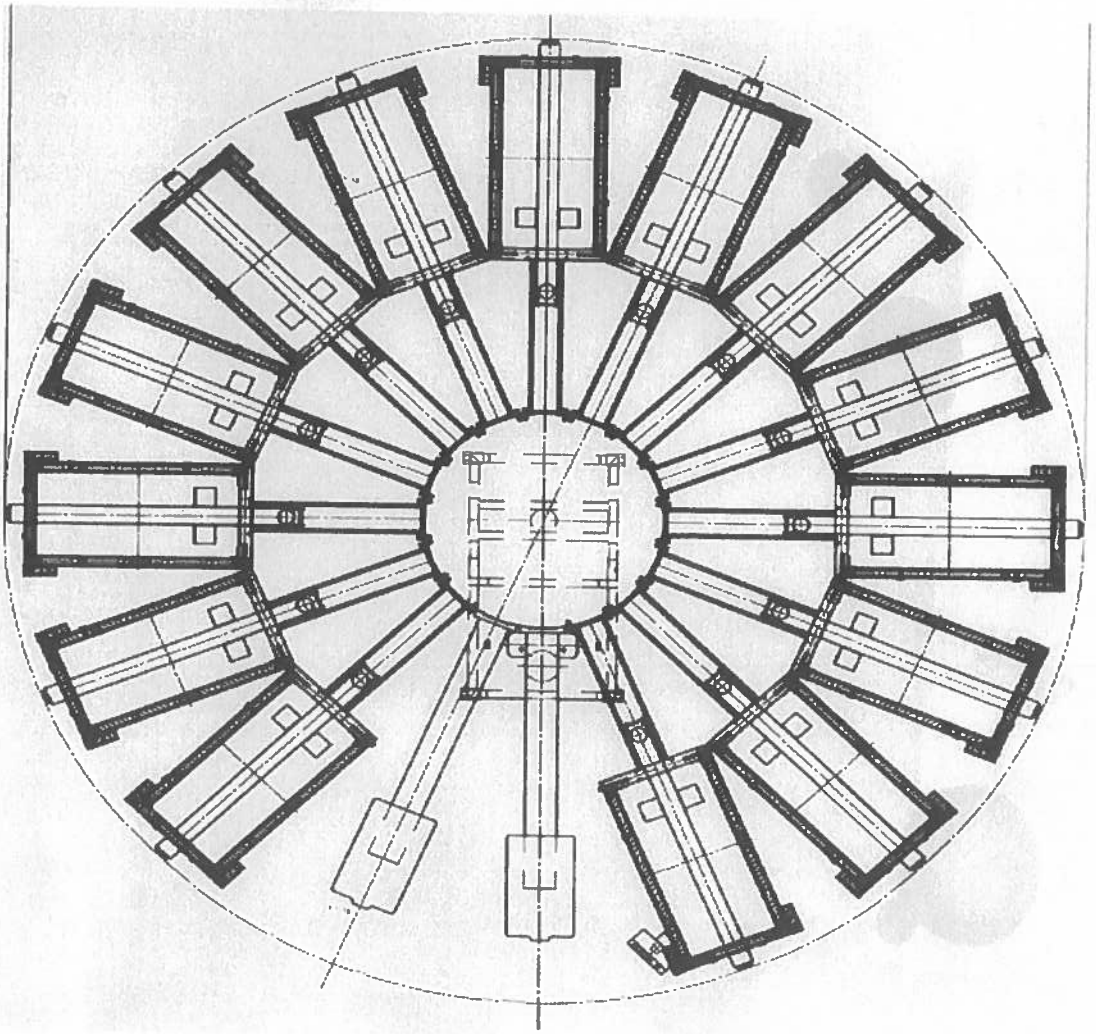
Screen Printing Machine
V 2002 EX/ Spider/ Easy
OPERATING GUIDE



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1- Safety notes:

Generalities:

Observe notes in the operating manual

The pre requisite for safe handling and trouble free operation of this machine is the knowledge of the fundamental safety regulation.
This operating manual contains the most important notes for safe operation of the machine.
The operating manual and the safety notes in particular, must be observed by all persons working on the machine.
In addition, the rules and regulations for accident prevention valid for the operating site must be observed.

Employer/ management:

Obligations of the employer/ Management

The employer/ management is obliged only to have persons working on the machine who:

- are familiar with the regulation on industrial safety and accident prevention and are instructed in the handling of the machine.
- have read, understood and confirmed by signature the safety chapter and the warning notes in this operating manual
- The safety conscious actions of the personnel will be checked by the operator at regular intervals.

Employees/ Operator:

Obligations of the employee/ Operator

Persons employed to work on the machine are obliged before commencing work:

- to observe the industrial safety regulations and rules of accident prevention.
- to read the safety chapter and the warnings in this operating manual and confirm that they have understood them by signing.

Machine:

Danger when handling the machine

The screen printing machines Schenk Spider and Variprint 2002CX have been constructed according to the latest state of the art and the recognized technical safety rules. The machine may only be used :

- for the purpose it was intended

- in perfect condition with respect to its technical safety devices.

Improper use may lead to danger to the life and limb of the user or third persons or damage to the machine or other material damages.
Faults which may affect the safety must be eliminated immediately.

Use :

Proper use of the machine:
The exclusive purpose of the screen printing machines Spider and Variprint 2002CX is the multicolour printing of textiles, synthetics and paper. Any other use of the machine will be considered as improper. The company Heinz WALZ GmbH will not be liable for damages resulting from such use. Proper use also includes

- observing all the instructions in the operating manual
- carrying out all inspections and maintenance work

Warranty and liability:

Warranty and liability.
The « General Terms of Sale and Delivery »of the company *Walz GmbH Textilmaschinen* apply systematically. These are available to the operator at the latest since concluding the contract. Warranty and liability claims in the event of personal injury and material damages are excluded if these are due to one or more of the following causes:

- improper use of the machine
- improper assembly, commissioning, operating and maintenance of the machine
- operation of the machine with defective and/or non functioning safety and protective devices
- failure to observe the instructions in the operating manual with respect to transport, storage, assembly, commissioning, operation and maintenance of the machine
- unauthorized constructional alterations to the machine
- unauthorized alteration of the drive condition(Performance etc.)
- poor monitoring of machine parts which are subject to wear
- repairs improperly done and/or use of non original or non adequate spare parts
- Catastrophes due to the influence of foreign bodies and force majeure.

1.1- Safety Regulations :

Symbols and notices :

Explanation of the symbols and notices
The following designations and signs are used for danger or warnings:

DANGER

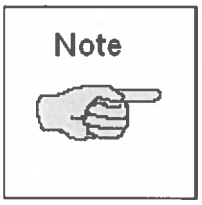
This symbol means an imminent threat to the life and health of persons.
Failure to observe these instructions may result in serious damage to the health and even potentially fatal injury.

WARNING

This symbol means a possible threat to the life and health of persons.
Failure to observe these instructions may result in serious damage to the health and even potentially fatal injury.

CAUTION

This symbol means a potentially dangerous situation.
Failure to observe these instructions may result in minor injury or material damage.



NOTE

Under this symbol, you will receive hints, tips and useful information.
They help you to use the machine functions correctly and optimally.

1.2- Basic safety precautions:

Avoid wearing loose clothing, non attached long hair, neck ties etc., when operating the machine as these can easily become entangled in moving parts (Rotating parts, squeegees cylinders etc.,).The wear of safety shoes is recommended.

Do not operate the machine if you are sick, excessively tired, under the influence of alcohol or prescription drugs.

Any person not directly operating the machine should stay away from the equipment as not to distract the operator or accidentally move control element. Avoid talking to the operator while the equipment is in operation.

During any set-up adjustment, maintenance work or cleaning of the machine etc., it is imperative that the main electrical and pneumatic power supply be disconnected to avoid accidental operation and resultant injury. This is particularly important when more than one person is involved in such task.

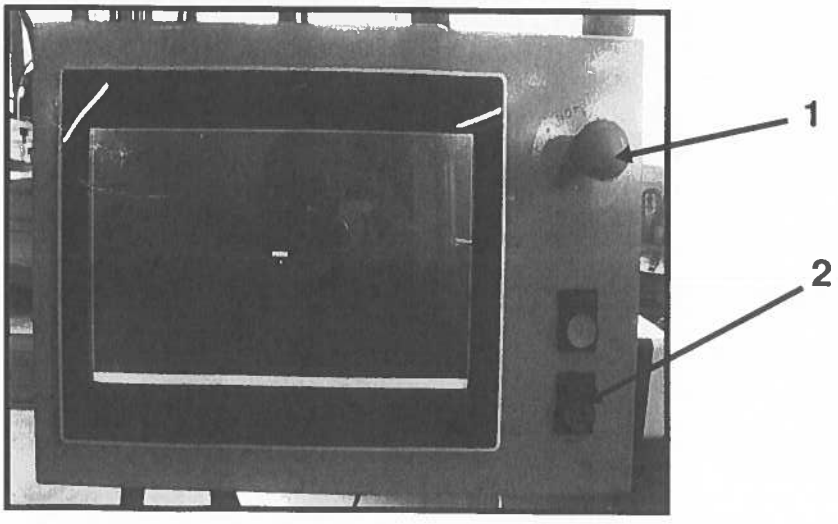
DANGER ! DO NOT ENTER WITHIN THE ROTATING INDEX TABLE AREA UNLESS ALL SAFETY PRECAUTIONS HAVE BEEN OBSERVED.

1.3- SAFETY DEVICES INSTALLED ON THE MACHINE :

The machine is equipped with different safety devices:

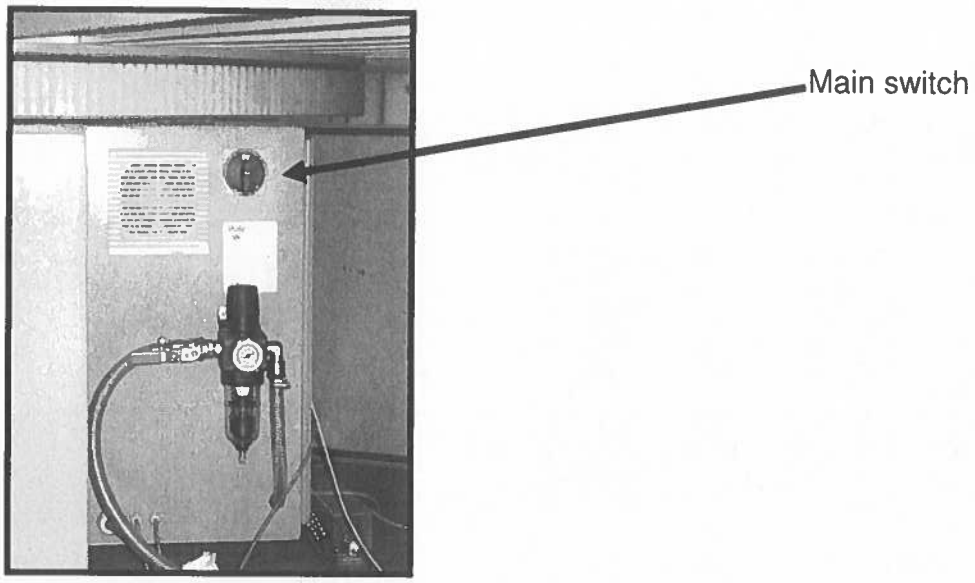
On the operator control:

- **1**- Emergency stop
- **2**- Red press button "Control off". When pressed, he control power supply is deactivated.

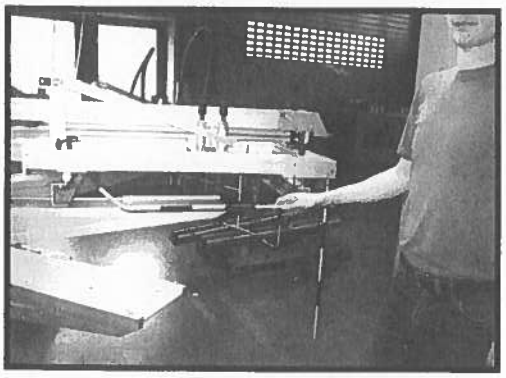


On the base of the machine:

- The main switch enables to cut the power supply of the machine. It cannot be used as emergency stop, but before any electrical, mechanical or pneumatic repair, before opening any cover, the mains power supply of the machine should be turned off by turning the mains switch to the position "0".



Around the machine:

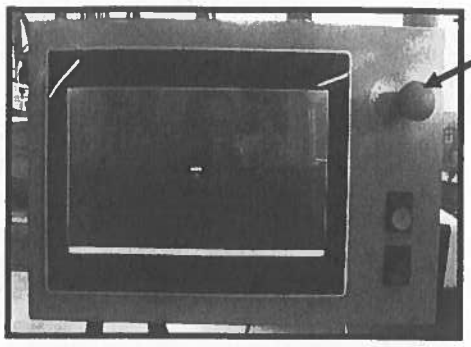


Each print station is equipped of one or two safety bars. Before entering into the machine rotating indexing table area, at least one of the safety bars has to be open. When one or more safety bar are open, the safety modus is activated, no rotation movement is possible.

CAUTION: Before any maintenance or cleaning of the machine, turn the main switch off instead of opening a safety bar.

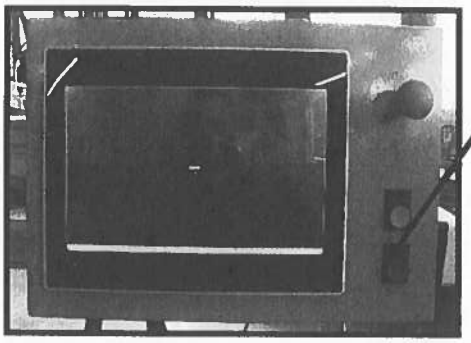
1.4- Check the different safety devices:

Once a month, the function integrity of all the safety devices should be check. Proceed as follows:



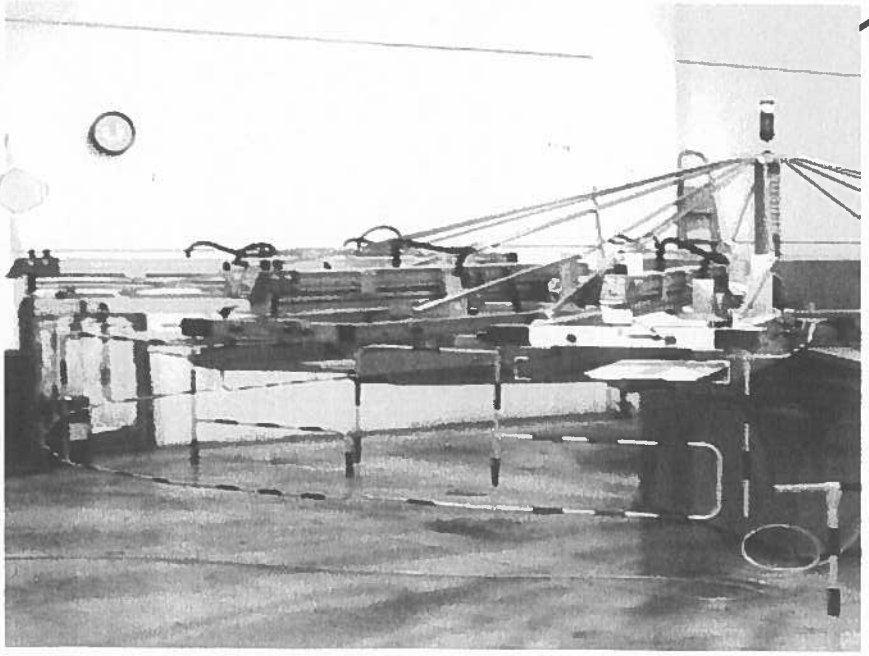
Emergency stop:

Action: Press on the emergency stop button while the machine is running in automatic mode.
Effect: The machine stops instantly, on the operator interface the following warning appears:« Emergency stop activated »
Restart: Unlock the emergency stop by turning it to the left. The warning on the interface will disappear, drive the machine to its start position (See page 11)

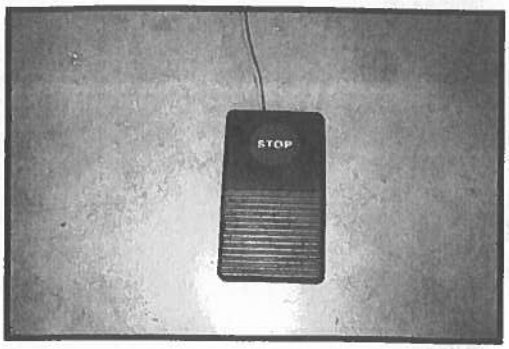


Control OFF press button :

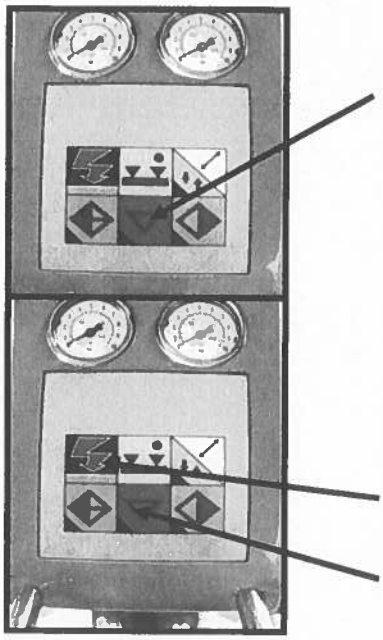
Action : press on the "Control off" press button while machine is running in automatic
Effect : the main control power supply is deactivated, the machine stops instantly, the operator interface is switched off.
Restart: press on the button "Control ON" and start the machine as depicted on page 11.



Each printing station is equipped with at least one safety bar.
Action: Activate successively all safety swivelling bars.
Effect: The machine stops instantly, respectively, the red lamp on the print station actually open will shine and the following warning will appear on the operator interface: "Safety door open "
Restart: close the safety bar, press the RESET button on the operator interface or on one of the « SCHENK » logo situated on each control pad in front of each print station.



-On the floor in front of the machine is a STOP foot pedal:
Action: While the machine is running in automatic mode, press once on the stop pedal.
Effect: The machine stops instantly..
Restart : Press on the start pedal or on the white arrow on the operator interface.



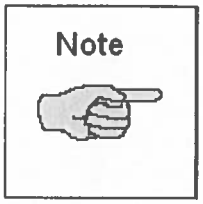
-On each printing station is a small control pad: the pad with a red triangular symbol:
Action: While the machine is running in automatic mode, press on the pad with a red triangular symbol situated on each control pad on each print station.
Effect : The machine stops at the end of the actual printing cycle.

Restart: Press once again on the logo SCHENK pad and red triangular symbol at the same time, the machine will turn one segment and start strait away in automatic.
SCHENK
+
RED BUTTON

If during the check up, one of the safety devices do not react the way described on the above description, it is important to proceed as follow:

- Stop the machine and turn mains power supply switch OFF.
- Lock mains power supply switch
- Tag a shield on the disconnect switch, stating that the power supply should not be switched ON, under no circumstance, to avoid an accidental reactivation of the switch.
- Contact as soon as possible the WALZ GmbH service department.

1.5 – Informal safety measures:



The operating guide has to stay on site where the machine is installed.
Attached to it should be the general and local rules of accident prevention and environmental protection. These rules have to be respected and applied.

1.6 - Operator training

Only the machine operator trained to use the machine is allowed to manipulate the operator interface, set the printing parameters, use the manual and automatic functions and print on the machine.
The competence of the machine operator has to be defined clearly by the employer.
Any employee not completely trained should not be allowed to work on the machine with out the supervision of an experienced operator.

1.7 – Controls and machine settings

Only a fully qualified machine operator should be allowed to use the different machine functions and/ or change any production parameters using the operator interface.

1.8 – Safety measures during production:

The running of the machine is authorised only when all the safety devices are in perfect working condition.
Before starting the machine in automatic mode, be sure that no object, piece of equipment are in contact with any moving part. Before starting the machine in automatic mode be sure that no person is in contact with any moving part of the machine, that no one is in the rotating table area, that no one is actually adjusting any part on the machine or under the printing station.

Inspect daily the machine for any damages or loose parts, check visually all safety devices.

1.9 Risks due to the electrical power supply

Any installation or repair or maintenance work, on any electrical parts of the machine has to be carried out exclusively by a qualified electrician.
The access to any electrical cabinet on the machine is authorised exclusively to a qualified electrician.
Before starting any repair or installation on the electric parts of the machine, switch main switch OFF and/or disconnect the plug of the socket.

1.10 Special danger areas

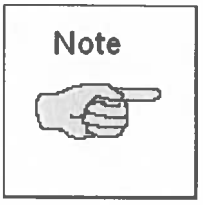
The Schenk screen printing machines have been designed and manufactured according to the latest state-of-the-art and knowledge. However, there are still some risks and areas of danger, which cannot be totally ruled out.

Danger
Do not duck under the safety bar to get to the machine. There is a risk of serious and even fatal injury when the machine rotates.

Caution
Clamping levers and screws need to be released and fixed for setting work. Make sure you use the suitable tools and never use force, you could injure yourself or damage the machine.

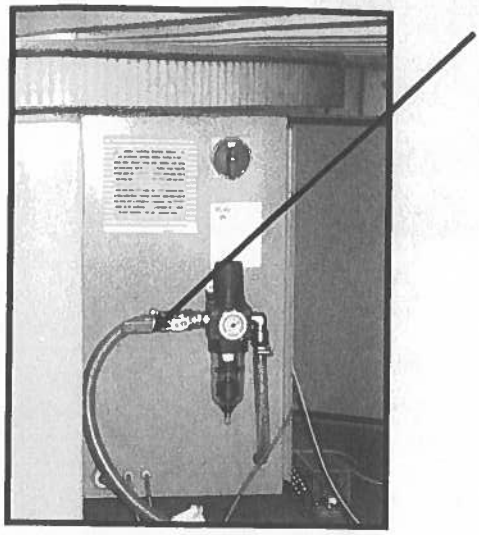
1.11 – Transformations, changes on the machine

It is no allowed to do any modification on the machine without the written consent of the company Heinz Walz GmbH. This interdiction includes any welding on any part of the machine.

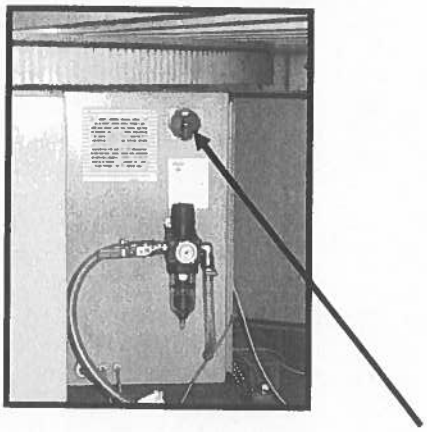


Note
For any repair use only original spare parts, particularly for any electrical or mechanical parts of the safety devices.
The use of non original or non compatible parts will not guaranty an optimal function.

1- START THE MACHINE

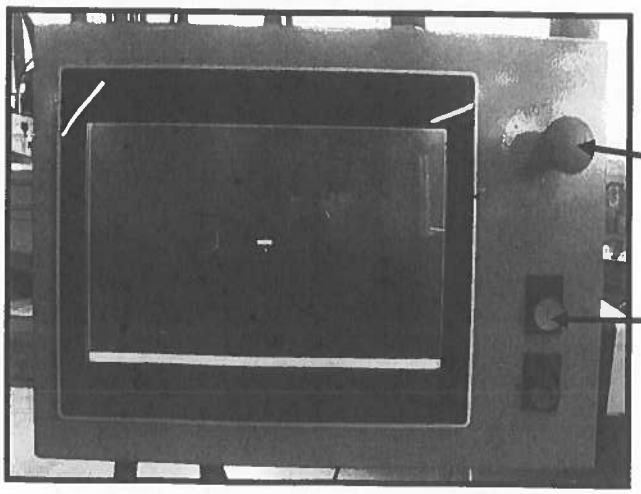


Turn the main pneumatic supply ON, by rotating the manual valve from the vertical position to the horizontal position.
Check the air pressure, the working pressure value is of 8 bars.



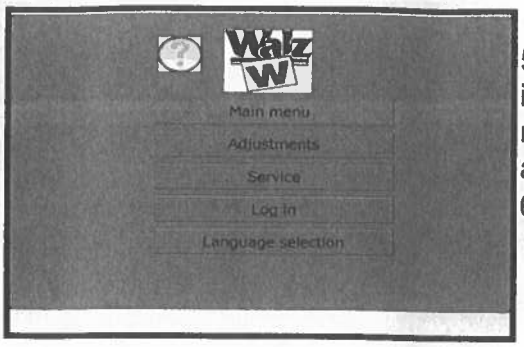
Main switch

1. Turn the main switch to the position « **I** »
2. Check that the emergency stop is not activated, if it is the case, turn it to the left to unlock it.
3. Press the button "Control ON"
4. Now the PLC is on. The PLC will take one minute to load its program; the operator interface is on, but not in function until the PLC program is fully loaded.

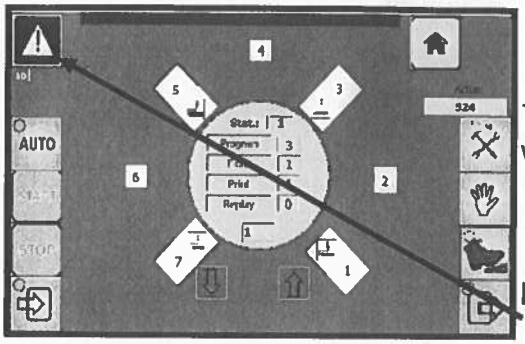


Emergency stop

Control on



5. When the PLC's program is loaded, the operator interface is in function, the red lamp on top of the machine shines. On the operator interface this display appears.
6. Press on the pad **"main menu"**



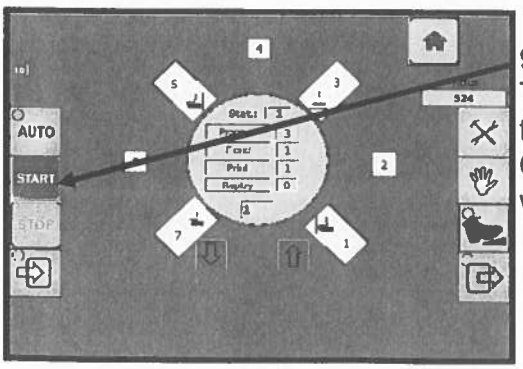
7. In the **Main Menu** display press on the blinking warning to access the warning/ error menu.

Blinking warning symbol in case of error or warning

8. Check the alarms, the following warning is displayed:

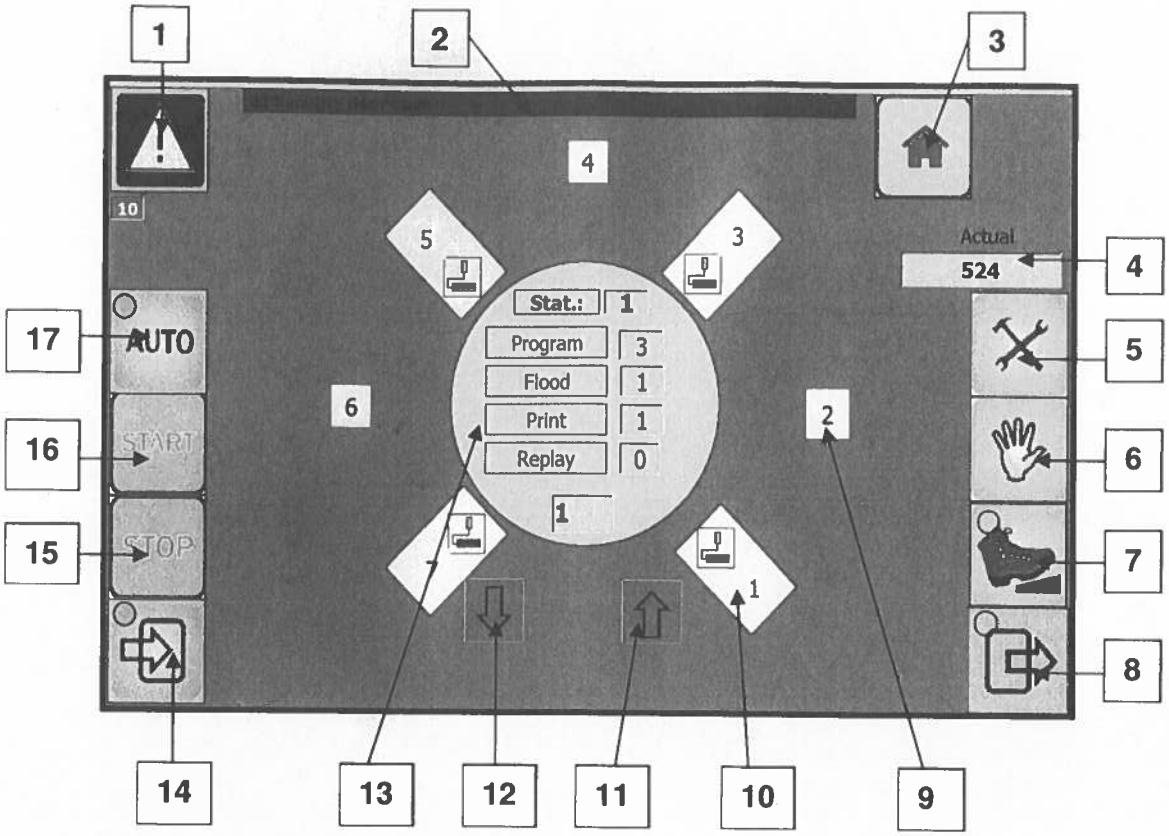
«Lift/ Rotation not in position. » meaning that the two axis are not in starting position.

In case the warning **"safety door open"** is displayed, check and close the safety bar and press on the **Reset** button.



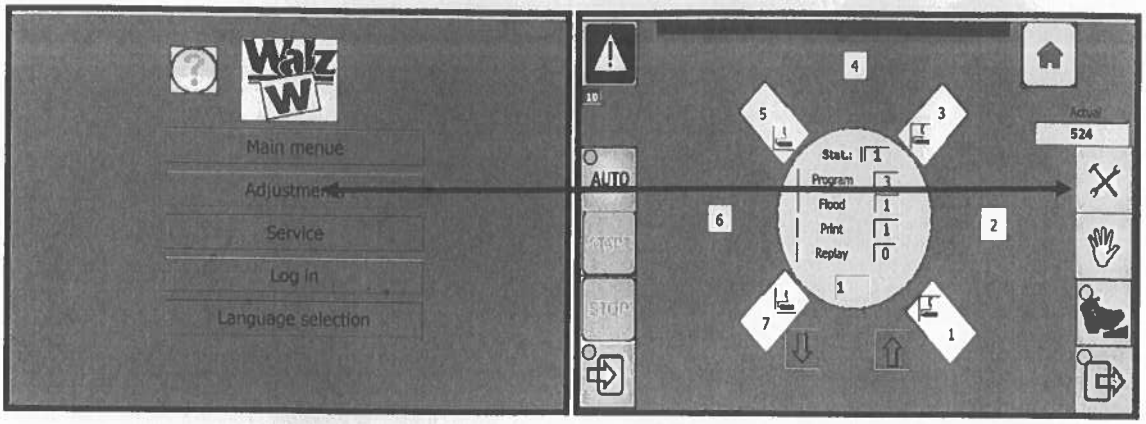
9. Press **on "START"**
The lift axis will run in starting position, then the rotating table.
Once the axes are in position, the machine will stop. No warning or alarm should appear on the display.

"Main Menu display" functions:

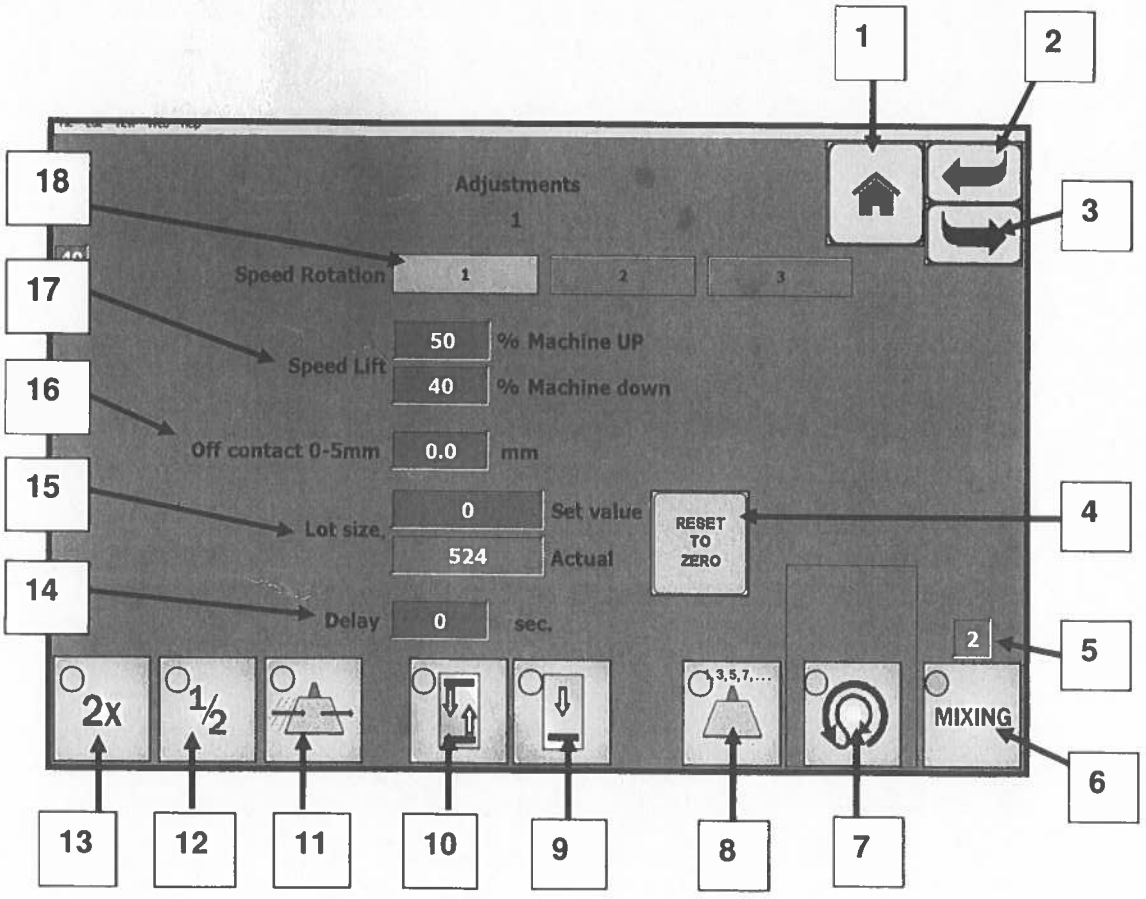


1- Access to **"warnings and errors menu"**.
2- Description of the latest warning or error
3- Access to overview display
4- Actual piece count
5- Access to **"adjustment"** menu
6- Access to "**Manual functions**" menu
7- Activation of the **foot pedal**. By activating this function the machine will start only by pressing the start foot pedal. One pedal impulse/ one print cycle. Deactivation possible only when in stop status.
8- Activation of the **"unload function"**. By pressing this pad, the machine will start deactivate one station after another until stop.
9- Identification number of the station. In this case the station number two is free.
10- Identification number of the station. In this case the station number one is à printing station activated in print modus.
11- Loading pallet
12- Unloading pallet
13- Access to the stations configuration menu. Pressing this circle enables the setting of parameters and configuration of each individual station.
14- Activation of the **"Load function"**. By pressing this pad, the machine will activate one station after another.
15- Stop. By pressing this pad, the machine will stop until the actual printing cycle is over
16- Start. By pressing this pad, the machine will start printing
17- Access to the automatic menu.

« Adjustments» menu:



You can access the menu "Adjustment" by pressing one of these pads.

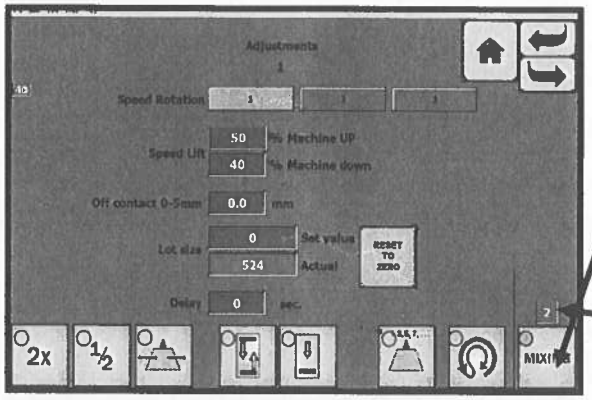


1- Return to main overview menu.
2- Return to previous page
3- Go to next page.
4- Reset to zero the lot size amount.
5- When the Mixing program is active: we can set here the amount of full rotations comprised in one Mixing production cycle. It can be 2, 3 or 4.
6- Activation of the **"Mixing function"**
7- Activation of the **"Return"** function.
8- When this function is activated, **only every second pallet will be printed**. This function enables the use of big pallets fixed on every second pallet arm, and the use of all printing heads and flash cure necessary.

9- When this function is active, all print heads set with program 2 will always flood as last squeegee movement.
10- The movement flood and print will be interchanged.
11- When this function is active, the pallet will only turn, without printing, enabling a **warm up** of the pallet surface. By pressing the "Load function" the machine will start printing
12-**Half index** function
13-**Double index** function
14-Setting of the **delay** time between printing cycle
15-Setting of a **lot size**
16- Setting of the **Lift Off Contact**
17- Setting of **Up and Down Lift speed**
18- Setting of one of the three **rotation speed**

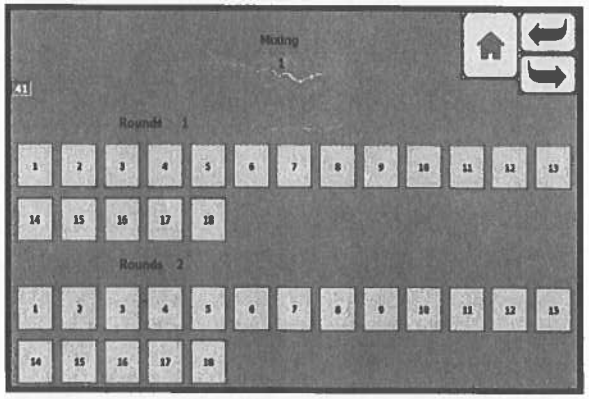
Next page on the "Machine settings" menu:

MIXING:

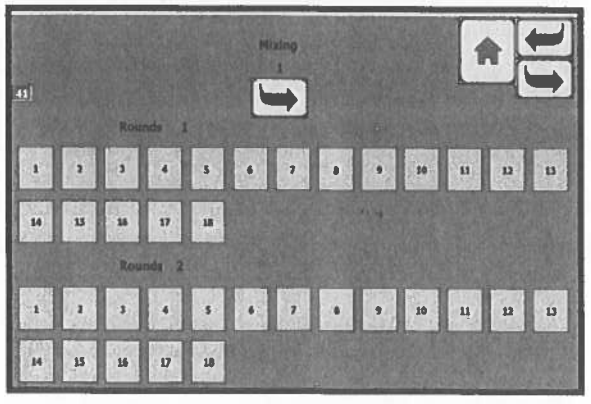


When the MIXING function is active, the following displays will be used to configure which stations will be printing in the successive rotations.

Here we can set the amount of full rotation needed

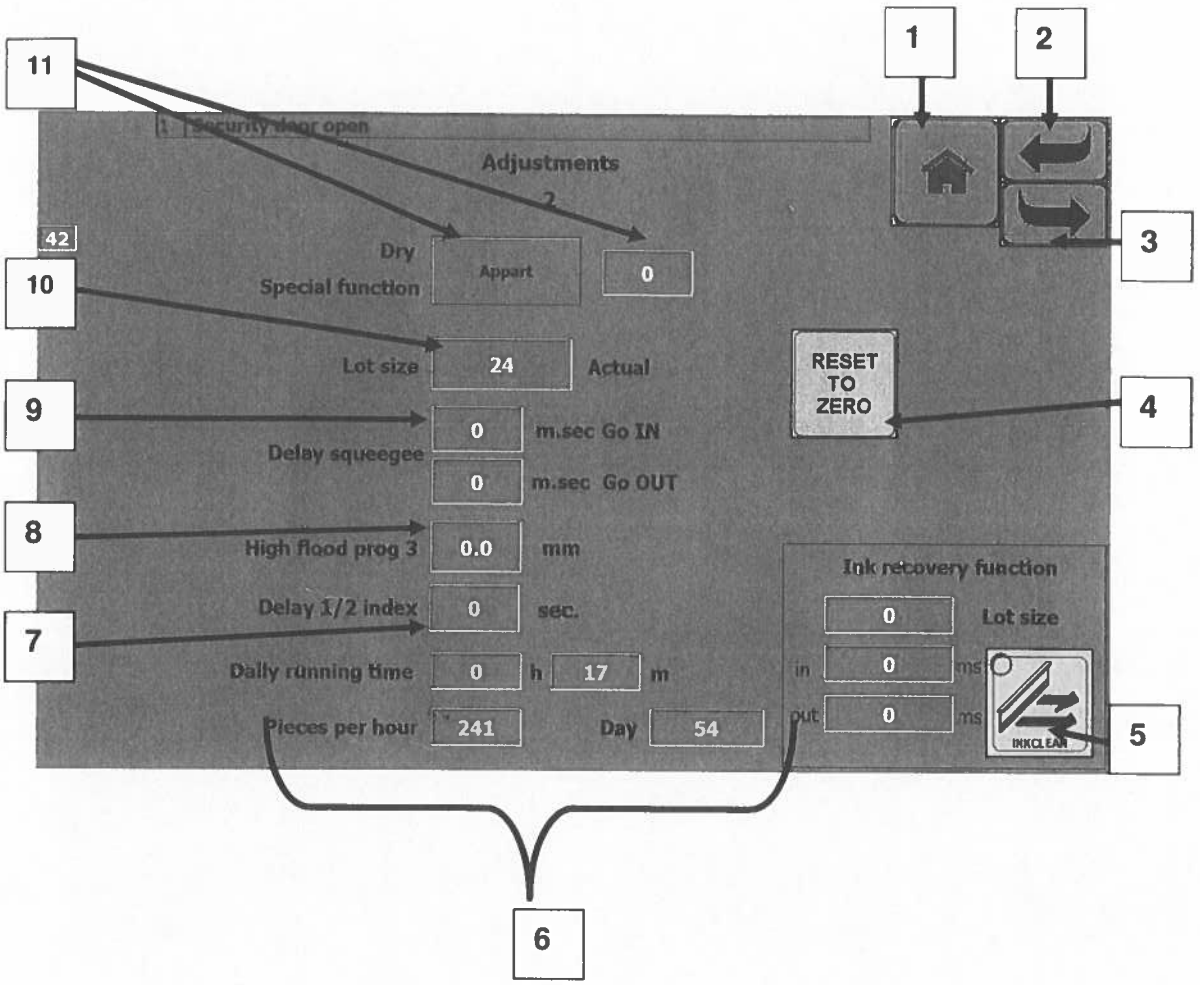


On these menus we can activate the stations needed for each rotation.
Here we set the stations for the first and second rotation



Here we set the stations for the third and forth rotation

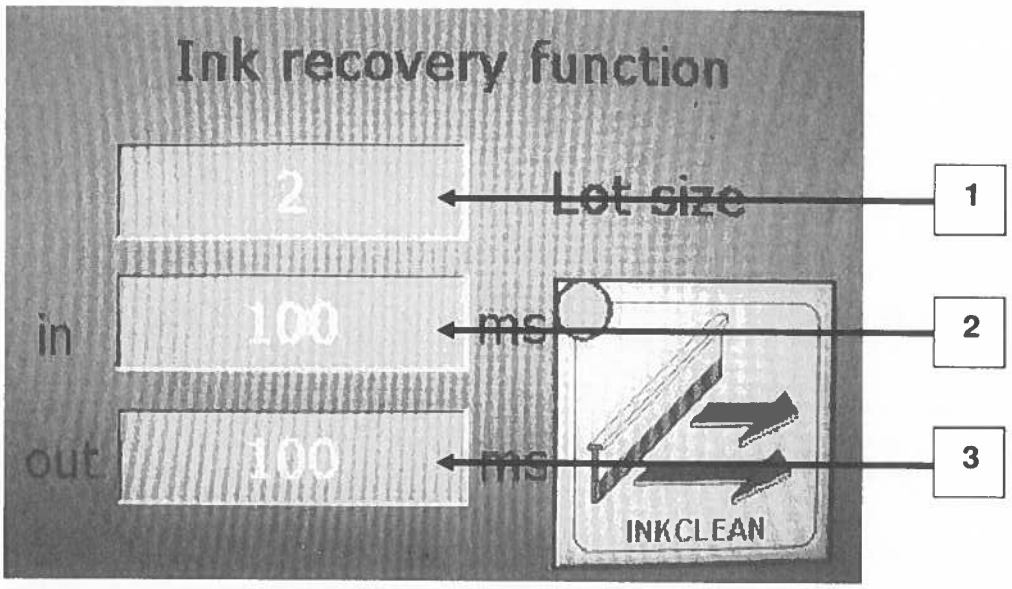
Next page on the "Machine settings" menu:



1- Return to main overview menu.
2- Return to previous page
3- Go to next page.
4- Reset Lot size to zero
5- **Ink recovery function**: this function enables the squeegees to stop every "n" T-shirt few centimetres further on the screen to recover the ink deposit accumulated there during the print process.
6- Production rate information
7- When the machine is set in half index, the waiting time of the half index position can be set independently of the waiting time set for the printing process
8- When printing stations are set in program number 3, we can set the off contact height in this menu, enabling a minimum adjustment of the lift up movement.
9- Delay of the squeegees horizontal movement in relation to the up/down movement
10- Setting of lot sizes
11- When a flash cure or a flocking device is attached to the machine, we can here decide if the communication between the two devices will be done when the T-shirt is near the flash cure/ flock or far from the devices.

INK RECOVERY FUNCTION:

This function enables the squeegees to stop every "n" T-shirt few centimetres further on the screen. to recover the ink deposit accumulated there during the print process.

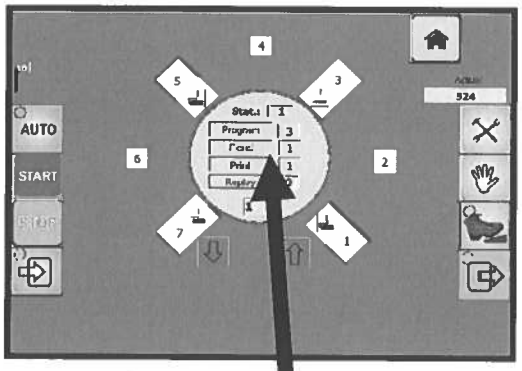


1- Set the frequency to which the function will be active. For example set to 25, then every 25 prints, the squeegee will remove the ink
2- Set the stop delay in ms for inner squeegee movement
3- Set the stop delay in ms for the outer squeegee movement

For example, for a speed squeegee movement set to 50% (value of the potentiometer fitted at the front of the printing station), and a setting of 100ms, the squeegee will overshoot 3cm.

2- PRINTING STATIONS CONFIGURATION

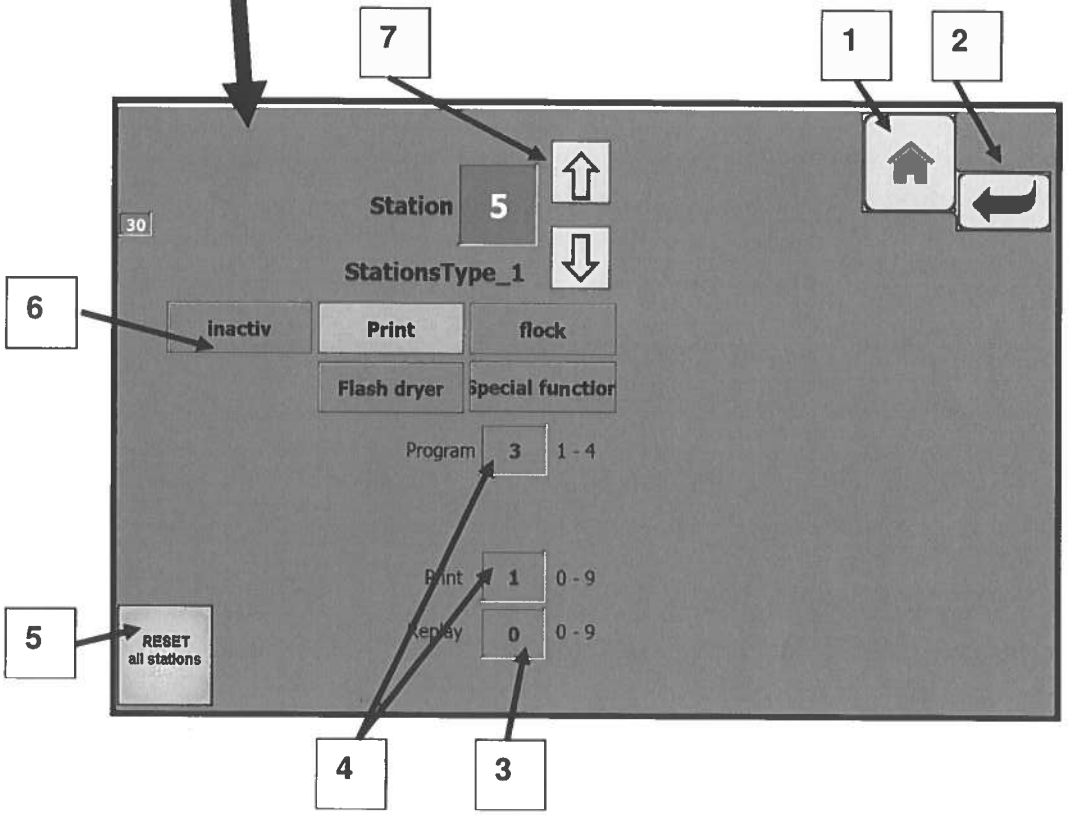
Each station can be individually configured. Each station can be activated or deactivated; each station can be set with a different printing programme and a different stroke amount. Proceed as follow:



By pressing the middle of the circle the following menu will appear.

Note

Changing a station configuration and/or program is **only possible in automatic stop or manual status**



Return to main overview menu.

1- Return to previous page
2- **Replay function**: when set, this function enables "n" times the pallet to return to this station to be reprinted.
3- Amount of squeegee strokes and print program choice
4- Reset all station: All stations status will be reset to zero.
5- Activate or deactivate the station as print station, flock unit or flash cure
6- Scroll station number

The station can be configured as follow:

Prog.1: Print station activated. Following printing cycles: Lift down, 1 to 9 squeegees strokes **(adjustable value),** lift up, rotation.

Prog.2: Print station activated. Following printing cycles: First 1 flood squeegee stroke, lift down, 1/ 3/ 5/ 7/ 9 squeegee strokes (Adjustable amount**, tip always an uneven amount** of strokes. Lift up and during rotation 1 flood stroke.

Prog.3: Print station activated. Following printing cycles: lift is in upper position, one flood stroke, lift down, one print stroke and then lift up. This cycle can be repeated up to nine times.

Prog.4: Is like program #2 but the flood strokes amount can be set by pressing on + and - next to **the pink square**.

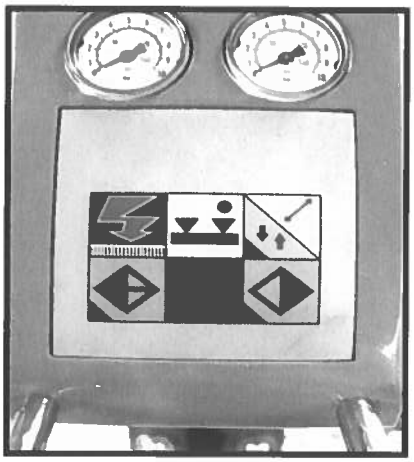
Flock: Station activated with a flocking device.

Deactivated: Station deactivated .
When all the stations have been configured, press "PRINT" to activate the automatic printing function and then press start.

3- Hand mode function:

The different movements of the machine can be activated separately in hand modus. This function is particularly useful during the adjustment of the screens and the print trials. There are two ways to activate the different hand modus function:

- **From the small control pad in front of each printing station.**



The hand functions are possible from the control pads on each station, only when the print function is deactivated and the bleu hand is visible.

Six functions are possible from the control pads:

- By pressing the button  , the frame locking pneumatic cylinder will be activated, the red LED is ON when the frame is not locked.

- By pressing the button  , the squeegee carrier pneumatic cylinder will move back and forth, one impulse, one movement.

- By pressing the buttons  and  at the same time the lift will move up and down, one impulse, one movement.

- By pressing the buttons  and  at the same time, the table will rotate to the **left** from one printing station to the next one.

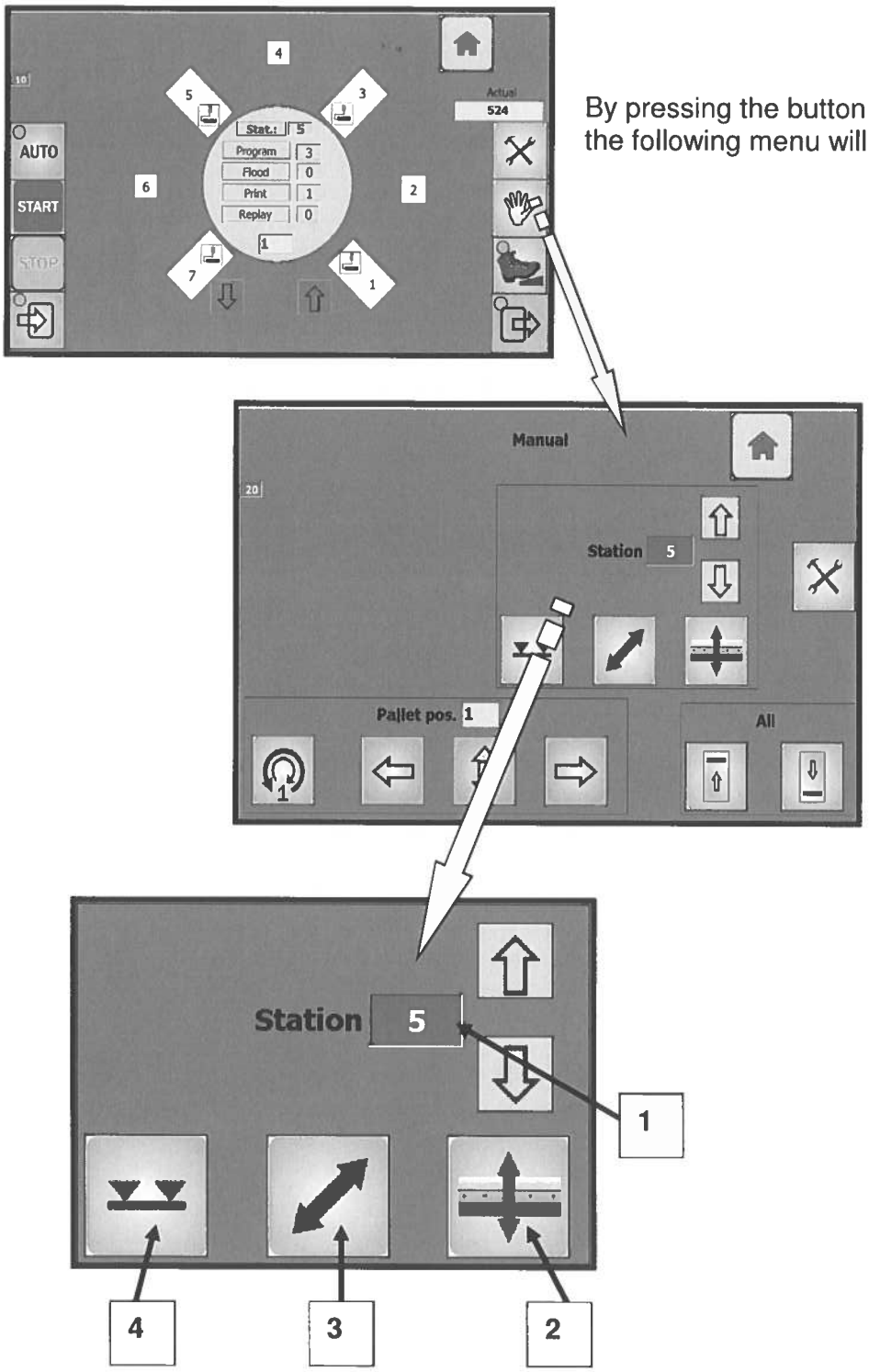
- By pressing the buttons  and  at the same time, the table will turn into cleaning position, ½ index.

- By pressing the buttons  and  at the same time, the table will rotate to the **right** from one printing station to the next one.

Note

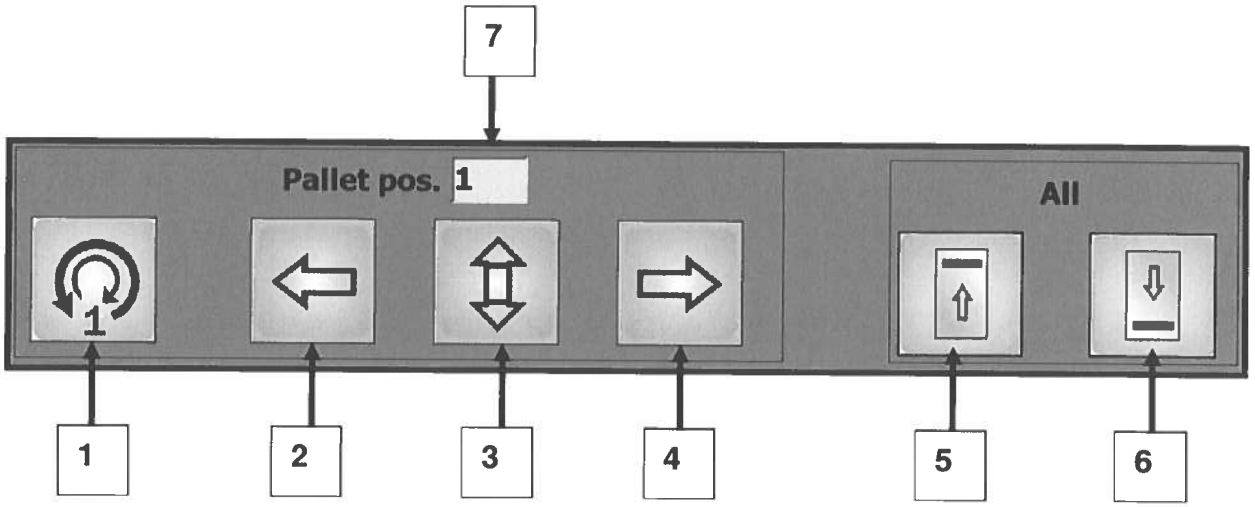
When the hand modus functions are activated and controlled from the touch screen, the control pads on each printing station are deactivated. When the hand modus functions are activated and controlled from the print stations, the touch screen is deactivated

Seven hand functions are possible from the touch screen:



By pressing the button with a hand symbol the following menu will appear

1- Scroll and choose the station you want to activate.
2- Squeegee UP DOWN
3- Squeegee back and forth
4- Screen lock / unlock

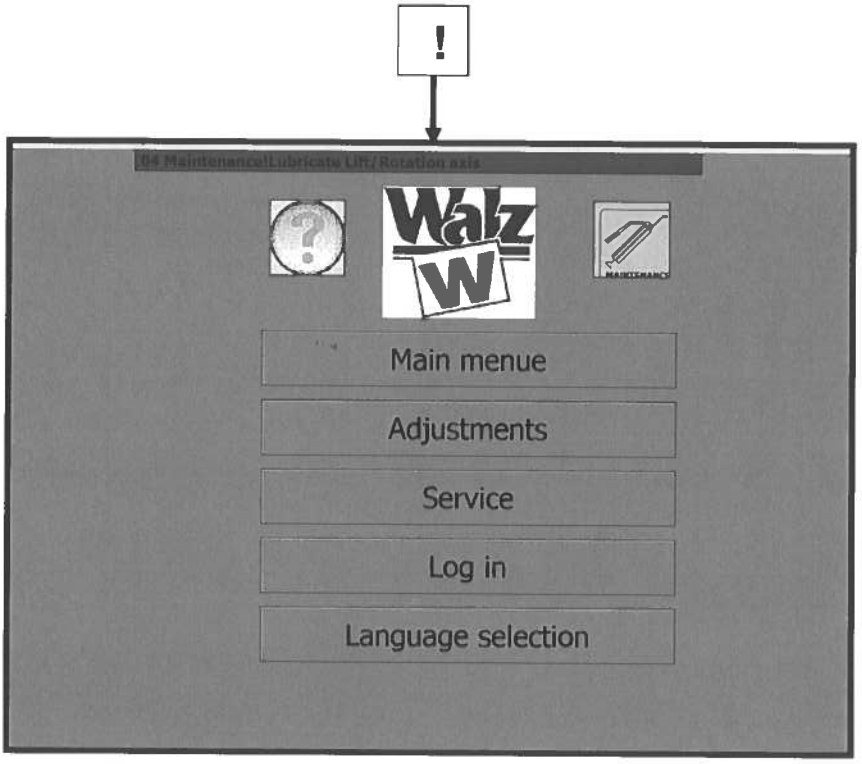


1- By pressing this button, the pallet #1 will come back in front position, reference position.
2- Pallet turn left
3- Lift up and down
4- Pallet turn right
5- All squeegees inside
6- All squeegees outside
7- Actual pallet number in loading position

4- Maintenance warning:

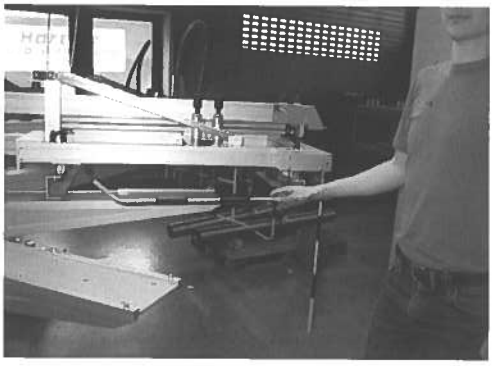
Every a preset time of production, the machine will warn you that it is time to lubricate the two axes: The rotating axis and the lift axis.

On the display the following warning will appear: **MAINTENANCE: Lubricate Lift/ Rotation axis.**
The red lamp will blink to signal the warning. The machine will keep running.



Proceed as follow to lubricate the machine and reset the maintenance counter:

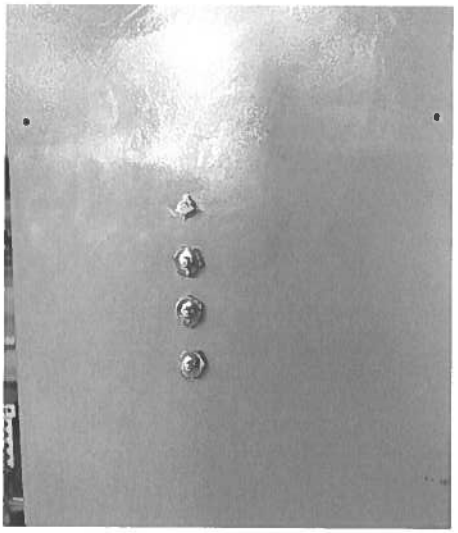
1- Stop the machine
2 - Exit the printing program
3- Open a security door



+

Your machine is delivered with an action grease pump:

One to two grease injections per greasing point every 80 hours of production is enough to guaranty the good maintenance of the lift axis and lift gear.

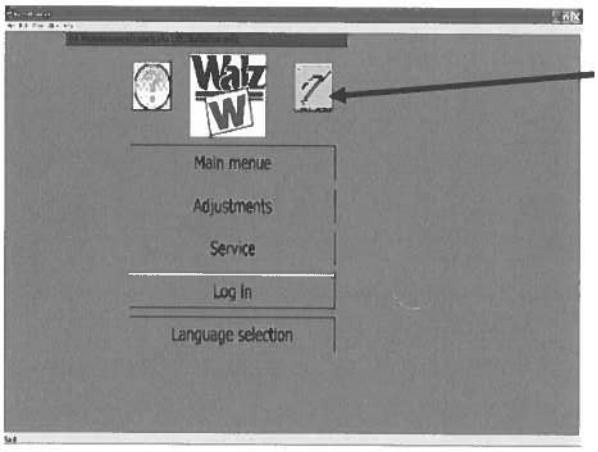


V2002 EX Lift Device Lubrication

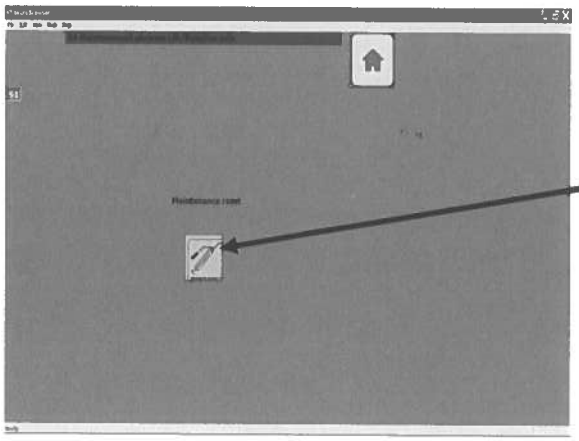
Note

If your machine is V2002EX, EX meaning that the lift is powered with an eccentrically Lifting device, you will find on the right hand side of the machine four lubricating points.
Using the provided grease pump lubricate the four points.

To reset the maintenance timer to zero proceed as follow:

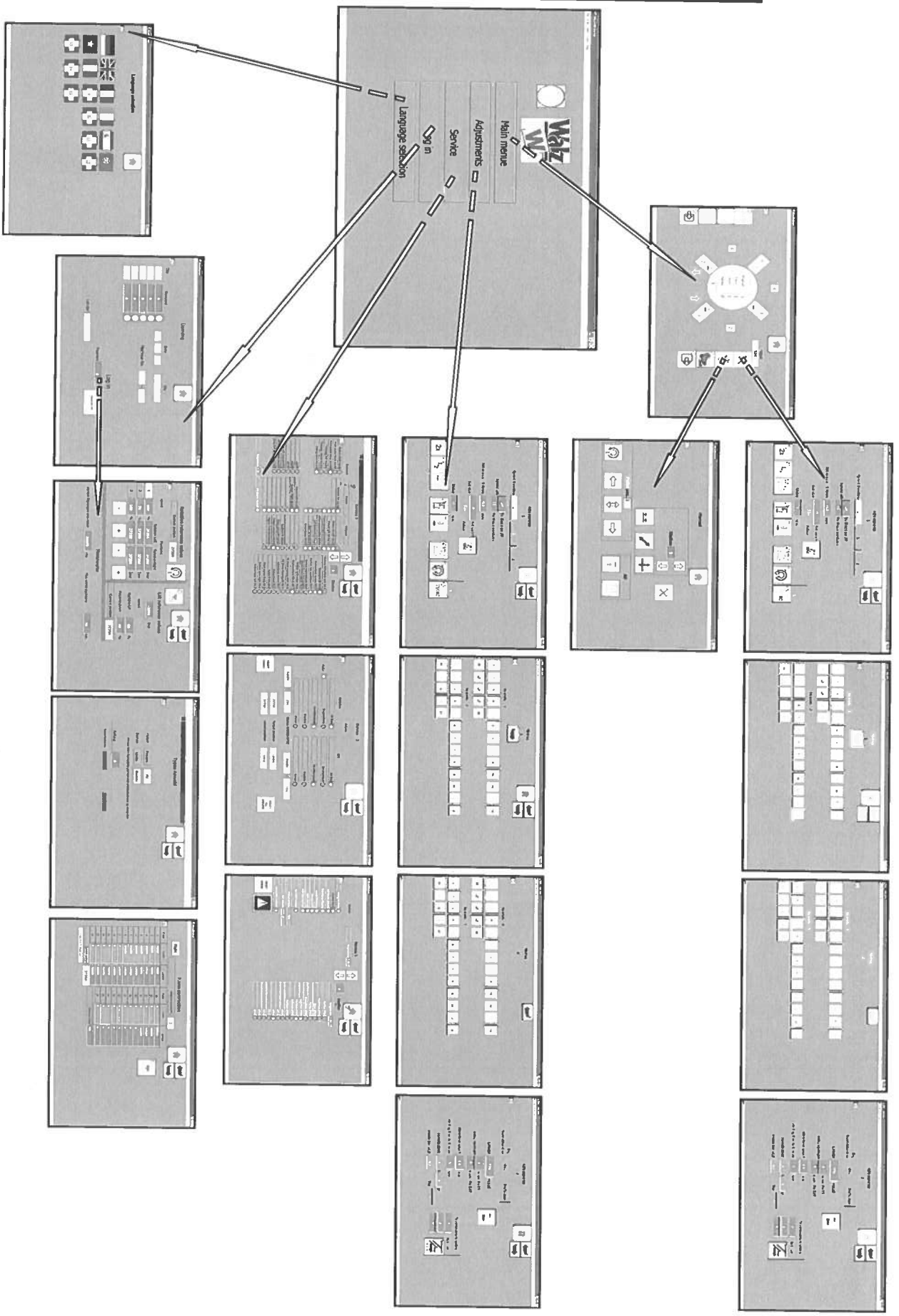


- Stay **out** of the print mode, press on this symbol. This symbols appears only when it is time to lubricate the axis

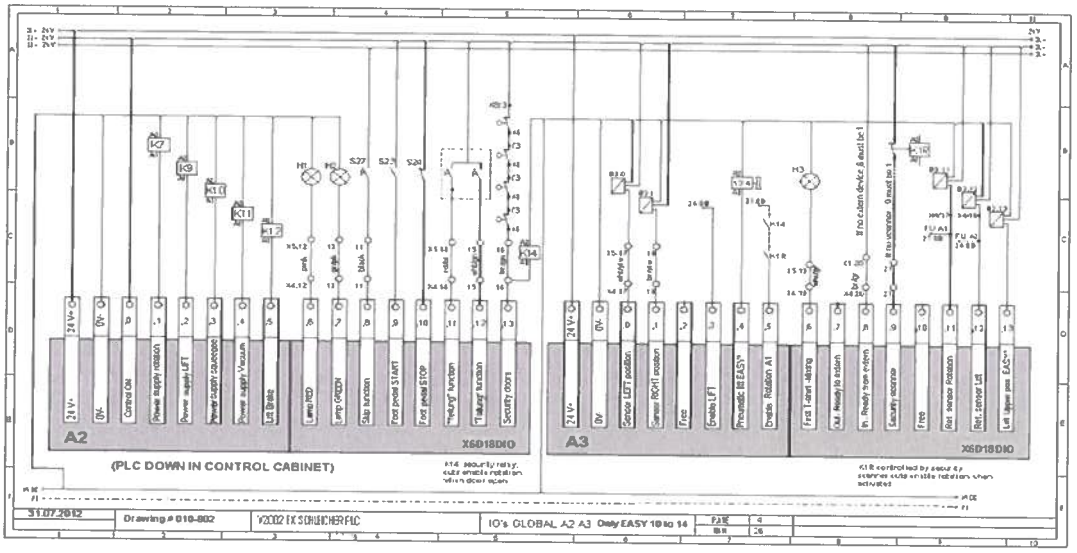


- Press on the button "Maintenance Reset". The countdown timer will return to zero.

Menu available on the machine's display

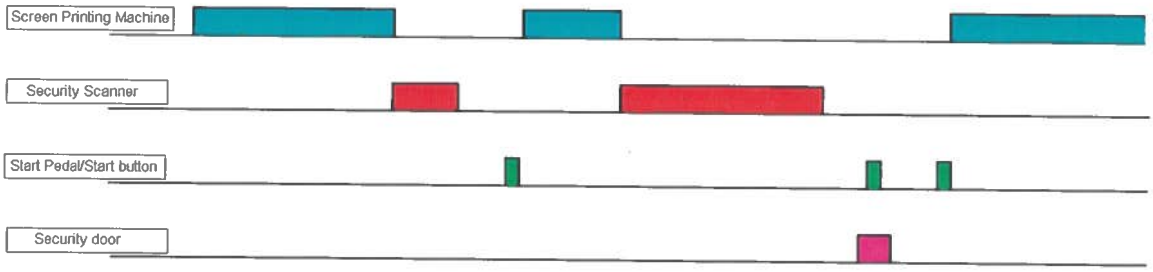


SECURITY SCANNER OPTION:

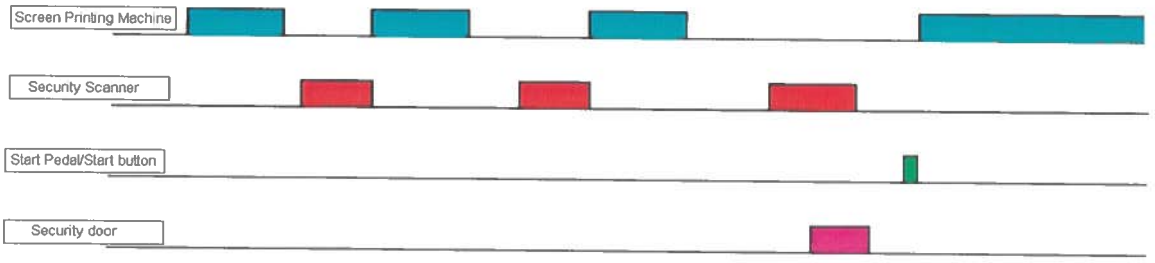


The scanner has to be connected on the Module A3, Input 9.
The scanner can be activated in two different manners:

1-When somebody enters the scanner security area, the rotation is stopped, the machine keeps printing and the lift function still operating until the print process is finished. The machine starts **only** after having press the start button on the touch screen or press the Start foot pedal. **<u>This function is active only when the delay timer is set to zero or a positive value (i.e. 3 seconds)</u>**

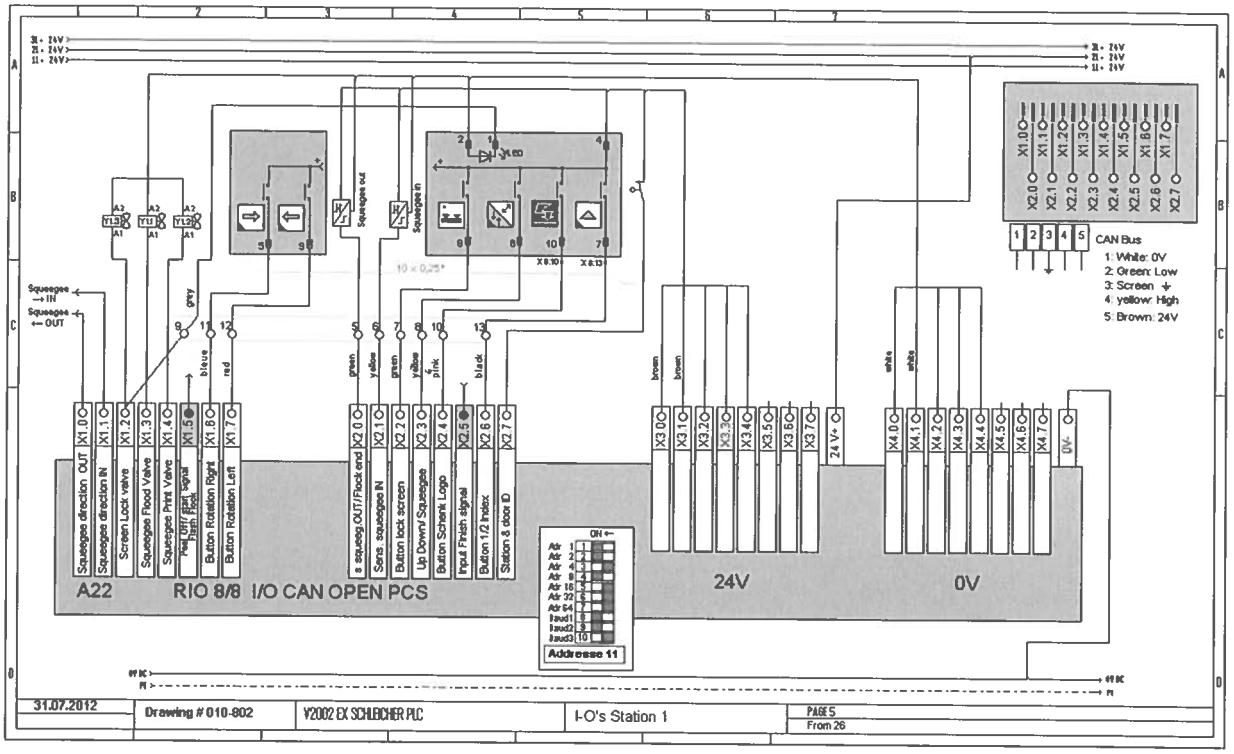


2-



When somebody enters the scanner security area, the rotation is stopped, the machine keeps printing and the lift function still operating until the print process is finished. Once the person leaves the secured area, the machine will start automatically without pressing the start pedal or start button, and will turn one segment. Every time a person enters and leaves the area, the machine will turn only one segment and will stop at the end of the printing process. **<u>This function is active only when the delay timer is set to a negative value (i.e. -1 second)</u>**

AUXILIARY UNITS INTERCONNECTION:



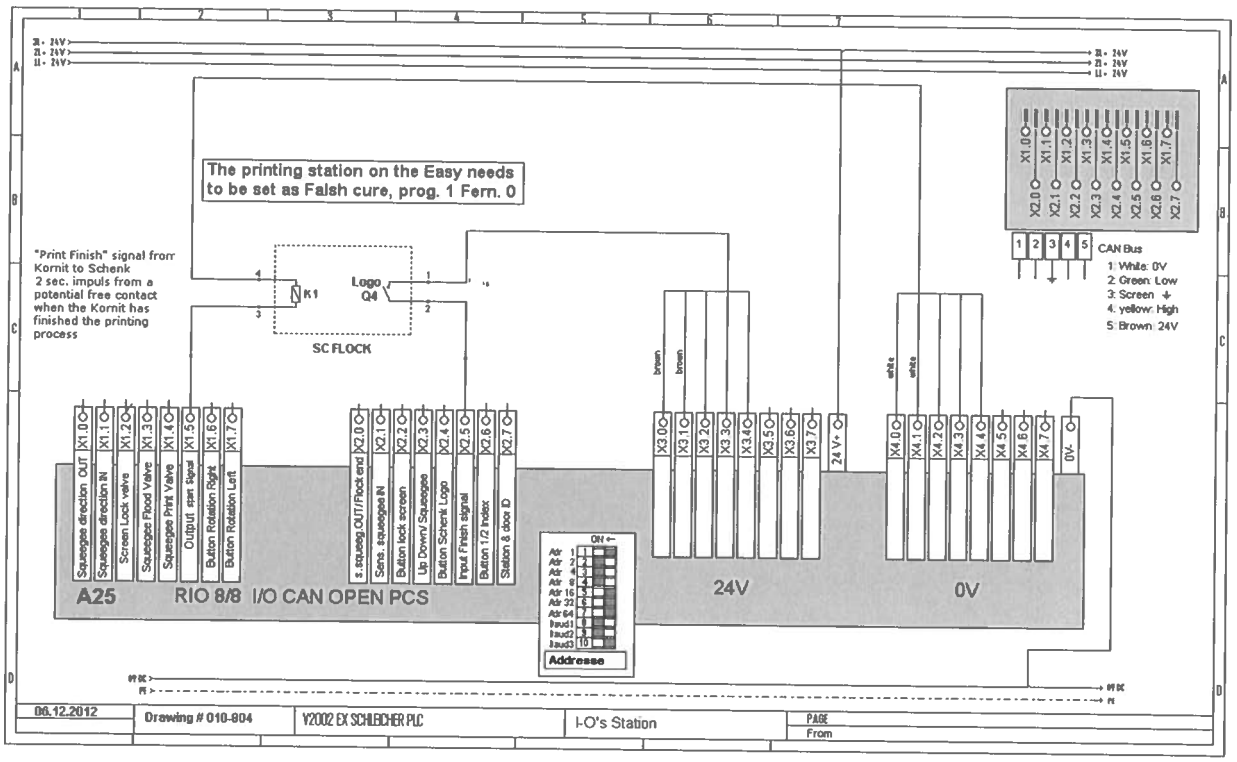
Auxiliary units like Flash Cures, Flocking boxes, Humidifiers, Coolers, Digital printer, can be interconnected to the printing machine enabling synchronization between both machines.
The OUTPUT X1.5 sends the signal START, 24V DC
The INPUT X2.5 receives the signal FINISH.

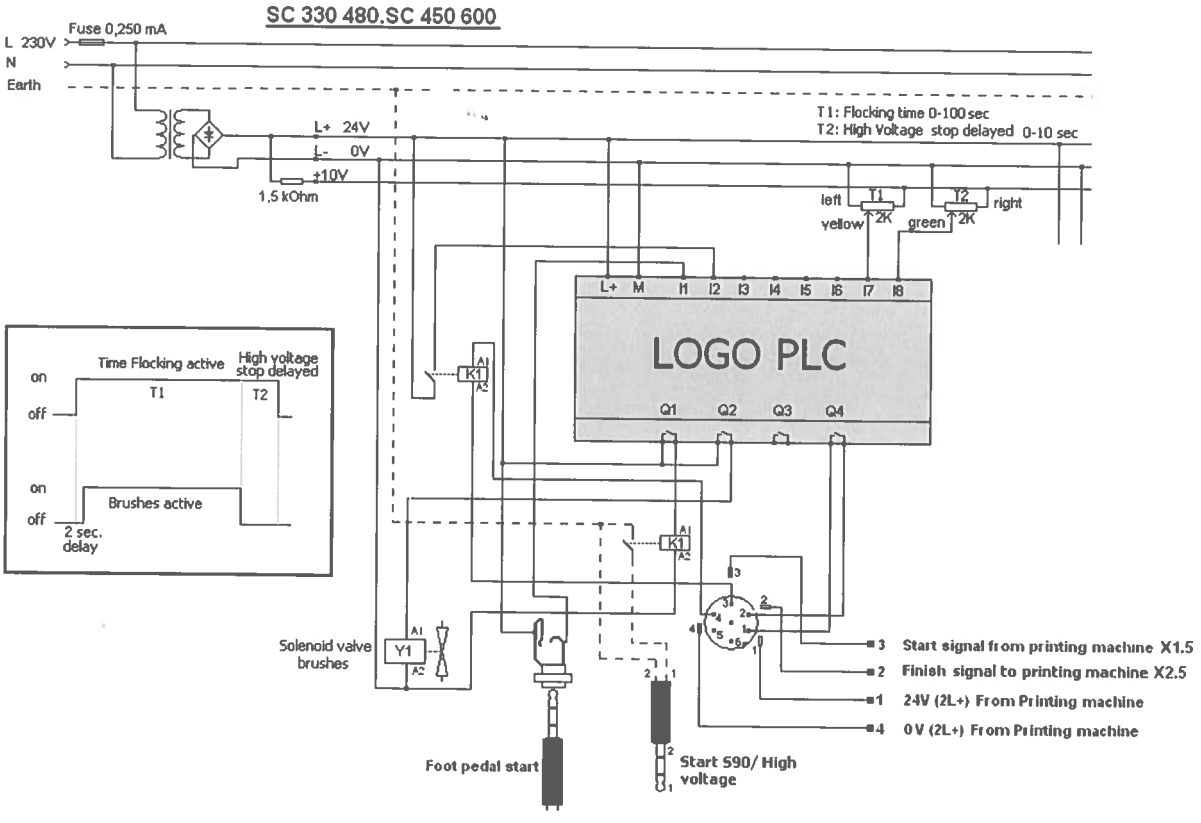
Caution

IMPORTANT: The 24V DC for input X2.5 has to be taken from our machine. No extern voltage is allowed into the input!

The form of the signal can be selected by first activating the station as flash cure, independently of the type of unit, then by selecting a number from 1 to 4 corresponding to the wished signal.
Following are the actual possibilities to communicate between machines:

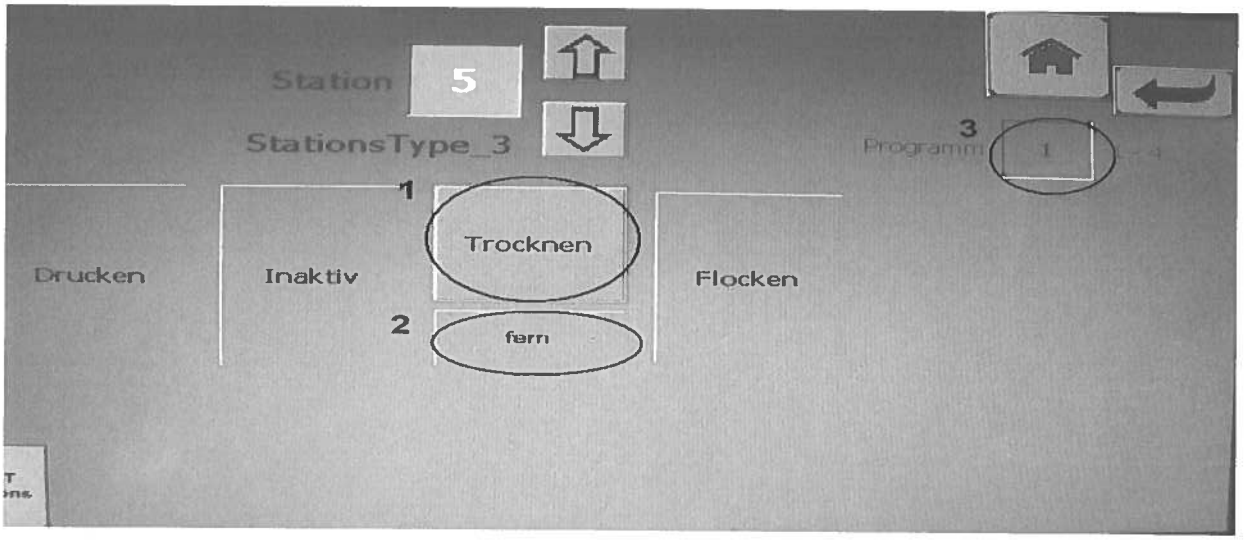
1. The screen printing machine sends a signal starts in the form of a 24V output. This signal stays high until the Flash cure sends a finished signal.
2. The screen printing machine sends a signal starts in the form of a 24V output. This signal stays high. This signal triggers the timer countdown of the flash cure and the flash cure sends a signal back to the printing machine which signal will stay high until the time is up. Then the start signal of the printing machine falls low.
3. Set the delay timer to a whished value. The screen printing machine sends a signal which stays high the time set in the delay menu.
4. The Screen Printing machine sends a one second impulse every time the machine is in position and ready.


The printing station on the Easy needs to be set as Falsh cure, prog. 1 Fern. 0
"Print Finish" signal from Kornit to Schenk 2 sec. impuls from a potential free contact when the Kornit has finished the printing process
K1
Logo Q4
SC FLOCK
CAN Bus
1: White: 0V
2: Green: Low
3: Screen
4: yellow: High
5: Brown: 24V
Squeegee direction OUT
Squeegee direction IN
Screen Lock valve
Squeegee Flood Valve
Squeegee Print Valve
Output start signal
Button Rotation Right
Button Rotation Left
s. squeeg OUT/Flock end
Sens. squeegee IN
Button lock screen
Up Down/ Squeegee
Button Schenk Logo
Input Finish signal
Button 1/2/ Index
Station & door ID
24V+
0V-
A25
RIO 8/8 I/O CAN OPEN PCS
24V
0V
Addresse
06.12.2012
Drawing # 010-804
Y2002 EX SCHLEICHER PLC
I-O's Station
PAGE
From

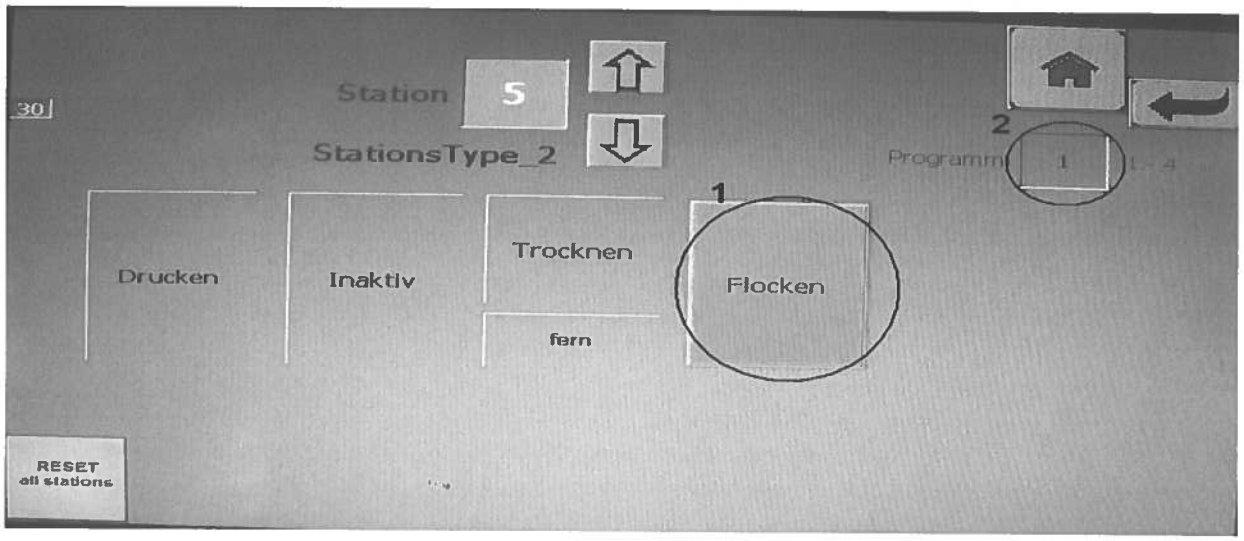

SC 330 480.SC 450 600
Fuse 0,250 mA
L 230V
N
Earth
L+ 24V
L- 0V
±10V
1,5 kOhm
T1: Flocking time 0-100 sec
T2: High Voltage stop delayed 0-10 sec
left
T1
2K
yellow
green
T2
2K
right
LOGO PLC
L+ M I1 I2 I3 I4 I5 I6 I7 I8
Q1 Q2 Q3 Q4
K1
Time Flocking active
High voltage stop delayed
on
off
T1
T2
Brushes active
2 sec. delay
Solenoid valve brushes
Y1
Foot pedal start
Start S90/ High voltage
3 Start signal from printing machine X1.5
2 Finish signal to printing machine X2.5
1 24V (2L+) From Printing machine
4 0V (2L+) From Printing machine

Flash cures and any accessories attached to the printing machine can be interconnected to receive START signals and send back FINISH signals. This communication can be set to asses WHEN the signal has to be sent and HOW this communication has to be done:

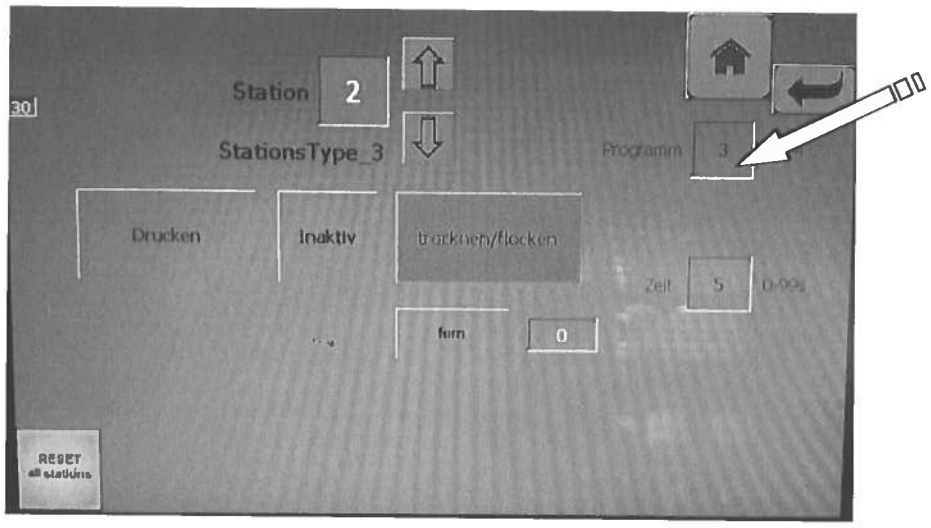
if the attached device is a **Flash cure,** activate the button flash cure. (1)
Now with the button Apart (2) you can choose to activate the flash cure far from the substrate or near the substrate.
With the button Program (3) you can choose the form of the communicating signal adapted to your flash cure.(see next page)

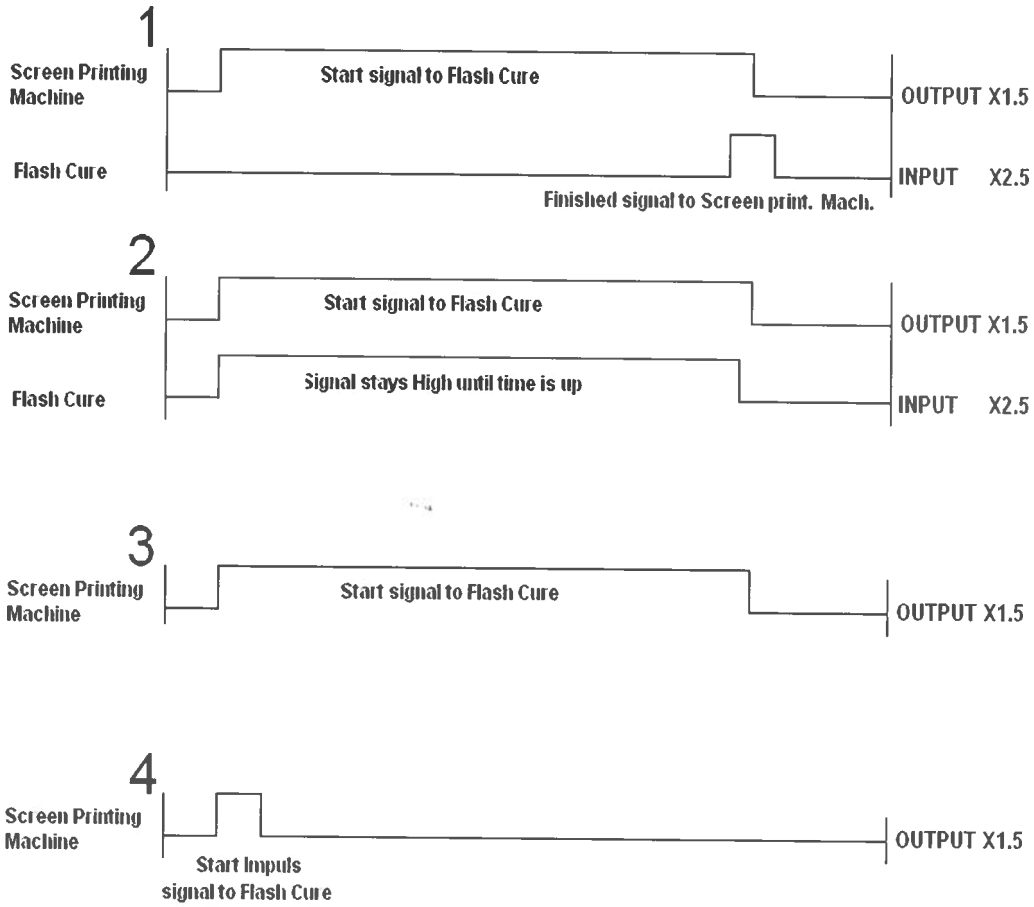


if the attached device is a **Flocking box or a Digital printer,** activate the button Flock. (1)
With the button Program (3) you can choose the form of the communicating signal adapted to your flash cure.(see next page)



The communication between the printing machine and attached device can be done of four different ways. You can choose the communication way by pressing the "Programme" button





7- Alarm- Message listing

The following alarms and errors messages may appear on the display during operation.

CONTROL POWER SUPPLY IS OFF: Press the button "Control ON". The machine's control power supply will be activated.

EMERGENCY STOP IS ON: Emergency button is on. Turn it to the left to unlock it, then the button "control on".

SECURITY BARRIER IS OPEN: At least one security barrier is open. You can localise it by checking which red light on the print station is on .

MAINTENANCE: GREASE AXIS: Every 35 hours this warning will appear signalling that it is time to lubricate the two axes, rotation and lift. Reset the warning as described on the page 23.

LIFT NOT IN START POSITION: The lift is not in its upper position.
Check the upper lift sensor.
Check if a warning code appears on the servo controller display (See page 24 and 25)

LIFT TIMEOUT: NOT IN UPPER POSITION: The lift is not in its upper position.
Check the upper lift sensor..
Check if a warning code appears on the servo controller display (See page 24 and 25)

LIFT TIMEOUT: NOT IN LOWER POSITION: The lift is not in its lower position.
Check the lower lift sensor..
Check if a warning code appears on the servo controller display (See page 24 and 25)

ROTATION AXIS IS OFF OR PROFIBUS ERROR: The servo controller A1 is off, or 24V are missing on connection X2 . (24v and GND)
If the error persists check the Profibus cable and connector.

LIFT AXIS IS OFF OR PROFIBUS ERROR: The servo controller A2 is off, or 24V are missing on connection X2 . (24v and GND)
If the error persists check the Profibus cable and connector.

STOKES AMOUNT MUST BE UNEVEN: In print program 2, the set amount of strokes has to be uneven

FRAME NOT CLAMPED STATION : The frame clamping device of the mentioned station is open. Close the clamping device.

TIME OUT SQUEEGEE STATION : The squeegee of the mentioned station has not reach its position. Check the space between sensor and activating plate. If the squeegees are electrically driven, check if the speed adjustment potentiometer is not at its lowest value.

8- Faults/ Events warnings code
STOEBER POSIDYN SDS 4000 Servo controller.

When faults occur, the inverter is no longer able to control the drive and is disabled.
An entry is made in the fault memory.
(E40/E41), and relay 1 (ready for operation) releases.

31: Short/ground	The hardware over current switch-off is active. Motor requires too much current from the inverter (e.g., inter-winding fault or overload).
32: Short/gr. int.	When the inverter is enabled, an internal check is performed. A short circuit triggers a fault. • An internal device fault has occurred (e.g., IGBT modules are defective
33: Overcurrent	Acceleration times too short. Lengthen ramps in group **D**. • Check torque limits **C03** / **C04**. - Which torque limits are in effect? See chapter 9.2. - Reduce torque limits **C03/C04** set to maximum value by approx. 10 %. • Optimize parameter **C30** (ratio of the moments of inertia). • With vector control (**B20**=2): encoder not connected correctly
34: Hardw. fault	The non-volatile data memory is defective or software version is time-limited.
35: Watchdog	Monitors the load and functions of the microprocessor
36: High voltage	DC-link voltage too high. . Power too high . Reverse powering of the drive while braking (no brake resistor connected, brake chopper defective, brake chopper deactivated with A20).
37: n-feedback	Resolver: Wire break or signal level too low Fault can only be acknowledged by turning 24 V off and on! Sin/cos absolute-value encoder: . During device startup - Communication to the device is faulty. - Absolute-value encoder unknown - Communication protocol unknown (neither EnDat nor HiperFace) . During operation - Wire break or signal level too low - Change in B26
38: tempDev.sens	The heat dissipater temperature is over the limit value. Cf. E25. . Temperature of environment/switching cabinet is too high.
39: TempDev.i2t	The inverter limits the output current to 99% of the nominal current. The i2t model calculated for the inverter has reached 100% of the thermal load. . Inverter is overloaded. (Inverter too small). . Temperature of the environment/switching cabinet is too high. . Closed brake . Motor connected incorrectly . Resolver connected incorrectly

40: Invalid data	The data in non-volatile memory are incomplete. Reset non-volatile memory with "A00save values." This loads the default values.
41: Temp.motorTMP	Excessive temperature indicated by the motor temperature sensor. . Motor is overloaded. Use external ventilation. . Temperature sensor not connected (X40.2 to X40.6)
42: Temp.brakeRes	The i2t model calculated for the brake resistor has reached 100% of the thermal load The i2t model calculated for the brake resistor has reached 100% of the thermal load . A20 programmed incorrectly . Permissible power loss of brake resistance is too high. . With internal brake resistance: No jumper on X12. . With external brake resistance: Brake resistor not connected.
44: Ext.fault	Fault triggered by BE
45: OTempMot.i2t .	Motor overloaded . Cooling insufficient
46: Low voltage	DC-link voltage is below the limit value set in A35. . Drops in the power supply . Acceleration times are too short (ramps, D ..).
47: Device overl.	The maximum torque has been exceeded. The permissible torque is limited by parameters C03 and C04 and the possible torque limitation via analog input.
48: Accel. overl.	Same as "47:Device overload" except for an acceleration procedure. M-Max 2 (C04) is permitted for the acceleration procedure with "cycle characteristic" startup (C20=2).
49: Decel. overl	Same as "47:Device overload" except for a deceleration procedure
50: Operat. area	The operating area defined under C41 to C46 has been exited.
51: Refused	Only for positioning (C60=2). Posi.start or posi.step was not accepted. . Destination position is located outside software limit switches. . In non-referenced status (I86=0), no absolute positions (e.g., J11=1) are traveled to. . The direction of rotation in the current process block is not the same as the permissible direction I04.
52: Communication	. Fault during communication between inverter and FDS Tool during remote control via PC . Communication fault during fieldbus operation
53: Stop input	A limit switch connected via a BE input or monitored via fieldbus has been triggered. During referencing at the limit switch (I30=1), a reversal of the limit switches will cause a fault.
54: Follow. error	The maximum following error (i.e., deviation between actual position and reference value position) permitted by I21 has been exceeded. . Motor overload, too much acceleration or blockage . Kv-factor I20 too small, speed feed forward I25 too small
55: OptionBoard	. When option board SEA-4000 is used, the external 24 V voltage is not present or the card is defective. No fault if enable is deactivated.

	. No option card found
56: Overspeed	Actual speed exceeds n-Max by more than 15%.

10- Disclaimer of warranty and limitation of liability

Installation:
We will furnish one (or more) factory technician(s) to assist and supervise the machine installation.
Buyer will provide additional labour and handling equipment.
Installation of all utilities (Power supply and compressed air) are at the Buyer's expense.
Buyer must prepare prior of WALZ GmbH technician arrival all electrical, air and gas line (When applicable).
Failure to ready all necessary utilities prior to the arrival of WALZ GmbH technician may result in penalty for each delayed installation day.

All service technician travel, lodging, and sustenance costs remain solely the customer's responsibility unless otherwise stated in the order confirmation.

Limited Warranty:
Machinery manufactured and/or sold by WALZ GmbH is warranted against defect in workmanship and materials for a period of one year. All warranties initiate from date of shipment.
Replacement parts are covered for the term of the machinery warranty period.
Any part found by WALZ GmbH to be defective in material or workmanship within the stated warranty period will be replaced or repaired at WALZ GmbH without charge when returned, freight prepaid, in within of the warranty period. Written authorisation must be obtained from WALZ GmbH before any part will be accepted.

WALZ GmbH does not warrant failure of parts or component resulting from misuse or lack of proper maintenance.

Any service work performed on this machine by persons other than WALZ GmbH certified service technician or persons specifically authorised by WALZ GmbH shall nullify this warranty.
This warranty is applicable to original machinery owner only and cannot be transferred to subsequent machinery owners.

Schaltplan / Electro Diagram

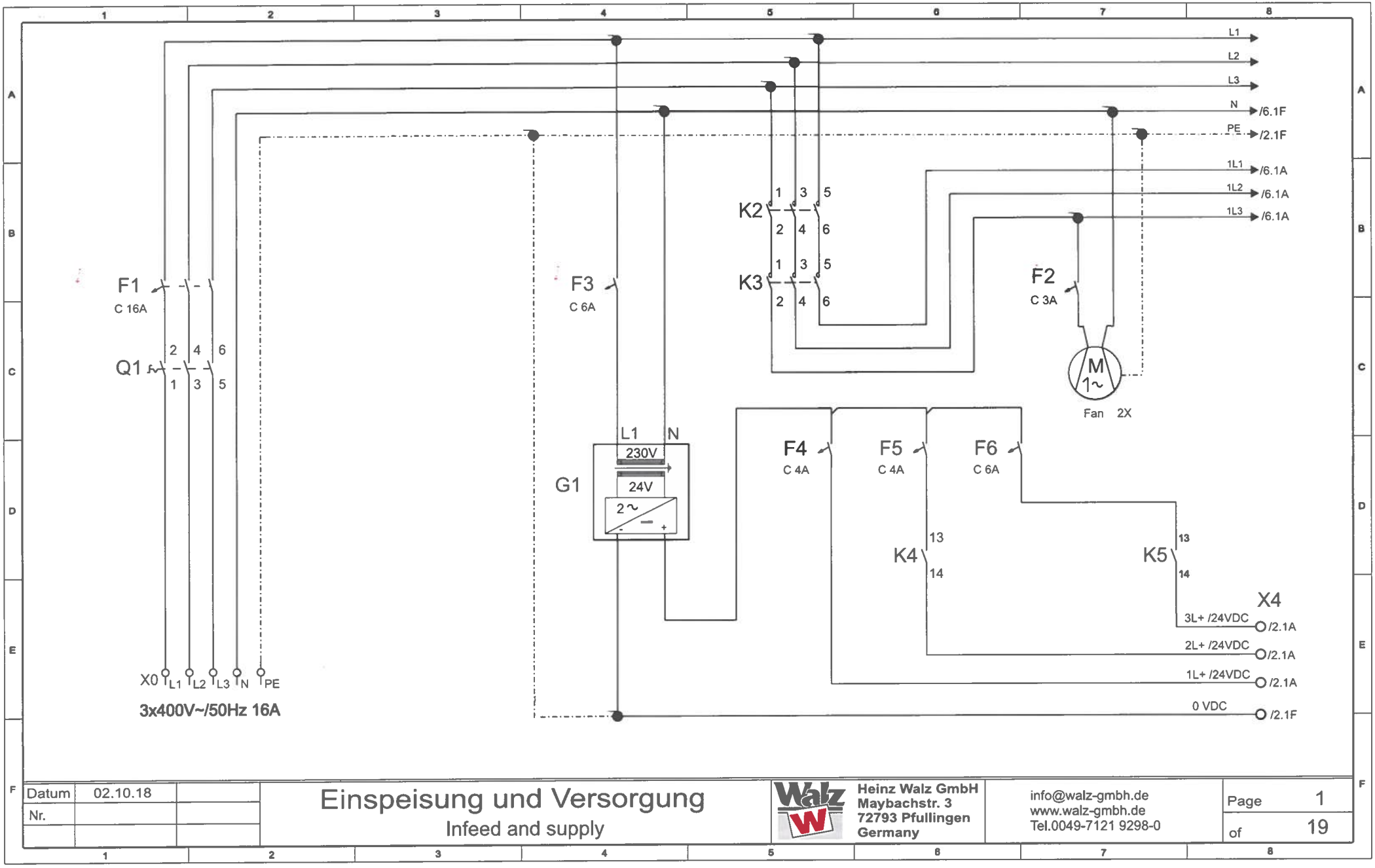
Easy - Spider EX - V 2002 EX

Schleicher PLC XCX300 / XCX400

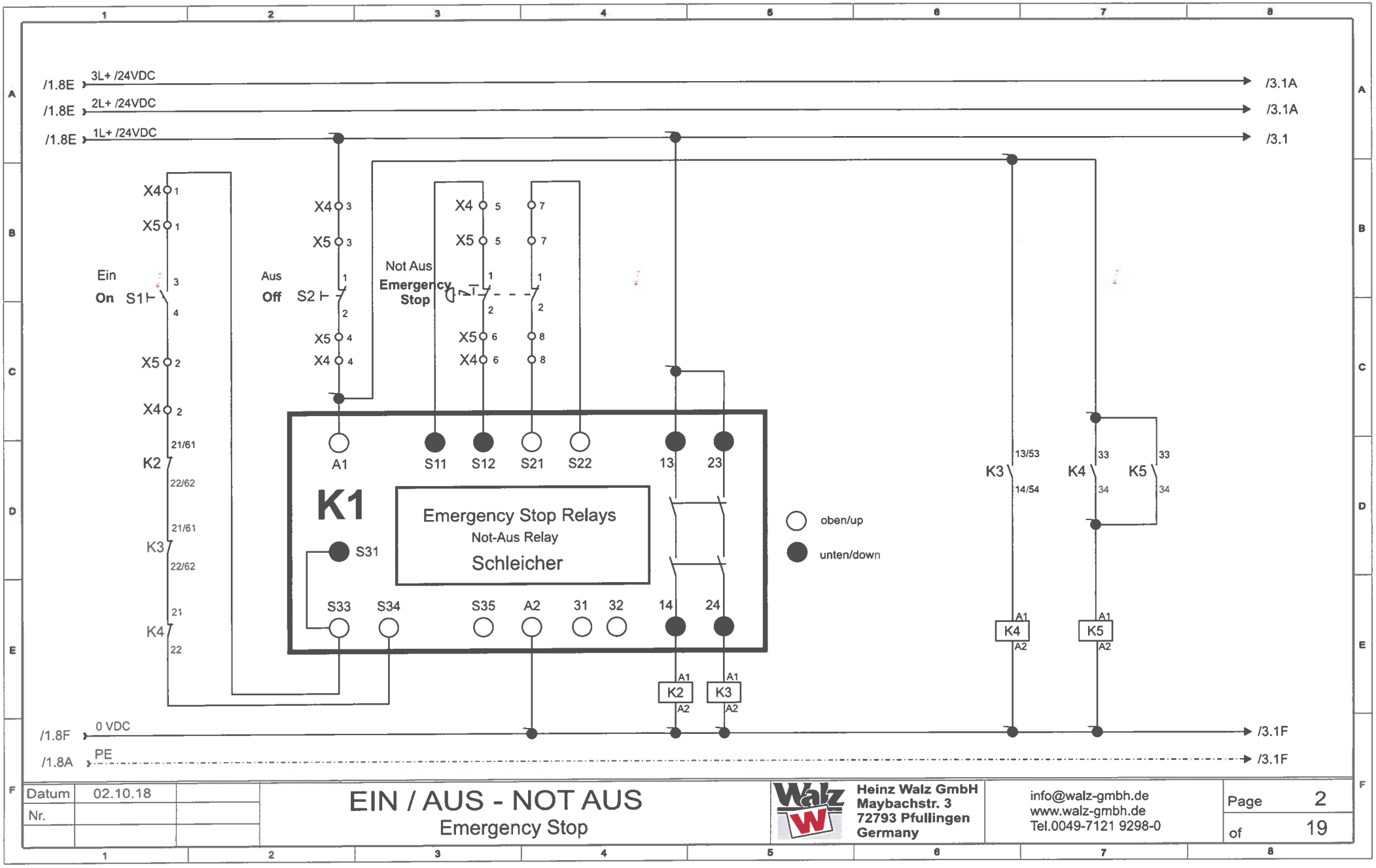
Heinz Walz GmbH
Maybachstr. 3
72793 Pfullingen
Germany

Tel.0049-7121 9298-0
info@walz-gmbh.de
www.walz-gmbh.de

Schaltplan Nr.18.39.03



Datum	02.10.18		Einspeisung und Versorgung Infeed and supply	Heinz Walz GmbH Maybachstr. 3 72793 Pfullingen Germany	info@walz-gmbh.de www.walz-gmbh.de Tel.0049-7121 9298-0	Page 1 of 19
Nr.						



Datum	02.10.18		
Nr.			

EIN / AUS - NOT AUS

Emergency Stop

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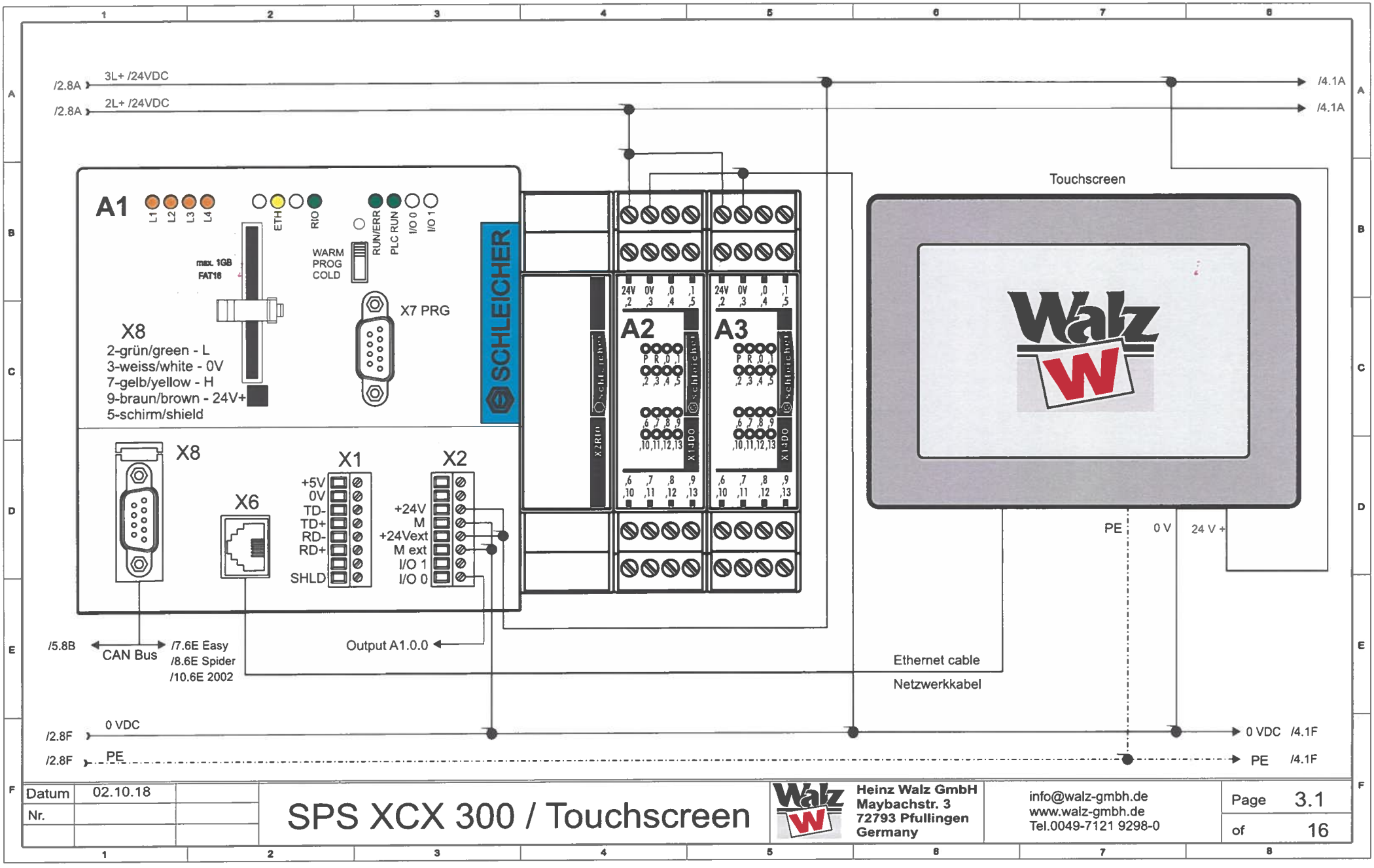

Datum	02.10.18	SPS XCX 300 / Touchscreen	Page 3.1
Nr.			of 16

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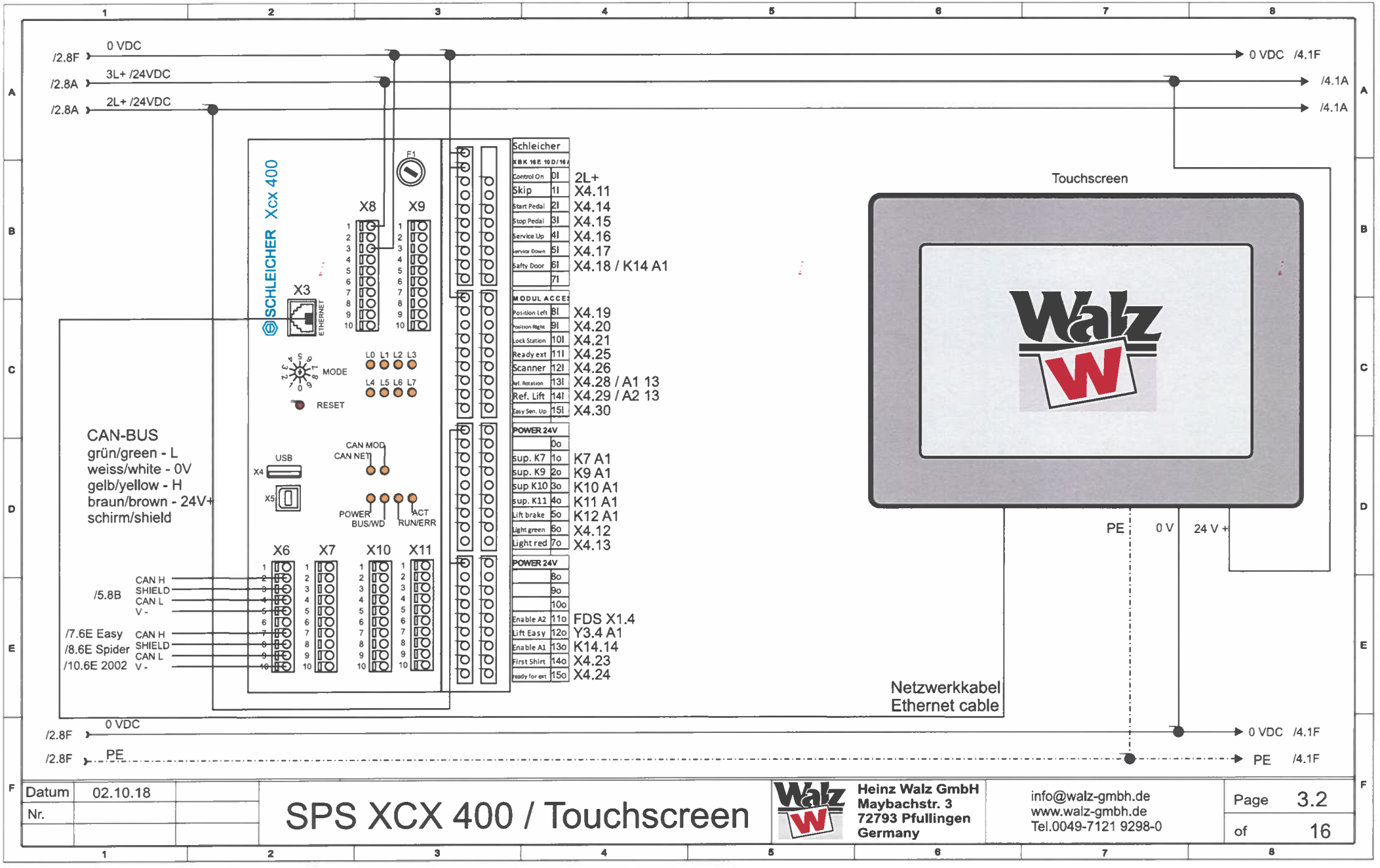

Datum	02.10.18
Nr.	

SPS XCX 400 / Touchscreen

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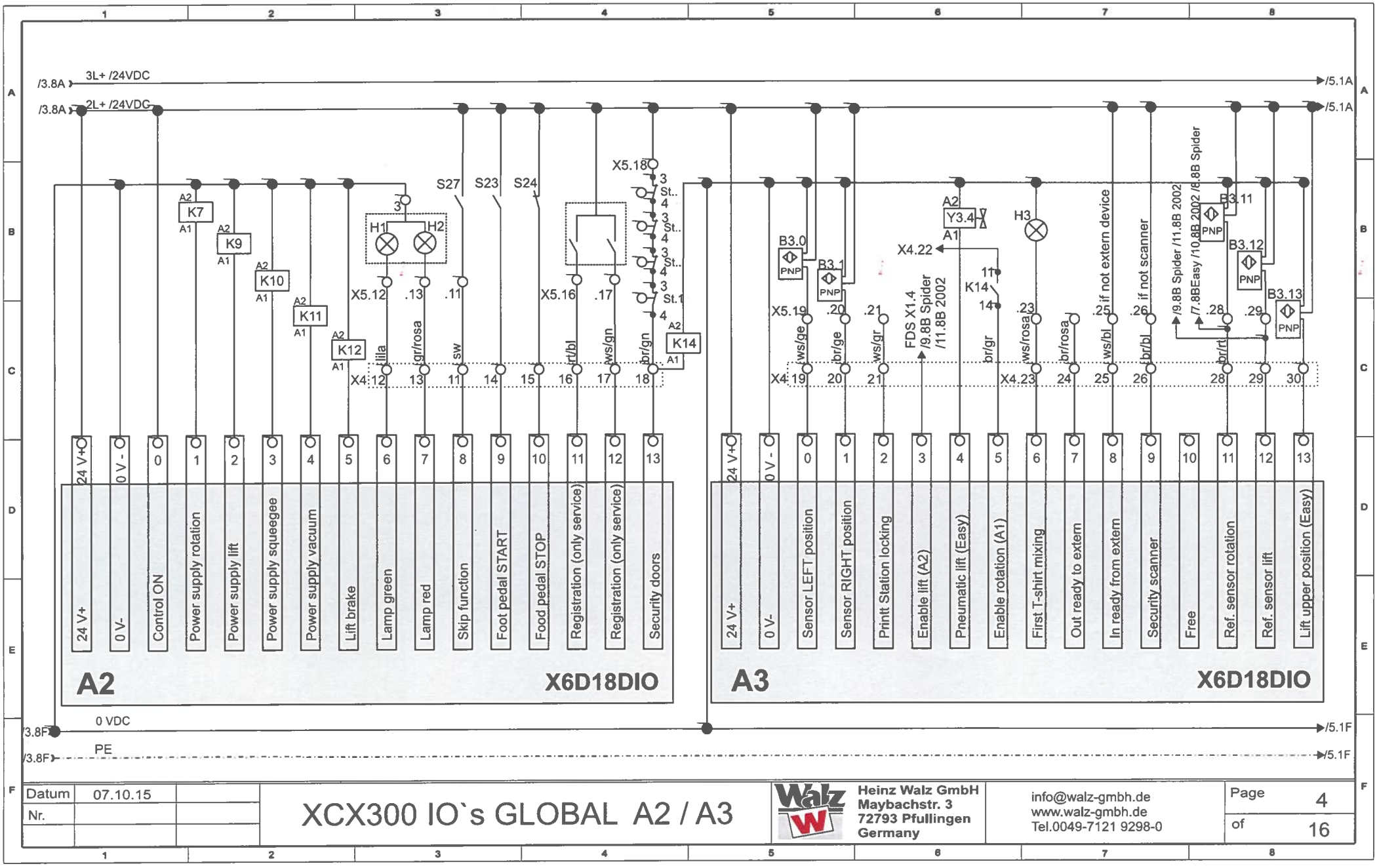

Datum	07.10.15		XCX300 IO`s GLOBAL A2 / A3	Heinz Walz GmbH Maybachstr. 3 72793 Pfullingen Germany	info@walz-gmbh.de www.walz-gmbh.de Tel.0049-7121 9298-0	Page 4 of 16
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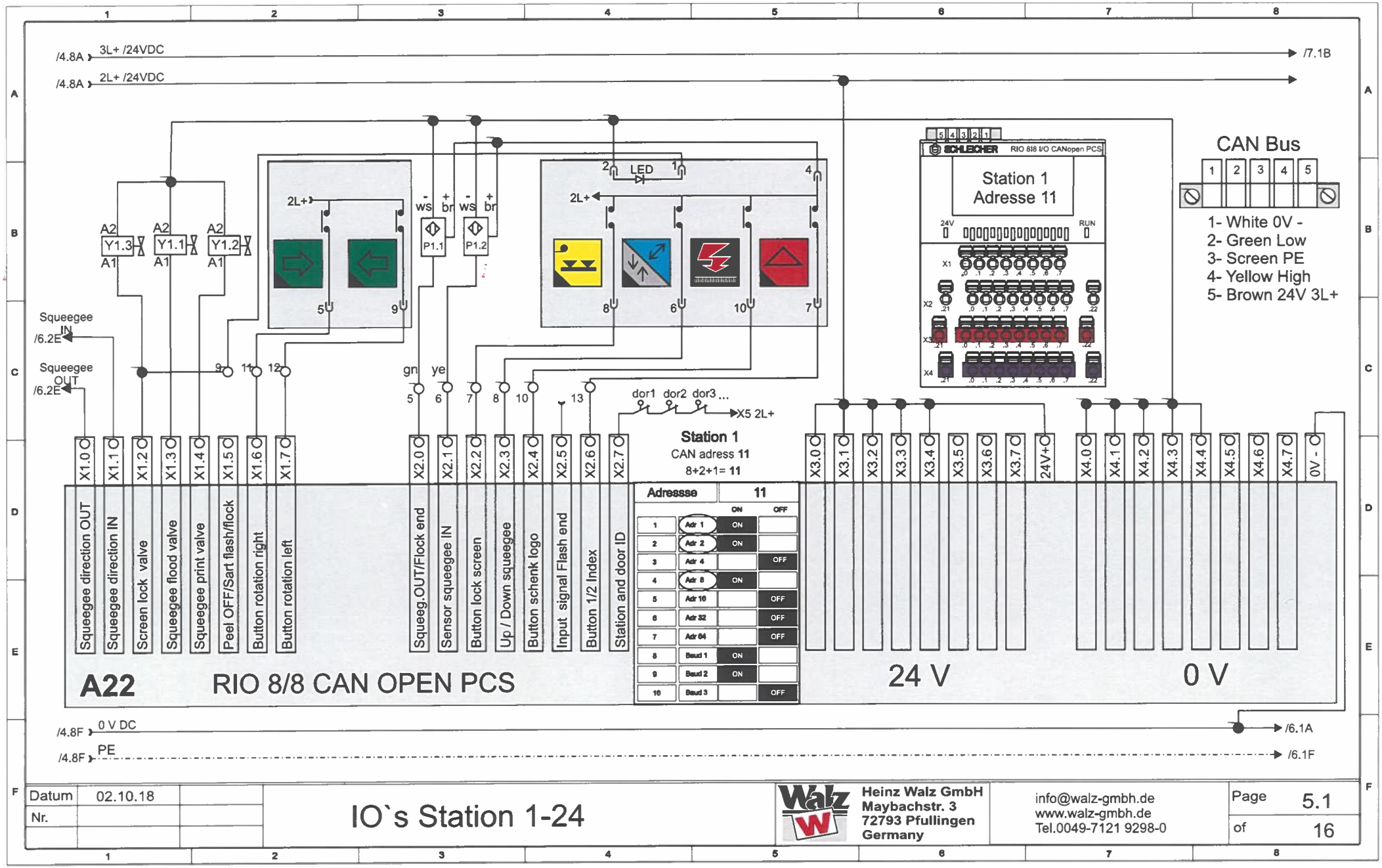

Datum	02.10.18		IO`s Station 1-24	Heinz Walz GmbH Maybachstr. 3 72793 Pfullingen Germany	info@walz-gmbh.de www.walz-gmbh.de Tel.0049-7121 9298-0	Page 5.1 of 16
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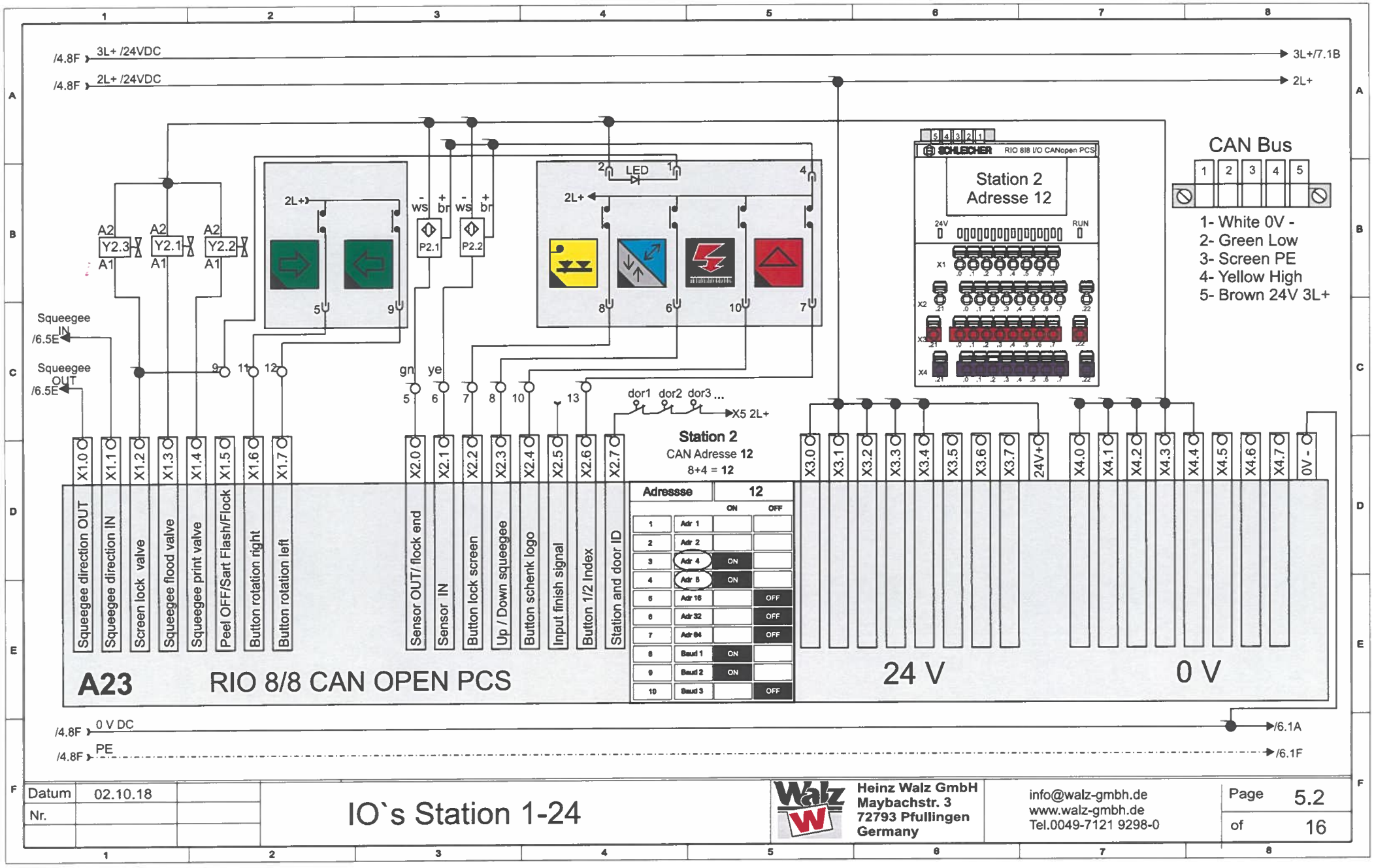

Datum	02.10.18	IO`s Station 1-24	Page 5.2
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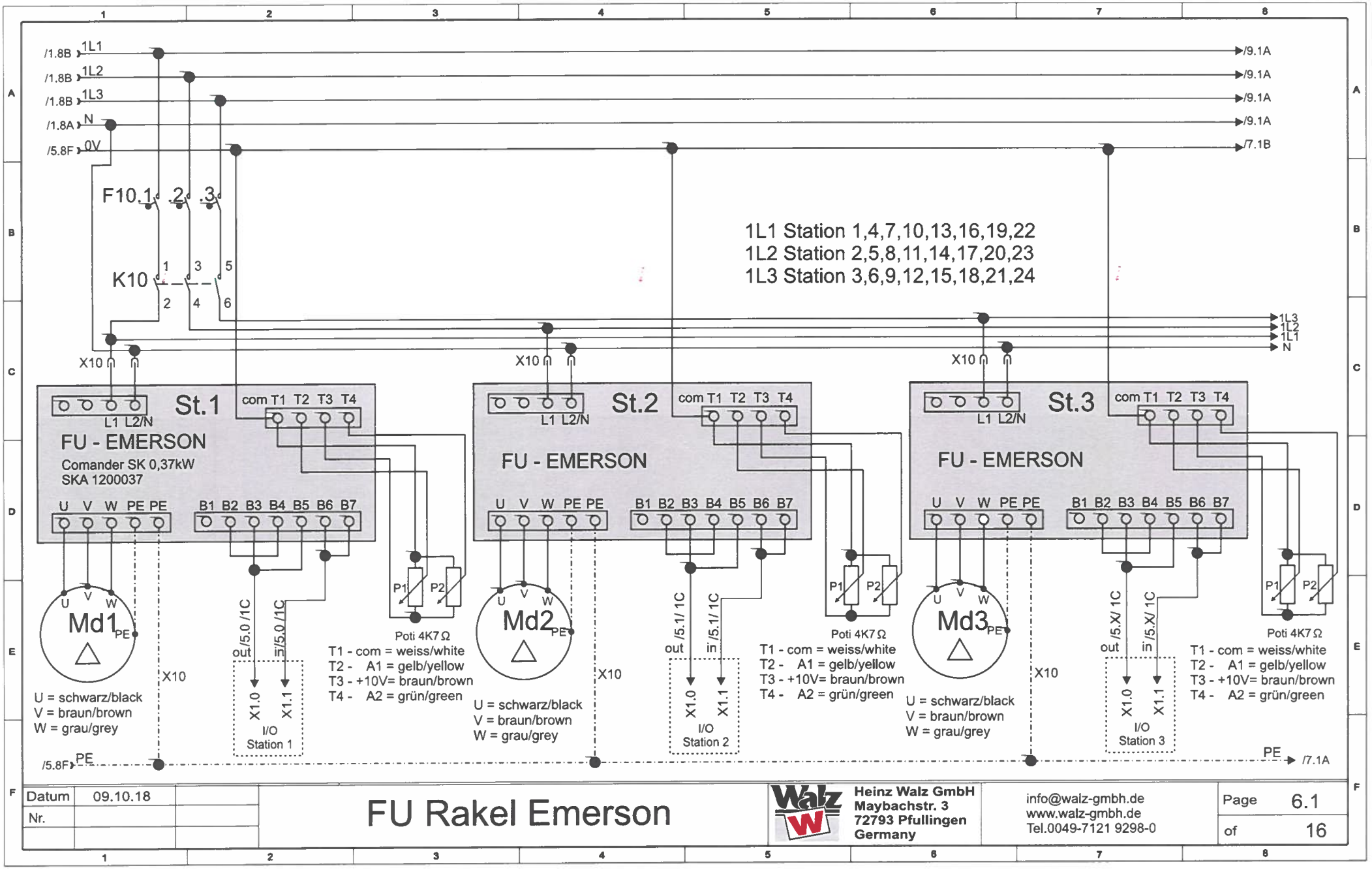

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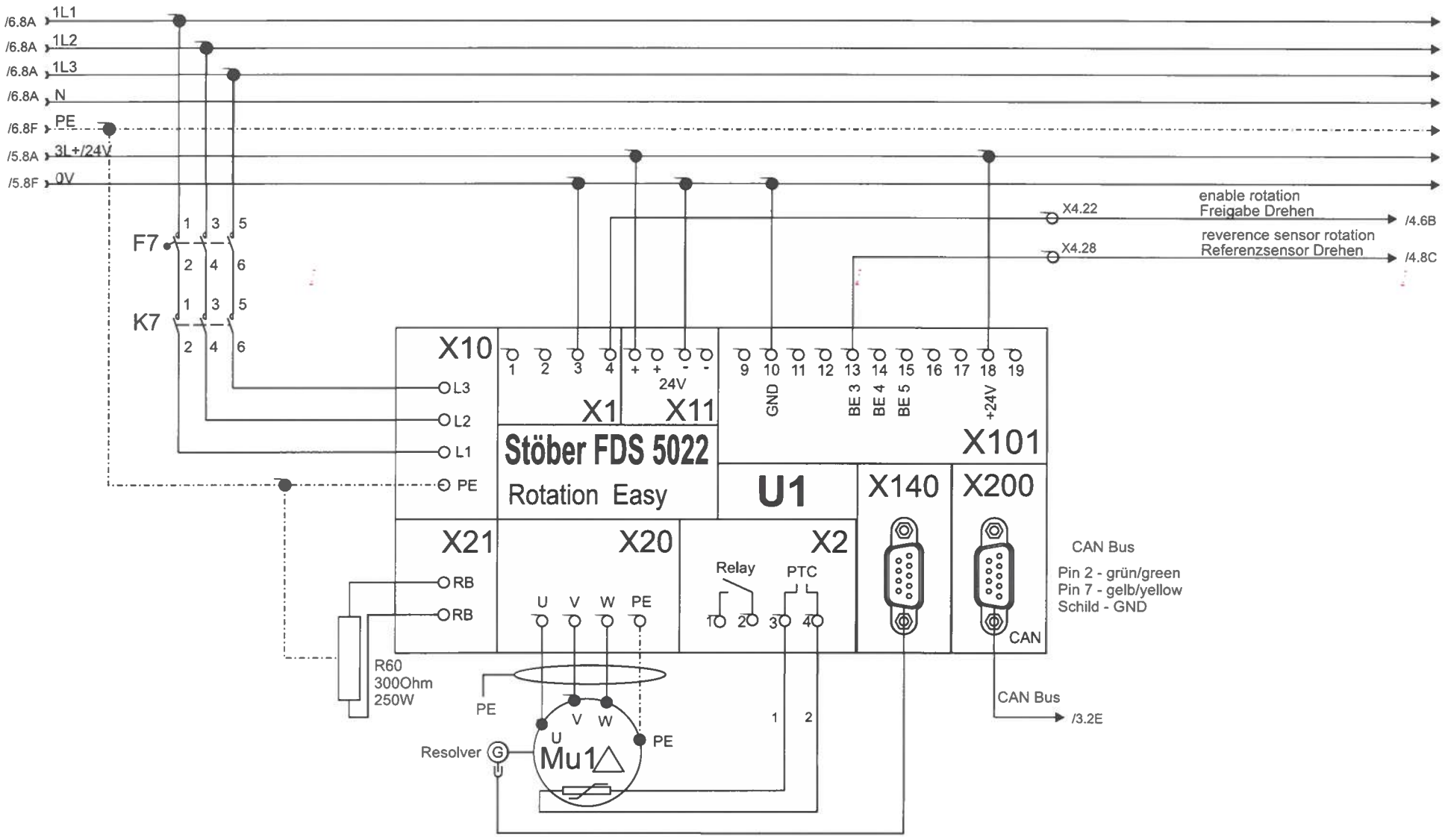

Datum	09.10.18		
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Easy Drehen/Rotation

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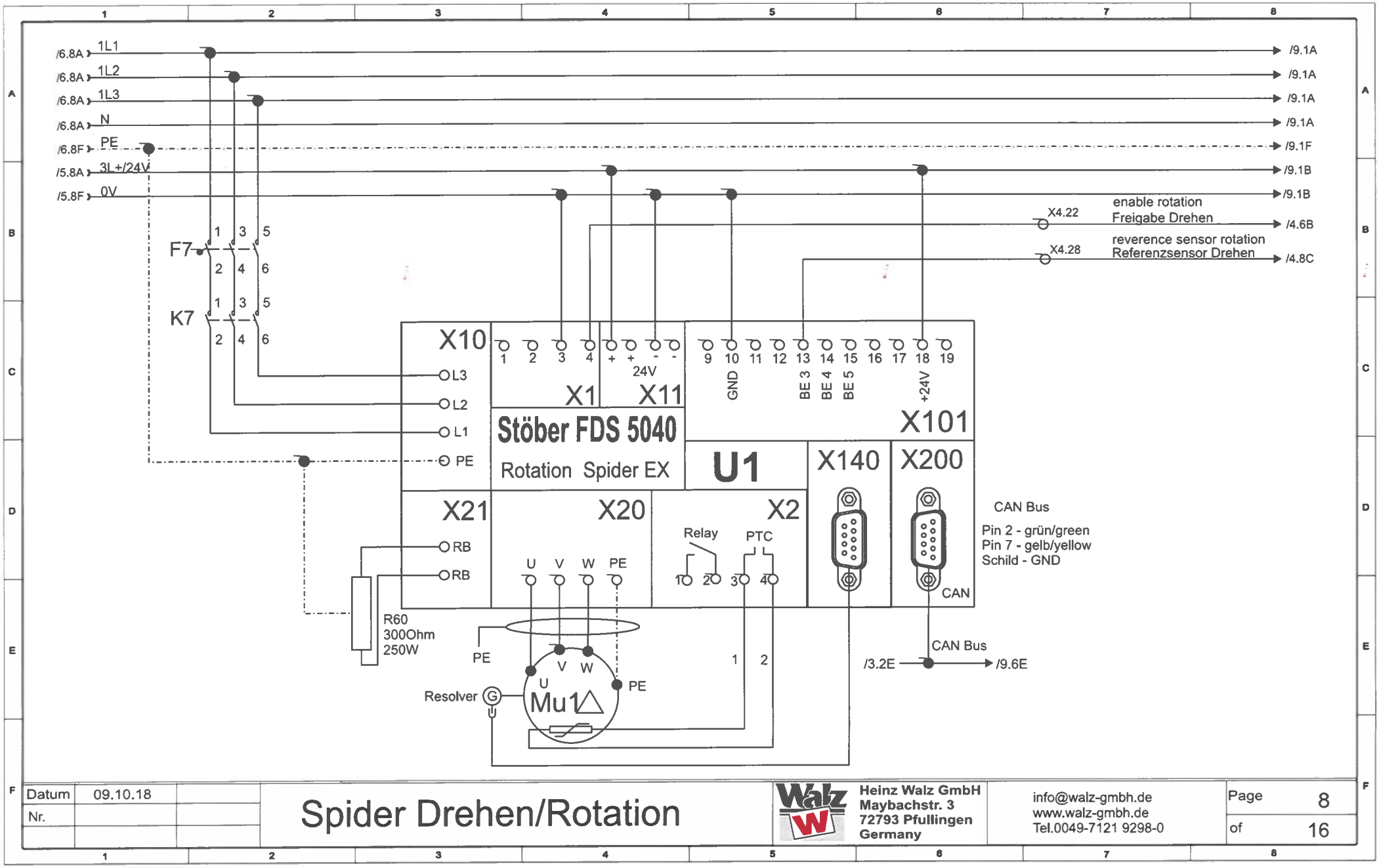

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Spider Drehen/Rotation

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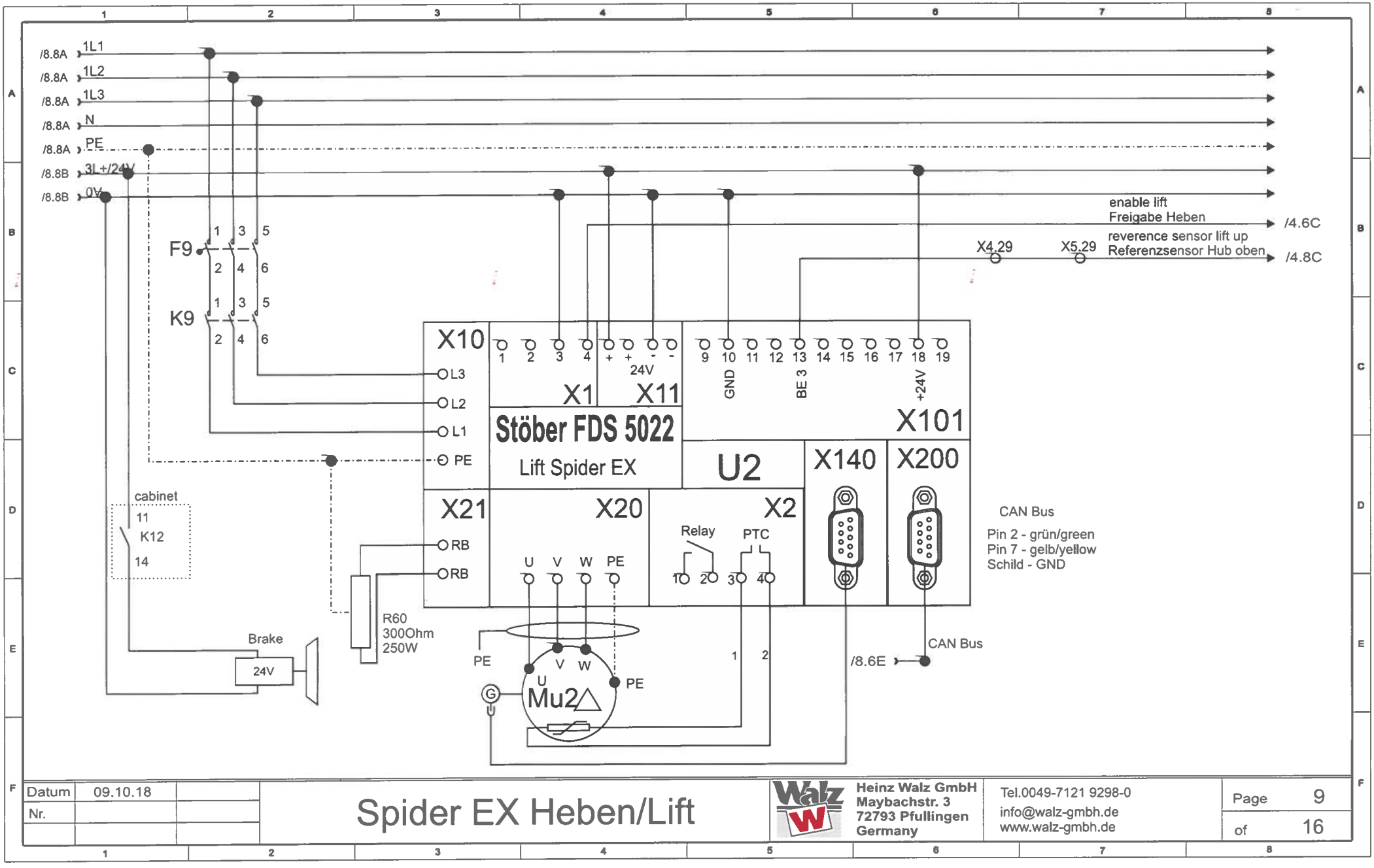

Datum	09.10.18		
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Spider EX Heben/Lift

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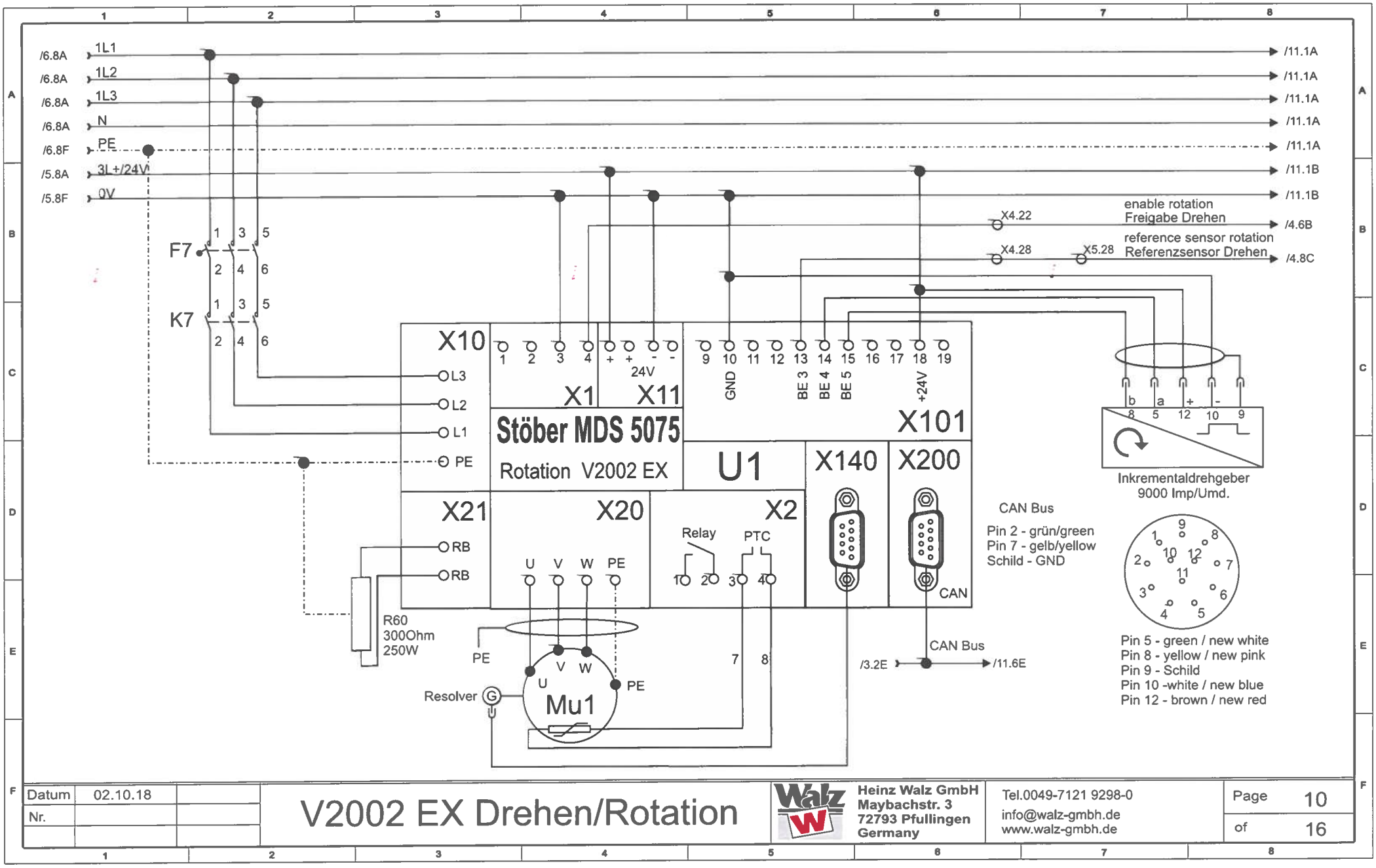

Datum	02.10.18
Nr.	

V2002 EX Drehen/Rotation

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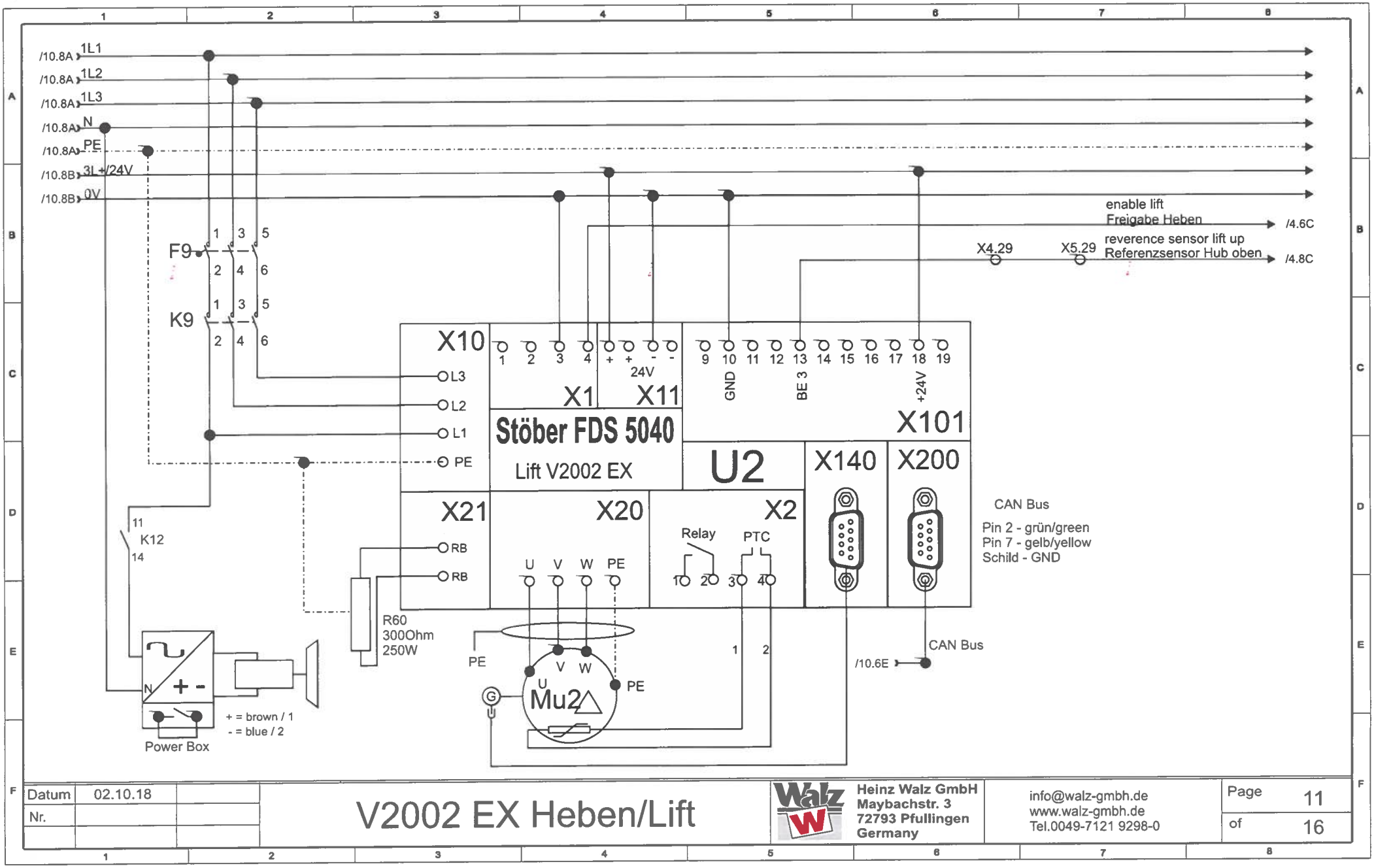

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print station

Druckwerk 1

Adressse	11	ON	OFF
1	Adr 1	ON	
2	Adr 2	ON	
3	Adr 4		OFF
4	Adr 8	ON	
5	Adr 16		OFF
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station

Druckwerk 2

Adressse	12	ON	OFF
1	Adr 1		OFF
2	Adr 2		OFF
3	Adr 4	ON	
4	Adr 8	ON	
5	Adr 16		OFF
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station

Druckwerk 3

Adressse	13	ON	OFF
1	Adr 1	ON	
2	Adr 2		OFF
3	Adr 4	ON	
4	Adr 8	ON	
5	Adr 16		OFF
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station

Druckwerk 4

Adressse	14	ON	OFF
1	Adr 1		OFF
2	Adr 2	ON	
3	Adr 4	ON	
4	Adr 8	ON	
5	Adr 16		OFF
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station

Druckwerk 5

Adressse	15	ON	OFF
1	Adr 1	ON	
2	Adr 2	ON	
3	Adr 4	ON	
4	Adr 8	ON	
5	Adr 16		OFF
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station

Druckwerk 6

Adressse	16	ON	OFF
1	Adr 1		OFF
2	Adr 2		OFF
3	Adr 4		OFF
4	Adr 8		OFF
5	Adr 16	ON	
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station

Druckwerk 7

Adressse	17	ON	OFF
1	Adr 1	ON	
2	Adr 2		OFF
3	Adr 4		OFF
4	Adr 8		OFF
5	Adr 16	ON	
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station

Druckwerk 8

Adressse	18	ON	OFF
1	Adr 1		OFF
2	Adr 2	ON	
3	Adr 4		OFF
4	Adr 8		OFF
5	Adr 16	ON	
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station

Druckwerk 9

Adressse	19	ON	OFF
1	Adr 1	ON	
2	Adr 2	ON	
3	Adr 4		OFF
4	Adr 8		OFF
5	Adr 16	ON	
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station

Druckwerk 10

Adressse	20	ON	OFF
1	Adr 1		OFF
2	Adr 2		OFF
3	Adr 4	ON	
4	Adr 8		OFF
5	Adr 16	ON	
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station

Druckwerk 11

Adressse	21	ON	OFF
1	Adr 1	ON	
2	Adr 2		OFF
3	Adr 4	ON	
4	Adr 8		OFF
5	Adr 16	ON	
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station

Druckwerk 12

Adressse	22	ON	OFF
1	Adr 1		OFF
2	Adr 2	ON	
3	Adr 4	ON	
4	Adr 8		OFF
5	Adr 16	ON	
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

Datum	08.10.18		CAN - Adressen 1-12
Nr.			

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print station
Druckwerk 13

Adressse	23		
		ON	OFF
1	Adr 1	ON	
2	Adr 2	ON	
3	Adr 4	ON	
4	Adr 8		OFF
5	Adr 16	ON	
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station
Druckwerk 14

Adressse	24		
		ON	OFF
1	Adr 1		OFF
2	Adr 2		OFF
3	Adr 4		OFF
4	Adr 8	ON	
5	Adr 16	ON	
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station
Druckwerk 15

Adressse	25		
		ON	OFF
1	Adr 1	ON	
2	Adr 2		OFF
3	Adr 4		OFF
4	Adr 8	ON	
5	Adr 16	ON	
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station
Druckwerk 16

Adressse	26		
		ON	OFF
1	Adr 1		OFF
2	Adr 2	ON	
3	Adr 4		OFF
4	Adr 8	ON	
5	Adr 16	ON	
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station
Druckwerk 17

Adressse	27		
		ON	OFF
1	Adr 1	ON	
2	Adr 2	ON	
3	Adr 4		OFF
4	Adr 8	ON	
5	Adr 16	ON	
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station
Druckwerk 18

Adressse	28		
		ON	OFF
1	Adr 1		OFF
2	Adr 2		OFF
3	Adr 4	ON	
4	Adr 8	ON	
5	Adr 16	ON	
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station
Druckwerk 19

Adressse	29		
		ON	OFF
1	Adr 1	ON	
2	Adr 2		OFF
3	Adr 4	ON	
4	Adr 8	ON	
5	Adr 16	ON	
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station
Druckwerk 20

Adressse	30		
		ON	OFF
1	Adr 1		OFF
2	Adr 2	ON	
3	Adr 4	ON	
4	Adr 8	ON	
5	Adr 16	ON	
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station
Druckwerk 21

Adressse	31		
		ON	OFF
1	Adr 1	ON	
2	Adr 2	ON	
3	Adr 4	ON	
4	Adr 8	ON	
5	Adr 16	ON	
6	Adr 32		OFF
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station
Druckwerk 22

Adressse	32		
		ON	OFF
1	Adr 1		OFF
2	Adr 2		OFF
3	Adr 4		OFF
4	Adr 8		OFF
5	Adr 16		OFF
6	Adr 32	ON	
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station
Druckwerk 23

Adressse	33		
		ON	OFF
1	Adr 1	ON	
2	Adr 2		OFF
3	Adr 4		OFF
4	Adr 8		OFF
5	Adr 16		OFF
6	Adr 32	ON	
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

print station
Druckwerk 24

Adressse	34		
		ON	OFF
1	Adr 1		OFF
2	Adr 2	ON	
3	Adr 4		OFF
4	Adr 8		OFF
5	Adr 16		OFF
6	Adr 32	ON	
7	Adr 64		OFF
8	Baud 1	ON	
9	Baud 2	ON	
10	Baud 3		OFF

Datum	08.10.18		
Nr.			

CAN - Adressen 13-24

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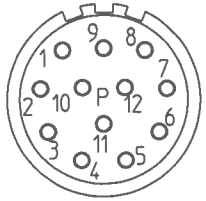
Encoder HTL FDS 5000

Motor		Signal	wires colors Aderfarben		Sub-D-15 x4
	Pin		Motorintern	Encoder	Pin
	1	B-	PK	YE	9
	2				
	3	N	RD	PK	3
	4	N-	BK	GY	10
	5	A	BN	BN	6
	6	A-	GN	WH	11
	7				
	8	B	GY	GN	1
	9				
	10	GND	WH	BU	2
	11				
	12	U_2	BN	RD	4
	Gehäuse	Schirm			

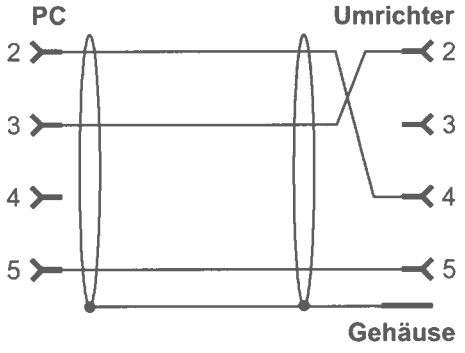
Encoder SSI MDS 5000

Signal	Motor	wires colors Aderfarben	Sub-D-15 x4
	Pin	Farbe	Pin
Data +	6	weiß ws	5
Data -	5	braun br	13
Clock +	1	gelb ye	8
Clock -	8	grün gn	15
Up +	12	rot rd	4
Up Sense[a)]	2	rosa pk	12
0 V GND[a)]	10	blau bu	2

CAN X200

Pin		Bezeichnung	Funktion
Stecker 	1	nc	—
	2	CAN-low	CAN-Low Leitung
	3	GND	Signal Ground
	4	nc	—
	5	nc	—
	6	CAN-low	CAN-Low Leitung Intern mit Pin 2 verbunden
	7	CAN-high	CAN-High Leitung
	8	nc	—
	9	CAN-high	CAN-High Leitung Intern mit Pin 7 verbunden

Positool / FDS Tool Servicekabel



schwarz	sw	BK
braun	br	BN
rot	rt	RD
orange	or	OG
gelb	ge	YE
grün	gn	GN
blau	bl	BU
violett	vi	VT
grau	gr	GY
weiß	ws	WH
rosa	rs	PK
türkis	tk	TQ
grün-gelb	gnge	GNYE

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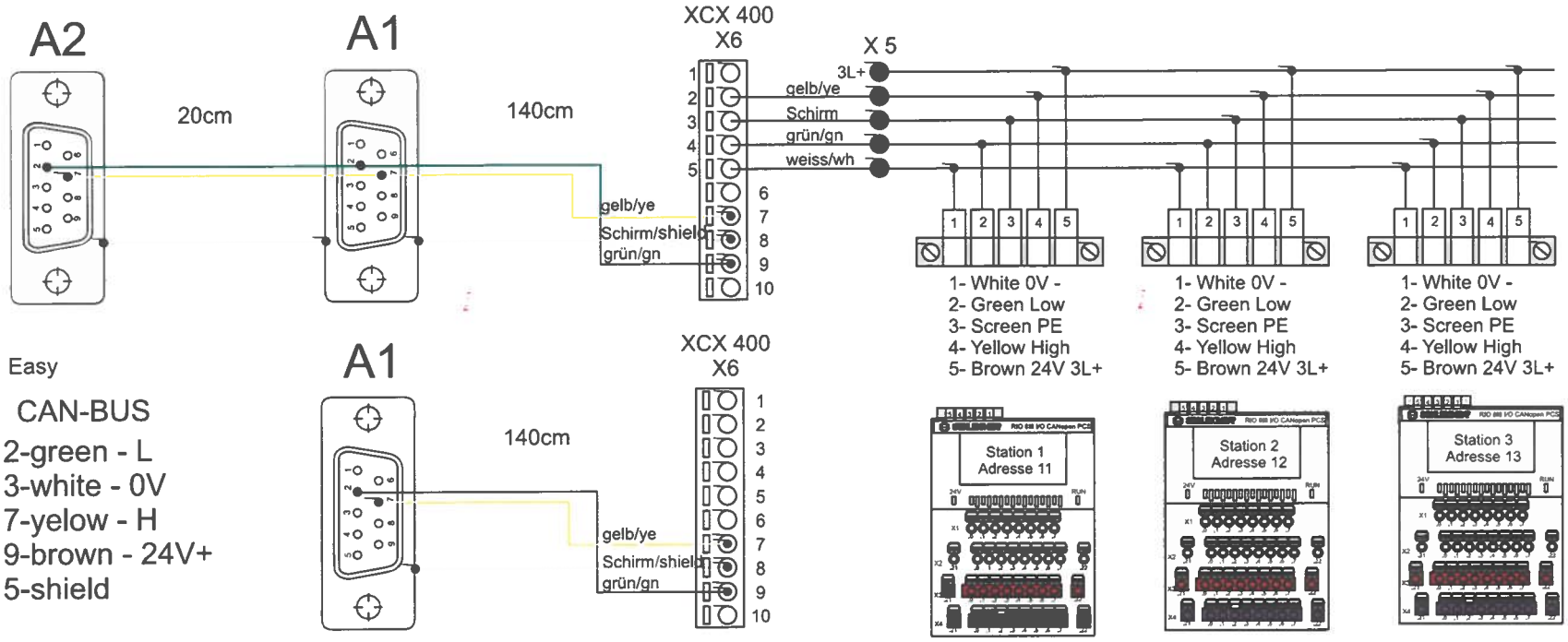
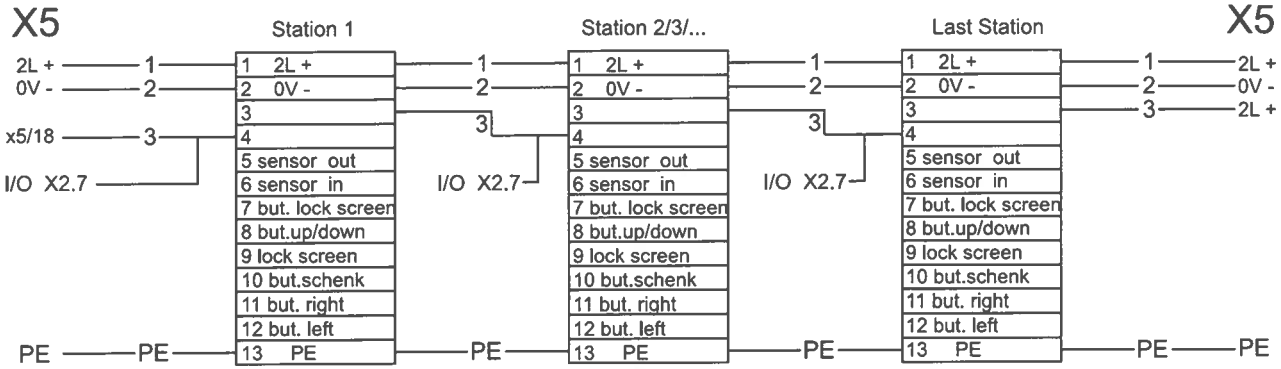
2002 EX / Spider EX



Easy

CAN-BUS
2-green - L
3-white - 0V
7-yelow - H
9-brown - 24V+
5-shield



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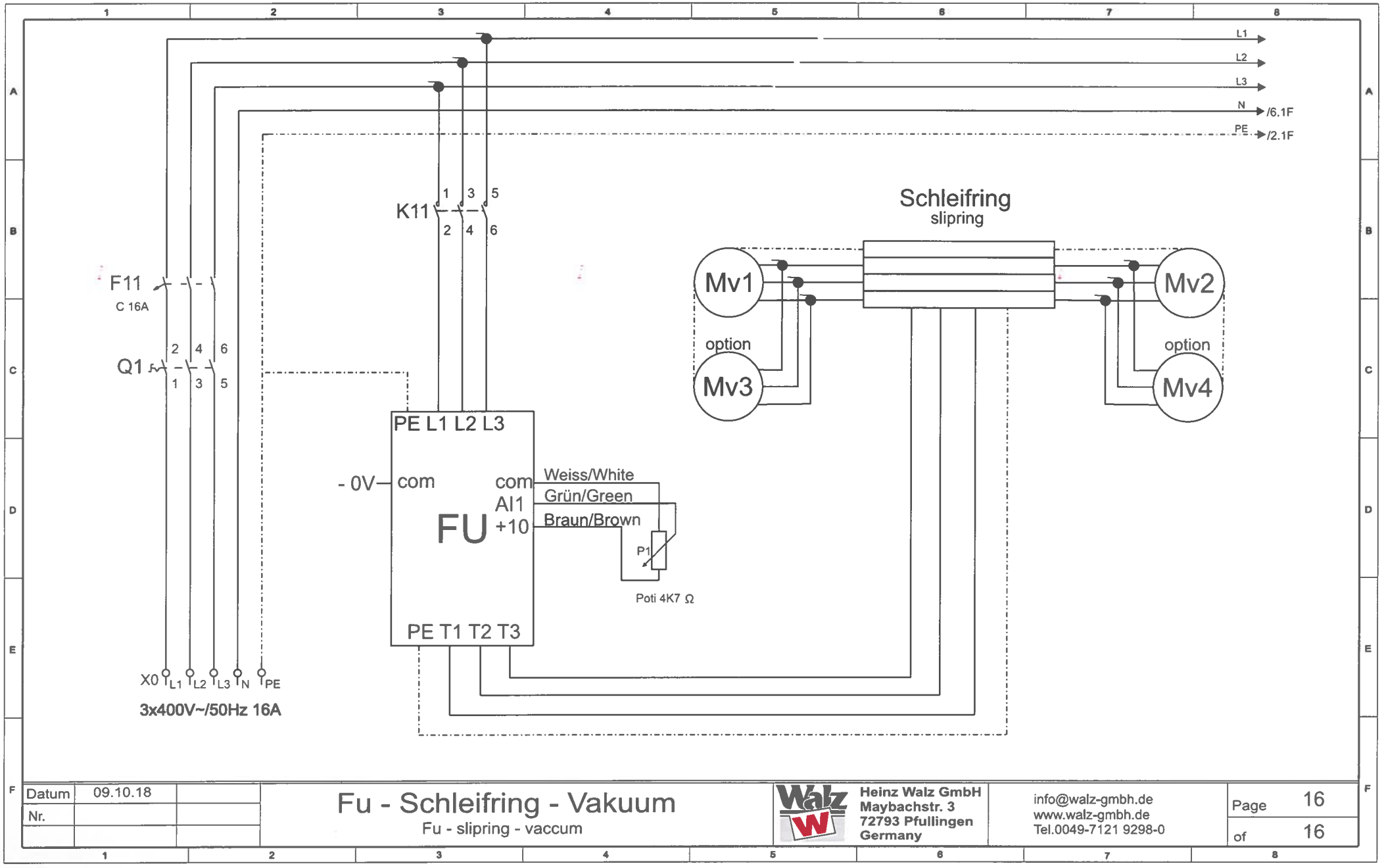

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