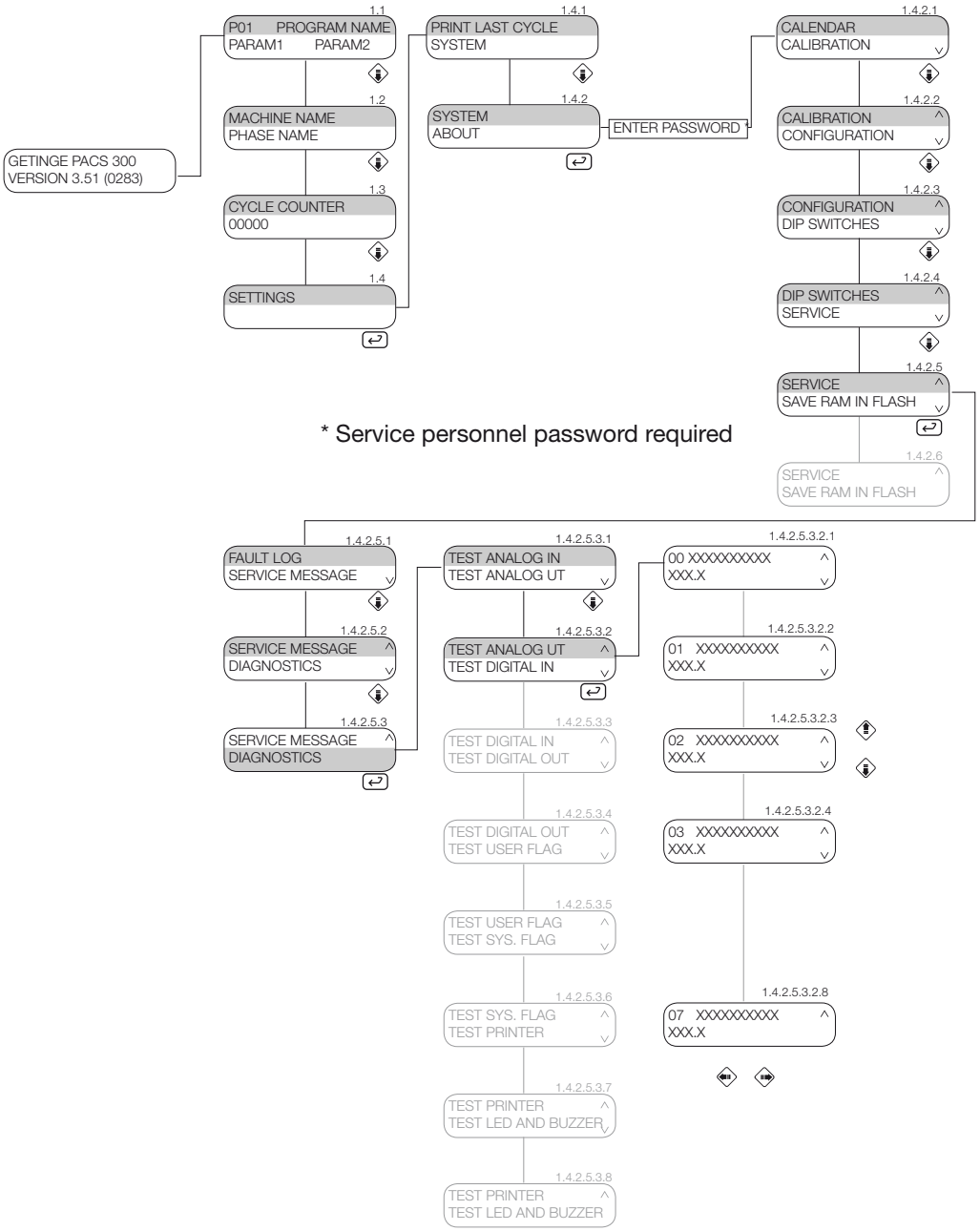
These values are read-only. The status of various input data is displayed. The various input data are pre-configured in the program. To see the various analog input data, see Electrical diagram.



GETINGE

Test analog out menu (1.4.2.5.3.2)

These values can be read and written. The status of various input data is displayed. Every item of output data can be set to the manual mode and a value can be set for output. The various items of output data are pre-configured in the program. To see the various items of analog output data, see Electrical diagram.

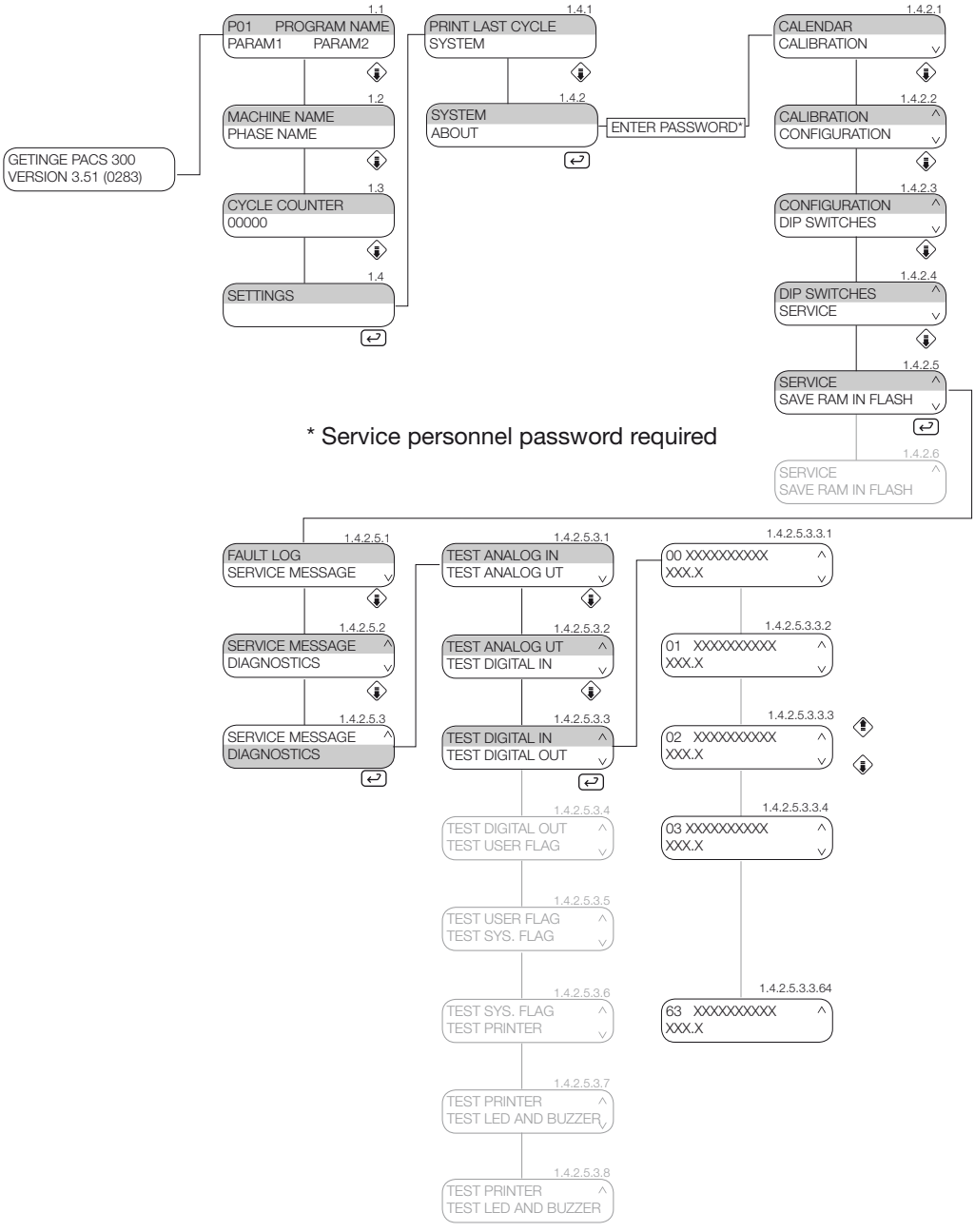


Fan

0%	speed 0
25%	speed 1
50%	speed 2
100%	speed 3

Test digital in menu (1.4.2.5.3.3)

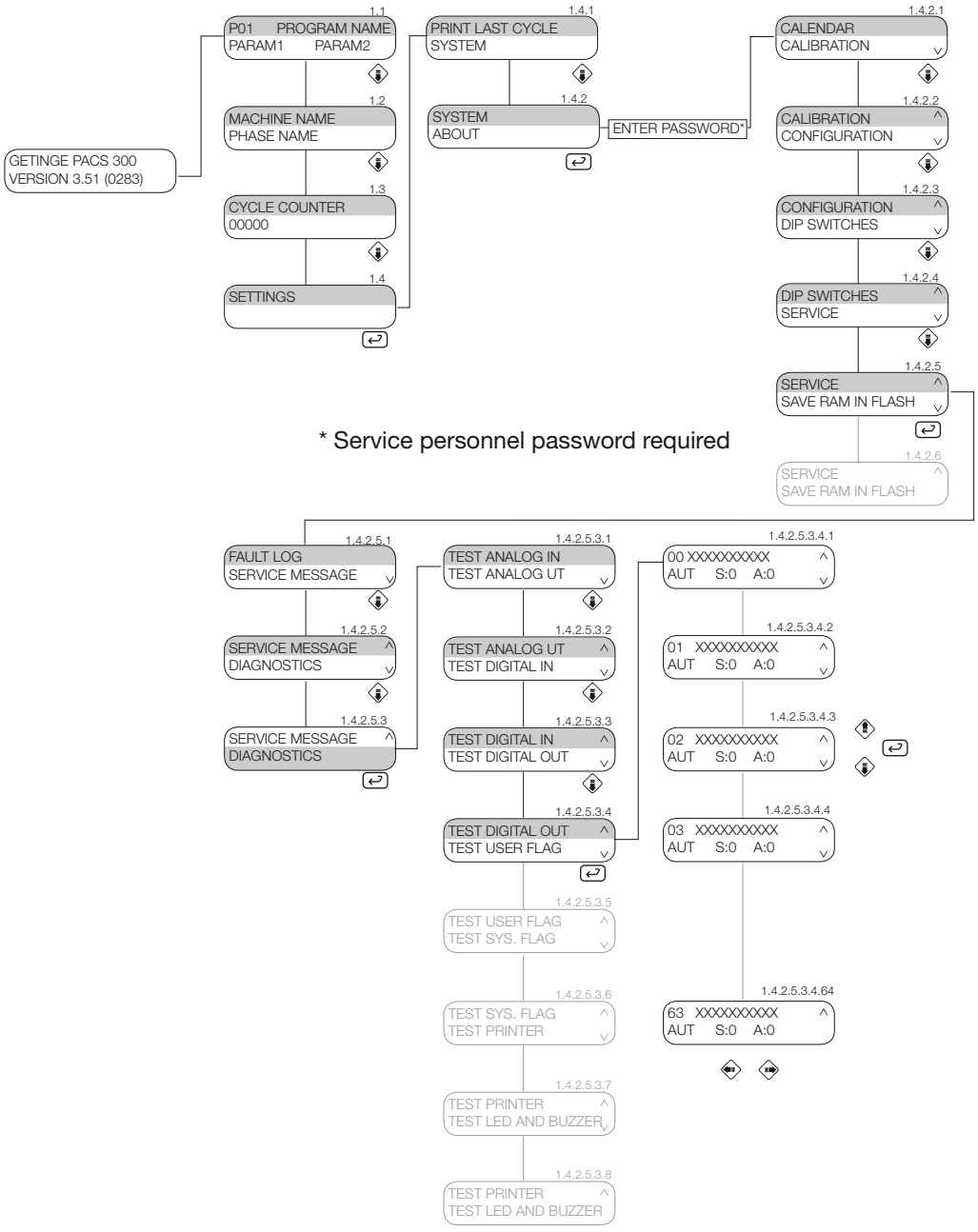
These values are read-only. The status of various input data is displayed. The various items of output data are pre-configured in the program. To see the various digital input data, see Electrical diagram.



GETINGE

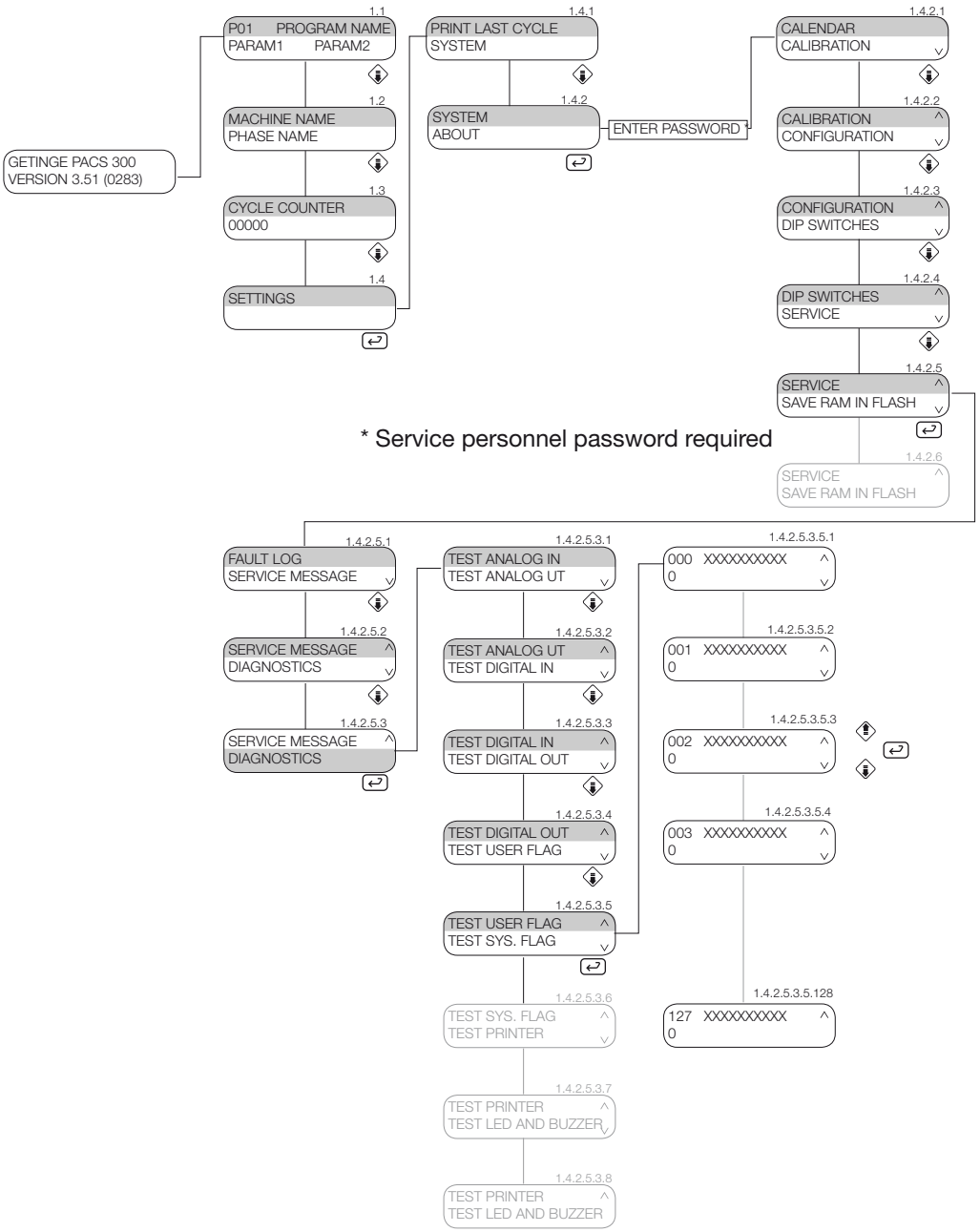
Test digital out menu (1.4.2.5.3.4)

These values can be read and written. The status of various output data is displayed. Every item of output data can be set to the manual mode and switched on and off. The various items of output data are pre-configured in the program. To see the various digital output data, see Electrical diagram.



Test user flag menu (1.4.2.5.3.5)

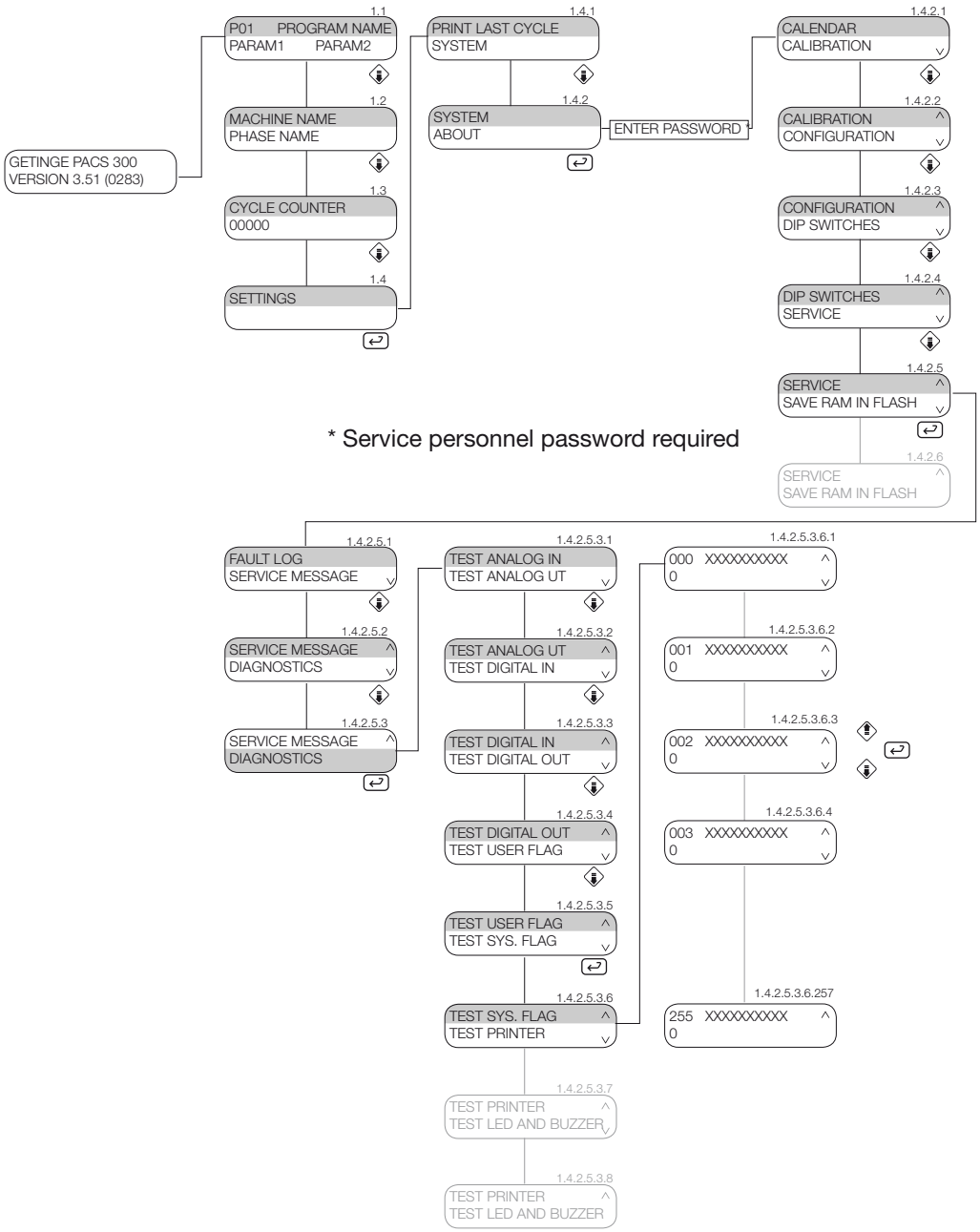
These values are read-only. The status of each flag is displayed. The various flags are preconfigured in the program.



GETINGE

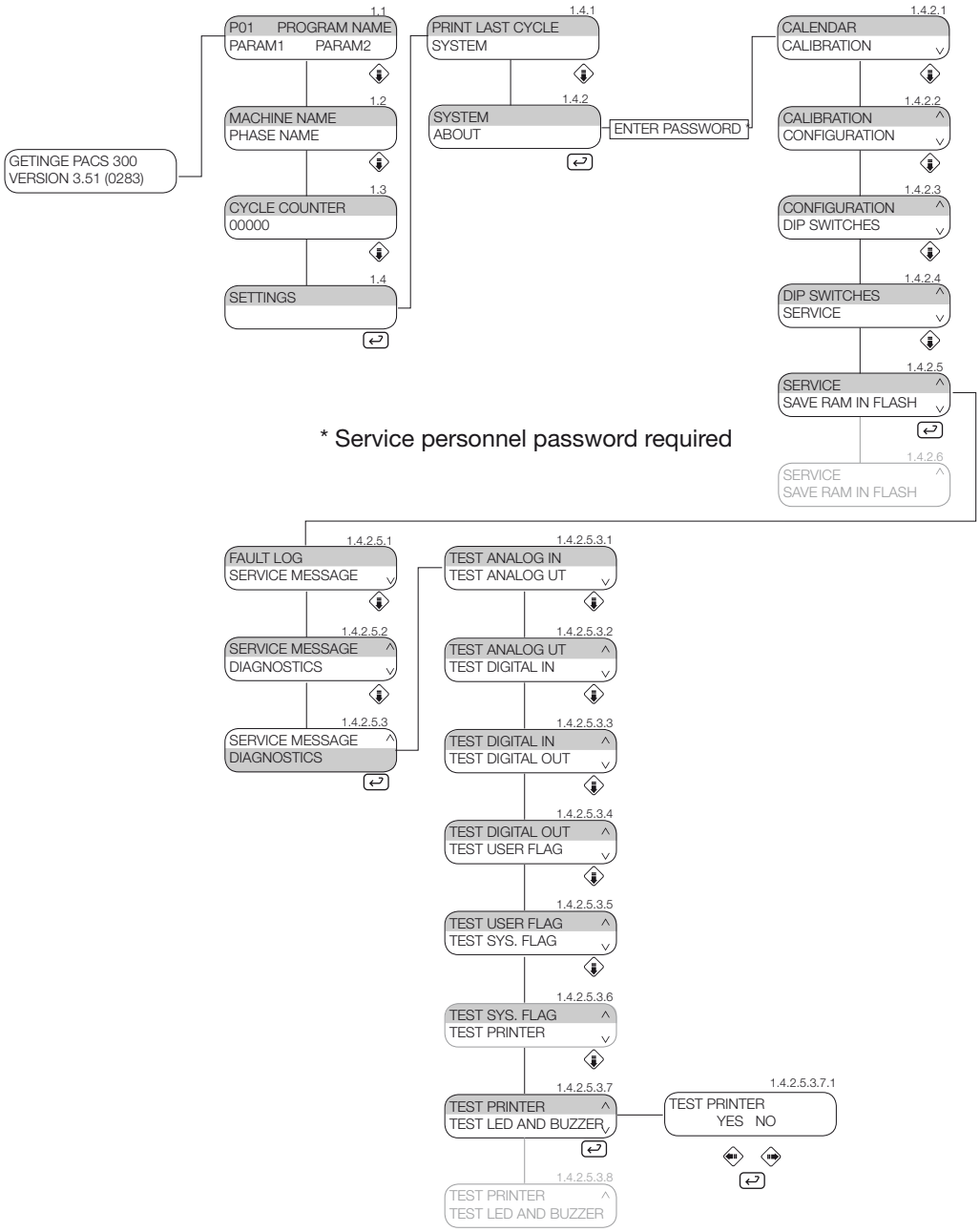
Test user flag menu (1.4.2.5.3.65)

These values are read-only. The status of each flag is displayed. The various flags are preconfigured in the program.



Test printer (1.4.2.5.3.7)

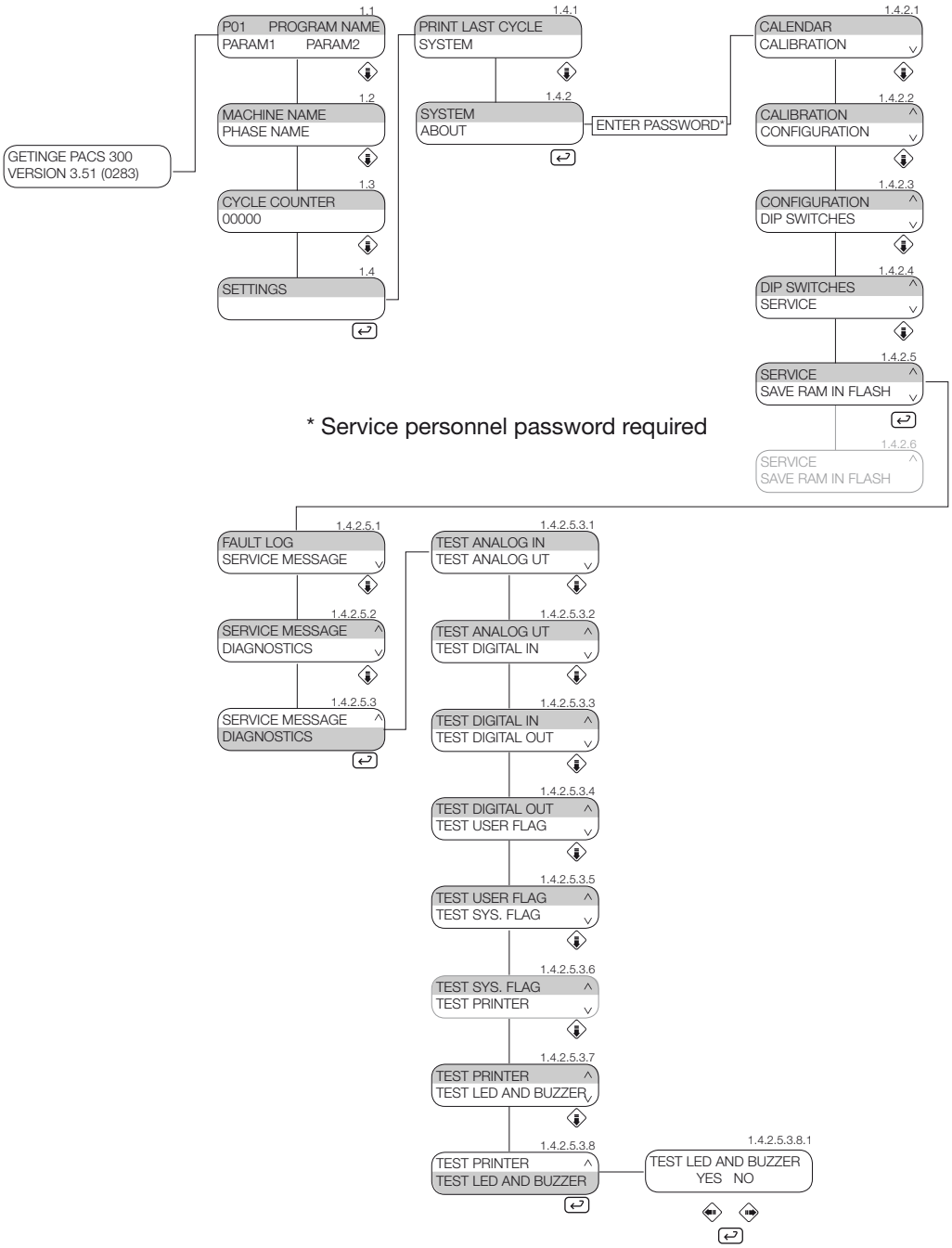
During the printer test, the printer prints characters on the paper.



GETINGE

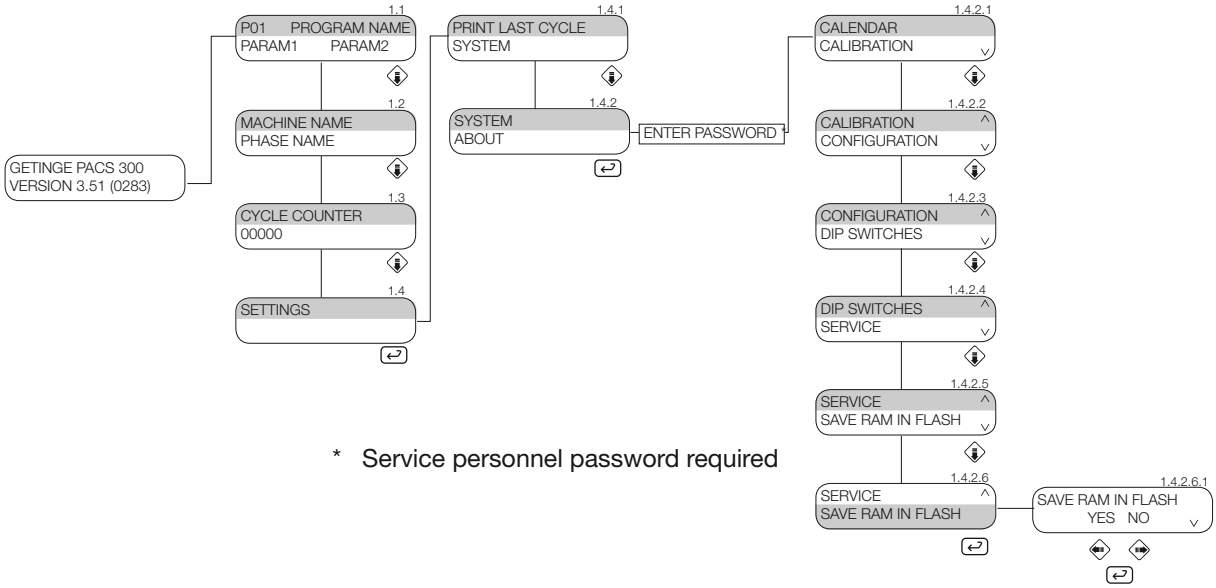
Test LED/buzzer display (1.4.2.5.3.8)

During the test, all LEDs light up and the buzzer sounds.



Save RAM in flash menu (1.4.2.6)

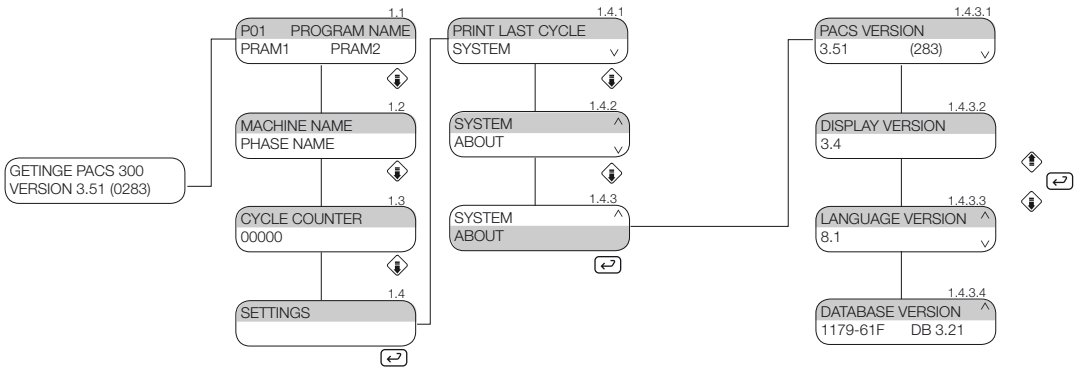
The RAM memory has battery backup, but during a cold start PACS loads data from the flash memory to the RAM memory and all changes made since the last time data was saved are lost.



* Service personnel password required

Appliance info (1.4.3)

This menu shows the versions of the various program parts in PACS.



A-parameters

Using the operator code, the following parameters (A-parameters) can be changed:

PH0025 WASHING

Parameter	Setting range
Washing temperature	40 - 92 °C
Washing time	0 - 900 s
Dosing amount	0 - 700 ml
Dosing temperature	20 - 85 °C

PH0030 WASHING 2

Parameter	Setting range
Washing temperature	40 - 92 °C
Washing time	0 - 900 s
Dosing amount	0 - 700 ml
Dosing temperature	20 - 85 °C

PH0300 NEUTRALIZING

Parameter	Setting range
Washing temperature	40 - 92 °C
Washing time	0 - 900 s
Dosing amount	0 - 700 ml
Dosing temperature	20 - 85 °C

PH0500 CHEMICAL DISINF

Parameter	Setting range
Washing temperature	30 - 60 °C
Washing time	0 - 900 s
Dosing amount	0 - 700 ml
Dosing temperature	20 - 85 °C

PH0440 FINAL RINSE

Parameter	Setting range
Washing temperature	40 - 92 °C (only when there is no disinfection phase)
Washing time	0 - 900 s (only when there is no disinfection phase)
Dosing amount	0 - 700 ml
Dosing temperature	20 - 85 °C

PH0900 DRYING

Parameter	Setting range
Drying time	0 - 3600 s
Washing time	60 - 90 °C

P-parameters

Using any code down to the supervisor code, the following parameters (P-parameters) can be changed.

PH0220 PRE-RINSE CW

Parameter	Setting range
Pre-rinsing time	0 - 600 s

PH0220 PRE-RINSE CW+HW

Parameter	Setting range
Pre-rinsing time	0 - 600 s

PH0220 PRE-RINSE HW

Parameter	Setting range
Pre-rinsing time	0 - 600 s

PH0025 WASHING

Parameter	Setting range
Water type	CW, HW, DW
Dosing pump	1, 2, 3, 4

PH0025 WASHING 2

Parameter	Setting range
Dosing pump	1, 2, 3, 4

PH0300 NEUTRALIZING

Parameter	Setting range
Dosing pump	1, 2, 3, 4

PH0500 CHEMICAL DISINF

Parameter	Setting range
Dosing pump	1, 2, 3, 4

PH0330 RINSE 1

Parameter	Setting range
Water type	CW, HW, DW
Rinse time	0 - 600 s

PH0360 RINSE 2

Parameter	Setting range
Water type	HW, DW
Rinse time	0 - 600 s

PH0440 FINAL RINSE

Parameter	Setting range
Water type	HW, DW
Conductivity	0 - 25
Dosing pump	1, 2, 3, 4

PH0900 DRYING

Parameter	Setting range
Drying temperature	80 - 120 °C

PREVENTIVE MAINTENANCE

General

The required maintenance interval will depend largely on the quality of the incoming water and how often the machine is used. The maintenance interval will have to be determined in each individual case. We recommend that the stated maintenance operations are done at the specified intervals. We also recommend that a function check is done once or twice a year.
For repairs or adjustments, see under Repair and adjustment.

Periodic maintenance

This may only be done by authorized personnel.

The machine is connected to the electricity supply and some components are live.

Component	Interval					
	Check yearly	Replace if necessary	Replace yearly	Replace every other year	Replace after 1000 hours	Replacement time
Door seal	•	•				1 h
Hoses between dosing pump and detergent container	•			•		1 h
Hose between dosing pump and machine	•			•		1 h
Filter in incoming media	•	•				1 h
Overheat protection	•	•				1 h
Hose in hose pump	•			•		1 h
Spray arm bearings	•	•				1 h
Sterile filter in dryer	•	•				2 h
Hoses to dryer	•	•				2 h
Check valve in dryer	•	•				1 h
Check valve in waste	•	•				1 h
Fan to dryer	•	•				3 h
Ribbon to printer	•	•				10 min
Manual door: Spring on door closing	•					4 h
Automatic door: Crush protection on door closing	•					1 h
Make sure that the power cables are firmly attached in their sockets.	•					

GETINGE

Function check

This may only be done by authorized personnel.

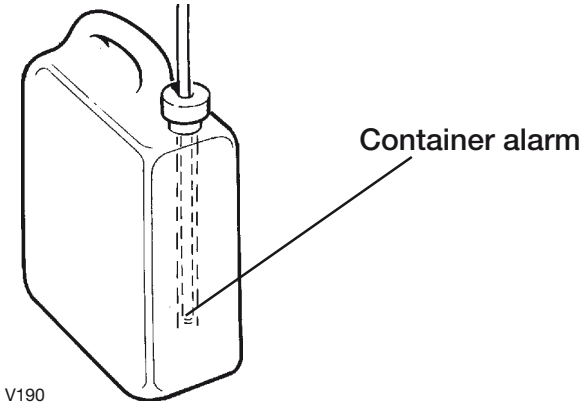
The machine is connected to the electricity supply and some components are live.

Instruction manual, cable, switch

- Check that a goods placing sign has been put up on the wall behind the disinfector.
- Check that the isolator switch on the wall is working and that the connecting cable is undamaged and free from defects.

Filters and valves

- Check that level switches and manual shutoff/opening valves are working properly.
- Check the filters in the supply line (see under Cleaning the filters in the supply line). Clean if necessary.
- Check all pipe couplings. Tighten and seal if necessary.



Controls

- The machine is operated with the buttons on the control panel.
- Check that the control buttons are working. If the buttons are working, a beep will be heard.
- While a program is running check that the yellow lamp at is lit.
- When the program is complete, the green lamp at should light up.

Insert for goods

- Check that the inserts for the machine dock properly with the water outlets.
- Check that spray arms (if fitted) rotate and are not clogged.
- Check that the goods to be cleaned are retained in the insert.

Door

Check that the door seal closes tight and is undamaged and that there is no leakage while a program is running. Clean or replace the seal if necessary.

Detergent dosing

Check that the suction hose and pump are full of detergent or rinse-aid before running a program. When the pre-programmed amount of detergent is changed, the consumption must be checked with a measuring glass.

Flushing system

All supply line valves must be closed when working on the pipe system.

- Check that the spray arms can rotate freely.
- Check that the holes in the washing arms are not blocked. Clean if necessary.
- Check that the coarse strainer in the bottom of the washing chamber is correctly installed. Clean if necessary.
- Check that all couplings connecting the washing system to the pump and chamber are leaktight. Tighten and seal if necessary.

Temperature check

- Check the temperature during a program run. Compare time and temperature with the program sheet. Time and temperature are especially important in the disinfection phase.
- The measuring equipment must be capable of registering temperature and time continuously. High-performance equipment is essential for reliable measuring results, because of the relatively rapid temperature changes.
- Only one measuring point in the centre of the machine is needed for the function check.

Note:
Washer-disinfectors that have been shown not to meet the requirements in terms of temperature, sequence, washing system and safety must not be used until the faults have been corrected.

Dryer

- Check seals and hoses for leaks once a year.
- Replace the sterile filter if necessary or in the event of an alarm.

Printer (option)

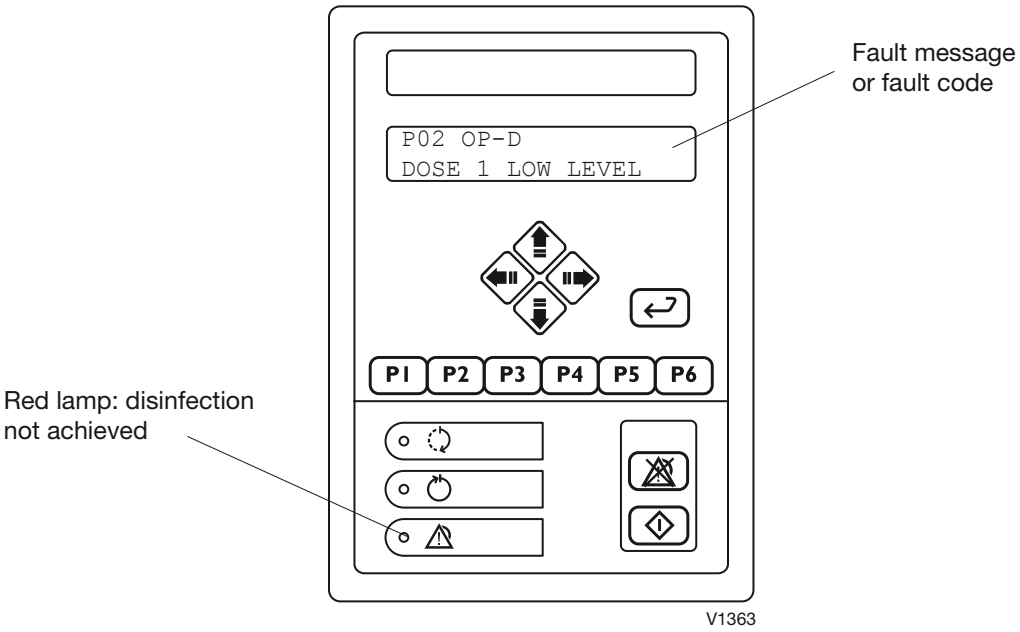
- Check ink ribbon cartridge
- Check print quality.

Power cables

- Make sure that the power cables are firmly attached in their sockets.

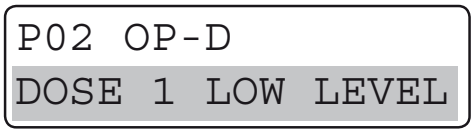
GETINGE

Fault indications



Handling alarms

Handling alarms appear on the display in plain text.



The machine cannot be started until the fault has been put right.

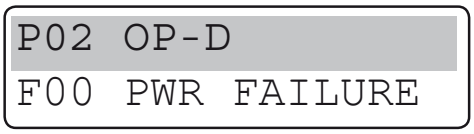
The following messages can be displayed:

Dose 1 low level	Empty container alarm 1. If detergent 1 is finished, a handling code is generated. The alarm is reset automatically when detergent is added.
Dose 2 low level	Empty container alarm 2. If detergent 2 is finished, a handling code is generated. The alarm is reset automatically when detergent is added.
Dose 3 low level	Empty container alarm 3. If detergent 3 is finished, a handling code is generated. The alarm is reset automatically when detergent is added.
Dose 4 low level	Empty container alarm 4. If detergent 4 is finished, a handling code is generated. The alarm is reset automatically when detergent is added.

Note:
The last process had access to detergent. A message is displayed for future processes.

Alarm

If the red lamp at ⚠ lights up, the process has been aborted because of a fault.
The display shows a fault code.



Acknowledging a fault code

Acknowledge the fault code by:

- Make a note of the fault code
- Cancel the acoustic signal by pressing . The machine remains locked but the program has been stopped. The display shows the password entry menu.
- Correct the fault or call service personnel.
- Enter the password (558387) using the arrow keys and press . All liquid is drained from the machine and the soiled-side door is unlocked*.
- Open the door and remove the items.

The items in the machine are not clean and must be washed again from the beginning with a new program.

If the items are still hot, handle them with care to avoid burns.

* If the drain pump is faulty, water cannot be drained from the machine and the fault cannot be put right until the door has been opened. The soiled-side door is unlocked as soon as the password is confirmed.

GETINGE

Troubleshooting

The table below describes the fault codes that may be generated and a possible action for each fault code.

This may only be done by authorized personnel. The machine is connected to the electricity supply and some components are live.

Fault code	Fault	Comment
F00	Power failure	If the power failure lasts for more than 59 seconds, the process is aborted. The fault code is generated when the power returns.
F01	The motor cutout has tripped.	The motor cutout (-F01) for the circulation pump has tripped. **Possible action:** a. Check that there is power on all phases from the circulation pump. b. Check that the motor cutout is correctly set (see electrical diagram). c. Check that the pump impeller rotates easily. d. Check the direction of rotation (see installation instructions).
F02	Water filling too slow.	The water level sensor (-B11) is not activated within two minutes of the start of filling. **Possible action:** a. Check that the shutoff valves are open and that water is reaching the machine. b Check that the solenoid valves open and that their filters are not clogged. c. Check that the strainer in the machine is not blocked.
F03	Emptying time too long	Emptying takes longer than five minutes or the water level sensor (-B11) is still activated when the emptying phase is complete. **Possible action:** a. Check that the waste pump (-M02) pumps out water. b. Check that the pressure switch changes over. c. Check that the solenoid valve closes (water does not leak in). d. Check that the strainer in the machine is not blocked.
F04	Water leakage in the dryer.	The switch to water level sensor (-B12) is open. **Possible action:** a. Check that the check valves to the drying connection close.
F05	Door fault, soiled side	Door does not lock (-S02) within 10 seconds or opens while a program is running. **Possible action:** a. Check whether the microswitch (-S02) for the “door locked” limit position has been activated within 10 seconds on door locking. b. Check that the motor (-M10) and the switch (-S52) for door locking are working.
F06	Door fault, soiled side	The door does not open (-S01) within 10 seconds. **Possible action:** a. Check whether the microswitch (-S01) for the “door locked” limit position has been activated within 10 seconds on door locking. b. Check that the motor (-M10) and the switch (-S51) for door locking are working.

Fault code	Fault	Comment
F07	Door fault, soiled side	Door does not lock (-S03) within 20 seconds or opens while a program is running. Machine with automatic door. **Possible action:** a. Check that nothing is trapped in the door. b. Check whether the microswitch (-S03) for closed door limit position has been activated for 20 seconds. c. Check that the motor (-M09) and the switch (-S54) for door locking are working. d. Check the chain.
F08	Door fault, soiled side	The door does not open (-S04) within 20 seconds. (Machine with automatic door only.) **Possible action:** a. Check that nothing is trapped in the door. b. Check whether the microswitch (-S04) for closed door limit position has been activated for 20 seconds. c. Check that the motor (-M09) and the switch (-S54) for door opening are working. d. Check the chain.
F09	Door fault, clean side	Door does not lock (-S05) within 10 seconds or opens while a program is running. **Possible action:** a. Check whether the microswitch (-S05) for the “door locked” limit position has been activated within 10 seconds on door locking. b. Check that the motor (-M12) and the switch (-S55) for door locking are working.
F10	Door fault, clean side	The door does not unlock (-S06) within 10 seconds. **Possible action:** a. Check whether the microswitch (-S06) for the “door open” limit position has been activated within 10 seconds on door unlocking. b. Check that the motor (M12) and the switch (-S56) for door locking are working.
F11	Door fault, clean side	Door does not lock (-S07) within 20 seconds or opens while a program is running. (Machine with automatic door only.) **Possible action:** a. Check that nothing is trapped in the door. b. Check whether the microswitch (-S07) for closed door limit position has been activated for 20 seconds. c. Check that the motor (-M11) and the switch (-S57) for door locking are working. d. Check the chain.
F12	Door fault, clean side	The door does not open (-S08) within 20 seconds. (Machine with automatic door only.) **Possible action:** a. Check that nothing is trapped in the door. b. Check whether the microswitch (-S08) for closed door limit position has been activated for 20 seconds. c. Check that the motor (-M11) and the switch (-S58) for door opening are working. d. Check the chain.

<Doc_TEC><Doc_502606900><Rel_B><Lang_GB>

Fault code	Fault	Comment
F15	Dosing flowmeter 1.	Not enough detergent 1 dosed (-B16). **Possible action:** a. Check operation of the dosing pump. b. Check that there is detergent in the container. c. Check whether an empty container alarm has occurred. d. Check that there is no air in the flowmeter and that it is rotating. e. Check that the hoses are not blocked.
F16	Dosing flowmeter 2.	Not enough detergent 2 dosed (-B17). **Possible action:** a. Check operation of the dosing pump. b. Check that there is detergent in the container. c. Check whether an empty container alarm has occurred. d. Check that there is no air in the flowmeter and that it is rotating. e. Check that the hoses are not blocked.
F19	Dosing flowmeter 3.	Not enough detergent 3 dosed (-B20). **Possible action:** a. Check operation of the dosing pump. b. Check that there is detergent in the container. c. Check whether an empty container alarm has occurred. d. Check that there is no air in the flowmeter and that it is rotating. e. Check that the hoses are not blocked.
F20	Dosing flowmeter 4.	Not enough detergent 4 dosed (-B21). **Possible action:** a. Check operation of the dosing pump. b. Check that there is detergent in the container. c. Check whether an empty container alarm has occurred. d. Check that there is no air in the flowmeter and that it is rotating. e. Check that the hoses are not blocked.
F21	Booster tank water filling slow.	If filling (-B11) takes longer than 10 minutes, a fault code is generated. **Possible action:** a. Check that the shutoff valves are open and that water is reaching the machine. b. Check that the solenoid valves open and that their filters are not clogged.
F23	High conductivity	The conductivity (-U01) is higher than the set value after the third repeat rinse. **Possible action:** a. Check that the correct type of water is connected.
F24	Low pressure in dryer.	The differential pressure (-B03) is < 150 Pa. **Possible action:** a. Check whether the fan, hoses or filter(s) are faulty. b. When changing a filter, check that the new filter is correctly installed.
F25	High pressure in dryer.	The differential pressure (-B03) is > 750 Pa. **Possible action:** a. Check whether the filter is clogged.
F26	Low pressure from circulation pump	The pressure (-B04) is <30 kPa. **Possible action:** a. Check the docking between machine and wash rack. b. Check that the pump impeller rotates easily. c. Check the direction of rotation (see installation manual). d. Check that the detergent is not foaming.

<Doc_TEC><Doc_502606900><Rel_B><Lang_GB>

Fault code	Fault	Comment
F27	High pressure from circulation pump.	The pressure (-B04) is >130 kPa. **Possible action:** a. Check that no nozzles or spray arms are blocked.
F28	Low temperature in dryer.	The temperature (-B05) has not risen to 20 degrees C below the set value after two minutes. **Possible action:** a. Check that there is power on all phases up to the element.
F29	Faulty temperature sensor in dryer.	The temperature (-B07) is <0 °C or >130 °C. **Possible action:** a. Check the temperature sensor (for open or short circuit)
F31	Faulty temperature sensor in wash chamber.	Independent. The temperature (-B07) is <0 °C or >130 °C. **Possible action:** a. Check the temperature sensor (for open or short circuit)
F32	Faulty temperature sensor in dryer.	The temperature (-B05) is <0 °C or >130 °C. **Possible action:** a. Check the temperature sensor (for open or short circuit)
F33	Incorrect temperature in wash chamber.	Wash temperature (-B07) has not risen by at least 10 degrees C after eight minutes' washing. **Possible action for an electrically-heated machine:** a. Check that there is power on all phases up to the elements. b. Check the voltage before and after the overheat cutout. If an overheat cutout has tripped, both cutouts must be replaced. **The overheat cutouts are not resettable.** **Possible action for a steam-heated machine:** a. Check the steam valve. b. Check that the ball valve is open and that the filter in the incoming steam is clean. c. Check steam pressure (see installation instructions). d. Check condensate drain. e. Check that there is no back-pressure in the condensate drain.
F34	Faulty temperature sensor in wash chamber.	Wash temperature (-B07), dependent and independent, differ by more than ±3 degrees C for three seconds. **Possible action:** a. Check the calibration of the temperature sensor (see "Calibration" in the section entitled Repair and adjustment) b. Check the temperature sensor.
F35	Incorrect temperature in booster tank.	The water temperature (-B06) has not risen by at least 10 degrees C in five minutes. **Possible action:** a. Check that there is power on all phases up to the elements. b. Check the voltage before and after the overheat cutout. If an overheat cutout has tripped it must be replaced. The overheat cutouts are not resettable.
F36	Fault message from independent monitoring system.	Correct the fault according to the fault message on the monitoring system.
F37	Temperature in wash chamber too high.	The temperature is more than 5 degrees C above the set value. **Possible action:** Check that the heating contactor is not stuck.

<Doc_TEC><Doc_502606900><Rel_B><Lang_GB>

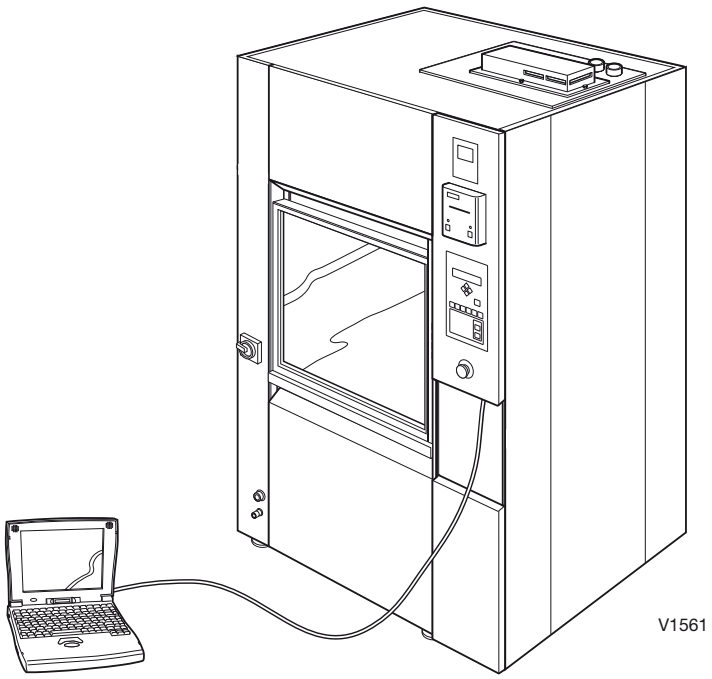
Fault code	Fault	Comment
F38	Faulty temp sensor in wash chamber. Disinfection temperature too low.	**Possible action for an electrically-heated machine:** a. Check that the elements are not short-circuited. **Possible action for a steam-heated machine:** a. Check the steam valve.

Repair and adjustment

Connecting a PC

An RS-232 cable is needed to connect a PC to the washer-disinfector.
Proceed as follows:

1. Connect a cable between the PC and port X24 or X25 as shown below.
   - X24 is mainly used for a PC and (for example) a scanner.
   - X25 is used mainly for T-doc (RS485) and printer (RS232 or RS485).



2. Set type of communication. The communication settings are done in the service program; see under tab 5 Software description and settings.
   Proceed as follows if the PC is:

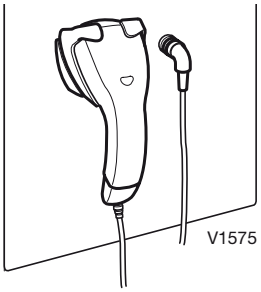
   ...connected to port X24
   - Go into Communication setup COM 0 (1.4.2.3.5.1); see tab 5 Software description and settings.
   - Choose COMLI PROTOCOL and press ↵. Exit the service program.

   ...connected to port X25
   - Go into Communication setup COM 1 (1.4.2.3.5.2); see tab 5 Software description and settings.
   - Choose COMLI PROTOCOL and press ↵.
   - Go into Communication setup COM 1 (1.4.2.3.5.3); see tab 5 Software description and settings.
   - Depending on the distance between the computer and the washer-disinfector, choose communication speed RS232 (<5 meters) or RS485 (> 5 meters) and press ↵. Exit the service program.

GETINGE

Connecting a barcode scanner

Hand scanner



To connect a barcode scanner, proceed as follows.

1. Connect power to the scanner.
2. Calibrate the scanner by reading in the barcodes below. Scan in the top barcode. Wait for a beep, then scan in the next code. Continue until all codes have been scanned in.
3. Connect a communication cable between the scanner and port X24.

reset factory defaults

configuration enable (*)

predefined terminal selections - RS-232 - special RS-232 configurations - slave mode (9600, 7, E, 2)

Code 128 / EAN 128 - active

\46\42\46\50\41\4A\01\29\41\5A\60

Code 128 / EAN 128 - EAN 128 identifier - remove]C1 identifier

Code 93 - active

Code 39 - active (*)

\47\5A\00\41\5E\41\4C\60

RS-232 - preamble / postamble - STX / ETX

RS-232 - hardware/software protocols timeout - compose (ms): 2500

\45\53\3E\02\45\54\3E\03\51\27\04\60

RS-232 - ENQ - not used (*)

temporary configuration mode - update current configuration

\47\3E\00\46\41\02\60

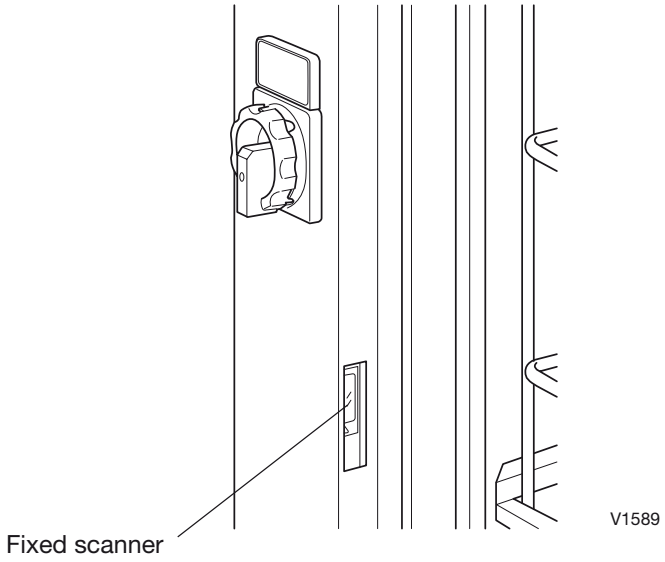
V1582

4. Set type of communication. The communication settings are done in the service program; see Chapter Software description and settings.
   - Go into Communication setup COM 0 (1.4.2.3.5.1); see Chapter 4 Software description and settings.
   - Choose Scanner and press ↵. Exit the service program.

Fixed scanner

To connect the barcode scanner, proceed as follows.

1. Connect power to the scanner.
2. Connect a communication cable between the scanner and port X24.
3. Set type of communication. The communication settings are done in the service program; see Chapter 4, Software description and settings.
   - Go into Communication setup COM 0 (1.4.2.3.5.1); see Chapter 4 Software description and settings.
   - Choose Scanner and press ↵. Exit the service program.



GETINGE

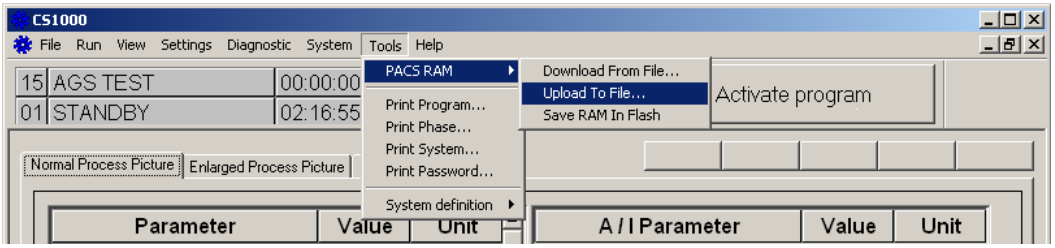
Loading programs to flash memory

The flash memory (existing or new card) can be reloaded with new wash programs or a new system program. Loading new wash programs requires the CS-1000 program, which can be purchased via Getinge Academy. Instructions are supplied with CS-1000. System programs and language versions are loaded with Flashloader.

Load system program

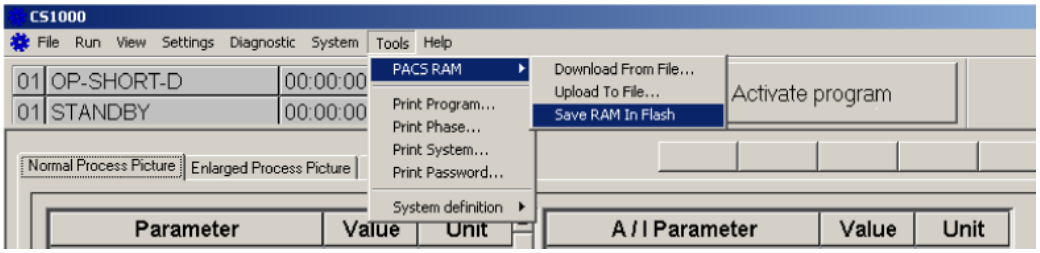
Note:
Always make a backup copy before starting work on updating system programs.

1. Connect a PC to the machine; see under Connecting a PC.
2. Check that the machine is in STANDBY mode.
3. Make a backup copy by starting CS 1000 and choosing:
   Tools/PACS RAM/Upload To File...



V1577

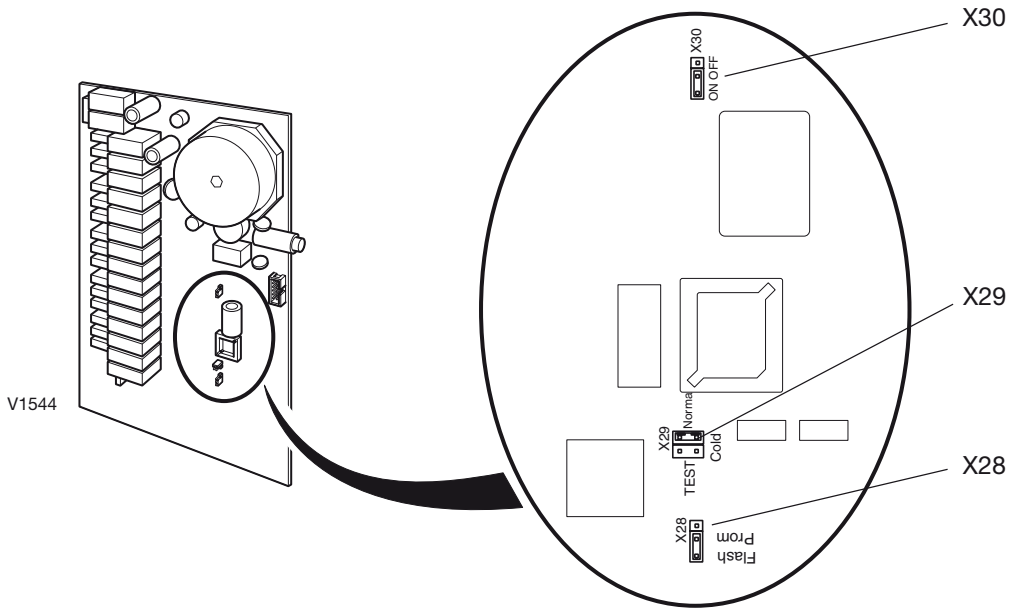
4. Save the *.prm file in your chosen location.
   The program will report an error during conversion. Disregard this. To check that conversion was successful, check the size of the *.prm file. The size of the file should be 84416 bytes.
5. If using existing card, do a Save RAM In Flash (the set calibration values will then be automatically moved back after loading of the program(s))



V1983

6. Switch off the power to the machine with the main switch.

7. Move jumper X29 on the board for the PACS 300 control system from Normal to Test. Check that jumper X28 is in the Flash position and that jumper X30 is in the ON position.



8. Switch on the power to the machine with the main switch. One of the following three menus appears on the display:

```
GETINGE
RAM OK
```

or

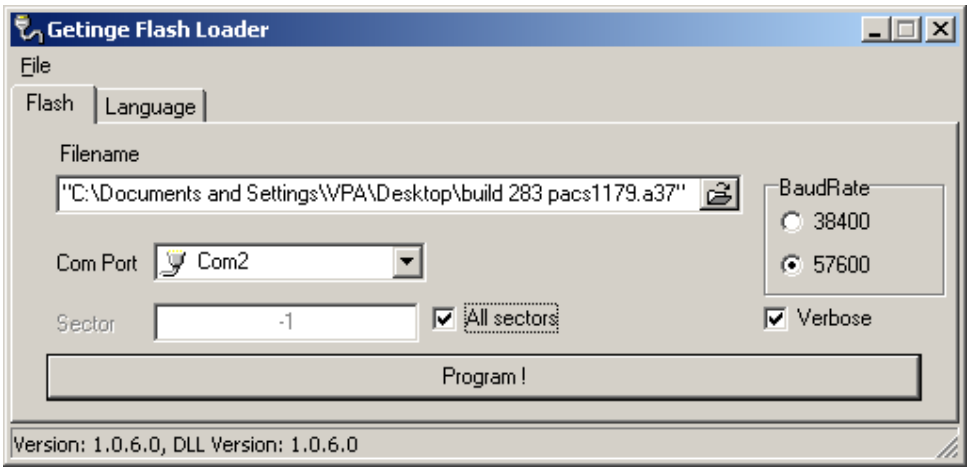
```
GETINGE BOOT 1179-61
RS232 0=0003 - FAIL
```

or

```
GETINGE PACS 300
Version X.XX
```

9. Start Flashloader from PC.

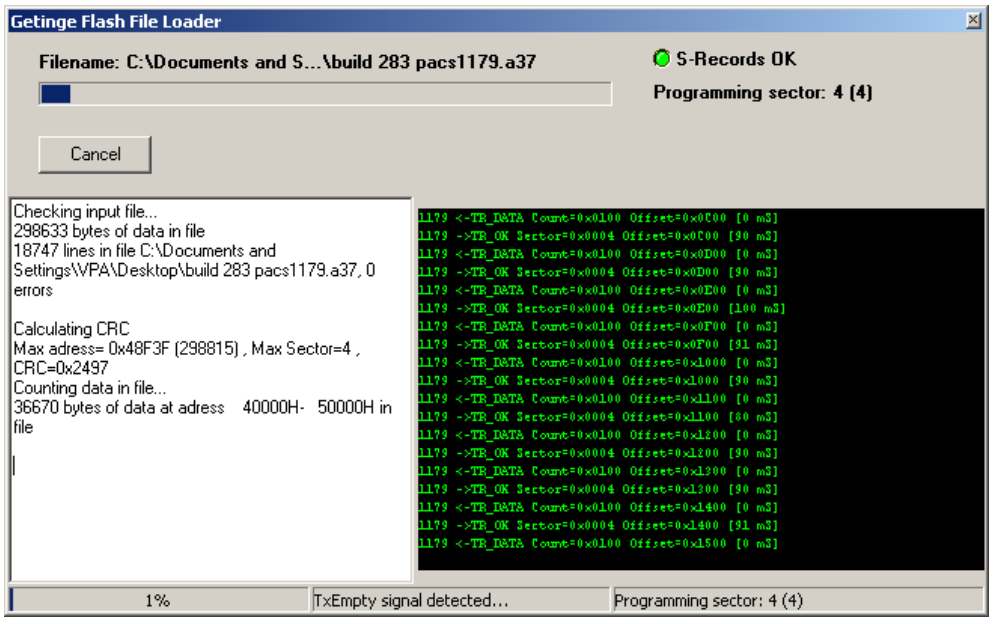
10. Set up as shown.



V1578

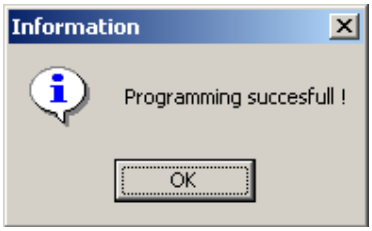
File name **Choose the right program file (*.a37).**
Com Port **The port to which you connected the data cable to your PC.**
Baud Rate **Choose 57600**
All Sectors and Verbose must be checked (=selected).

11. Start loading by pressing Program !. The following image appears.



V1579

12. When loading is complete, the following image appears. Press OK.



V1580

13. Now the display shows:

```
SW Update 0x2497
Updating CRC....
```

A beep is heard and the display shows:

```
SW Update 0x2497
CRC OK
```

14. If loading a language file as well, go to step 8 under Loading a language file.
15. Check that the battery jumper (X30) is set to ON.
16. Switch off the power to the machine with the main switch.
17. Change the jumper (X29) to Cold.
18. Switch on the power to the machine with the main switch. The display should now show:

```
P00
```

New card

Alternatively

```
P01   OP-SHORT-D
60.0°C       4
```

Existing card

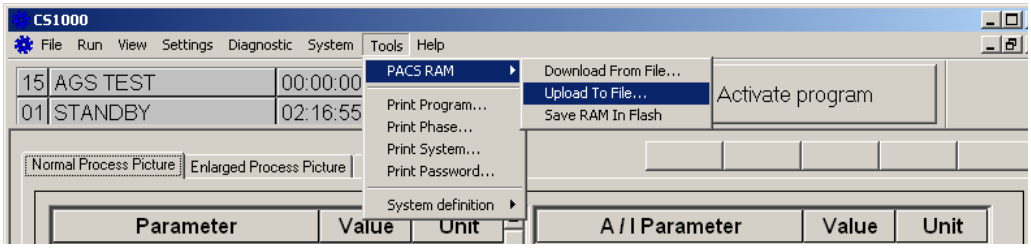
19. Without switching off the power, move jumper X29 to the Normal position.
17. Close Flashloader.
18. Start CS-1000 and load wash programs; see instructions for CS-1000.

GETINGE

Loading language files

Note:
Always make a backup copy before starting work on updating system programs.

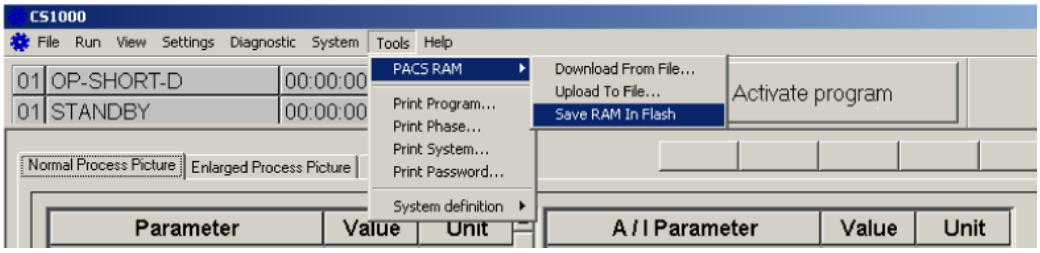
1. Connect a PC to the machine; see under Connecting a PC.
2. Check that the machine is in STANDBY mode.
3. Make a backup copy by starting CS 1000 and choosing:
   Tools/PACS RAM/Upload To File...



V1577

4. Save the *.prm file in your chosen location.
   The program will report an error during conversion. Disregard this. To check that conversion was successful, check the size of the *.prm file. The size of the file should be 84416 bytes.

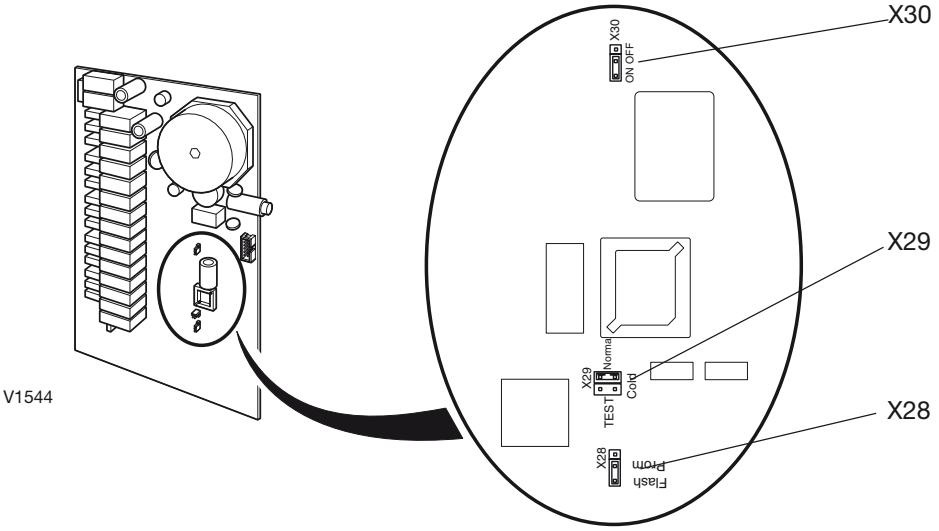
5. If using an existing card, do a Save RAM In Flash (the set calibration values will then be automatically moved back after loading of the program(s)).



V1983

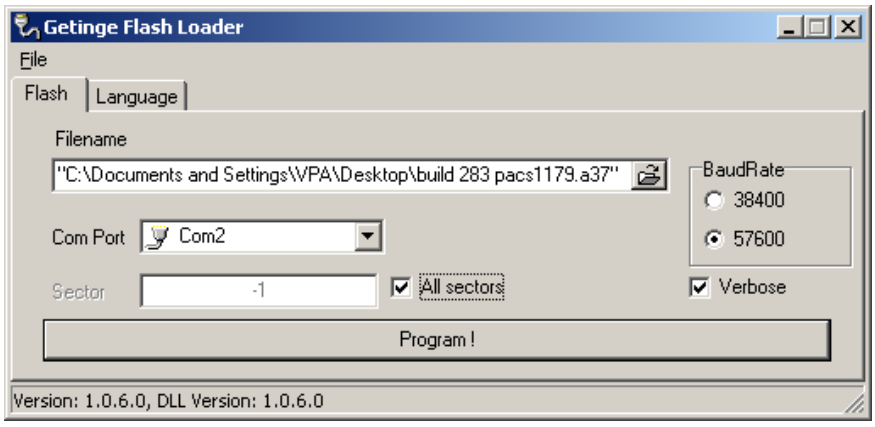
6. Switch off the power to the machine with the main switch.

7. Change the jumper (X29) on the board for the PACS 300 control system from Normal to Test. Check that jumper X28 is in the Flash position and that jumper X30 is in the ON position.



V1544

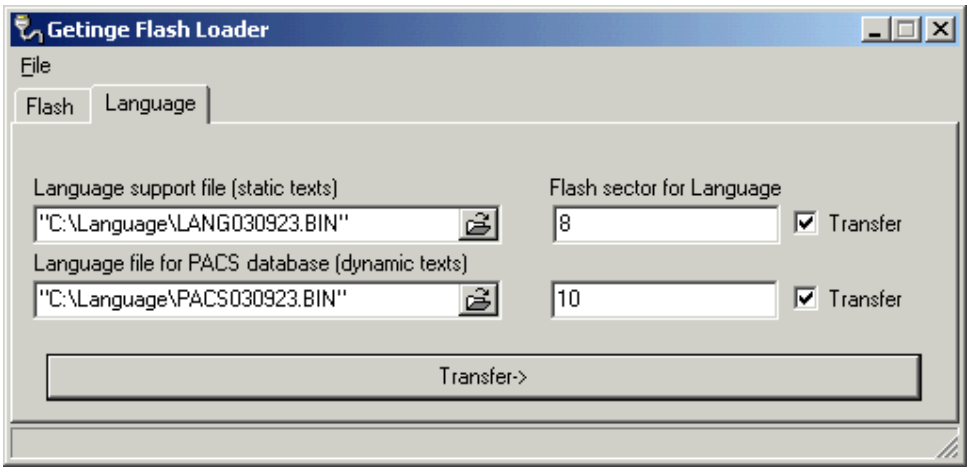
8. Set up as shown.



V1578

File name **Choose the right program file (*.a37).**
Com Port **The port to which you connected the data cable to your PC.**
Baud Rate **Choose 57600**
All Sectors and Verbose must be checked (=selected).

9. Choose the Language tab.



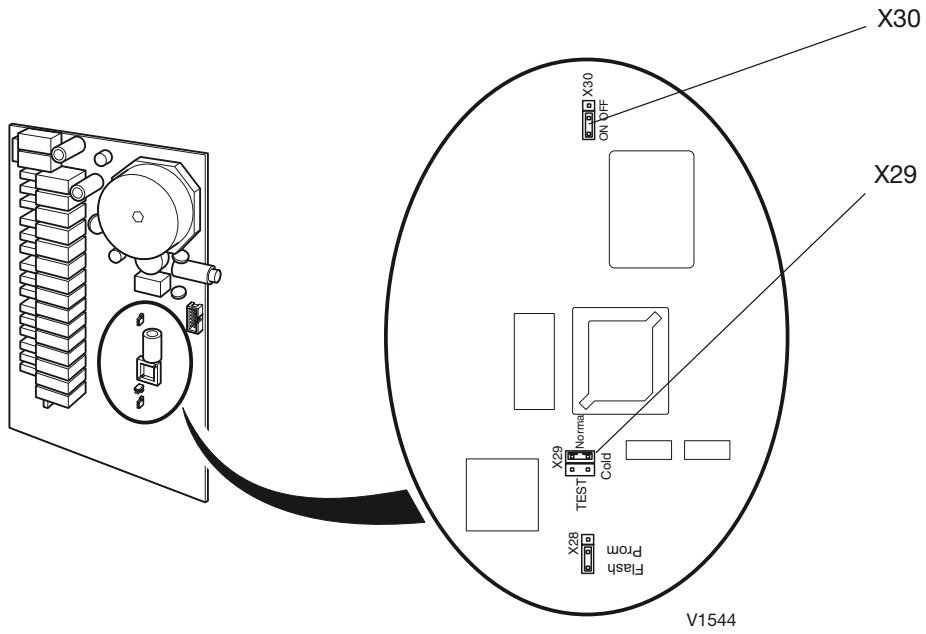
10. Choose the relevant files:
    - Language support file,
    - Language file for PACS database.
11. Set Flash Sector for Language to 8 and 10 (as shown).
12. Check Transfer (both checkboxes).
13. Click Transfer->. The language files are now transferred to PACS 300.
14. Check that the battery jumper (X30) is set to ON.
15. Switch off the power to the machine with the main switch.
16. Change the jumper (X29) to Cold.
17. Switch on the power to the machine with the main switch. The display should now show:

18. Without switching off the power, move jumper X29 to the Normal position.
19. Close Flashloader.
20. Start CS-1000 and load wash programs; see instructions for CS-1000.

Cold start

Do a cold start when the machine has hung and you cannot proceed with the program.

1. Switch off the power to the machine.
2. Move the battery jumper (X30) to OFF.
3. Move the programming jumper (X29) from Normal to Cold.
4. Switch on the power.
5. Wait until CRC OK appears on the display.
6. Move the battery jumper (X30) back to ON. **Note:** The power is still on.
7. Move the programming jumper (X29) from Cold to Normal. **Note:** The power is still on.
8. Set the doors to the home position using the service program (tab 5 Software description and settings, Test digital output display (1.4.2.5.3.4)) or CS1000.
   Home position for the doors:
   Soiled side = door unlocked and open
   Clean side = door closed and locked



GETINGE

CALIBRATION

Conductivity meter

Check the output signal from conductivity meter

To check the output signal, proceed as follows.

1. Press [E] on the conductivity meter.
2. Enter code 22 with [+] and [−].
3. Press [E]. Setup 1 appears.
4. Choose Output med [+] and [−].
5. Press [E]. Lin appears on the upper line and Sel. Type appears on the lower line.
6. Press [E].
7. Choose 4-20 mA with [+] and [−].
8. Press [E] .
9. Set 0/4 mA = 0.000 µS/cm with [+] and [−].
10. Press [E].
11. Set 20 mA = 200 µS/cm with [+] and [−].
12. Press [E].
13. Press [+] and [−] at the same time to log out.

Setting the cell constant

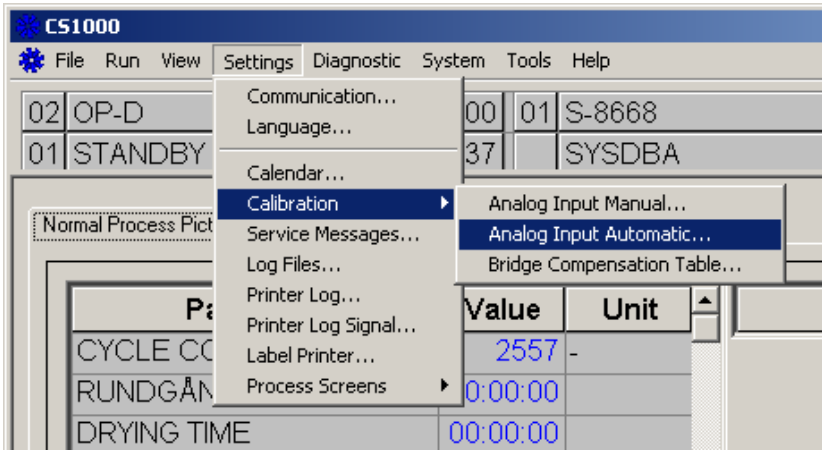
To set the cell constant, proceed as follows:

1. Press [E] .
2. Enter code 22 with [+] and [−].
3. Press [E]. Setup 1 appears.
4. Press [E] until the display shows Cellconst.
5. Set the relevant cell constant with [+] and [−]; see the calibration certificate
6. Press [E] three times. The display shows Setup 1.
7. Press [+] and [−] at the same time to log out.

Calibration

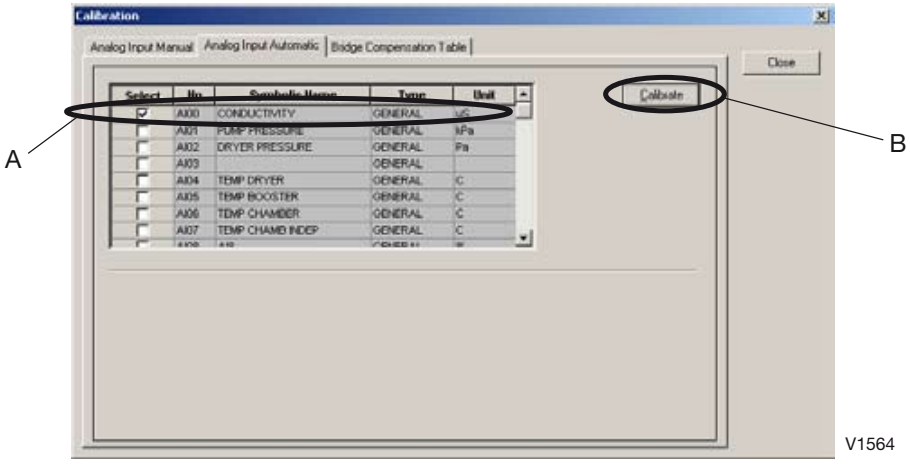
To calibrate the conductivity meter, proceed as follows.

1. Connect a PC with the CS 1000 program installed to the disinfector.
2. Press [E] on the conductivity meter.
3. Enter code 22 with [+] and [−].
4. Press [E]. Setup 1 appears.
5. Choose Output med [+] and [−].
6. Press [E]. Sel. Type appears.
7. Choose SIM med [+] and [−].
8. Press [E].
9. Choose 0 ... with [+] and [−] 22 mA.
10. Set 4 mA.
11. Start CS 1000 and choose Settings/Calibration/Analog Input Automatic...



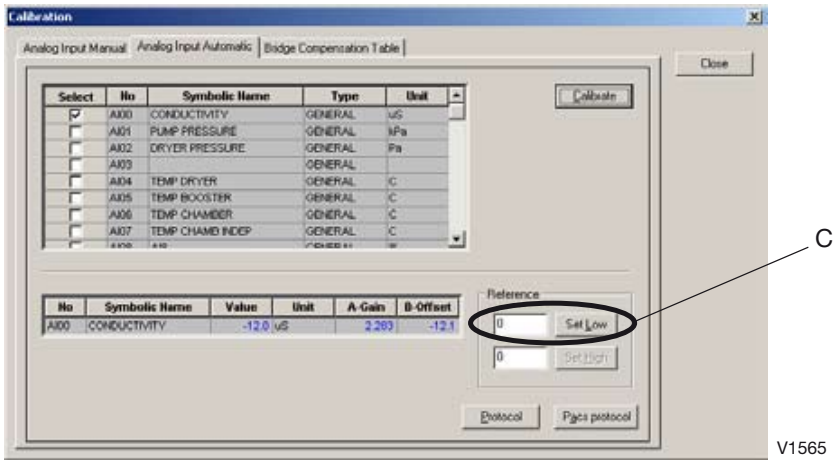
V1563

12. Click Conductivity (A) and then Calibrate (B).

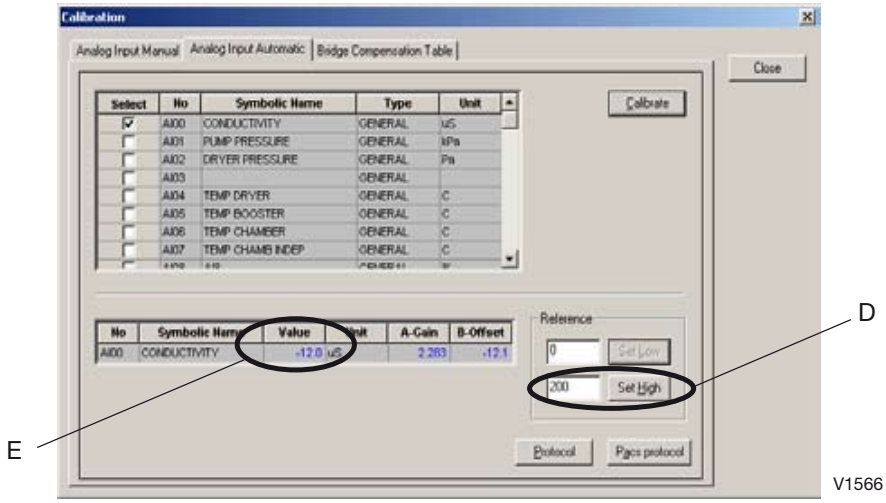


V1564

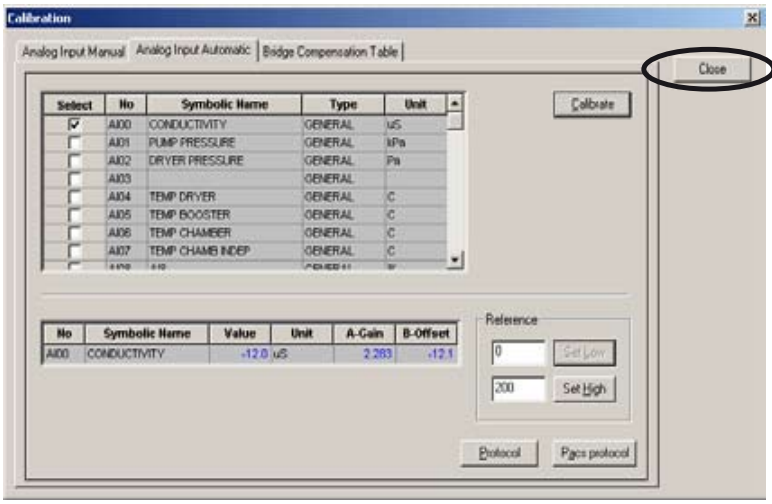
13. Enter the value 0 (C) and click Set Low.



14. Set 20 mA on the conductivity meter with ⊕ and ⊖.
15. Enter 200 (D) in CS 1000 and click Set High.



16. Check that the value (E) rises to 200.
17. Cancel the acoustic signal by pressing Close (F).



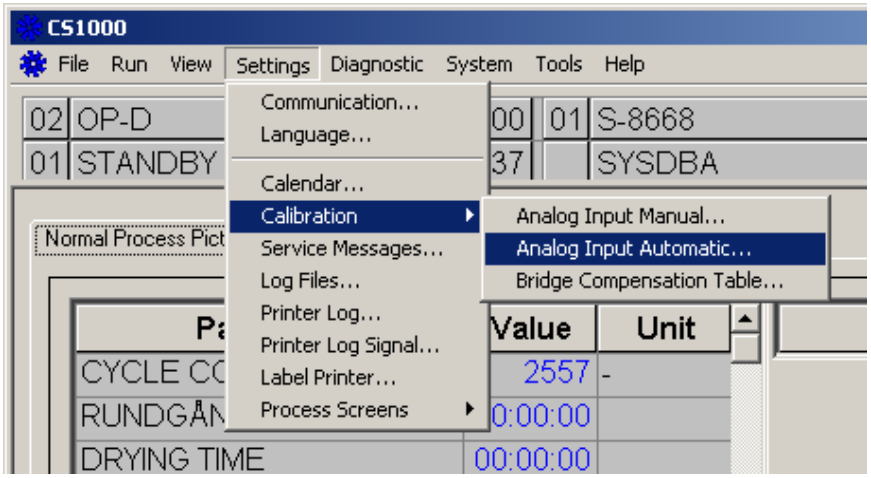
18. Press [+] and [−] at the same time. Output appears on the display.
19. Press [E]. Sel. Type appears.
20. Choose Lin. with [−].
21. Press [E].
22. Press [+] and [−] at the same time twice to log out of the conductivity meter.

GETINGE

Pressure sensor for circulation pump

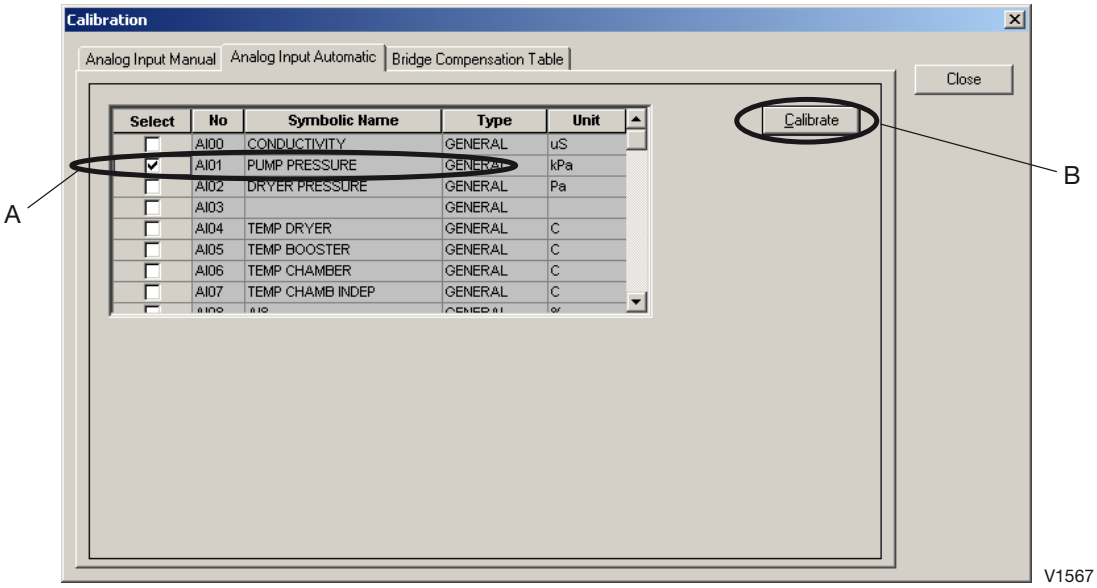
To calibrate the pressure sensor for the circulation pump, proceed as follows.

1. Connect a PC with the CS 1000 program installed to the disinfector. (If the machine is equipped with a monitoring system, the PC must be connected to that as described in Chapter 9.)
2. Connect a process simulator to A01-X2:
   + to 2
   - to 5.
3. Set the process simulator to 4 mA.
4. Start CS 1000 and choose Settings/Calibration/Analog Input Automatic...



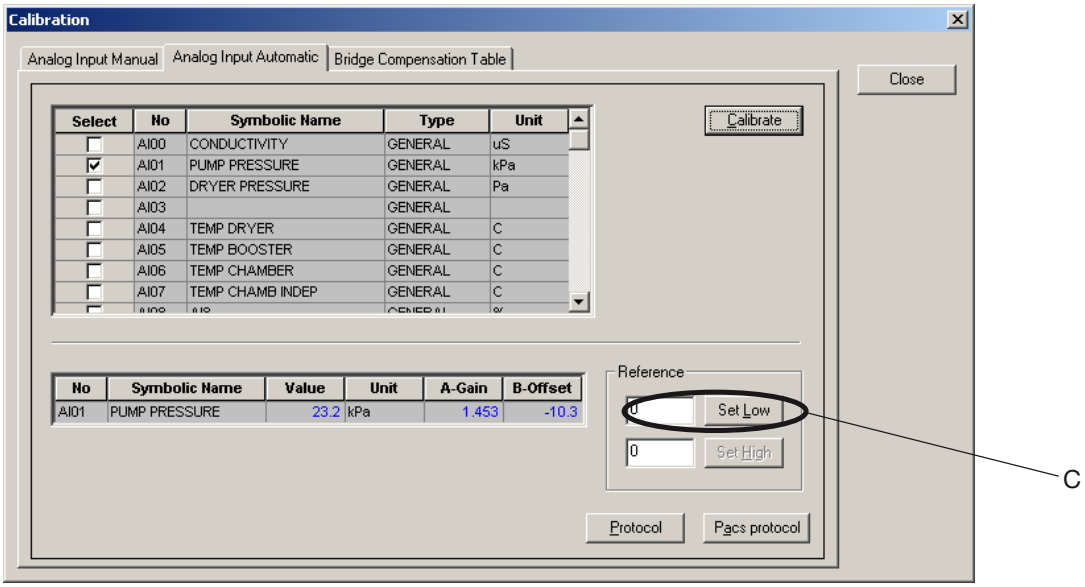
V1563

5. Click Pump pressure (A) and then Calibrate (B).



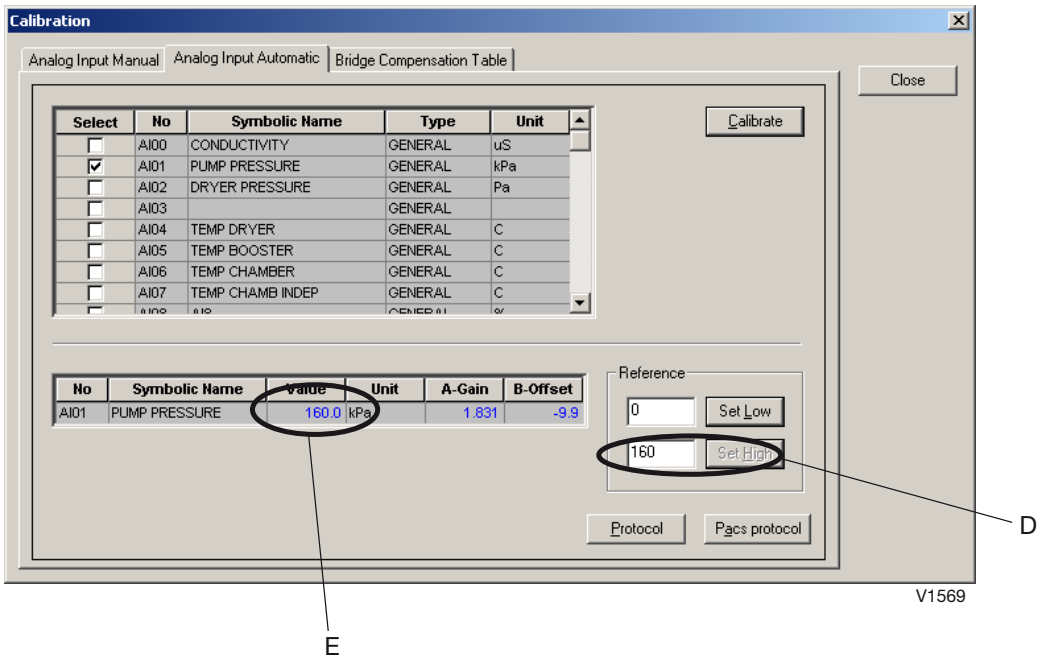
V1567

6. Enter the value 0 (C) and click Set Low.



V1568

7. Set the process simulator to 20 mA.
8. Enter 160 (D) in CS 1000 and click Set High.



V1569

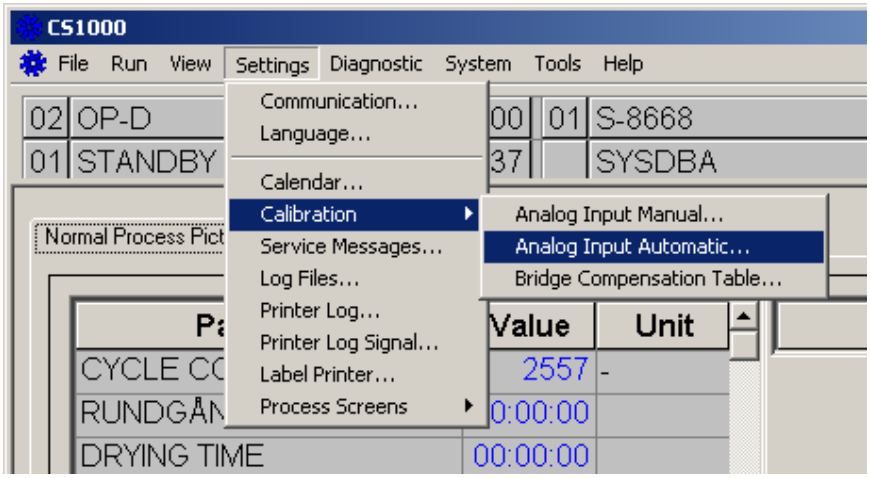
9. Check that the value (E) rises to 160.
10. Log off CS 1000.

GETINGE

Temperature sensor - with resistor

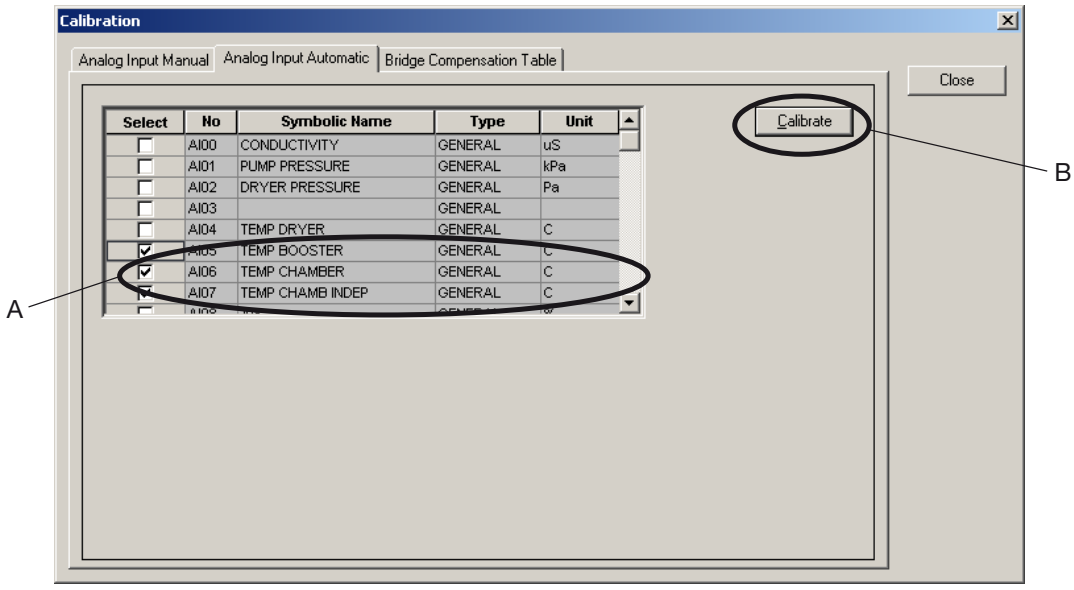
Proceed as follows to calibrate the temperature sensors with the aid of resistors:

1. Connect a PC with the CS 1000 program installed to the disinfector. (If the machine is equipped with a monitoring system, the PC must be connected to that as described in Chapter 9.)
2. Insert resistors for 20 ºC at the following places:
   A01-X7 Chamber temperature (two sensors)
   A01-X6 Booster tank
   A01-X5 Dryer
3. Start CS 1000 and choose Settings/Calibration/Analog Input Automatic...



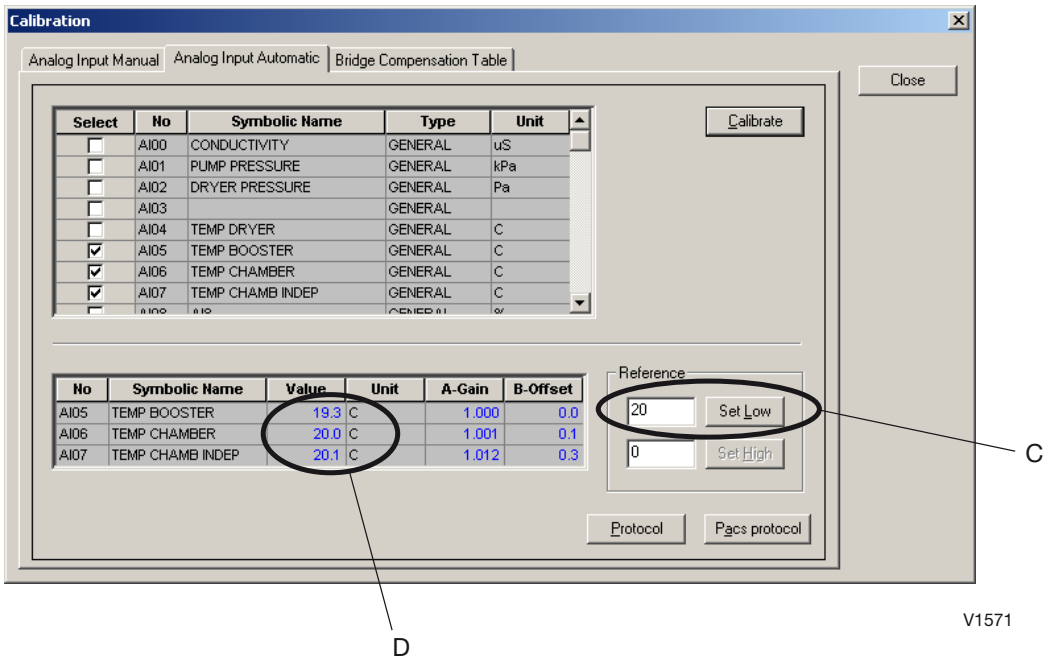
V1563

4. Click Temp booster, Temp chamber and Temp chamb indep(A), then click Calibrate (B).

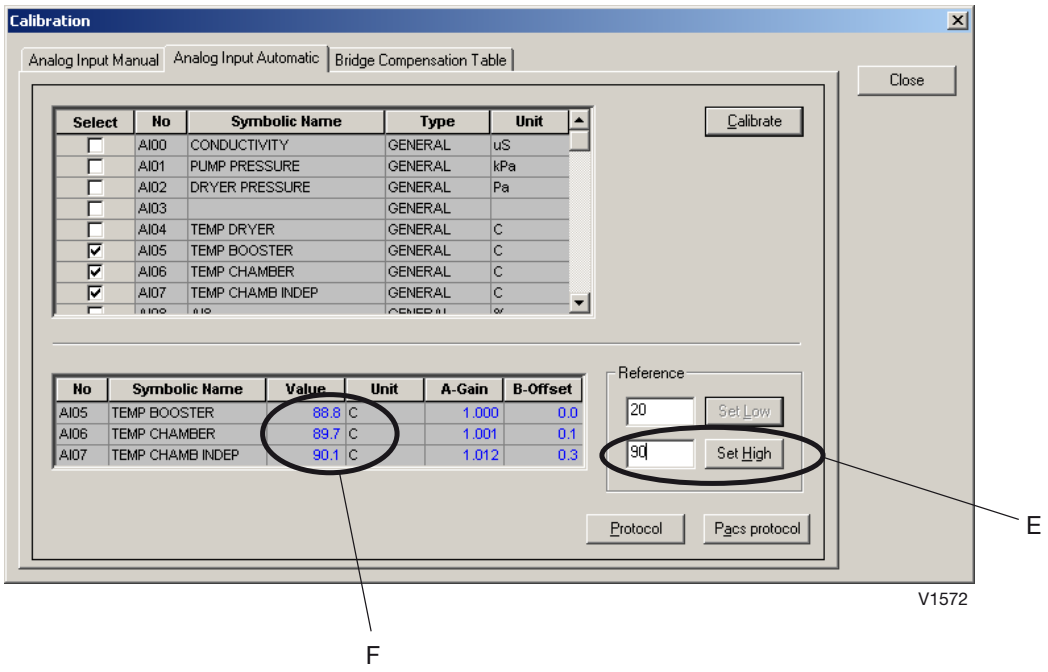


V1571

5. Enter the value 20 (C) and click Set Low.



6. Check that the value (D) rises to 20.
7. Replace resistors for 20 ºC with resistors for 90 ºC.
8. Enter 90 (E) in CS 1000 and click Set High.



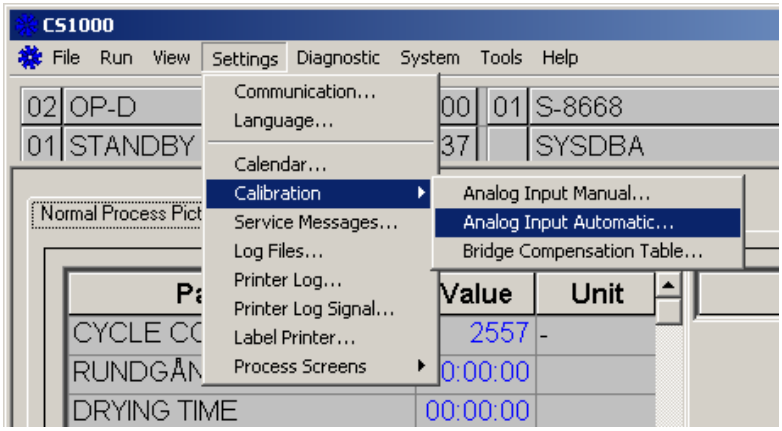
9. Check that the value (F) rises to 90.
10. Log off CS 1000.
11. Remove the resistors and reinstate the temperature sensors.

GETINGE

Temperature sensor - with ice bath and oil bath

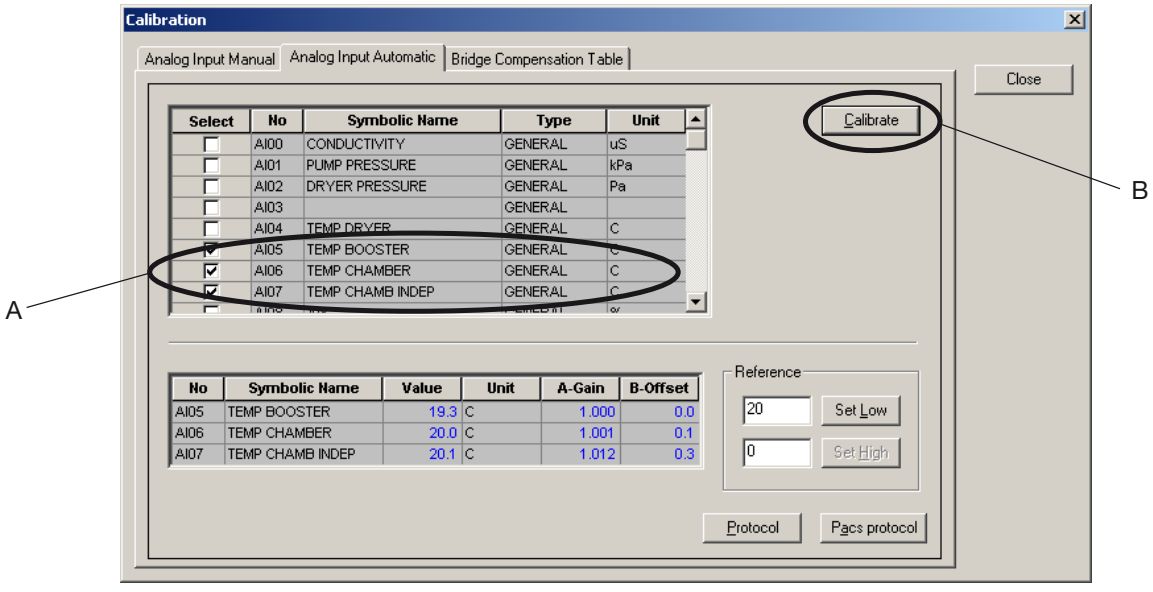
Proceed as follows to calibrate the temperature sensors with the aid of an ice bath and an oil bath:

1. Connect a PC with the CS 1000 program installed to the disinfector. (If the machine is equipped with a monitoring system, the PC must be connected to that as described in Chapter 9.)
2. Prepare an ice bath and an oil bath.
   The ice bath must consist of crushed ice in a bowl of cold water. The bath must stand for at least 20 minutes so that the temperature can stabilize.
   The oil bath must be switched on for at least 45 minutes at the set temperature (100 ºC) to stabilize the temperature.
3. Remove the temperature sensors from the disinfector. Tape the sensors together.
4. Lower the temperature sensors into the ice bath together with an external thermometer.
5. Start CS 1000 and choose Settings/Calibration/Analog Input Automatic...

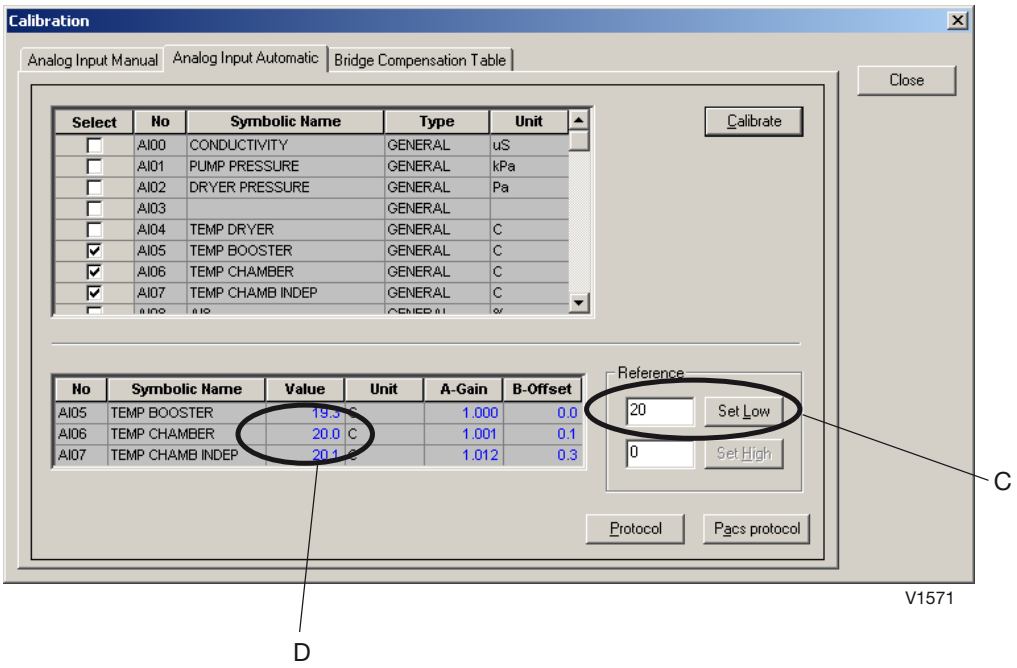


V1563

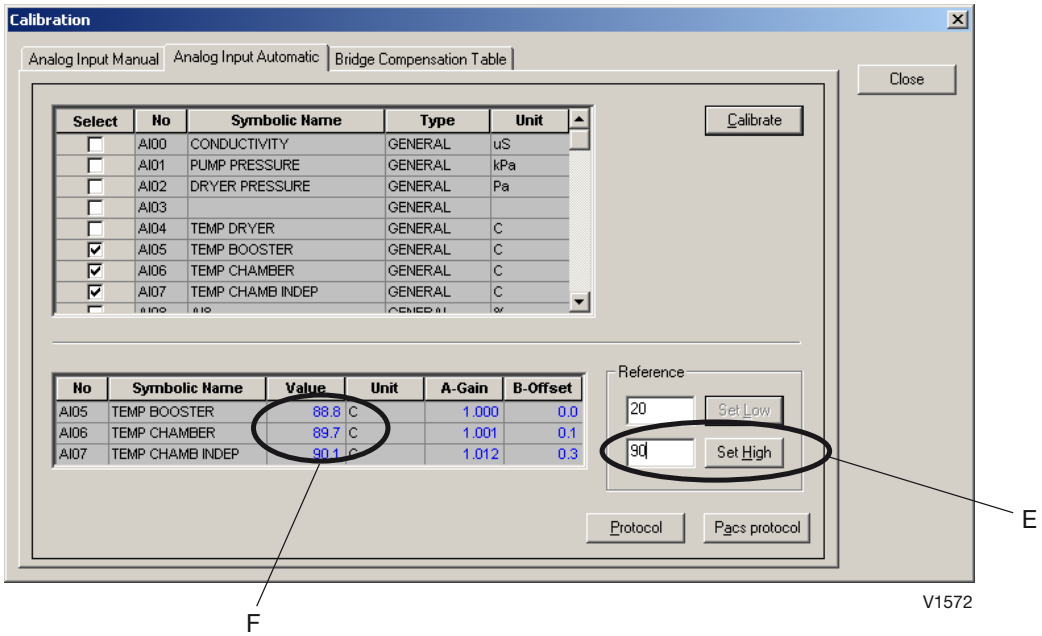
6. Click Temp booster, Temp chamber and Temp chamb indep (A), then click Calibrate (B).



7. Check that the reading of the external thermometer stabilizes. Enter the reading of the external thermometer (C) and click Set Low.



8. Check that the value (D) rises to the set value.
9. Move the temperature sensors and the external thermometer to the oil bath. Check that the reading of the external thermometer stabilizes. Enter the reading of the external thermometer (E) and click Set High.



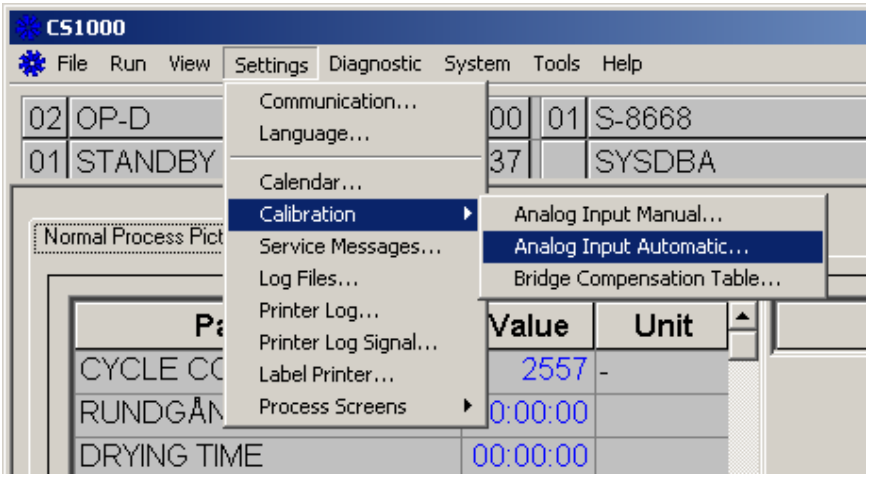
10. Check that the value (F) rises to the set value.
11. Log off CS 1000.
12. Re-instate the temperature sensors.

GETINGE

Differential pressure gauge for dryer

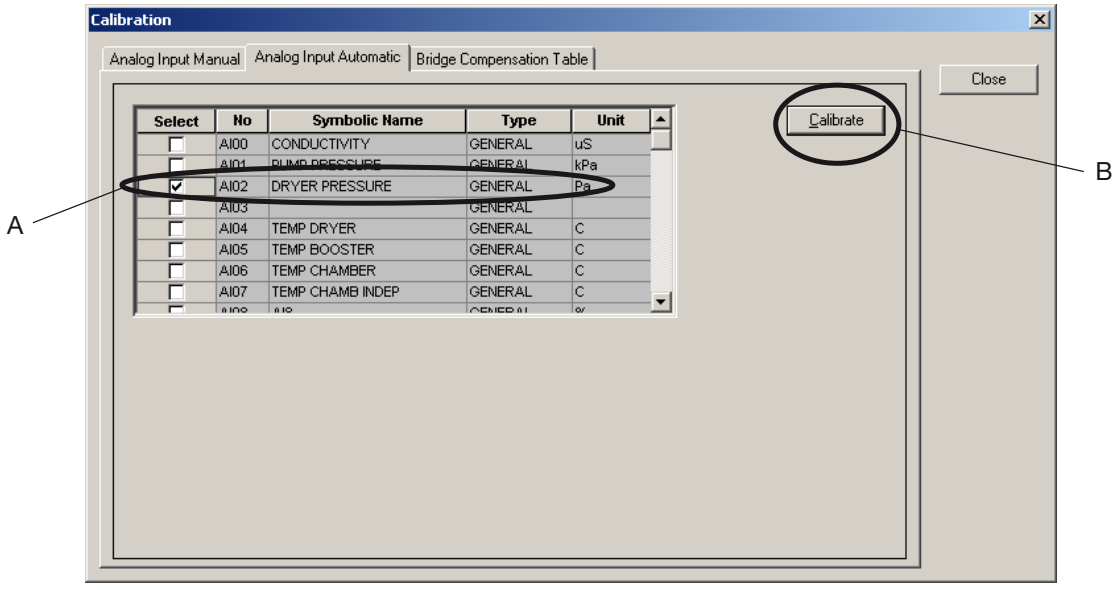
To calibrate the differential pressure gauge for the dryer, proceed as follows.

1. Connect a PC with the CS 1000 program installed to the disinfector.
2. Close the machine doors.
3. Connect an external differential pressure gauge in parallel with the existing gauge on the machine. Zero the external differential pressure gauge.
4. Start CS 1000 and choose Settings/Calibration/Analog Input Automatic...



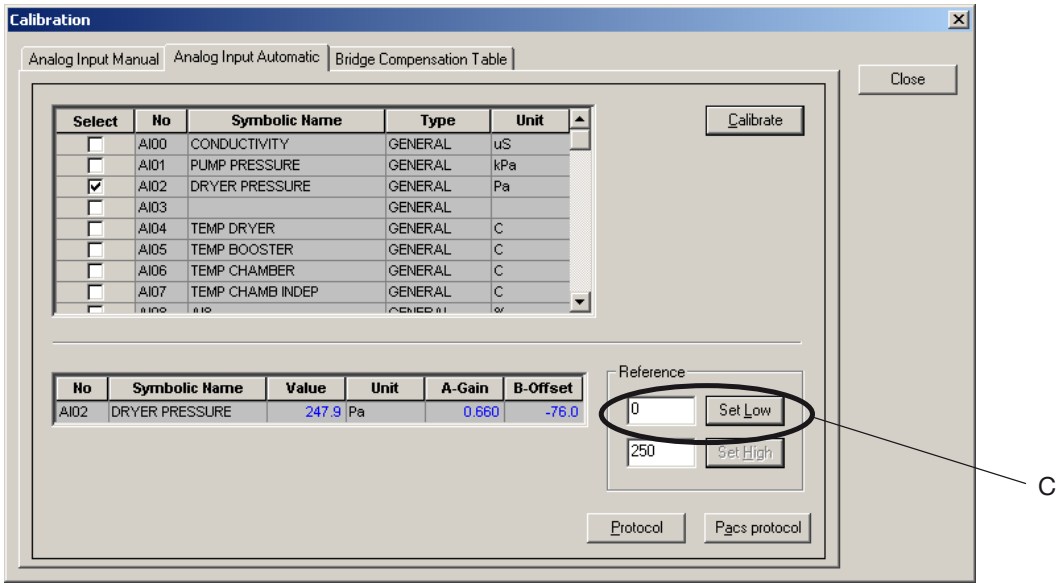
V1563

5. Click Dryer pressure (A) and then Calibrate (B).



V1573

6. Enter the value 0 (C) and click Set Low.



V1574

7. Start the machine fan manually as follows:

```
>SETUP
```

Scroll to SETUP with ◈. Press ↵.

```
>SYSTEM
 APPLIANCE INFO
```

Scroll to SYSTEM with ◈. Press ↵.

```
>ENTER PASSWORD
```

Enter password. Press ↵.

```
>SERVICE
 SAVE RAM IN FLASH
```

Scroll to SERVICE with ◈. Press ↵.

```
 SERVICE MESSAGE
>DIAGNOSTICS
```

Scroll to DIAGNOSTICS with ◈. Press ↵.

```
>TEST ANALOG OUT
 TEST DIGITAL IN
```

Scroll to TEST ANALOG OUT with ◈. Press ↵.

```
>01 FAN SPEED DRYER
 AUT          100%
```

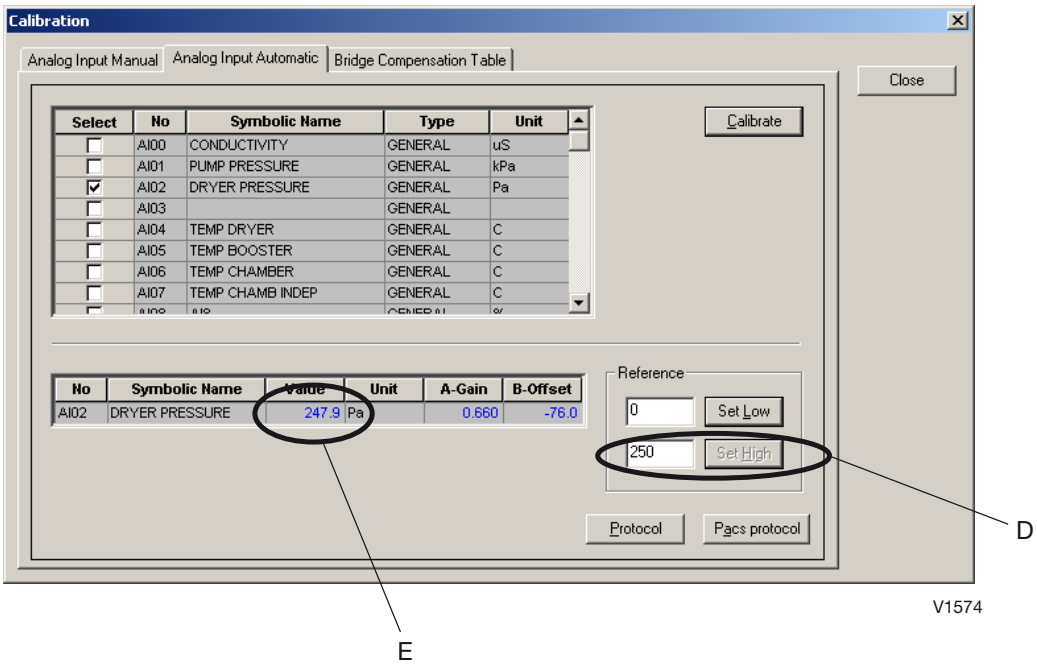
Scroll to 01 FAN SPEED DRYER with ◈. Press ↵.

```
>01 FAN SPEED DRYER
MAN           75%
```

Change AUT to MAN with ◈. Set fan speed to 75 %.

8. Check the reading of the external differential pressure gauge. Enter the reading of gauge (D) in CS 1000 and click Set High.
   The reading should be between 200 and 400 Pa.

If it is too high, the filter may be clogged; if it is too low, there may be a hole in the filter.



9. Check that the value (E) rises to the reading of the external differential pressure gauge.
10. Log off CS 1000.
11. Reinstate the fan.
    Set fan speed to 0 %. Change MAN to AUT with ◈. Press ↵.

```
>01 FAN SPEED DRYER
 MAN          0%
```

12. Log out.
13. Reinstate the differential pressure gauge.

Replacing a temperature sensor

This may only be done by authorized personnel.

The machine is connected to the electricity supply and some components are live.

In wash chamber and dryer

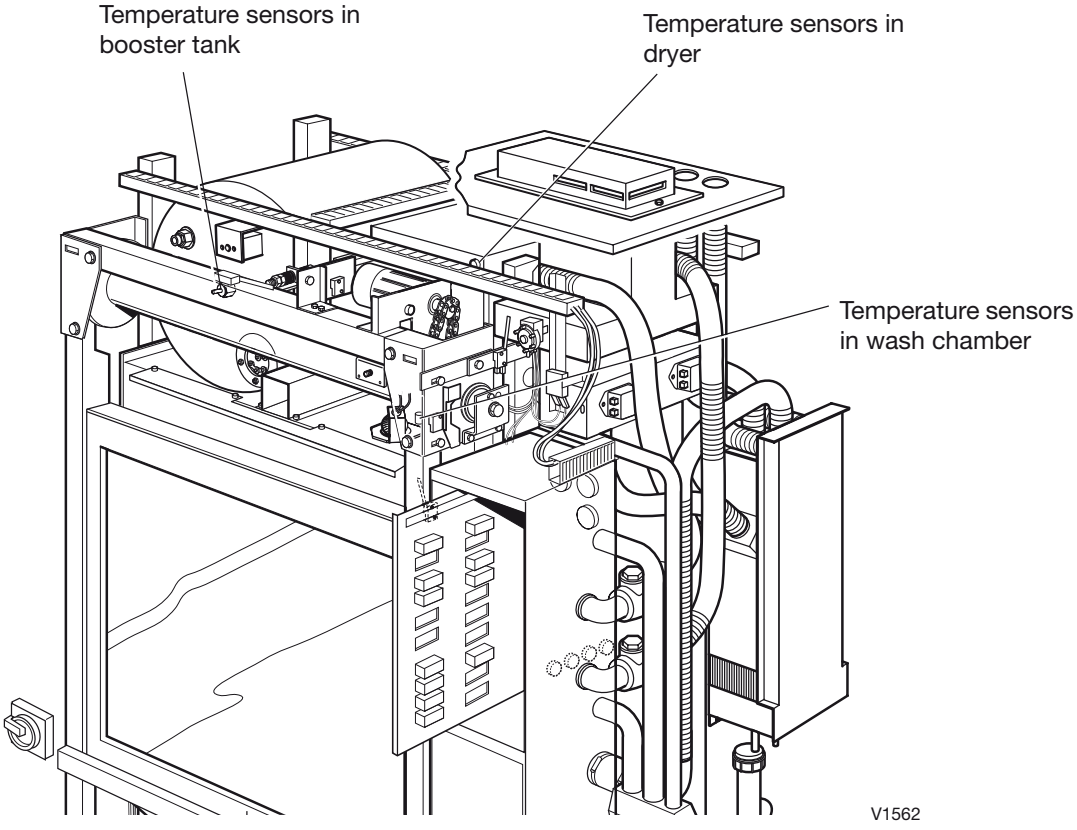
- Remove the old temperature sensor by pulling it out of the seal.
- Push the new sensor in through the seal.

It is important that the sensor does not penetrate too far into the chamber, since it may be damaged in service.

After replacing a sensor in the chamber, check that the controlling and independent sensors show the same temperature. If not, calibrate as described under Calibration.

In a booster tank

- Remove the old temperature sensor by unscrewing the gland and pulling the sensor out.
- Push in the new sensor and tighten the gland.



GETINGE

Door

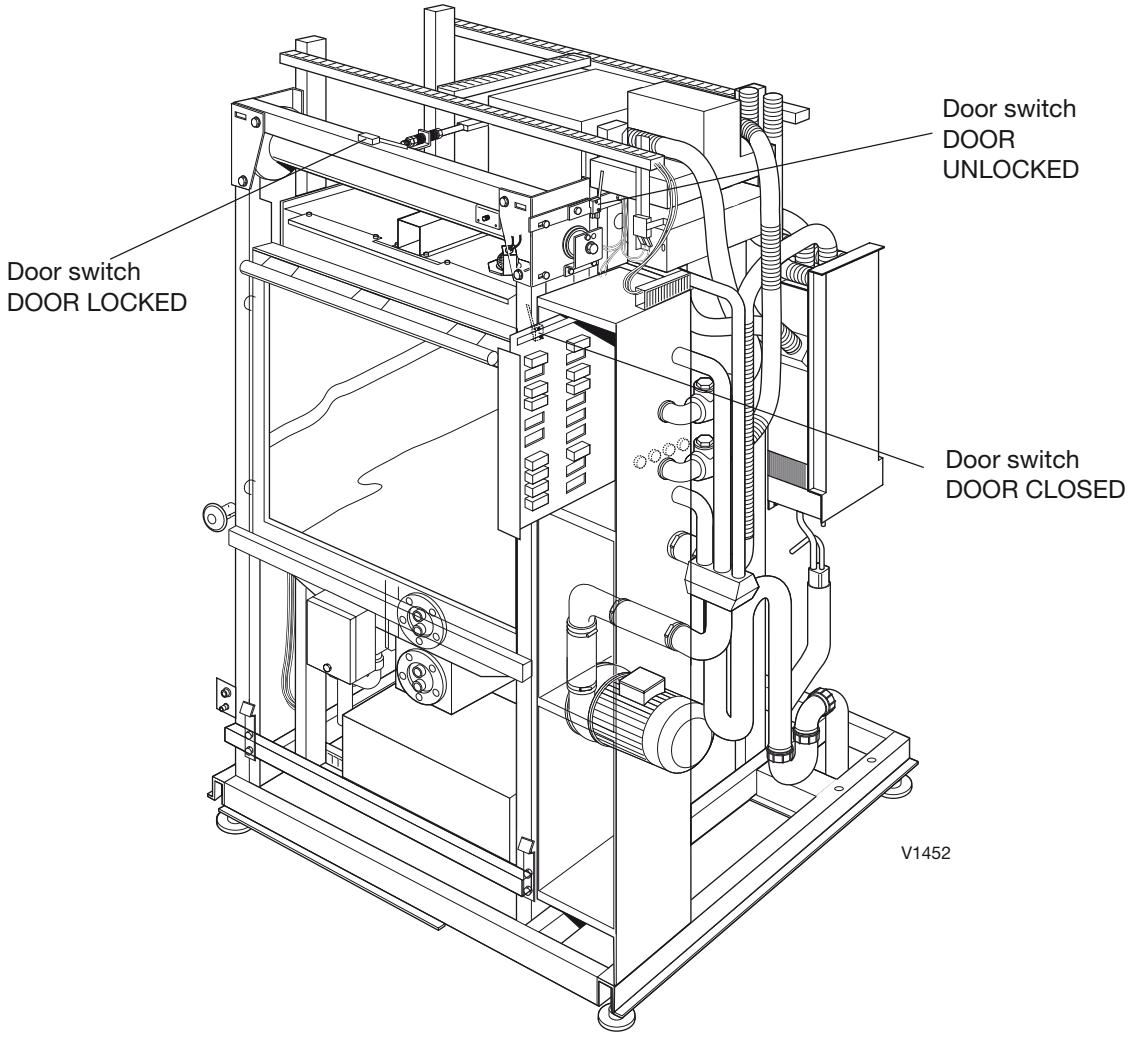
Position and operation, door switches

This may only be done by authorized personnel.

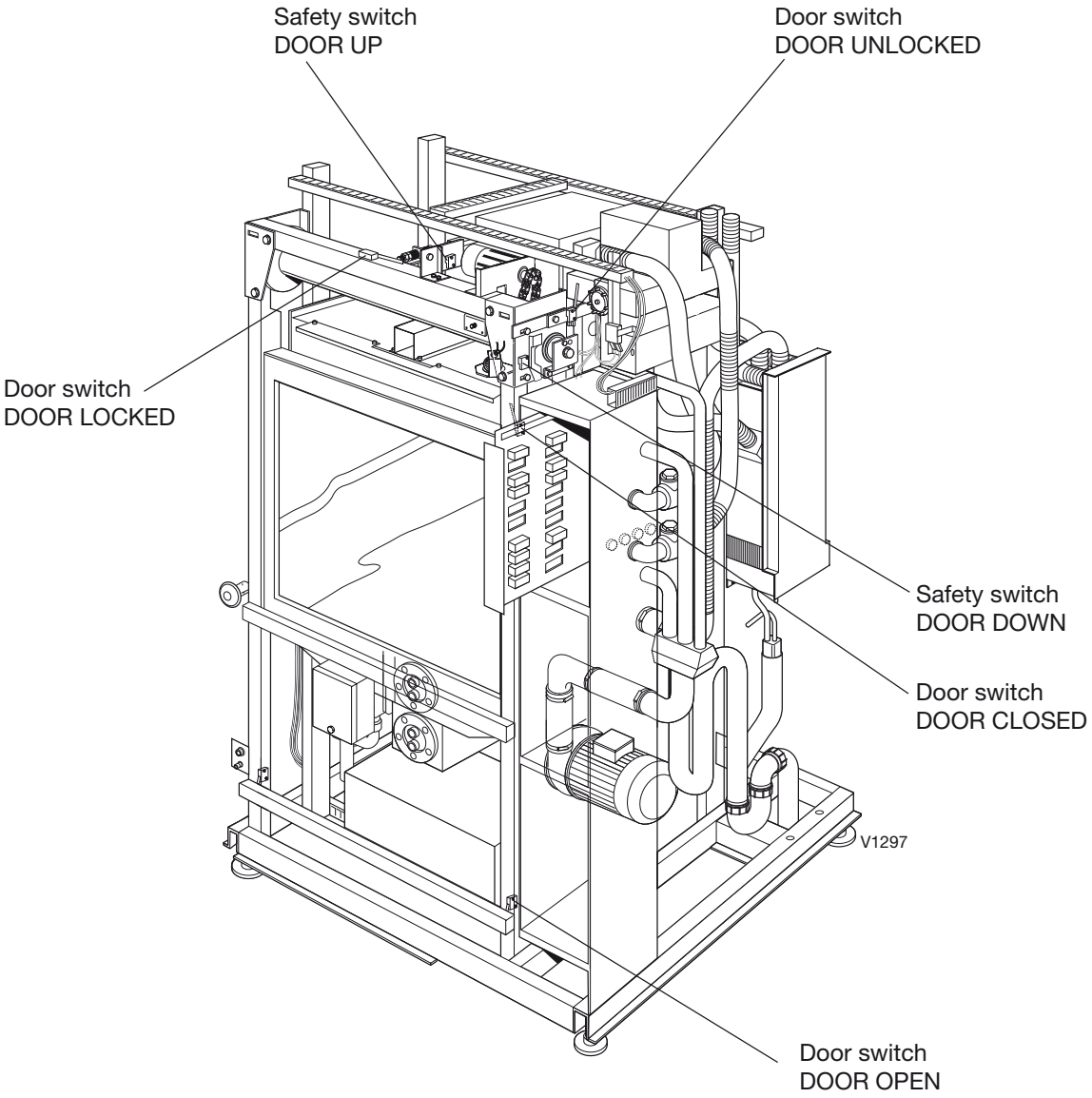
Before starting work, make sure that the machine is isolated from the electric power supply.

Do not use magnetic material when adjusting the “Door locked” switch.

The illustrations show which door switches are fitted to a machine with manual or automatic door.



Manual door:
When the door is at its top position, the DOOR CLOSED and DOOR UNLOCKED switches are activated. When the motor has pulled the door into its inner position, the DOOR LOCKED switch is activated.



Automatic door:

When the door is at its bottom position, the DOOR OPEN switch is activated and when the door is in the top position the DOOR CLOSED and DOOR UNLOCKED switches are activated. When the motor has pulled the door into its inner position, the DOOR LOCKED switch is activated.

If the door is obstructed on its way up and the force on the door is greater than 150 N, the DOOR UP safety switch stops the door. When the door is stopped, the motor drive unit turns around its fixing point and activates the safety switch. For adjustment, see under “Adjusting safety switches, DOOR UP”.

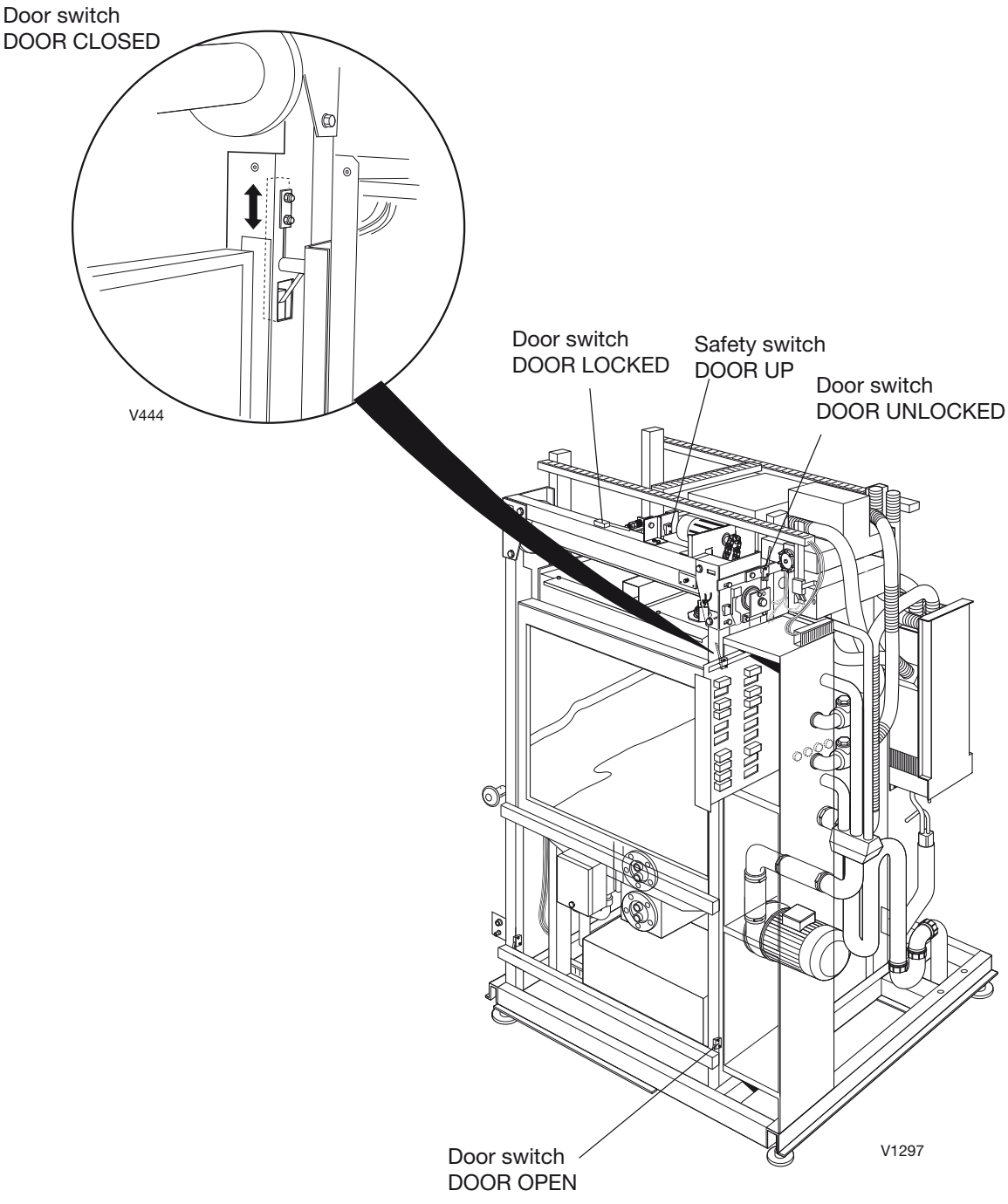
If the door is obstructed on its way down, the DOOR DOWN safety switch stops the door. The door is suspended on two wires. If the door is obstructed, the wires continue to be paid out, and a spring force activates the DOOR DOWN safety switch, stopping the door.

GETINGE

Adjusting door switches

This may only be done by authorized personnel.
Before starting work, make sure that the machine is isolated from the electric power supply.

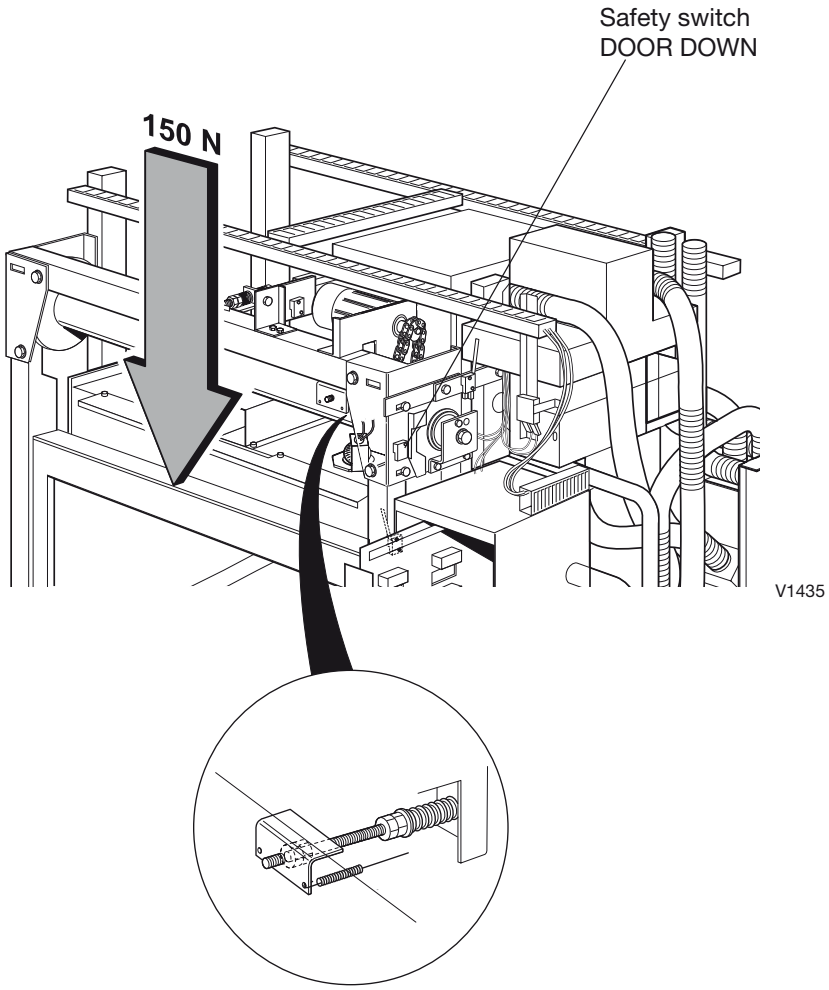
Check that the respective microswitches are activated. Adjust if necessary.



Adjusting DOOR UP safety switch

This may only be done by authorized personnel.

The DOOR UP safety switch is fitted only to machines with automatic door.
To prevent damage, the spring must be adjusted so that the door stops when a force of 150 N is applied to the door when the door is moving up. The illustration below shows how to adjust the spring.



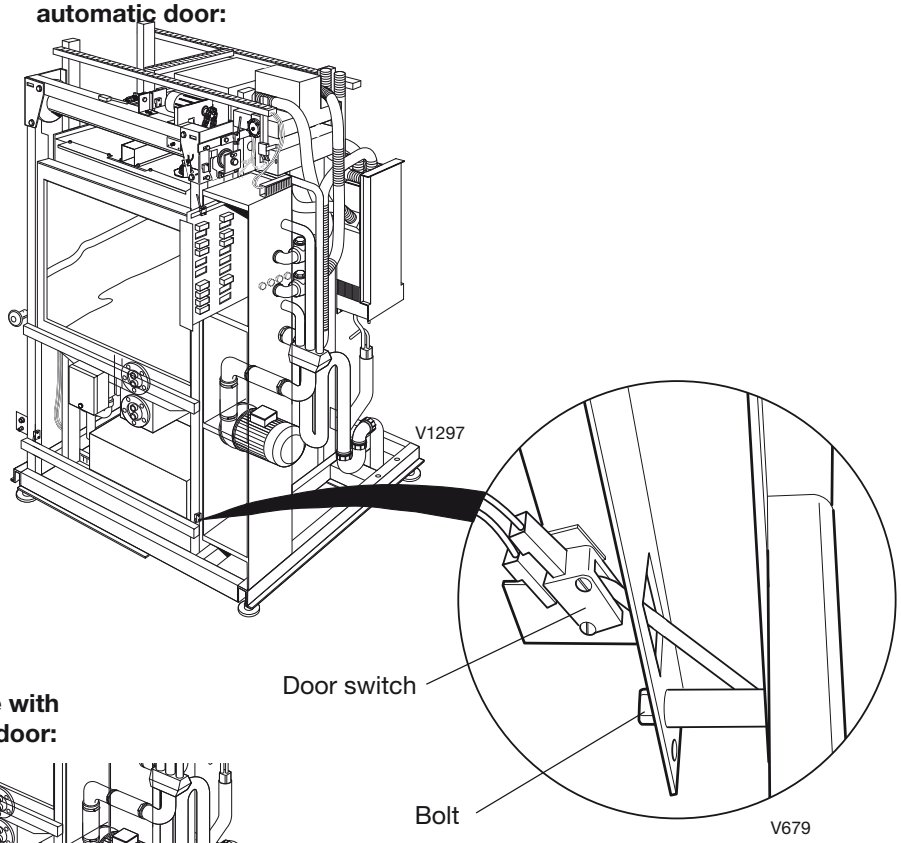
GETINGE

Replacing the door seal

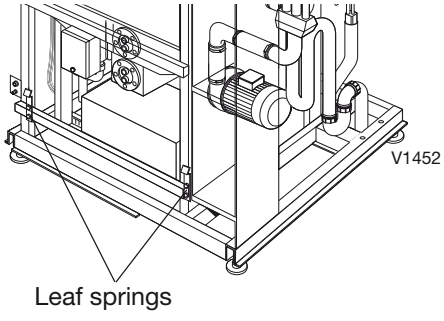
This may only be done by authorized personnel.

- Automatic door: Remove door switches and bolts. (If a loading/unloading unit is installed, there are door switches on the left-hand side only). This is so that the door can be pushed down far enough to release the seal.
- Manual door: Remove bolts and leaf springs so that the door can be pushed down far enough to release the seal.
- Push the door down to its lower position.
- Pull off the old seal.
- Fit the new seal and press it firmly into place.
- Automatic door: Install door switches and bolts.
- Manual door: Install bolts and leaf springs.

Machine with automatic door:



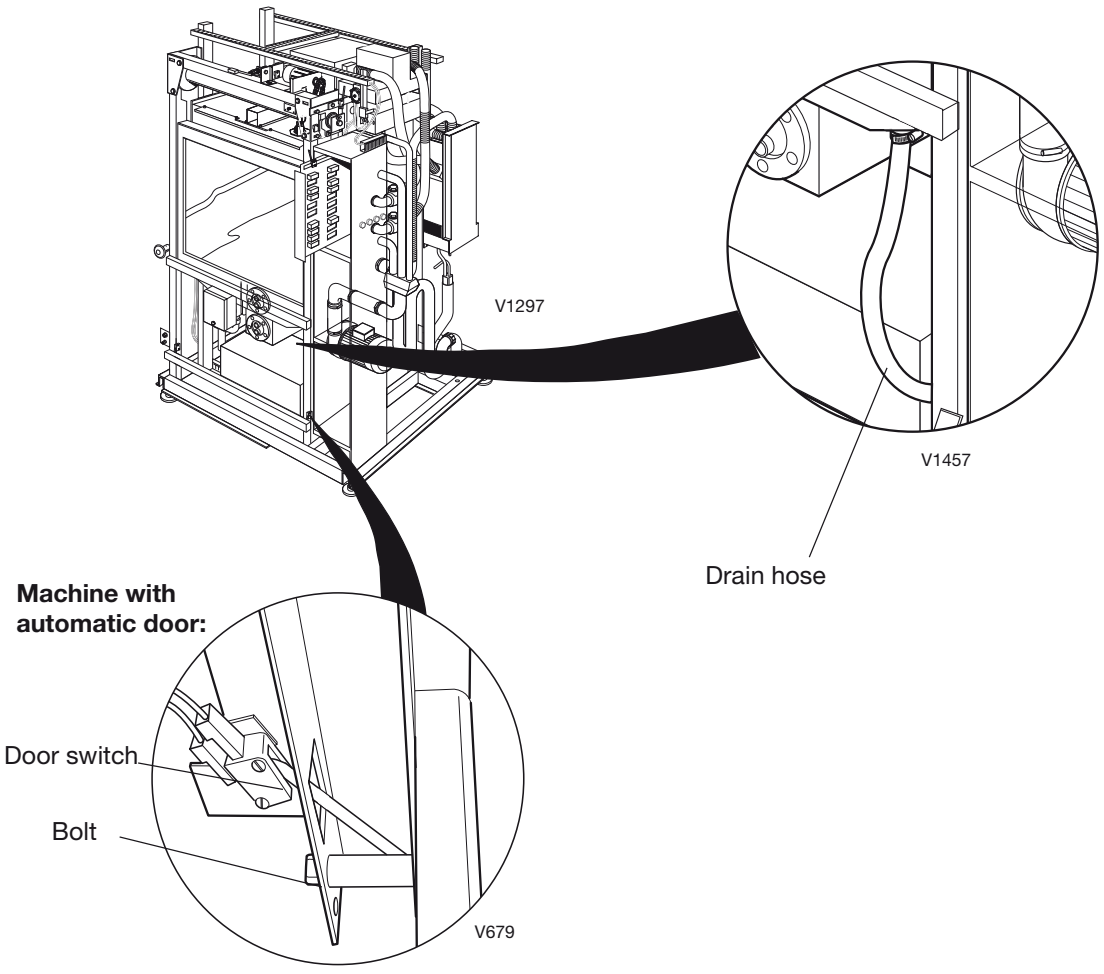
Machine with manual door:



Removing the door

This may only be done by authorized personnel.

- Remove the front panels.
- Automatic door: Remove door switches and the door switches of the loader/unloader (if there is one). Remove bolts.
- Remove leaf springs, bolts and spacers in the lower part of the frame.
- Remove the drain hose.
- Automatic door: Access the service program; Test the operation of the door.
- Move the door to the half-open position.
- Separate the door frame and the door closing mechanism.
- Free the door frame at the top edge. NOTE: Secure the frame so that it cannot fall forwards.
- Free the lower edge of the door frame. NOTE: Secure the frame so that it cannot fall down and suffer damage.
- The frame and door assembly can now be lifted out and placed on the floor or on a table.
- Release the wire from the door and hoist mechanism.



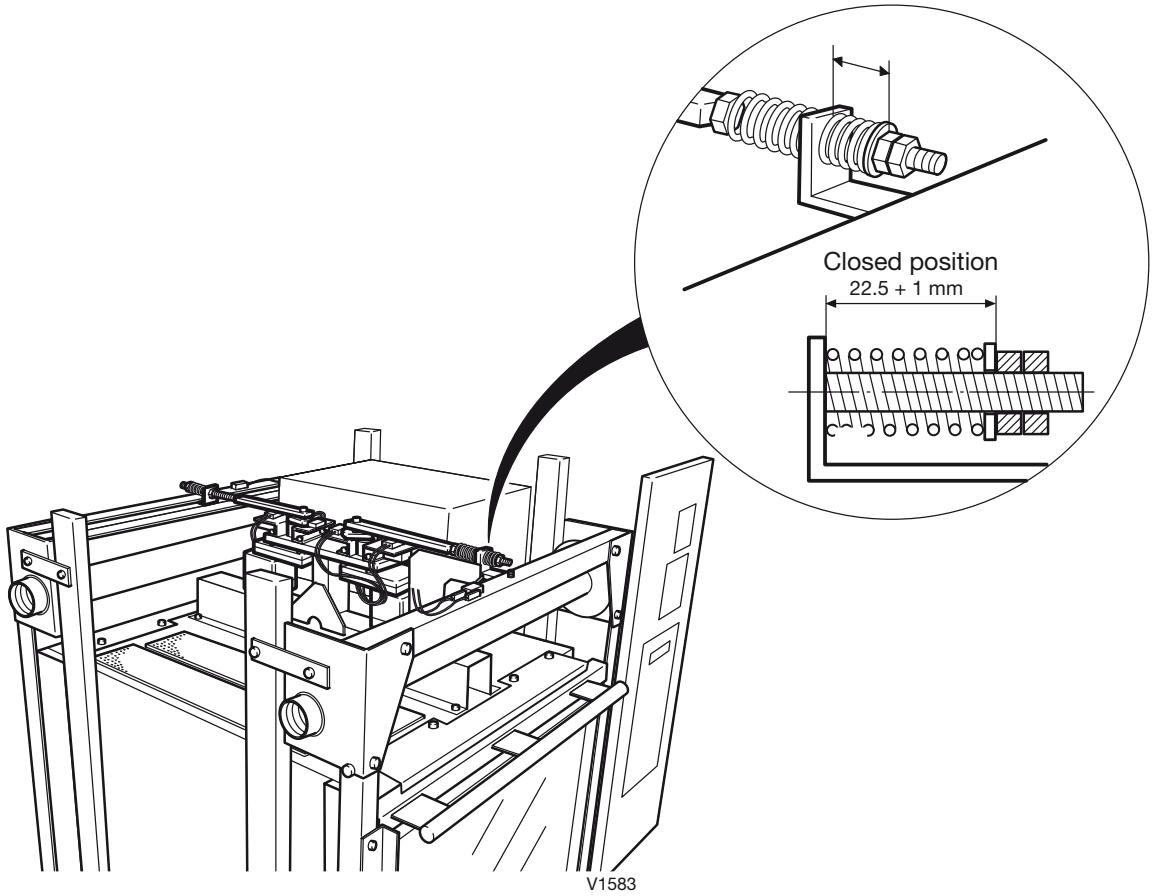
GETINGE

Adjusting the door closing force

This may only be done by authorized personnel.

When door is in its top position, the motor pulls the door in from the outer to the inner position. The force with which it does this is adjusted with a spring as shown below.

Note:
The spring must never be fully compressed.



Adjusting a manual door

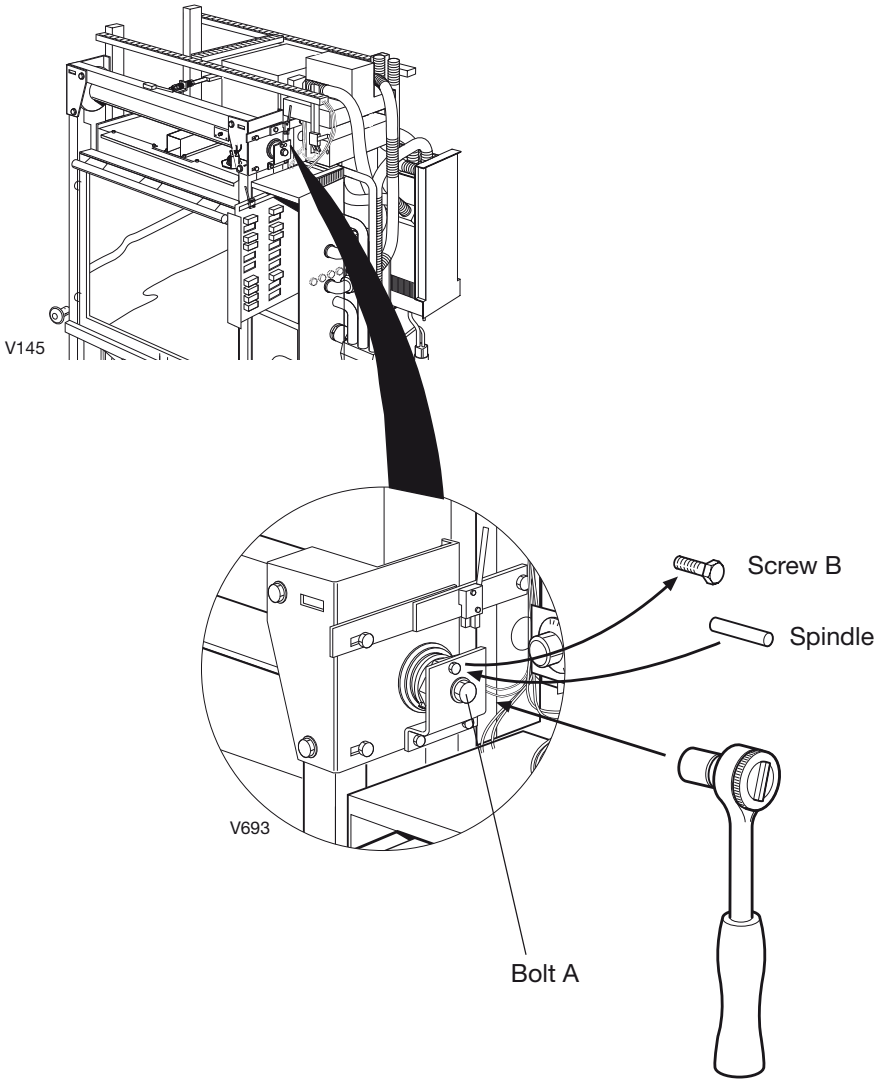
This may only be done by authorized personnel.

The door is held in its lower position by two leaf springs. When the door is pushed up, it must stop about 10 cm from its top position. The door must always be moved up manually for the last part of its travel. The inertia of the door is adjusted with a spring as follows:

- Secure bolt A with a socket wrench and retain the grip.
- Remove screw B and insert a rod (4.5 mm diameter) in the hole.
- Adjust the spring by tightening bolt A about one-sixth of a turn with the socket wrench, removing the rod at the same time.

Note:
Note: Bolt A or the rod must be held securely or the spring will escape.

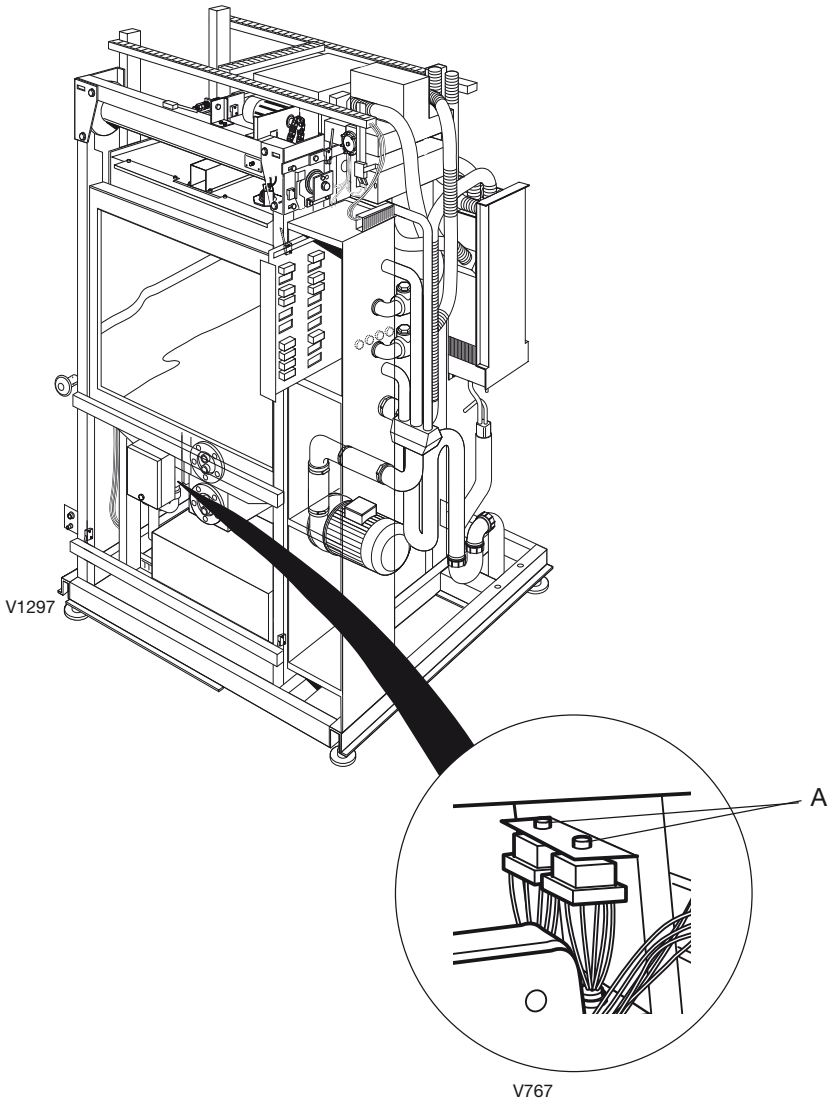
- When adjustment is complete, insert and tighten screw B.



GETINGE

Overheat protection

If the element overheats, the overheat cutout trips. If the overheat cutout has tripped it must be replaced. **The overheat cutouts are not resettable.**



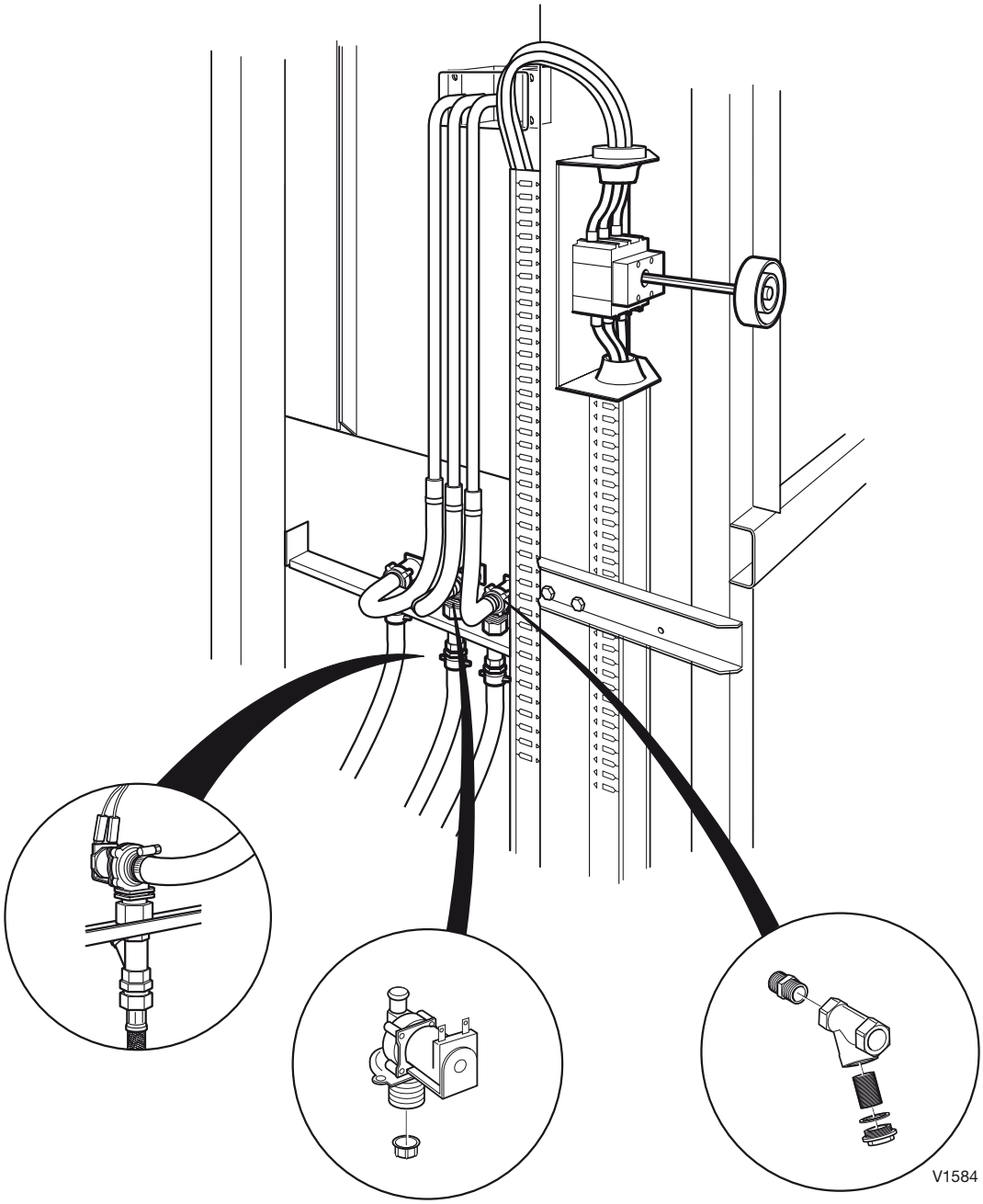
V1297

V767

Cleaning the filters in the solenoid valves

This may only be done by authorized personnel. The machine is connected to the electricity supply and some components are live.

The filters in the solenoid valves should be regularly checked and cleaned if necessary.



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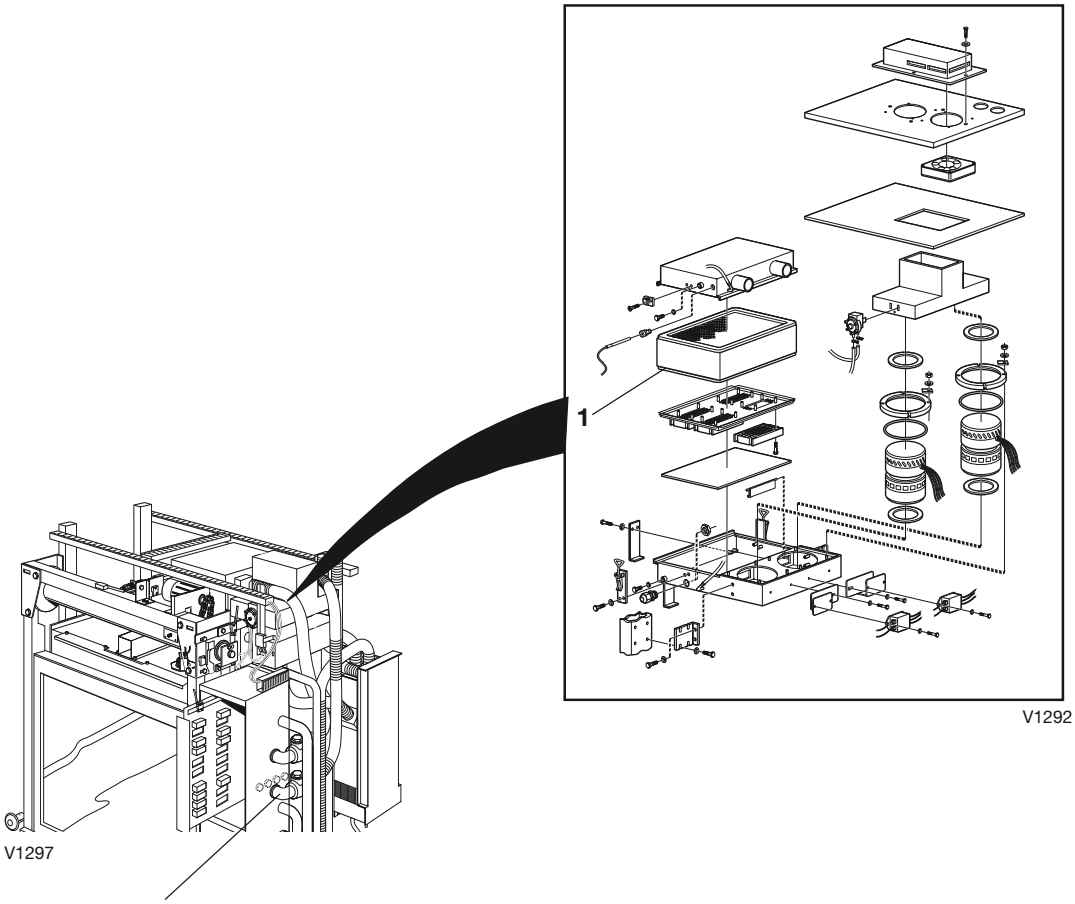
Dryer

This may only be done by authorized personnel. The machine is connected to the electricity supply and some components are live.



Temperature sensor
located inside the tube

- Check seals and hoses for leaks once a year.
- Replace the sterile filter (1) if necessary or in the event of an alarm.
- Make sure that the filter seals tight when reinstalled, otherwise there is a risk of an alarm.

Conductivity measurement (extra equipment)

Conductivity is measured with equipment from Endress+Hauser. (If the machine is equipped with a monitoring system, the conductivity must be measured as described under Conductivity measurement in Chapter 9.)

This may only be done by authorized personnel.

Function in washing process

The conductivity meter monitors the quality of the water in the final rinse, independently of the process control.
If the conductivity in the final rinse is higher that the preset value, the machine is emptied and the final rinse is repeated automatically.
If, after three repetitions, the conductivity is still above the preset value, the process is stopped and fault code 11 appears on the display.

Measuring range

The normal measuring range is 0-20 µS/ cm

Calibrating the conductivity equipment

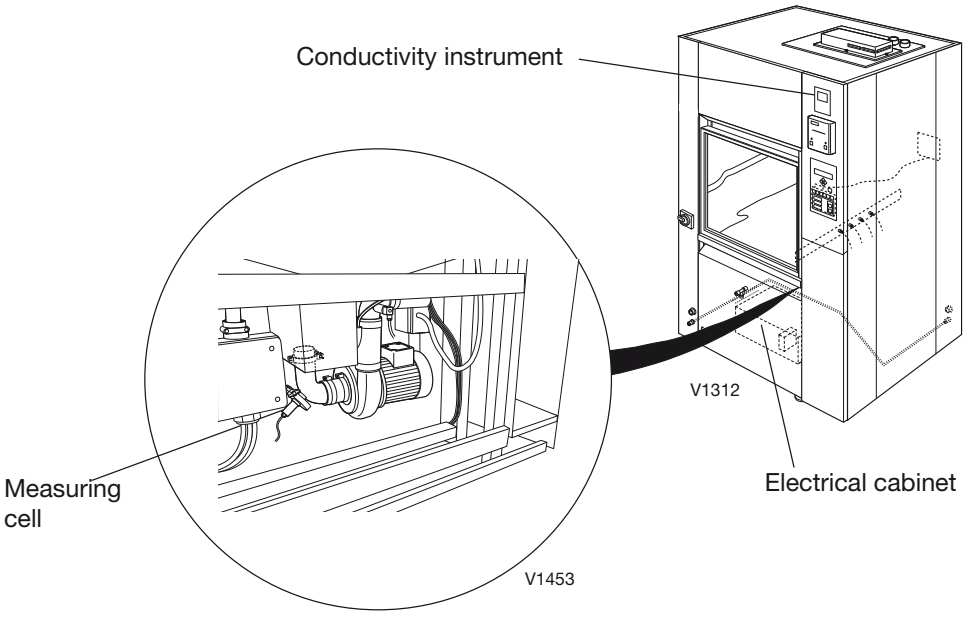
See manual: Liquisys CLM 223, from Endress+Hauser.
The conductivity equipment is calibrated at the factory by specifying the exact cell constant; see below.

7.1 Default
7.2 Default
7.3 Set SP1 Limit 15 µS/ cm*
Set Hi= Max. contact
Rest default
*The user chooses the value during process validation.
7.4 Default
7.5 Set 20 µS/ cm
Rest default
7.6 Default
7.7 Set cell constant as value in certificate 98.7%**
Rest default
** Take the figure from the certificate for the measuring cell.

GETINGE

Removing a measuring cell

For easy access to the measuring cell, slacken the two screws that keep the electrical cabinet in place. Remove the right-hand screw. Move the electrical cabinet to the left and rotate it forward. Unscrew the measuring cell. The cables are long enough to allow the measuring cell to be immersed in a vessel of calibration liquid.



Setting detergent and rinse-aid quantities

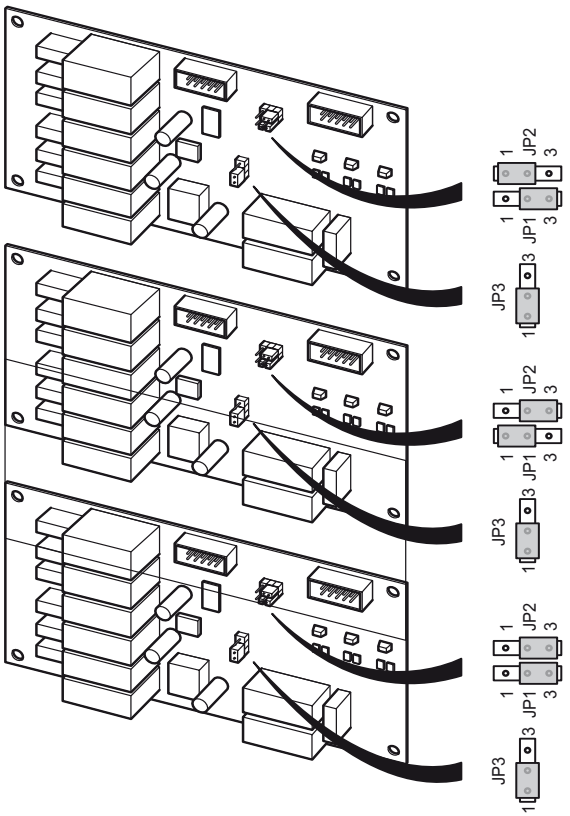
This may only be done by authorized personnel. The machine is connected to the electricity supply and some components are live.

- Dispense 100 ml of the relevant substance into a measuring beaker. Check that the suction hose and pump are full before the check.
- Push the suction hose down into the beaker and measure the consumption during an entire cleaning program. Lift up the hose when reading the volume. Adjust if necessary and repeat the measurement until the amount conforms to the manufacturer's recommendations.
- If necessary, adjust the dosing time in the service program.

GETINGE

Jumpering an expansion card

The expansion board is jumpered so that the processor can identify which card is which. Jumpering may be necessary when changing a card or when installing additional equipment. Jumpering is done as shown in the illustration.



Exp. 1 (A02*)

Exp. 2 (A03*)

Exp. 3 (A04*)

V1543

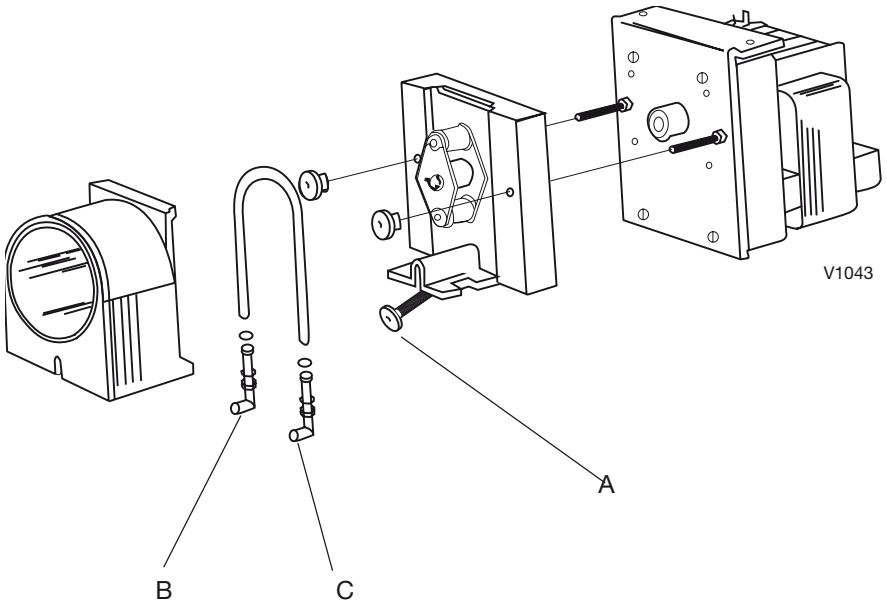
*References on electrical diagram

Replacing a hose to a hose pump

This may only be done by authorized personnel.
Before starting work, make sure that the machine is isolated from the electric power supply.

There are three grades of hose for installation in the pump, depending on the detergent used. For article numbers see the spare parts list.

- Remove the cover (3) by unscrewing screw A.
- Disconnect the hoses at connections B and C.
- Take out the entire unit including hose (2) (a complete spare parts kit).
- Install the new unit.
- Refit the cover.



GETINGE

Servicing the booster tank

It is essential to drain the booster tank when servicing the booster tank and its valves. This is in order to prevent scalding, since the temperature of the water in the booster tank is about 85 degrees Celsius (about 180 degrees F).

Booster tank with drain tap

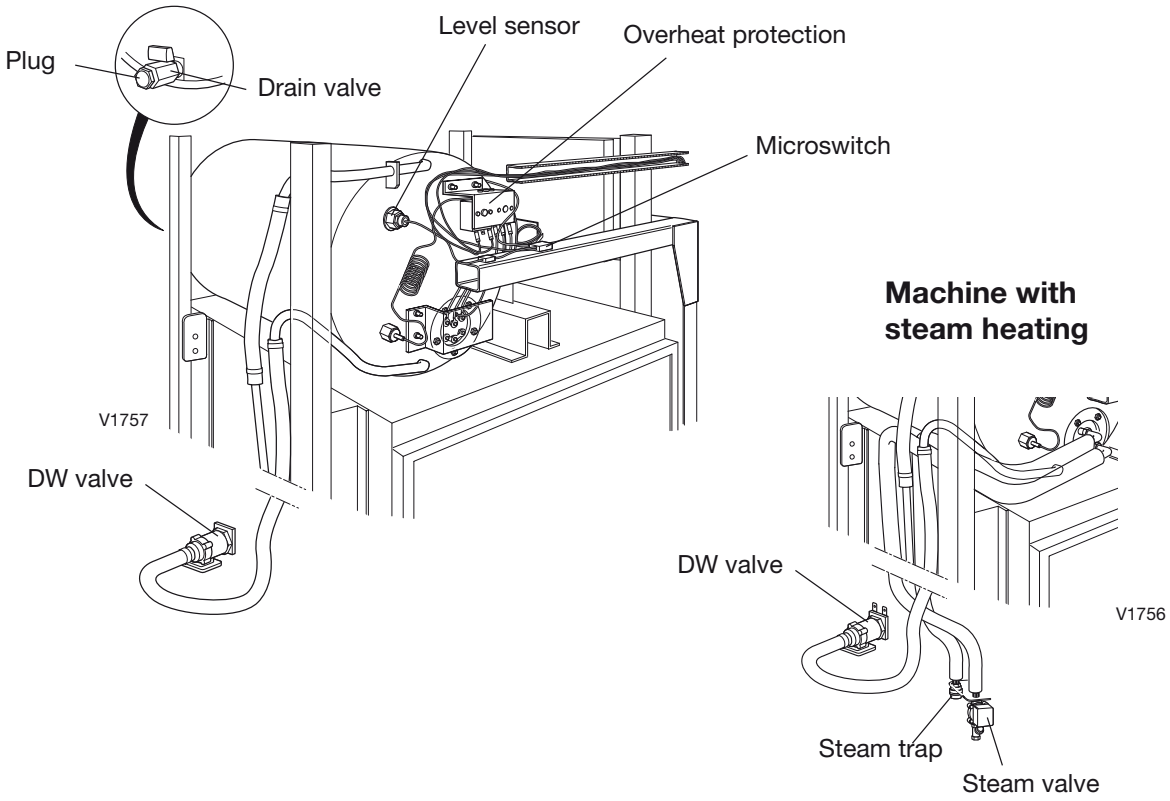
The tank is drained via a drain tap on the back of the tank. Make sure that the tap is not open before unscrewing the plug. If a nipple with G 1/4 male thread is used, together with the associated hose, the hose can be fitted to the drain tap. The tank can now be drained.

After draining, check that the drain tap is working properly. Seal the plug with PTFE tape and refit it.

The microswitch must be checked as well, since it activates the booster tank. The booster tank heating must **never** be on when the door(s) is/are down for loading/unloading goods.

When servicing is complete, check the entire system for water leaks.

The booster tank must be refilled before a process is started. To do this, open the DW valve via the control system. This is important, in order to avoid unwanted fault codes when starting the machine.



Overheat protection

If the element overheats, the overheat cutout trips. If the overheat cutout has tripped it must be replaced. **The overheat cutouts are not resettable.**

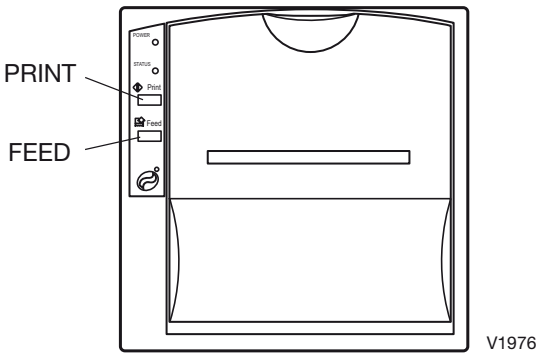
Printer configuration

Check the printer configuration as follows.

- Cut off the power to the printer.
- Hold down the **FEED** and **PRINT** buttons at the same time and switch on the power to the printer.
- The printer is now in programming mode.
  Press the **FEED** button to step though the parameter list (this is printed on the paper) and to confirm a changed parameter setting or that the set parameter is OK.
  Available parameter settings are listed in the table below.
  Press the **PRINT** button to change between available settings for the current parameter. Press FEED when the desired setting is printed out.
- When the last parameter in the list has been confirmed, the printer automatically prints the entire new configuration. The printer is then ready for use.

Parameter	Available setting
Print mode	Custom emulation
	ESC/POS emulation
	iDP-emulation
	Print = Normal
	Print = Reverse
	Little
	Double with
	Double height
	Expanded
	Font 1
	Font 2
	CR-LF Honor CR
	CR-LF Ignore CR
Serial mode	Baud rate 300
	Baud rate 600
	Baud rate 1200
	Baud rate 2400
	Baud rate 4800
	Baud rate 9600
	Baud rate 19200
	Baud rate 38400
	Protocol = 8,N,1
	Protocol = 8,E,1
	Protocol = 8,0,1
	Protocol = 8,N,1
	Protocol = 7,N,2
	Protocol = 7,E,1
	Protocol = 7,0,1
	Flow control CTS-RTS
	Flow control XON-XOFF
	Print key null
	Print key transmit $OD
	Buffer 1K byte
	Buffer 24K byte
Real time clock	Enable set RTCK
	Disable set RTCK
	Enable seconds
	Disable seconds
	Enable print time by key
	Dis. print time by key

Available settings



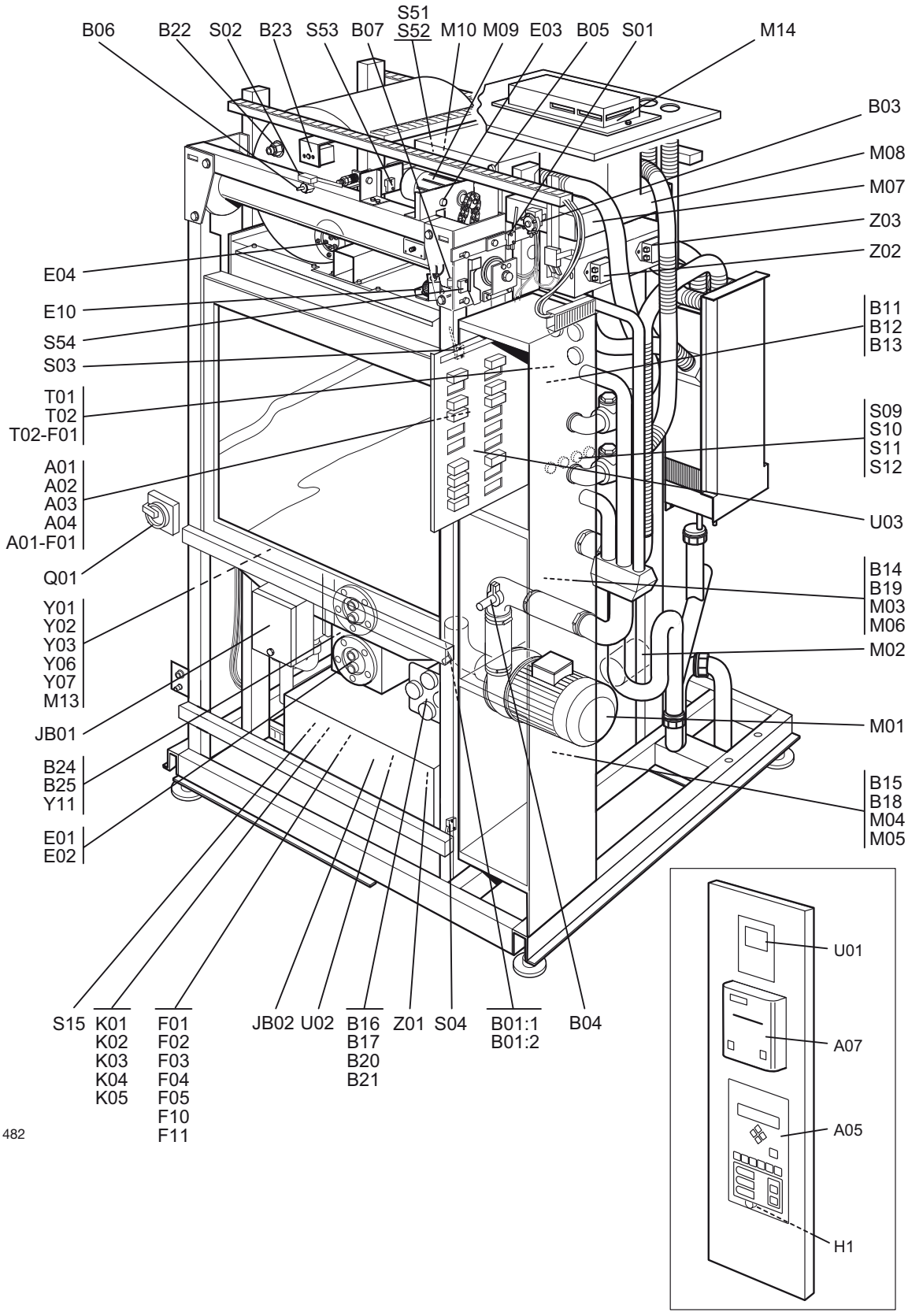
Printer

*** END PROGRAMMING ***
Custom emulation
Print = Normal
Little
Font 1
CR-LF Honor CR
Enable set RTCK
Disable seconds
Enable print time by key
Buffer 1K byte
Baud rate 2400
Protocol = 8,N,1
Flow control CTS-RTS
Print key null

Printout of current configuration

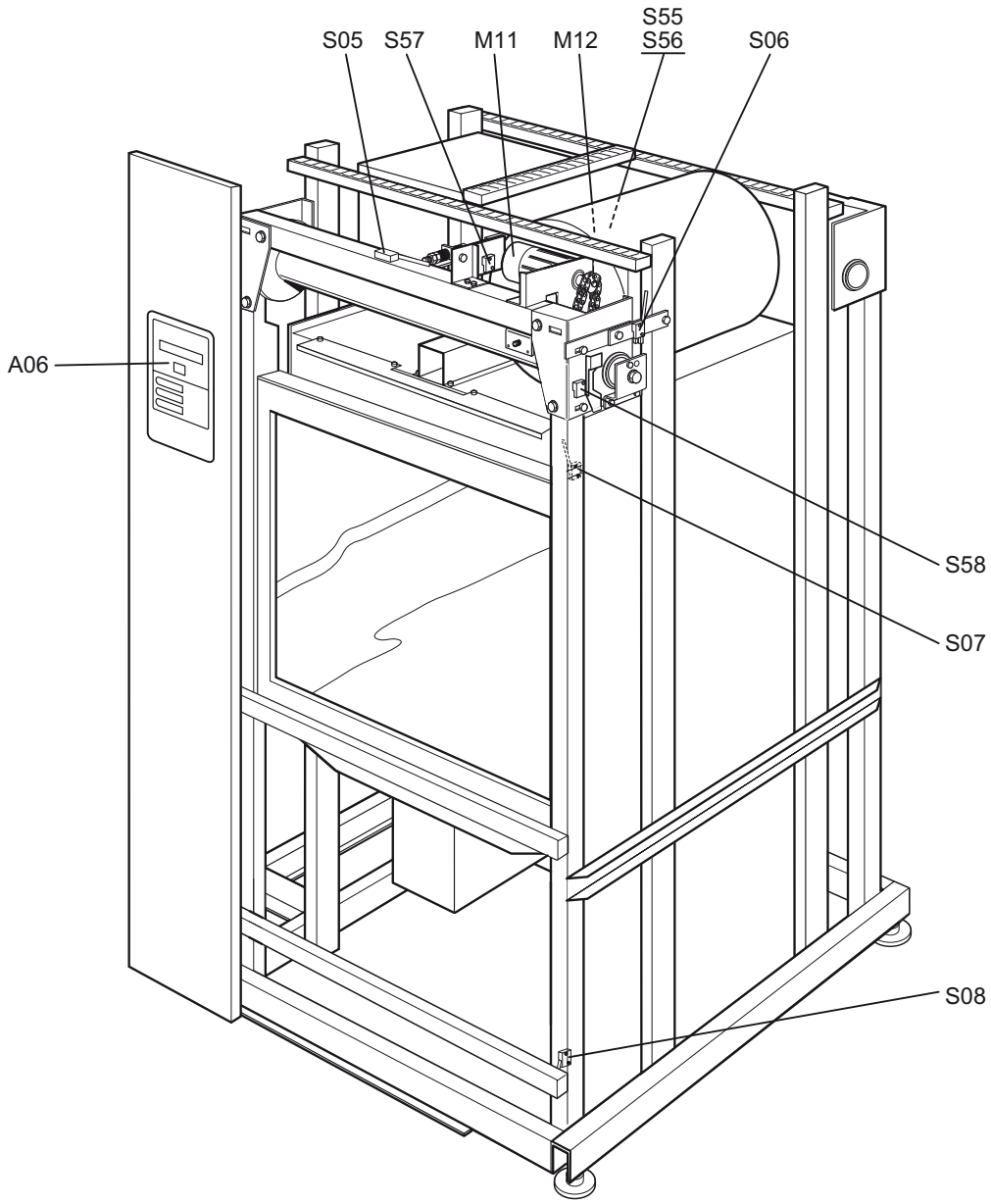
GETINGE

List of components



A01	Control system PACS300
A01-F01	Glass fuse for main board power supply T 500 mA/250 V
A02	Expansion card 1
A03	Expansion card 2
A04	Expansion card 3
A05	Panel, soiled side
A07	Printer *
B01:1	Conductivity sensor *
B01:2	Conductivity sensor *
B03	Diff. sensor, dryer filter (1)
B04	Pressure sensor, circulation pump *
B05	Temperature sensor, dryer
B06	Temperature sensors, booster tank *
B07	Temperature sensor, chamber / independent (two in one sensor)
B11	Level sensor, tank, chamber (lower)
B12	Leakage sensor, dryer
B13	Leakage sensor, dryer
B14	Level sensor, empty container alarm 1
B15	Level sensor, empty container alarm 2
B16	Flow sensor, dosing ind 1 *
B17	Flow sensor, dosing ind 2 *
B18	Level sensor, empty container alarm 3 *
B19	Level sensor, empty container alarm 4 *
B20	Flow sensor, dosing ind 3 *
B21	Flow sensor, dosing ind 4 *
B22	Level sensor, booster tank *
B23	Overtemperature protection, booster tank heating
B24	Overtemperature protection, tank heating
B25	Overtemperature protection, tank heating
E01	Heating element, tank
E02	Heating element, tank
E03	Heating element dryer
E04	Heating element, booster tank
E10	Lamp in chamber
F01	MCB, circulation pump
F02	MCB, tank heating
F03	MCB, tank heating
F04	MCB, dryer heat (1)
F05	MCB, booster tank heating
F10	MCB for T01 (dryer fans)
F11	MCB, control
H1	Buzzer *
JB01	Junction box
JB02	Power electrical box
K01	Contactor, circulation pump
K02	Contactor, tank heating
K03	Contactor, tank heating
K04	Contactor, dryer heating (1)
K05	Contactor, booster tank heating *
M01	Motor, circulation pump
M02	Motor, waste pump
M03	Motor, dosing pump 1
M04	Motor, dosing pump 2
M05	Motor, dosing pump 3 *
M06	Motor, dosing pump 4 *
M07	Motor, drying fan 1
M08	Motor, drying fan
M09	Motor, door, SS *
M10	Motor, door locking, SS
M13	Motor, pressure boost pump *
M14	Motor, ventilation fan
Q01	Main switch
S01	Limit switch, door unlocked/out, SS
S02	Limit switch, door locked/in, SS
S03	Limit switch, top position/closed, SS
S04	Limit switch, bottom position/open, SS *
S09	Trolley indication, program selection *
S10	Trolley indication, program selection *
S11	Trolley indication, program selection *
S12	Trolley indication, correct position *
S15	OK Steam / Elec.
S51	Limit switch, door locking, SS
S52	Limit switch, door locking, SS
S53	Limit switch, door, SS *
S54	Limit switch, door, SS *
T01	Transformer
T02	Transformer, lighting
T02-F01	Glass fuse on transformer for lighting
U01	Conductivity meter *
U02	DC power supply unit
U03	DC power supply unit, printer, 5 V *
Y01	Solenoid valve, cold water
Y02	Solenoid valve, hot water
Y03	Solenoid valve DW/WFI water *
Y06	Solenoid valve, waste cooling *
Y07	MV extra DV *
Y11	MV tank heating, steam
Z01	Filter, control
Z02	Filter, dryer fans
Z03	Filter, dryer fans

* Optional extra equipment



A06	Panel, clean side *
M11	Motor, door, clean side *
M12	Motor, door locking, clean side *
S05	Limit switch, door locked/in, clean side *
S06	Limit switch, door unlocked/out, clean side *
S07	Limit switch, top position/closed, clean side *
S08	Limit switch, bottom position/open, clean side *
S55	Limit switch, door locking, clean side *
S56	Limit switch, door locking, clean side *
S57	Limit switch, door, clean side *
S58	Limit switch, door, clean side *

* Optional extra equipment

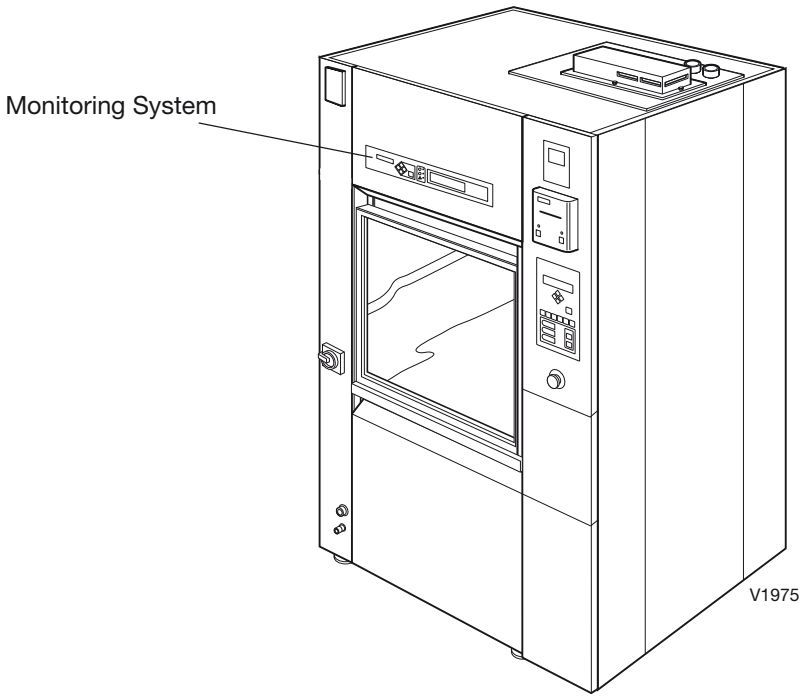
MONITORING SYSTEM

Description

Getinge Monitoring System is an independent monitoring system that is used together with Getinge Disinfection AB's standard 46 series and 86 series dishwashers. The Monitoring System has its own PACS 300 system and control panel. The purpose of the system is to monitor five parameters:

- the pressure in the circulation circuit when the pump is running.
- the temperature during the disinfection phase.
- the duration (length) of the disinfection phase.
- the conductivity in the disinfection phase.
- The flow in the dosing circuit during dosing.

The equipment has been tested and approved to HTM2030.



The monitoring system on a 86 series machine.

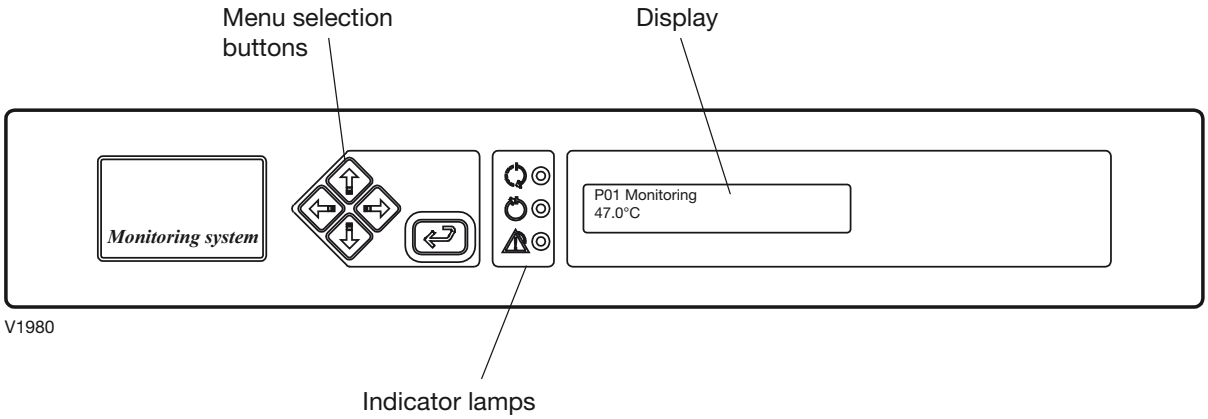
GETINGE

Software description and settings

Control panel

The buttons on the control panel are used to navigate in the menu tree.

Display



The screen has two lines, each with a capacity of 20 characters.
Information or error messages appear on the bottom line and replace the text that would otherwise appear there.

```
P01 MONITORING
47.0 °C
```

Menu selection buttons

The are five navigation buttons on the panel. These fixed buttons are four arrow buttons that control the cursor (◄, ►, ▼ and ▲) and ↵.

- ◄ Used to go back one step (up one level) in menus. If the button is held down for a little longer, you are returned to the main menu.
- ► Not used in menus and lists.
- ▼ Shows the next object in the list.
- ▲ Shows the previous object in the list.
- ↵ Goes to the chosen object in the list or opens a field for editing if there is an editable field.

Scrolling in menus and lists

You can use ◄, ►, ▼ and ▲ to scroll through menus and lists. You can scroll either line by line or two lines at a time, depending on what is displayed. The top line of the list may look like the example below.

```
>PRINT LAST PRG.
 SYSTEM
```

The angle bracket ">" to the left of the top line shows which object will be chosen if you press ↵. Bottom right there is a "v" indicating that there are more objects in the list which are displayed if you press ▼.
This is what you see if you are in a list. The "arrows" to the right show that there are objects both above and below the displayed line.

```
>SYSTEM
^
```

When you reach the end of the object list, only one up-arrow appears at the right edge of the display. Menus and lists are "endless"; you can reach the top of the list by pressing ▼ at the end of the list.

```
 SYSTEM                ^
>APPLIANCE INFO
```

Field editing

↵ opens the chosen field for editing. The content of the field is changed with ▲ or ▼. These arrow keys scroll in an endless list containing numbers. When a field is opened for editing, the first character is highlighted. To move the cursor use ◄ or ►. Entered values are saved when you press ↵. On saving, the system checks that the value is in the permitted range.

GETINGE

Passwords

There are two passwords with different levels of authorisation in the system program:

- Supervisor - contact service for code.
- Programming - contact service for code.

Note: In the menu tree, where a password must be entered, there is a letter code (between PW: A-K) which indicates which function the respective password level gives authorisation for.

When a password is being entered, the top line shows “ENTER PASSWORD”. Each digit can be changed with and . and toggle between the digits. Press to confirm the entered password.
If the wrong password is entered, “WRONG PASSWORD” appears on the first line. Press to return to the display that shows “ENTER PASSWORD”

Note: The password cannot be changed.

Supervisor

Code in menu tree	Authority to change
A	Parameters:
B	Calender (time and date)
C	Sensor calibration
D	Acknowledge alarms
H	Process-critical configurations, Parameters of type P
J	Password configuration
K	Documentation

Programming

Code in menu tree	Authority to change
A	Parameters:
B	Calender (time and date)
C	Sensor calibration
D	Acknowledge alarms
E	Service message
F	DIP switches
G	Non-critical system configurations
H	Process-critical configurations, Parameters of type P
I	Programming (phases and programs)
J	Password configuration
K	Documentation

A-parameters

Using the authorisation code, the following parameters (A-parameters) can be changed.

Parameter	Type	Description	Range	Default
MAX COND 75	A	Maximim conductivity at 75 °C	0-200 µS/cm	57.0
MAX COND 90	A	Maximim conductivity at 90 °C	0-200 µS/cm	69.0

P-parameters

Using the authorisation code, the following parameters (P-parameters) can be changed.

Parameter	Type	Description	Range	Default
DISINF TEMP 90	P	Disinfection phase with 90 °C	75-92 °C	90
DISINF TEMP 75	P	Disinfection phase with 75 °C	50-75 °C	75
MAX PUMP PRESS	P	Maximum pressure in circulation circuit	0-160 kPa	130
MIN PUMP PRESS	P	Minimum pressure in circulation circuit	0-160 kPa	30
TEMP CHECK DELAY	P	Delay before temperature check after the control system has indicated that the disinfection temperature is OK	0-30 s	00:00:00
PRES. CHECK DELAY	P	Delay before pressure check after the circulation pump starts	0-30 s	00:00:10
COND CHECK DELAY	P	Delay before check of the conductivity in the disinfection phase	0-30 s	00:00:15
DOS CHECK DELAY	P	Delay before check of the flow after the dosing pump starts	0-30 s	00:00:05
DEV CHECK DELAY	P	Delay before activation of the temperature differential alarm	0-30 s	00:00:10

GETINGE

Fault codes

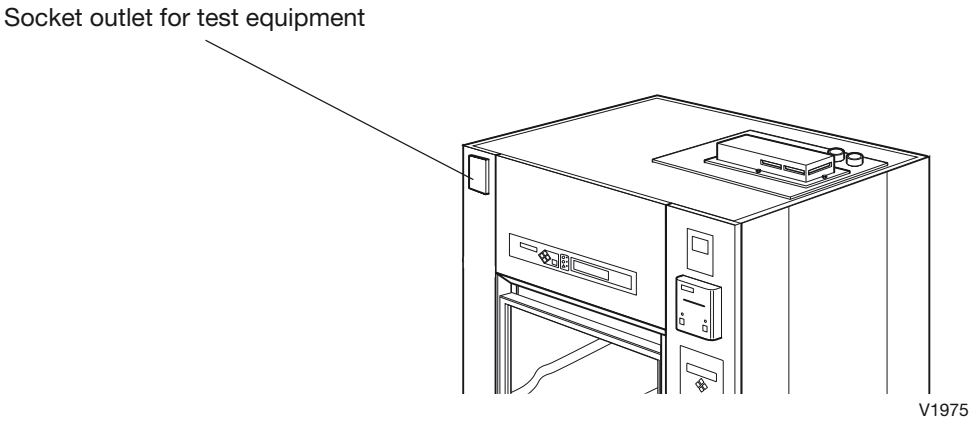
The fault codes indicate that the monitoring system has detected serious fault in the machine or in the current wash program. All fault coders in the monitoring system must be acknowledged on the washer disinfector's control panel.
The fault must be put right by an authorised service technician. Afterwards, the collective alarm must be reset by entering the password on the machine's control panel. The fault code is then automatically reset in the monitoring system.
The following fault codes may occur:

Fault code	Description of fault
F00	Faulty (controlling) temperature sensor in washing chamber
F01	Faulty (independent) temperature sensor in washing chamber
F02	Low pressure from circulation pump.
F04	Incorrect temperature in washing chamber. (Sensor fault)
F05	Low pressure in circulation line.
F06	High pressure in circulation line.
F08	Low flow from dosing pump 1.
F09	Low flow from dosing pump 2.
F10	Low flow from dosing pump 3.
F11	Low flow from dosing pump 4.
F13	High conductivity in the disinfection phase.
F14	Incorrect disinfection time.
F15	Low disinfection temperature.
F16	Fault message from control system.
F17	Power outage (Emergency stop)

Repair and adjustment

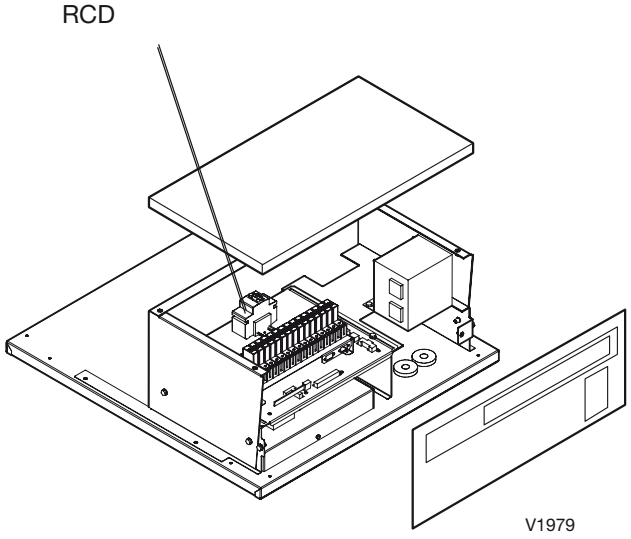
Socket outlets on the machine

On machines fitted with a monitoring system there is a socket outlet (230 V, 13 A) to be used to connect test equipment.



RCD

The monitoring system is fitted with a residual current device which is located on the electrical plate of the machine. There is a reset button on the RCD.



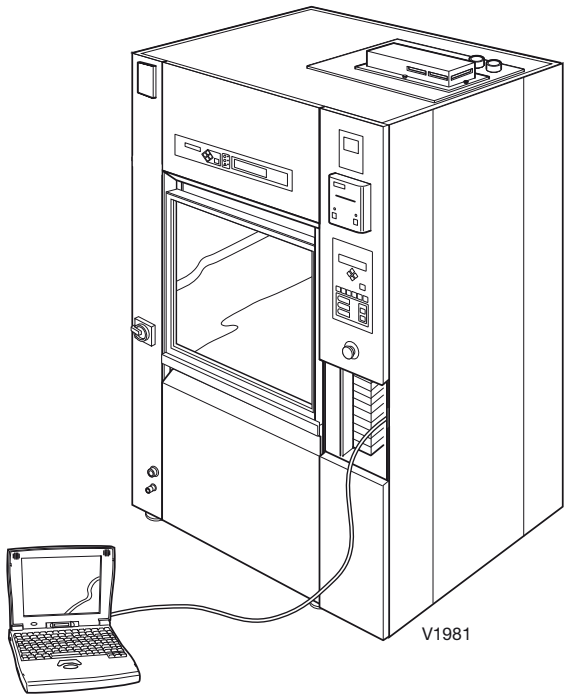
<Doc_TEC><Doc_502606900><Rel_B><Lang_GB>

Connecting a PC

An RS-232 cable is needed to connect a PC to the washer disinfector.
Proceed as follows:

- 1. Connect a cable between the PC and port X24 as shown below.
- 2. Set type of communication. The communication settings are done in the service program; see Chapter Software description and settings. Proceed as follows:

- Go into Communication setup COM 0 (1.4.2.3.5.1); see Chapter 4 Software description and settings.
- Choose COMLI PROTOCOL and press ↵. Exit the service program.



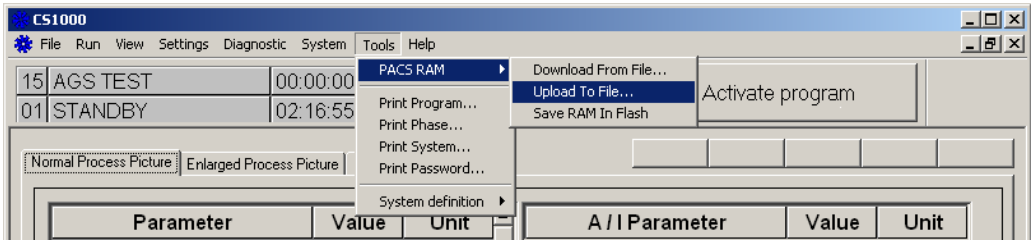
PC connected to a 86 series machine.

Loading programs to flash memory

The flash memory can be loaded with new wash programs or new system programs. Loading new wash programs requires the CS-1000 program, which can be purchased from Getinge. Instructions are supplied with CS-1000. System programs are loaded with Flashloader.

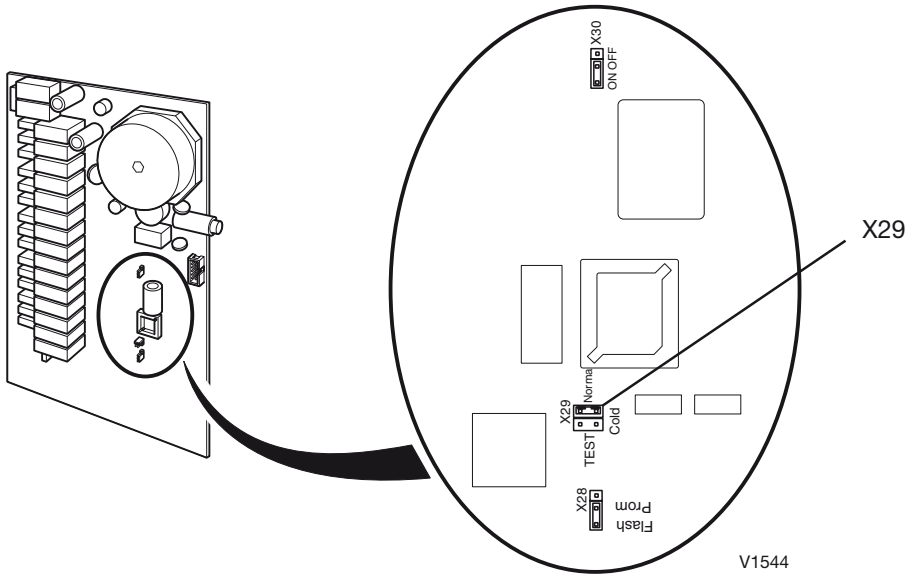
Note:
Always make a backup copy before starting work on updating system programs.

1. Connect a PC to the machine; see under Connecting a PC.
2. Check that the machine is in STANDBY mode.
3. Make a backup copy by starting CS 1000 and choosing:
   Tools/PACS RAM/Upload To File...



V1577

4. Save the *.prm file in your chosen location.
   The program will report an error during conversion. Disregard this. To check that conversion was successful, check the size of the *.prm file. The size of the file should be 84416 bytes.
5. Switch off the power to the machine with the main switch.
6. Change the jumper (X29) on the board for the PACS 300 control system from Normal to Test.



V1544

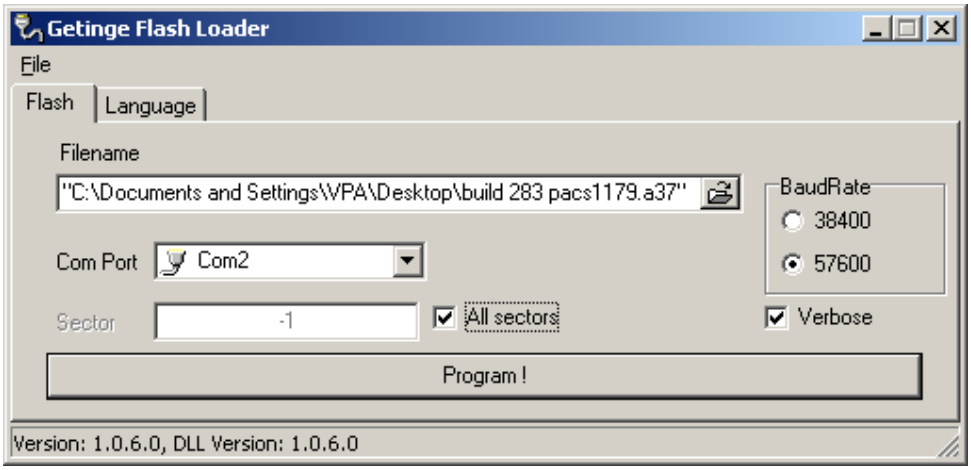
7. Switch on the power to the machine with the main switch.
   The display should now show:

```
GETINGE
Ram OK
```

   or

```
GETINGE PACS 300
Version X.XX (XXXX)
```

8. Start Flashloader from PC.
9. Set up as shown.

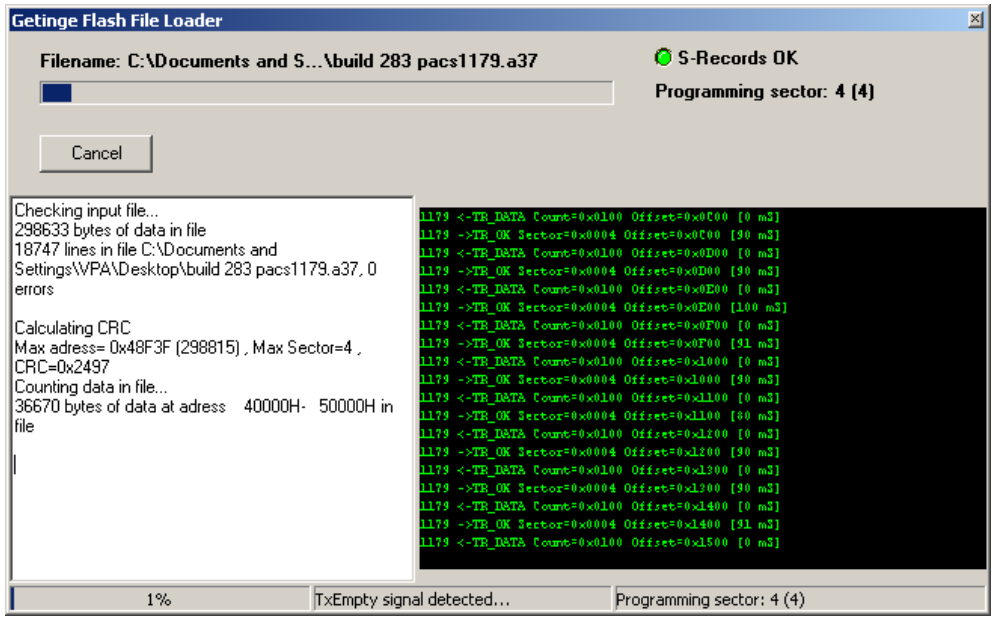


V1578

Filename	Choose the right program file (*.a37).
Com Port	The port to which you connected the data cable to your PC.
Baud Rate	Choose 57600

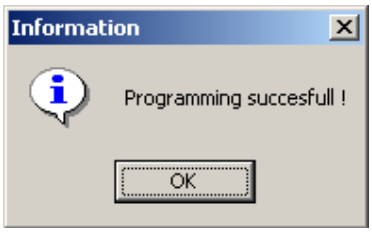
All Sectors and Verbose must be checked (=selected).

10. Start loading by pressing Program !. The following image appears.



V1579

11. When loading is complete, the following image appears. Press OK.



V1580

12. Now the display shows:

```
SW Update 0x2497
Updating CRC....
```

A beep is heard and the display shows:

```
SW Update 0x2497
CRC OK
```

13. Check that the battery jumper (X30) is set to ON.
14. Switch off the power to the machine with the main switch.
15. Change the jumper (X29) to Normal.
16. Switch on the power to the machine with the main switch.
    The display should now show:

```
P00
```

17. Close Flashloader.
18. Start CS-1000 and load wash programs; see instructions for CS-1000.

Cold start

Perform a cold start as described under “Cold start” in Chapter 7 Repair and adjustment.

Calibrating the conductivity meter

Perform a cold start as described under “Calibrating the conductivity meter” in Chapter 7 Repair and adjustment.

Calibrating pressure sensors for the circulation pump

Perform a cold start as described under “Calibrating pressure sensors for the circulation pump” in Chapter 7 Repair and adjustment.

Calibrating temperature sensors with resistors

Perform a cold start as described under “Calibrating temperature sensors with resistors” in Chapter 7 Repair and adjustment.

Calibrating a temperature sensor - with ice bath and oil bath

Perform a cold start as described under “Calibrating temperature sensors with ice bath and oil bath” in Chapter 7 Repair and adjustment.

Measuring conductivity in a monitoring system

Conductivity is measured with equipment from Endress+Hauser.

This may only be done by authorized personnel.

Function in washing process

The conductivity meter monitors the quality of the water in the disinfection phase, independently of the process control.
If the conductivity at the end of the disinfection phase is higher than the preset value, alarm F13 is generated.

Measuring range

The normal measuring range is 0-20 µ S/ cm

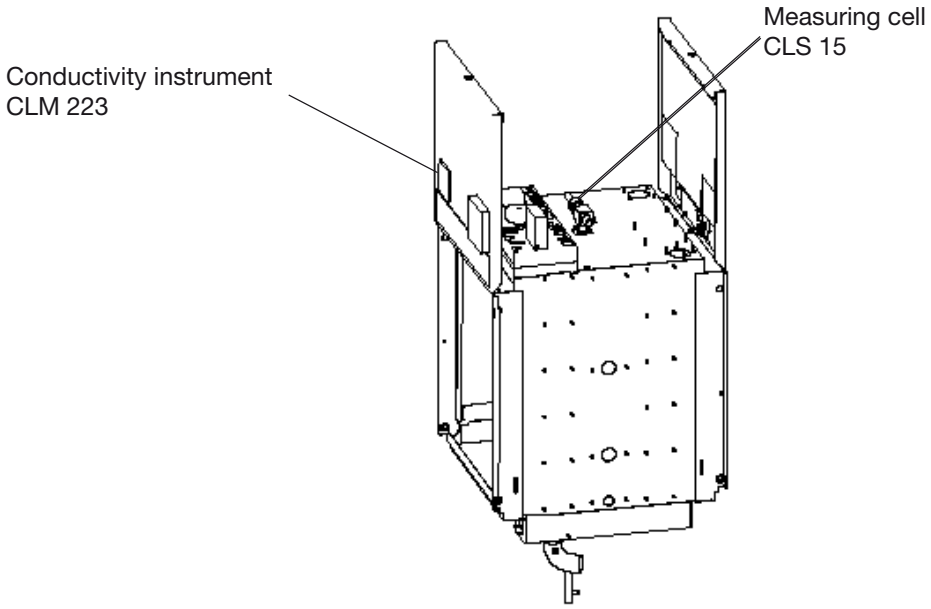
Calibrating the conductivity equipment

See manual: Liquisys CLM 223, from Endress+Hauser.
The conductivity equipment is calibrated at the factory by specifying the exact cell constant; see below.

7.1 Default
7.2 Default
7.3 Set SP1 Limit 15 µ S/ cm*
Set Hi= Max. contact
Rest default
*The user chooses the value during process validation.
7.4 Default
7.5 Set 20 µ S/ cm
Rest default
7.6 Default
7.7 Set cell constant as value in certificate 98.7%**
Rest default
** Take the figure from the certificate for the measuring cell.

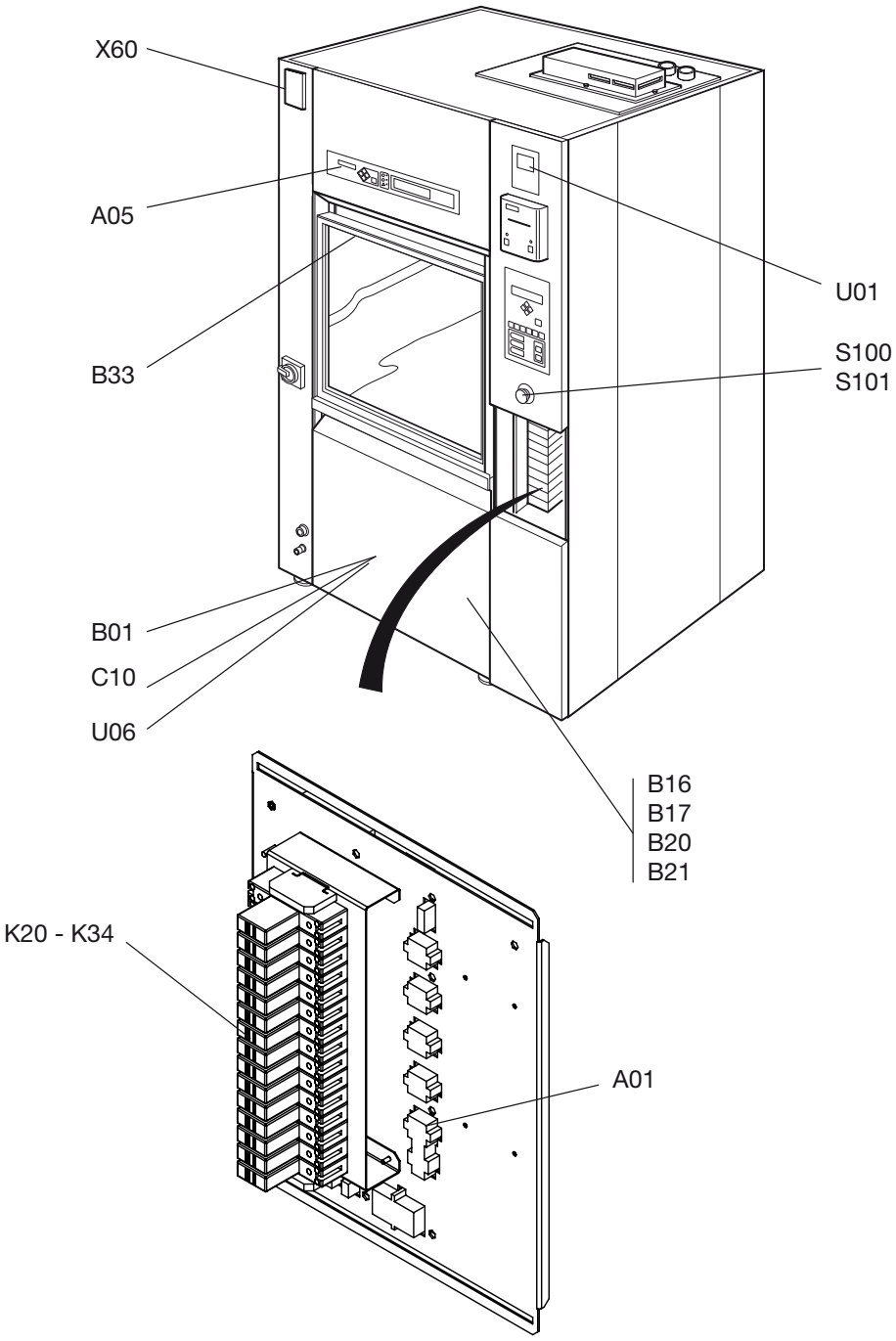
Removing a measuring cell

For easy access to the measuring cell, slacken the two screws that keep the electrical cabinet in place. Remove the right-hand screw. Move the electrical cabinet to the left and rotate it forward. Unscrew the measuring cell. The cables are long enough to allow the measuring cell to be immersed in a vessel of calibration liquid.



GETINGE

Component locations on the 86 series



A01	Control system PACS300
A05	Panel
B01	conductivity transmitter
B04	PRESSURE TRANSMITTER
B16	Flow sensor, dosing 1 *
B17	Flow sensor, dosing 2 *
B20	Flow sensor, dosing 3 *
B21	Flow sensor, dosing 4 *
B33	Temperature sensor
C10	RCD
K20	relay
K21	relay
K22	relay
K23	relay
K24	relay
K25	relay
K26	relay
K27	relay
K28	relay
K29	relay
K30	relay
K31	relay
K32	relay
K33	relay
K34	relay
S100	Emergency stop, soiled side
S101	Emergency stop, clean side
U01	Conductivity meter
U06	Flowmeter
X60	Socket outlet

GETINGE

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Electrical diagram

ELECTRICAL DOCUMENTATION PACS 300

PAGE	DRAWING NO	DOCUMENT CLASS	DOCUMENT CONTENTS	EQUIPMENT	DATE	REV NO	DATE
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02	D-5011512	DOCUMENT LIST	DOCUMENT CONTENTS	S-8666	030610	D	071114
03	D-5011516	P&I DIAGRAM	ELECTRICAL HEATING	S-8666	030610		
04	D-5011517	P&I DIAGRAM	STEAM HEATING	S-8666	030610		
05	D-5011518	P&I DIAGRAM	STEAM HEATING + ELECTRICAL AS BACKUP	S-8666	030610		
06	D-5011515	LAYOUT	ELBOX	S-8666	030610		
07	D-5018930	CIRCUIT DIAGRAM	MAIN CIRCUITS 240/415 V, 3N+PE, ELECTRICAL HEATING	S-8666	041115		
08	D-5011479	CIRCUIT DIAGRAM	MAIN CIRCUITS 230/400 V, 3N+PE, ELECTRICAL HEATING	S-8666	030610	C	041115
09	D-5018931	CIRCUIT DIAGRAM	MAIN CIRCUITS 220/380 V, 3N+PE, ELECTRICAL HEATING	S-8666	041115		
10	D-5011480	CIRCUIT DIAGRAM	MAIN CIRCUITS 240 V, 3+PE, ELECTRICAL HEATING	S-8666	030610	C	041115
11	D-5011481	CIRCUIT DIAGRAM	MAIN CIRCUITS 230 V, 3+PE, ELECTRICAL HEATING	S-8666	030610	B	041115
12	D-5011482	CIRCUIT DIAGRAM	MAIN CIRCUITS 208 V, 3+PE, ELECTRICAL HEATING	S-8666	030610	B	041115
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14	D-5018932	CIRCUIT DIAGRAM	MAIN CIRCUITS 240/415 V, 3N+PE, STEAM HEATING	S-8666	041115		
15	D-5011484	CIRCUIT DIAGRAM	MAIN CIRCUITS 230/400 V, 3N+PE, STEAM HEATING	S-8666	030610	C	041115
16	D-5018933	CIRCUIT DIAGRAM	MAIN CIRCUITS 220/380 V, 3N+PE, STEAM HEATING	S-8666	041115		
17	D-5011485	CIRCUIT DIAGRAM	MAIN CIRCUITS 240 V, 3+PE, STEAM HEATING	S-8666	030610	C	041115
18	D-5011486	CIRCUIT DIAGRAM	MAIN CIRCUITS 230 V, 3+PE, STEAM HEATING	S-8666	030610	C	041115
19	D-5011487	CIRCUIT DIAGRAM	MAIN CIRCUITS 208 V, 3+PE, STEAM HEATING	S-8666	030610	C	041115
20	D-5011488	CIRCUIT DIAGRAM	MAIN CIRCUITS 200 V, 3+PE, STEAM HEATING	S-8666	030610	C	041115
21	D-5018934	CIRCUIT DIAGRAM	MAIN CIRCUITS 240/415 V, 3N+PE, STEAM HEATING + ELECTRICAL AS BACKUP	S-8666	041115		
22	D-5011489	CIRCUIT DIAGRAM	MAIN CIRCUITS 230/400 V, 3N+PE, STEAM HEATING + ELECTRICAL AS BACKUP	S-8666	030610	C	041115
23	D-5018935	CIRCUIT DIAGRAM	MAIN CIRCUITS 220/380 V, 3N+PE, STEAM HEATING + ELECTRICAL AS BACKUP	S-8666	041115		
24	D-5011490	CIRCUIT DIAGRAM	MAIN CIRCUITS 240 V, 3+PE, STEAM HEATING + ELECTRICAL AS BACKUP	S-8666	030610	C	041115
25	D-5011491	CIRCUIT DIAGRAM	MAIN CIRCUITS 230 V, 3+PE, STEAM HEATING + ELECTRICAL AS BACKUP	S-8666	030610	C	041115
26	D-5011492	CIRCUIT DIAGRAM	MAIN CIRCUITS 208 V, 3+PE, STEAM HEATING + ELECTRICAL AS BACKUP	S-8666	030610	C	041115
27	D-5011493	CIRCUIT DIAGRAM	MAIN CIRCUITS 200 V, 3+PE, STEAM HEATING + ELECTRICAL AS BACKUP	S-8666	030610	C	041115

Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
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C		ÄM04-0040	040130	PA
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PHu		TO 2007-11-20		1:1		

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DOCUMENT LIST
ELECTRICAL DOCUMENTATION
S-8666 HOSPITAL

File No.	Date
	2002-06-06

Dwg No	Rev.
5011511	E

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ELECTRICAL DOCUMENTATION PACS 300

PAGE	DRAWING NO	DOCUMENT CLASS	DOCUMENT CONTENTS	EQUIPMENT	DATE	REV NO	DATE
28	D-5018936	CIRCUIT DIAGRAM	CONTROL VOLTAGE 240/451 V, 3N+PE	S-8666	041115		
29	D-5011494	CIRCUIT DIAGRAM	CONTROL VOLTAGE 230/400 V, 3N+PE	S-8666	030610	D	071030
30	D-5011495	CIRCUIT DIAGRAM	CONTROL VOLTAGE 240 V, 3+PE	S-8666	030610	D	071030
31	D-5011496	CIRCUIT DIAGRAM	CONTROL VOLTAGE 230 V, 3+PE	S-8666	030610	D	071030
32	D-5011497	CIRCUIT DIAGRAM	CONTROL VOLTAGE 208 V, 3+PE	S-8666	030610	D	071030
33	D-5011498	CIRCUIT DIAGRAM	CONTROL VOLTAGE 200 V, 3+PE	S-8666	030610	D	071030
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45	D-5011510	CIRCUIT DIAGRAM	DIGITAL OUTPUTS CARD 04	S-8666	030610	B	041115
46	D-5015850	CIRCUIT DIAGRAM	AUTO SCANNER	S-8666	040407	A	041115
47	D-5015851	CIRCUIT DIAGRAM	HAND SCANNER	S-8666	040407	A	041115

Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
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B		ÄM04-0040	040130	PA
A		ÄM03-0355	03-11-06	PA

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					File No.	Date 2002-06-06
					Dwg No 5011512	Rev. D

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DOCUMENT LIST
ELECTRICAL DOCUMENTATION
S-8666 HOSPITAL

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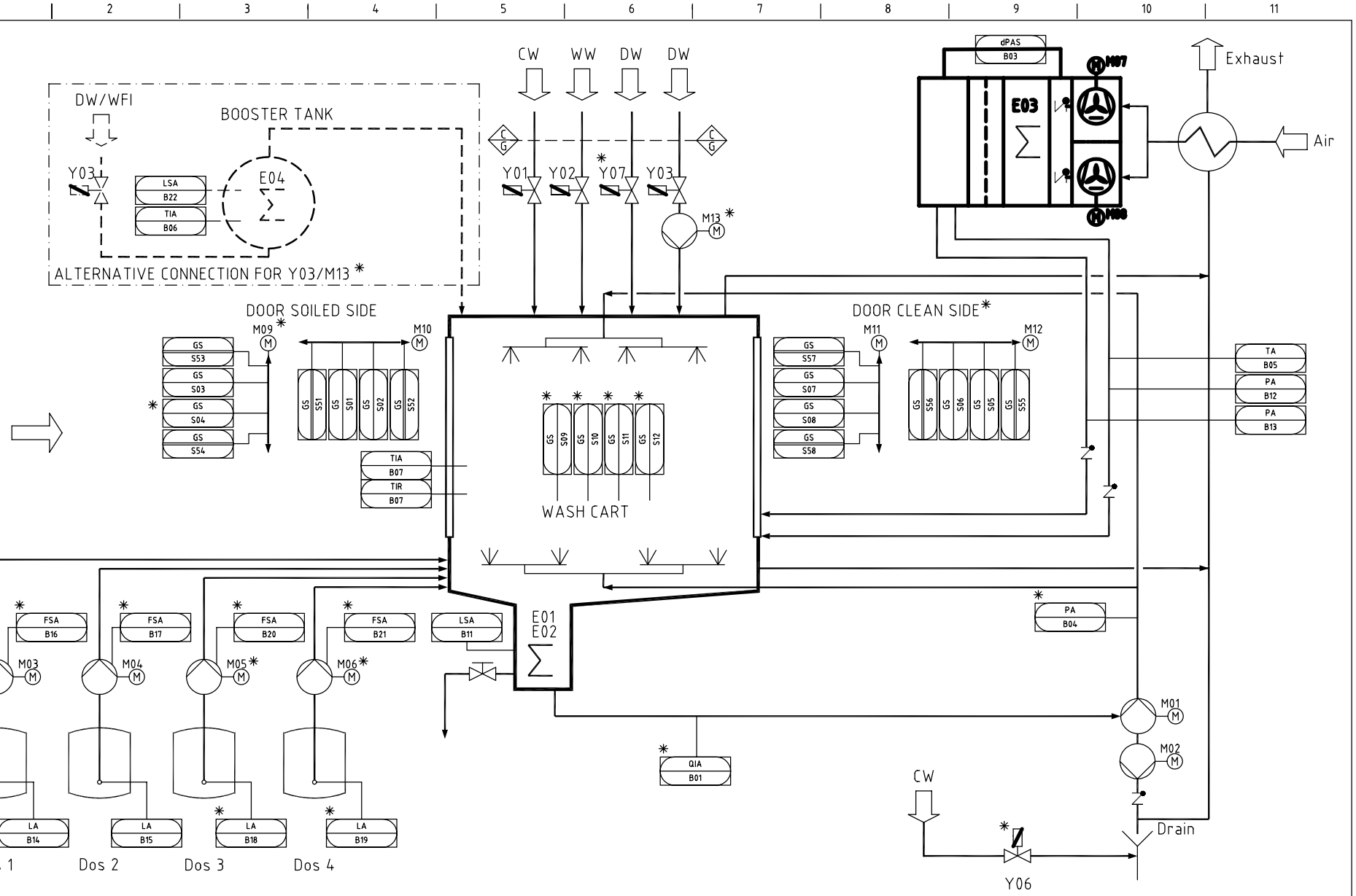

*) OPTION

Instrument symbols acc. to ISO 10628
Instrument functions acc. to ISO 3511
Component denomination acc. to IEC 750

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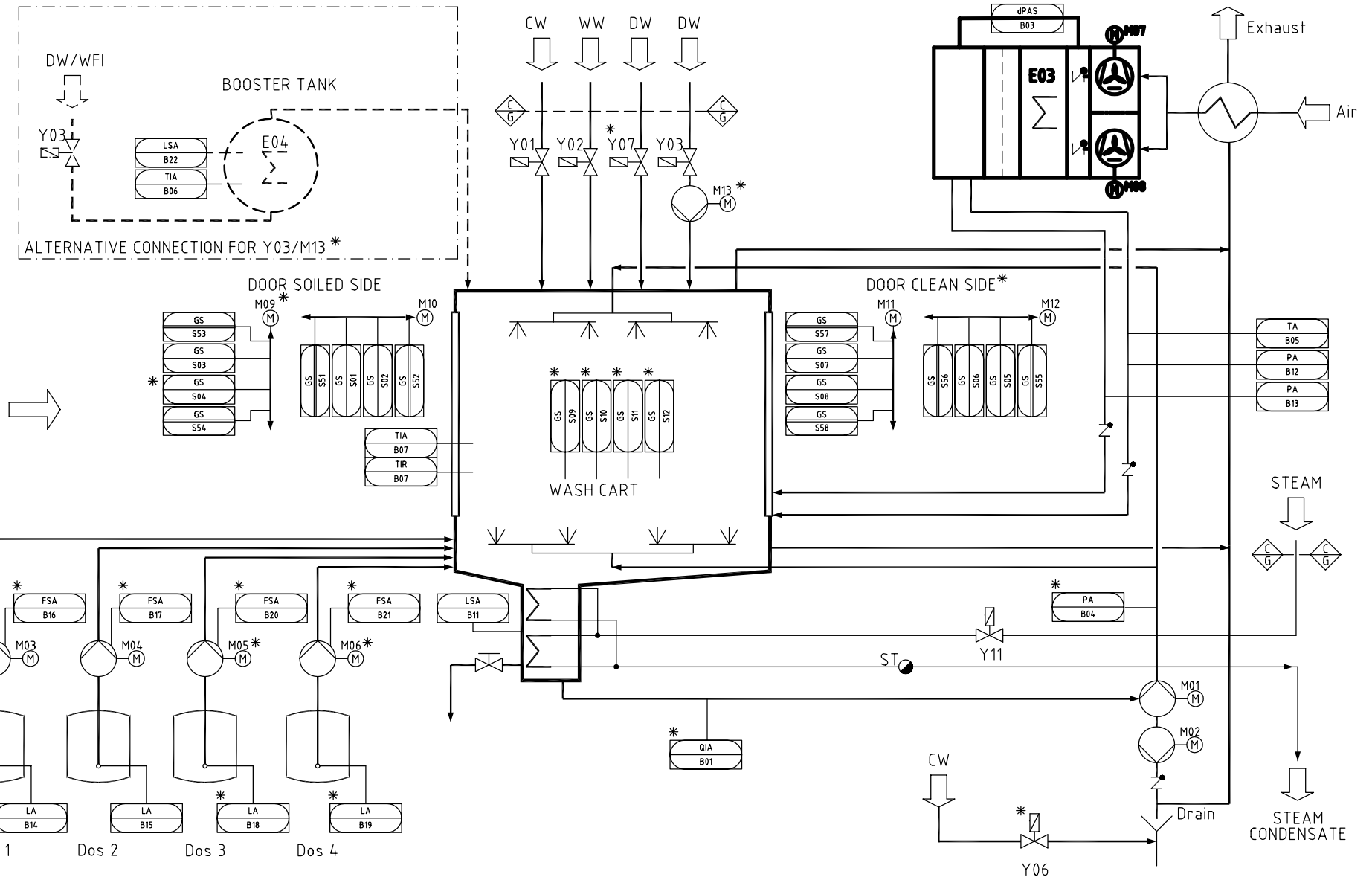
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	P & I DIAGRAM ELECTRICAL HEATING S-8666 HOSPITAL				File No.	Date 2002-06-06
					Dwg No 5011516	Rev.



*) OPTION

Instrument symbols acc. to ISO 10628
Instrument functions acc. to ISO 3511
Component denomination acc. to IEC 750

Drawn by PHu	Checked by	Approved by - Date PA 2005-01-31	If no other tolerance given	Scale 1:1	Replacing	Replaced by 4
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	P & I DIAGRAM STEAM HEATING S-8666 HOSPITAL				File No.	Date 2002-06-06
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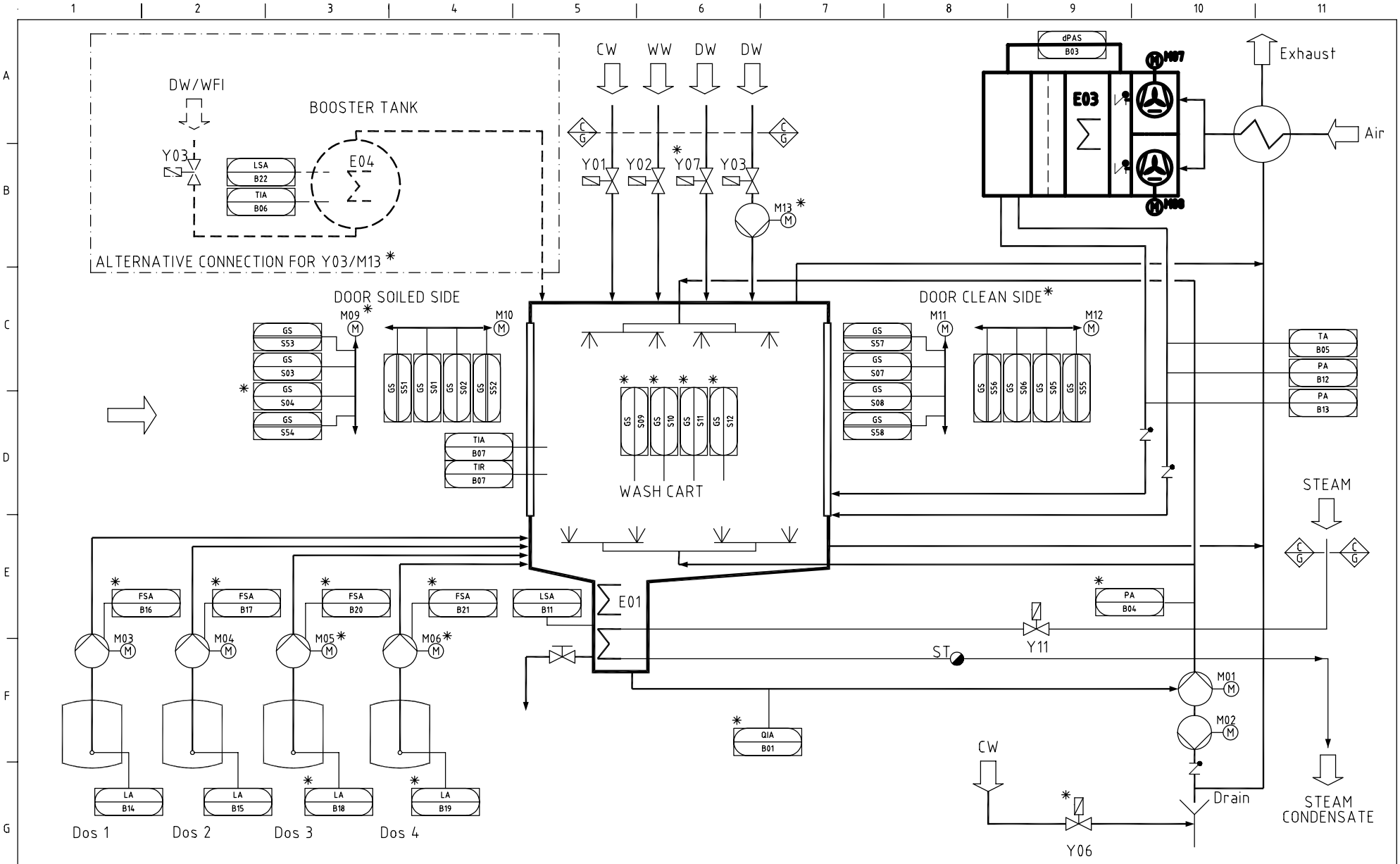

*) OPTION

Instrument symbols acc. to ISO 10628
Instrument functions acc. to ISO 3511
Component denomination acc. to IEC 750

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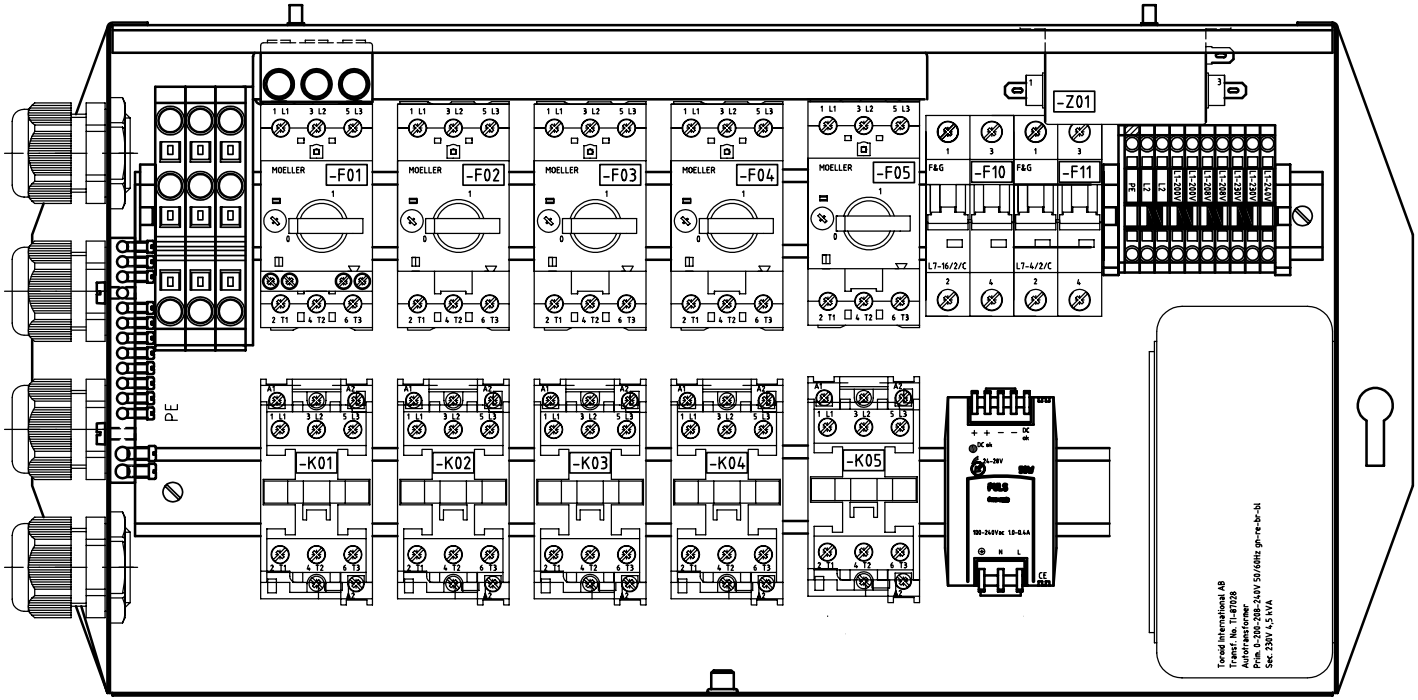
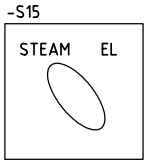
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	P & I DIAGRAM STEAM HEATING +EL.(BACKUP) S-8666 HOSPITAL				File No.	Date: 2002-06-06
					Dwg No: 5011518	Rev.

5





When steam heating with electrical heating as backup
-K03 is not used and switch -S15 is mounted in its position

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GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	LAYOUT ELECTRICAL BOX S-8666 HOSPITAL				File No.	Date: 2002-06-06
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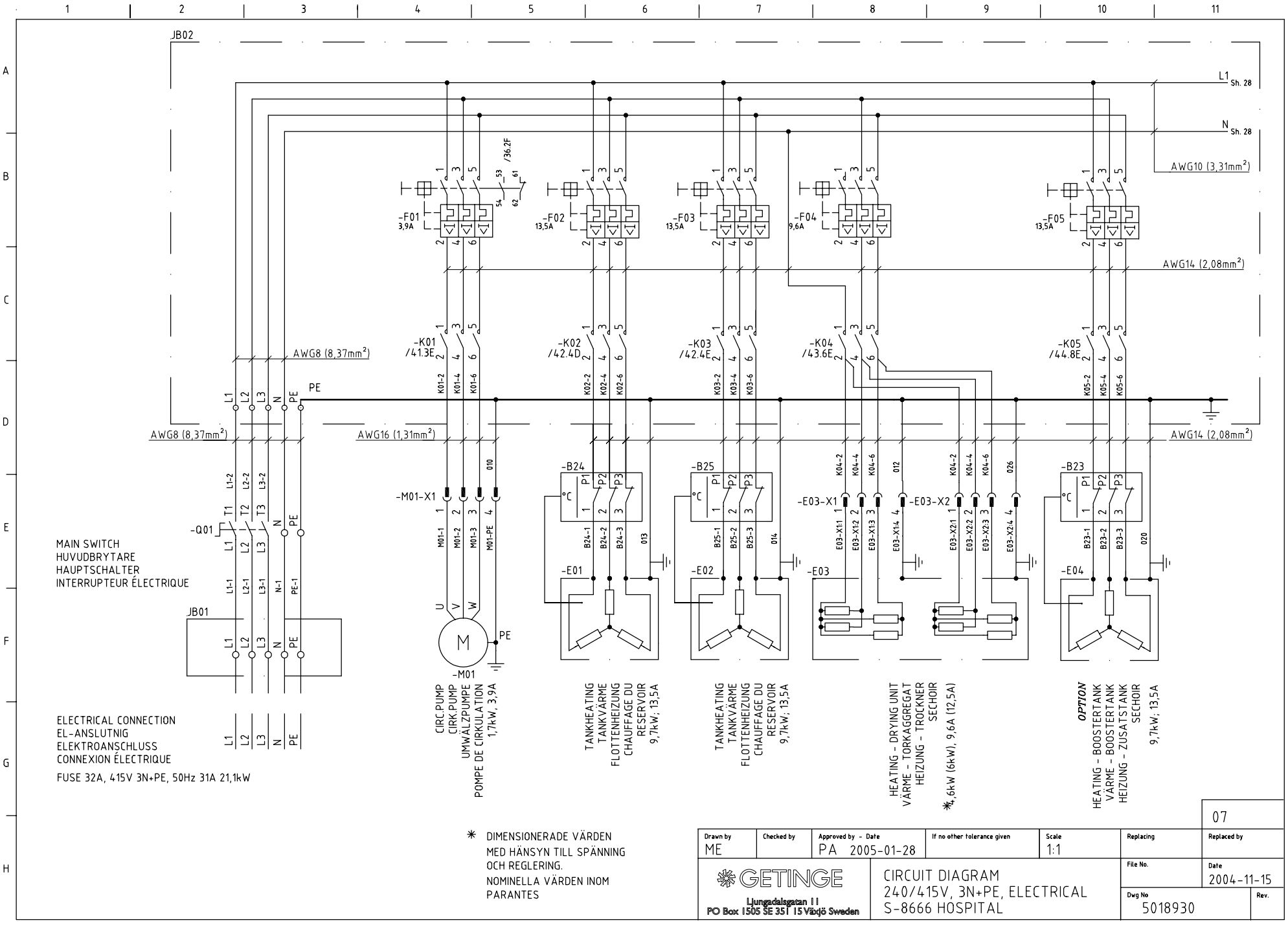

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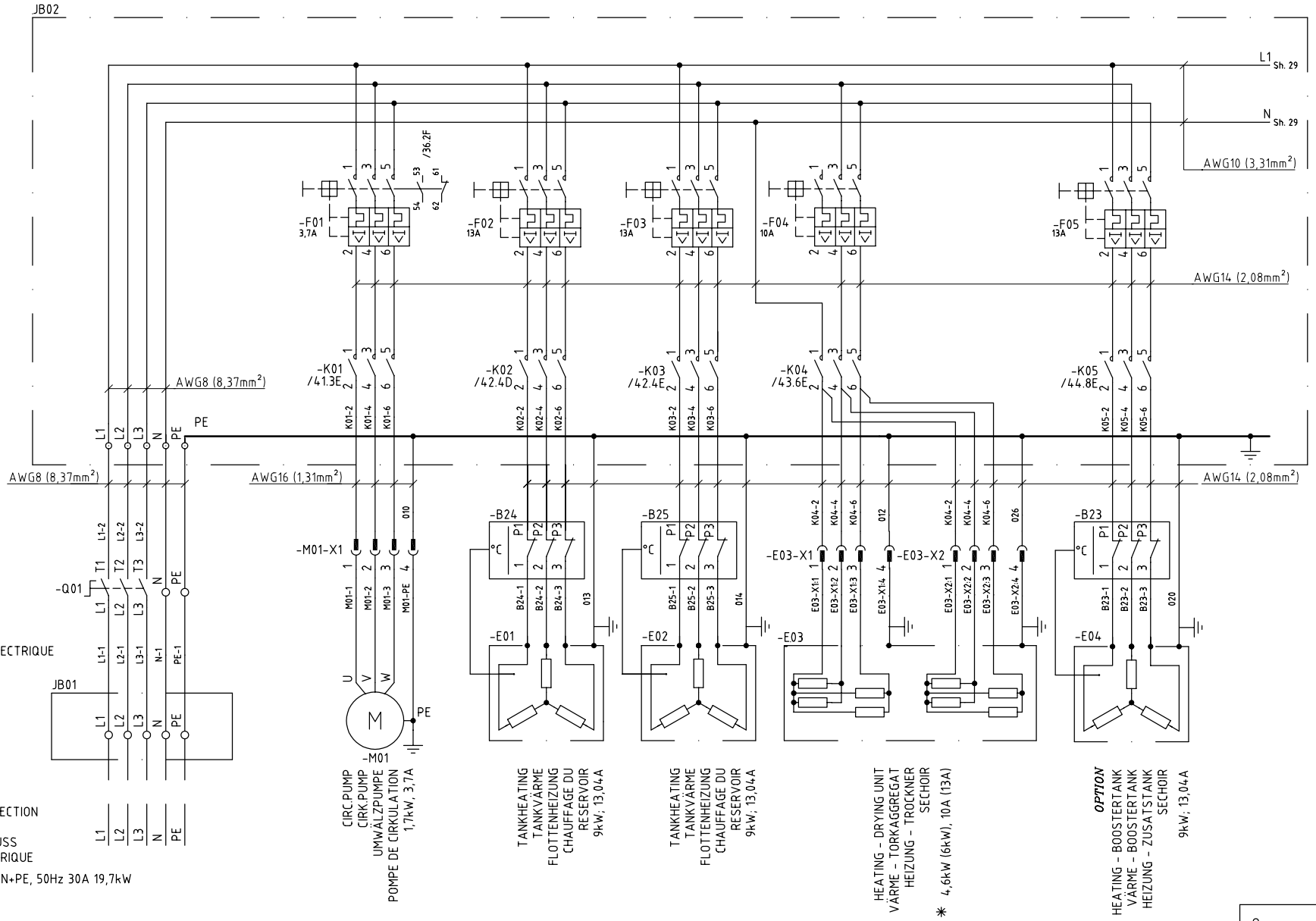
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRCUIT DIAGRAM 240/415V, 3N+PE, ELECTRICAL S-8666 HOSPITAL				File No.	Date: 2004-11-15
					Dwg No: 5018930	Rev.



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C		ÄM04-0381	041115	ME
B		ÄM03-0355	031024	PA
A		ÄM03-0303	030916	PA

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PHu		PA 2005-01-28		1:1		8

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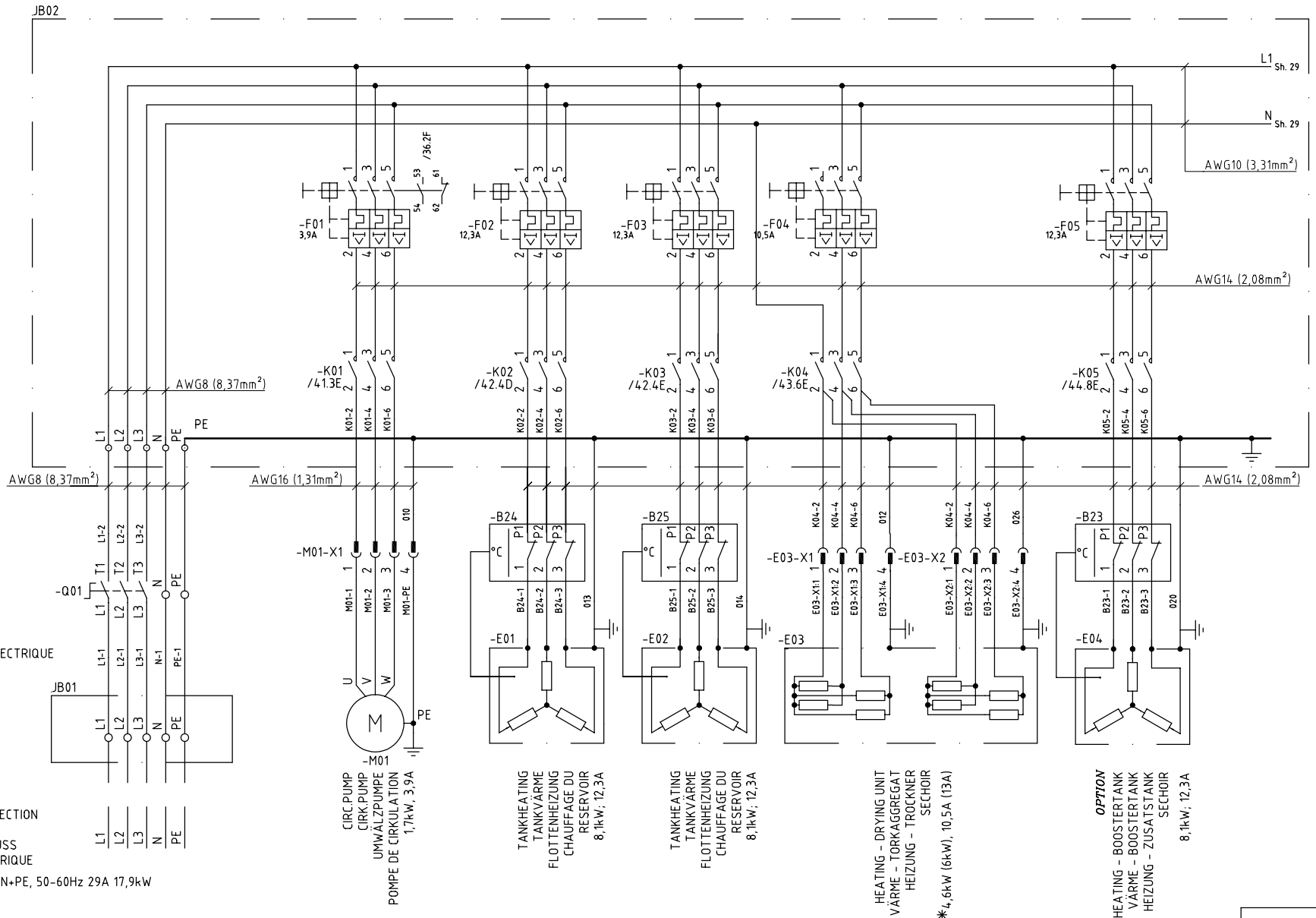
CIRCUIT DIAGRAM
230/400 V, 3N+PE, ELECTRICAL
S-8666 HOSPITAL

File No.	Date
	2002-06-06

Dwg No	Rev.
5011479	C



* DIMENSIONERADE VÄRDEN
MED HÄNSYN TILL SPÄNNING
OCH REGLERING.
NOMINELLA VÄRDEN INOM
PARANTES

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ME		PA 2005-01-28		1:1		09

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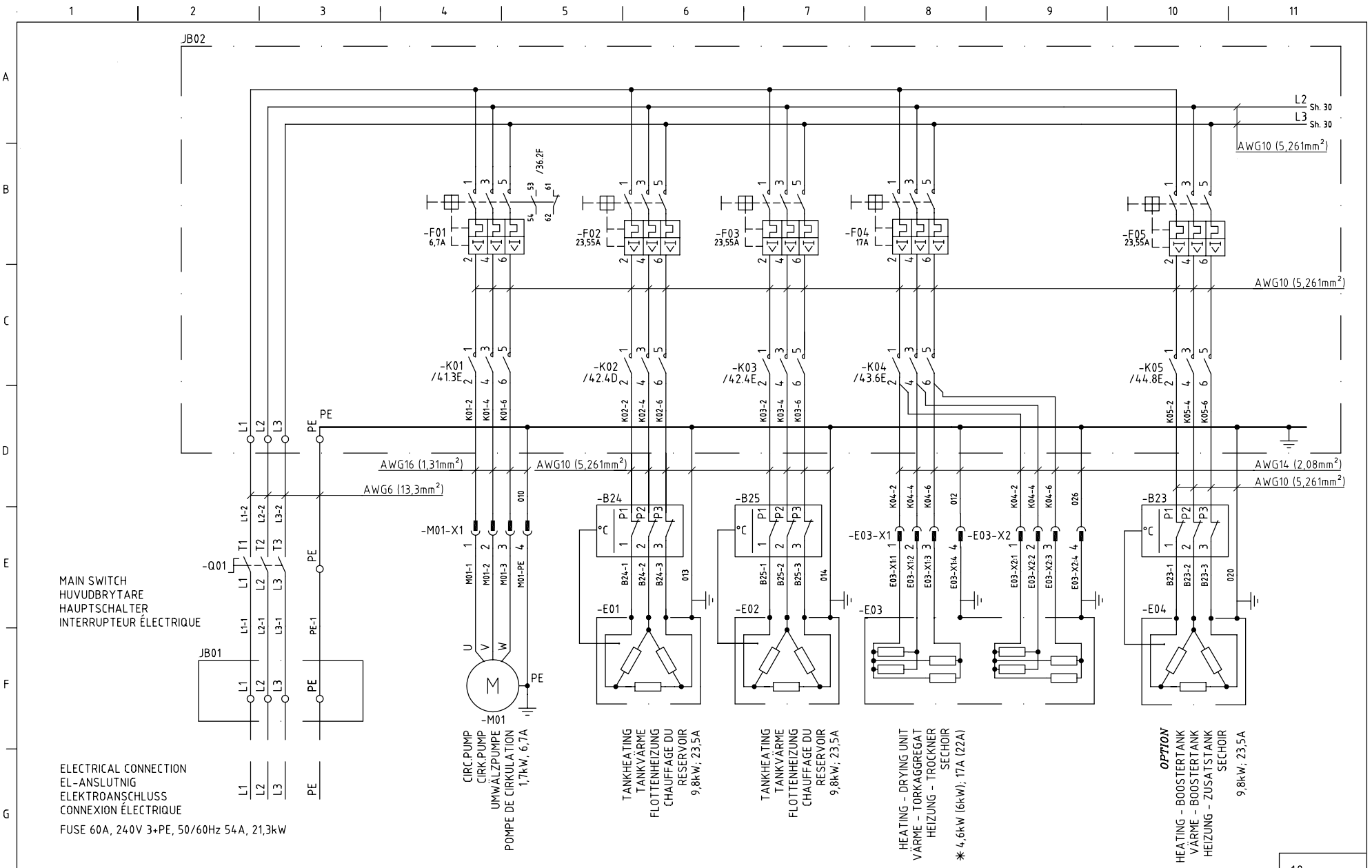
CIRCUIT DIAGRAM
220/380V, 3N+PE, ELECTRICAL
S-8666 HOSPITAL

File No.	Date
	2004-11-15
Dwg No	Rev.
5018931	



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NOMINELLA VÄRDEN INOM PARANTES

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B		ÄM03-0355	031024	PA
A		ÄM03-0303	030916	PA

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale
PHu		PA 2005-01-28		1:1

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CIRUIT DIAGRAM
240 V, 3+PE, ELECTRICAL
S-8666 HOSPITAL

Replacing	Replaced by
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File No.	Date
	2002-06-06
Dwg No	Rev.
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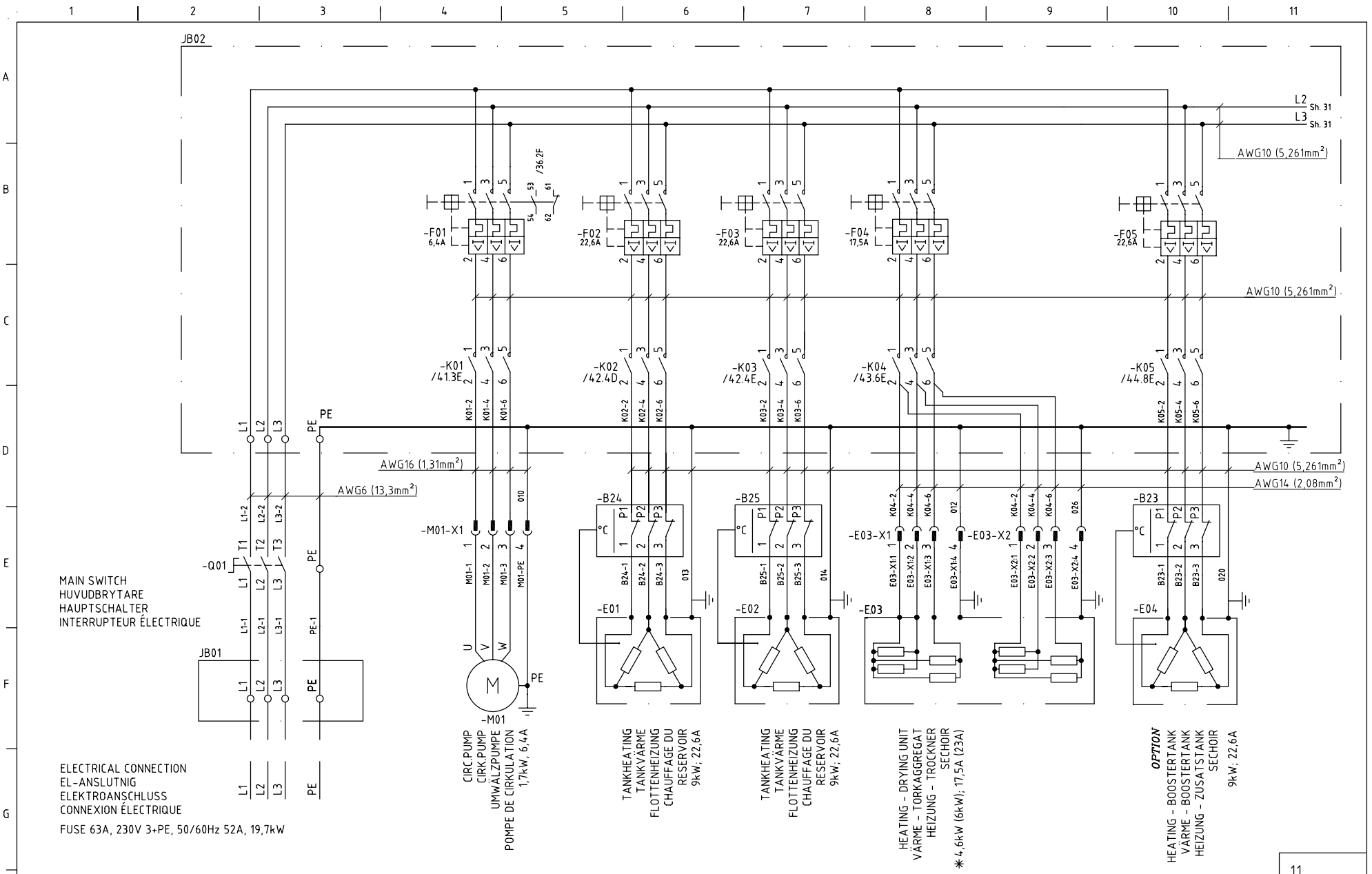

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NOMINELLA VÄRDEN INOM PARANTES

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Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
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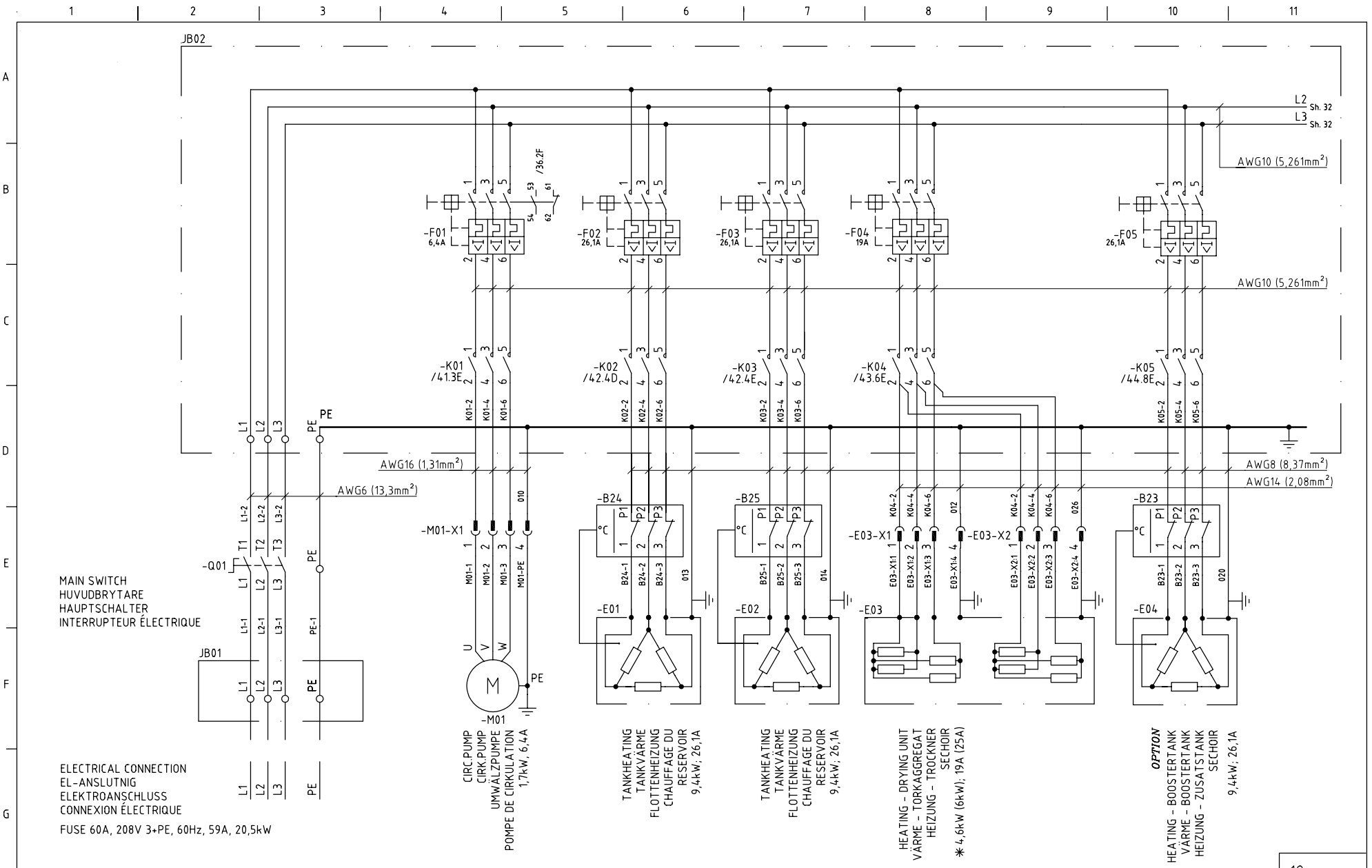
CIRUIT DIAGRAM
230 V, 3+PE, ELECTRICAL
S-8666 HOSPITAL

File No.	Date
	2002-06-06

Dwg No	Rev.
5011481	B



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MED HÄNSYN TILL SPÄNNING
OCH REGLERING.
NOMINELLA VÄRDEN INOM
PARANTES

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Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
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CIRUIT DIAGRAM
208 V, 3+PE, ELECTRICAL
S-8666 HOSPITAL

File No.	Date
	2002-06-06

Dwg No	Rev.
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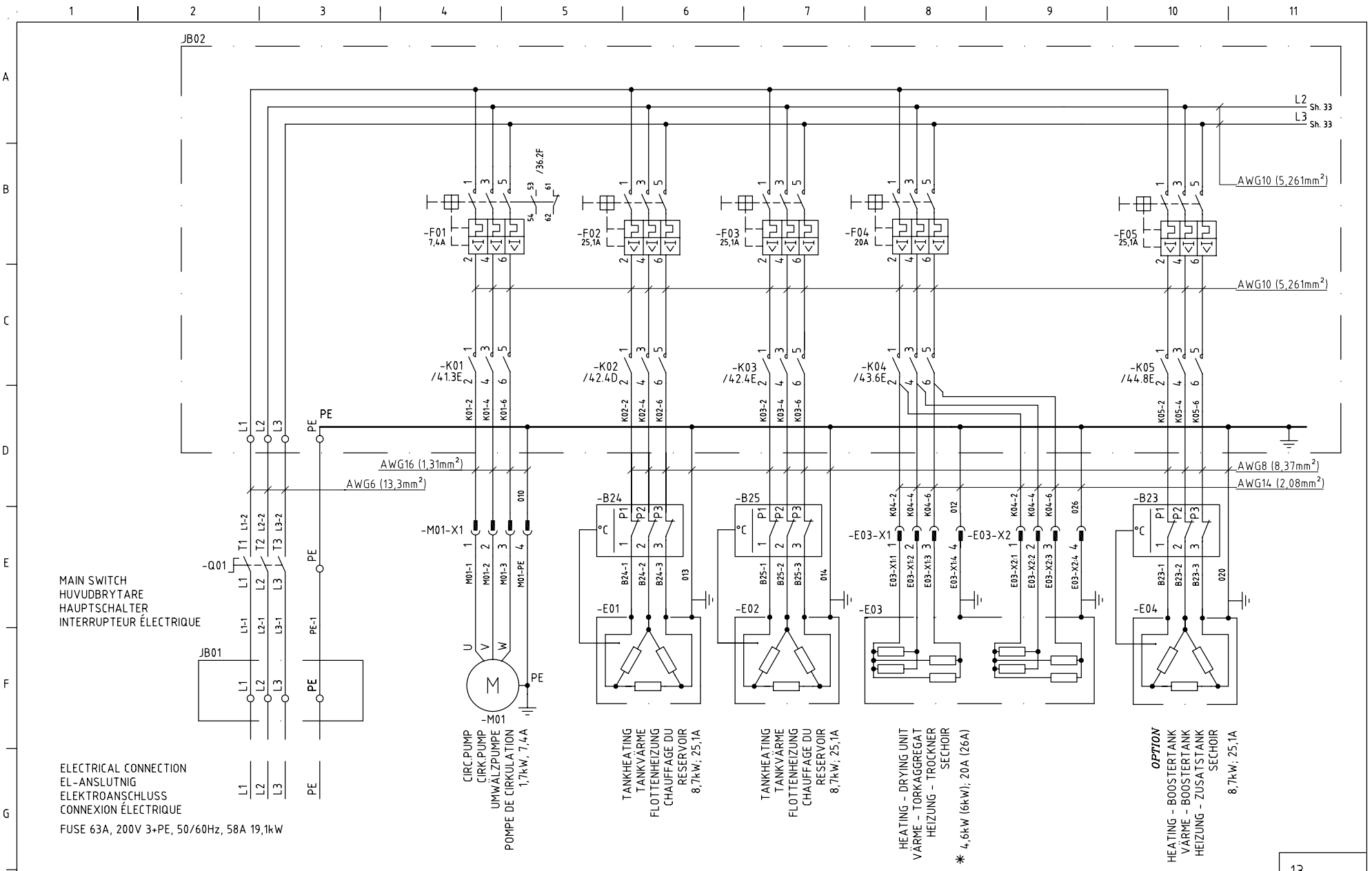

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* DIMENSIONERADE VÄRDEN MED HÄNSYN TILL SPÄNNING OCH REGLERING. NOMINELLA VÄRDEN INOM PARANTES

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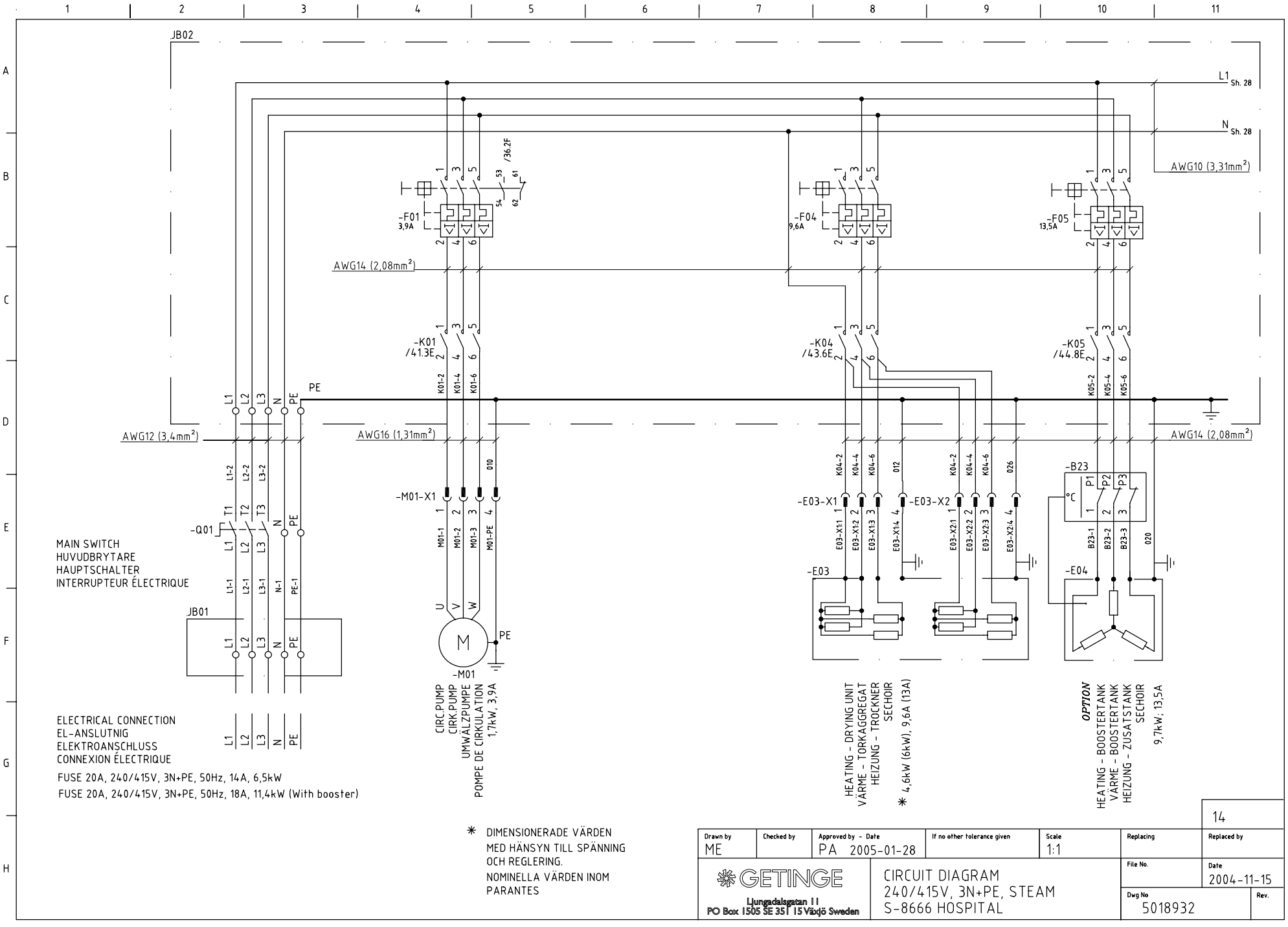
CIRUIT DIAGRAM
200 V, 3+PE, ELECTRICAL
S-8666 HOSPITAL

Replacing	Replaced by
File No.	Date
	2002-06-06
Dwg No	Rev.
5011483	C

13



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GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRCUIT DIAGRAM 240/415V, 3N+PE, STEAM S-8666 HOSPITAL				File No.	Date 2004-11-15
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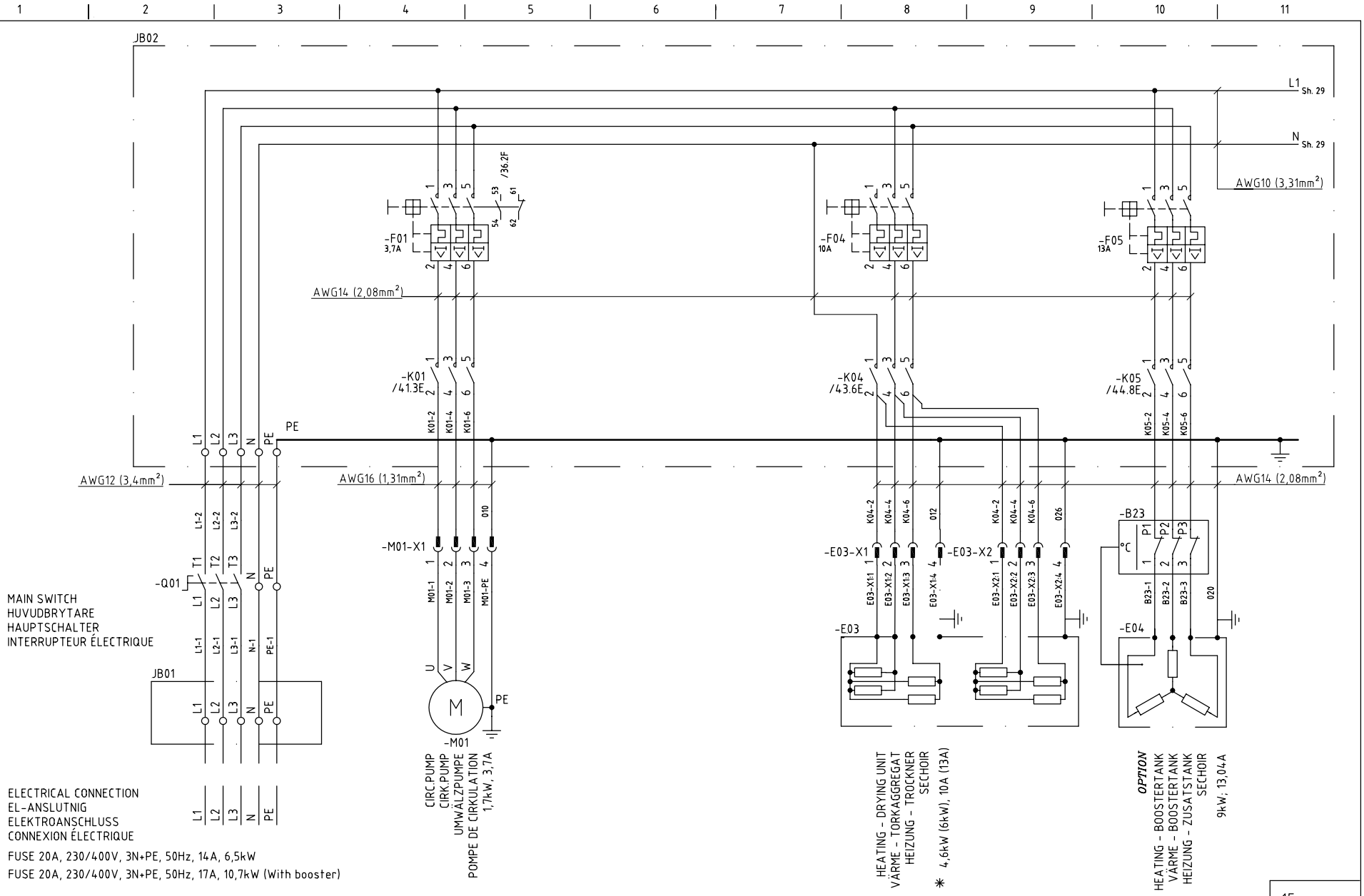

* DIMENSIONERADE VÄRDEN
MED HÄNSYN TILL SPÄNNING
OCH REGLERING.
NOMINELLA VÄRDEN INOM
PARANTES

Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
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B		ÄM03-0355	031025	PA
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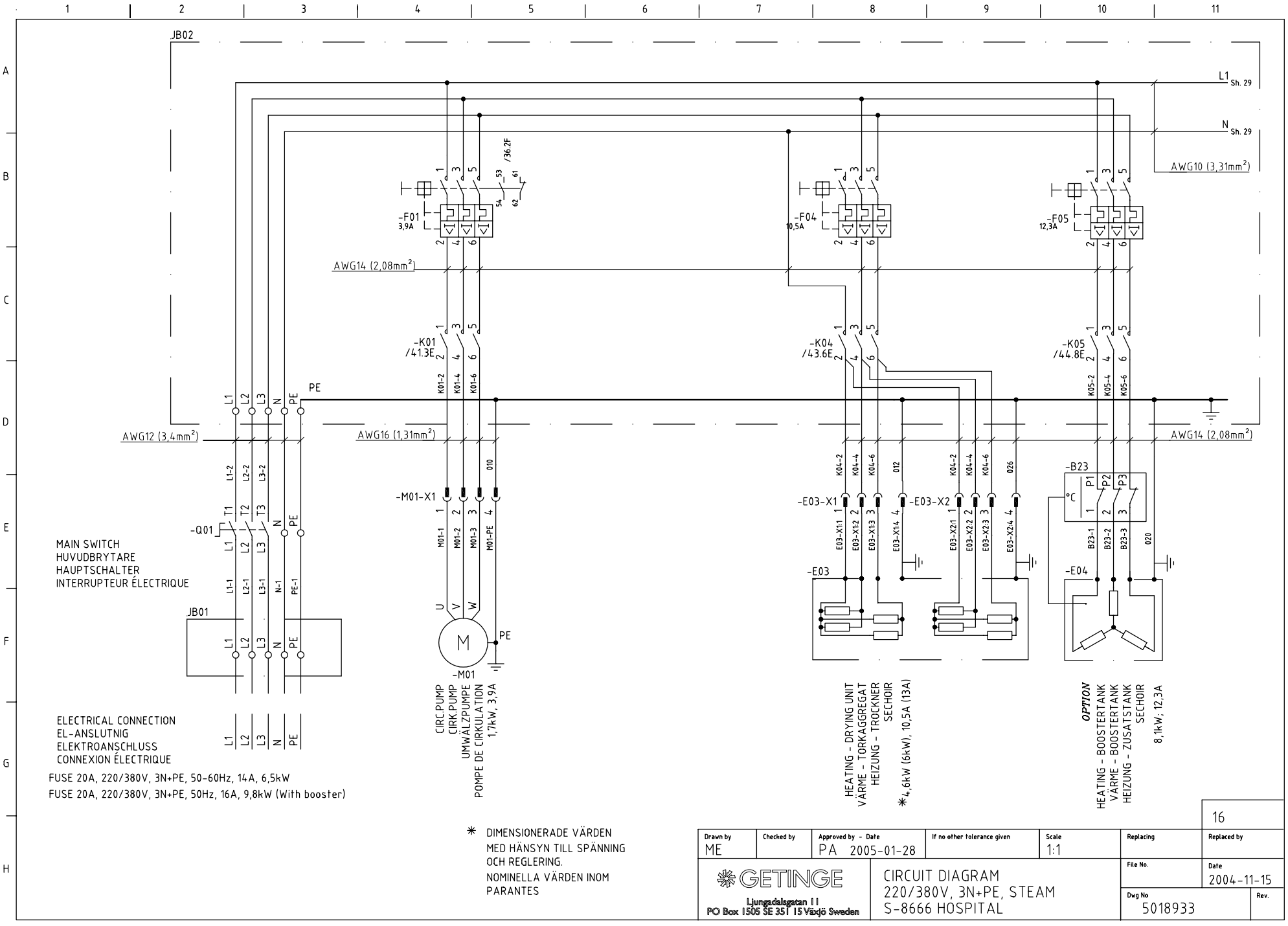
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRUIT DIAGRAM 230/400 V, 3N+PE, STEAM S-8666 HOSPITAL			File No. / Date 2002-06-06	Dwg No 5011484 / Rev. C

15



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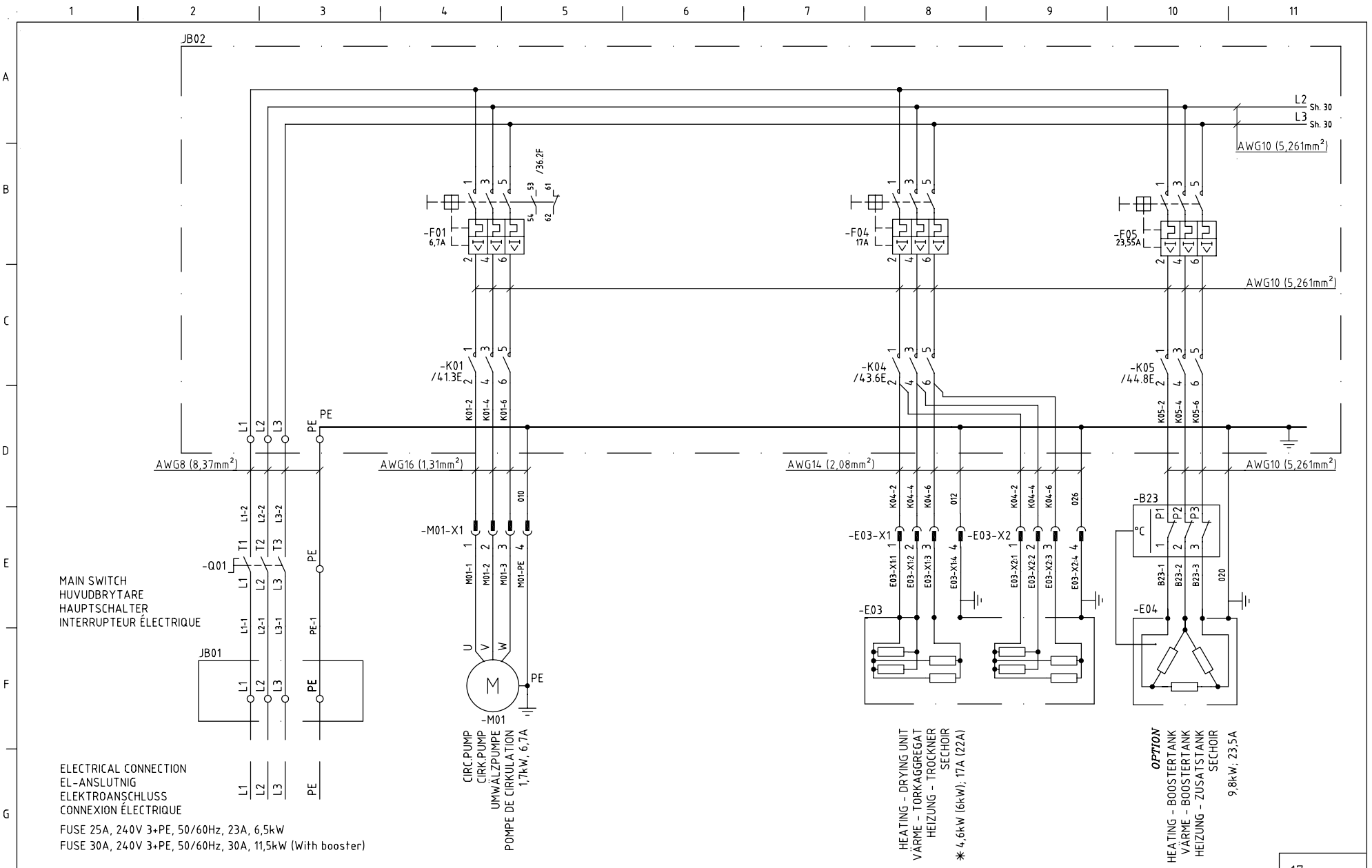

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C		ÄM04-0381	041115	ME
B		ÄM03-0355	031025	PA
A		ÄM03-0303	030916	PA

* DIMENSIONERADE VÄRDEN MED HÄNSYN TILL SPÄNNING OCH REGLERING.
NOMINELLA VÄRDEN INOM PARANTES

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PHu		PA 2005-01-28		1:1		

GETINGE
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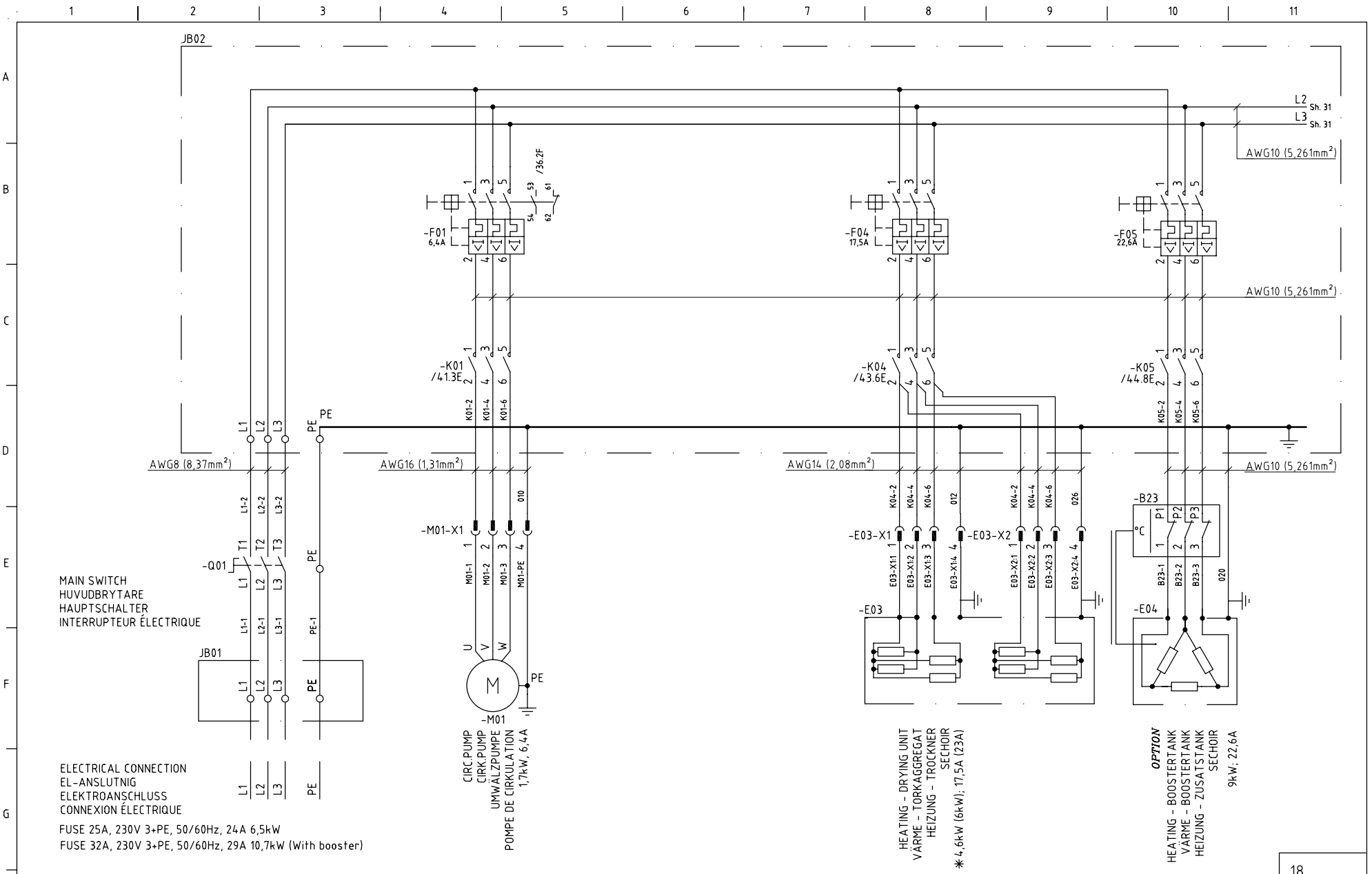
CIRUIT DIAGRAM
240 V, 3+PE, STEAM
S-8666 HOSPITAL

File No.	Date
	2002-06-06
Dwg No 5011485	Rev. C

17



✳ DIMENSIONERADE VÄRDEN MED HÄNSYN TILL SPÄNNING OCH REGLERING. NOMINELLA VÄRDEN INOM PARANTES

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A		ÄM03-0303	030916	PA

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
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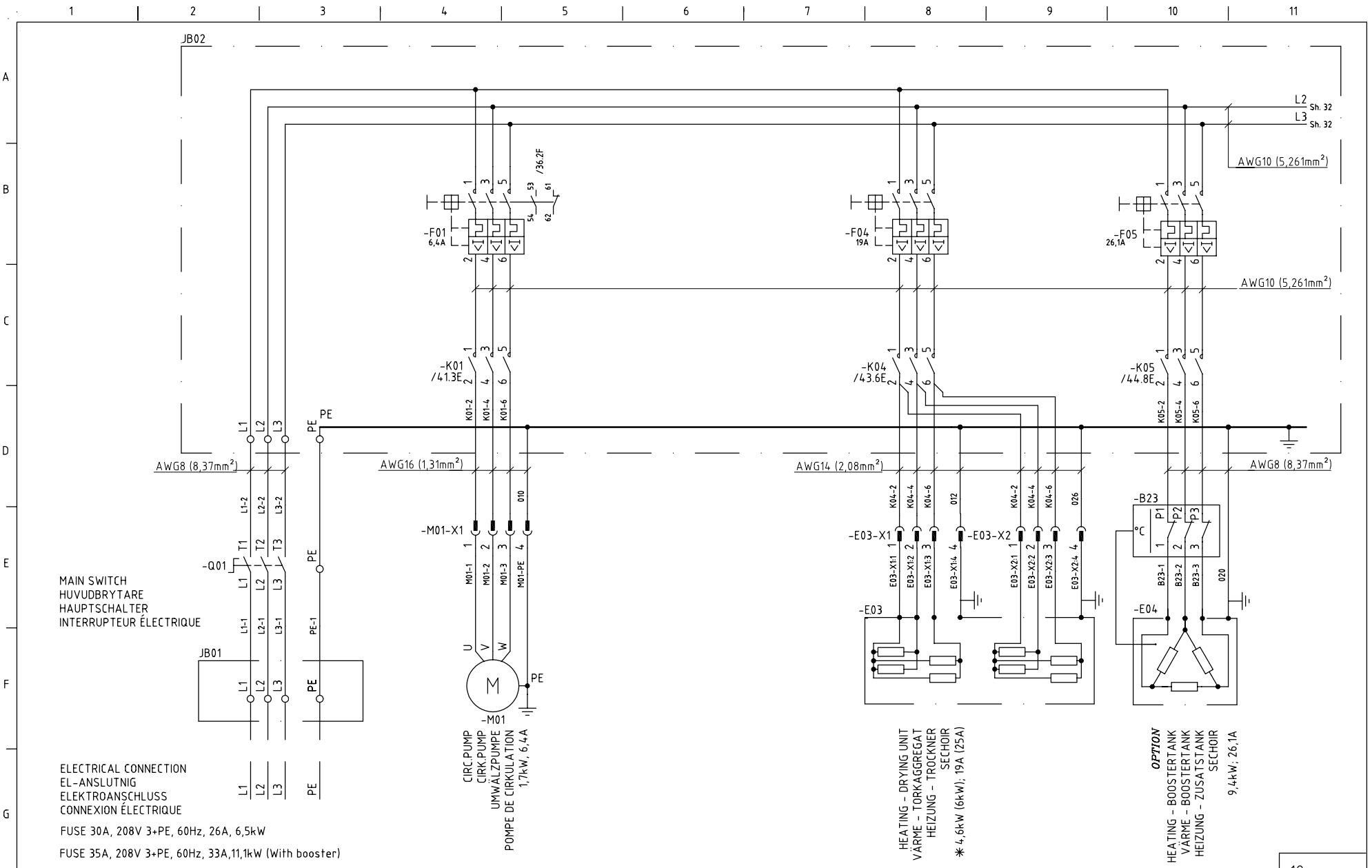
CIRUIT DIAGRAM
230 V, 3+PE, STEAM
S-8666 HOSPITAL

File No.	Date
	2002-06-06

Dwg No	Rev.
5011486	C



✱ DIMENSIONERADE VÄRDEN MED HÄNSYN TILL SPÄNNING OCH REGLERING.
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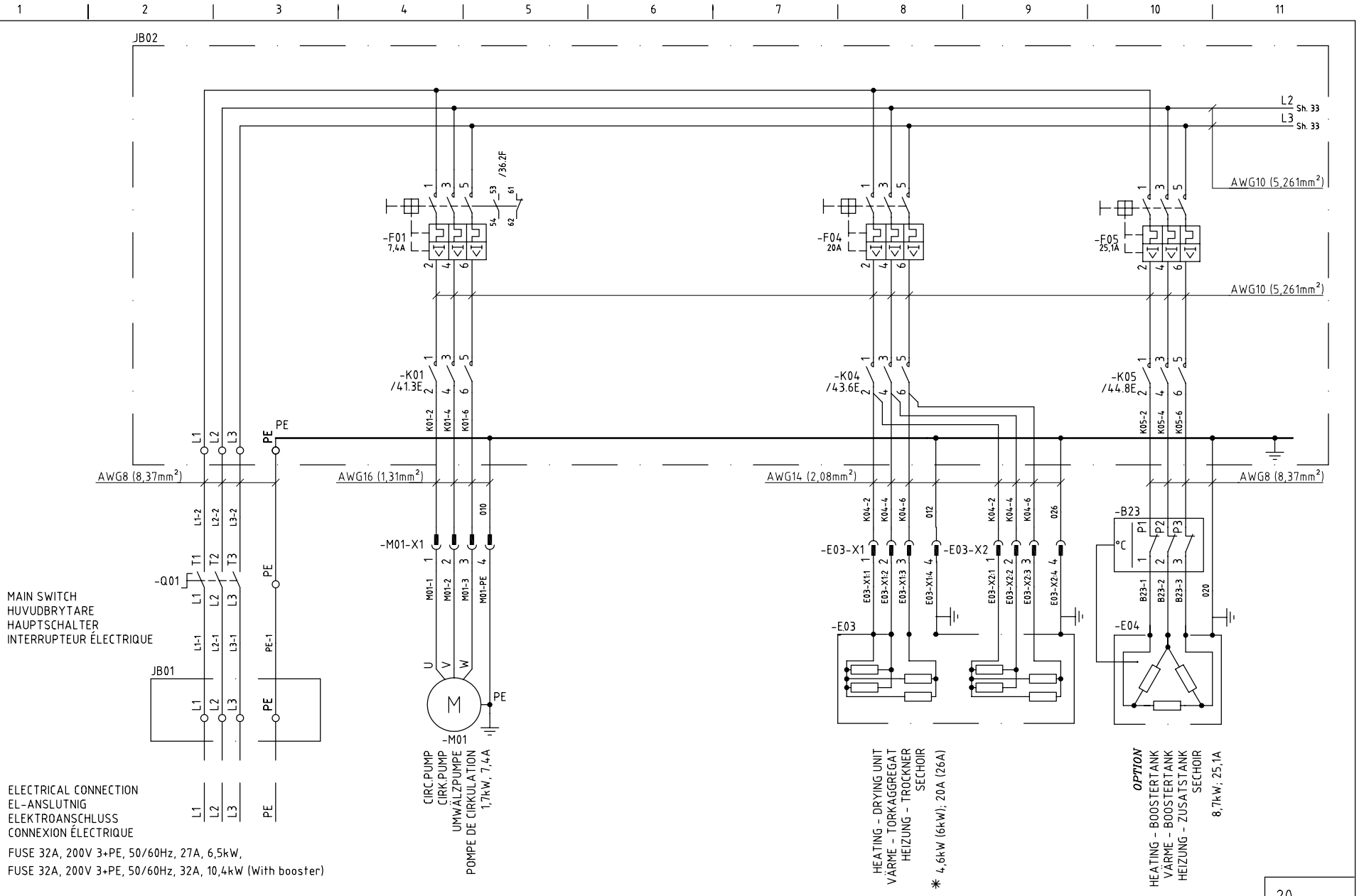
Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
C		ÄM04-0381	041115	ME
B		ÄM03-0355	031025	PA
A		ÄM03-0303	030916	PA

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale
PHu		PA 2005-01-28		1:1

GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRUIT DIAGRAM
208 V, 3+PE, STEAM
S-8666 HOSPITAL

Replacing	Replaced by
	19
File No.	Date
	2002-06-06
Dwg No	Rev.
5011487	C



Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
C		ÄM04-0381	041115	ME
B		ÄM03-0355	031025	PA
A		ÄM03-0303	030916	PA

* DIMENSIONERADE VÄRDEN MED HÄNSYN TILL SPÄNNING OCH REGLERING. NOMINELLA VÄRDEN INOM PARANTES

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PHu		PA 2005-01-28		1:1		

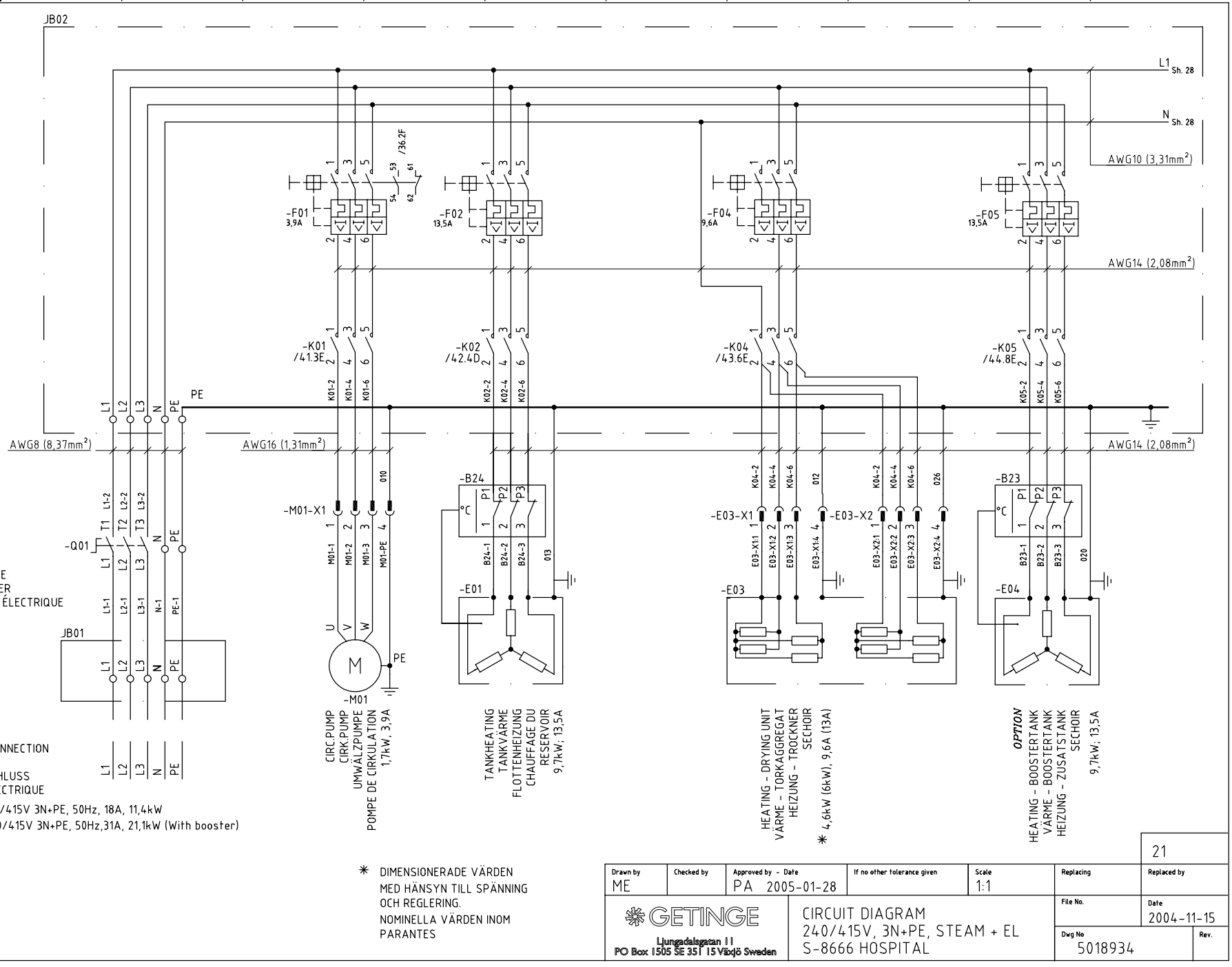
GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRUIT DIAGRAM
200 V, 3+PE, STEAM
S-8666 HOSPITAL

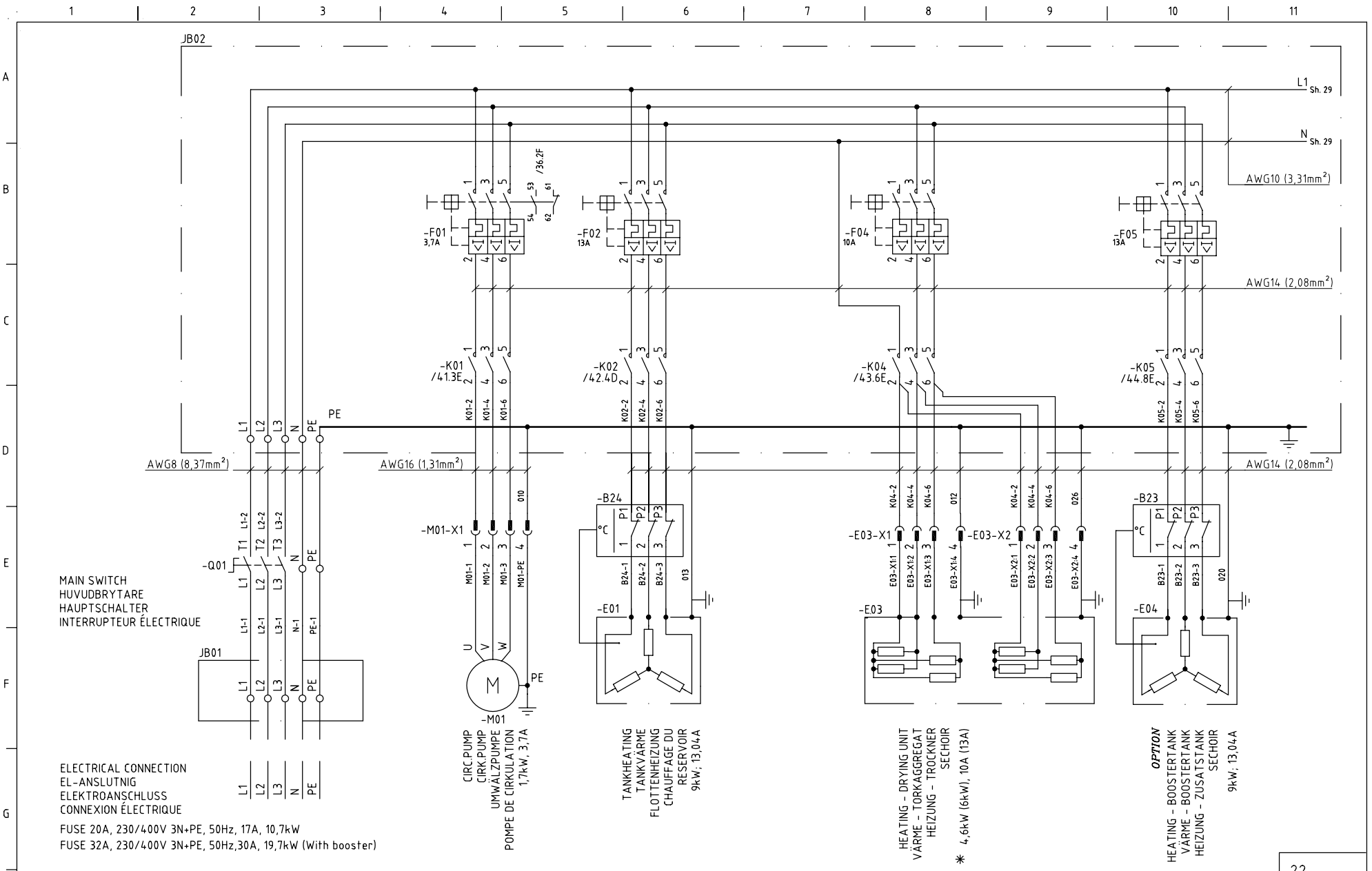
File No.	Date
	2002-06-06

Dwg No	Rev.
5011488	C

20



Drawn by ME	Checked by	Approved by - Date PA 2005-01-28	If no other tolerance given	Scale 1:1	Replacing	Replaced by
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden		CIRCUIT DIAGRAM 240/415V, 3N+PE, STEAM + EL S-8666 HOSPITAL			File No.	Date 2004-11-15
					Dwg No 5018934	Rev. 21



Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
C		ÄM04-0381	041115	ME
B		ÄM03-0355	031025	PA
A		ÄM03-0303	030916	PA

* DIMENSIONERADE VÄRDEN MED HÄNSYN TILL SPÄNNING OCH REGLERING. NOMINELLA VÄRDEN INOM PARANTES

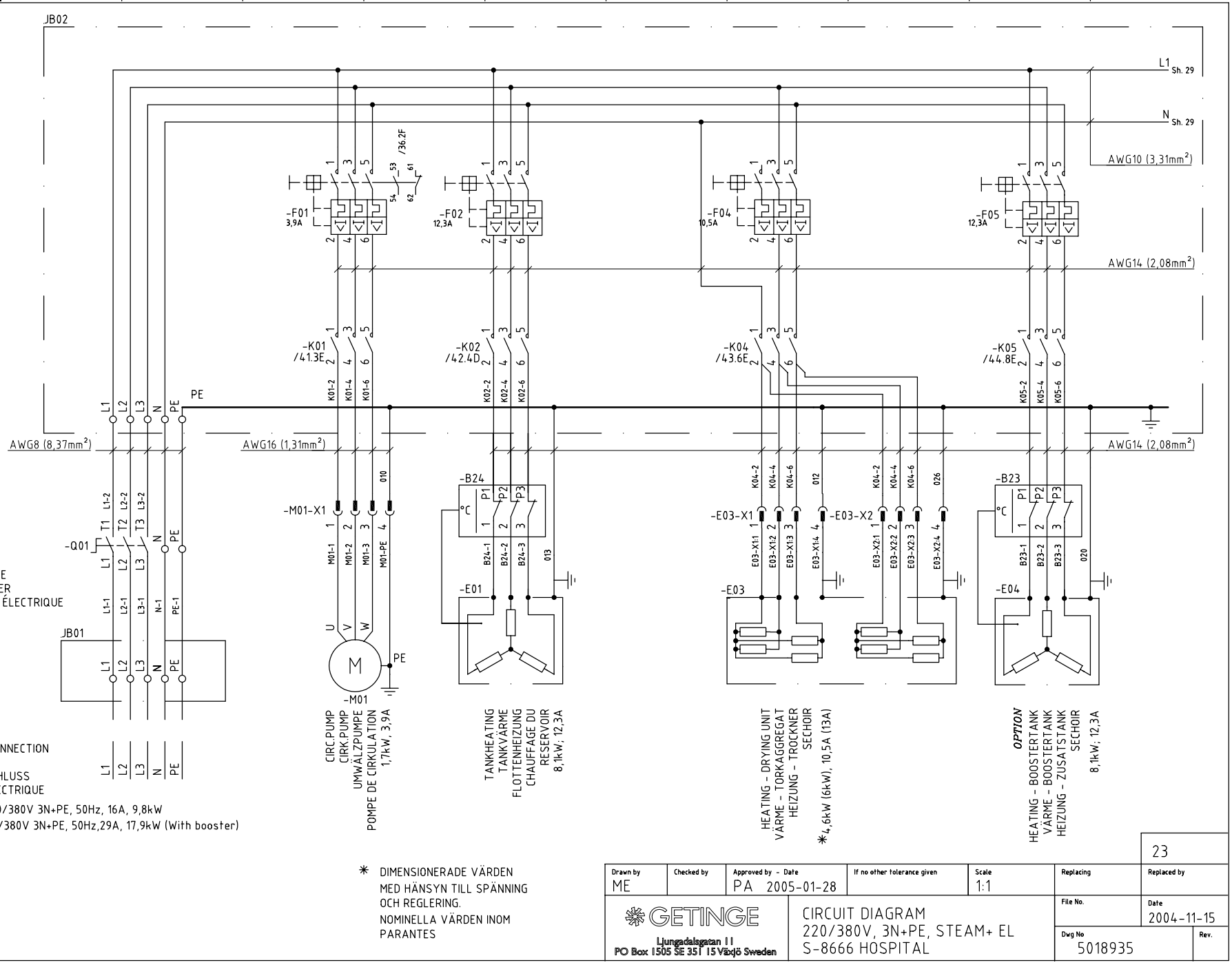
Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale
PHu		PA 2005-01-28		1:1

GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRUIT DIAGRAM
230/400 V, STEAM+EL. (BACKUP)
S-8666 HOSPITAL

Replacing	Replaced by
File No.	Date
	2002-06-06
Dwg No	Rev.
5011489	C

22

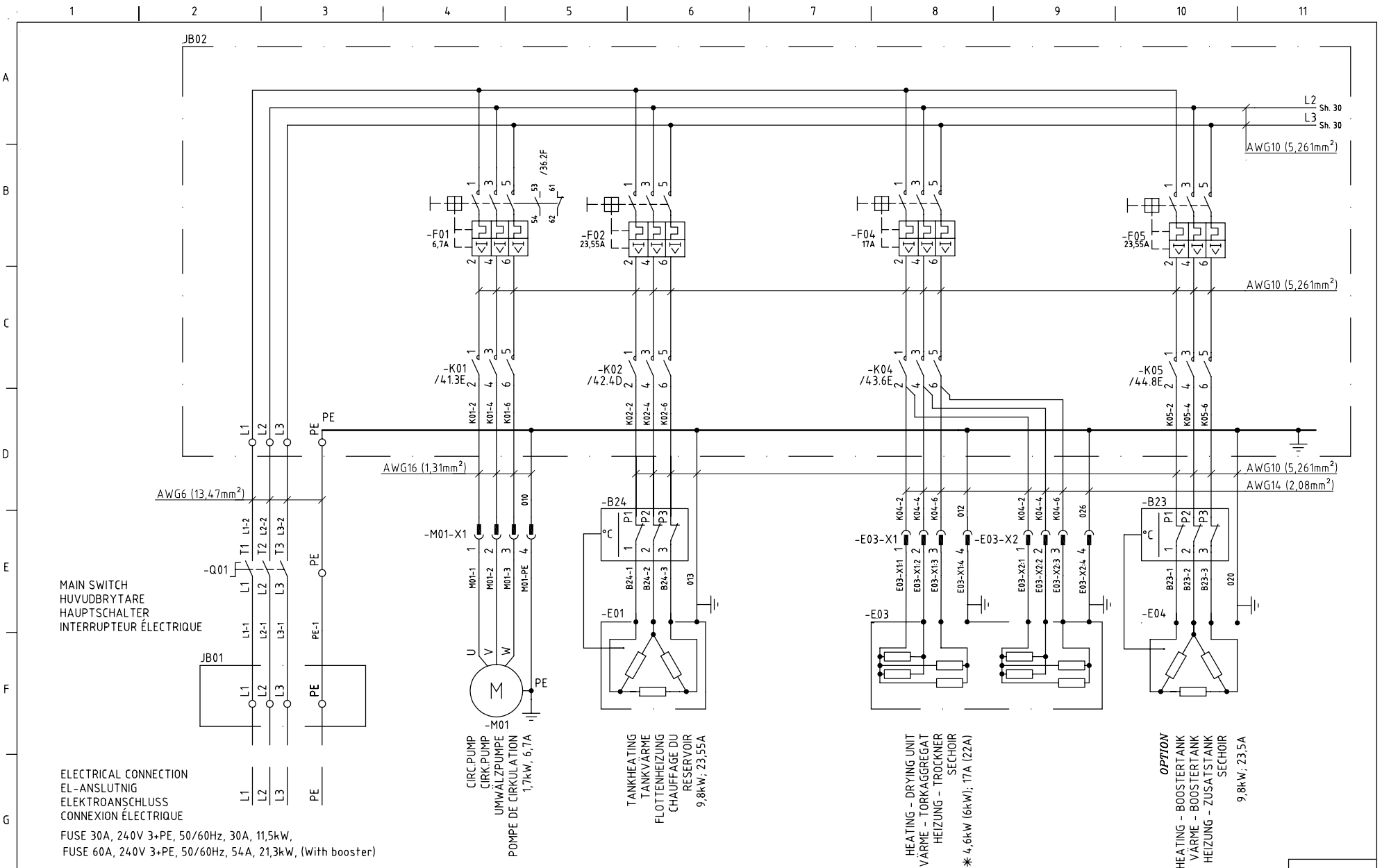


Drawn by ME	Checked by	Approved by - Date PA 2005-01-28	If no other tolerance given	Scale 1:1	Replacing	Replaced by
					File No.	Date 2004-11-15
					Dwg No 5018935	Rev.

GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRCUIT DIAGRAM
220/380V, 3N+PE, STEAM+ EL
S-8666 HOSPITAL

23



* DIMENSIONERADE VÄRDEN MED HÄNSYN TILL SPÄNNING OCH REGLERING.
NOMINELLA VÄRDEN INOM PARANTES

Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
C		ÄM04-0381	041115	ME
B		ÄM03-0355	031025	PA
A		ÄM03-0303	030916	PA

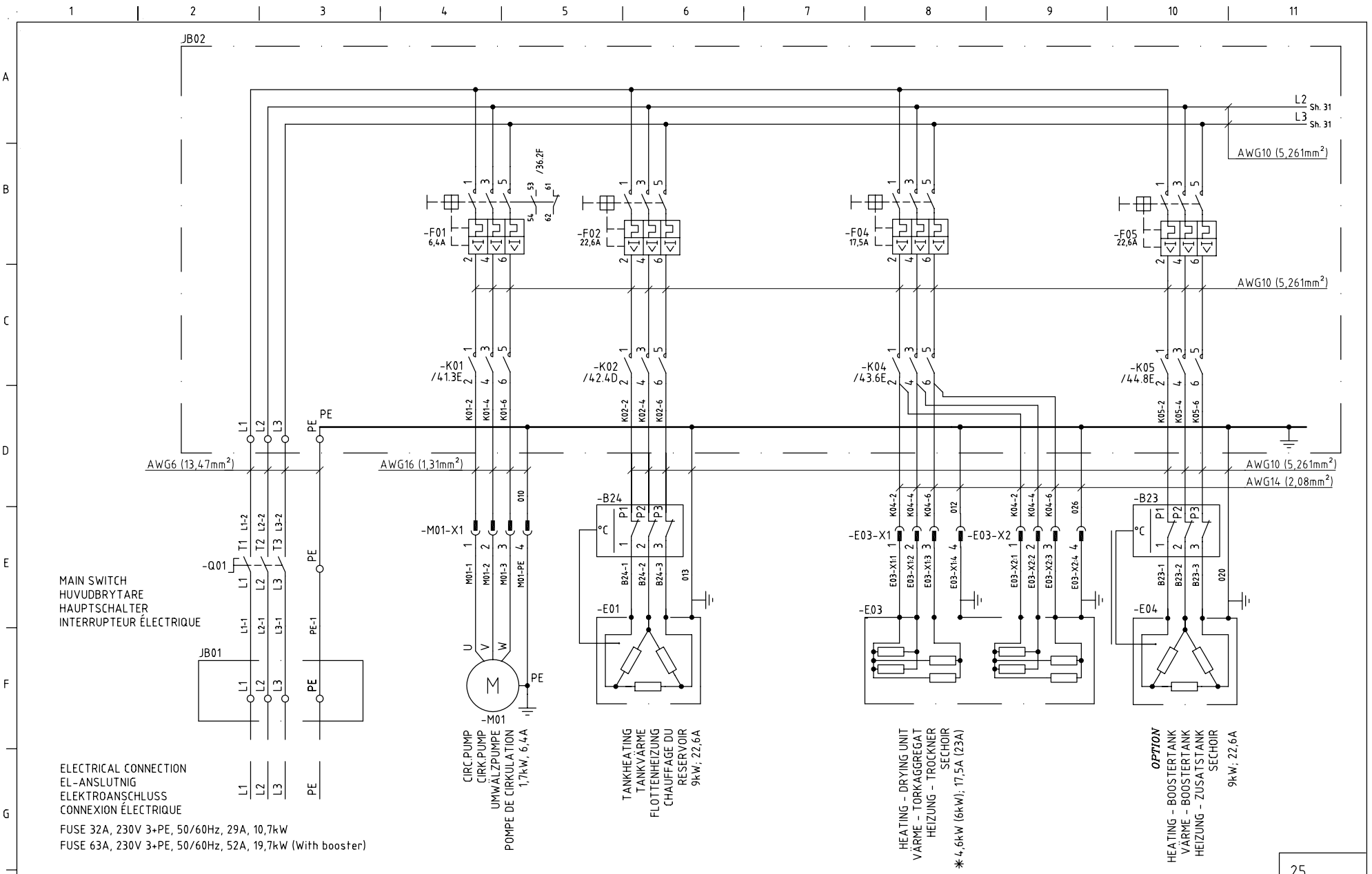
Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PHu		PA 2005-01-28		1:1		24

GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRUIT DIAGRAM
240 V, 3+PE, STEAM+EL. (BACKUP
S-8666 HOSPITAL

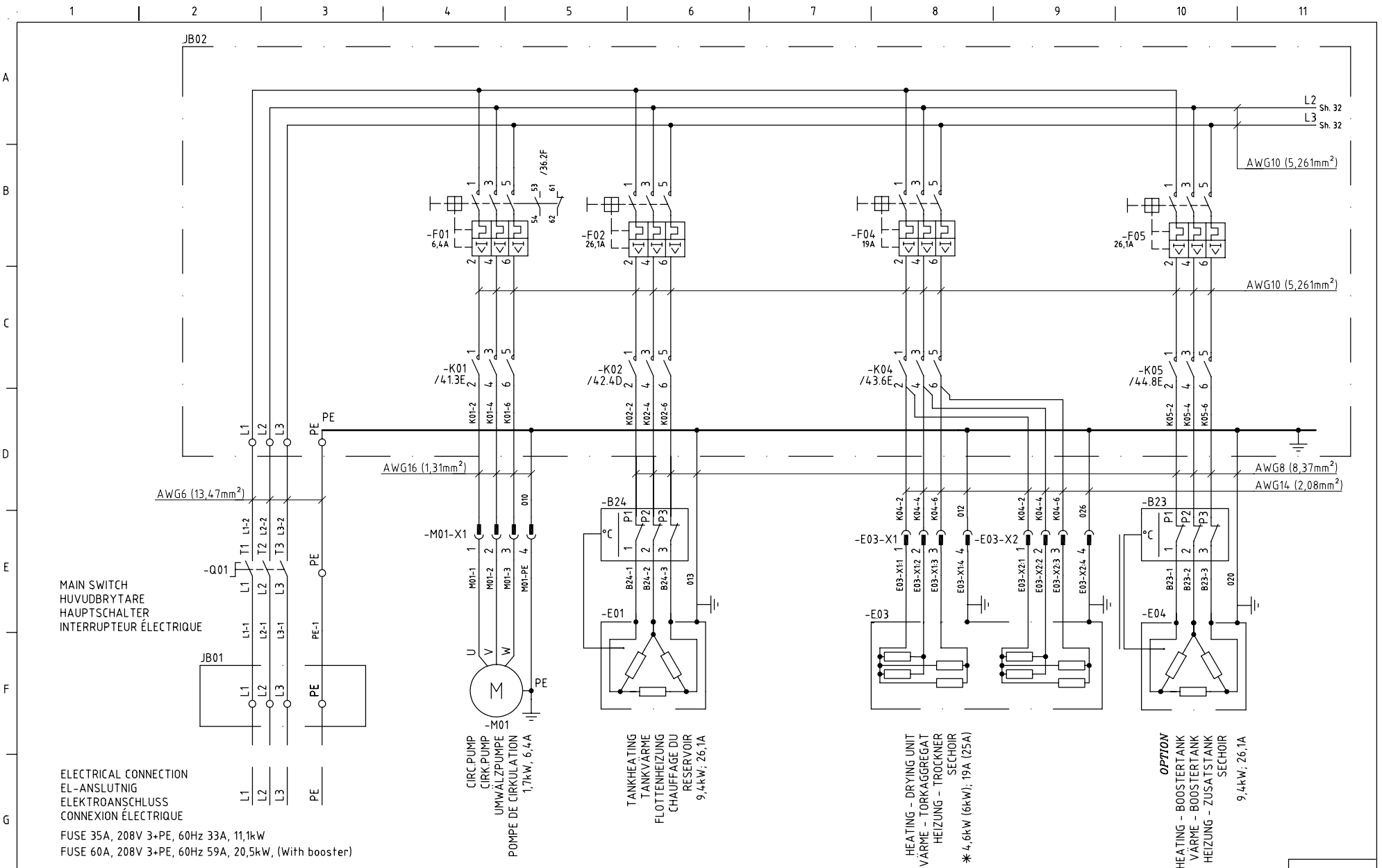
File No.	Date
	2002-06-06

Dwg No	Rev.
5011490	C



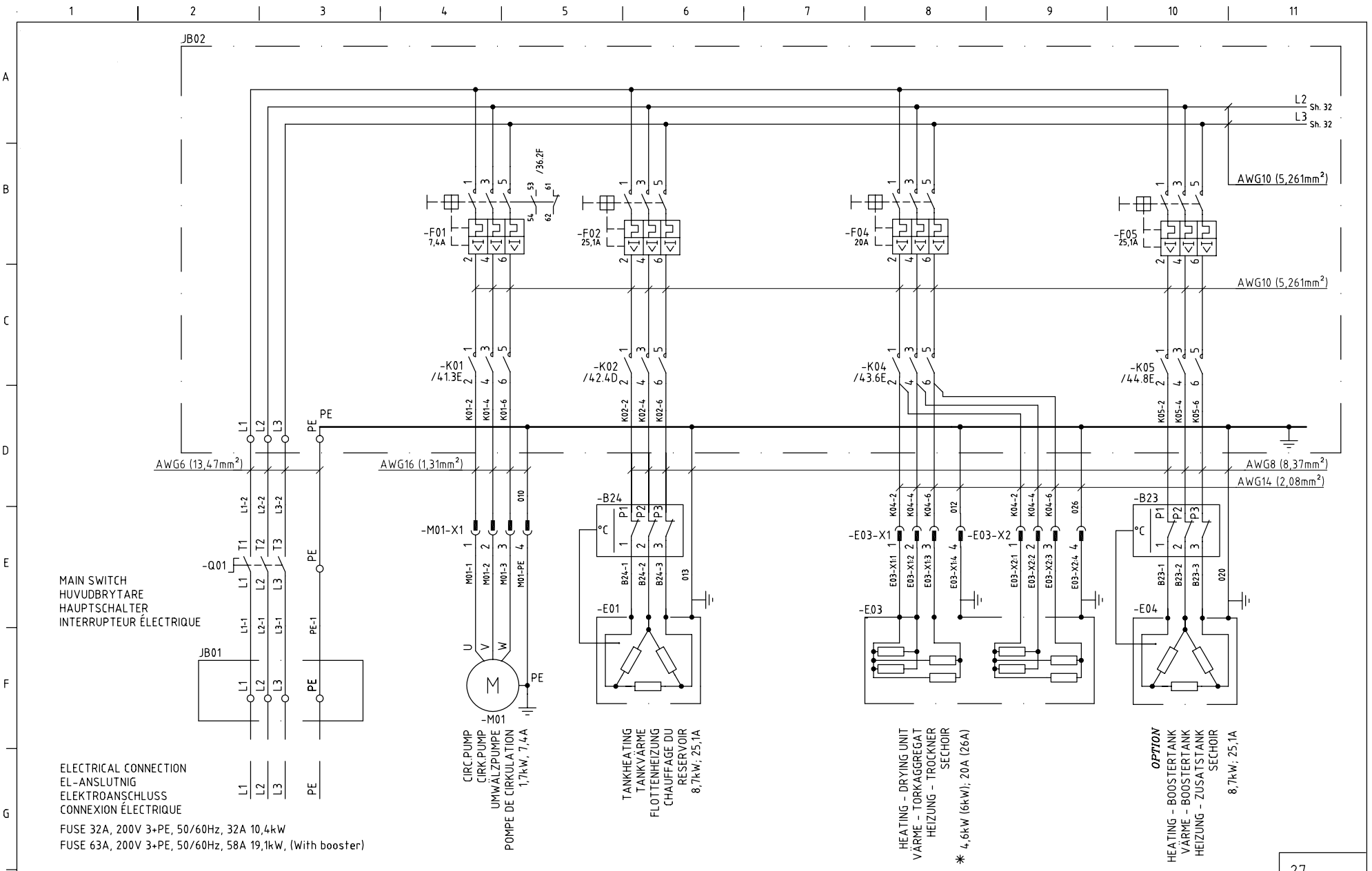
Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
C		ÄM04-0381	041115	ME
B		ÄM03-0355	031025	PA
A		ÄM03-0303	030916	PA

Drawn by PHu	Checked by	Approved by - Date PA 2005-01-28	If no other tolerance given	Scale 1:1	Replacing	Replaced by	25
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRUIT DIAGRAM 230 V, 3+PE, STEAM+EL. (BACKUP S-8666 HOSPITAL				File No.	Date 2002-06-06	
					Dwg No 5011491	Rev. C	



Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
C		ÄM04-0381	041115	ME
A		ÄM03-0303	030916	PA

Drawn by PHu	Checked by	Approved by - Date PA 2005-01-28	If no other tolerance given	Scale 1:1	Replacing	Replaced by	26
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden		CIRUIT DIAGRAM 208 V, 3+PE, STEAM+EL. (BACKUP S-8666 HOSPITAL			File No.	Date 2002-06-06	
					Dwg No 5011492	Rev. C	



Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
C		ÄM04-0381	041115	ME
B		ÄM03-0355	031025	PA
A		ÄM03-0303	030916	PA

* DIMENSIONERADE VÄRDEN MED HÄNSYN TILL SPÄNNING OCH REGLERING.
NOMINELLA VÄRDEN INOM PARANTES

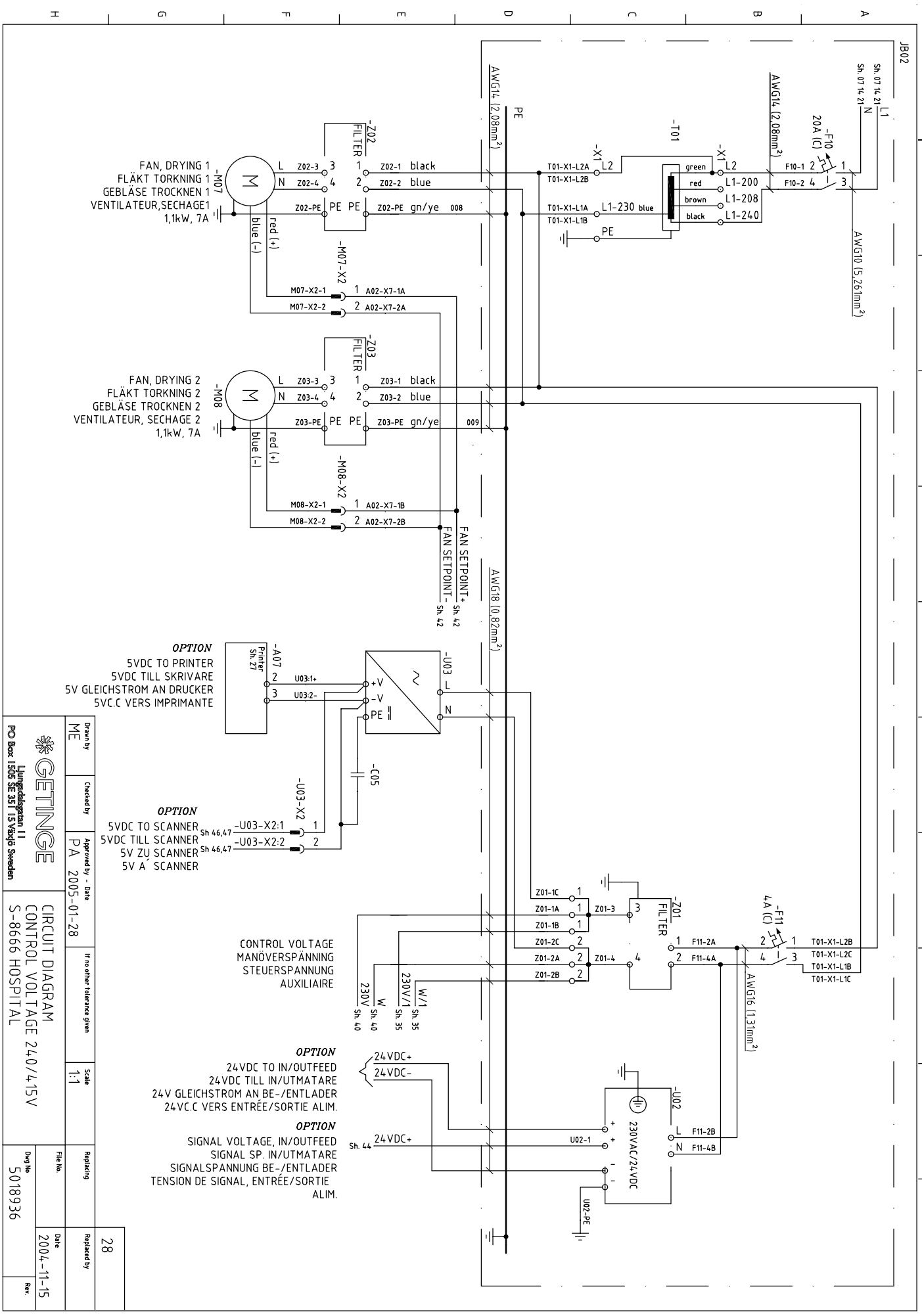
Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale
PHu		PA 2005-01-28		1:1

GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRUIT DIAGRAM
200 V, 3+PE, STEAM+EL. (BACKUP
S-8666 HOSPITAL

Replacing	Replaced by
File No.	Date 2002-06-06
Dwg No 5011493	Rev. C

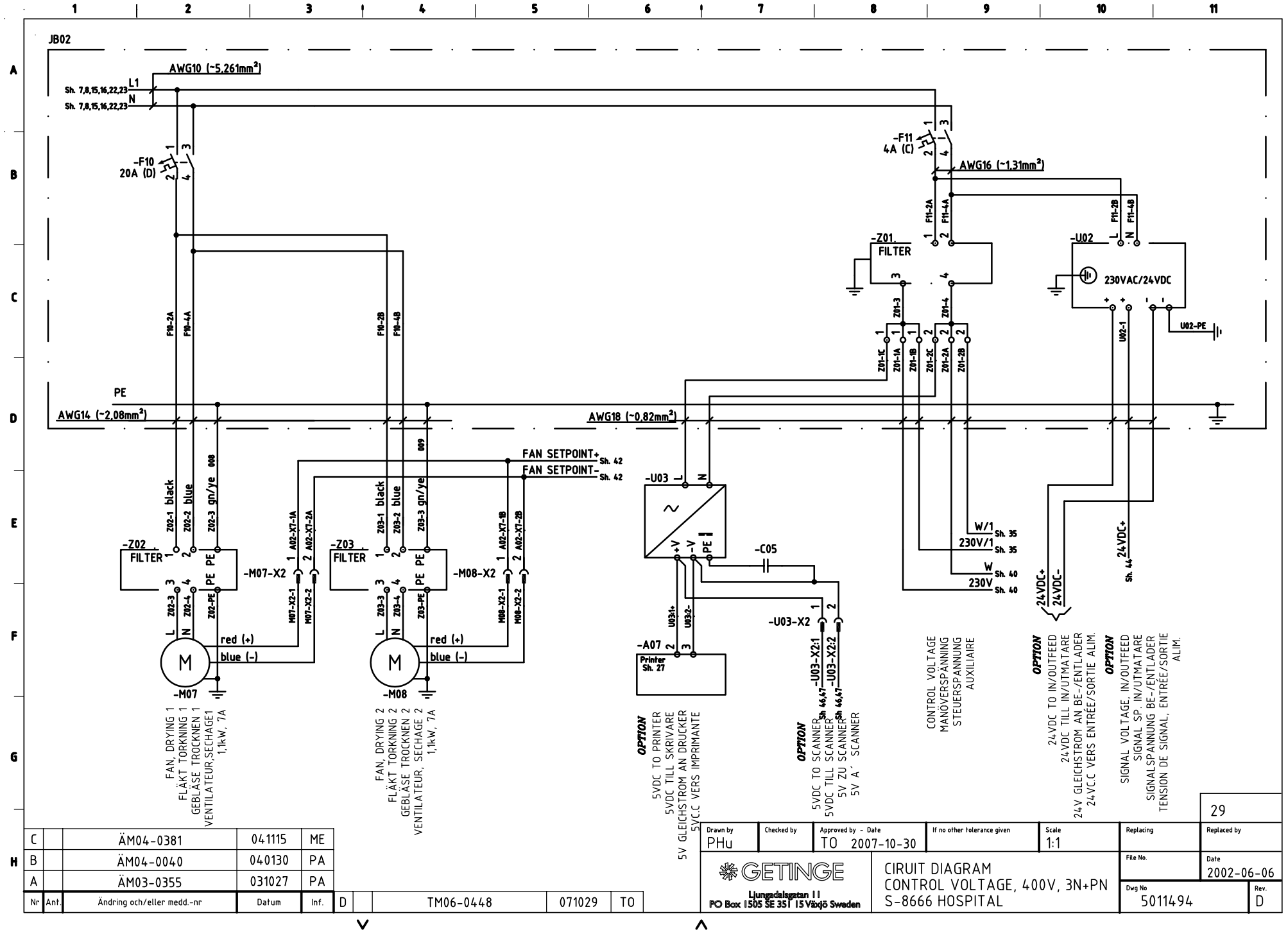
27



GETINGE
Lunngårdsvägen 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRCUIT DIAGRAM
CONTROL VOLTAGE 240/415V
S-8666 HOSPITAL

Drawn by	ME
Checked by	
Approved by - Date	PA 2005-01-28
If no other tolerance given	
Scale	1:1
Replacing	
File No.	
Dwg No	5018936
Date	2004-11-15
Rev.	
Replaced by	
	28



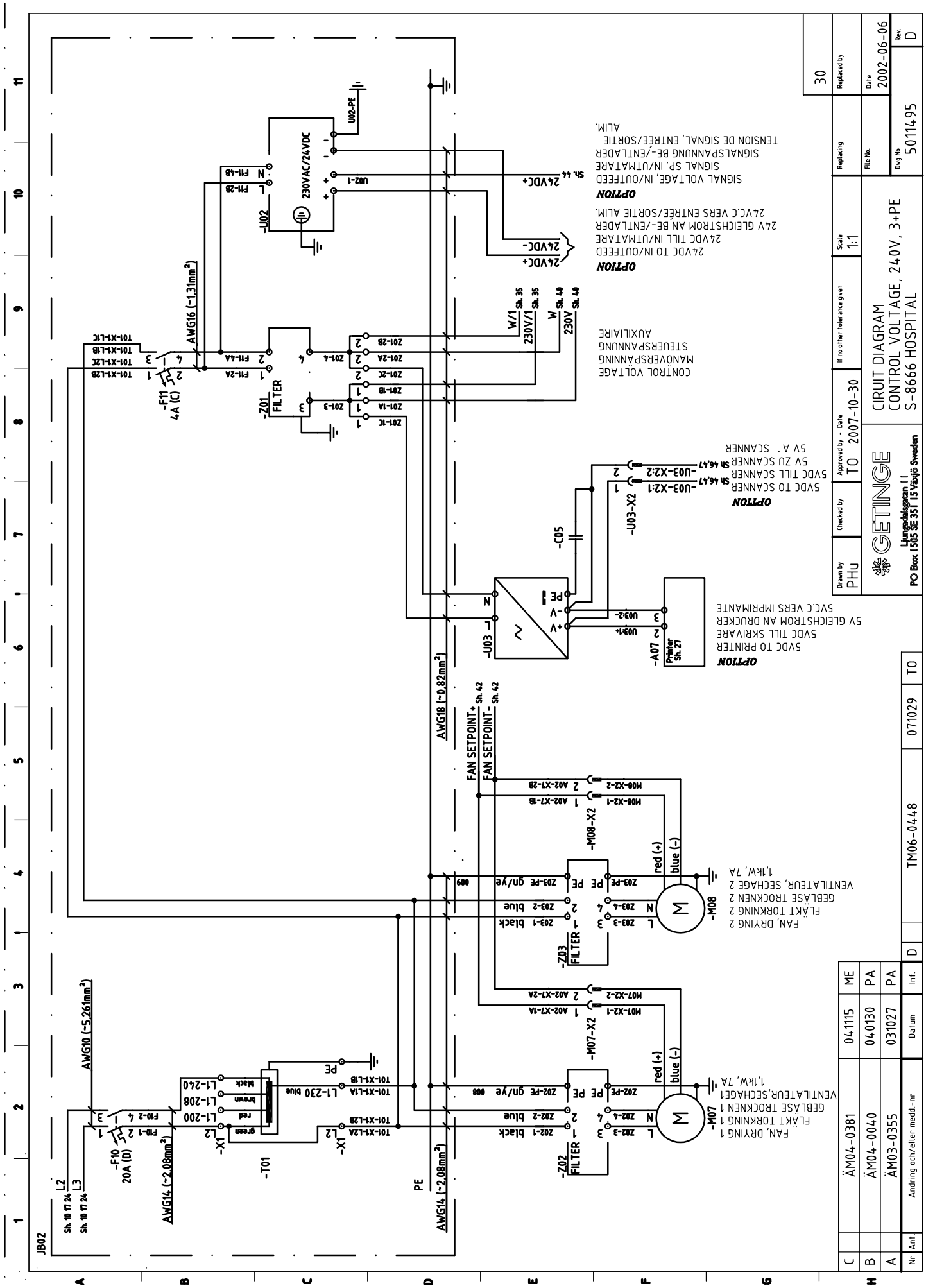
Nr	Anf.	Ändring och/eller medd.-nr	Datum	Inf.				
C		ÄM04-0381	041115	ME				
B		ÄM04-0040	040130	PA				
A		ÄM03-0355	031027	PA				
					D	TM06-0448	071029	TO

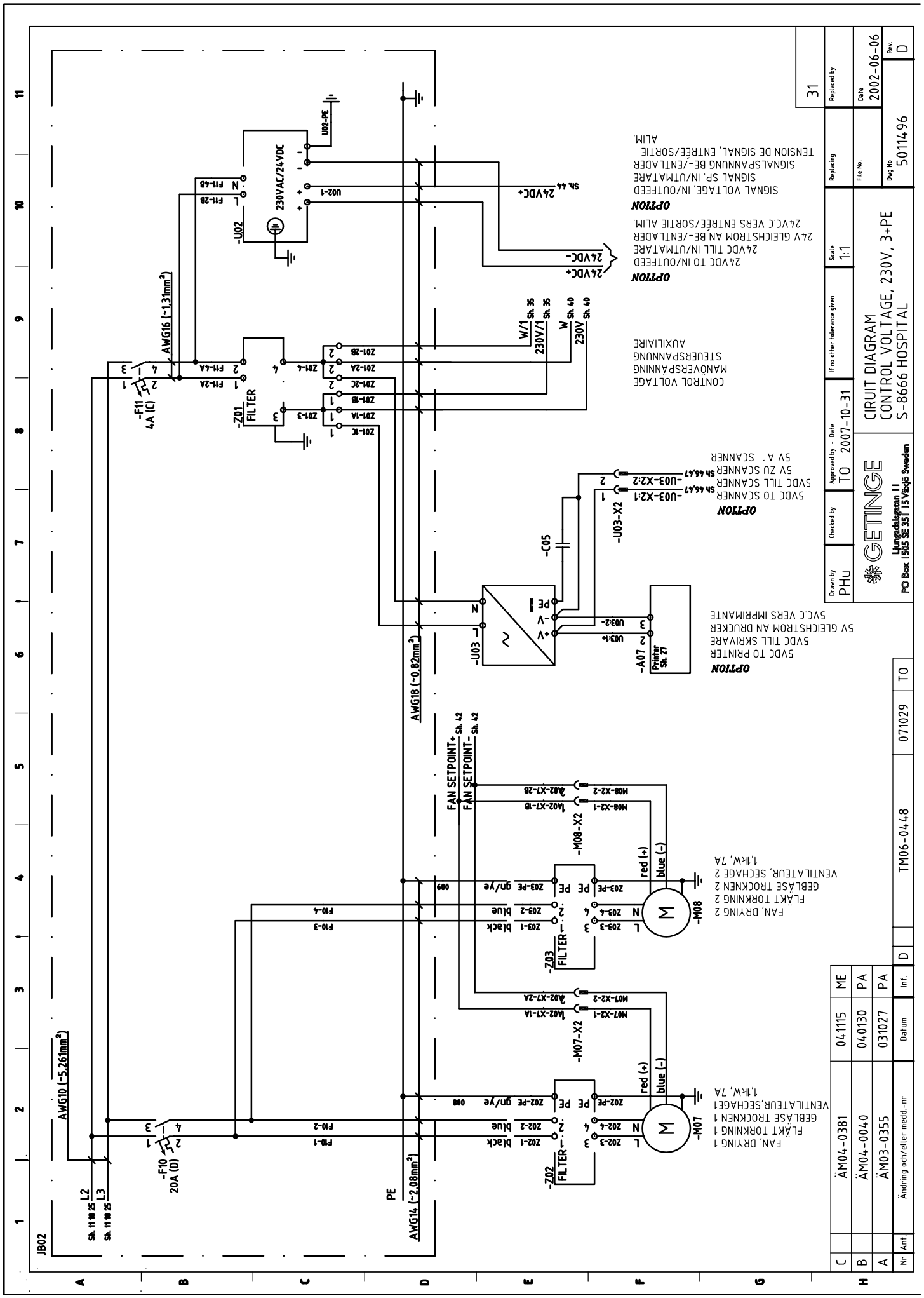
Drawn by PHu	Checked by	Approved by - Date TO 2007-10-30	If no other tolerance given	Scale 1:1	Replacing	Replaced by
					File No.	Date 2002-06-06
					Dwg No 5011494	Rev. D

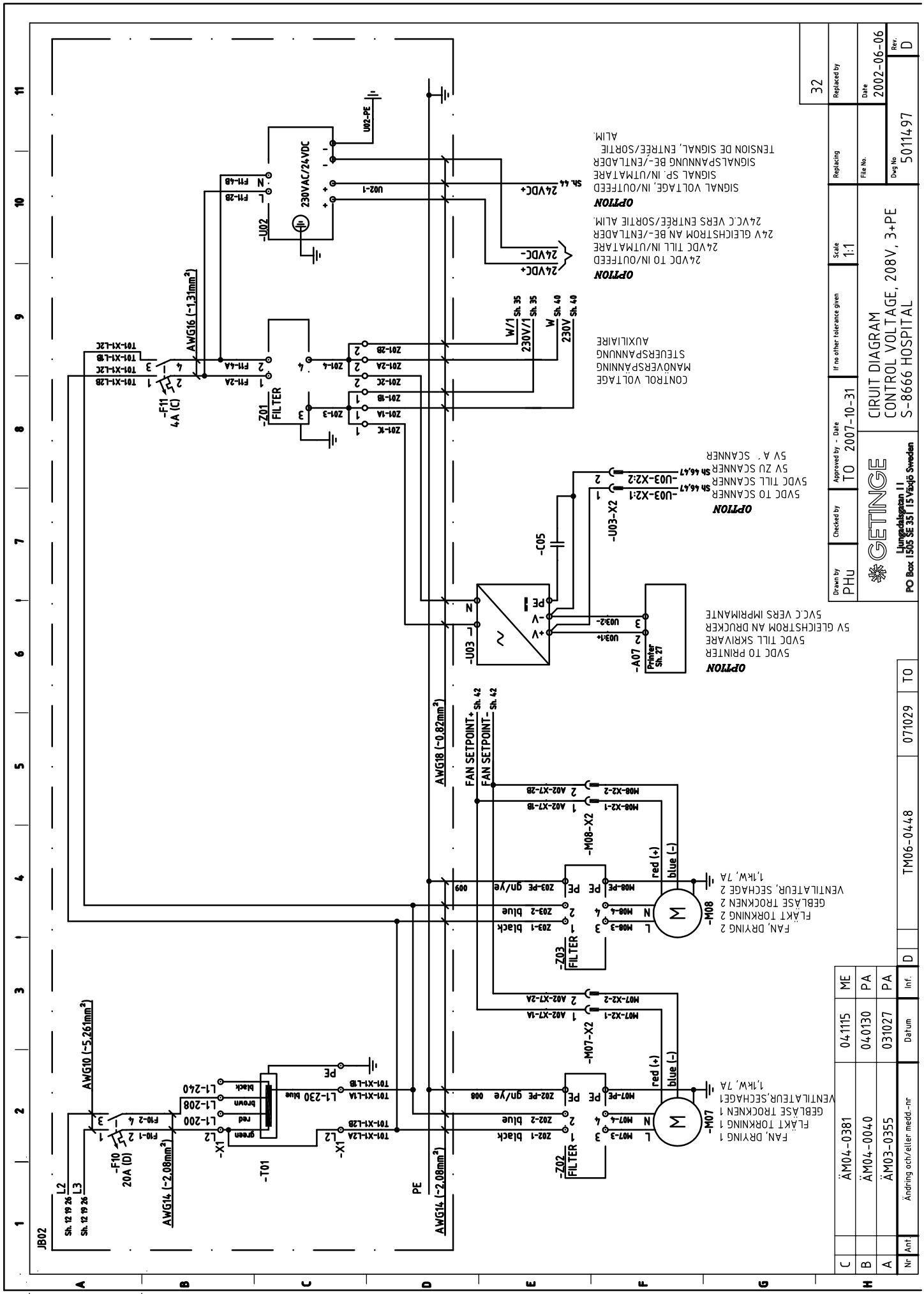
GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

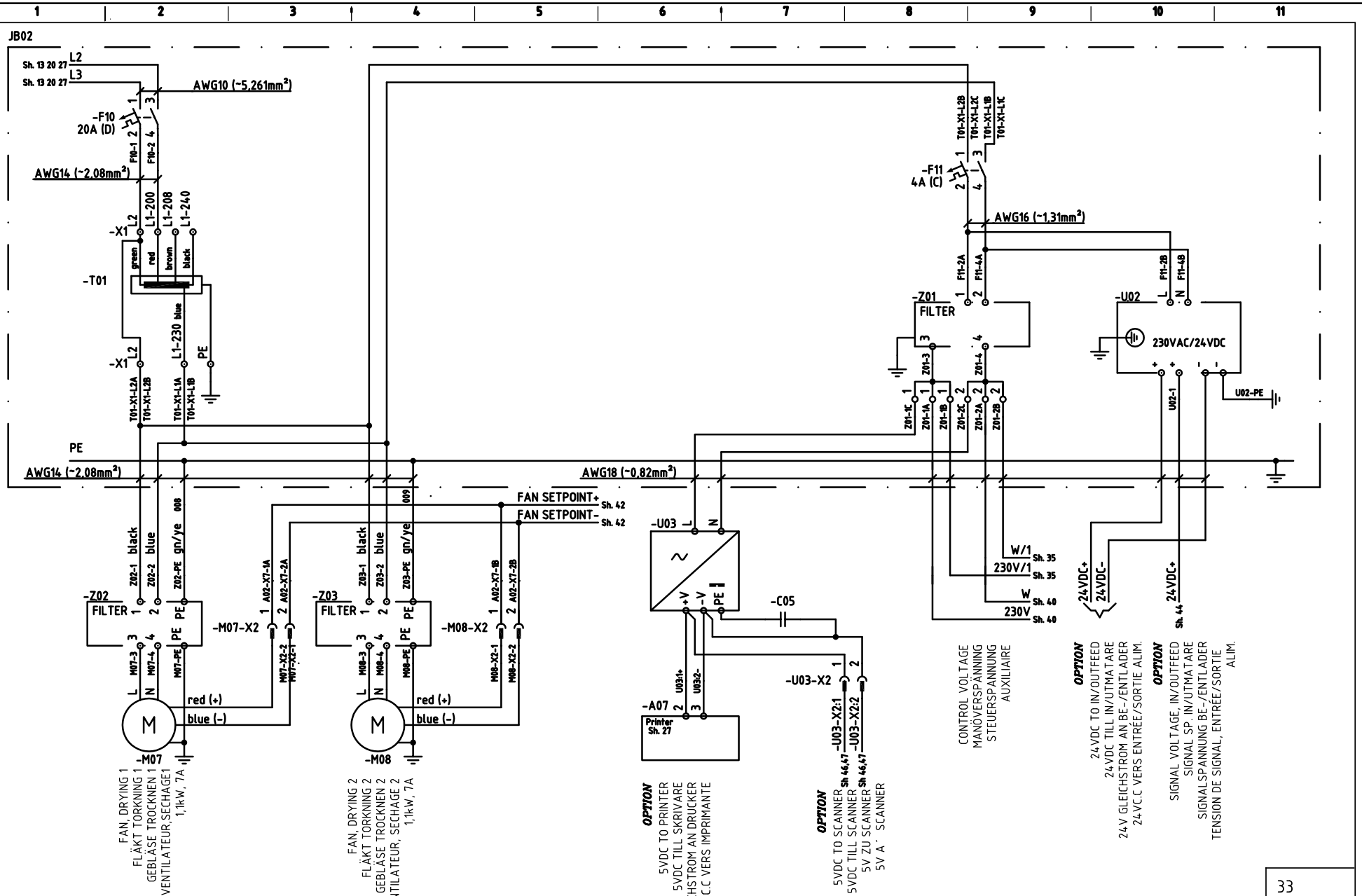
CIRUIT DIAGRAM
CONTROL VOLTAGE, 400V, 3N+PN
S-8666 HOSPITAL

29









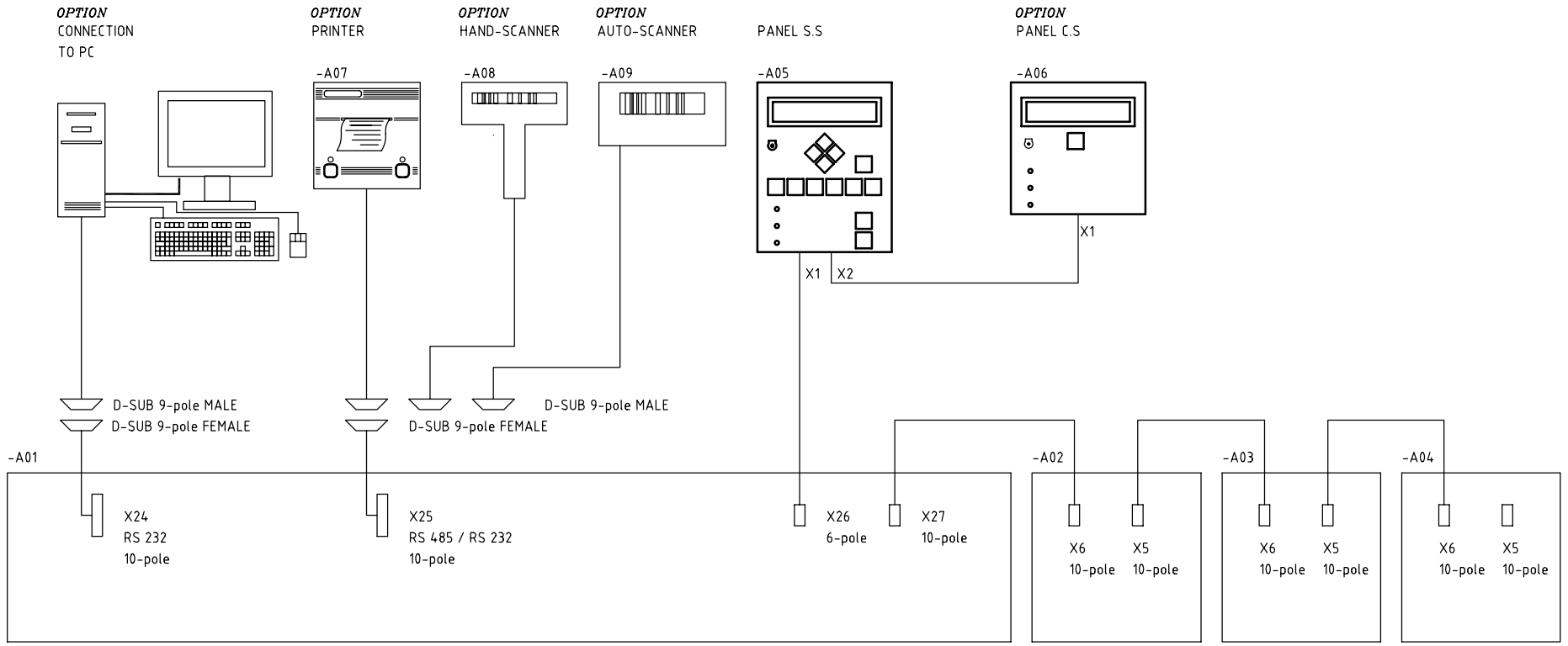
Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
C		ÄM04-0381	041115	ME
B		ÄM04-0040	040130	PA
A		ÄM03-0355	031027	PA
D		TM06-0448	071029	TO

Drawn by PHu	Checked by	Approved by - Date TO 2007-10-31	If no other tolerance given	Scale 1:1	Replacing	Replaced by
					File No.	Date 2002-06-06
					Dwg No 5011498	Rev. D

33

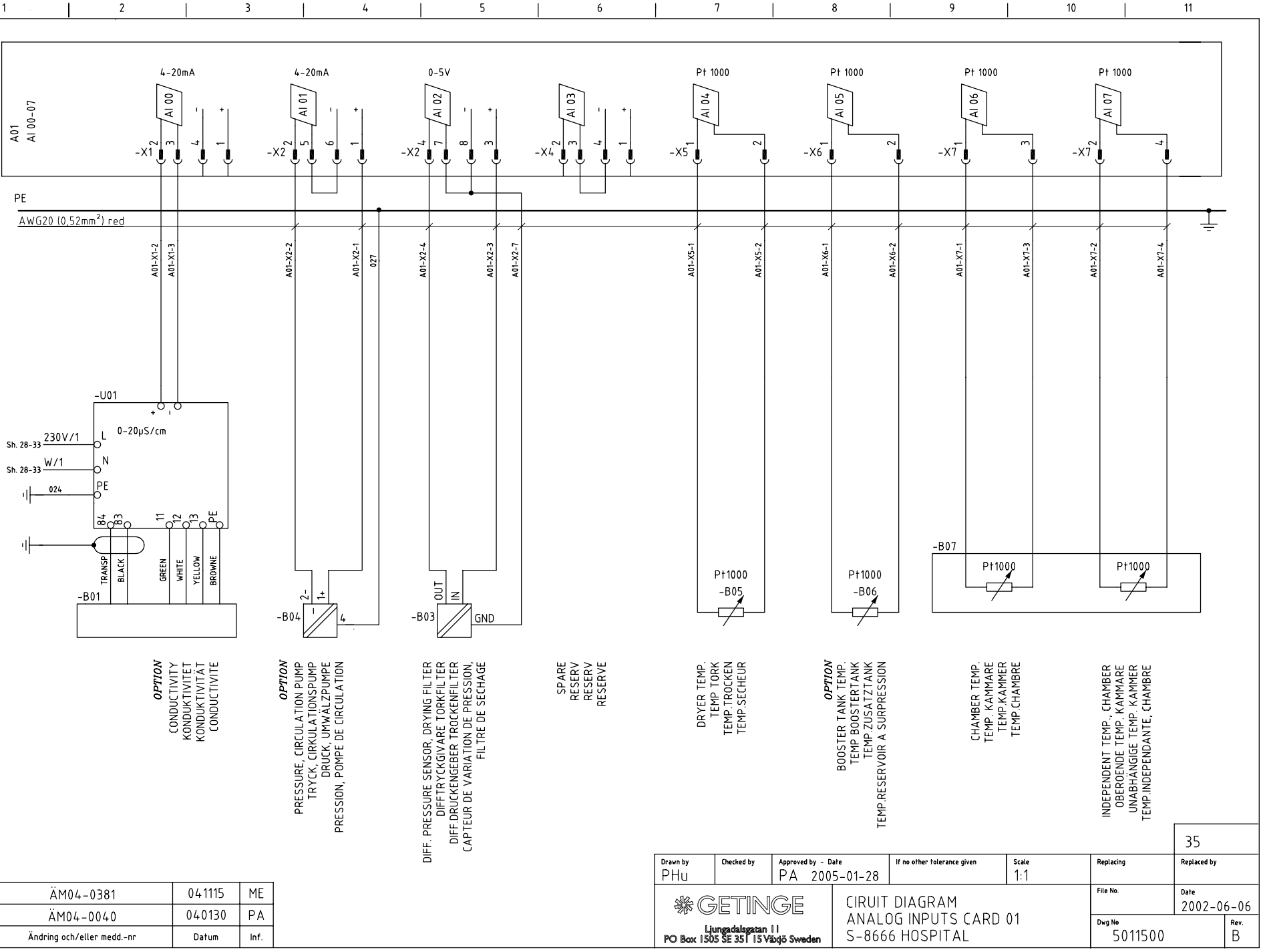
GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRUIT DIAGRAM
CONTROL VOLTAGE, 200V, 3+PE
S-8666 HOSPITAL



Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
B		ÄM04-0381	041115	ME
A		ÄM04-0040	040130	PA

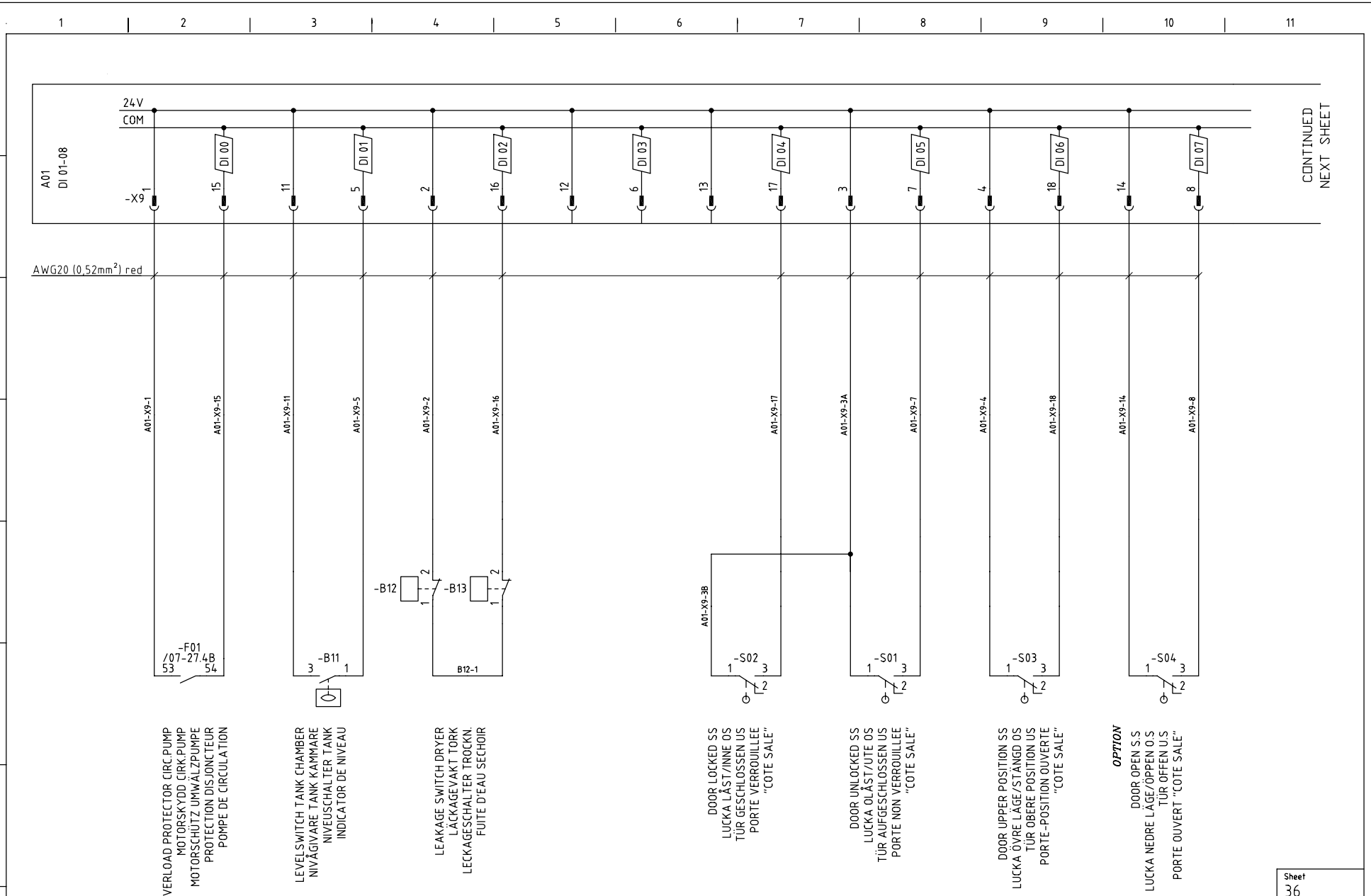
Drawn by PHu	Checked by	Approved by - Date PA 2005-01-28	If no other tolerance given	Scale 1:1	Replacing	Replaced by	34
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRUIT DIAGRAM PACS 300 CONNECTIONS S-8666 HOSPITAL				File No.	Date 2002-06-06	
					Dwg No 5011499	Rev. B	



Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
B		ÄM04-0381	041115	ME
A		ÄM04-0040	040130	PA

Drawn by: PHu	Checked by:	Approved by - Date: PA 2005-01-28	If no other tolerance given	Scale: 1:1	Replacing / Replaced by
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRUIT DIAGRAM ANALOG INPUTS CARD 01 S-8666 HOSPITAL				File No. / Date: 2002-06-06 Dwg No: 5011500 / Rev.: B

35



Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
A		ÄM04-0381	041115	ME

Constr.	App.				Replacing	Replaced by
PHu	PA					

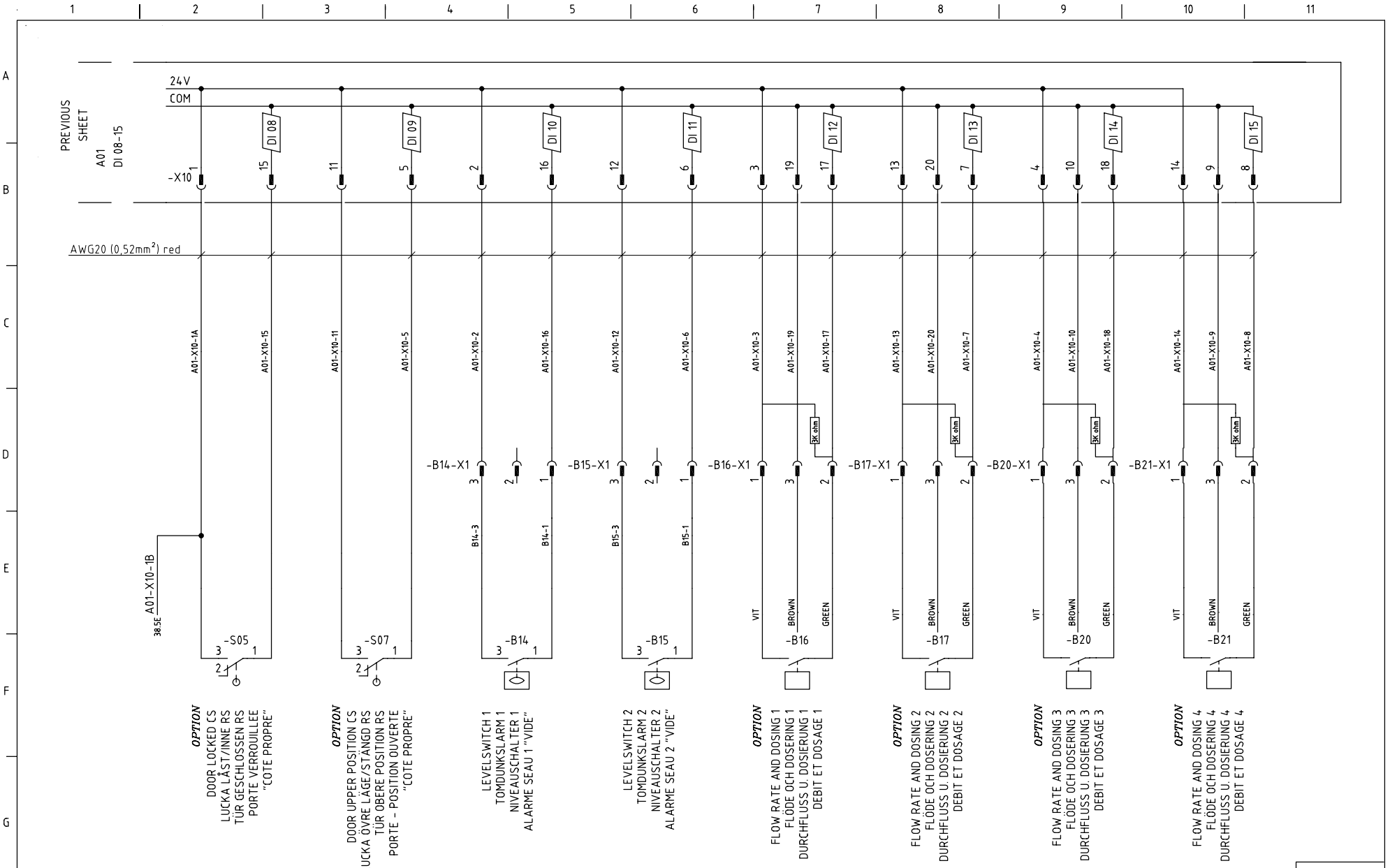
GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRUIT DIAGRAM
DIGITAL INPUTS CARD 01
S-8666 HOSPITAL

Filnamn	Date
5008574	2002-03-12

DWG No.	Rev.
5011501	A

Sheet
36



Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
B		ÄM04-0381	041115	ME
A		ÄM03-0355	2003-11-06	PA

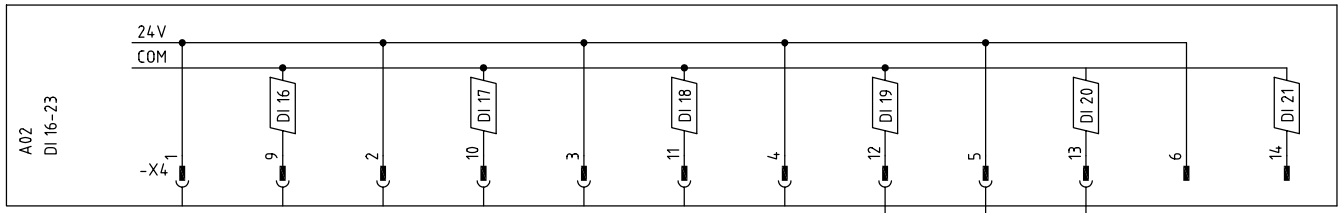
Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PHu		PA 2005-01-28		1:1		37

GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRUIT DIAGRAM
DIGITAL INPUTS CARD 01
S-8666 HOSPITAL

File No.	Date
	2002-06-06

Dwg No	Rev.
5011502	B



AWG20 (0,52mm²) red

A02-X4-12

A02-X4-5

A02-X4-13

A01-X10-1B 37.4E

A01-X10-1B

S06

S08

OPTION
DOOR UNLOCKED C.S
LUCKA OLÅST/UTE R.S
TÜR AUFGESCHLOSSEN RS
PORTE NON VERROUILLE
"COTE PROPRE"

OPTION
DOOR OPEN C.S
LUCKA NEDRE LÄGE/ÖPPEN R.S
TÜR OFFEN R.S
PORTE OUVERT "COTE PROPRE"

Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
A		ÄM04-0381	041115	ME

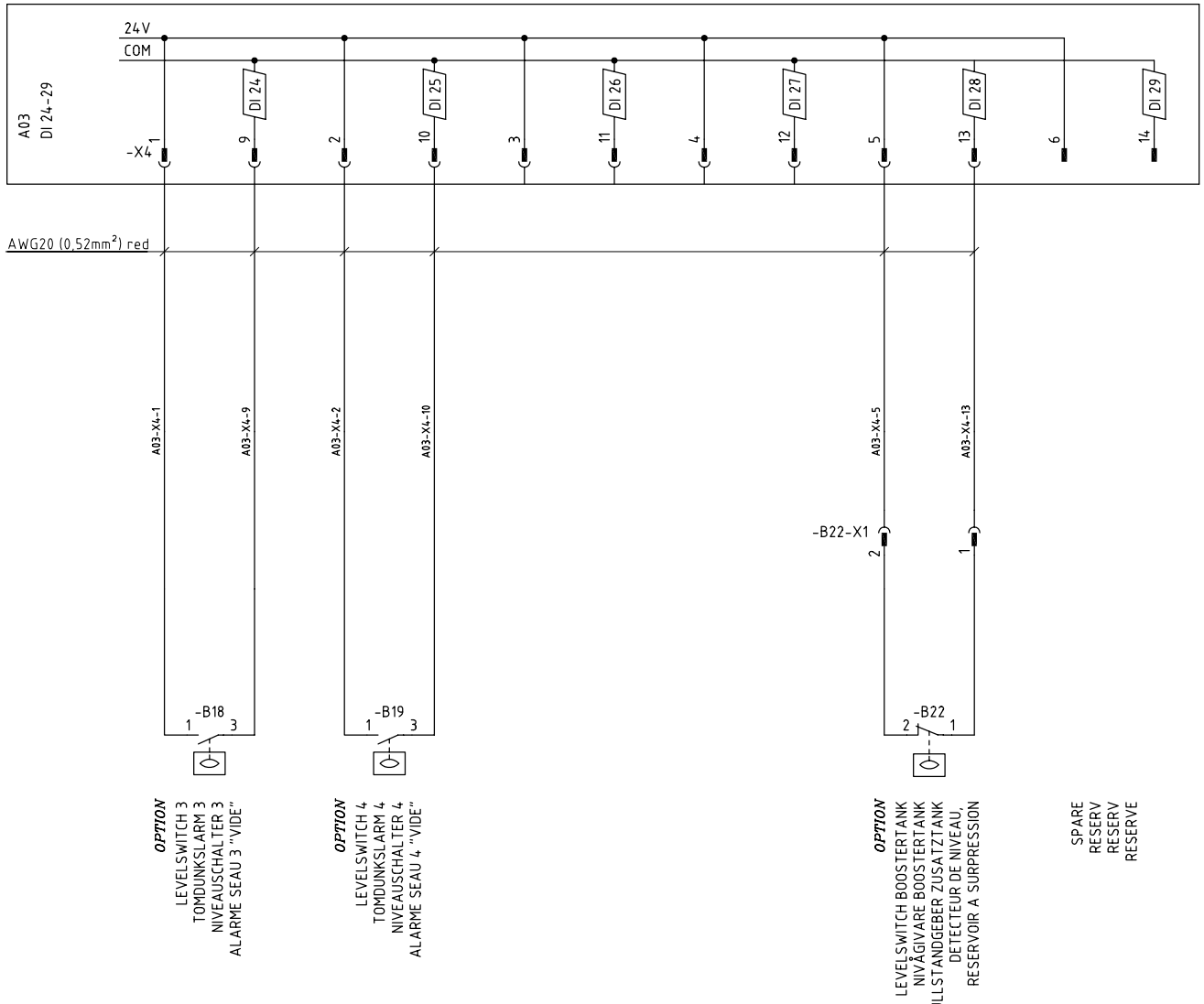
Constr.	App.	Replacing	Sheet
PA	PA		38

GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRUIT DIAGRAM
DIGITAL INPUTS CARD 02
S-8666 HOSPITAL

Filnamn	Date
5010163	2003-01-08

DWG No.	Rev.
5011503	A



Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
A		ÄM04-0381	041115	ME

Constr.	App.	Replacing	Peplaced by
PHu	PA		

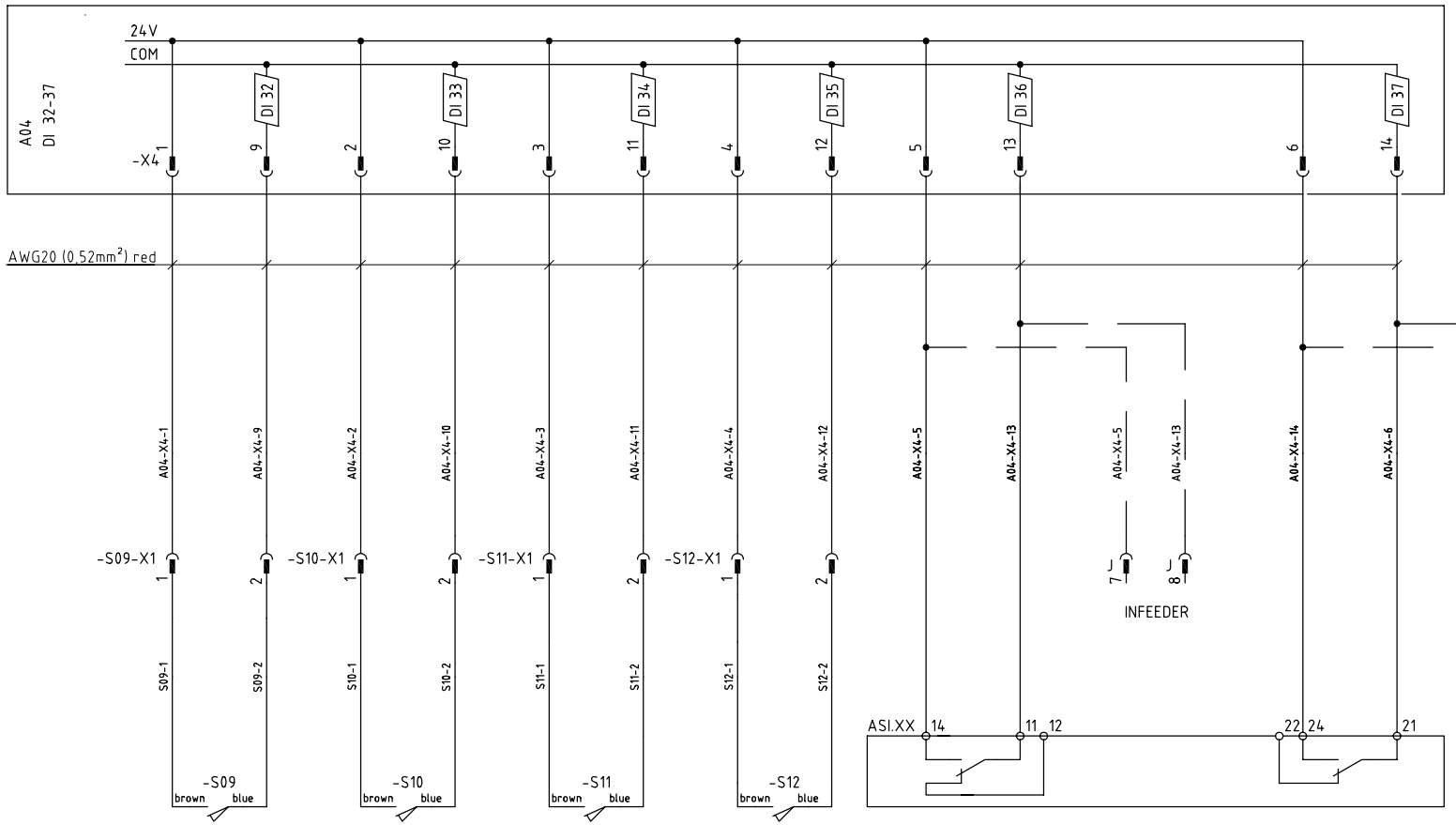
GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRUIT DIAGRAM
DIGITAL INPUTS CARD 03
S-8666 HOSPITAL

Filnamn	Date
5008576	2002-06-06

DWG No.	Rev.
5011504	A

Sheet 39



OPTION
TROLLEY INDICATION-PROGRAM OPTION
VAGNINDIKERING PROGRAMVAL
WAGENANZEIGE PROGRAMMWAHL
INDICATION CHARIOT-OPTION PROGRAMME

OPTION
TROLLEY INDICATION-PROGRAM OPTION
VAGNINDIKERING PROGRAMVAL
WAGENANZEIGE PROGRAMMWAHL
INDICATION CHARIOT-OPTION PROGRAMME

OPTION
TROLLEY INDICATION-PROGRAM OPTION
VAGNINDIKERING PROGRAMVAL
WAGENANZEIGE PROGRAMMWAHL
INDICATION CHARIOT-OPTION PROGRAMME

OPTION
TROLLEY INDICATION-CORRECT POSITION
VAGNINDIKERING RÄTT POSITION
WAGENANZEIGE KORR. POS.
INDICATION CHARIOT- POSITION CORRECTE

OPTION
AGS INFEED READY
AGS INMATNING KLAR
AGS BELADUNG FERTIG
ENTREE ALIM.AGS PRETE

OPTION *)
INFEED READY
INMATARE KLAR
BELADER FERTIG
ENTREE ALIM. PRETE

OPTION
AGS OUTFEED READY
AGS UTMATNING KLAR
AGS ENTLADUNG FERTIG
SORTIE ALIM.AGS PRETE

OPTION *)
OUTFEED READY
UTMATARE KLAR
ENTLADER FERTIG
SORTIE ALIM.PRETE

×) ALTERNATIVE CONNECTION

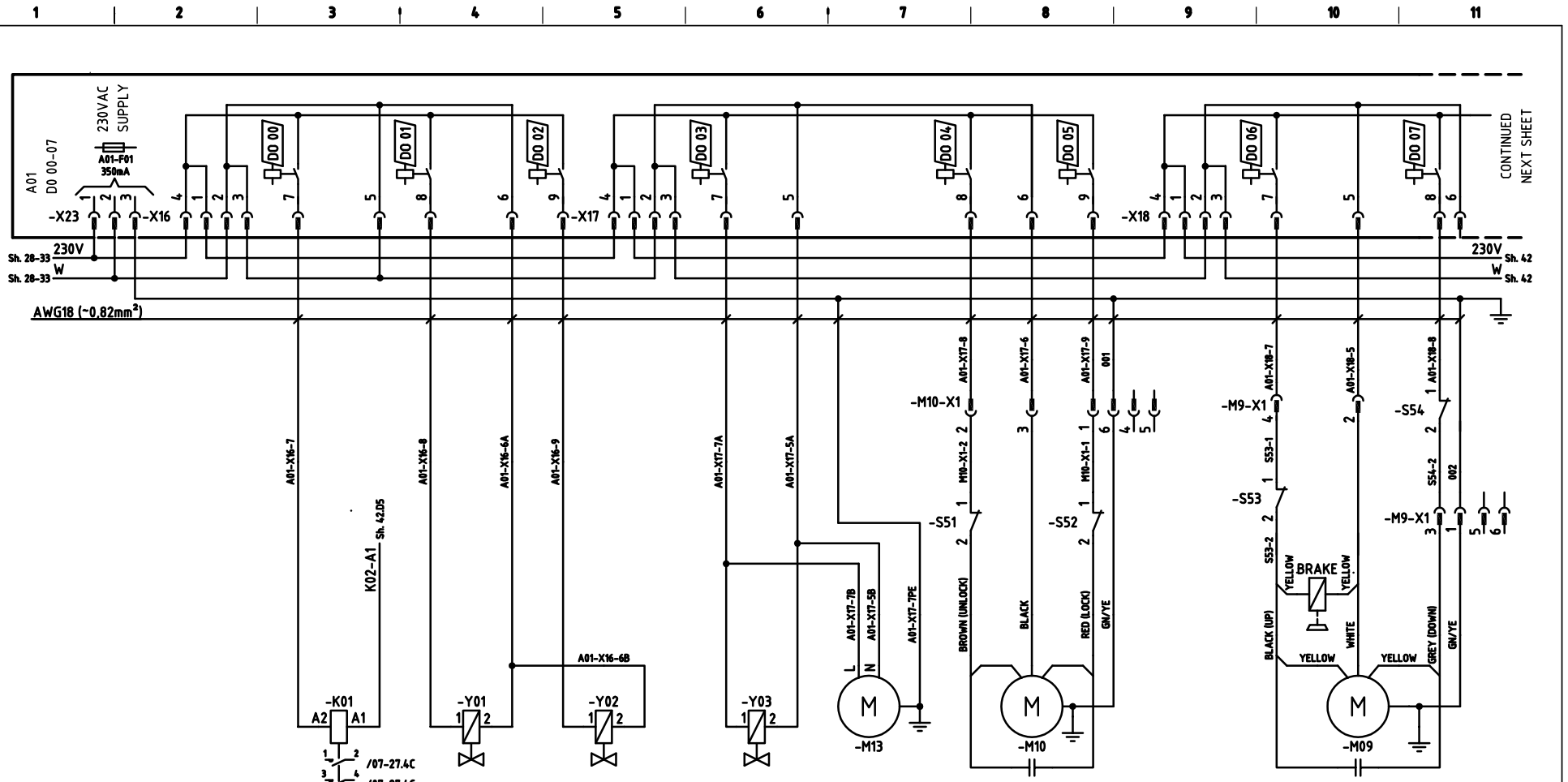
Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
B		ÄM04-0381	041115	ME
A		ÄM04-0040	040130	PA

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale
PHu		PA 2005-01-28		1:1

GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRUIT DIAGRAM
DIGITAL INPUTS CARD 04
S-8666 HOSPITAL

Replacing	Replaced by
	40
File No.	Date
	2002-06-06
Dwg No	Rev.
5011505	B



CIRC.PUMP
CIRKULATIONSPUMP
UMWÄLZPUMPE
POMPE DE CIRKULATION

SOLENOID VALVE COLD WATER
MAGNETVENTIL KALLVATTEN
MAGNETVENTIL KALT WASSER
ELECTROVANNE EAU FROIDE

SOLENOID VALVE WARM WATER
MAGNETVENTIL VARMVATTEN
MAGNETVENTIL WARM WASSER
ELECTROVANNE EAU CHAUDE

OPTION
SOLENOID VALVE DW/WFI BOOSTERTANK
MAGNETVENTIL DV/WFI-BOOSTERTANK
MAGNETVENTIL DW/WFI-ZUSATZTANK
ELECTROVANNE DW/WFI RESERVOIR
A SURPRESSION

OPTION
PRESSURE BOOSTER PUMP
TRYCKSTEGRINGSPUMP
DRUCKSTEIGERUNGSPUMPE
PRESSION POMPE AUXILIAIRE

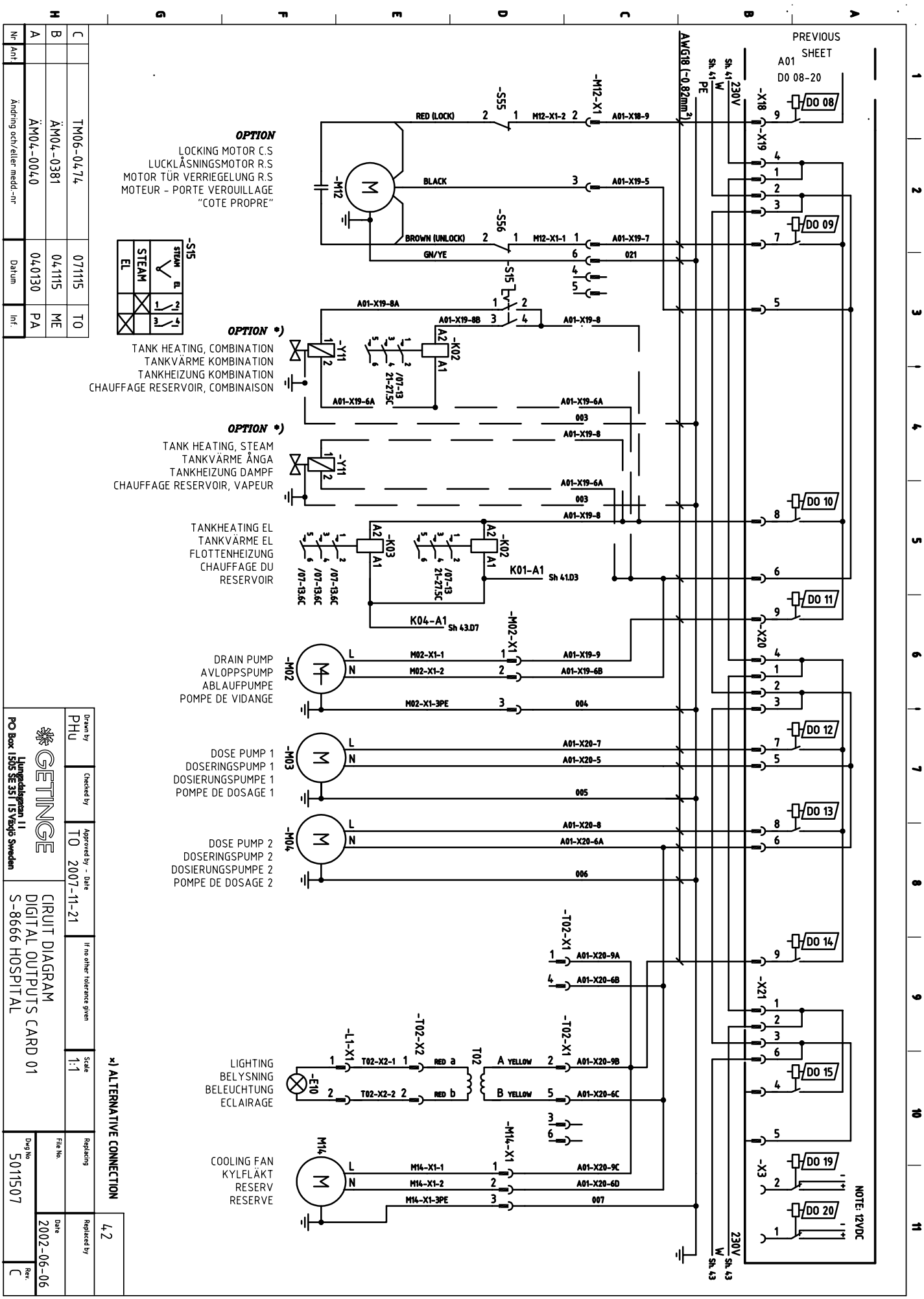
LOCKING MOTOR S.S
LUCKLÅSNINGSMOTOR O.S
MOTOR TÜR VERRIEGELUNG U.S
MOTEUR - PORTE VEROUILLAGE
"COTE SALE"

OPTION
MOTOR - DOOR S.S.
MOTOR - LUCKA O.S
MOTOR - TÜR U.S.
MOTEUR - PORTE "COTE SALE"

D		TM06-0474	071114	TO
A		ÄM04-0381	041115	PA
Nr	Anf.	Ändring och/eller medd.-nr	Datum	Inf.

Constr. PHu	App. TO				Replacing	Replaced by	Sheet 41
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRUIT DIAGRAM DIGITAL OUTPUTS CARD 01 S-8666 HOSPITAL				Filname 5008578	Date 2002-06-06	
					DWG No. 5011506		Rev. D

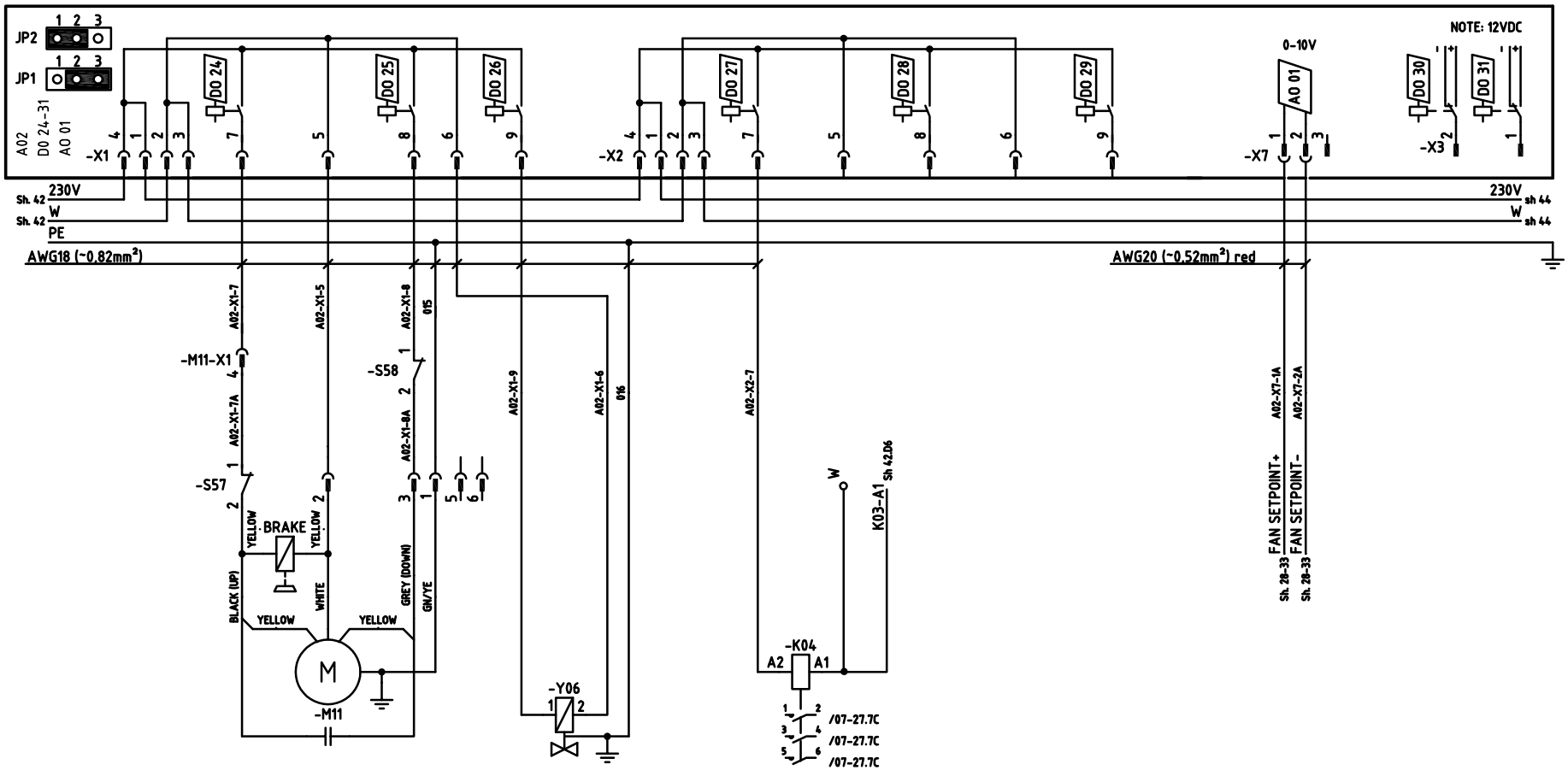
Nr	Ändring och/eller medd.-nr	Datum	Inf.
C	TM06-0474	071115	TO
B	ÄM04-0381	041115	ME
A	ÄM04-0040	040130	PA



Drawn by	PHu
Checked by	
Approved by - Date	TO 2007-11-21
If no other tolerance given	
Scale	1:1
Replacing	
Replaced by	
File No.	
Dwg No	5011507
Date	2002-06-06
Rev.	C
	42

GETINGE
Lungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRUIT DIAGRAM
DIGITAL OUTPUTS CARD 01
S-8666 HOSPITAL



OPTION
MOTOR - DOOR SC.S.
MOTOR - LUCKA R.S
MOTOR - TÜR R.S.
MOTEUR - PORTE "COTE PROPRE"

OPTION
SOLENOID VALVE, WASTE COOLING
MAGNETVENTIL AVLOPPSKYLNING
MAGNETVENTIL ABLAUFKÜHLUNG
ELECTROVANNE, REFROIDISSEMENT DECHETS

HEATING - DRYING UNIT
VÄRME - TORKNING 1
HEIZUNG - TROCKNER
SECHOIR

RESERVED FOR FAN CONTROL
RESERVERAT FÖR FLÄKTSTYRN.
RESERVIERT FÜR GEBLÄSESTEUER
RESERVE A LA COMMANDE DU VENTILATEUR

RESERVED FOR FAN CONTROL
RESERVERAT FÖR FLÄKTSTYRN.
RESERVIERT FÜR GEBLÄSESTEUER
RESERVE A LA COMMANDE DU VENTILATEUR

CONTROL, FANS
STYRNING FLÄKTAR
GEBLÄSESTEUERUNG
COMMANDE, VENTILATEURS

SPARE
RESERV
RESERV
RESERVE

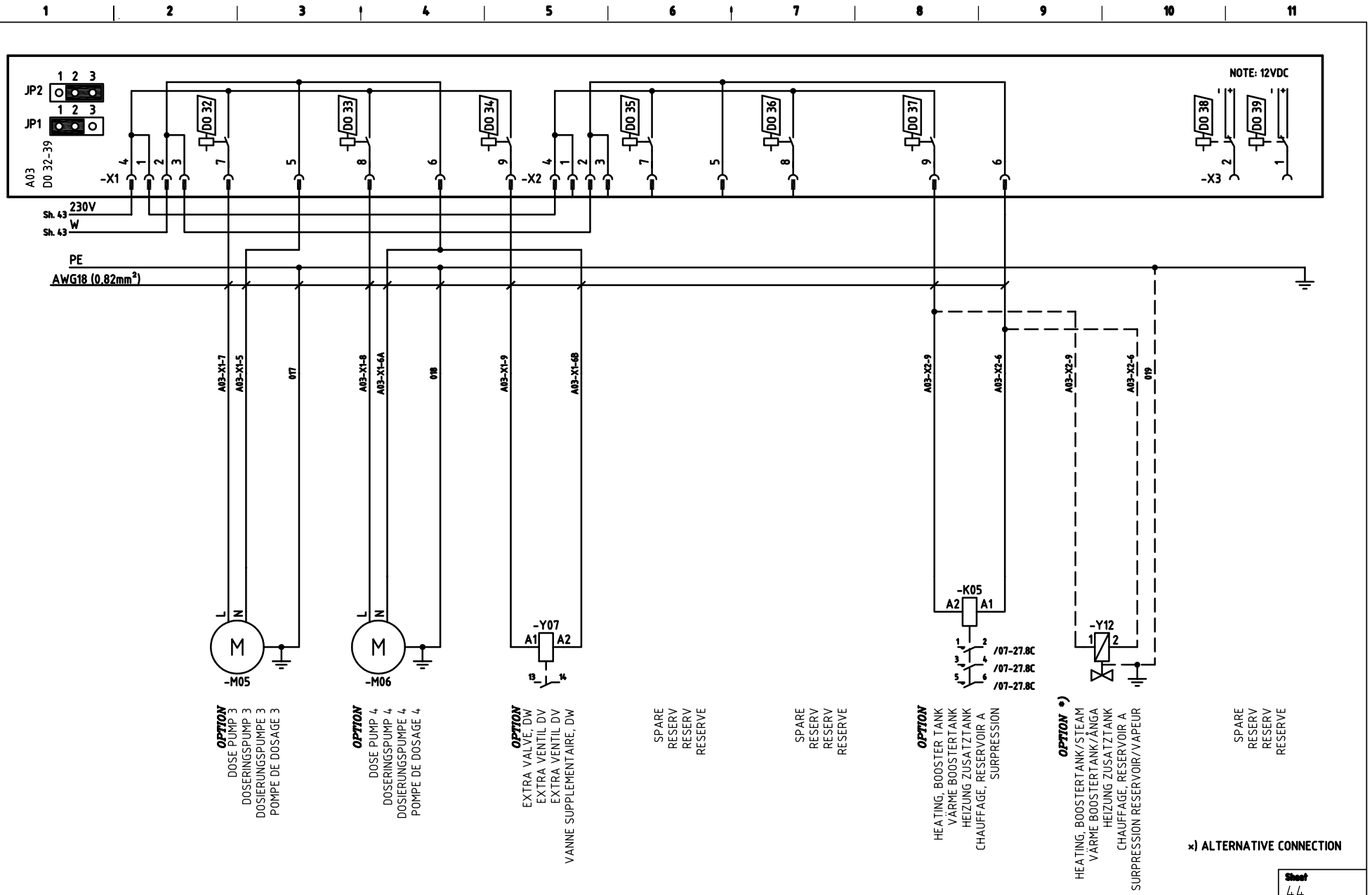
Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
B		TM06-0474	071115	TO
A		ÄM04-0381	041115	PA

Constr. PHu | App. TO

GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRUIT DIAGRAM
DIGITAL OUTPUTS CARD 02
S-8666 HOSPITAL

Sheet 43
Replacing
Replaced by
Filename 5008580
Date 2002-06-06
DWG No. 5011508
Rev. B



Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
A		ÄM04-0381	041115	PA

Constr. PHu	App. PA				Replacing	Replaced by
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRUIT DIAGRAM DIGITAL OUTPUTS CARD 03 S-8666 HOSPITAL				Filnamn 5008581	Date 2002-06-06
					DWG No. 5011509	Rev. A

Sheet 44

Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
B		ÄM04-0381	04115	ME
A		ÄM04-0040	04-01-30	PA

A04
DO 40-47

JP1 JP2

-X1

-X2

-X3

PE

OPTION
EXTERNAL SUPPLY
EXTERN SPÄNNINGSMATNING
EXTERNE SPANNUNGSZUFUHR
ALIMENTATION EXTERNE

OPTION
PROCESS RUNNING (YELLOW)
PROCESS PÅGÅR (GUL)
PROZESS LÄUFT (GELB)
PROCEDE EN COURS (JAUNE)

PROCESS RUNNING — DO 40

OPTION
PROCESS COMPLETE (GREEN)
PROCESS FÄRDIG (GRÖN)
PROZESS FERTIG (GRÜN)
PROCEDE TERMINE (VERT)

PROCESS COMPLETE — DO 41

OPTION
FAULTCODE (RED)
FELKOD (RÖD)
FEHLERCODE (ROT)
CODE DE PANNE (ROUGE)

FAULTCODE — DO 42

INFEEDER -J

ASi XX

24VDC+ Sh. 28-33

A04-X2-4

OUTFEEDER -H

*OPTION *)*
VOLTAGE FROM AGS
SPÄNNING FRÅN AGS
SPANNUNG VON AGS
TENSION DE L'AGS

OPTION
TROLLEY IN CORRECT POSITION, AGS CONTROL
VAGN I RÄTT POSITION STYRNING AGS
WAGEN IN KORR. POS. STEUER. AGS
CHARIOT EN POSITION CORRECTE COMMANDE AGS

I3 A04-X2-7 — DO 43

OPTION
DOOR OPEN, SS, AGS/INFEED CONTROL
LUCKA ÖPPEN OS STYRNING AGS/INMATARE
TÜR OFFEN BELADESEITE STEUERUNG AGS/BELADER
PORTE OUVERTE, DS, COMMANDE ENTREE ALIM./AGS

I1 A04-X2-8 — DO 44

INFEEDER -J

OPTION
DOOR OPEN, CS, AGS/OUTFEED CONTROL
LUCKA ÖPPEN RS STYRNING AGS/UTMATARE
TÜR OFFEN ENTLADESEITE STEUERUNG AGS/ENTLADER
PORTE OUVERTE, DS, COMMANDE SORTIE ALIM./AGS

I2 A04-X2-9 — DO 45

OUTFEEDER -H

A- A+ E- E+

OPTION
BUS CONNECTION
BUS ANSLUTNING
XXXX
XXXX

AWG20 (0,52mm²) red

OPTION
BUZZER
SUMMER
SUMMER
AVERTISSEUR SONORE

-H1-X1

H1-1 — A04-X3-2 — DO 46

red -H1 black

H1-2 — A04-X3-1 — DO 47

NOTE: 12VDC

×) ALTERNATIVE CONNECTION

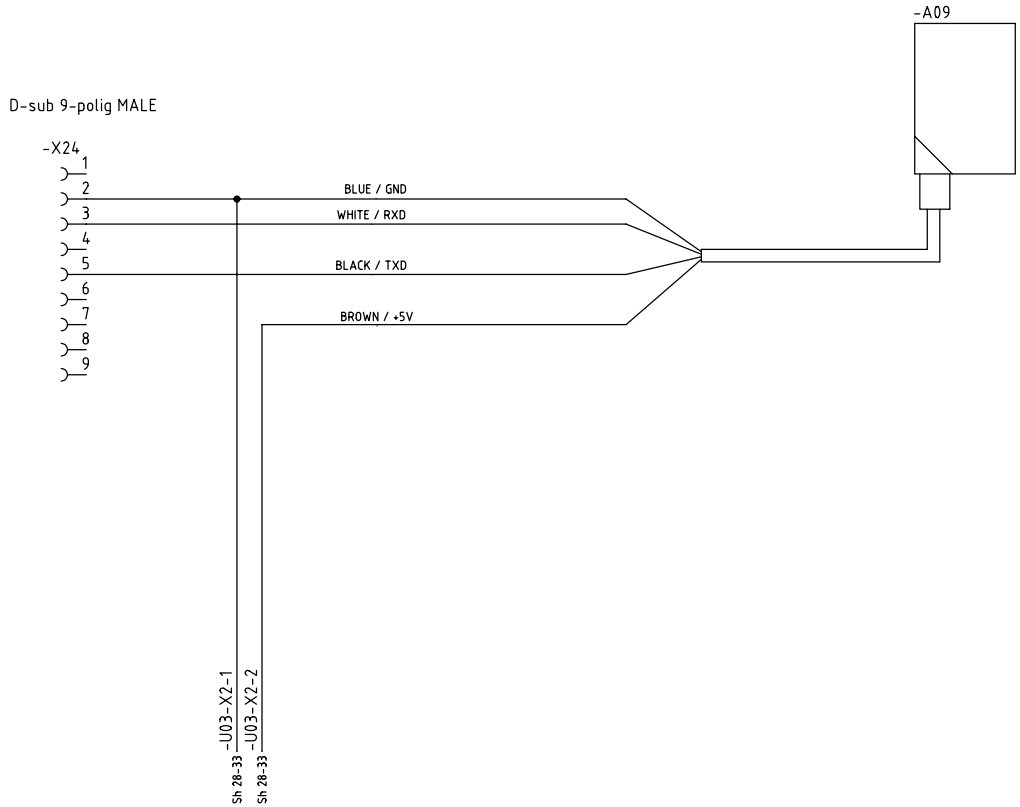
GETINGE
Lungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRUIT DIAGRAM
DIGITAL OUTPUTS CARD 04
S-8666 HOSPITAL

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale
PHu		PA 2005-01-28		1:1

Dwg No	File No.	Replacing	Replaced by
5011510			

Date	Rev.
2002-06-06	B



Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PA		PA 2005-01-28		1:1		

46

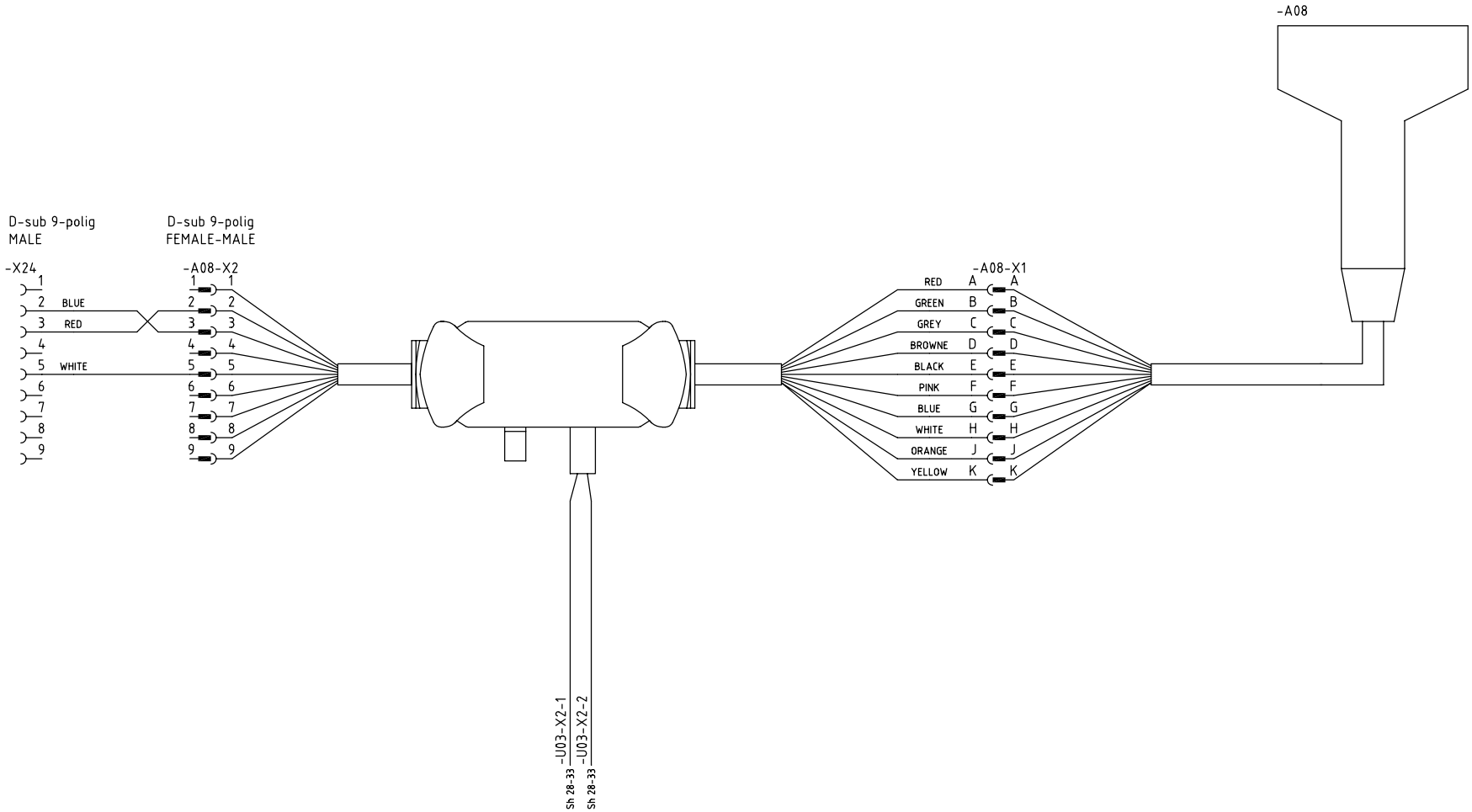
GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRUIT DIAGRAM
AUTO SCANNER
S-8666 HOSPITAL

File No.	Date
	2004-04-07

Dwg No	Rev.
5015850	

A		ÄM04-0381	041115	ME
Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.



Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
A		ÄM04-0381	041115	ME

Drawn by PA	Checked by	Approved by - Date PA 2005-01-28	If no other tolerance given	Scale 1:1	Replacing	Replaced by	47
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRUIT DIAGRAM HAND SCANNER S-8666 HOSPITAL				File No.	Date 2004-04-07	
					Dwg No 5015851	Rev.	

ELECTRICAL DOCUMENTATION S-8666/8668 PACS 300 & 300 MONITOR

PAGE	DRAWING NO	DOCUMENT CLASS	DOCUMENT CONTENTS	EQUIPMENT	DATE	REV NO	DATE
01	D-5020580	DOCUMENT LIST	DOCUMENT CONTENTS	S-8666	050429	B	071114
02	D-5020581	DOCUMENT LIST	DOCUMENT CONTENTS	S-8666	050429	A	051110
03	D-5020582	LAYOUT	XXXXX	S-8666	050429		
04	D-5020583	LAYOUT	XXXXX	S-8666	050429		
05	D-5020584	LAYOUT	XXXXX	S-8666	050429		
06	D-5020585	CIRCUIT DIAGRAM	MAIN CIRCUITS 415 V, 3N+PE, ELECTRICAL HEATING	S-8666	050429		
07	D-5020586	CIRCUIT DIAGRAM	MAIN CIRCUITS 415 V, 3N+PE, STEAM HEATING	S-8666	050429		
08	D-5020587	CIRCUIT DIAGRAM	MAIN CIRCUITS 415 V, 3N+PE, STEAM + ELECTRICAL HEATING	S-8666	050429		
09	D-5020588	CIRCUIT DIAGRAM	CONTROL VOLTAGE 240/415 V, 3N+PE	S-8666	050429		
10	D-5020589	CIRCUIT DIAGRAM	PACS 300 CONNECTIONS	S-8666	050429		
11	D-5020590	CIRCUIT DIAGRAM	ANALOG INPUTS CARD 01	S-8666	050429		
12	D-5020591	CIRCUIT DIAGRAM	DIGITAL INPUTS CARD 01	S-8666	050429		
13	D-5020592	CIRCUIT DIAGRAM	DIGITAL INPUTS CARD 01	S-8666	050429		
14	D-5020593	CIRCUIT DIAGRAM	DIGITAL INPUTS CARD 02	S-8666	050429		
15	D-5020594	CIRCUIT DIAGRAM	DIGITAL INPUTS CARD 03	S-8666	050429		
16	D-5020595	CIRCUIT DIAGRAM	DIGITAL INPUTS CARD 04	S-8666	050429		
17	D-5020596	CIRCUIT DIAGRAM	DIGITAL OUTPUTS CARD 01	S-8666	050429	A	071114
18	D-5020597	CIRCUIT DIAGRAM	DIGITAL OUTPUTS CARD 01	S-8666	050429	A	071114
19	D-5020598	CIRCUIT DIAGRAM	DIGITAL OUTPUTS CARD 02	S-8666	050429	A	071114
20	D-5020599	CIRCUIT DIAGRAM	DIGITAL OUTPUTS CARD 03	S-8666	050429		
21	D-5020600	CIRCUIT DIAGRAM	DIGITAL OUTPUTS CARD 04	S-8666	050429		
22	D-5020601	CIRCUIT DIAGRAM	ANALOG INPUTS CARD 10	S-8666	050429		
23	D-5020602	CIRCUIT DIAGRAM	DIGITAL INPUTS CARD 10	S-8666	050429		
24	D-5020603	CIRCUIT DIAGRAM	DIGITAL INPUTS CARD 10	S-8666	050429		
25	D-5020604	CIRCUIT DIAGRAM	DIGITAL OUTPUTS CARD 01	S-8666	050429		

Nr	Anf.	Ändring och/eller medd.-nr	Datum	Inf.
B		TM06-0474	071114	TO
A		CC05-0281	20051110	PA

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PA		TO 2007-11-20		1:1		

01

GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

DOCUMENT LIST

S-8666/68 PACS300+300MONITOR

File No.	Date
	2005-04-29

Dwg No	Rev.
5020580	B

ELECTRICAL DOCUMENTATION S-8666/8668 PACS 300 & 300

PAGE	DRAWING NO	DOCUMENT CLASS	DOCUMENT CONTENTS	EQUIPMENT	DATE	REV NO	DATE
26	D-5020605	CIRCUIT DIAGRAM	DIGITAL OUTPUTS CARD 01	S-8666	050429		
27	D-5020606	CIRCUIT DIAGRAM	FLOW METERS	S-8666	050429	A	051110
28	D-5020607	CIRCUIT DIAGRAM	AUTO SCANNER	S-8666	050429		
29	D-5020608	CIRCUIT DIAGRAM	HAND SCANNER	S-8666	050429		
30	D-5020609	CIRCUIT DIAGRAM	PROCESS STOP	S-8666	050429		

Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
A		CC05-0281	20051110	PA

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PA		PA 2005-11-14		1:1		

02

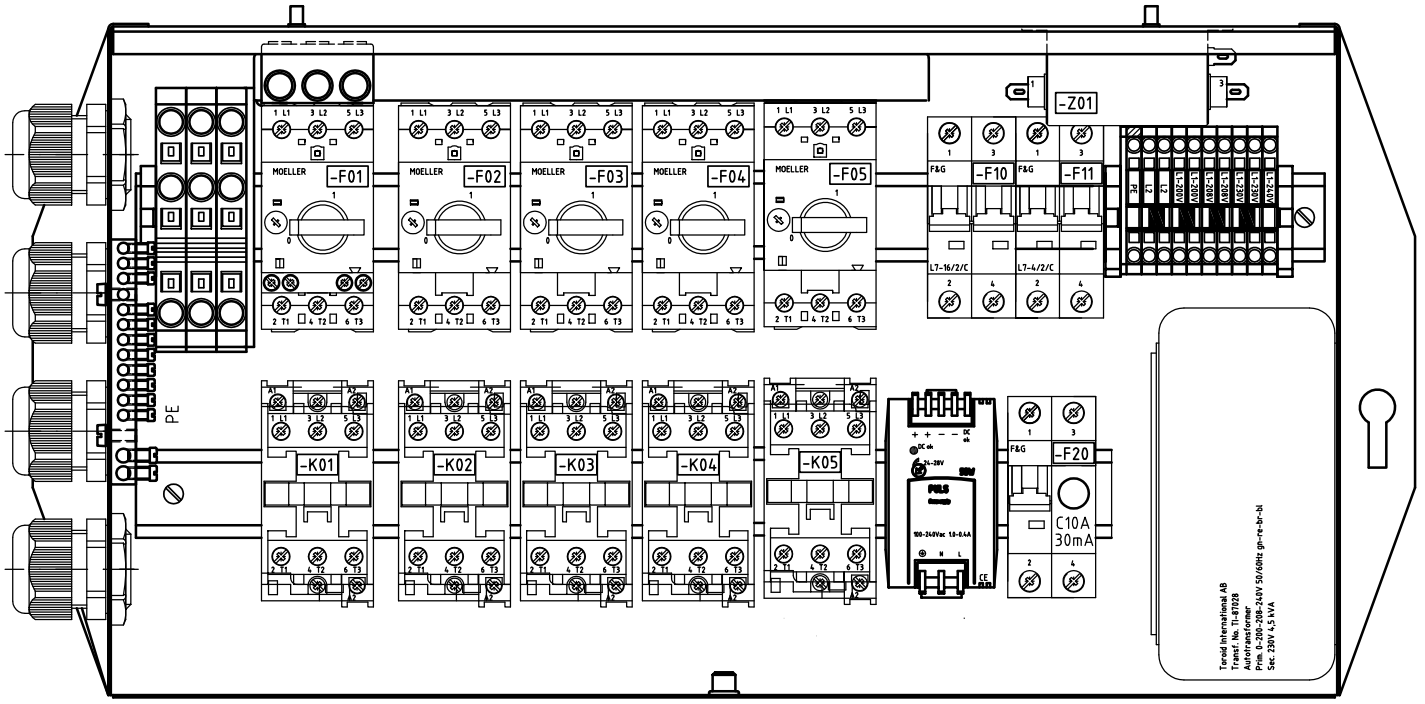
GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

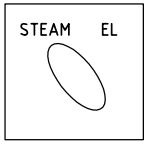
DOCUMENT LIST

S-8666/68 PACS300+300MONITOR

File No.	Date
	2005-04-29

Dwg No	Rev.
5020581	A





When steam heating with electrical heating as backup
-K03 is not used and switch -S15 is mounted in its position

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PA		PA 2005-05-24		1:1		

GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

LAYOUT

S-8666/68 PACS300+300MONITOR

File No.	Date
	2005-04-29

Dwg No	Rev.
5020582	

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PA		PA 2005-05-24		1:1		

GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

LAYOUT

S-8666/68 PACS300+300MONITOR

File No.	Date
	2005-04-29

Dwg No	Rev.
5020583	

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PA		PA 2005-05-24		1:1		

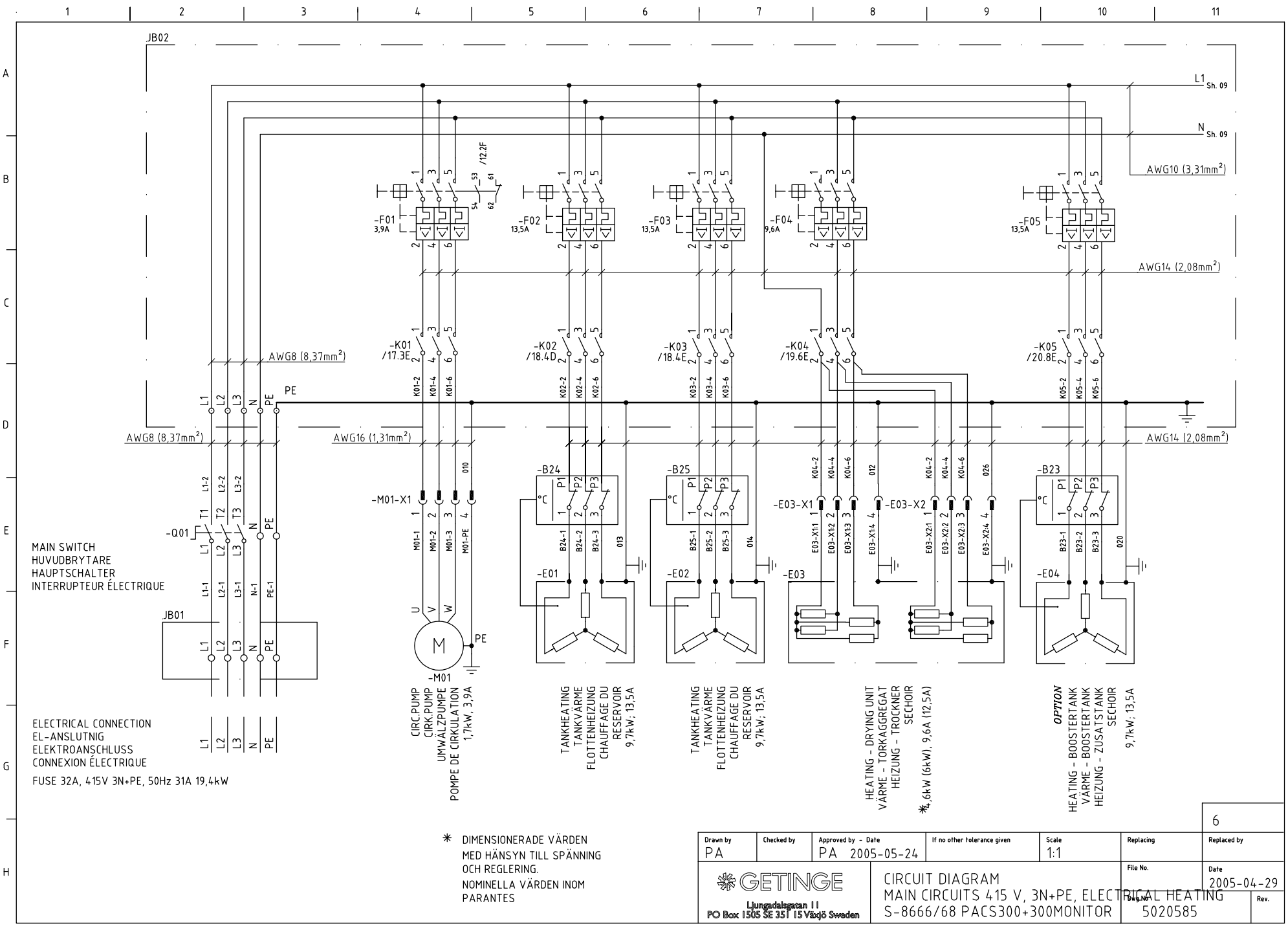
GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

LAYOUT

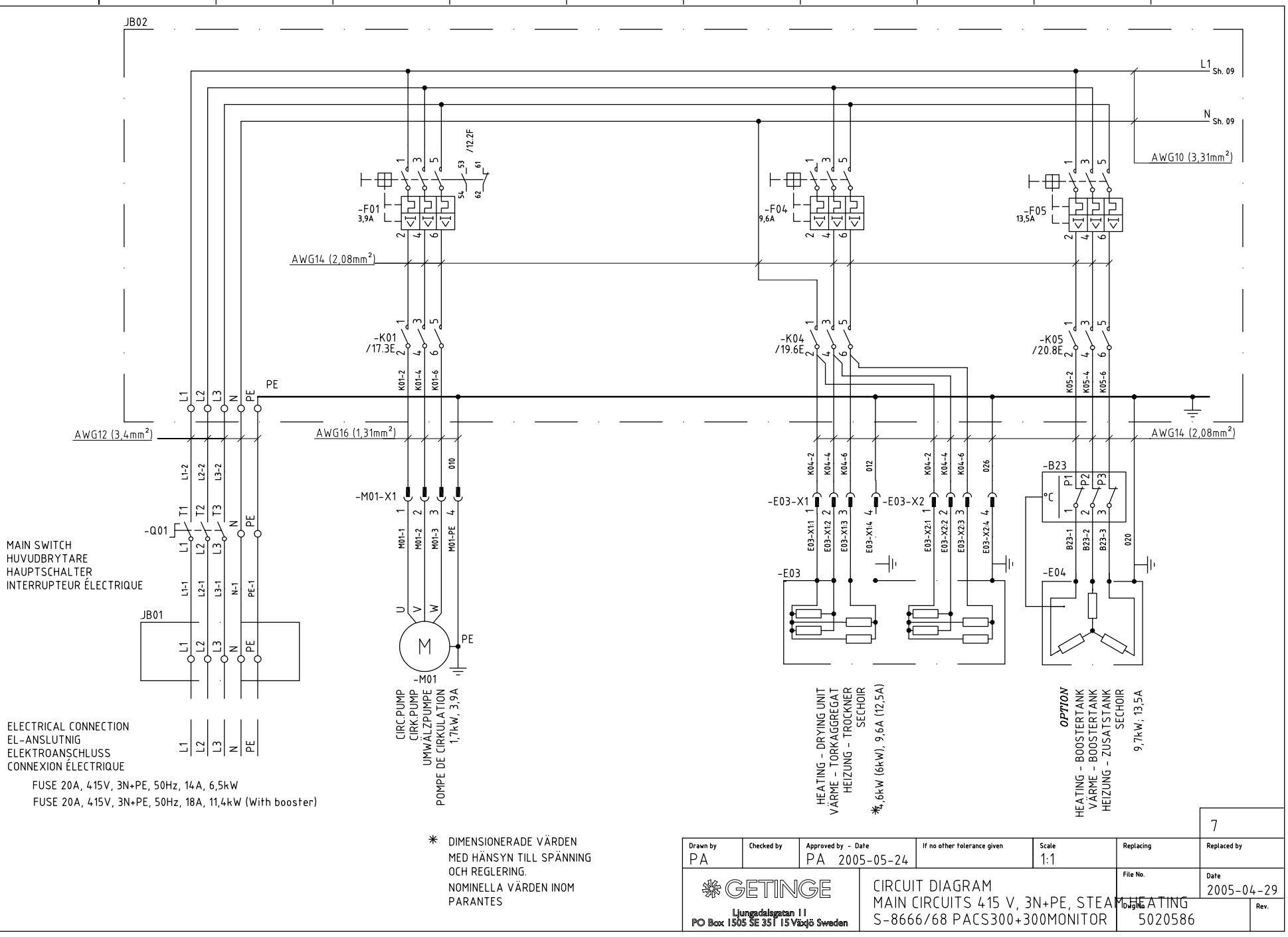
S-8666/68 PACS300+300MONITOR

File No.	Date
	2005-04-29

Dwg No	Rev.
5020584	



Drawn by PA	Checked by	Approved by - Date PA 2005-05-24	If no other tolerance given	Scale 1:1	Replacing	Replaced by 6
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden					File No.	Date 2005-04-29
CIRCUIT DIAGRAM MAIN CIRCUITS 415 V, 3N+PE, ELECTRICAL HEATING S-8666/68 PACS300+300MONITOR					Dwg.No. 5020585	Rev.



* DIMENSIONERADE VÄRDEN
MED HÄNSYN TILL SPÄNNING
OCH REGLERING.
NOMINELLA VÄRDEN INOM
PARANTES

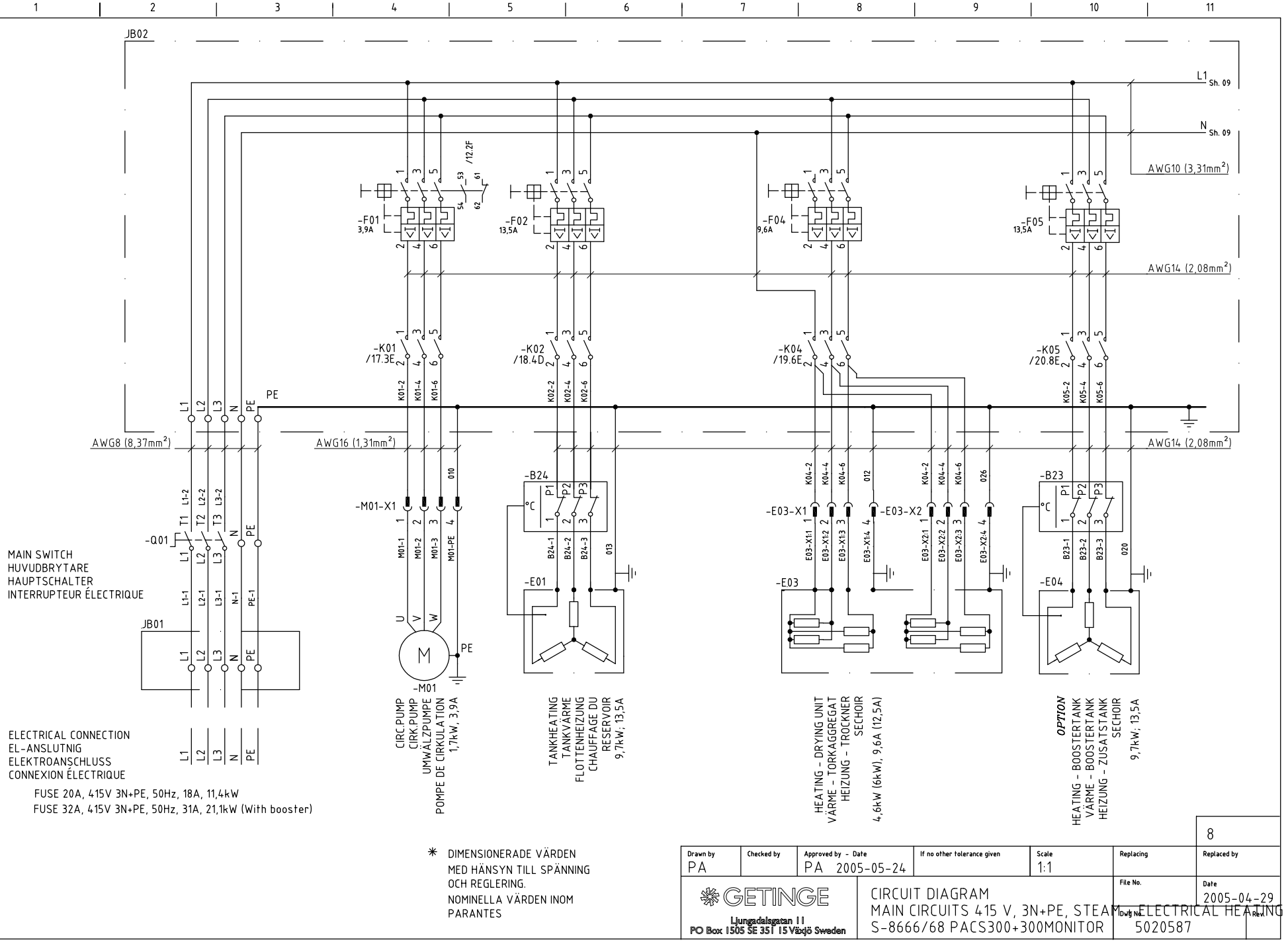
Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PA		PA 2005-05-24		1:1		7

GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRCUIT DIAGRAM
MAIN CIRCUITS 415 V, 3N+PE, STEAM HEATING
S-8666/68 PACS300+300MONITOR

File No.	Date	Rev.
	2005-04-29	

Dwg No. 5020586



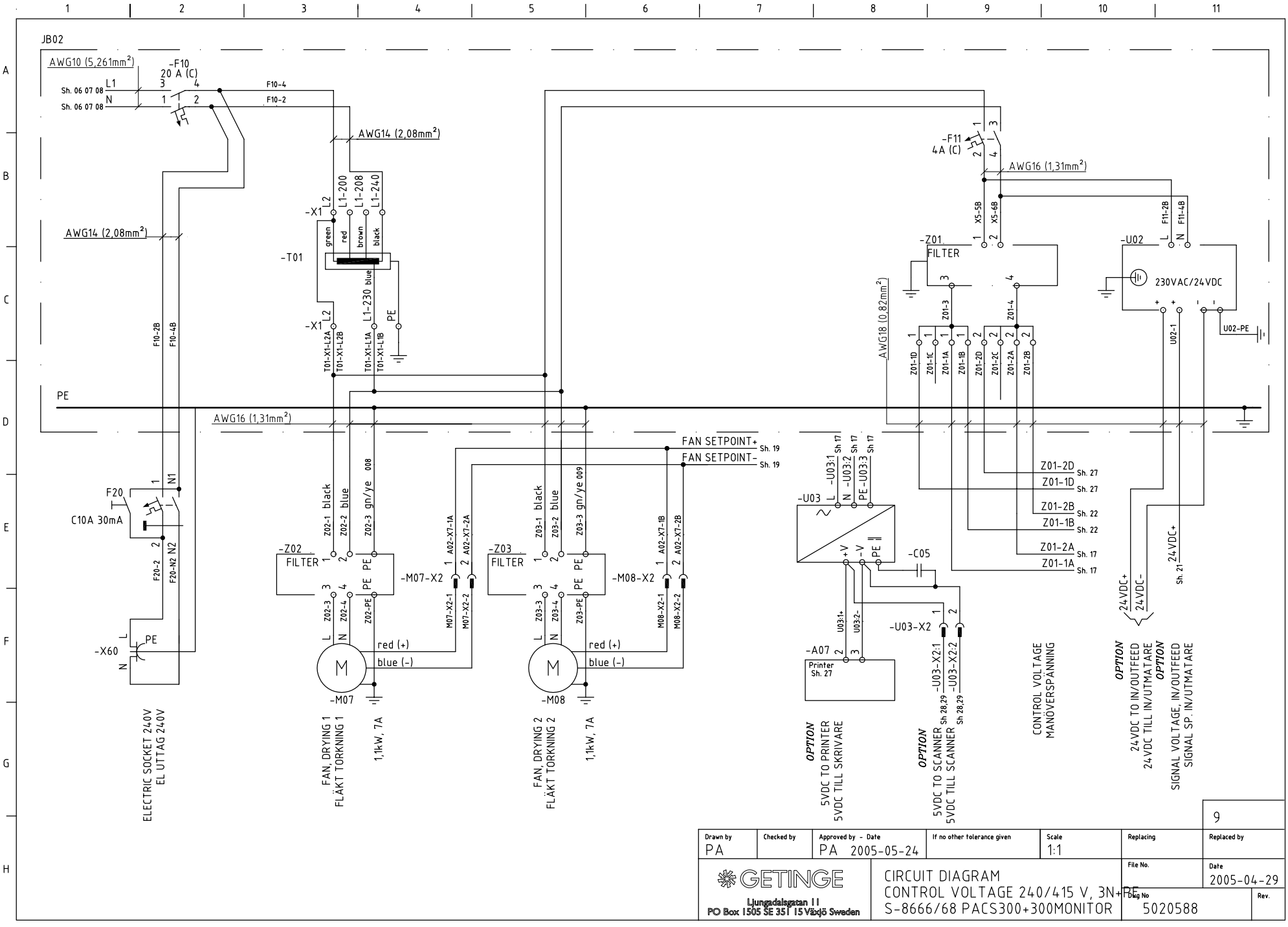
✳ DIMENSIONERADE VÄRDEN
MED HÄNSYN TILL SPÄNNING
OCH REGLERING.
NOMINELLA VÄRDEN INOM
PARANTES

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PA		PA 2005-05-24		1:1		8

GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRCUIT DIAGRAM
MAIN CIRCUITS 415 V, 3N+PE, STEAM, ELECTRICAL HEATING
S-8666/68 PACS300+300MONITOR

File No. | Date 2005-04-29
Dwg No. 5020587 | Rev.



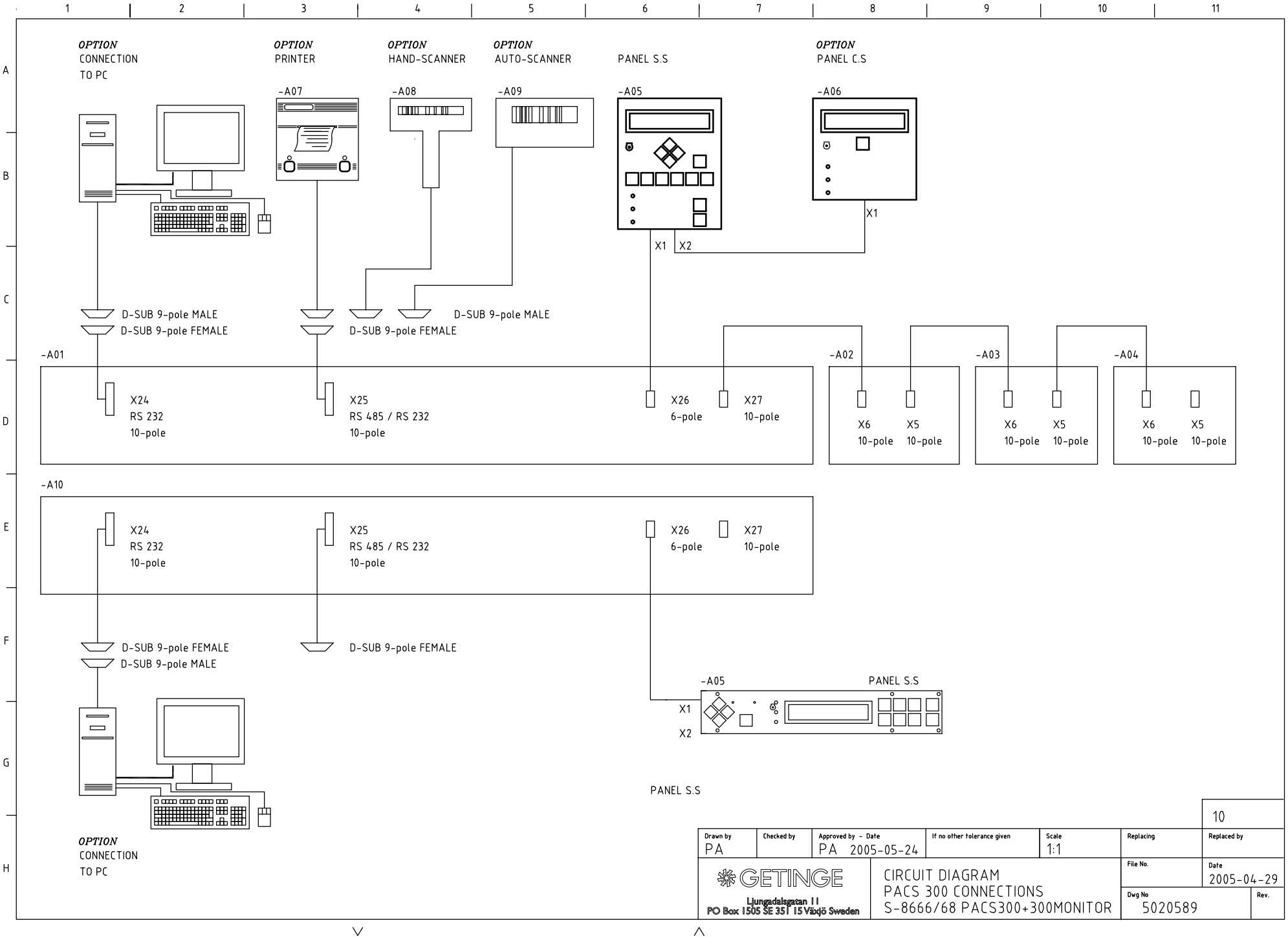
Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PA		PA 2005-05-24		1:1		9

GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRCUIT DIAGRAM
CONTROL VOLTAGE 240/415 V, 3N+PE
S-8666/68 PACS300+300MONITOR

File No.	Date
	2005-04-29

Dwg No	Rev.
5020588	



10

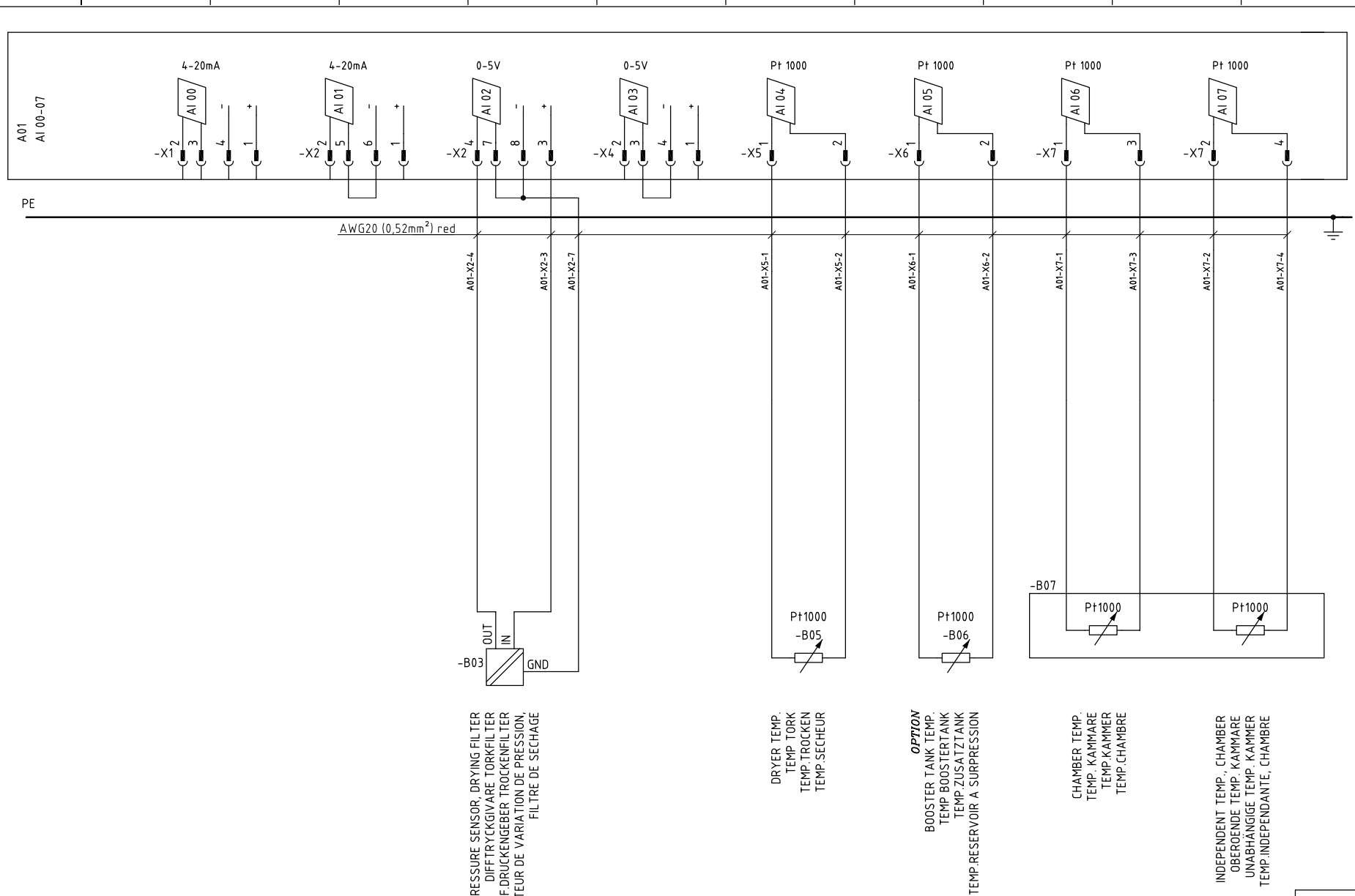
Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PA		PA 2005-05-24		1:1		

GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRCUIT DIAGRAM
PACS 300 CONNECTIONS
S-8666/68 PACS300+300MONITOR

File No.	Date
	2005-04-29

Dwg No	Rev.
5020589	



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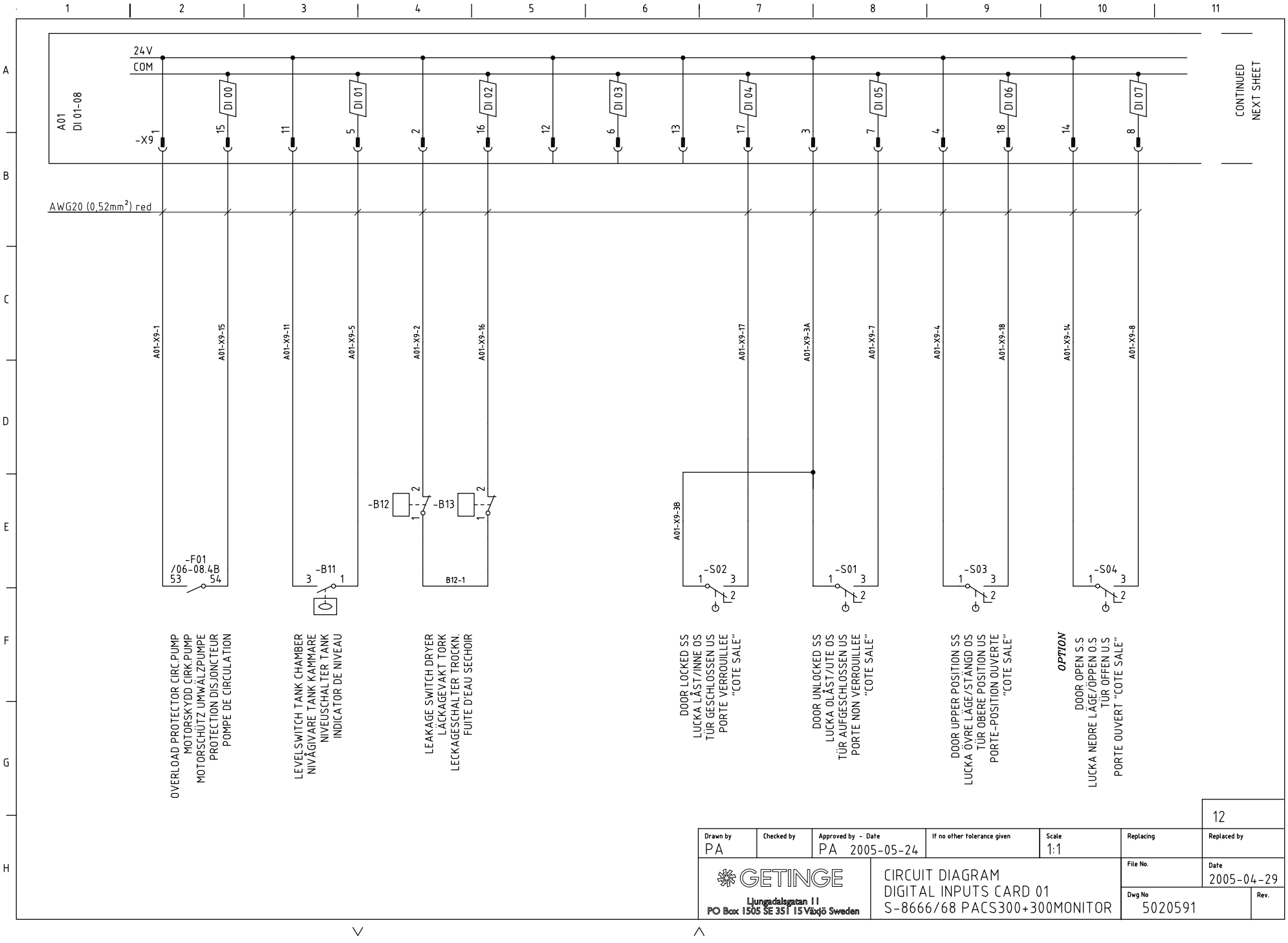
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRCUIT DIAGRAM ANALOG INPUTS CARD 01 S-8666/68 PACS300+300MONITOR				File No.	Date: 2005-04-29
					Dwg No: 5020590	Rev.

11



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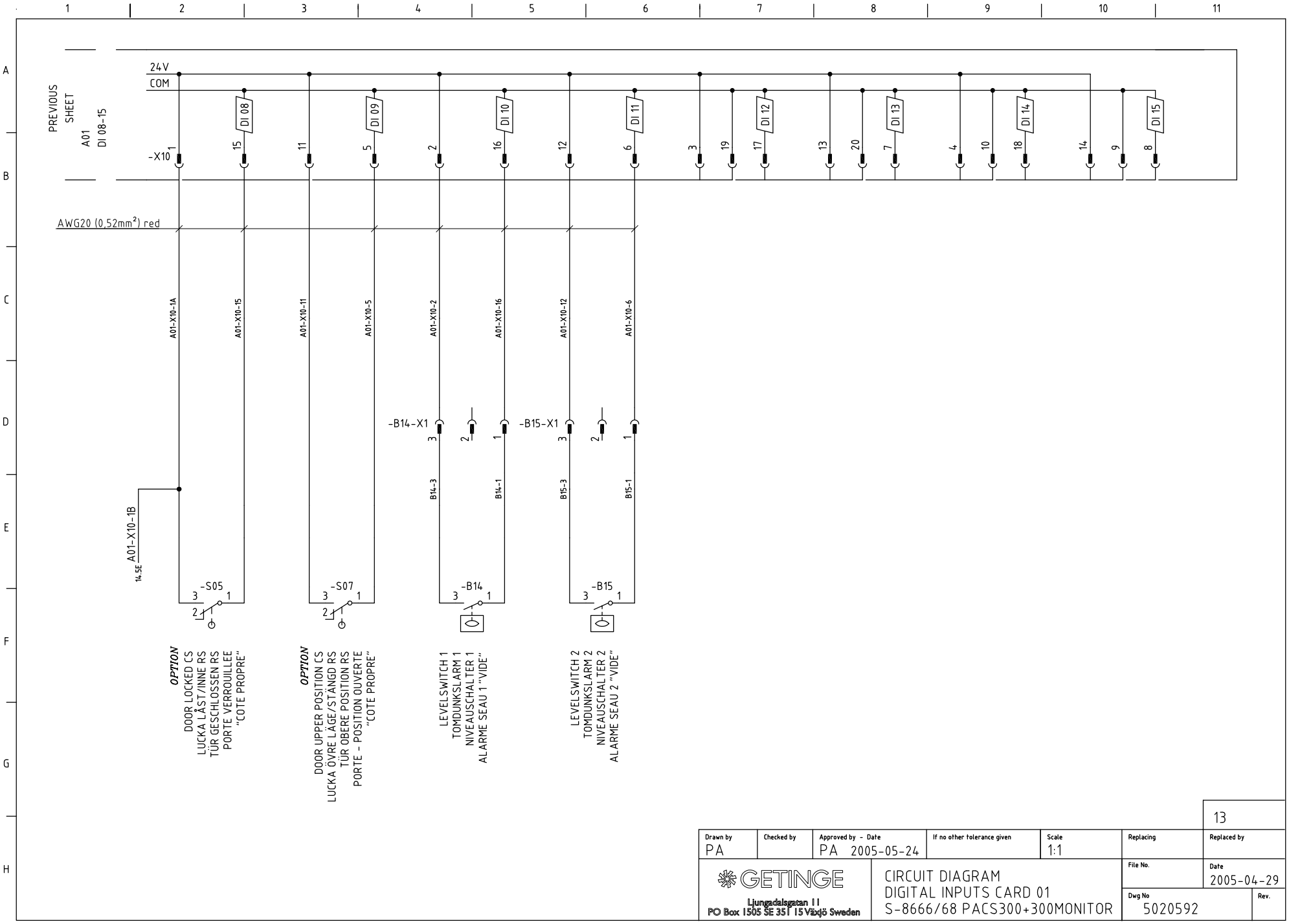
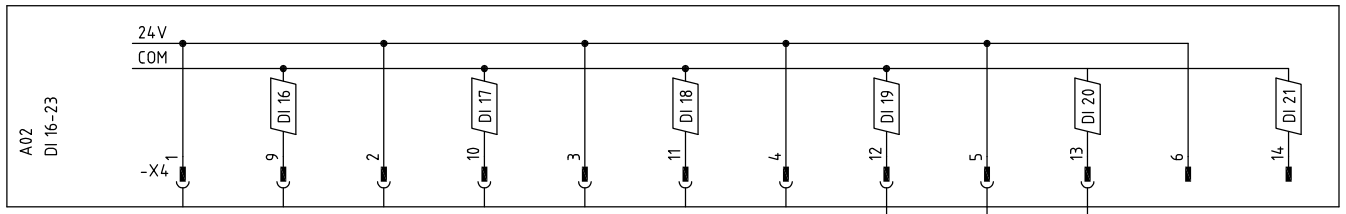
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRCUIT DIAGRAM DIGITAL INPUTS CARD 01 S-8666/68 PACS300+300MONITOR				File No.	Date: 2005-04-29
					Dwg No: 5020591	Rev.

12



Drawn by: PA	Checked by:	Approved by - Date: PA 2005-05-24	If no other tolerance given	Scale: 1:1	Replacing	Replaced by
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRCUIT DIAGRAM DIGITAL INPUTS CARD 01 S-8666/68 PACS300+300MONITOR				File No.	Date: 2005-04-29
					Dwg No: 5020592	Rev.

13



AWG20 (0,52mm^2) red

A02-X4-12

A02-X4-5

A02-X4-13

A01-X10-1B 13.4E

A01-X10-1B

S06

S08

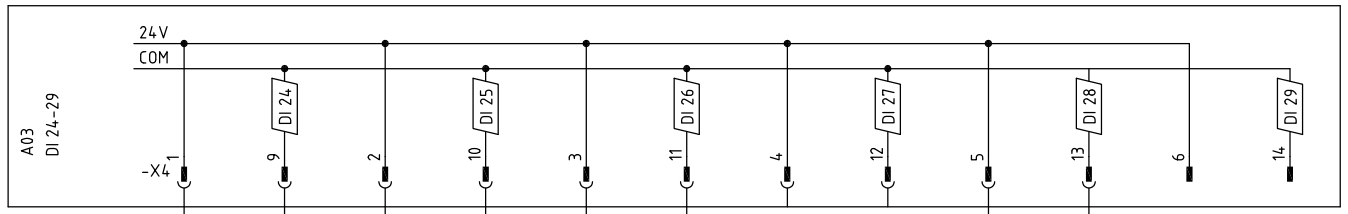
1 3 2

1 3 2

OPTION
DOOR UNLOCKED C.S
LUCKA OLÅST/UTE R.S
TÜR AUFGESCHLOSSEN R.S
PORTE NON VERROUILLE
"COTE PROPRE"

OPTION
DOOR OPEN C.S
LUCKA NEDRE LÄGE/ÖPPEN R.S
TÜR OFFEN R.S
PORTE OUVERT "COTE PROPRE"

Drawn by PA	Checked by	Approved by - Date PA 2005-05-24	If no other tolerance given	Scale 1:1	Replacing	Replaced by 14
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRCUIT DIAGRAM DIGITAL INPUTS CARD 02 S-8666/68 PACS300+300MONITOR				File No.	Date 2005-04-29
					Dwg No 5020593	Rev.



AWG20 (0,52mm²) red

A03-X4-1
A03-X4-9
A03-X4-2
A03-X4-10
A03-X4-3
A03-X4-11
A03-X4-5
A03-X4-13

-B22-X1

-B18
-B19
K30
Sh 26
-B22

OPTION
LEVELSWITCH 3
TOMDUNKSLARM 3
NIVEAUSCHALTER 3
ALARME SEAU 3 "VIDE"

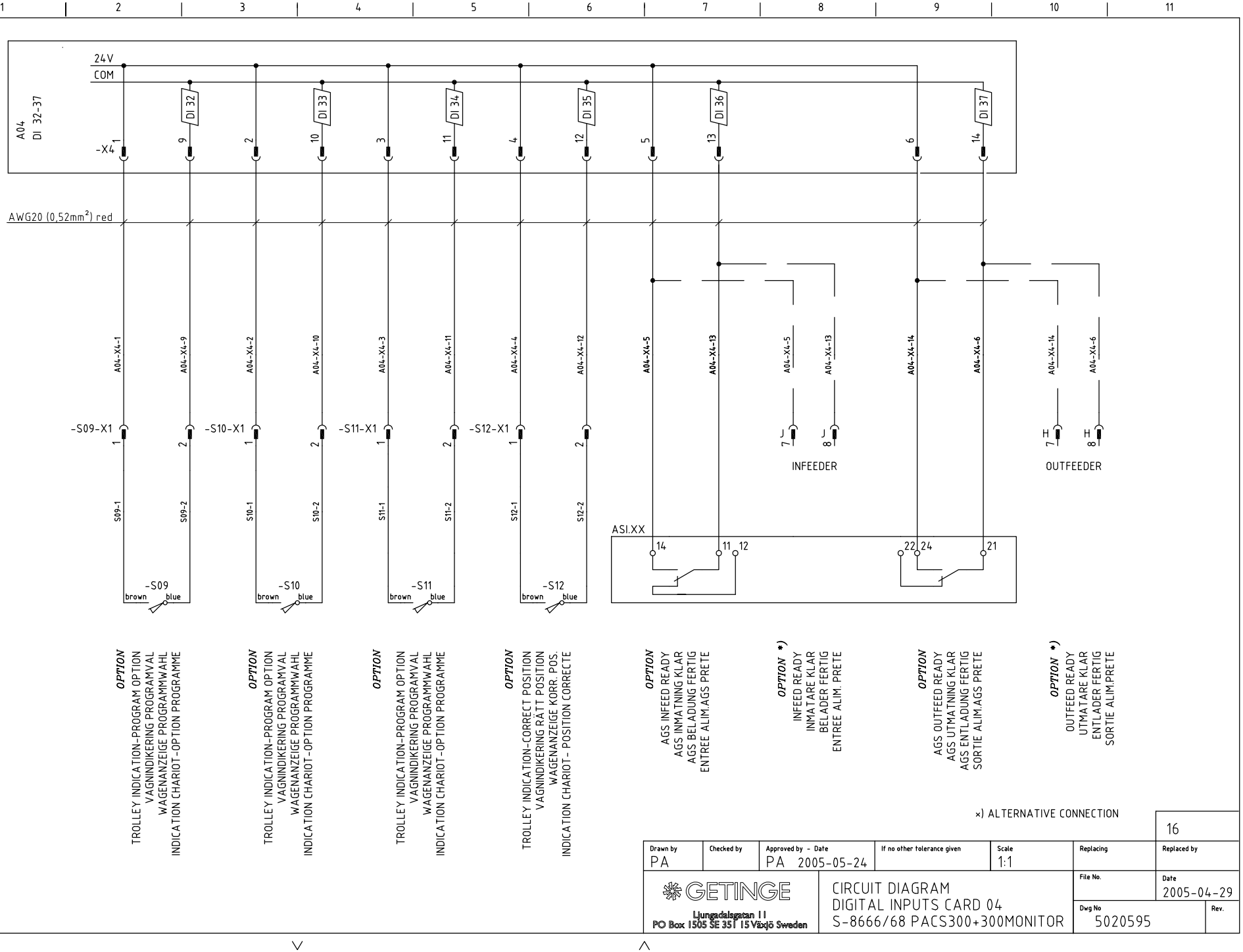
OPTION
LEVELSWITCH 4
TOMDUNKSLARM 4
NIVEAUSCHALTER 4
ALARME SEAU 4 "VIDE"

INDEPRNDENT MONITOR
CYCLE FAILURE

OPTION
LEVELSWITCH BOOSTERTANK
NIVÅGIVARE BOOSTERTANK
FÜLLSTANDGEBER ZUSATZTANK
DETECTEUR DE NIVEAU,
RESERVOIR A SURPRESSION

SPARE
RESERV
RESERV
RESERVE

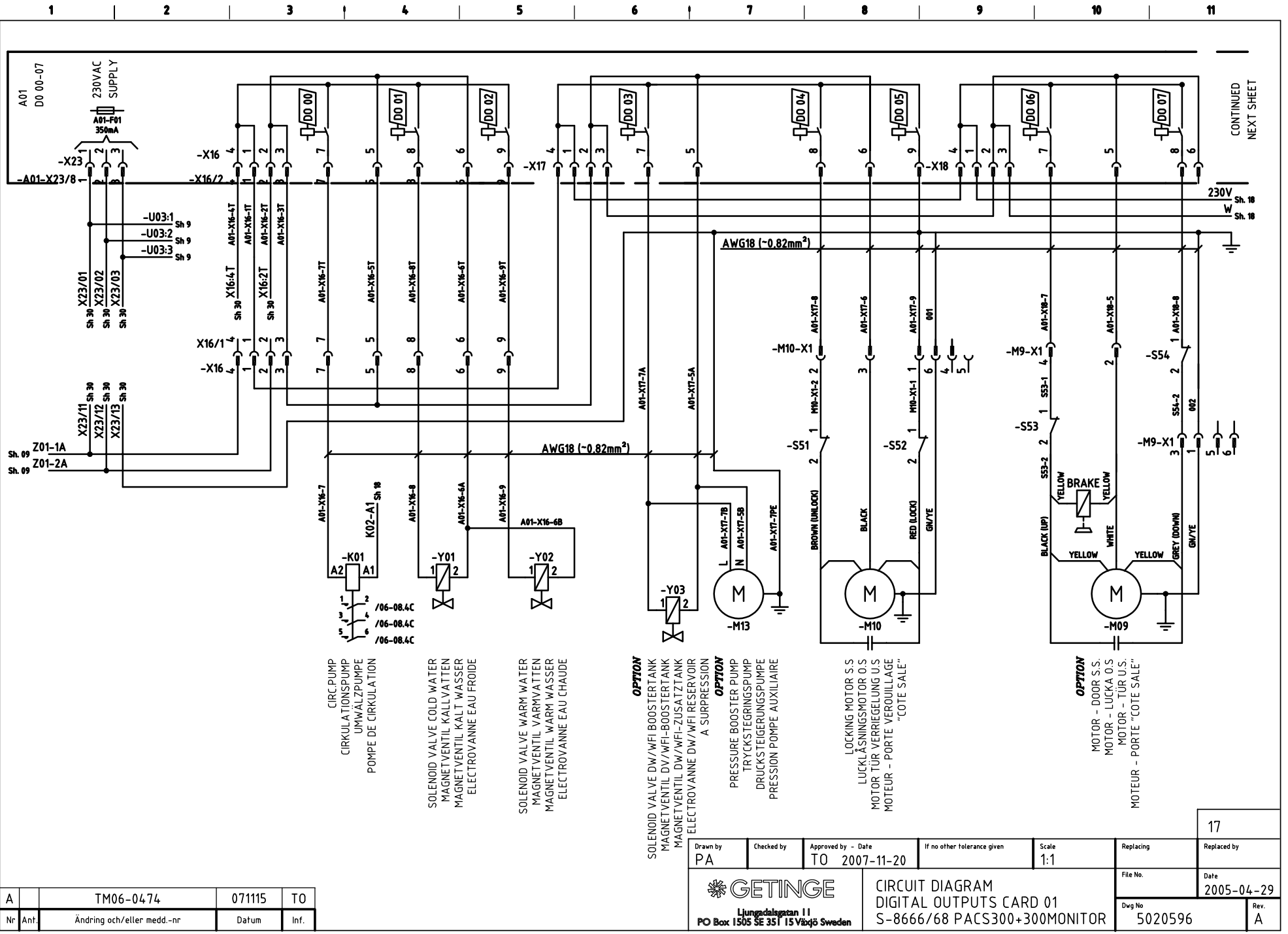
					15	
Drawn by PA	Checked by	Approved by - Date PA 2005-05-24	If no other tolerance given	Scale 1:1	Replacing	Replaced by
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRCUIT DIAGRAM DIGITAL INPUTS CARD 03 S-8666/68 PACS300+300MONITOR				File No.	Date 2005-04-29
					Dwg No 5020594	Rev.



×) ALTERNATIVE CONNECTION

Drawn by: PA	Checked by:	Approved by - Date: PA 2005-05-24	If no other tolerance given	Scale: 1:1	Replacing	Replaced by
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRCUIT DIAGRAM DIGITAL INPUTS CARD 04 S-8666/68 PACS300+300MONITOR				File No.	Date: 2005-04-29
					Dwg No: 5020595	Rev.

16



Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PA		TO 2007-11-20		1:1		

GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRCUIT DIAGRAM
DIGITAL OUTPUTS CARD 01
S-8666/68 PACS300+300MONITOR

File No.	Date
	2005-04-29

Dwg No	Rev.
5020596	A

17

Nr	Anf.	Ändring och/eller medd.-nr	Datum	Inf.
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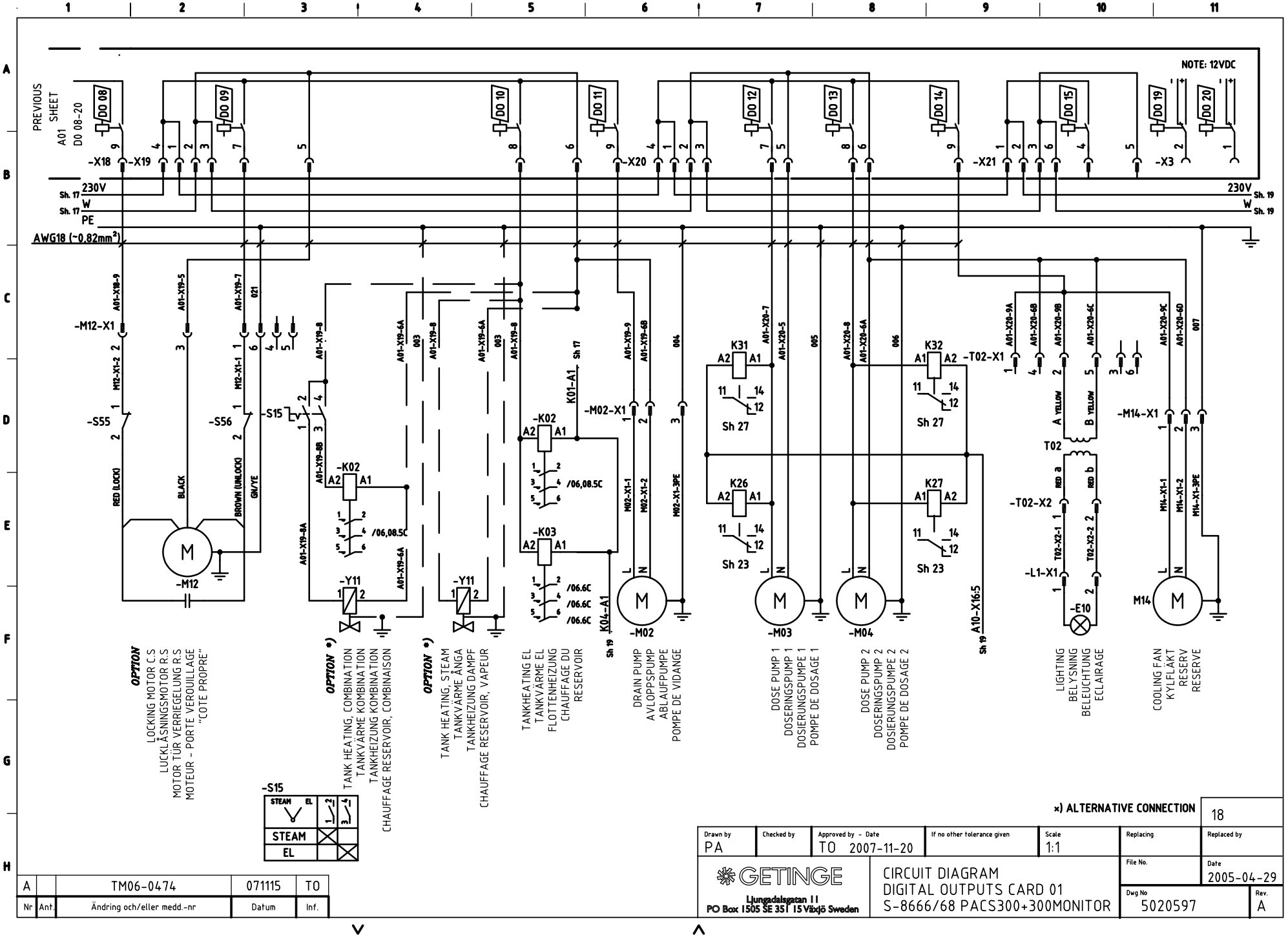

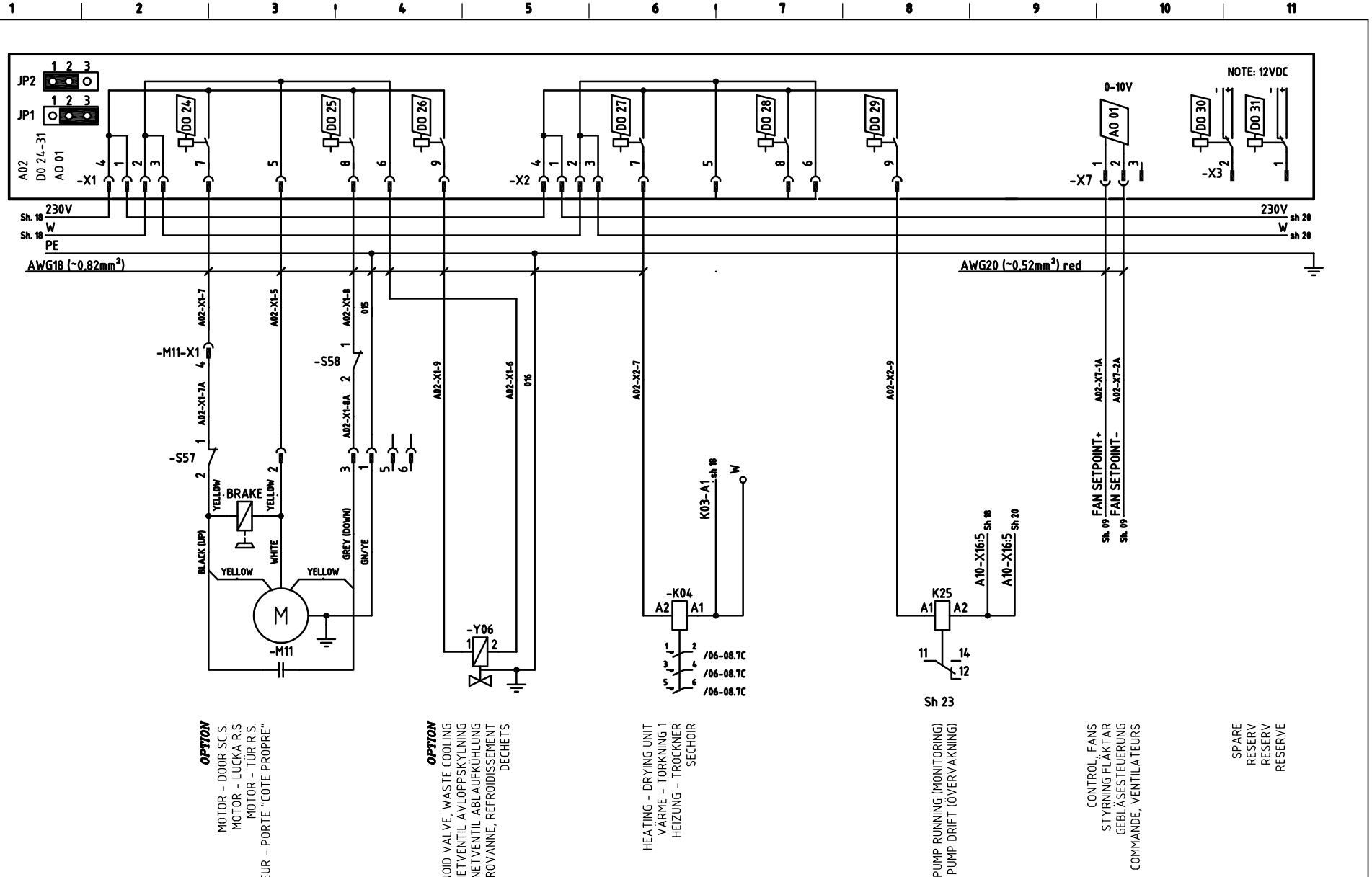

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PA		TO 2007-11-20		1:1		

19

GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRCUIT DIAGRAM
DIGITAL OUTPUTS CARD 02
S-8666/68 PACS300+300MONITOR

File No.	Date
	2005-04-29

Dwg No	Rev.
5020598	A

Nr	Anf.	Ändring och/eller medd.-nr	Datum	Inf.
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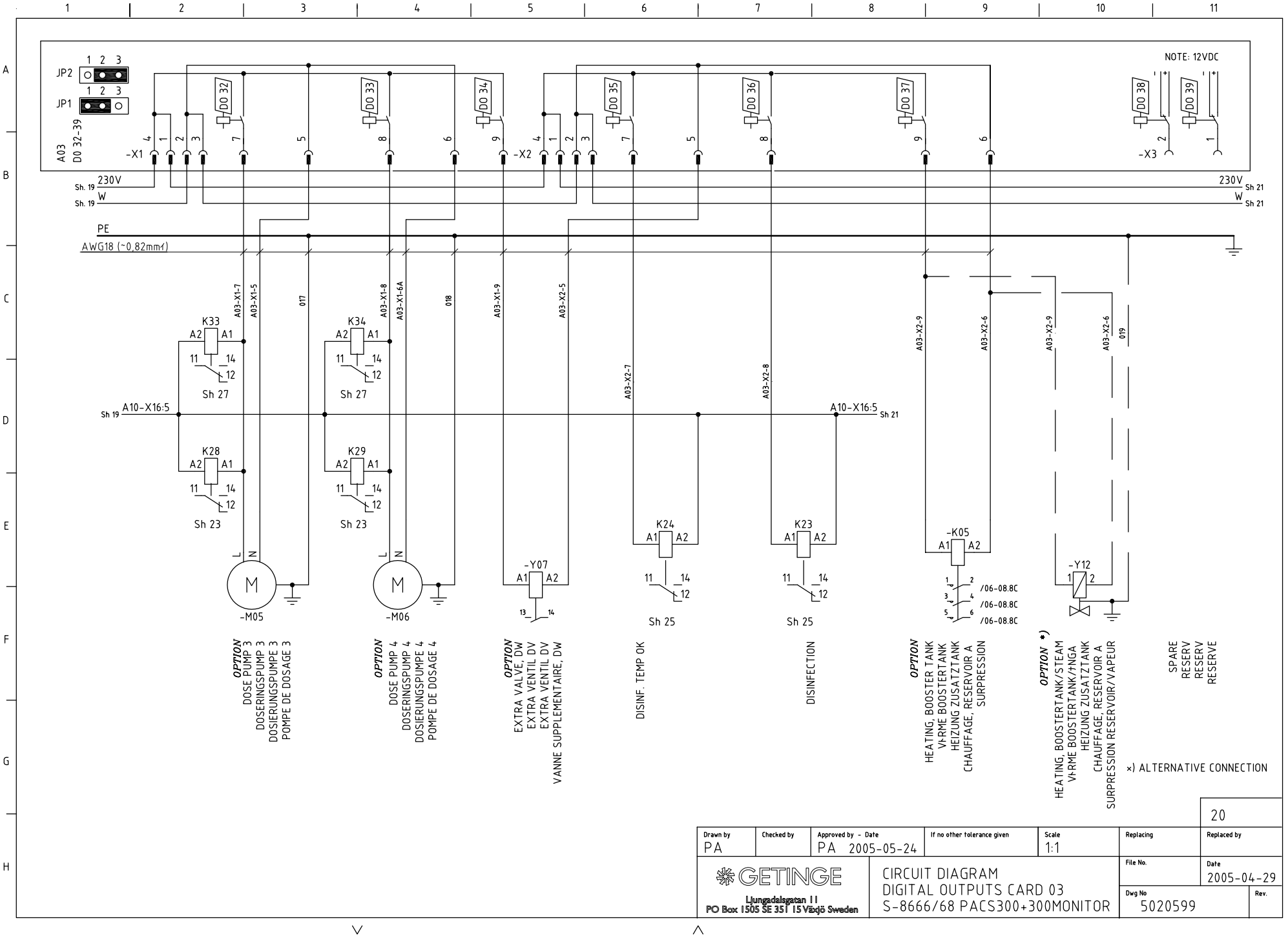

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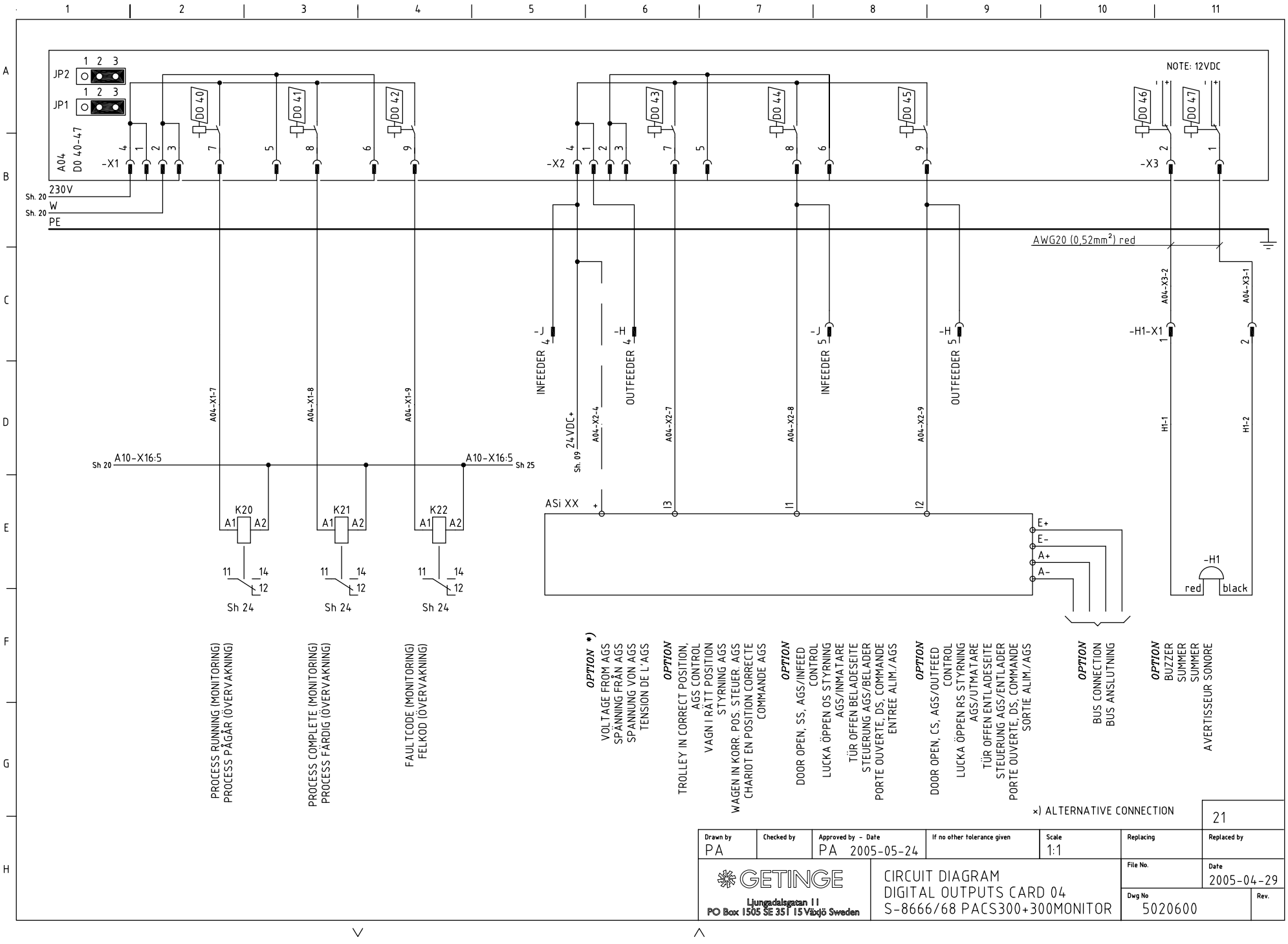
					Dwg No 5020599	Rev.

20



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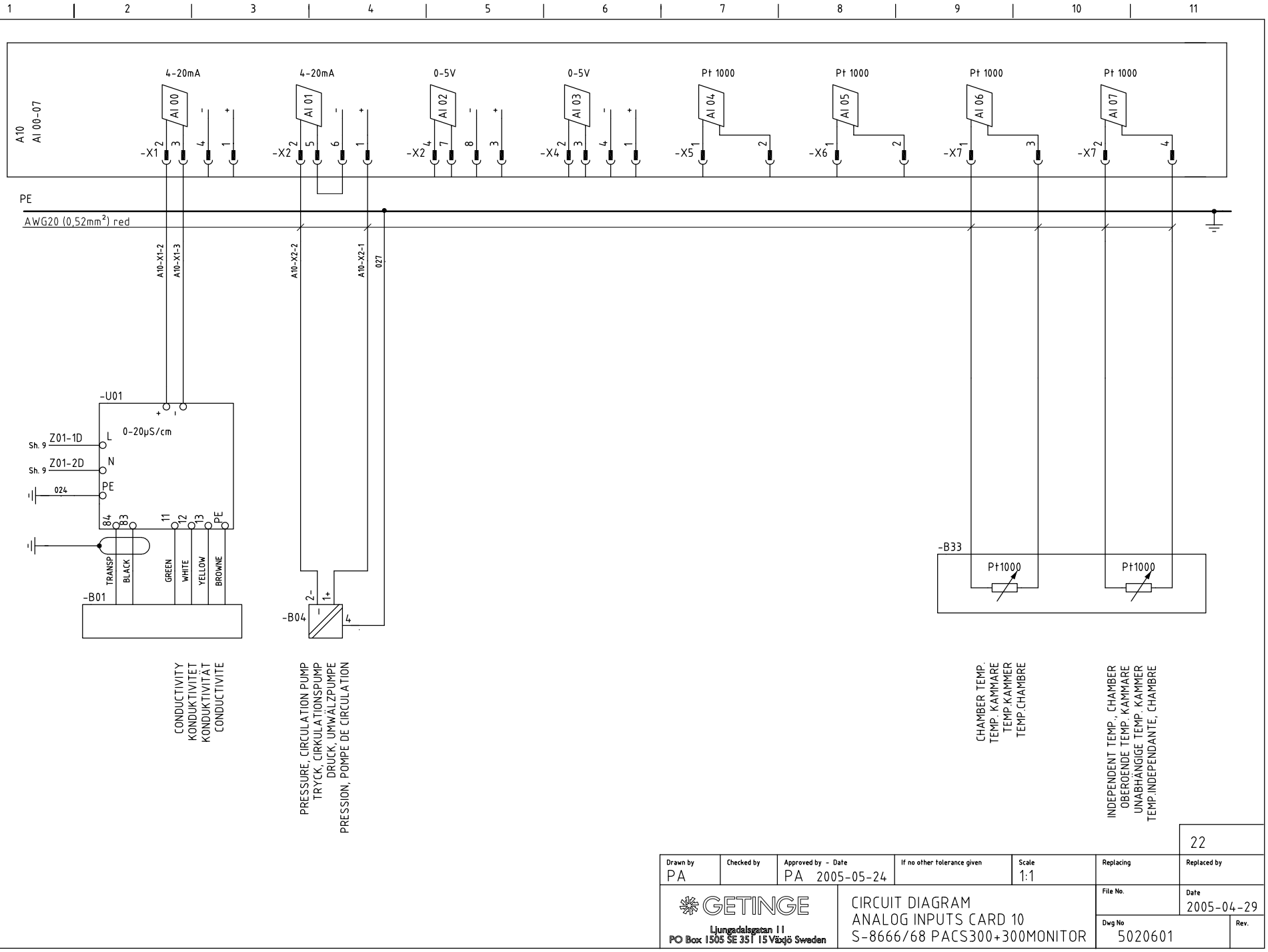
					Dwg No 5020600	Rev.



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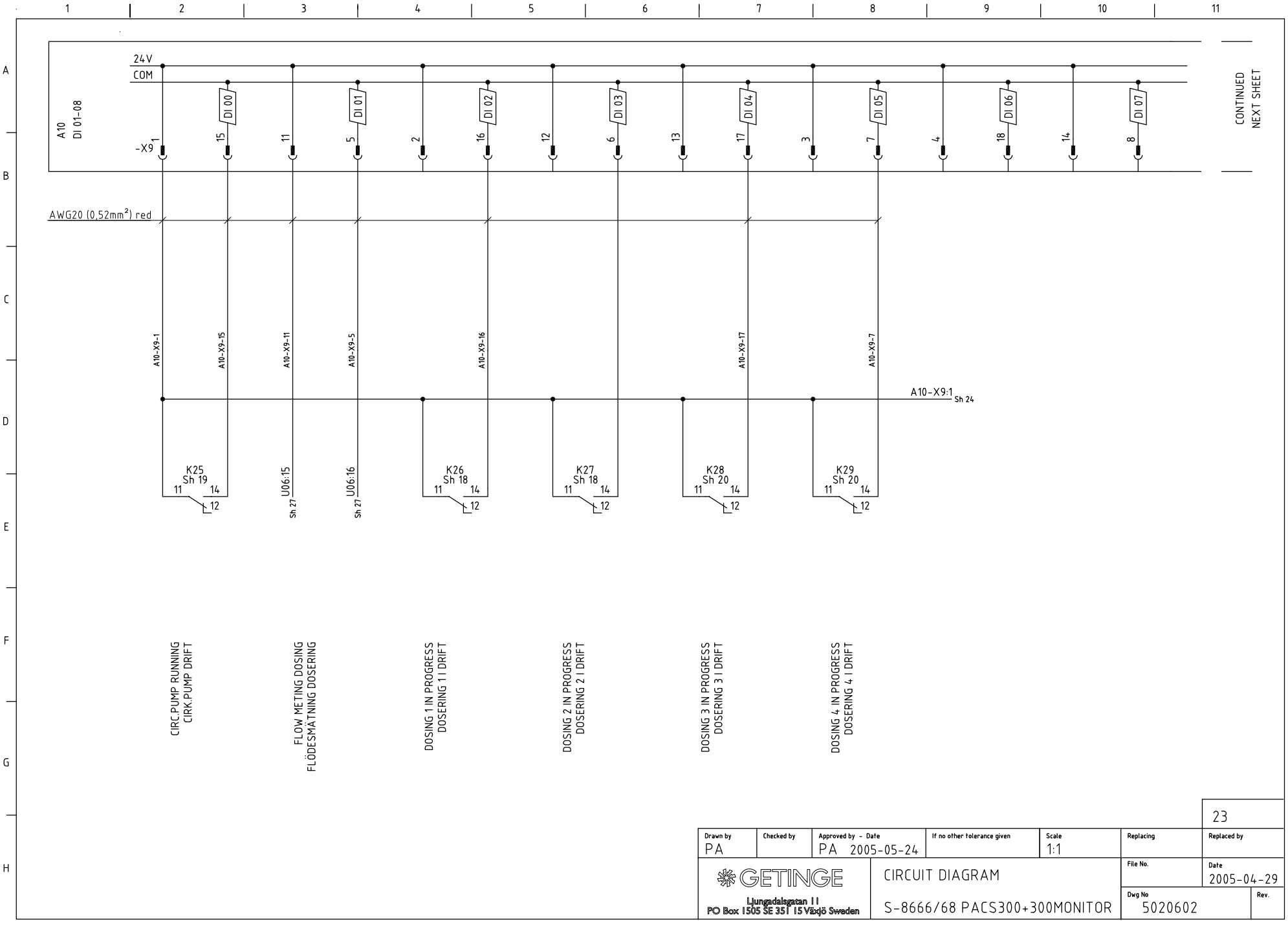
					Dwg No: 5020601	Rev.

22



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Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
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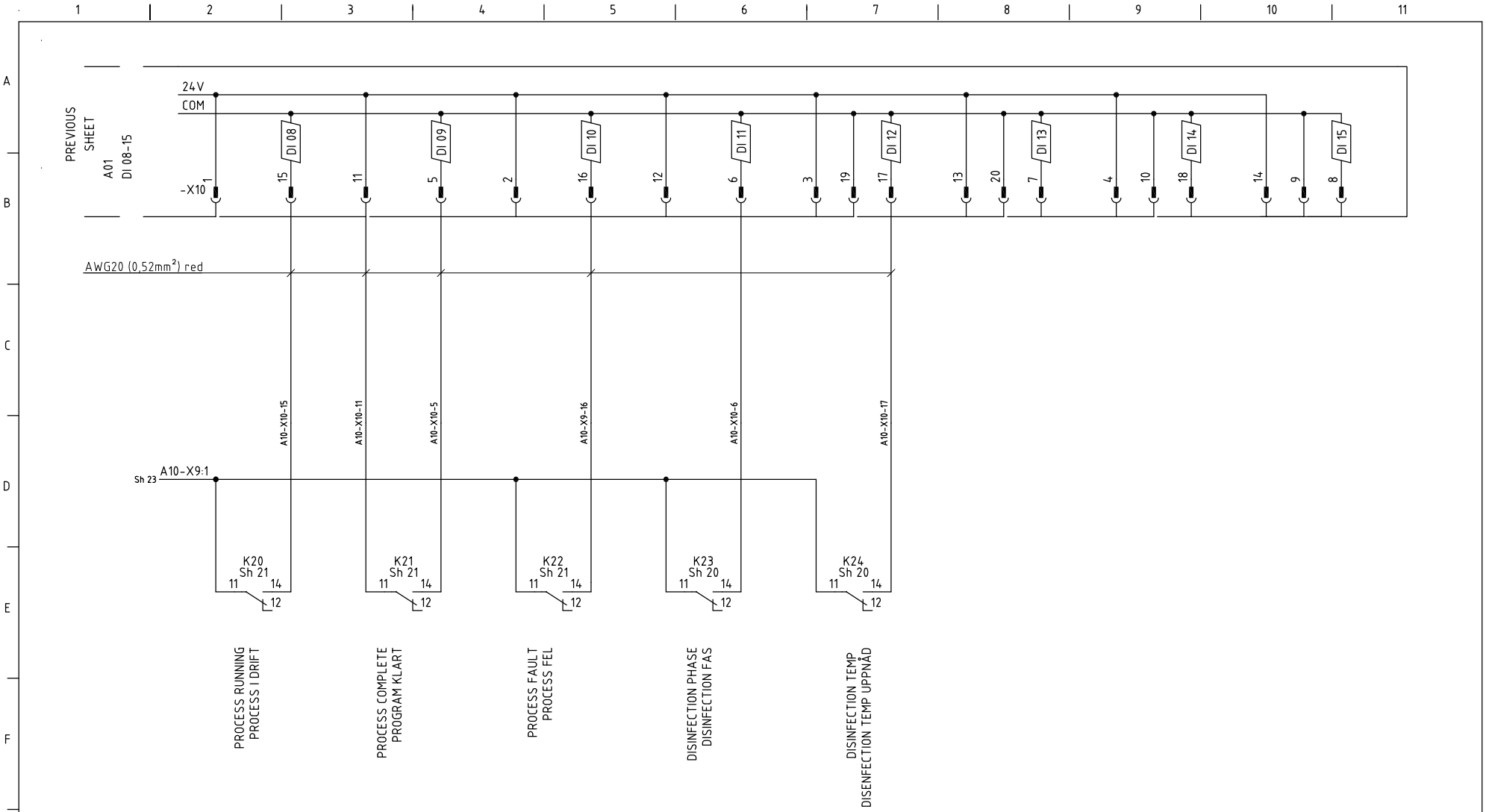
CIRCUIT DIAGRAM

S-8666/68 PACS300+300MONITOR

File No.	Date
	2005-04-29

Dwg No	Rev.
5020602	



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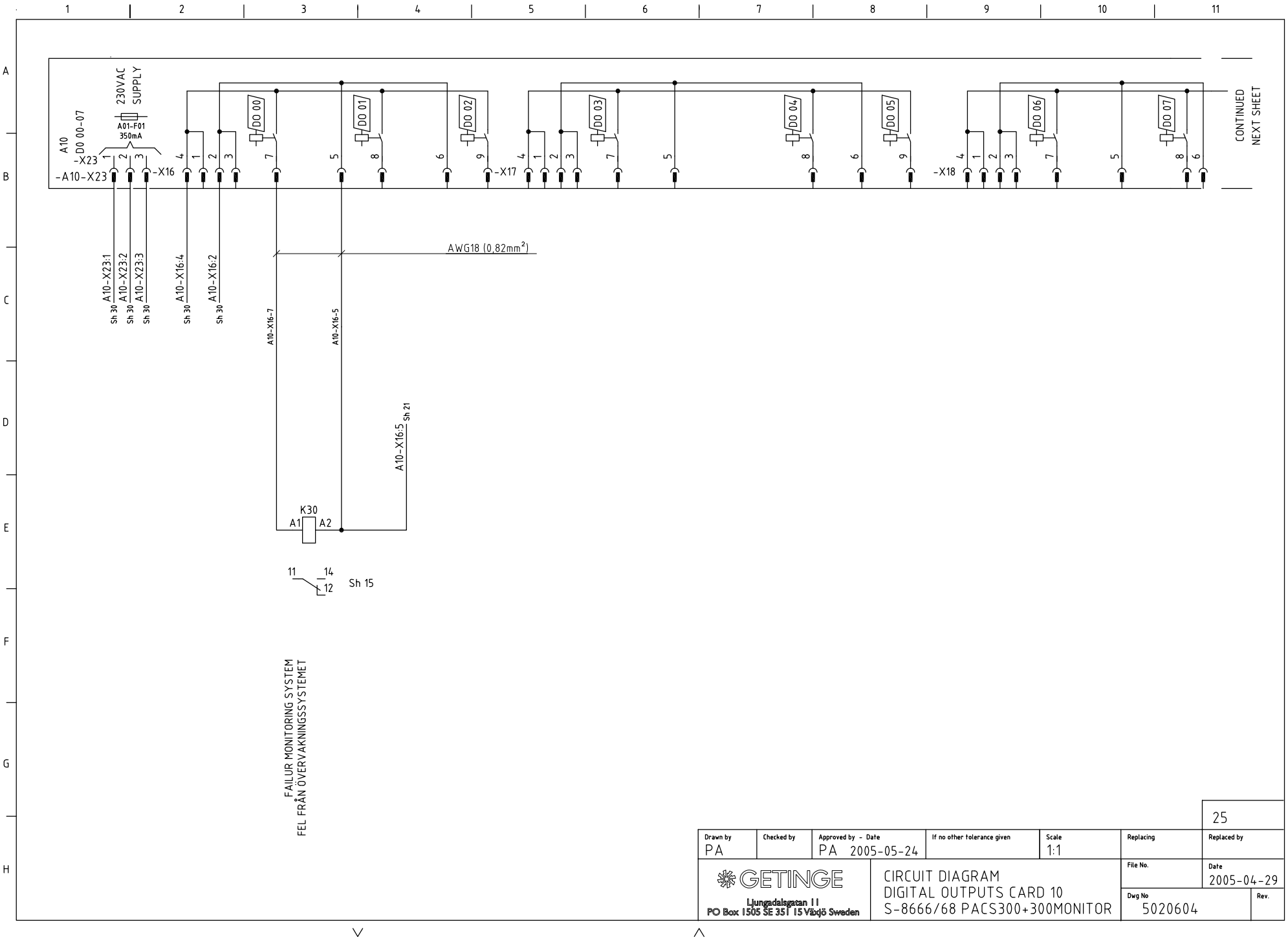
					Dwg No: 5020603	Rev.

24



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GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRCUIT DIAGRAM DIGITAL OUTPUTS CARD 10 S-8666/68 PACS300+300MONITOR				File No.	Date: 2005-04-29
					Dwg No: 5020604	Rev.

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ELECTRICAL DOCUMENTATION S-8666/8668 PACS 300 & 300 MONITOR

PAGE	DRAWING NO	DOCUMENT CLASS	DOCUMENT CONTENTS	EQUIPMENT	DATE	REV NO	DATE
01	D-5022737	DOCUMENT LIST	DOCUMENT CONTENTS	S-8666	060110	A	071114
02	D-5022738	DOCUMENT LIST	DOCUMENT CONTENTS	S-8666	060110		
03	D-5022739	LAYOUT		S-8666	060110		
04	D-5022740	LAYOUT		S-8666	060110		
05	D-5022741	LAYOUT		S-8666	060110		
06	D-5022742	CIRCUIT DIAGRAM	MAIN CIRCUITS 400 V, 3N+PE, ELECTRICAL HEATING	S-8666	060110		
07	D-5022743	CIRCUIT DIAGRAM	MAIN CIRCUITS 400 V, 3N+PE, STEAM HEATING	S-8666	060110		
08	D-5022744	CIRCUIT DIAGRAM	MAIN CIRCUITS 400 V, 3N+PE, STEAM + ELECTRICAL HEATING	S-8666	060110		
09	D-5022745	CIRCUIT DIAGRAM	CONTROL VOLTAGE 400 V, 3N+PE	S-8666	060110		
10	D-5022746	CIRCUIT DIAGRAM	PACS 300 CONNECTIONS	S-8666	060110		
11	D-5022747	CIRCUIT DIAGRAM	ANALOG INPUTS CARD 01	S-8666	060110		
12	D-5022748	CIRCUIT DIAGRAM	DIGITAL INPUTS CARD 01	S-8666	060110		
13	D-5022749	CIRCUIT DIAGRAM	DIGITAL INPUTS CARD 01	S-8666	060110		
14	D-5022750	CIRCUIT DIAGRAM	DIGITAL INPUTS CARD 02	S-8666	060110		
15	D-5022751	CIRCUIT DIAGRAM	DIGITAL INPUTS CARD 03	S-8666	060110		
16	D-5022752	CIRCUIT DIAGRAM	DIGITAL INPUTS CARD 04	S-8666	060110		
17	D-5022753	CIRCUIT DIAGRAM	DIGITAL OUTPUTS CARD 01	S-8666	060110	A	071114
18	D-5022754	CIRCUIT DIAGRAM	DIGITAL OUTPUTS CARD 01	S-8666	060110	A	071114
19	D-5022755	CIRCUIT DIAGRAM	DIGITAL OUTPUTS CARD 02	S-8666	060110	A	071114
20	D-5022756	CIRCUIT DIAGRAM	DIGITAL OUTPUTS CARD 03	S-8666	060110		
21	D-5022757	CIRCUIT DIAGRAM	DIGITAL OUTPUTS CARD 04	S-8666	060110		
22	D-5022758	CIRCUIT DIAGRAM	ANALOG INPUTS CARD 10	S-8666	060110		
23	D-5022759	CIRCUIT DIAGRAM	DIGITAL INPUTS CARD 10	S-8666	060110		
24	D-5022760	CIRCUIT DIAGRAM	DIGITAL INPUTS CARD 10	S-8666	060110		
25	D-5022761	CIRCUIT DIAGRAM	DIGITAL OUTPUTS CARD 01	S-8666	060110		

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A		TM06-0474	071114	TO

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PA		TO 2007-11-20	ISO 2768-mK	1:1		

01

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DOCUMENT LIST

S-8666/68 PACS300+300MONITOR

File No.	Date
	2006-01-10

Dwg No	Rev.
5022737	A

ELECTRICAL DOCUMENTATION S-8666/8668 PACS 300 & 300

PAGE	DRAWING NO	DOCUMENT CLASS	DOCUMENT CONTENTS	EQUIPMENT	DATE	REV NO	DATE
26	D-5022762	CIRCUIT DIAGRAM	DIGITAL OUTPUTS CARD 01	S-8666	060110		
27	D-5022763	CIRCUIT DIAGRAM	FLOW METERS	S-8666	060110		
28	D-5022764	CIRCUIT DIAGRAM	AUTO SCANNER	S-8666	060110		
29	D-5022765	CIRCUIT DIAGRAM	HAND SCANNER	S-8666	060110		
30	D-5022766	CIRCUIT DIAGRAM	PROCESS STOP	S-8666	060110		

02

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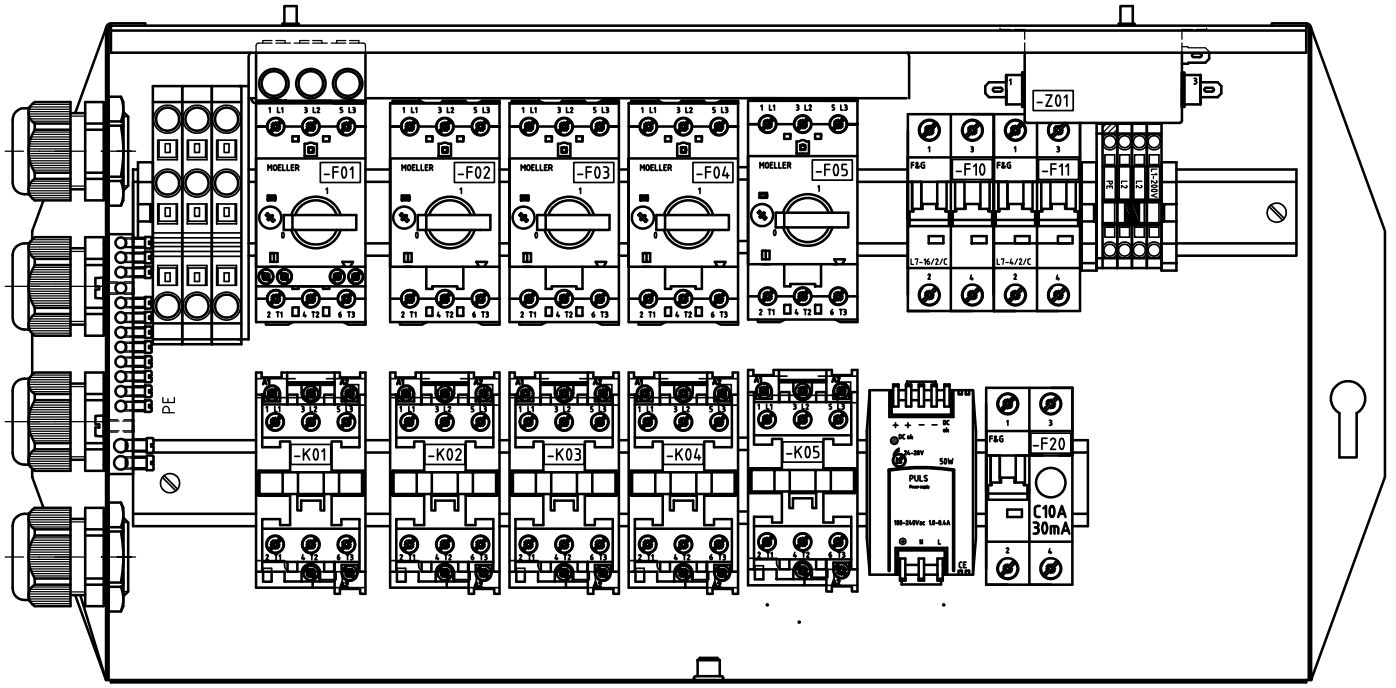
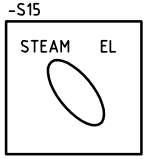
DOCUMENT LIST

S-8666/68 PACS300+300MONITOR

File No.	Date
	2006-01-10

Dwg No	Rev.
5022738	





When steam heating with electrical heating as backup
-K03 is not used and switch -S15 is mounted in its position

					03	
Drawn by PA	Checked by	Approved by - Date PA 2006-01-11	If no other tolerance given ISO 2768-mK	Scale 1:1	Replacing	Replaced by
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden		LAYOUT S-8666/68 PACS300+300MONITOR			File No.	Date 2006-01-10
					Dwg No 5022739	Rev.

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
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LAYOUT

S-8666/68 PACS300+300MONITOR

File No.	Date	Dwg No	Rev.
	2006-01-10	5022740	04

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PA		PA 2006-01-11	ISO 2768-mK	1:1		

05

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LAYOUT

S-8666/68 PACS300+300MONITOR

File No.	Date
	2006-01-10

Dwg No	Rev.
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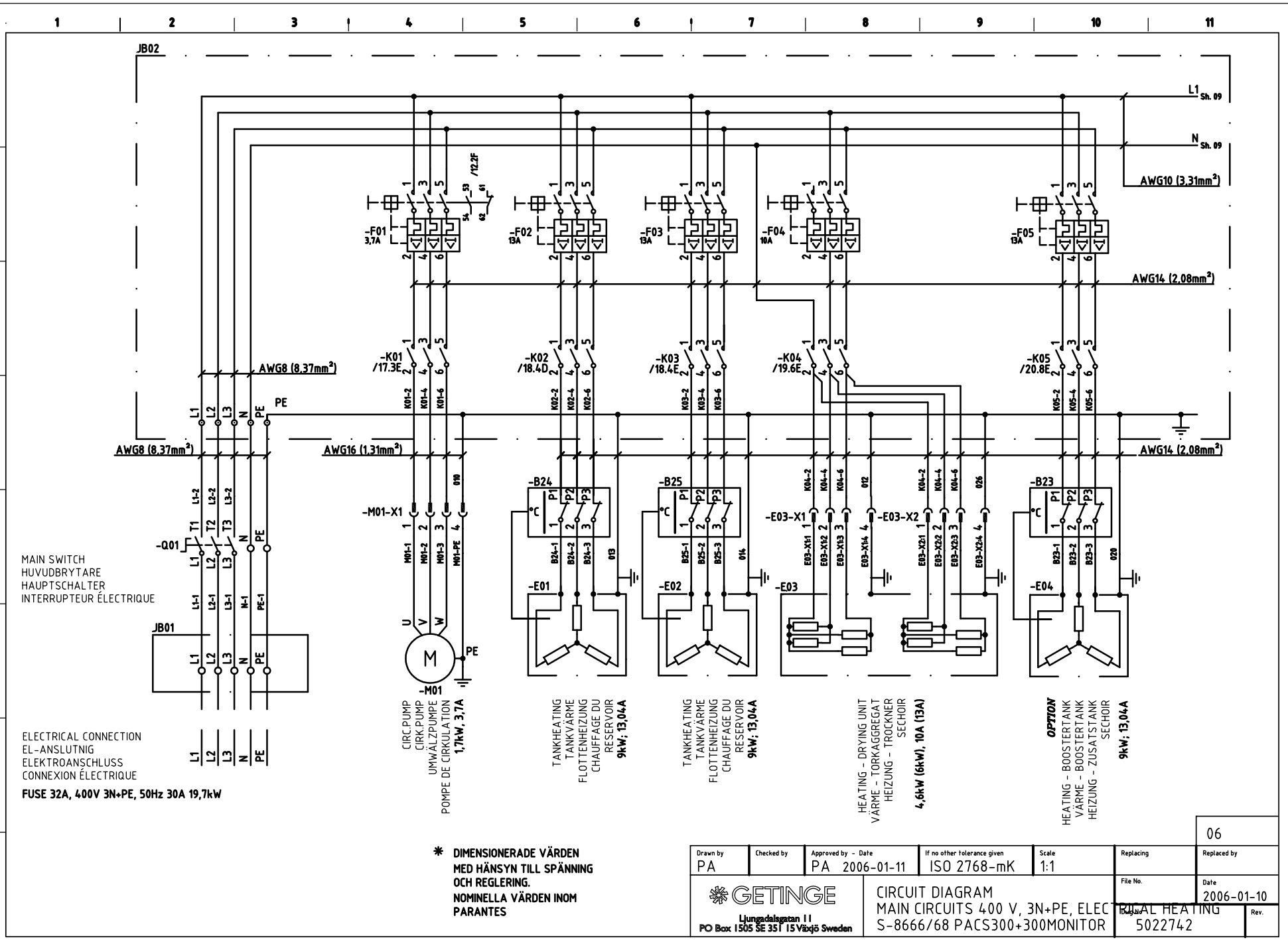

* DIMENSIONERADE VÄRDEN MED HÄNSYN TILL SPÄNNING OCH REGLERING. NOMINELLA VÄRDEN INOM PARANTES

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PA		PA 2006-01-11	ISO 2768-mK	1:1		06

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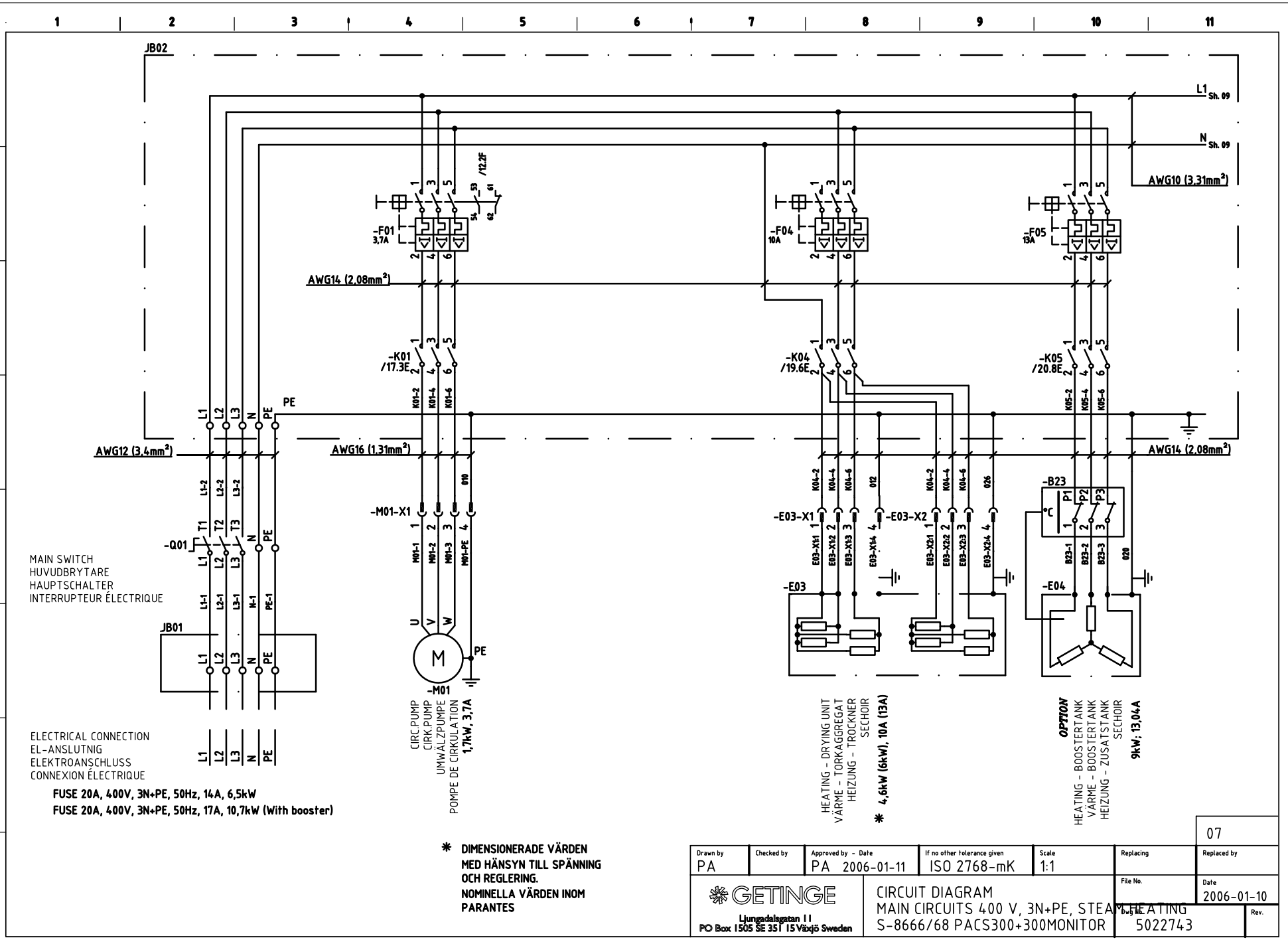
CIRCUIT DIAGRAM
MAIN CIRCUITS 400 V, 3N+PE, ELECTRICAL HEATING
S-8666/68 PACS300+300MONITOR

File No.	Date	Drawing No.	Rev.
	2006-01-10	5022742	



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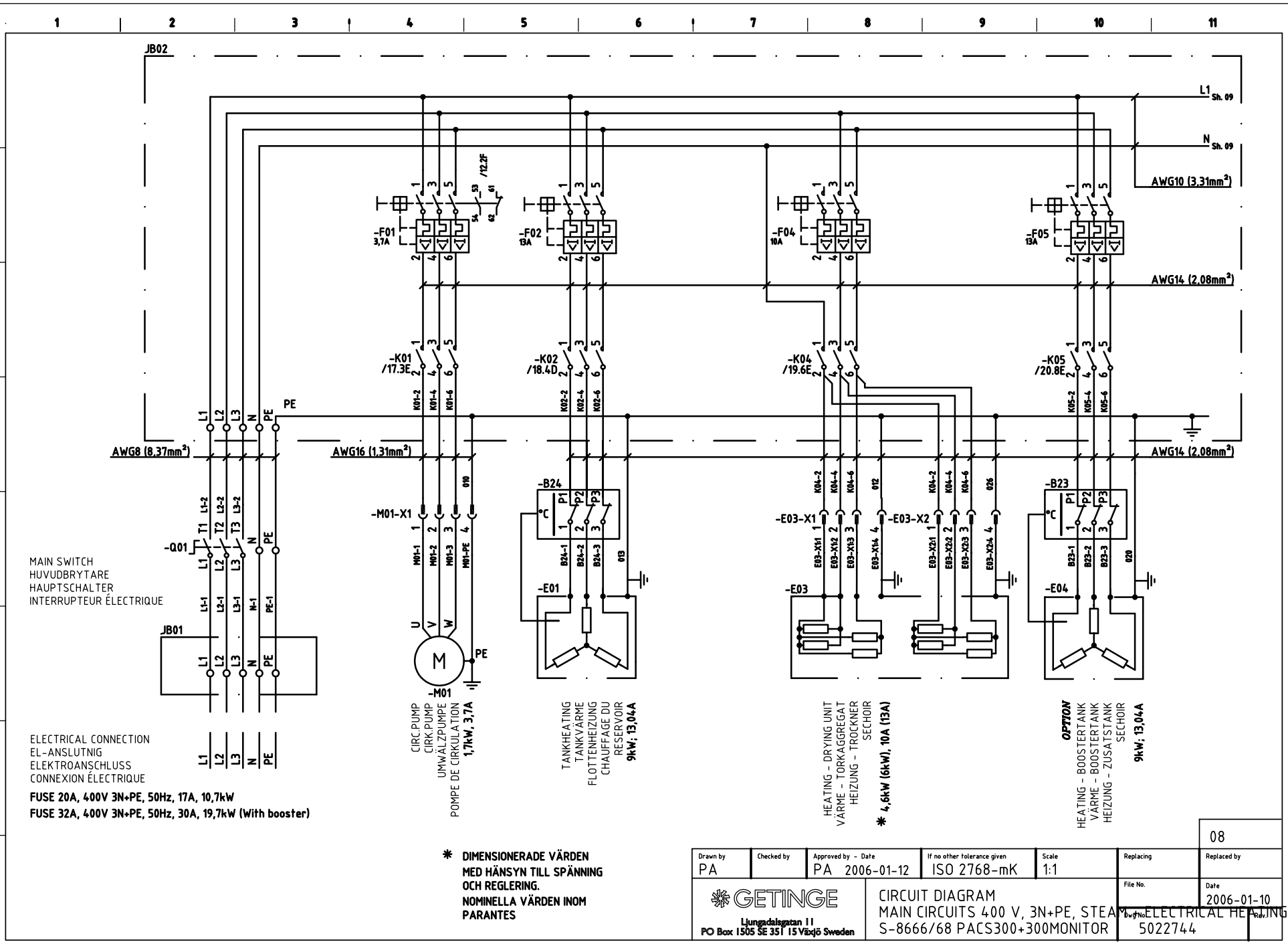
PA		PA 2006-01-11	ISO 2768-mK	1:1		07

GETINGE
Ljungadalsgatan 11
PO Box 1505 SE 351 15 Växjö Sweden

CIRCUIT DIAGRAM
MAIN CIRCUITS 400 V, 3N+PE, STEAM HEATING
S-8666/68 PACS300+300MONITOR

File No.	Date	Dwg No.	Rev.
	2006-01-10	5022743	



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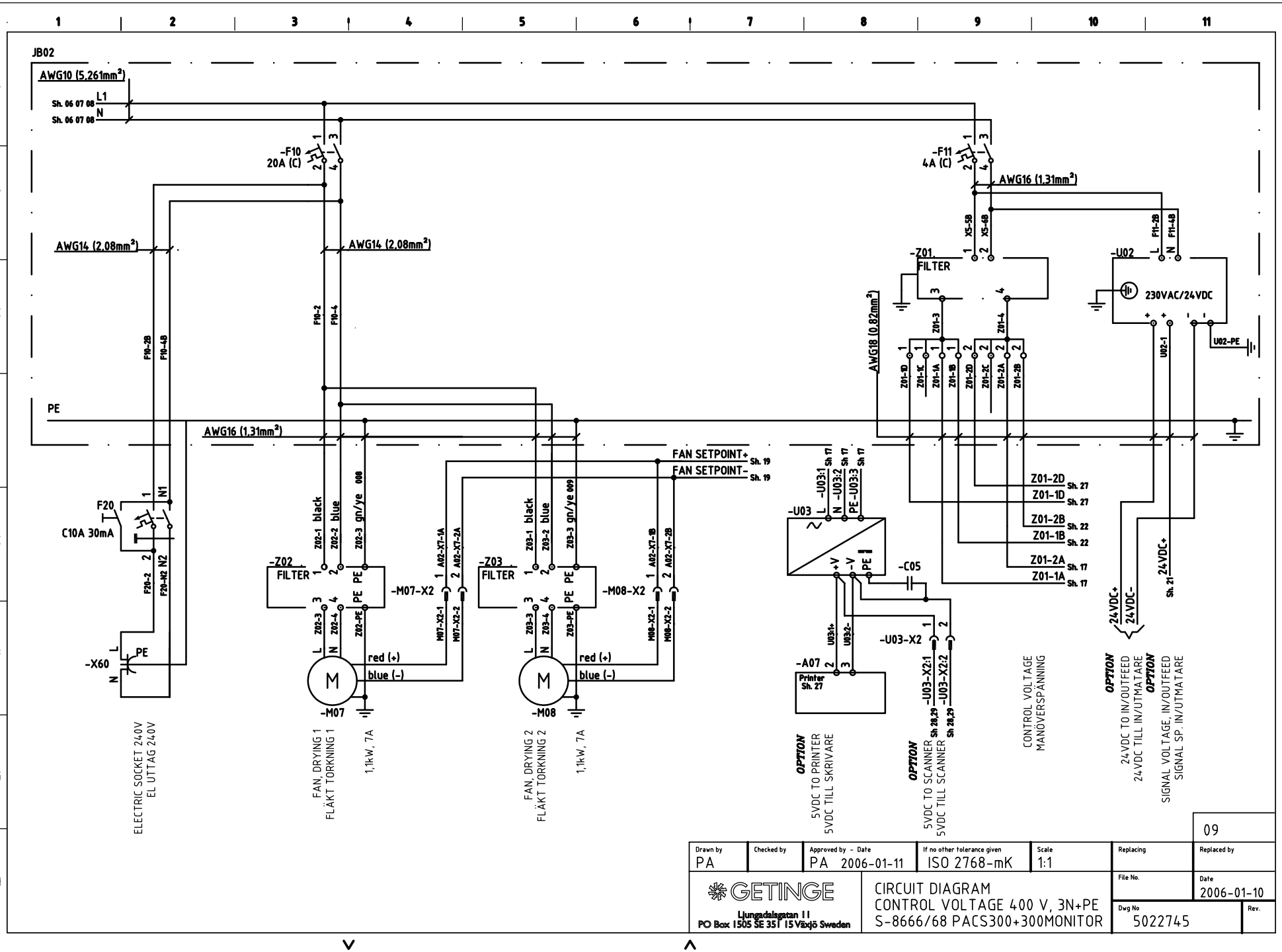
					Dwg No. 5022744	Rev.



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					File No.	Date 2006-01-10
					Dwg No 5022745	Rev. 09

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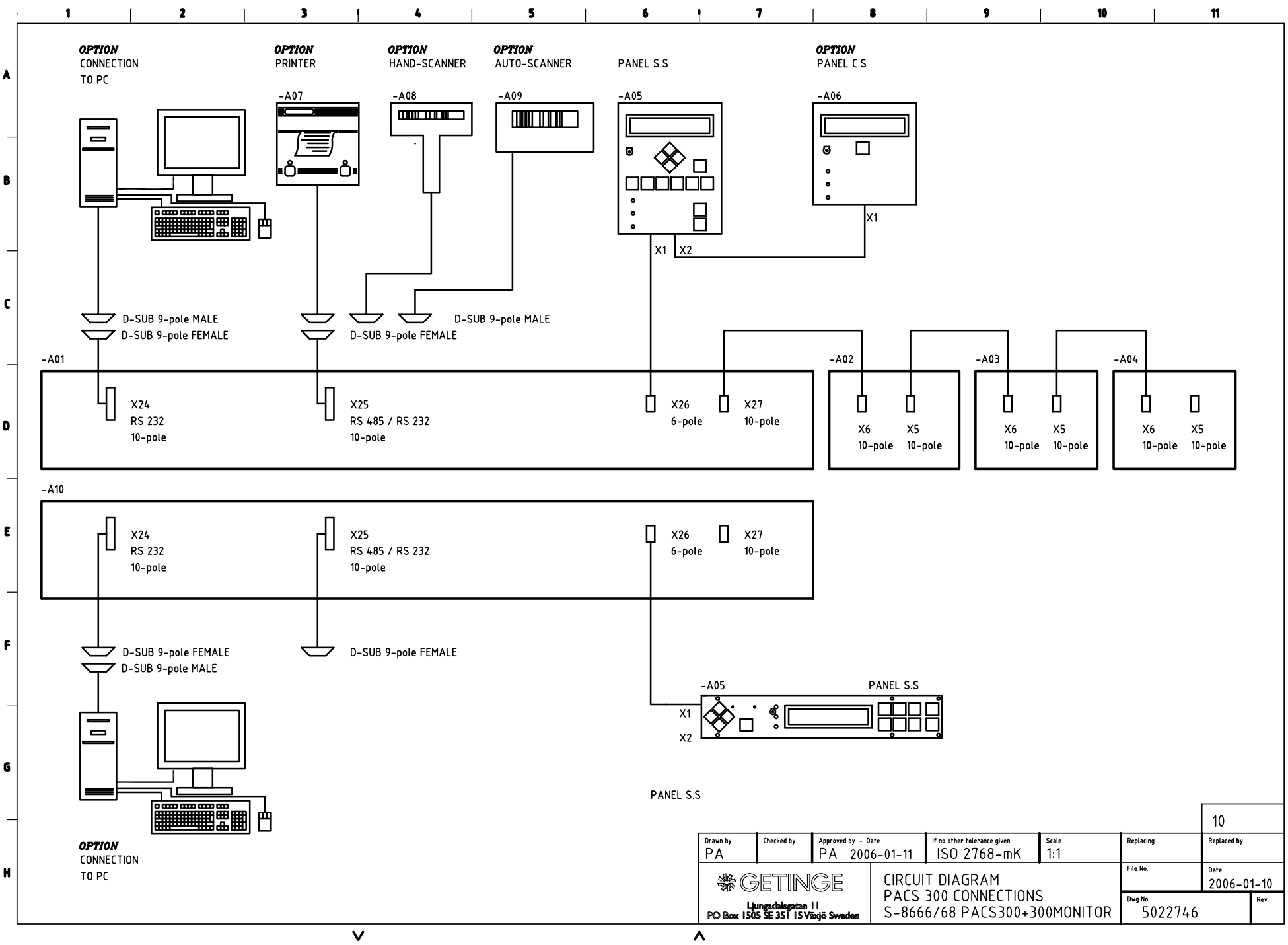
CIRCUIT DIAGRAM
CONTROL VOLTAGE 400 V, 3N+PE
S-8666/68 PACS300+300MONITOR



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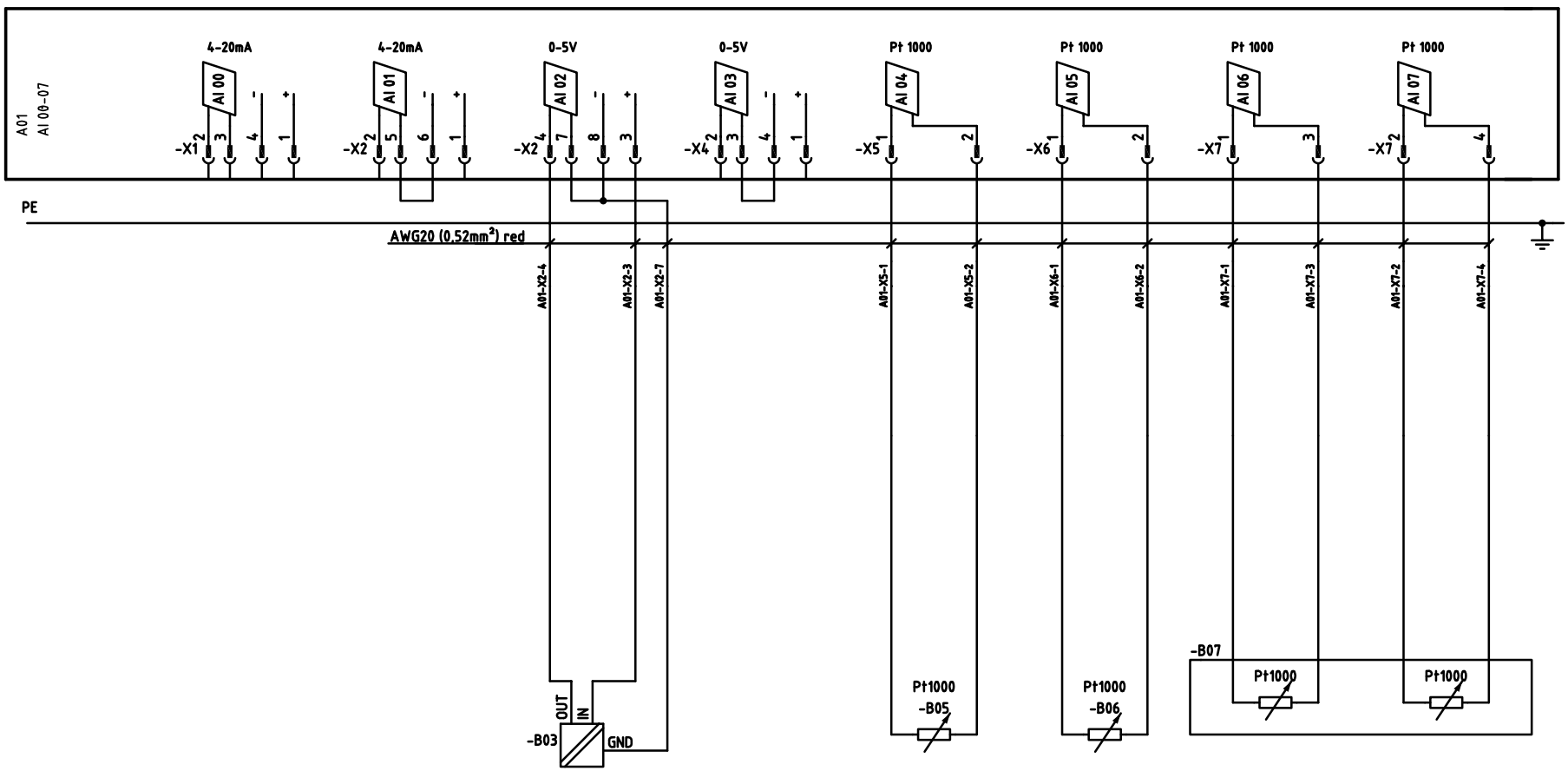
					Dwg No 5022746	Rev.	



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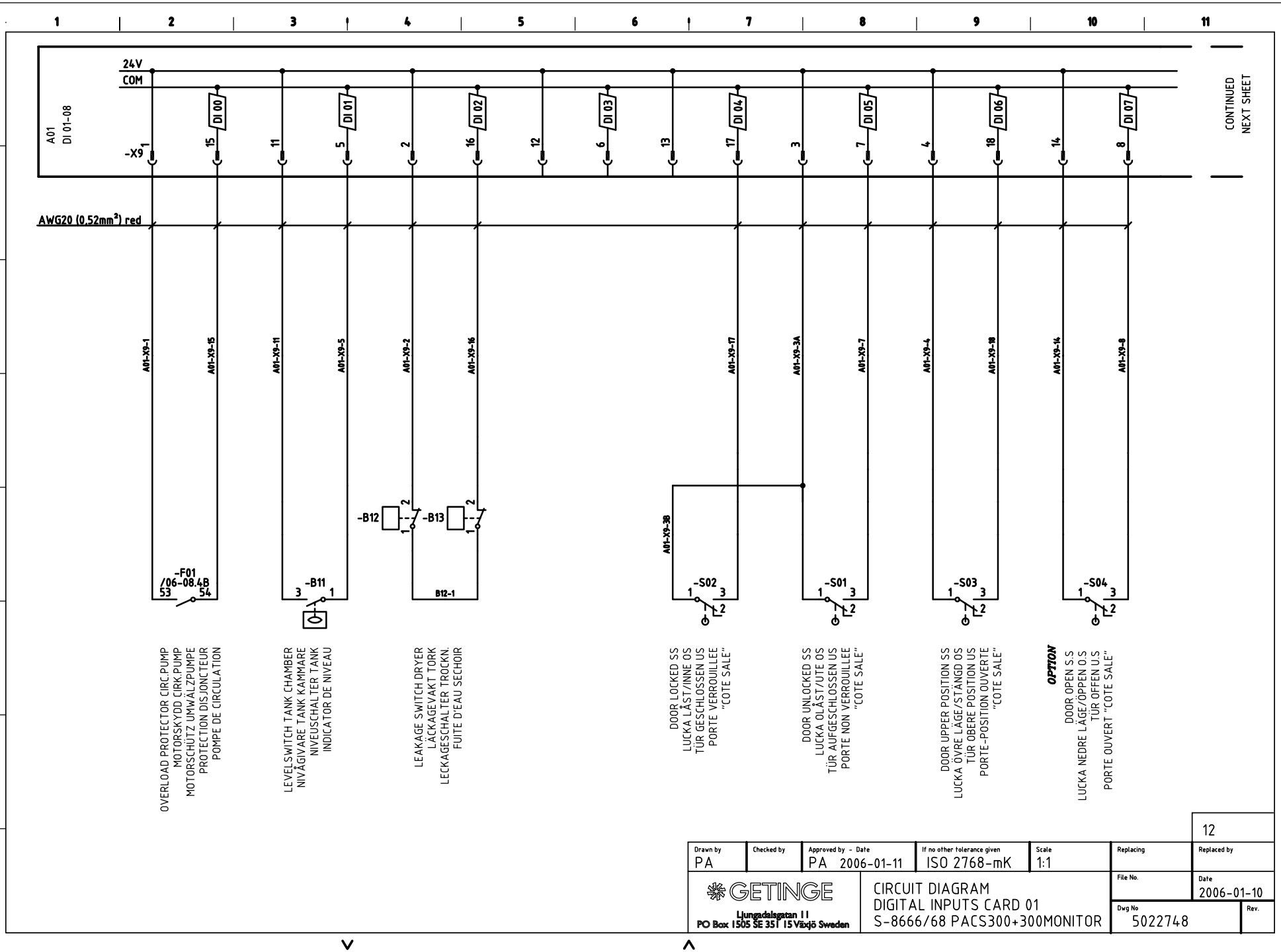
CIRCUIT DIAGRAM
ANALOG INPUTS CARD 01
S-8666/68 PACS300+300MONITOR

File No.	Date
	2006-01-10

Dwg No	Rev.
5022747	

11



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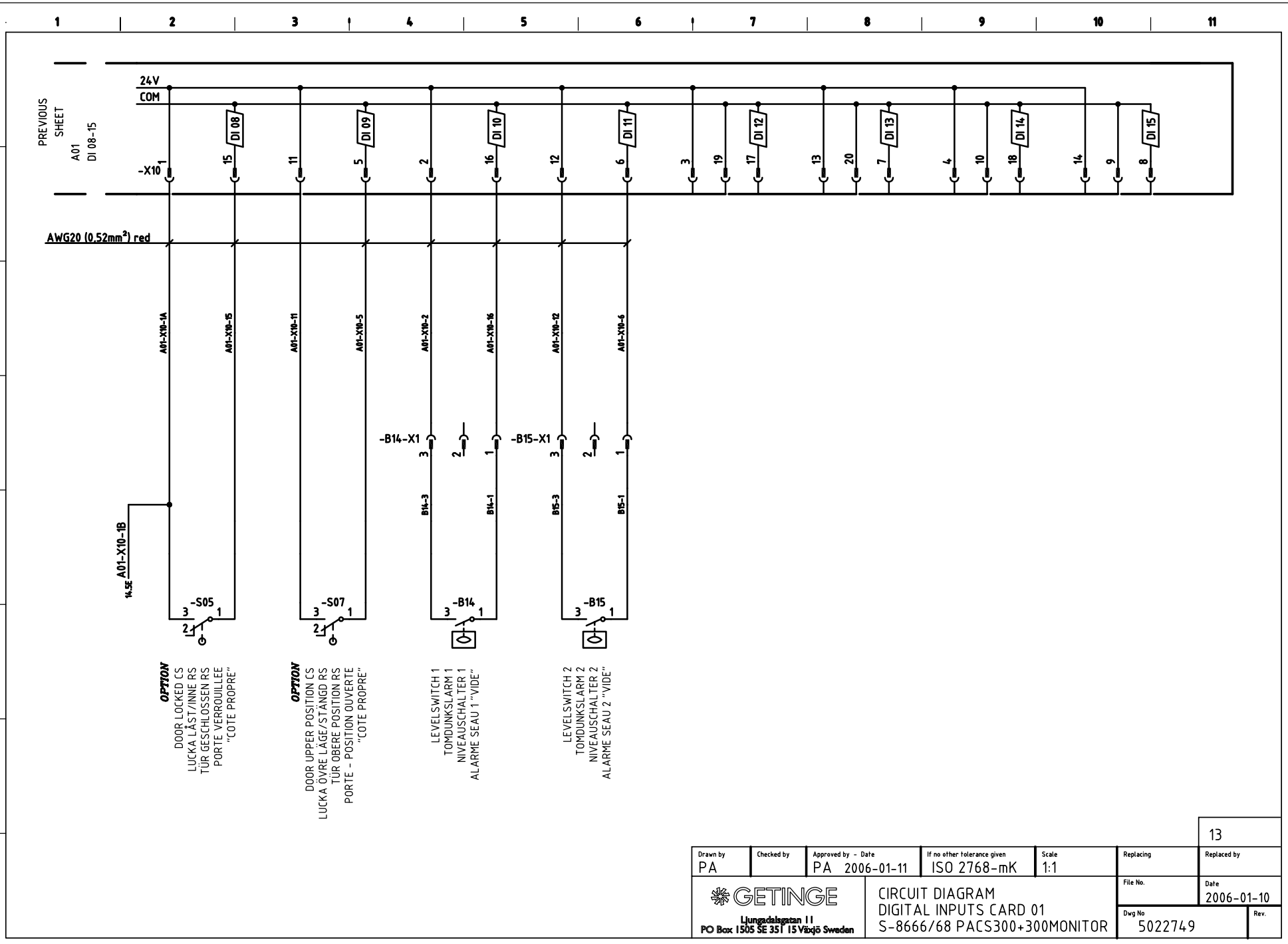
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRCUIT DIAGRAM DIGITAL INPUTS CARD 01 S-8666/68 PACS300+300MONITOR				File No.	Date 2006-01-10
					Dwg No 5022748	Rev.

12



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					Dwg No 5022749	Rev.

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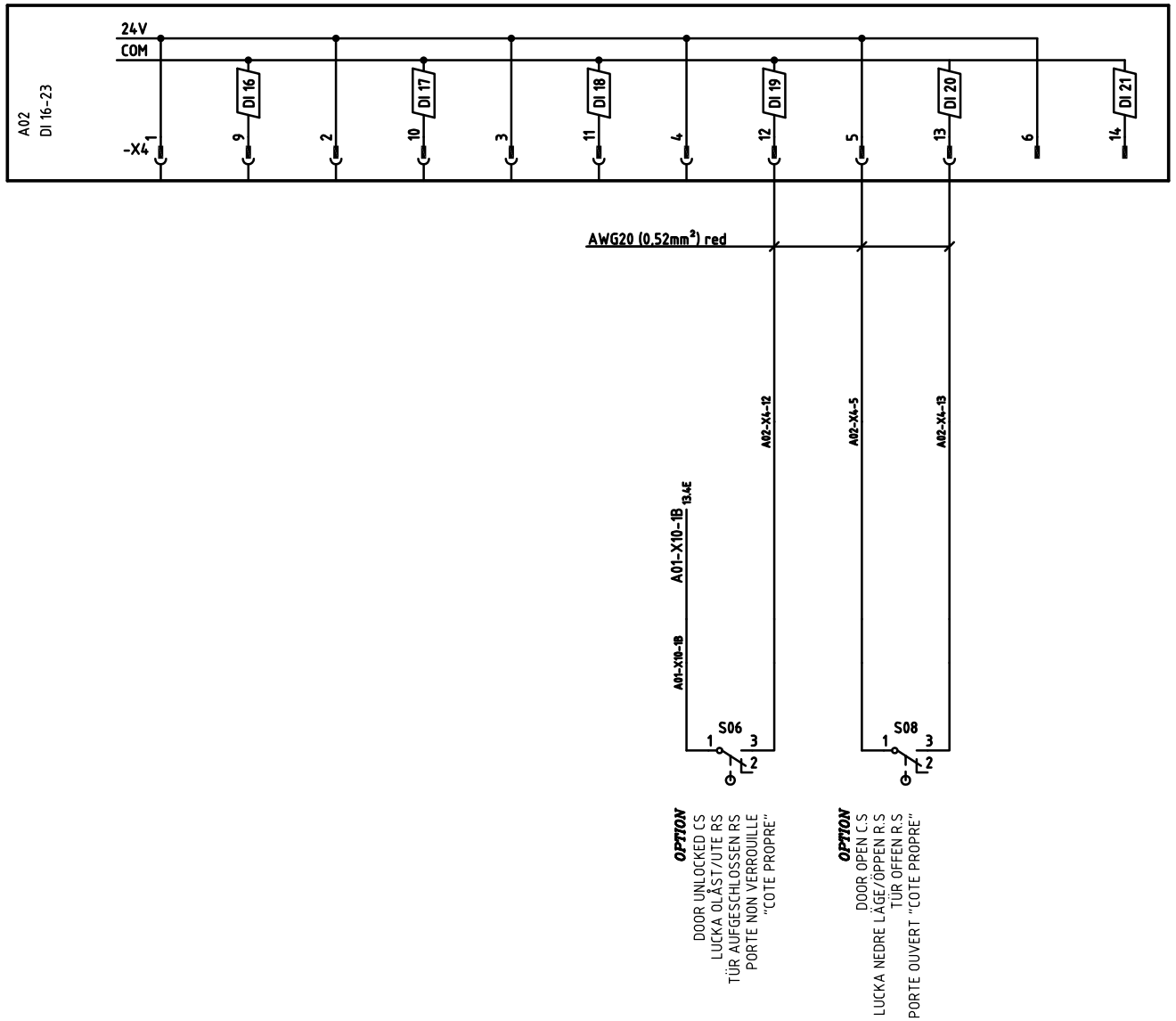

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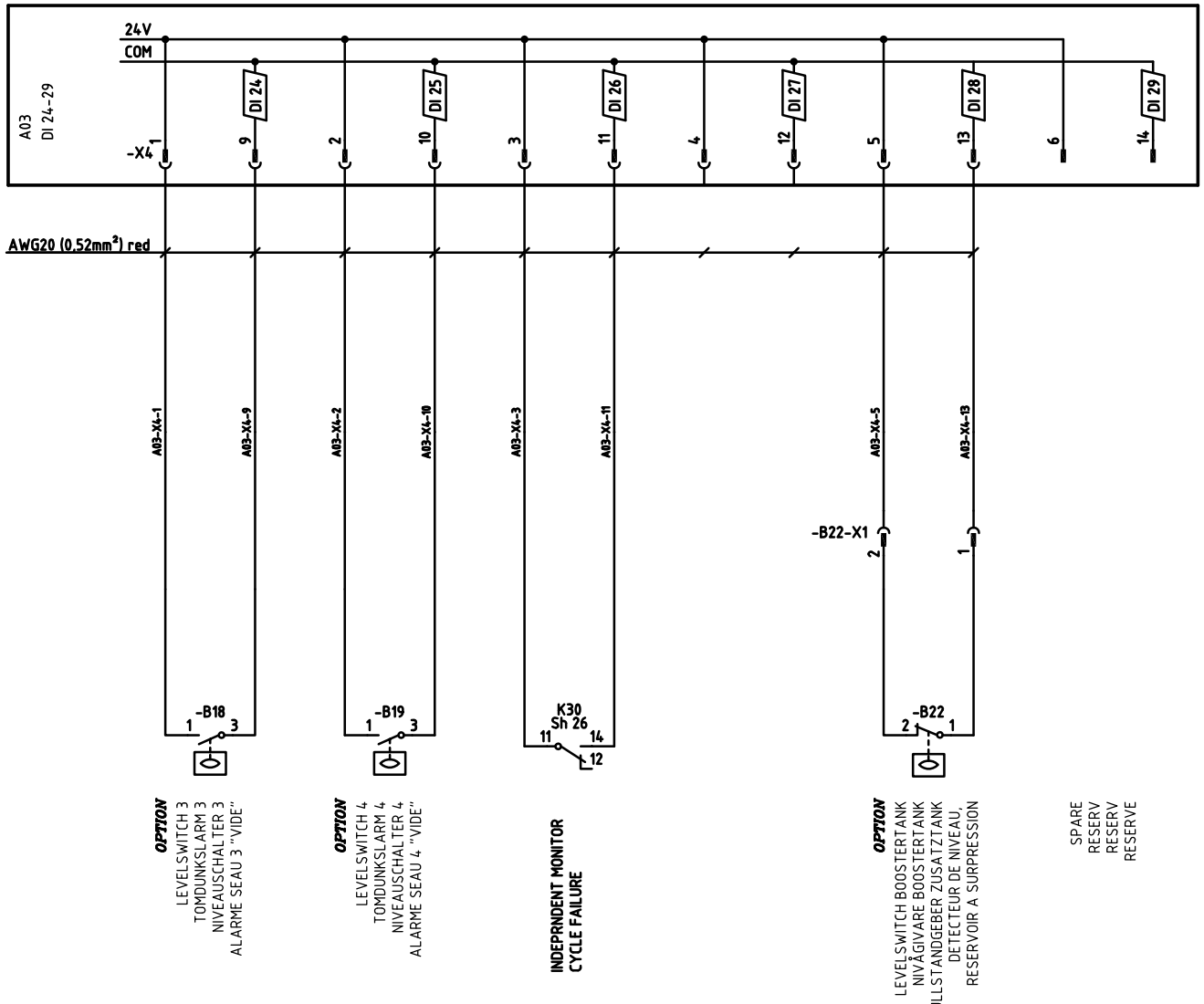
GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRCUIT DIAGRAM DIGITAL INPUTS CARD 02 S-8666/68 PACS300+300MONITOR				File No.	Date 2006-01-10	
					Dwg No 5022750	Rev.	



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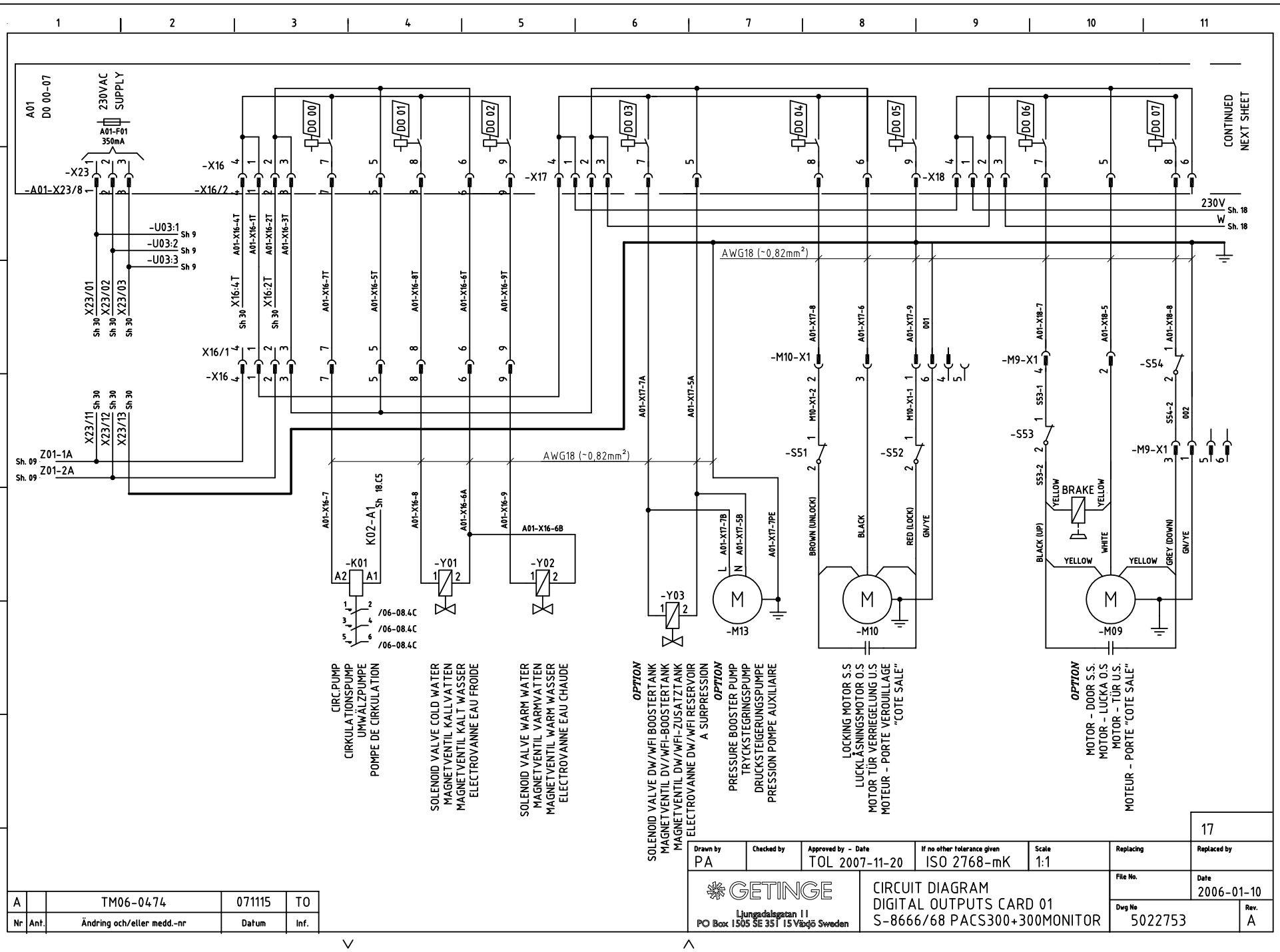
					Dwg No 5022751	Rev.	



Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
A		TM06-0474	071115	TO

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PA		TOL 2007-11-20	ISO 2768-mK	1:1		

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CIRCUIT DIAGRAM
DIGITAL OUTPUTS CARD 01
S-8666/68 PACS300+300MONITOR

File No.	Date
	2006-01-10

Dwg No	Rev.
5022753	A

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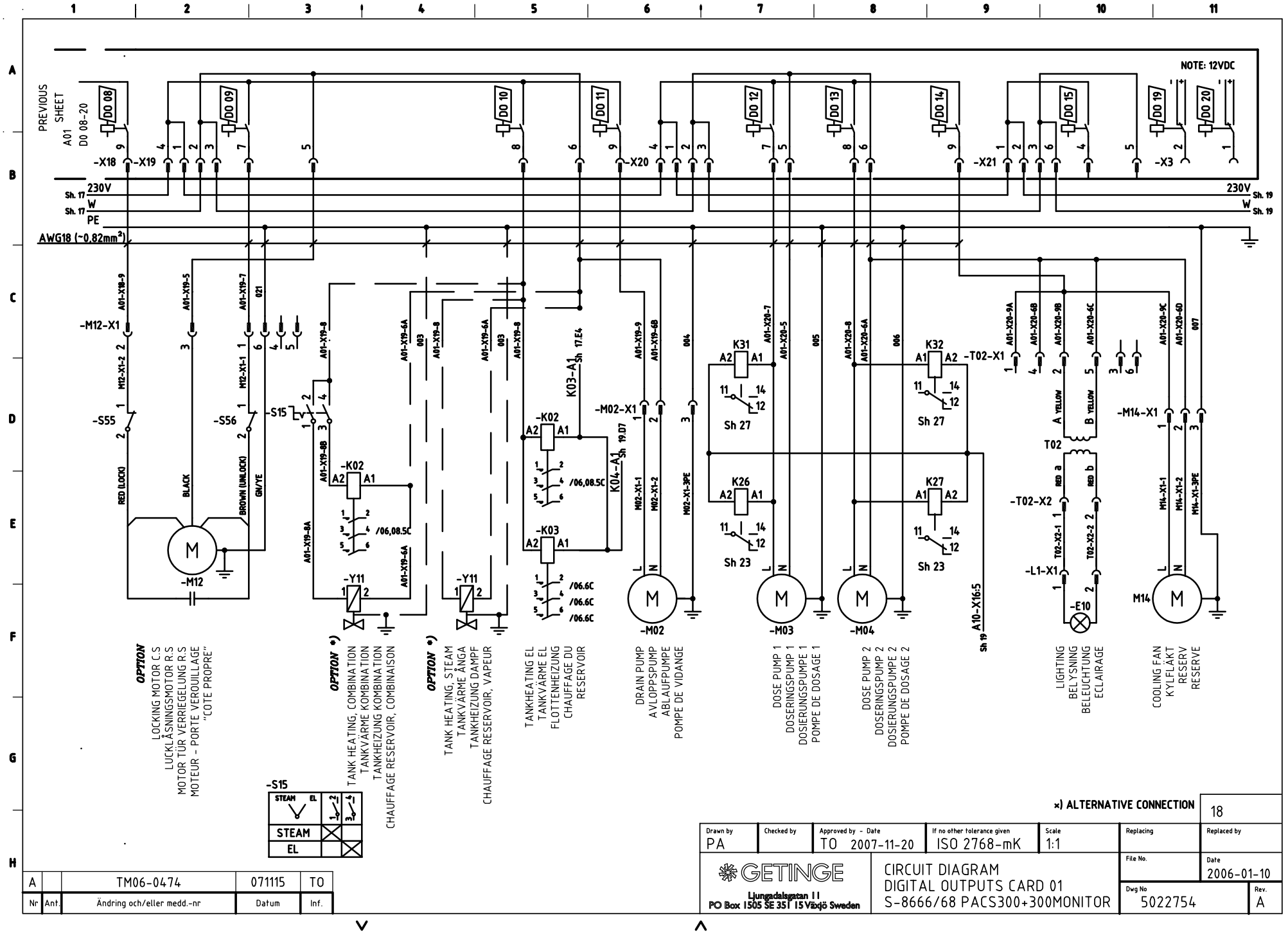

Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
A		TM06-0474	071115	TO

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PA		TO 2007-11-20	ISO 2768-mK	1:1		

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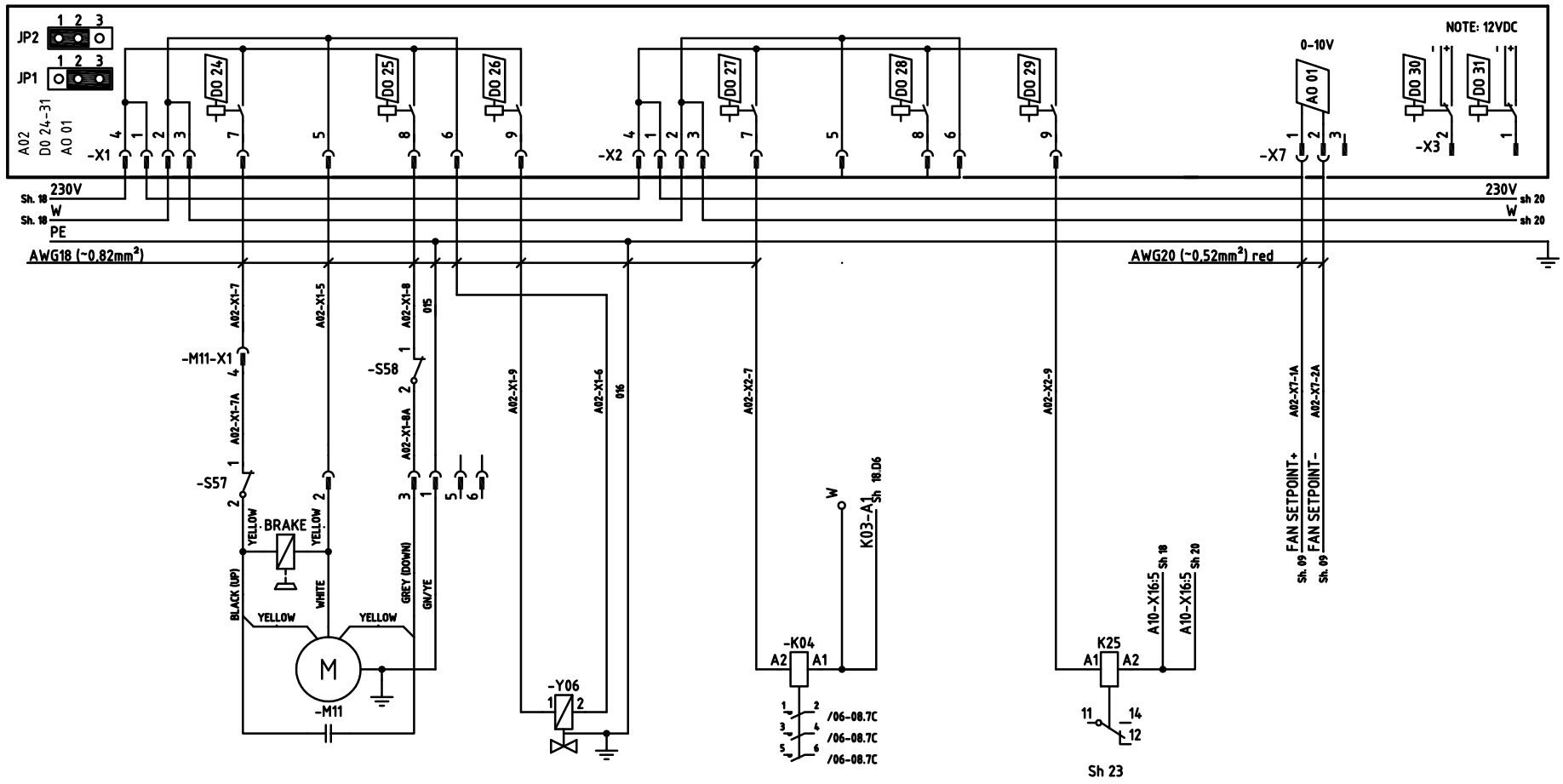
CIRCUIT DIAGRAM
DIGITAL OUTPUTS CARD 01
S-8666/68 PACS300+300MONITOR

File No.	Date
	2006-01-10

Dwg No	Rev.
5022754	A

18



Nr	Ant.	Ändring och/eller medd.-nr	Datum	Inf.
A		TM06-0474	071115	TO

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PA		TO 2007-11-20	ISO 2768-mK	1:1		

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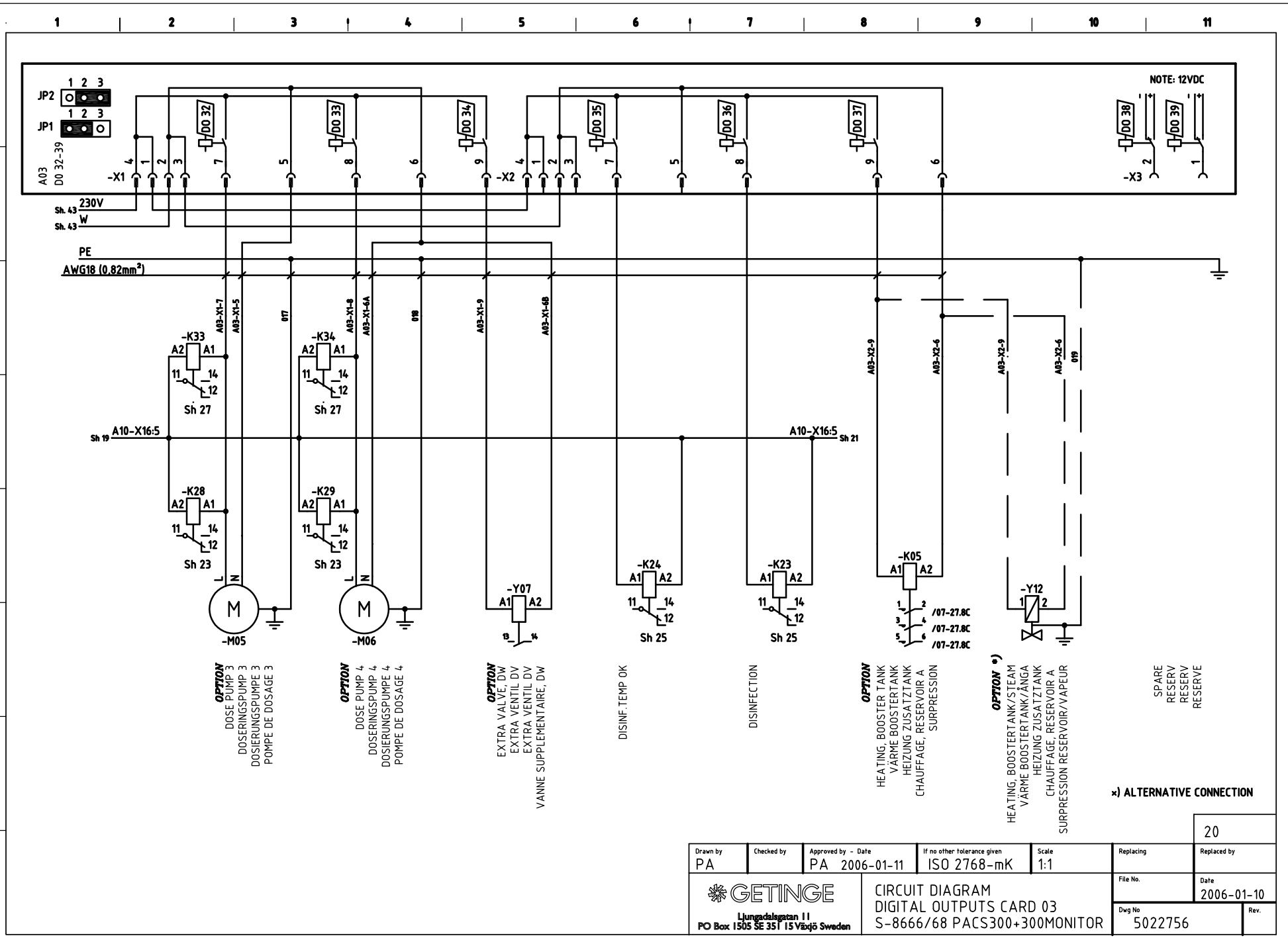
CIRCUIT DIAGRAM
DIGITAL OUTPUTS CARD 02
S-8666/68 PACS300+300MONITOR

File No.	Date
	2006-01-10

Dwg No	Rev.
5022755	A

19



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					Dwg No 5022756	Rev.

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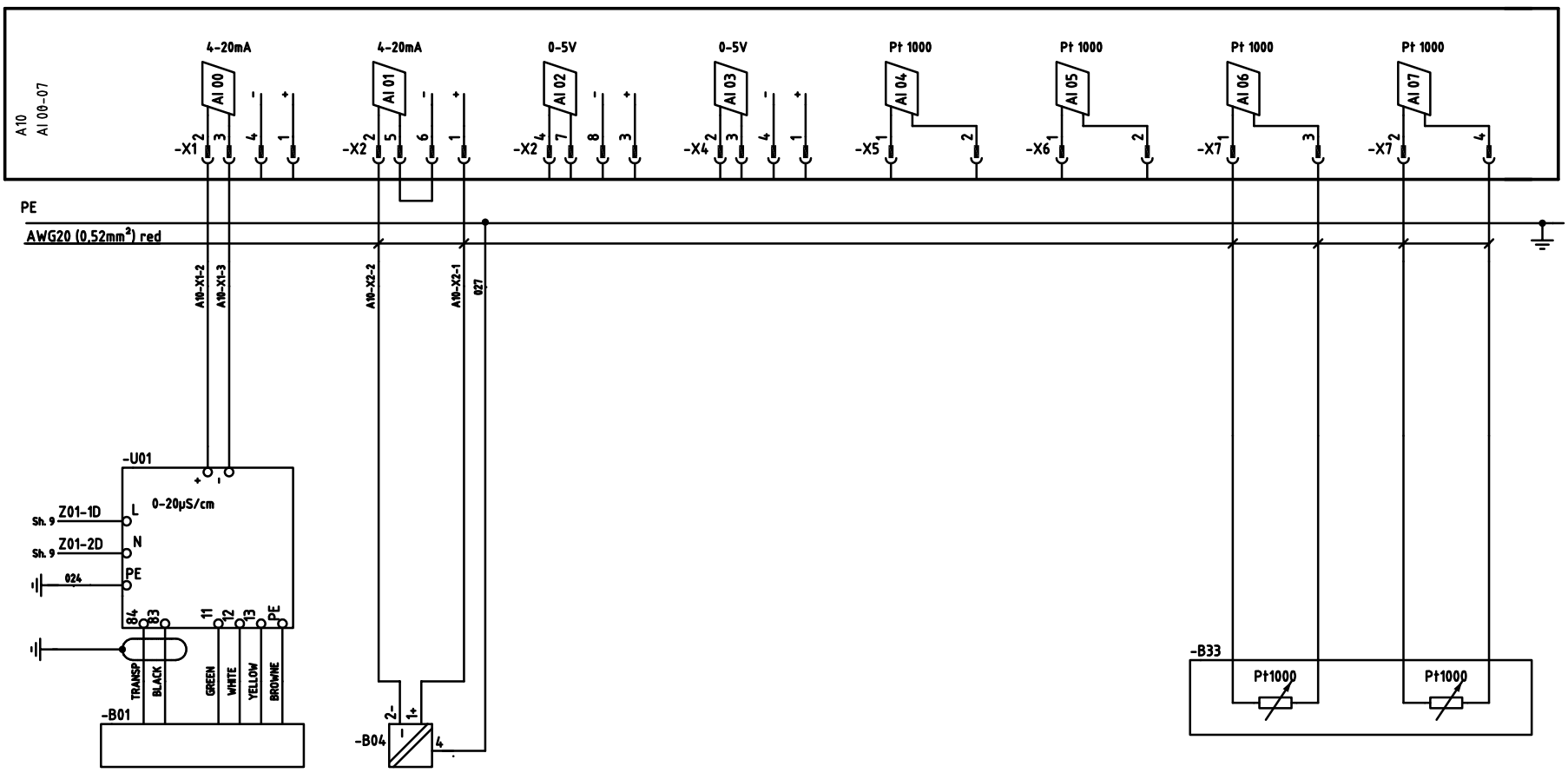
CIRCUIT DIAGRAM
DIGITAL OUTPUTS CARD 03
S-8666/68 PACS300+300MONITOR



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					File No.	Date 2006-01-10
					Dwg No 5022758	Rev.

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CIRCUIT DIAGRAM
ANALOG INPUTS CARD 10
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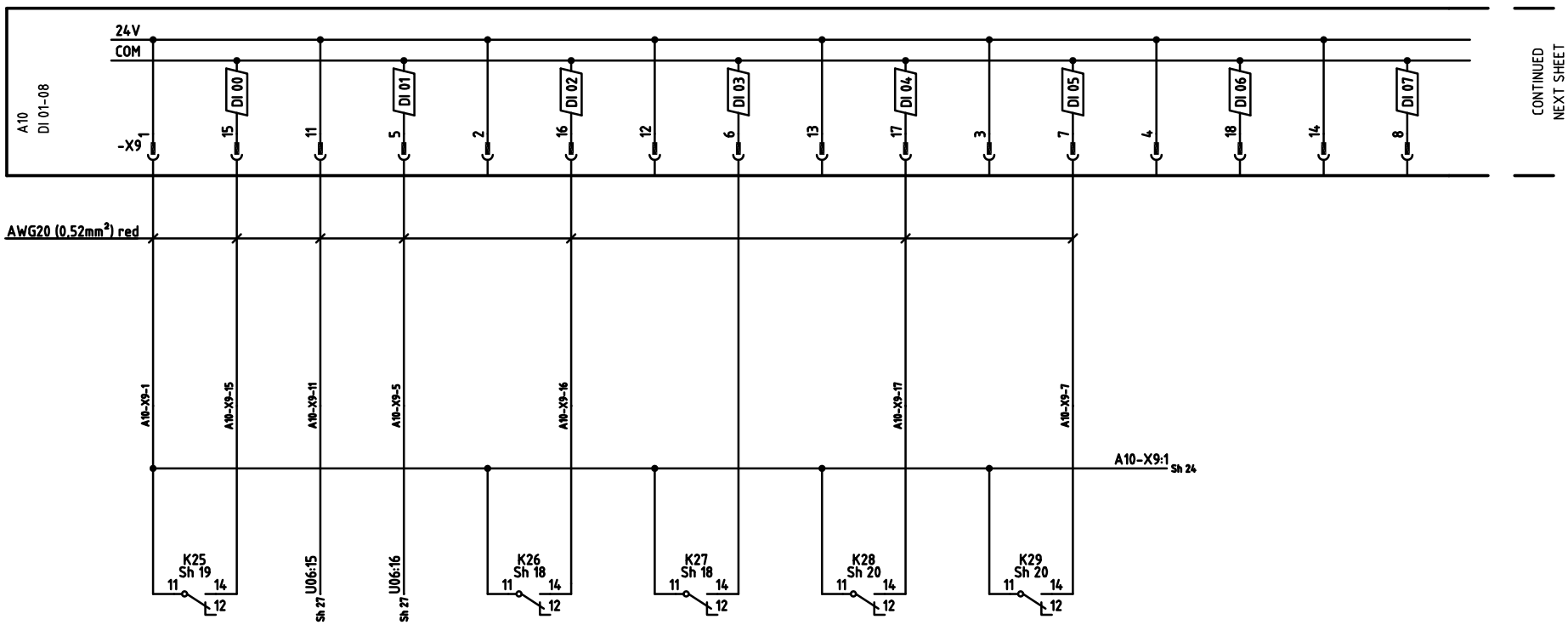

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GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRCUIT DIAGRAM S-8666/68 PACS300+300MONITOR				File No.	Date 2006-01-10
					Dwg No 5022759	Rev.

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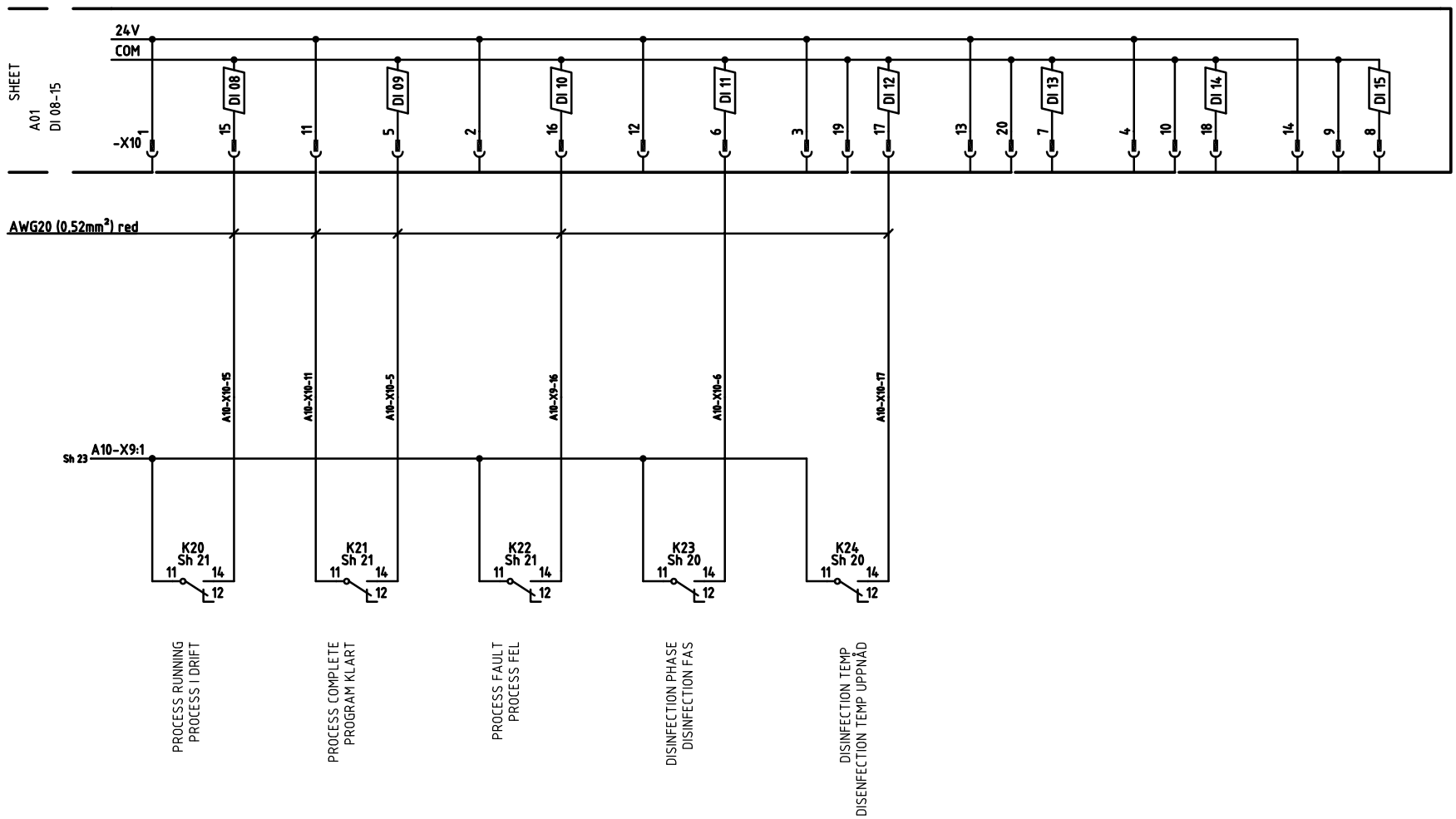

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GETINGE Ljungadalsgatan 11 PO Box 1505 SE 351 15 Växjö Sweden	CIRCUIT DIAGRAM DIGITAL INPUTS CARD 10 S-8666/68 PACS300+300MONITOR				File No.	Date 2006-01-10	
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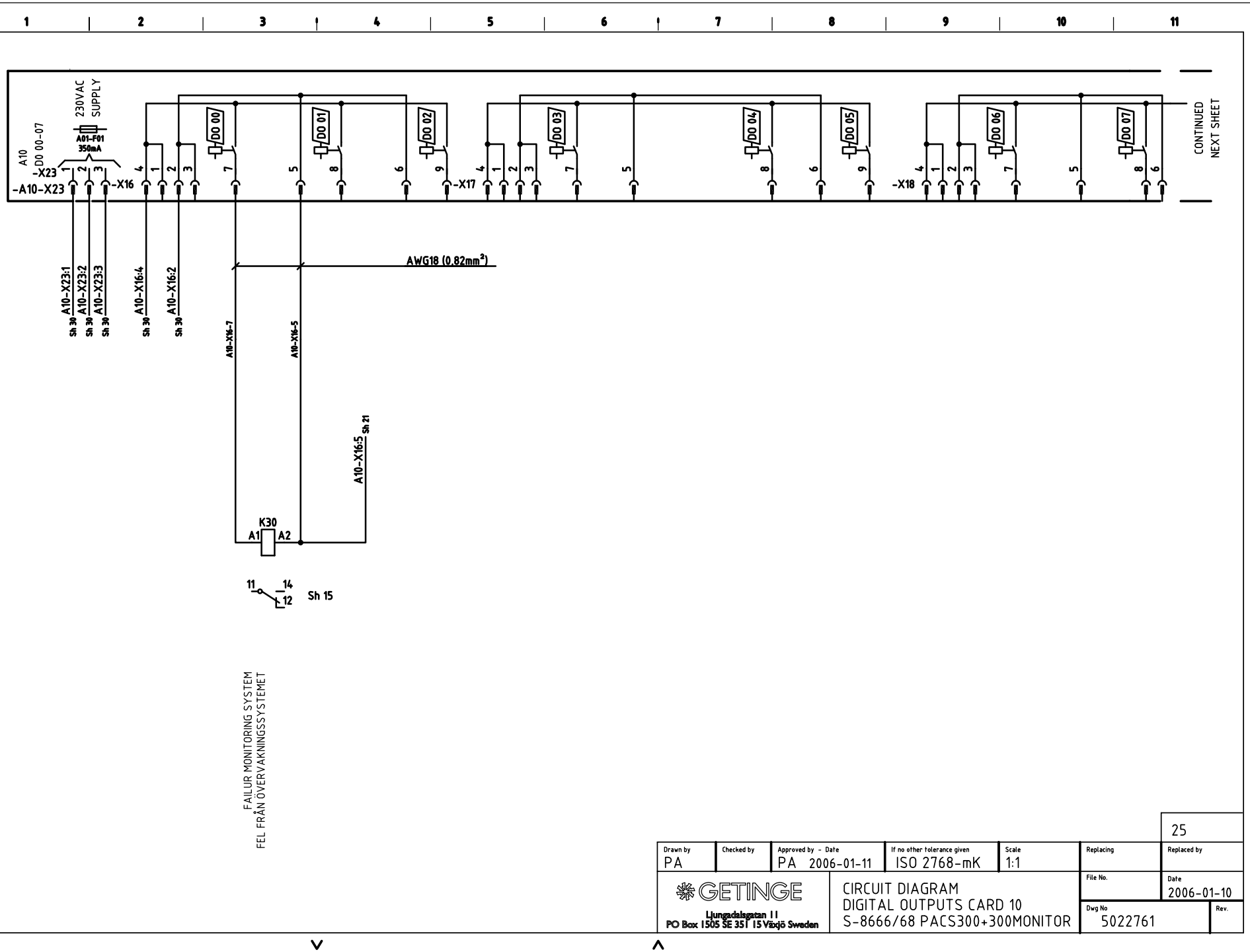

25

Drawn by	Checked by	Approved by - Date	If no other tolerance given	Scale	Replacing	Replaced by
PA		PA 2006-01-11	ISO 2768-mK	1:1		

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CIRCUIT DIAGRAM
DIGITAL OUTPUTS CARD 10
S-8666/68 PACS300+300MONITOR

File No.	Date
	2006-01-10

Dwg No	Rev.
5022761	

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