

Microprocessor Analyzers

- pH ELECTRODE DIAGNOSTICS warn user of the need for calibration or electrode replacement.
- AUTOMATIC BUFFER RECOGNITION with stored buffer-temperature curves.
- NEMA 4X (IP65) WEATHERPROOF, CORROSION-RESISTANT ENCLOSURE.
- NO BATTERY BACK-UP REQUIRED. Non-volatile EEPROM memory.
- SPECIFIC PROCESS TEMPERATURE COMPENSATION for pH changes due to temperature.



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, ozone, dissolved oxygen, and total free chlorine, in industrial and municipal processes.

The Model 1054B is housed in a NEMA 4X (IP65) weatherproof, corrosion-resistant, flame retardant enclosure suitable for panel, pipe or wall mounting. All functions are accessed through the front panel membrane keyboard which features tactile feedback. Measurement data may be read at any time; however, settings may be protected against accidental or unauthorized changes by a user selectable security code. The display indicates the measured value in engineering units as well as temperature, alarm status, hold output and fault conditions.

The analyzer transmits an isolated current output, which is continuously expandable over the measurement range for either direct or reverse action. A hold output function is available for allowing manual control

during routine sensor maintenance. During hold mode, the output will be at a preset or last process value.

In the event of one of the following conditions, the analyzer will drive the output to a preset value in addition to displaying a fault code. Continuous self diagnostics alert the user to the following:

- Broken or cracked electrode
- Worn out or non-immersed electrode
- Calibration or coated glass electrode warning
- Faulty slope value (off-line only)
- Open wiring
- Analyzer electronics failure
- Faulty temperature element or temperature value

With automatic buffer recognition, the analyzer calculates the electrode slope using stored buffer-temperature curves for ten common buffers.

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Dual alarms are a standard feature on the Model 1054B and are programmable for either high or low operation. Alarm 2 may be programmed to activate in event of a failure detected by the continuous diagnostics. Both alarms feature independent set-points, adjustable hysteresis and time delay action. A dedicated interval timer with relay is also provided for chemical or ultrasonic cleaning.

The 1054B automatically compensates the pH reading for process temperature changes. Automatic or manual temperature compensation is keyboard selectable. The process temperature can be read on the display in °F or °C. Additional process temperature compensation is available. The analyzer includes a 0.7 in. digital display available in LCD or LED format.

PHYSICAL SPECIFICATIONS - GENERAL

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 fiberglass, reinforced thermoplastic.

300 X 300 X 190 mm (11.75 X 13 X 7.5 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 ± 6%, 4.0 W

200 - 253 VAC, 50/60 Hz ± 6%, 4.0 W

EMI/RFI: EN50081-2

EN50082-2



LVD: EN61010-1

Ambient Humidity: LED max 95% RH

(LCD max 85% RH @ 50°C)

Ambient Temperature: -10 to 65°C (14 to 149°F)

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

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 is adjustable up to 2 pH units or 25% full scale for low side/High Alarm and high side/Low Alarm

Interval Timer: Interval: Minimum 10 minutes

On Counts: 1 to 60

On Duration: 1 to 299 seconds

Off Duration: 1 to 299 seconds

Wait Duration: 1 to 299 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)

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

The **Model 1054B pH Analyzer** requires a preamplifier to convert the high impedance pH glass electrode signal to a low impedance signal. The preamplifier may be located in one of three areas; in the pH sensor for best performance, in a remote junction box when process temperatures exceed 80°C (176°F) in submersion applications, or in the analyzer when the distance between the pH sensor and the analyzer is 4.5 meters (15 ft) or less. The result is that the pH signal may then be reliably transmitted from the sensor to the analyzer using standard shielded 4-wire instrument cable.

The Model 1054B pH measures over the full range of 0-14 pH. The current output may be calibrated to represent any 1 to 14 pH span.

A two-point calibration is made by immersing the sensor in two different buffer solutions and entering the pH values. When two buffers are used, the microprocessor automatically calculates the electrode slope which is used for self-diagnostics. This electrode slope can be read on the display and manually adjusted. A one point process standardization is also easily accomplished by entering the pH value of a grab sample.

INSTRUMENT SPECIFICATIONS @ 25°C

Measurement Range: 0 to 14 pH

Output Scale Expansion:

Zero suppression: up to 13 pH units

Span: Any pH from 1 to 14

Accuracy: ±0.01 pH

Repeatability: ±0.01 pH

Stability: ±0.01 pH/month, non-cumulative

Temperature Coefficient: Input: ±0.003 pH/°C

Output: ±0.006 pH/°C

Temperature Compensation: Pt100 RTD, Automatic or Manual -15 to 100°C (5 to 212°F)

The **Model 1054B ORP Analyzer** measures over the full range of -1500 mV to +1500 mV full scale, user selectable in either the American convention (Oxidation Reduction Potential), or the European convention (Reduction Oxidation-Redox). Although temperature compensation is not required for ORP measurements, the process temperature is measured and displayed. Temperature measurement is made by a Pt 100 RTD located in the sensor assembly.

INSTRUMENT SPECIFICATIONS @ 25°C

Measurement Range: -1500 to +1500 mV

Output Scale Expansion:

Zero suppression: up to ± 1500 mV

Span: ± 1500 mV

Accuracy: ± 1.0 mV

Repeatability: ± 1.0 mV

Stability: ± 1.0 mV/month, non-cumulative

Temperature Coefficient: Input: ± 0.2 mV/°C

Output: ± 0.4 mV/°C

Temperature Measurement: -15 to 100°C
(5 to 212°F)

*Model 1054B pH includes programmable temperature correction required for the presence of ammonia when used in treating high purity water.

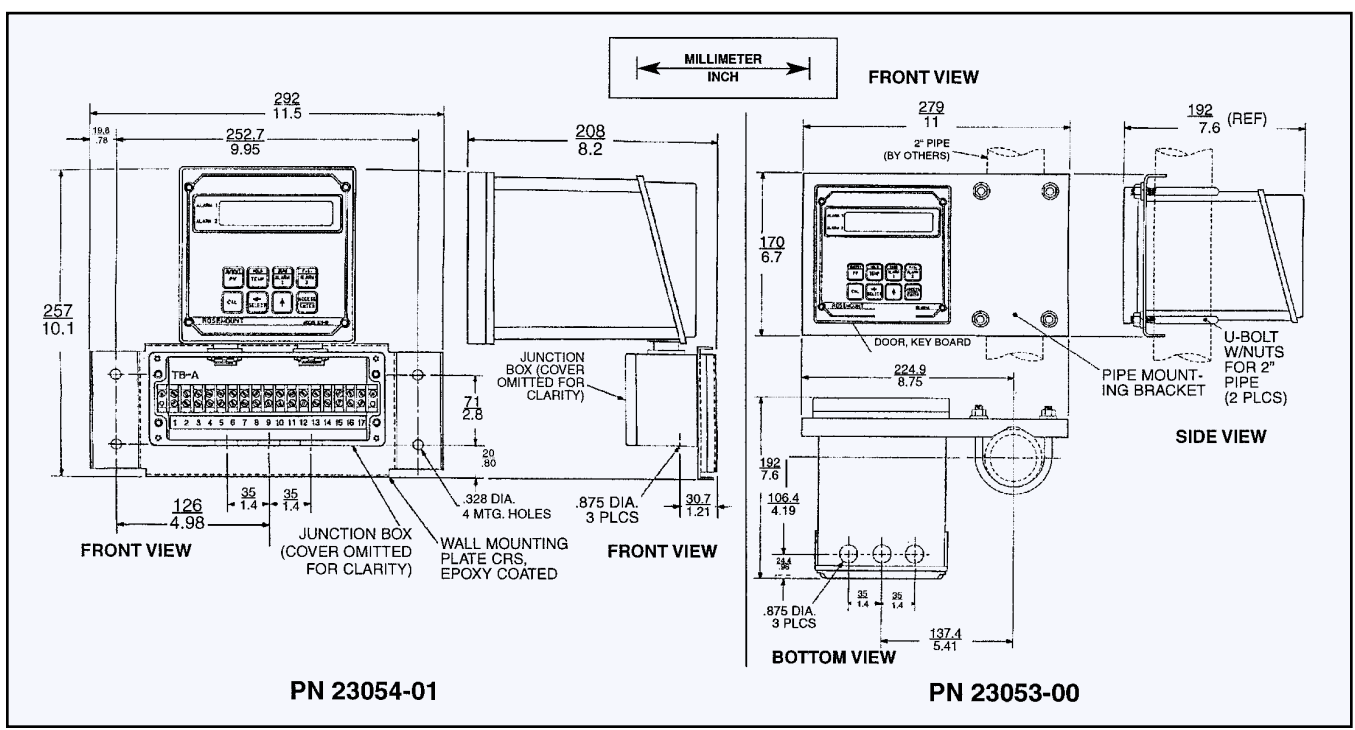
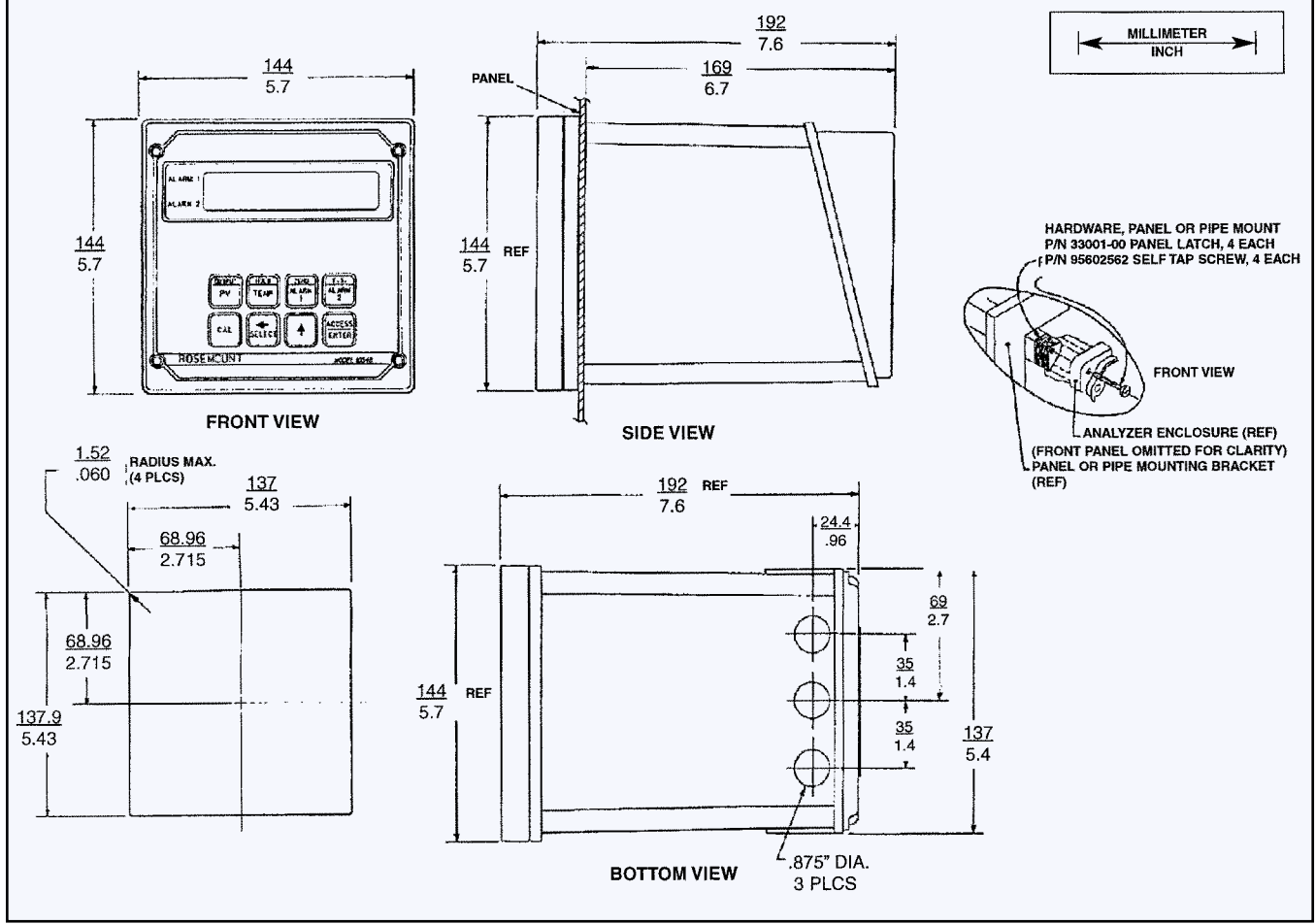
RECOMMENDED SENSORS FOR ORP:

Model 300 Retractable
Model 330B Flow Through
Model 381 Insertion/Submersion/Flow
Model 385 Retractable
Models 389/399 Disposable
Model 396P TUpH Disposable
Model 396R TUpH Retractable

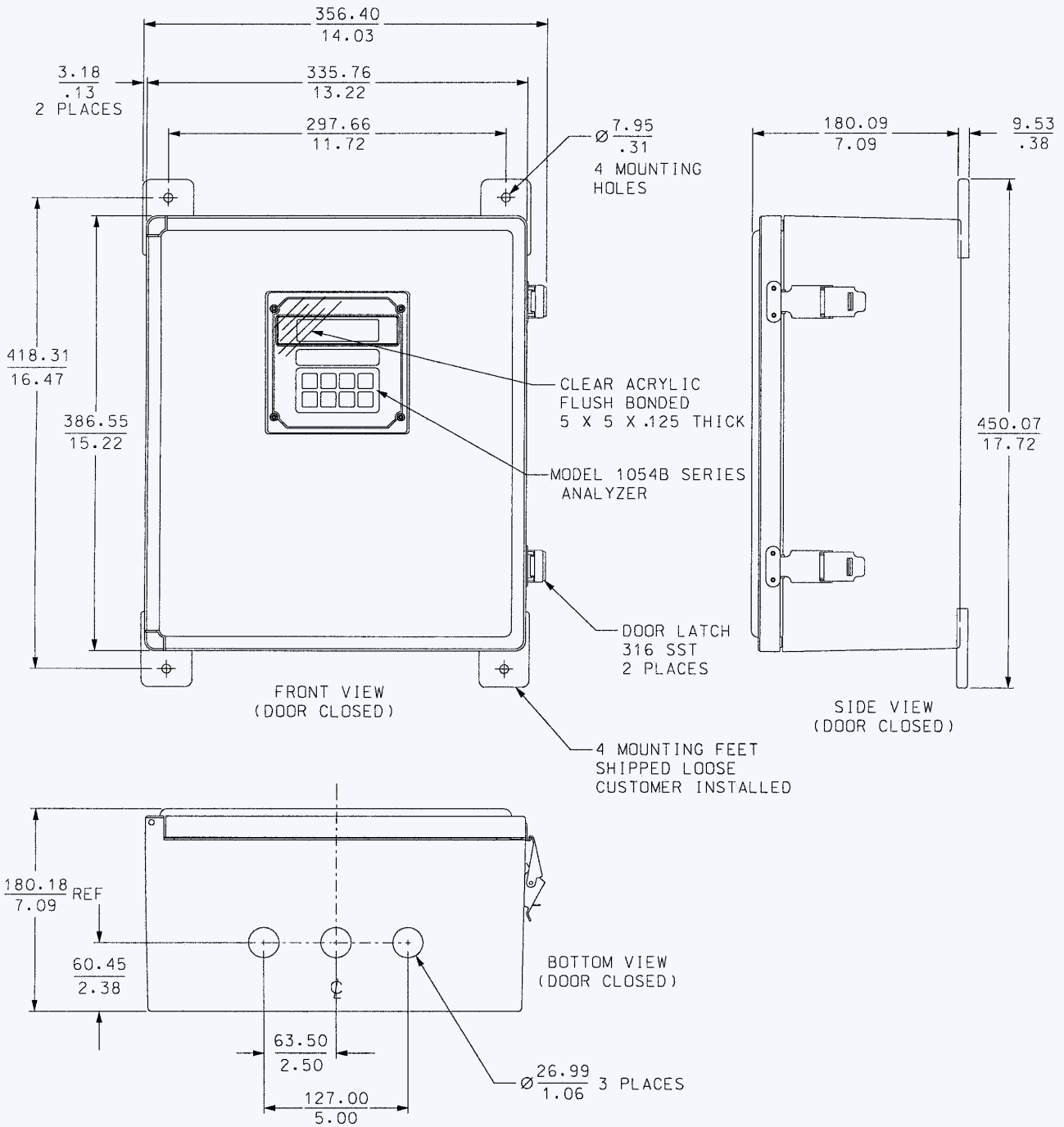
RECOMMENDED SENSORS FOR pH:

Model 300 Retractable
Model 320B Flow Through
Model 320HP High Purity
Model 328A Steam Sterilizable
Model 371 Eurosenz
Model 381 Insertion/Submersion/Flow
Model 385 Retractable
Models 389/399 Disposable
Models 396/396P TUpH Disposable
Model 396R TUpH Retractable
Model 397 Quik-Loc Sensor

MOUNTING AND DIMENSIONAL DRAWING - ANALYZER



MILLIMETER
INCH



Wall Mount Enclosure (option -20)

