28.9.2023
ver. 8.1

INSTALLATION AND OPERATING INSTRUCTIONS FOR LOGI CONTROL CENTRES
13735L, 13750L, 13780L ja 13800L

TEHTY SUOMESSA
MADE IN FINLAND

CE

MANUFACTURER:

MISA OY
Punaportinkatu 15
54710 LEMI
FINLAND

Tel.
+358 20 710 9390
misa@misa.fi
www.misa.fi

VAT
FI01620383
Krnro 188.087
Alv rek.

Sisällysluettelo

INSTALLATION

Control centre location

The control centre is a touch proof (IP20) unit for surface mounting in dry rooms. Suitable locations include, for example, a dressing room, corridor, kitchen or the like, but not a washroom. The control centre is attached with screws. Max. room temperature +30°C. Attachment to level and sturdy wall surface, level concrete/board wall with durable frame. On a rough brick wall/uneven surface, the base plate may resonate.

IMPORTANT INSTALLATION NOTE!!!

A known issue with fine-stranded control centre conductors is that the conductors become stuck over time, which leads to loosening of the connections.

The screws of Logi Control Centre wiring must be tightened before commissioning, as well as one month after commissioning. After this, once in every six months, in connection with regular sauna stove maintenance.

We recommend using a thermal camera for inspection, as loose connections in the control centre can easily be spotted this way.

Location of thermostat sensors

Sensor T1 (temperature sensor PT100 + resettable overheating protection)
The thermostat sensor is placed on the wall of the sauna so that the distance from the ceiling to the sensor top edge is 30 cm. Additionally, the sensor must be at least 120 cm away from the side of the stove. The sensor must not be located near a door or window. The distance between the sensor and a fresh air supply valve, if present, must be at least 100 cm.
The sensor is screw-mounted on the wall.

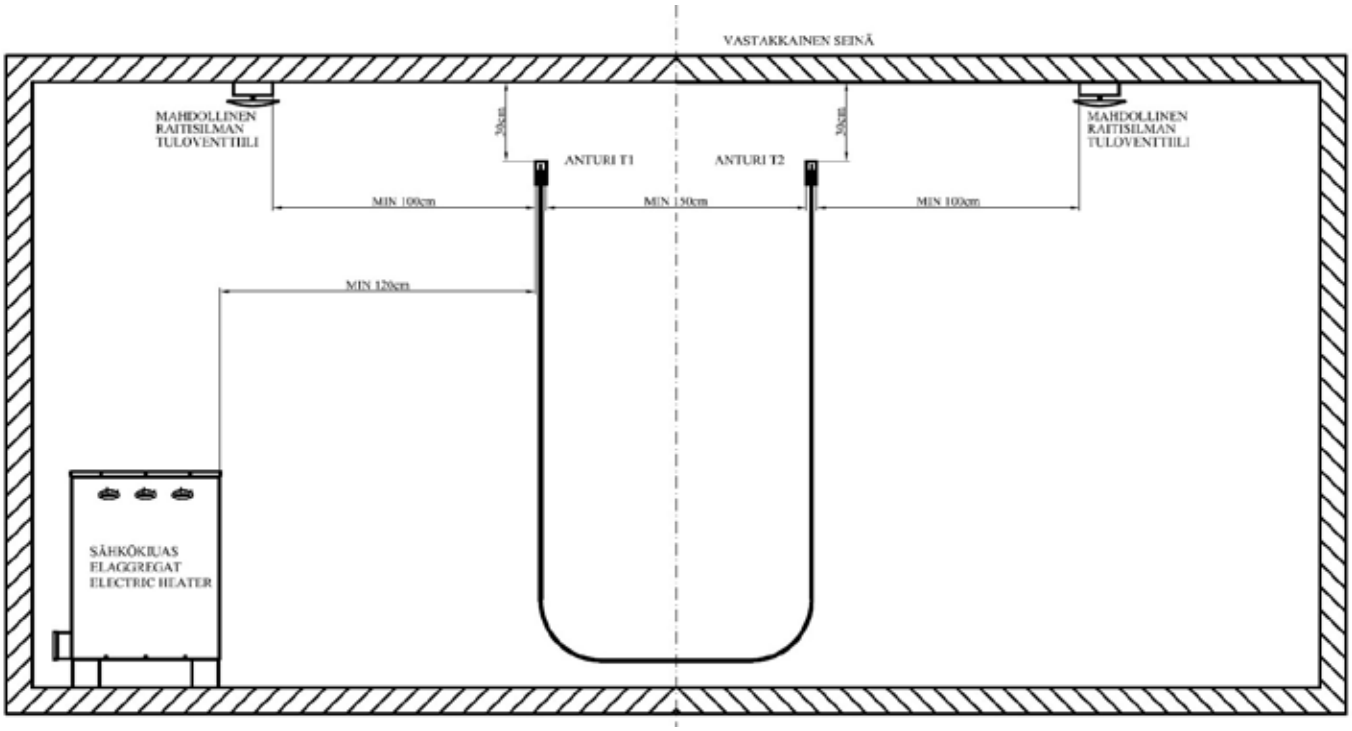
Sensor T2 (temperature sensor PT100 + fusible overheating protection)
The thermostat sensor is to be installed on a sauna room wall (opposite to sensor T1). The distance from the ceiling to the top edge of the sensor is 30 cm. Additionally, the sensor must be at least 120 cm away from the side of the stove. The sensor must not be located near a door or window. The distance between the sensor and a fresh air supply valve, if present, must be at least 100 cm. The sensor is screw-mounted on the wall.
Minimum distance between the sensors is 150 cm.

The sensor cables have been attached to the sensors by screw connections to facilitate installation.

NOTE! If the sensor cable is routed using a protective conduit penetrating the wall directly behind the sensor, the protective conduit must be sealed so that cooler air could not flow directly to the sensor through the conduit.

The temperature sensor cable routing hole in the wall panel must always be filled with a suitable filler. This is to prevent the airflow behind the wall panels from cooling the sensor.

For installation drawing, see page 4.



CONNECTION TO POWER SUPPLY

Connection works may only be performed by an authorised skilled electrician, in compliance with valid regulations. Open the housing cover (hinged) to make the connections. Route the supply cables through the bottom part of the housing; a strain relief device in the penetration is to be used.

Logi 13735L Control Centre (group fuses 2 x 3x20 A):
- supply to the centre: 1 pc. 5x16 mm² fuse rating 3x40 A
- from centre to sauna stove 2 pc. 5x6 mm²

Logi 13750L Control Centre (group fuses 2 x 3x32 A):
- supply to the centre: 1 pc. 5x25 mm² fuse rating 3x63 A
- from centre to sauna stove 2 pc. 5x6 mm²

Logi 13780L Control Centre (group fuses 2x 3x40 A):
- supply to the centre: 2 pc. 5x16 mm² fuse rating 2 x 3x40A
- from centre to sauna stove 2 pc. 5x10 mm²

Logi 13800L Control Centre (group fuses 4 x 3x25 A):
- supply to the centre: 2 pc. 5x16 mm² fuse rating 2 x 3x50 A
- from centre to sauna stove 4 pc. 5x6 mm²

In case of commercial electric sauna stoves, installation of two supply cables from the centre to the stove is always recommended. This way, the sauna stove can also be operated at half power.

We recommend using silicone cables instead of rubber cables for sauna stove power supply. The heat resistance of silicone cables is superior to that of rubber cables.

Wiring/cabling

All Logi Control Centres are equipped with the same stainless steel housing (dimensions: 500x325x130mm (H x W x D))

100 A Logi Control Centre has two housings of the same size as mentioned above.

The control centre may not be installed in a room where the temperature exceeds 30°C.

The warranty period granted to Logi Control Centres is 12 months.

The warranty period granted to automatic fuses is 6 months.

The surface material of the control centres is always stainless steel. The power supply to the control centres is always routed through the bottom edge of the housing.

The protection rating of the control centres is IP20. The centre comes with two 30m cables for both temperature sensors for the sauna. (If cables longer than that are required for the site, contact the seller.)

CONTROL CENTRE PRODUCT NUMBERS AND CABLING

Product number	**Power supply**	**Cabling to the centre**	**Max. output of commercial electric sauna stoves**
Logi 13735L	40 A	1 pc. 5x16 mm²	19 kW
Logi 13750L	63 A	1 pc. 5x25 mm²	31 kW
Logi 13780L	80 A	2 pc. 5x16 mm²	50 kW
Logi 13800L	100 A	2 pc. 5x16 mm²	62 kW

CABLING FROM CENTRE TO SAUNA STOVE

Sauna stove power kW	**Group inputs (pc.)**	**Cabling**	**Control Centre current A**
10,2 kW	2 pc.	5x6,0 mm²	40 A
11,9 kW	2 pc.	5x6,0 mm²	40 A
15,3 kW	2 pc.	5x6,0 mm²	40 A
20,4 kW	2 pc.	5x6,0 mm²	63 A
25,5 kW	2 pc.	5x6,0 mm²	63 A
30,6 kW	2 pc.	5x6,0 mm²	63 A
40,8 kW	2 pc.	5x10,0 mm²	80 A
2 pc. 25,5 kW 2 pc. 30,6 kW	4 pc. 4 pc.	5x6,0 mm² 5x6,0 mm²	100 A

Connection instructions on pages 18-23

USING THE CONTROL CENTRE

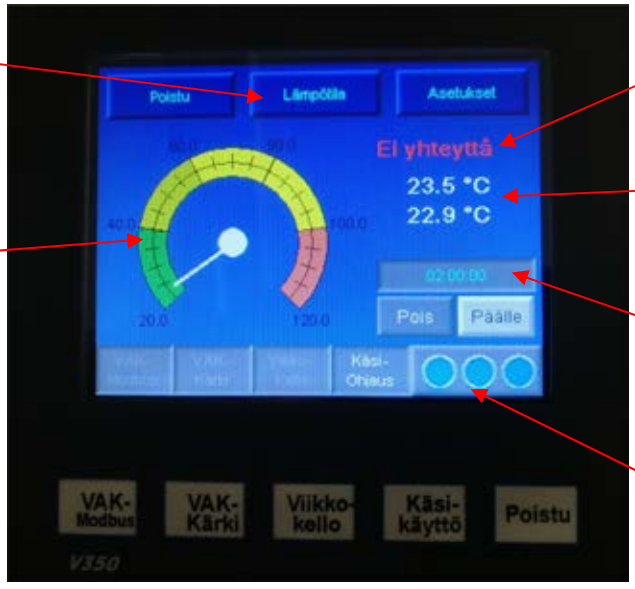
Flip the control centre's group fuses and control fuse to ON.
Use the electronics main switch to switch on the electronics. The touch screen of the panel lights up and the Misa logo (white) appears.

Touch screen. The touch screen returns to this mode automatically if it has not been touched for one minute. The logo is displayed in red when the sauna stove is on.

Operating mode selection buttons.

TO START

Touch the screen. The setting mode home screen is displayed.



start menu

temperature display

Modbus status notification

sensor-specific temperatures

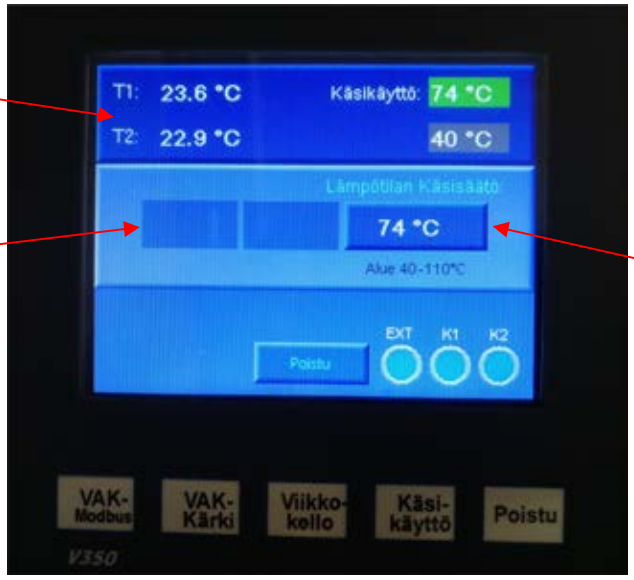
ON time notification in manual mode

ON/OFF status information, power group-specific status information (K1, K2)

The buttons at the bottom of the panel can be used to choose how ON time is controlled.

Temperature adjustment

Tap the “Temperature” box in the main menu. The set temperature value is displayed.



The setting can be changed by tapping the set temperature box. The temperature can be adjusted between 40 and 110°C. The desired temperature is entered using the number buttons and confirmed by pressing the Enter button.

After confirmation of the temperature value, the display returns to the previous screen. Press “Poistu” (exit) to return to the home screen.

Manual operation

Manual control is activated using the button on the panel bottom edge.

If manual control has been selected as the operating mode, “Käsiohjaus” (manual control) is highlighted at the bottom of the screen and “Pois”/”Päälle” (Off/On) buttons are displayed on the screen. The ON time is displayed above the Off/On buttons.

To start the heating of the sauna stove, tap the On button. The stove will be energized for the set time, unless the Off button is tapped before the ON time expires.

ON time selection
To change the ON time, tap “Asetukset” (settings) in the main menu. In the settings menu, choose the item “Käsikäyttö-ajastin” (manual timer). The set ON time is displayed. The time can be changed by tapping the time box and changing the value in the window that opens.

Use the number buttons to choose the desired time (hh:mm) and the Enter button to confirm. The ON time can be set between 1 and 12 hours.
Leave the menus to return to the main menu using the “Poistu” (exit) screen buttons.

The screen returns to screen saver mode if the function button “Poistu” (exit) in the main menu is tapped or if the screen has not been touched for one minute. In the screen saver mode, the Misa logo is displayed on the screen. The logo is white if the sauna stove is OFF and red while the stove is ON.

Week timer operation

Week timer control is activated using the button on the panel bottom edge.

If week timer has been chosen as the operating mode, “Viikkokello” (week timer) is highlighted at the bottom of the screen.

Week timer ON time setting

To change the ON time, tap “Asetukset” (settings) in the main menu. In the settings menu, choose the item “Viikkokello” (week timer). The week timer ON time settings are displayed. Two timer periods can be set for each day. The desired ON or OFF time can be changed by tapping the respective time box.
For example, if the first timer period is set for Monday with a start time of 7.00 and an end time of 17.00, the start and end time of the second timer period will automatically change (17.00). In other words, the second time period cannot be set to start before the first one ends.

To disable an entire day, tap the box for that day. To re-enable the day, tap on it again. If timer periods have been set for a weekday, these will remain stored in the memory.

NOTE!
To save the time settings made, remember to press the “Tallenna” (save) button before exiting the week timer settings.

Operation with VAK-Kärki control

To activate VAK-Kärki control, press the button on the panel bottom edge.
In this case, the sauna stove can be used by remotely controlling the control centre from an external system (e.g., building automation system) using potential-free tip input. Remote control can be enabled by connecting a “switch” between the pair of terminal blocks shown in the connection diagram. The sauna stove is on when the tip pair of the switch is connected. NOTE! Uninterrupted ON time of the sauna stove cannot be set to more than 12 hours (with the exception of stove-specific instructions provided for commercial use). The temperature is adjusted from the control centre.

Operation with VAK-Modbus control

To activate VAK-Modbus control, press the button on the panel bottom edge.
In this case, the control centre can be controlled from the building automation system via Modbus. The Modbus connector (RJ-45) is located on the bottom edge of the control centre. If necessary, several control centres can be linked together and controlled at the same time.
With VAK-Modbus control, ON time and temperature values can be controlled from the building automation system.

Other settings

From the settings menu, the operating hours of the control centre can be checked by choosing “Käyttötunnit” (operating hours).
The time and date are set under the section “Kellonasetus” (clock setting).

Device settings

The item “Laite asetukset” (device settings) in the settings menu is locked. These settings should only be changed if this is necessary.

The locking can be disabled by holding down the “VAK-kärki” (VAK tip) and “Käsikäyttö” (manual operation) buttons while pressing “Laite asetukset”; the lock symbol disappears from the screen and the device settings can be selected. NOTE! All three must be pressed at the same time.

Alarms

In the event of a fault, the alarms reported by the device are shown in red on the alarm screen.

- Overheating protection 1, alerts if the overheating protection of sensor T1 is triggered; to be manually reset at the sensor by pressing
- Overheating protection 2, alerts if the overheating protection of sensor T2 is triggered; a fusible component, the sensor must be replaced
- Temperature difference between sensors, alerts if the temperature difference between sensors is excessive
- Sensor over-temperature, alerts if the temperature is higher than the set limit value
- Sensor under-temperature, alerts if the temperature is lower than the set limit value
- MODBUS alarms

NOTE! Separate indicator lights can be connected for the sensor over-temperature and under-temperature alarms. For the location, see the connection diagram.

Hysteresis

The hysteresis value can be adjusted between 2-10°C (factory setting 5°C). The hysteresis setting affects the control of the desired temperature.
If the hysteresis value is 5°C and the set temperature value is 80°C, for example, the control of the sauna stove takes place as follows. Both power groups of the stove (heating element groups (K1 and K2)) are ON until the set temperature 80°C is reached; after that, one of the heating element groups is switched off. If the temperature rises and the set temperature is exceeded by the hysteresis value, in this case, above 85°C, the second heating element group is also switched off. After that, if the sauna temperature drops below 80°C, one of the heating element groups is switched on. If the sauna temperature continues to decrease and falls below 75°C, the second heating element group is also switched on, i.e., the sauna stove works at full power.

Device ID

Modbus control-related specification of the device ID.

Alarm limits

The following alarm limit values can be set:

- the maximum permitted temperature difference of temperature sensors (T1 and T2)
- under-temperature alarm, 0-110°C
- over-temperature alarm, 40-130°C

NOTE! Remember to save the changed settings before leaving the menu.

WARRANTY

The warranty period is one year from the control centre delivery date. The warranty is valid in Finland only.
Any raw material or manufacturing defects discovered during the warranty period will be repaired free of charge.
The warranty does not cover faults resulting from installation and/or use conflicting with the instructions for use and maintenance.

WARNING!

The sauna stove may not be covered. Never hang combustible objects, such as towels, above the sauna stove or in its vicinity, even after using the sauna. These will cause a fire hazard if the sauna stove is switched on without inspecting the sauna first.
Covering, short-circuiting or otherwise restricting the functionality of the thermostat and temperature limiter sensors is prohibited, as this would create a fire hazard. If these components do not work normally, the cause of the malfunction must be identified and fixed.

SELLER: **Cihaus Oy**, Pintiläntie 44, 53400 Lappeenranta, Finland
p. +358 50 555 1822, info@cihaus.fi, www.cihaus.fi

MAINTENANCE RECORD

<table>
<tr><td colspan="2">CONTROL CENTRES SERIAL NUMBER:</td></tr>
<tr><td colspan="2">COMMISSIONING DATE:</td></tr>
<tr><td>First installation maintenance / commissioning
☐ Tightening of cabling screws
Other maintenance works:

_____
day: mechanic:</td><td>Inspection maintenance 1 month after commissioning
☐ Tightening of cabling screws
Other maintenance works:

_____
day: mechanic:</td></tr>
<tr><td>Semi-annual maintenance ½ year
☐ Tightening of cabling screws
Other maintenance works:

_____
day: mechanic:</td><td>Semi-annual maintenance 1 year
☐ Tightening of cabling screws
Other maintenance works:

_____
day: mechanic:</td></tr>
</table>

Semi-annual maintenance 1½ year ☐ Tightening of cabling screws Other maintenance works: _____ day: mechanic:	Semi-annual maintenance 2 year ☐ Tightening of cabling screws Other maintenance works: _____ day: mechanic:
Semi-annual maintenance 2½ year ☐ Tightening of cabling screws Other maintenance works: _____ day: mechanic:	Semi-annual maintenance 3 year ☐ Tightening of cabling screws Other maintenance works: _____ day: mechanic:
Semi-annual maintenance 3½ year ☐ Tightening of cabling screws Other maintenance works: _____ day: mechanic:	Semi-annual maintenance 4 year ☐ Tightening of cabling screws Other maintenance works: _____ day: mechanic:
Semi-annual maintenance 4½ year ☐ Tightening of cabling screws Other maintenance works: _____ day: mechanic:	Semi-annual maintenance 5 year ☐ Tightening of cabling screws Other maintenance works: _____ day: mechanic:
Semi-annual maintenance 5½ year ☐ Tightening of cabling screws Other maintenance works: _____ day: mechanic:	Semi-annual maintenance 6 year ☐ Tightening of cabling screws Other maintenance works: _____ day: mechanic:
Semi-annual maintenance 6½ year ☐ Tightening of cabling screws Other maintenance works: _____ day: mechanic:	Semi-annual maintenance 7 year ☐ Tightening of cabling screws Other maintenance works: _____ day: mechanic:

MANUFACTURER:
MISA OY
Punaportinkatu 15
54710 LEMI
FINLAND

Tel.
+358 20 710 9390
misa@misa.fi
www.misa.fi

VAT
FI01620383
Krnro 188.087
Alv rek.

Modbus rekisterit MISA ryhmäkeskukselle

Yhteysasetukset: 38400 Baud, 8bit Data, 1 Stop Bit, No Parity.

Coil	Function	Values	
0	On/Off (Modbus)	0 = Pois, 1 = Päällä	Luku/kirjoitus
1	EXT Rele	0 = Pois, 1 = Päällä	Luku
2	K1	0 = Pois, 1 = Päällä	Luku
3	K2	0 = Pois, 1 = Päällä	Luku
4	Delta hälytys	0 = Normaalitila, 1 = Hälytys	Luku
5	Alilämpöhälytys	0 = Normaalitila, 1 = Hälytys	Luku
6	Ylilämpöhälytys	0 = Normaalitila, 1 = Hälytys	Luku
7	Ylilämpösuoja 1	1 = Normaalitila, 0 = Lauennut	Luku
8	Ylilämpösuoja 2	1 = Normaalitila, 0 = Lauennut	Luku

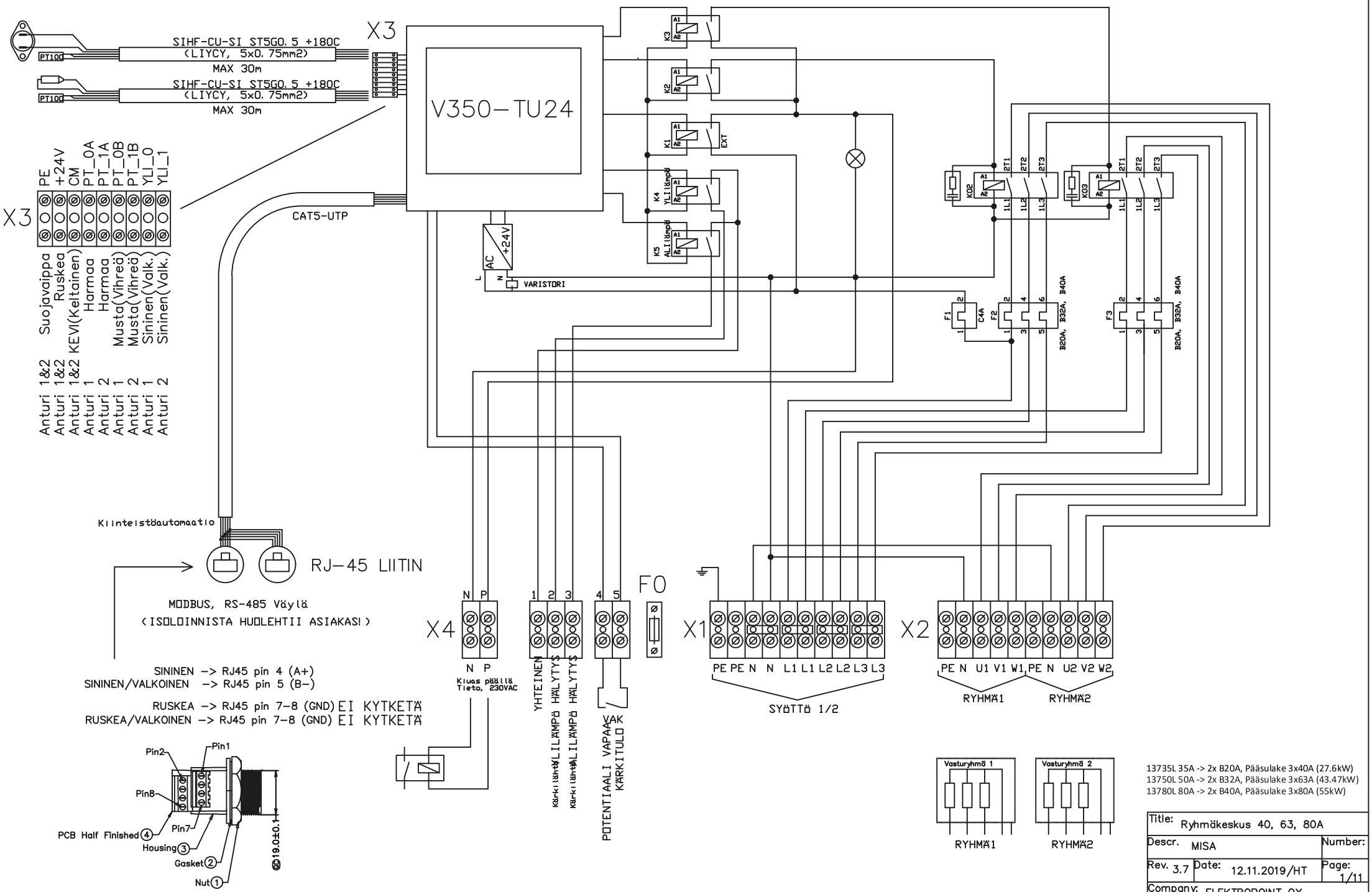
Holding register	Function	Values		
0	Tavoitelämpö (Modbus)	40-110 [^{o}C]	Luku/kirjoitus	
1	Tavoitelämpö (Käsi)	40-110 [^{o}C]	Luku	
2	Käytössä oleva Tavoitelämpö	40-110 [^{o}C] (Modbus tai Käsi)	Luku	
3	Lämpöanturi 1	-32768 - 32767 [nnn.n^{o}C]	Luku	245 vastaa 24.5^{o}C 32767 = Anturi puuttuu
4	Lämpöanturi 2	-32768 - 32767 [nnn.n^{o}C]	Luku	1015 vastaa 101.5^{o}C 32767 = Anturi puuttuu
5	Hystereesi	2-10 ^{o}C	Luku	
6	Delta suuruus	5-20 ^{o}C	Luku	
7	Alilämpö hälytysraja	0-1100 [0-110.0^{o}C]	Luku	200 vastaa 20.0^{o}C
8	Ylilämpö hälytysraja	400-1300 [40-130.0^{o}C]	Luku	800 vastaa 80.0^{o}C
9	Modbus-ID	Laitteen ID	Luku	

Kirjoittaminen muihin, kuin sallittuihin rekistereihin on kielletty!

Laitteessa neljä toimintatilaa.

Toimintatila:	**Tavoitelämpöä ohjaa:**	**Päälläoloaika:**	
Käsiohjaus	Käsivalinta Logiikasta	Käsiajastin 1-12h	
Viikkokello	Käsivalinta Logiikasta	Viikkokello	
VAK-Ohjaus kärkitiedolla	Käsivalinta Logiikasta	VAK	
VAK-Ohjaus **Modbus**	Väylän kautta **Modbus MASTER**	VAK	**Yhteyden katketessa, Keskus sammuu Timeout:in jälkeen n. 10-20sek**

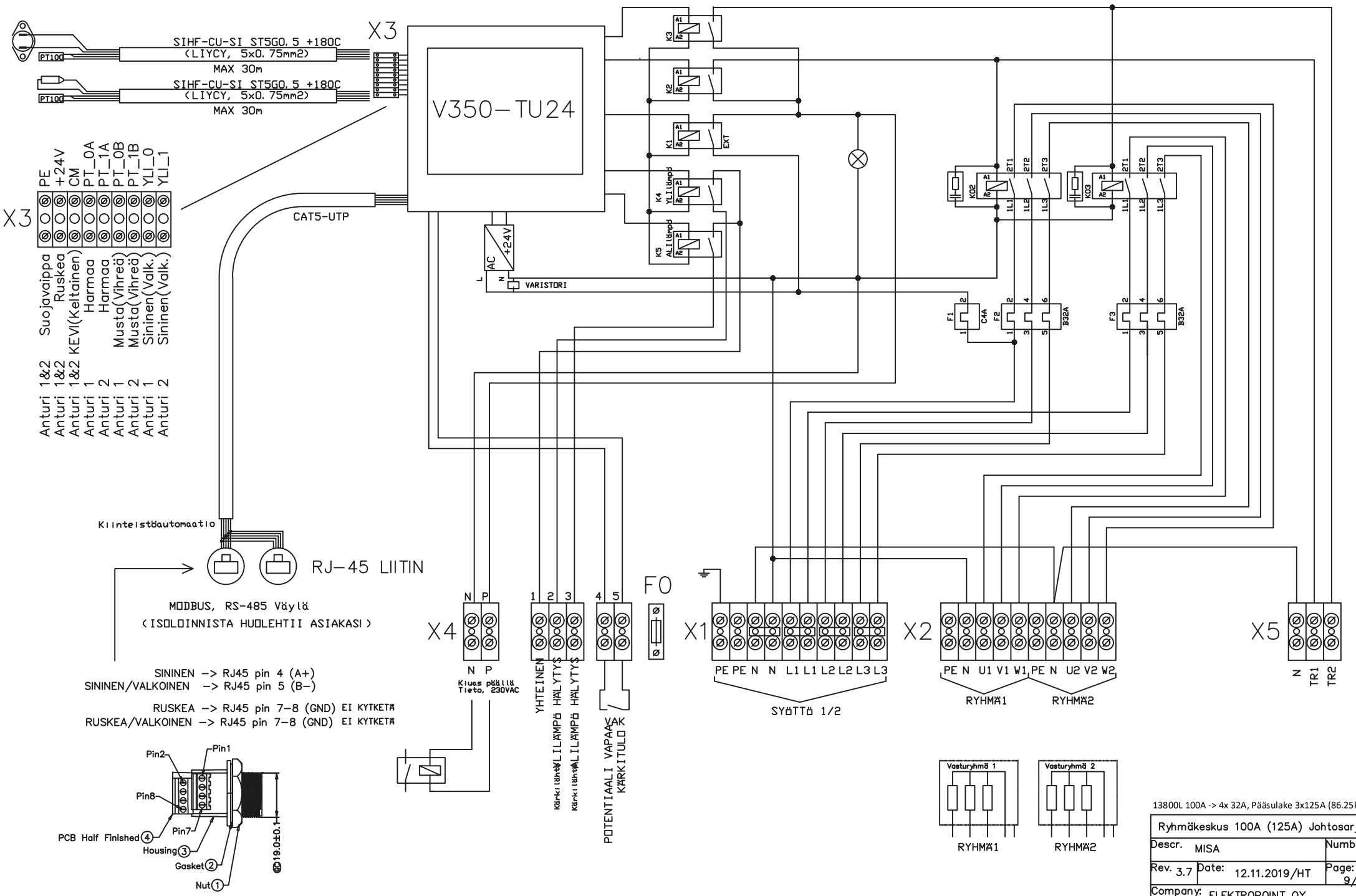
KYTKENTÄOHJE MISA LOGIIKKA RK: 40A (27.6kW), 63A (43.47kW), 80A (55kW)



13735L 35A -> 2x B20A, Pääsulake 3x40A (27.6kW)
13750L 50A -> 2x B32A, Pääsulake 3x63A (43.47kW)
13780L 80A -> 2x B40A, Pääsulake 3x80A (55kW)

Title: Ryhmäkeskus 40, 63, 80A		
Descr. MISA		Number:
Rev. 3.7	Date: 12.11.2019/HT	Page: 1/11
Company: ELEKTROPOINT OY		

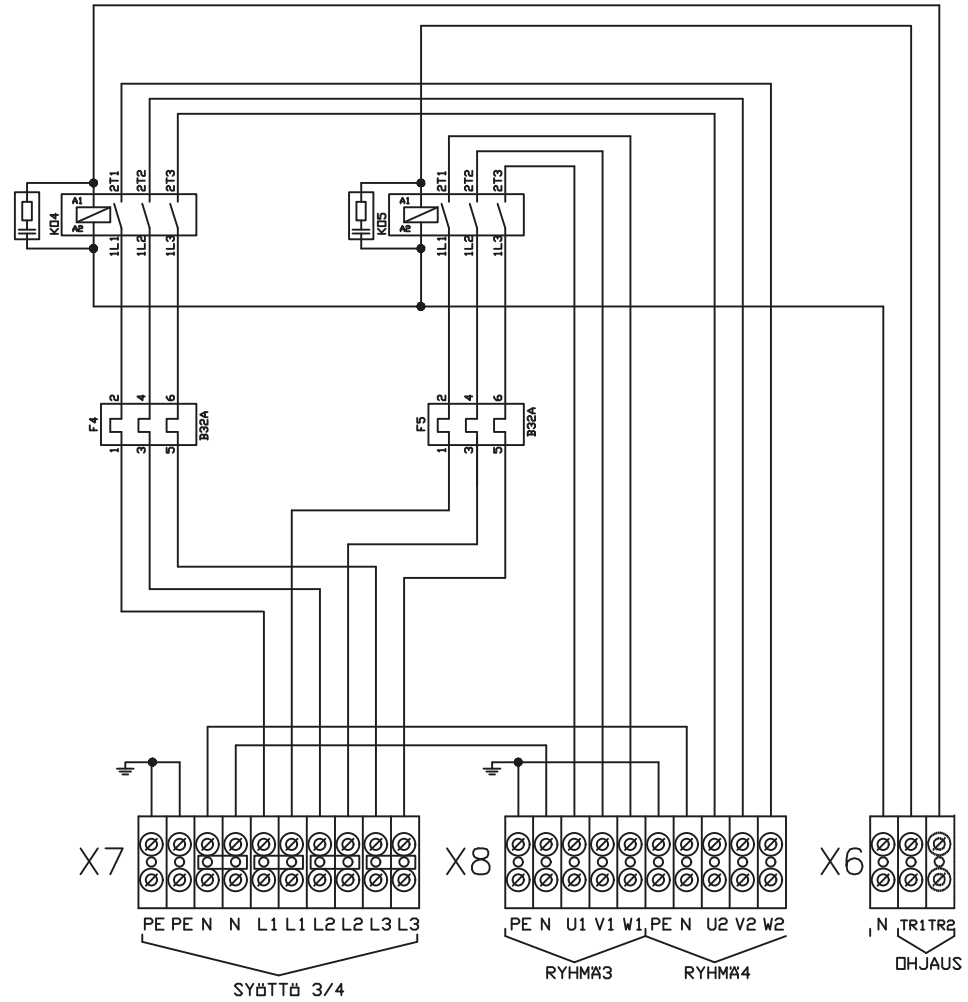
KYTKENTÄOHJE MISA LOGIIKKA RK: 100A Pääsulake 3x125A (86.25kW)

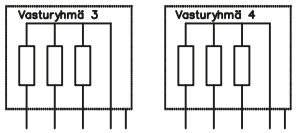


13800L 100A -> 4x 32A, Pääsulake 3x125A (86.25kW)

Ryhmäkeskus 100A (125A) Johtosarja		
Descr. MISA		Number:
Rev. 3.7	Date: 12.11.2019/HT	Page: 9/11
Company: ELEKTROPOINT OY		

KYTKENTÄOHJE MISA RK 100A (125A) APUKESKUS SLAVE



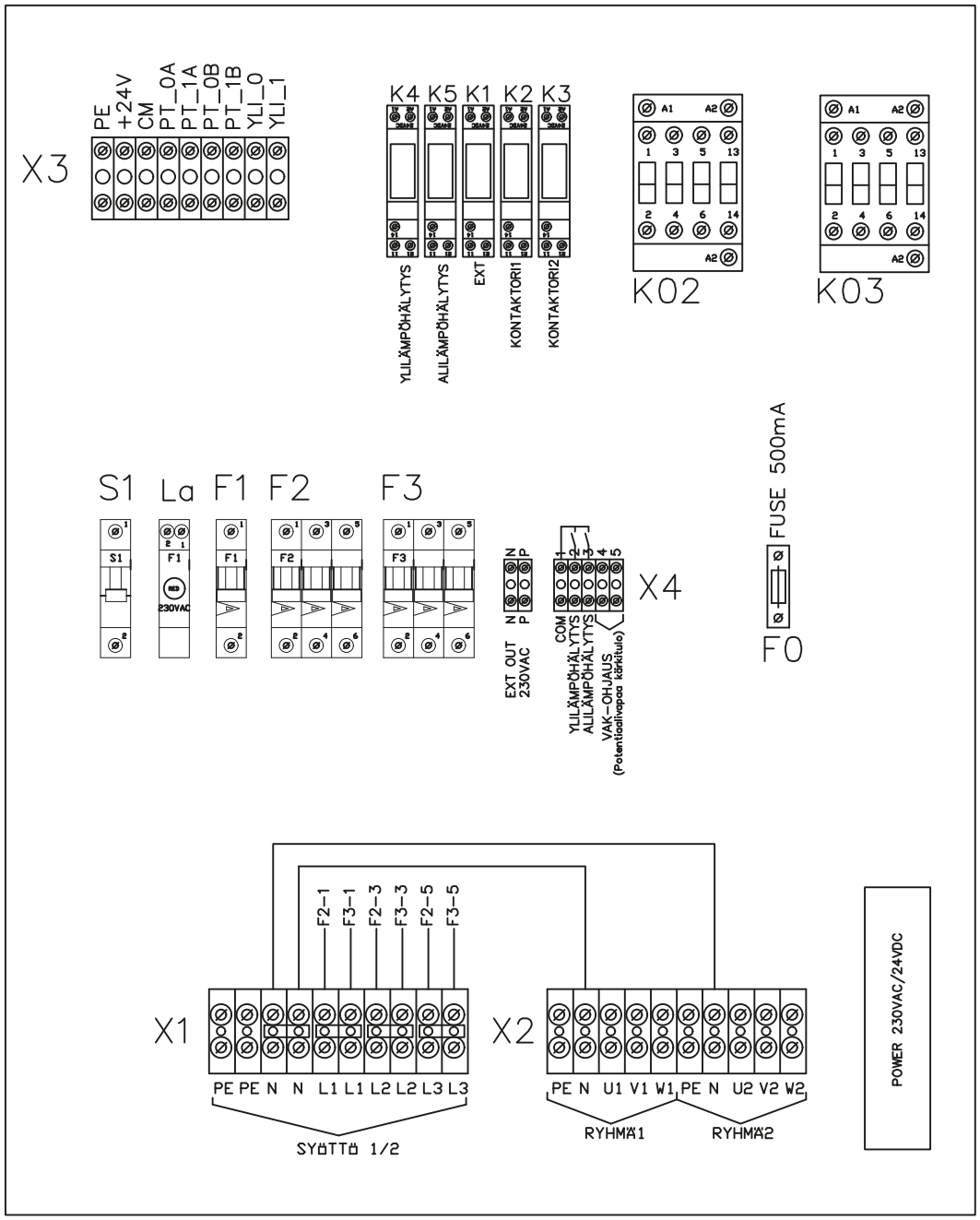


13800L 100A -> 4x 32A, Pääsulake 3x125A (86.25kW)

Ryhmäkeskus 100A (125A) Johtosarja		
Descr. MISA		Number:
Rev. 3.7	Date: 12.11.2019/HT	Page: 10/11
Company: ELEKTROPOINT OY		

LOHKOKAAVIO MISA LOGIIKKA RK: 40A (27.6kW), 63A (43.47kW), 80A (55kW)

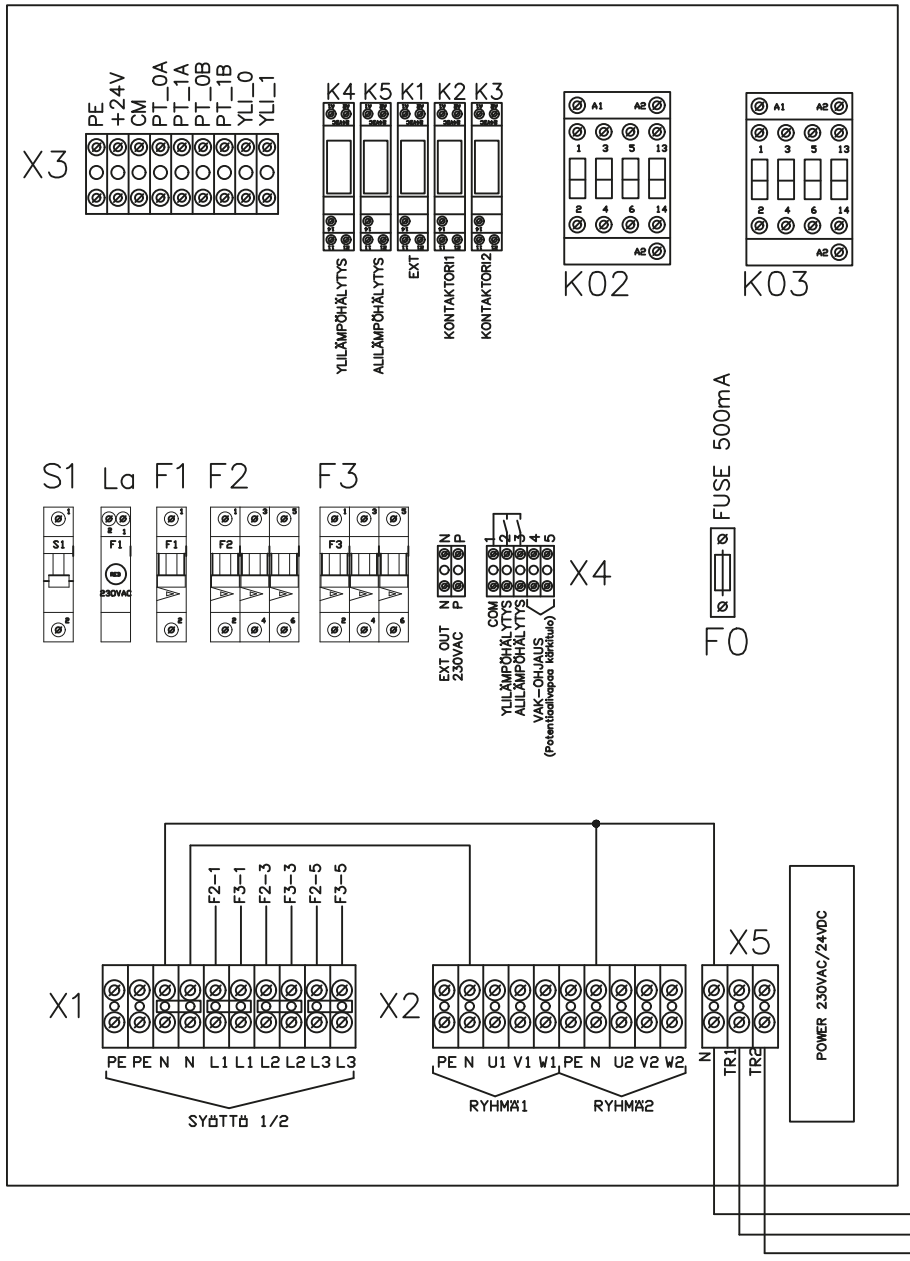
PLC
V350–TU24

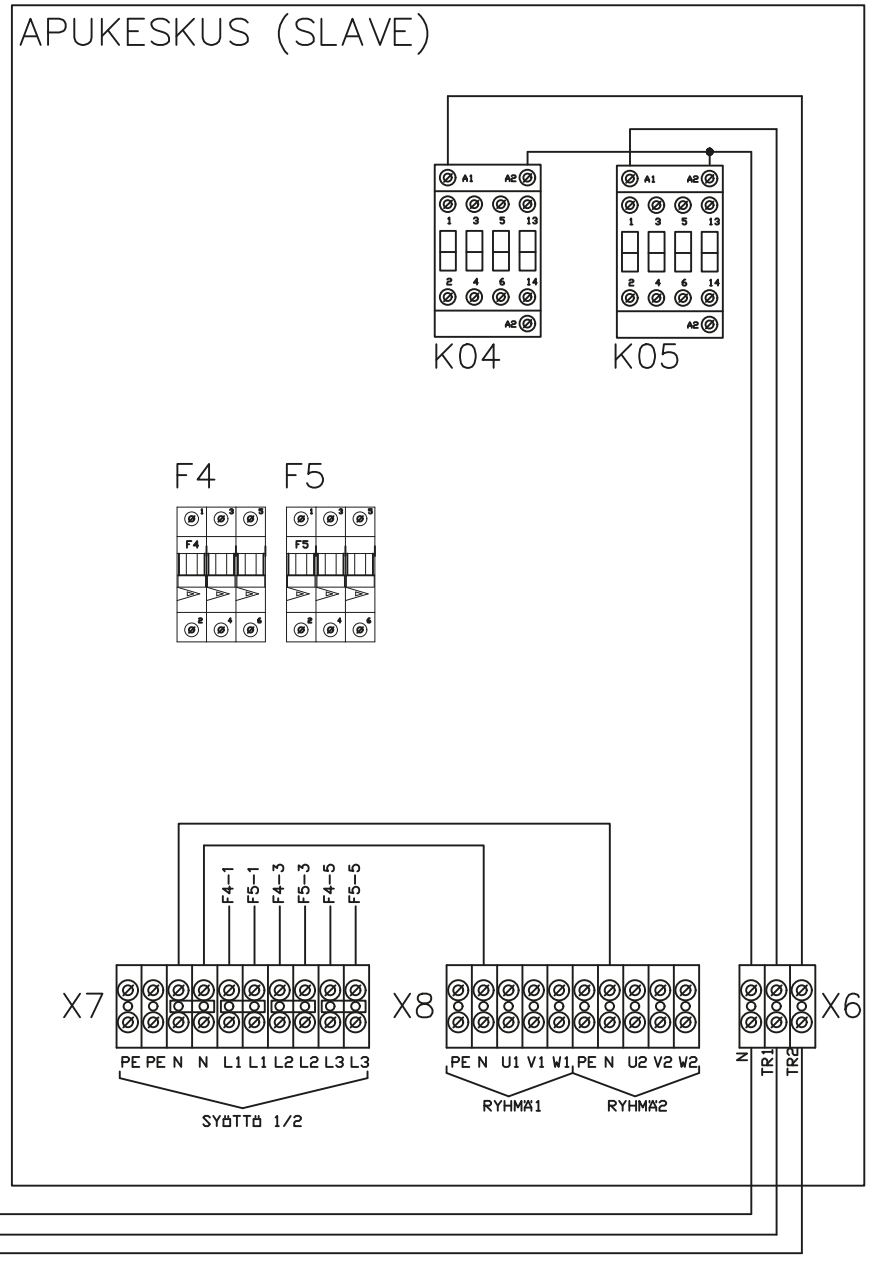


Title: Ryhmäkeskus 40, 63, 80A		
Descr. MISA		Number:
Rev. 3.7	Date: 12.11.2019/HT	Page: 2/11
Company: ELEKTROPOINT OY		

LOHKOKAAVIO MISA LOGIIKKA RK: 100A, Pääsulake 3x125A (86.25kW)

PLC
V350–TU24

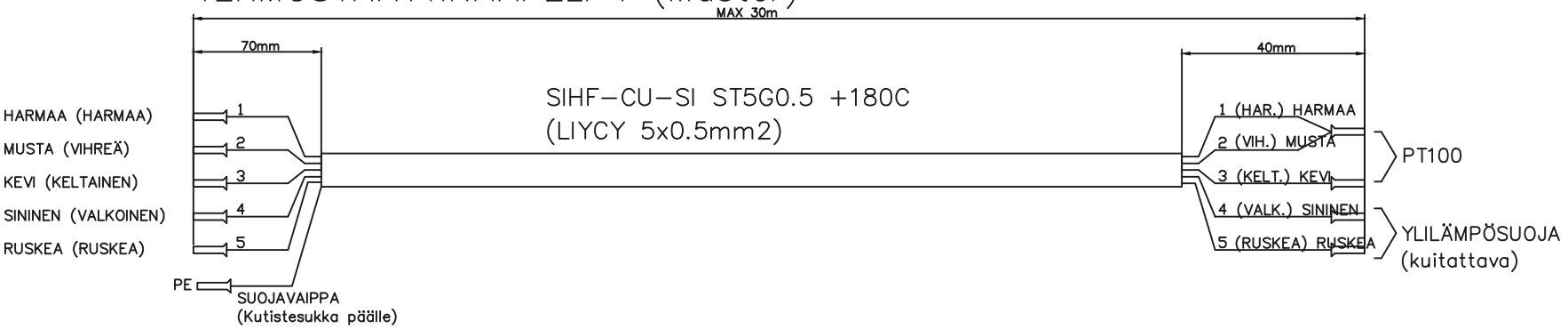


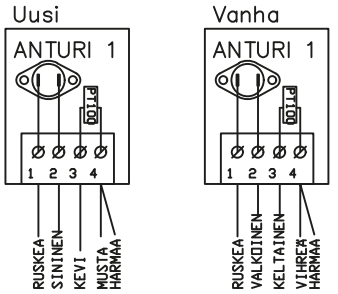


13800L 100A -> 4x 32A, Pääsulake 3x125A (86.25kW)

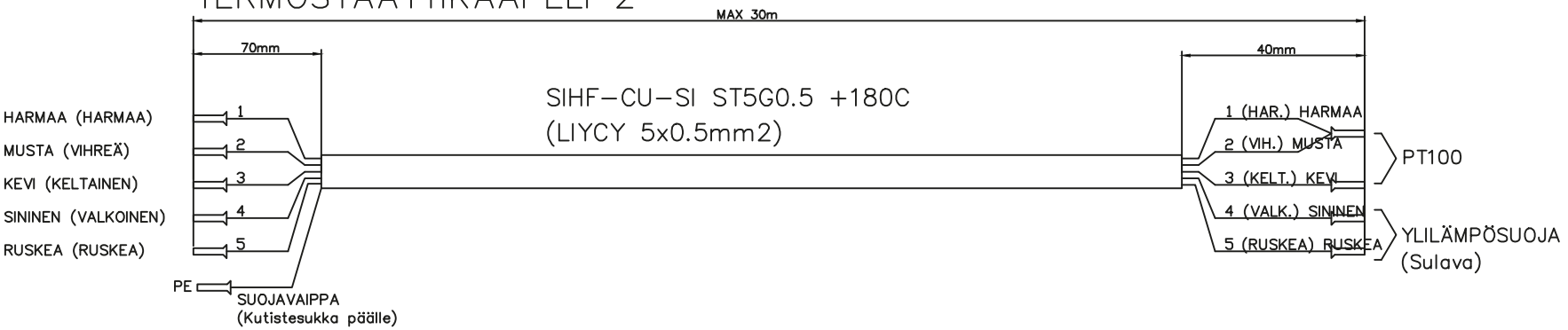
Title: Ryhmäkeskus 100A (125A)		
Descr. MISA		Number:
Rev. 3.7	Date: 12.11.2019/HT	Page: 3/11
Company: ELEKTROPOINT OY		

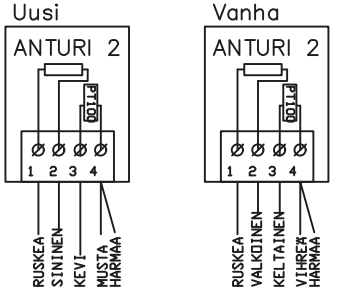
TERMOSTAATTIKAAPELI 1 (Master)





TERMOSTAATTIKAAPELI 2





Ryhmäkeskus 35–100A Johtosarja		
Descr. MISA		Number:
Rev. 3.6	Date: 22.05.2019/HT	Page: 7/11
Company: ELEKTROPOINT OY		