



**Fire Fighting Electric Pump Control Panel  
in Conformity to NFPA 20 Standard  
Instruction and User Manual**

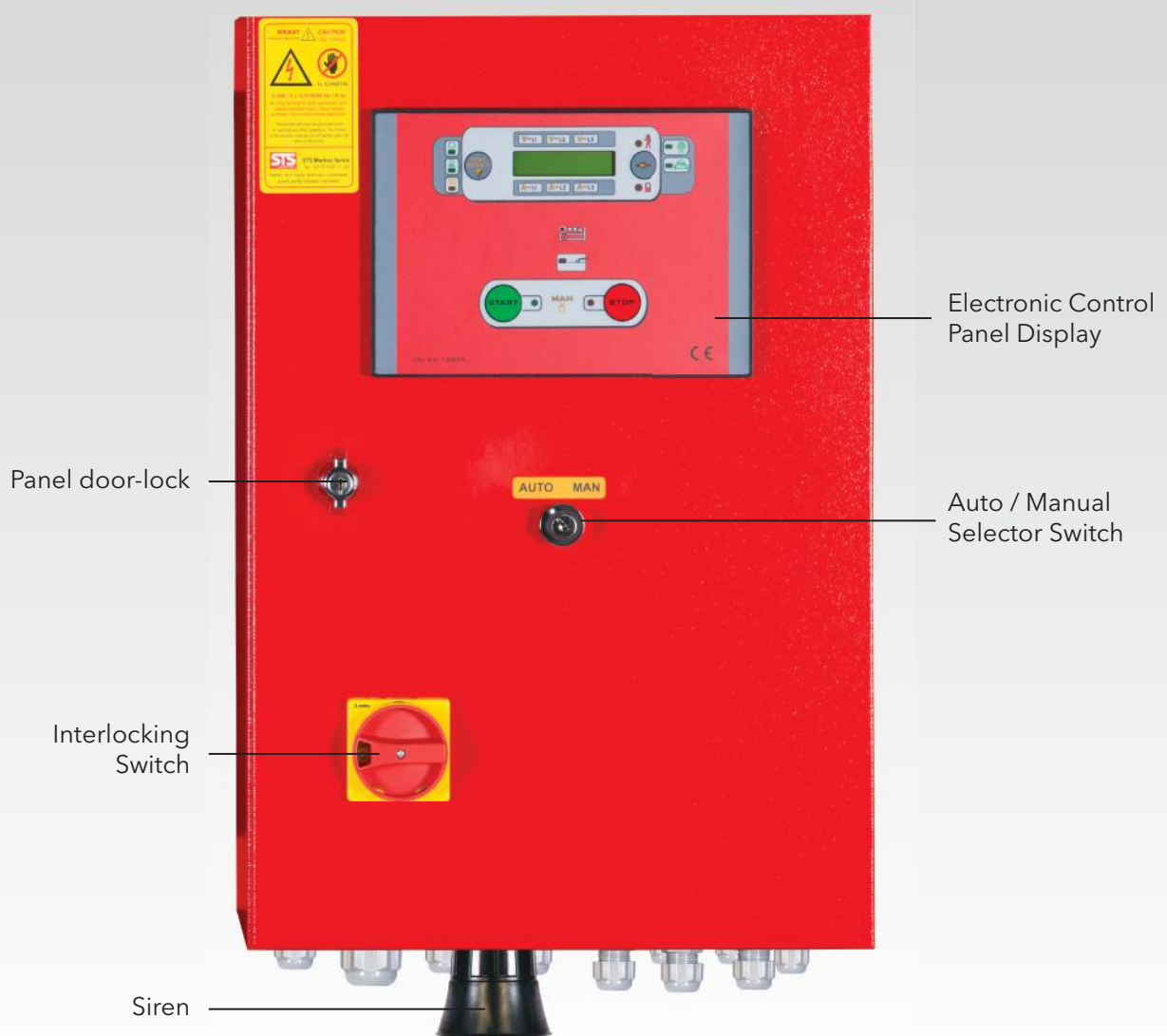


Figure 1. NFPA 20 Electric Control Panel- External View

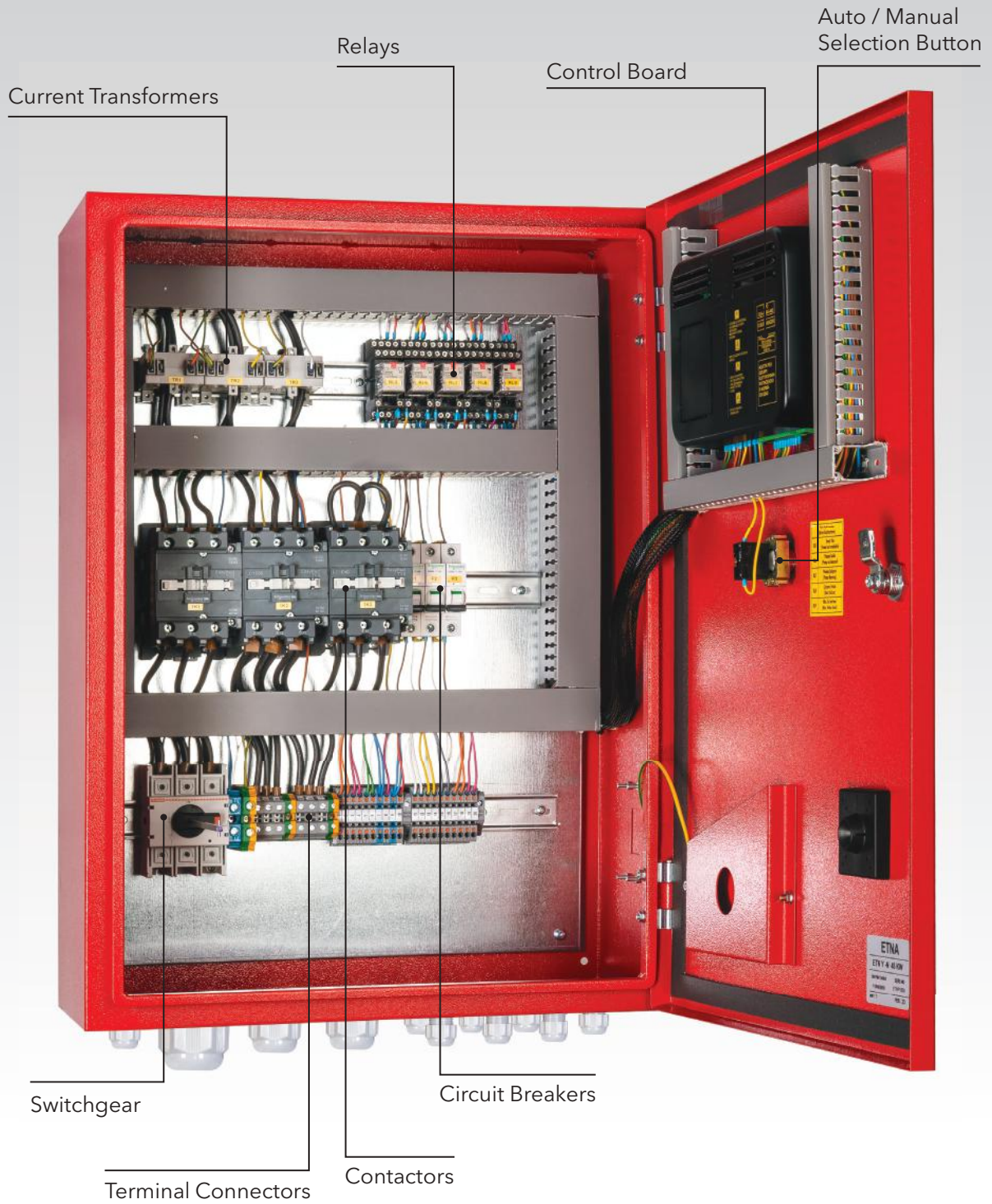
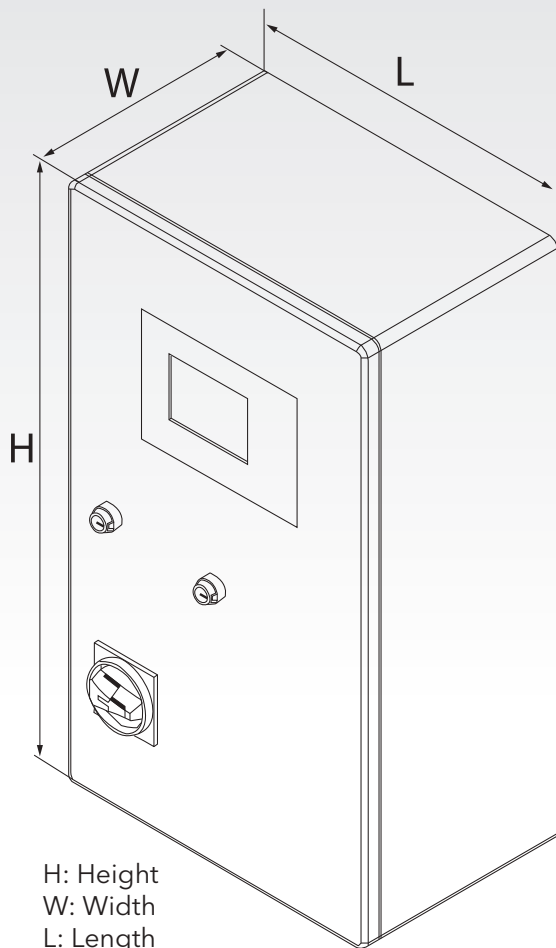


Figure 2. NFA 20 Electric Control Panel- Internal View

## 1. Specifications

- 3 Mains Voltmeters
- 3 Ammeters Max 1000 A ( Possibility For The Connection Of A Single Ammeter)
- Mains Frequency Meter ( 50/60 Hz )
- Wattmeter (Active Power)
- Varmeter (Reactive Power)
- Voltammeter (Apparent Power)
- Cosphimeter (Power Factor)
- Total Hour Meter (Total Hours Of Pump Operation)
- Partial Hour Meter
- Star / Delta Start Command
- Impedance Start Command
- Button For Test Of The Warning Lights
- Start Stop Buttons
- Historical Report

## 2. Dimensions



Motor Power		Dimensions		
HP	KW	L (mm)	H (mm)	W (mm)
10	7,5	400	600	200
15	11	400	600	200
20	15	400	600	200
25	18,5	400	600	200
30	22	400	600	200
40	30	400	600	200
50	37	400	600	200
60	45	500	700	260
75	55	500	700	260
100	75	600	800	260
125	90	700	1000	260
150	110	700	1000	260
180	132	800	1200	300
220	160	800	1200	300

Table 1. Dimensions (please ask quotation for the models out of the table)

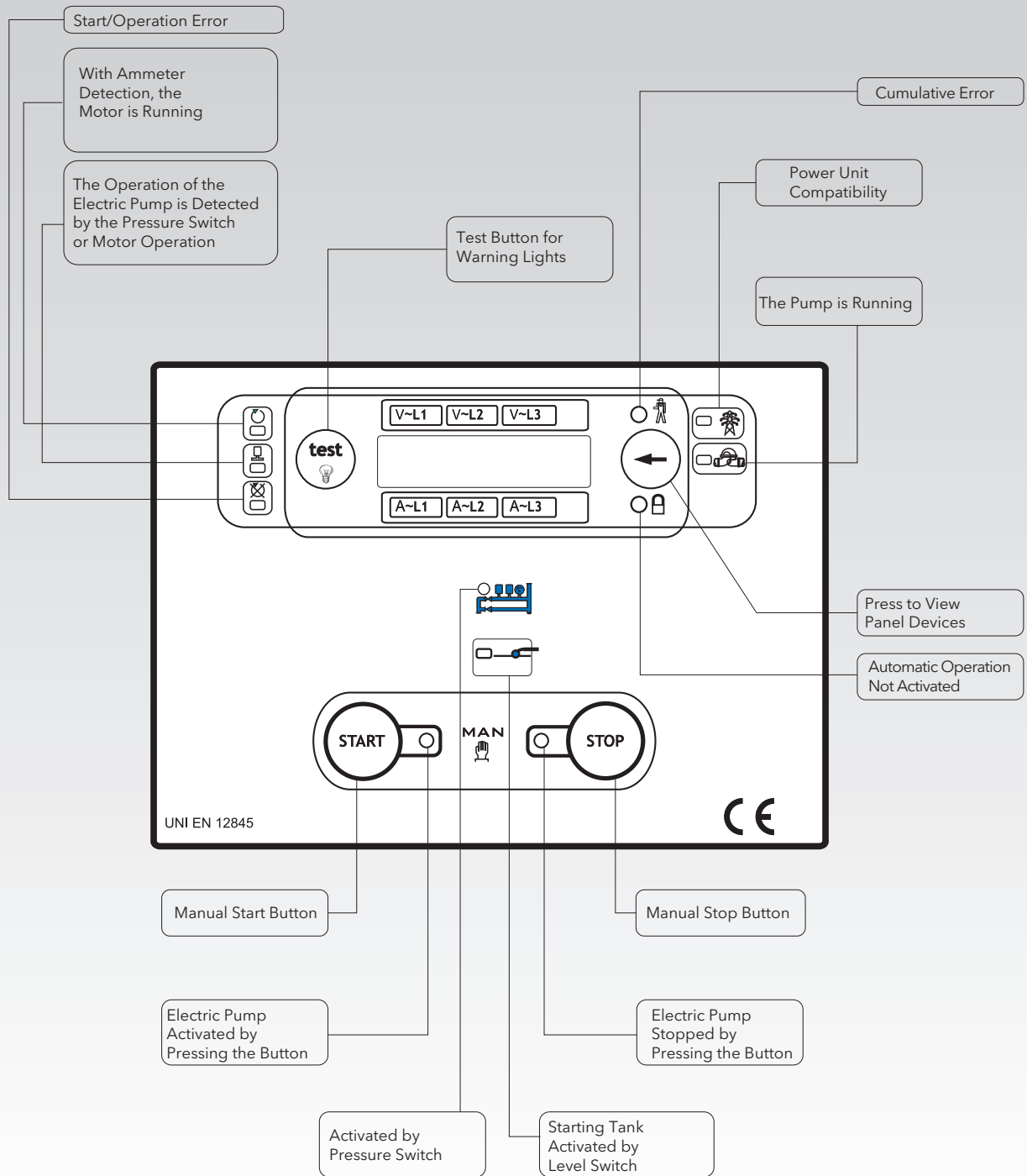
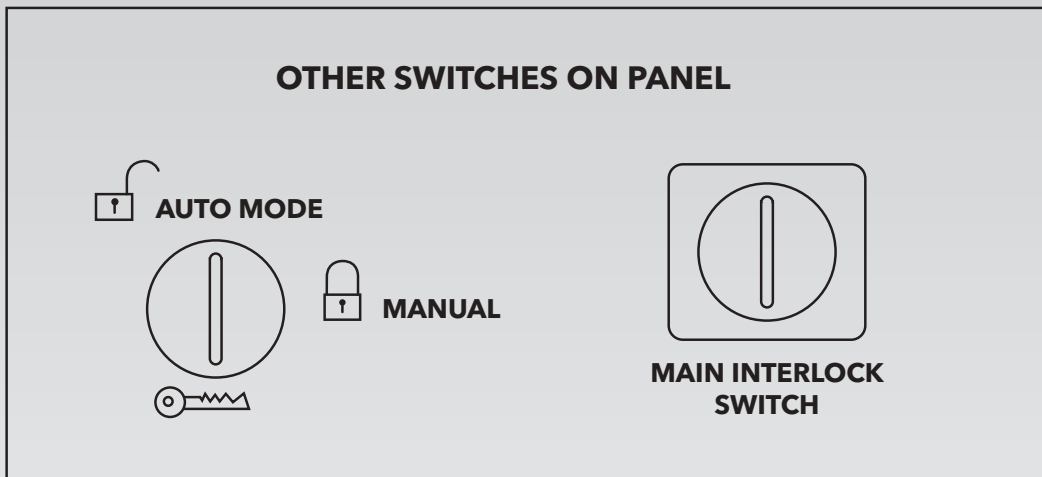



Figure 3. Control Panel Buttons and Indicators



### 3. Operation Preparation For Automatic





Active with the switch (externally connected) AUTOMATIC START-UP ENGAGED (from this position, it is possible to remove the key). Setting the switch to excluded, the automatic start is blocked. This exclusion is signalled by the flashing  warning light and by the following message displayed on the screen; AUTOMATIC STARTING EXCLUDED

### 4. Automatic-Manual Starting

#### AUTOMATIC

When the equipment detects the closure of the "starting call" contact (pressure switch), the electric pump set begins to start up. The control unit checks (without commanding the stopping of the electric pump unit) for possible motor faults, during its operation.


#### AUTOMATIC

This takes place when the CALL pressure switch contacts are opened, which is shown by a fixed light  coming on. After the pressure switches have closed, the indicator starts flashing. Automatic starting also happens when the pump priming contact is closed, which is shown by a fixed light  coming on. When the contact opens, the indicator starts flashing. Flashing lights stay on for the whole time the motor is running.


#### MANUAL

With START button.

## 5. Motor In Operation

 → It is detected when the motor current is higher than the threshold set for the entire duration of the intervention delay.

## 6. Electric Pump In Operation

 → With motor started it is detected by the value of power ( kW) and by closing of the pump pressurized-pressure switch.

## 7. Stop

### THE ENGINE CAN ONLY BE TURNED OFF MANUALLY

It is not possible to stop it when the call from the pressure switches is present and automatic start up engaged.


- **With call from the pressure switches present,**

Pressing the STOP push button, the following message is displayed on the screen : DON'T SWITCH OFF IN EVENT OF FIRE STOP EXCLUDED.

- **With call from the pressure switches absent,**

Pressing the STOP push button, the following message is displayed on the screen : DON'T SWITCH OFF IN EVENT OF FIRE.

## 8. Alarms

The alarms are indicated on the display by the relative led and by a cumulative flashing led  and the switching of relay.

MOTOR SUPPLY ALARMS	MOTOR ALARM	PLANT ALARM
Voltage value failure or lowering even on just one phase	Overcurrent	Working pump pressure switch fault
Incorrect phase sequence		


Table 2. Alarms

## 9. Restoring

This is done by pressing the RESET  pushbutton: In this way, the protections are activated and the startup cycle controlled by the priming tank float is released.

## 10. Start Up Failure

It is detected at least one of the following functions after a request for an automatic starting of the motor.

 it is not controlled through amperometric detection when the value of power (kw) of the motor of the pump remains lower than the programmed threshold for the whole of the intervention delay time.

## 11. Remote Auxiliary Functions

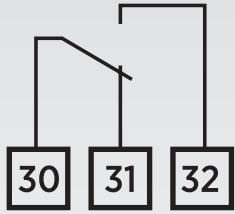

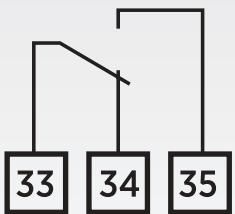

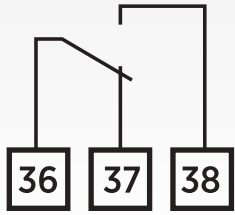

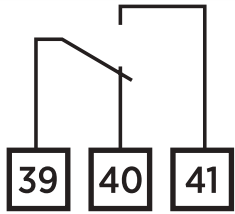


		INTERVENTION	
		SWITCHES THE RELAY	INDICATION SIGNAL
<b>ELECTRIC POWER NOT AVAILABLE</b>	It is detected when at least one of the following faults occur: - Voltage value failure or lowering even on just one phase - Phase sequence not correct (for three-phase systems only) - Blown switchboard fuses - Automatic startup excluded - Alarms		
<b>ELECTRIC PUMP STARTUP REQUEST</b>	It is detected in two ways; - At the opening of the call pressure switches - At the closing of the pump priming tank float contact		
<b>ELECTRIC PUMP IN OPERATION</b>	- see description		
<b>START UP FAILURE</b>	- see description		

Table 3. Remote Auxiliary Functions



## 12. Partial Hour Meter

Press  to select (PARTIAL HOUR METER) the operating hours and minutes of the last run of the electric pump. The hours indicated are zero-set the next time the motor pump is started up.

## 13. Warning

- Before making any connections, connect the earth wiring first
- When making connections always follow the instructions and the wiring diagrams
- Check that the user equipment power consumption is compatible with the technical features described.
- Install in such a way that there is always adequate heat disposal
- Always install under other equipment which produces or spreads heat.
- Handle and connect without mechanically stressing the electronic control unit.
- Make sure that no copper conductor cuttings or other waste material fall inside the equipment

### **This Control Unit Is Not Suitable For Operating Under The Following Conditions**

- Where the environment temperature is outside limits (+4/+50 °C)
- Where the air pressure and temperature variations are so rapid to produce exceptional condensations.
- Where there are high levels of pollution caused by dust, smoke, vapor, salts and corrosive or radioactive particles.
- Where there are high levels of heat caused by the sun , ovens etc.
- Where there are attacks from mold or small animals are possible
- Where there is risk of fire or explosions.
- Where the switch board can receive strong vibrations or knocks.

## 14. Conduction And Maintenance

**The following maintenance operations should be performed every week:**

- Check that the indicators function
- Check that the conductors are tight , check the condition of the terminals

## 15. Electromagnetic Compatibility

The control unit functions correctly only if inserted in plants which conform with the CE marking standards; it meets the exemption requirements of the standard EN61326-1 but it can not be excluded that malfunctions could occur in extreme cases due to particular situations.

The installer has the task of checking that disturbance levels are within the requirements of the standards.

## 16. Technical Data

Nominal mains voltage	400 VAC
Frequency	50/60 Hz
Supply Voltage	24 VAC or 110 / 230 VAC $\pm$ 10 %
Power supply tolerance	$\pm$ 10 %
Absorbed power	4 W
Nominal insulation voltage - Terminals at mains voltage - Terminals from 3 to 14	400 VAC 24 VAC
Capacity of contacts - Contactors control - Contacts for remote monitoring	Max 16A (AC1) 250 VAC 24 VAC Max 5A (AC1) 250 VAC
Voltmeters	Max 570 V Precision $\pm$ % 2
Ammeters	Max 1200 A Precision $\pm$ % 2
Frequency meter	0 / 85 Hz Precision $\pm$ % 2
Wattmeter	Max. 830 kW
Serial communication parameters	9600 baud, 8 bit stop; EVEN parity
Control panel protection class	IP 54
Temperature Range	-10 +50 °C

Table 4. Technical Data

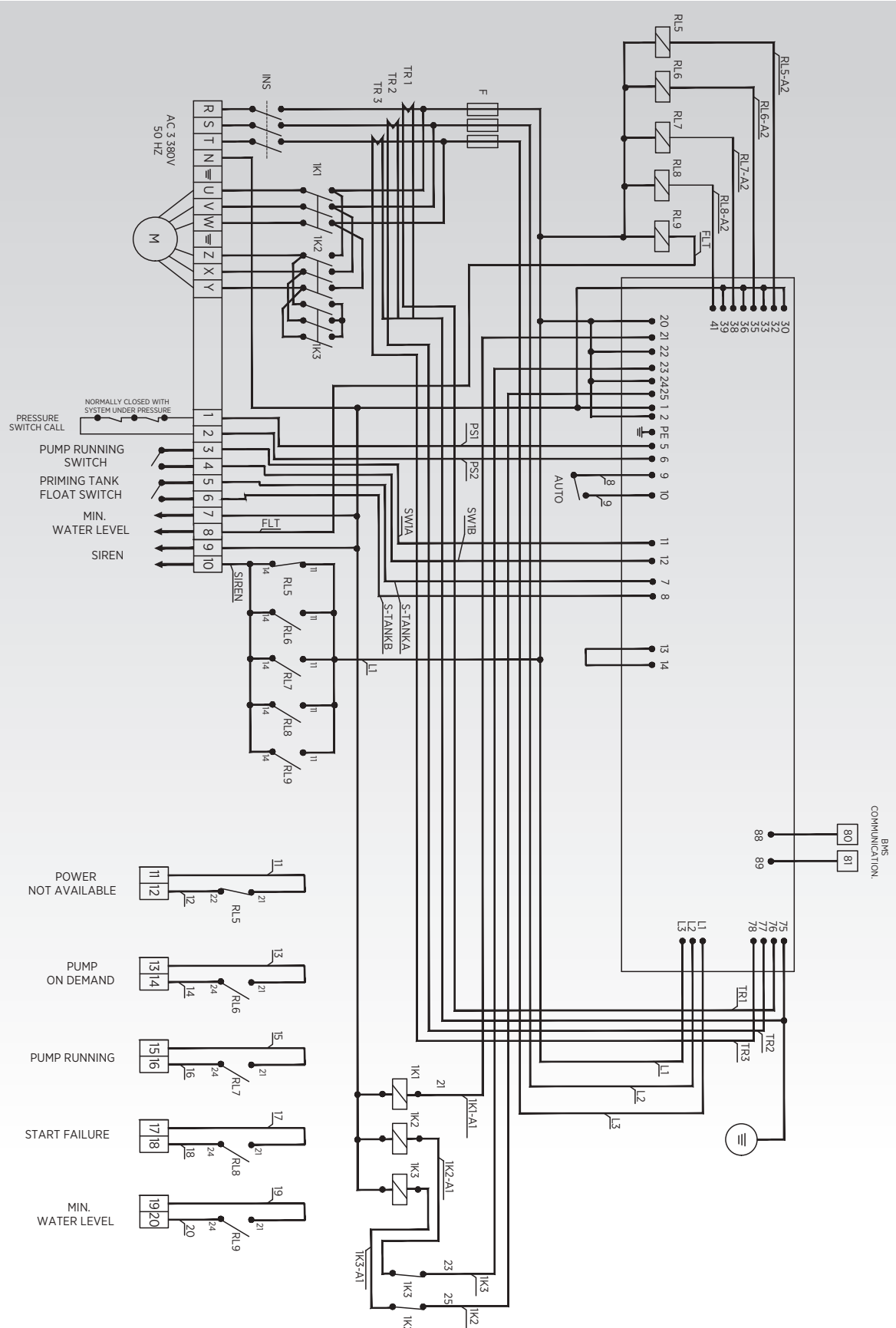


Figure 4. Electric Motor Control Panel Electric Schema



Dudullu Organize Sanayi Bölgesi 2. Cadde No: 14  
34775 Ümraniye- İstanbul / Turkey  
Tel : +90 216 561 47 74 (Pbx) • Fax : +90 216 561 47 50  
www.etna.com.tr/en • info@etna.com.tr



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**0850 455 38 62**  
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