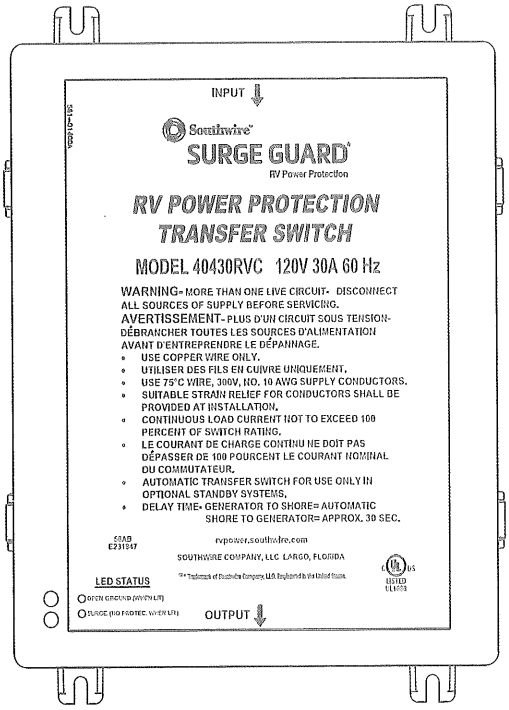
TROUBLESHOOTING GUIDE

Southwire™
SURGE GUARD®
RV Power Protection

Model 40430 RVC

Automatic Transfer Switch



The 40430 series automatic transfer switch (ATS) has many different protective features to protect your coach from low quality power. Included in these are protection against high voltage, low voltage, and an incorrectly connected chassis ground. If one of these fault conditions is encountered, the ATS will open both contactors in order to protect the coach. Once the fault condition goes away, the ATS will delay for approximately 2.5 minutes before trying to close the appropriate contactor again.

If the ATS fails to close the contactor or fails to transfer when expected, check the level of the input voltage to ensure it is within the proper operating limits. Check if Open Ground LED status is ON, indicating open ground. Also check that the ATS is correctly connected to chassis ground and that the neutral conductor is correctly connected to ground at the power pedestal. Wait 2.5 minutes to check if the fault condition was temporary and has cleared. If so, the contactor will pull in at the end of the 2.5 minute period.

If available, check the 40430 display to see if an error message is displayed. The screen will flash an error message for that failure such as "Loss of Ground", "High Volt", or "Reverse Polarity". The error condition must be corrected in order for the transfer switch to function correctly. Refer to the table on the following page for help in troubleshooting these conditions. The 40430 series also supports the optional wired Remote Display, part number 40299.

If there is no error message and the display instead reads "Delay Active" this means that the fault condition has cleared and that the switch is going through a 2.5 minute delay before it will attempt to close the contactor again. Wait until this delay is over to see if the ATS correctly closes its contactor.

CAUTION: To avoid damage to the transfer switch or the RV, the torque specifications on the terminal block cable installation diagram MUST be followed. Make sure that the screws holding the input and output power cables down to the terminal block are fully tightened to the correct torque. Failure to fully tighten these connections could cause an electrical shock or fire hazard. Care must be taken to assure that the terminal screws are not cross threaded, otherwise an improper torque will result.

PROBLEM	TROUBLESHOOTING STEPS
Unit does not engage shore contactor when shore power is present after 10 seconds.	• If available, check the 40430 display screen to see if an error message is displayed. Refer to Table 2 for further troubleshooting. • Check the input power at the RV pedestal. If the power is outside of the range of 100-135V, the unit will protect the RV by not engaging the contactor. Move to a different source of power that is within the correct limits. • Check to make sure that the incoming power is within 55-70 Hz in frequency. • Check to make sure that the incoming neutral is at the same voltage as the green incoming ground wire. • Double check all wiring connections into the ATS and make sure that they are all properly torqued down.
Unit does not transfer to generator power correctly when the generator is turned on.	Note that the ATS takes approximately 30 seconds to complete the transfer from shore power to generator power after the generator is started. If this amount of time has passed and the generator contactor still does not engage, check the following: • If available, check the 40430 display screen to see if an error message is displayed. Refer to Table 2 for further troubleshooting. • Check the voltage level on the incoming generator lines. If the power is outside of the range of 100-135V, the unit will protect the RV by not engaging the contactor. Refer to generator documentation to fix incoming voltage within acceptable limits. • Check the incoming generator circuit breaker to ensure it is not tripped. • Check to make sure that the incoming power is within 55-70 Hz in frequency. • Verify that the incoming neutral is at the same voltage as the green incoming ground wire. • Double check all wiring connections into the ATS and make sure that they are all properly torqued down.

For technical assistance, please call 1-800-780-4324

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TROUBLESHOOTING ERROR CODES

(For optional 40299 Remote LCD Display)

ERROR MESSAGE	DESCRIPTION
NO GROUND LED Status: Open Ground (when lit)	Check to make sure that the ATS is properly grounded. The green wire going into the transfer switch should be properly attached to the terminal block (see installation manual). The other end of the green wire should be properly grounded to the RV. If there is a voltage difference between the incoming neutral (white) and the ground (green), the transfer switch will not allow the contactor to engage. If all of the connections are correct and this message still displays, then there is a bad ground at the input power pedestal and a different pedestal should be used. Unit must be reset manually by turning ON/OFF/ON to clear the fault.
HIGH/LOW VOLTAGE	Check the voltage level on the incoming generator lines. If it is outside of 100-135V, the ATS will protect your RV by not letting the contactor pull in. Refer to the generator documentation to adjust the incoming voltage to within acceptable limits.
HIGH/LOW FREQUENCY	The transfer switch constantly monitors the incoming frequency to verify that it is within 55-70 Hz. If it is outside these limits, the transfer switch will protect the RV by keeping the contactor open. If this error message occurs on generator power, check the generator documentation to adjust frequency to within acceptable limits.
L1 OPEN	This indicates a possible faulty connection on the input power to the transfer switch. With the power off, verify that all input cables are properly connected to the transfer switch. Also confirm that the generator circuit breaker is not tripped. After these steps, measure the voltage on the incoming generator connection to verify that it is within limits.
REVERSE POLARITY	With the power off, make sure the connection is correct to the transfer switch terminals. Reverse polarity occurs when one of the hot leads (L1) is mis-wired into the neutral (N) terminal. In this condition the transfer switch will not allow the contactor to close.
CHECK SURGE FUS LED Status: Surge (No protection when lit)	This indicates that the metal -oxide varistors (MOVs) have exercised their protection and prevented a high voltage surge from entering the RV. Surge protection is no longer present.

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