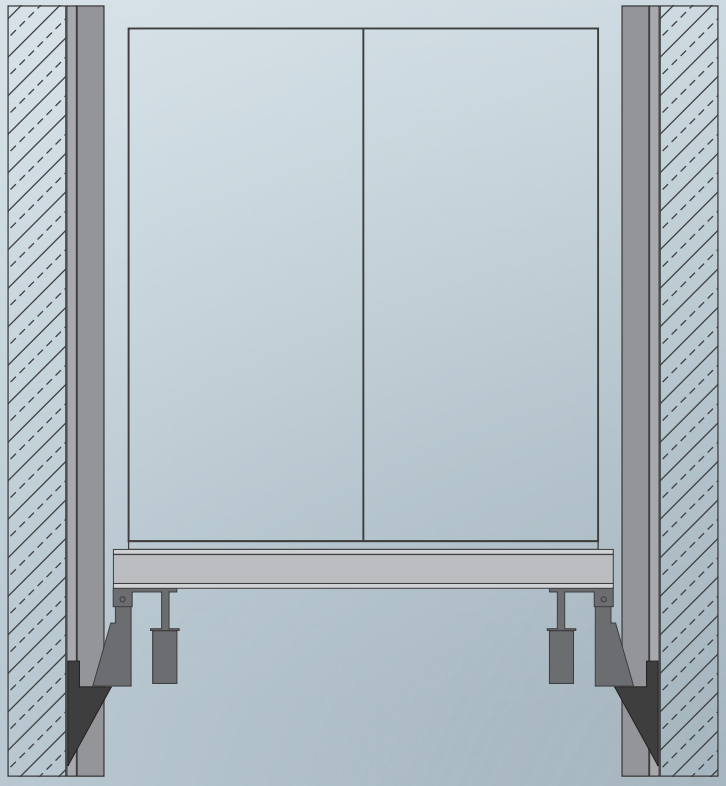
MANUAL

NEWLIFT
NEUE ELEKTRONISCHE WEGE

ASV

Control for pawl device



ASV Control

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Contents

1 General

This manual is a supplement to the FST manual and the FST installation & commissioning manual. It is limited exclusively to the description of the aspects relevant for the function.

1.1 Abbreviations, characters and symbols used

Characters/ Abbreviations	Meaning
ASV	Pawl device
ve	Entry violation
FST	Fieldbus control
LCS	Load control system
UCM	unintended car movement - Unintentional car movements with the car door open
▶	**Operation instructions** Perform the tasks that follow this symbol in the specified order
●	Action step under the respective operational instruction
⚠	***Safety-relevant notice*** This symbol is located in front of safety-relevant information
ⓘ	***Information notice*** This symbol is located in front of relevant information

1.2 Notation

Notation	Meaning
Bold	› Designations of switches and actuators › Input values
Italics	› Captions › Cross references › Designations of functions and signals › Product names
Bold italics	› Remarks
LCD font	› System messages of the controller

1.3 Further information

The following documents, among others, are available for the FST controller and its components.

- FST-2XT Installation & Commissioning
- FST-2XT manual
- ADM manual
- FPM manual
- SAM manual
- Fire recall manual

These and other current manuals can be found in the download area of our website at https://www.newlift.de/downloads-311.html

1.4 How to contact us

If, after referring to this manual, you still require assistance, our service line is there for you:

Phone	+49 89 – 898 66 – 110
E-mail	service@newlift.de
Mon. - Thurs.:	8:00 a.m. – 12:00 p.m. and 1:00 p.m. – 5:00 p.m.
Fr:	8:00 a.m. – 3:00 p.m.

2 Safety

2.1 General safety regulations

The pawl device may only be operated in a technically perfect condition and in accordance with its intended use, in a safety-conscious and hazard-conscious manner, in compliance with the manual, the applicable accident prevention regulations and the guidelines of the local electricity supplier.

This manual is a supplement to the FST manual and the FST Installation and Commissioning manual whose safety guidelines must always be observed.

2.2 Handling electronic assemblies

Electrostatic charge

› Keep the electronic assembly in its original packaging until installation.

› Before opening the original packaging, a static discharge must be performed. To do this, touch a grounded piece of metal.

› During work on electronic assemblies, periodically perform this discharge procedure.

› All bus inputs and outputs that are not in use must be equipped with a terminator.

ATTENTION:

The system is only to be put into operation with the ASV switched off (learn drive, calibration and flush positions).

The ASV is not put into operation until the system has been set correctly.

3 Pawl devices

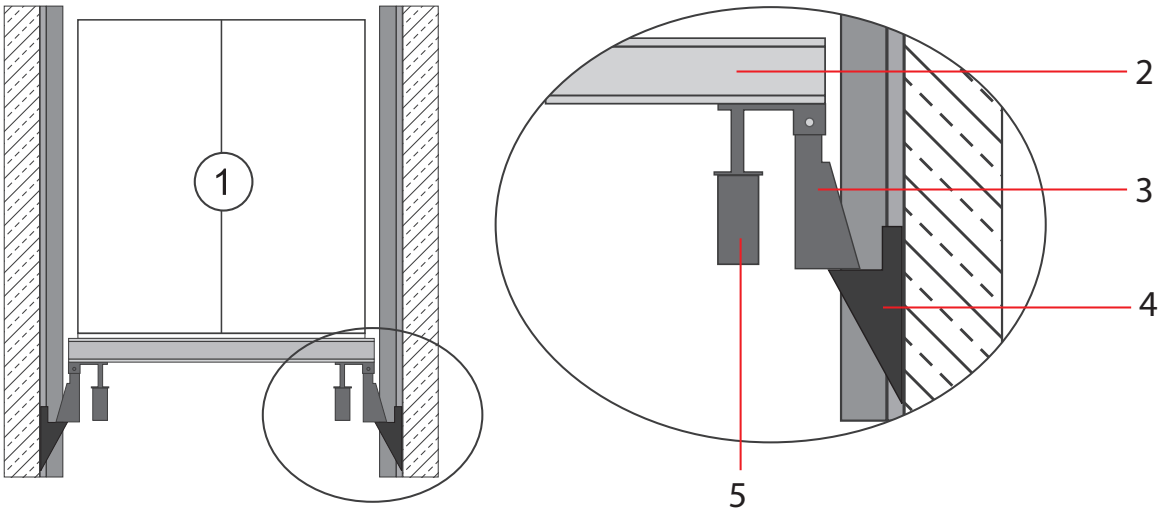
3.1 Functional principle of a pawl device

The pawl device prevents the car from sinking when loading heavy loads in lifts with large loads (e.g. by stretching the suspension ropes or compressing the hydraulic oil).

An electromagnetic or electro-hydraulic locking device fixes the flush position and thus prevents movement (step formation) of the lift during loading and unloading.

The follwoing illustrations explain the functional principle using the example of an electromagnetic lock.

3.1.1 Principle sketch

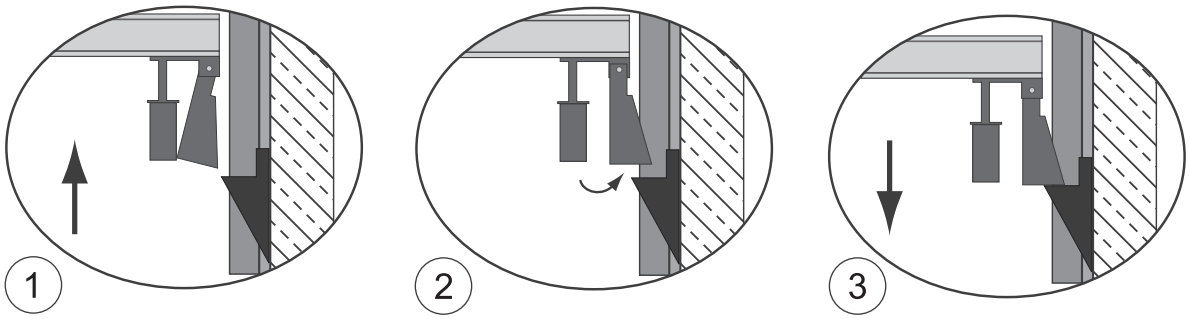


Example of an electromagnetic interlock

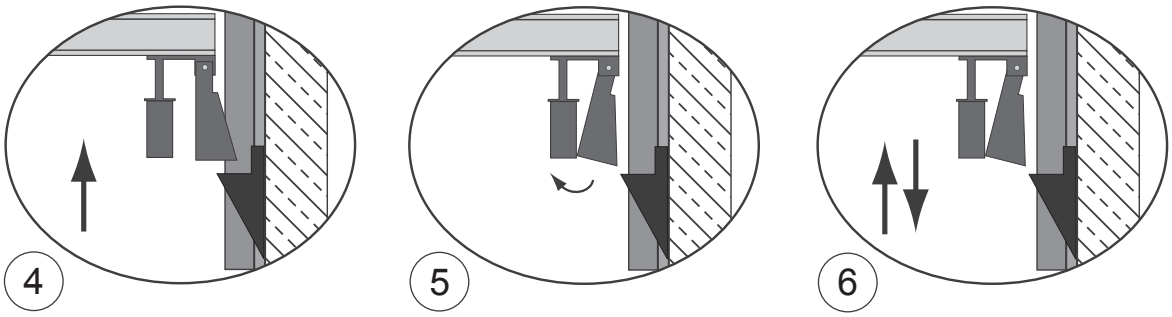
1	Car	4	Support bracket
2	Car bottom	5	Magnet
3	Locking bolt		

3.1.2 Function steps using the example of an upward movement

The lift first passes the stop (1) and stops. Then the locking bolts are extended (2) The lift then sinks onto the support brackets provided for this purpose in the shaft of the landing (3).



When leaving the stop, the car is raised a certain distance (4) and stops. Then the locking bolts are retracted (5) to allow the car to continue its journey (6).



3.2 Support bolt

Rope and hydraulically operated lifts can be equipped with pawl devices of different interlock types.

The control for the landing gear must be adapted to the respective conditions. Each bolt is (must be) monitored separately in the end position with a contact.

3.2.1 Electromagnetic support bolt = „Solenoid-Pawl“ YES

The touchdown bolts are extended and retracted via controlled electromagnets. As a rule, these are electric lifting magnets. When controlled, the bolt is tightened. In the de-energised state, the bolt drops down to the touchdown position pretensioned by a pressure spring.

3.2.2 Electro-hydraulic support bolt = „Solenoid-Pawl“ NO

The oil pressure generated by a hydraulic pump is used via controlled valves to retract or extend the hydraulic touchdown bolts.

A hydraulic unit, which is usually located on the car, extends and retracts the touchdown bolts.

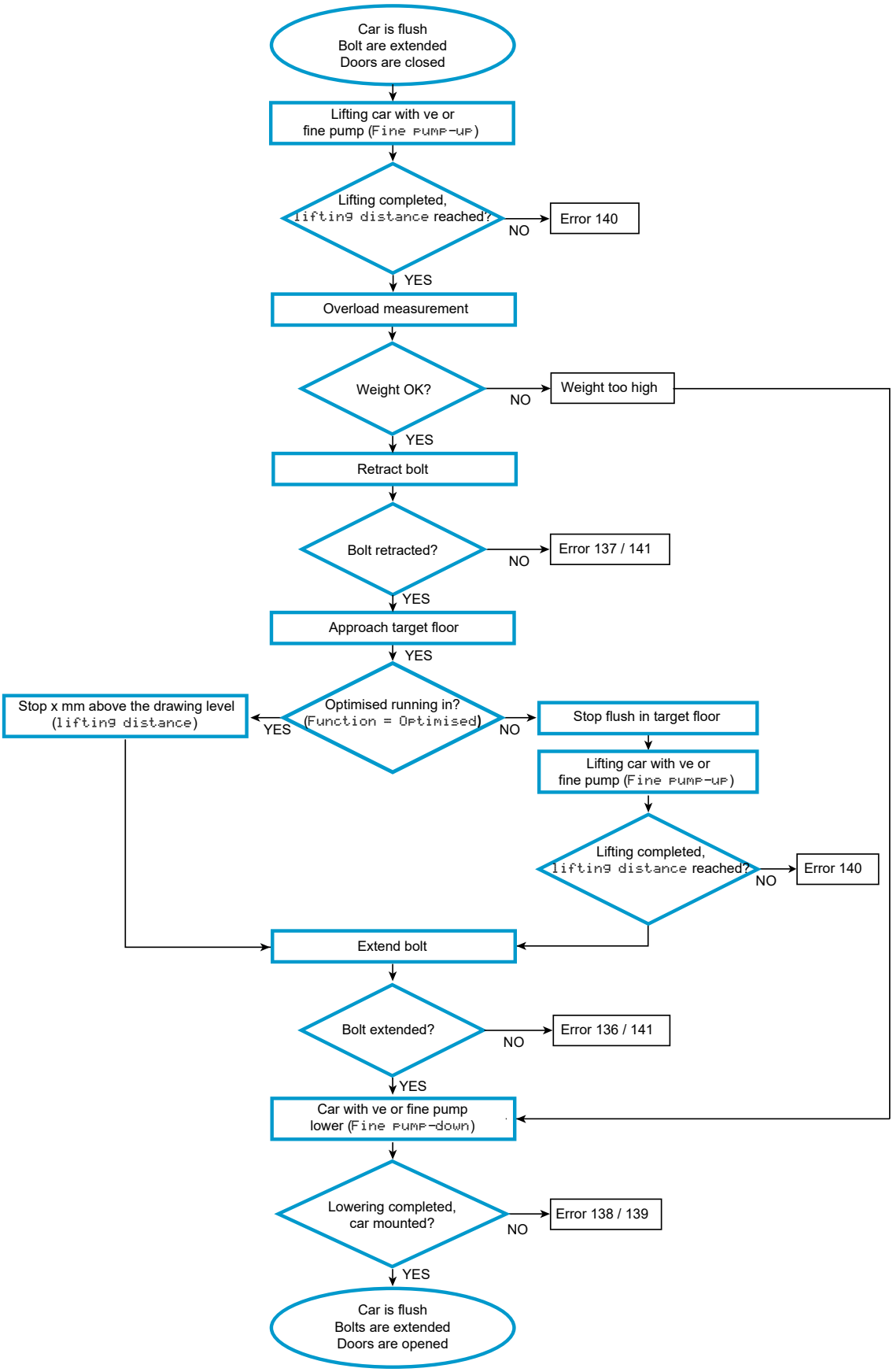
This is to be set via the following parameters:

```
..Drive / Pawl control / Solenoid-Pawl: Yes/No
```

See chapter 5.2.2 Drive parameter settings, on page 16.

4 Control for pawl devices

4.1 Functional principle of a control unit



Parameters that influence the sequence are shown in brackets, e.g. (lifting distance).
Time delays between the individual states are not shown in the diagram.
See chapter 5.2 Check and set parameters, on page 15.

If certain states are not reached due to missing feedback or timeouts, the corresponding error code is indicated in the diagram.
See chapter 6 Error messages, on page 20.

4.1.1 Pawl device for rope lifts

The drive must be adjusted in such a way that it is able to correct (catch up) even a few millimetres.

ASV operation on rope systems usually only prevents the car from sinking, as the car becomes lighter during unloading and is „pulled away“, i.e. lifted, by the (now heavier) counterweight.

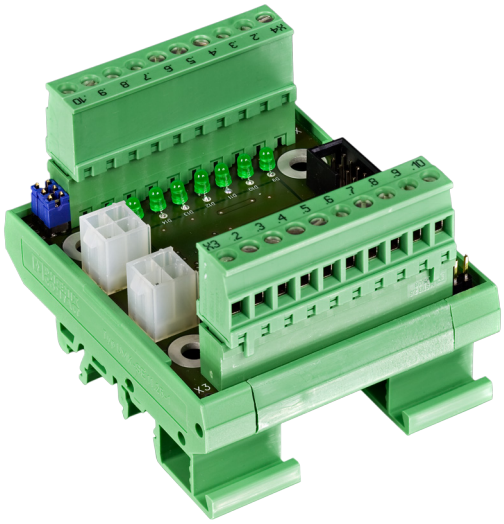
The pawl control does not „hold“ the car.

Settings see chapter „5.2.2 Drive parameter settings“ on page 16.

4.2 Components

The following additional components are required to control a pawl device:

› RIO-2-Module - for bolt control



RIO-2

› Contactors and relays - for signal coupling and power transmission

› Optional: additional suspension cable - for signal transmission between car and machine room.

› Safety circuit bypass control- magnetic switches and magnets for bridging the bolt switches within the bolt zone.

The bolt zone is the area in which the car can move with the bolts extended without colliding with a landing bracket.
The length of this zone must be defined by the installation company.

4.3 Signals

The following table shows all signals required for control, depending on the interlock type:

Signals	Module, Terminal	Hydraulic	Magnetic	Input	Output
Retract bolt	RIO-2, X3.4		X		X
Extend bolt	RIO-2, X3.3		X		X
Pump attachment bolt	RIO-2, X3.2	X			X
Bolt extended	RIO-2, X3.5	X	X	X	
Bolt retracted	RIO-2, X3.6	X	X	X	
Overload	RIO-2, X3.7	X	X	X	
Car mounted	RIO-2, X3.9	X	X	X	
Re-Pump	RIO-2, X3.8	X		X	
Fine adjustement	FST2, X21.7	X			X
Fine lowering	FST2, X21.9	X			X

Retract bolt

Control of the electromagnetic valve for retracting the touchdown bolts.

Extend bolt

Control of the electromagnetic valve for extending the touchdown bolts.

Pump attachment bolt

Control of the hydraulic pump for retracting/extending the touchdown bolts.

Bolt extended

Interrogation of the limit switches **Bolt extended**.

Bolt retracted

Checking the limit switches **Bolt retracted**.

Overload

Interrogation of the pressure switch **Overload.**

The overload cannot be measured in the mounted state
See chapter 4.5 Overload measurement, on page 12.

Car mounted

Interrogation of the pressure or limit switch for the mounted car (NC function).

The car up signal can be generated in two ways:

› Mechanical switches on the landing troughs, which are actuated by the extended landing pins when the car is in position.
› Pressure switch on the hydraulic unit of the drive, which signals that the car is in the raised position when the pressure falls below a defined threshold.

Re-pump (NO contact function) (NO)

Interrogation of the pressure switch when the car has been in the open position for a long time (normally closed function).

The signal *Re-pump* prevents a complete loss of pressure in the hydraulic cylinder during long idle times with the bolt extended.

The signal *Re-pump* can be generated via two variants:

› Additional pressure switch on the hydraulic unit, which triggers pumping when the pressure falls below a defined threshold.
› Slack rope switch (for hydraulic rope systems)

Re-pumping must never lead to the „loss“ of the „Set up“ message (opener function)!

Fine adjustment

Control of an optional fine adjustment pump for slow lifting of the car.

Hydraulic power packs with a high output work more efficiently if they are used together with an additional fine adjustment pump with a lower output. The fine-adjustment pump performs the short readjustment and repumping operations without switching on the main power unit. This is beneficial for both energy consumption and driving behaviour.

The fine adjustment pump ensures

› a slow lifting of the car with the bolts extended

› a pump-up to prevent pressure loss in the hydraulic cylinder

Without a fine adjustment pump, the car is raised slowly via the main pump.

Fine lowering

Control of an optional fine lowering valve for slow lowering of the car. Without a fine lowering valve, the car is lowered slowly via the main pump.

4.4 Safety circuit and Safety circuit bypass control

Safety circuit

The contacts of the signals *bolt retracted* and *bolt extended* are integrated into the safety circuit. This means that the car can only be moved within the bolt zone when the bolts are extended.

Safety circuit bypass control

Within the door zone, a safety circuit bypass control bridges

› the contacts of the signals *Bolt retracted* and *Bolt extended*,
to allow the car to be raised and lowered slowly in this area with the bolts extended.

› the car and shaft door contacts,
to enable pumping when the doors are open.

See chapter 7 Standard circuit diagrams, on page 21.

4.5 Overload measurement

Due to the largely pressureless hydraulic cylinder of the mounted car, the overload measurement required by EN81 cannot be carried out by pressure measurement at standstill, as is usually the case, but must be carried out using a measuring method that is independent of the hydraulic pressure.

Sequence of the overload measurement:

› The car is raised by the `lifting distance` or, for the time Lifting time `Max`.

› *Measurement of the overload via the pressure switch input RIO-2 X3.7.*

» measured weight OK?
-> ride continues

» measured weight to high
->The car is set down on the bolts, the car doors are opened and the car waits until either the light barrier has been interrupted or the time set in `Overload Stg.` has elapsed.

› Overload condition is canceled and the process starts again.
See chapter 4.1 Functional principle of a control unit, on page 9.

4.5.1 Overload measurement for rope systems

In contrast to hydraulic systems, in rope systems the overload must be implemented via sensors, e.g. via rope or strain gauges.

Contrary to the usual procedure, the overall structure must be able to lift an overloaded car, as only after lifting from the support bars a load measurement is possible.

If this is not desired or if it is not possible by design, other load measurement methods must be used, e.g. load measurement via the car floor!

Lift type specific the touchdown of the car in rope lifts is not be regarded as equivalent to that in hydraulic lifts. The load of the car is never completely placed. In addition, there is a relaxation of the suspension rope when the car is unloaded, which results in the formation of steps. The pawl device must therefore be regarded as a means of preventing the car from sinking when it is loaded. In order to avoid the formation of steps during unloading, it is necessary to readjust the flush position.

4.6 Diagnostic display

This menu is used for diagnostics during commissioning and troubleshooting of the signal inputs and outputs of the ASV control.

4.6.1 Call up diagnosis display

The diagnostic display is called up in the FST main display by pressing the key combination Shift+←+→. The switching is done via the key combinations Shift+← or Shift+→. (*See FST Manual*).

▶ Press the key combination briefly Shift+←+→
Line C of the FST display switches to the diagnostic display. It appears:
`LIK-Errs:00000 00000`

▶ Press the key combination Shift+← or Shift+→ repeatedly until the following appears in line C of the FST display:
`ASV: 00000000 P=[00]` displays

4.6.2 Decoding of the diagnostic display

The diagnostic display `ASV: 00000000 P=[00]` is divided into two parts and can be decoded as follows:

› left hand tub `ASV: 00000000`:
Display of the states of all relevant inputs/outputs, with each digit corresponding to a terminal

› right hand tub `P=[00]`:
Display of the states of the bolt control via numerical codes.

ASV: 0000000

Digit	Set	Description	Terminal
00000000	1	Pump for bolt control switched on	RIO-2 X3.2
00000000	1	**Extend bolts** valve activated	RIO-2 X3.3
00000000	1	**Retract bolts** valve activated	RIO-2 X3.4
00000000	1	**Bolts extended** limit switch is active	RIO-2 X3.5
00000000	1	**Bolts retracted** limit switch is active	RIO-2 X3.6
00000000	1	**Car bottomed** input is active	RIO-2 X3.9
00000000	1	**Re-Pump** input is active	RIO-2 X3.8

P=[00]

Digit	Code	Description
[00]	0	Standstill
[00]	1	Main contactors ON, wait for star-delta startup
[00]	2	Lift car
[00]	3	Motor run-on active
[00]	4	Wait for bolts to extend or retract.
[00]	5	Bolts extended or retracted completely
[00]	6	Waiting for car bottomed input
[00]	7	Delay after stop
[00]	0	No bolt movement
[00]	1	Bolts are retracting
[00]	2	Bolts are extending
[00]	3	Re-Pumping active
[00]	4	Error in the bolt contol

4.7 Diagnosis via Guide Menu

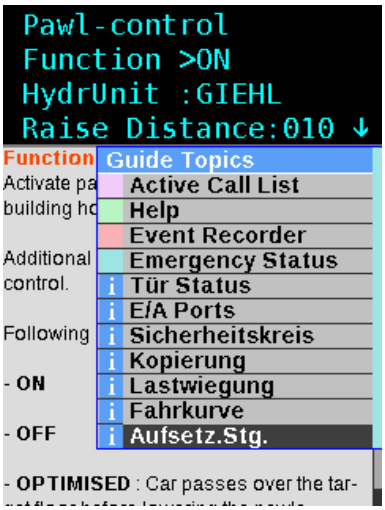
This menu is a clearly visible menu that shows the states of the ASV.

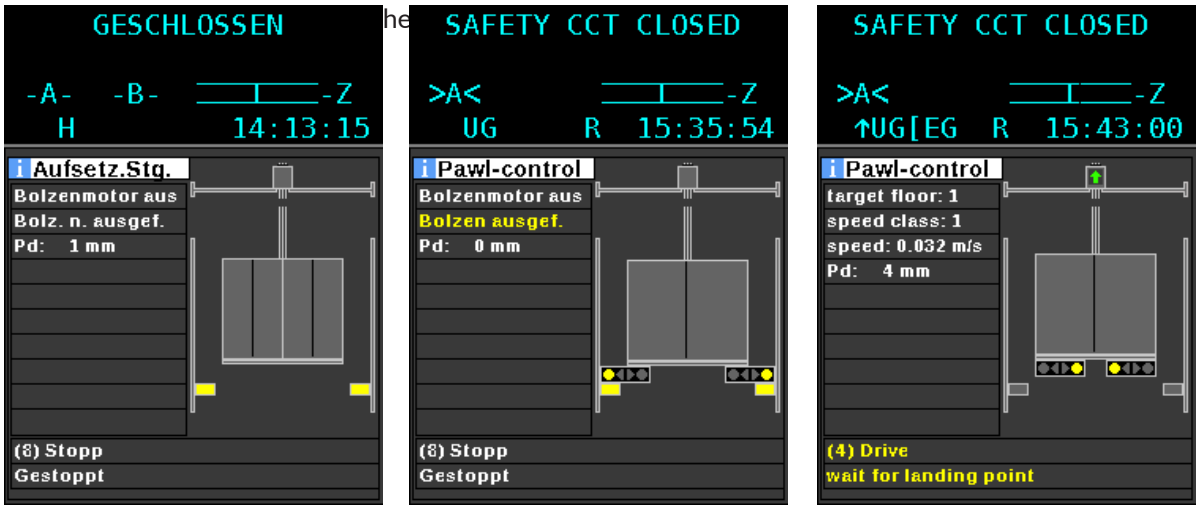
4.7.1 Call up diagnosis via Guide

► Press the Func Button to open the menu

► go to the menu item **Aufsetz.Stg** with the ▼

► and then press the Select button to confirm





Examples

5 Commissioning

Unintentional car movements when the safety circuit is bridged!

When working on the shaft, body parts can be crushed by unintentional car movements. The bolts in the shaft can collide with the support brackets.

- ▶ Ensure that any set wire jumpers have been removed from the safety circuit before activating the pawl device.
- ▶ Observe the instructions *in chapter 2.1 General safety regulations* of the FST Installation and Commissioning Manual.

5.1 Requirements

› Completely electrically connected, functional touchdown mechanism (stud pump, stud valves, stud limit switch, pressure switch)

› Solenoid switch bracket mounted and solenoid placed on the guide rails according to the bolt zone

› Functional safety circuit bypass control

› Control block, valve control or frequency converter set and parameterised

› External control locked

› Car doors locked

5.2 Check and set parameters

The parameters are checked or set in the menus *Doors Basic* and *Drive*.

5.2.1 Door parameter settings

The doors must not be opened until the car is completely in place.

▶ select `MAIN MENU / Doors / Doors-Basic / Pre-Opening`

▶ with ▲/▼ set `NO` and confirm with Enter

5.2.2 Drive parameter settings

▶ select MAIN MENU / Drive

▶ Select menu items one after the other and set parameters according to the following list

Menu item	Description	Setting range
Drive Drive Type	Drive variant ***Note!*** ***A pawl device can only be controlled if the drive type is set correctly.***	ASV-DCP03 ASV-MFC ASV-CT-Unidrive 4-VentilHydr+ASV ASV-ZA-1DF ASV-CERN 25T
Drive Re-levelling	Relevelling with open shaft and car doors only for hydraulic lifts.	YES
Drive Special Params Switch 6	Input set up and re-pumping is not evaluated, but only a zone in the flush area (set up after path) ***Note! Only to be set for rope lifts!***	NO
Drive Pawl-control Function	› Switching on the control of a pawl-control for hydraulic freight lifts ON: Pawl-control activated (without optimised retraction) OFF: Pawl-control inactivated OPTIMISED: Pawl-control activated (with optimised retraction). The control requires additional modules. ***Attention!*** ***Before deactivating the pawl device, the touch-down bolts must be retracted.***	ON OFF OPTIMISED
Drive Pawl-control HydrUnit	Type of hydraulic unit ***Note!*** ***Setting must match the setting under drive type.*** ***(Settings for rope lifts are not relevant).***	Giehl Giehl AZFR Giehl AZRS BER.ELRV Oildynam. Leistritz iValve
Drive Pawl-control Raise Distance	Distance by which the car is lifted when the bolts are retracted and extended. ***Note!*** ***The distance must be adjusted so that the bolts are free to move when retracting and extending.*** ***The distance must be within the door zone.***	0 – 255 mm
Drive Pawl-control Raise Time Max	Maximum time allowed for lifting the car for the set lifting distance. If the set lifting distance has not been reached after the time has elapsed, the system is shut down with Error 140.	0 – 255 sec
Drive Pawl-control Seating-Zone	Position range in which the lift must be located in order to be recognized as set up. (In addition to the hardware signal set up) Set range in millimeters according to conditions on site ***Note! Only to be set for rope lifts!***	0 – 30 mm
Drive Pawl-control Solenoid-Pawl	Variant of the pawl device: › YES: Electromagnetically operated pawl-control › NO: Hydraulically operated pawl-control	YES NO
Drive Pawl-control Pawl Time Max	Maximum time to retract or extend the bolt	2 – 15 sec

Menu item	Description	Setting range
Drive Pawl-control Pawl Deb. Time	Debouncing time from retracting the bolts to starting the main drive	1000–4000 ms
Drive Pawl-control Door Lock	Locking the car doors until the car has been set down.	YES NO
Drive Pawl-control Fine Pump-UP	Additional fine adjustment pump available for lifting	YES NO
Drive Pawl-control Fine Pump-DN	Additional fine valve down for slow lowering of the car available	YES NO
Drive Pawl-control Low Press. Ctrl	*Re-pumping* to prevent slack rope with the car in place (via the RIO-2 X3.8 input)	YES NO
Drive Pawl-control Overload Ctrl.	Activate the overload measurement by briefly lifting the car. Max. Holding time for overload condition after overload measurement *See chapter 4.5 Overload measurement, on page 12.* The setting value 0 deactivates the overload measurement via the pressure switch RIO-2 X3.7. The overload measurement must then be made on the car.	0 – 255 sec
Drive Pawl-control Re-levelling	Option to activate catch-up during active touch-down device for all hydraulic ASV drive types. (Available via actuator type 4-Valve Hydr. + ASV)) ***Notice!*** ***The main setting \Drive Re-levelling is still observed independently and must be activated additionally if the ASV catch-up is required.***	YES NO

5.3 Check and set signal inputs

► Call up the diagnostic display and check according to the table.
See chapter „4.6.1 Call up diagnosis display“ on page 13.

5.3.1 Testing the bolt switches

► Move the car UP or DOWN by means of the return control and at the same time activate the diagnostic display.
observe `ASV: 00000000 P=[00]`.
» The input *bolt retracted* is active when the diagnostic display shows the following:
`ASV: 00010000`
» The input *bolt extended* is active when the diagnostic display shows the following:
`ASV: 00001000`

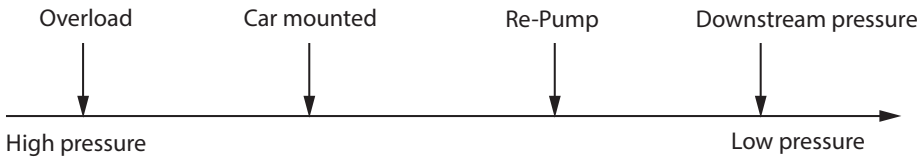
5.3.2 Testing the pressure switches

Incorrect connection / incorrect programming of the pressure switches will result in malfunctions.

► ***Ensure correct connection and, if necessary, programming for normally open (NO) and normally closed (NC) contacts.***

► ***Use the system-specific wiring diagram.***

For this test, no exact adjustment by means of a test weight is required.
The sequence of the pressure switch thresholds is decisive:



► Set the return control to ON.

► For hydraulic systems:

- Close the stopcock
- Operate hand pump
- Operate the emergency release valve
- Simultaneously observe diagnostic display `ASV: 00000000 P=[00]`, LED on ASV module and status display of the safety circuit:
  - » *Overload*
    If overload is active, the LED of terminal 3.7 on the ASV module goes out.
  - » *Car Bottomed*
    When the car is in position, the following display appears `ASV: 00101000`.
  - » *Re-pump*
    When the piston is pumped up again, the display shows `ASV: 01101000`
  - » *Downstream pressure*
    If downstream pressure is active, `Emergency stop` appears in the FST display.
    If necessary, set the FST-2 to normal operation for a short time.

► Proceed analogously for rope lifts
Carry out the re-pumping and downward pressure functions by placing the counterweight or car on the buffer.

5.4 Commission positioning system

The positioning system can be commissioned with active ASV control.

Due to the clarity of the sequence and possible troubleshooting, NEW LIFT recommends commissioning with the ASV control deactivated.

5.4.1 Activate, deactivate pawl device

- ▶ select `MAINMENU / Drive / Pawl-Cotrol / Function`
- ▶ Confirm selection with Enter
- ▶ Press ▲/▼ to select `ON` to activate the touchdon device.
  resp. select `OFF` to deactivate the touchdown device.
- ▶ Confirm with Enter
- ▶ Exit the meu with ◀ and save

5.4.2 Brief overview of the commissioning steps

The detailed procedure can be found in Chapter 6 - Commissioning the FST-2XT, of the FST Installation and Commissioning Manual.

- ▶ Set the car flush with the lowest floor
- ▶ Set floor 0
- ▶ Carry out calibration drive
- ▶ Carry out flush correction
- ▶ Activate pawl device
- ▶ Carry out a control drive:
  - Set call of any stop.
  - Check the pressures during the states *overload*, *car on*, *re pump and downstream pressure*, correct if necessary.

The commissioning is completed!

5.5 UCM-A3

Due to the standard EN81-1/2:1998+A3:2009 as well as EN81-20/50:2014 a test of the UCM-A3 function with deactivated pawl device may be required!

- ▶ Deactivate pawl device
  See chapter 5.2 Check and set parameters, on page 15.

Or:

- ▶ Optionally, deactivate the pawl device using the key switch (S20.1) in the control cabinet via an I/O port with the setting `000026F2`.
  The pawl device is deactivated as soon as a red signal lamp (H20.1) lights up.
- ▶ Activate pawl device
  See chapter 5.2 Check and set parameters, on page 15.

There is no automatic reactivation of the pawl device.
The responsibility of the intact pawl device lies with the lift installer in charge!

- ▶ Make sure that the pawl device is active again after the test has been carried out
  See chapter 5.2 Check and set parameters, on page 15.

6 Error messages

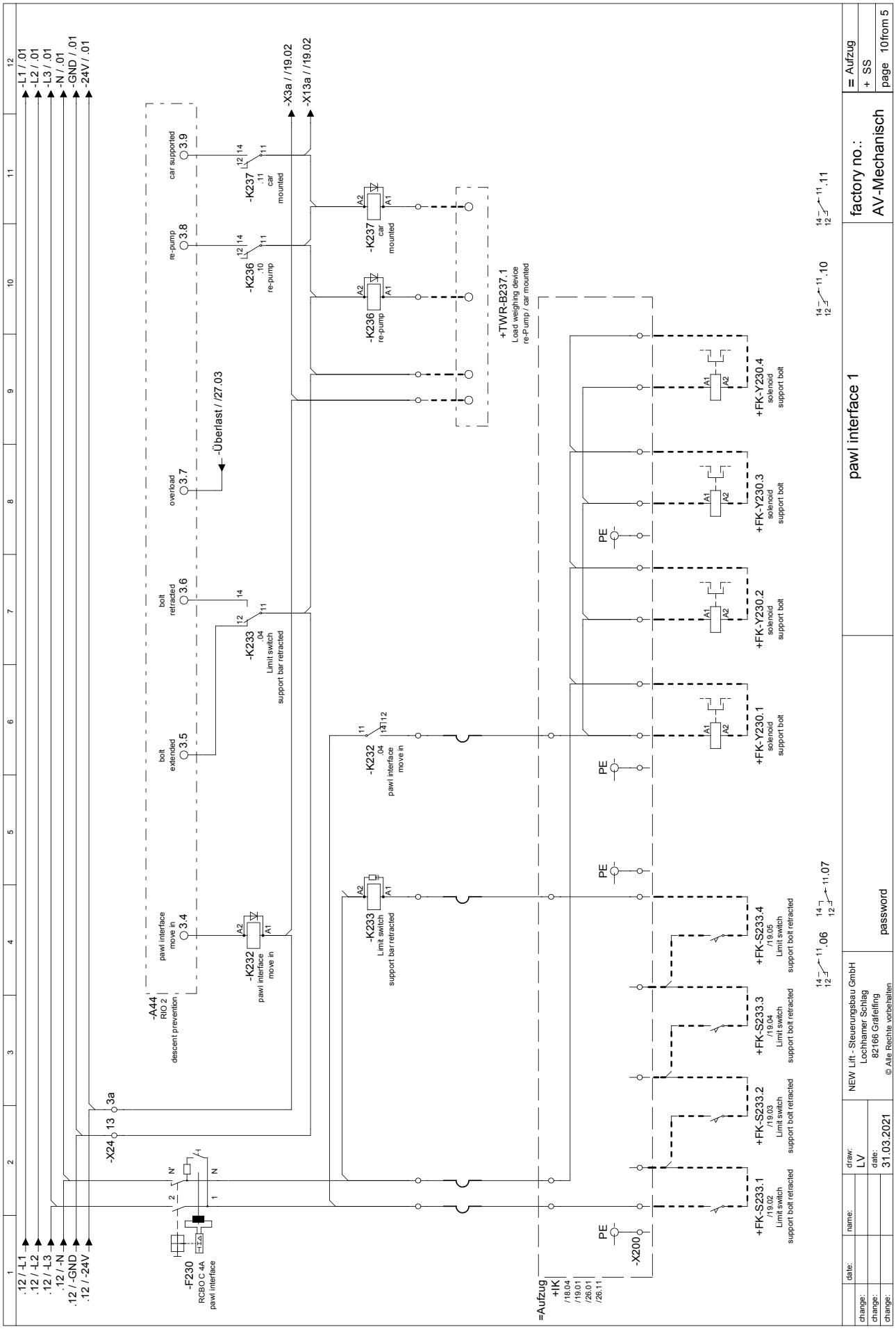
Code	Message	Description	Cause	Solution
135	CONTROLLER-ERROR	Error during re-pump: After 30 s re-pump, the *re-pump* input (RIO-2 X3.8) is still active or the car has lifted more than 10 mm during re-pump	› Pressure switch re-pump incorrectly set or defective	› Check pressure switch › Disconnect input RIO-2 X3.8 and observe diagnostic display
136	CONTROLLER-ERROR	Error when extending the bolts: Even after 4 attempts, the input *Bolts extended* is not activated.	› Limit switch **bolt extended** defective or incorrectly adjusted › Bolts hang mechanically › Bolt control defective	› Check limit switch **bolt extended** › Check bolt › Check bolt control
137	CONTROLLER-ERROR	Error when retracting the bolts: Even after 4 attempts, the input *Bolt retracted* is not activated.	› Limit switch **bolt retracted** defective or incorrectly adjusted › Bolts hang mechanically › Bolt control defective	› Check limit switch **bolt retracted** › Check bolt › Check bolt control
138	CONTROLLER-ERROR	Error during set up: The car has sunk lower than 30 mm below the flush position when touching down on the bolts.	› Bolts not extended correctly › Trays mounted incorrectly › Flush position under MAIN MENU / Copying / Floor / REL set incorrectly	› Check bolts › Check the assembly of the trays › Check the parameters of the flush position
139	CONTROLLER-ERROR	Error during set up: The *car mounted* input (RIO-2 X3.9) has not been activated within 20 sec.	› Pressure switch **car sat** on incorrectly set or defective	› Check pressure switch › Bridge input RIO-2 X3.9 and observe diagnostic display
140	CONTROLLER-ERROR	Lifting error: The programmed lifting distance was not reached within the Lifting Time Max time, although no overload was measured.	› Lifting time set too short › Car is jammed or overloaded	› Increase lifting time max parameter ??? › Check car suspension › Check overload measurement › Check drive

Code	Message	Description	Cause	Solution
141	CONTROLLER-ERROR	Input *bolt retracted* and input *bolt extended* are active at the same time.	› Limit switch **bolt retracted** defective or incorrectly adjusted › Limit switch **bolt extended** defective or incorrectly adjusted	› Check limit switch › Check bolts

7 Standard circuit diagrams

On pages 22 to 26 you will find standard circuit diagrams of an electromechanical pawl device.

On pages 27 to 34 you will find standard circuit diagrams of a hydraulic pawl device.


-L1 / .01
-L2 / .01
-L3 / .01
-N / .01
-GND / .01
-24V / .01
-X3a / /19.02
-X13a / /19.02
car supported
3.9
re-pump
3.8
overload
3.7
bolt retracted
3.6
bolt extended
3.5
pawl interface move in
3.4
-Überlast / /27.03
-K237
.11
car mounted
-K236
.10
re-pump
-K233
.04
Limit switch
support bar retracted
-K232
pawl interface move in
-A44
RIO 2
descent prevention
-K237
car mounted
-K236
re-pump
+TWR-B237.1
Load weighing device
re-Pump / car mounted
-K232
.04
pawl interface move in
-K233
Limit switch
support bar retracted
+FK-Y230.4
solenoid
support bolt
+FK-Y230.3
solenoid
support bolt
+FK-Y230.2
solenoid
support bolt
+FK-Y230.1
solenoid
support bolt
+FK-S233.4
/19.05
Limit switch
support bolt retracted
+FK-S233.3
/19.04
Limit switch
support bolt retracted
+FK-S233.2
/19.03
Limit switch
support bolt retracted
+FK-S233.1
/19.02
Limit switch
support bolt retracted
-X24
3a
13
-F230
RCBO C 4A
pawl interface
PE
-X200
=Aufzug
+IK
/18.04
/19.01
/26.01
/26.11
.12 / -L1
.12 / -L2
.12 / -L3
.12 / -N
.12 / -GND
.12 / -24V
14 / 12 .11
14 / 12 .10
14 / 12 .06
14 / 12 .07
pawl interface 1
factory no.:
AV-Mechanisch
= Aufzug
+ SS
page 10from 5
password
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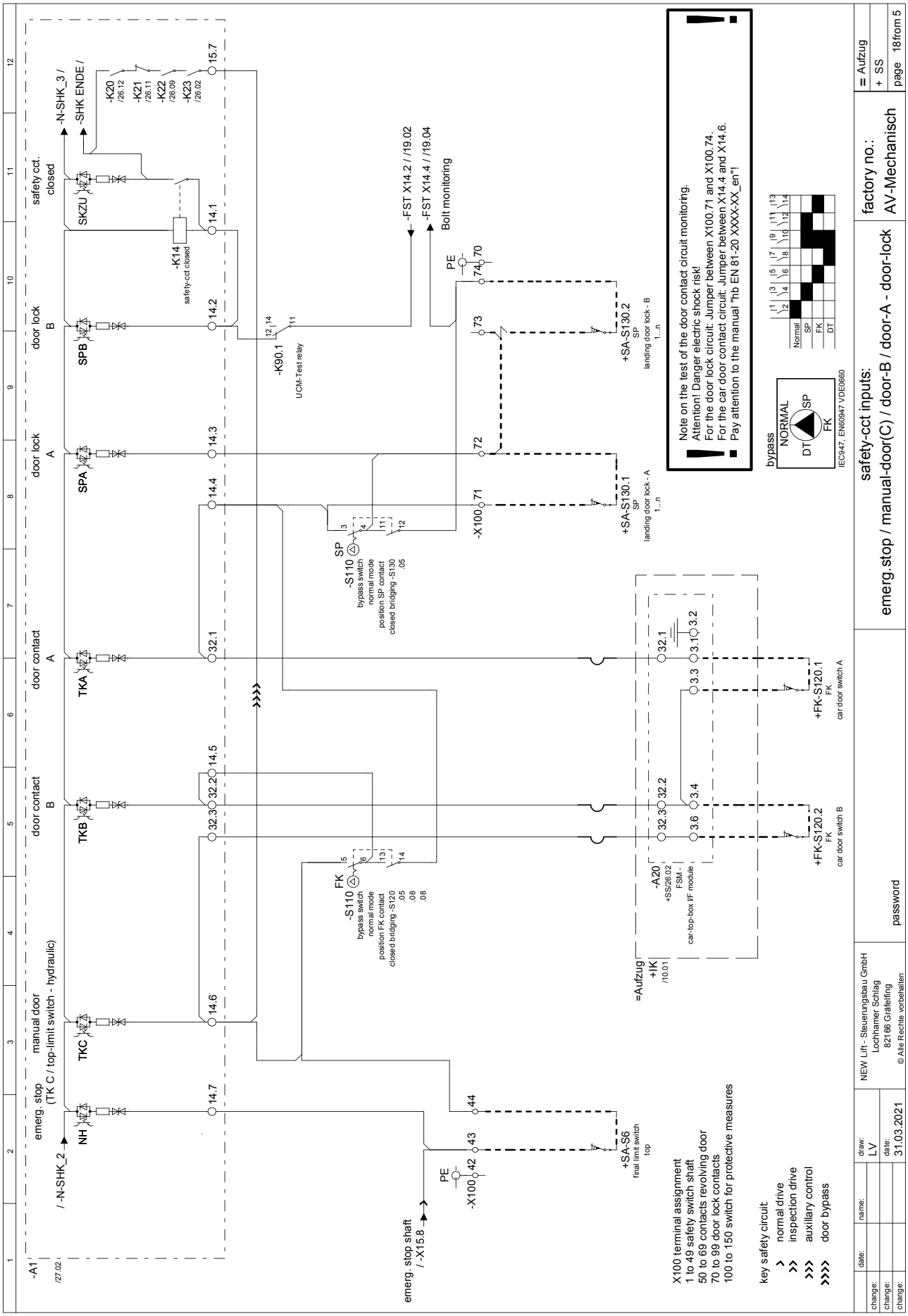
82166 Gräfelfing
© Alle Rechte vorbehalten
draw:
LV
date:
31.03.2021
name:
date:
change:


safety-cct inputs:
emerg.stop / manual-door(C) / door-B / door-A - door-lock
factory no.:
AV-Mechanisch
= Aufzug
+ SS
page 18from 5
Note on the test of the door contact circuit monitoring.
Attention! Danger electric shock risk!
For the door lock circuit: Jumper between X100.71 and X100.74.
For the car door contact circuit: Jumper between X14.4 and X14.6.
Pay attention to the manual "hb EN 81-20 XXXX-XX_en"!
bypass
NORMAL
DT
SP
FK
IEC947, EN60947 VDE0660
-FST X14.2 / /19.02
-FST X14.4 / /19.04
Bolt monitoring
-N-SHK_3 /
-SHK ENDE /
safety cct. closed
door lock B
door lock A
door contact A
door contact B
manual door
emerg. stop
(TK C / top-limit switch - hydraulic)
/ -N-SHK_2
-A1
/27.02
-K14
safety-cct closed
-K90.1
UCM-Test relay
-S110
bypass switch
normal mode
position SP contact
closed bridging -S130
-S110
bypass switch
normal mode
position FK contact
closed bridging -S120
+SA-S130.2
SP
landing door lock - B
+SA-S130.1
SP
landing door lock - A
+FK-S120.1
FK
car door switch A
+FK-S120.2
FK
car door switch B
-A20
+SS/26.02
FSM -
car-top-box IF module
=Aufzug
+IK
/10.01
+SA-S6
final limit switch
top
emerg. stop shaft
/ -X15.8
X100 terminal assignment
1 to 49 safety switch shaft
50 to 69 contacts revolving door
70 to 99 door lock contacts
100 to 150 switch for protective measures
key safety circuit:
normal drive
inspection drive
auxillary control
door bypass
password
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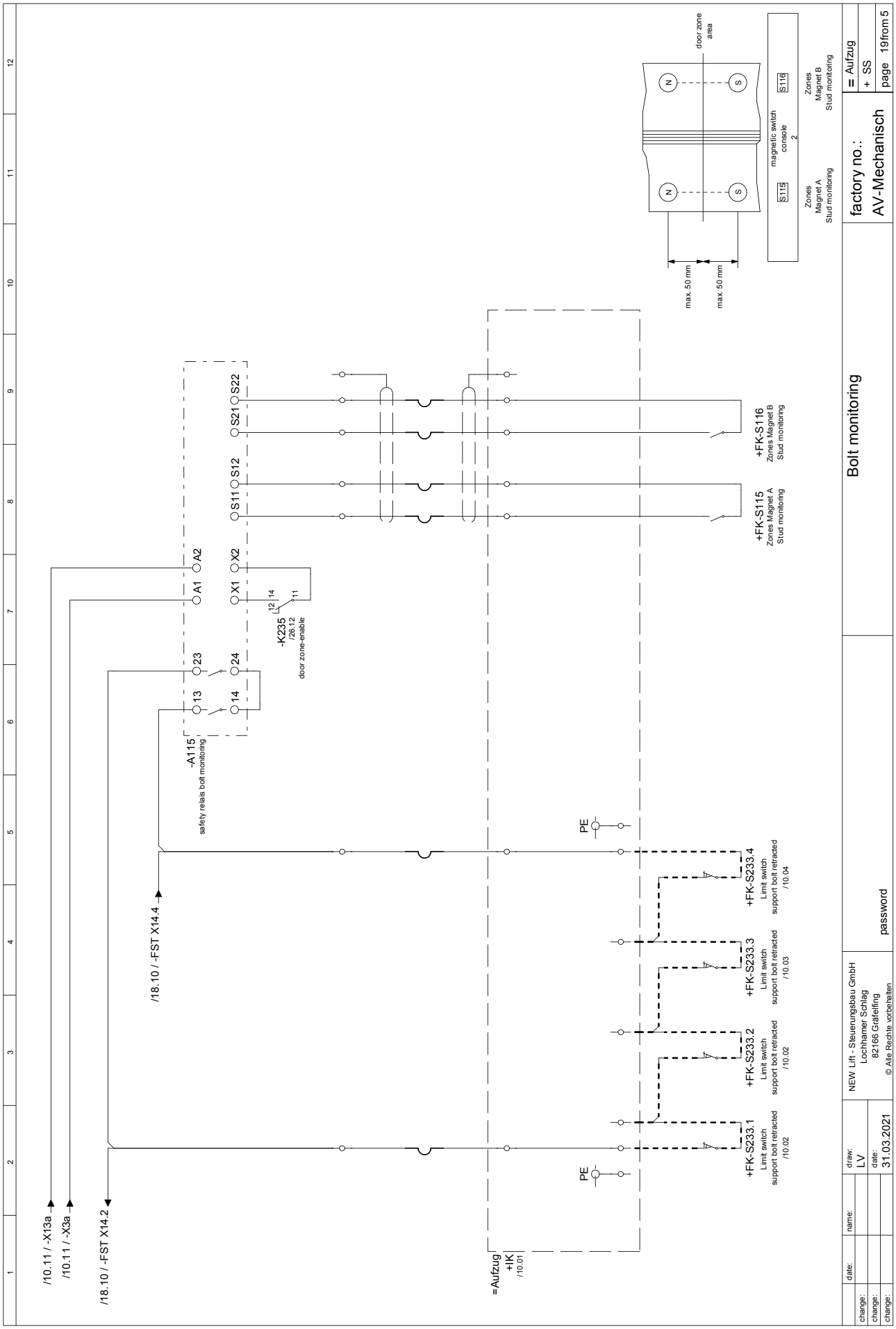
draw: LV
date: 31.03.2021
date:
name:
change:


door zone area
N
S
max. 50 mm
max. 50 mm
magnetic switch console 2
S115
S116
Zones Magnet A Stud monitoring
Zones Magnet B Stud monitoring
A1
A2
X1
X2
S11
S12
S21
S22
23
24
13
14
-A115
safety relais bolt monitoring
-K235
/26.12
door zone-enable
+FK-S116
Zones Magnet B Stud monitoring
+FK-S115
Zones Magnet A Stud monitoring
PE
PE
+FK-S233.4
Limit switch support bolt retracted
/10.04
+FK-S233.3
Limit switch support bolt retracted
/10.03
+FK-S233.2
Limit switch support bolt retracted
/10.02
+FK-S233.1
Limit switch support bolt retracted
/10.02
/18.10 / -FST X14.4
/10.11 / -X13a
/10.11 / -X3a
/18.10 / -FST X14.2
=Aufzug
+IK
/10.01
Bolt monitoring
factory no.:
AV-Mechanisch
= Aufzug
+ SS
page 19from 5
password
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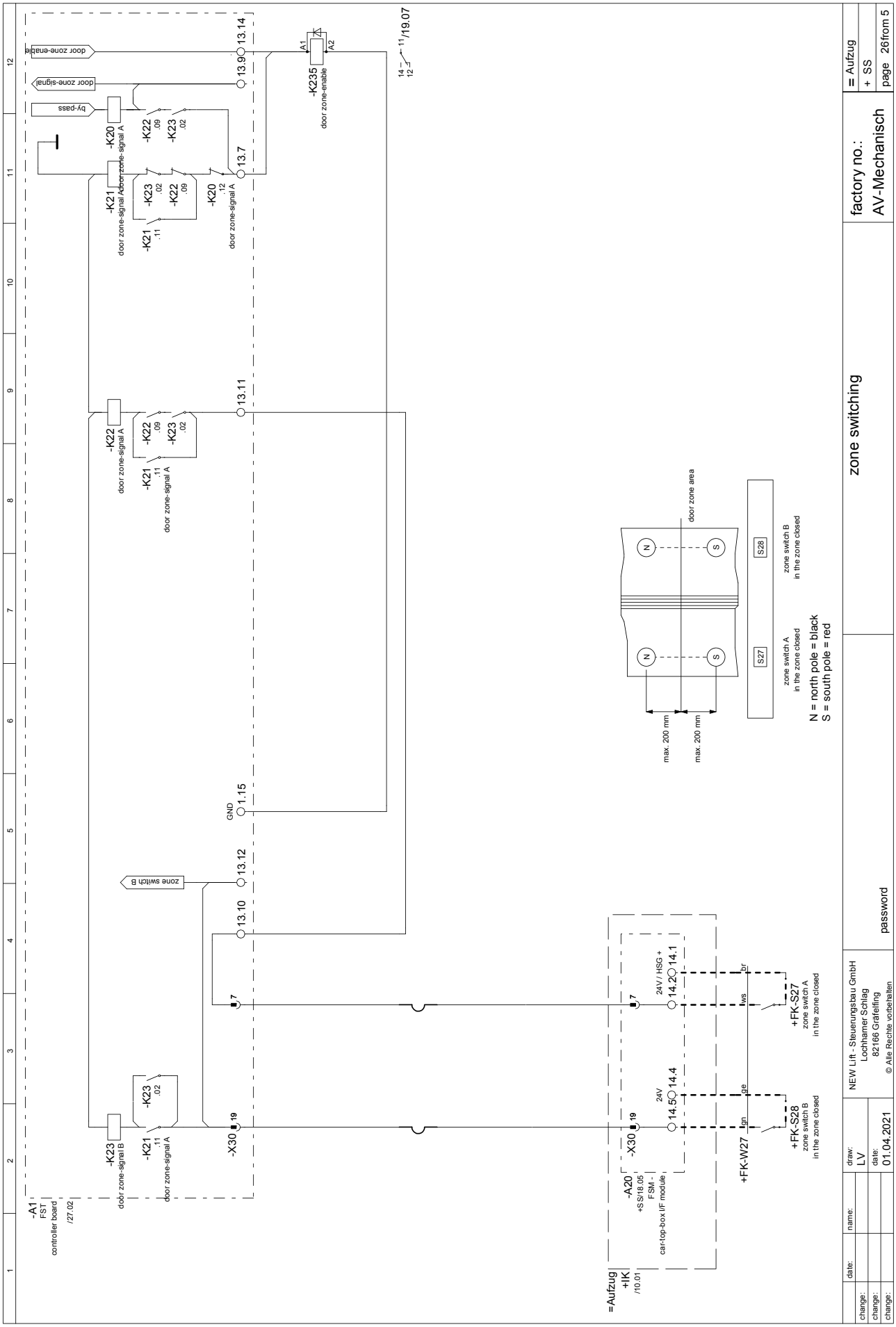
draw:
LV
date:
31.03.2021
date:
name:
change:
change:
change:


zone switching
factory no.:
AV-Mechanisch
= Aufzug
+ SS
page 26 from 5
door zone-enable
door zone-signal
by-pass
-K20
door zone-signal A
-K22
.09
-K23
.02
-K21
.11
-K20
.12
-K235
door zone-enable
A1
A2
13.14
13.9
13.7
13.11
13.12
13.10
1.15
GND
zone switch B
-K22
door zone-signal A
-K23
-K23
door zone-signal B
-X30
19
7
-A1
FST
controller board
/27.02
=Aufzug
+IK
/10.01
-A20
+SS/18.05
FSM -
car-top-box I/F module
24V / HSG +
24V
14.1
14.2
14.4
14.5
+FK-W27
+FK-S27
zone switch A
in the zone closed
+FK-S28
zone switch B
in the zone closed
br
ws
ge
gn
max. 200 mm
door zone area
N
S
S27
S28
N = north pole = black
S = south pole = red
password
NEW Lift - Steuerungsbau GmbH
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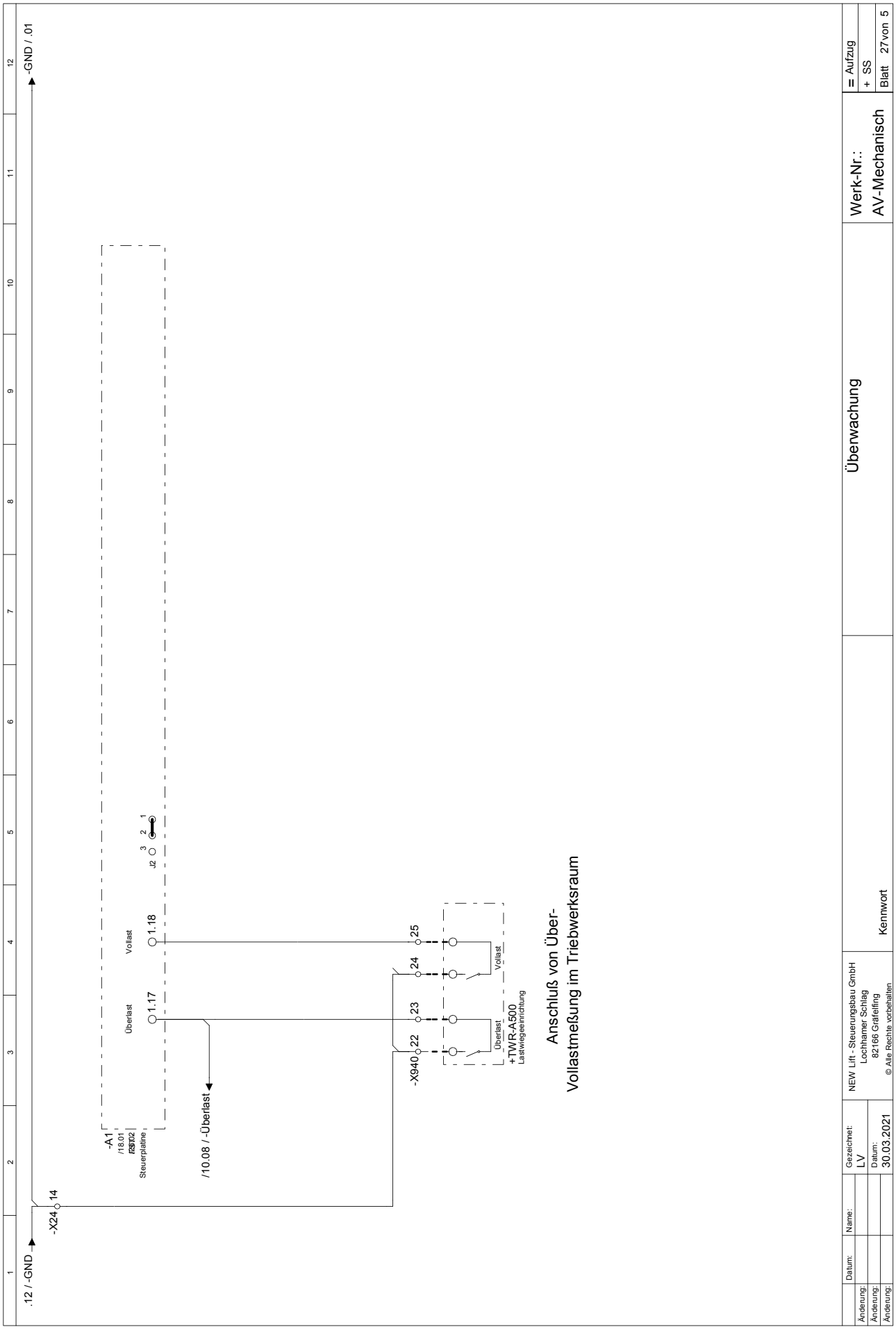
draw:
LV
date:
01.04.2021
change:
date:
name:


.12 / -GND
-GND / .01
-X24
14
-A1
/18.01
Steuerplatine
Überlast
Vollast
1.17
1.18
J2
/10.08 / -Überlast
-X940
22
23
24
25
Überlast
Vollast
+TWR-A500
Lastwiegeeinrichtung
Anschluß von Über-
Vollastmeßung im Triebwerksraum
Datum:
Name:
Änderung:
Änderung:
Änderung:
Gezeichnet:
LV
Datum:
30.03.2021
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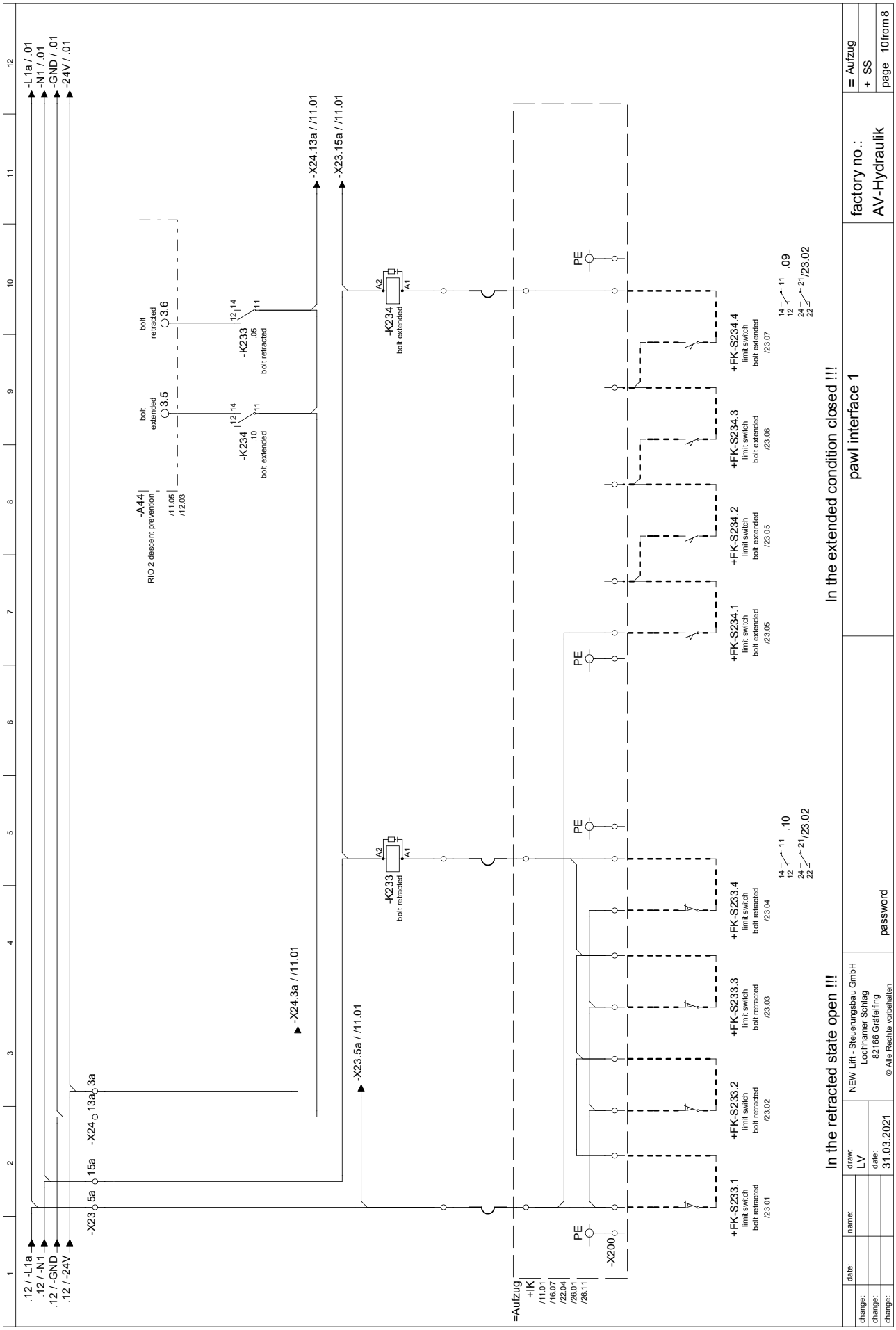
Kennwort
Überwachung
Werk-Nr.:
AV-Mechanisch
= Aufzug
+ SS
Blatt 27von 5


-L1a / .01
-N1 / .01
-GND / .01
-24V / .01
-X24.13a / /11.01
-X23.15a / /11.01
-A44
RIO 2 descent prevention
/11.05
/12.03
bolt extended
3.5
bolt retracted
3.6
-K233
.05
bolt retracted
-K234
.10
bolt extended
-K234
bolt extended
-K233
bolt retracted
PE
+FK-S234.4
limit switch
bolt extended
/23.07
.09
/23.02
+FK-S234.3
limit switch
bolt extended
/23.06
+FK-S234.2
limit switch
bolt extended
/23.05
+FK-S234.1
limit switch
bolt extended
/23.05
In the extended condition closed !!!
pawl interface 1
factory no.:
AV-Hydraulik
= Aufzug
+ SS
page 10from 8
.12 / -L1a
.12 / -N1
.12 / -GND
.12 / -24V
-X23
5a
15a
-X24
13a
3a
-X24.3a / /11.01
-X23.5a / /11.01
-K233
bolt retracted
+FK-S233.4
limit switch
bolt retracted
/23.04
.10
/23.02
+FK-S233.3
limit switch
bolt retracted
/23.03
+FK-S233.2
limit switch
bolt retracted
/23.02
+FK-S233.1
limit switch
bolt retracted
/23.01
-X200
=Aufzug
+IK
/11.01
/16.07
/22.04
/26.01
/26.11
In the retracted state open !!!
password
date:
name:
change:
change:
change:
draw:
LV
date:
31.03.2021
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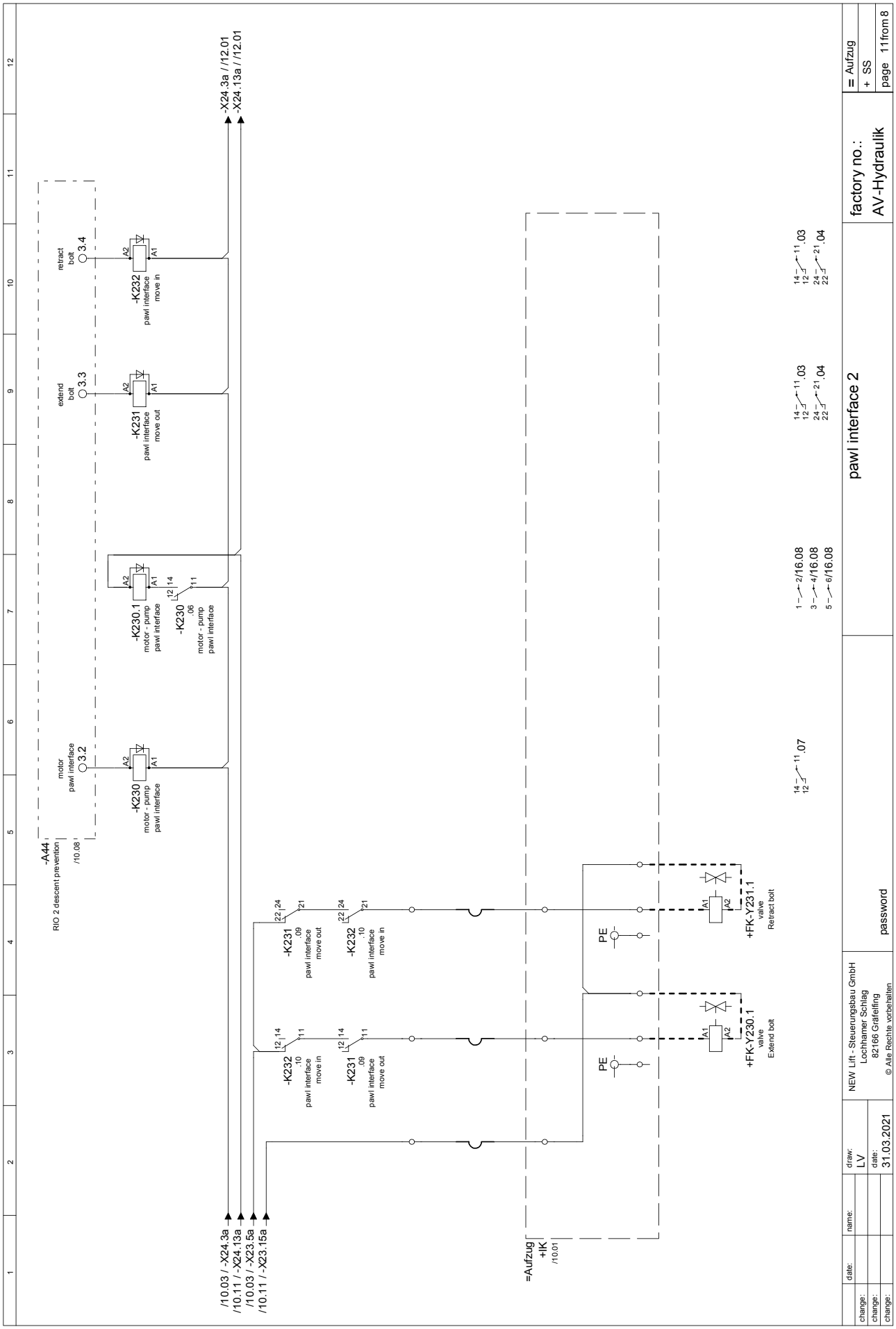
-A44
RIO 2 descent prevention
/10.08
motor
pawl interface
3.2
extend
bolt
3.3
retract
bolt
3.4
-K230
motor - pump
pawl interface
-K230.1
motor - pump
pawl interface
-K230
.06
motor - pump
pawl interface
-K231
pawl interface
move out
-K232
pawl interface
move in
-X24.3a / /12.01
-X24.13a / /12.01
/10.03 / -X24.3a
/10.11 / -X24.13a
/10.03 / -X23.5a
/10.11 / -X23.15a
-K231
.09
pawl interface
move out
-K232
.10
pawl interface
move in
-K232
.10
pawl interface
move in
-K231
.09
pawl interface
move out
PE
PE
+FK-Y231.1
valve
Retract bolt
+FK-Y230.1
valve
Extend bolt
=Aufzug
+IK
/10.01
1 2/16.08
3 4/16.08
5 6/16.08
14 11.07
12
14 11.03
12
24 21.04
22
14 11.03
12
24 21.04
22
pawl interface 2
factory no.:
AV-Hydraulik
= Aufzug
+ SS
page 11from 8
password
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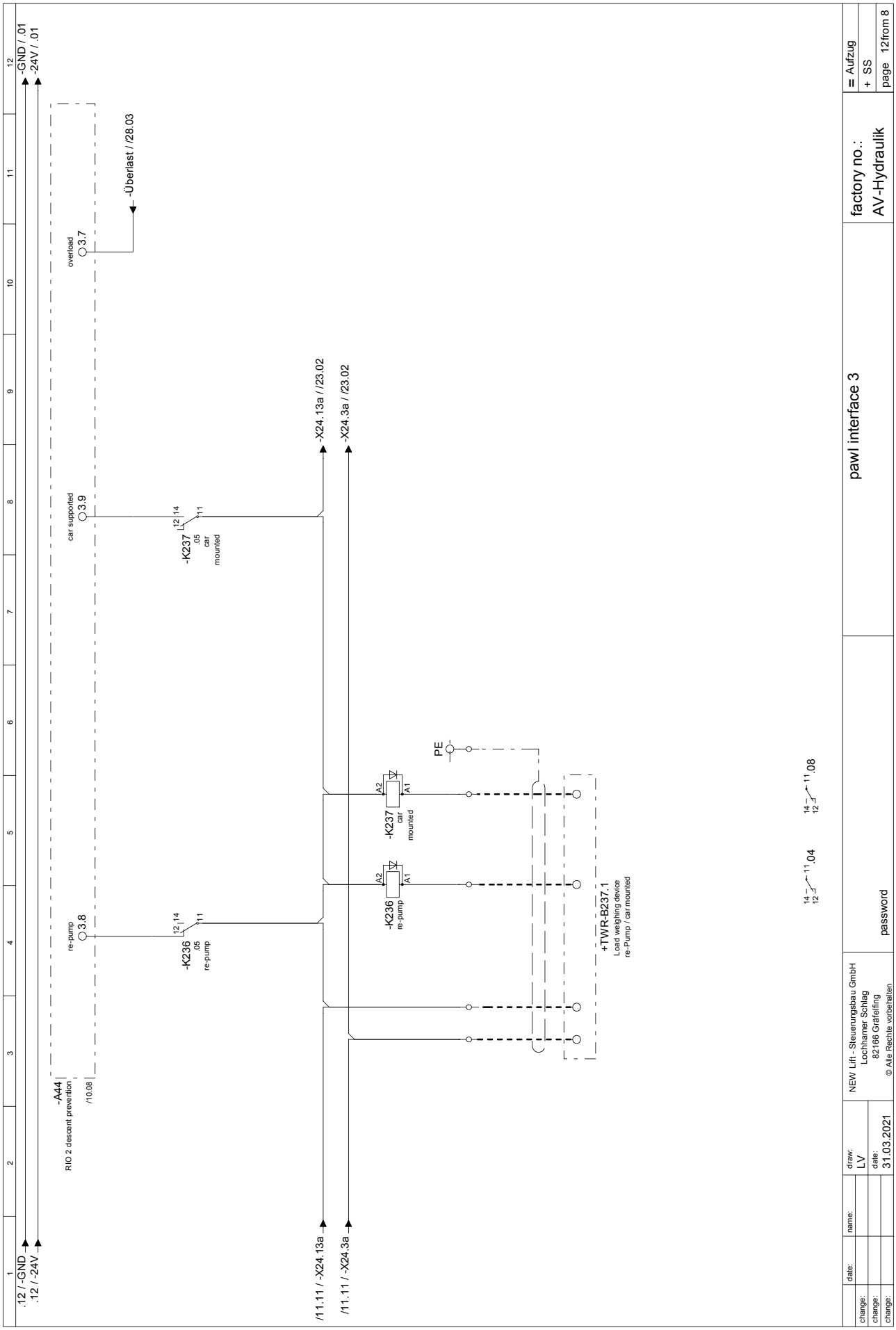
draw:
LV
date:
31.03.2021
date:
name:
change:
change:
change:


.12 / -GND
.12 / -24V
-GND / .01
-24V / .01
-A44
RIO 2 descent prevention
/10.08
re-pump
3.8
car supported
3.9
overload
3.7
-Überlast / /28.03
-K236
.05
re-pump
-K237
.05
car
mounted
-X24.13a / /23.02
-X24.3a / /23.02
/11.11 / -X24.13a
/11.11 / -X24.3a
-K236
re-pump
-K237
car
mounted
PE
+TWR-B237.1
Load weighing device
re-Pump / car mounted
14 12 11.04
14 12 11.08
pawl interface 3
password
factory no.:
AV-Hydraulik
= Aufzug
+ SS
page 12from 8
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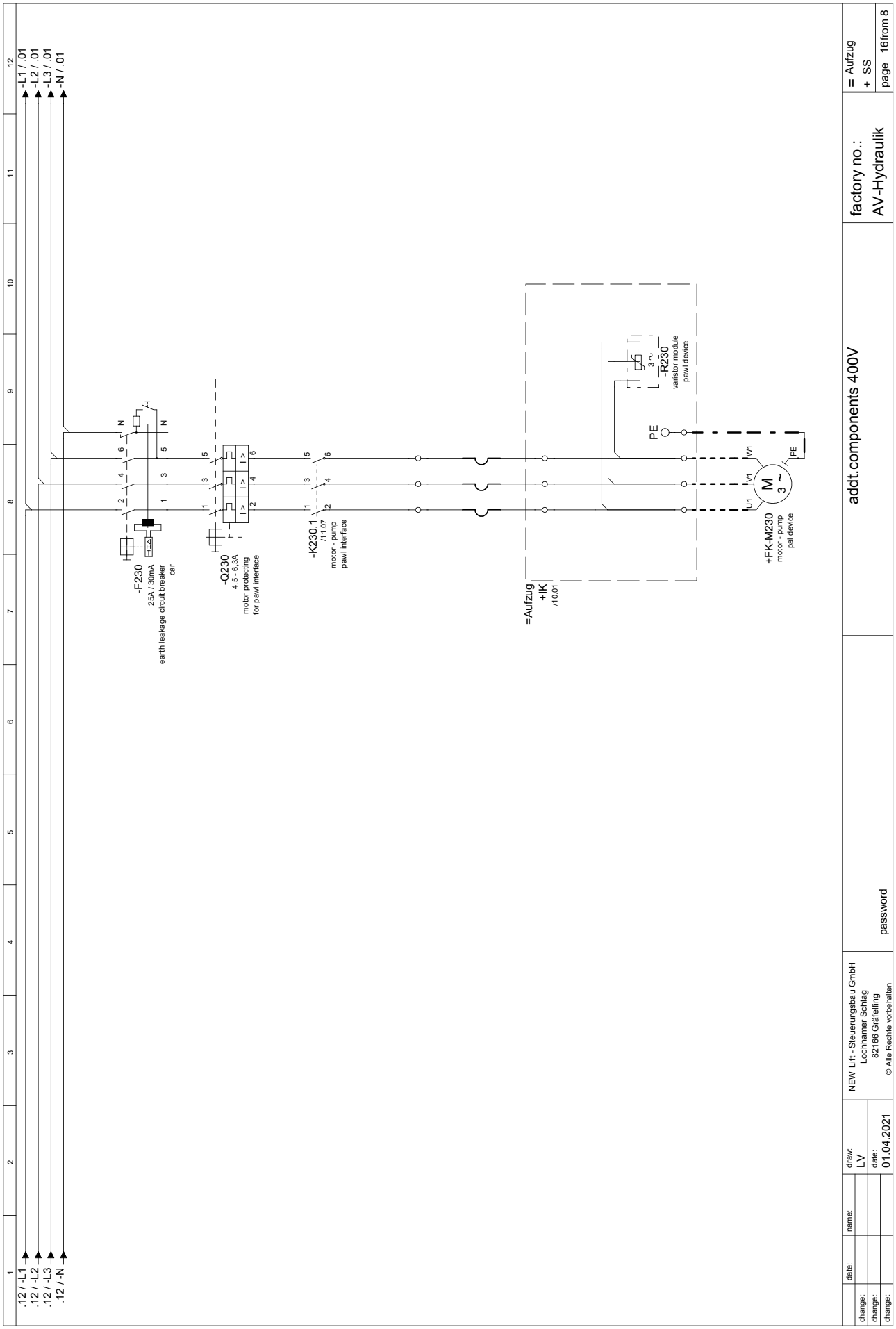
draw:
LV
date:
31.03.2021
change:
change:
change:
date:
name:


.12 / -L1
.12 / -L2
.12 / -L3
.12 / -N
-L1 / .01
-L2 / .01
-L3 / .01
-N / .01
-F230
25A / 30mA
earth leakage circuit breaker
car
-Q230
4,5 - 6,3A
motor protecting
for pawl interface
-K230.1
/11.07
motor - pump
pawl interface
=Aufzug
+IK
/10.01
-R230
varistor module
pawl device
PE
+FK-M230
motor - pump
pal device
addt.components 400V
factory no.:
AV-Hydraulik
= Aufzug
+ SS
page 16from 8
date:
name:
change:
draw:
LV
date:
01.04.2021
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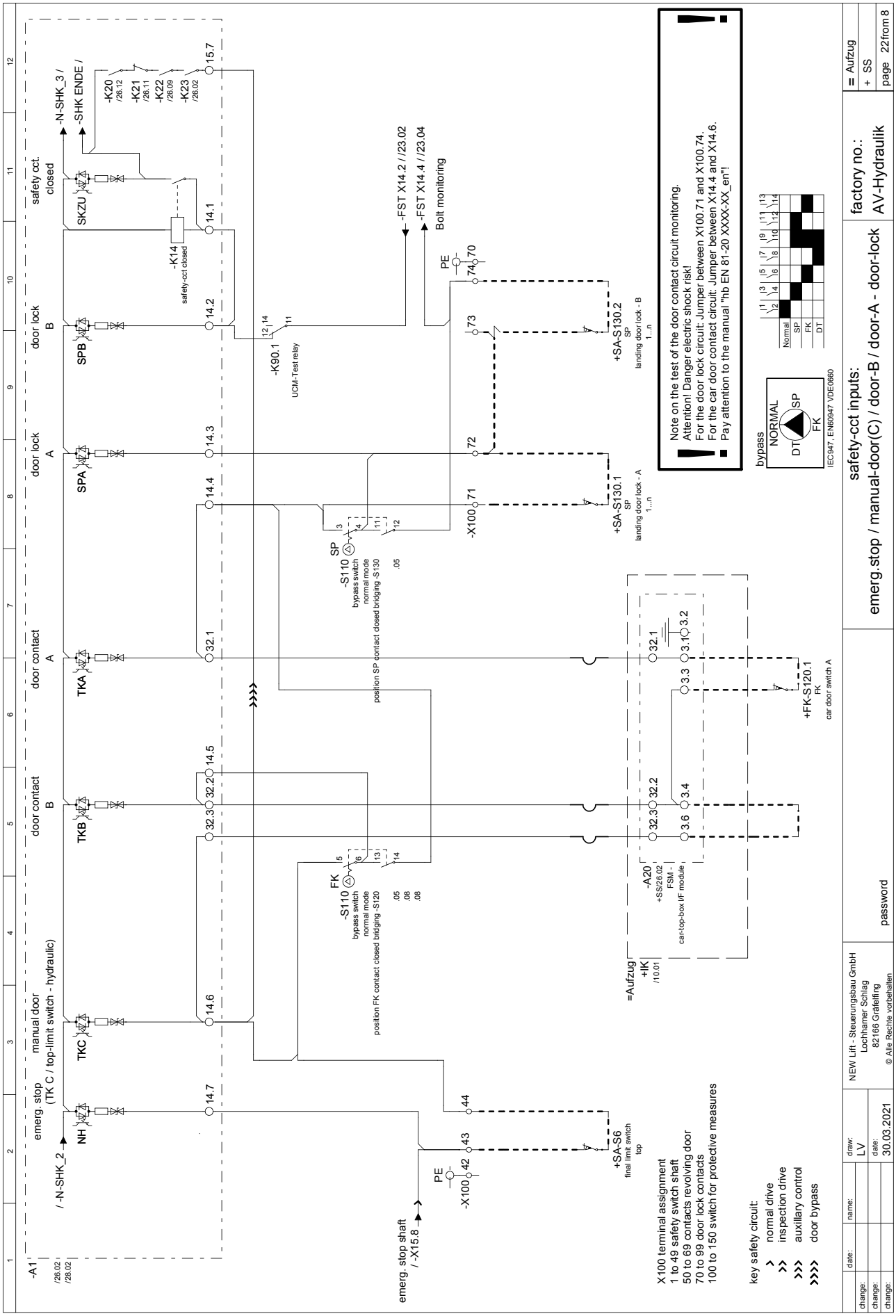
password


safety-cct inputs:
emerg.stop / manual-door(C) / door-B / door-A - door-lock
factory no.:
AV-Hydraulik
= Aufzug
+ SS
page 22from 8
password
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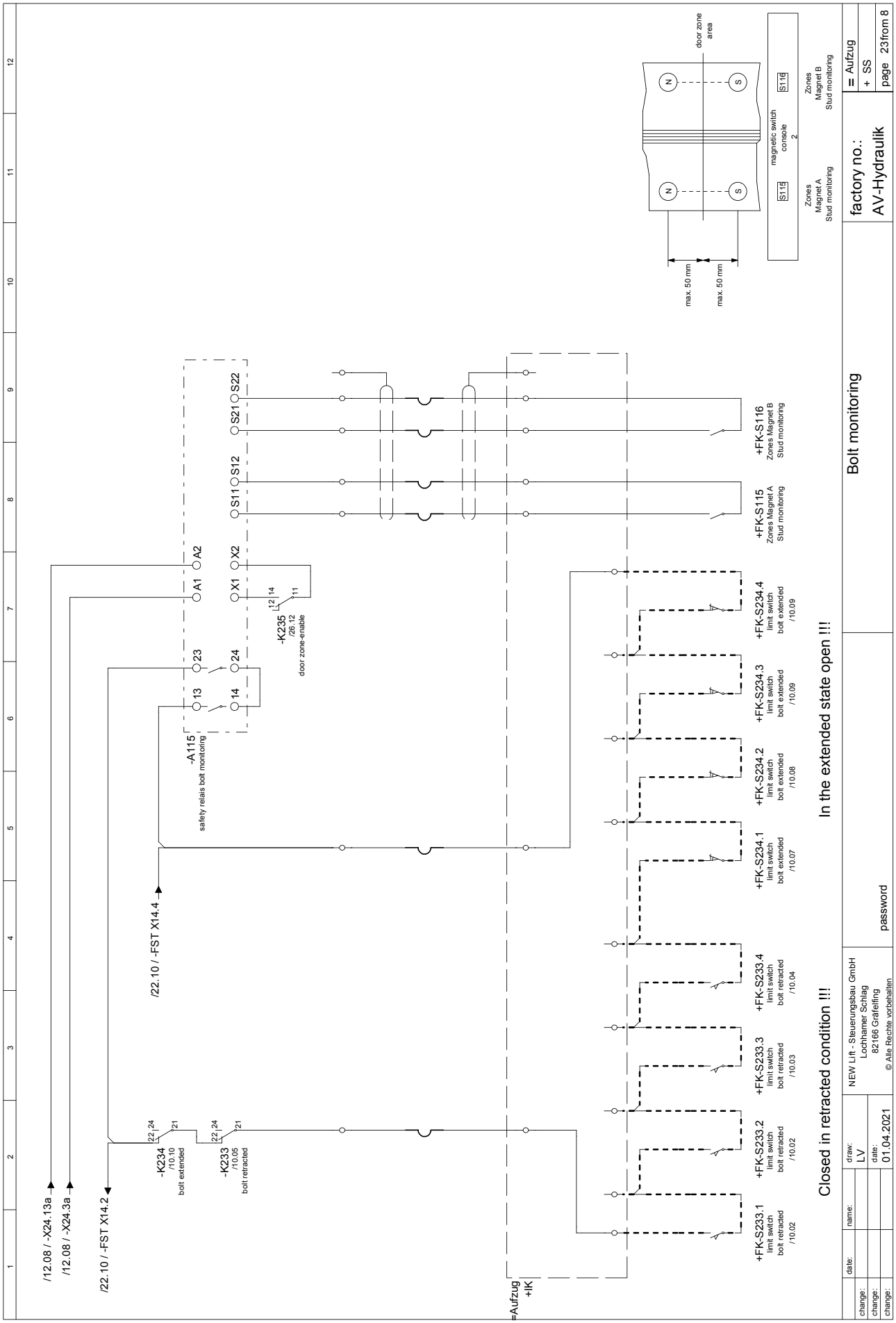
draw: LV
date: 30.03.2021
Note on the test of the door contact circuit monitoring.
Attention! Danger electric shock risk!
For the door lock circuit: Jumper between X100.71 and X100.74.
For the car door contact circuit: Jumper between X14.4 and X14.6.
Pay attention to the manual "hb EN 81-20 XXXX-XX_en"!
bypass
NORMAL
DT
SP
FK
IEC947, EN60947 VDE0660
-A1
/26.02
/28.02
/ -N-SHK_2
emerg. stop
(TK C / top-limit switch - hydraulic)
manual door
door contact B
door contact A
door lock A
door lock B
safety cct. closed
-N-SHK_3 /
-SHK ENDE /
NH
TKC
TKB
TKA
SPA
SPB
SKZU
-K20 /26.12
-K21 /26.11
-K22 /26.09
-K23 /26.02
-K14 safety-cct closed
-K90.1 UCM-Test relay
-FST X14.2 / /23.02
-FST X14.4 / /23.04
Bolt monitoring
+SA-S130.2 SP landing door lock - B 1...n
+SA-S130.1 SP landing door lock - A 1...n
-S110 SP bypass switch normal mode position SP contact closed bridging -S130
-S110 FK bypass switch normal mode position FK contact closed bridging -S120
+FK-S120.1 FK car door switch A
-A20 +SS/26.02 FSM - car-top-box I/F module
=Aufzug +IK /10.01
+SA-S6 final limit switch top
emerg. stop shaft / -X15.8
X100 terminal assignment
1 to 49 safety switch shaft
50 to 69 contacts revolving door
70 to 99 door lock contacts
100 to 150 switch for protective measures
key safety circuit:
normal drive
inspection drive
auxillary control
door bypass


door zone area
max. 50 mm
max. 50 mm
N
S
S115
S116
magnetic switch console 2
Zones Magnet A Stud monitoring
Zones Magnet B Stud monitoring
/12.08 / -X24.13a
/12.08 / -X24.3a
/22.10 / -FST X14.2
/22.10 / -FST X14.4
-A115
safety relais bolt monitoring
A1
A2
X1
X2
S11
S12
S21
S22
13
14
23
24
-K235
/26.12
door zone-enable
12 14
11
-K234
/10.10
bolt extended
-K233
/10.05
bolt retracted
22 24
21
+FK-S116
Zones Magnet B
Stud monitoring
+FK-S115
Zones Magnet A
Stud monitoring
+FK-S234.4
limit switch
bolt extended
/10.09
+FK-S234.3
limit switch
bolt extended
/10.09
+FK-S234.2
limit switch
bolt extended
/10.08
+FK-S234.1
limit switch
bolt extended
/10.07
+FK-S233.4
limit switch
bolt retracted
/10.04
+FK-S233.3
limit switch
bolt retracted
/10.03
+FK-S233.2
limit switch
bolt retracted
/10.02
+FK-S233.1
limit switch
bolt retracted
/10.02
=Aufzug
+IK
In the extended state open !!!
Closed in retracted condition !!!
Bolt monitoring
password
factory no.:
AV-Hydraulik
= Aufzug
+ SS
page 23from 8
date:
name:
change:
change:
change:
draw:
LV
date:
01.04.2021
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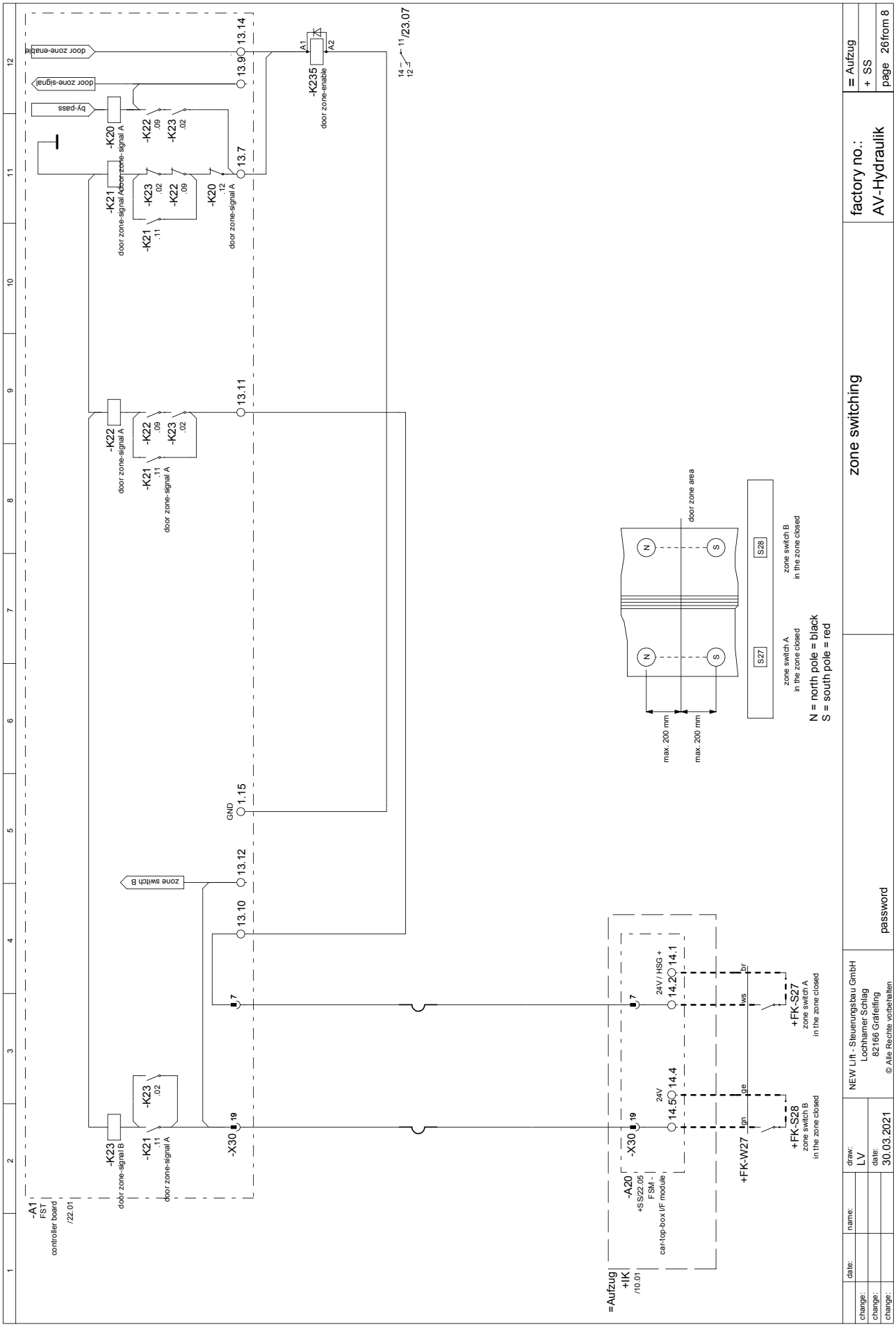
door zone-enable
door zone-signal
by-pass
-K20
door zone-signal A
-K22
.09
-K23
.02
-K21
door zone-signal A
.11
13.14
13.9
13.7
-K235
door zone-enable
A1
A2
14
12
11
/23.07
13.11
GND
1.15
13.12
zone switch B
13.10
-K23
door zone-signal B
-X30
19
7
-A1
FST
controller board
/22.01
door zone area
N
S
max. 200 mm
S27
S28
zone switch A
in the zone closed
zone switch B
in the zone closed
N = north pole = black
S = south pole = red
24V / HSG +
14.2
14.1
24V
14.5
14.4
-A20
+S/22.05
FSM -
car-top-box I/F module
=Aufzug
+IK
/10.01
+FK-W27
br
ws
ge
gn
+FK-S27
zone switch A
in the zone closed
+FK-S28
zone switch B
in the zone closed
= Aufzug
+ SS
page 26 from 8
factory no.:
AV-Hydraulik
zone switching
password
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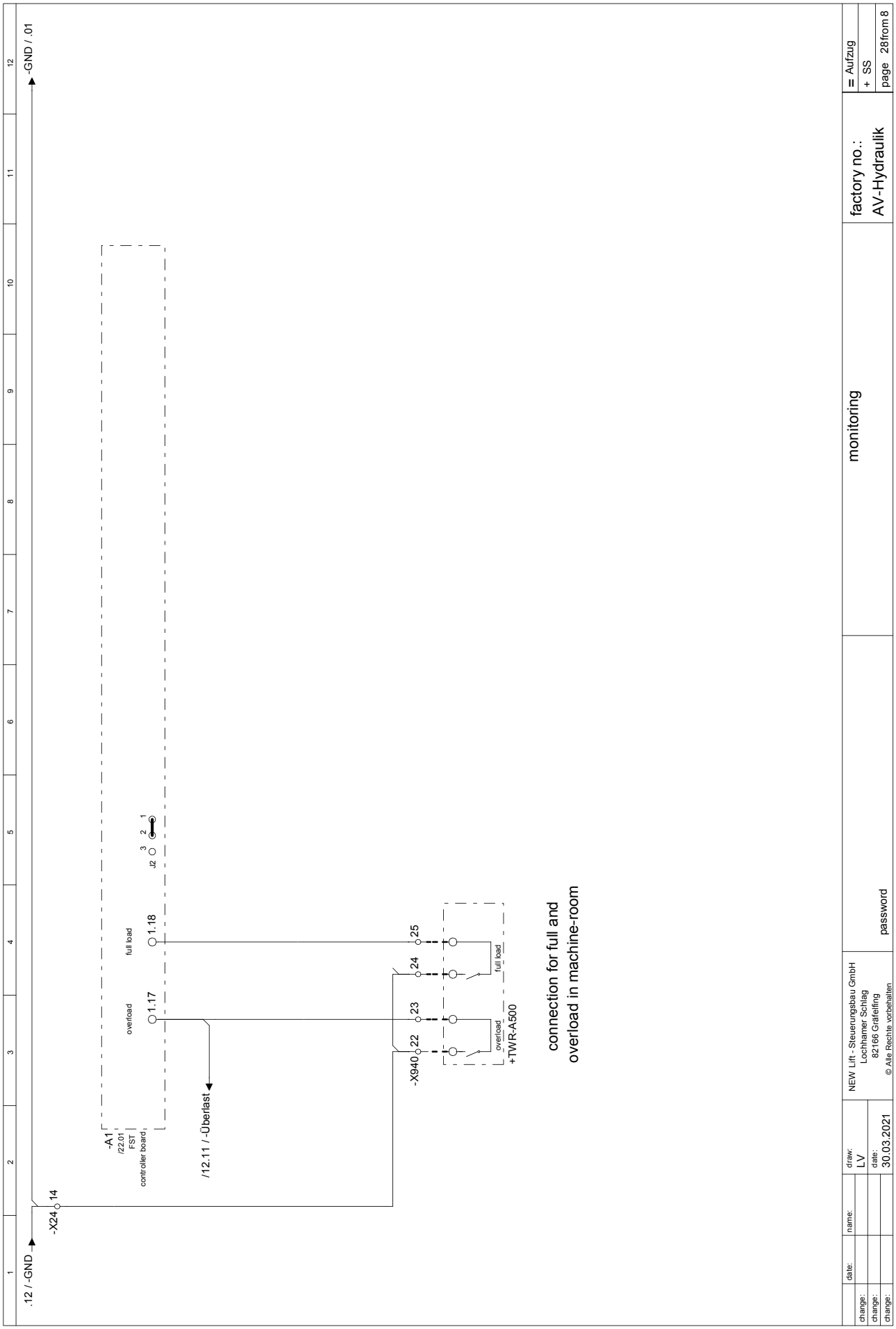
draw:
LV
date:
30.03.2021
date:
name:
change:


.12 / -GND
-GND / .01
-X24
14
-A1
/22.01
FST
controller board
overload
full load
1.17
1.18
J2
/12.11 / -Überlast
-X940
22
23
24
25
overload
full load
+TWR-A500
connection for full and
overload in machine-room
monitoring
password
factory no.:
AV-Hydraulik
= Aufzug
+ SS
page 28from 8
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draw:
LV
date:
30.03.2021
name:
date:
change:
change:
change:

NOTES

NEWLIFT
NEUE ELEKTRONISCHE WEGE

NEW LIFT Neue Elektronische Wege
Steuerungsbau GmbH
Lochhamer Schlag 8
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