



EHP-K Electric Pump Control Panel Operation and Maintenance Manual

1. Product Information

EHP K series panel is designed for fire fighting booster systems controlled by an electronic board with 128*64 graphics LCD. On front panel casing, EHP Panel, Automatic/Manual mode selection buttons and audible / visual warning lights are available. Panel is used to run and display the mode of the pump with the help of relays and contactors assembled inside. The parameters about the system can be set easily on graphic display by using the control buttons.

EHP Panel, is a device that puts pump into the system by trigger from pressure switch in order to provide requested pressure level.



Figure 1: EHP-K Panel External View

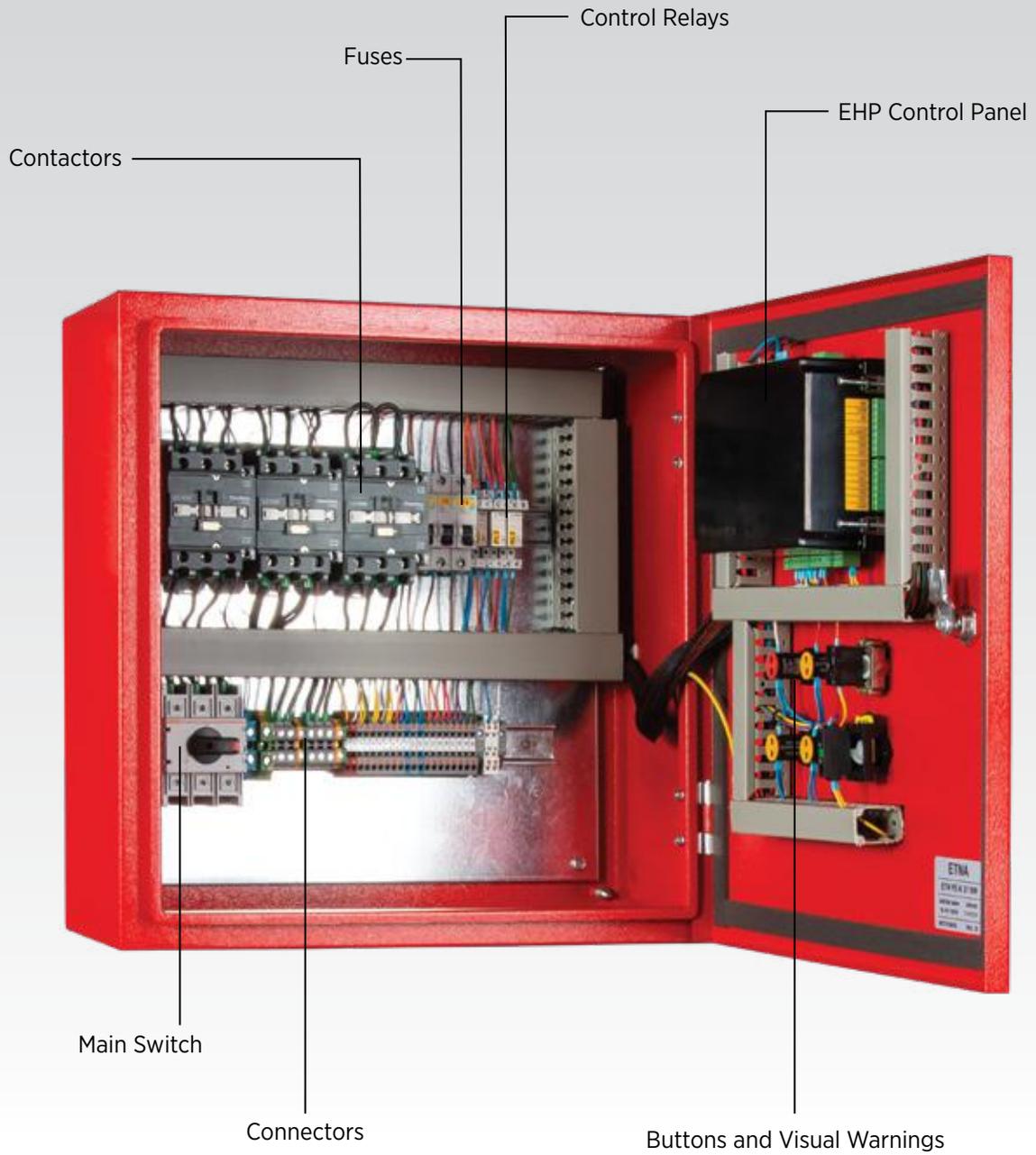


Figure 2: EHP-K Panel Internal View

2. Technical Specifications

- Epoxy coated DKP steel body
- IP 54 protection class
- Manual and Automatic Run by using selective buttons located on front casing.
- Phase absence / unbalance /sequence detection and warning
- Dry run warning on booster applications by external floater connection.
- Possibility to transfer system parameters to Building Management System (BMS) via MODBUS-RS 485 data communication protocol (Please check next pages for MODBUS Address Table)
- Specifically designed PLC with 128*64 graphic LCD screen
- Supply voltages, real time date and time, pump operation mode and fault information is displayed via main screen and visual warnings.
- Preventing unauthorized access thanks to password protection support
- Ability to view total working hours containing both automatic and manual of the pump and number of switchings
- Optimum reaction with adjustable engagement and disengagement duration according to system needs.
- Turkish / English language option
- 100 events history logging capacity
- Real-time date / time information
- Remote run with dry contact (optional)

3. Electronic Control Board

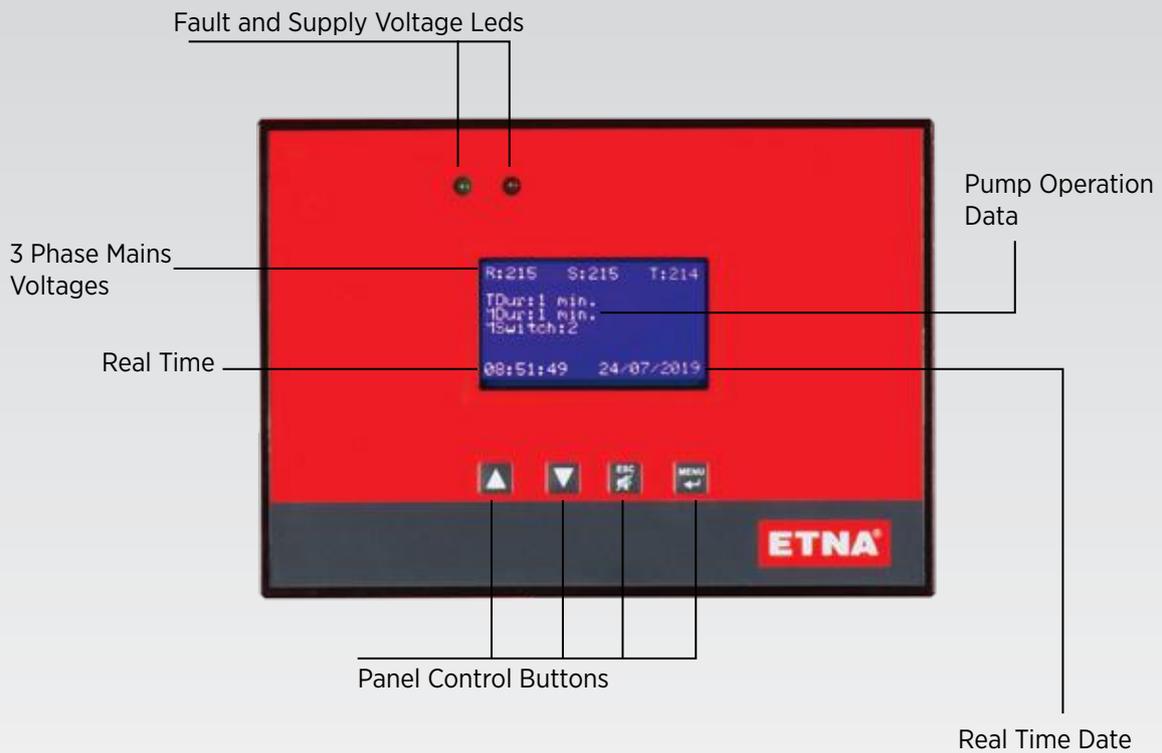


Figure 3: Electronic Control Board

3.1 Control Panel Buttons

-  : Used to scroll through the menu or to increase the value to be set
-  : Used to scroll through the menu or to decrease the value to be set
-  : Used to silence the buzzer in case fault or to scroll back to the previous menu
-  : Used to reach the menu or to save the changed parameter. The change cannot be saved if this button is not pushed.

4. Menus

4.1 Main Menu



Figure 4: Main Menu Screen

When the panel is on Operating

Screen and  menu button is pushed, main menu is displayed on screen as shown on Figure 4. In order to reach desired menu pointer can be moved by pressing up and

down arrow buttons  and menu button is pressed to enter related sub-menu.

4.1.1 Stop System Confirmation Menu

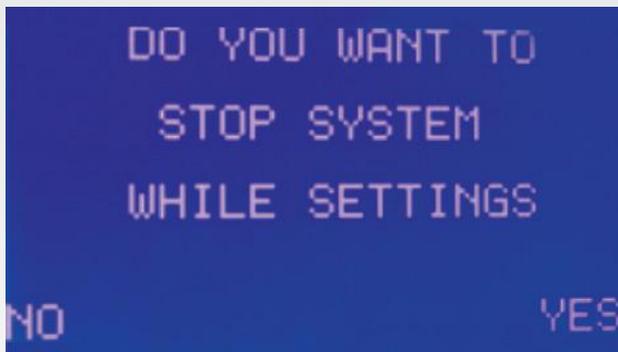


Figure 5: Settings Confirmation Screen

Stop System Confirmation is displayed when the pointer is on

Settings line and  button is pressed. If the system wants to be stopped Yes is selected if not No is selected and after that Password screen is displayed. On password screen, if the correct password is entered Settings submenu becomes visible as seen on Figure 6.



Figure 6: Settings Menu Screen

4.1.1.1 General Settings

General Settings Screen is displayed when the pointer is on corresponding line and  button is pressed, as seen on Figure 7. On this menu Language, Date&Time and MODBUS parameters can be set

- Turkish and English Language options are available on Language Settings.
- Date&Time Settings can be set as;
 - Time setting is in hours, minutes and seconds,
 - Date setting is in day, month and year.
- Baud Rate, Parity, Stop Bit value ve Device ID parameters can be set on MODBUS Settings menu.



Figure 7: General Settings Screen

EHP CONTROL PANEL MODBUS ADDRESS TABLE

REGISTER ADDRESS	UNIT	RATIO	VALUE RANGE	DESCRIPTION
40000	-	-	0 - 1	After sales service maintenance alarm. If output is 1 alarm exists, If output is 0 alarm does not exist.
40001	-	-	0 - 1	Panel start - stop. If output is 1, panel is in start mode, If output is 0, panel is in stop mode
40002	-	-	0 - 1	Blockage fault information. If output is 1, blockage fault exists; If output is 0, blockage fault does not exist
40003	-	-	0 - 1	Phase fault information. If output is 1, phase fault exists; If output is 0, phase fault does not exist.
40004	-	-	0 - 1	No water fault information. If output is 1, no water fault exists; If output is 0, no water fault does not exist
40005	-	-	0 - 1	Sensor 1 fault information. If output is 1, sensor 1 fault exists; If output is 0, sensor 1 fault does not exist.
40006	-	-	0 - 1	Sensor 2 fault information. If output is 1, sensor 2 fault exists; If output is 0, sensor 2 fault does not exist.
40007	-	-	0 - 1	High pressure fault information. If output is 1, high pressure fault exists; If output is 0, high pressure fault does not exist.
40008	-	-	0 - 1	Phase sequence fault. If output is 1, phase sequence fault exists; If output is 0, phase sequence fault does not exist.
40009	Seconds	-	0 - 65535	Low pressure countdown. In case low pressure fault, countdown starts
40010	-	-	-	-
40011	-	-	0 - 1	Operating Mode. If output is 1, circulation mode; If output is 0, booster mode
40012	Bar	0,1	0 - 65535	Line pressure.
40013	Bar	0,1	0 - 65535	Set pressure.
40014	-	-	0 - 65535	Pump 1 data. 11 Pump Run Mode, 22 Pump Standby Mode, 33 Pump Backup, 44 Thermal Protector Fault
40015	-	-	0 - 65535	Pump 2 data. 11 Pump Run Mode, 22 Pump Standby Mode, 33 Pump Backup, 44 Thermal Protector Fault
40016	-	-	0 - 65535	Pump 3 data. 11 Pump Run Mode, 22 Pump Standby Mode, 33 Pump Backup, 44 Thermal Protector Fault
40017	-	-	0 - 65535	Pump 4 data. 11 Pump Run Mode, 22 Pump Standby Mode, 33 Pump Backup, 44 Thermal Protector Fault
40018	-	-	0 - 65535	Pump 5 data. 11 Pump Run Mode, 22 Pump Standby Mode, 33 Pump Backup, 44 Thermal Protector Fault
40019	-	-	0 - 65535	Pump 6 data. 11 Pump Run Mode, 22 Pump Standby Mode, 33 Pump Backup, 44 Thermal Protector Fault
40020	-	-	0 - 65535	Number of pumps on the system
40021	Minutes	6	0 - 65535	Pump 1 total run time
40022	Minutes	6	0 - 65535	Pump 2 total run time
40023	Minutes	6	0 - 65535	Pump 3 total run time
40024	Minutes	6	0 - 65535	Pump 4 total run time
40025	Minutes	6	0 - 65535	Pump 5 total run time
40026	Minutes	6	0 - 65535	Pump 6 total run time
40027	-	-	0 - 1	Low pressure fault . If output is 1, low pressure fault exists; If output is 0, low pressure fault does not exist.
40028	Minutes	6	0 - 65535	Switching duration
40029	-	-	0 - 65535	Number of switching
40030	-	-	0 - 1	Pump 1 switching fault . If output is 1 switching fault exists , If output is 0 switching fault does not exist.
40031	-	-	0 - 1	Pump 2 switching fault . If output is 1 switching fault exists , If output is 0 switching fault does not exist.
40032	-	-	0 - 1	Pump 3 switching fault . If output is 1 switching fault exists , If output is 0 switching fault does not exist.
40033	-	-	0 - 1	Pump 4 switching fault . If output is 1 switching fault exists , If output is 0 switching fault does not exist.
40034	-	-	0 - 1	Pump 5 switching fault . If output is 1 switching fault exists , If output is 0 switching fault does not exist.
40035	-	-	0 - 1	Pump 6 switching fault . If output is 1 switching fault exists , If output is 0 switching fault does not exist.
40036	-	-	0 - 65535	R Phase Voltage
40037	-	-	0 - 65535	S Phase Voltage
40038	-	-	0 - 65535	T Phase Voltage

Table 1: EHP K Control Panel Modbus Address Table

4.1.1.2 Device Settings

Device Settings Screen is displayed when the pointer is on Device Settings and button is pressed as seen on Figure 8. On this menu; Line, Pump, Maintenance Period and Weekly Test Settings can be configured as follows;



Figure 8: Device Settings Screen

i) Line Settings: On this menu; voltage calibration, voltage limites and LCD display settings can be configured.

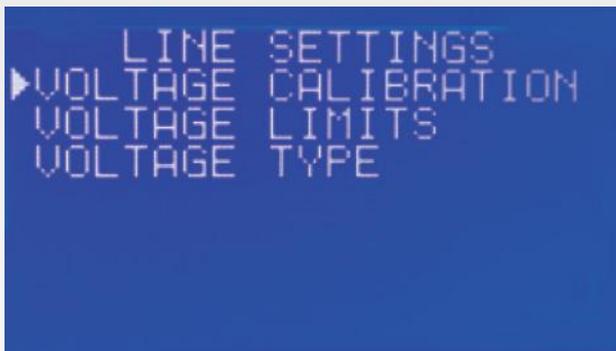


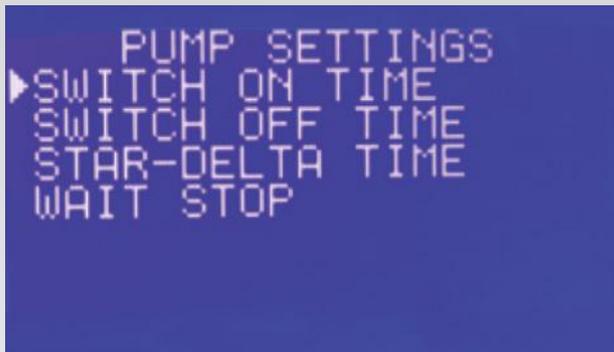
Figure 9: Line Settings Screen

- a. Voltage Calibration:** Measured voltage value is calibrated by factory in order to make the line voltage value exactly the same as displayed voltage value.
- b. Voltage Limits:** Line voltage tolerance parameter is configured as percentage.
- c. LCD Display:** The voltage values are set either between phases or phase-neutral.

ii) Pump Settings: Settings about pump operation can be configured on this sub-menu.

a. Switch On Time: The pump waits during this time before operating when the “RUN” command comes from Pressure Switch and there is no other fault.

b. Switch Off Time: The pump waits during this time before stopping when the “RUN” command is stopped by Pressure Switch.



c. λ / Δ Time: On Star-Delta Ramp-Up type motors, star-delta transition time is configured on this parameter. Default factory setting is 5 seconds.

d. Wait Stop: In addition to switch off time this parameter is configured in order to keep the system stable. It starts to count down when the “RUN” command coming from pressure switch is stopped.

Figure 10. Pump Settings Menu Screen



iii) Maintenance Period Menu:

Maintenance Period Reminder can be set on this menu

Figure 11. Maintenance Period Main Screen



iv) Weekly Test: Detailed settings about weekly test can be configured under this menu.

a. Test Period: It is determined from this menu that the test is repeated every few days.

b. Test Duration: Test duration can be set in mutes from this menu

c. Test Date: First test date is determined from this menu as date and time. Next test date and time is displayed According to the test period

Figure 12. Weekly Test Menu Screen

5. Dimensions

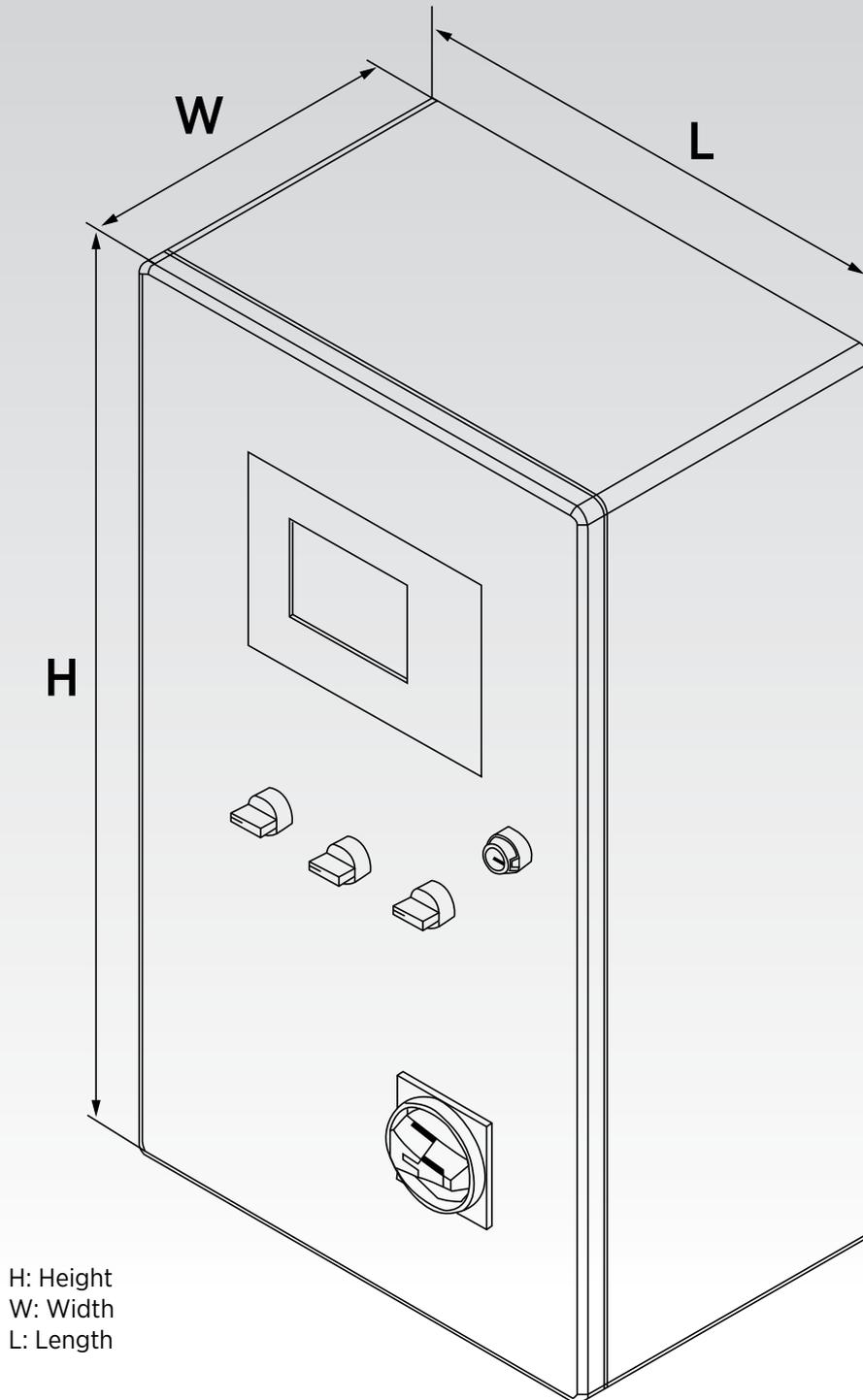


Figure 13: EHP -K Panel Dimensions

Motor Power				
HP	KW	L (mm)	H (mm)	W (mm)
15	11	500	500	260
20	15	500	500	260
25	18,5	500	500	260
30	22	500	500	260
40	30	500	500	260
50	37	500	500	260
60	45	600	600	260
75	55	600	600	260
100	75	700	700	260
120	90	700	700	260

Table 2. Panel Dimensions Table

6. Maintenance

General Information

High Voltage Warning:

WARNING: Please cut off the electricity before any technical intervention.

Check List:

- Please check the ambient temperature is within required working conditions.
- Please be sure the electricity is cut before any technical intervention.
- Please always follow pump and motor instructions.
- Please get in contact with manufacturer in case detailed technical information needed.

Check Fault Log:

- You can check fault lists occurred during lifetime.

7. Troubleshooting

WARNING: Please cut off the electricity before set-up and maintenance..

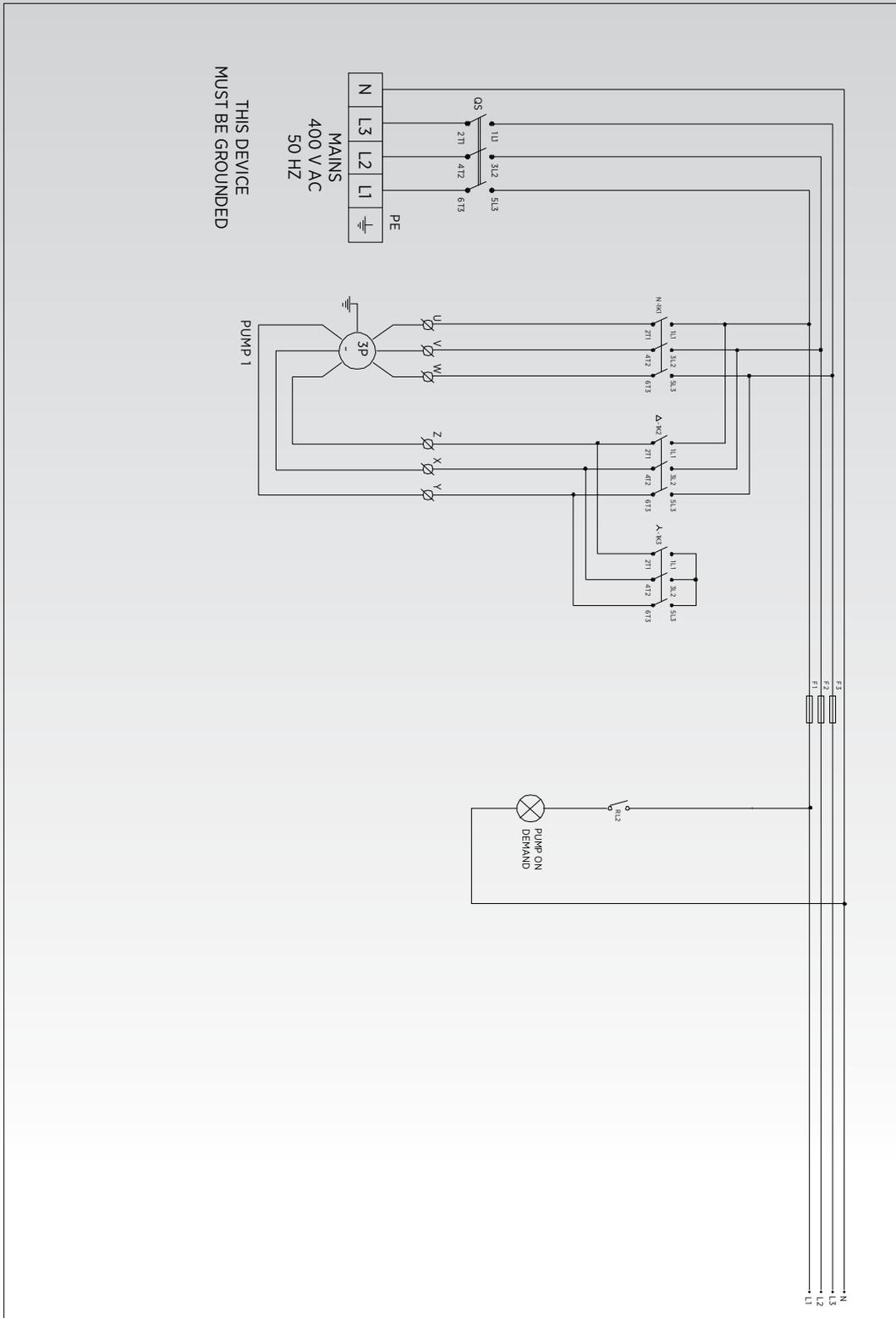
Warnings and Faults:

In case any fault or alarm occurred on system, please follow below listed instructions;

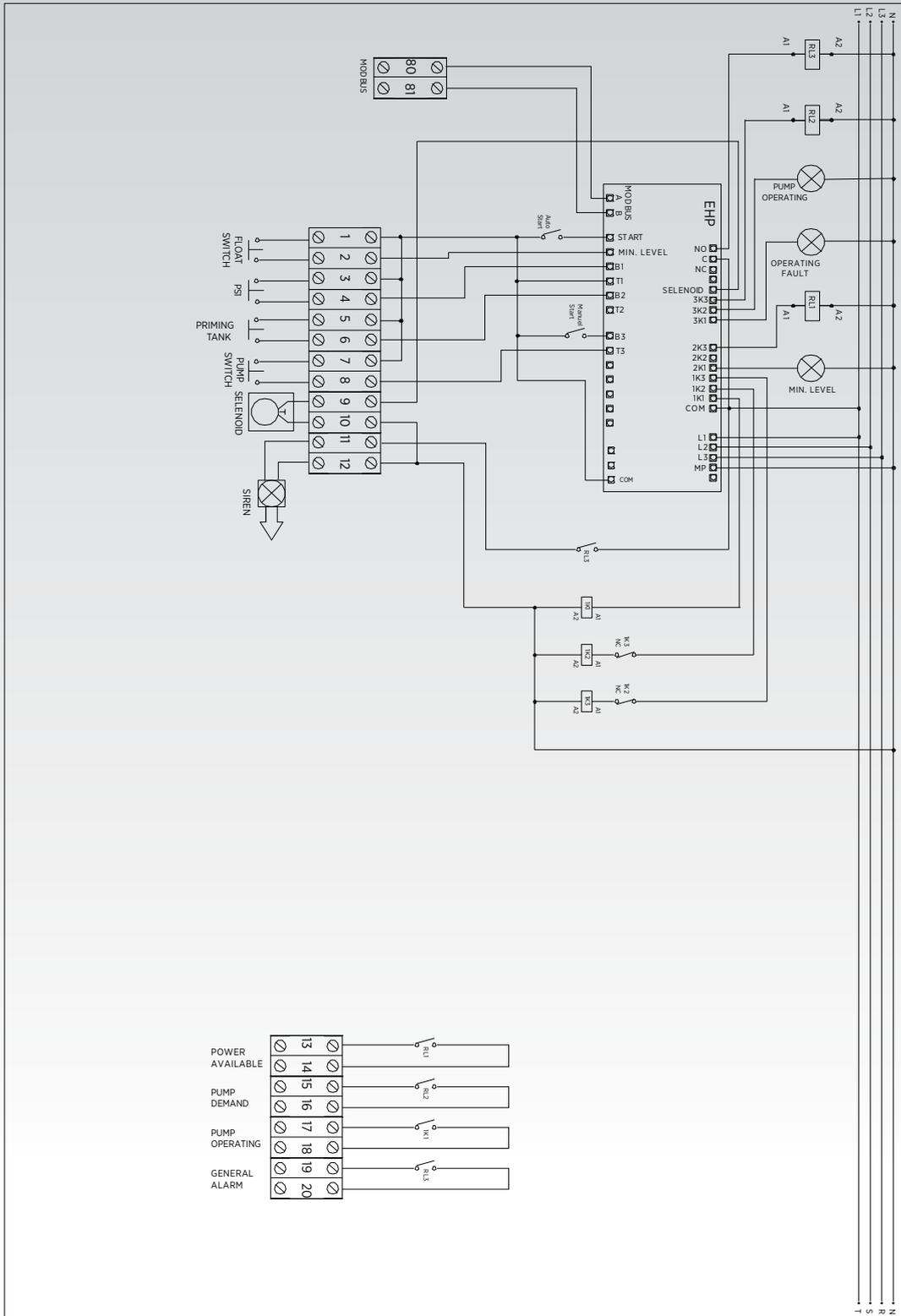
NO	FAULT or ALARM	CAUSE	SOLUTION
1	PHASE FAULT	3 phase supply voltage value is out of limit or phase sequence is not correct.	<ul style="list-style-type: none"> • Check supply voltage for each phase and phase-neutral. • Check phase sequence. • Check cable connections.
2	NO WATER	COM signal coming to "No Water" labelled terminal of EHP panel is cut	<ul style="list-style-type: none"> • Check water level in the storage • Check whether the floater working properly. • Check cable connections.
3	PUMP OPERATION FAULT	Pump does not create voltage	<ul style="list-style-type: none"> • Check whether pump deaired or not • Check if there is a flow from suction line • Check pressure switch connections on panel terminals 7 and 8

Table 3. Troubleshooting Table

8. Electrical Schematics



Drawing 1. EHP-K Panel Electrical Schematics



Drawing 2. EHP-K Panel Electrical Schematics



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