

## Dissolved Oxygen Microprocessor Analyzer

- SELF DIAGNOSTICS with user selectable fault alarm.
- NEMA 4X (IP65) WEATHERPROOF CORROSION-RESISTANT ENCLOSURE.
- NO BATTERY BACK-UP REQUIRED. Non-volatile EEPROM memory.
- DUAL ALARMS WITH PROGRAMMABLE LOGIC. Third relay with timer functions.
- KEYBOARD SECURITY is user selectable.



### FEATURES AND APPLICATIONS

The Model 1054B microprocessor analyzers, with the appropriate sensor, are designed to continuously measure and control pH, ORP, conductivity, percent concentration, ratio, resistivity, dissolved oxygen, dissolved ozone, or total free chlorine in industrial and municipal processes.

Housed in a NEMA 4X (IP65) weatherproof, corrosion-resistant, flame retardant enclosure, the Model 1054B DO is suitable for panel, pipe, or wall mounting. All functions are accessed through the front panel keyboard that features tactile feedback.

The Model 1054B DO transmits a user selected isolated current output continuously expandable over the measurement range in either direct or reverse action. The output can be displayed in milliamps or percent of full scale. Output dampening of 0-255 seconds is user selectable.

Dual programmable alarms are a standard feature on the Model 1054B DO and are programmable for either high or low operation. Alarm 2 may be programmed as a fault alarm. Both alarms feature independent set-points, adjustable hysteresis, and time delay action. The time delay is convenient when an alarm is used

for corrective action. Time delay ignores temporary upsets and prevents relay chatter. An interval timer with relay is also provided.

The 1054B DO analyzer, which is intended for use with a membrane-covered amperometric sensor, automatically compensates for changes in membrane permeability with temperature. Temperature can be displayed in either °C or °F.

Calibrating the analyzer is as simple as exposing the sensor to air and keying in the barometric pressure. If removing the sensor from the process is impractical, the analyzer can also be calibrated against a laboratory measurement made on a grab sample.

Solubility correction factors, for liquids containing high concentrations of electrolytes, can be programmed into the analyzer. The microprocessor automatically calculates ppm dissolved oxygen or % saturation.

The 1054B DO microprocessor analyzer comes with either LCD or LED display. The display indicates dissolved oxygen in ppm or % saturation as well as temperature, alarm status, hold output, and fault conditions.



## PHYSICAL SPECIFICATIONS - GENERAL

**Panel Mount Enclosure:** Black, ABS, NEMA 4X, IP65  
CSA Enclosure 4  
144 X 144 X 192 mm  
(5.7 X 5.7 X 7.6 in.)


**Wall Mount Enclosure:** NEMA 4X, Heavy duty fiber-glass, reinforced thermoplastic.  
356.4 X 450.1 X 180.2 mm\* (14 X 17.7 X 7.1 in.\*)

**Front Panel:** Membrane keyboard with tactile feedback and user selectable security.

**Digital Display:** LCD, black on grey  
Optional red LED  
Character Height: 18 mm (0.7 in.)

**Electrical Classification:**  
FM Class I, Div. 2, Group A thru D  
28 Vdc relays - 5.0 amps resistive only  
150 mA - Groups A & B; 400 mA - Group C ;  
540 mA - Group D; Ci = 0; Li = 0  
CSA Class I, Div. 2, Group A thru D.  
28 Vdc, 110 Vac & 230 Vac relays  
5.0 Amps resistive only  
Wall Mount Enclosure: General Purpose

**Power:** 100 - 127 VAC, 50/60 Hz  $\pm$  6%, 4.0 W  
200 - 253 VAC, 50/60 Hz  $\pm$  6%, 4.0 W

**EMI/RFI:** EN50081-2  
EN50082-2 

**LVD:** EN61010-1

Code -20 Wall Mount Enclosure does not meet CE requirements.

\* Includes latches and mounting feet.

**Current Output:** Isolated, 0-20 mA or 4-20 mA into 600 ohms maximum load at 115/230 Vac *or* 550 ohms maximum load at 100/200 Vac; direct or reverse output; dampening: 0-255 sec

**Ambient Temperature:** -10 to 65°C (14 to 149°F)  
-50 to 65°C (-58 to 149°F) with optional heater, wall mount enclosure.

**Ambient Humidity:** LED: 0-95% RH  
LCD: 0-85% RH @ 50°C

**Alarms:** Dual, field selectable High/Low, High/High, Low/Low  
Alarm 2 configurable as a fault alarm  
Time Delay 0 to 255 seconds  
Dual Setpoints, continuously adjustable  
Hysteresis, adjustable up to 25% of reading for low side/High Alarm and high side/Low Alarm

**Interval Timer:** Interval: 10 min. to 2999 days  
On Counts: 1 to 60  
On Duration: 0.1 to 299.9 seconds  
Off Duration: 0.1 to 299.9 seconds  
Wait Duration: 0.1 to 299.9 seconds  
Controls dedicated relay

**Relay Contacts:** Epoxy Sealed Form A contacts, SPST, Normally Open.

	<u>Resistive</u>	<u>Inductive</u>
28 VDC	5.0 Amps	3.0 Amps
115 VAC	5.0 Amps	3.0 Amps
230 VAC	5.0 Amps	1.5 Amps

**Weight/Shipping Weight:** 1.1 kg/1.6 kg (2.5 lb/3.5 lb)

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The **Model 1054B Dissolved Oxygen Microprocessor Analyzer** is designed for the continuous measurement of dissolved oxygen over the entire range of 0-20 ppm or 0-250% saturation in municipal wastewater, industrial wastewater, and activated sludge basin applications. Other applications include food processing plants, aeration lagoons, and pharmaceutical plants.

Calibration is easily accomplished by exposing the sensor to air and keying in the barometric pressure. A solubility correction factor can be used for process solutions other than fresh water. The microprocessor automatically calculates the ppm or % saturation value.

## INSTRUMENT SPECIFICATIONS

**Operating Ranges:** 0-20 ppm (mg/l); 0-250% saturation; 0-50°C

**Accuracy:**  $\pm$  1% full scale

**Repeatability:**  $\pm$  0.1% of range

**Stability:** Zero Drift:  $\pm$  1% full scale/month  
Span Drift:  $\pm$  1% full scale/month

**Response Time:** 0-95% full scale in less than 15 seconds

**Temperature Correction for Membrane**

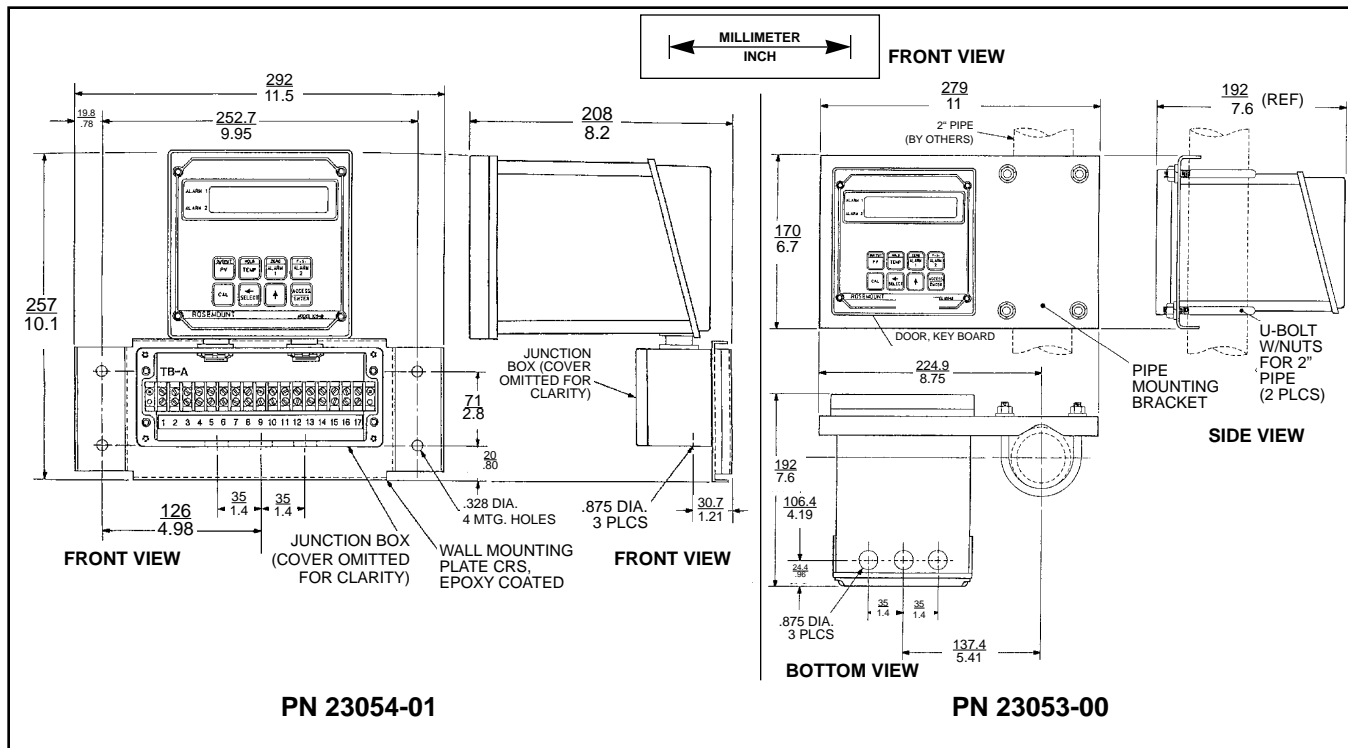
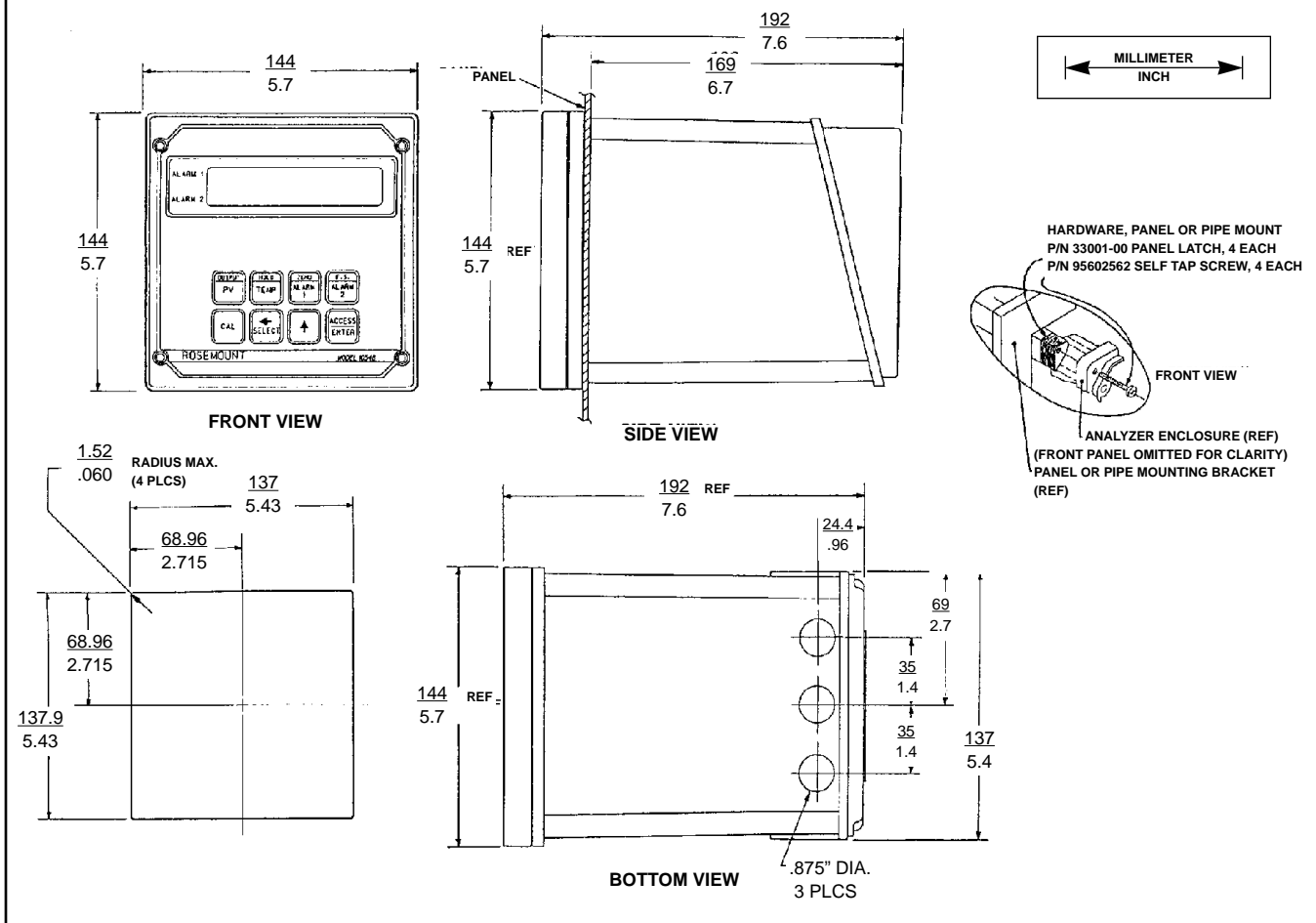
**Permeability:** Automatic between 0-50°C.

Temperature compensation can be disabled if desired.

## RECOMMENDED SENSOR:

**Model 499A DO**

### Mounting and Dimensional Drawing – Analyzer



## ORDERING INFORMATION

**The Model 1054B Dissolved Oxygen Microprocessor Analyzer:** Housed in a NEMA 4X corrosion resistant, weatherproof housing suitable for panel, pipe, or wall mounting. Standard features include isolated current outputs, dual programmable alarms, timer relay, and automatic temperature correction for membrane permeability.

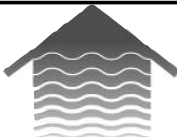
MODEL	
<b>1054B</b>	<b>MICROPROCESSOR ANALYZER (3.5 lbs/1.5 kg)</b>
Code	Measurement
DO	Dissolved Oxygen
Code	Display
01	LCD Display
02	LED Display
<b>1054B</b>	<b>DO 01 EXAMPLE</b>

ACCESSORIES	
PART #	DESCRIPTION
2001492	Stainless Steel Tag
23053-00	2 in. Pipe Mounting Bracket
23054-01	Wall Mounting Bracket with Junction Box



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