



SEL-300G Communications Connections

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INTRODUCTION

This application note provides information on the simplest and least costly means of satisfying two generator protection and communications connection applications using the SEL-300G Generator Relay and auxiliary SEL devices. The SEL-300G supports three rear-panel serial communications ports (two EIA-232 and one EIA-485) and various protocols that will be used in these applications.

PROBLEM

Typical generator protection and communications applications need to provide a means to support SCADA, thermal protection, and field ground detection. One solution supports SCADA with the Modbus[®] RTU slave protocol and the other provides the support with protocols compatible with SEL communications processors. In each of the two solutions, thermal protection and field ground detection is provided through communications with auxiliary SEL devices.

SEL SOLUTION(S)

Modbus RTU Slave, Thermal Protection, and Field Ground Protection

Use Figure 1 as a guide in making your connections. You can order SEL-2600 Series RTD Modules with either V-pin or ST[®] connectors. The SEL-2664 Field Ground Module comes with ST connectors. Settings and ordering options are described in more detail below.

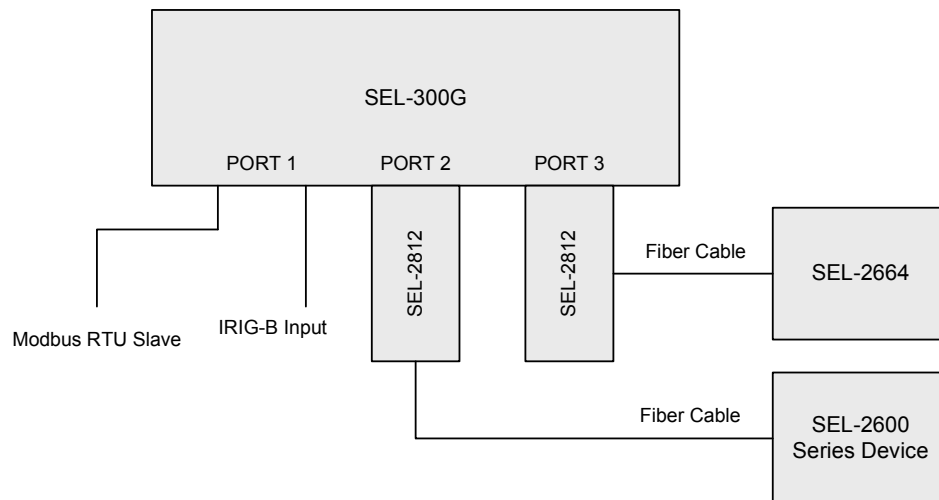


Figure 1 Generator Protection Connections Using Modbus RTU Slave Protocol

Connect your four-wire EIA-485 Modbus RTU network to PORT 1 of the relay and change the relay's PORT 1 settings to match your network.

Connect your IRIG-B source to the IRIG-B time-code input using pins 7 and 8 of PORT 1.

Connect your SEL-2600 Series RTD Module (e.g., SEL-2600A, SEL-2600D) to an interface converter mounted to PORT 2 (EIA-232) on your SEL-300G, and change the relay's settings to PROTO = SEL and BAUD = 2400.

Connect your SEL-2664 Field Ground Module to PORT 3 (EIA-232) on your SEL-300G, and change the relay's settings to PROTO = SEL and BAUD = 9600.

Use the SEL auxiliary devices and cables shown in Table 1.

Table 1 Auxiliary Devices and Cables Used With Various Options

Option	SEL-2600	SEL-2664	Converter	Cable
ST 120/240 Vac	SEL-2600A01X	SEL-2664	SEL-2812M	SEL-C807
ST 125 Vdc	SEL-2600D01X	SEL-2664	SEL-2812M	SEL-C807
V-Pin 120/240 Vac	SEL-2600A00X		SEL-2800M	SEL-C805
V-Pin 125 Vdc	SEL-2600D00X		SEL-2800M	SEL-C805

Communications Processor, Thermal Protection, and Field Ground Protection

Use Figure 2 as a guide in making your connections and the settings from the previous solution.

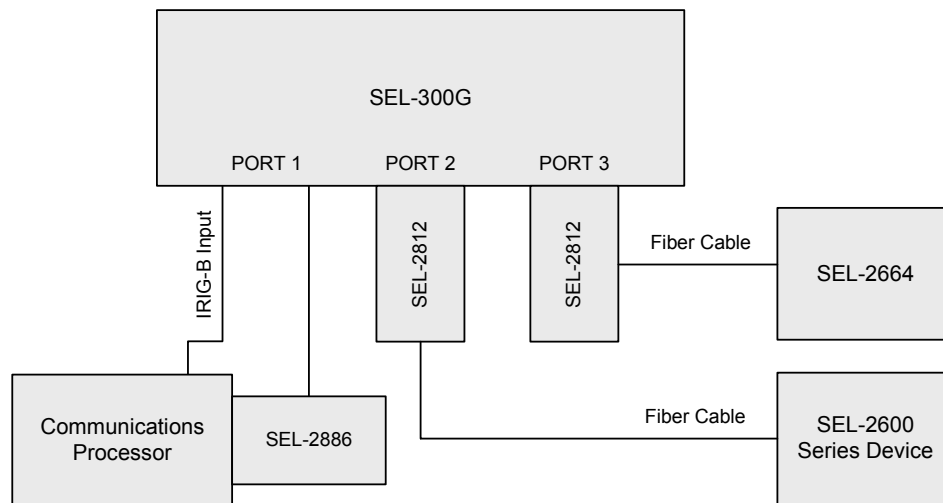


Figure 2 Generator Protection Connections Using an SEL Communications Processor

Connect your SEL communications processor to PORT 1 (EIA-485 serial, 4-wire) on your SEL-300G using an SEL-2886 Interface Converter.

Change the relay's and communications processor's settings to PROTO = SEL and BAUD = 9600 bps.

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