OWNER'S & INSTALLATION MANUAL

100-600 AMP

RONK Automatic Transfer Switch

DISCLAIMERS:

All information, illustrations and specifications in this manual are based on the latest information available at the time of publishing. The illustrations used in this manual are intended as representative reference views only. Moreover, because of our continuous product improvement policy, we may modify information, illustrations and/or specifications to explain and/or exemplify a product, service or maintenance improvement. We reserve the right to make any change at any time without notice. Some images may vary depending upon which model is shown.

ALL RIGHTS RESERVED:

ORIGINAL INSTRUCTIONS (English):

The English version of this manual controls over any error in or conflicting interpretation of any translation.

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INTRODUCTION

Thank you for your purchase of a RONK Automatic Transfer Switch (ATS). This product is designed for use with standby generators. When operated and maintained according to the instructions in this manual, your system will provide many years of standby electrical energy service.

This manual contains important safety instructions for installation and operation of this ATS. We have made every effort to provide safe, efficient instructions for installation and operation. However, as every installation is unique, it is impossible to anticipate every possible procedure and method to obtain a properly installed unit. It is important that you read and understand these instructions thoroughly before attempting to install or operate this unit. Your equipment is supplied with this combined Installation and User Manual. This is an important document and should be retained by the owner after the installation has been completed.

This ATS requires professional installation before use. Refer to the installation section of this manual for instructions on installation procedures. Only licensed electrical contractors should install an ATS. Installations must comply completely with all federal, state and local codes, standards and regulations. Your installer should follow these instructions completely. Every effort has been made to ensure that the information in this manual is both accurate and current. However, the manufacturer reserves the right to change, alter or otherwise improve the system at any time without prior notice.

NOTICE

Please check with the generator manufacturer to ensure the RONK ATS switch is compatible.

CONTACT INFORMATION

There are several ways to contact us for answers to questions you may have about your product. Contact Technical Services by phone at 1-217-563-8333 Monday through Friday 8 AM to 4:30 PM Central Time or email sales@RONKelectrical.com.

For your future reference, record the following pertinent information. This information will help to identify product information should you need to contact RONK's Technical Services department.

ATS

Model Number: _____

Description: _____

Serial Number: _____

Installation Date: _____

GENERATOR

Model Number: _____

Description: _____

Serial Number: _____

Installation Date: _____

SAFETY

IMPORTANT SAFETY INSTRUCTIONS

Read Manufacturer's Instructions.
SAVE THESE INSTRUCTIONS.

- This manual contains important information that should be used during installation, maintenance, and operation of this unit.
- Read all the instructions and safety symbols thoroughly before attempting to install, operate and/or service this equipment.

SAFETY SYMBOL MEANINGS

SYMBOL	DESCRIPTION
	Safety Alert Symbol
	Crush Hazard
	Electrical Shock Hazard

This safety alert symbol appears with most safety statements. It means attention, become alert, your safety is involved! Please read and abide by the message that follows the safety alert symbol.

⚠ DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

Indicates a situation which can cause damage to the equipment, personal property and/or the environment, or cause the equipment to operate improperly.

NOTE:

Indicates a procedure, practice or condition that should be followed for the ATS to function in the manner intended.

The manufacturer of this product cannot reasonably anticipate every possible circumstance that might involve a hazard. The warnings in this manual and the tags and decals affixed to the unit are, therefore, not all-inclusive. If you use a procedure, work method or operating technique that the manufacturer does not specifically recommend, you must ensure that your method is safe for you and others. You must also make sure that the procedure, work method or operating technique that you choose does not render the equipment unsafe.

SAFETY LABELS

Always replace any illegible or missing labels immediately. All safety labels must be legible to alert personnel to safety hazards

Figure 1

GENERAL SAFETY PRECAUTIONS

⚠ DANGER

DANGER! Equipment contains high voltage. Despite the safe design of the system, operating this equipment imprudently, neglecting its maintenance or being careless can result in death or serious injury.

⚠ WARNING

The safety messages that follow have WARNING level hazards.

- Unauthorized or improper installation, operation, application, or repair of this equipment is extremely dangerous.
- Only qualified electricians should attempt installation of this equipment, which must strictly comply with all applicable codes, standards and regulations.
- When connecting a generator system to an electrical system that is normally supplied by an electric utility company, always comply with regulations of the National Electrical Code (NEC) (Article 701 Legally Required Standby Systems or Article 702 Optional Standby Systems, as applicable), and Occupational Safety and Health Administration (OSHA), as applicable. It is essential to use the latest version of any standard to ensure all current information is applied.

⚠ WARNING

The safety messages that follow have WARNING level hazards.

- Failure to properly ground equipment can result in electrocution.
  - Do not touch bare wires.
  - Do not use equipment with worn, frayed, bare or otherwise damaged wiring.
  - Do not handle electrical cords while standing in water, while barefoot, or while hands or feet are wet.
  - If you must work around a unit while it is operating, stand on an insulated dry surface to reduce shock hazard.
  - Do not allow unqualified persons or children to service equipment.
  - In case of an accident caused by electrical shock, immediately shut down all sources of electrical power and contact local authorities. Avoid direct contact with the victim.
- Low-voltage wire cannot be installed in the same conduit as power voltage wiring.
- Dangerous power voltages are present inside a live ATS. Never work on the ATS unless all power voltage supplies to the switch have been turned off.
- When an ATS is connected to a standby generator, the generator engine may crank and start at any time without notice to the end user. To avoid injury that may be caused by such start-ups, move the safety disconnect switch on the front panel to the OFF position before working on this equipment.

NOTICE

Improper treatment of equipment can damage it and shorten its life.

- Use equipment only for intended uses.
- If you have questions about intended use, contact RONK Electrical Industries, Inc.
- Do not expose equipment to excessive moisture, dust, dirt or corrosive vapors.
- Always remain alert while working on this equipment. Never work on the equipment when you are physically or mentally fatigued.
- If connected devices overheat, turn them off and turn off their circuit breaker or fuse.

RONK ATS

RONK ATS PRODUCT OVERVIEW

RONK automatic transfer switches are designed to automatically transfer an electrical load to standby (emergency) power source in the event of an over/under voltage or frequency condition on any or all phases of the utility power source. Upon the restoration of the utility supply, the electrical load will be automatically retransferred to the utility power source.

All transfer switch mechanisms incorporate a double- throw action switching device for automatic transferring. The transfer switch mechanism is a contactor-operated device controlled by a set of utility and generator solenoids.

Manual operation is also provided for manual transfer of the load between the power sources.

Figure 2 - RONK ATS

RECEIVING, HANDLING AND STORAGE

Shipment contents:

- Automatic Transfer Switch
- DSE 331 Installation Instructions
- Owner's & Installation Manual

RECEIVING

Every effort is made to ensure that your automatic transfer switch arrives at its destination undamaged and ready for installation. The packing is designed to protect the transfer switch's internal components as well as the enclosure. Care should be taken to always protect the equipment from impact. Do not remove the protective packaging until the equipment is at the installation site and ready to be installed.

A shipping label affixed to the shipping box includes a variety of product and shipping information, such as items and customer numbers. Make certain that this information matches your order information.

After unpacking, inspect the switch for any damage that may have occurred during shipping. If any missing parts or damage is discovered when unpacking, do not return the unit to the place of purchase; please contact RONK Electrical for instructions on how to proceed. Never install a switch that has been damaged.

HANDLING

Always protect the equipment from impact and do not double stack. Once the transfer switch is at the installation site and ready to be installed, the packaging material may be removed.

STORAGE

Store the transfer switch with its protective packaging in place until ready for installation. Always protect the transfer switch from excessive moisture, dirty conditions, corrosive conditions and other contaminants. It is strongly recommended that the package-protected equipment be stored in a climate-controlled environment of -4° to 149°F (-20° to 65°C), with a relative humidity of 80% or less. Do not stack other equipment on top of the stored switch.

100A/200A/400A/600A SPECIFICATIONS

OPTIONAL STANDBY - UL1008						
PART NUMBER	**TYPE**	**PHASE**	**AMPERAGE RATING**	**VOLTAGE RATING**	**APPROX. WEIGHT**	**APPROX. DIM. [HxWxD]**
ATS10012	V12	1	100	240	48 lbs.	24 x 20 x 6
ATS20012	V22	1	200	240	85 lbs.	30 x 24 x 6

EMERGENCY - UL1008						
PART NUMBER	**TYPE**	**PHASE**	**AMPERAGE RATING**	**VOLTAGE RATING**	**APPROX. WEIGHT**	**APPROX. DIM. [HxWxD]**
ATS10032	V13	3	100	240	49 lbs.	24 x 20 x 6
ATS20032	V23	3	200	240	86 lbs.	30 x 24 x 6
ATS40012	W04	1	400	240	181 lbs.	48 x 30 x 10
ATS40014	W04	1	400	480	203 lbs.	48 x 30 x 10
ATS40032	W04	3	400	240	188 lbs.	48 x 30 x 10
ATS40034	W04	3	400	480	210 lbs.	48 x 30 x 10
ATS60012	N06	1	600	240	410 lbs.	60 x 36 x 24
ATS60014	N06	1	600	480	432 lbs.	60 x 36 x 24
ATS60032	N06	3	600	240	428 lbs.	60 x 36 x 24
ATS60034	N06	3	600	280	450 lbs.	60 x 36 x 24

All switches are provided from factory with a solid neutral.

	POWER DERATING	
Ambient Temperature Rating	113°F (45°C)	100%
	131°F (55°C)	90%
	149°F (65°C)	75%
	158°F (70°C)	70%
Do not exceed 158°F (70°C)		

DC POWER CONSUMPTION	168 mA @ 12 Vdc 80 mA @ 24 Vdc
RSC RATING	8 Amp, 35 Vdc Maximum
TEST SWITCH	Local or Remote Capable

INSTALLATION & WIRING

GENERAL INFORMATION

All RONK Automatic transfer switches are factory-tested and approved. Installation requires the mounting of the transfer switch and external wiring for utility and generator operation. Once the transfer switch is properly installed, it should be visually inspected and approved before any testing is performed.

MOUNTING LOCATION

All RONK Automatic transfer switches require that adequate lifting means be used to install the switch at its mounting location. Be certain to choose a location that offers a flat mounting surface that can support the transfer switch. Caution must be taken at the installation site to make sure the site is free from excessive moisture, fluctuating temperature ranges, dust, corrosive materials, etc. Before any drilling takes place, be certain the drilling area is free of any hazards including electrical wiring, piping, etc. Extreme caution should be exercised when any installation and drilling are performed to protect the transfer switch from any debris including contaminants, filings, etc. Any debris within the transfer switch may result in a system malfunction.

⚠ WARNING

Always use adequate lifting to lift and mount the transfer switch during installation.

MOUNTING REQUIREMENTS

The enclosure has a NEMA (National Electrical Manufacturer's Association) Type 4 rating and is suitable for indoor/outdoor installations and provides a degree of protection against falling rain and sleet. Guidelines for mounting the unit include:

- Ensure that the mounting surface can support the weight of the switch and adheres to all local codes.
- The enclosure must be installed with NEMA Type 4 hardware and connections.
- Level and plumb the unit enclosure to prevent deformation.
- Never install the switch where any corrosive substance may come in contact with the enclosure.
- Protect the switch at all times against excessive moisture, dust, dirt, lint, construction grit and corrosive vapors.

SHORT CIRCUIT WITHSTAND/CLOSING RATINGS, ANY CIRCUIT BREAKER (ANY CB)

When protected by a circuit breaker, this transfer switch is suitable for use in a circuit capable of delivering the short-circuit current for the maximum time duration and voltage marked below.

SPECIFIC CIRCUIT BREAKER MANUFACTURER AND TYPE (SPECIFIC CB)

When protected by a circuit breaker of the specific manufacture, type, and ampere rating as marked below, this transfer switch is suitable for use in circuits capable of delivering the short-circuit current at the maximum voltage marked.

MODEL	POLES	AMPS	MAX VOLTS	ANY CB	MAX DURATION	SPECIFIC CB*	MANUFACTURER	TYPE	RATING
V12 V13	1 3	100	240	10 kA	0.025 Seconds	22 kA	Siemens	HED4, HED6	125 A
							Siemens	ED4, ED6	125 A
							Siemens	CED6	125 A
							Eaton / Cutler Hammer	FDC	150 A
							Eaton / Cutler Hammer	QCHW	125 A
							Eaton / Cutler Hammer	FCL	100 A
							Eaton / Cutler Hammer	FB	100 A
							SQUARED D	FI	100 A
V22	1	200	240	10 kA	0.025 Seconds	22 kA	Siemens	FXD	250 A
							Siemens	NFK	250 A
							SQD/Schneider	QBL	250 A
							General Electric	SFHA	250 A
V23	3	200	240	10 kA	0.025 Seconds	25 kA	General Electric	SFH	250 A
W04	1 3	400	480	NA	NA	10 kA	Cutler-Hammer	LD	600 A
N06	1 3	600	480	NA	NA	12 kA	Cutler-Hammer	MD	800 A

RECOMMENDED UPSTREAM PROTECTION

⚠ CAUTION

Using upstream protection devices other than the circuit breakers with the recommended ratings given above may cause improper operation of the switch.

⚠ WARNING

Always de-energize power connections before installing any connections. Power lines may carry high voltage. Exercise extreme caution when installing any power connections to the switch.

POWER CONNECTIONS

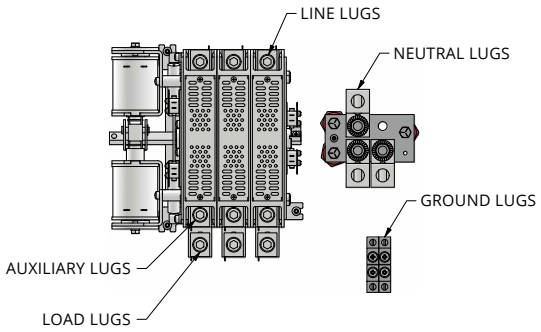
Proper power cables need to be installed to the transfer switch and should be installed by licensed electrical contractors.

Improper installation or connections of these power cables are extremely dangerous and may cause severe injury or death. All power connections are to be connected to the proper lugs, which are included on the switch contactor and neutral block assembly. Connect the line auxiliary, neutral and load cables to the terminals, which are clearly marked on the transfer switch (see Figure 5). Verify that all connections are correct before tightening lugs. All power cable lug connections must be tightened to the proper torque values as shown in Table 1 and Table 2.

⚠ WARNING

Low-voltage wire cannot be installed in the same conduit as power voltage wiring. It could result in shock due to short circuit as well as cause electromagnetic interference resulting in non-operation of the system.

Figure 5 - Power Cable Connection Locations



⚠ WARNING

Always install the transparent protective shields covering the power connections of the switch mechanism once the proper connections are performed.

WIRE SIZING & TORQUE

MODEL	LINE, LOAD, AUXILIARY		NEUTRAL		GROUND	
100	10 - 12 AWG	35 in-lb	300 MCM - 6 AWG	160 in-lb	10 - 14 AWG	35 in-lb
	8 AWG	40 in-lb			8 AWG	40 in-lb
	4 - 6 AWG	45 in-lb			4 - 6 AWG	45 in-lb
	1/0 - 2 AWG	50 in-lb			2 AWG	50 in-lb
200	250 MCM - 1/0 AWG	275 in-lb	300 MCM - 6 AWG	160 in-lb	10 - 14 AWG	35 in-lb
					8 AWG	40 in-lb
					4 - 6 AWG	45 in-lb
					2 AWG	50 in-lb
400	(1) 600 MCM - 4 AWG or (2) 250 MCM - 1/0 AWG	500 in-lb	(1) 600 MCM - 4 AWG or (2) 250 MCM - 1/0 AWG	310 in-lb	1/0 - 14 AWG	120 in-lb
600	600 MCM - 2 AWG	500 in-lb	600 MCM - 2 AWG	500 in-lb	250 MCM - 6 AWG	275 in-lb

CU9AL CONDUCTOR INSULATION SHALL BE RATED FOR 90°C.
CONDUCTOR SIZING SHALL BE BASED ON AMPACITY RATINGS AT 75°C.

INSTALLATION & WIRING

CONTROL CONNECTIONS

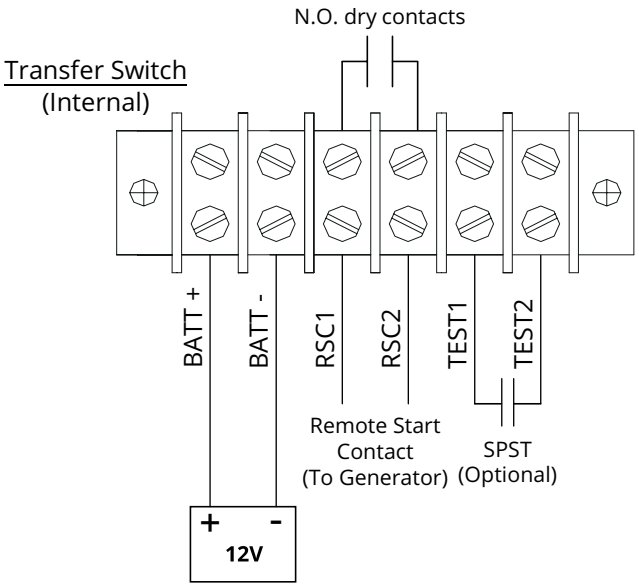


Figure 6

NOTE:

The transfer switch consists of the 6-position terminal block (shown in Figure 6) for connections.

⚠ WARNING

Make sure the disconnects for the LINE (Utility) and AUXILIARY (Generator) are in the OFF position. Once battery (12 Vdc) is applied to the ATS customer terminal block (BATTERY+ & BATTERY-) the ATS controller will power up to the AUTO MODE. Since the power to the LINE position should be in the OFF position, the ATS will close RSC1 & RSC2 sending a start signal to the generator. To avoid injury that may be caused by such a start-up, please make sure the generator is in the OFF/DISABLED position on the controller.

Battery + and **Battery –** must be connected for operation of the DSE controller. Standard is for 12 Vdc connection. For 24 Vdc operation, the relays K1, K2, K3, and K4 would need to be changed to 24 Vdc coils. K3 & K4 on 600A only. Consult factory for kit RONK 26097 (2 relay coils).

RSC1 and **RSC2** need to be connected to the remote start/stop connections of the generator to allow automatic starting. These are N.O. dry contacts. 8A, 35 Vdc Max.

An optional customer-supplied test switch may be installed by the customer using the **TEST 1** and **TEST 2** terminals. A closed circuit between the test connections will simulate a utility failure.

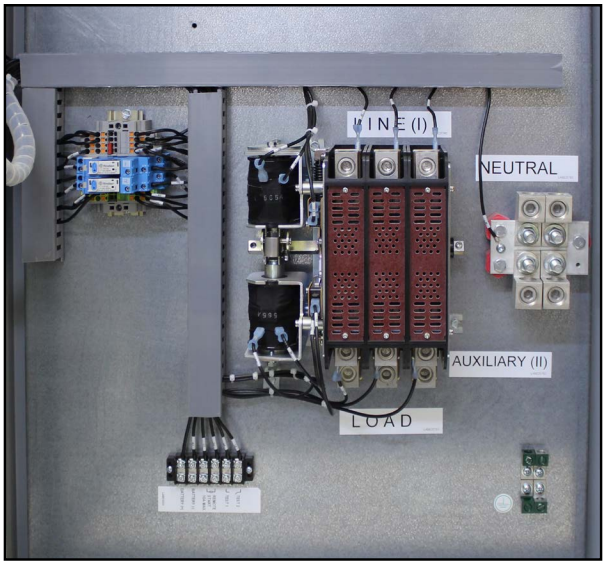


Figure 7

RONK ATS GENERAL OPERATION

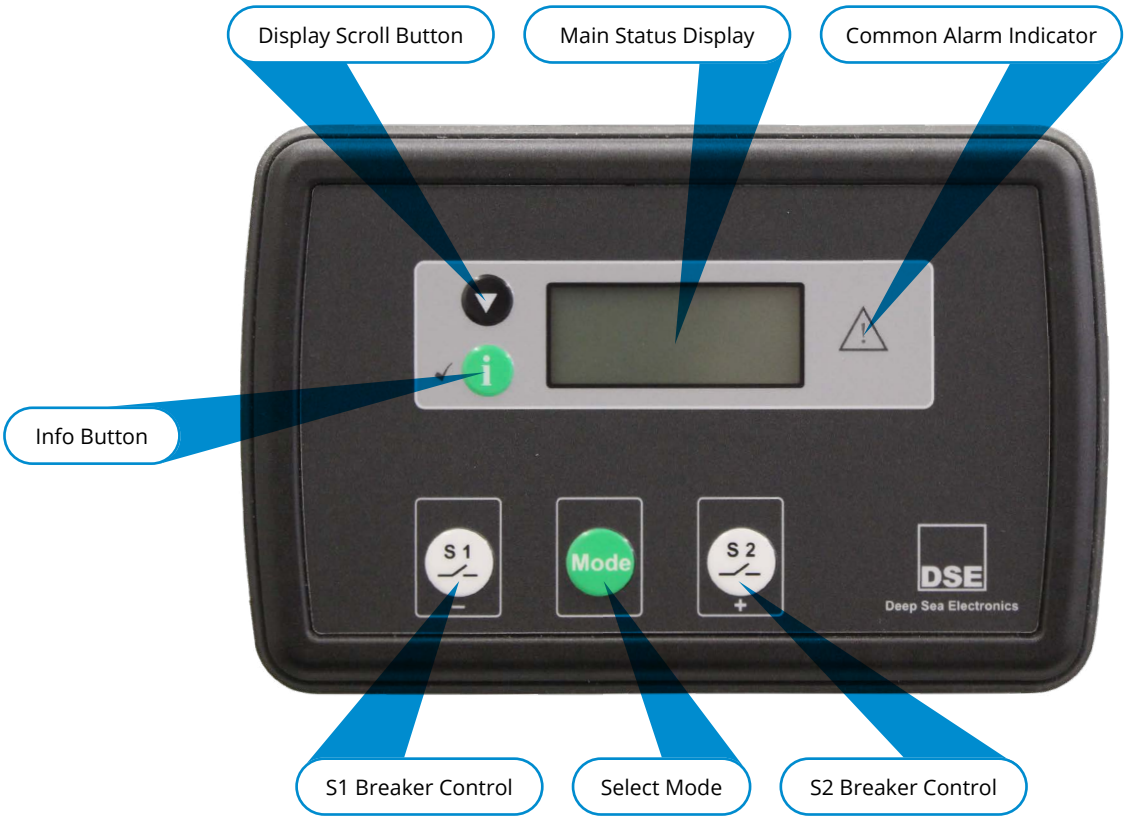
The ATS switch in combination with the controller module will allow for the automatic transfer of an electrical load to a standby power source in the event of an over/under voltage or frequency condition on any or all phases of the utility power supply.

In the event of an over/under voltage or frequency condition of utility power, the onboard controller sensing circuitry will begin the initiation of the transfer process. Upon initial sensing of a loss of utility power, the transfer switch is specifically designed to allow an engine start time delay period (Parameter 502) to expire before starting the generator. This engine start time delay is user-adjustable from the switch, preventing unnecessary engine starts from a temporary loss of utility. In the event the utility source is not restored after the engine start time delay has expired, the remote contacts will close, sending a signal to the generator's automatic start controller.

When the ATS controller senses that the generator has started, and is within acceptable limits, the transfer switch will wait until the utility to generator time delay (Parameter 503) has expired before switching to the generator position. All connected loads will be transferred to the generator power source.

While the transfer switch is in the generator position, the controller will constantly monitor the utility source voltage and frequency status. Once the utility source is restored, the transfer switch will wait until the generator to utility time delay (Parameter 510) has expired before switching back to the utility position. All connected loads are transferred to the utility power source.

When connected loads are transferred back to the utility power source, an engine cooldown period (Parameter 511) will be initiated, allowing the generator to run in a no-load condition. This engine cooldown time delay is user-adjustable from the controller, allowing the generator to continue running for an adjustable period after the utility is restored.



QUICKSTART GUIDE

SETTING TIME OF DAY (TOD)

See DSE331 Installation Instructions (DSE Document 053-131) or DSE 331 ATS Controller Operators Manual (DSE Document 057-146) for definition of adjustable parameters.

The TOD must be set to local time on initial power up. To do so, enter the configuration mode by pressing and holding the button (approximately 3 sec) until the configuration icon is displayed. Navigate to parameter 1001 by pressing the button twice (and button advance or decrease by one, advances to the next 100). Press the button again to activate the TOD to be changed, it will begin to flash. Change to the current time using the or buttons (24 hr. clock; only changes by the minute with multiple presses or press and hold). Press the button to save once the correct time is reached. The value will stop flashing.

Navigate to parameter 1002 by pressing the button and set the day of the week in a similar fashion. (1=Mon, 2=Tue, 3=Wed, 4=Thu, 5=Fri, 6=Sat, 7=Sun)

Press and hold the button to exit the configuration mode.

NOTE:

On battery loss to the Automatic Transfer Switch, the TOD must be reset to current time and day when the battery is re-applied.

SCHEDULER

The DSE331 scheduler is the feature that sets the exercise timer for the Automatic Transfer Switch and the generator set. The ATS comes from the factory with the scheduler pre-set. If no modifications are made, the ATS will simulate a utility power outage, start the generator, and transfer the load to generator power each Saturday at noon. After ten minutes of the generator powering the load, the ATS will transfer the load back to utility power. The generator will run through a cooldown period and then be shutdown.

To change the scheduler, configuration parameters 901 through 905 can be modified.

208V SYSTEM SETTINGS

The 200-240V ('2' voltage code) Automatic Transfer Switches are factory preset for 240V systems. To apply the ATS to a 208V system, the following configuration parameters need to be changed.

PARAMETER NUMBER	FACTORY SETTING	208V SYSTEM SETTING
602	5	0
604	125	108
605	132	115
607	146	126
608	153	133
703	120	104
704	125	108
706	153	133

The 208V settings will result in a switch that will work in a 208V, 3PH, WYE system with the following voltage set points:

	LINE	AUXILIARY
Under Voltage Trip	187V	180V
Under Voltage Return	200V	187V (Loading Voltage)
Over Voltage Return	218V	NA
Over Voltage Trip	230V	230V

NOTE:

DSE parameter setpoint represent Vø-ø/sqrt(3).

ATS FACTORY SET TRIPS AND TIME DELAYS

	SENSING FUNCTION	SETTING
LINE	Under Frequency - Trip	54 Hz
	Under Frequency - Return	58 Hz
	Over Frequency - Trip	66 Hz
	Over Frequency - Return	62 Hz
AUX	Under Frequency - Trip	54 Hz
	Loading Frequency	58 Hz
	Over Frequency - Trip	66 Hz

		SETTING [VOLT, +/- 2%]	
	SENSING FUNCTION	240	480
LINE	Under Voltage - Trip	216	432
	Under Voltage - Return	228	456
	Over Voltage - Trip	264	528
	Over Voltage - Return	252	504
AUX	Under Voltage - Trip	206	412
	Loading Voltage	216	432
	Over Voltage - Trip	264	528

The 240V switches are usable on 208V systems. See manual for instructions to change parameters.

TIME DELAY FUNCTION	SETTING
LINE Transient	2 Seconds
Engine Start	13 Seconds
Transfer LINE to AUXILIARY	21 Seconds
*Non-Sync Transfer Time	2.5 Seconds
Transfer AUXILIARY to LINE	270 Seconds
Time Delay Engine Cooldown	270 Seconds

*TYPE N06 (600A Only)

	SETTING [VOLT]	
DC BATTERY SENSING	12	24
Under Voltage - Alarm	10	19
Over Voltage - Alarm	16	31

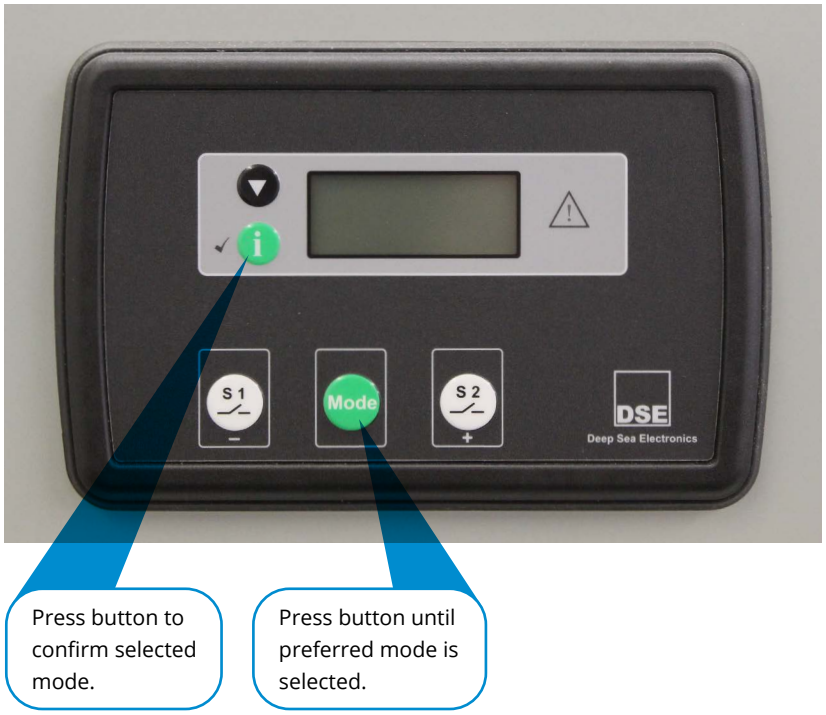
Standard is for connection to 12V dc systems. See manual for connection to 24V dc systems.

The ATS Controller is programmed to exercise periodically: Every Saturday at noon for a 10 minute run time, On Load. The ATS will transfer to generator (AUXILIARY) power during this exercise to load the generator. See manual for instructions to change scheduler.

QUICKSTART GUIDE

This section provides a quick start guide to the module's operation for DSE controller 331.

MODE SELECTION OPERATION



NOTE:

For further details, see the section entitled 'MODE SELECTION' elsewhere in this manual.

GRAPHICAL DISPLAY

- 4- line, 64 x 132 small Graphic Display with LED Backlight

- Icon and numeric display. Switch to select 'Icon' or 'English' display

- Software controlled contrast

- Mimic of Text insert / 4x indicators via LCD

DISPLAY PAGES

It is possible to scroll to display the different pages of information by repeatedly operating the scroll button

Once selected the page will remain on the LCD display until the user selects a different page or after an extended period of inactivity, the module will revert to the status display.

When scrolling manually, the display will automatically return to the Status page if no buttons are pressed for the duration of the configurable LCD Page Timer.

If an alarm becomes active while viewing the status page, the display shows the Alarms page to draw the operator's attention to the alarm condition.

At power up, the display will show the software version, and then display the default display screen, which will display Mains instrumentation.

STATUS

Displays voltage operational status information.

Example:

QUICKSTART GUIDE

INSTRUMENTATION

The instrumentation page contains the following information:

S1 Voltage L-N

S1 Voltage L-L

S1 Frequency

S2 Voltage L-N

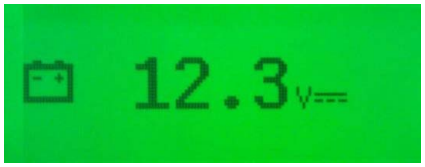
S2 Voltage L-L

S2 Frequency

Battery Voltage

Scheduler

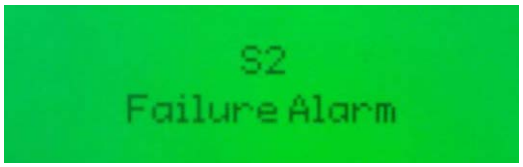
Example:



ALARMS

Lists any current alarms

Example (English)

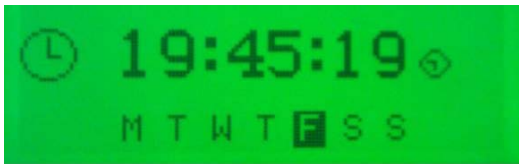


(Icon)

SCHEDULER

Shows the settings of the exercise scheduler

Example:



ALARM ICONS

In instances where more than one alarm is present the icon area will transition between icons to display all active alarm conditions. For information alarm conditions see section.

ALARM	ICON	REASON
Switch Fail Alarm		The Switching device has failed to operate.
Failed to Start		The engine has not fired after the preset number of start attempts.
Failed to Stop		The module has detected a condition that indicates that the engine is running when it has been instructed to stop.
Over Voltage		S1 or S2 voltage has risen above the pre-set pre-alarm setting.
Under Voltage		S1 or S2 voltage has fallen below the pre-set pre-alarm setting.
Over Frequency		S1 or S2 frequency has risen above the pre-set pre-alarm setting.
Under Frequency		S1 or S2 frequency has fallen below the pre-set pre-alarm setting.

QUICKSTART GUIDE

CONTROLS

MODE SELECTION

NOTE:

Icons only apply when display mode in the software program is set to `icons`.

This button selects the preferred mode of operation. 

to complete the selection press the  button.

Automatic mode.  This mode allows the module to control the function of the load switching completely automatically. The module will monitor the remote start input and mains supply status and once a start request is made, the set will be placed on load. Upon removal of the starting signal (or S1supply returns), the module will automatically transfer the load from the generator to the mains and remove the genset starting instruction.

Manual mode.  This mode allows manual control of the ATS functions. Once in this mode the module will send a start request to the generator. Breakers can be opened and close using the transfer buttons detailed below.

Test mode.  Once in Test mode the module will send a start request to the generator and place the set on load or off load depending on what is set in the software. The set will remain on load or off load when in this mode.

Start inhibit mode.  This mode is used to provide an over-ride function to prevent the controller from starting the generator in the event of a remote start/S1 out of limits condition occurring.

Prohibit return.  This mode is used to prevent the module from loading S1 even though S1 has returned.

DISPLAY

This button changes between the various pages About, Status, Instrumentation, Alarms, Event Log, LCD Indicators	
This buttons scrolls through the items in the currently displayed page.	

LOAD SWITCHING CONTROL

Two fascia mounted buttons are provided for load switching operation when in manual mode. These buttons are enabled/disabled in the modules PC configuration Suite so refer to your configuration file to ensure the configuration has enabled the buttons.

Pressing this button when the S1 is on load will open the S1 load switch. Pressing this button when S2 is on load and S1 is healthy, will open S2 load switch, wait for the duration of the transfer delay, then close the S1 load switch.	
Pressing this button when S2 is on load will open the S2 load switch. Pressing this button when the S1 is on load and S2 is available, will open the S1 load switch, wait for the duration of the transfer delay, then close S2 load switch.	

MANUAL TRANSFER OF MECHANISM

⚠ WARNING

Never perform a manual transfer while the transfer switch is under load. Manual transfer is not recommended. If performing an emergency manual transfer, be certain to isolate the transfer switch from all power and load sources.

Manual transferring is not recommended. If the transfer switch fails to transfer in an emergency, an optional manual transfer may be performed. Caution must be taken to confirm that the transfer switch is isolated from all possible load sources before transferring. Always remove the handle from the manual transfer handle lever location after each transfer.

100A/200A MANUAL TRANSFER

In 100 and 200A transfer switches, the manual transfer lever located on the contactor is used to manually transfer between the utility and generator position. With the lever facing up toward the normal side, the switch will be in the normal position. With the lever down facing toward the emergency side, the switch will be in the emergency position.

⚠ WARNING

Never allow the removable lever handle to come in contact with live wires or terminals.

400A MANUAL TRANSFER

In 400A transfer switches, the manual transfer lever located on the contactor is used to manually transfer between the utility and generator position. A separate removable lever handle is used to transfer the mechanism. The transfer switch is in the utility position when reference A on the contactor is set to the ON position and reference B is set to the OFF position. The transfer switch is in the generator position when reference A on the contactor is set to the OFF position and reference B is set to the ON position. The mechanism is transferred by moving the lever handle in the down position. See transfer instructions on the switch mechanism. Never transfer under a load condition. Always remove the handle from the manual transfer lever location after each transfer.

⚠ WARNING

Never allow the removable lever handle to come in contact with live wires or terminals.

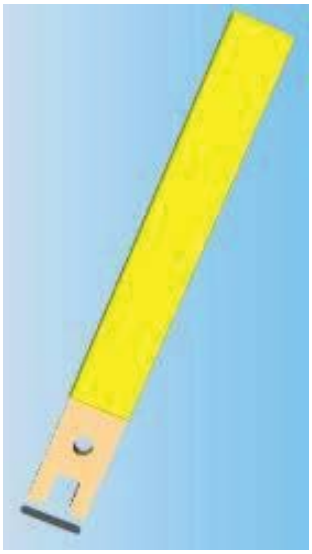


Figure 10 - Removable Lever Handle

Figure 11 - Manual Transfer Lever Locations

MANUAL TRANSFER

600A MANUAL TRANSFER

In 600A transfer switches, the manual transfer lever (M) located on the contactor is used to manually transfer between the utility and generator position. A separate removable lever handle is used to transfer the mechanism. See transfer instructions on the switch mechanism. Never transfer under a load condition. Always remove the handle from the manual transfer lever location after each transfer.

⚠ WARNING

Never allow the removable lever handle to come in contact with live wires or terminals.

Figure 12 - Removable Lever Handle

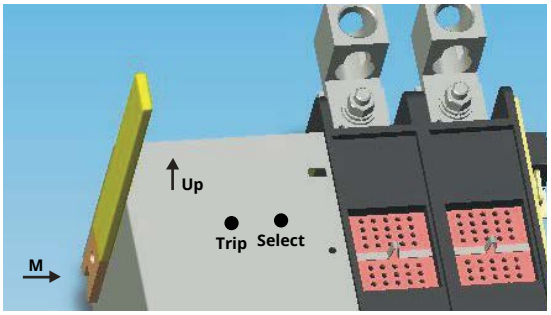


Figure 13 - Manual Transfer Lever Locations

To transfer from Utility to Generator position:

1. Push "Trip" using an object such as a screwdriver to open the utility poles.
2. Set the removable handle on "M" and operate in the UP direction while pushing "select" with the screwdriver.

To transfer from Generator to Utility position:

1. Push "Trip" using an object such as a screwdriver to open the generator poles.
2. Set the removable handle on "M" and operate in the UP direction.

The transfer switch is in the utility position when reference A on the contactor is set to the ON position and reference B is set to the OFF position. The transfer switch is in the generator position when reference A on the contactor is set to the OFF position and reference B is set to the ON position, as seen in 400A Manual Transfer on page 18.

The switch should need to be transferred manually only in the event of a failure within the VTS controls. Please call technical support if any transfer failures are observed.

RECOMMENDED MAINTENANCE

⚠ WARNING

Always isolate the transfer switch from all possible power sources when performing maintenance on the mechanism.

Periodically inspect all terminals (load, line and control) and all fasteners for any loose parts or wiring.

Periodically inspect all terminals (load, line and control) and all fasteners for tightness.

Test the transfer switch operation upon initial installation. Periodically check for any excessive wear on any mechanical operating parts or wiring connections. Clean or replace parts when necessary.

All transfer switch parts are made of corrosion-resistant material or are plated, coated or painted for corrosion protection.

MAINTENANCE

Always maintain a 3 feet (92 cm) clearance around the transfer switch. Once a month, visually inspect the outside of the switch for accumulation of dirt, moisture and/or corrosion on the enclosure.

The homeowner or end user is responsible for following all maintenance and periodic testing procedures and guidelines of the generator owner's manual to ensure proper operation.

Once a year, have a licensed electrician clean the inside of the switch and inspect for:

- Damage or loose parts
- Discoloration of wire insulation or components

PROCEDURE	ACTION
Make the transfer switch safe for inspection and maintenance	Disconnect all possible power sources before switch inspection.
Inspect the transfer switch location for possible safety hazards	Inspect mounting location for any safety or fire hazards. Inspect for dirt, wiring damage and mechanical damage.
Inspect the transfer switch for loose hardware	Check all hardware including controller, terminals, etc. for any looseness due to vibrations, etc.
Check for any overheating due to loose connections	Check for any discoloration, melting or blistering of wiring or connections.
Perform regular testing of the transfer switch	Perform regular testing of the switch to check for proper operation in case of emergency.

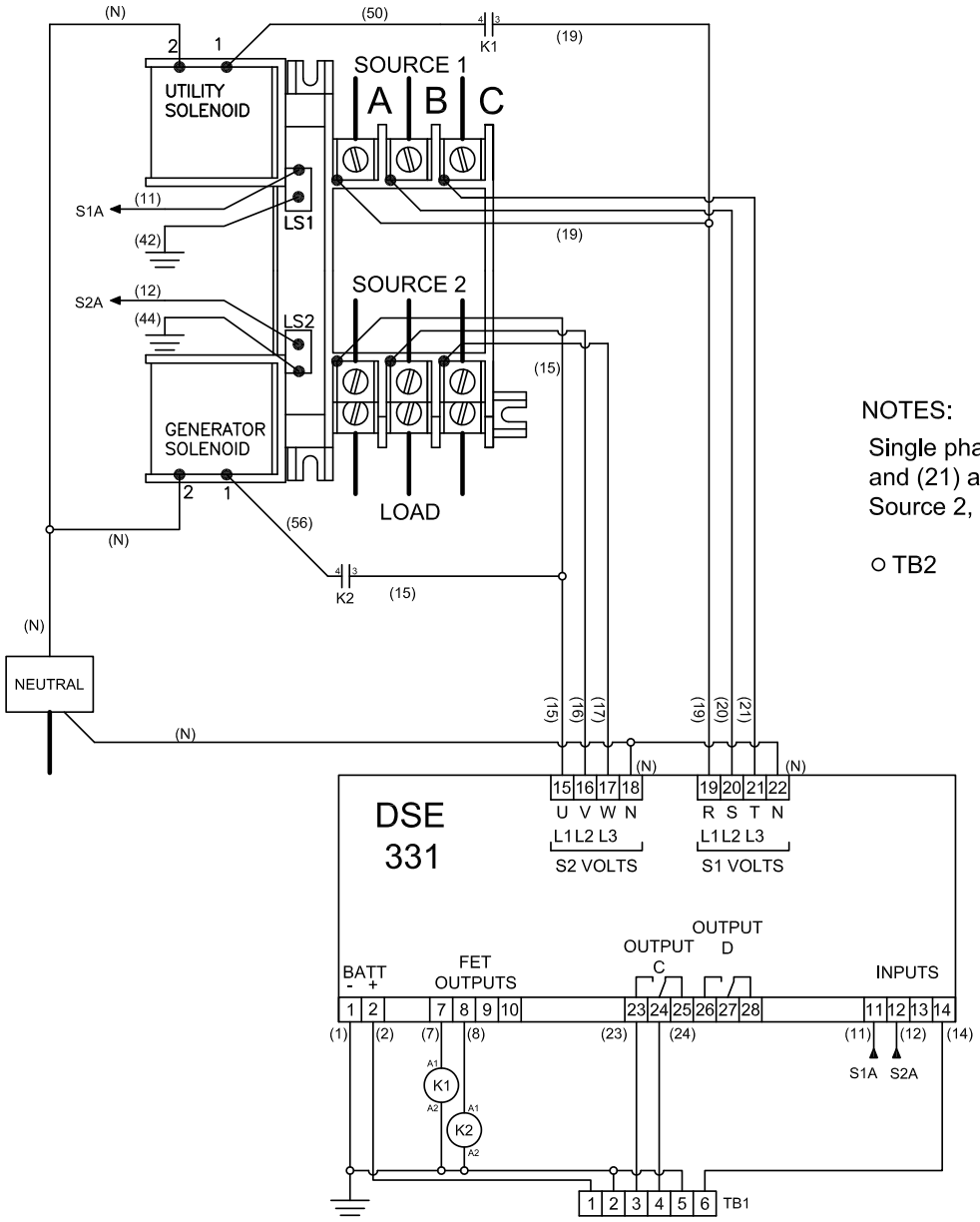
Table 7

WIRE DIAGRAM DRAWINGS

100A AND 200A SCHEMATIC

Source 1 - LINE - Utility

Source 2 - AUXILIARY - Generator



NOTES:

Single phase units do not contain wires (17) and (21) as well as terminal C on Source 1, Source 2, and LOAD.

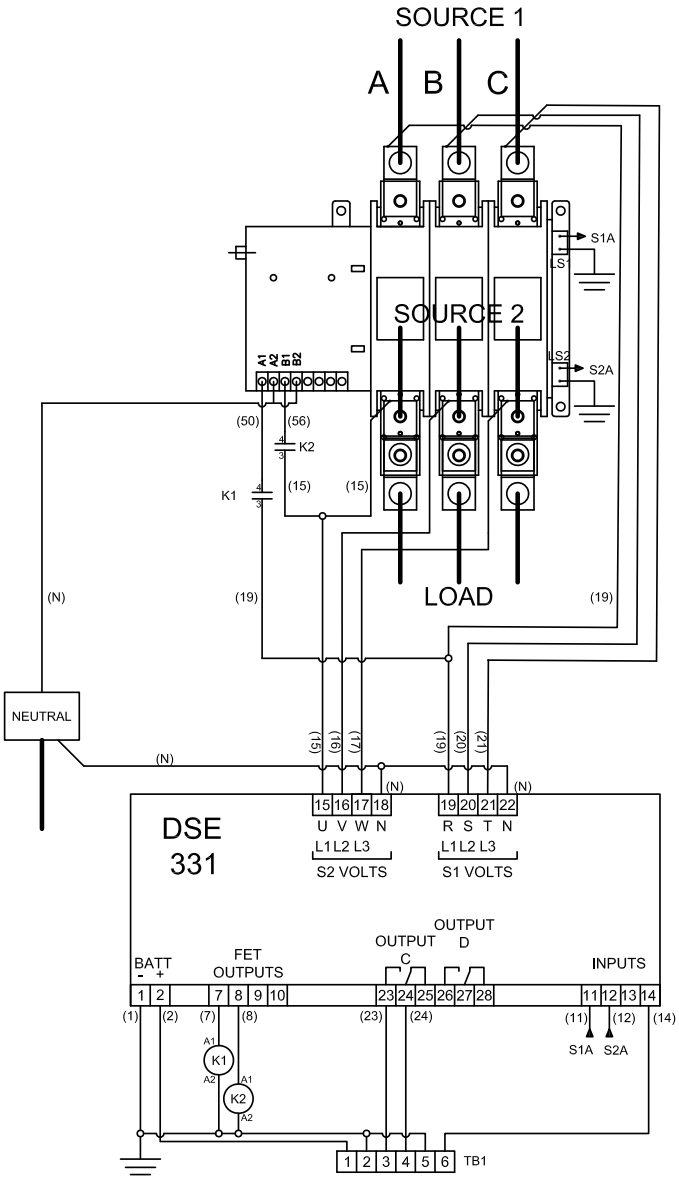
○ TB2

WIRE DIAGRAM DRAWINGS

400A, 240V SCHEMATIC

Source 1 - LINE - Utility

Source 2 - AUXILIARY - Generator



NOTES:

Single phase units do not contain wires (17) and (21) as well as terminal C on Source 1, Source 2, and LOAD.

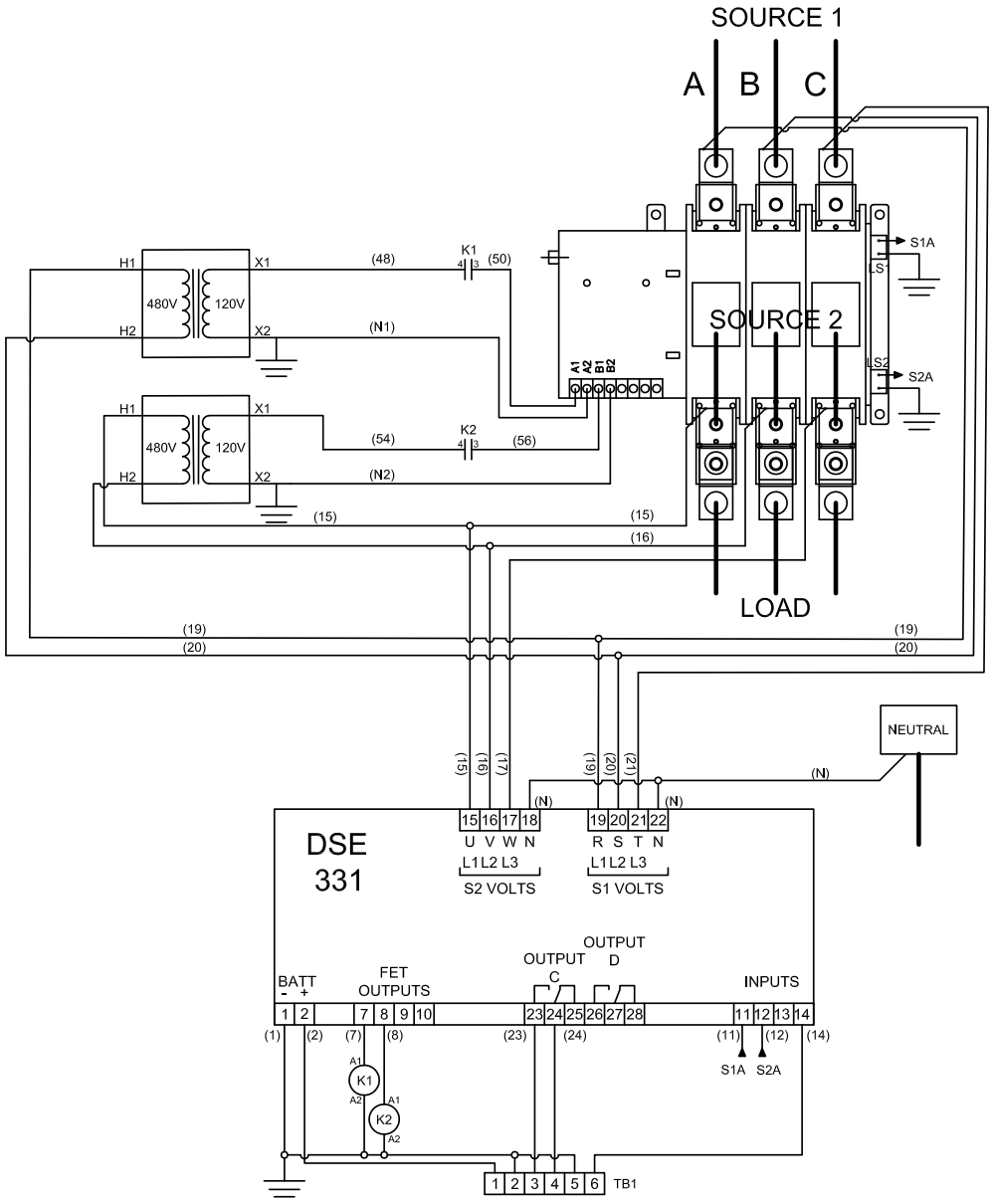
○ TB2

WIRE DIAGRAM DRAWINGS

400A, 480V SCHEMATIC

Source 1 - LINE - Utility

Source 2 - AUXILIARY - Generator



NOTES:

Single phase units do not contain wires (17) and (21) as well as terminal C on Source 1, Source 2, and LOAD.

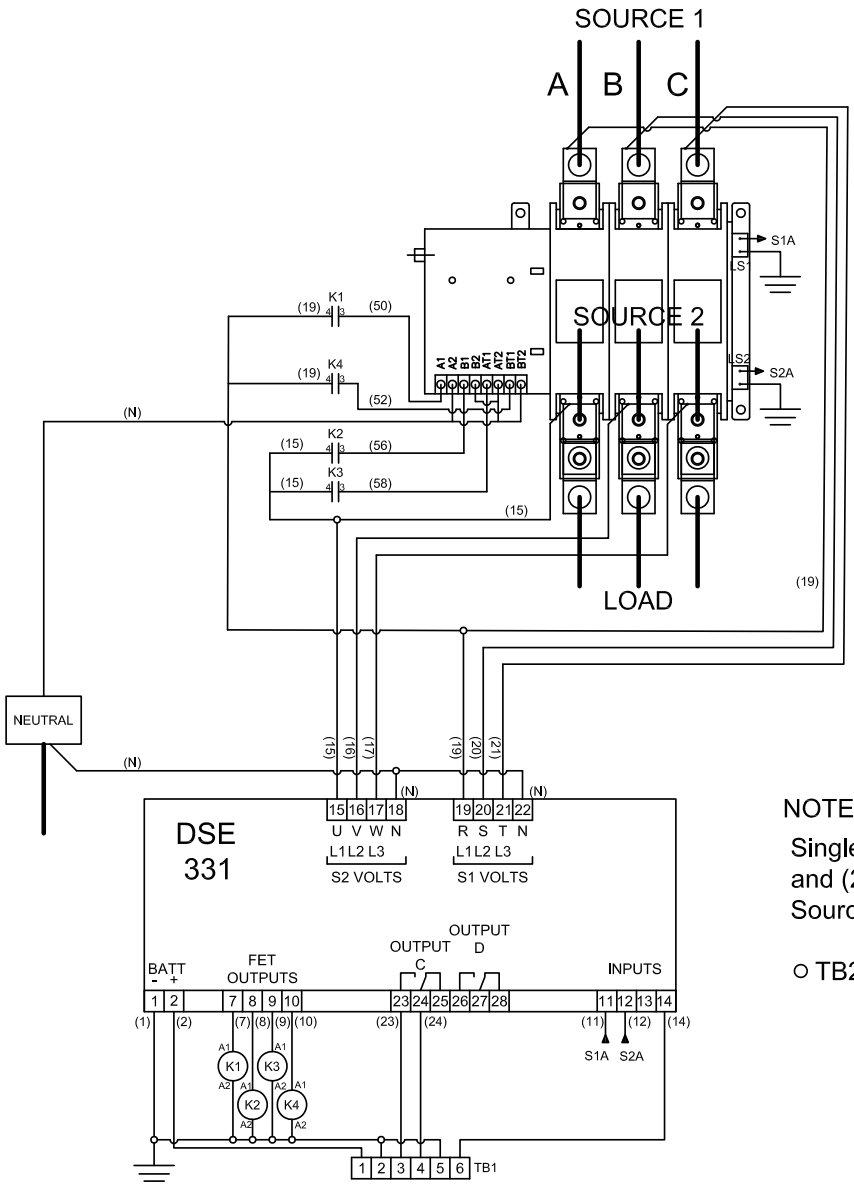
○ TB2

WIRE DIAGRAM DRAWINGS

600A, 240V SCHEMATIC

Source 1 - LINE - Utility

Source 2 - AUXILIARY - Generator



NOTES:

Single phase units do not contain wires (17) and (21) as well as terminal C on Source 1, Source 2, and LOAD.

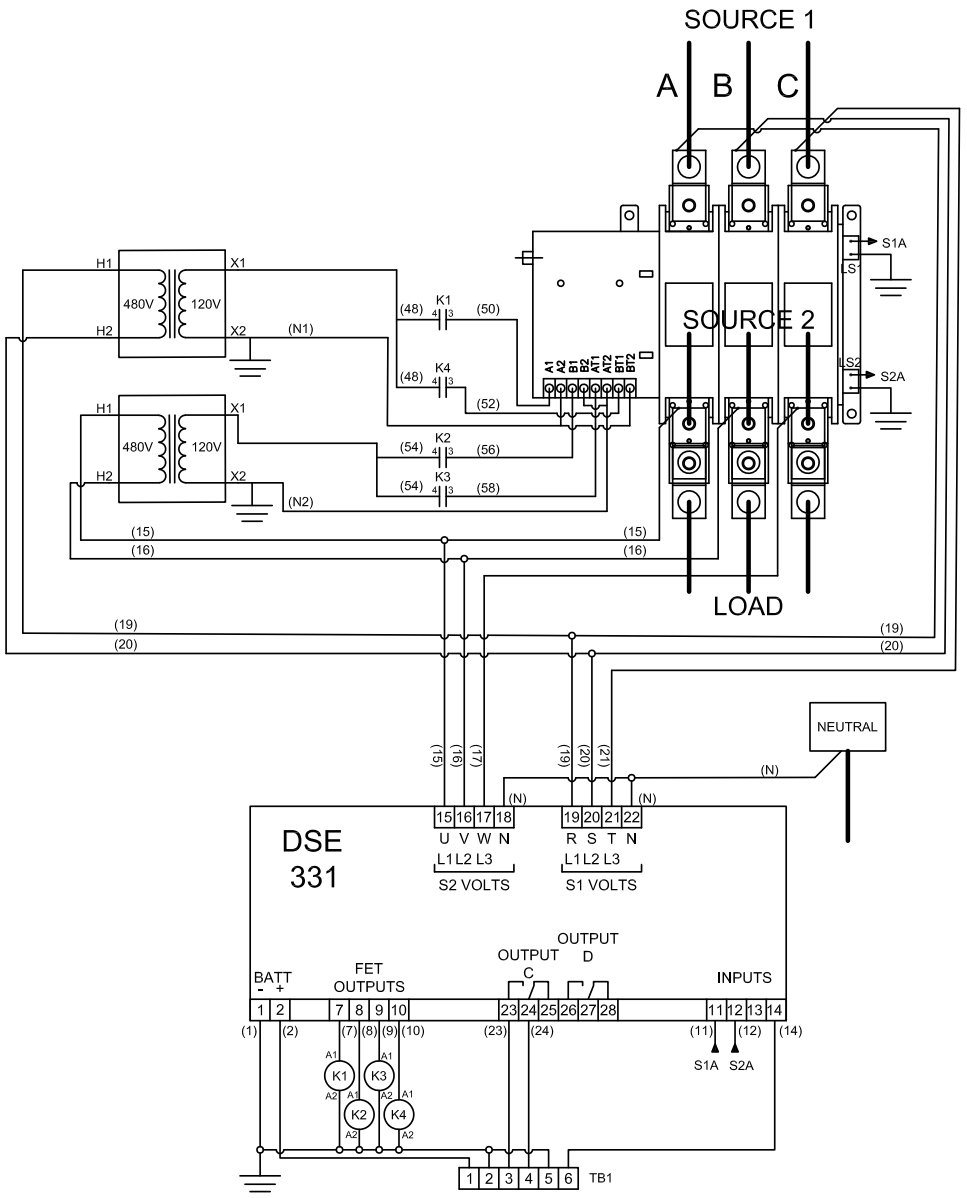
○ TB2

WIRE DIAGRAM DRAWINGS

600A, 480V SCHEMATIC

Source 1 - LINE - Utility

Source 2 - AUXILIARY - Generator



NOTES:

Single phase units do not contain wires (17) and (21) as well as terminal C on Source 1, Source 2, and LOAD.

○ TB2

AUTOMATIC TRANSFER SWITCH OWNER WARRANTY POLICY

LIMITED WARRANTY

RONK Electrical Industries, Inc. will repair or replace, free of charge, any part(s) of the equipment that is defective in material or workmanship or both providing that installation of the equipment complies with all applicable codes, industry standards, laws, regulations and provided installation manual. RONK's ATS and associated components shall be installed only by a licensed electrical contractor, and otherwise this warranty is void. This warranty is effective for the time period and subject to the conditions stated below. For warranty service, please call RONK Electrical Industries, Inc. at 1-217-563-8333.

THERE ARE NO OTHER EXPRESS WARRANTIES OR IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ABOVE WARRANTY IS LIMITED TO TWO YEARS FROM PURCHASE. ANY AND ALL IMPLIED WARRANTIES ARE EXCLUDED AND LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES ARE EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW. BUYER'S SOLE REMEDY IS THE LIMITED WARRANTY STATED ABOVE.

This warranty only applies to units sold for use in the United States of America and Canada.

WARRANTY PERIOD

Consumer Use: 2 years
Commercial Use: 2 years

The warranty period begins on the date of purchase by the first retail consumer and continues for the period stated above. Equipment used for primary power in place of utility is not applicable to this warranty.

WARRANTY REGISTRATION PROCESS

Thank you for choosing RONK's Automatic Transfer Switch for your generator system!

1. For the fastest and most efficient way to register your ATS warranty, please complete the online form at ronkelectrical.com/warranty (preferred method). Otherwise, please complete the postcard and return via mail.
2. Complete the online form or return the postcard within 10 days of installation.
3. Save the proof of purchase. If your switch is not registered within 10 days, the warranty start date will default to the date of purchase by the first retail consumer.
4. If the warranty registration steps are not completed, the warranty start date will default to the manufacturing date.

ABOUT OUR WARRANTY

Warranty repairs are handled routinely, but sometimes requests for warranty service may not be appropriate or applicable. For example, warranty service would not apply if equipment damage occurred because of misuse, lack of routine maintenance, shipping, handling, warehousing, or improper installation.

Similarly, the warranty is void if the manufacturing date or the serial number on the equipment has been removed, altered, or modified. During the warranty period defined above, the authorized certified technician, at its option, will repair or replace any part that, upon examination, is found to be defective under normal use and service. No allowances shall be made to the Buyer for any transportation, duties, brokerage fees, labor costs, or parts adjustments or repairs, or any other work, unless said charges have been authorized in writing, in advance, by the Seller. The Seller shall not be liable for determining whether any Article(s) or parts thereof are suitable for the Buyer's or any third-party's intended use or application. The Seller shall in no event be liable for any special or consequential damages or for loss of profit as a result of a breach of this warranty, including without limitation, any damages relating to any direct or indirect damage to property resulting from any use, removal or installation of the article(s) by the Buyer or any third-party.

This warranty will not cover the following repairs and equipment:

- Normal Wear: Electrical equipment, like any mechanical device, needs periodic parts and service to perform well. This warranty does not cover repair when normal use has exhausted the life of the part or equipment.
- Installation and Maintenance: This warranty does not apply to equipment or parts that have been subjected to improper or unauthorized installation or alteration or modification, misuse, negligence, accident, overloading, improper maintenance, repair or storage so as, in our judgment, to adversely affect its performance and reliability. This warranty also does not cover normal maintenance such as adjustments, cleaning and fuse replacement.

Other exclusions: This warranty excludes wear items or damage or malfunctions resulting from accidents, abuse, modifications, alterations, or improper servicing. Accessory parts are excluded from the product warranty. This warranty excludes failure due to acts of God and other force majeure events beyond the manufacturer's control. Also excluded is used, reconditioned, and demonstration equipment. The warranty shall not apply to any materials or parts thereof furnished by the Buyer, or acquired from others at the Buyer's request and/or the Buyer's specifications or designs.

NOTES

106 E State Street, Nokomis, IL 62075 | 800-221-7665 | www.ronkelectrical.com