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**Data Sheet**

August 15, 2026

EMERSON / ROSEMOUNT ANALYTICAL

# Emerson / Rosemount Analytical 54EC-01-09 Conductivity / Resistivity Analyzer / Controller

The Emerson Rosemount Analytical 54EC-01-09 is a conductivity/resistivity analyzer and controller designed for industrial applications. It accurately measures and controls conductivity or resistivity in liquids, ensuring process efficiency and product quality. It features a user-friendly interface, solid construction, and versatile output options for seamless integration with control systems.



## MODEL

**Emerson /  
Rosemount  
Analytical 54EC-  
01-09**

## CALIBRATION

**Available on  
request**

## CONDITION

**Used**

## STATUS

**In stock**

## RFQ / SKU

**54EC-01-09**

## LISTING

<https://aumictechlabs.com/products/54ec-01-09-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

## This unit

The Emerson Rosemount Analytical 54EC-01-09 is a conductivity/resistivity analyzer and controller for inline process monitoring and control of liquid solutions. It measures conductivity, resistivity, and percent concentration using contacting or inductive sensors, delivering  $\pm 0.5\%$  accuracy with contacting probes across a 0–20,000  $\mu\text{S}/\text{cm}$  range. The unit accommodates toroidal inductive sensors to 2 S/cm with  $\pm 1\%$  accuracy and supports temperature measurement from  $-15$  to  $200^\circ\text{C}$ . Temperature compensation operates automatically or manually, with

selectable correction algorithms for high-purity water, cation conductivity, or linear temperature coefficients (0.0 to 5.00%/°C). Technical Specifications Measurement Ranges Contacting sensors: 0–20,000  $\mu\text{S}/\text{cm}$  Inductive (toroidal) sensors: 0–2 S/cm Temperature: –15 to 200°C (5 to 392°F) Accuracy & Stability Contacting sensors:  $\pm 0.5\%$  of reading Inductive sensors (200  $\mu\text{S}/\text{cm}$  to 2 S/cm):  $\pm 1\%$  of reading Repeatability:  $\pm 0.25\%$  of reading Stability:  $\pm 0.25\%$  of output range per month (non-cumulative) Ambient temperature coefficient:  $\pm 0.01\%$  of reading/°C Electrical Power supply: 115–230 VAC, 50/60 Hz,  $\pm 10\%$  or 28 VDC @ 6 A Power consumption: 8 W maximum Outputs & Communication Two isolated 4–20 mA or 0–20 mA analog outputs (500  $\Omega$  maximum load) HART® digital signaling superimposed on Output 1 Four relays: three Form A (SPST, normally open); one Form C (SPDT) fault alarm Configurable for process, temperature, or interval timer functions with programmable setpoints and adjustable hysteresis Key Features NEMA 4X (IP65) cast aluminum enclosure with weatherproof, corrosion-resistant construction Back-lit dot-matrix LCD display and membrane keyboard interface DIN-size package: 144 × 144 × 132 mm (5.7 × 5.7 × 5.2 inches) Independent temperature compensation with four algorithm options Relay-activated chemical cleaning timer at user-defined intervals Sensor diagnostics output assignment Typical Applications High-purity water quality monitoring Cation conductivity measurement in deionization systems Industrial process water control Harsh environment deployments requiring IP65 protection Compatibility & Integration Works with both contacting electrode and toroidal inductive sensor technologies. HART® protocol enables digital communication over standard 4–20 mA wiring for advanced diagnostics and remote configuration.

## 54EC01 Characteristics / Specifications

| PARAMETER            | VALUE                                                                                                  |
|----------------------|--------------------------------------------------------------------------------------------------------|
| Model                | 54eC                                                                                                   |
| Instrument Type      | Conductivity resistivity analyzer controller                                                           |
| Contacting Range     | 0 to 20000 uS/cm                                                                                       |
| Toroidal Range       | 0 to 2 S/cm                                                                                            |
| Temperature Range    | minus 15 to 200 C (5 to 392 F)                                                                         |
| Accuracy Contacting  | plus or minus 0.5 percent of reading, plus or minus 0.005 uS/cm (simulated sensor)                     |
| Accuracy Inductive   | plus or minus 1 percent of reading, 200 uS/cm to 2 S/cm, plus or minus 5 uS/cm                         |
| Repeatability        | plus or minus 0.25 percent of reading                                                                  |
| Stability            | plus or minus 0.25 percent of output range per month, noncumulative                                    |
| Ambient Tc           | plus or minus 0.01 percent of reading perC<br>Enclosure: NEMA 4X (IP65)<br>epoxy painted cast aluminum |
| Display              | backlit dot-matrix LCD, process variable character height 16 mm (0.6 in)                               |
| Current Outputs      | two galvanically isolated 0-20 mA or 4-20 mA                                                           |
| Output Load          | 600 ohm maximum at 115/230 VAC or 24 VDC; 550 ohm at 100/200 VAC                                       |
| Hart                 | digital HART superimposed on 4-20 mA output 1 with code 09                                             |
| Power Ac             | code 01: 100-127 VAC or 200-253 VAC, 50/60 Hz plus or minus 6 percent, 6.0 W                           |
| Power Dc             | code 02: 20-30 VDC, 6.0 W                                                                              |
| Relays               | process relays; CSA max 28 VDC / 110 VAC / 230 VAC, 6 A resistive                                      |
| Hazardous Location   | Class I Division 2 Groups ABCDT5 Ta=50 C; Class II Division 1 EFG; Class III                           |
| Concentration Curves | 0-12 percent NaOH, 0-15 percent HCl, 0-25 percent or 96-99.7 percent H2SO4                             |
| Temp Correction      | high purity water, cation conductivity, linear 0.0 to 5.00 percent per C, or none                      |

| PARAMETER         | VALUE                                                                                   |
|-------------------|-----------------------------------------------------------------------------------------|
| Ambient Operating | 0 to 50 C (32 to 122 F) specified; operable minus 20 to 60 C                            |
| Manufacturer      | Emerson Rosemount Analytical                                                            |
| Documentation     | Rosemount Model 54eC Conductivity/Resistivity Analyzer manual and 54e series data sheet |

# 54EC01 Specifications

| PARAMETER                | VALUE                             |
|--------------------------|-----------------------------------|
| Key Features             | Contacting 0 to 20000 uS/cm       |
| Toroidal 0 to 2 S/cm     | Two isolated 0-20/4-20 mA outputs |
| NEMA 4X IP65 enclosure   | HART on output 1 with code 09     |
| Technical Specifications | Model: 54eC                       |

# Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

| Specifications           |                                                                                    |
|--------------------------|------------------------------------------------------------------------------------|
| Technical Specifications |                                                                                    |
| PARAMETER                | VALUE                                                                              |
| Model                    | 54eC                                                                               |
| Instrument Type          | Conductivity resistivity analyzer controller                                       |
| Contacting Range         | 0 to 20000 uS/cm                                                                   |
| Toroidal Range           | 0 to 2 S/cm                                                                        |
| Temperature Range        | minus 15 to 200 C (5 to 392 F)                                                     |
| Accuracy Contacting      | plus or minus 0.5 percent of reading, plus or minus 0.005 uS/cm (simulated sensor) |
| Accuracy Inductive       | plus or minus 1 percent of reading, 200 uS/cm to 2 S/cm, plus or minus 5 uS/cm     |
| Repeatability            | plus or minus 0.25 percent of reading                                              |
| Stability                | plus or minus 0.25 percent of output range per month, noncumulative                |
| Ambient Tc               | plus or minus 0.01 percent of reading per C                                        |
| Enclosure                | NEMA 4X (IP65) epoxy painted cast aluminum                                         |
| Display                  | backlit dot-matrix LCD, process variable character height 16 mm (0.6 in)           |
| Current Outputs          | two galvanically isolated 0-20 mA or 4-20 mA                                       |
| Output Load              | 600 ohm maximum at 115/230 VAC or 24 VDC; 550 ohm at 100/200 VAC                   |
| Hart                     | digital HART superimposed on 4-20 mA output 1 with code 09                         |
| Power Ac                 | code 01: 100-127 VAC or 200-253 VAC, 50/60 Hz plus or minus 6 percent, 6.0 W       |
| Power Dc                 | code 02: 20-30 VDC, 6.0 W                                                          |
| Relays                   | process relays; CSA max 28 VDC / 110 VAC / 230 VAC, 6 A resistive                  |
| Hazardous Location       | Class I Division 2 Groups A B C D T5 Ta=50 C; Class II Division 1 E F G; Class III |
| Concentration Curves     | 0-12 percent NaOH, 0-15 percent HCl, 0-25 percent or 96-99.7 percent H2SO4         |
| Temp Correction          | high purity water, cation conductivity, linear 0.0 to 5.00 percent per C, or none  |
| Ambient Operating        | 0 to 50 C (32 to 122 F) specified; operable minus 20 to 60 C                       |
| Manufacturer             | Emerson Rosemount Analytical                                                       |

| PARAMETER     | VALUE                                                                                   |
|---------------|-----------------------------------------------------------------------------------------|
| Documentation | Rosemount Model 54eC Conductivity/Resistivity Analyzer manual and 54e series data sheet |

## Specifications

| PARAMETER            | VALUE                                                                                          |
|----------------------|------------------------------------------------------------------------------------------------|
| Model                | 54eC                                                                                           |
| Instrument Type      | Conductivity resistivity analyzer controller                                                   |
| Contacting Range     | 0 to 20000 uS/cm                                                                               |
| Toroidal Range       | 0 to 2 S/cm                                                                                    |
| Temperature Range    | minus 15 to 200 C (5 to 392 F)                                                                 |
| Accuracy Contacting  | plus or minus 0.5 percent of reading, plus or minus 0.005 uS/cm (simulated sensor)             |
| Accuracy Inductive   | plus or minus 1 percent of reading, 200 uS/cm to 2 S/cm, plus or minus 5 uS/cm                 |
| Repeatability        | plus or minus 0.25 percent of reading                                                          |
| Stability            | plus or minus 0.25 percent of output range per month, noncumulative                            |
| Ambient Tc           | plus or minus 0.01 percent of reading perEnclosure: NEMA 4X (IP65) epoxy painted cast aluminum |
| Display              | backlit dot-matrix LCD, process variable character height 16 mm (0.6 in)                       |
| Current Outputs      | two galvanically isolated 0-20 mA or 4-20 mA                                                   |
| Output Load          | 600 ohm maximum at 115/230 VAC or 24 VDC; 550 ohm at 100/200 VAC                               |
| Hart                 | digital HART superimposed on 4-20 mA output 1 with code 09                                     |
| Power Ac             | code 01: 100-127 VAC or 200-253 VAC, 50/60 Hz plus or minus 6 percent, 6.0 W                   |
| Power Dc             | code 02: 20-30 VDC, 6.0 W                                                                      |
| Relays               | process relays; CSA max 28 VDC / 110 VAC / 230 VAC, 6 A resistive                              |
| Hazardous Location   | ClassIDivision 2 GroupsABCDT5 Ta=50 C; Class II Division 1 EFG; Class III                      |
| Concentration Curves | 0-12 percent NaOH, 0-15 percent HCl, 0-25 percent or 96-99.7 percent H2SO4                     |
| Temp Correction      | high purity water, cation conductivity, linear 0.0 to 5.00 percent per C, or none              |
| Ambient Operating    | 0 to 50 C (32 to 122 F) specified; operable minus 20 to 60 C                                   |
| Manufacturer         | Emerson Rosemount Analytical                                                                   |
| Documentation        | Rosemount Model 54eC Conductivity/Resistivity Analyzer manual and 54e series data sheet        |

#### Notes

From Rosemount Analytical Model 54eC manual and 54e series analyzer data sheet. Queue SKUs 54eC-01 and 54EC-01-09 are AC-powered (01) with optional HART (09).

### Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: [sales@aumictech.com](mailto:sales@aumictech.com) · +1 (484) 841-9341

#### Aumictech

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NIST-traceable calibration · SAM registered ·  
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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.