

DA-300[®] IO Tester

Operations Manual

THIS MANUAL CONTAINS TECHNICAL INFORMATION FOR
THE DA-300[®] IO Tester

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THE *DA-300*[®] *IO Tester* IS DESIGNED AND MANUFACTURED IN THE USA BY
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Section 1 GENERAL

Overview

The Data Aggregator DA-300® provides the ability to monitor several DC and AC analog signals as well as detector outputs from a traffic cabinet. The DA-300® also generates relay outputs. Production testing and demonstration of a DA-300® unit may occur outside a traffic cabinet and thus a bench tool capable of simulating these inputs to and receive the outputs from a DA-300® unit is needed.

The DA-300® IO tester (model DIOT) was created to fulfill this need. It provides user adjustable DC and AC voltages to a DA-300® simulating real inputs; and it receives the DA-300® relay outputs displaying the contact statuses.

The DIOT supports a simple intuitive user interface consisting of 36 labeled toggle switches (one for each DA input), Two front panel rotating knobs (one for DC adjust and one for AC adjust) and 8 LEDs (one for each relay output). The adjustable AC and DC voltages are read by two different meters.

- Labeled toggle switches apply or remove either AC or DC voltages from an AC or DC input respectively.
- Other labeled toggle switches simulate discrete detector input states.
- The left top panel knob when rotated clockwise increases the DC voltage, while rotating it counterclockwise, the DC voltage drops.
- The right top panel knob when rotated clockwise lowers the AC voltage, while rotating counterclockwise raises the AC voltage.
- The front panel toggle switch labeled PWR, turns the tester on or off, when in the "off" position all AC and DC voltages are removed from the inputs to a connected DA-300® regardless of the status of their toggle switches. As a safety feature, if the DIOT is still plugged in but turned off, the AC voltage will still be displayed.



Section 2 SPECIFICATIONS

(Note: An output channel of a tester is an input to the DA-300[®])

Input Voltage:	80 to 145 VAC
Output Power DC Voltage:	24VDC @ 1.25 A
Output Adjustable DC Voltage:	0 to 24VDC @ 50 mA per channel
Output Adjustable AC Voltage:	70 to 112 VAC @ 100 mA per channel
Digital Reference Voltage:	22 to 24VDC @ 50 mA per channel
Variable DC Output Channels:	8
Variable AC Output Channels:	8
Simulated Detector Input Channels:	16
DA-300 [®] Interface:	One to One Harnesses with header connectors at both ends.



Section 3 PROCEDURES

SETUP:

1. Verify the harnesses are connected securely to the DA-300® under test and the DA-300® IO tester. The harnesses are keyed to go into only their respective ports on both the IO tester and DA-300®.
2. Verify all top panel labeled switches are off.
3. Turn IO Tester on by front panel ON/OFF toggle switch.

A. Apply an AC or DC voltage to a single DC or AC Analog input of DA unit under test.

1. Select and flip the toggle switch labeled for the required Analog Input of the DA-300® under test.
2. If a DC Analog channel is to be tested, adjust the DC voltage displayed by top meter to the required start value by rotating the front panel left knob. Increase voltage by rotating knob clockwise; and decrease DC voltage by rotating it counter clockwise.
3. If an AC Analog channel is to be tested, adjust the AC voltage displayed by bottom larger meter to the required start value by rotating the front panel right knob. Increase voltage by rotating knob counter clockwise; and decrease DC voltage by rotating it clockwise.
4. Freely adjust the DC or AC voltages as required by the test for this DA-300® input channel.
5. When the test for this channel is complete, flip the toggle switch of step 1 back down.

B. Apply simultaneous AC or DC voltages to multiple DC or AC Analog inputs of DA-300® unit under test.

1. Select and flip the toggle switches labeled for the required Analog Inputs of the DA-300® under to be tested.
2. If DC Analog channels are to be tested, adjust the DC voltage displayed by top meter to the required start value by rotating the front panel left knob. Increase voltage by rotating knob clockwise; and decrease DC voltage by rotating it counter clockwise. (All DC channels selected in step 1 will receive the same adjusted DC voltage.)
3. If AC Analog channels are to be tested, adjust the AC voltage displayed by bottom larger meter to the required start value by rotating the front panel right knob. Increase voltage by rotating knob counter clockwise; and decrease DC voltage by rotating it clockwise. (all channels selected in step 1 will receive the same adjusted AC voltage.)
4. Freely adjust the DC or AC voltages as required by the test for the DA-300® input channels undergoing testing.
5. When the test for this input channel is complete, flip the toggle switches of step 1 back down.

C. Simulating a Detector Input

1. There are 16 detector toggle switches labeled DET1 through DET16.
2. When a detector toggle switch on the IO Tester is pushed up, the IO Tester simulates that particular channel as a turned-on detector output or “call” to the connected DA unit.
3. When the detector toggle switch is pushed down, the IO Tester simulates that particular channel as a turned-off detector output to the connected DA-300® unit.
4. All detector channels can be turned on or off at the same time or any combination of on and off as required by the specific test or demonstration.

16 Detector Toggle Switches

