

469 FREQUENTLY ASKED QUESTIONS

1 Can not communicate through the front port RS232

Check the following settings

Communication port on your computer (com1, com2 com3 etc)

Parity settings must match between the relay and the master PC or PLC

Baud rate setting on the master must be 9600

Cable has to be a straight through cable, do not use a null modem cable

Check the pin outs of the RS232 cable (TX -pin 2, RX-pin 3, GND pin5)

Check the RS232 LED on the relay. The LED should be solidly lit when communicating properly

2 Can not communicate with RS485

Check the following settings

Communication port on your computer (com1, com2 com3 etc)

Parity settings must match between the relay and the master PC or PLC

Baud rate must match between the relay and the master

Is terminating filter circuit present

Are you communicating in half duplex? (SR469 communicates in half duplex mode only)

Is wiring correct? (+ wire should go to + terminal of the relay and - goes to - terminal)

Is the RS485 cable shield grounded (shielding diminishes noise from external EM radiation)

Check the RS485 LED on the relay. The LED should be solidly lit when communicating properly

Verify that the 232/485 converter box is at the right baud rate if there is a setting

3 Can the SR469 be applied on a cyclic load

There are a few ways to approach this situation:

- If you want to 'smooth out' the currents you can do so under Setpoints Page 1: SR469 Setup: Motor Load Filter Interval. Please refer to page 4-5 of the manual for a more detailed explanation of what this does. Basically this will average the current readings over the number of cycles that is programmed here. This will in fact smooth the current readings, but it does result in an increased trip time of 16.7ms per additional cycle averaged.
- If you would like to make the current readings more readable on the display of the SR469 without increasing the averaging time you can also adjust this under Setpoints Page 1: SR469 Setup: Display Update Interval. This will update the display at a slower rate allowing the user to better view the phase currents, but will not affect the calculations of the relay in any way (i.e. the phase currents will still be varied).
- You can increase the overload pickup level in Setpoints Page 5: Thermal Model. This will not affect the current readings in anyway, but will not start timing out on overload (and there by increasing your thermal capacity register) until the current levels exceed this setting.
- Another method to deal with this problem is to reduce your Running Cool Time Constant, this will let the thermal capacity decrease quicker when the motor is running under the FLC, giving you more room in the thermal capacity register when you enter into overload.

4 The SR469 Relay indicates "Emergency Restart: NO trips & no Blocks" Why?

Check the back of the relay and make sure that terminals D17 & D23 (Emergency Restart Digital input is not Shorted). If they are shorted together with nothing connected please contact the Call Center (1-800-547-8629)

5 My Digital inputs are not working.

There are 9 digital inputs that are designed for DRY CONTACT connections only. By applying direct voltage to the inputs, it may result in component damage to the digital input circuitry. If you have done this check the switch with a multifunction meter by connecting it across the digital input to see if it still reads open. If the input reads short with no switch attached contact the factory.

6 The SR469 tripped on overload and I can not reset or my lockout time is not decreasing?

You will not be able to reset the relay unless the unit is reading zero current on all phases. If RTD Biasing is enabled then this might be another cause why your lockout time is not counting down. If one or more RTDs are reading high then the lockout time will not count down.

7 The 469 relay displays high unbalance readings (or wrong power reading), yet the power system is balanced, what could be the possible reasons?

It is highly possible that the secondary wiring to the relay is not correct. High unbalance and wrong power can be read when any of the A, B or C phases are swapped, or the relay is programmed as ABC sequence when the power system is actually ACB and vice versa. The easiest way to verify is to check the voltage and current phasor readings on the 469 relay and make sure that each respective voltage and current angles match.

8 Can not store setpoint into the relay

Check and make sure the ACCESS switch is shorted (I.e. Check the ACCESS LED) and for any Passcode restrictions.

9 My Cool Time Constant Stopped time is 30 minutes but it takes longer then 30 minutes for my TC to drop to zero:

This value you enter in setpoint page 5 Thermal Model is not the actual time but a time constant value. The actual time for a value of 30 minutes to go from TC of 100% to 0 would be five times that (150 minutes). Please refer to page 4-36 of the manual.

10 Can the SR469 be used on Variable Frequency Drives (VFD)?

Yes it can. The following are important settings and notes on using a SR469 with VFD.
Must set S2: /SYSTEM SETUP/POWER SYSTEM/NOMINAL SYSTEM FREQUENCY: Variable
Frequency range of operation should not go below or exceed 15 to 200 Hz
CTs and VTs must be on the Motor side of the VFD drive
IMPORTANT: PWM drives may induce SR469 to read wrong Voltage and frequency due to extra zero crossings in the signal

11 Are the Output Relays contacts Failsafe ?

There are six Form C output relays. (See specifications for ratings). Five of the six relays are always non-failsafe, R6 Service is always failsafe. As failsafe, R6 relay will be energized normally and de-energize when called upon to operate. It will also de-energize when control power to the SR469 is lost and therefore, be in its operated state. All other relays, being non-failsafe, will be de-energized normally and energize when called upon to operate

12 Can I assign two digital inputs with the same function?

There are four user assignable digital inputs that may be configured to any one of a number of different functions, or turned Off. Once a function is chosen, any messages that follow may be used to set pertinent parameters for operation. Each function may only be chosen once. Assignable Inputs 1-4 will be activated by shorting D19 - D22 (respectively) with D23.

13 Can the Filter Ground terminal be Hi-Pot tested?

No,
however It may be required to test a complete motor starter for dielectric strength (flash or hipot) with the 469 installed. The 469 is rated for 2000Vdc isolation between relay contacts, CT inputs, VT inputs, trip coil supervision, and the safety ground terminal G12. Some precautions are required to prevent 469 damage during these tests.

Filter networks and transient protection clamps are used between control power, trip coil supervision, and the filter ground terminal G11. This filtering is intended to filter out high voltage transients, radio frequency interference (RFI) and electromagnetic interference (EMI). The filter capacitors and transient suppressors could be damaged by application continuous high voltage. Disconnect filter ground terminal G11 during testing of control power and trip coil supervision. CT inputs, VT inputs, and output relays do not require any special precautions. Low voltage inputs (< 30V), RTDs, analog inputs, analog outputs, digital inputs, and RS485 communication ports are not to be tested for dielectric strength under any circumstance.

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Important: PWM drives may induce SR469 to read wrong frequency due to extra zero crossings in the signal

15 Do I need to wire the Starter Status switch?

This input is necessary for all motors. The SR469 determines that a motor has stopped when the phase current falls below the level that the relay can measure (5% of CT primary). Monitoring an auxiliary contact from the breaker or contactor prevents the relay from detecting additional starts when an unloaded motor is loaded, or issuing a block start after an unloaded motor is started and running at less than 5% CT rated primary current.

Once 'Starter Auxiliary a' is chosen, terminals D16 and D23 will be monitored to detect the state of the breaker or contactor, open signifying the breaker or contactor is open and shorted signifying the breaker or contactor is closed. The SR469 will then determine that a motor has made the transition from 'running' to 'stopped' only when the measured current is less than 5% CT ratio and the 'a' contact is open.

Once 'Starter Auxiliary b' is chosen, the terminals D16 and D23 will be monitored to detect the state of the breaker or contactor, open signifying the breaker or contactor is closed and shorted signifying the breaker or contactor is open. The SR469 will then determine that a motor has made the transition from 'running' to 'stopped' only when the measured current is less than 5% CT ratio and the 'b' contact is closed

16 I forgot my password?

Enter the correct passcode that was previously programmed. A flash message will advise if the code is incorrect
INVALID PASSCODE ENTERED .

If an invalid passcode is entered, an encrypted passcode may be viewed by pressing the [HELP] key. Consult the Call Center (1-800-547-8629) with this number if the currently programmed passcode is unknown. Using a deciphering program, the passcode can be determined.

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18 I have a two-wire transducer. Can I connect it to the 469 analog inputs?

Yes, you can. Connect the +24Vdc of the 469 to the positive terminal of the transducer. Connect the negative terminal to the analog input 1+,2+,3+ or 4+ of the 469. DO NOT connect anything to the analog input -COM terminal

19 My ground current readings are not correct?

The 469 will measure up to 5 A secondary current if the 1A/5A tap is used. Since the conversion range is relatively small, the 1A or 5A option is field programmable. Proper selection of this setpoint will ensure proper reading of primary ground current. The 1A/5A ground CT chosen must be capable of driving the 469 ground CT burden (see Specifications for ratings). The 469 will measure up to 25A of primary ground current if this tap is used in conjunction with the Multilin core balance CT.

The zero sequence connection is recommended. Unequal saturation of CTs, size and location Of motor, resistance of power system and motor core saturation density, etc. may cause false readings in the residually connected GF circuit.

Only one ground input should be wired and the other input should be unconnected

20 The 469 relay displays high unbalance reading (or wrong power reading), yet the power system is balanced, what could be the possible reasons?

It is highly possible that the secondary wiring to the relay is not correct. High unbalance (and wrong power) can be read when any of the A, B, or C phases are swapped, or the relay is programmed as ABC sequence when the power system is actually ACB and vice versa. The easiest way to verify is to check the voltage and the current phasor readings on the 469 relay and make sure that each respective voltage and current angles match.

21 Which Modbus functions are supported by the 469?

The following Modbus functions are supported by the 469:

- 03 - Read Setpoints and Actual Values
- 04 - Read Setpoints and Actual Values
- 05 - Execute Operation
- 06 - Store Single Setpoint
- 07 - Read Device Status
- 08 - Loopback Test
- 16 - Store Multiple Setpoints

Refer to section 6.3 of the 469 Instruction Manual for more information and examples of using these functions with the 469.