

Product Test Guide

SC-SE-I8-T08

29-03-2021

Model Name	SENSOPER SC-SE-I8-T08
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, NORVI-IIOT-AE01-T (Transistor model).



Features

- 24V Sink/Source Digital Inputs x 8
- Open Collector Transistor Outputs x 8
- 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.	<ul style="list-style-type: none">• The red color LED inside the device glows.• Display turns on.
Display	Power-up the device using USB cable or 24V DC supply.	<ul style="list-style-type: none">• 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.

<p>Digital Inputs</p>	<ol style="list-style-type: none"> 1. Power-up the device using 24V DC supply. 2. Connect the digital input side GND & COM pins and supply the 24V DC to every digital input one by one. 	<ul style="list-style-type: none"> • 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.
<p>Transistor Outputs</p>	<ol style="list-style-type: none"> 1. Power-up the device using 24V DC supply. 	<ul style="list-style-type: none"> • Toggling output status (from 0 to 1) is observed on the display for the 8 transistor outputs, which follow the output side LED indicator blinking pattern. Whenever these LEDs are on, it means the respective transistor is on.

<p>Transistor Outputs (continued..)</p>	<p>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.</p> <p>Next touch the negative probe with the 8 transistor pins after, one by one after a 15s gap.</p>	<ul style="list-style-type: none"> • The multimeter shows a 24V DC reading, whenever the transistor is on (Transistor status is displayed on the display).
<p>Push Buttons</p>	<p>Press the 3 push buttons, one at a time.</p>	<ul style="list-style-type: none"> • The 4 digit analog status of the push button is displayed accordingly on the display. <p>***</p> <p>Analog status 1_ _ _ for the upper button</p> <p>Analog status 2_ _ _ for the middle button</p> <p>Analog status 3_ _ _ for the lower button</p>

<p>RS-485 Communication</p>	<p>For this test, a USB to RS-485 converter is required.</p> <ol style="list-style-type: none"> 1. Connect the RS-485 A and B pins of the Norvi 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 	<ul style="list-style-type: none"> • In the serial monitor, "RS485 SUCCESS" statement is printed. <p>This indicates that the RS-485 sending operation is functioning properly in the SENSOPER device.</p> <ul style="list-style-type: none"> • 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. <p>This indicates that the RS-485 receiving operation is functioning properly in the SENSOPER device.</p>
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