

# HanTron

## Model HT-SIM-MOP

### *Manual*



Advantage Controls  
P.O.Box 1472  
Muskogee, OK 74402  
Phone: 918-686-6211  
Fax: 888-686-6212  
[www.advantagecontrols.com](http://www.advantagecontrols.com)

7/2018

# I. Introduction

## Features

- Simulate pH, ORP, and powered milliamp signals
- Three different levels for each signal type
- Accurate simulation of pH and ORP probe response
- Low battery indication via flashing keypad lights

## Description

The HT-SIM-MOP simulator is a handheld, battery-operated device that provides a convenient means of testing and calibrating multiple instrumentation signals. The simulator provides a method for calibrating current loop devices and simulating high impedance pH & ORP probe signals.

## II. Specifications

Battery Type	9 VDC Alkaline		
Simulation Values	4pH	-100mV	4 mA
	7pH	300mV	12mA
	10pH	700mV	20mA
Line Impedance	300 MΩ (pH & ORP signals only)		
Low Battery Indicator	LED's flash rapidly		

## III. Operating Instructions

### pH and/or ORP

1. Plug the provided BNC male cable from the simulator into the female receptacle of the water treatment instrument's desired input (pH or ORP).
2. Press the "pH or ORP" button on the simulator and select the desired reading between Low, Med, and High

pH Low = 4pH	ORP Low = -100mV
pH Med = 7pH	ORP Med = +300mV
pH High = 10pH	ORP High = +700mV

The control instrument reading will gradually shift to the specified value at a similar speed as a pH or ORP probe (10-30 seconds). If the instrument behaves as expected, check the probe for fouling or elapsed life span. Most pH and ORP probes should be replaced 12-18 months after their manufacture date.

If the instrument behavior does not operate as expected, reset the pH or ORP calibration to factory default values and repeat test. If instrument behaves as expected, check probe. If instrument does not operate as expected there may be an issue with the instrument's ability to read the probe signal.

### mA Signals

1. Insert the red (+) and black (-) wires from the simulator into the respective positive and negative milliamp input terminals on the water treatment instrument.
2. Press the "mA" button on the simulator and select the desired reading between Low, Med, and High
  - mA Low = 4mA
  - mA Med = 12mA
  - mA High = 20mA

If the instrument's 4-20 mA input reading is within specification, the device is considered calibrated. If the instrument's 4-20 mA input reading is not within specification, then further calibration of the instrument is required.

Note: If the mA functions are used after a low battery indication has occurred, accuracy cannot be guaranteed until the battery has been replaced. The LED's will flash repeatedly when initially turned on to indicate a low battery.