



ITTT

Commercial Water Systems

CentriPro

FloStandard

SIMPLEX PUMP CONTROL PANEL

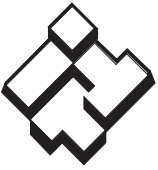
Installation and Operation Manual



CentriPro is a brand of ITT
Residential and Commercial Water.

www.centripro.com

Engineered for life



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OWNER'S INFORMATION

Pump Model No: _____ Pump Serial No: _____

Control Model No: _____ Control Panel Serial No: _____

Dealer Phone No: _____ Dealer: _____

Date of Purchase: _____ Installation Date: _____

CURRENT READINGS AT SETUP

| 1Ø | 3Ø | L1 | L2 | L3 |
|--------|--------|----|----|----|
| Amps: | Amps: | | | |
| Volts: | Volts: | | | |

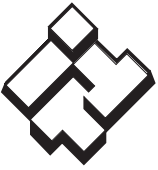
MOTOR INFORMATION

HP: _____ RPM: _____

Volts: _____ Service Factor: _____

Frequency: _____ Phase: _____

Enclosure: _____



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SAFETY INSTRUCTIONS

TO AVOID SERIOUS OR FATAL PERSONAL INJURY OR MAJOR PROPERTY DAMAGE, READ AND FOLLOW ALL SAFETY INSTRUCTIONS IN MANUAL AND ON PUMP.

THIS MANUAL IS INTENDED TO ASSIST IN THE INSTALLATION AND OPERATION OF THIS UNIT AND MUST BE KEPT WITH THE PUMP.



This is a **SAFETY ALERT SYMBOL**. When you see this symbol on the pump or in the manual, look for one of the following signal words and be alert to the potential for personal injury or property damage.

⚠ DANGER Warns of hazards that **WILL** cause serious personal injury, death or major property damage.

⚠ WARNING Warns of hazards that **CAN** cause serious personal injury, death or major property damage.

⚠ CAUTION Warns of hazards that **CAN** cause personal injury or property damage.

NOTICE: INDICATES SPECIAL INSTRUCTIONS WHICH ARE VERY IMPORTANT AND MUST BE FOLLOWED.

THOROUGHLY REVIEW ALL INSTRUCTIONS AND WARNINGS PRIOR TO PERFORMING ANY WORK ON THIS PUMP.

MAINTAIN ALL SAFETY DECALS.

⚠ WARNING All electrical work must be performed by a qualified technician. Always follow the National Electrical Code (NEC), or the Canadian Electrical Code, as well as all local, state and provincial codes. Code questions should be directed to your local electrical inspector. Failure to follow electrical codes and OSHA safety standards may result in personal injury or equipment damage. Failure to follow manufacturer's installation instructions may result in electrical shock, fire hazard, personal injury or death, damaged equipment, provide unsatisfactory performance, and may void manufacturer's warranty.

⚠ WARNING See specific pump and motor nameplates for all agency Listings.

⚠ WARNING Check motor nameplate and FloStandard nameplate for all electrical ratings.

⚠ DANGER The FloStandard fixed-speed pump panel may have safety devices that will stop the motor in the event of electrical, mechanical load or external faults. This does not remove power to the panel.

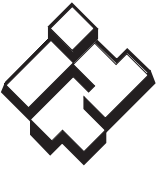
⚠ DANGER The FloStandard may have an auto reset feature in the event of faults, which can result in the pump motor restarting unexpectedly. You must remove all main power to the pump and motor before attempting a repair.

PRE-INSTALLATION CHECKS

⚠ WARNING Open all cartons and inspect for shipping damage. Report any damage to you supplier or shipping carrier immediately.

Verify that all equipment is the correct voltage and phase. Warranty does not cover damage caused by connecting pumps and controls to an incorrect power source (voltage/phase supply).

Record the model numbers and serial numbers from the pumps and control panel on the front of this instruction manual for future reference. Give it to the owner or place it in the plastic protective pocket inside the panel cabinet when finished with the installation.



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PUMP CONTROL PANELS AND WIRING

⚠ WARNING NOTE: CONSULT MOTOR AND PUMP MANUALS FOR SPECIFIC WIRING INSTRUCTIONS.

WIRING AND GROUNDING

⚠ WARNING IMPORTANT NOTICE: Read Safety Instructions before proceeding with any wiring.

⚠ Use only stranded copper wire to pump/motor and ground. The ground wire must be at least as large as the power supply wires. Wires should be color coded for ease of maintenance and troubleshooting.

⚠ Install wire and ground according to the National Electrical Code (NEC), or the Canadian Electrical Code, as well as all local, state, and provincial codes.

⚠ Disconnect and lockout electrical power before performing any service or installation.

⚠ All splices must be waterproof. If using splice kits follow manufacturer's instructions.

⚠ Seal all panel connections tightly from gases or moisture present which may damage electrical components.

⚠ WARNING FAILURE TO PERMANENTLY GROUND PUMP, MOTOR, AND CONTROLS BEFORE CONNECTING TO POWER CAN CAUSE SHOCK, BURNS, OR DEATH.

SELECTING CONTROL PANELS

⚠ WARNING MATCH EQUIPMENT TO POWER SUPPLY: It is important always to match the pump motor voltage, phase, and HP ratings to your control panel and power supply. Record the motor nameplate HP, voltage and phase in the Owner Information table on the cover page. Make sure that the power supply, motor nameplate, and panel nameplate data match. Incorrect voltage or phase can cause fire, motor and control damage and voids the warranty.

WARNING PUMP CONTROL PANELS AND SWITCHES

⚠ WARNING It is important to use the wiring diagrams furnished in the manual and to wire all connections as indicated. Please refer to Figure 1 on page 4 and pages 9-12.

Motor Lead Connections: Locate the terminal block labeled T1, T2, T3 and ground screw. Connect wires to terminal block and route wires through one of the knock out ports on the bottom of the panel. There is room allowed to wire with service loops to avoid wire strain.

Input Power Cable Installation: The main power cable is connected to the terminal block labeled L3, L2, and L1. Room is allowed in the panel to wire with service loops to avoid wire strain.

PANEL OPERATION

Operation is with a Hand/Off/Auto (HOA) three-position switch on the panel cover. The pump may be started and stopped at the panel cover by setting the switch to the Hand (manual start) or Off positions. When the three-position switch is in the Auto position, start and stopping is controlled only by the wired remote contact or control device.

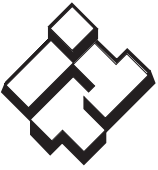
CHECK ROTATION

Always verify correct rotation. Correct rotation is usually indicated on the pump casing. Motor direction is reversible. Consult pump and motor manuals for specific instructions.

A full three-phase supply consisting of three individual transformers or one three-phase transformer is recommended. "Open" delta or wye connections using only two transformers can be used, but are more likely to cause poor performance, overload tripping or early motor failure due to current unbalance.

Check the current in each of the three motor leads and calculate the current unbalance as explained below.

- If the current unbalance is 2% or less, leave the leads as connected.



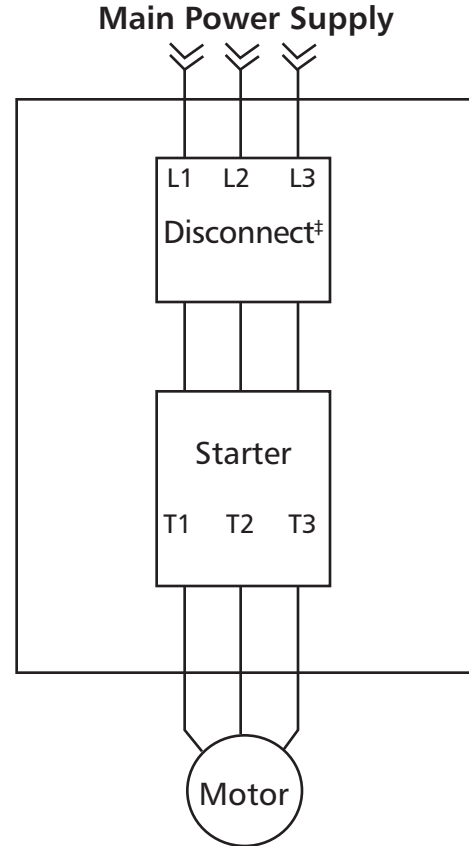
- If the current unbalance is more than 2%, current readings should be checked on each leg using each of the three possible hook-ups. Roll the motor leads across the starter in the same direction to prevent motor reversal.

To calculate percent of current unbalance (see, Example below):

1. Add the three-line amp values together.
2. Divide the sum by three, yielding average current
3. Pick the amp value, which is furthest from the average current (either high or low).
4. Determine the difference between this amp value (furthest from average) and the average.
5. Divide the difference by the average. Multiply the result by 100 to determine percent of unbalance.

Current unbalance should not exceed 5% at service factor load or 10% at rated input load. If the unbalance cannot be corrected by rolling leads, the source of the unbalance must be located and corrected. If, on the three possible hookups, the leg farthest from the average stays on the same power lead, most of the unbalance is coming from the power source.

Contact your local power company to resolve imbalance.



‡ Class J Fuses are not included. Supplied by other vendors.

Figure 1 – Panel Connection Points

| | Hookup 1 | | | Hookup 2 | | | Hookup 3 | | |
|-------------------|----------|----|----|----------|----|----|----------|----|----|
| Starter Terminals | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 |
| | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ |
| Motor Leads | T3 | T1 | T2 | T2 | T3 | T1 | T1 | T2 | T3 |

Example:

$$\begin{aligned}
 T3 &= 51 \text{ amps} \\
 T1 &= 46 \text{ amps} \\
 T2 &= \underline{53} \text{ amps} \\
 \text{Total} &= 150 \text{ amps} \\
 \div 3 &= 50 \text{ amps} \\
 - 46 &= 4 \text{ amps} \\
 4 \div 50 &= .08 \text{ or } 8\%
 \end{aligned}$$

$$\begin{aligned}
 T2 &= 50 \text{ amps} \\
 T3 &= 48 \text{ amps} \\
 T1 &= \underline{52} \text{ amps} \\
 \text{Total} &= 150 \text{ amps} \\
 \div 3 &= 50 \text{ amps} \\
 - 48 &= 2 \text{ amps} \\
 2 \div 50 &= .04 \text{ or } 4\%
 \end{aligned}$$

$$\begin{aligned}
 T1 &= 50 \text{ amps} \\
 T2 &= 49 \text{ amps} \\
 T3 &= \underline{51} \text{ amps} \\
 \text{Total} &= 150 \text{ amps} \\
 \div 3 &= 50 \text{ amps} \\
 - 49 &= 1 \text{ amp} \\
 1 \div 50 &= .02 \text{ or } 2\%
 \end{aligned}$$



COMBINATION STARTER AND OVERLOAD RELAY

FloStandard is furnished with a combination starter and overload relay to protect the motor from overload during start-up or operation. Panels designed for use on three phase power also incorporate circuitry that will protect motors from phase loss or phase imbalance, in addition to overload during start-up or operation.

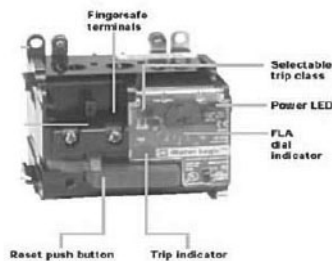


Figure 2 – Starter/Overload Relay

The following are field adjustments and indications are available and can be referenced from Figure 2 above:

- **Setting Based on Motor Service Factor:** For continuous-rated motors having a service factor (SF) of 1.0, set the current adjustment dial to 90% of the motor’s full-load current (MFLC). For continuous-rated motors having a service factor of 1.15 to 1.25, set the FLA dial indicator current to the MFLC.
- **Visible Trip Indication:** A viewing window on the front of the solid-state overload relay provides visible trip indication. A yellow marker appears when the device is tripped.

When the overload relay detects motor current in excess of 125% of the current adjustment dial setting, the overload contacts open and the optional auxiliary contacts change state (N.O. contacts close and N.C. contacts open). The time required for the overload relay to trip depends upon:

- Current value.
- Time elapsed since last trip.

The phase loss/phase imbalance circuitry can detect a phase loss and initiate a trip within three seconds. Phase loss detection extends to a phase loss in either the primary or the secondary of a wye-delta or delta-wye transformer. The circuitry also detects a phase imbalance and initiates a trip when any phase current drops 25% below or rises 25% above the average of the three phase currents.

Reset Bar: The overload relay is reset by depressing the reset bar on the front of the device. Since the overload relay trip function is of the “trip-free” design, it cannot be overridden by holding down the reset bar.

Overload Relay Power On Light: A red LED indicates that the power necessary to operate the overload relay protective circuitry is present. This power is derived from the current flowing in the motor leads. When sufficient power is extracted to enable normal operation, the LED blinks. It blinks faster as the current being monitored increases.

Functional Test: To test for proper operation of the overload contacts, de-energize the starter and disconnect the control circuit power. With a small, flat-blade screwdriver, slide the TEST switch located on the bottom of the overload relay to the right. This operates the trip mechanism, opening the N.C. overload contacts at terminals 95 and 96. Verify proper operation of the overload contacts, and then reset the device by depressing the red RESET bar. Reconnect the control circuit power and reenergize the starter as required.

Inspecting and Replacing Contacts: Discoloration and slight pitting do not harm contacts. Do not file contacts; this wastes contact material. Replace contacts only when worn thin. To inspect or replace contacts, disconnect all power. Do not remove any wiring. Loosen the four captive screws holding the contact actuator to the contact block. Lift the contact actuator to expose the contacts. Manually operate the contactor or starter with a screwdriver by pushing down the contact carrier. There is a step on the outside of the contact carrier suitable for this use. Replacement starter contacts may be obtained from a local electrical supply house.



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Loss of Phase/Phase Imbalance: The overload relay has phase loss and phase imbalance monitoring circuitry. Loss of phase or a phase imbalance of 25% or more of the average of the three phases will result in a trip. Disconnect the unit from the main power supply, find and correct cause for phase loss of phase imbalance. Possible causes would be blown fuse(s) or loose wiring connections. Reset the overload relay with the reset bar on the front of the combination starter. Restart the pump.

CONTROLLER FUNCTIONS

FloStandard is designed to accept a variety of inputs to function as a pump controller. Pressure Switches, Level Sensors, Flow Switches, etc. can be used as a dry contact signal to automatically start and stop the pump. Caution should be used to prevent pump cycling when utilizing remote controllers.

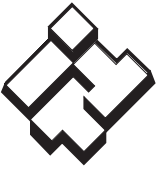
SPECIFICATIONS

GENERAL SPECIFICATIONS:

| | |
|-----------------------|----------------------------------|
| Enclosure Type | NEMA 3R Suitable for Outdoor Use |
| Operating Temperature | 4° F to 122° F |
| Storage Temperature | 20° F to 149° F |
| Humidity | 0-95% non-condensing |

ELECTRICAL:

| | |
|----------------------|---|
| Voltage Input | +/- 10% Rated Panel Voltage |
| Input Line Frequency | 50/60 Hz +/- 2 Hz |
| Control Voltage | Line Voltage / 115 Volts AC with control power transformer option |
| Overload Capacity | 125% of rated RMS current for 60 seconds |
| Overload Class | 10 or 20 |
| Time Overload | Adjustable setting for 125% of rated motor current |
| Agency Listing | UL508A or equivalent |



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INTERPRETING MODEL NUMBERS

The model number of the FloStandard appears on the shipping carton label and on the technical data label affixed to the panel. The information provided by the model number is shown below:

FloStandard™ Simplex Pump Control Panels J

Units supplied with Class 20 adjustable Overload Protection (For Above Ground Pumps)

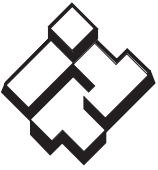
| Order Number | Max. HP | Input Voltage | NEMA Starter Size | Max. Amps | Max. Fuse holder Size (Amps) [‡] | Enclosure Size | Weight lbs. |
|--------------|---------|---------------|-------------------|-----------|---|--------------------|-------------|
| FV2070027A1 | 7½ | 230 | 1 | 27 | 30 | 36"H x 16"W x 9"D | 40 |
| FV2015045A2 | 15 | | 2 | 45 | 60 | | 55 |
| FV2030090A3 | 30 | | 3 | 90 | 100 | 45"H x 20"W x 11"D | 111 |
| FV2050130A4 | 50 | | 4 | 135 | 200 | | 170 |
| FV2100311A5 | 100 | | 5 | 270 | 400 | 73"H x 22"W x 18"D | 440 |
| FV4010018B1 | 10 | 460 | 1 | 27 | 30 | 36"H x 16"W x 9"D | 40 |
| FV4025045B2 | 25 | | 2 | 45 | 60 | | 55 |
| FV4050090B3 | 50 | | 3 | 90 | 100 | 45"H x 20"W x 11"D | 111 |
| FV4100200B4 | 100 | | 4 | 135 | 200 | | 170 |
| FV4200311B5 | 200 | | 5 | 270 | 400 | 73"H x 22"W x 18"D | 440 |

[‡]Class J fuses are *not* supplied.

Units supplied with Class 10 Overload Protection (For Submersible Pumps)

| Order Number | Max. HP | Input Voltage | NEMA Starter Size | Max. Amps | Max. Fuse holder Size (Amps) [‡] | Enclosure Size | Weight lbs. |
|--------------|---------|---------------|-------------------|-----------|---|--------------------|-------------|
| FV2070027A1T | 7½ | 230 | 1 | 27 | 30 | 36"H x 16"W x 9"D | 40 |
| FV2015045A2T | 15 | | 2 | 45 | 60 | | 55 |
| FV2030090A3T | 30 | | 3 | 90 | 100 | 45"H x 20"W x 11"D | 111 |
| FV2050130A4T | 50 | | 4 | 135 | 200 | | 170 |
| FV2100311A5T | 100 | | 5 | 270 | 400 | 73"H x 22"W x 18"D | 440 |
| FV4010018B1T | 10 | 460 | 1 | 27 | 30 | 36"H x 16"W x 9"D | 40 |
| FV4025045B2T | 25 | | 2 | 45 | 60 | | 55 |
| FV4050090B3T | 50 | | 3 | 90 | 100 | 45"H x 20"W x 11"D | 111 |
| FV4100200B4T | 100 | | 4 | 135 | 200 | | 170 |
| FV4200311B5T | 200 | | 5 | 270 | 400 | 73"H x 22"W x 18"D | 440 |

[‡]Class J fuses are *not* supplied.



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**Units supplied with Class 10 Overload Protection with
Pump Monitor (777) and Lightning Protection**

| Order Number | Max. HP | Input Voltage | NEMA Starter Size | Max. Amps | Max. Fuse holder Size (Amps)‡ | Enclosure Size | Weight lbs. |
|--------------|---------|---------------|-------------------|-----------|-------------------------------|--------------------|-------------|
| FV2070027A1W | 7½ | 230 | 1 | 27 | 30 | 36"H x 16"W x 9"D | 40 |
| FV2015045A2W | 15 | | 2 | 45 | 60 | | 55 |
| FV2030090A3W | 30 | | 3 | 90 | 100 | 45"H x 20"W x 11"D | 111 |
| FV2050130A4W | 50 | | 4 | 135 | 150 | | 170 |
| FV2100311A5W | 100 | | 5 | 270 | 400 | 73"H x 22"W x 18"D | 440 |
| FV4010018B1W | 10 | 460 | 1 | 27 | 30 | 36"H x 16"W x 9"D | 40 |
| FV4025045B2W | 25 | | 2 | 45 | 60 | | 55 |
| FV4050090B3W | 50 | | 3 | 90 | 100 | 45"H x 20"W x 11"D | 111 |
| FV4100200B4W | 100 | | 4 | 135 | 200 | | 170 |
| FV4200311B5W | 200 | | 5 | 270 | 400 | 73"H x 22"W x 18"D | 440 |

‡Class J fuses are *not* supplied.

Accessories sold separately. Field installation required.

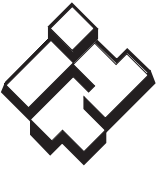
FloStandard™ Simplex Pump Control Panels

J

Note: Recommended class "R" Fuse Type, dual element, time delay (not Included).

| Option | Description | Weight (Lbs) |
|--------|---|--------------|
| FSCT | 120 V Control Transformer | 7 |
| FSSP | Surge/Lightning Protection | 2 |
| FSPF | Pump Monitor (777) Includes class 10 overload | |
| FSTC | Time Clock† | |
| FSPH | Condensation Header† | 1 |
| FSGN | Green Run Light† | |
| FSRN | Red Alarm Light† | |
| FSOP | Class 10 Overload Protection† | |

†Requires control transformer option FSCT. For specials or other options, consult factory.



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SUGGESTED FUSE, WIRE AND CONDUIT SIZES

208 Volt

| HP | Fuse | Wire | Conduit |
|----|------|------|---------|
| 3 | 17.5 | 14 | 0.50 |
| 5 | 30 | 10 | 0.50 |
| 7½ | 40 | 8 | 0.75 |
| 10 | 50 | 8 | 0.75 |
| 15 | 80 | 6 | 1.00 |
| 20 | 100 | 4 | 1.00 |
| 25 | 125 | 3 | 1.25 |
| 30 | 150 | 2 | 1.25 |

230 Volt

| HP | Fuse | Wire | Conduit |
|----|------|------|---------|
| 3 | 15 | 14 | 0.50 |
| 5 | 25 | 12 | 0.50 |
| 7½ | 35 | 10 | 0.50 |
| 10 | 45 | 8 | 0.75 |
| 15 | 70 | 6 | 1.00 |
| 20 | 90 | 4 | 1.00 |
| 25 | 110 | 4 | 1.00 |
| 30 | 125 | 3 | 1.25 |

460 Volt

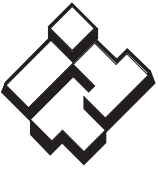
| HP | Fuse | Wire | Conduit |
|----|------|------|---------|
| 5 | 12 | 14 | 0.50 |
| 7½ | 17.5 | 14 | 0.50 |
| 10 | 25 | 12 | 0.50 |
| 15 | 35 | 10 | 0.50 |
| 20 | 45 | 8 | 0.75 |
| 25 | 60 | 8 | 0.75 |
| 30 | 70 | 6 | 1.00 |
| 40 | 90 | 6 | 1.00 |
| 50 | 110 | 4 | 1.00 |
| 60 | 125 | 3 | 1.25 |

NOTE:

Fuses are for main disconnect. Recommended dual element, time-delay type fuse.

Wire is copper, type "THW," 75° C.

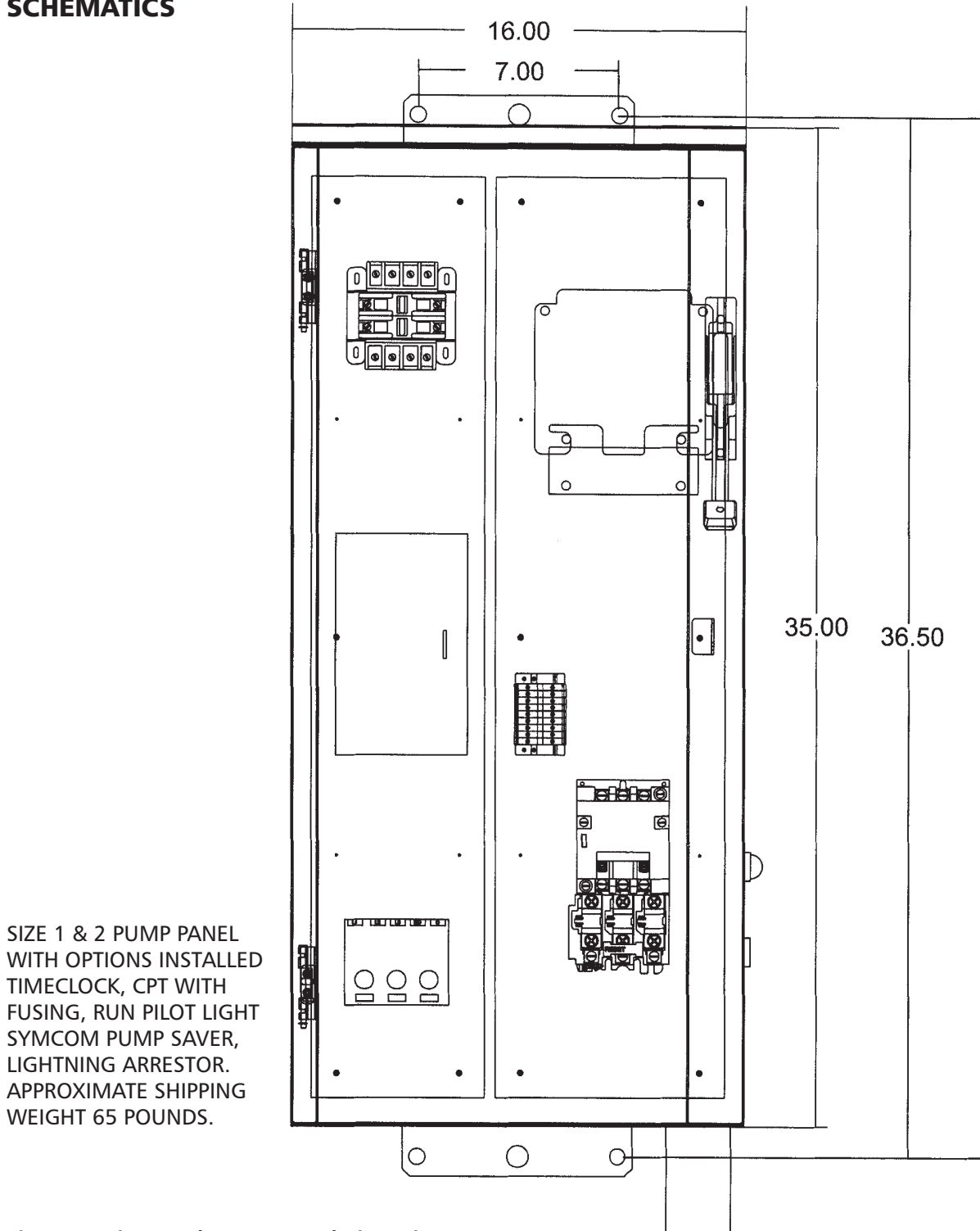
All sizes are recommended only and are not a substitute for hiring a local electrician to properly size according to NEC and local codes.



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SCHEMATICS



SIZE 1 & 2 PUMP PANEL
WITH OPTIONS INSTALLED
TIMECLOCK, CPT WITH
FUSING, RUN PILOT LIGHT
SYMCOM PUMP SAVER,
LIGHTNING ARRESTOR.
APPROXIMATE SHIPPING
WEIGHT 65 POUNDS.

Figure 3 – Size 1 and 2 Pump Panel Dimensions



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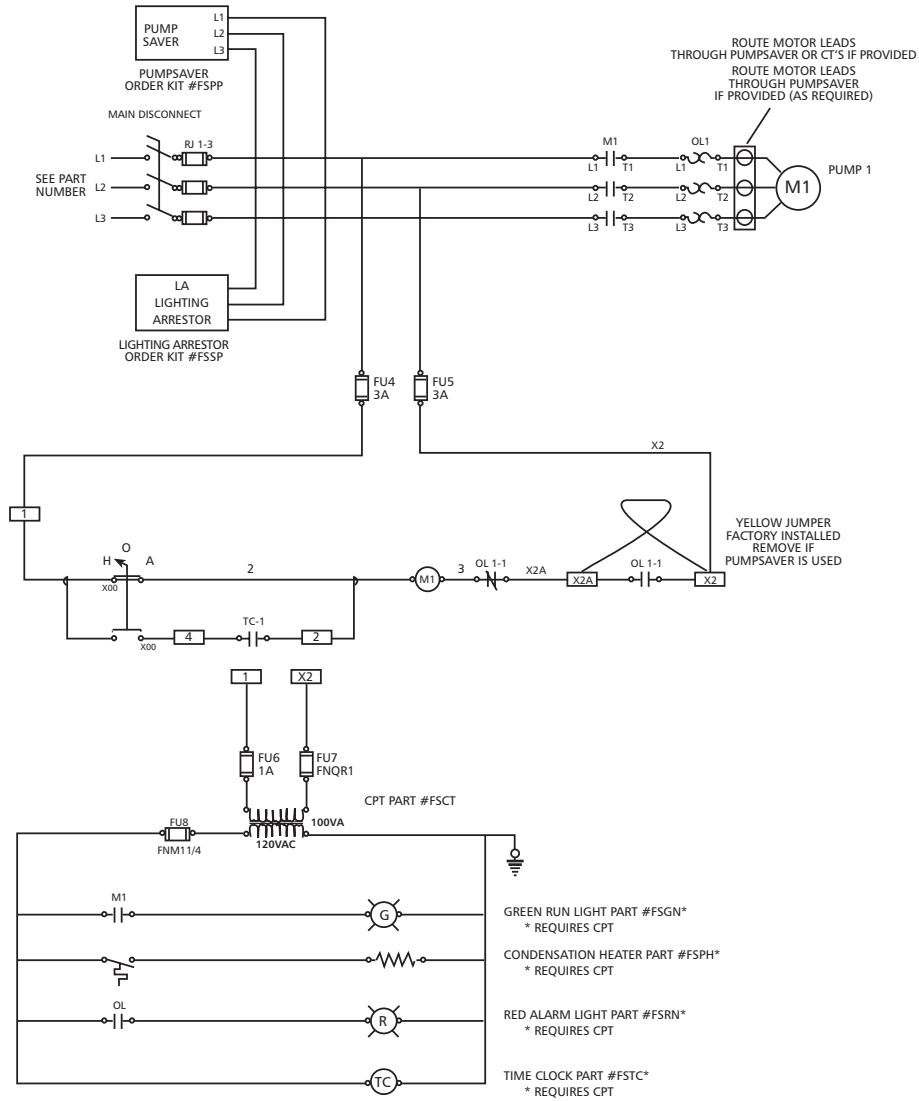


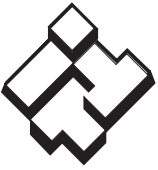
Figure 4 – Simplex Panel with Accessories Size 1, 2 and 3

CT Size Chart (CTs must be installed in the field for selected HP)

Size 1 240VAC

| HP | FLA | Fuse Size | Number of Loops | Number of Conductors through A, B & C [‡] |
|-------|----------|-----------|-----------------|--|
| 5 HP | 15.2 FLA | FRNR25 | 1 | 2 |
| 75 HP | 96 FLA | FRNR30 | 1 | 2 |

[‡] The number of loops may differ from the number of conductors through the current transformers. Always double check based on HP and FLA.



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CT Size Chart (CTs must be installed in the field for selected HP)

Size 1 480VAC

| HP | FLA | Fuse Size | Number of Loops | Number of Conductors through A, B & C [‡] |
|--------|---------|-----------|-----------------|--|
| 5 HP | 7.6 FLA | FRSR15 | 3 | 4 |
| 7.5 HP | 11FLA | FRSR20 | 2 | 3 |
| 10 HP | 14FLA | FRSR20 | 1 | 2 |

‡ The number of loops may differ from the number of conductors through the current transformers.
Always double check based on HP and FLA.

Size 2 240VAC

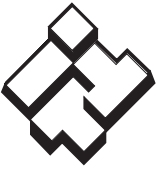
| HP | FLA | Fuse Size | Number of Loops | Number of Conductors through A, B & C [‡] |
|-------|-------|-----------|-----------------|--|
| 10 HP | 28FLA | FRNR40 | 0 | 1 |
| 15 HP | 42FLA | FRSR250 | 0 | 1 |

‡ The number of loops may differ from the number of conductors through the current transformers.
Always double check based on HP and FLA.

Size 2 480VAC

| HP | FLA | Fuse Size | Number of Loops | Number of Conductors through A, B & C [‡] |
|-------|-------|-----------|-----------------|--|
| 15 HP | 21FLA | FRSR35 | 1 | 2 |
| 20 HP | 27FLA | FRSR40 | 0 | 1 |
| 25 HP | 34FLA | FRSR50 | 0 | 1 |

‡ The number of loops may differ from the number of conductors through the current transformers.
Always double check based on HP and FLA.



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SCHEMATICS

SIZE 3 PUMP PANEL WITH
OPTIONS INSTALLED
TIMECLOCK, CPT WITH
FUSING, RUN PILOT LIGHT
SYMCOM PUMPSAVER,
LIGHTNING ARRESTOR.
APPROXIMATE SHIPPING
WEIGHT 150 POUNDS.

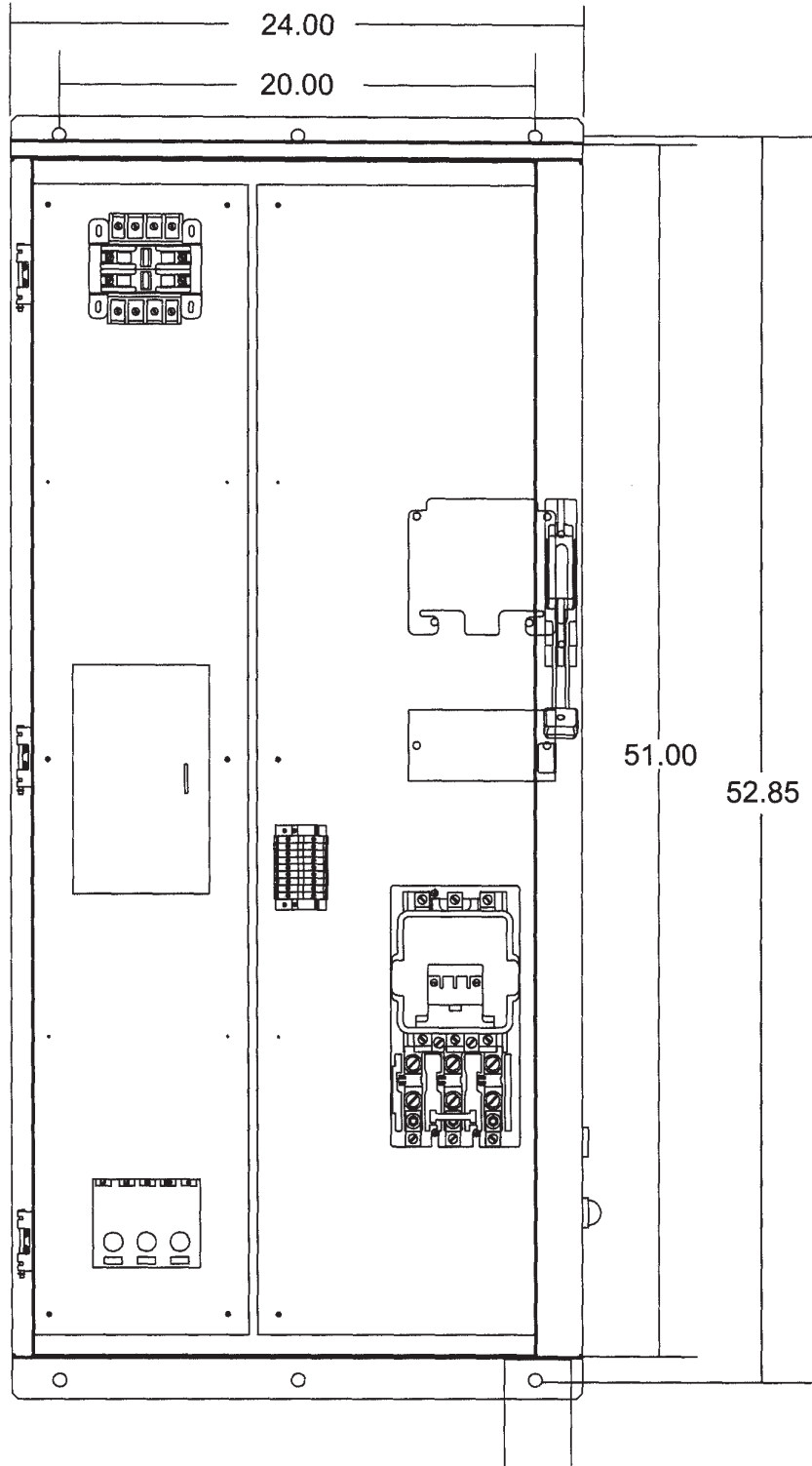


Figure 5 – Size 3 Dimensions



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CT Size Chart (CTs must be installed in the field for selected HP)

Size 3 240VAC

| HP | FLA | Fuse Size | Number of Loops | Number of Conductors through A, B & C [‡] |
|-------|-------|-----------|-----------------|--|
| 25 HP | 68FLA | FRNR100 | 0 | 1 |
| 30 HP | 80FLA | FRNR150 | 0 | 1 |

‡ The number of loops may differ from the number of conductors through the current transformers.
Always double check based on HP and FLA.

Size 3 480VAC

| HP | FLA | Fuse Size | Number of Loops | Number of Conductors through A, B & C [‡] |
|-------|-------|-----------|-----------------|--|
| 30 HP | 40FLA | FRSR60 | 0 | 1 |
| 40 HP | 52FLA | FRSR80 | 0 | 1 |
| 50 HP | 65FLA | FRSR100 | 0 | 51 |

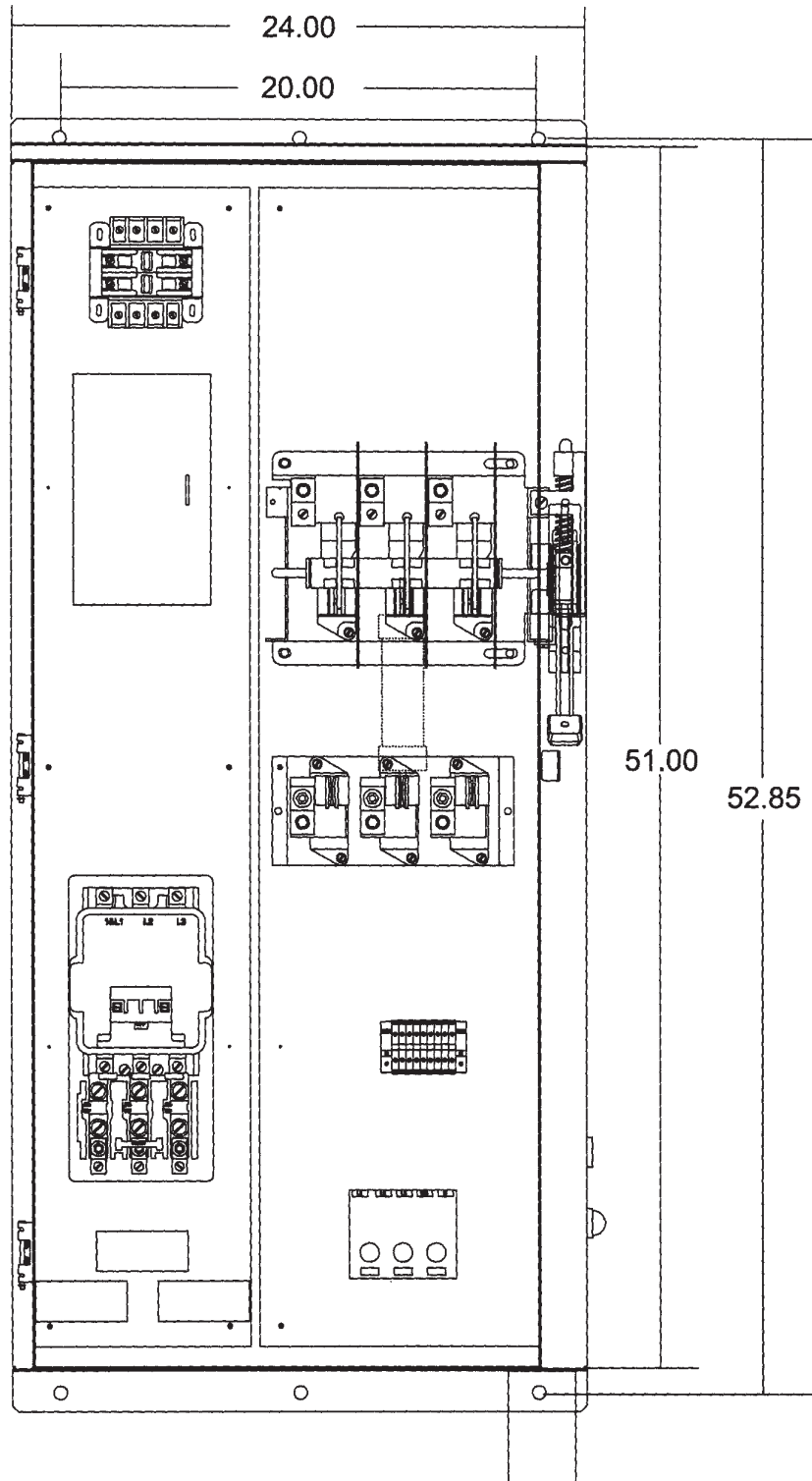
‡ The number of loops may differ from the number of conductors through the current transformers.
Always double check based on HP and FLA.



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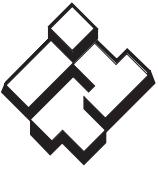
CENTRIPRO Commercial Water Systems

SCHEMATICS



SIZE 4 PUMP PANEL WITH
OPTIONS INSTALLED
TIMECLOCK, CPT WITH
FUSING, RUN PILOT LIGHT
SYMCOM PUMPSAVER,
LIGHTNING ARRESTOR.
APPROXIMATE SHIPPING
WEIGHT 150 POUNDS.

Figure 6 – Size 4 Dimensions



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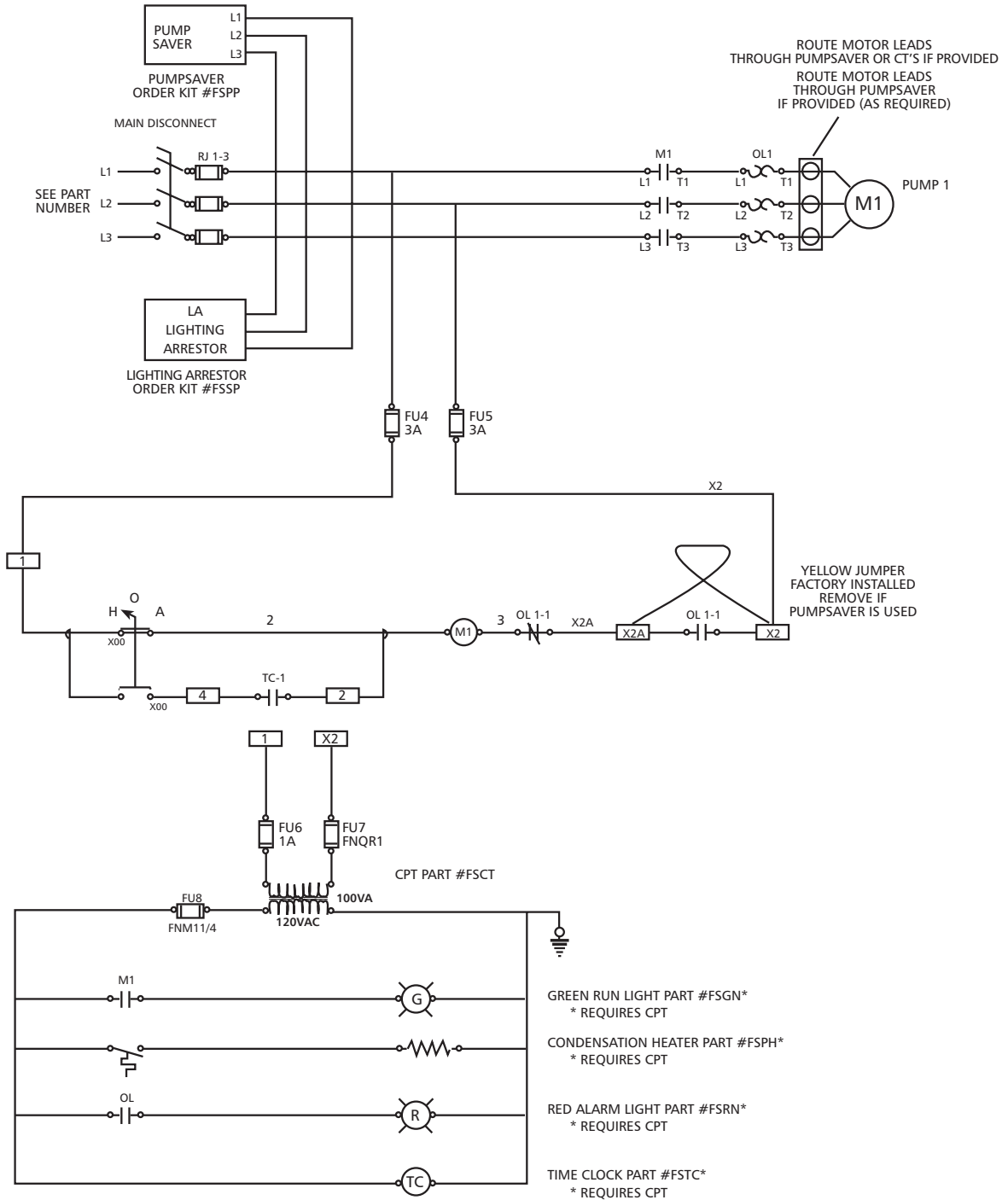


Figure 7 – Simplex Panel with Accessories Size 4 and 5



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CT Size Chart (CTs must be installed in the field for selected HP)

Size 4 480VAC

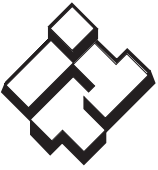
| HP | FLA | Fuse Size | CT Size | Number of Loops | Number of Conductors through A, B & C [‡] |
|--------|--------|-----------|---------|-----------------|--|
| 60 HP | 77FLA | FRSR100 | No CT | 0 | 1 |
| 75 HP | 96FLA | FRSR150 | 100:5 | 4 | 5 |
| 100 HP | 124FLA | FRSR170 | 150:5 | 4 | 5 |

‡ The number of loops may differ from the number of conductors through the current transformers.
Always double check based on HP and FLA.

Size 4 240VAC

| HP | FLA | Fuse Size | CT Size | Number of Loops | Number of Conductors through A, B & C [‡] |
|-------|--------|-----------|---------|-----------------|--|
| 50 HP | 130FLA | FRNR200 | 150:5 | 4 | 5 |

‡ The number of loops may differ from the number of conductors through the current transformers.
Always double check based on HP and FLA.



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SCHEMATICS

SIZE 5 PUMP PANEL WITH OPTIONS INSTALLED TIMECLOCK, CPT WITH FUSING, RUN PILOT LIGHT SYMCOM PUMPSAVER, LIGHTNING ARRESTOR. APPROXIMATE SHIPPING WEIGHT 300 POUNDS.

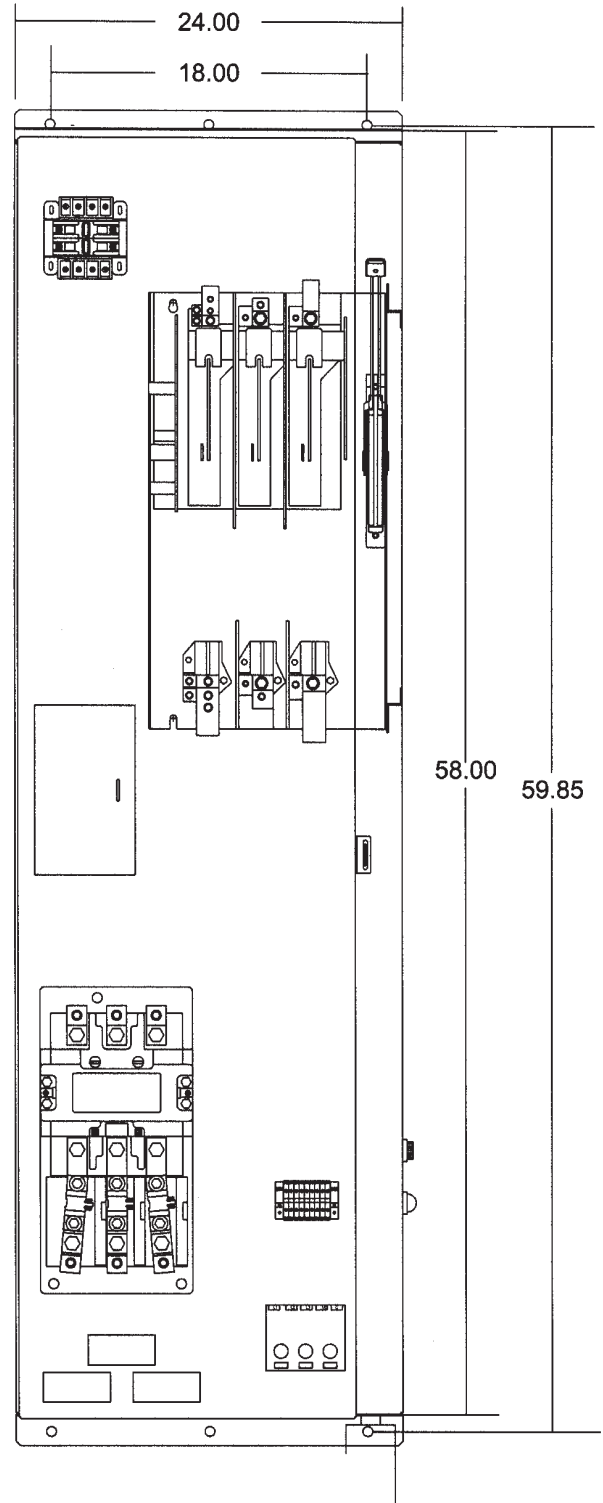
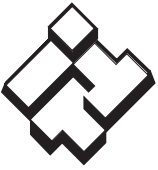


Figure 8 – Size 5 Dimensions



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CT Size Chart (CTs must be installed in the field for selected HP)

Size 5 480VAC

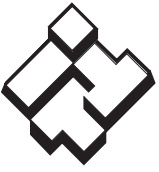
| HP | FLA | Fuse Size | CT Size | Number of Loops | Number of Conductors through A, B & C [‡] |
|--------|--------|-----------|---------|-----------------|--|
| 125 HP | 156FLA | FRSR200 | 150:5 | 4 | 5 |
| 150 HP | 180FLA | FRSR250 | 200:5 | 4 | 5 |
| 200 HP | 240FLA | FRSR350 | 300:5 | 4 | 5 |

‡ The number of loops may differ from the number of conductors through the current transformers.
Always double check based on HP and FLA.

Size 5 240VAC

| HP | FLA | Fuse Size | CT Size | Number of Loops | Number of Conductors through A, B & C [‡] |
|--------|--------|-----------|---------|-----------------|--|
| 75 HP | 193FLA | FRNR300 | 200:5 | 4 | 5 |
| 100 HP | 248FLA | FRNR350 | 300:5 | 4 | 5 |

‡ The number of loops may differ from the number of conductors through the current transformers.
Always double check based on HP and FLA.



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RECOMMENDED SPARE PARTS FOR FIVE YEARS OF OPERATION

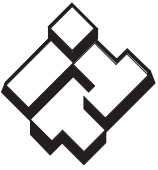
- A set of spare main and control voltage fuses.
- A set of replacement contactors for the starter.



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NOTES



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Commercial Water Systems

CENTRIPRO LIMITED WARRANTY

This warranty applies to all water systems pumps manufactured by CentriPro.

Any part or parts found to be defective within the warranty period shall be replaced at no charge to the dealer during the warranty period. The warranty period shall exist for a period of twenty-four (24) months from date of installation or thirty (30) months from date of manufacture, whichever period is shorter.

A dealer who believes that a warranty claim exists must contact the authorized CentriPro distributor from whom the pump was purchased and furnish complete details regarding the claim. The distributor is authorized to adjust any warranty claims utilizing the CentriPro Customer Service Department.

The warranty excludes:

- (a) Labor, transportation and related costs incurred by the dealer;
- (b) Reinstallation costs of repaired equipment;
- (c) Reinstallation costs of replacement equipment;
- (d) Consequential damages of any kind; and,
- (e) Reimbursement for loss caused by interruption of service.

For purposes of this warranty, the following terms have these definitions:

- (1) "Distributor" means any individual, partnership, corporation, association, or other legal relationship that stands between CentriPro and the dealer in purchases, consignments or contracts for sale of the subject pumps.
- (2) "Dealer" means any individual, partnership, corporation, association, or other legal relationship which engages in the business of selling or leasing pumps to customers.
- (3) "Customer" means any entity who buys or leases the subject pumps from a dealer. The "customer" may mean an individual, partnership, corporation, limited liability company, association or other legal entity which may engage in any type of business.

THIS WARRANTY EXTENDS TO THE DEALER ONLY.



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SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

IM192R00 August, 2006

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