SB, 1-10DS Lenze I550 VFD + Brake Resistor, 2024-02

SYMPTOM/DESCRIPTION

After replacing the 50Hz drive motor with the 120Hz drive motor, at specific circumstances e.g. while the Shot blasting machine is driving down ramps or working downwards, it may stop working and the VFD (Variable Frequency Drive) displays error codes.

When the 120Hz drive motor is forced to turn due to a downward inclination it turns into a generator and starts feeding energy back to the VFD. The VFD cannot handle the entire generated energy going back and as a result of self-protection it switches off.

AFFECTED UNITS

Note: Only the old **Blue** Blastrac products are affected.
For the serial number range of the **E-box**, refer to the table in *Appendix A*.

CORRECTIVE ACTION

Replacing the VFD from I510 to I550 with brake resister solves this.

PROCEDURE

Refer to *Appendix B*.

PARTS INFORMATION

What parts to order and how? *Order from EPC:*

1. Check the serial number range in the table to see which part(s) you actually need to order.
2. Scrap parts in local stock? - *No*
3. The I510 is not eliminated, kept as *Orderable.*
4. 50Hz drive motor is eliminated, *Not able to order, replacement is 120Hz.*
5. Update products in local stock? – *No*
6. Recall products from customers and update? – *No*
7. Update sold products during next service only if part has caused a problem or anyway? – *No, replace only if I510 VFD fails or if the customer complains about the aforementioned symptoms.*

WARRANTY INFORMATION

Normal warranty policy applies.

Revision History

Rev.	*Date*	*Order id.*	*Description*
A	*2024-02*	*00039813*	*Created*

Appendix A

Parts to order:

1-10DSG1 = Dual Voltage (US market)

1-10DS = Global (EU Market)

Product	Blue	Affected serial range E-Box	Programmed VFD I550	Brake Resistor (120Hz)	Wiring diagram I510 120Hz
1-10DSG1	970553901	From 20211279 Up to + 20211303	546042902	546043001	PJ11.1064.21.0
1-10DS	970574201	From 20211259 Up to + 20211389	536688802	536689301	PJ20.1364.03

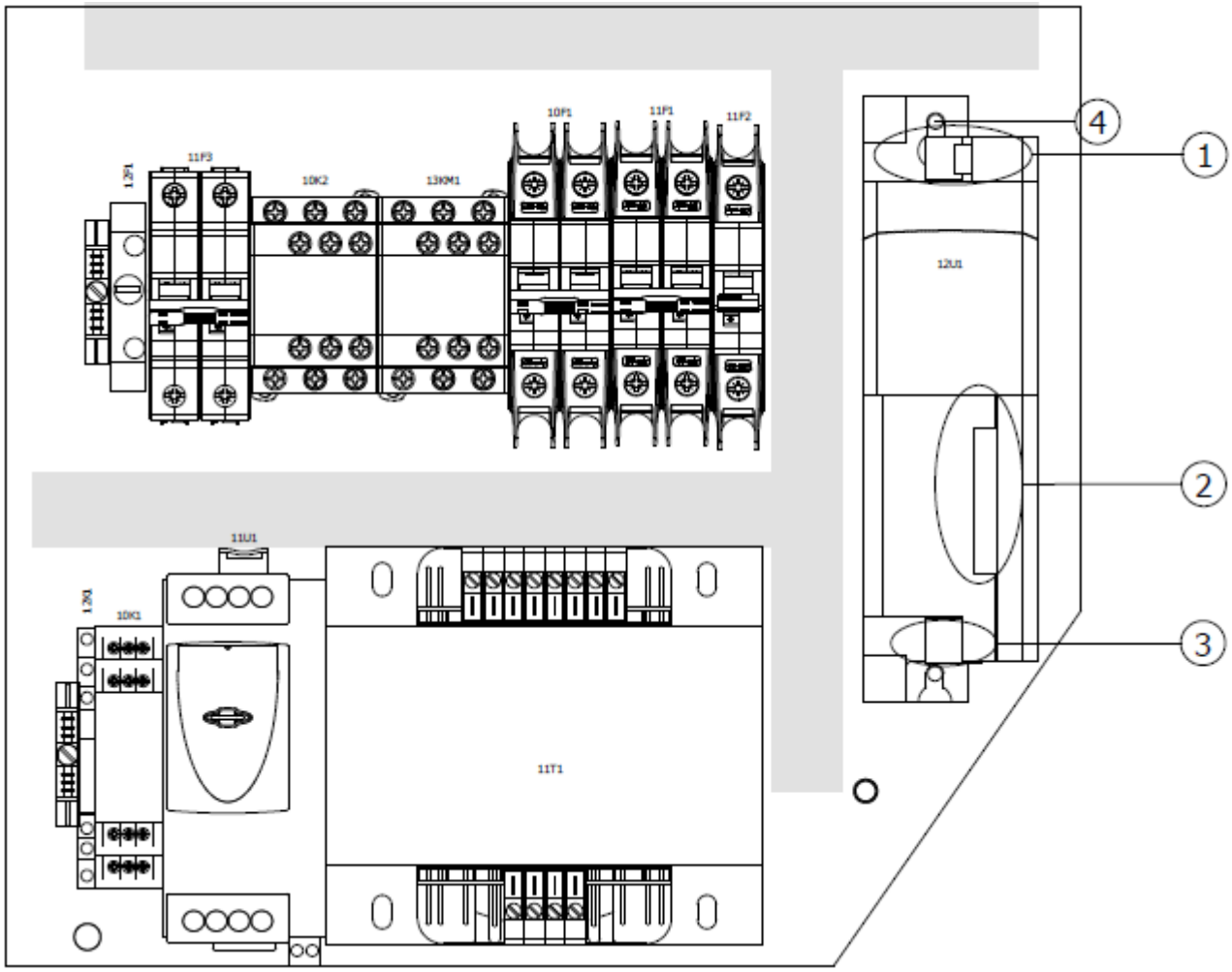
Old, Eliminated 50Hz drive motor

New, Active 120Hz drive motor

Appendix B

How to replace the I510 with an I550 + Brake Resistor.

1-10DS Dual Voltage *(PJ11.1064.REFIT)*

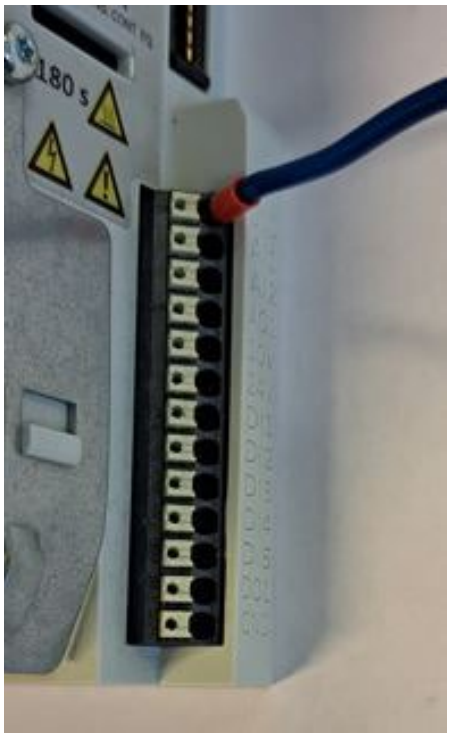


1. Take off the connectors with the power supply wires and motor brake wires.
2. Take off the control wires that are connected to the I/O block.
3. Take off the connectors with the motor wires.
4. Unscrew the VFD (drive) from the backplane.

Connectors attached

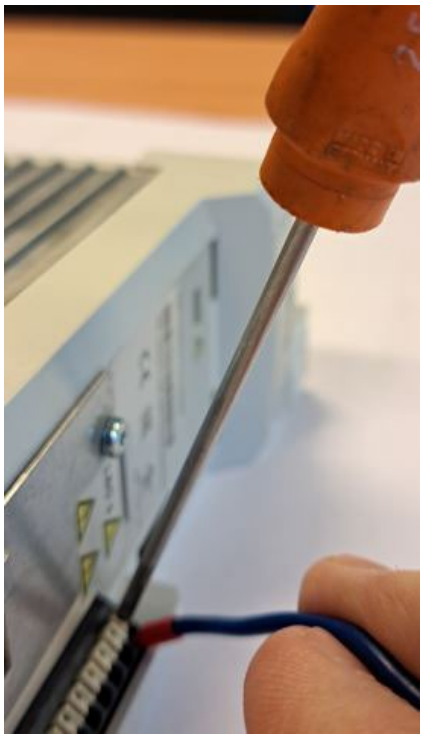
Connectors detached

Connected control wire



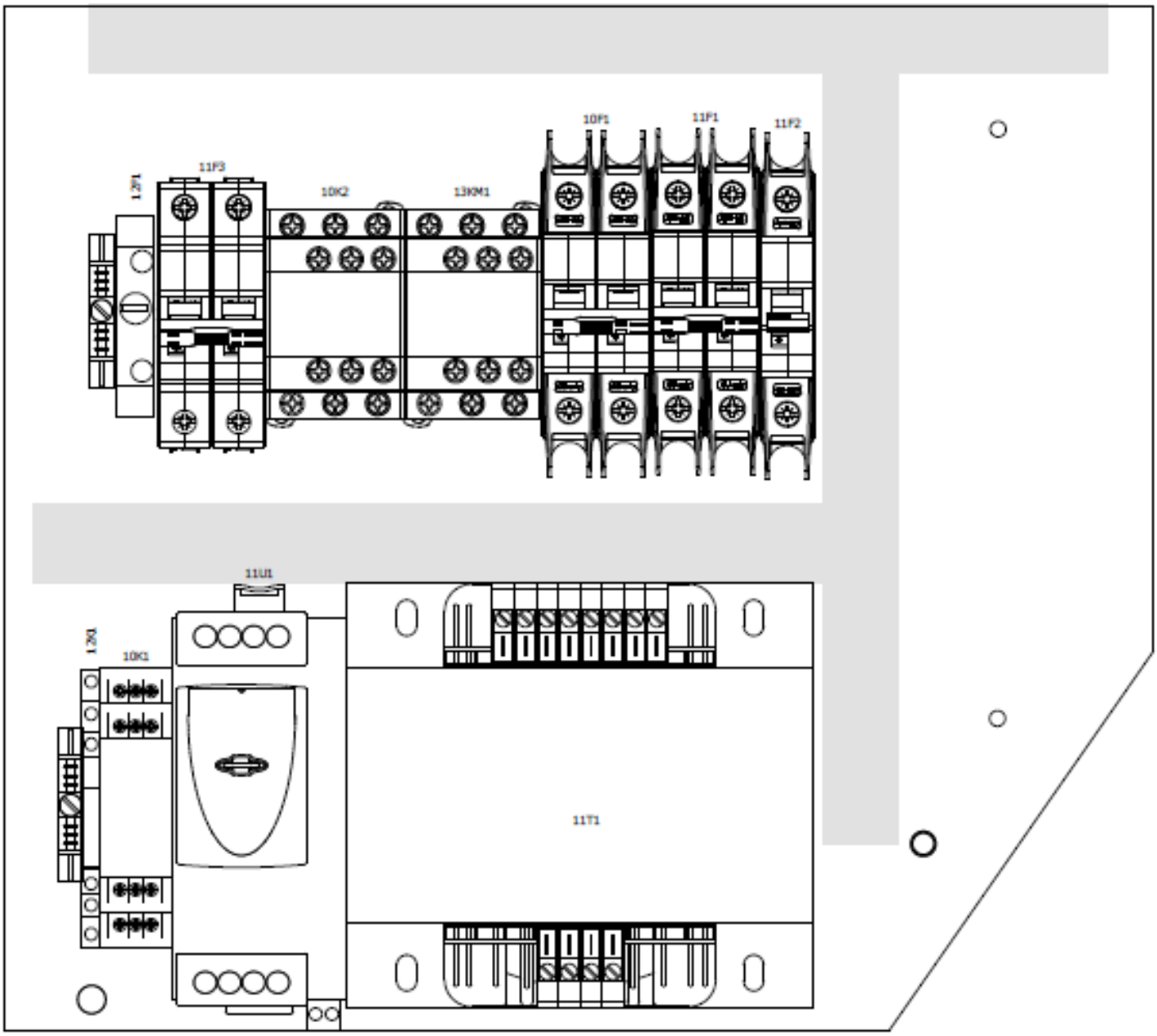
Connected control wire

Push in connector with a screwdriver

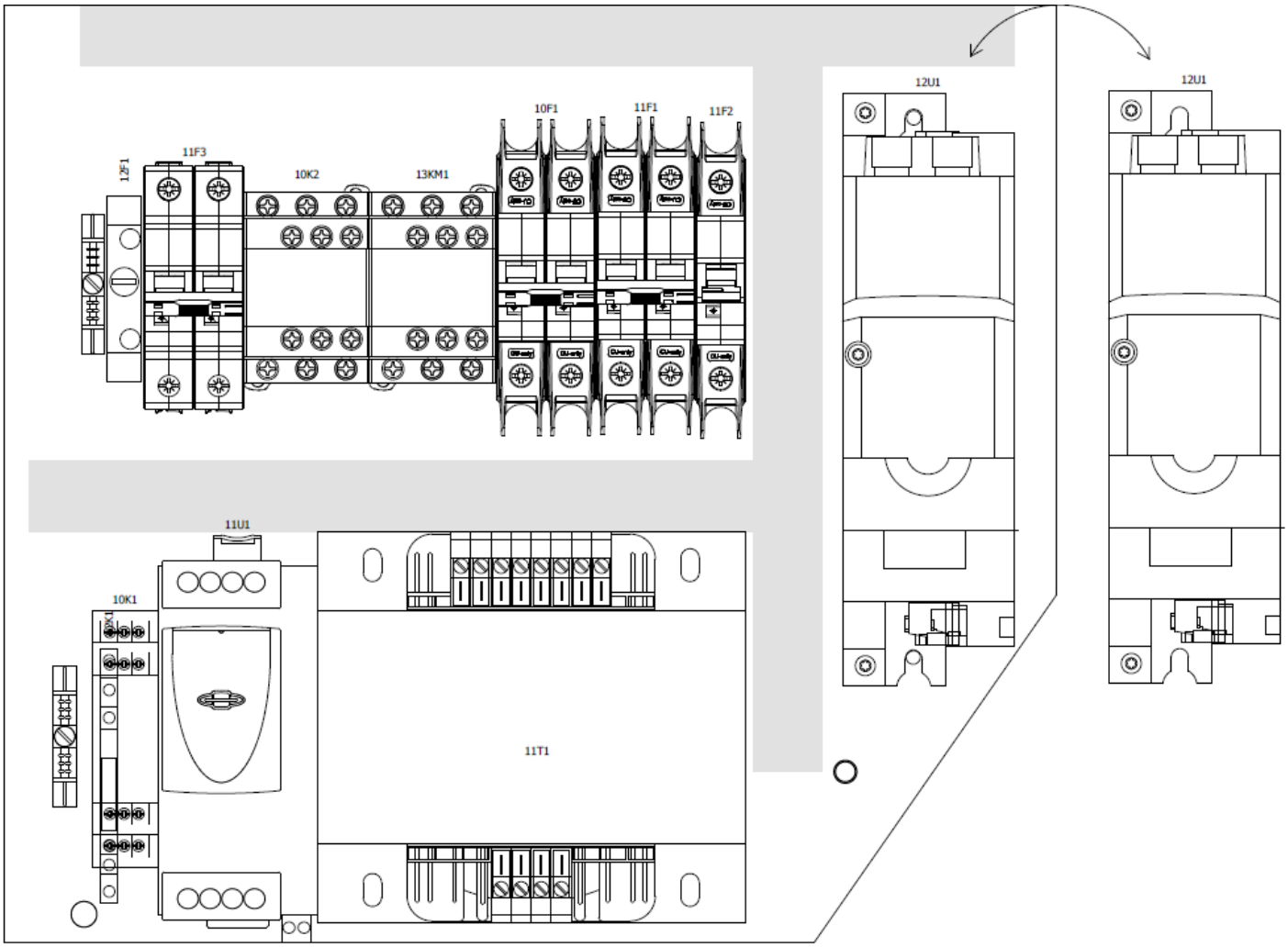


Pull out wire while pushing

After removing the I510 VFD.



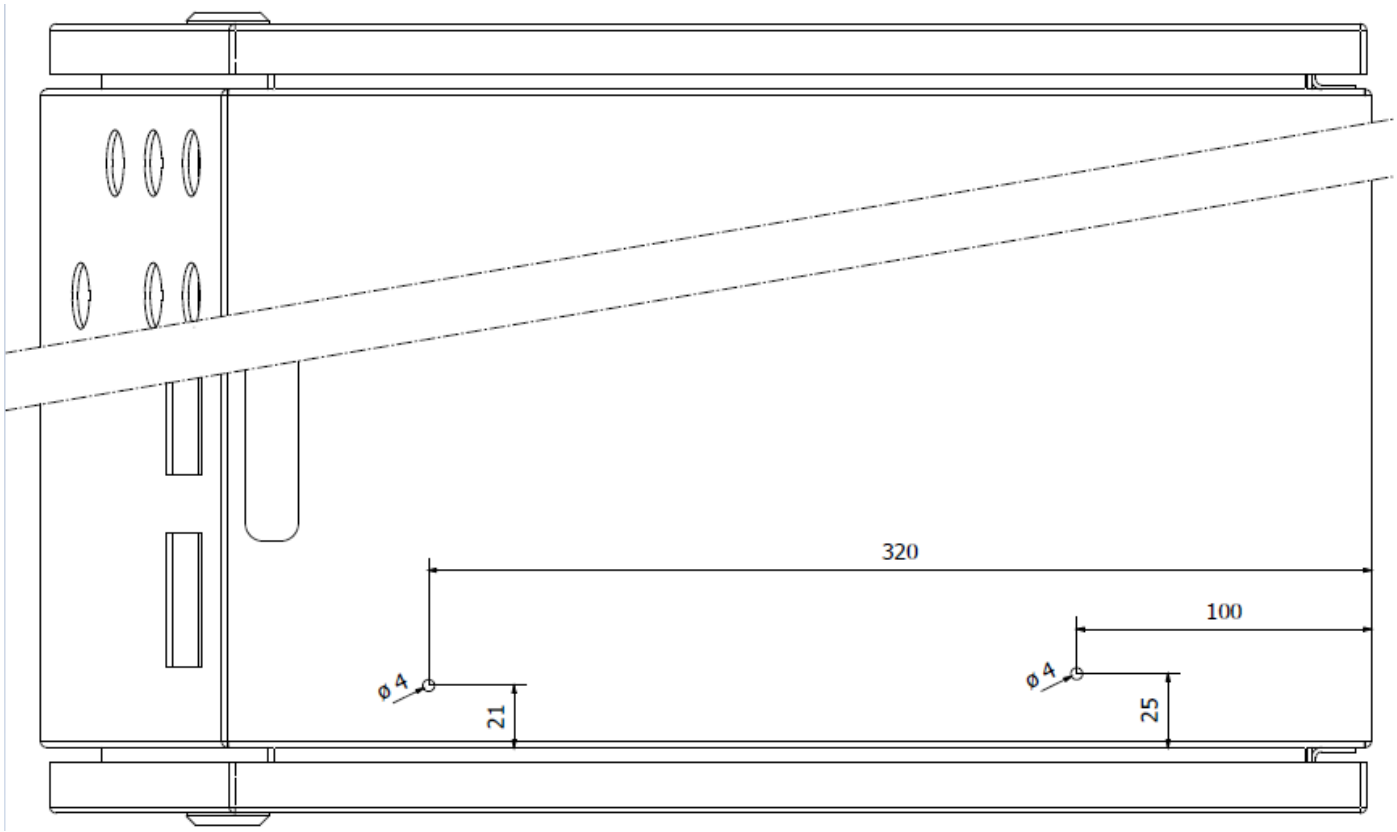
Mount the I550 drive with the screws in the same place where the I510 drive was mounted. The I550 has the same mounting dimensions as the I510



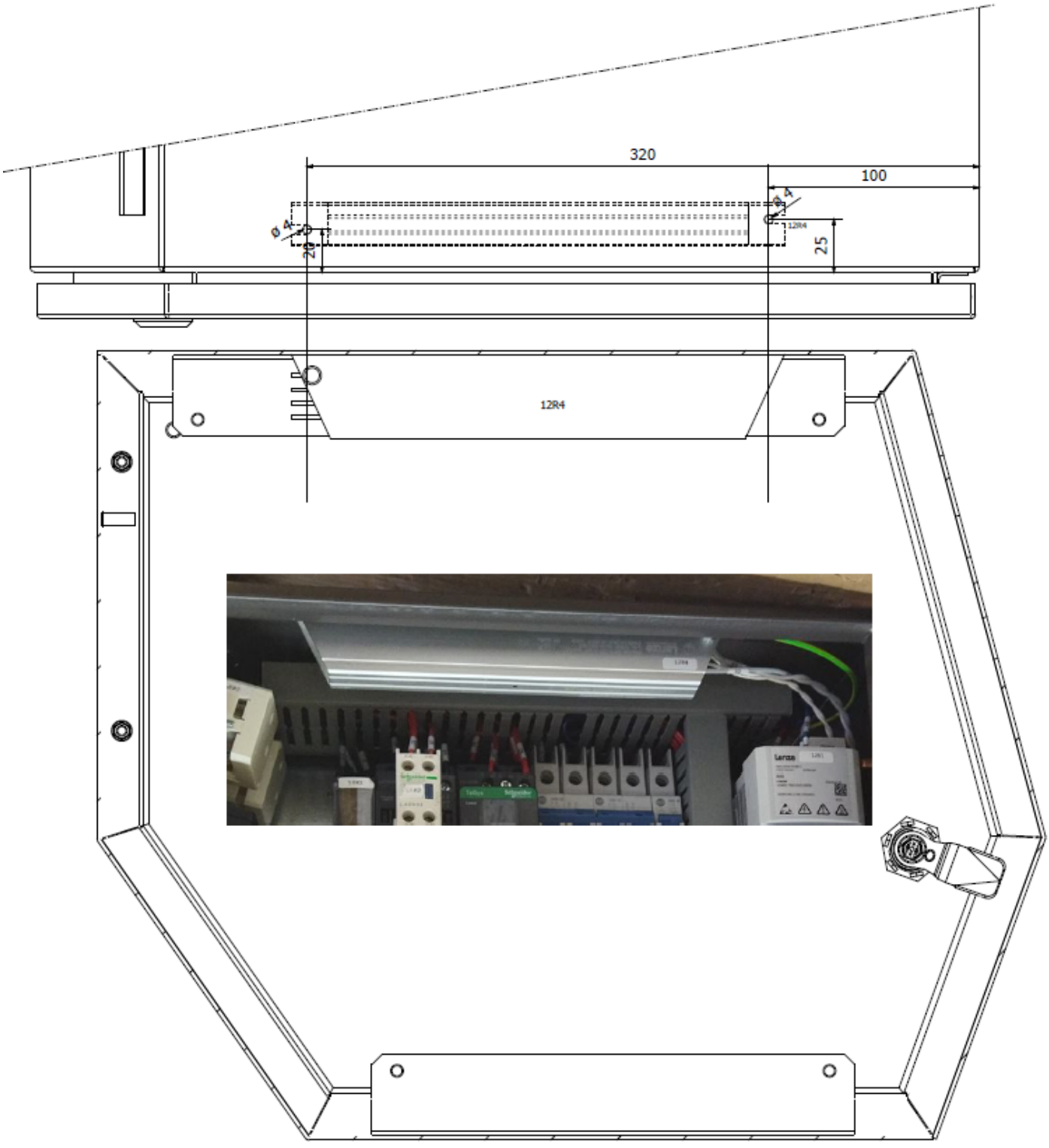
Drill 2 holes of 4mm according the dimensions given here below for mounting the Brake resistor at the inside of the box.

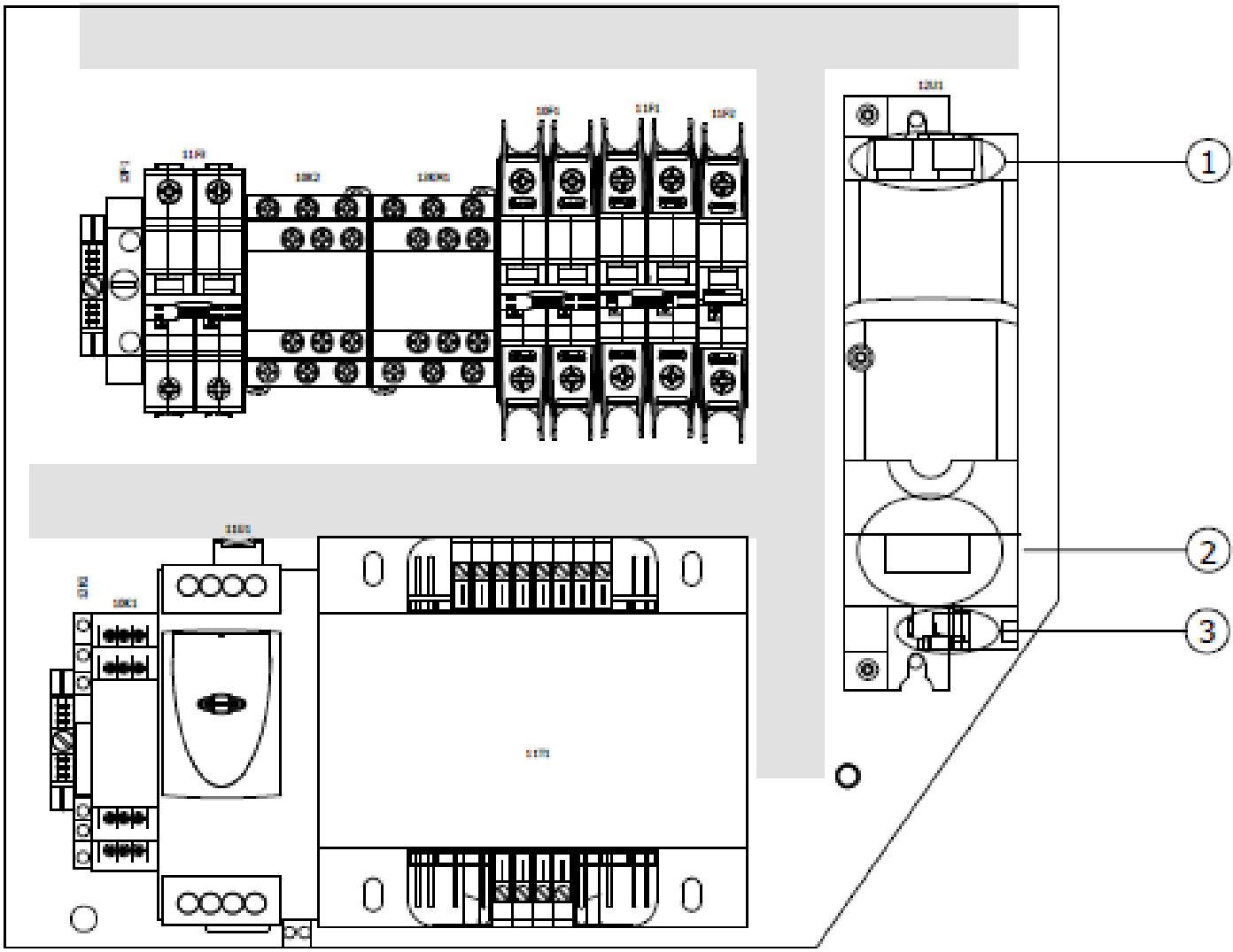
*** Make sure that you protect the parts inside the box from the metal debris and dust that comes while drilling!**

*** Place some plastic foil over the parts before you start drilling!**



Mount the brake resistor at the newly drilled holes with M4 screws and tighten the M5 screws for the brake resistor.





1. Place the connectors with the power supply wires and motor brake wires.
2. Install the control wires that are connected on the I/O block.
3. Place the connectors with the motor wires.

Supply connectors and relay contact connectors

I510

I550

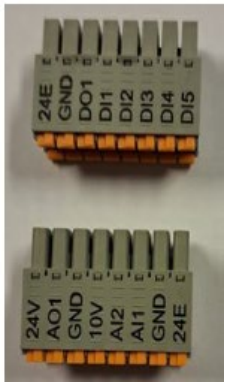
Motor cable connectors and Brake resistor connection

I510 *(no brake resistor connection)*

I550 *(with brake resistor connection)*

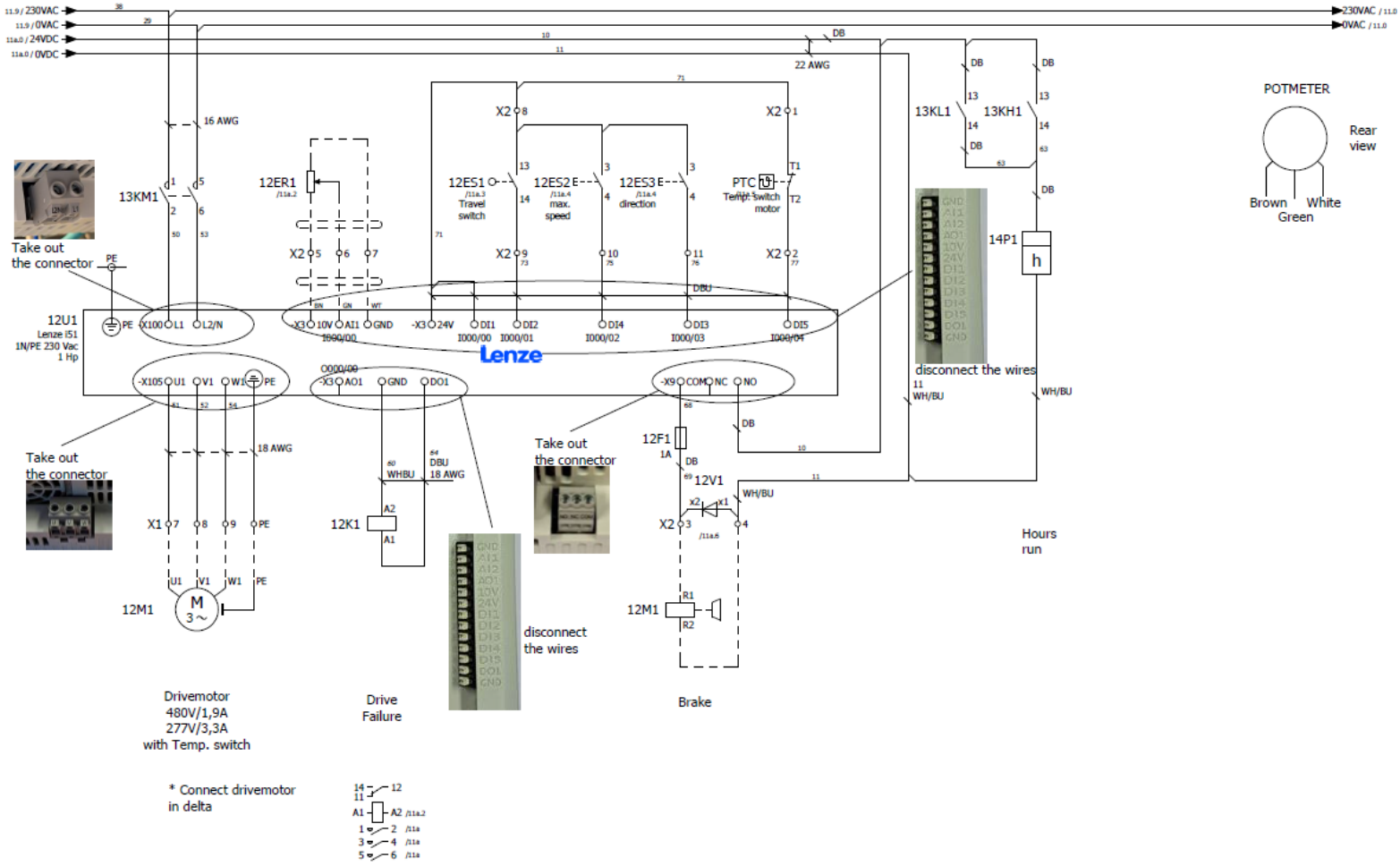
Control connections

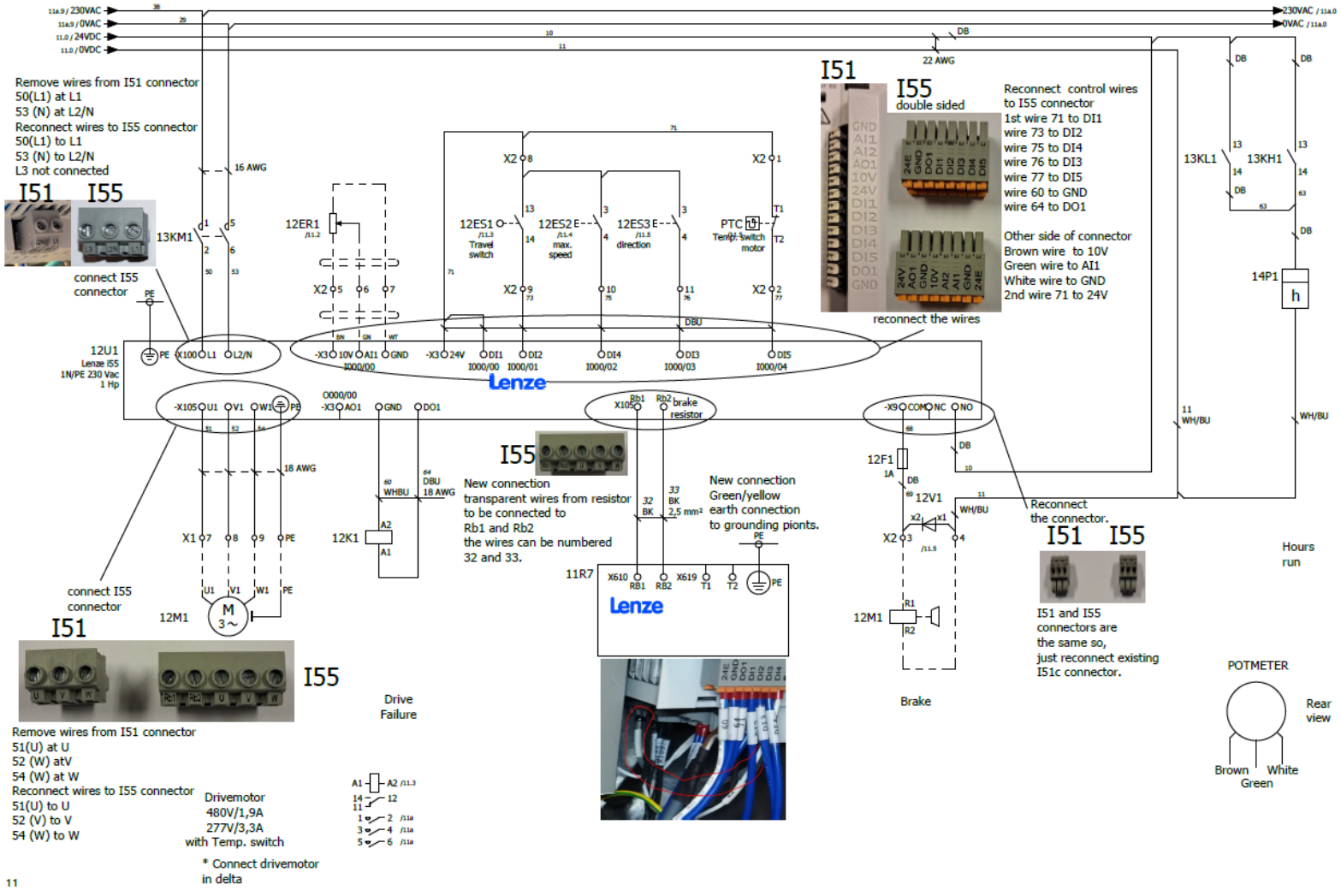
I510 has a fixed terminal



I550 has a detachable connector with connections at both side

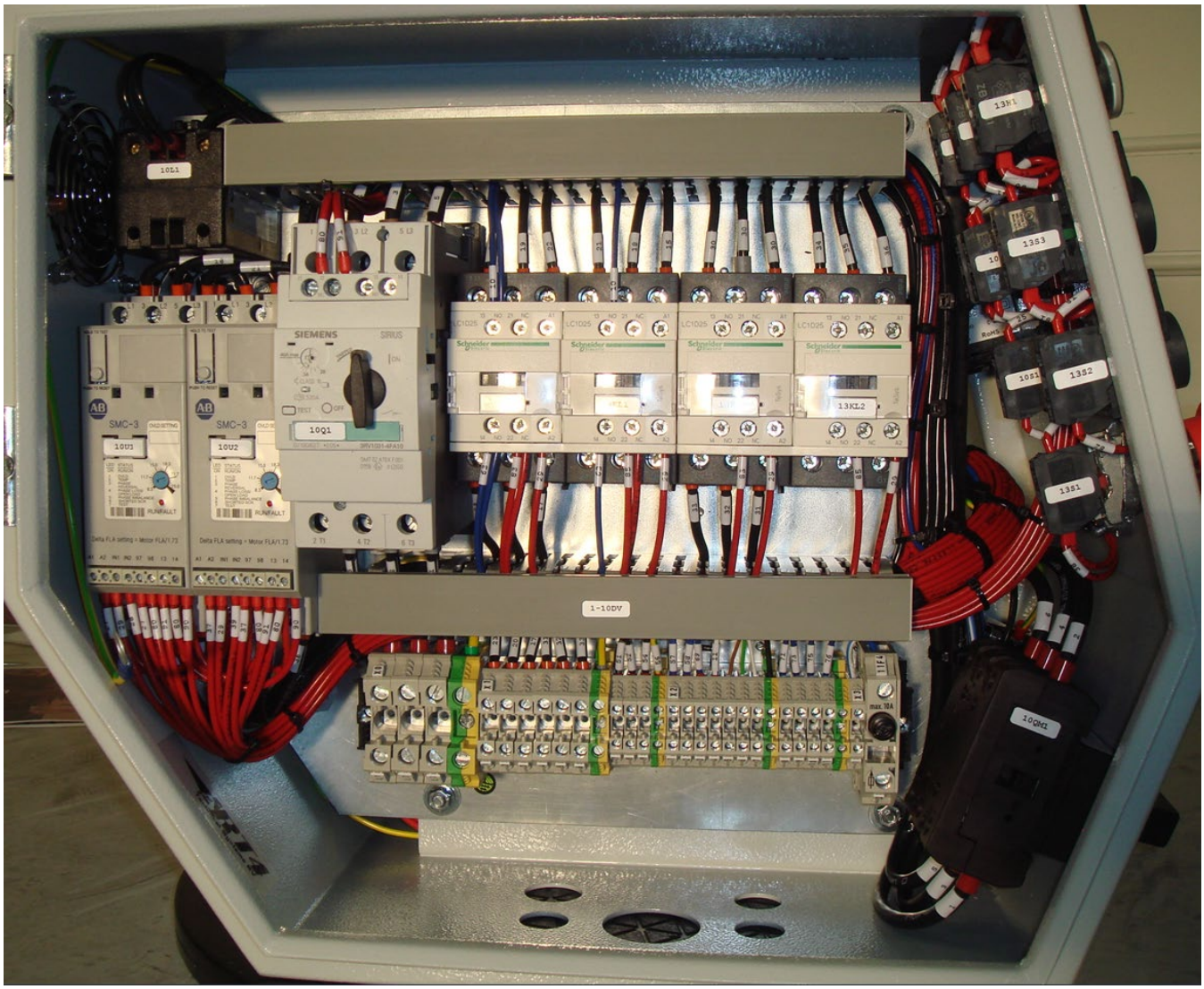
Reconnecting the wires to the newly installed VFD and BR.
Refer to wiring diagram ''PJ11.1064.REFIT'' on page 11 and 11a.



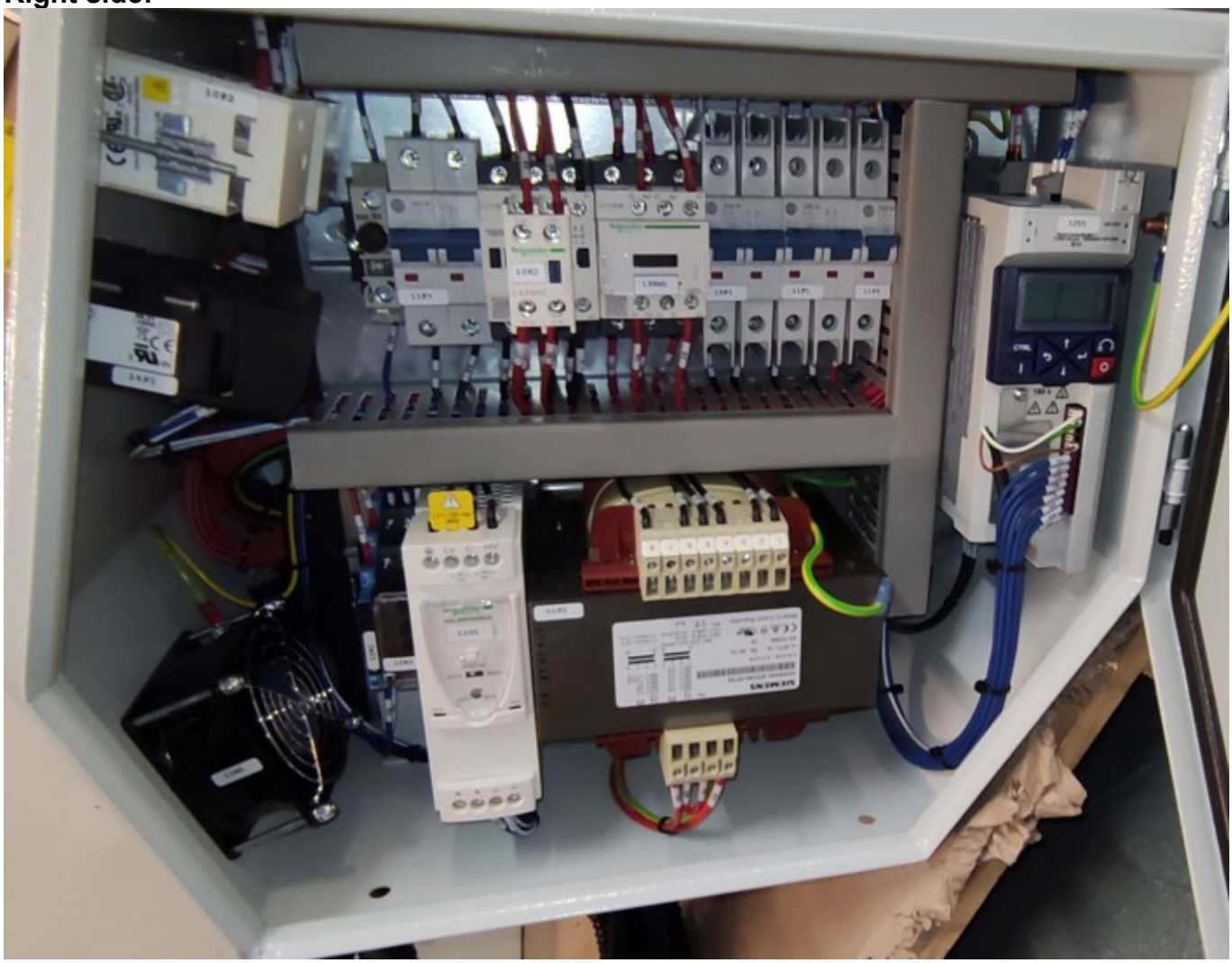

Remove wires from I51 connector
50(L1) at L1
53 (N) at L2/N
Reconnect wires to I55 connector
50(L1) to L1
53 (N) to L2/N
L3 not connected
I51
I55
connect I55 connector
13KM1
12ER1
12ES1 Travel switch
12ES2 max. speed
12ES3 direction
PTC Temp. switch motor
12U1 Lenze I55 1N/PE 230 Vac 1 Hp
Lenze
I55
New connection transparent wires from resistor to be connected to Rb1 and Rb2 the wires can be numbered 32 and 33.
11R7
New connection Green/yellow earth connection to grounding pionts.
brake resistor
12K1
12M1
connect I55 connector
I51
I55
Remove wires from I51 connector
51(U) at U
52 (W) atV
54 (W) at W
Reconnect wires to I55 connector
51(U) to U
52 (V) to V
54 (W) to W
Drivemotor
480V/1,9A
277V/3,3A
with Temp. switch
* Connect drivemotor in delta
Drive Failure
I51
I55
double sided
reconnect the wires
Reconnect control wires to I55 connector
1st wire 71 to DI1
wire 73 to DI2
wire 75 to DI4
wire 76 to DI3
wire 77 to DI5
wire 60 to GND
wire 64 to DO1
Other side of connector
Brown wire to 10V
Green wire to AI1
White wire to GND
2nd wire 71 to 24V
12F1
12V1
Reconnect the connector.
I51 and I55 connectors are the same so, just reconnect existing I51c connector.
Brake
13KL1
13KH1
14P1
Hours run
POTMETER
Rear view
Brown
White
Green

1-10DS Dual Voltage - Overview E-Box, I510 without Brake Resistor.

Left side:

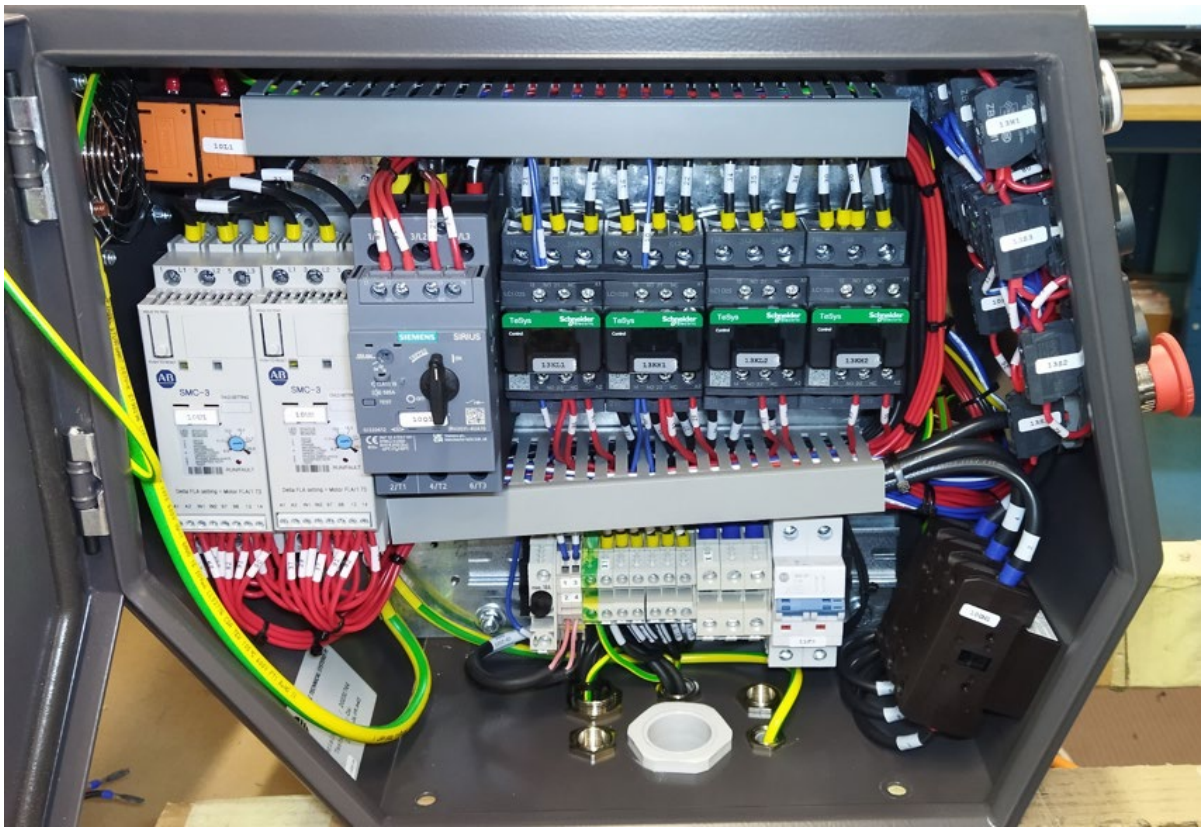


Right side:

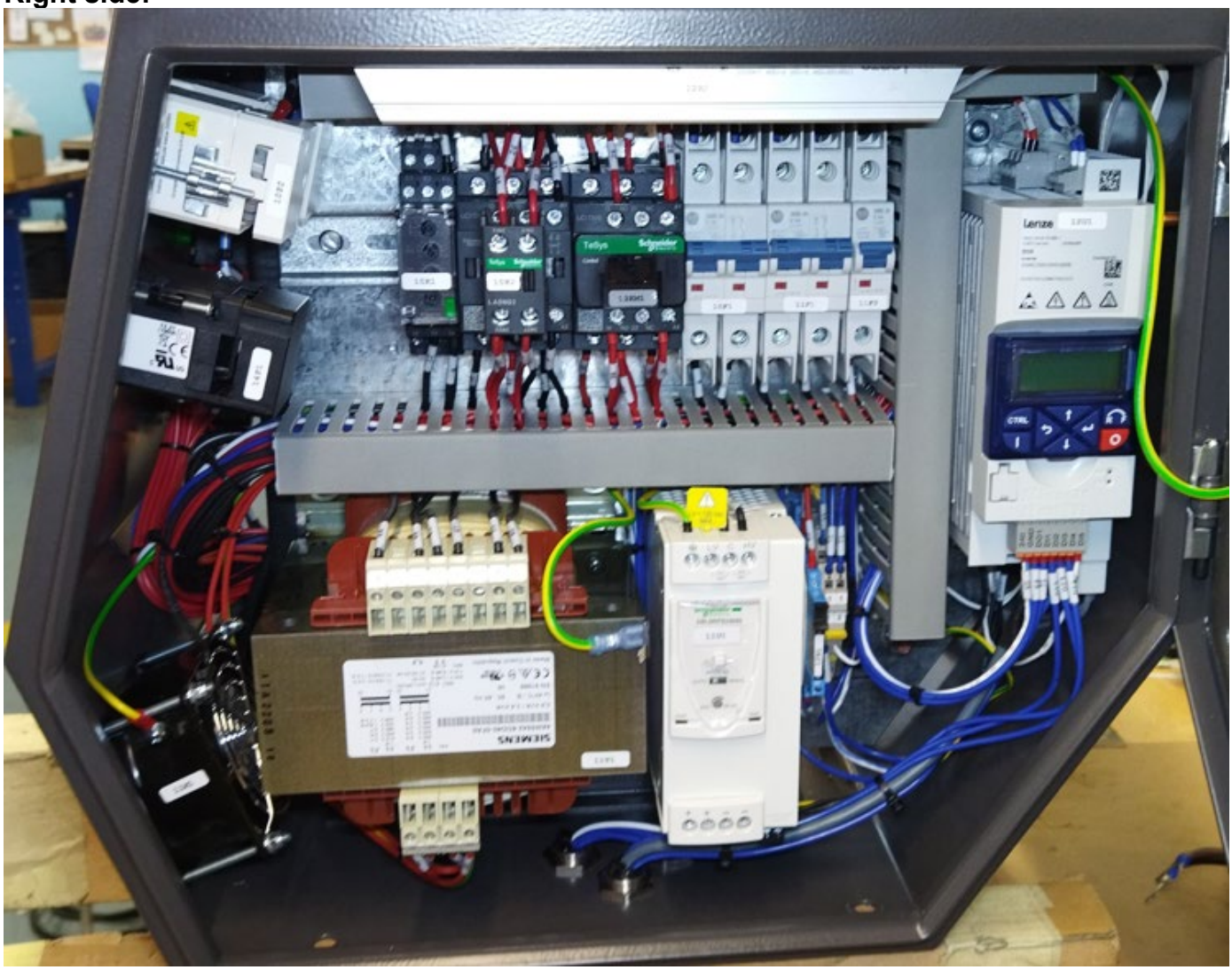


1-10DS Dual Voltage - Overview E-Box, I550 with Brake Resistor.

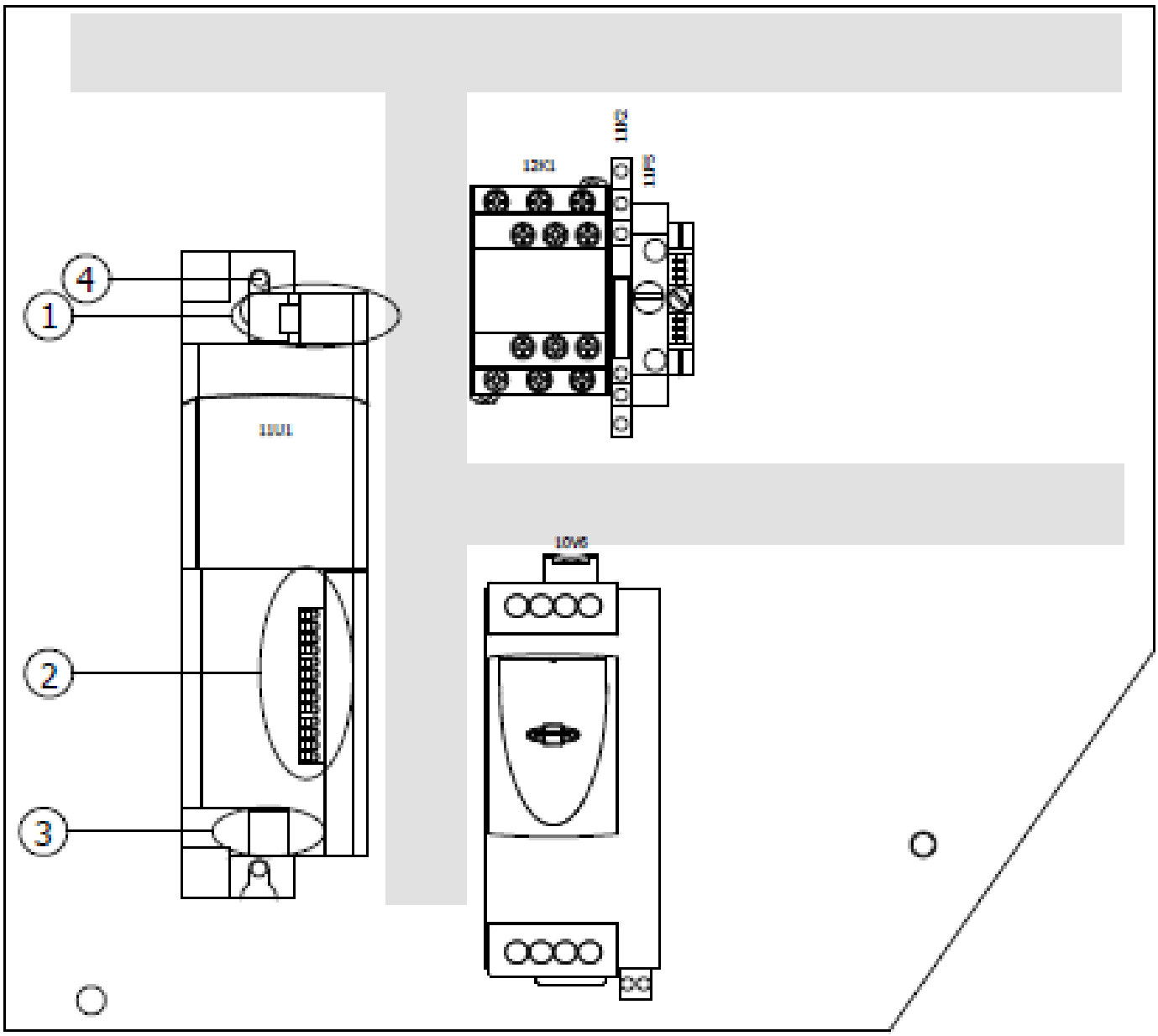
Left side:



Right side:

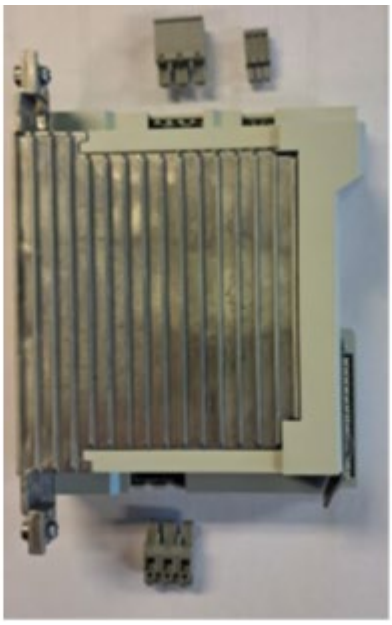


1-10DS Global *(PJ20.1364.REFIT)*

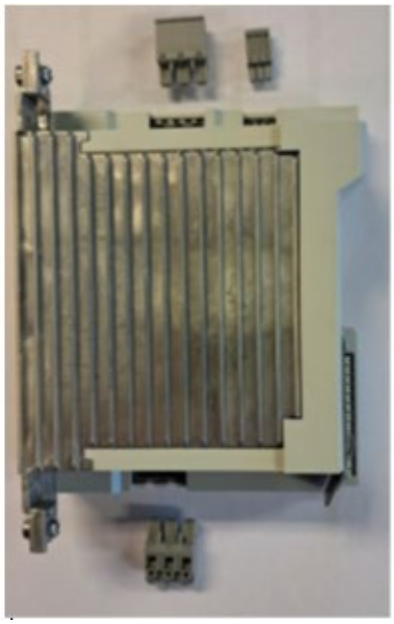


1. Take off the connectors with the power supply wires and motor brake wires.
2. Take off the control wires that are connected to the I/O block.
3. Take off the connectors with the motor wires.
4. Unscrew the VFD (drive) from the backplane.

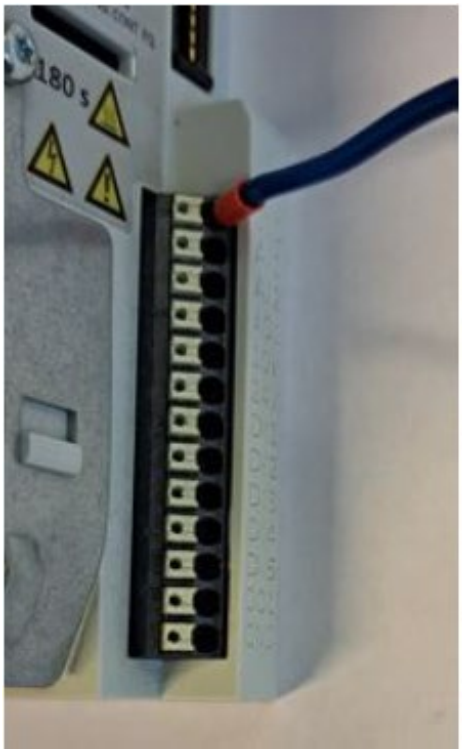
Connectors attached



Connectors detached



Connected control wire

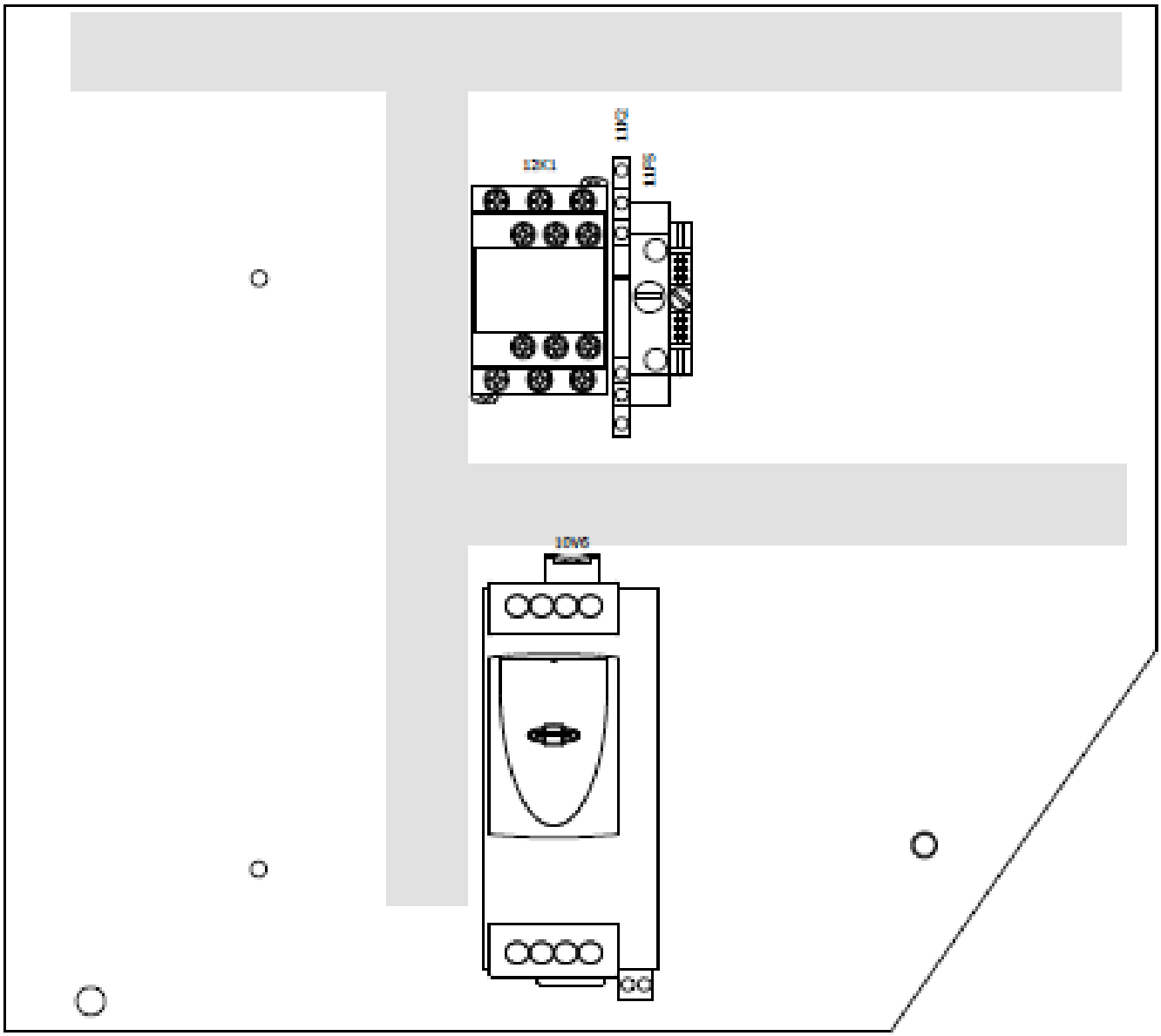


Connected control wire

Push in connector with a screwdriver

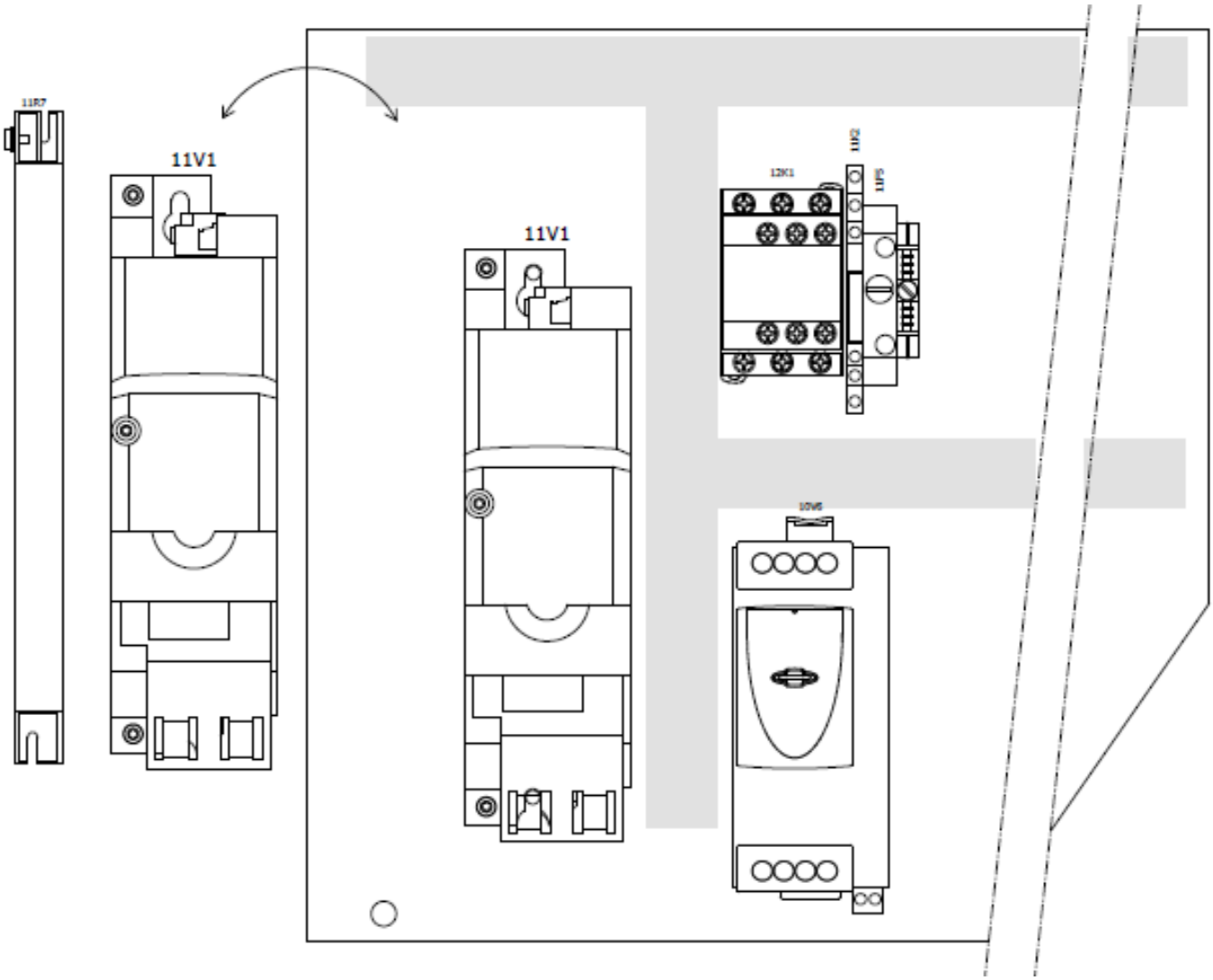
Pull out wire while pushing

After removing the I510 VFD.



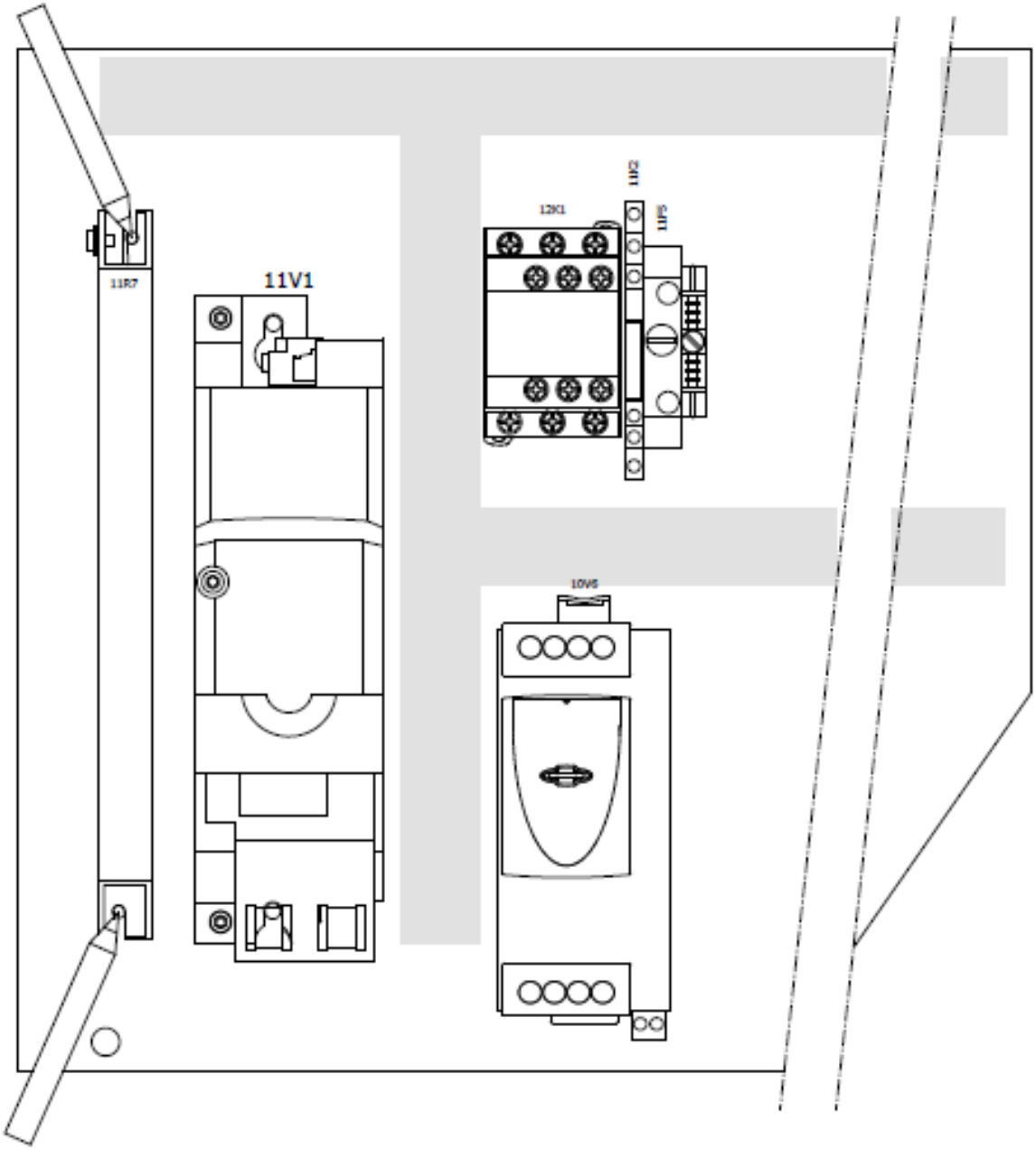
Mount the I550 drive with the screws on the same place where the I510 drive was mounted. The I550 has the same mounting dimensions as the I510.

*** Do not tighten the screws too much because later the VFD will be taken out when drilling holes for the brake resistor.**



Place the brake resistor next to the I550 frequency drive.
Make sure you have some space between the drive and brake resistor.

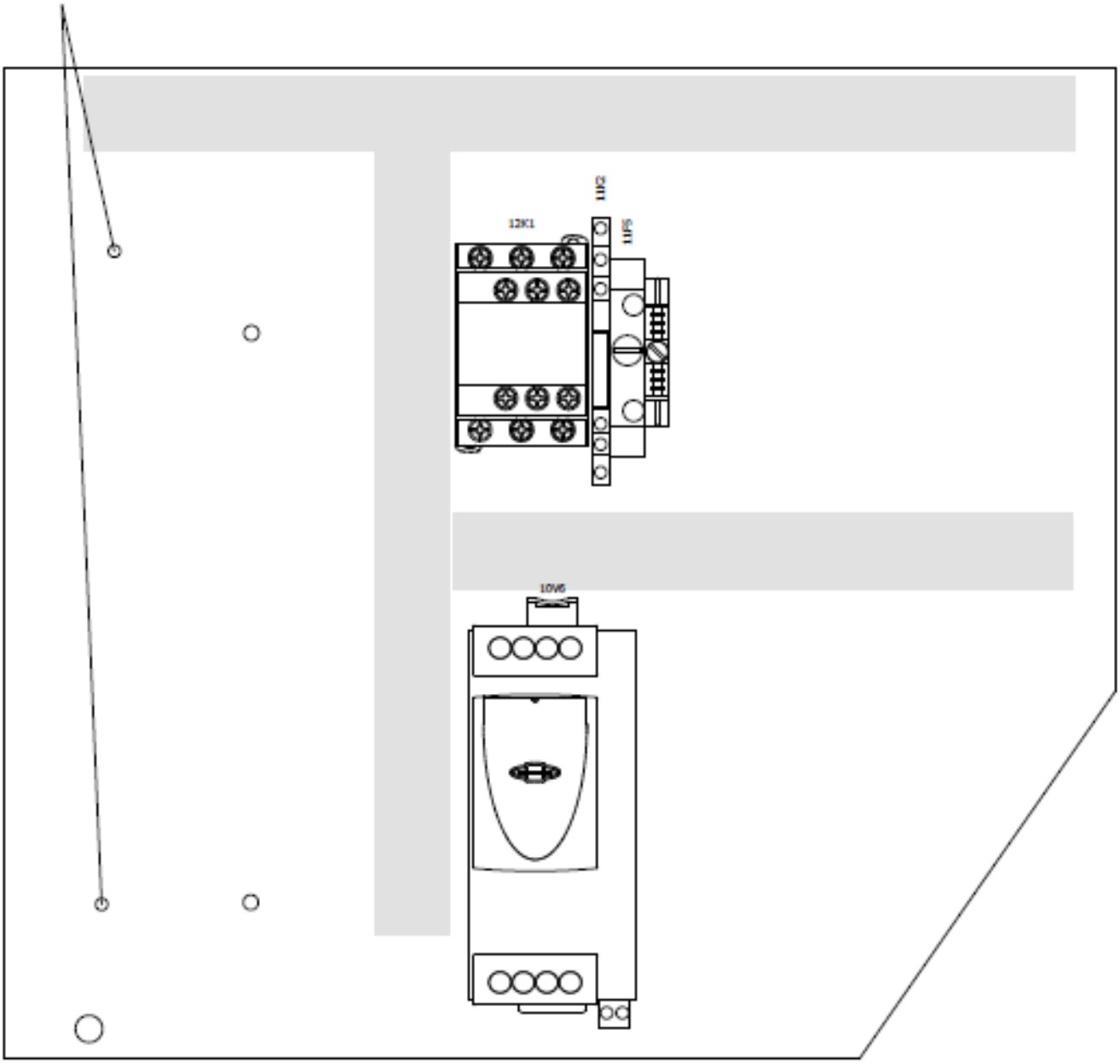
*** With a marker you can now mark the place where you need to drill the holes for the M4 screws.**



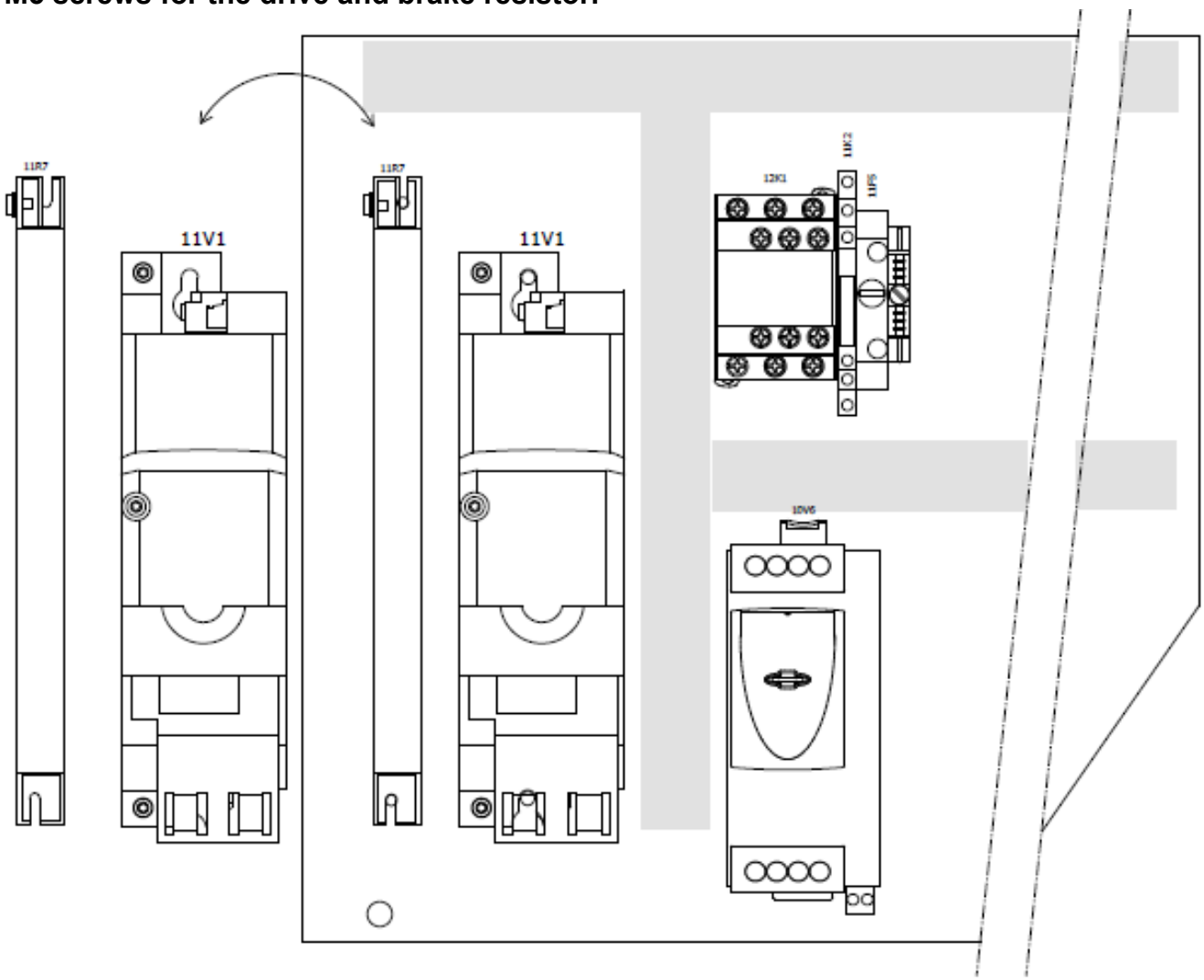
How it looks when ready to mount both units at there place.

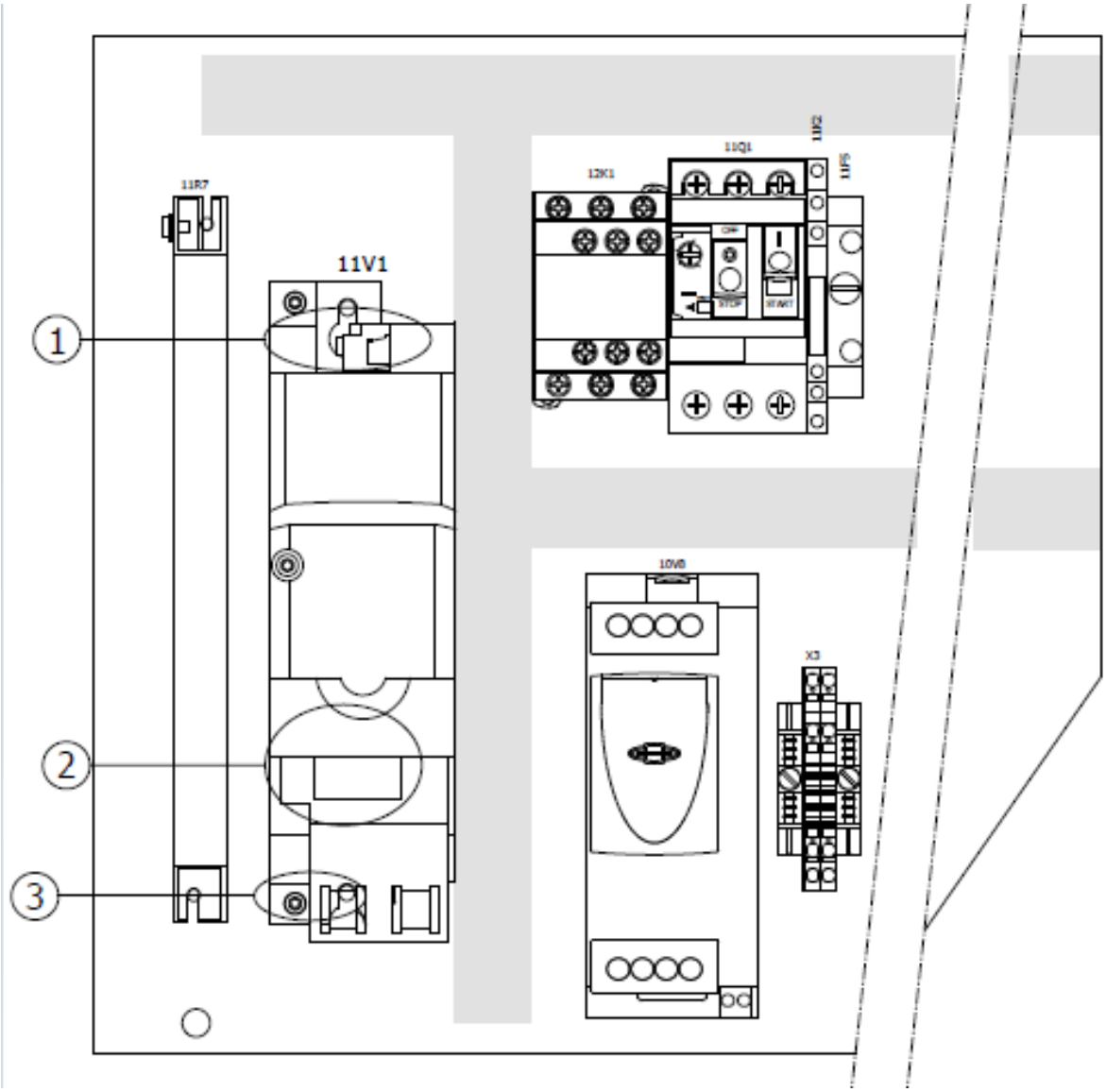
*** BE CAREFUL WHILE DRILLING THE HOLES, THERE ARE OTHER PARTS MOUNTED ON THE BACKSIDE OF THE PANEL!**

Now you drill two holes of 3,3mm and then tap them with M4 thread.



Mount the I550 drive with the M5 screws in the same place where the I510 drive was mounted.
Mount the brake resistor at the newly drilled holes with M5 and M4 screws and tighten the M5 screws for the drive and brake resistor.





1. Place the connectors with the power supply wires and motor brake wires.
2. Install the control wires that are connected to the I/O block.
3. Place the connectors with the motor wires.

Supply connectors and relay contact connectors

I510

I550

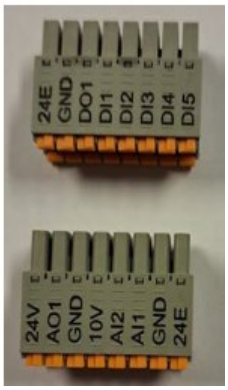
Motor cable connectors and Brake resistor connection

I510 *(no brake resistor connection)*

I550 *(with brake resistor connection)*

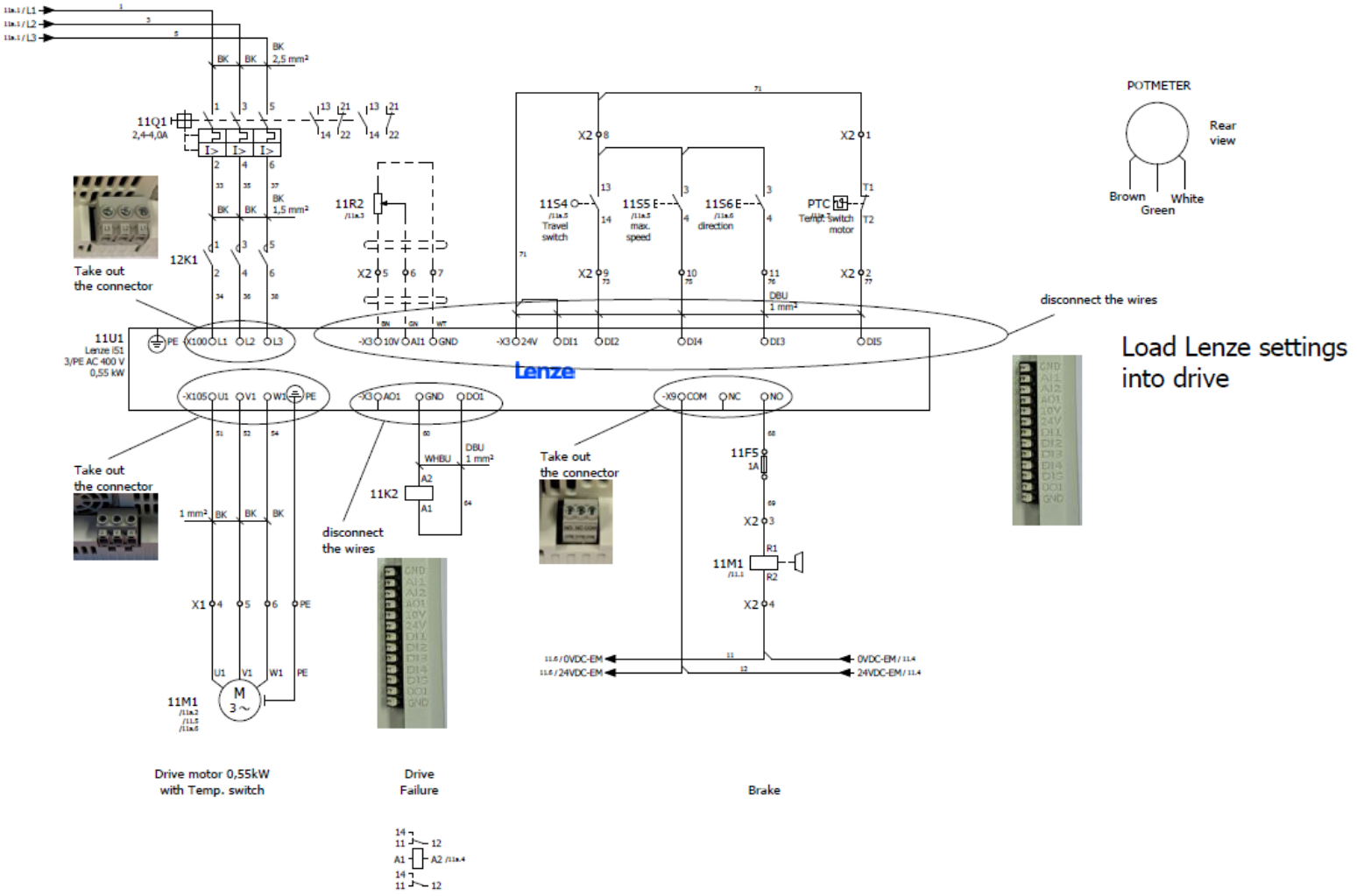
Control connections

I510 has a fixed terminal

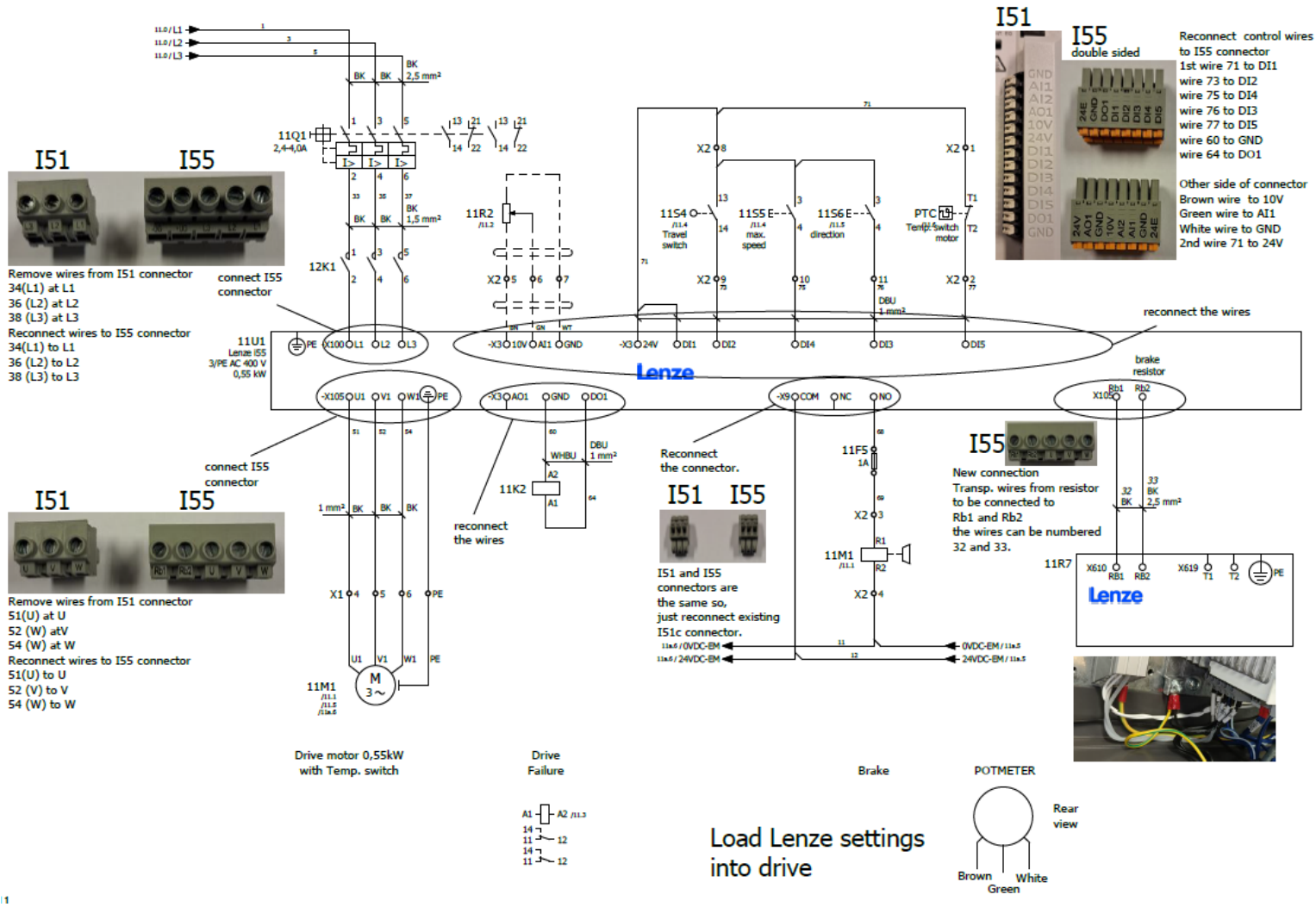


I550 has a detachable connector with connections at both sides

Reconnecting the wires to the newly installed VFD and BR.
Refer to wiring diagram ''PJ20.1364.REFIT'' on page 11 and 11a.

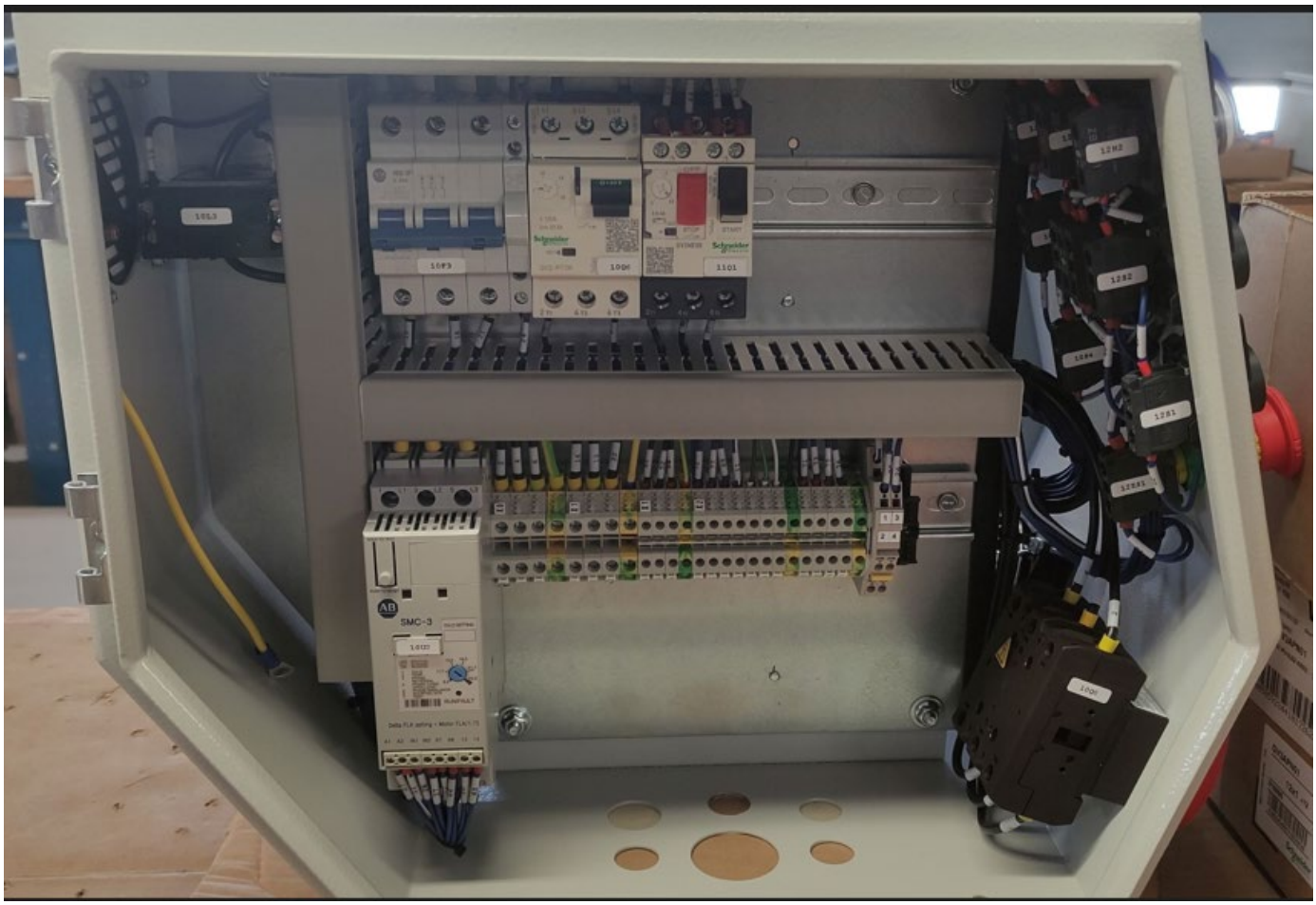


Reconnecting the wires to the newly installed VFD and BR.
Refer to wiring diagram ''PJ20.1364.REFIT'' on page 11 and 11a.



1-10DS Global - Overview E-Box, I510 without Brake Resistor.

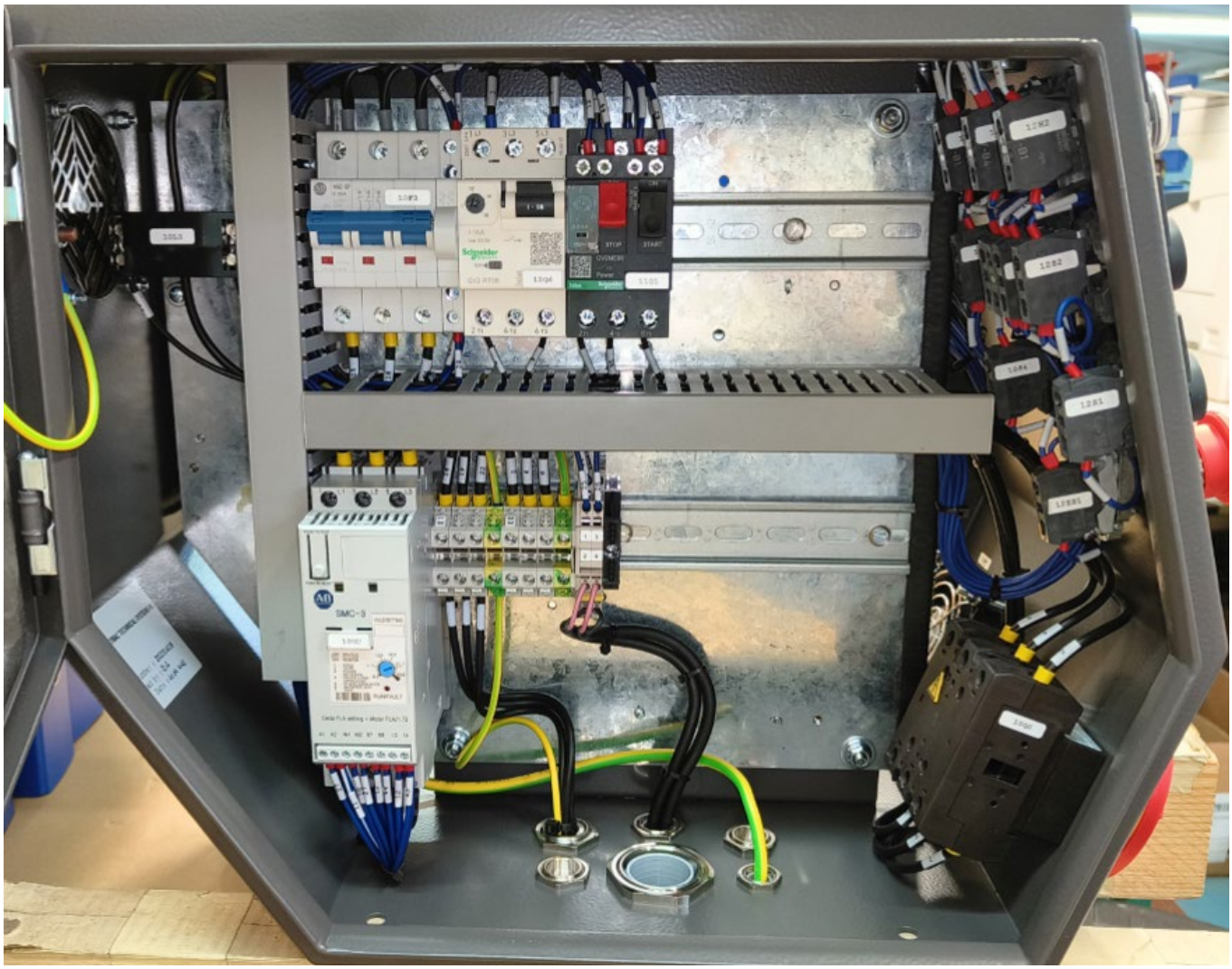
Left side:



Right side:

1-10DS Global - Overview E-Box, I550 with Brake Resistor.

Left side:



Right side: