GENERAC®

POWER SYSTEMS, INC.

Owner's Manual

GTS "Wn" Type

Automatic Transfer Switch

100 thru 2600 Amp, 600 Volts

This manual should remain with the unit.

Read the following information carefully before attempting to install, operate or service this equipment. Also read the instructions and information on tags, decals, and labels that may be affixed to the transfer switch. Replace any decal or label that is no longer legible.

DANGER! Connection of a generator to an electrical system normally supplied by an electric utility shall be by means of suitable transfer equipment so as to isolate the electric system from utility distribution system when the generator is operating (Article 701 Legally Required Standby Systems or Article 702 Optional Standby Systems, as applicable). Failure to isolate electric system by these means may result in damage to generator and may result in injury or death to utility workers due to backfeed of electrical energy.

Generac cannot possibly anticipate every possible circumstance that might involve a hazard. The warnings in this manual, and on tags and decals affixed to the unit are, therefore, not all-inclusive. If a procedure, work method or operating technique is used that Generac does not specifically recommend, you must satisfy yourself that it is safe for you and others. Also, make sure the procedure, work method or operating technique choosen does not render the transfer switch unsafe.

Throughout this publication, and on tags and decals affixed to the generator, DANGER, WARNING, CAUTION and NOTE blocks are used to alert the user of special instruction about a particular operation that may be hazardous if performed incorrectly or carelessly. Observe them carefully. Their definitions are as follows:

DANGER

After this heading, are instructions that, if not strictly complied with, will result in personal injury or property damage.

WARNING

After this heading, are instructions that, if not strictly complied with, may result in personal injury or property damage.

CAUTION

After this heading, are instructions that, if not strictly complied with, could result in damage to equipment and/or property.

NOTE:

After this heading, are explanatory statements that require special emphasis.

These safety warnings cannot eliminate the hazards that they indicate. Common sense and strict compliance with the special instructions while performing the service are essential to preventing accidents.

Four commonly used safety symbols accompany the DANGER, WARNING and CAUTION blocks. The type of information each indicates follows:

This symbol points out important safety information that, if not followed, could endanger personal safety and/or property.

This symbol points out potential explosion hazard.

This symbol points out potential fire hazard.

This symbol points out potential electrical shock hazard.

GENERAL HAZARDS

- Any AC generator that is used for backup power if a NORMAL (utility) power source failure occurs, must be isolated from the NORMAL (utility) power source by means of an approved transfer switch. Failure to properly isolate the NORMAL and STANDBY power sources from each other may result in injury or death to electric utility workers, due to backfeed of electrical energy.
- Improper or unauthorized installation, operation, service or repair of the equipment is extremely dangerous and may result in death, serious personal injury, or damage to equipment and/or personal property.
- Extremely high and dangerous power voltages are present inside an installed transfer switch. Any contact with high voltage terminals, contacts or wires will result in extremely hazardous, and possibly LETHAL, electric shock. DO NOT WORK ON THE TRANSFER SWITCH UNTIL ALL POWER VOLTAGE SUPPLIES TO THE SWITCH HAVE BEEN POSITIVELY TURNED OFF.
- Competent, qualified personnel should install, operate and service this equipment. Adhere strictly to local, state and national electrical and building codes. When using this equipment, comply with regulations the National Electrical Code (NEC), CSA Standard; C22.1 Canadian Electric Code and Occupational Safety and Health Administration (OSHA) have established.
- Never handle any kind of electrical device while standing in water, while barefoot, or while hands or feet are wet. DANGEROUS ELECTRICAL SHOCK MAY RESULT.

- Remove all jewelry (such as rings, watches, bracelets, etc.) before working on this equipment.
- If work must be done on this equipment while standing on metal or concrete, place insulative mats over a dry wood platform. Work on this equipment only while standing on such insulative mats.
- Never work on this equipment while physically or mentally fatigued.
- Keep the transfer switch enclosure door closed and bolted at all times. Only qualified personnel should be permitted access to the switch interior.
- In case of an accident caused by electric shock, immediately shut down the source of electrical power. If this is not possible, attempt to free the victim from the live conductor but AVOID DIRECT CONTACT WITH THE VICTIM. Use a nonconducting implement, such as a rope or board, to free the victim from the live conductor. If the victim is unconscious, apply first aid and get immediate medical help.
- When an automatic transfer switch is installed for a standby generator set, the generator engine may crank and start at any time without warning. To avoid possible injury that might be caused by such sudden start-ups, the system's automatic start circuit must be disabled before working on or around the generator or transfer switch. For that purpose, a MAINTENANCE DISCONNECT is provided inside the transfer switch. Always set the switch to its MANUAL position before working on the equipment. Then place a "DO NOT OPERATE" tag on the transfer switch and on the generator.

1.1 INTRODUCTION

This manual has been prepared especially for the purpose of familiarizing personnel with the design, application, installation, operation and servicing of the applicable equipment. Read the manual carefully and comply with all instructions. This will help to prevent accidents or damage to equipment that might otherwise be caused by carelessness, incorrect application, or improper procedures.

Every effort has been expended to make sure that the contents of this manual are both accurate and current. Generac, however, reserves the right to change, alter or otherwise improve the product at any time without prior notice.

1.2 EQUIPMENT DESCRIPTION

The automatic transfer switch is used for transferring critical electrical load from a NORMAL (utility) power source to a STANDBY (emergency generator) power source. Such a transfer of electrical loads occurs automatically when the NORMAL power source has failed or is substantially reduced and the STANDBY source voltage and frequency have reached an acceptable level. The transfer switch prevents electrical feedback between two different power sources (such as the NORMAL and STANDBY sources) and, for that reason, codes require it in all standby electric system installations.

The transfer switch consists of a solid state intelligence circuit which consists of a utility voltage sensing PCB, an inphase monitor, a seven day exerciser, a transfer mechanism and a control panel.

1.3 TRANSFER SWITCH DATA PLATE

A DATA PLATE is permanently affixed to the transfer switch enclosure. Use this transfer switch only with the specific limits shown on the DATA PLATE and on other decals and labels that may be affixed to the switch. This will prevent damage to equipment and property.

When requesting information or ordering parts for this equipment, make sure to include all information from the DATA PLATE.

Record the Model and Serial numbers in the space provided below for future reference.

MODEL #

SERIAL #

1.4 TRANSFER SWITCH ENCLOSURE

The standard switch enclosure is a National Electrical Manufacturer's Association (NEMA) 1 type. NEMA 1 type enclosures (indoor installation only) primarily provide protection against contact with the enclosed equipment and against a limited amount of falling dirt.

1.5 SAFE USE OF TRANSFER SWITCH

Before installing, operating or servicing this equipment, read the SAFETY RULES (inside front cover) carefully. Comply strictly with all SAFETY RULES to prevent accidents and/or damage to the equipment. Generac recommends that a copy of the SAFETY RULES is make and posted near the transfer switch. Also, be sure to read all instructions and information on tags, labels and decals affixed to the equipment.

Two publications that outline the safe use of transfer switches are the following:

- National Electrical Code
- UL 1008, STANDARD FOR SAFETY-AUTOMATIC TRANSFER SWITCHES

2.1 INTRODUCTION TO INSTALLATION

This equipment has been wired and tested at the factory. Installing the switch includes the following procedures:

- Mounting the enclosure.
- Connecting power source and load leads.
- Connecting the generator start circuit.
- Installing/connecting any options and accessories.
- Functional tests and adjustments.

2.2 UNPACKING

Carefully unpack the transfer switch. Inspect closely for any damage that might have occurred during shipment. The purchaser must file with the carrier any claims for loss or damage incurred while in transit.

Check that all packing material is completely removed from the switch prior to installation.

Attach any lifting device to the transfer switch mounting holes or brackets only. DO NOT LIFT THE SWITCH AT ANY OTHER POINT.

2.3 MOUNTING

Mounting dimensions for the transfer switch enclosure are in this manual. Enclosures are typically wall-mounted. Components are generally mounted in a standard NEMA 1-type enclosure. A NEMA 12, 3R, 4 & 4X are also available. See TRANSFER SWITCH OPTIONS, Section 3.15.

⚠ CAUTION ⚠

⚠ Handle transfer switches carefully when installing. Do not drop the switch. Protect the switch against impact at all times, and against construction grit and metal chips. Never install a transfer switch that has been damaged.

Install the transfer switch as close as possible to the electrical loads that are to be connected to it. Mount the switch vertically to a rigid supporting structure. To prevent switch distortion, level all mounting points. If necessary, use washers behind mounting holes to level the unit.

2.4 CONNECTING POWER SOURCE AND LOAD LINES

⚠ DANGER ⚠

⚠ Make sure to turn OFF both the normal (Utility) and standby (generator) power supplies before trying to connect power source and load lines to the transfer switch. Supply voltages are extremely high and dangerous. Contact with such high voltage power supply lines causes extremely hazardous, possibly lethal, electrical shock.

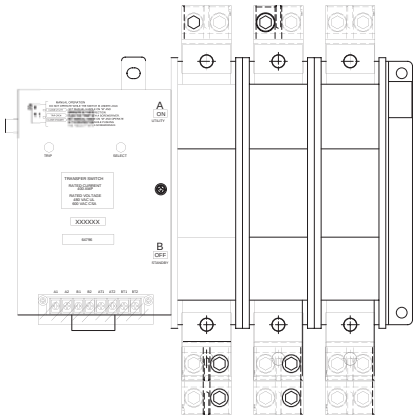
Wiring diagrams and electrical schematics are provided in this manual. Power source and load connections are made at a transfer mechanism, inside the switch enclosure.

◆ 2.4.1 TRANSFER MECHANISMS

The transfer mechanism may be either a 2-pole, 3-pole, or 4-pole type (Figure 2.1). The switch enclosure may include a NEUTRAL BLOCK for connection of the NEUTRAL line. Connect power source and load leads to transfer mechanism terminal lugs as follows:

- LOAD Leads: Connect to terminals T1, T2, T3, etc.
- NORMAL (utility) Source Leads: To terminals N1, N2, N3, etc.
- STANDBY (emergency) Source Leads: Connect to transfer mechanism terminal lugs E1, E2, E3, etc.

Figure 2.1 — Transfer Mechanism



NOTE:

Unless otherwise specified, a NEUTRAL block is not supplied with the transfer switch on single phase, 3-pole units where the NEUTRAL line is to be switched during transfer action. Similarly, a NEUTRAL block is not supplied on 3-phase, 4-pole units where the NEUTRAL line is to be switched during transfer.

Solderless, screw-type terminal lugs are standard. Conductor sizes must be adequate to handle the maximum current to which they will be subjected. The installation must comply fully with all applicable codes, standards and regulations.

Before connecting wiring cables to terminals, remove any surface oxides from the cable ends with wire brush. If ALUMINUM conductors are used, apply joint compound. Tighten terminal lugs to the torque values on page 4.

All power cables should enter the switch next to transfer mechanism terminals. Standard terminal lugs on the transfer mechanism are solderless, screw-type.

SWITCH RATING	WIRE SIZE	TORQUE RATING
100 AMP	2/0-#3	50 INCH-LBS
100 AMP	#4	45 INCH-LBS
200/300 AMP	350MCM-#1	375 INCH-LBS
400 AMP	250MCM-#6	375 INCH-LBS
600 AMP	500MCM-1/O	375 INCH-LBS
800/1000 AMP	500MCM-1/O	375 INCH-LBS
1200/1600 AMP	750MCM-1/O	500 INCH-LBS

Be sure to maintain proper electrical clearance between live metal parts and grounded metal. Allow at least 1/2 inch for 100-400 amp circuit; at least 1 inch for circuits over 400 amps.

2.5 CONNECTING START CIRCUIT WIRES

Connect suitable, approved wiring to transfer switch terminals 178 and 183 (see chart below). Route these wires through suitable, approved conduit (separate from AC conduit) and connect to identically numbered terminals in the AC connection (lower) panel of Generac power systems (engine-generator set). See Figure 2.2.

Closure of Wire 178/183 circuit by switch circuit action must result in generator engine cranking and startup.

NOTE:

The preceding applies to the standard 2-WIRE START SYSTEM. If a generator having a 3-WIRE START SYSTEM is to be installed, using the optional 3-wire start system. See TRANSFER SWITCH OPTIONS, Section 3.15.

Recommended wire gauge sizes for this wiring depends on the length of the wire, as recommended below:

MAXIMUM WIRE LENGTH	RECOMMENDED WIRE SIZE
460 feet (140m)	No. 18 AWG.
461 to 730 feet (223m)	No. 16 AWG.
731 to 1,160 feet (354m)	No. 14 AWG.
1,161 to 1,850 feet (565m)	No. 12 AWG.

2.6 AUXILIARY CONTACTS

There is access to Auxiliary Contacts on the transfer switch to operate customer accessories, remote advisory lights, or remote annunciator devices. For connection details, consult the relevant annunciator or control panel manual. The contacts shown as FACTORY in Figure 2.3 (page 5) are connected at the factory for operating transfer switch advisory lights. The contacts shown as auxiliary are available for customer use.

Contact operation is shown in the following chart:

	Switch Position	
	Utility	Standby
Common to Normally Open	Closed	Open
Common to Normally Closed	Open	Closed

NOTE:

Auxiliary Contacts are rated 10 amps at 125 or 250 volts AC. DO NOT EXCEED THE RATED VOLTAGE AND CURRENT OF THE CONTACTS.

Figure 2.2 — Connection Diagram - 3-Phase With Neutral Shown (Typical)

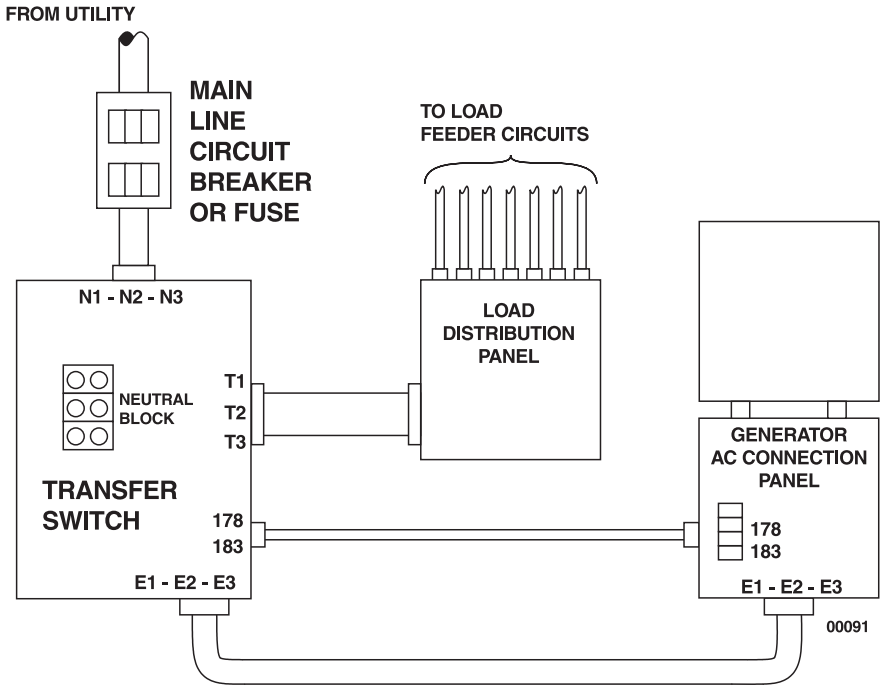
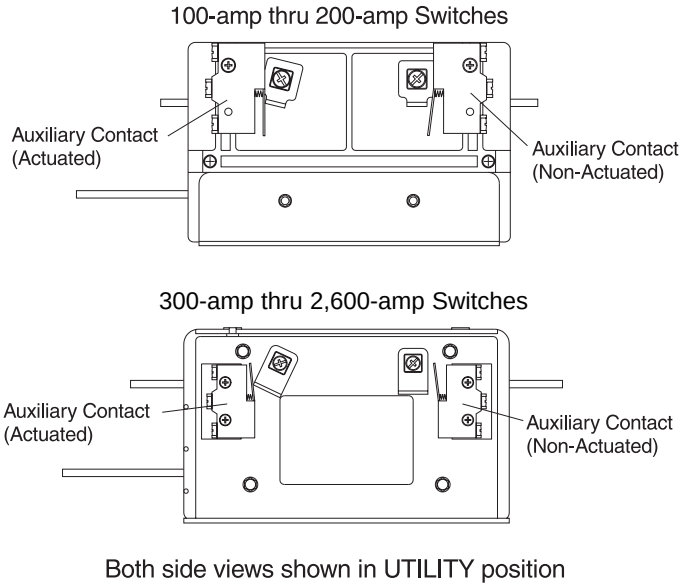
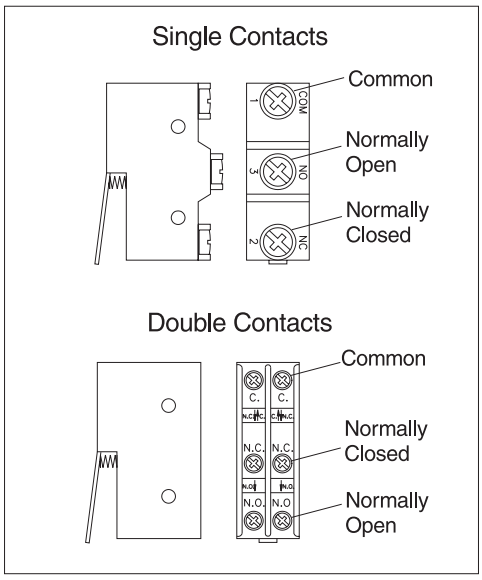


Figure 2.3 — Auxiliary Contact Diagram



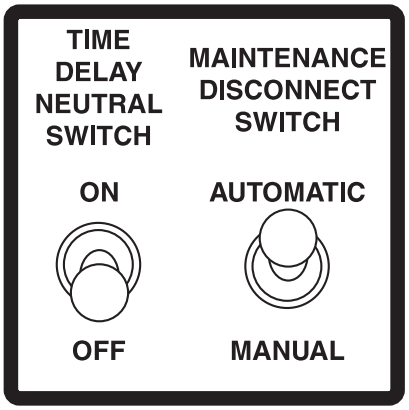


2.7 TIME DELAY NEUTRAL ON-OFF SWITCH

The Time Delay Neutral feature extends the time that the main contacts normally disconnect. By permitting the LOAD to remain disconnected from both power sources for a fixed time setting, residual voltages generated by heavy inductive loads will decay to a safe level before reconnecting. This provides some protection against nuisances such as blown fuses or circuit breakers that otherwise might occur during a rapid transfer of motor and other heavy inductive loads (Figure 2.4).

Units with the Time Delay Neutral feature are equipped with a Time Delay On/Off switch. To eliminate the time delay at neutral during a transfer action, set the switch to OFF.

Figure 2.4 — Time Delay Neutral Switch



2.8 OPTIONAL ACCESSORIES

Note any optional accessories that may be installed on the transfer switch or are to be installed in the standby electric system in conjunction with the switch. Complete the necessary connections for these accessories.

3.1 FUNCTIONAL TESTS AND ADJUSTMENTS

Following transfer switch installation and interconnection, inspect the entire installation carefully. A competent, qualified electrician should inspect it. The installation should comply strictly with all applicable codes, standards, and regulations. When absolutely certain the installation is proper and correct, complete a functional test of the system. Perform functional tests in the exact order presented in this manual, or damage could occur to the switch.

IMPORTANT: Before proceeding with functional tests, read and make sure all instructions and information in this section are understood. Also read the information and instructions of labels and decals affixed to the switch. Note any options or accessories that might be installed and review their operation.

3.2 MANUAL OPERATION

DANGER

Do NOT manually transfer under load. disconnect transfer switch from all power sources by approved means, such as a main circuit breaker(s).

A manual HANDLE is shipped with the transfer switch. Manual operation must be checked BEFORE the transfer switch is operated electrically. To check manual operation, proceed as follows (Figure 3.1):

1. In the transfer switch enclosure, set the Maintenance Disconnect switch to MANUAL. This prevents the generator from starting automatically as soon as you turn OFF the UTILITY power source.
2. If so equipped, turn the generator's Manual-Off-Auto switch to OFF.
3. Turn OFF both NORMAL and STANDBY power supplies to the transfer switch, with whatever means provided (such as the main line circuit breakers).
4. Note position of transfer mechanism main contacts by observing display windows in "A" and "B" in Figure 3.1 as follows:
   - Window "A" ON, Window "B" OFF - LOAD terminals (T1, T2, T3) are connected to NORMAL terminals (N1, N2, N3).
   - Window "A" OFF, Window "B" ON - LOAD terminals (T1, T2, T3) are connected to STANDBY terminals (E1, E2, E3).

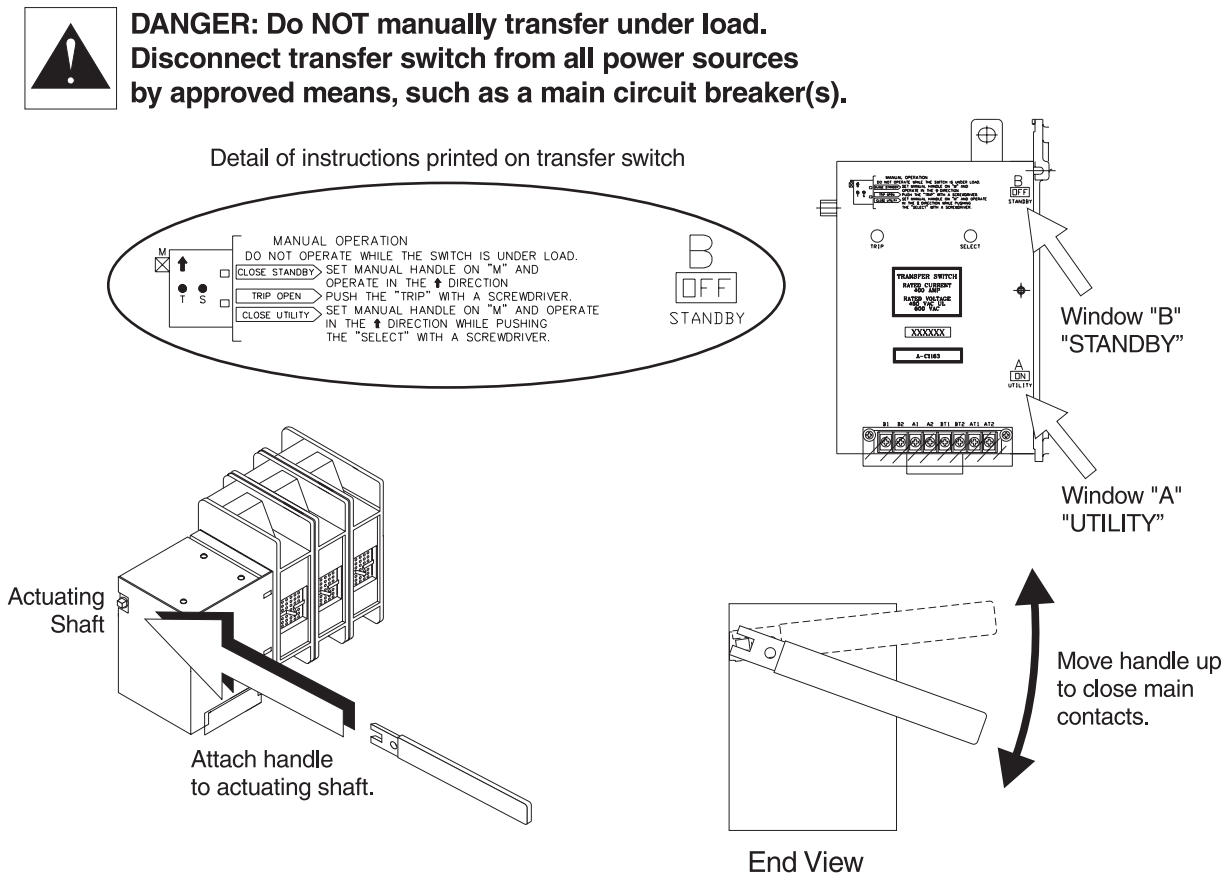
CAUTION

Do not use excessive force when operating the transfer switch manually or you could damage the manual handle.

◆ 3.2.1 TRIP TO NEUTRAL POSITION

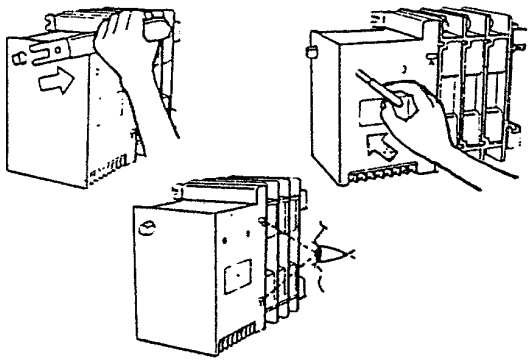
Remove handle from the square lug at the upper left corner of the switch. Insert a screwdriver into the "T" hole and push inward. The main contact should trip to the neutral position and the word OFF should appear in both windows "A" and "B". See Figure 3.2.

Figure 3.1 — Actuating Transfer Switch



NOTE: Return handle to storage location in enclosure when finished with manual transfer.

Figure 3.2 — Trip to Neutral



Disconnect manual handle from square shaft. Insert screwdriver into Hole "T" and push in. Confirm "trip" by word "OFF" in both windows "A" and "B".

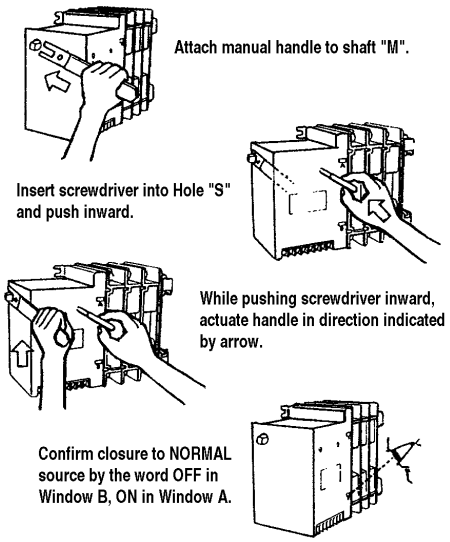
◆ 3.2.2 CLOSE TO NORMAL SOURCE SIDE

Before proceeding, verify the position of the switch by observing window "A" and window "B". If window "A" displays ON the ATS is closed in the UTILITY position, with the LOAD connected to the NORMAL source. It is not necessary to manually close in the UTILITY position. See Figure 3.3.

If window "A" reads OFF and window "B" reads ON it will be necessary to trip the ATS to the neutral position. See section 3.2.1.

With handle attached to the actuating shaft. Insert screwdriver into hole marked "S". While pushing inward on screwdriver, move manual handle upward as indicated by arrow in illustration until it stops. DO NOT FORCE. Confirm main contacts close to UTILITY source when window "A" is ON and window "B" is OFF. Remove handle from switch.

Figure 3.3 — Closure to Normal Source Side



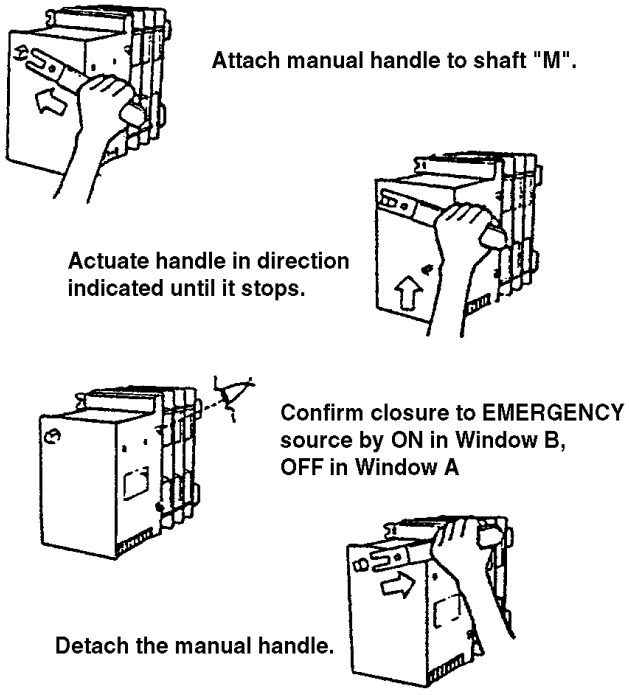
◆ 3.2.3 CLOSE TO EMERGENCY SOURCE SIDE

Before proceeding, verify the position of the switch by observing window "A" and window "B". If window "B" reads ON the ATS is closed in the STANDBY position, with the LOAD connected to the STANDBY source. It is not necessary to manually close in the STANDBY position. See Figure 3.4.

If window "B" reads OFF and window "A" reads ON it will be necessary to trip the ATS to the neutral position. See section 3.2.1.

With handle attached to the actuating shaft. Move manual handle upward as indicated by arrow in illustration until it stops. DO NOT FORCE. Confirm main contacts close to STANDBY source when window "B" is ON and window "A" is OFF. Remove handle from switch.

Figure 3.4 — Closure to Emergency Source Side



3.3 VOLTAGE CHECKS

⚠ DANGER ⚠

⚠ Disconnect all loads from the transfer switch until all voltage checks and phase rotation checks have been completed to prevent possible injury to personnel and, or damage to equipment.

⚠ For safety, set the maintenance disconnect switch (inside transfer switch enclosure) to its manual position before proceeding with voltage checks.

Before proceeding, check the transfer switch data PLATE for switch rated voltage. Make sure the data plate voltage is compatible with NORMAL and STANDBY power source voltages.

Proceed with caution. Do not touch electrically hot terminals, wires, etc. During the voltage checks, the transfer switch is electrically energized.

Perform voltage checks as follows:

1. Inside the transfer switch enclosure, set the Maintenance Disconnect switch to MANUAL.
2. If generator is so equipped, set the Manual-Off-Auto switch to OFF.
3. On the switch enclosure door, set SYSTEM TEST switch to AUTOMATIC MODE position.
4. Check that the GREEN indicator is visible in UTILITY Window "B". See MANUAL OPERATION for location of "A" and "B" windows.

IMPORTANT: DO NOT PROCEED UNTIL STEPS 1, 2, 3, AND 4 HAVE BEEN COMPLETED.

CAUTION

Before proceeding to voltage checks, manually connect the load to NORMAL power supply. Window "A" must indicate ON, Window "B" must indicate OFF before proceeding.

5. Turn ON the NORMAL (UTILITY) power supply to the transfer switch, with whatever means provided (such as the main line circuit breaker).

DANGER

The transfer switch is now electrically hot. Proceed with caution.

6. With UTILITY voltage available to the transfer switch, check that the SWITCH - POSITION UTILITY lamp on the enclosure door is ON. If the SWITCH - POSITION UTILITY lamp is OFF, turn off the utility power supply to the transfer switch by whatever means provided (such as the main line circuit breaker(s)), then proceed back to Step 1 of "VOLTAGE CHECKS".
7. Inside the transfer switch enclosure door, locate the Utility Voltage Sensor Circuit Board. The UTILITY ON light (LED) should be ON.
8. With an accurate AC voltmeter, check the phase-to-phase (line-to-line) and phase-to-neutral (line-to-neutral) voltages present at transfer mechanism terminals N1, N2, N3 and neutral. SUPPLIED VOLTAGES MUST BE FULLY COMPATIBLE WITH TRANSFER SWITCH RATED VOLTAGE.

DANGER

Ensure that the phase rotation of NORMAL (UTILITY) power lines and transfer switch load power lines are compatible.

9. Refer to the standby generator instruction manual. Make sure the generator engine has been properly serviced and prepared for use, as outlined in that manual. Then start the generator engine manually. Let the engine stabilize and warm up for a few minutes.
10. Turn ON the STANDBY (GENERATOR) power supply to the transfer switch by whatever means provided (such as the main line circuit breaker).
11. With the generator running, check that the STANDBY - OPERATING light on the switch enclosure door is ON.
12. With an accurate AC voltmeter, check phase-to phase (line-to-line) and phase-to neutral (line-to neutral) voltages present at transfer mechanism terminals E1, E2 and E3. Also check AC frequency at those terminals. If frequency is incorrect, the engine governor may require adjustment. Generator AC output voltage and frequency must be compatible with transfer switch rated voltage and frequency.

DANGER

Ensure that the phase rotation of STANDBY (GENERATOR) power lines and transfer switch NORMAL (UTILITY) and load power lines are compatible.

13. If supplied voltage or frequency is incorrect, refer to standby generator Owner's Manual. If AC frequency is incorrect, adjust engine governed speed. If voltage is incorrect, adjust generator's voltage regulator or correct the problem.
14. When supplied voltage and frequency is correct, shut down the engine manually.

DANGER

Supplied voltages from both NORMAL (UTILITY) and STANDBY (GENERATOR) power sources must be compatible with transfer switch rated voltage before proceeding.

15. Connect the transfer switch load to the transfer switch when "voltage checks" section has been completed. Connect the load to the transfer switch by whatever means provided (such as circuit breaker(s)), then proceed with the "ELECTRICAL OPERATION" section.

3.4 ELECTRICAL OPERATION

Test transfer system electrical operation as follows:

1. On the Utility Voltage Sensor circuit board, check that the UTILITY ON lamp (LED) is ON.
2. On the enclosure door, check that the Switch Position-Utility lamp is ON.

CAUTION

The UTILITY ON lamp (on circuit board) and the SWITCH POSITION-UTILITY lamp (on enclosure door) must both be ON before proceeding to Step 3.

3. Refer to the appropriate owner's manual. Be sure the standby generator is prepared for automatic operation.
4. In the switch enclosure, set the Maintenance Disconnect switch to AUTOMATIC.
5. Set the System Test switch to its NORMAL TEST MODE position. Generator startup and transfer to the STANDBY power source should occur. Refer to the SEQUENCE OF OPERATION, Section 3.13.

NOTE:

All systems are equipped with the Inphase Monitor Control board, and advisory lights on the circuit board will light up to indicate operation of the various solid state timers that control automatic operation. By observing these lights (LED's), the operator can check the automatic operating sequences and times. See SENSOR AND TIMER ADJUSTMENTS, Section 3.16. For a detailed description of the automatic operating sequences, see SEQUENCE OF OPERATION, Section 3.13.

6. When the test is complete, return the System Test Switch to its AUTOMATIC MODE position. R etransfer back to the UTILITY (NORMAL) power source. The generator should shut down according to circuit board timers.

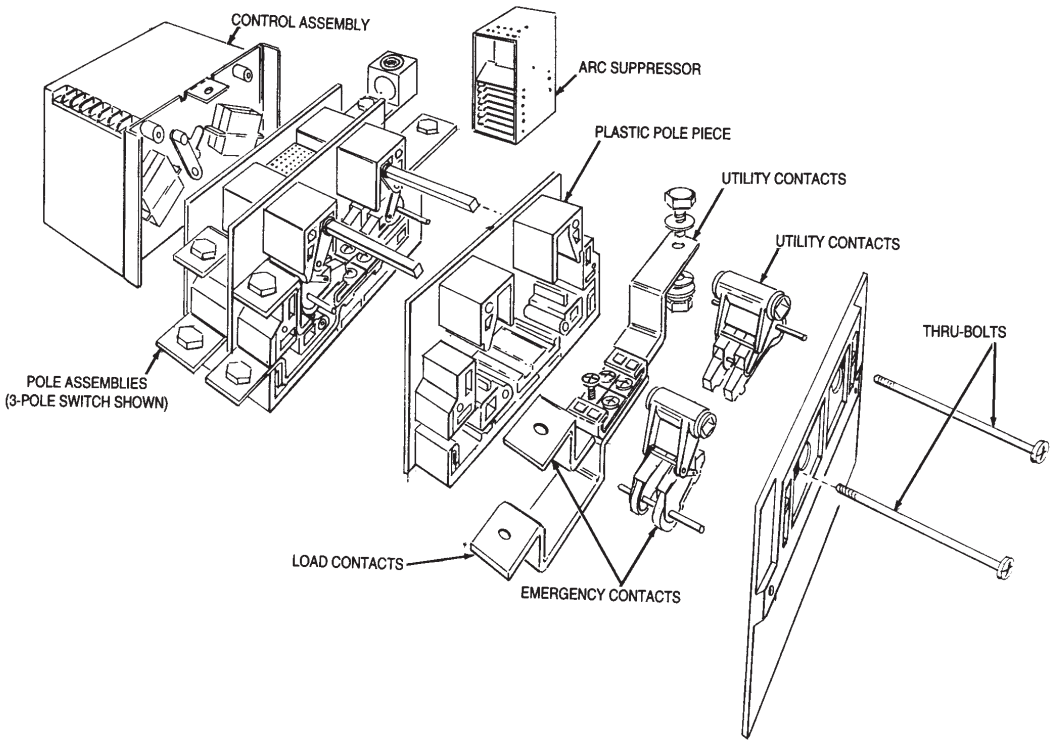
3.5 TRANSFER MECHANISM

The transfer mechanism main contacts are actuated by an electro-magnetic coil. Power for that coil's operation is taken from the side to which the LOAD is being transferred. Thus, transfer to any power source cannot occur unless that power source is available to the switch.

3.6 STATIONARY AND MOVEABLE MAIN CONTACTS

LOAD or "T" contacts, bolted to an insulated plastic pole piece are stationary. The NORMAL (UTILITY) and STANDBY (EMERGENCY) contacts are moveable (Figure 3.5). The contacts are actuated by means of a closing coil and mechanical linkage. The pole assemblies which retain the stationary and moveable main contacts are assembled together and retained by thrubolts. Either 2, 3 or 4 pole assemblies may be used to form a 2, 3 or 4-pole mechanism.

Figure 3.5 — Stationary and Moveable Main Contacts



3.7 MAIN CONTACTS OPERATION

There are three coils inside a "Wn" switch that are used in transferring power to the respective load: a trip coil, a slect coil and a closing coil. Working with these coils is a series of limit switches that allow voltage to go to the respective coil for actuation. Refer to the diagnostic repair manual 079247, section 9.6, for complete operational analysis. See Figures 3.6, 3.7 and 3.8.

Figure 3.6 — Main Contacts at Normal (Utility)

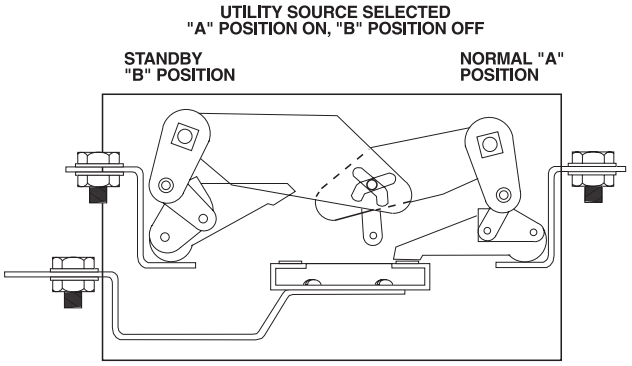


Figure 3.7 — Main Contacts at Neutral

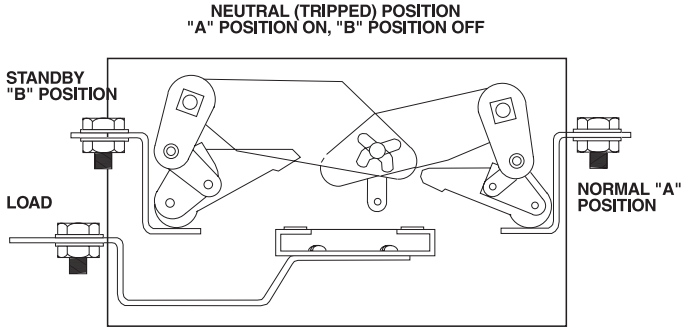
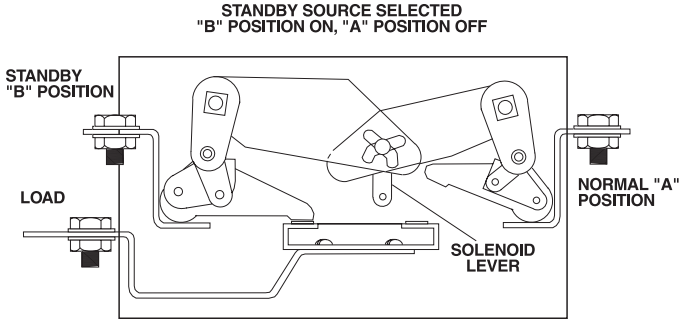


Figure 3.8 — Main Contacts at Standby (Emergency)



3.8 SWITCHES AND ADVISORY LAMPS

This section will familiarize the reader with switches and advisory lights on the transfer switch enclosure door, as well as with the Maintenance Disconnect Switch inside the switch enclosure.

Circuit board inside the switch door may also mount several switches. Operation of these switches will be covered in the section entitled SENSOR AND TIMER ADJUSTMENTS.

3.9 SYSTEM TEST SWITCH

This switch permits operator selection of AUTOMATIC, NORMAL TEST or FAST TEST mode operations (Figure 3.9).

◆ 3.9.1 AUTOMATIC MODE

Use this switch position for all normal automatic operations. With AUTOMATIC MODE selected, any NORMAL source voltage that dropped below a pre-set value will result in the automatic sequence of events listed in the chart in Section 3.13.

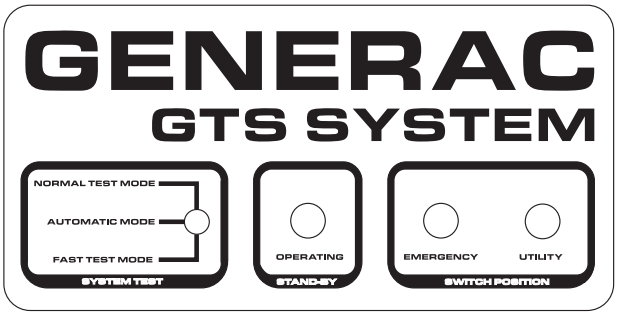
◆ 3.9.2 NORMAL TEST MODE

Permits the operator to test automatic operations, just as though an actual drop in NORMAL source voltage had occurred. See the chart in Section 3.13. During the test, observe the lights (LED's) on the transfer switch circuit board to monitor automatic operating sequences.

◆ 3.9.3 FAST TEST MODE

Permits the operator to test system operation with all circuit board timers accelerated to less than five seconds. Switch is spring-loaded back to AUTOMATIC MODE, so continuously press the FAST TEST CONTROL. Following the generator startup, loads are transferred to the EMERGENCY (STANDBY) power source as soon as EMERGENCY source voltage and frequency have reached the settings of STANDBY VOLTAGE and STANDBY FREQUENCY sensors on the inphase monitor board.

Figure 3.9 — System Test Switch, Standby Operating Light, and Switch Position Light



3.10 STANDBY-OPERATING LIGHT

This light will go ON to tell the operator that the standby generator is running and that STANDBY (emergency) source power is available to the transfer switch.

3.11 SWITCH POSITION LAMPS

◆ 3.11.1 EMERGENCY

This light will go ON when main current-carrying contacts have actuated to their STANDBY (EMERGENCY) position and that power source is available to the transfer switch.

◆ 3.11.2 UTILITY

This light will go ON when main contacts have actuated to NORMAL (utility) position and that power supply is available to the transfer switch.

The switch is equipped with the Inphase Monitor Control circuit board. The sensors and timers are adjustable (see SENSOR AND TIMER ADJUSTMENTS, Section 3.17).

3.12 SEQUENCE OF OPERATION

When acceptable NORMAL source voltage is available, observe the following:

- Utility voltage Sensor circuit board monitor's NORMAL source voltage and UTILITY ON lamp is ON.
- Switch Position - UTILITY lamp is ON.
- Transformer reduced LOAD (T) terminal voltage is delivered to the 7-day exerciser board to operate the 7-day exercise timer.

Automatic timers and sensors on the Inphase Monitor Control circuit board can be monitored by observing light emitting diodes (LED's) next to the sensor/timer adjustments.

◆ 3.12.1 SEQUENCE 1 - VOLTAGE DROPOUT

- UTILITY source voltage drops below 75-95% of the Voltage Pickup Setting (factory set to about 80%). The UTILITY ON lamp goes OFF.
- Voltage Dropout sensor is factory set to about 80% of "pickup" voltage.
- Voltage dropout below this sensor's setting triggers Sequence 2.

◆ 3.12.2 SEQUENCE 2 - LINE INTERRUPT DELAY

- UTILITY voltage dropout below setting of Voltage Dropout sensor turns on a line Interrupt Delay Timer.
- Line Interrupt Delay may be set for 0.1 to 10 seconds, (factory set to about 5 seconds).
- If voltage dropout lasts longer than Line Interrupt Delay setting, circuit board action closes the automatic start circuit (Wires 178 and 183). When that circuit closes, engine cranks and starts as controlled by a circuit board in the generator's control panel.
- Once the standby generator starts, circuit board is turned ON (go to Sequence 3).

◆ 3.12.3 SEQUENCE 3 - ENGINE MINIMUM RUN AND WARMUP TIMERS

- This timer establishes the minimum length of time for the generator to run before it shuts down. Timer prevents shutdown of a cold engine.
- Timer is adjustable from five to 30 minutes, (factory setting is about 20 minutes).
- An engine warmup timer is also turned ON. This timer permits engine to stabilize and warm up before loads are transferred to STANDBY. Timer is adjustable from five seconds to three minutes. (factory setting is about one minute).

◆ 3.12.4 SEQUENCE 4 - STANDBY VOLTAGE AND FREQUENCY SENSORS

- If generator AC output voltage and frequency is above the setting of these sensors, loads transfer to the STANDBY power source.
- Adjust Standby Voltage Sensor between 75% and 95% or nominal supply frequency, (factory setting is about 90%).
- Adjust Standby Frequency Sensor between 80% and 90% or nominal supply frequency; factory setting is about 90%.

NOTE:

You can bypass the engine warmup timers by setting the Engine Warmup Timer Bypass switch to ON. Loads are transferred to STANDBY as soon as generator AC voltage and frequency have reached the settings of the Voltage and Frequency sensors without having to wait for the engine to warm up.

◆ 3.12.5 SEQUENCE 5 - VOLTAGE PICKUP

- If the UTILITY source voltage is restored above the setting of the Voltage Pickup sensor, Sequence 5 begins.
- Adjust Voltage Pickup between 85% to 95% of the normal supply voltage from the UTILITY source, (factory setting is about 90%).

◆ 3.12.6 SEQUENCE 6 - RETURN TO UTILITY TIMER

- This timer prevents retransfer that a Utility Source voltage surge or transient might cause.
- Adjust timer between one to 30 minutes, (factory setting is about five minutes).

- If UTILITY voltage remains above the setting of the Voltage Pickup Sensor for the time interval of the Return to Utility Timer setting, loads are re-transferred back to the UTILITY source.

◆ 3.12.7 SEQUENCE 7 - ENGINE COOL DOWN TIMER

- After the switch retransfers loads back to UTILITY, this timer starts. When the interval has "timed out", the automatic start circuit (Wires 178/183) is opened, and the engine shuts down.
- Timer permits engine to run at noload for a fixed time, so the engine internal temperature can stabilize before shutting down.
- Adjust timer between one to 30 minutes, factory setting is about 10 minutes).

NOTE:

Actual time between retransfer back to UTILITY and engine shutdown is whichever is longer of the Engine Cool Down timer setting or any time remaining on Engine Minimum run timer.

After the switch automatically retransferred loads back to the UTILITY power source and generator has shut down, the system is "armed" for Sequence 1 again.

3.13 SEQUENCE OF OPERATION SETTINGS

◆ 3.13.1 UNITS WITH INPHASE MONITOR CONTROL CIRCUIT BOARD

SEQUENCE	ACTION	TIMER/SENSOR	ADJUST RANGE	FACTORY SETTING
—*	UTILITY voltage available - no action	Voltage Dropout Sensor	75 - 95%	80%
A*	UTILITY voltage drops out	Voltage Dropout Sensor	75 - 95%	80%
B	Line Interrupt Delay Timer Starts	Line Interrupt Delay Timer	0.1 - 10 seconds	5 seconds
C	Line Interrupt Delay Timer Stops	Line Interrupt Delay Timer	0.1 - 10 seconds	5 seconds
—	Engine cranks and starts			
D	Engine Minimum Run Timer starts	Engine Minimum Run Timer	5 to 30 minutes	20 minutes
E**	Engine Warmup Timer Starts	Engine Warmup Timer	5 sec. - 3 min.	1 minute
F	STANDBY ON lamp ON			
G**	Engine Warmup Timer stops	Engine Warmup Timer	5 sec. - 3 min.	1 minute
H	Is STANDBY voltage good?	Standby Voltage Sensor	75 - 95%	90%
J	Is STANDBY frequency good?	Standby Frequency Sensor	80 - 90%	90%
K	Time Delay at NEUTRAL	Time Delay Neutral Timer	0.1 - 10 seconds	5 seconds
L	Inphase Transfer	Inphase Transfer Select	None	
—	Transfer to STANDBY			
M	TRANSFER TO STANDBY lamp ON			
—	STANDBY source powers LOAD			
N	UTILITY voltage restored	Voltage Pickup Sensor	85 - 95%	90%
O	Return to UTILITY Timer ON	Return to Utility Timer	1 - 30 minutes	5 minutes
P	Time Delay at NEUTRAL	Time Delay Neutral Timer	0.1 - 10 seconds	5 seconds
R	Inphase Transfer	Inphase Transfer Select	none	0.1 - 30 seconds
S	Signal Before Transfer LED lights	Signal Before Transfer Timer	1 - 30 seconds	10 seconds
—	Retransfer to UTILITY source			
T***	Engine Cooldown Timer starts	Engine Cooldown Timer	1 - 30 minutes	10 minutes
U***	Engine Cooldown Timer stops	Engine Cooldown Timer	1 - 30 minutes	10 minutes
—	Engine shuts down			
—	UTILITY voltage available - no action			

* 75 - 95% of the Voltage Pickup Sensor setting

** Engine Warmup Timer can be bypassed. See SENSOR AND TIMER ADJUSTMENTS

*** Following re-transfer to UTILITY source, engine shutdown will not occur until both Engine Minimum run and Engine Cooldown timers have timed out.

3.13.2 UNITS WITH SYSTEM CENTRAL CONTROL (CPU) CIRCUIT BOARD

SEQUENCE	ACTION	TIMER/SENSOR	ADJUST RANGE	FACTORY SETTING
—	UTILITY voltage available - no action	Voltage Dropout Sensor	75 - 95%	80%
A	UTILITY voltage drops out	Voltage Dropout Sensor	75 - 95%	80%
B	Line Interrupt Delay Timer Starts	Line Interrupt Delay Timer	0.1 - 10 seconds	5 seconds
C	Line Interrupt Delay Timer Stops	Line Interrupt Delay Timer	0.1 - 10 seconds	5 seconds
—	Engine cranks and starts			
D	Engine Minimum Run Timer starts	Engine Minimum Run Timer	Fixed	10 minutes
E**	Engine Warmup Timer Starts	Engine Warmup Timer	Fixed	30 seconds
F	STANDBY ON lamp ON			
G**	Engine Warmup Timer stops	Engine Warmup Timer	Fixed	30 seconds
H	Is STANDBY voltage good?	Standby Voltage Sensor	Fixed	80%
J	Is STANDBY frequency good?	Standby Frequency Sensor	Fixed	80%
K***	Time Delay at NEUTRAL	Time Delay Neutral Timer	Fixed	5 seconds
—	Transfer to STANDBY			
L	TRANSFER TO STANDBY lamp ON			
—	STANDBY source powers LOAD			
M	UTILITY voltage restored	Voltage Pickup Sensor	85 - 95%	90%
N	Return to UTILITY Timer ON	Return to Utility Timer	Fixed	30 seconds
P***	Time Delay at NEUTRAL	Time Delay Neutral Timer	Fixed	5 seconds
—	Retransfer to UTILITY source			
R****	Engine Cooldown Timer starts	Engine Cooldown Timer	Fixed	10 minutes
S****	Engine Cooldown Timer stops	Engine Cooldown Timer	Fixed	10 minutes
—	Engine shuts down			
—	UTILITY voltage available - no action			

* 75 - 95% of the Voltage Pickup Sensor setting
** Engine Warmup Timer can be bypassed. See SENSOR AND TIMER ADJUSTMENTS
*** Following re-transfer to UTILITY source, engine shutdown will not occur until both Engine Minimum run and Engine Cooldown timers have timed out.

3.14 TRANSFER SWITCH OPTIONS

The transfer switch may be equipped with one or more of the following options:

- 3-wire Start System
- Instrument Package
- System Central Control (CPU) Circuit Board
- Deluxe Exerciser Circuit Board
- NEMA 3R, 4, 4X, or 12 Enclosure

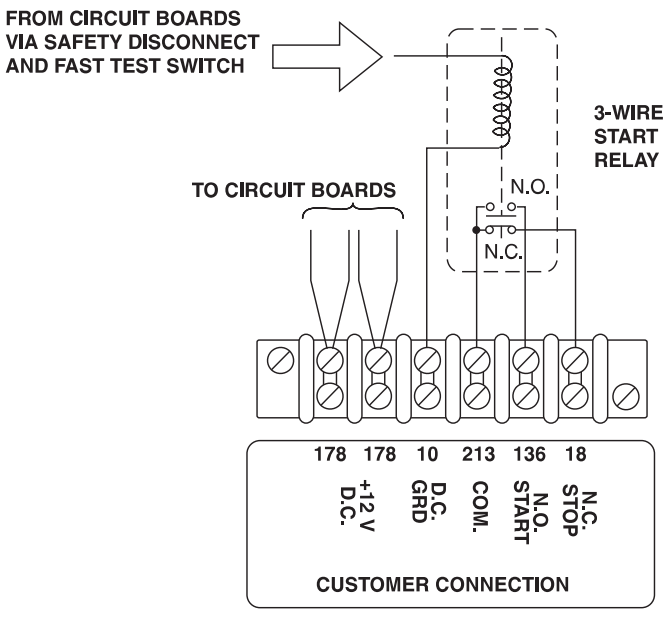
◆ 3.14.1 3-WIRE START SYSTEM

The standard generator start circuit on Generac transfer switches is a "2-wire" type. If the standby generator being installed has a "3-wire" start/stop system, a transfer switch with a 3-wire system may be needed.

The optional 3-wire start system includes a 6-point terminal strip, a control relay, terminal strip decal and required wiring (Figure 3.10). These components are shown in the REPAIR PARTS section. Terminal strip connections are shown below:

- Terminal 178 - + 12 volts DC supply. On Generac generators, connect to generator Terminal #15.
- Terminal 10 - Common ground. Connect to negative (-) side of the DC supply circuit (to Terminal #10 on Generac generators).
- Terminal 213 - Acts as the COMMON terminal for the normally-open (N.O.) START and the normally-closed (N.C.) STOP relay contacts.
- Terminal 136 - N.O. START terminal. On Generac generators, connect to generator Terminal #136.
- Terminal 18 - N.C. STOP terminal. On Generac generators, connect to generator Terminal #18.

Figure 3.10 — 3-Wire Start System



◆ 3.14.2 INSTRUMENT PACKAGE

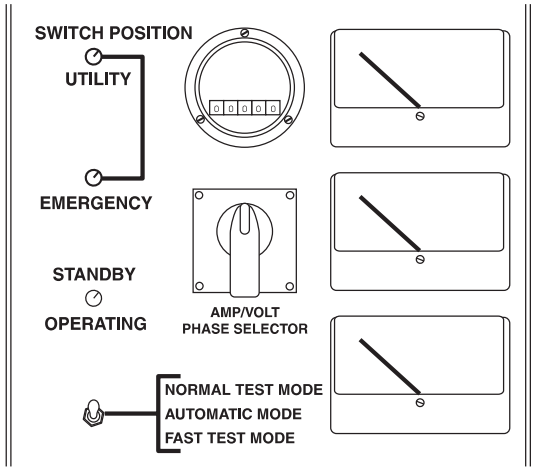
The optional instrument package includes (a) an AC voltmeter, (b) an AC ammeter, (c) an AC frequency meter, (d) an hourmeter, and (e) a phase selector switch (Figure 3.11). Current transformers are required to operate the instrument package, i.e., two for single phase systems, three for three-phase systems. Use the phase selector switch to select the single-phase voltage and current being read as follows:

SWITCH OPERATION	CURRENT READING	VOLTAGE READING
1	Line 1	Line 1 to Neutral
2	Line 2	Line 2 to Neutral
3	No reading	Line 1 to Line 2
OFF	No reading	No reading

For three-phase systems use the switch as follows:

SWITCH OPERATION	CURRENT READING	VOLTAGE READING
1	Phase A	Phase A to Phase B
2	Phase B	Phase B to Phase C
3	Phase C	Phase C to Phase A
OFF	No reading	No reading

Figure 3.11 — Instrument Package



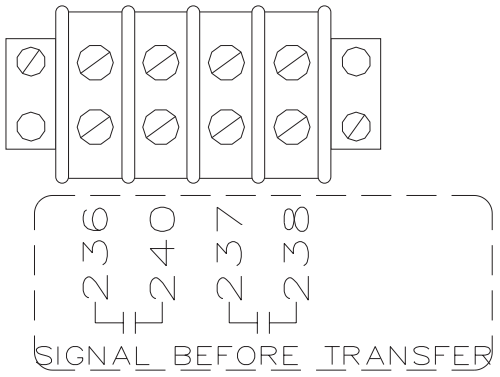
◆ 3.14.3 SIGNAL BEFORE TRANSFER

The signal before transfer option includes a signal relay, customer connection terminal strip and the associated wiring. See Figure 3.12.

The logic for this option is a part of the GTS Controller PCB. The option is active when the Signal Before Transfer switch is ON. The delay time is adjustable from 1 to 30 seconds.

The basic operation of the option is to delay (for the period of time set on timer) the transfer of the GTS mechanism while a signal relay (SR) is energized. When the relay is energized, 2 sets of the dry contacts (wire nos. 236-240 and 237-238) are closed. These dry contacts can be connected to, via a terminal strip located on the bottom of the subplate. Reference wiring diagram for further details. The customer connections are made on terminal strip TS4.

Figure 3.12 — Signal Before Transfer



NOTE:

This delay is not active on a Normal source failure. Transfer during Normal source failure is immediate.

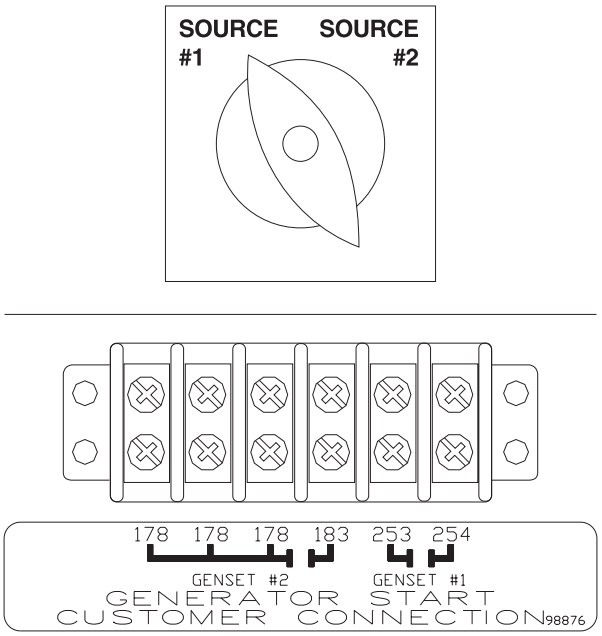
◆ 3.14.4 REMOTE AUTO CONTROL

The Remote Auto Control option includes a customer connection terminal strip and the associated wiring (Figure 3.13).

This option allows for remote starting of the generator and transfer of the GTS to connect the LOAD to the EMERGENCY source. This is done by paralleling the Fast Test switch. A description of the Fast Test Mode function can be found in Section 3.9.3 on page 10.

Reference wiring diagram for further details. The customer connections are made on TS3. The associated wire numbers are 0, 177, 178 and 201.

Figure 3.13 — Remote Auto Control



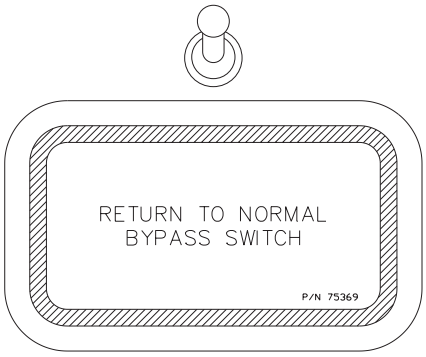
◆ 3.14.5 MANUAL BYPASS FOR RETURN TO NORMAL

The Manual Bypass for Return to Normal option includes a door mounted toggle switch and associated wiring (Figure 3.14).

This option will override the Return to Utility timer on the GTS Controller PCB. When the toggle switch is activated (pushed down), and the Return to Utility timer is active, the remaining time on the timer will be cleared. Once the timer is cleared the GTS mechanism will transfer and the LOAD will be connected to the UTILITY source.

If the toggle switch is not activated, the Return to Utility timer will function as normal. The retransfer of the GTS will be delayed until it times out.

Figure 3.14 — Manual Bypass for Return to Normal



◆ 3.14.6 PREFERRED SOURCE SELECTOR SWITCH

The Preferred Source Selector Switch option includes a door mounted rotary 2-position selector switch, customer connection terminal strip and associated wiring (Figure 3.9).

This option is normally used when there is not a UTILITY supply present and both sources are a generator. It may be used when it is desirable for either source of power to serve as the preferred source. The other power source then becomes the backup source. The switch is manually operated

When the rotary switch is in position Source #1 the GTS will perform as a normal system. Generator #1 will be the primary source and generator #2 will be the backup source.

When the rotary switch is in position #2, the GTS will signal generator #2 to start and the GTS will transfer the LOAD to generator #2. If Source #2 fails, Source #1 will be signaled to start. The GTS mechanism will transfer the LOAD to Source #1. When Source #2 returns to service, the GTS will transfer the LOAD to Source #2.

Reference wiring diagram No. 0D8035 for further details. The customer connections are made on TS2. The associated wire numbers are 178, 183, 253 and 254.

◆ 3.14.7 MANUAL 3-POSITION SELECTOR SWITCH (NORMAL-AUTO-STANDBY)

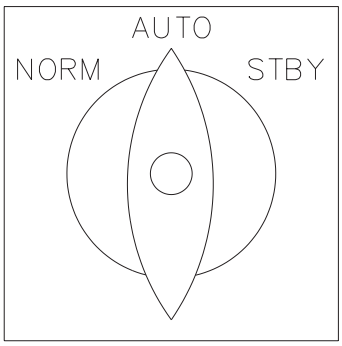
The Manual 3-Position Selector Switch option includes a door mounted rotary 3-position selector switch and associated wiring (Figure 3.15).

Under certain conditions it may be desirable to manually select the active power source. This can be done by means of the door mounted selector switch. The Normal - Auto - Standby, 3-position selector switch provides the following:

1. When the switch is set to the Normal position, the Load will be connected to the Normal source and any other transfer will be inhibited.
2. When the switch is set to the Auto position, the ATS will function as normal. See the Sequence of Operation section 3.13, page 12.
3. When the switch is set to the Standby position, the Load will be connected to the Emergency source and any other transfer will be inhibited.

Reference the wiring diagram No. 0D8035 for further details.

Figure 3.15 — Manual 3-Position Switch



◆ 3.14.8 OPTIONAL DELUXE EXERCISER CIRCUIT BOARD

See OPTIONAL DELUXE EXERCISER CIRCUIT BOARD SETTINGS, Section 3.21.

◆ 3.14.9 NEMA 12 ENCLOSURE

National Electrical Manufacturer's Association (NEMA) 12 enclosure. This type of enclosure is intended for use indoors to provide a degree of protection against dust, falling dirt, and dripping, non-corrosive liquids. Ask the local Dealer/Distributor or consult the factory for details.

◆ 3.14.10 NEMA 3R ENCLOSURE

National Electrical manufacturer's Association (NEMA) 3R enclosure. This type of enclosure is intended for use outdoors to protect enclosed parts from windblown dust and water. The enclosure is sealed for dust, rain or sleet and is ice resistant. Ask the local Dealer/Distributor or consult the factory for details.

◆ 3.14.11 NEMA 4 ENCLOSURE

National Electrical Manufacturer's Association (NEMA) 4 enclosure. This type of enclosure is intended for use indoors or outdoors to provide a degree of protection against windblown dust and rain, splashing water, and hose-directed water: undamaged by the formation of ice on the enclosure. Ask the local Dealer/Distributor or consult the factory for details.

◆ 3.14.12 NEMA 4X ENCLOSURE

National Electrical Manufacturer's Association (NEMA) 4X enclosure. This type of enclosure is intended for use indoors and outdoors to provide a degree of protection against corrosion, windblown dust and rain, splashing water, and hose-directed water: undamaged by the formation of ice on the enclosure. Ask the local Dealer/Distributor or consult the factory for details.

◆ 3.14.13 ADDITIONAL OPTIONS

For information on additional options not covered in this manual, ask the local Dealer/Distributor or consult the factory.

3.15 SYSTEM CENTRAL CONTROL (CPU) CIRCUIT BOARD

This circuit board controls automatic operation and timing sequences.

The circuit board is located behind a circuit board COVER. This circuit board is non-adjustable. Functions of the 7-day Exercise Timer are incorporated into the System Central Control board, thus eliminating the need for a third circuit board.

3.16 SENSOR AND TIMER ADJUSTMENTS — SENSING CIRCUIT BOARD

◆ 3.16.1 VOLTAGE DROPOUT SENSOR

This sensor (Figure 3.16) establishes the NORMAL power source voltage which generator startup and transfer to STANDBY (EMERGENCY) power source occurs. Adjust the sensor to any voltage between 75-95% of the nominal voltage Pickup Sensor setting, by turning the adjusting knob to the desired setting (in percent). Sensor is factory set to about 80% of the Voltage Pickup Sensor setting.

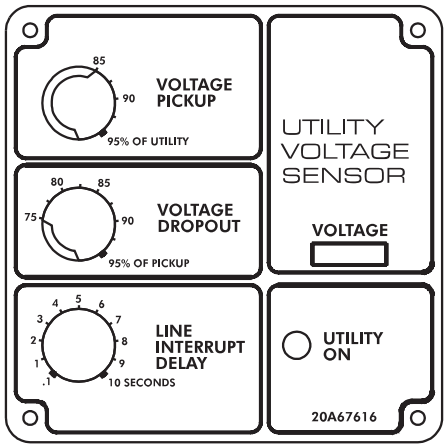
◆ 3.16.2 VOLTAGE PICKUP SENSOR

Establishes the NORMAL power source voltage at which retransfer back to that power source occurs. Turn knob to adjust setting to 85-95% of the nominal NORMAL source supply voltage. Sensor has been factory set to about 90% of nominal rated NORMAL source voltage.

◆ 3.16.3 LINE INTERRUPT DELAY TIMER

Established a definite time interval between NORMAL source voltage dropout below the setting of the Voltage Dropout Sensor and generator startup. This time interval is necessary to prevent false generator starts that voltage transients might otherwise cause. Adjust timer from 0.1 to 10 seconds, sensor is factory set to about five seconds.

Figure 3.16 — Sensing Circuit Board Panel



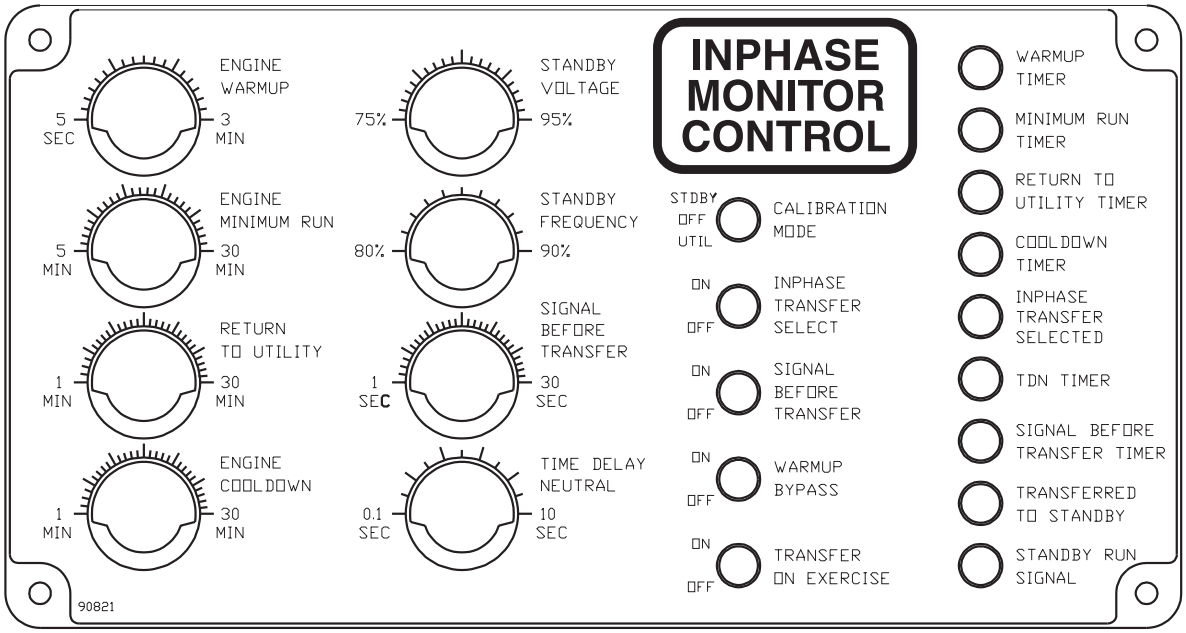
3.17 ADJUSTMENTS ON INPHASE MONITOR CONTROL CIRCUIT BOARD

The Inphase Monitor Control board is operational only when the generator set is running. Transfer will occur when UTILITY and GENERATOR voltage and phase are comparatively equal with a maximum difference of 20° between the power sources. To assure precision matching control, minimum voltage and frequency ranges are specified by the operator. In addition, each inphase control is programmed with the use of an onboard DIP switch to match the actuation time of the corresponding switch. Inphase transfer is used only between two live power sources and NOT during a UTILITY source failure. The Inphase Monitor Control board (Figure 3.17) is designed to transfer loads under the following conditions:

- When generator set frequency is between 58-62 Hz (48-52 Hz for 50 Hz systems).
- When generator set and utility power source frequencies are within 2 Hz.
- When the generator set and utility source voltage are within 85-100 percent of normal voltage.
- When both power sources are able to come into phase within 10 seconds.
- When less than 10 seconds has elapsed since the engine warmup timer has indicated "go ahead."

If any one of the preceding conditions are not met within 30 seconds, the system will automatically revert to Time delay Neutral (if selected). If Time Delay Neutral is not selected, the switch will transfer immediately after failing to do an inphase transfer within the 30 second window.

Figure 3.17 — Inphase Monitor Control Panel



◆ 3.17.1 ENGINE WARMUP TIMER

Permits the engine to warm up before transferring LOAD from NORMAL to STANDBY power. Reset timer to any time interval between five seconds and three minutes; factory set to about one minute.

◆ 3.17.2 ENGINE MINIMUM RUN TIMER

Establishes the minimum length of time the generator must run before it can be shut down automatically. Timer prevents a cold engine from being shut down. It is factory set to about 20 minutes, but you can reset the interval between five and 30 minutes.

◆ 3.17.3 RETURN TO UTILITY TIMER

Establishes time interval between restoration of NORMAL source voltage above the setting of the Voltage Pickup Sensor and retransfer back to that source. This time interval is necessary, to prevent retransfer that otherwise might occur as a result of transient voltages. Timer may be reset to any interval between one and 30 minutes, timer is factory set to about five minutes.

◆ 3.17.4 ENGINE COOL DOWN TIMER

Provides a time delay between automatic re-transfer back to the NORMAL source and engine shutdown. This permits internal engine-generator temperatures to stabilize at "no-load" prior to shutdown. Set timer between one and 30 minutes; factory set to about 10 minutes.

NOTE:

The actual time interval between retransfer back to NORMAL and generator shutdown, is the time remaining on Engine Minimum Run timer or time setting of the Engine Cool Down Timer, whichever is longer.

◆ 3.17.5 STANDBY VOLTAGE SENSOR

After engine starts automatically, the system does not transfer LOAD to STANDBY power source until generator AC output voltage has reached the setting of this sensor. Factory set to about 90% of the nominal rated voltage, but can be reset between 75% and 95% of the unit's rated voltage.

◆ 3.17.6 STANDBY FREQUENCY SENSOR

This adjustment allows the installer or operator to select the minimum required frequency of the standby power source. It is adjustable between 80-90%. Factory set to 90%.

◆ 3.17.7 SIGNAL BEFORE TRANSFER TIMER

If this function is selected, this timer will control the amount of time signal remains active. Timer is adjustable from one to 30 seconds, timer is factory set to about 10 seconds.

NOTE:

The "Signal Before Transfer" feature provides a time delay that allows elevators to continue operating before transfer to another power supply occurs.

◆ 3.17.8 TIME DELAY NEUTRAL

This timer holds the transfer mechanisms main contacts in the "Neutral" position for a time that has been selected. "Neutral" is the main contacts position where the LOAD is disconnected from both UTILITY and STANDBY power supplies. Timer is adjustable from 0.1 and 10 seconds, timer is factory set to about five seconds.

◆ 3.17.9 CALIBRATION MODE SWITCH

This switch has three positions, identified as "STDBY", "OFF" and "UTIL". The switch allows the installer or operator to calibrate the circuit board to the existing generator set output voltage and to the existing UTILITY power source voltage. The board must be calibrated to both power source voltages in order to initiate transfer and retransfer at the correct voltages. To calibrate the circuit board to the correct voltage, see Section 3.18, Calibrating the Circuit Board.

◆ 3.17.10 INPHASE TRANSFER SELECT SWITCH

This switch allows the operator or installer to select either "Inphase Transfer" or "Time Delay Neutral" operation. The switch may be positioned as follows:

- Switch at ON: Inphase transfer operation is selected.
- Switch at OFF: Time Delay Neutral is activated, if selected.

◆ 3.17.11 SIGNAL BEFORE TRANSFER SWITCH

This switch allows the operator or installer to select the "Signal Before Transfer" feature or to turn OFF the feature. To activate the feature, set the switch to ON, if the option is installed. To turn off the feature, set the switch to OFF.

◆ 3.17.12 ENGINE WARMUP TIMER BYPASS SWITCH

To bypass Engine Warmup Timer and transfer as soon as generator voltage and frequency have reached the setting of the Standby Voltage and Frequency Sensors, set switch to ON. To place engine warmup Timer back into the automatic operating system, set the switch to OFF.

◆ 3.17.13 TRANSFER ON EXERCISE SWITCH

For transferring LOAD to the STANDBY source during the 7-day exercise cycle, set switch to ON. For no transfer during the exercise, set switch to OFF.

◆ 3.17.14 ADVISORY LAMPS

The advisory lamps on the Inphase Control board consist of nine LED's (light emitting diodes) and include the following:

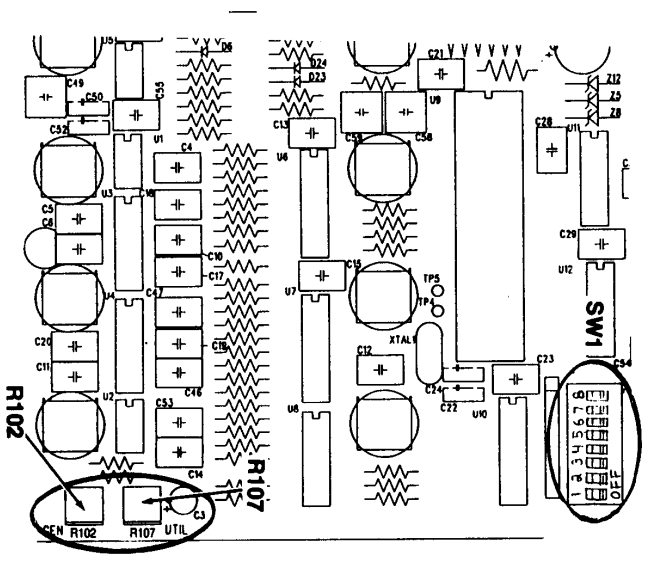
- The four red timer lamps will turn ON when their respective timers are activated.
- The "Inphase Transfer Selected" lamp goes ON when Inphase Transfer Select switch is set to ON, indicating the system will operate in its "Inphase" mode (and NOT in Time Delay Neutral mode).
- The Time Delay Neutral (TDN) Timer lamp will turn ON when the TDN timer is running.
- The Signal Before Transfer Timer lamp will turn ON for the duration of the Signal Before Transfer Timer, when it is turned ON.
- Transfer to Standby Lamp goes ON when LOAD has been transferred to STANDBY power source.
- Standby run Signal will go ON when the generator is running and the Inphase Monitor Control circuit board is operational and controlling the generator.

3.18 CALIBRATING THE INPHASE MONITOR CONTROL CIRCUIT BOARD

The Inphase Monitor circuit board must be calibrated to existing STANDBY and UTILITY source voltages if the system is to operate properly. To calibrate the circuit board, two adjustment potentiometers (R102 and R107) are provided in the lower left corner of the circuit board (Figure 3.18). The board must be calibrated as follows:

1. Check that UTILITY supply voltage is available to the system.
2. Start the generator, let it stabilize and warm up.
3. Set the Calibration Mode Switch to "STDBY" and observe the four top red LED's on the circuit board (Warmup Timer, Minimum Run Timer, Return to Utility Timer and Cool down Timer).
   - If the two upper LED's are illuminated, calibration is set too low.
   - If the two bottom LED's are illuminated, calibration is set too high.
4. On the circuit board, adjust potentiometer R102 until only the two center LED's are illuminated (Minimum Run and Return to Utility timers).
5. Now, set the Calibration Mode switch to "UTIL" and observe the four upper LED's on the circuit board.
6. Adjust potentiometer R107 until only two center LED's are illuminated (Minimum Run and Return to Utility).
7. Set the Calibration Mode Switch to "OFF". The Inphase Monitor Control board is calibrated.

Figure 3.18 — Inphase Monitor Control Circuit Board



NOTE:

With the Calibration Mode Switch set to "STDBY" or "UTIL", the four top LED's should turn ON in sequence. That is, the lights should sweep on and off, from one light to the next. Calibration is obtained when the two center lamps of the four (Minimum Run and Return to Utility) are illuminated. This establishes 100% rated voltage.

NOTE:

The Inphase Monitor Control circuit board should be calibrated when the transfer switch has been installed as part of an operating system. Also, replacement circuit boards must be calibrated.

3.19 CIRCUIT BOARD SWITCH SW1

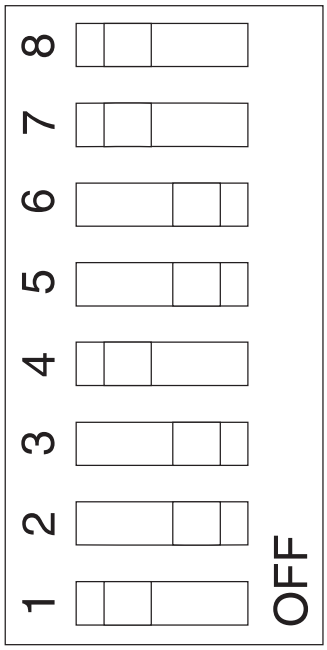
On the Inphase Monitor Control Board, a switch assembly consisting of a bank of eight miniature switches is identified as "SW1" and is usually set up at the factory. SW1 should require no additional configuring (Figure 3.19 on page 20).

NOTE:

On boards not installed at the factory, SW1 must be set by the installer. SW1 must be set to match the type of transfer switch in which the board is installed.

The individual switches on SW1 are numbered from "1" (bottom) through "8" (top), as shown in figures 3.18 and 3.19. To make the circuit board compatible to the specific transfer switch assembly, set the switches as indicated in the chart on page 20. Improper settings may cause transfer outside the 20-degree specification.

Figure 3.19 — Circuit Board Switch SW1

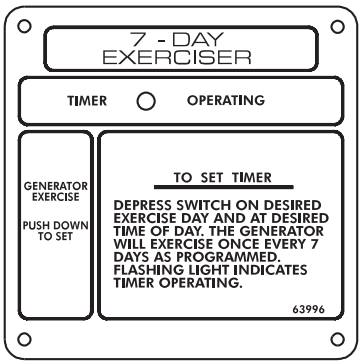


3.20 ADJUSTMENTS ON 7-DAY EXERCISER CIRCUIT BOARD

◆ 3.20.1 SET EXERCISE DAY AND TIME OF DAY

On the day, and at the time of day chosen for the system to start and exercise, press the GENERATOR EXERCISE switch and hold it there for about 15 seconds (Figure 3.20). The generator will start and exercise seven days later at the selected time of day.

Figure 3.20 — 7-Day Exerciser



DIP Switch Settings - Wn-Type Transfer Switches

TRANSFER SWITCH	SWITCH RATED 208 VOLTS								SWITCH RATED 240/416/480/600 VOLTS							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
100 amps, 3-pole (64787)	*	on	on	off	on	off	on	off	*	on	on	off	on	on	on	on
100 amps, 4-pole (64788)	*	on	on	off	on	on	off	off	*	on	on	on	off	off	off	off
150 amps, 2 pole (64789)	*	on	on	off	on	on	off	on	*	on	on	on	off	off	off	off
150 amps, 3-pole (64790)	*	on	on	off	on	on	off	on	*	on	on	on	off	off	off	on
150 amps, 4-pole (64791)	*	on	on	off	on	on	off	off	*	on	on	on	off	off	on	off
200 amps, 2-pole (64789)	*	on	on	off	on	on	off	on	*	on	on	on	off	off	off	off
200 amps, 3-pole (64790)	*	on	on	off	on	on	off	on	*	on	on	on	off	off	off	on
200 amps, 4-pole (64791)	*	on	on	off	on	on	off	off	*	on	on	on	off	off	on	off
300 amps, 2-pole (64795)	*	on	on	off	off	on	on	off	*	on	on	off	on	off	off	on
300 amps, 3-pole (64796)	*	on	on	off	off	on	off	on	*	on	on	off	on	off	off	on
300 amps, 4-pole (64797)	*	on	on	off	off	on	on	on	*	on	on	off	on	on	off	off
400 amps, 2-pole (64795)	*	on	on	off	off	on	on	off	*	on	on	off	on	off	off	on
400 amps, 3-pole (64796)	*	on	on	off	off	on	off	on	*	on	on	off	on	off	off	on
400 amps, 4-pole (64797)	*	on	on	off	off	on	on	on	*	on	on	off	on	on	off	off
600 amps, 3-pole (72111)	*	on	off	off	on	on	on	on	*	on	off	on	off	on	on	off
600 amps, 4-pole (72117)	*	on	off	off	on	on	off	on	*	on	off	on	off	on	off	off
800 amps, 3-pole (72113)	*	on	off	off	on	on	off	off	*	on	off	on	off	off	on	off
800 amps, 4-pole (72119)	*	on	off	off	on	on	on	off	*	on	off	on	off	off	on	on
1000 amps, 3-pole (72113)	*	on	off	off	on	on	off	off	*	on	off	on	off	off	on	off
1000 amps, 4-pole (72119)	*	on	off	off	on	on	on	off	*	on	off	on	off	off	on	on
1200 amps, 3-pole (72114)	*	on	off	off	on	off	on	on	*	on	off	on	off	off	off	on
1200 amps, 4-pole (72120	*	on	off	on	off	on	off	off	*	on	off	off	on	on	off	off
1600 amps, 3-pole (72114)	*	on	off	off	on	off	on	on	*	on	off	on	off	off	off	on
1600 amps, 4-pole (72120	*	on	off	on	off	on	off	off	*	on	off	off	on	on	off	off
2000 amps, 3-pole (72115)	*	off	on	on	off	off	on	on	*	off	on	on	on	on	on	on
2000 amps, 4-pole (72121)	*	off	on	on	off	off	off	on	*	off	on	on	on	on	on	off
2600 amps, 3-pole (72116)	*	off	on	on	on	off	off	on	*	on	off	off	off	off	on	off
2600 amps, 4-pole (72122)	*	off	on	off	off	on	on	off	*	off	on	on	off	on	on	on

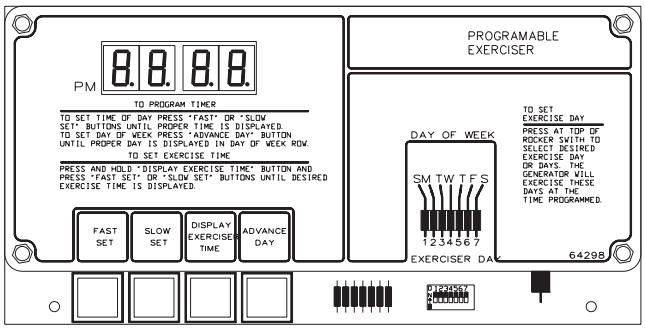
* Set Switch 1 to OFF for 60 Hz systems; set Switch to ON for 50 Hz systems

3.21 OPTIONAL DELUXE EXERCISE CIRCUIT BOARD SETTINGS

Always adjust the board in the exact order given (Figure 3.21).

1. Set Actual Day of Week: Locate the switch above which appears the words "ADVANCE DAY". Press this Advance Day switch while watching the lighted DAY OF WEEK indicator. That indicator advances one day each time you press the switch. Stop when the actual current day of the week is displayed.
2. Set Actual Time of Day: Hold FAST SET switch down while watching the lighted chronograph at left side of circuit board. When close to actual current time of day, release the FAST SET switch. Then, use the SLOW SET switch to complete adjustment of actual time of day.

Figure 3.21 — Deluxe 7-Day Exerciser

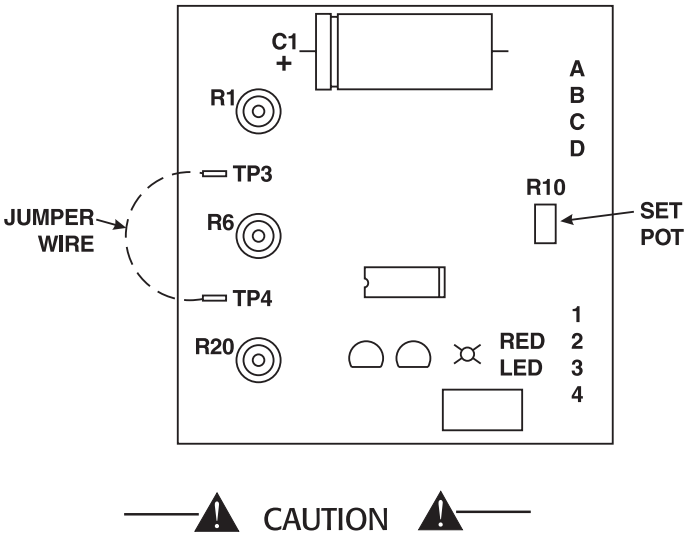


3. Select Day (or Days) of Exercise: A bank of eight miniature rocker switches is provided at right side of circuit board. Switches one (1) through seven (7) correspond to days of the week (Sunday through Saturday respectively). Switch eight (8) is not used. To select a day of the week for system exercise, move the correct numbered switch to its ON position. A lighted band appears next to that day. In this manner, the system can be set to exercise one, two or more days each week.
4. Select Exercise Time of Day: Push down on switch below the words DISPLAY EXERCISE TIME. While holding that switch down, press FAST SET and SLOW SET switches until the exercise time is displayed. A red dot next to the letters "PM" indicates p.m. times.

3.22 CALIBRATE UTILITY VOLTAGE SENSING CIRCUIT BOARD

The utility sensing interface reduces utility source voltage at a fixed ratio. Thus, if utility voltage varies from the nominal, sensing voltage to the circuit board also varies. For that reason, calibration of the circuit board is needed to match the system (Figure 3.22).

Figure 3.22 — Utility Voltage Sensing Circuit Board



CAUTION

The installed transfer switch must be rated at a voltage and phase that is compatible with the utility and standby power supplies. DO NOT attempt to calibrate any utility voltage sensor board on any non-compatible unit trying to make the unit compatible.

Once the circuit board has been properly calibrated, the voltage that was present during calibration establishes 100 percent utility voltage for "pickup" and "dropout" settings. Utility source voltage must be available to the transfer switch during calibration.

NOTE:

Use this procedure to calibrate a replacement circuit board. Follow these instructions:

1. In the transfer switch enclosure, set the Maintenance Disconnect Switch to "Manual".
2. On the Utility Voltage Sensor circuit board, locate test points "TP3" and "TP4" and install a jumper lead.
3. Locate the small potentiometer "R10". Turn the potentiometer fully counterclockwise.
4. Now, turn the "R10" potentiometer SLOWLY clockwise until the "Utility On" light emitting diode (LED) just turns ON.

5. Remove the jumper wire from "TP3" and "TP4".
6. Reset the Maintenance Disconnect switch to AUTOMATIC.

RESULTS:

- If the "Utility On" LED does NOT go on as described above, check to see if jumper is making contact on TP3 and TP4, before replacing utility voltage sensor. Calibrate the new board and perform a "Normal Test" of the system.
- If the "Utility On" LED goes ON, discontinue the test.

4.1 OPERATE TRANSFER SWITCH

Operate the transfer switch at least once each month. This can be done by performing a NORMAL TEST of the system. Because the System Test switch only simulates failure of the UTILITY power source, service will be interrupted only during the actual transfer of the load.

4.2 CLEAN AND INSPECT TRANSFER SWITCH

Protect the transfer switch against construction grit, metal chips, excessive moisture and other harmful dirt at all times. At least once each year, turn OFF all power supplies to the switch, then brush and vacuum away dust and dirt that has accumulated inside the enclosure. After cleaning, inspect the transfer switch carefully. Look for evidence of arcing, burning, hot spots, charring and other damage. If any of these are found, have the switch assembly checked by an authorized service technician.

4.3 7-DAY EXERCISER

On each transfer action (when applicable), the LOAD will be disconnected from both power sources for a brief interval. During such brief intervals, the exercise timer is powered by the nine volt battery. However, the timer will not advance during the transfer. For that reason, it may be necessary to reset the exercise timer periodically.

4.4 LUBRICATION

Operating parts inside the transfer mechanism have been properly lubricated at the time of assembly. Under normal conditions, no additional lubrication should be required. The service technician should lubricate all recommended points whenever major transfer mechanism components are replaced.

CAUTION

Use only specified greases to lubricate contactor parts. DO NOT USE ANY SUBSTITUTES.

Use the following lubricants for the:

1. Main Contacts (Between movable contact and busbars).
   - Dow Corning (Molykote) BR2 Plus; (Mfg. by Dow Corning Co., USA)
   - Liqui-Moly (Mfg. by DAI TO Co., Ltd., Japan)
2. Operating Mechanism (Used on the actuator and other parts of the contactors. Excluding the movable contacts).
   - Mobilgrease 28 (Mfg. by Mobil Oil Co.)
   - Mobiltemp SHC 32 (Mfg. by Mobil Oil Co.)
   - Polo Moly Complex Grease #NLG12 (Mfg. by Polo Lubricants, USA)
   - Rheolube 363 (Mfg. by Nye Lubricants Inc., USA)

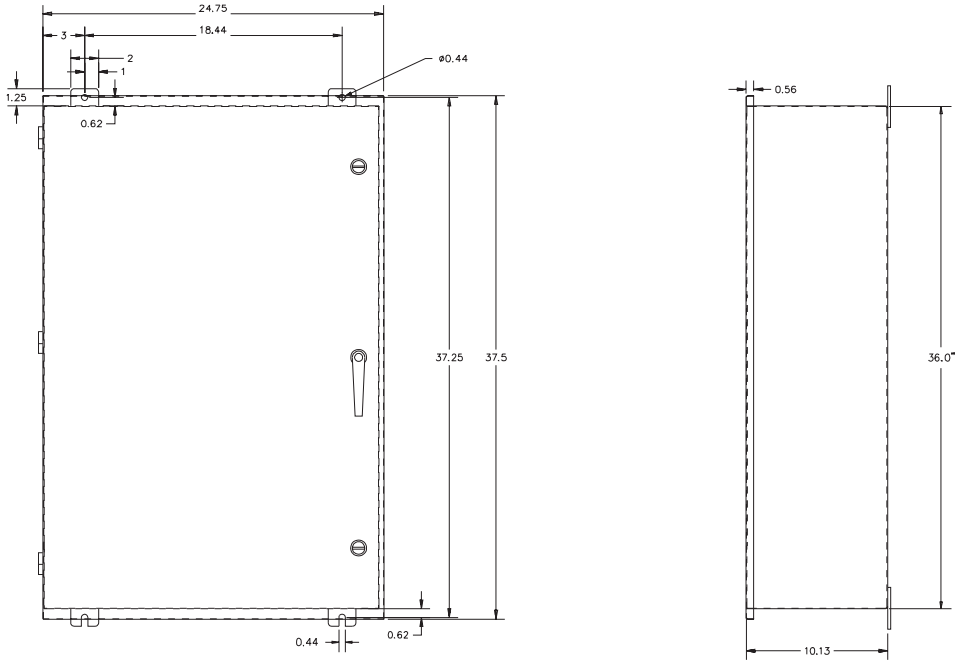
4.5 MAIN CURRENT CARRYING CONTACTS

At least once annually, have an Authorized Service Technician check the main current carrying contacts in the transfer mechanism. They will repair or replace major components that have been found defective.

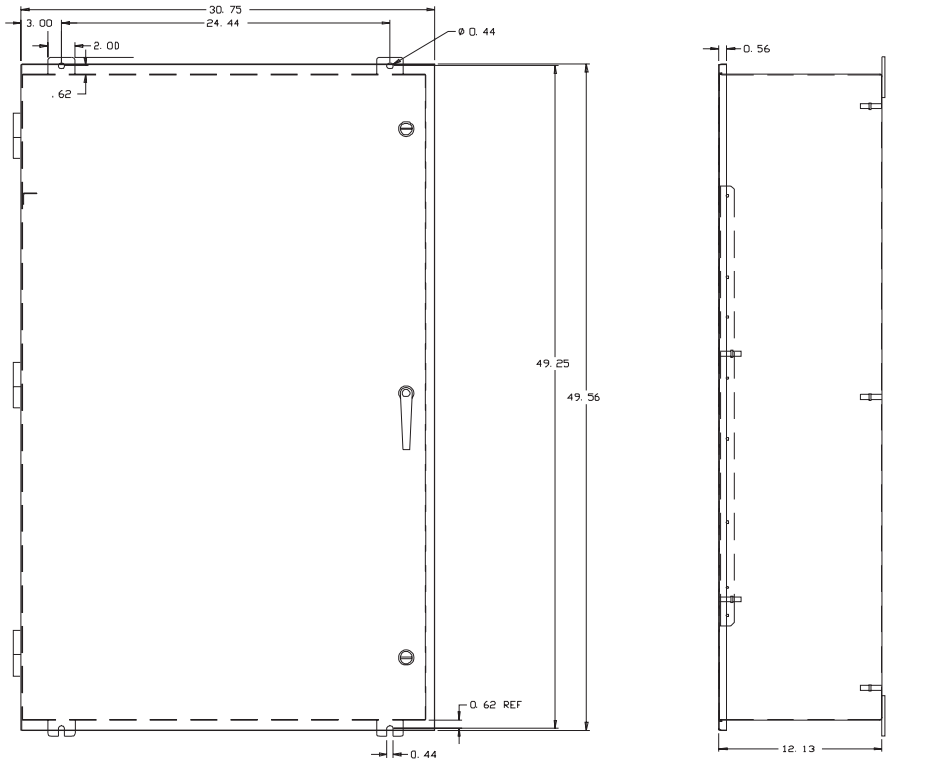
4.6 NINE-VOLT BATTERY

The transfer switch is equipped with an adjustable Inphase Monitor Control circuit board. The battery connects to a separate 7-day exerciser circuit board. Battery power for Exercise Timer operation is only needed during the short time interval when the transfer mechanism main contacts are at NEUTRAL position (LOAD disconnected from both power sources). It is recommended that the nine volt battery be replaced once each year.

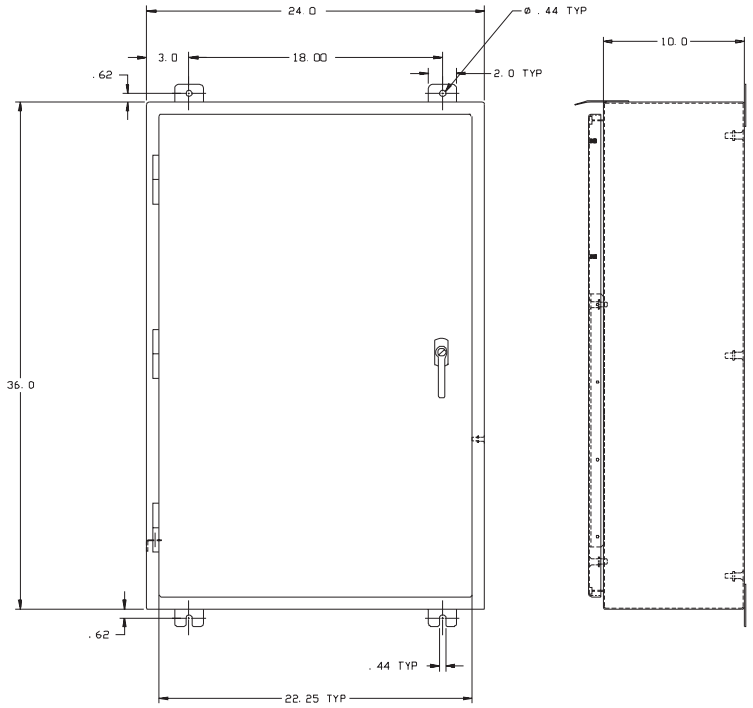
100-150 Amp NEMA 1 Units



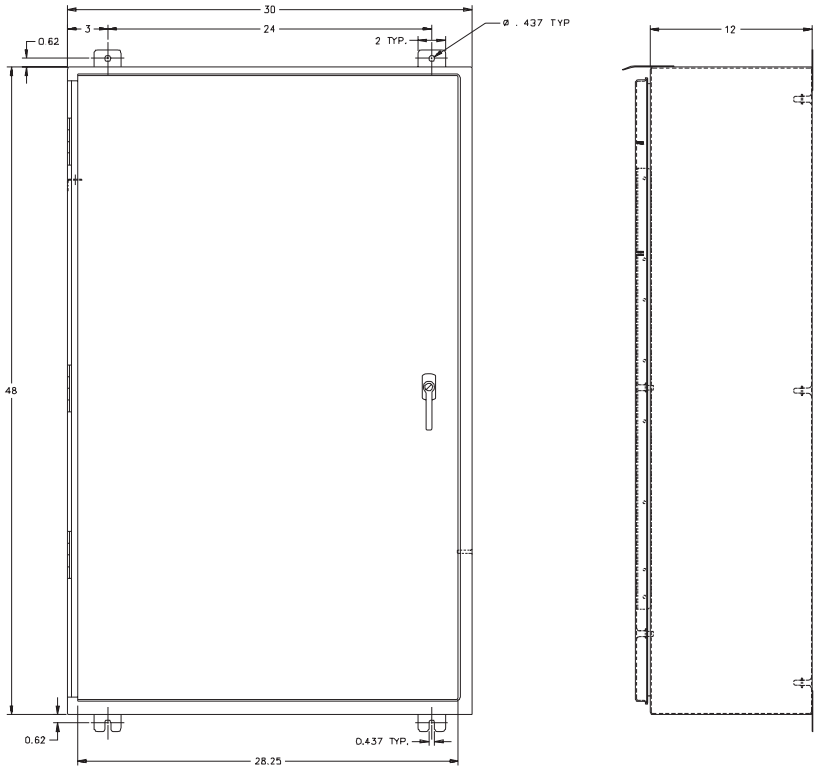
200-400 Amp NEMA 1 Units



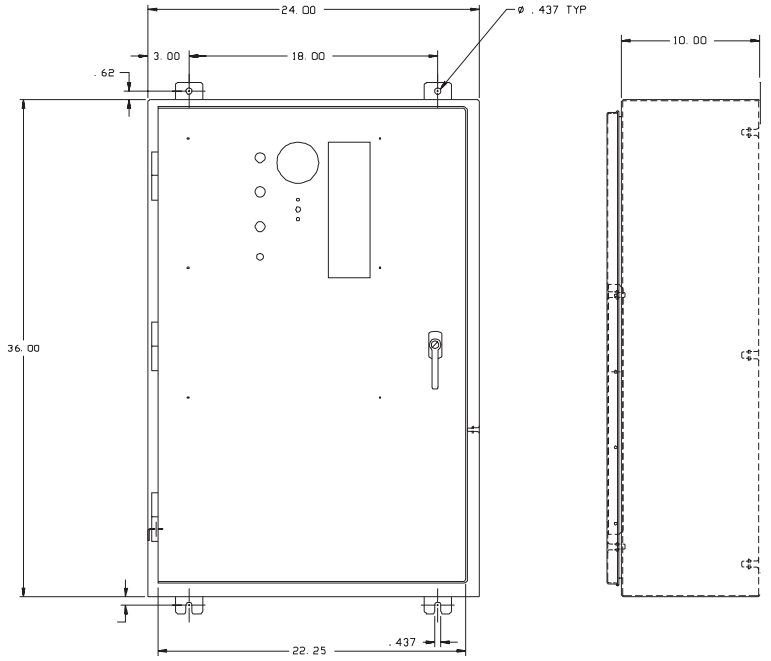
100-150 Amp NEMA 12, 3R, 4, and 4X Units (Typical)



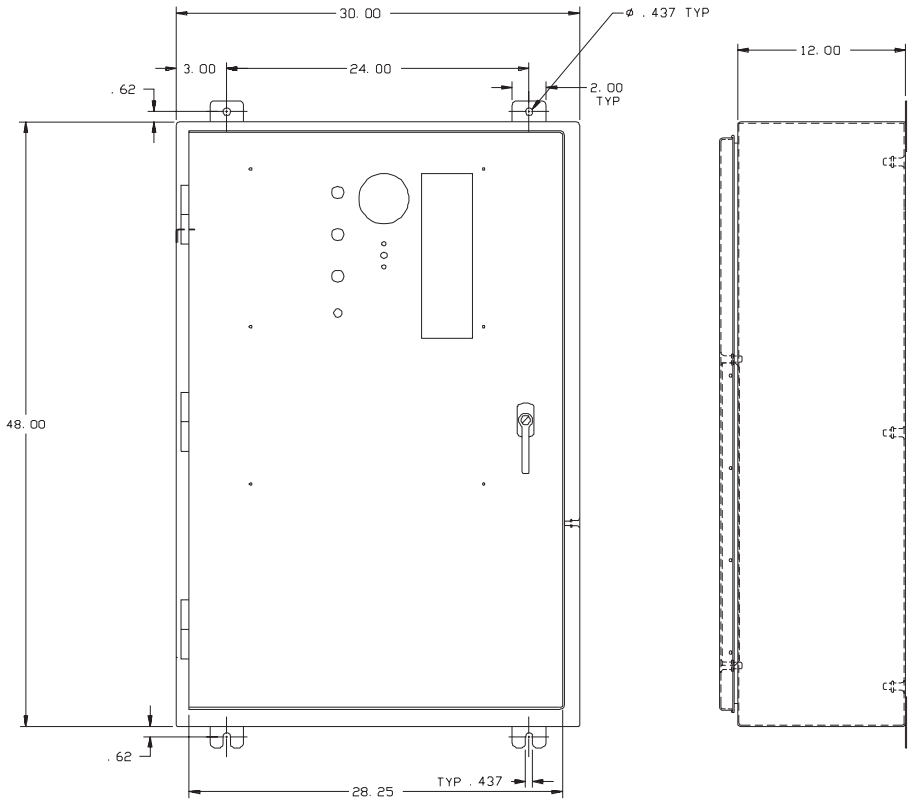
200-400 Amp NEMA 12, 3R, 4 and 4X Units (Typical)



100-150 Amp NEMA 12 Units With Instrument Package

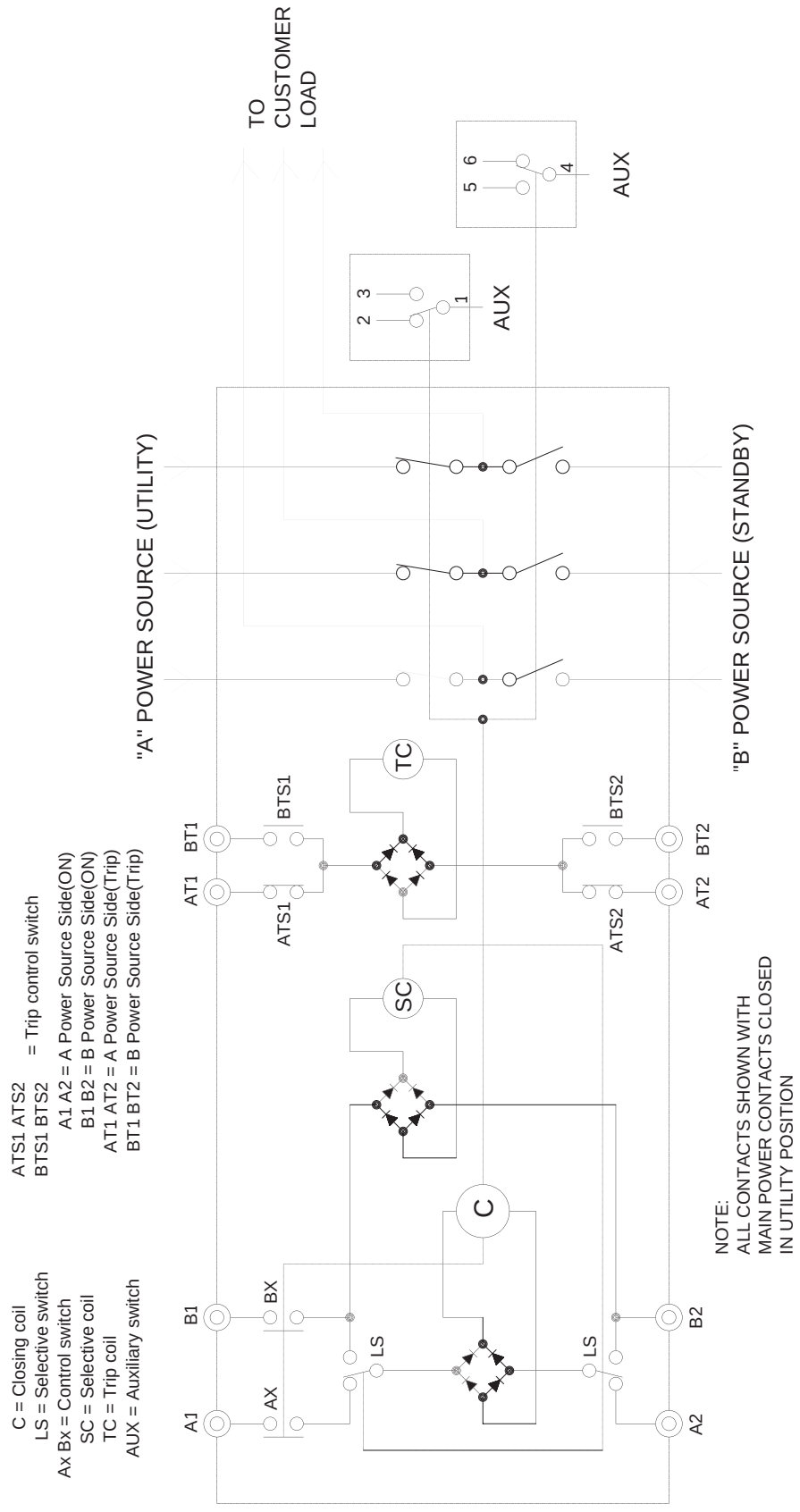


200-400 Amp NEMA 12 Units With Instrument Package



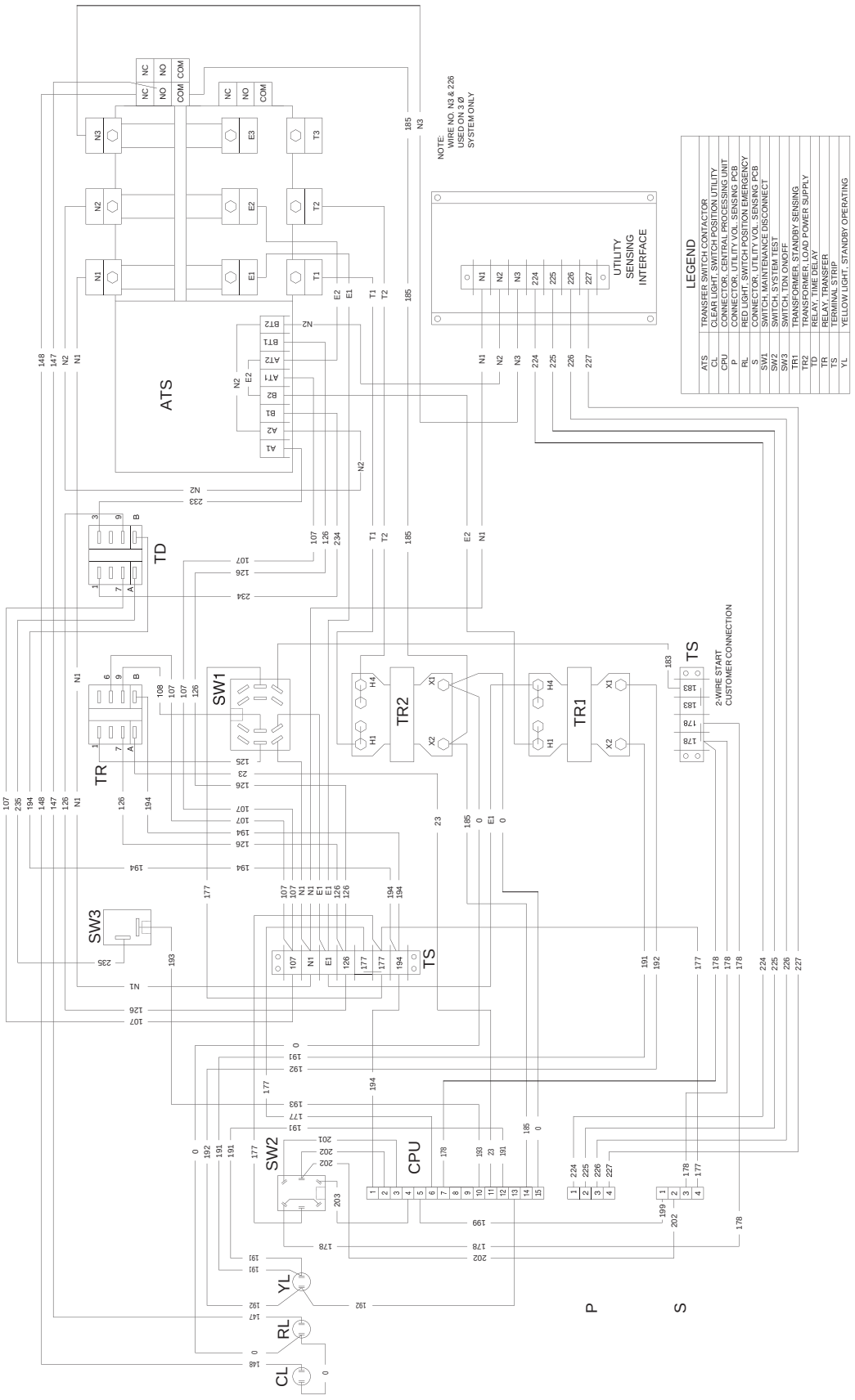
Generac GTS "Wn" Type Transfer Switch

Connection Diagram - Drawing No. 073658



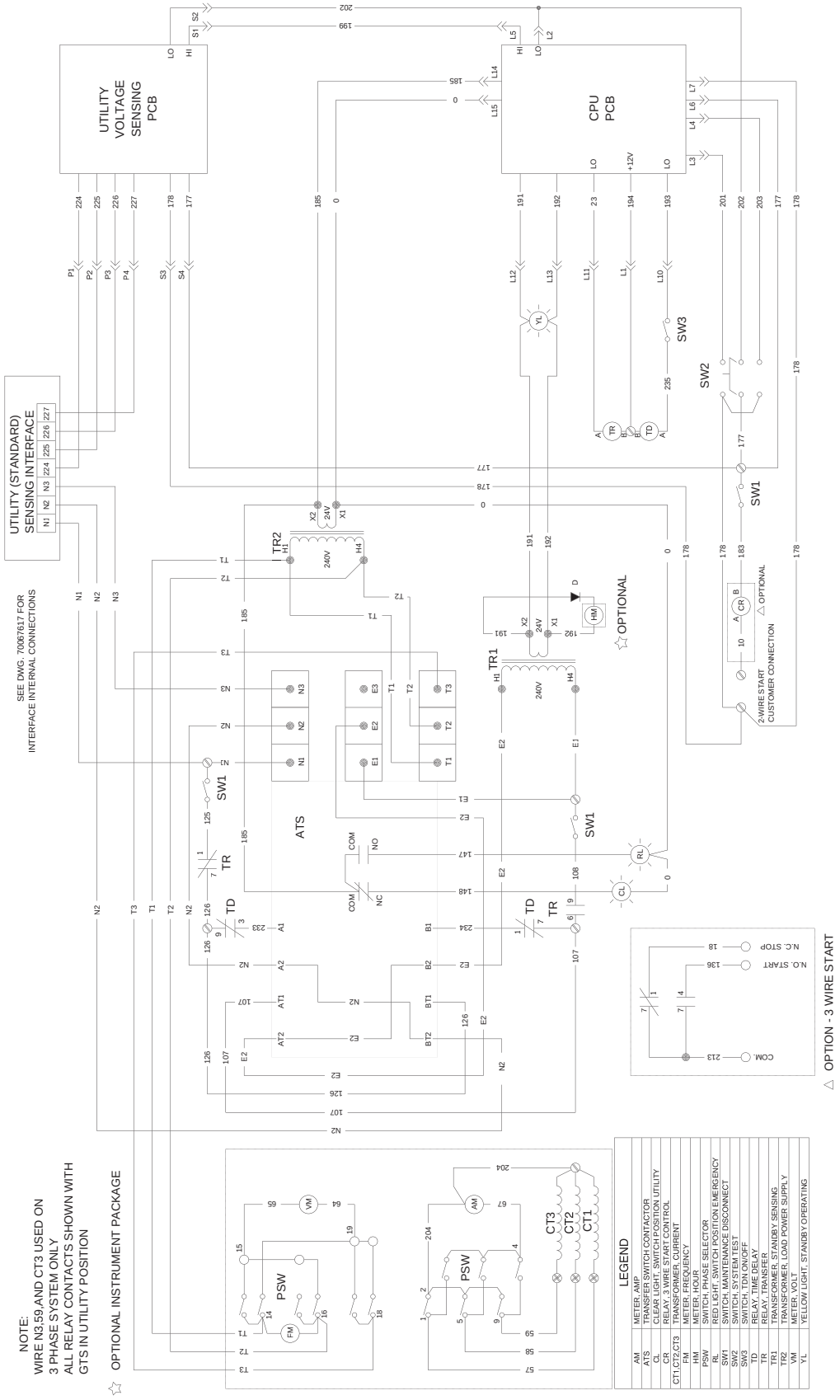
Generac GTS "Wn" Type Transfer Switch

Wiring Diagram - 240V with CPU - Drawing No. 74324



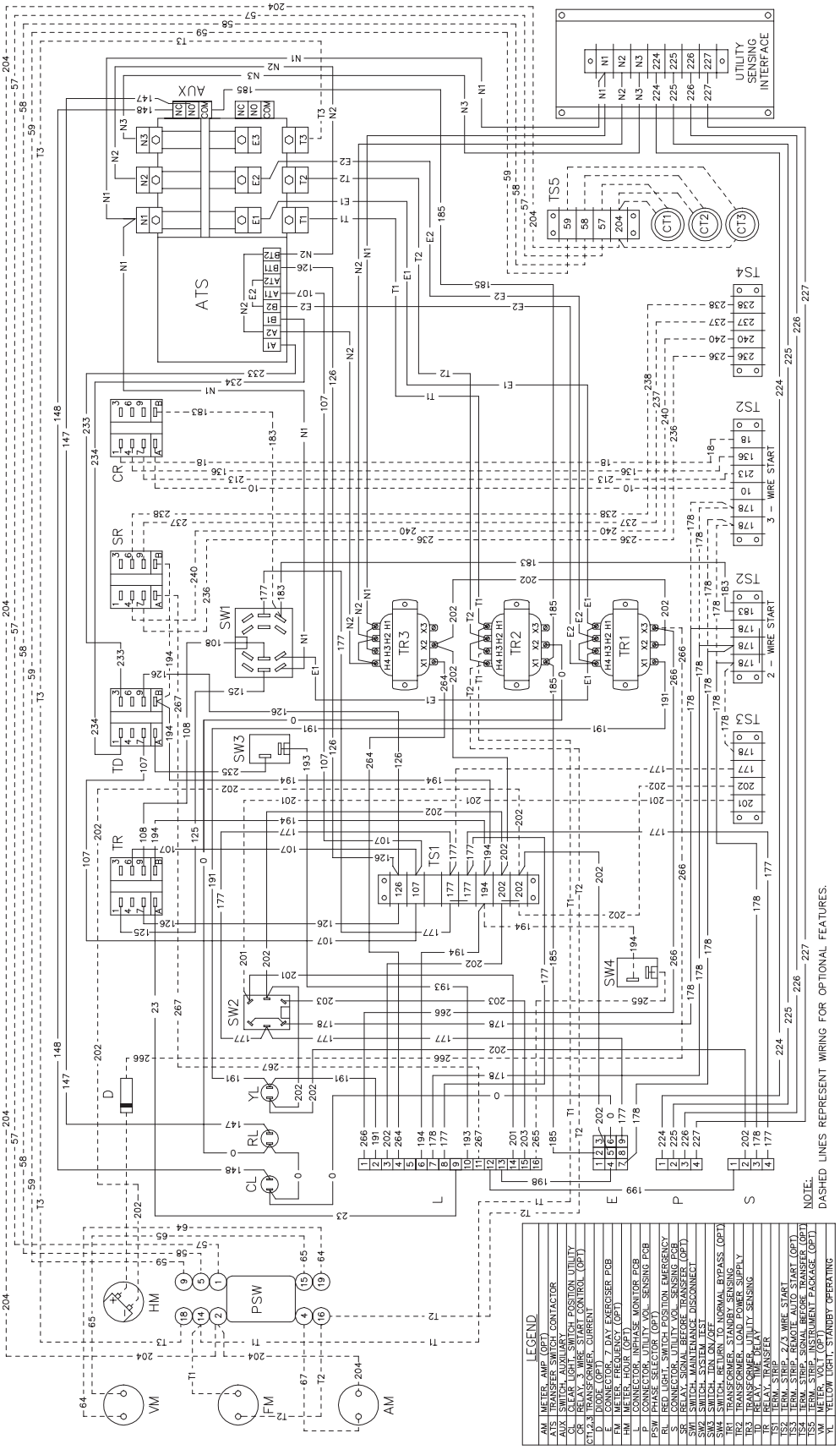
Generac GTS "Wn" Type Transfer Switch

Electrical Schematic - 240V with CPU - Drawing No. 74325



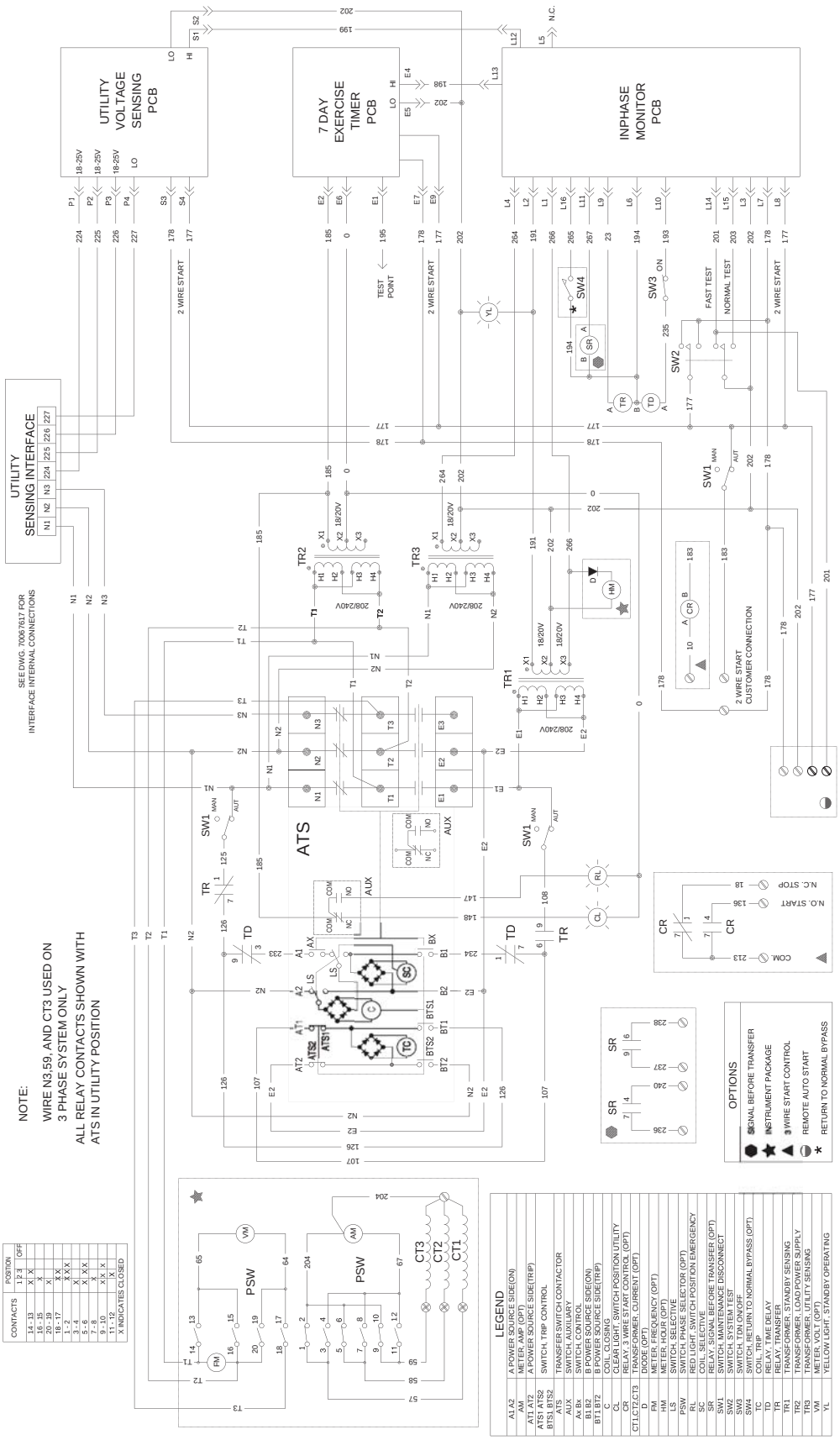
Generac GTS "Wn" Type Transfer Switch

Wiring Diagram - 240V Inphase - Drawing No. 91398



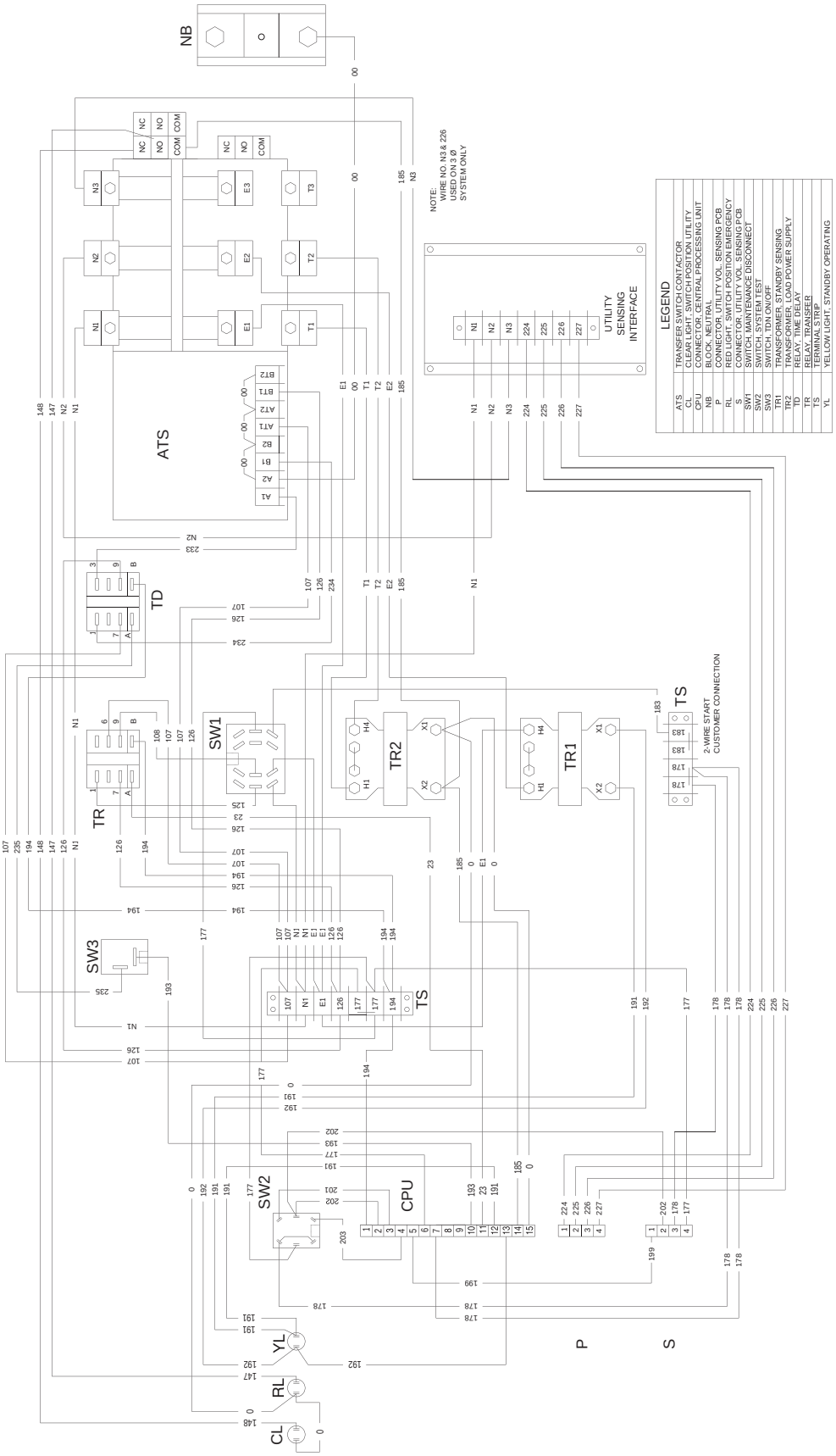
Generac GTS "Wn" Type Transfer Switch

Electrical Schematic - 240V Inphase - Drawing No. 91287



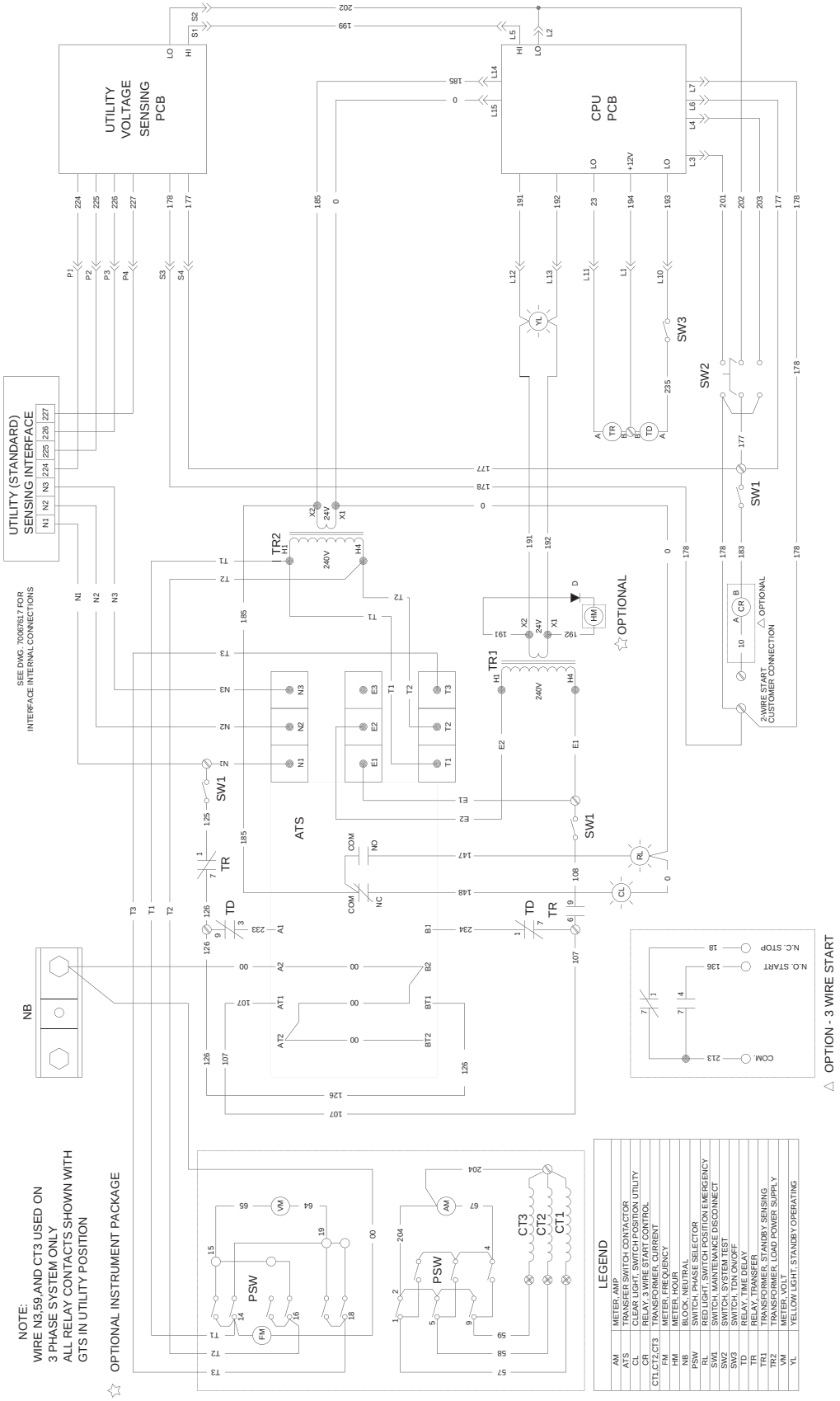
Generac GTS "Wn" Type Transfer Switch

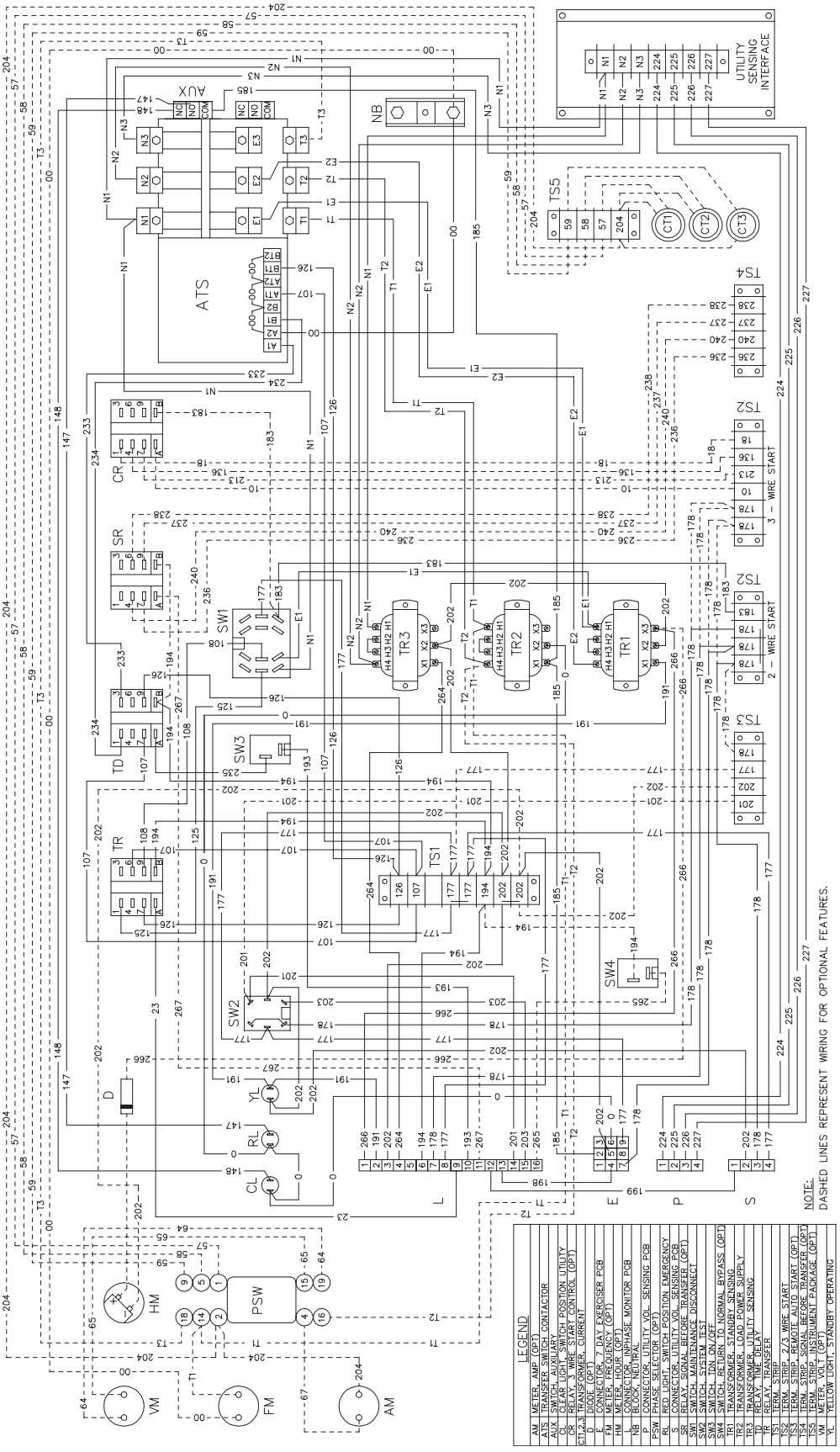
Wiring Diagram - 416V 3P with CPU - Drawing No. 74328



Generac GTS "Wn" Type Transfer Switch

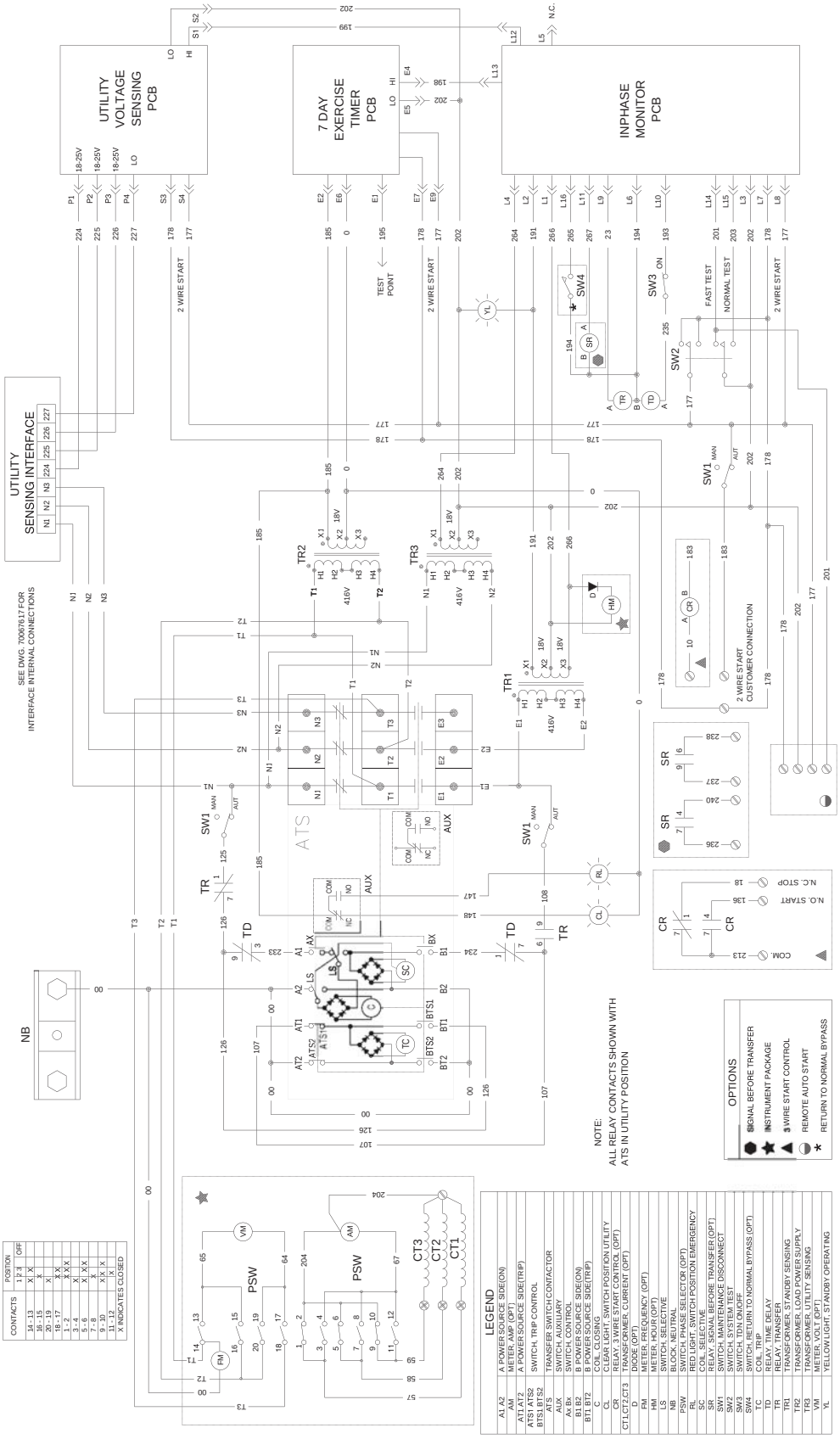
Electrical Schematic - 416V 3P with CPU - Drawing No. 74329




LEGEND
AM METER, AMPS (OPT)
ATS TRANSFER SWITCH CONTACTOR
AUX SWITCH, AUXILIARY
CL CLEAR LIGHT, SWITCH POSITION, UTILITY
CR 2,3 RELAY, START CONTROL (OPT)
CT1,2,3 TRANSFORMER, CURRENT
D DIODE (OPT)
E CONNECTOR, 7 DAY EXERCISER PCB
FM METER, FREQUENCY (OPT)
HM METER, HOUR (OPT)
L CONNECTOR, INPHASE MONITOR PCB
NB BLOCK, NEUTRAL
P CONNECTOR, UTILITY VOL. SENSING PCB
PSW PHASE SELECTOR (OPT)
RL RED LIGHT, SWITCH POSITION, EMERGENCY
S CONNECTOR, UTILITY VOL. SENSING PCB
SR RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1 SWITCH, MAINTENANCE DISCONNECT
SW2 SWITCH, SYSTEM TEST
SW3 SWITCH, ITEN ON/OFF
SW4 SWITCH, RETURN TO NORMAL BYPASS (OPT)
TR1 TRANSFORMER, STANDBY SENSING
TR2 TRANSFORMER, LOAD POWER SUPPLY
TR3 TRANSFORMER
TR RELAY, UTILITY SENSING
TD RELAY, TIME DELAY
TS1 TERM. STRIP
TS2 TERM. STRIP, 2/3 WIRE START
TS3 TERM. STRIP, 2 WIRE ALT. START (OPT)
TS4 TERM. STRIP, SIGNAL BEFORE TRANSFER (OPT)
TS5 TERM. STRIP, INSTRUMENT PACKAGE (OPT)
VM METER, VOLT (OPT)
YL YELLOW LIGHT, STANDBY OPERATING
NOTE:
DASHED LINES REPRESENT WIRING FOR OPTIONAL FEATURES.

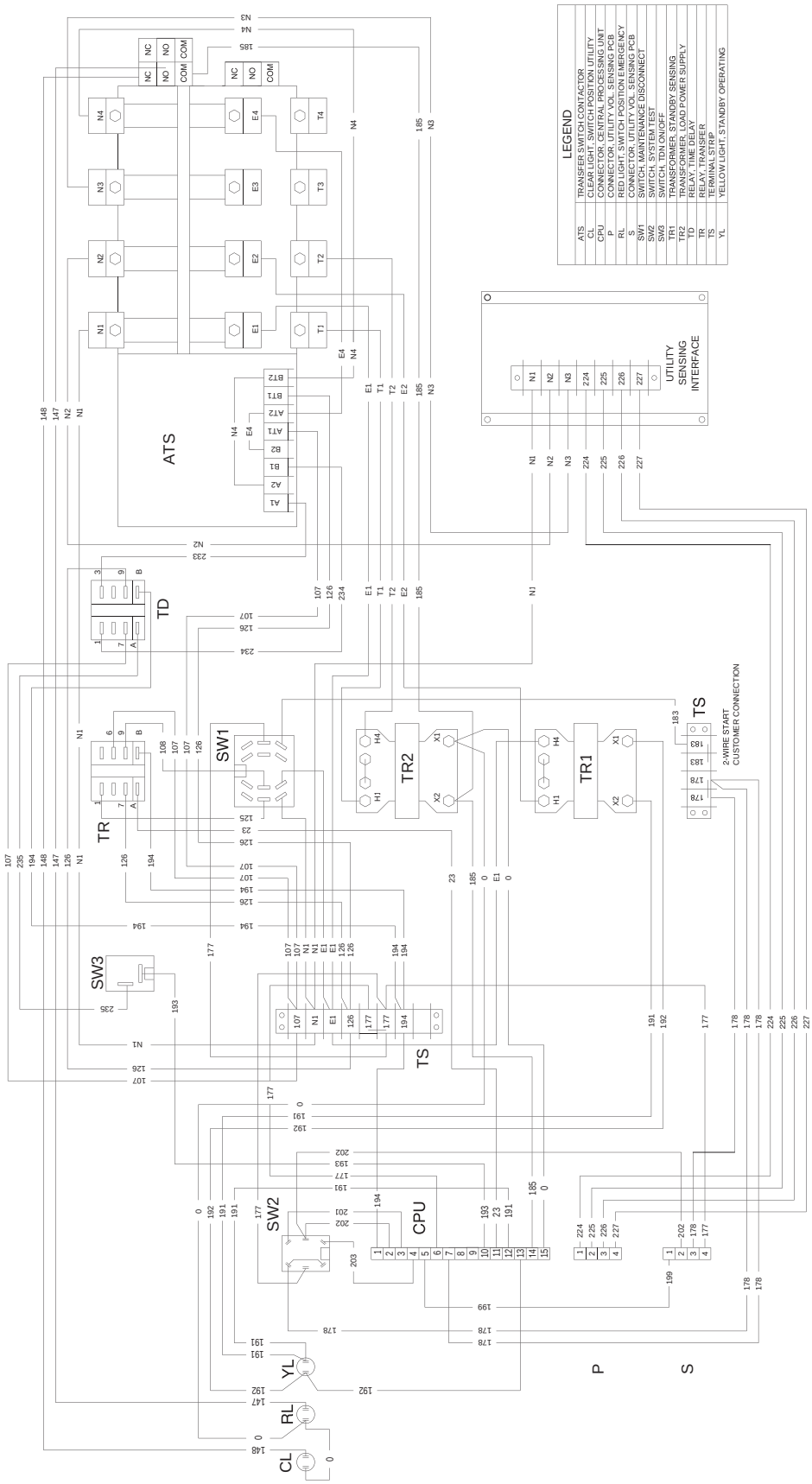
Generac GTS "Wn" Type Transfer Switch

Electrical Schematic - 416V 3P Inphase - Drawing No. 91288



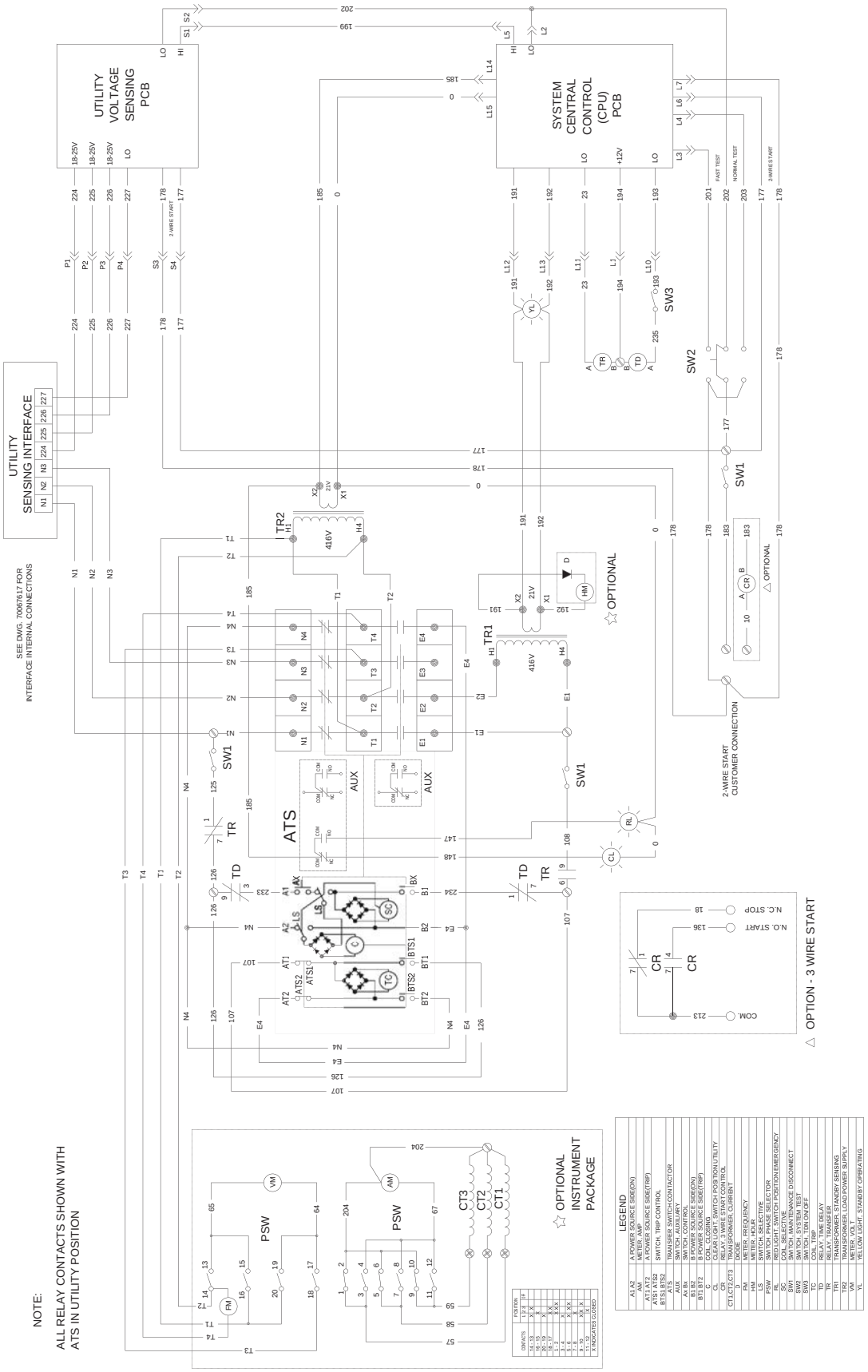
Generac GTS "Wn" Type Transfer Switch

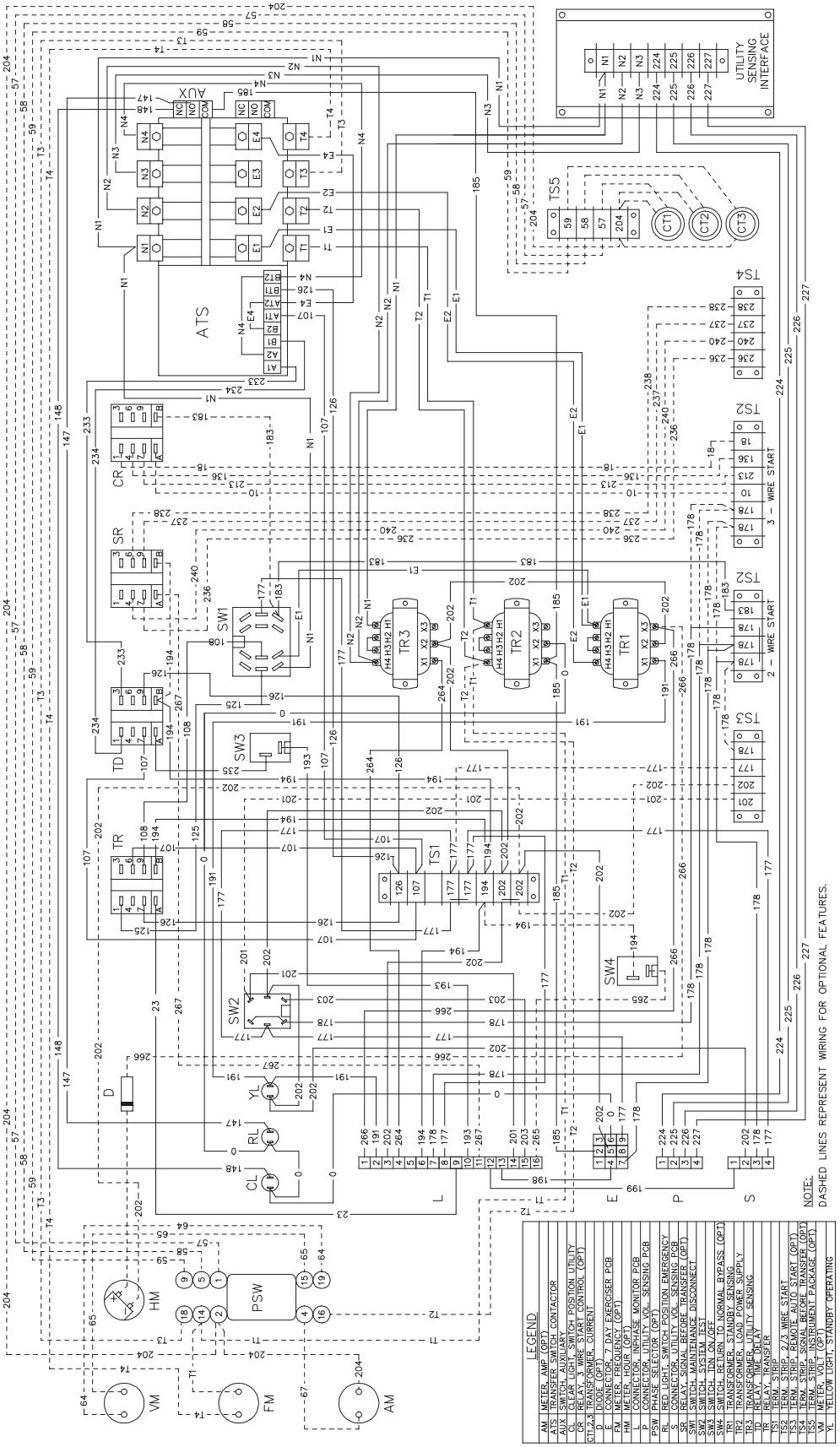
Wiring Diagram - 416V 4P with CPU - Drawing No. 88790



Generac GTS "Wn" Type Transfer Switch

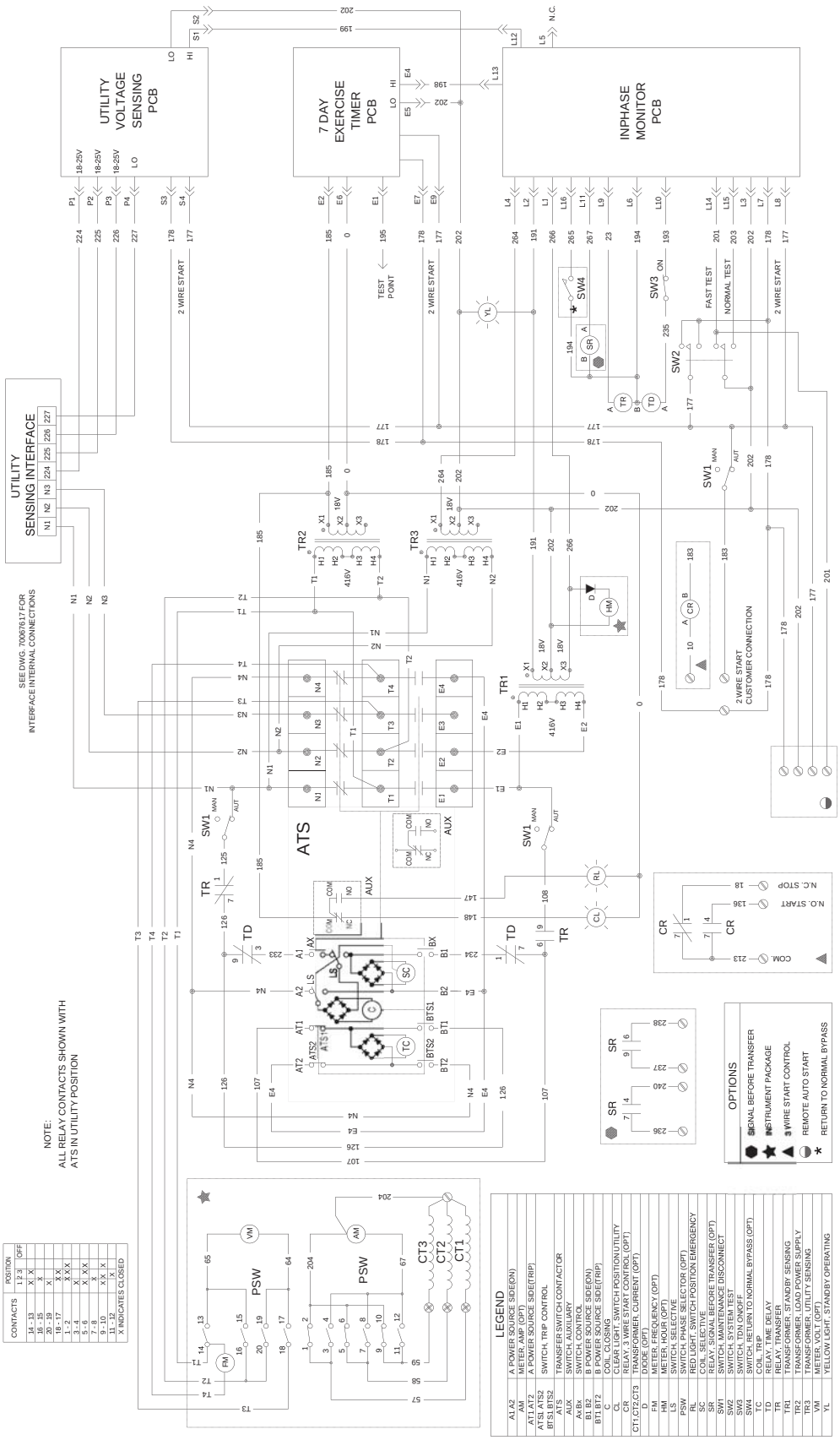
Electrical Schematic - 416V 4P with CPU - Drawing No. 88791




LEGEND
AM METER, AMP (OPT)
ATS TRANSFER SWITCH CONTACTOR
AUX SWITCH, AUXILIARY
CR RELAY, 3 WIRE START CONTROL (OPT)
CT1,2,3 TRANSFORMER, CURRENT
D DIODE (OPT)
E CONNECTOR, 7 DAY EXERCISER PCB
FM METER, FREQUENCY (OPT)
HM METER, HOUR (OPT)
L CONNECTOR, INPHASE MONITOR PCB
P CONNECTOR, UTILITY VOL. SENSING PCB
PSW PHASE SELECTOR (OPT)
RL CONNECTOR, SWITCH POSITION, EMERGENCY
S CONNECTOR, UTILITY VOL. SENSING PCB
SR RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1 SWITCH, MAINTENANCE DISCONNECT
SW2 SWITCH, SYSTEM TEST
SW3 SWITCH, TDN ON/OFF
SW4 SWITCH, RETURN TO NORMAL BYPASS (OPT)
TR1 TRANSFORMER, STANDBY SENSING
TR2 TRANSFORMER, LOAD POWER SUPPLY
TR3 TRANSFORMER, UTILITY SENSING
TD TIME DELAY, ENGINE
TR RELAY, TRANSFER
TS1 TERM. STRIP
TS2 TERM. STRIP, 2/3 WIRE START
TS3 TERM. STRIP, REMOTE AUTO START (OPT)
TS4 TERM. STRIP, SIGNAL BEFORE TRANSFER (OPT)
TS5 TERM. STRIP, INSTRUMENT PACKAGE (OPT)
VM METER, VOLT (OPT)
YL YELLOW LIGHT, STANDBY OPERATING
NOTE: DASHED LINES REPRESENT WIRING FOR OPTIONAL FEATURES.
UTILITY SENSING INTERFACE
ATS
AUX
CR
SR
TD
TR
SW1
SW2
SW3
SW4
TR1
TR2
TR3
TS1
TS2
TS3
TS4
TS5
CT1
CT2
CT3
HM
PSW
VM
FM
AM
YL
RL
CL
D
L
E
P
S
3 - WIRE START
2 - WIRE START

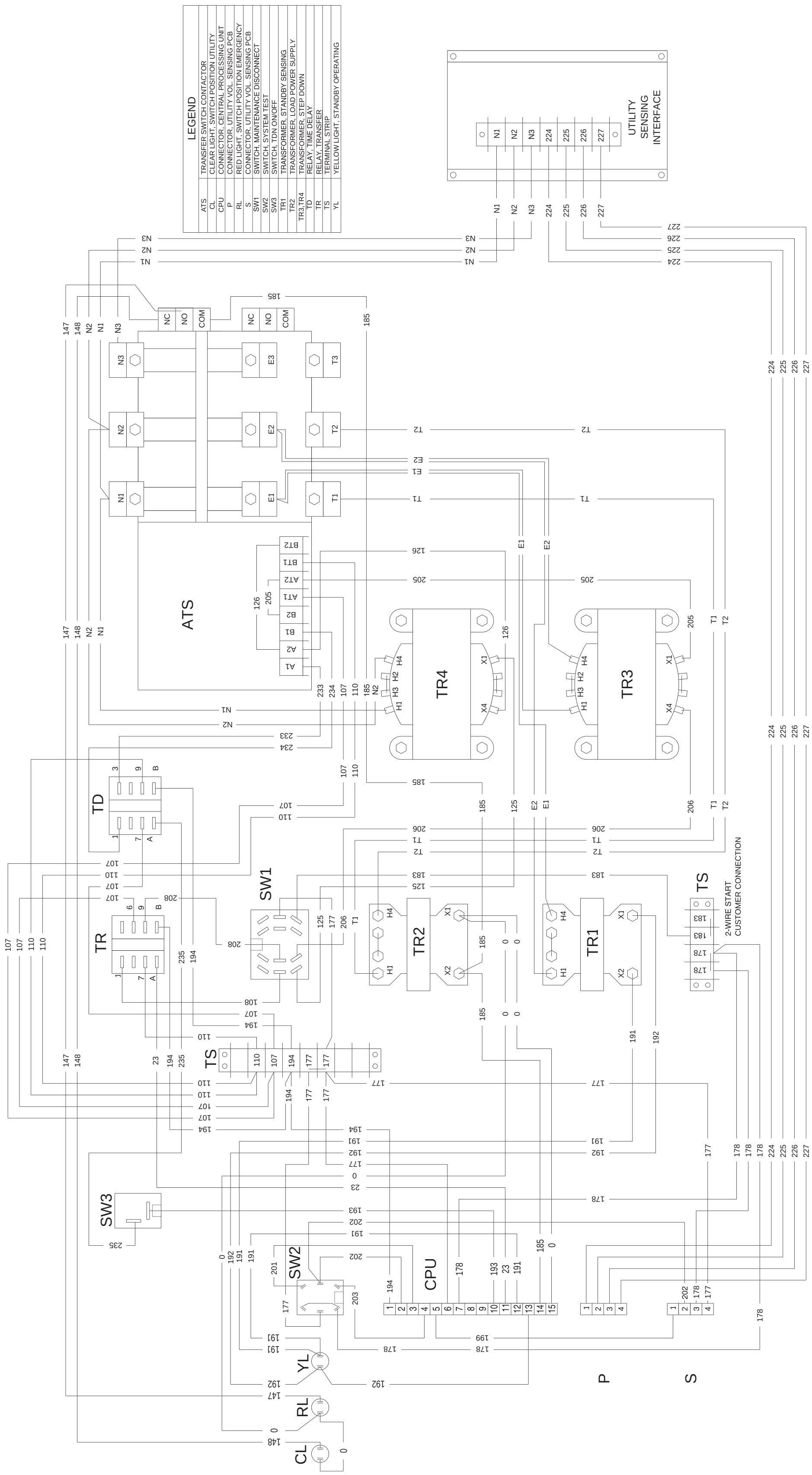
Generac GTS "Wn" Type Transfer Switch

Electrical Schematic - 416V 4P Inphase - Drawing No. 91289



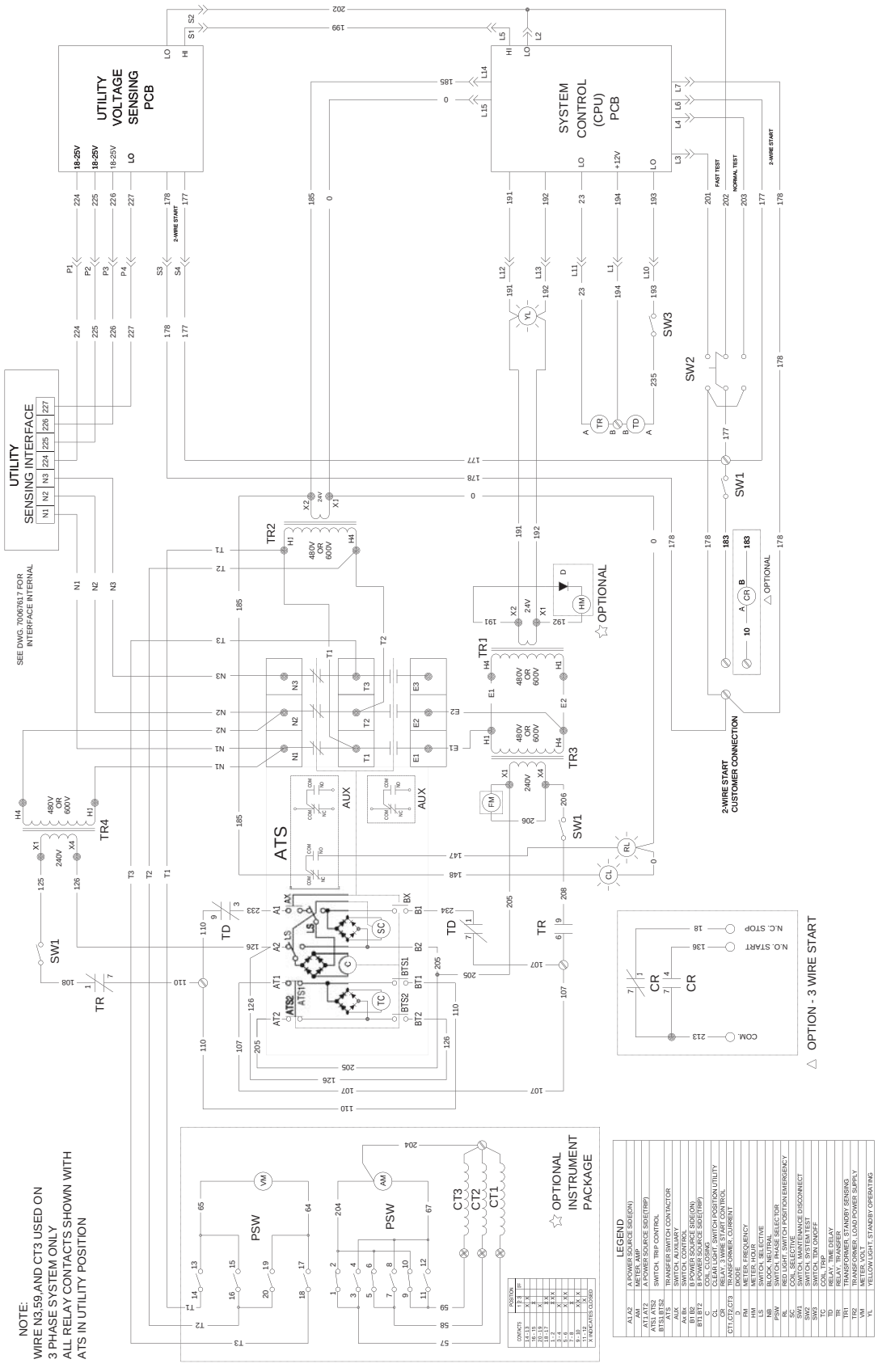
Generac GTS "Wn" Type Transfer Switch

Wiring Diagram - 480V with CPU - Drawing No. 74332-B



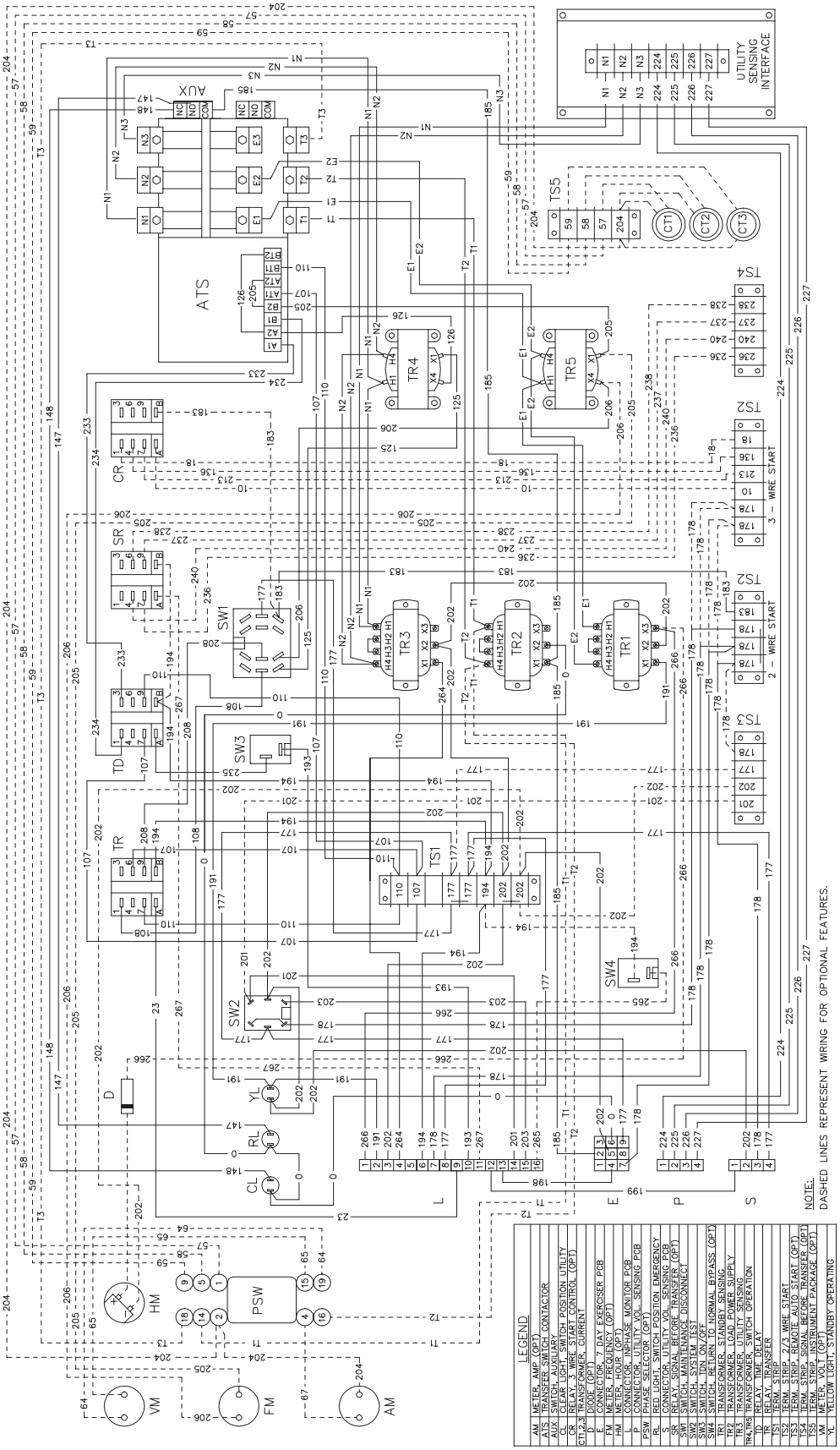
Generac GTS "Wn" Type Transfer Switch

Electrical Schematic - 480V with CPU - Drawing No. 74333-B



Generac GTS "Wn" Type Transfer Switch

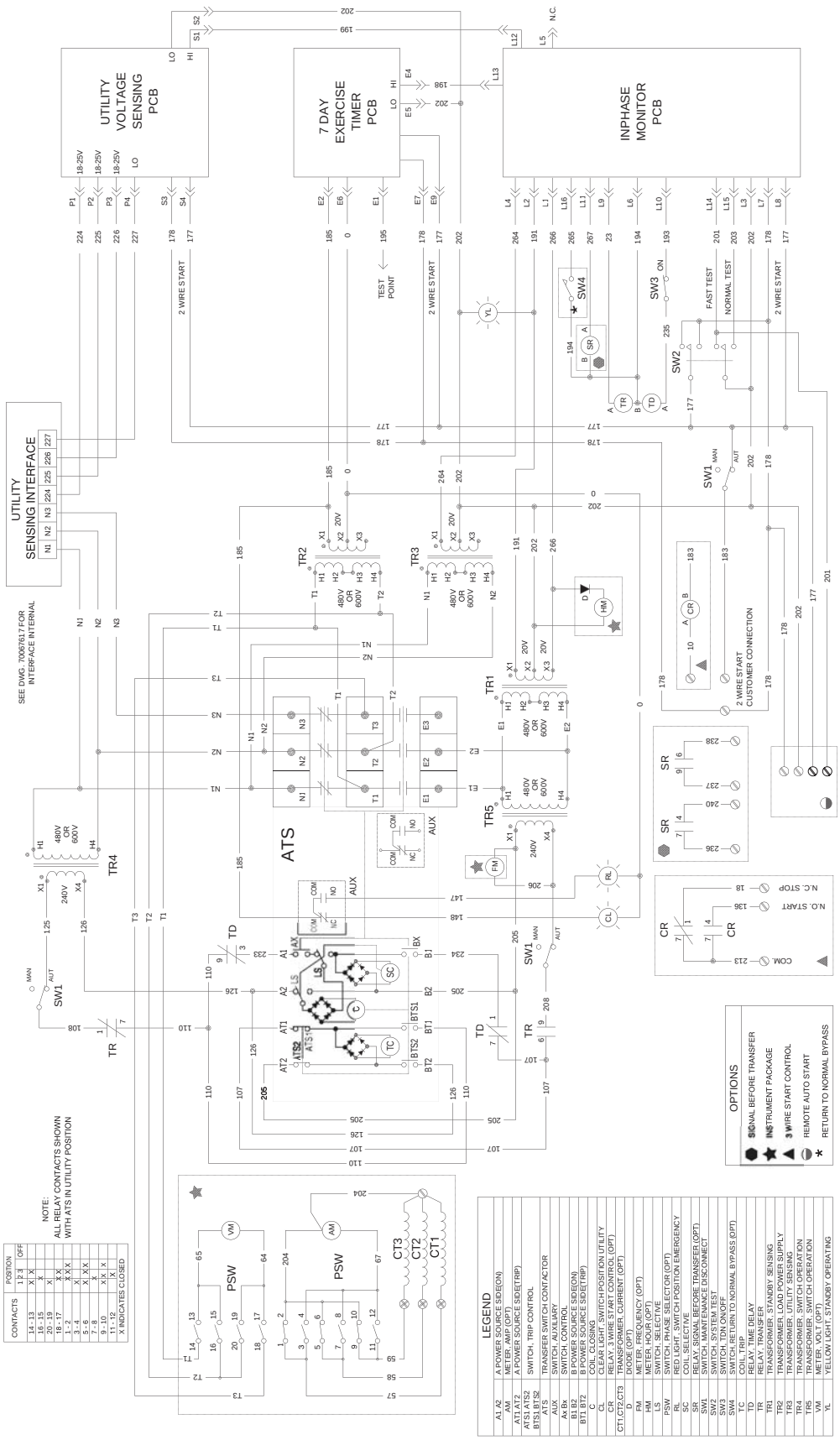
Wiring Diagram - 480V Inphase - Drawing No. 91400

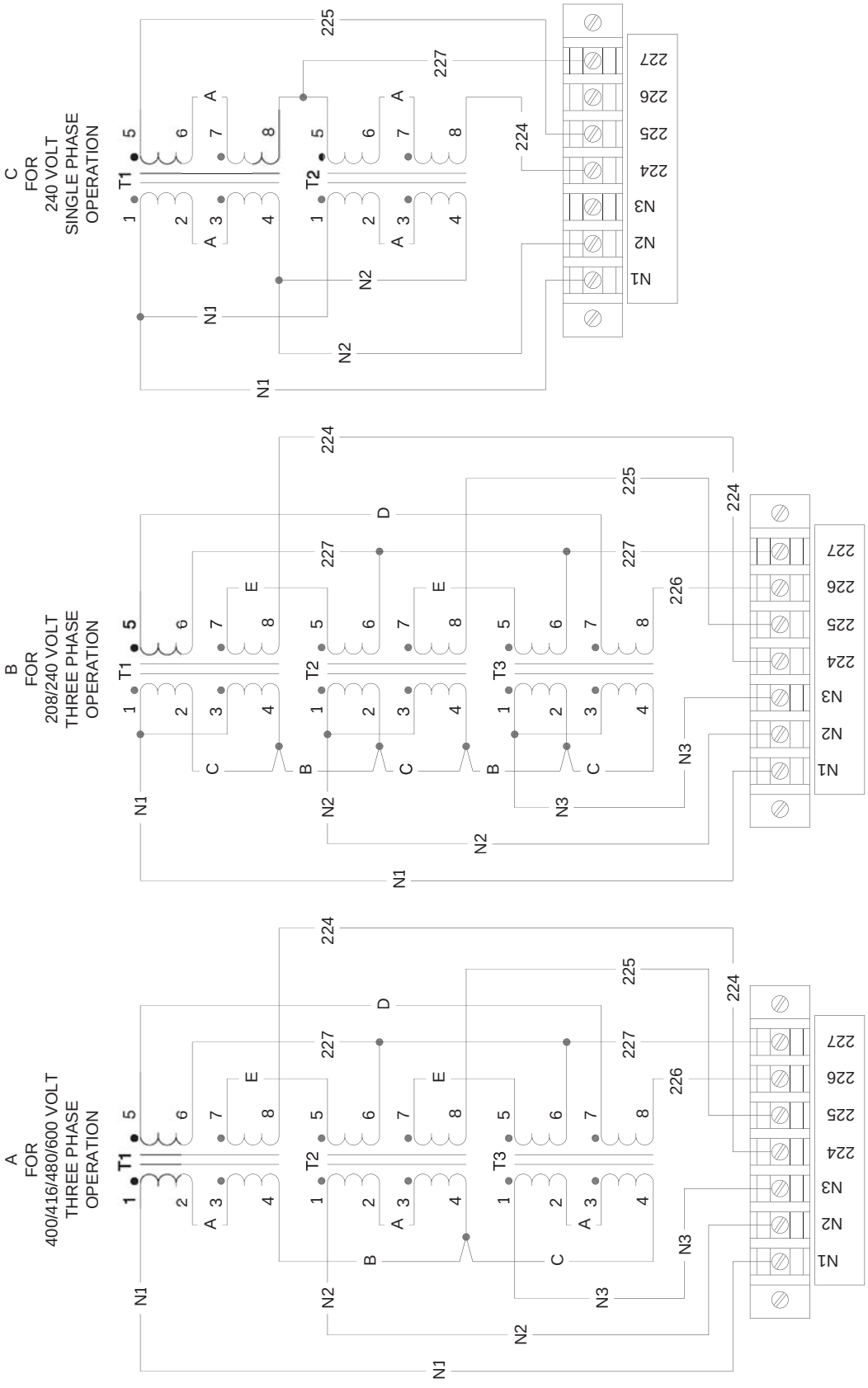


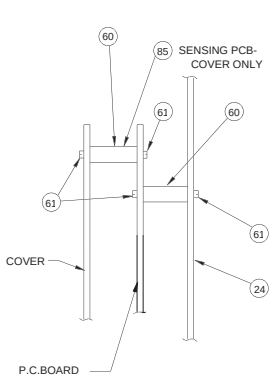
Section 6 — Electrical Schematics and Wiring Diagrams

Generac GTS "Wn" Type Transfer Switch

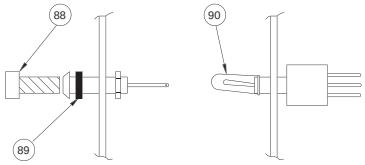
Wiring Diagram - 480V Inphase - Drawing No. 91290




A
FOR
400/416/480/600 VOLT
THREE PHASE
OPERATION
B
FOR
208/240 VOLT
THREE PHASE
OPERATION
C
FOR
240 VOLT
SINGLE PHASE
OPERATION
T1
T2
T3
N1
N2
N3
224
225
226
227



P.C. INSTALLATION (TYPICAL)



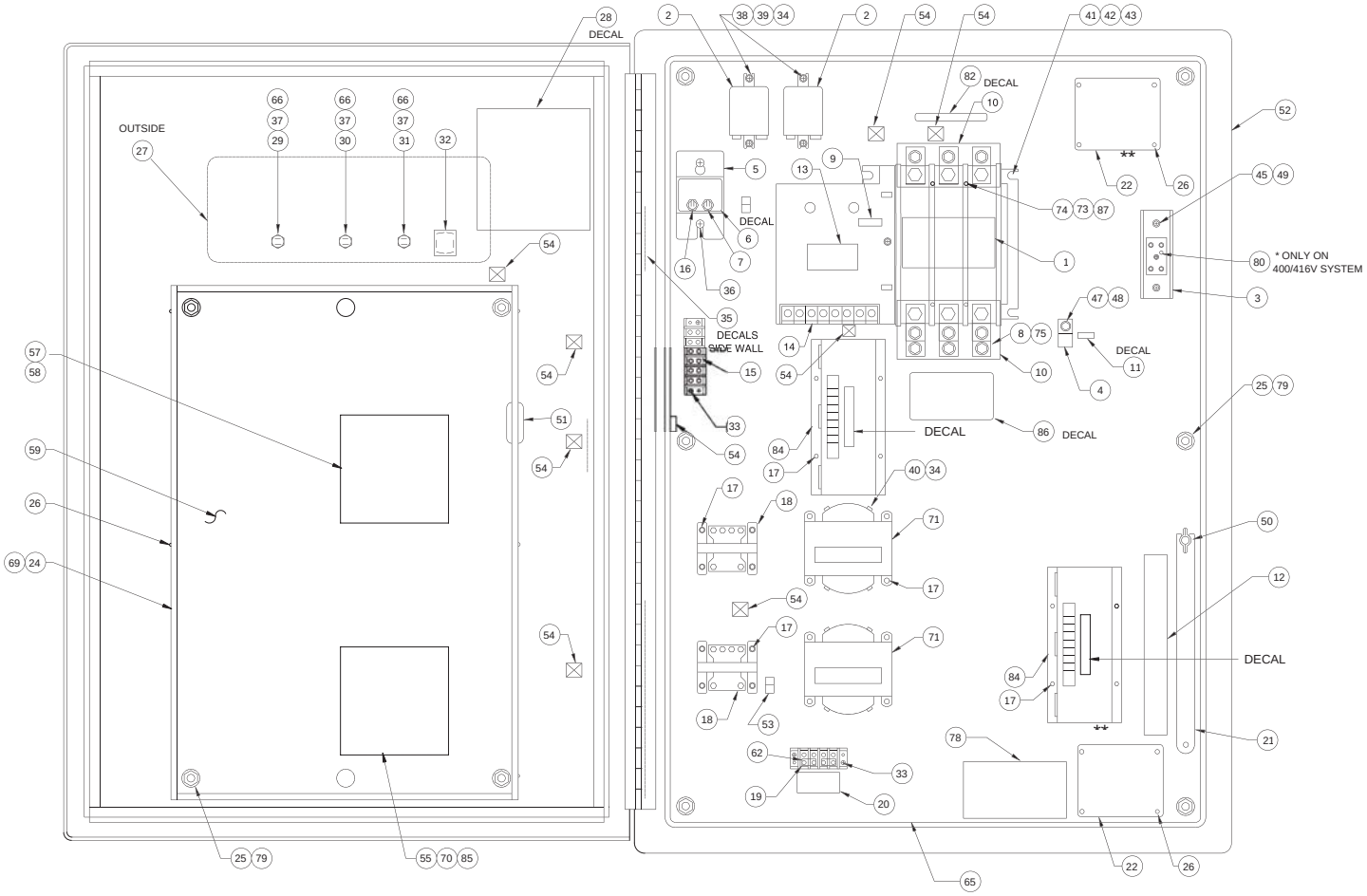
NEMA 3R ENCLOSURE (TYPICAL)

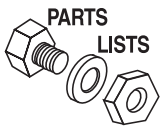
** 100 AMP ONLY

* NOTES:
NOT USED ON 1-PHASE, 3 POLE SYSTEMS OR ANY 4 POLE SYSTEM.

MANUFACTURING NOTE

1. WIPE OFF AICHI INSIGNIA USING SOLVENT, FROM TRANSFER SWITCH CONTACTOR (ITEM #1)
2. REMOVE AICHI MODEL AND RATING DECAL.

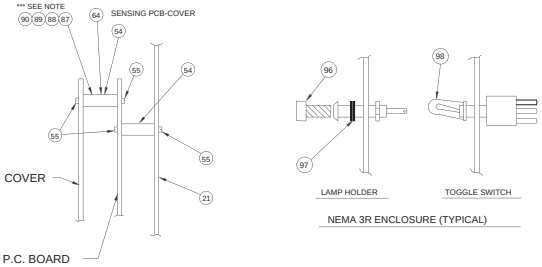




ITEM	PART NO.	QTY.	DESCRIPTION
1	064787	1	SWITCH ASSEM, TRANSFER, 100A, 3 - POLE
	064788		SWITCH ASSEM, TRANSFER, 100A, 4 - POLE
	064790		SWITCH ASSEM, TRANSFER, 200A, 3 - POLE
	064791		SWITCH ASSEM, TRANSFER, 200A, 4 - POLE
	064793		SWITCH ASSEM, TRANSFER, 300A, 3 - POLE
	064794		SWITCH ASSEM, TRANSFER, 300A, 4 - POLE
	064796		SWITCH ASSEM, TRANSFER, 400A, 3 - POLE
	064797		SWITCH ASSEM, TRANSFER, 400A, 4 - POLE
2	063617	2	RELAY, TRANSFER
3	063384		LUG ASSEMBLY NEUTRAL - 100 AMP
	063657	1*	LUG ASSEMBLY NEUTRAL - 200 & 300 AMP
	062633		LUG ASSEMBLY NEUTRAL - 400 AMP
4	057329	1	LUG GROUNDING 200-300-400 AMP
	062684		LUG GROUNDING 100 AMP
5	074509	1	BRACKET SAFE DISCONNECT SWITCH
6	074511	1	DECAL MAINTENANCE DISCONNECT SWITCH
7	055868	1	SWITCH SAFETY DISCONNECT -4PDT
8	099084	9	LUG SOLDERLESS - 100 AM
	062706		LUG SOLDERLESS - 200&300 AM
	062707		LUG SOLDERLESS - 400 AM
9	074513-B	1	DECAL, 100 AMP, 3 POLE SWITCH
	074513-F		DECAL, 100 AMP, 4 POLE SWITCH
	074513-C		DECAL, 200 AMP, 3 POLE SWITCH
	074513-G		DECAL, 200 AMP, 4 POLE SWITCH
	074513-D		DECAL, 300 AMP, 3 POLE SWITCH
	074513-H		DECAL, 300 AMP, 4 POLE SWITCH
	074513-E		DECAL, 400 AMP, 3 POLE SWITCH
	074513-J		DECAL, 400 AMP, 4 POLE SWITCH
10	073662-B	2	COVER 100 AMP, SWITCH
	073662-C		COVER, 100 AMP, 4-POLE SWITCH
	073662-D		COVER, 200 AMP, 3-POLE SWITCH
	073662-E		COVER, 200 AMP, 4-POLE SWITCH
	073662-F		COVER, 300 & 400 AMP 3-POLE SWITCH
	073662-G		COVER, 300 & 400 AMP 4-POLE SWITCH
11	067210-A	1	DECAL GROUND
12	074525	1	DECAL MANUAL OPERATION
13	073617-B	1	DECAL 100 AMP 3-POLE SWITCH
	073617-F		DECAL 100 AMP 4-POLE SWITCH
	073617-C		DECAL 200 AMP 3-POLE SWITCH
	073617-G		DECAL 200 AMP 4-POLE SWITCH
	073617-D		DECAL 300 AMP 3-POLE SWITCH
	073617-H		DECAL 300 AMP 4-POLE SWITCH
	073617-E		DECAL 400 AMP 3-POLE SWITCH
	073617-J		DECAL 400 AMP 4-POLE SWITCH
14	063357	1	DECAL MAC - DT - GTS
15	046357	1	BLOCK TERMINAL 480V SYSTEM
	057701		BLOCK TERMINAL - 208, 240, 416 VOLT SYSTEM
16	028199	1	SWITCH TIME DELAY NEUTRAL BYPASS
17	056893	20	SCREW CRIMPTITE - NO. 10-24 X 1/2"
18	047616	2	TRANSFORMER
19	046689	1	BLOCK, TERMINAL
20	063580	1	DECAL, TERMINAL BLOCK
21	063321	1	HANDLE, MANUAL
22	063578	1	PLATE, DATA
23			NOT USED
24	068212	1	COMPARTMENT, CIRCUIT BOARD
25	064101	10	NUT FLANGED LOCK - 3/8"-16
26	036261	10	RIVET POP - 1/8" X 0.23"
27	073681	1	GTS - DECAL
28	063385	1	DECAL - AUTOMATIC SEQUENCE
29	057328	1	LENS LAM -CLEAR
30	057327	1	LENS LAM -RED
31	057325	1	LENS LAM -YELLOW
32	055142	1	SWITCH MODE -DPDT
33	0A1661	4	RIVET, POP.156 D X.5 LG.
34	022264	12	WASHER, LOCK -NO.8
35	073619-B	1	DECAL, TESTING SEQUENCE 100 AMP
	073619-C		DECAL TESTING SEQUENCE 200 AMP
	073619-D		DECAL TESTING SEQUENCE 300 AMP
	073619-E		DECAL TESTING SEQUENCE 400 AMP
36	0A2111	2	10-32 - 5/16 FASTENER
37	057514	3	HOLDER LAM
38	038150	4	WASHER FLAT -NO.8
39	0A2284	4	8-32 X 1/2 FASTENER
40	036917	8	PPHMS 8-32 X 3/8"
41	090388	3	M6-1 .0 X 12 TAPTITE
42	049811	3	WASHER FLAT - M6
43	022097	3	WASHER LOCK-M6
44	058000-L	1	TRIC-NUT - M6 100-200 AMP
45	0A2312	2	10-32 - 1" FASTENER 100 AMP
	0A2311	2	1/4-20-1 SCREW 150-400 AMP
46			
47	024526	1	SCREW TAPTITE - 5/16"-18 X 3/4"
48	022129	1	WASHER LOCK-5/16"
49	022678	1 CC	LOC-TITE TYPE A
50	064113	1	STUD MANUAL HANDLE INCLUDES WIN NUT
51	072252	1	GROMMET
52	074398	1	NEMA 12 ENCLOSURE 100 AMP
	074399		NEMA 12 ENCLOSURE 150-200-300-400 AMP
53	063378	8	TIE-DOWN CABLE
54	057593	11	TIE-DOWN CABLE
55	067629	1	BOARD UTILITY VOLTAGE SENSING
56	----	-	NOT USED
57	067626	1	BOARD SYSTEM CONTROL CPU
58	071775	1	COVER CPU
59	063582	1	DOOR CIRCUIT BOARD COMPARTMENT
60	064525	20	SUPPORT CIRCUIT BOARD
61	063526	24	SCREW IN - NO. 6-32 X 3/8"
62	046669	2	JUMPER TERMINAL BLOCK
63	----	-	NOT USED
64	----	-	NOT USED
65	064152	1	SUB-PLATE - 100 AMP
	064151		SUB-PLATE - 150-400 AMP
66	040587	3	LAMP
67	----	-	NOT USED
68	----	-	NOT USED
69	063981	2	GUIDE SIDE
70	020A67616	1	COVER, UTILITY VOLTAGE SENSING BOARD
71	064126	2	TRANSFORMER 480 VOLTS ONLY
72	073964	1	HARNESS WIRING - 100 AMP
	073965		HARNESS WIRING - 150-200-300-400 AMP
73	0BH-45761	4	SUPPORT SWITCH COVER - 200 AMP
	0BJ-45761		SUPPORT SW. COVER - 100-300-400 AMP
74	063986	4	KNOB HOLD-DOWN
75	026902	3 EA	TAPTITE #8-32 X 1/4" 3 PER POLE
76			
77	----	-	NOT USED
78	062209	1	DECAL UL
79	022131	10	WASHER FLAT-3/8"
80	026902	1	TAPTITE #8-32 X 1/4" 416 VOLT ONLY)
81	----	-	NOT USED
82	064510	1	DECAL TERMINAL NOTE
83	----	-	NOT USED
84	030A67617	1	INTERFACE - "GTS" UTIL. (416/480 VOLTS 3Ø)
	030B67617		INTERFACE - "GTS" UTIL. (208/240 VOLTS, 3Ø)
	030C67617		INTERFACE - "GTS" UTIL. (240 VOLTS 1Ø)
	072160		INTERFACE - "GTS" UTILITY (400V, 3Ø)
85	068337	4	STANDOFF HEX 1"LG. STD. SENSING ONLY)
86	054199	1	DECAL HIGH VOLTAGE
87	064210	4	COVER SUPPORT - 100-300-400 AMP
	064210	8	COVER SUPPORT - 150-200 AMP
88	072829	3	GSKT LM HOLDER LENS (NEMA 3R ENCL. ONLY)
89	074548	3	GASKET, LAMPHOLDER (NEMA 3R ENCL. ONLY)
90	072828	1	SW. BOOT, WTRPROOF (NEMA 3R ENCL. ONLY)

Generac GTS "Wn" Type Transfer Switch

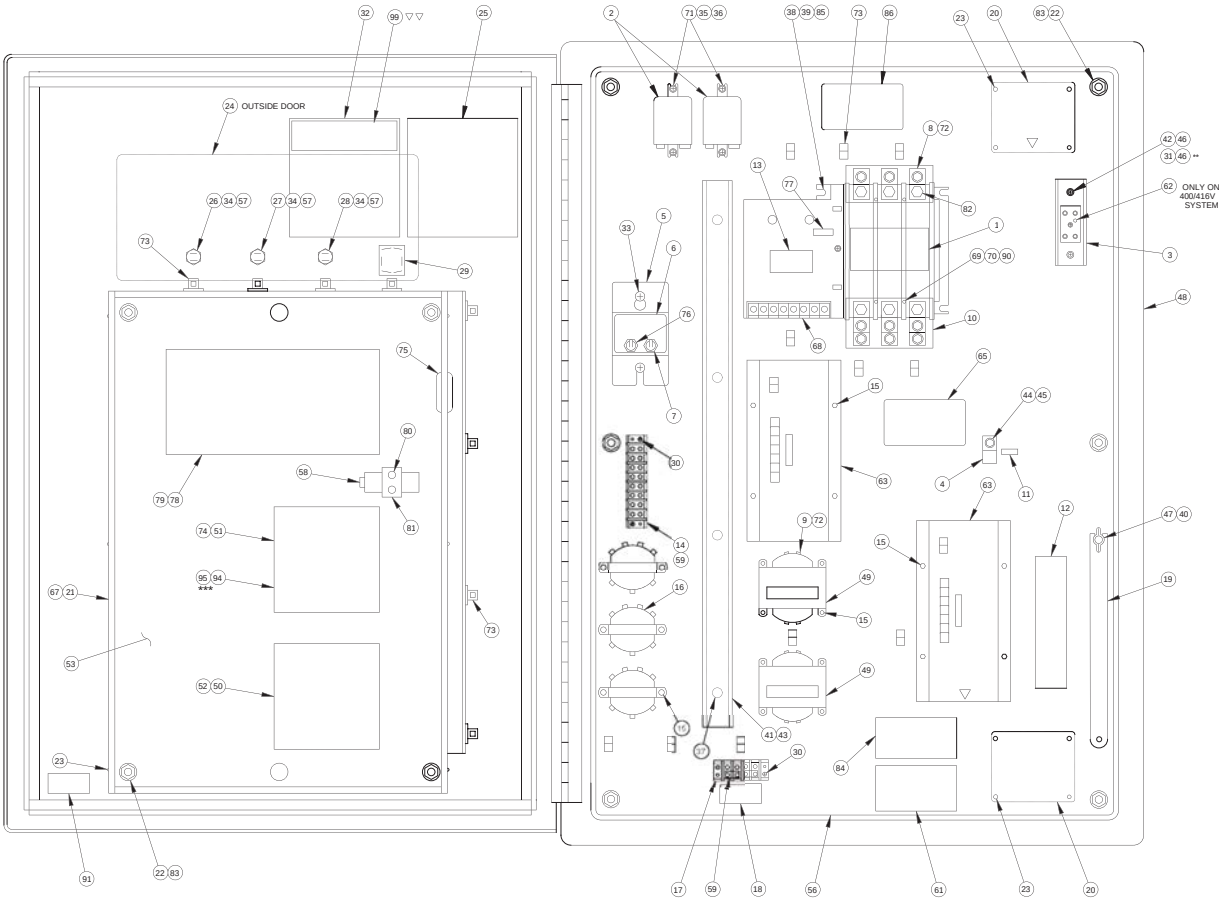
100-400A Inphase Assembly - Drawing No. 091186-B



P.C. BOARD INSTALLATION
TYPICAL

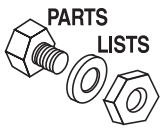
NOTES:
* NOT USED WITH 1Ø, 3 POLE OR 4 POLE SYSTEMS.
** USED WITH 200, 300 AND 400 AMP SWITCH.
*** USED ONLY WITH #63919 BOARD.
LOCATION FOR 100 AMP SWITCH ONLY.
USED ONLY WITH 600 VOLT SWITCHES.

MANUFACTURING NOTES:
1. WIPE OFF AICHI INSIGNIA USING SOLVENT, FROM TRANSFER SWITCH CONTACTOR (ITEM #1).
2. REMOVE AICHI MODEL AND RATING DECAL.
3. USE ITEM #93 AT CHAFE POINTS AS REQUIRED.



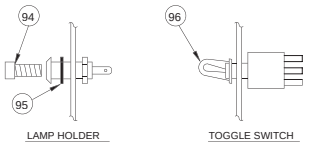
ITEM	PART NO.	QTY.	DESCRIPTION
1	064787	1	SWITCH, TRANSFER - 100 AMP, 3-POLE
	064788	1	SWITCH, TRANSFER - 100 AMP, 4-POLE
	064790	1	SWITCH, TRANSFER - 200 AMP, 3-POLE
	064791	1	SWITCH, TRANSFER - 200 AMP, 4-POLE
	064796	1	SWITCH, TRANSFER - 300/400 AMP, 3-POLE
	064797	1	SWITCH, TRANSFER - 300/400 AMP, 4-POLE
2	063617	2	RELAY, TRANSFER
3*	063384	1	LUG, NEUTRAL - 100 & 150 AMP SWITCH
	063657	1	LUG, NEUTRAL - 200 & 300 AMP SWITCH
	062633	1	LUG, NEUTRAL - 400 AMP SWITCH
4	062684	1	LUG, GROUNDING - 100 & 150 AMP SWITCH
	057329	1	LUG, GROUNDING - 200 - 400 AMP SWITCH

ITEM	PART NO.	QTY.	DESCRIPTION
5	074509	1	BRACKET, SAFETY DISCONNECT SWITCH
6	074511	1	DECAL, SAFETY DISCONNECT SWITCH
7	055868	1	SWITCH, SAFETY DISCONNECT - 4PDT
8	099084	-	LUG, 100-150 AMP SWITCH (3/POLE)
	062706	-	LUG, 200, 300 AMP SWITCH (3/POLE)
	062707	-	LUG, 400 AMP SWITCH (3/POLE)
9	36917	8	PPHMS 8-32 X 3/8
10	073662-B	2	COVER, 100 AMP, 3-POLE SWITCH
	073662-C	2	COVER, 100 AMP, 4-POLE SWITCH
	073662-D	2	COVER, 200 AMP, 3-POLE SWITCH
	073662-E	2	COVER, 200 AMP, 4-POLE SWITCH
	073662-F	2	COVER, 300/400 AMP, 3-POLE SWITCH
	073662-G	2	COVER, 300/400 AMP, 4-POLE SWITCH
11	067210-A	1	DECAL, GROUND
12	074525	1	DECAL, MANUAL OPERATION



ITEM	PART NO.	QTY.	DESCRIPTION
13	073617-B	1	DECAL, 100 AMP, 3 & 4-POLE SWITCH
	073617-C	1	DECAL, 200 AMP, 3 & 4-POLE SWITCH
	073617-D	1	DECAL, 300 AMP, 3 & 4-POLE SWITCH
	073617-E	1	DECAL, 400 AMP, 3 & 4-POLE SWITCH
14	057701	-	BLOCK, TERMINAL - 8 POS.
15	056893	14	SCR. CRIMPTITE #10-24 X 1/2"
16	090975	3	TRANSFORMER - 25VA
17	046689	-	BLOCK, TERMINAL - 4 POS.
18	091466	1	DECAL, TERMINAL BLOCK
19	063321	1	HANDLE, MANUAL TRANSFER
20	63578	1	PLATE, DECAL
21	068212	1	COMPARTMENT, PRINTED CIRCUIT BOARD
22	064101	10	NUT, FLANGED LOCK 3/8" - 16
23	036261	14	RIVET, POP 1/8" X .23" SS
24	073681	1	DECAL, GTS
	056298	1	DECAL, GTS NEMA 3R ENCLOSURE
	090257	1	DECAL, CTS NEMA 3R ENCLOSURE
	087227	1	DECAL, CTS
25	091478	1	DECAL, AUTOMATIC SEQUENCE
26	057328	1	LENS, LAMP CLEAR
27	057327	1	LENS, LAMP RED
28	057325	1	LENS, LAMP YELLOW
29	055142	1	SWITCH, MODE DPDT
30	0A1661	4	RIVET, POP .156 D X .5 LG.
31	0A2311	2	1/4-20-1" SCREW
32	073619-B	1	DECAL, TESTING SEQUENCE 100 AMP
	073619-N	1	DECAL, TESTING SEQUENCE 150 AMP
	073619-C	1	DECAL, TESTING SEQUENCE 200 AMP
	073619-D	1	DECAL, TESTING SEQUENCE 300 AMP
	073619-E	1	DECAL, TESTING SEQUENCE 400 AMP
33	0A2111	2	10-32 X 5/16" FASTENER
34	057514	3	HOLDER, LAMP
35	038150	4	WASHER, FLAT #8
36	0A2284	4	8-32 X 1/2 FASTENER
37	091477	5	RIVET, NYLON "PUSH"
38	090388	3	M6-1.0 X 12 TAPTITE
39	049811	3	WASHER, FLAT M6
40	058000-L	1	TRIC-NUT - M6 X 1.0 THD.
41	091472	1	DUCT, WIRE 24 1/4" LG.
		1	DUCT, WIRE 33 1/2" LG.
42	0A2312	2	10-32 - 1" FASTENER
43	91472-A	1	COVER, WIRE DUCT 24 1/4" LG.
		1	COVER, WIRE DUCT 33 1/2" LG.
44	024526	1	SCR., TAPTITE 5/16"-18 X 3/4"
45	022129	1	WASHER, LOCK 5/16"
46	022678	1 CC	LOC-TITE (TYPE A)
47	064113	1	STUD (INCLUDES WING NUT)
48	063558	1	ENCLOSURE, 100-150 AMP INST. PKG.
	073959	1	ENCLOSURE, 100-150 AMP NEMA 12
	073961	1	ENCLOSURE, 100-150 AMP NEMA 1
	073961-C	1	ENCLOSURE, 100-150 AMP NEMA 3R
	063559	1	ENCLOSURE, 200-400 AMP INST. PKG.
	073960	1	ENCLOSURE, 200-400 AMP NEMA 12
	073962	1	ENCLOSURE, 200-400 AMP NEMA 1
	073962-C	1	ENCLOSURE, 200-400 AMP NEMA 3R
49	064126	2	TRANSFORMER, 480V ONLY
	072162	2	TRANSFORMER, 600V ONLY
50	067629	1	BRD., UTIL. VOLT. SENS. MULTI-VOLT
51	064217	1	BOARD, CIRCUIT EXERCISER (STD.)
	063919	1	BOARD, CIRCUIT EXERCISER (DELUXE)
52	020A67616	1	CVR., UTIL. VOLT. SENS. BOARD
53	63582	1	DOOR, PRINTED CIRCUIT BRD. COMPT.
54	064525	20	SUPPORT, PRINTED CIRCUIT BOARD
55	064526	48	SCR., TAPTITE #6-32 X 3/8"
56	064152	1	SUBPLATE, 100 AMP SWITCH
	064151	1	SUBPLATE, 150-400 AMP SWITCH
57	040587	3	LAMP, 28 VOLT
58	063998	1	BATTERY, 9 VOLT
59	046669	-	JUMPER, TERMINAL BLOCK
60	073964	-	HARNESS-WRG 100 AMP SW (NOT SHOWN)
	073965	-	HARNESS-WRG 150-400A SW (NOT SHOWN)
61	062209	1	DECAL, UL
62	026902	1	SCR. TAPTITE #8-32 X 1/4" 100/150A SW
63	030A67617	1	INTERFACE, UTILITY 416/480V 3-PHASE
	030B67617	1	INTERFACE, UTILITY 208/240V 3-PHASE
	086961	1	INTERFACE, UTILITY 240V 1-PHASE
	072160	1	INTERFACE, UTILITY 400V 3-PHASE
	072158	1	INTERFACE, UTILITY 600V 3-PHASE
64	068337	4	STANDOFF, HX SPCR 1.0"L (STD SENS.)
65	054199	1	DECAL, HIGH VOLTAGE
66	064761	-	TIE-WRAP, 5 5/8" LG. (NOT SHOWN)
67	063981	2	GUIDE, SIDE
68	063357	1	DECAL, MAC DT GTS
69	0BH-45761	4	SUPPORT, SWITCH COVER 200 AMP
	0BJ-45761	4	SUPT., SWITCH COVER 100, 300-400A
70	063986	4	KNOB, HOLD-DOWN
71	022264	12	WASHER, LOCK #8
72	026902	-	SCR., TAPTITE #8-32 X 1/4"
73	063378	31	TIE-DOWN, CABLE
74	063996	1	CVR., EXERCISER CIRCUIT BRD. (STD.)
	064298	1	CVR., EXERCISER CIRCUIT BRD. (DLX.)
75	0722525	1	GROMMET
76	028199	1	SWITCH, TIME DELAY NEUTRAL BYPASS
77	074513-B	1	SWITCH PART #64787
	074513-C	1	SWITCH PART #64790
	074513-D	1	SWITCH PART #64793
	074513-E	1	SWITCH PART #64796
	074513-F	1	SWITCH PART #64788
	074513-G	1	SWITCH PART #64791
	074513-H	1	SWITCH PART #64794
	074513-J	1	SWITCH PART #64797
78	092734	1	PCB, INPHASE MONITOR
79	094446	1	COVER, INPHASE CONTROL
80	029357	2	RIVET
81	063982	1	CLIP, BATTERY
82	067989	9	NUT, FLANGED LOCK M8-1.25
83	022131	10	WASHER, FLAT 3/8"
84	083736	1	DECAL, CSA
85	022097	3	WASHER, LOCK M6
86	064510	1	DECAL, TERMINAL NOTE
87***	033139	4	SCR.C HEX HS. MACH. #6-32 X 3/4"
88***	022188	4	NUT, HEX #6-32
89***	022155	4	LOCKWASHER, #6
90***	064210	12	TUBE, NYLONE Ø .17 X .43
91	077228	1	DECAL, ENCLOSURE TYPE
92	064153-A	4	WIRE, XFORMER JUMPER (NOT SHOWN)
93	056326	-	TRIM, VINYL 1/8" GAP (NOT SHOWN)
94***	064861-A	1	RED PLEXI 1.5 X 3
95***	064861-B	1	RED PLEXI 1.5 X 1
96	072829	3	GASKET-LAMPHOLDER LENS (NEMA 3R)
97	074548	3	GASKET, LAMPHOLDER (NEMA 3R ENCL.)
98	072828	1	SWITCH BOOT-WATERPROOF (NEMA 3R)
99∇∇	095080-A	1	DECAL 600 VOLT RATINGS 100 AMP
	095080-B	1	DECAL 600 VOLT RATINGS 150/200 AMP
	095089-A	1	DECAL 600 VOLT RATINGS 300-400 AMP

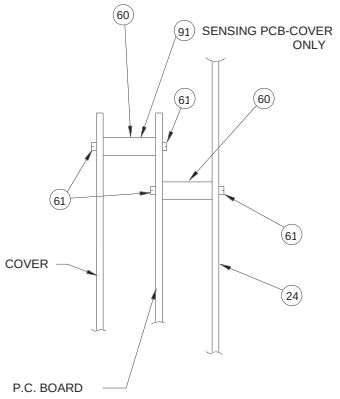
* NOT USED WITH 1Ø, 3-POLE OR 4-POLE SYSTEMS.
** USED WITH 200,300 AND 400 AMP SWITCH.
*** USED ONLY WITH #63919 BOARD.
∇ LOCATION FOR 100 AMP SWITCH ONLY.
∇∇ USED ONLY WITH 600 VOLT SWITCHES.



NEMA 3R ENCLOSURE (TYPICAL)

MANUFACTURING NOTE

1. WIPE OFF AICHI INSIGNIA USING SOLVENT, FROM TRANSFER SWITCH CONTACTOR (ITEM #1).
2. REMOVE AICHI MODEL AND RATING DECAL.

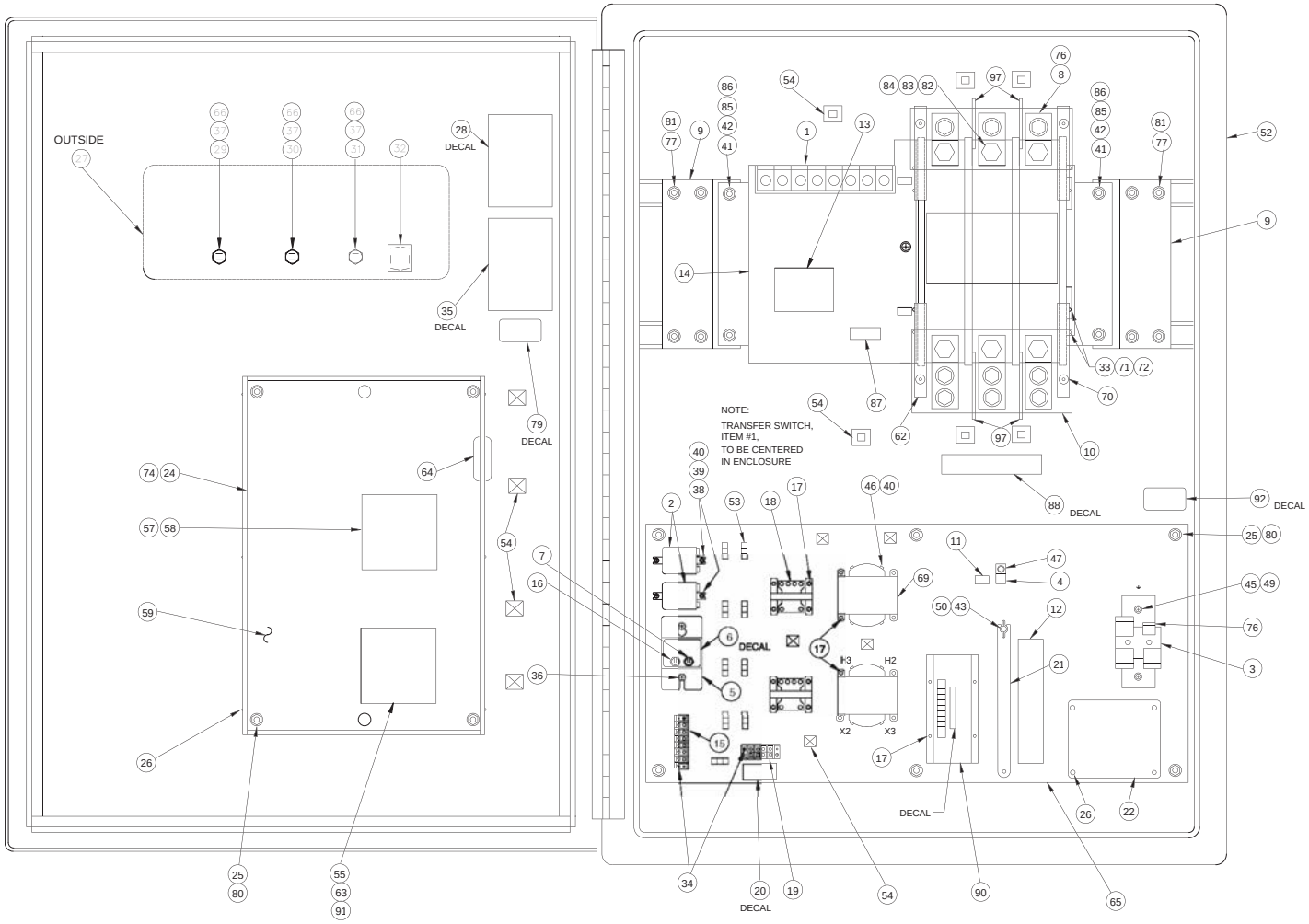


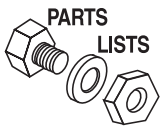
P.C. BOARD INSTALLATION (TYPICAL)

NOTES:

1. * NOT USED ON 1-PHASE, 3-POLE SYSTEMS OR ANY 4-POLE SYSTEM
2. ** INSULATING BARRIER (ITEM #97) MAY BE USED.

B



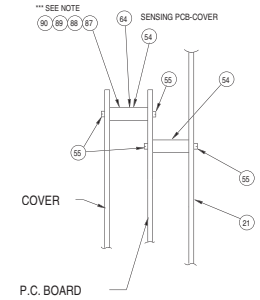


ITEM	PART NO.	QTY.	DESCRIPTION
1	072111	1	SWITCH ASSEMBLY, TRANSFER, 600 AMP, 3P
	072117		SWITCH ASSEMBLY, TRANSFER, 600 AMP, 4P
	072112		SWITCH ASSEMBLY, TRANSFER, 800 AMP, 3P
	072118		SWITCH ASSEMBLY, TRANSFER, 800 AMP, 4P
	072113		SWITCH ASSY, TRANSFER, 1000 AMP, 3P
	072119		SWITCH ASSY, TRANSFER, 1000 AMP, 4P
2	063617	2	RELAY, TRANSFER
3	062633	1	*LUG ASSEMBLY, NEUTRAL - 600 AMP
	062641		*LUG ASSY., NEUTRAL - 800&1000 AMP
4	057329	1	LUG, GROUNDING
5	074509	1	BRACKET, SAFETY DISCONNECT SWITCH
6	074511	1	DECAL, SAFETY DISCONNECT SWITCH
7	055868	1	SWITCH, SAFETY DISCONNECT - 4PDT
8	064188	9**	LUG, SOLDERLESS - 600 AMP
	064939		LUG, SOLDERLESS - 800 & 1000 AMP
9	075099	2	SUPPORT - TRANSFER SWITCH
10	074349-A	2	COVER, 600 AMP, 3-POLE SWITCH
	074349-B		COVER, 600 AMP, 4-POLE SWITCH
	074349-C		COVER, 800&1000 AMP, 3-POLE SWITCH
	074349-D		COVER, 800&1000 AMP, 4-POLE SWITCH
11	06721-A	1	DECAL, GROUND
12	074525	1	DECAL, MANUAL OPERATION
13	073617-K	1	DECAL, 600 AMP, 3&4-POLE SWITCH
	073617-L		DECAL, 800 AMP, 3&4-POLE SWITCH
	073617-M		DECAL, 1000 AMP, 3&4-POLE SWITCH
14	063357	1	DECAL, MAC - DT - GTS
15	046357	1	BLOCK, TERMINAL, 480V SYSTEM
	057701		BLOCK, TERM. - 208,240, 416 VOLT SYSTEMS
16	028199	1	SWITCH, TIME DELAY NEUTRAL BYPASS
17	056893	20	SCREW, (CRIMPTITE)-NO. 10-24 X 1/2"
18	047616	2	TRANSFORMER
19	046689	1	BLOCK, TERMINAL
20	063580	1	DECAL, TERMINAL BLOCK
21	072164	1	HANDLE, MANUAL
22	063578	1	DATA PLATE
23	-	-	NOT USED
24	068212	1	COMPARTMENT, CIRCUIT BOARD
25	064101	10	NUT, FLANGED LOCK - 3/8"-16
26	036261	10	RIVET, POP - 1/8" X 0.23"
27	073681	1	GTS - DECAL
28	063385	1	DECAL - AUTOMATIC SEQUENCE
29	057328	1	LENS, LAMP - CLEAR
30	057327	1	LENS, LAMP - RED
31	057325	1	LENS, LAMP - YELLOW
32	055142	1	SWITCH, MODE - DPDT
33	024469	8	#10-32 X 3/8" TAPTITE
34	0A1661	4	RIVET, POP .156D X .5 LG.
35	073619-F	1	DECAL, TESTING SEQUENCE 600 AMP
	073619-G		DECAL, TESTING SEQUENCE 800 AMP
	073619-H		DECAL, TESTING SEQUENCE 1000 AMP
36	0A2111	2	10-32 - 5/16 FASTENER
37	057514	3	HOLDER, LAMP
38	038150	4	WASHER, FLAT - NO. 8
39	0A2284	4	8-32 X 1/2 FASTENER
40	022264	12	WASHER, LOCK #8
41	061342	4	CAPSCREW, HEX HEAD - 1/2"-13 X 1.25
42	022304	4	WASHER, FLAT 1/2"
43	058000-L	1	M6-1.0 TRIC-NUT
44			
45	024979	2	5/16"-18 X 5/8" TAPTITE
46	036917	8	PPHMS 8-32 X 3/8"
47	024526	1	SCREW (TAPTITE) - 5/16"-18 X 3/4"
48	-	-	NOT USED
49	022678	1 CC	LOC-TITE, TYPE A
50	064113	1	STUD, MANUAL HANDLE (INCLUDES WINGNUT)
51	-	-	NOT USED
52	074538	1	ENCLOSURE
53	063378	9	TIE-DOWN, CABLE
54	057593	15	TIE-DOWN, CABLE
55	067629	1	BOARD, UTILITY VOLTAGE SENSING
56	-	-	NOT USED
57	067626	1	BOARD, SYSTEM CONTROL (CPU)
58	071775	1	COVER, CPU
59	063582	1	DOOR, CIRCUIT BOARD COMPARTMENT
60	064525	12	SUPPORT, CIRCUIT BOARD
61	064526	24	SCREW, SELF-TAPPING - NO. 6-32 X 3/8"
62	074351	2	BRACKET, COVER SUPPORT
	074351-A		BRACKET, COVER SUPPORT
63	020A67616	1	COVER, UTILITY VOLT SENSING BOARD
64	072252	1	GROMMET
65	064935	1	SUBPLATE 600-2600 AMP
66	040587	3	LAMP - 28 VOLTS
67	-	-	NOT USED
68	-	-	NOT USED
69	064932	2	TRANSFORMER, 480 V SYSTEMS ONLY
70	063986	4	KNOB, HOLD-DOWN
71	023897	8	WASHER, FLAT - NO. 10
72	022152	8	WASHER, LOCK - NO. 10
73	075080	4	HARNESS, WIRE (480V SYSTEM ONLY, NOT SHOWN)
	075079		HARNESS, WIRE (240, 416 AND 208V SYSTEMS, NOT SHOWN)
74	063981	2	GUIDE SIDE
75			
76	026902	7	SCREW, TAPTITE - NO. 8-32 X 1/4" (416 VOLT ONLY
77	031863	8	HHCPSC - 3/8"-16 X 1-1/4"
78			
79	062209	1	DECAL, UL
80	022131	10	WASHER, FLAT - 3/8"
81	022237	8	WASHER, LOCK - 3/8"
82	023316	18	HHCPSC - 1/2"-13 X 4" (800 & 1000 A SWITCHES
	026209	9	HHCPSC - 7/16"-13 X 4" (600 A SWITCH ONLY)
83	022195	18	WASHER, LOCK - 1/2" (800&1000 A SWITCHES)
	022302	9	WASHER, LOCK - 7/16" (600A SWITCH ONLY)
84	022196	18	HEX NUT - 1/2"-13 (800 & 1000A SWITCHES)
	022509	9	HEX NUT - 7/16"-13 (600A SWITCH ONLY)
85	022195	4	WASHER, LOCK - 1/2"
86	022196	4	HEX NUT - 1/2"-13
87	074513-K	1	DECAL, 600A, 3-POLE SWITCH
	074513-T		DECAL, 600A, 4-POLE SWITCH
	074513-L	1	DECAL, 800A, 3-POLE SWITCH
	074513-U	1	DECAL, 800A, 4-POLE SWITCH
	074513-M	1	DECAL, 1000A, 3-POLE SWITCH
	074513-V	1	DECAL, 1000A, 4-POLE SWITCH
88	064510	1	DECAL, - TERMINAL NOTE
89			
90	030A67617	1	INTERFACE - GTS UTILITY 416/480V 3-PHASE
	030B67617		INTERFACE - GTS UTILITY 208/240V 3-PHASE
	030C67617		INTERFACE - GTS UTILITY 240V 1-PHASE
	072160		INTERFACE - GTS UTILITY 400V, 3-PHASE
91	068337	4	STANDOFF - HEX SPACER 1.00 LONG
92	054199	1	DECAL - HIGH VOLTAGE
93	028739	-	TIE WRAP 4" LONG (NOT SHOWN)
94	072849	3	GASKET, LAMPHOLDER LENS (NEMA 3R ENCLOSURE ONLY)
95	075458	3	GASKET, LAMPHOLDER LENS (NEMA 3R ENCLOSURE ONLY)
96	072828	1	SWITCH BOOT, WATERPROOF (NEMA 3R ENCLOSURE ONLY)
97	079663	-	BARRIER, INSULATING

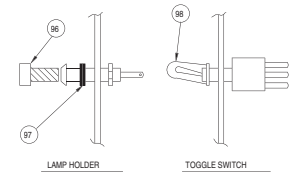
* NOT USED ON 1-PHASE, 3-POLE SYSTEMS OR ANY 4-POLE SYSTEM.
** INSULATING BARRIER (ITEM #97) MAY BE USED.

Generac GTS "Wn" Type Transfer Switch

600-1000A Inpahase Assembly - Drawing No. 091394-D



P.C. BOARD INSTALLATION
TYPICAL



NEMA 3R ENCLOSURE (TYPICAL)

NOTES:

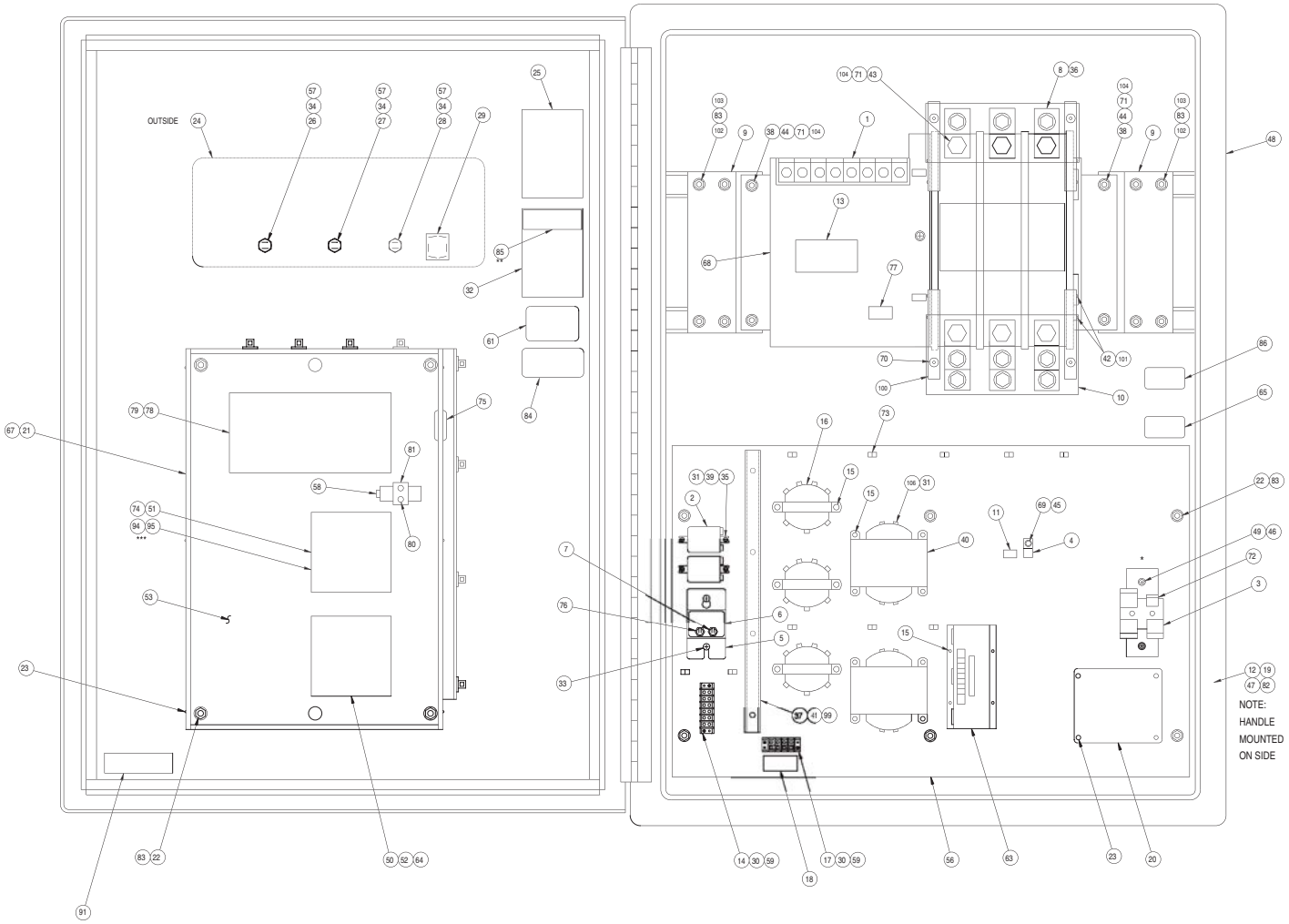
* NOT USED ON 1Ø, 3 POLE OR 4 POLE SYSTEMS.

** USED ONLY WITH 600 VOLT SWITCHES.

*** USED ONLY WITH #063919 BOARD.

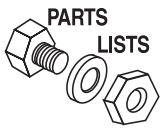
MANUFACTURING NOTES:

1. WIPE OFF AICHI INSIGNIA USING SOLVENT, FROM TRANSFER SWITCH CONTACTOR (ITEM #1).
2. REMOVE AICHI MODEL AND RATING DECAL.
3. USE ITEM #93 AT CHAFE POINTS AS REQUIRED.
4. TRANSFER SWITCH TO BE CENTERED IN ENCLOSURE.



ITEM	PART NO.	QTY.	DESCRIPTION
1	072111	1	XFRSW 600A 3P WN600V
	072117	1	XFRSW 600A 4P WN600V
	072112	1	XFRSW 800A 3P WN600V
	072118	1	XFRSW 800A 4P WN600V
	072113		XFRSW1000A 3P WN600V
	072119		XFRSW1000A 4P WN600V
2	063617	2	RELAY PNL 12VDC DPDT 10A@240VA
3	062633	1	NEUTRAL BLOCK 400A

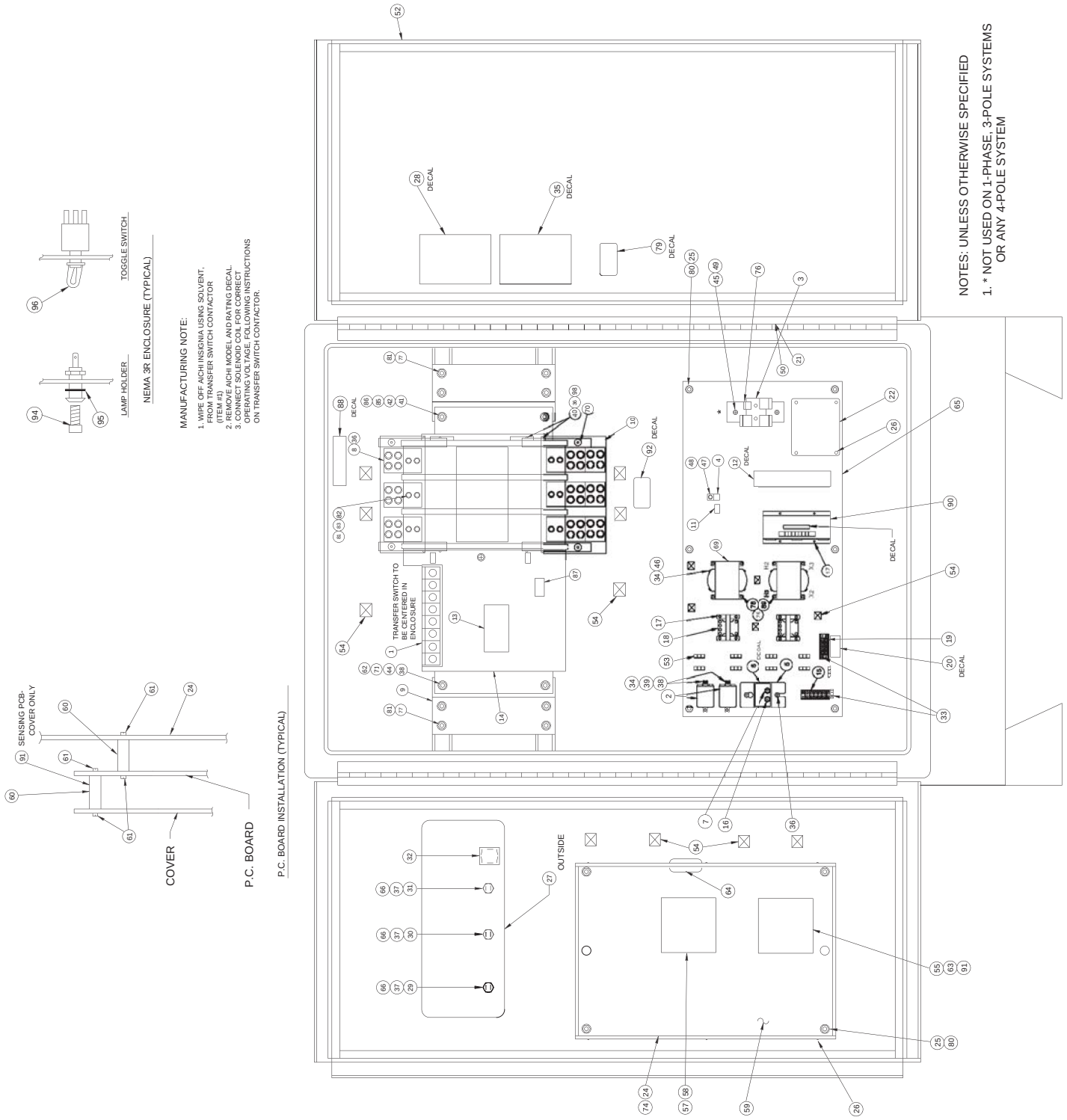
ITEM	PART NO.	QTY.	DESCRIPTION
*	062641	1	NEUTRAL BL 800-2600A
4	057329	1	LUG SLDLSS 350-#6X13/32 AL/CU
5	074509	1	BRACKET SWITCH
6	074511	1	DECAL TDN MAINTENANCE SW
7	055868	1	SWITCH TOGGLE 4PDT 15A SPADE
8	080433	-	LUG SLDLSS 500-#1X13/32 AL/CU
	063925	-	LUG SLDLSS 500-4/0X17/32 AL/CU
9	075099	2	MOUNTING BRACKET-WN

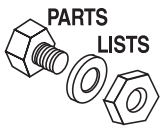


ITEM	PART NO.	QTY.	DESCRIPTION
10	074349A	2	SW CVR WN 600A 3P
	074349B	2	SWTCH CVR 600A WN 4P
	074349C	2	SW CVR WN 800/10003P
	074349D	2	SW CVR WN800/1000A4P
11	067210A	1	DECAL GROUND LUG
12	074525	1	DECAL MANUAL OPERATION
13	073617K	1	DECAL-TRAN SW 600-WN
	073617L	1	DECAL-TRAN SW 800-WN
	073617M	1	DECAL-TRAN SW 1000WN
14	057701	-	BLOCK TERM 20A 8 X 6 X 1100V
	046357	-	BLOCK TERM 20A 6 X 6 X 1100V
15	056893	18	SCREW CRIMPTITE 10-24 X 1/2
16	090975	3	XFMR 240/40V 25VA
17	046689	-	BLOCK TERM 20A 4 X 6 X 1100V
18	091466	1	DECAL 2 WR TERM STRP
19	072164	1	MNL HNDL 6-1600A WN
20	063578	1	PLATE DATA - GTS
21	068212	1	ENCLOSURE PCB GTS
22	064101	10	NUT LOCK FL 3/8-16
23	036261	10	RIVET POP .125 X .275 AL
24	073681	1	DECAL, DOOR GTS
	056298	1	DECAL GENERAC 2IN HIGH
	090257	1	DECAL OLYMPN 2IN HI
	087227	1	DECAL, DOOR CTS-OLY
25	091478	1	DECAL, SWITCH OPER
26	057328	1	LIGHT T-3-1/4 LENS (CLEAR)
27	057327	1	LIGHT T-3-1/4 LENS (RED)
28	057325	1	LIGHT T-3-1/4 LENS (AMBER)
29	055142	1	SWITCH TOG DPDT 15A MOM W/SEAL
30	0A1661	4	RIVET POP .156 X .675 AL
31	022264	12	WASHER LOCK #8-M4
32	073619F	1	DECAL-TEST SEQ 600WN
	073619G	1	DECAL-TEST SEQ 800WN
	073619H	1	DECAL-TEST SEQ1000WN
33	0A2111	2	SCREW SWAGE 10-32 X 5/16 Z/YC
34	057514	3	LIGHT 120V T-3-1/4 LAMP/HOLDER
35	038150	4	WASHER FLAT #8 ZINC
36	026902	9	SCREW HHTT #8-32 X 1/4 CZ
37	091477	5	RIVET, WIRE DUCT MNT
38	061342	4	SCREW HHC 1/2-13 X 1-1/4 G5
39	0A2284	4	SCREW SWAGE 8-32 X 1/2 Z/YC
40	064932	2	TRANSFRM 480/240V 250VA
	074652	2	TRANSFRM 600V TO 240V 250VA
41	091472	1	DUCT WIRING 1X1.5 6 FT
42	024469	8	SCREW HHTT #10-32 X 3/8 CZ
43	023316	18	SCREW HHC 1/2-13 X 4 G5
	026209	9	SCREW HHC 7/16-14 X 1-3/4 G5
44	022304	4	WASHER FLAT 1/2 ZINC
45	022129	1	WASHER LOCK M8-5/16
46	022678	1CC	LOCTITE THRDLOKR 242
47	025870	1	NUT WING 1/4-20
48	063560	1	NEMA 12 ENCL 600 AMP
	074538	1	NEMA12 ENC 600-1000 AMP
	074538C	1	ENCL NEMA 12 DR6-1000A
49	024979	2	SCREW HHTT 5/16-18 X 5/8 CZ
50	067629	1	ASSY STANDARD SENSNG
51	064217	1	ASSY 7-DAY EXERCISER
	063919	1	ASSY DELUXE EXERCISR
52	067616020A	1	ASS'Y-STNDSNS CVRPLT
53	063582	1	DOOR-PCB ENCL
54	064525	20	STANDOFF HEX 3/4
55	064526	48	SCREW S-THR PH #6-25 X 3/8 ZNC
56	064935	1	SUBPLT GTS 600-2600
57	040587	3	LIGHT 28V .17A LAMP #757
58	063998	1	BATTERY 9V
59	046669	-	BLOCK TERM JUMPER
60	075079	-	HRNSS 600-1000A 240V
61	062209	1	DECAL UL LABEL E84929-GTS
63	067617030A	1	INTRFC,3PHS 416/480V
	067617030B	1	INTRFC,3PHS 208/240V
	086961	1	INTRFC,1PH 240V
	072160	1	INTRFC,3P 400V 50/60
	072158	1	INTRFC,3PHS 600V
64	068337	4	STANDOFF-HEX 1.00 LG
65	054199	1	DECAL HIGH VOLTAGE
66	064761	-	TIE WRAP UL 5.6 X .10 NATL
67	063981	2	SIDE GUIDE PCB ENCL
69	024526	1	SCREW HHTT 5/16-18 X 3/4 CZ
70	063986	4	KNOB,COVER HOLD-DOWN
71	022195	22	WASHER LOCK 1/2
	022302	9	WASHER LOCK 7/16
72	026902	-	SCREW HHTT #8-32 X 1/4 CZ
73	063378	31	HOLDER CABLE TIE
74	063996	1	ASSY, COVER STANDARD EXERCISER
	064298	1	ASSY, COVER DELUXE EXERCISER
75	072252	1	GROMMET 1.37 X .06 X 1.00
76	028199	1	SWITCH TOGGLE SPST 6A TAB C-H
77	074513K	1	DECAL-SW.P/N 3P600A
	074513T	1	DECAL-SW.P/N 4P600A
	074513L	1	DECAL-SW.P/N 3P800A
	074513U	1	DECAL-SW.P/N 4P800A
	074513M	1	DECAL-SW.P/N 3P1000A
	074513V		DECAL-SW.P/N 4P1000A
78	092734	1	ASSY INPHASE MONITOR
79	094446	1	COVER PLT INPH CONTL
80	029357	2	RIVET AVDEL3/32X1/8L
81	063982	1	CLIP BATT-9V TRANSIS
82	022473	1	WASHER FLAT 1/4-M6 ZINC
83	022131	18	WASHER FLAT 3/8-M10 ZINC
84	083736	1	DECAL-CSA GTS
**85	095089B	1	DECAL600V600A RTGS
	095089C	1	DECAL600V8-1000ARTGS
86	064510	1	DECAL-TERMINAL NOTE
***87	033139	4	SCREW HHM #6-32 X 3/4
***88	022188	4	NUT HEX #6-32 STEEL
***89	022155	4	WASHER LOCK #6
***90	064210	4	NYLON-TUBE .17 X .43
91	077228	1	DECAL-ENCLOSURE NOTE
93	056326	-	TRIM VINYL BLACK 1/8GP 74"
***94	064861A	1	RED PLEXI 1.5 X 3 IN
***95	064861B	1	RED PLEXI 1.5 X 1 IN
96	072849	3	GASKET WATERPROOF
97	074548	3	O-RING.625IDX.75X.06
98	072828	1	SWITCH WATERPROOF RUBBER BOOT
99	091472A	1	COVER WIRE DUCT 1 IN
100	074351	2	CVR BRCKT 600-1600A
	074351A	2	CVR BRCKT600-1600 LH
101	022152	8	WASHER LOCK #10
102	031863	8	SCREW HHC 3/8-16 X 1-1/4 G5
103	022237	8	WASHER LOCK 3/8
104	022196	22	NUT HEX 1/2-13 STEEL
	022509	9	NUT HEX 7/16-14 STEEL
106	036917	8	WASHER LOCK M6-1/4

Generac GTS "Wn" Type Transfer Switch

1200-1600A CPU Assembly - Drawing No. 074544-D

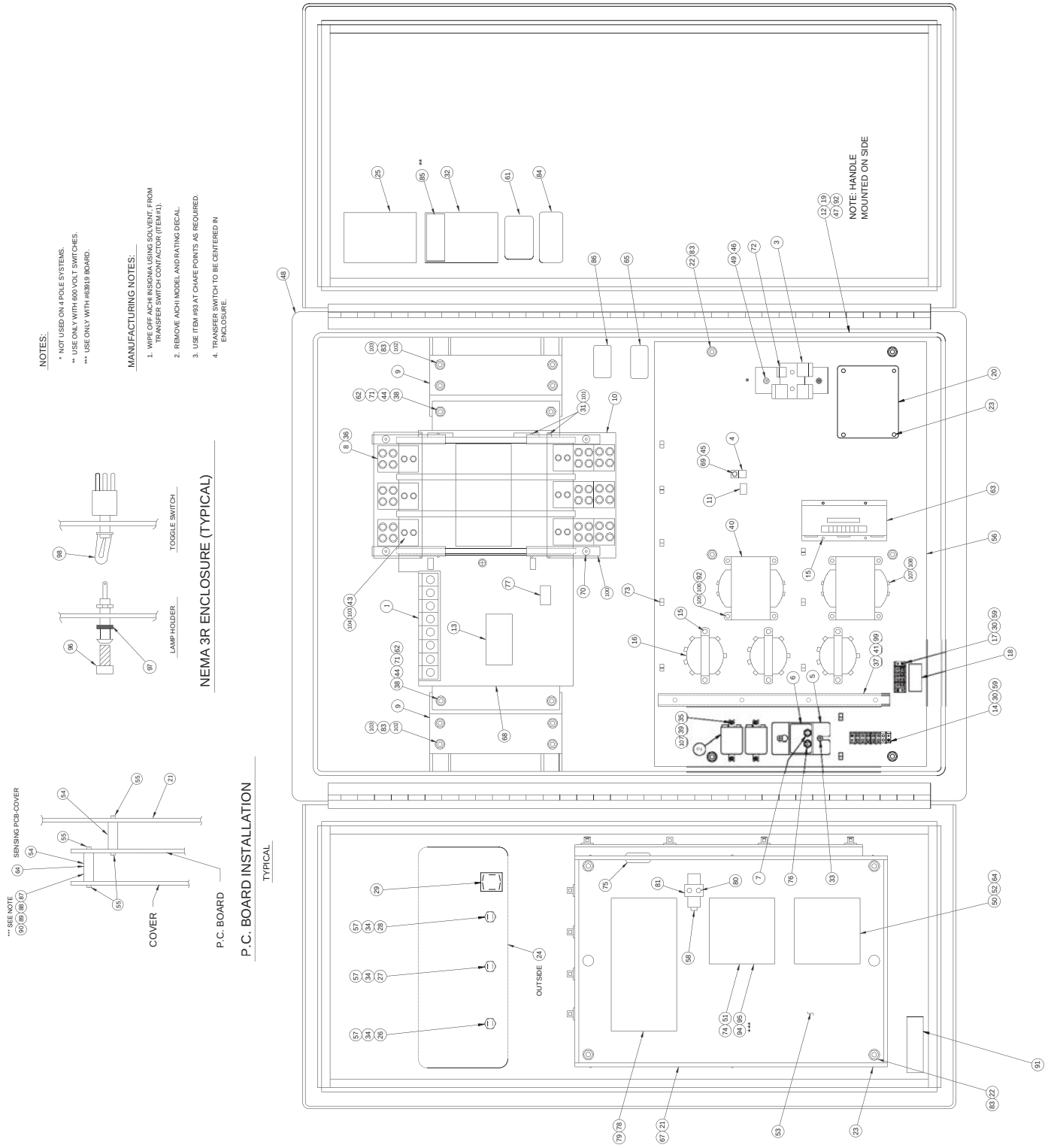


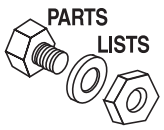


ITEM	PART NO.	QTY.	DESCRIPTION
1	072124	1	XFRSW1200A 3P WN600V
	072125	1	XFRSW1200A 4P WN600V
	072114	1	XFRSW1600A 3P WN600V
	072120	1	XFR SW 1600A 4P WN600V
2	063617	2	RELAY PNL 12VDC DPDT 10A@240VA
*3	062641	1	NEUTRAL BL 800-2600A
4	057329	1	LUG SLDLSS 350-#6X13/32 AL/CU
5	074509	1	BRACKET SWITCH
6	074511	1	DECAL TDN MAINTENANCE SW
7	055868	1	SWITCH TOGGLE 4PDT 15A SPADE
8	063963	9	LUG SLDLSS 750-1/2X13/32 AL/CU 3-P0LE
	063963	12	LUG SLDLSS 750-1/2X13/32 AL/CU 4-P0LE
9	075099	2	MOUNTING BRACKET-WN
10	074349E	2	SW CVR 1200/1600A 3P
	074349F	2	SW CVR 1200/1600A 4P
11	067210A	1	DECAL GROUND LUG
12	074525	1	DECAL MANUAL OPERATION
13	073617N	1	DECAL-TRAN SW 1200WN
	073617P	1	DECAL-TRAN SW 1600WN
14	063357	1	DECAL MAC-DT GTS
15	057701	1	BLOCK TERM 20A 8 X 6 X 1100V
16	028199	1	SWITCH TOGGLE SPST 6A TAB C-H
17	056893	12	SCREW CRIMPTITE 10-24 X 1/2
18	047616	2	TRANSFRM 240/480V TO 24V 25VA
19	046689	1	BLOCK TERM 20A 4 X 6 X 1100V
20	063580	1	DECAL-TERM BL-2 WIRE
21	072164	1	MNL HNDL 6-1600A WN
22	063578	1	PLATE DATA - GTS
24	068212	1	ENCLOSURE PCB GTS
25	064101	10	NUT LOCK FL 3/8-16
26	036261	10	RIVET POP .125 X .275 AL
27	073681	1	DECAL, DOOR GTS
28	063385	1	SWITCH INFO DECAL
29	057328	1	LIGHT T-3-1/4 LENS (CLEAR)
30	057327	4	LIGHT T-3-1/4 LENS (RED)
31	057325	1	LIGHT T-3-1/4 LENS (AMBER)
32	055142	1	SWITCH TOG DPDT 15A MOM W/SEAL
33	0A1661	4	RIVET POP .156 X .675 AL
34	022264	12	WASHER LOCK #8-M4
35	073619J	1	DECAL-TEST SEQ1200WN
	073619K	1	DECAL-TEST SEQ1600WN
36	0A2111	2	SCREW SWAGE 10-32 X 5/16 Z/YC
37	057514	3	LIGHT 120V T-3-1/4 LAMP/HOLDER
38	038150	4	WASHER FLAT #8 ZINC
39	0A2284	4	SCREW SWAGE 8-32 X 1/2 Z/YC
40	024469	8	SCREW HHTT #10-32 X 3/8 CZ
41	060277	4	SCREW HHC 1/2-13 X 2 G5
42	022304	4	WASHER FLAT 1/2 ZINC
*45	024979	2	SCREW HHTT 5/16-18 X 5/8 CZ
46	036917	8	SCREW PPHM #8-32 X 3/8
47	024526	1	SCREW HHTT 5/16-18 X 3/4 CZ
48	022129	1	WASHER LOCK M8-5/16
*49	022678	1CC	LOCTITE THRDLOKR 242
50	025870	1	NUT WING 1/4-20
52	074542	1	NEMA12 ENC 1200-1600
	074543	1	NEMA3R ENC 1200-1600
53	063378	-	HOLDER CABLE TIE
54	057593	-	CABLE TIE MOUNT BLACK
55	067629	1	ASSY STANDARD SENSNG
57	067626	3	ASSY PCB CPU
58	071775	1	SILKSCREEN CPU BRD
59	063582	1	DOOR-PCB ENCL
60	064525	20	STANDOFF HEX 3/4
61	064526	24	SCREW S-THR PH #6-25 X 3/8 ZNC
62	074351	2	CVR BRCKT 600-1600A
	074351A	2	CVR BRCKT600-1600 LH
63	067617020A	1	BRACKET,TRANS.MNTG.
64	072252	1	GROMMET 1.37 X .06 X 1.00
65	064935	1	SUBPLT GTS 600-2600
66	040587	3	LIGHT 28V .17A LAMP #757
69	064929	2	SCREW HHTT 5/16-18 X 3/4 CZ
70	063986	4	KNOB,COVER HOLD-DOWN
73	074541	31	USE HARNESS 74540
	074540		HARNESS 1600A,240V
74	063981	2	SIDE GUIDE PCB ENCL
75	022473	8	WASHER FLAT 1/4-M6 ZINC
76	026902	1	SCREW HHTT #8-32 X 1/4 CZ
77	031863	8	SCREW HHC 3/8-16 X 1-1/4 G5
78	022097	8	WASHER LOCK M6-1/4
79	062209	1	DECAL UL LABEL E84929-GTS
80	022131	10	WASHER FLAT 3/8-M10 ZINC
81	022237	22	WASHER LOCK 3/8
82	022258	-	SCREW HHC 3/8-16 X 2 G5
83	027628	-	NUT HEX JAM 3/8-16 STEEL
84	022152	8	WASHER LOCK #10
85	022195	4	WASHER LOCK 1/2
86	022196	4	NUT HEX 1/2-13 STEEL
87	074513N	1	DECAL-SW.P/N 3P1200A
	074513W	1	DECAL-SW.P/N 4P1200A
	074513P	1	DECAL-SW.P/N 3P1600A
	074513X	1	DECAL-SW.P/N 4P1600A
88	064510	1	DECAL-TERMINAL NOTE
89	090388	8	SCREW HHTT M6-1.0 X 12 ZINC
90	067617030A	1	INTRFC,3PHS 416/480V
	067617030B	1	INTRFC,3PHS 208/240V
	067617030C	1	USE-86961INTERFACE1P
	072160	1	INTRFC,3P 400V 50/60
91	068337	4	STANDOFF-HEX 1.00 LG
92	054199	1	DECAL HIGH VOLTAGE
93	028739	-	TIE WRAP UL 3.9" X .10" NATL
94	072849	3	GASKET WATERPROOF
95	074548	3	O-RING.625IDX.75X.06
96	072828	1	SWITCH WATERPROOF RUBBER BOOT
98	023897	8	WASHER FLAT #10 ZINC

Generac GTS "Wn" Type Transfer Switch

1200-1600A Inphase Assembly - Drawing No. 091395-D

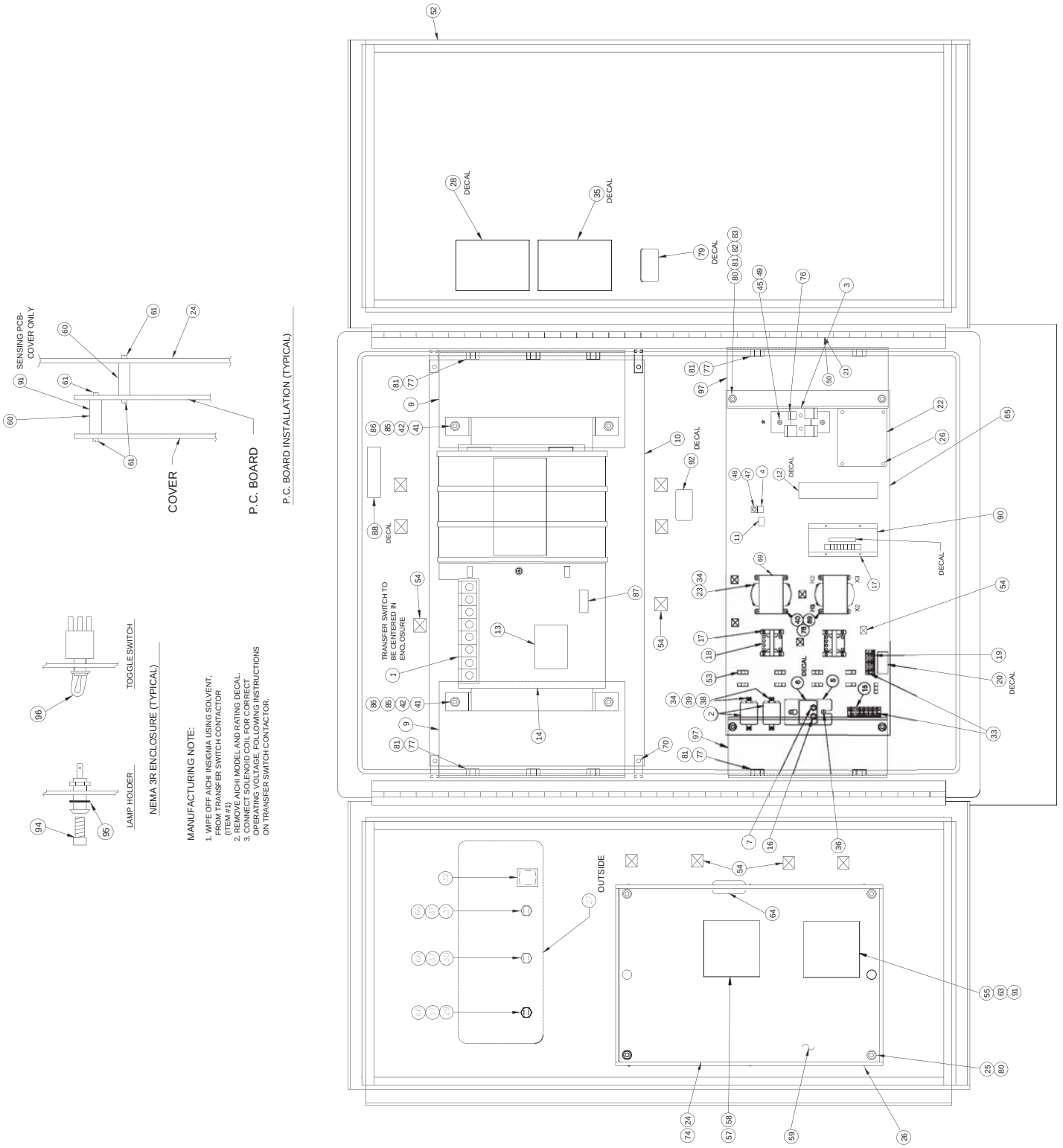


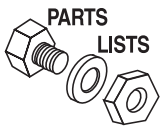


ITEM	PART NO.	QTY.	DESCRIPTION
1	072124	1	XFRSW1200A 3P WN600V
	072125	1	XFRSW1200A 4P WN600V
	072114	1	XFRSW1600A 3P WN600V
	072120	1	XFR SW 1600A 4P WN600V
2	063617	2	RELAY PNL 12VDC DPDT 10A@240VA
3	062641	1	NEUTRAL BL 800-2600A
4	057329	1	LUG SLDLSS 350-#6X13/32 AL/CU
5	074509	1	BRACKET SWITCH
6	074511	1	DECAL TDN MAINTENANCE SW
7	055868	1	SWITCH TOGGLE 4PDT 15A SPADE
8	063963	-	LUG SLDLSS 750-1/2X13/32 AL/CU
9	075099	2	MOUNTING BRACKET-WN
10	074349E	2	SW CVR 1200/1600A 3P
	074349F	2	SW CVR 1200/1600A 4P
11	067210A	1	DECAL GROUND LUG
12	074525	1	DECAL MANUAL OPERATION
13	073617N	1	DECAL-TRAN SW 1200WN
	073617P	1	DECAL-TRAN SW 1600WN
14	057701	-	BLOCK TERM 20A 8 X 6 X 1100V
15	056893	10	SCREW CRIMPTITE 10-24 X 1/2
16	090975	3	XFMR 240/40V 25VA
17	046689	-	BLOCK TERM 20A 4 X 6 X 1100V
18	091466	1	DECAL 2 WR TERM STRP
19	072164	1	MNL HNDL 6-1600A WN
20	063578	1	PLATE DATA - GTS
21	068212	1	ENCLOSURE PCB GTS
22	064101	10	NUT LOCK FL 3/8-16
23	036261	10	RIVET POP .125 X .275 AL
24	073681	1	DECAL, DOOR GTS
	056298	1	DECAL GENERAC 2IN HIGH
	090257	1	DECAL OLYMPN 2IN HI
	087227	1	DECAL, DOOR CTS-OLY
25	091478	1	DECAL, SWITCH OPER
26	057328	1	LIGHT T-3-1/4 LENS (CLEAR)
27	057327	1	LIGHT T-3-1/4 LENS (RED)
28	057325	1	LIGHT T-3-1/4 LENS (AMBER)
29	055142	1	SWITCH TOG DPDT 15A MOM W/SEAL
30	0A1661	4	RIVET POP .156 X .675 AL
31	024469	8	SCREW HHTT #10-32 X 3/8 CZ
32	073619I	1	DECAL-TEST SEQ1200WN
	073619K	1	DECAL-TEST SEQ1600WN
33	0A2111	2	SCREW SWAGE 10-32 X 5/16 Z/YC
34	057514	3	LIGHT 120V T-3-1/4 LAMP/HOLDER
35	038150	4	WASHER FLAT #8 ZINC
36	026902	9	SCREW HHTT #8-32 X 1/4 CZ
37	091477	5	RIVET, WIRE DUCT MNT
38	061342	4	SCREW HHC 1/2-13 X 1-1/4 G5
39	0A2284	4	SCREW SWAGE 8-32 X 1/2 Z/YC
40	064932	2	TRANSFRM 480/240V 250VA
	074652	2	TRANSFRM 600V TO 240V 250VA
41	091472	1	DUCT WIRING 1X1.5 6 FT
43	022258	-	SCREW HHC 3/8-16 X 2 G5
44	022304	4	WASHER FLAT 1/2 ZINC
45	022129	1	WASHER LOCK M8-5/16
46	022678	1CC	LOCTITE THRDLOKR 242
47	025870	1	NUT WING 1/4-20
48	074542	1	NEMA12 ENC 1200-1600
	074542C	1	ENCL 3R BLDR 12-1600
49	024979	2	SCREW HHTT 5/16-18 X 5/8 CZ
50	067629	1	ASSY STANDARD SENSNG
51	064217	1	ASSY 7-DAY EXERCISER
	063919	1	ASSY DELUXE EXERCISR
52	067616020A	1	ASS'Y-STNDSNS CVRPLT
53	063582	1	DOOR-PCB ENCL
54	064525	20	STANDOFF HEX 3/4
55	064526	48	SCREW S-THR PH #6-25 X 3/8 ZNC
56	064935	1	SUBPLT GTS 600-2600
57	040587	3	LIGHT 28V .17A LAMP #757
58	063998	1	BATTERY 9V
59	046669	-	BLOCK TERM JUMPER
60	074540	-	HARNESS 1600A,240V
61	062209	1	DECAL UL LABEL E84929-GTS
62	022196	4	NUT HEX 1/2-13 STEEL
63	067617030A	1	INTRFC,3PHS 416/480V
	067617030B	1	INTRFC,3PHS 208/240V
	072160	1	INTRFC,3P 400V 50/60
	072158	1	INTRFC,3PHS 600V
64	068337	4	STANDOFF-HEX 1.00 LG
65	054199	1	DECAL HIGH VOLTAGE
66	064761	-	TIE WRAP UL 5.6 X .10 NATL
67	063981	2	SIDE GUIDE PCB ENCL
68	063357	1	DECAL MAC-DT GTS
69	024526	1	SCREW HHTT 5/16-18 X 3/4 CZ
70	063986	4	KNOB,COVER HOLD-DOWN
71	022195	4	WASHER LOCK 1/2
72	026902	-	SCREW HHTT #8-32 X 1/4 CZ
73	063378	31	HOLDER CABLE TIE
74	063996	1	ASSY, COVER STANDARD EXERCISER
	064298	1	ASSY, COVER DELUXE EXERCISER
75	072252	1	GROMMET 1.37 X .06 X 1.00
76	028199	1	SWITCH TOGGLE SPST 6A TAB C-H
77	074513N	1	DECAL-SW.P/N 3P1200A
	074513W	1	DECAL-SW.P/N 4P1200A
	074513P	1	DECAL-SW.P/N 3P1600A
	074513X	1	DECAL-SW.P/N 4P1600A
78	092734	1	ASSY INPHASE MONITOR
79	094446	1	COVER PLT INPH CONTL
80	029357	2	RIVET AVDEL3/32X1/8L
81	063982	1	CLIP BATT-9V TRANSIS
83	022131	18	WASHER FLAT 3/8-M10 ZINC
84	083736	1	DECAL-CSA GTS
**85	095089D	1	DEC 600V10-1200ARTGS
86	064510	1	DECAL-TERMINAL NOTE
***87	033139	4	SCREW HHM #6-32 X 3/4
***88	022188	4	NUT HEX #6-32 STEEL
***89	022155	4	WASHER LOCK #6
***90	064210	4	NYLON-TUBE .17 X .43
91	077228	1	DECAL-ENCLOSURE NOTE
92	022473	9	WASHER FLAT 1/4-M6 ZINC
93	056326	-	TRIM VINYL BLACK 1/8GP 74"
***94	064861A	1	RED PLEXI 1.5 X 3 IN
***95	064861B	1	RED PLEXI 1.5 X 1 IN
96	072849	3	GASKET WATERPROOF
97	074548	3	O-RING.625IDX.75X.06
98	072828	1	SWITCH WATERPROOF RUBBER BOOT
99	091472A	1	COVER WIRE DUCT 1 IN
100	074351	2	CVR BRCKT 600-1600A
	074351A	2	CVR BRCKT600-1600 LH
101	022152	8	WASHER LOCK #10
102	031863	8	SCREW HHC 3/8-16 X 1-1/4 G5
103	022237	32	WASHER LOCK 3/8
104	022241	-	NUT HEX 3/8-16 STEEL
105	090388	8	SCREW HHTT M6-1.0 X 12 ZINC
106	022097	8	WASHER LOCK M6-1/4
107	022264	12	WASHER LOCK #8-M4
108	036917	8	SCREW PPHM #8-32 X 3/8

Generac GTS "Wn" Type Transfer Switch

2000-2600A CPU Assembly - Drawing No. 075331-C



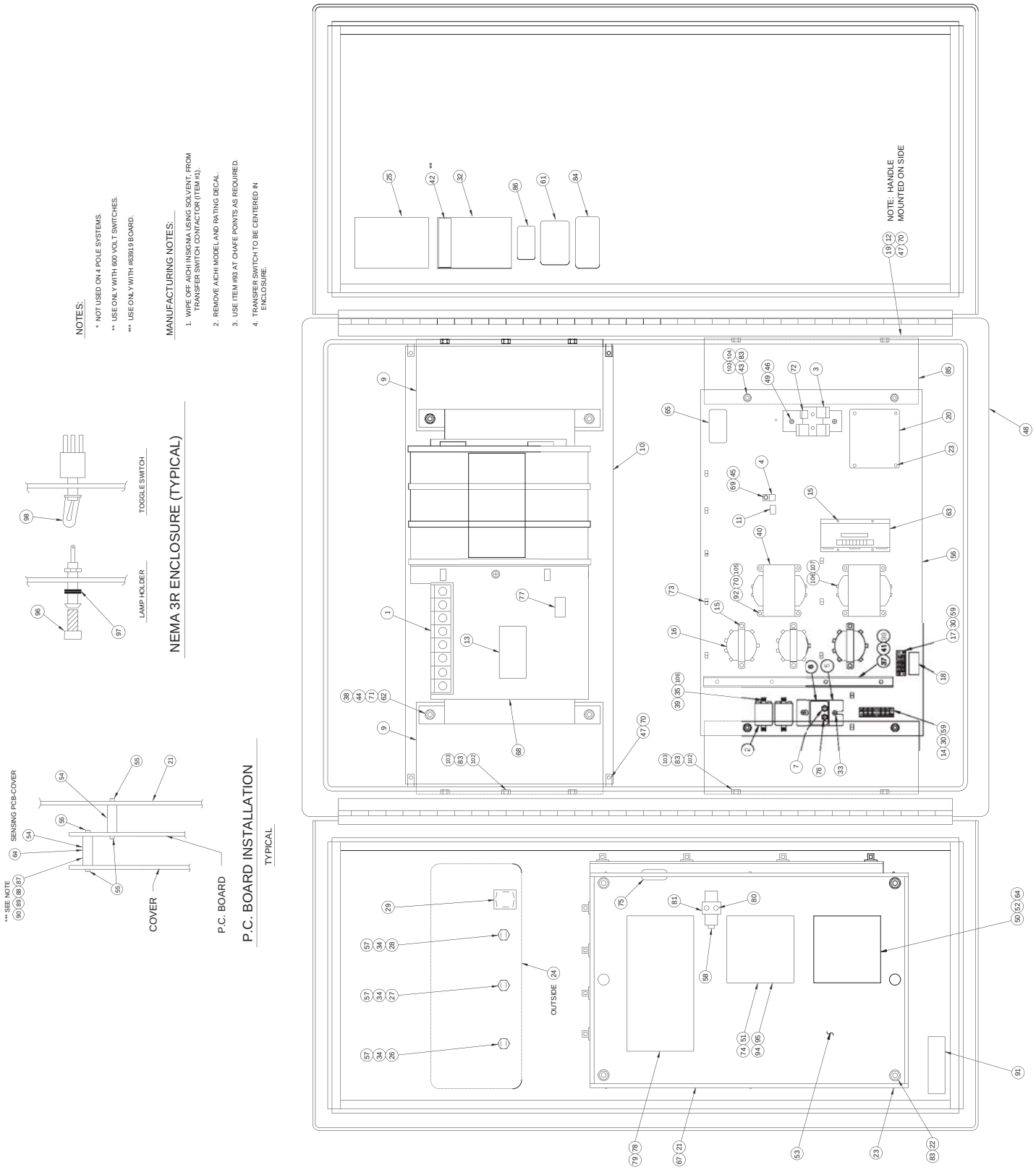


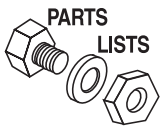
ITEM	PART NO.	QTY.	DESCRIPTION
1	072115	1	SWITCH ASSY, TRANSFER, 2000A, 3-POLE
	072121		SWITCH ASSY, TRANSFER, 2000A, 4-POLE
	072116		SWITCH ASSY, TRANSFER, 2600A, 3-POLE
	072122		SWITCH ASSY, TRANSFER, 2600A, 4-POLE
2	063617	2	RELAY, TRANSFER/TIME DELAY
3	062641	1	LUG ASSEMBLY, NEUTRAL
4	057329	1	LUG, GROUNDING
5	074509	1	BRACKET, SAFETY DISCONNECT SWITCH
6	074511	1	DECAL, MAINT. DISCONNECT SWITCH
7	055868	1	SWITCH, SAFETY DISCONNECT - 4PDT
8	-	-	NOT USED
9	074375-A	2	BRACKET, SWITCH MOUNTING
10	072126	1	COVER, SWITCH
11	067210-A	1	DECAL, GROUND
12	074525	1	DECAL, MANUAL OPERATION
13	073617-R	1	DECAL, 2000 AMP
	073617-S		DECAL, 2600 AMP
14	063357	1	DECAL, MAC - DT - GTS
15	057701	1	BLOCK, TERMINAL
16	028199	1	SWITCH, TIME DELAY NEUTRAL BYPASS
17	056893	20	SCREW, (CRIMPTITE) - NO. 10-24 X 1/2"
18	047616	2	TRANSFORMER
19	046689	1	BLOCK, TERMINAL
20	063580	1	DECAL, TERMINAL BLOCK
21	072164	1	HANDLE, MANUAL
22	063578	1	PLATE, DATA
23	036917	8	PPHMS 8-32 X 3/8"
24	068212	1	COMPARTMENT, CIRCUIT BOARD
25	064101	6	NUT, FLANGED LOCK - 3/8"-16
26	036261	10	RIVET, POP - 1/8" X 0.23"
27	073681	1	GTS - DECAL
28	063385	1	DECAL - AUTOMATIC SEQUENCE
29	057328	1	LENS, LAMP - CLEAR
30	057327	1	LENS, LAMP - RED
31	057325	1	LENS, LAMP - YELLOW
32	055142	1	SWITCH, MODE - DPDT
33	0A1661	4	RIVET, POP .156 D X .5 LG.
34	022264	12	WASHER, LOCK #8
35	073619-L	1	DECAL, TESTING SEQUENCE 2000 AMP
	073619-M		DECAL, TESTING SEQUENCE 2600 AMP
36	0A2111	2	10-32 - 5/16 FASTENER
37	057514	3	HOLDER, LAMP
38	038150	4	WASHER, FLAT - NO.8
39	0A2284	4	8-32 X 1/2 FASTENER
40	022473	8	FLAT, WASHER 1/4-M6
41	060277	4	CAPSCREW, HEX HEAD - 1/2"-13 X 2.0
42	022304	4	WASHER, FLAT - 1/2"
45	024979	2	5/16"-18 X 5/8" TAPTITE
46	-	-	NOT USED
47	024526	1	SCREW (TAPTITE) - 5/16"-18 X 3/4"
48	022129	1	WASHER, LOCK - 5/16"
49	022678	1 CC	LOC-TITE, TYPE A
50	025870	1	WING NUT 1/4-20
52	073669	1	ENCLOSURE, NEMA 12
	074577		ENCLOSURE, NEMA 3R
53	063378	-	TIE-DOWN, CABLE
54	057593	-	TIE-DOWN, CABLE
55	067629	1	BOARD, UTILITY VOLTAGE SENSING
56	-	-	NOT USED
57	067626	1	BOARD, SYSTEM CONTROL (CPU)
58	071775	1	COVER, CPU
59	063582	1	DOOR, CIRCUIT BOARD COMPARTMENT
60	064525	20	SUPPORT, CIRCUIT BOARD
61	064526	24	SCREW, SELF-TAPPING - NO. 6-32 X 3/8"
62	-	-	NOT USED
63	020A67616	1	COVER, UTILITY VOLTAGE SENSING BOARD
64	072252	1	GROMMET
65	064935	1	SUBPLATE 600-2600 AMP
66	040587	3	LAMP - 28 VOLTS
67	-	-	NOT USED
68	-	-	NOT USED
69	064933	2	TRANSFORMER, 400 & 480V SYSTEMS ONLY, 500VA
70	025870	4	WING NUT, 1/4"-20
72	-	-	NOT USED
73	074570	1	HARNESS, WIRE
74	063981	2	GUIDE, SIDE
75	-	-	NOT USED
76	026902	2	SCREW, TAPTITE - NO. 8-32 X 1/4" (416 VOLT ONLY)
77	022238	18	HHCPSC - 3/8"-16 X 1"
78	022097	8	WASHER, LOCK - M6 (480 VOLT ONLY)
79	062209	1	DECAL - UL
80	022131	12	WASHER, FLAT - 3/8"
81	022237	22	WASHER, LOCK - 3/8"
82	022258	-	CAPSCREW, HEX HEAD 3/8-16 X 1.5"
83	022241	4	NUT, HEX, 3/8"-16
84	-	-	NOT USED
85	022195	4	WASHER, LOCK - 1/2"
86	022196	4	HEX NUT - 1/2"-13
87	074513-R	1	DECAL, 2000A, 3-POLE SWITCH
	074513-Y		DECAL, 2000A, 4-POLE SWITCH
	074513-S		DECAL, 2600A, 3-POLE SWITCH
	074513-Z		DECAL, 2600A, 4-POLE SWITCH
88	064510	1	DECAL - TERMINAL NOTE
89	090388	8	M6-1.0 X 12 TAPTITE
90	030A67617	1	INTERFACE - GTS UTILITY 416/480V 3-PHASE
	030B67617		INTERFACE - GTS UTILITY 208/240V 3-PHASE
	030C67617	1	INTERFACE - GTS UTILITY 240V 1-PHASE
	072160		INTERFACE - GTS UTILITY 400V, 3-PHASE, 50 HZ.
91	068337	4	STANDOFF - HEX SPACER 1.00 LONG
92	054199	1	DECAL - HIGH VOLTAGE
93	028739	-	TIE WRAP 4" LONG (NOT SHOWN)
94	072849	3	GASKET, LAMPHOLDER LENS (NEMA 3R ENCLOSURE ONLY)
95	074548	3	GASKET, LAMPHOLDER (NEMA 3R ENCLOSURE ONLY)
96	072821	1	SWITCH BOOT, WATERPROOF (NEMA 3R ENCLOSURE ONLY)
97	074376	2	BRACKET, SUBPLATE MOUNTING

NOTE: UNLESS OTHERWISE SPECIFIED -
* NOT USED ON 1-PHASE, 3-POLE SYSTEMS OR ANY 4-POLE SYSTEM.

Generac GTS "Wn" Type Transfer Switch

2000-2600A Inphase Assembly - Drawing No. 091396-B





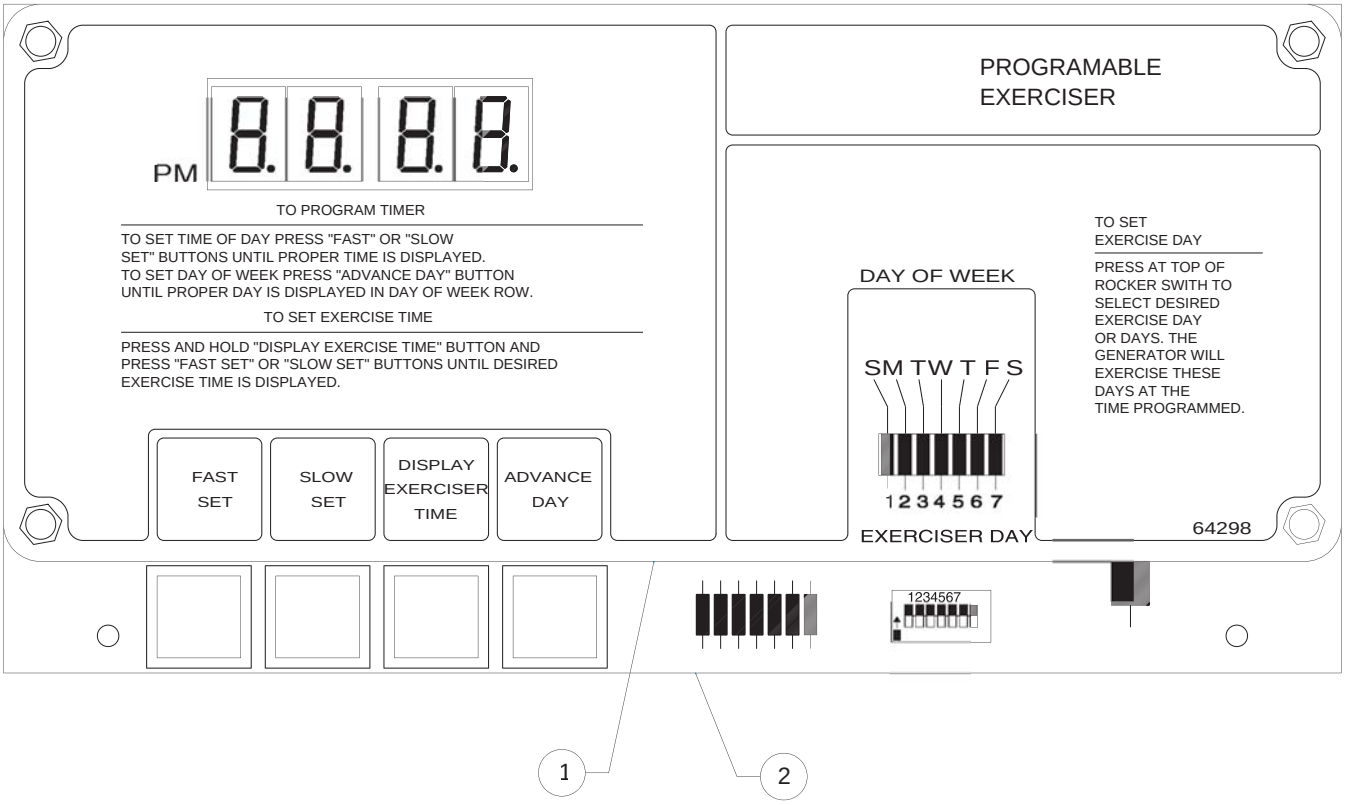
ITEM	PART NO.	QTY.	DESCRIPTION
1	072115	1	SWITCH, TRANSFER - 2000 AMP, 3-POLE
	072121	1	SWITCH, TRANSFER - 2000 AMP, 4-POLE
	072116	1	SWITCH, TRANSFER - 2600 AMP, 3-POLE
	072122	1	SWITCH, TRANSFER - 2600 AMP, 4-POLE
2	063617	2	RELAY, TRANSFER
3	062641	1	LUG, NEUTRAL
4	057329	1	LUG, GROUNDING
5	074509	1	BRACKET, SAFETY DISCONNECT SWITCH
6	074511	1	DECAL, SAFETY DISCONNECT SWITCH
7	055868	1	SWITCH, SAFETY DISCONNECT - 4PDT
9	074375-A	2	SUPPORT, 2000 AMP 3-POLE SWITCH
	074375-B	2	SUPPORT, 2000 AMP 4-POLE SWITCH
	074375-C	2	SUPPORT, 2600 AMP 3-POLE SWITCH
	074375-D	2	SUPPORT, 2600 AMP 4-POLE SWITCH
10	072126	1	COVER, SWITCH
11	067210-A	1	DECAL, GROUND
12	074525	1	DECAL, MANUAL OPERATION
13	073617-R	1	DECAL, 2000 AMP
	073617-S	1	DECAL, 2600 AMP
14	057701	-	BLOCK, TERM - 8 POS.
15	056893	10	SCR., CRIMPTITE #10-24 X 1/2"
16	09075	3	TRANSFORMER - 25VA
17	046689	-	BLOCK, TERMINAL - 4 POS.
18	091466	1	DECAL, TERMINAL BLOCK
19	074327	1	HANDLE, MANUAL TRANSFER
20	063578	1	PLATE, DATA
21	068212	1	COMPARTMENT, PRINTED CIRCUIT BOARD
22	064101	4	NUT, FLANGED LOCK 3/8"-16
23	036261	10	RIVET, POP 1/8" X .23" SS
24	073681	1	DECAL, GTS
	056298	1	DECAL, GTS NEMA 3R ENCLOSURE
	090257	1	DECAL, CTS NEMA 3R ENCLOSURE
	087227	1	DECAL, CTS
25	091478	1	DECAL, AUTOMATIC SEQUENCE
26	057328	1	LENS, LAMP CLEAR
27	057327	1	LENS, LAMP RED
28	057325	1	LENS, LAMP YELLOW
29	055142	1	SWITCH, MODE DPDT
30	0A1661	4	RIVET, POP .156 D X .5 LG.
31			
32	073619-L	1	DECAL, TESTING SEQUENCE 2000 AMP
33	0A2111	2	10-32 - 5/16 FASTENER
34	057514	3	HOLDER, LAMP
35	038150	4	WASHER, FLAT #8
37	091477	5	RIVET, NYLON "PUSH"
38	061342	4	CAPSCR., HEX HD. 1/2"-13 X 1 1/4"
39	0A2284	4	8-32 X 1/2 FASTENER
40	064932	2	TRANSFORMER, 480/240 250VA
	074652	2	TRANSFORMER, 600/240 250VA
41	091472	1	DUCT, WIRE 33 1/2" LG.
42**	095089-A	1	DECAL, 600 VOLT RATINGS 2000 AMP
	095089-B	1	DECAL, 600 VOLT RATINGS 2600 AMP
43	022258	4	CSCR, HEX HD 3/8"-13 X 2"
44	022304	8	WASHER, FLAT 1/2"
45	022129	1	WASHER, LOCK 5/16"
46	022678	1 CC	LOCK-TITE (TYPE A)
47	025870	5	WING NUT, 1/4"-20
48	073669	1	ENCLOSURE, NEMA 12
	073669-C	1	ENCLOSURE, NEMA 3R
49	024979	2	5/16"-18 X 5/8" TAPTITE
50	067629	1	BRD., UTIL. VOLT. SENS. MULTI-VOLT
51	064217	1	BOARD, CIRCUIT EXERCISER (STD.)
	063919	1	BOARD, CIRCUIT EXERCISER (DELUXE)
52	020A67616	1	CVR., UTIL. VOLT. SENS. BOARD
53	063582	1	DOOR, PRINTED CIRCUIT BRD. COMPT.
54	064525	20	SUPPORT, PRINTED CIRCUIT BOARD
55	064526	48	SCR., TAPTITE #6-32 X 3/8"
56	064935	1	SUBPLATE, 600-2600 AMP SWITCH
57	040587	3	LAMP, 28 VOLT
58	063998	1	BATTERY, 9 VOLT
59	046669	-	JUMPER, TERMINAL BLOCK
60	074570	-	HARNESS - WIRING (NOT SHOWN)
61	062209	1	DECAL, UL
62	022196	4	NUT, HEX 1/2"-13
63	030A67617	1	INTERFACE, UTILITY 416/480V 3-PHASE
	030B67617	1	INTERFACE, UTILITY 208/240V 3-PHASE
	072160	1	INTERFACE, UTILITY 400V 3-PHASE
	072158	1	INTERFACE, UTILITY 600V 3-PHASE
64	068337	4	STANDOFF, HX SPCR 1.0" L (STD SNES.)
65	054199	1	DECAL, HIGH VOLTAGE
66	064761	-	TIE-WRAP, 5 5/8" LG (NOT SHOWN)
67	063981	2	GUIDE, SIDE
68	063357	1	DECAL, MAC DT GTS
69	024526	1	SCR., TAPTITE 5/16"-18 X 3/4"
70	022473	13	WASHER, FLAT 1/4"
71	022195	4	WASHER, LOCK 1/2"
72	026902	-	TAPTITE #8-32 X 1/4"
73	036678	31	TIE-DOWN, CABLE
74	036996	1	CVR, EXERCISER CIRCUIT BRD. (STD.)
	064298	1	CVR, EXERCISER CIRCUIT BRD. (DLX.)
75	072252	1	GROMMET
76	028199	1	SWITCH, TIME DELAY NEUTRAL BYPASS
77	074513-R	1	SWITCH PART #72115
	074513-S	1	SWITCH PART #72116
	074513-Y	1	SWITCH PART #72121
	074513-Z	1	SWITCH PART #72122
78	092734	1	PCB, INPHASE MONITOR
79	094446	1	COVER, INPHASE CONTROL
80	029357	2	RIVET
81	063982	1	CLIP, BATTERY
82			
83	022131	30	WASHER, FLAT 3/8"
84	083736	1	DECAL, CSA
85	074376	2	BRACKET, SUBPLATE MOUNTING
86	064510	1	DECAL, TERMINAL NOTE
87***	0333139	4	SCR., HEX HD. MACH. #6-32 X 3/4"
88***	022188	4	NUT, HEX #6-32
89***	022155	4	LOCKWASHER, M6
90***	064210	4	TUBE, NYLON Ø .17 X .43
91	077228	1	DECAL, ENCLOSURE TYPE
92	022097	8	WASHER, LOCK M6
93	056326	-	TRIM, VINYL 1/8" GAP (NOT SHOWN)
94***	064861-A	1	RED PLEXI 1.5 X 3
95***	064861-B	1	RED PLEXI 1.5 X 1
96	072849	3	GASKET-LAMPHOLDER LENS (NEMA 3R)
97	074548	3	GASKET-LAMPHOLDER (NEMA 3R ENCL.)
98	072828	1	SWITCH BOOT - WATERPROOF (NEMA 3R)
99	091472-A	1	COVER, WIRE DUCT 33 1/2" LG.
102	031863	18	CSCR., 3/8"-16 X 1 1/4"
103	022237	22	WASHER, LOCK 3/8"
104	022241	4	NUT, HEX 3/8"-16
105	090388	8	M6-1.0 X 12 TAPTITE
106	022264	12	WASHER, LOCK #8
107	036917	8	PPHMS 8-32 X 3/8"

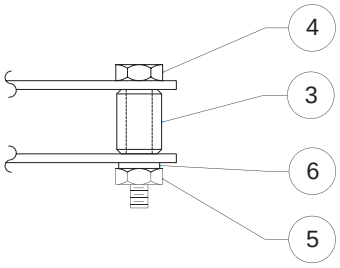
NOTE:

* NOT USED ON 4-POLE SYSTEMS.

** USE ONLY WITH 600 VOLT SYSTEMS.

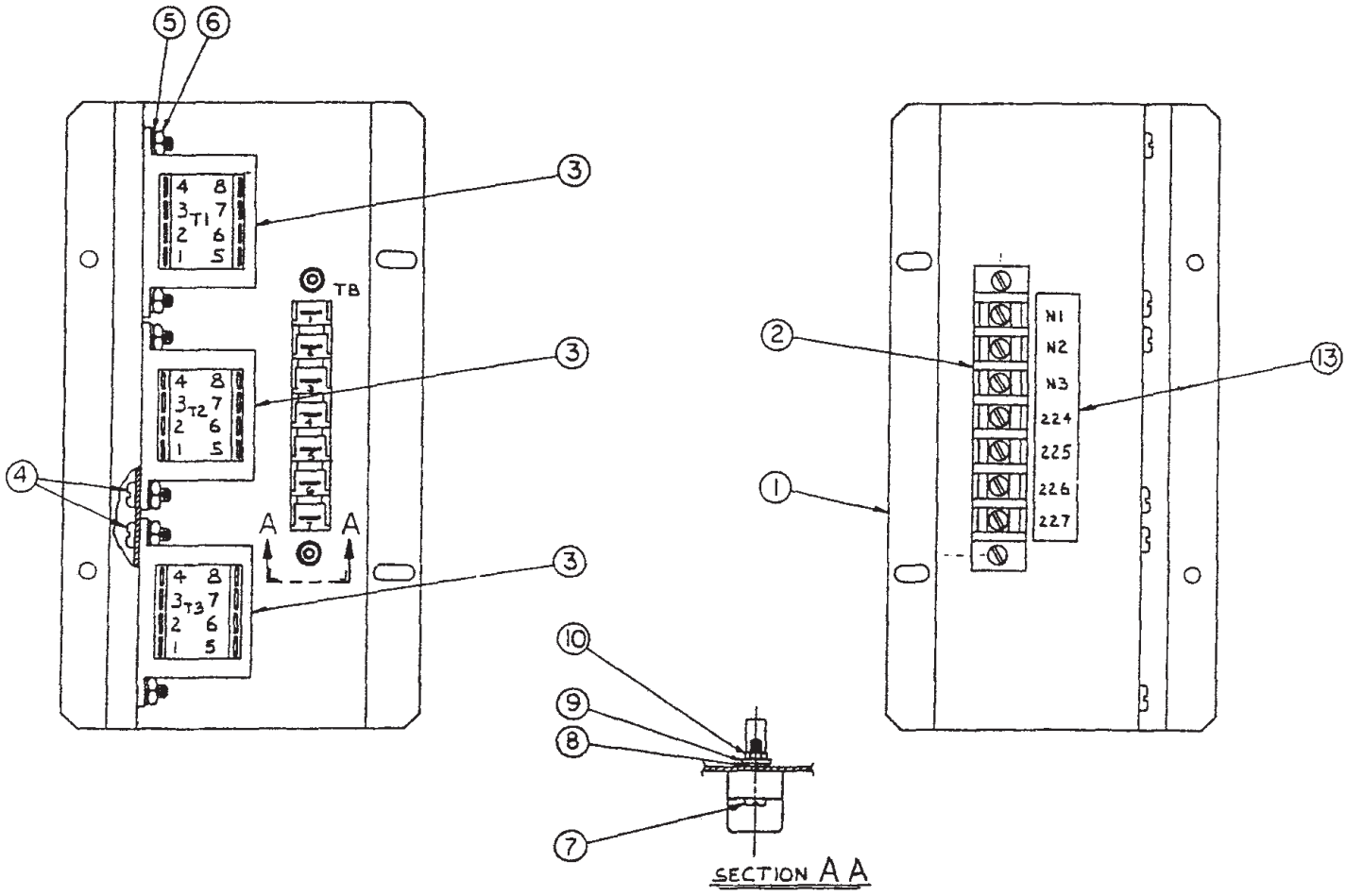
*** USE ONLY WITH #63919 BOARD.





(NOT TO SCALE)

ITEM	PART NO.	QTY.	DESCRIPTION
1	064298	1	COVER PLATE DLX EXER
2	063919	1	ASSY DELUXE EXERCISER
3	064863	4	SPACER - 1/4 OD X 3/4
4	033139	4	HHMS NUT #6-32 X 3/4
5	022188	4	HEX NUT #6-32
6	22155	4	LOCKWASHER #6



ITEM	PART NO.	QTY.	DESCRIPTION
1	20A67621	1	BRACKET, TRANSFORMER MOUNTING
2	20A67615	1	BLOCK, TERMINAL
3	20A67614	3	TRANSFORMER, DUAL
4	33514	6	SCREW, PAN HEAD MACHINE - NO. 8-32 X 1/2"
5	22264	6	LOCKWASHER, NO. 8
6	22471	6	NUT, HEX - NO. 8-32
7	33502	2	SCREW, PAN HEAD MACHINE - NO. 6-32 X 3.4"
8	22155	2	LOCKWASHER, NO.6
9	22985	2	FLATWASHER, NO.6
10	22188	2	NUT, HEX - NO. 6-32
12	55199-A	6 FT.	WIRE, INSULATED - NO 18 AWG. (TEW)
13	20A67931	1	DECAL, INTERFACE

GENERAC POWER SYSTEMS STANDARD TWO-YEAR LIMITED WARRANTY FOR GENERAC TRANSFER SWITCH SYSTEMS

NOTE: ALL UNITS MUST HAVE A START-UP INSPECTION PERFORMED BY AN AUTHORIZED GENERAC DEALER. For a period of 2 (two) years from the date of sale/start date, Generac Power Systems, Inc. will, at its option, repair or replace any part(s) which, upon examination, inspection, and testing by Generac Power Systems or a Generac Power Systems Authorized Warranty Service Facility, is found to be defective under normal use and service, in accordance with the warranty schedule set forth below. Any equipment that the purchaser/owner claims to be defective must be returned to, and examined by the nearest Generac Power Systems Authorized Warranty Service Facility. All transportation costs under the warranty, including return to the factory, are to be borne and prepaid by the purchaser/owner. This warranty applies only to Generac Power Systems Transfer Switch applications, as Generac Power Systems, Inc. have defined Transfer Switch application, provided said Transfer Switch has been initially installed and inspected on-site by a Generac Power Systems Authorized Service Dealer or branch thereof. A scheduled maintenance agreement with a local Authorized Generac Power Systems Dealer is highly recommended to verify adequate service has been performed on the unit throughout the warranty period.

WARRANTY SCHEDULE

- **YEAR ONE** — 100% (one hundred percent) coverage on mileage*, labor, and parts listed.
- **ALL COMPONENTS**
- **YEAR TWO** — 100% (one hundred percent) coverage on parts listed.
- **ALL COMPONENTS — *PARTS ONLY**
- *Travel allowance is limited to 300 miles maximum, or 7.5 hours maximum (per occurrence), **round trip**, to the nearest authorized Generac Service Facility.
- A Generac Power Systems, Inc. Transfer Switch is highly recommended to be used in conjunction with the genset. If a non Generac genset is substituted for use and directly causes damage to the Generac Transfer Switch, no warranty coverage shall apply.
- All warranty expense allowances **are** subject to the conditions defined in Generac Power Systems Warranty, Policies, and Procedures Flat Rate Manual.
- Units that have been resold **are not** covered under the Generac Power Systems Warranty, as this Warranty **is not** transferable.

THIS WARRANTY SHALL NOT APPLY TO THE FOLLOWING:

1. Any unit built/manufactured prior to January 1, 2002.
2. Unit enclosure is only covered against rust or corrosion the first year of the warranty provision.
3. Costs of normal maintenance i.e. tune-ups, associated part(s), adjustments, loose/leaking clamps, installation and start-up.
4. Use of Non-Generac replacement part(s) will void the warranty in its entirety.
5. Any failure caused by contaminated fuels, oils, coolants/antifreeze or lack of proper fuels, oils or coolants/antifreeze.
6. Failures due, but not limited to, normal wear and tear, accident, misuse, abuse, negligence, or improper installation or sizing.
7. Failures caused by any external cause or act of God such as collision, fire, theft, freezing, vandalism, riot or wars, lightning, earthquake, windstorm, hail, volcanic eruption, water or flood, tornado, hurricane, terrorist acts or nuclear holocaust.
8. Products that are modified or altered in a manner not authorized by Generac Power Systems in writing.
9. Any incidental, consequential or indirect damages caused by defects in materials or workmanship, or any delay in repair or replacement of the defective part(s).
10. Failure due to misapplication, misrepresentation, or bi-fuel conversion.
11. Telephone, telegraph, teletype or other communication expenses.
12. Living or travel expenses of person(s) performing service, except as specifically included within the terms of a specific unit warranty period.
13. Rental equipment used while warranty repairs are being performed i.e. rental generators, cranes, etc..
14. Overtime labor or more than one person performing repairs.
15. Any and all expenses incurred investigating performance complaints unless defective Generac materials and or workmanship were the direct cause of the problem.
16. *Engine coolant heaters (block-heaters), heater controls and circulating pumps after the first year.
17. *Starting batteries, fuses, light bulbs, engine fluids, tires, brakes, and overnight freight cost for replacement part(s).

THIS WARRANTY IS IN PLACE OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, SPECIFICALLY, GENERAC POWER SYSTEMS MAKES NO OTHER WARRANTIES AS TO THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

GENERAC POWER SYSTEMS ONLY LIABILITY SHALL BE THE REPAIR OR REPLACEMENT OF PART(S) AS STATED ABOVE. IN NO EVENT SHALL GENERAC POWER SYSTEMS BE LIABLE FOR ANY INCIDENTAL, OR CONSEQUENTIAL DAMAGES, EVEN IF SUCH DAMAGES ARE A DIRECT RESULT OF GENERAC POWER SYSTEMS, INC. NEGLIGENCE.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. Purchaser/owner agrees to make no claims against Generac Power Systems, Inc. based on negligence. This warranty gives you specific legal rights. You also may have other rights that vary from state to state.

GENERAC® POWER SYSTEMS, INC. · P.O. BOX 8 · WAUKESHA, WI 53187
PH: (262) 544-4811 · FAX: (262) 544-4851

Bulletin 0166260SBY / Printed in USA 5.02