



# Micro Processor Based Fire Pump Controllers





## AN INTRODUCTION TO NAFFCO

NAFFCO was founded in Dubai, UAE to become the world's leading producer and supplier of life safety solutions. By recognizing the importance and convenience of having easy access to multiple safety services, we became specialized by offering complete solutions under one roof for all types of high quality firefighting equipment, fire protection systems, fire alarms, addressable emergency systems, security systems, custom-made vehicles such as fire trucks, ambulances, mobile hospitals and airport rescue firefighting vehicles (ARFF).

With the most talented and dedicated employees from around the world, NAFFCO has over 450 passionate engineers and over 3 million square feet of manufacturing facilities. We are currently exporting to over 100 countries worldwide.

Our products have been consistently certified by UL, FM, BSI, LPCB and Global Mark according to the latest International Quality Standard for their strict adherence to ISO 9001 quality management system and certified for ISO 14001 environmental management systems and BS OHSAS 18001 for occupational safety by UL DQS.

Our success is driven by our passion to protect; our vision is to become the world's number one provider of innovative solutions in protecting life, environment and property.







## MANUFACTURING

NAFFCO manufacturing department has the latest technology, state-of-the-art machines (CNC machines, hydraulic shearing and bending machines, all types of welding machines - MIG, TIG, ARC etc.), and a complete machine shop that enable us to meet the needs of any production requirement.

NAFFCO has the ability to introduce the latest technological systems & equipment in the field. Our engineers and technicians are well qualified & experienced in producing quality products.

The department is equipped with full-fledged testing facilities to test the equipment as per NFPA, EN, ICAO, KKK and Civil Defense standards & requirements, and to meet the customers specifications.

Considering the above facilities and excellence in engineering capabilities, NAFFCO can meet any challenges to produce bulk quantities of fire safety materials.



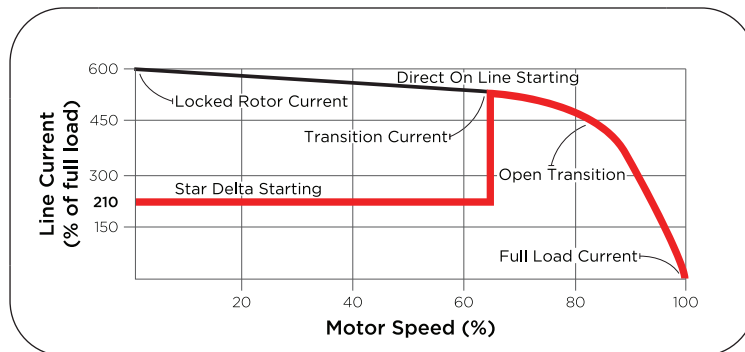
# UL CERTIFIED ELECTRIC MOTOR MICROPROCESSOR BASED CONTROLLER MODEL NFY-SDM1 STAR DELTA



NAFFCO Electric Motor Controllers for fire pumps are listed by Underwriters Laboratories (UL file number EX15064), in accordance with UL218 (Standard for Fire Pump Controller), UL508a (Standard for Industrial Control Panel), NFPA20 (National Fire Protection Association Pamphlet 20- Standard for Centrifugal Fire Pumps), NFPA70 (National Electric Code) and NEMA.

Only high quality UL listed or UL recognized components are used in these panels to guarantee the best possible reliability. Also high quality UL listed enclosures are used.

This controller is completely wired, assembled, programmed and tested at the factory before shipment, and ready for immediate installation.



**MOTOR STARTING CHARACTERISTICS**

## RATING

Motor Power (HP)	Rated Voltage (V)	Frequency (Hz)	Rated Current (A)	Short Circuit Rating (KA)
15	380 - 415	50 / 60	27	100
20			34	
25			44	
30			51	
40			66	
50			83	
60			103	
75			128	
100			165	
125			208	
150			240	
200			320	
250			403	
300			482	
350			560	
400			636	

# ELECTRIC FIRE PUMP CONTROLLER FEATURES

Power ratings vary from 15 to 400 horsepower, 230 / 380 / 415 VAC, 50/60 Hz.

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## STANDARD FEATURES

- 230 / 380 / 415 VAC, 50/60 Hz main 3 phase system power.
- Voltage Surge Protector.
- Main disconnecting switch with rotary handle sized for disconnecting motor horsepower and voltage.
- Motor Run indicator/free contact.
- Phase Loss/Failure alarm / indicator / free contact.
- Phase sequence error alarm/indicator / free contact.
- System error alarm / indicator / free contact.
- Fail to start alarm / indicator.
- System error alarm / indicator.
- Pump lockout indicator / free contact.
- Push button for alarm silence (only for additional alarms).
- Motor locked rotor trip at 600% of FLA, after programmable time delay.
- Programmable automatic test, which can be programmed to start at any desired day, hour and minute in the week.
- Manual test push button.
- Motor overload alarm/ indicator / free contact (programmable).
- Over voltage alarm/indicator / free contact (programmable).

- Circuit breaker with shunt trip coil and rotary handle.
- Rated motor connectors.
- Emergency run mechanism to mechanically close motor connector contacts to start motor in case of emergency.
- Manual start and stop push buttons.
- 20x4 LCD display showing all system parameters and variables.
- User friendly software enables user to program all related parameters like timers, pressure, inputs, outputs ... etc.
- Shows 3 phase line voltages.
- Shows 3 phase line motor currents.
- Shows real value of discharge pressure.
- Shows motor running hours.
- Shows ambient temperature.
- Starting delay timer (programmable) for sequence multiple pumps starting.
- Automatic or manual shutdown after automatic start (selectable).
- Automatic shutdown mode enabled/disabled indicator.
- Power ON/Healthy indicator.
- Automatic mode indicator.
- Manual mode indicator.
- Remote start on alarm / indicator / free contact (programmable).
- Manual local start on alarm/ indicator / free contact (programmable).
- Fail while run alarm / indicator / free contact (programmable).
- Emergency start on alarm / indicator / free contact (programmable).
- Test on alarm/ indicator / free contact (programmable).
- 10 additional programmable indicators (LED's).
- 10 additional programmable auxiliary digital inputs.
- 7 additional programmable output relays (free contacts).
- Pressure transducer with analog voltage output.
- Data logging system for pressure and events.
- USB port for saving recorded pressure and events on USB memory, and can be viewed with MS word and Excel.
- Electrically actuated built in discharge solenoid valve.
- Under voltage alarm / indicator / free contact (programmable).
- Low discharge pressure alarm / indicator / free contact (programmable).
- Deluge valve on alarm / indicator / free contact (programmable).
- Electrical alarm bell.
- UL listed NEMA 2 enclosure.

## ENCLOSURE OPTIONS:

- NEMA 3
- NEMA 4
- NEMA 12



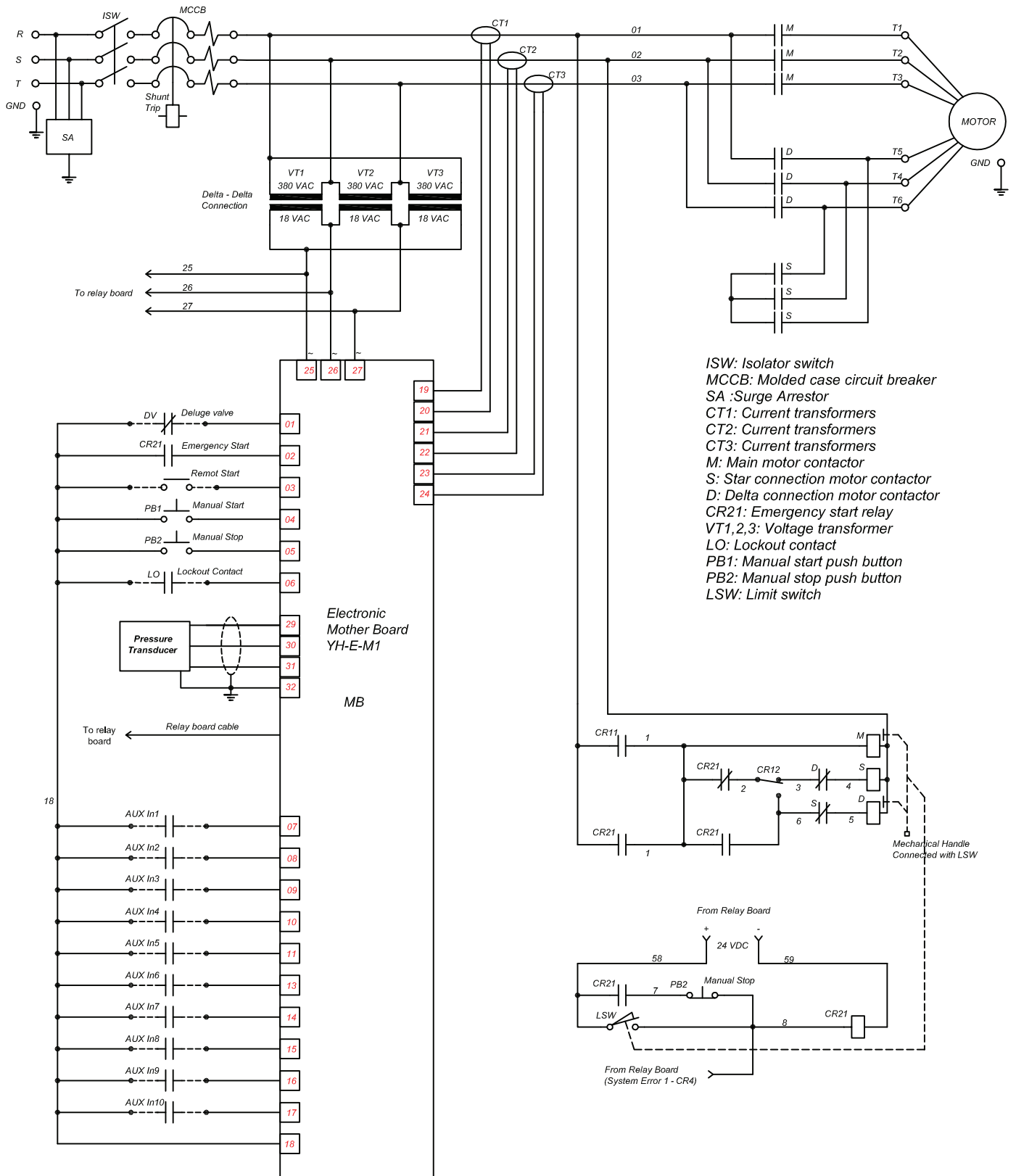
# Electric Pump Controller

Reduced Voltage / Star - Delta (Open Transition)

Wiring Schematic

Model: NFY-SDM1

Version 1.0



Client :	Desinged By : Eng. Yousef Abu Hadhoud	Panel Model No : NFY-SDM1
	Approved By : Eng. Emad Kassab	Version: 1.0
Title / Name : Electric Fire Pump Controller	Drawing No :	Panel Serial No :
	Date : 09/04/2012	Page Description : Mother board wiring diagram
Reference No : -NAFF-H01-EXP-12571 (0)		Sheet 7 of 8 Page 32 of 144



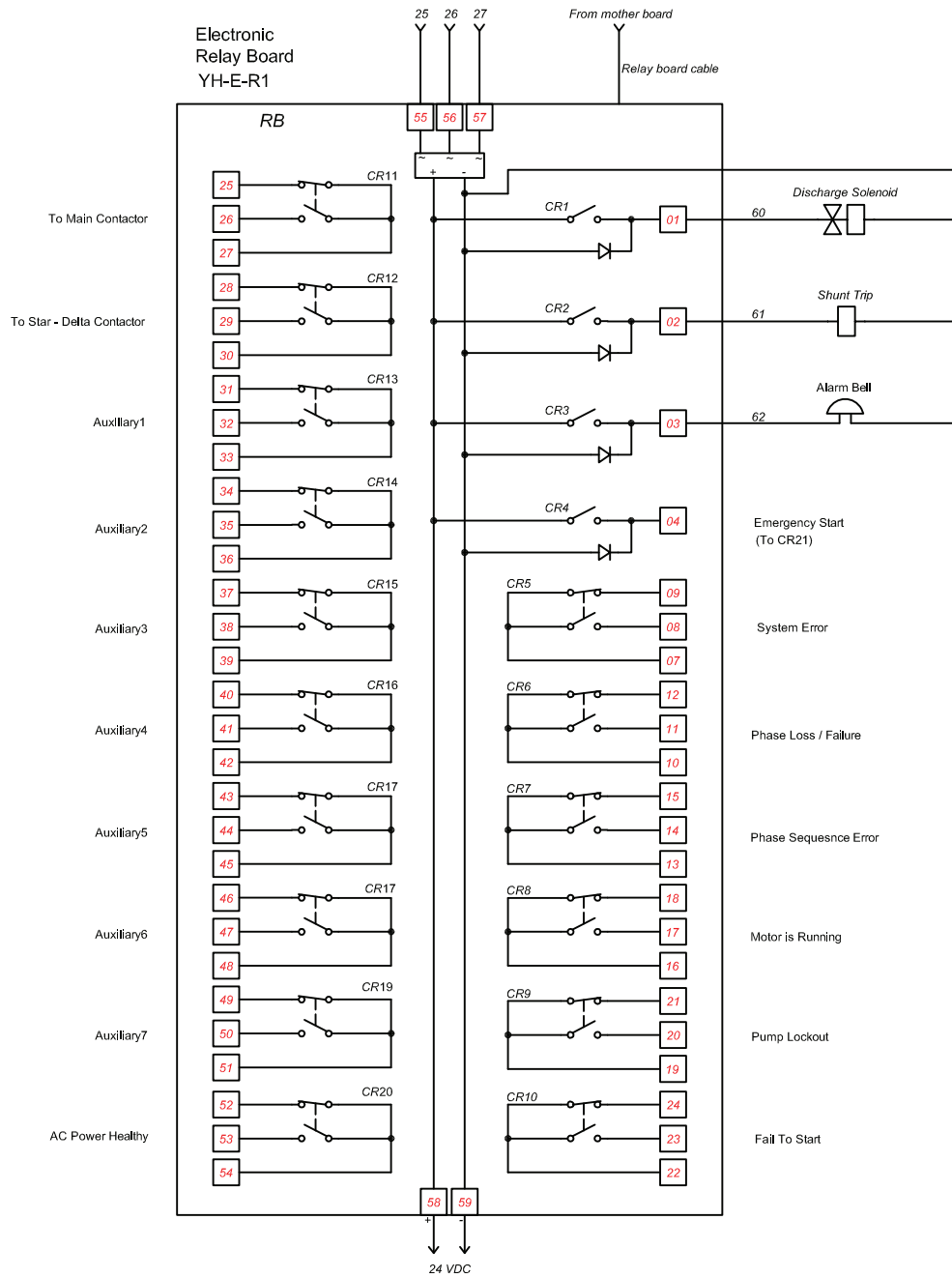
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**NAFFCO**

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In line with NAFFCO policy for continuous product development,  
NAFFCO has the right to change specifications without prior notice.