Model 53 Controller

pH/ORP, Conductivity, Dissolved Oxygen, Flow, Turbidity

HART® FIELD COMMUNICATIONS PROTOCOL

- *1/2 inch Graphic Dot Matrix Backlit LCD With Multiple Language Capabilities*
- *Menu-Guided Operation*
- *Simple Interactive Diagnostics*
- *Password-Protected Access*
- *Universal Mounted, Epoxy Coated Aluminum 1/2 DIN, NEMA 4X Enclosure*
- *(2) 0/4-20 mA Outputs and (4) Relays*

The Model 53 Controllers are best suited for applications requiring environmental ratings, high level of control, and multiple 0/4-20 mA and relay outputs. The Model 53 features a easy to follow clear text driven menu and is equipped with four electromechanical relays; SPDT (Form C) contacts; UL rated 5A 115/230 Vac, 5A @ 30 Vdc resistive. The controllers are housed in a 1/2 DIN, NEMA 4X enclosure and include hardware for panel, surface or pipe mounting.

Prod. No.	Description
P53A4A1N	pH/ORP analyzer
C53A4A1N	Contacting conductivity/ resistivity analyzer (with dual input)
E53A4A1N	Electrodeless conductivity analyzer (also measures % concentration or TDS)
D53A4A2N	Dissolved Oxygen analyzer for use with Hach/GLI membrane D.O. sensors. Two inputs (no sensor quick-disconnect receptacles)
F53A4A1N	Flow monitor/ totalizer (with four sensor inputs, four relays, and two pulsed outputs)

Prod. No.	Description
U53A4A1N	Ultrasonic flow analyzer for use with Hach/GLI U53S flow sensor
T53A4A2N	Turbidity analyzer (For use with 50Hz line power)
ACCESSORIES	
1000G3088-001	Aluminum sun shield for 53 controller includes hardware
LZX961.54	Polycarbonate Sun Shield for 53 controller, includes hardware

Popular models shown. For other model configurations, call 800-227-4224 or visit www.hach.com.

*Specifications**

Ambient Conditions
Operational: -4 to 140°F (-20 to 60°C);
0 to 95% relative humidity, non-condensing
Storage: -22 to 158°F (-30 to 70°C);
0 to 95% relative humidity, non-condensing

Power Requirements
90-130 Vac, 50/60 Hz. (10 VA max.)
or 180-260 Vac, 50/60 Hz. (10 VA max)

Display
Graphic dot matrix LCD, 128 x 64 pixels with LED backlighting; 1/2 inch (13 mm) main character height; 1/8 inch (3 mm) auxiliary information character height; menu screens contain up to six text lines

Outputs
Two isolated 0/4 – 20 mA outputs; each with 0.004 mA (12 bit) resolution and drive capability of 600Ω load

Control
High/low phasing, setpoint, deadband, overfeed timer, off/on delay

Alarms
Low/high alarm point and low/high alarm point deadband, off/on delay

Communication (Optional)
HART Protocol: Configure and measure data for multiple analyzers using HART enabled data system or hardware

Memory Backup (non-volatile)
All user settings are retained indefinitely in memory (EEPROM)

Mounting Configurations
Surface, panel, and pipe (horizontal and vertical)

Enclosure
NEMA 4X/IP66; metal enclosure with corrosion-resistant finish

Dimensions
1/2 DIN; 144 x 144 x 150 mm (5.7 x 5.7 x 5.9 in.)

Weight
1.6 kg (3.5 lbs.)

Certifications
ETL listed (cETLus marked) to Canadian and US General Safety and Hazardous (Class I Div. 2) Locations

Measurement
pH/ (ORP), P53
-2.0 to 14.0 pH/(-2100 to +2100 mV)
Contacting Conductivity, C53
µS/cm: 0-2.000 or 0-20.0, 0-200.0 or 0-2000;
mS/cm: 0-2.000, 0-20.00, 0-200.0
Resistivity: 0-19.99 MΩ·cm or 0-999.9 KΩ·cm
TDS: 0-9999 ppm or 0-9999 ppb
Inductive Conductivity, E53
µS/cm: 0-200.0 or 0-2000; mS/cm: 0-2.000, 0-20.00, or 0-2000; S/cm: 0-2.000
% Concentration: 0-99.99% or 0-200.0%
TDS: 0-9999 ppm
Dissolved Oxygen, D53
0-99.99 ppm, 0-99.99 mg/L
or 0-999.9% saturation
Paddle Wheel Flow, F53
Flow rate: 0-9999, 0-999.9 or 0-99.99 with selectable flow rate units and multiplier
Volume: 0-999,999,999 with selectable volume units
Ultrasonic Flow, U53
Flow rate: 0-9999, 0-999.9 or 0-99.99 with selectable flow rate units and multiplier
Volume: 0-9,999,999 with selectable volume units
Depth: 0-1200.0 inches, 0-100.0 feet, 0-30,000 mm, or 0-30.00 meters
Turbidity, T53
0.000-1.000, 0.00-10.00, and 0.0-100.0 NTU with auto ranging

Accuracy (Controller)
P53, C53, F53: 0.1% of span
D53: ±0.1% of span
E53, U53: 0.5% of span
T53: ±2% of reading, all ranges

Stability
P53, C53 0.05% of span per 24 hours., non-cumulative
E53 0.2% of span per 24 hours., non-cumulative

Repeatability
P53, C53, E53, T53, U53: 0.1% of span or better
D53, F53: ±0.05% of span

Temperature Drift
P53, C53 Zero & Span: < 0.03% of span per °C
E53: Zero & Span: 0.02% of span per °C
T53: Zero & Span: 0.01% of span per °C
D53, F53: Zero & Span: ±0.02% of span per °C

**Subject to change without notice.*

HACH® Be Right™

800-227-4224
Outside the United States, call 970-669-3050