

## Model AM-9222 DO Simulator



### OPERATING INSTRUCTIONS FOR THE BROADLEY-JAMES™ OXYPROBE® DO SIMULATOR

The Broadley-James Dissolved Oxygen Simulator is a simple and rapid diagnostic check for DO measurement systems. The device simulates a DO sensor on-line and can be used to diagnose transmitter functionality.

### FEATURES AND APPLICATIONS

#### TROUBLESHOOT TRANSMITTER PERFORMANCE:

The Broadley-James DO Simulator allows the operator to troubleshoot a questionable DO measurement by isolating the transmitter and cables from the actual DO sensor inputs.

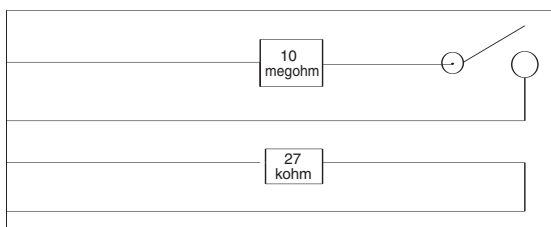
**SIMULATE THE D.O. SENSOR:** The device simulates an ideal DO sensor output at 20°C. Simply attach the simulator in place of the DO sensor, and check for the appropriate responses in the transmitter.

### Technical Specifications

- Red Button Up (released) - 0% sat (~0 nA)
- Red Button Down (pressed) - 100% sat (~67 nA)

The DO simulator isolates the transmitter by simulating the load of a DO sensor over the range of 0-100% saturation. It connects directly to the DO cable, in place of the sensor. In doing so, the simulator can help confirm whether fluctuations in the transmitter display are caused by the sensor, or caused by problems with the transmitter or cable. Check for the appropriate responses by pressing the red button on the end of the simulator. This two position switch allows simulation of either 0% (0 nA) or 100% (67nA) saturation.

### Schematic drawing of the DO Simulator



Simulates the OxyProbe® DO sensor current of ~67nA @ 20°C

Simulates the sensor's internal thermistor output at 20°C

## Model AM-9222 — DO Simulator

### Recommended procedure:

1. Connect the D4 plug on the DO cable, that leads to the transmitter, to the 4-pin connector on the simulator. The simulator is now acting as a DO sensor.
2. Switch the simulator to 0% saturation or 0 nA (red button “up” or in the release position) and adjust the transmitter display to 0% saturation. If the transmitter is set to display nanoAmps, than the display should read <1nA in this mode.
3. Switch the simulator to 100% saturation (red button “down” or in the pressed position) and adjust the transmitter display to 100% saturation. If the transmitter is set to display nanoAmps, than the display should read ~67nA in this mode.
4. The DO transmitter check procedure is complete.

### Notes:

- Actual values for DO may vary significantly from expected values, dependent upon the previous calibration of the instrument being tested.
- This simulator is a troubleshooting device, not a calibration instrument. It is used for testing cables and instruments, not sensors.
- If the tests have not been completed successfully, look for possible faults in the transmitter or cable.
- If the tests have been completed successfully but the measurement loop is still experiencing problems, look for possible faults in the sensor. (For sensor troubleshooting, refer to the sensor operating instructions.)



Measurement and Control Products for Science and Industry

19 Thomas, Irvine, California 92618 USA

Phone: (949) 829-5555 Toll-Free: (800) 288-2833 Fax: (949) 829-5560

E-Mail: sales@broadleyjames.com Website: www.broadleyjames.com