

CONDUCTIVITY, pH/ORP, & AMPEROMETRIC HART® ANALYZERS/CONTROLLERS

Model 54e Family of Analyzers/Controllers

- NEMA 4X (IP65) WEATHERPROOF CORROSION-RESISTANT ENCLOSURE.
- BACK-LIT DISPLAY with easy-to-use interface.
- TWO INDEPENDENT OUTPUTS.
- THREE ALARMS WITH PROGRAMMABLE LOGIC, plus one dedicated fault alarm.
- OPTIONAL TPC AND PID CONTROL CAPABILITY.



Model 54e pH/ORP Analyzer/Controller

- COMPREHENSIVE pH GLASS DIAGNOSTICS warn user of the need for calibration, maintenance, or sensor replacement.
- AUTOMATIC CALIBRATION with buffer recognition and stabilization check.
- SELECTIVE ION CAPABILITY.

Model 54eC Conductivity/Resistivity Analyzer/Controller

- MEASURES Conductivity, Resistivity, or Percent (%) Concentration.
- USES EITHER CONTACTING OR INDUCTIVE SENSORS to meet most application requirements.
- PERCENT CONCENTRATION CURVES FOR 0-12% NaOH, 0-15% HCl, and 0-25% or 96-99.7% H₂SO₄.
- TEMPERATURE CORRECTION ALGORITHMS for high purity water, cation conductivity, & linear temperature coefficient. Temperature correction can also be turned off.



Model 54eA Amperometric Analyzer/Controller

- MEASURES dissolved oxygen (ppm & ppb level), free chlorine, total chlorine, and ozone.
- ON-BOARD PRESSURE SENSOR for automatic air-calibration of oxygen sensors.
- SECOND INPUT FOR pH SENSOR ALLOWS AUTOMATIC pH CORRECTION for free chlorine measurement. No expensive reagents needed.
- AUTOMATIC BUFFER RECOGNITION for pH calibration.
- INTERVAL TIMER operates spray cleaner for oxygen sensor in aeration basins.

FEATURES AND APPLICATIONS—GENERAL

The Model 54e family of analyzers, with the appropriate sensors, monitor and control pH/ORP, conductivity/resistivity, dissolved oxygen (ppm and ppb level), free chlorine, total chlorine, or ozone in a variety of process liquids.

The analyzer/controller is housed in a rugged NEMA 4X (IP65) weatherproof, corrosion resistant enclosure of epoxy-painted aluminum. It is suitable for panel, pipe or wall mounting. All functions are accessible through the front panel membrane keyboard that features tactile feedback. The large back-lit dot-matrix liquid crystal display continuously indicates the measured variable in large numerals, along with the temperature, output value and two programmable process parameters (such as alarms or diagnostics variables). Three levels of security are available: 1) calibration, 2) output range and alarm setpoint adjustment, and 3) advanced configuration. A hinged front panel provides convenient wiring access. All operations and descriptive messages can be field selected for English, French, German, Italian, or Spanish.

The Model 54e is a member of the Rosemount SMART FAMILY™ of instruments which is designed to communi-

cate with the Model 275 HART® hand-held communicator and any other host, including AMS, that supports the 275 HART communication protocol.

The two independent, isolated outputs provide 4-20 or 0-20 mA signals for the process measurement and temperature. The controller option also allows PID control choices acting on process measurement or temperature. Manual control of the output may also be selected for routine maintenance and tests.

Three process alarms are a standard feature. All alarms have programmable high or low activation, independent setpoints, adjustable hysteresis (deadband), and time delay. One relay may be configured as a timer relay for chemical cleaning, which may be activated at a specific time interval. An overfeed timer feature is also selectable for any one process relay. The control option allows each alarm the additional choice of Time Proportional Control. During any relay activation, a corresponding Green LED is illuminated.

® SMART FAMILY is a trademark of Rosemount Inc.

® HART is a registered trademark of the HART Communication Foundation.

SPECIFICATIONS - GENERAL

Enclosure: Epoxy-painted (dark gray) cast aluminum, NEMA4X (IP65). 144 x 144 x 132 mm (5.7 x 5.7 x 5.2 in.), DIN size panel cut-out.

Front Panel: Membrane keypad with tactile feedback. Three green LEDs indicate alarm status. Red LED indicates fault condition.

Display: Three-line, back-lit, dot matrix LCD, 70 x 35 mm. First line is measurement reading. Second line is temperature and current output. Third line is user-selectable. Character heights: 1st line - 16 mm (0.6 in.), 2nd and 3rd lines - 7 mm (0.3 in.).

Hazardous Location Approvals:

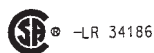
Class I, Division 2, Groups A, B, C, & D.
T5 Ta=50°C. Dust ignition proof: Class II, Division 1, Groups E, F, & G; Class III.

FM: Max. relay contact rating: 28 Vdc resistive

150 mA - Groups A & B;
400 mA - Group C;
540 mA - Group D



CSA:



Max. relay contact rating:
28 Vdc; 110 Vac; 230 Vac;
6 amps resistive. Enclosure Type 4.

Power:

Code -01: 100 - 127 Vac, 50/60 Hz ± 6%, 8 W
200 - 253 Vac, 50/60 Hz ± 6%, 8 W

Code -02: 20 - 30 VDC, 6 W

RFI/EMI: EN-61326

LVD (Code -01 only): EN-61010-1

Outputs: Two 4-20 mA or 0-20 mA isolated outputs. Continuously adjustable. Outputs can be assigned to the primary measurement, glass impedance (pH only), reference impedance (pH only), or temperature. Output dampening is user-selectable. Maximum load at 24 Vdc or 115/230 Vac is 500 ohms. Maximum load at 100/200 Vac is 500 ohms. Output 1 has superimposed HART signal (option -09 only). Outputs can be programmed for PID control (option -20 only).

Output Accuracy: ± 0.05 mA

Alarms:



Relay 1 - Process, Interval, or Time Proportional Control (TPC requires code -20)

Relay 2 - Process, Interval, or Time Proportional Control (TPC requires code -20)

Relay 3 - Process, Interval, or Time Proportional Control (TPC requires code -20)

Relay 4 - Sensor/analyzer and process fault alarm

Each relay has a dedicated LED on the front panel.

Relay Contacts: Relays 1-3: Epoxy sealed form A contacts, SPST, normally open



Relay 4: Epoxy sealed form C, SPDT

	<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

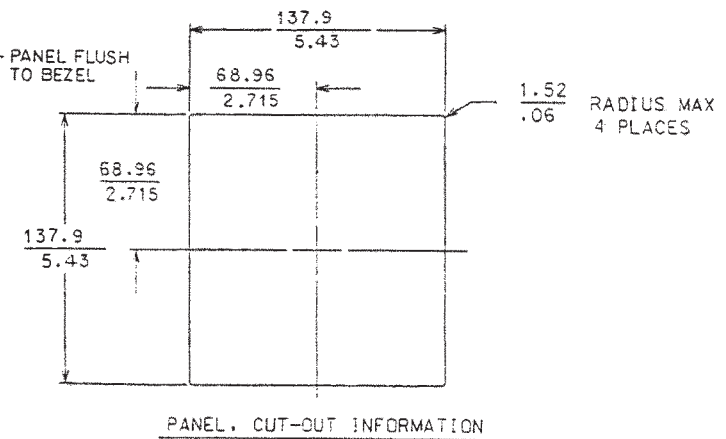
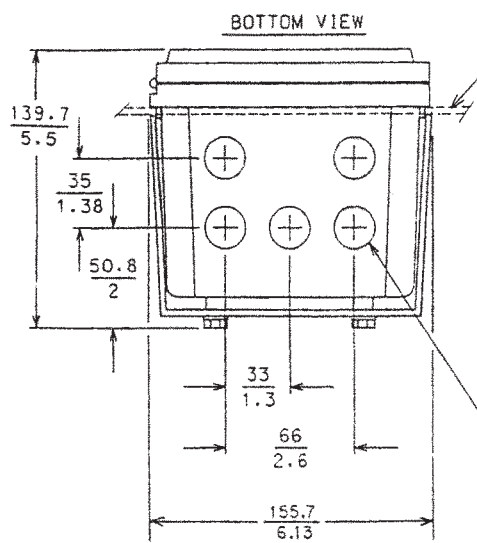
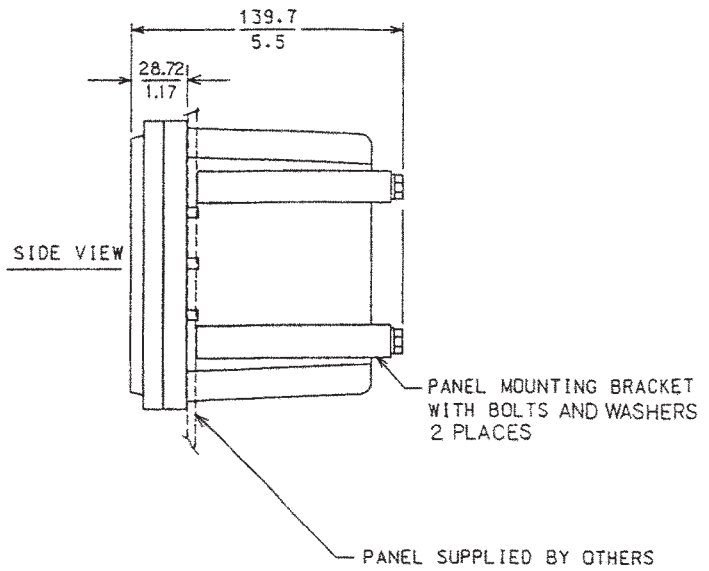
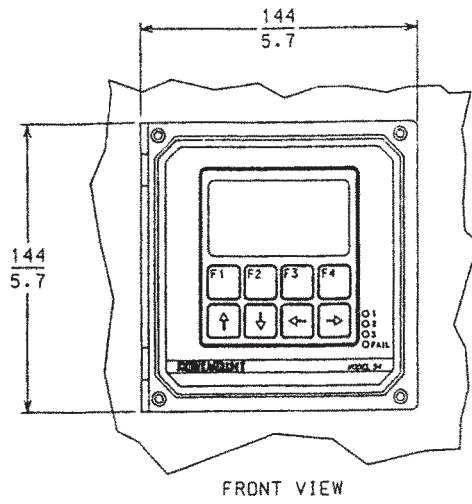
Temperature Sensors Accepted: Pt 100 RTD, Pt 1000 RTD, 22K NTC thermistor (54eA only).

Ambient Temperature: 0 to 50°C (32 to 122°F). Analyzer can be operated between -20 and 60°C (-4 to 140°F) with some degradation in display quality.

Relative Humidity: 95% (maximum) non-condensing

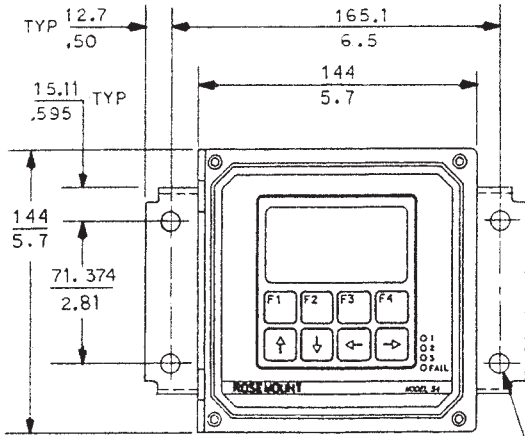
Weight/Shipping Weight: 4 lb/5 lb (1.8 kg/2.3 kg)

WHEN INCH AND METRIC DIMS
ARE GIVEN

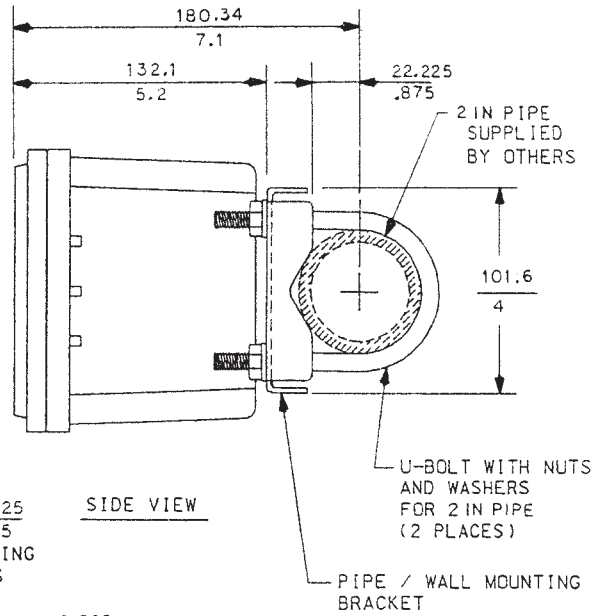


PANEL MOUNTING DIMENSIONS

WHEN INCH AND METRIC DIMS
ARE GIVEN

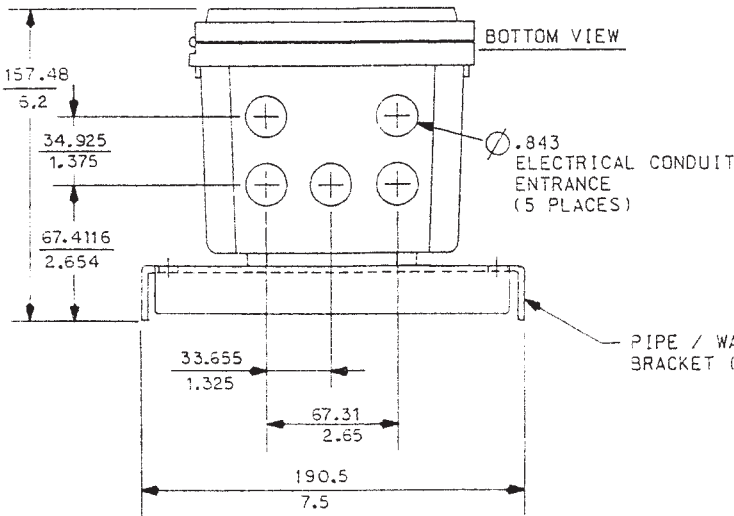


FRONT VIEW



SIDE VIEW

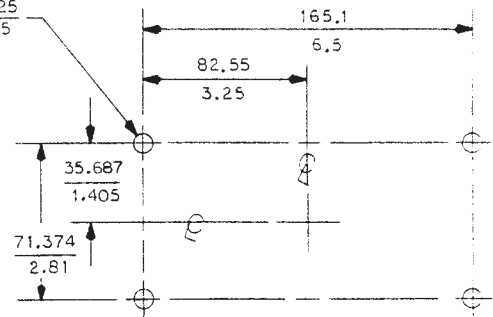
DRILL \varnothing 9.525 / .375
4 MOUNTING HOLES



BOTTOM VIEW

\varnothing .843
ELECTRICAL CONDUIT
ENTRANCE
(5 PLACES)

DRILL \varnothing 9.525 / .375
4 PLACES



BRACKET, HOLES PATTERN
FOR WALL MOUNTING

PIPE AND WALL MOUNTING DIMENSIONS

ORDERING INFORMATION

MODEL	
54e	MICROPROCESSOR ANALYZER
CODE	MEASUREMENT SELECTION
pH/ORP	pH/ORP
C	Conductivity/Resistivity
A	Amperometric (Chlorine, Dissolved Oxygen, and Ozone)
CODE	REQUIRED SELECTION
01	115/230 VAC, 50/60 Hz Power
02	24 VDC Power
CODE	OPTIONS
09	HART Communications Protocol
20	Controller Outputs - PID and TPC
54e pH/ORP -01 -20 EXAMPLE	

ACCESSORIES	
PART NO.	DESCRIPTION
2002577	Wall and two inch pipe mounting kit
23545-00	Panel mounting kit
23554-00	Cable glands, kit (Qty 5 of PG 13.5)
9240048-00	Stainless steel tag (specify marking)

MODEL 54e pH/ORP ANALYZER

FEATURES AND APPLICATIONS

The Model 54e pH/ORP Microprocessor Analyzer, with the appropriate sensor, is designed to monitor and control pH or ORP in industrial and municipal processes using the most advanced technology available.

The continuous diagnostic capability of the analyzer eliminates troubleshooting guesswork by alerting the user to the following problems:

- Cracked or broken pH electrode
- Aged glass - calibration recommended
- Worn out or non-immersed electrode
- Poisoned reference (off-line only)
- Faulty temperature element
- Open wiring
- pH electrode slope error (off-line)
- Analyzer electronics failure.

In the event of one of these conditions, the analyzer will display a descriptive message of the problem, illuminate a red LED on the front panel, and drive the outputs to preselected fault mode values. A dedicated fault relay may be used to operate a visible or audible alarm.

The glass impedance is continuously monitored and can be programmed to read out on the main display. Fault setpoints for the glass impedance are programmable. The

glass impedance is temperature compensated for the greatest accuracy.

The automatic buffer recognition feature uses stored buffer values and their temperature curves for the most common buffer standards available worldwide. The analyzer will recognize the last two buffers used for the two point calibration, and perform a self-stabilization check on the sensor in each buffer.

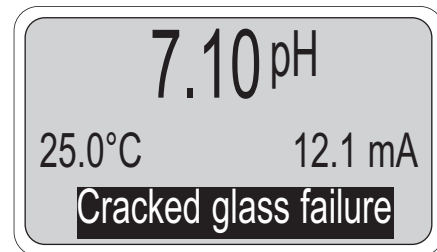
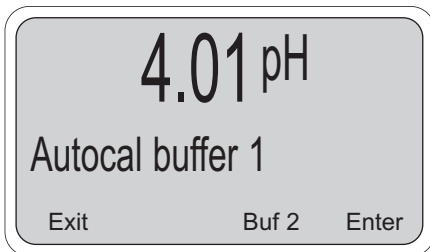
Three process alarms are a standard feature. All alarms have programmable high or low activation, independent setpoints, adjustable hysteresis (deadband), and time delay. One relay may be configured as a timer relay for chemical cleaning, which may be activated at a specific time interval. An overfeed timer feature is also selectable for any one process relay. The control option allows each alarm the additional choice of Time Proportional Control. During any relay activation, a corresponding Green LED is illuminated.

The Model 54e pH/ORP is compatible with either an external Pt 1000 or a Pt 100 RTD located in the sensor to compensate the pH reading for process temperature fluctuations. Manual temperature compensation is keyboard selectable. Processes with pH changes due to temperature can be compensated using a programmable temperature coefficient or isopotential point.

EASY TO USE MENU-DRIVEN INTERFACE

AUTO CALIBRATION with buffer recognition and stabilization check removes calibration guesswork.

DIAGNOSTIC MESSAGES are clearly spelled out on the main display and on all other screens.



In the screen above, pressing Enter (Function key #4) initiates the automatic calibration procedure for buffer 1.

MODEL 54e pH/ORP ANALYZER

The Model 54e when configured as a pH analyzer, requires a dual (glass and reference) impedance preamplifier. This preamp converts the high impedance pH glass electrode signal to a low impedance signal. The preamplifier may be located in one of three areas: 1) in the pH sensor for best performance, 2) in a remote junction box when process temperatures exceed 80°C (176°F) in submersion applications, or 3) in the analyzer (included in circuitry) when the distance between the pH sensor and the analyzer is 4.5 meters (15 feet) or less.

The Model 54e 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. The electrode slope can be read on the display and manually adjusted. A one-point process standardization is 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: Pt 100 or Pt 1000 RTD, Automatic or Manual; -15 to 120°C (5 to 248°F)

RECOMMENDED SENSORS:

Model 320B Flow Through pH

Model 320HP High Purity pH

*Model 328A Steam Sterilizable pH

*Model 370 and 371 EuroSenz pH

Model 381+ Insertion/Submersion/Flow Through pH

*Model 389 Disposable pH

*Model 396 Disposable pH

*Model 396VP Disposable pH with VP 6.0 connector

Model 396P Disposable pH

Model 396PVP Disposable pH

Model 396R Retractable pH

Model 396RVP Retractable pH with VP 6.0 connector

Model 397 Quik Disconnect pH

Model 398 Insertion/Submersion pH

Model 398VP Insertion/Submersion with VP 6.0 connector

*Model 398R Retractable pH

*Model 398RVP Retractable pH with VP 6.0 connector

*Model 399 Disposable pH

*Model Hx338 Steam Sterilizable pH

*Model Hx348 Steam Sterilizable pH

The Model 54e when configured as an ORP analyzer, measures over a range of -1400 mV to +1400 mV in either the American convention (Oxidation Reduction Potential), or the European convention (Reduction Oxidation-Redox). Although temperature compensation is not used for ORP measurements, the process temperature is measured and displayed. Temperature measurement is made by an RTD located in the sensor assembly.

INSTRUMENT SPECIFICATIONS @ 25°C

Measurement Range: -1400 to +1400 mV

Output Scale Expansion:

Zero suppression: up to ±1300 mV

Span: Any ORP range from 100 to 2800 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 120°C (5 to 248°F)

Pt 100 or Pt 1000 RTD

RECOMMENDED SENSORS:

Model 330 Flow Through ORP

*Model 371 EuroSenz ORP

Model 381+ Insertion/Submersion/Flow Through ORP

*Model 389 Disposable ORP

Model 396P Disposable ORP

Model 396R Retractable ORP

Model 398 Insertion/Submersion ORP

Model 398VP Insertion/Submersion with VP 6.0 connector

Model 398R Retractable ORP

Model 398RVP Retractable ORP with VP 6.0 connector

The Model 54e when ordered for ISE capability, is suitable for use with a number of ion-selective electrodes. Consult the factory for available measurements and ranges.

* Reference diagnostics not available with these sensors

MODEL 54eC CONDUCTIVITY ANALYZER

FEATURES AND APPLICATIONS

The Model 54e C Analyzer/Controller, with the appropriate sensor, monitors and controls conductivity/resistivity in a variety of industrial processes. The analyzer can use either a contacting electrode or an inductive (toroidal) conductivity sensor, selected via keyboard entry. Process measurement selections are conductivity, resistivity, raw conductivity, or percent (%) concentration.

The temperature correction algorithm is user-selectable. Choose from high purity water (dilute sodium chloride), cation conductivity (dilute hydrochloric acid), or an adjustable linear temperature coefficient (0 to 5.00%/°C). The high purity water and cation conductivity corrections are good to 100°C. The lin-

ear temperature correction applies between -5 to 200°C. The user can set the linear temperature coefficient's reference temperature.

The percent concentration measurement includes the choice of four common solutions (0 to 12% NaOH, 0 to 15% HCl, and 0 to 25% or 96 to 99.7% H₂SO₄) which include specific nonlinear temperature corrections that depend on the concentration being measured and the process temperature. A versatile data entry menu for entry of a custom solution with concentration and conductivity values for up to five points lets the analyzer generate a best fit quadratic curve. Reference temperature and temperature slope may be adjusted to provide optimum results.

INSTRUMENT SPECIFICATIONS @ 25°C

Measurement Range: -15 to 200°C (5 to 392°F)

Contacting: 0-20,000 µS/cm

Toroidal: 0-2 S/cm

Accuracy of Analyzer: (Analyzer connected to simulated sensor input)

Contacting Sensors: ±0.5% of reading, ±0.5 µS/cm

Inductive Sensors: ±1% of reading, 200 µS/cm to 2 S/cm, ±5 µS/cm

Repeatability: ±0.25% of reading

Stability: ±0.25% of output range/month, noncumulative

Ambient Temperature Coefficient: ±0.01% of reading/°C

Temperature Compensation: -15 to 200°C (5 to 392°F) (automatic or manual)

Temperature Correction: High purity water (dilute sodium chloride), cation conductivity (dilute hydrochloric acid), linear temperature coefficient (0.0 to 5.00%/°C), or none. High purity water and cation conductivity temperature correction apply between 0 and 100°C. Linear temperature coefficient can be applied between -5 and 200°C (23 to 392°F).

EASY TO USE MENU-DRIVEN INTERFACE

CONTROL SET-UP can be accomplished by entering four parameters from the control menu (code option -20 only).

Setpoint: 1000 µS/cm
Proportional: 100.0%
Integral: 0 sec
Exit Edit

CUSTOM % CONCENTRATION CURVE is easy to set up and update.

Number of points: 3
Ref temp: 25°C
Linear slope: 2.00%/°C
Exit Edit

MODEL 54eC CONDUCTIVITY ANALYZER

SENSOR CHOICE GUIDELINES

The Model 54eC is compatible with both contacting and inductive conductivity sensors. The best sensor for an application depends on many factors, among them are the conductivity to be measured, the compatibility of the sensor's wetted materials with the process chemicals and conditions, and the mounting arrangement. The tables below are provided as an aid for choosing an appropriate sensor.

CONTACTING SENSORS			
Conductivity Sensor Model Number	142, 400 402, 403, 404	142, 400 402, 403, 404	140, 141 400, 402, 403
Cell Constant (/cm)	0.01	0.1	1.0
Recommended Conductivity Range* (μS/cm)	0-25	1-2000	10-10,000**

* For sensor linearity equal to or better than 1% with ENDURANCE series.

** ENDURANCE sensors with cell constant of 1.0/cm may be used for conductivity up to 20,000 μS/cm with linearity equal to or better than 2%.

INDUCTIVE SENSORS						
Conductivity Sensor Model Number	226	228	225	222 (1in.)	222 (2 in.)	242
Nominal Cell Constant	1.0	3.0	3.0	6.0	4.0	*
Minimum Conductivity (μS/cm)	50	200	200	500	500	100*
Maximum Conductivity (μS/cm)	1,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000*

* Model 242 values depend on sensor configuration and wiring.

RECOMMENDED SENSORS:

Model 140 Retractable Conductivity
 Model 141 Insertion Conductivity
 Model 142 Insertion Conductivity
 Model 222 Inductive Conductivity
 Model 225 Inductive Conductivity
 Model 226 Inductive Conductivity
 Model 228 Inductive Conductivity
 Model 242 Inductive Conductivity

Model 400 Screw-in Conductivity
 Model 401-14 Screw-in Conductivity
 Model 402 Retractable Conductivity
 Model 403 Conductivity with Sanitary Fitting
 Model 404 Flow Cell Conductivity
 Model 400VP Screw-in Conductivity
 Model 402VP Retractable Conductivity
 Model 403VP Conductivity with Sanitary Fitting

MODEL 54eA AMPEROMETRIC ANALYZER

The Model 54eA Analyzer/Controller with the appropriate sensor monitors and controls dissolved oxygen (ppm and ppb level), free chlorine, total chlorine, and ozone in a variety of process liquids. The analyzer is compatible with Rosemount Analytical series 499A amperometric sensors for oxygen, chlorine, and ozone; and with Hx438 and Gx448 steam sterilizable oxygen sensors.

For oxygen measurements, an on-board pressure sensor allows truly automatic air calibration. Simply expose the sensor to water-saturated air. Wait until readings are stable and press a button. The analyzer measures temperature and barometric pressure and automatically completes the calibration.

For free chlorine measurements, both automatic and manual pH correction are available. pH correction is necessary because amperometric chlorine sensors respond only to hypochlorous acid. To measure free chlorine (hypochlorous acid plus hypochlorite ion) most competing instruments require an acidified sam-

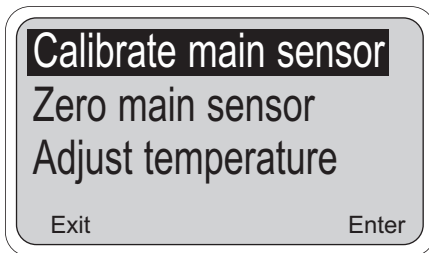
ple. Acid lowers the pH and converts hypochlorite ion to hypochlorous acid. The 54eA eliminates the need for messy and expensive reagents by measuring the sample pH and using it to correct the chlorine sensor signal. If the pH is relatively constant, a fixed pH correction can be used. If the pH is greater than 7 and fluctuates more than about 0.2 units, continuous measurement of pH and automatic pH correction is necessary. Corrections are valid to pH 9.5.

The 54eA analyzer fully compensates oxygen, ozone, free chlorine, and total chlorine readings for changes in membrane permeability caused by temperature changes.

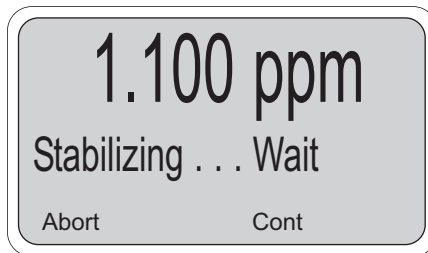
For pH measurements — pH is available with free chlorine only — the 54eA features automatic buffer recognition with stabilization check. Buffer pH and temperature data for commonly used buffers are stored in the analyzer. Glass impedance diagnostics warn the user of an aging or failed pH sensor.

EASY TO USE MENU-DRIVEN INTERFACE

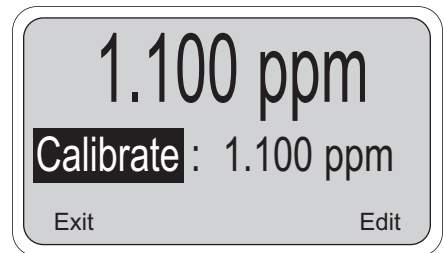
CALIBRATING AN OZONE OR CHLORINE SENSOR IS SIMPLE



With the cursor on “Calibrate main sensor,” press Enter (key F4).

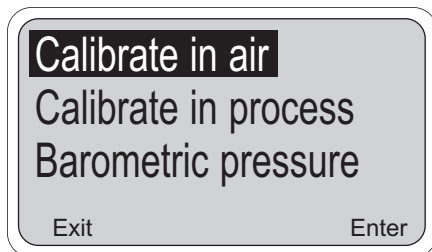


The analyzer starts monitoring sensor current. The Model 54eA analyzer will not accept the calibration until readings are stable. Stability limits are user-selectable.

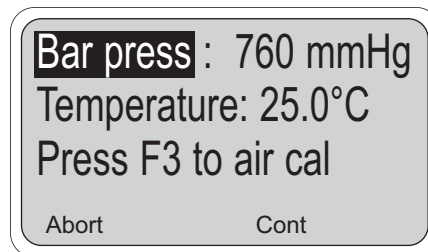


Once the reading is stable, take a grab sample of the process liquid and use a portable test kit to determine the chlorine or ozone level. Press Edit (key F4). Use the arrow keys to change the reading to match the results of the grab sample test.

CALIBRATING A DISSOLVED OXYGEN SENSOR TAKES ONLY A FEW KEY PRESSES



Press Enter (key F4) to start the calibration.



The display shows the current temperature and barometric pressure. Press Continue (key F3). The analyzer automatically completes the calibration.

MODEL 54eA AMPEROMETRIC ANALYZER

SPECIFICATIONS — OXYGEN

Measurement Range: 0-99 ppm (mg/L), 0-200% saturation

Resolution: 0.01 ppm, 0.1 ppb for 499A TrDO sensor

Temperature correction for membrane permeability: automatic between 0 and 50°C (can be disabled)

Calibration: automatic air calibration or calibration against a standard instrument

Pressure sensor range: 113 to 862 mmHg (151 to 1149 mbar)

RECOMMENDED SENSORS — OXYGEN:

Model 499A DO-54 for ppm level

Model 499A TrDO-54 for ppb level

Hx438 and Gx448 steam-sterilizable oxygen sensors

SPECIFICATIONS — FREE CHLORINE

Measurement Range: 0-20 ppm (mg/L) as Cl₂

Resolution: 0.001 ppm

Temperature correction for membrane permeability: automatic between 0 and 50°C (can be disabled)

pH Correction: Automatic between pH 6.0 and 9.5. Manual pH correction is also available.

Calibration: against grab sample analyzed using portable test kit.

RECOMMENDED SENSOR — FREE CHLORINE:

Model 499A CL-01-54

SPECIFICATIONS — pH

Application: pH measurement available with free chlorine only.

Measurement Range: 0-14 pH

Resolution: 0.01 pH

Sensor Diagnostics: Glass impedance (for broken or aging electrode) and reference offset. Reference impedance (for fouled reference junction) is not available.

Repeatability: ±0.01 pH at 25°C

Stability: ±0.01 pH/month, non-cumulative at 25°C

RECOMMENDED pH SENSORS:

Model 399-09-62, 399-14, and 399VP-09

See pH sensor product data sheet for complete ordering information.

SPECIFICATIONS — TOTAL CHLORINE

Measurement Range: 0-20 ppm (mg/L) as Cl₂

Resolution: 0.001 ppm

Temperature correction for membrane permeability: automatic between 5 and 35°C (can be disabled)

Calibration: against grab sample analyzed using portable test kit.

RECOMMENDED SENSOR — TOTAL CHLORINE:

Model 499A CL-02-54 (must be used with SCS 921)

SPECIFICATIONS — OZONE

Measurement Range: 0-10 ppm (mg/L)

Resolution: 0.001 ppm

Temperature correction for membrane permeability: automatic between 5 and 35°C (can be disabled)

Calibration: against grab sample analyzed using portable test kit.

RECOMMENDED SENSOR — OZONE:

Model 499A OZ-54

ALSO AVAILABLE FROM ROSEMOUNT ANALYTICAL — FOUNDATION® Fieldbus Transmitters



The Model 5081 has obtained FOUNDATION Fieldbus certification and is now authorized to bear the FOUNDATION Fieldbus registration checkmark. The Model 5081 transmitter successfully completed rigorous Fieldbus Foundation testing, including stack communication, physical layer conformance, and user layer interoperability testing.

Two digital communication protocols are available with Model 5081 transmitters: HART and FOUNDATION Fieldbus. Digital communications allows access to AMS (Asset Management Solutions). AMS can be used to set up and configure the transmitter, read process variables, and troubleshoot problems from a personal computer or host anywhere in the plant.

This transmitter features the latest in technology providing predictive pH sensor diagnostics and a large easy-to-read display. Ideal for harsh environments, the Model 5081 is housed in a rugged enclosure and is designed to meet NEMA 4X and NEMA 7B requirements.

Model 5081pH pH/ORP Transmitter



- Large two-line display shows pH or ORP (mV) and temperature.
- Automatic two-point buffer calibration reduces errors.
- Solution temperature compensation allows pH adjustment for actual pH changes with temperature.
- Continuous diagnostics monitor sensor performance and warn the user of impending problems.

Model 5081C Conductivity Transmitter



- Large two-line display shows conductivity and temperature.
- High loop accuracy (within $\pm 1\%$ of actual conductivity and resistivity measurement).

Model 5081A Amperometric Transmitter

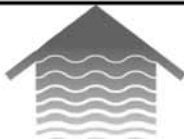


- Measures dissolved oxygen (ppm and ppb level), free chlorine, total chlorine, and ozone.
- Second input for pH sensor allows automatic pH correction for free chlorine measurement. No expensive reagents needed.
- Automatic buffer recognition for pH calibration.



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