Product Test Guide
SC-SE-I8-RO6-TO2

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Model Name	SENSOPER SC-SE-I8-RO6-TO2
Product Type	Programmable Controller
Manufacturer	SENSOPER CONTROLS LLC
Country of Origin	Sri Lanka
Certifications	EN 61131-2:2007 EN 61010-1:2010+A1:2019 EN IEC 61010-2-201:2018 2014/30/EU- Electromagnetic Compatibility (EMC) Annex III, Part B, Module C

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Introduction

This guide is intended to test the features and the basic operation of the device, SENSOPER SC-SE-I8-RO6-TO2 (Relay model).

Features

- 24V Sink/Source Digital Inputs x 8
- 5A Relay Outputs x 6
- Open Collector Transistor Outputs x 2
- RS-485 Communication x 1
- 0.96’ OLED Display
- 3 Built-in Push Buttons

Table of Test Instructions

Flash the test code firmware before testing the device. Follow the instructions given in the **Guide to Flash the Test Code Firmware guide, to flash the binary code.

Testing component/ feature	Test	Expected Output/Outputs
Power	Provide 24V DC supply.	• The red LED inside the device glows. • Display turns on.
Display	Power-up the device using USB cable or 24V DC supply.	• Display starts with the Norvi logo. • Device model is displayed. • Final screen with Input, Output and Push Button status appears. • The output side LED indicators glow in a pattern.

Digital Inputs	1. Power-up the device using 24V DC supply. 2. Connect the digital input side **GND** & **COM** pins and supply 24V DC to every digital input one by one.	• Refer to the expected outputs of the Display check above. In the input status, status of all the 8 digital inputs will be 1.(As they are internally pulled up) • The input status changes from 1 to 0, and the input side LED indicator starts to glow accordingly.
Relay and Transistor Outputs	1. Power-up the device using 24V DC supply.	• Toggling output status (from 0 to 1) is observed on the display for the 6 relay outputs (with relay switching sound) and 2 transistor outputs, which follows the output side LED indicator blinking pattern.Whenever these LEDs are on, it means the respective relay / transistor is on.

Relay and Transistor Outputs (continued..)	1. After powering up the device, to check the working of the relays, **a continuity** test is done using the multimeter. To do this, keep one end of the multimeter probe on the **COM pin on the relay side**.Next touch the other end of the probe with the 6 relay pins, one by one after a 15s gap. 2. To check the working of the transistors, **a voltage test** is done using a multimeter.To do this, keep the positive probe of the multimeter on the +24V pin of the device. Next touch the negative probe with the 2 transistor pins after,one by one after a 15s gap.	• The multimeter makes a beep sound, whenever the relay is on (Relay status is indicated by the respective output side LED indicator and the output status on the display). • The multimeter shows a 24V DC reading, whenever the transistor is on (Transistor status is indicated by the respective output side LED indicator and the output status on the display).
Push Buttons	Press the 3 push buttons, one at a time.	• The 4 digit analog status of the push button is displayed accordingly on the display. *** Analog status 1_ _ _ for the upper button Analog status 2_ _ _ for the middle button Analog status 3_ _ _ for the lower button

RS-485 Communication	For this test, a USB to RS-485 converter is required. 1. Connect the RS-485 A and B pins of the SENSOPER device with the respective A and B pins of the USB to RS-485 converter. 2. Plug the USB end of the USB to RS-485 converter to the PC. 3. Power-up the SENSOPER device using USB Cable. 4. Open the Arduino IDE application. 5. Select the **correct COM** port of the USB to RS-485 converter in Arduino IDE and open the serial Monitor. 6. Send the Number '**5**' in the serial monitor.	• In the serial monitor, "RS485 SUCCESS" statement is printed. This indicates that the RS-485 **sending** operation is functioning properly in the SENSOPER device. • Once number "5" is received, all the output side LED indicators will glow simultaneously for a few seconds. Then later, they'll continue to glow in their previous pattern. This indicates that the RS-485 **receiving** operation is functioning properly in the SENSOPER device.