

Oxygen Controllers

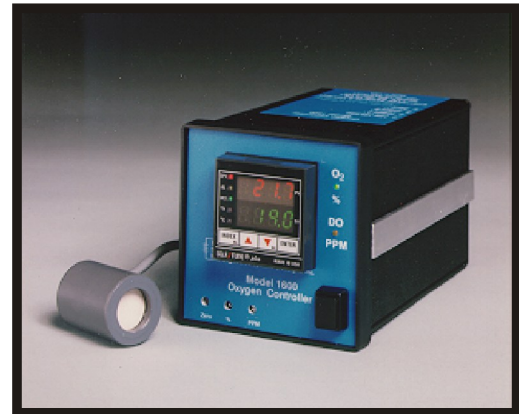


Model 1630

- **0-100% Atmospheric Oxygen**
- **Galvanic Electrode Has a 3-5 Year Life**
- **Features Gold Cathode**

- **Measures 0-100% Atmospheric and 0-100 PPM Dissolved Oxygen**
- **Galvanic Electrode Has 12-month Life**
- **Features Gold Cathode**

Model 1600



Models 1600 and 1630 provide economical atmospheric and dissolved oxygen control. Each has the latest in microprocessor-based technology with an unprecedented number of standard features found in a 1/4-DIN package. All control functions are conveniently programmable from the front panel.

Model 1600's galvanic electrode measures up to 100.0 parts per million (PPM) dissolved oxygen in aqueous solutions as well as up to 100% concentration in an atmospheric environment. Model 1630's galvanic electrode measures 0-100% atmospheric oxygen.

There are no filling solutions or membranes to change, making the electrodes of both controllers virtually maintenance-free. Models 1600 and 1630 come with a standard five-foot oxygen electrode. Custom lengths can be manufactured to 100 feet.

The electrodes are temperature compensated and are totally sealed from the environment. Model 1600's electrode features a low flow-rate sensitivity, needing only 0.5 ft/second flow to read dissolved oxygen accurately. No flow is needed when testing atmospheric oxygen.

Standard Features Found in Models 1600 and 1630 Include:

- Dual, four-digit LED displays: Process Variable, Set Point
- Two independent set points: Low-High, High-High, Low-Low
- Auxiliary alarm point
- Selectable control modes: ON/OFF, PID
- Selectable tuning modes including Self-Tune
- Four security levels are password protected
- Front-panel programmability
- Wide range power supply: 86-268 VAC
- Outputs available: SSR, relay, logic, current or voltage
- Solid-state relays 3.5A up to 240 VAC



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Specifications

Range:	Model 1600 0-100 PPM Dissolved Oxygen, 0-100 % Atmospheric	Model 1630 0-100% Atmospheric
Accuracy:	+/- 0.25 PPM, +/-1% of full scale	+/- 1% of full scale
Resolution/Precision:	0.1 / (+/-) 0.1	0.1 / (+/-) 0.1
Response Time:	90% in 12 seconds	95% in 30 seconds
Electrode Warranty:	Six months	One year
Electrode Dimension:	1.62-inch length x 1.25-inch diameter	2-inch length x 1-inch diameter

Zero: True zero in the absence of oxygen

Temperature Compensation: Automatic from 0-40°C

Electrode: Standard 5-foot length, with 0.25 inch phone plug

Set Point Range: Selectable

Displays: Two 4 digit, 7 segment 0.3 inch high LED's: PV red, SV green

Supply Voltage: 85 to 265 VDC or VAC, 50 through 400 Hz.
This applies to the instrument power only. Consult the factory for relay and SSR output operation at DC and power line frequencies other than 50/60 Hz.

Power Consumption: 5 VA maximum

Operating Temperature Range: -10 to +55°C, controller; 0 to 40°C, electrode

Storage Temperature Range: -40 to +80°C, controller; refrigerate, electrode

Humidity Conditions: 0 to 90% up to 40°C non-condensing; 10 to 50% at 55°C non-condensing.

Memory Backup: Non-volatile memory, no batteries required

Control Output Ratings: SSR: 3.5 A @ 25°C typical; derates to 1.25 A @ 55°C.

Panel Cutout: 3.58 x 3.58 inches, 9.9 x 9.9 cm

Depth Behind Mounting Surface: 7 inches, 17 cm

Weight: 2.8 lbs, 1.27 kg

Controller Warranty: two years

NOTE: These controllers are not intended for use in life support systems, nor are the controllers 100% fail-safe in some modes of operation. Please contact the manufacturer to determine the suitability of the controllers for your application.

Control Functions

Time proportioning and Proportional Control

Modes: Selectable Pre-set Tune, Self-Tune or Manual PID, P, PI or PD with reset anti-windup.

Proportional Band (P): 6 to 9990 counts

Integral Time (I): 0.1 to 99.9 minutes or off

Derivative Time (D): 0.01 to 99.99 minutes or off

Cycle Rate: 2 to 80 seconds

Approach Rate: Off to 99.99 minutes

On/Off Control Mode: Adjustable On/Off Differential, 2 counts to full scale in 1 count steps.

Output Standard

Solid-state relay 3.5 A up to 240 VAC or logic output 5 VDC up to 25 mA selectable. The total current rating for both will be 3.5A.

Outputs-Optional

Relay 3 A up to 250 VAC or logic output 5 V up to 25 mA selectable.

Proportional current, non-isolated 0 to 20 mA into 0 to 600 ohms max. Zero and span programmable to 4 to 20 mA, 2 to 12 mA etc.

Proportional voltage, non-isolated 0 to 10 VDC into 500 ohms min. (10 mA). Zero and span programmable to 0 to 1 VDC, 1 to 5 VDC, 4 to 7 VDC, etc.

Alarms

Two alarms operate the same relay. 3.0 A resistive 250 VAC. Form A contact (SPST). Field programmable for absolute (non-tracking) or deviation (tracking). Alarms can be set anywhere within the scaling of the controller. Selectable inhibit and power interrupt features are included. Alarms can be reset automatically or manually.

Status LED's indicate status of set point and alarm outputs.

The **Index Key** advances menu for programming and can also be used with the decrement key to reset an alarm programmed for manual reset.

The **Increment Key** raises a value or turns "on" menu item chosen and can be used with the **Enter Key** to display the secondary and secure menus.

Screwdriver adjustments for calibration.



Upper Display continuously indicates process value or value of menu item selected.

Lower Display continuously indicates set value or menu item selected.

Enter Key enters new settings or commands into memory. Also used with the increment key to display other menus.

Decrement Key lowers value or turns "off" menu item chosen. Also used with **Index Key** to reset an alarm programmed for manual reset.

Function Switch changes operation from O₂ to DO readings. (**Not found on Model 1630**)