

# AM-2251 Multiparameter, Single Input Controller



## Features

- pH, ORP, toroidal conductivity & dissolved oxygen parameters
- Highly visible large backlit LCD display
- Flexible and easy calibration, including multi-point conductivity calibration for acids and bases
- 4-20mA process output with range scaling and PID Control
- Universal mounting hardware for surface, panel and pipe mounting
- Compatible with AquaMetrix models 60-series differential pH/ORP sensors, 500-series combination style pH/OR sensors, ES1A toroidal conductivity sensor, and P91 dissolved oxygen sensor
- Second 4-20 mA output with range scaling and temperature
- Three control/alarm relays using either the process variable or temperature.

## Description

The AM-2251 is the newest addition to the 2250 family. It adds two parameters:

1. Dissolved Oxygen. (It replaces the 2200D).
2. Toroidal Conductivity.

The 2251 turns any toroidal conductivity sensor into a super wide-range probe that can measure conductivities between 4 and 400,000  $\mu\text{S}/\text{cm}$ .

### Four Parameters

Choose from pH, ORP, toroidal conductivity or dissolved oxygen. Selecting, configuring, calibrating and troubleshooting the probe is so intuitive it's unlikely you will ever need the manual.

### One Amazing Conductivity Circuit

Whereas most toroidal circuits can only measure down to 100  $\mu\text{S}/\text{cm}$  the 2251 with just about any toroidal probe can measure all the way down to 4  $\mu\text{S}/\text{cm}$  and all the way up to 400,000  $\mu\text{S}/\text{cm}$ . One analyzer for just about any application.

### Three Relays

The AM-2251 provides control of external devices using its three independent relays. Each relay has adjustable high, low and in range set-points, cycle timer, with adjustable on and off times. These features enable tighter control of batch processes and eliminates a chemical overshoot. The third relay can be activated by temperature as well.

### Analog Outputs

The AM-2251 provides two isolated, independent and scalable 4-20 mA outputs.

One 4-20 mA output can be configured for PID control. Most users will only use proportional control but the integral and derivative terms are there for advanced control.

### Zero Cards

The AM-2251 comes complete. There are no extra costs associated with buying boards for different sensors, relays or outputs.

### Enclosure

The AM-2251 is packaged in a rugged NEMA 4X polycarbonate enclosure making it ideally suited for indoor and outdoor heavy-duty applications. A mounting kit is included for surface and panel mounting. The enclosure outline makes panel-mount cutouts simple.

### One Big Display

The AM-2251 features a backlit LCD display that can be seen from a distance. All menu items are where you would guess they would be.

### Calibration

No other controller offers the same combination of flexibility and ease for calibration. The process value is visible during calibration so the user knows when it has settled down. Calibration of pH can be with 2 or 3 points. Calibration of conductivity can take as many as 16 points so acids and bases can be measured through their conductivity.

All Calibration data is stored.

## Applications

- Industrial process control, e.g. plating, food and beverage, chemical processing, pulp & paper, mining, food and beverage
- Municipal water and wastewater treatment
- Industrial and municipal waste treatment and Neutralization
- Fume scrubbers
- HVAC, cooling towers and boilers



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# AM-2251 Controller for pH, ORP, Toroidal Conductivity, Dissolved Oxygen

## Technical Data

Probe Parameters				
	pH	ORP	Toroidal Conductivity	Dissolved Oxygen
Sensor	6-Wire Differential or Combination	6-Wire Differential or Combination	Toroidal (Inductive) Non-Contacting	Clark Cell Amperometric
Temperature Elements	100, 1000 Ω RTD 300, 3K or 10K Ω NTC or none with auto detect	100, 1000 Ω RTD 300, 3K or 10K Ω NTC or none with auto detect	100, 1000 Ω RTD 300, 3K or 10K Ω NTC or none with auto detect	100, 1000 Ω RTD 300, 3K or 10K Ω NTC or none with auto detect
Sensor Input	-600 to +600 mV	-999 to +999 mV	0 to 4000 mV	0 to 5000 nA
Measurement Range (Process)	0 to 14 pH	-999 to +999 mV	4 to 400,000 μS/cm	0 to 10.3 ppm 0 to 125% sat
Measurement Range (Temperature)	-20 to 150 °C	-20 to 150 °C	-20 to 150 °C	-20 to 150 °C
Temperature Compensation	Automatic -20 to 150 °C	Display temperature	Automatic or Manual -20 to 150 °C	Automatic
Calibration modes	Automatic or Manual 2 or 3 points	Manual 1 point	Up to 16 points Zero offset	100% sat Zero offset
Outputs				
Analog	two 4-20 mA outputs Scalable 4-20mA with PID (Process) Scalable 4-20mA (Process or Temperature) Optically isolated. Max Load - 800 Ω			
Relays	3 Dry contact relay 10A @ 120/240 VAC or 8A @ 30 VDC (Resistive Load) 5A @ 120/240 VAC or 4A @30 VDC (Inductive load)			
Relay Modes	Rising/Falling/In Range. Options: Relay Delay, Overfeed Timer, Override Cycle On/Off One relay can be triggered by temperature.			
Ratings				
Ingress Protection	NEMA 4X			
Electrical	ETL (US and Canada) and CE pending			
Max. Power Input	0.2 A @ 115 VAC or 15 W			
Temperature	-20 to 70 °C			
Humidity	0 to 90% Relative Humidity, non-condensing			
Physical				
Mounting	Wall mount, panel mount with kit provided. pipe mount with optional kit			
Dimensions	Front cover: 5.5"x5.5" (14 cm x 14 cm). Depth: 5" (13 cm)			
Power	120/240 VAC, 50 or 60 Hz			
Weight	2 lbs			
Protection	NEMA 4X			
Panel Cut-out	5.4" x 5.4" (138 x 138 mm)			