SC300 Series Troubleshooting Guide

Troubleshooting the Software

Problem Description	Recommended Actions
Application does not open	Verify that the minimum requirements for the software are met. Reinstall the software. Read the log file located in the install directory.
USB device not recognized	Make sure the drivers for the device are installed. A new COM port should be displayed in Device Manager a few seconds after the device is plugged in and the LED has turned Amber. If the drivers are not installed see the Verifying Driver Support for Configuration page. The device may take as long 40 seconds for the software to recognize the signal conditioner. This will be especially true with signal conditioners older than firmware version 2. Try unplugging the signal conditioner and closing the software. Only have one signal conditioner plugged in at a time. Try using a different USB cable. Try using a different USB port. Check wiring for correctness/robustness; ensure signal conditioner is not tied to earth/chassis ground.
View Errors/Clear Errors/Program Device failed	Try unplugging the signal conditioner and closing the software. Only have one signal conditioner plugged in at a time. Update to latest firmware version.

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Troubleshooting the Hardware

Problem Description	Recommended Actions
4-20 mA or 0-5/10 V$_{DC}$ output is non-functional	Check status LED; ensure signal conditioner is in Normal mode. Ensure it was correctly programmed and make sure all wiring is correct. Refer to Figure 1 for wiring diagram. Use the configurator's error reporter to read potential hardware issues.
No waveform data from BNC jack	Check status LED; ensure signal conditioner is in Normal mode. Make sure sensor is properly wired. Refer to Figure 1 for wiring diagram. Ensure the sensor power option is correctly programmed.
4-20 mA or 0-5/10 V$_{DC}$ output is lower than expected	Check filter settings. Make sure low-pass and high-pass filters have been set to range capable of capturing the expected frequencies. Ensure the rest of the configuration is correct.
4-20 mA signal is less than 2 mA	Check output cabling for damage. Ensure load resistance is no more than 1 kΩ.
Filter data or configuration profile did not send correctly	Ensure that the connection to the PC is secure and did not come loose during programming. Also make sure that the signal conditioner does not lose power during programming. LED status light should remain solid orange while plugged in. Check that the configuration is correct and try programming again.

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Problem Description	Recommended Actions
Open circuit detected on CH1	Check output wiring, ensure all connections are present and secure, there are no breaks in the wires, and there is no exposed conductors that can cause short circuits.
Short circuit detected on CH1	Ensure that the end measurement device (DCS, DAQ, PLC, multimeter, etc.) is correctly configured to read the signal conditioner's output signal (current for 0-20/4-20 mA, voltage for 0-5/0-10 V_{DC}).
Open circuit detected on CH2	If a resistive load is being used for measurement, ensure it is properly valued. Load should be 1k Ω minimum for voltage configurations.
Short circuit detected on CH2	For current configurations, load must be configured so that compliance voltage (voltage powering the device) is not exceeded (1k Ω maximum recommended for a compliance voltage of 24 V_{DC}).
CH1 overheat detected	The signal conditioner detected a temperature outside of its operating range while running. Ensure operating environment/enclosure does not exceed 80 °C.
CH2 overheat detected	
Hardware configuration error	Power cycle the device. Check wiring for correctness/robustness; ensure signal conditioner common is NOT tied to earth/chassis ground.
Internal communication bus fault	Try re-programming. Try setting to ISO.

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Problem Description	Recommended Actions
No response from signal conditioner when programming	Ensure that the connection to the PC is secure and did not come loose during programming. Also make sure that the signal conditioner does not lose power during programming. LED status light should remain solid orange while plugged in. Check that the configuration is correct and try programming again.
Error writing configuration to memory	Close the application and reconnect the signal conditioner and attempt to reprogram the device. If communication errors persist, follow the USB device not recognized section in the Troubleshooting the software section of the user manual.
Configuration memory corrupted	
Error configuring CH1	
Error configuring CH2	
Error configuring CH1 (CRC)	
Error configuring CH2 (CRC)	
Once installed and connected to an online system (PLC, DCS, SCADA), the values that the system receives do not match what is expected (too high, too low, etc.)	Ensure that the PLC/DCS input settings (unit, scaling, filtering) match the chosen configuration of the signal conditioner exactly. Confirm wiring from the signal conditioner to the system is correct according to manual instructions and diagram, with consideration for noise, along with radio frequency and electromagnetic interference. **Note:** the SC300 Series signal conditioner features shared commons between each channel and between multiple units if wired into one of our SCE or SCD enclosures. The SC300 does not require an isolated analog input card for the monitoring system. Ensure that there is a strong earth ground connection to avoid noise and loop interference.