

Product Test Guide

SC-SE-I8-AM6-T02

29-03-2021

Model Name	SENSOPER SC-SE-I8-AM6-T02
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-AM6-T02 (Current model).



Features

- 24V Sink/Source Digital Inputs x 8
- 4-20mA Analog Inputs 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.	<ul style="list-style-type: none">• Red colour 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 SENSOPER 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 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. <p>In the input status, status of all the 8 digital inputs will be 1.(As the inputs are internally pulled up)</p> <ul style="list-style-type: none"> • The input status changes from 1 to 0, and the input side LED indicator starts to glow accordingly.
<p>Current Inputs and Transistor Outputs</p>	<ol style="list-style-type: none"> 1. Power-up the device using 24V DC supply. 	<ul style="list-style-type: none"> • Status of all the 6 analog inputs will be 0. • Toggling output status (from 0 to 1) is observed on the display for the 2 transistor outputs, which follows the output side LED indicator blinking pattern. Whenever these LEDs are on, it means the respective transistor is on.

<p>Current Inputs and Transistor Outputs (continued..)</p>	<p>2. After powering up the device, to check the working of the 6 analog (current) inputs, supply a current between 4-20mA to each current input.</p> <p>(Check this link for the wire connection)</p> <p>3. To check the working of the 2 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 2 transistor output pins after, one by one after a 15s gap.</p>	<p>On the display, the current sensed by the SENSOPER device is displayed. (You can confirm these current values using a multimeter.)</p> <ul style="list-style-type: none"> • 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)
<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 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. 	<ul style="list-style-type: none"> • In the serial monitor "RS485 SUCCESS" statement getting printed is observed. <p>This indicates that the RS-485's Tx operation is working properly in the SENSOPER device.</p> <ul style="list-style-type: none"> • Once number "5" is received, all the output side LED <p>indicators will glow simultaneously for a few</p> <p>seconds. Then later they'll continue to glow in their previous pattern.</p> <p>This indicates that the RS-485's RX operation is working properly in the SENSOPER device.</p>
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