



Model 2200D Dissolved Oxygen Analyzer/Controller



Description

The model 2200D Dissolved Oxygen analyzer/controller is a rugged and dependable industrial grade microprocessor-based instrument that is extremely easy to use.

Its large, bright LED digital display is clearly visible even in direct sunlight. Its speedy calibration and simple operator interface makes this analyzer/controller a favorite with instrumentation departments in a wide variety of demanding industrial and municipal applications.

Frequently used functions are accessed through an intuitive step-through menu which is printed directly on the front panel for ease of navigation. By pressing the MENU key the operator scrolls through the menu, illuminating an LED beside the selected item and displaying the stored value. Arrow keys are used to change the value. Seldom used or set-once adjustments, such as password activation are located on DIP switches on the back of the swing-out front panel.

INPUTS

The 2200D accepts a sensor input from the P91 sensor. The P91 sensor consists of a probe that is fitted with a cartridge (P91D) containing a precisely stretched permeable membrane, electrodes and electrolyte. The inexpensive and easy to change cartridge will provide continuous service for years and is then easily replaced in minutes. The cartridge is hermetical sealed for long shelf life. Optional mounting hardware include submersion, flow through and "ball float" assemblies.

CALIBRATION

Calibration can be accomplished by using one of seven different calibration techniques: in the process to a portable meter; in clean water to a portable meter; in a process sample to a lab meter; in a clean water sample to a lab meter; in a

saturated process; in saturated clean water and in air.

To Calibrate, press the MENU key until the CALIBRATION LED illuminates. Use the arrow keys to set the value determined using a calibration method described above. Press The Enter key twice. The unit is now calibrated.

OUTPUTS

The 2200D provides three analog outputs, including a 4-20 mA, 0-5 Vdc and 0-1 mA. The instrument also provides control of external devices using its two independent control relays.

An alarm relay has both high and low setpoints with a fixed deadband. When this relay is energized, the Alarm LED on the front panel also illuminates to clearly indicate an alarm condition.

Factory set for bidirectional control, both control relays can be set to control either a rising or falling process, with easily programmed Relay On and Relay Off setpoints.

DIAGNOSTICS

A self-diagnostics program clearly indicates any system errors or faults by turning the STATUS LED on the front panel from green to red. The operator then scrolls through the menu to STATUS to determine the fault code. The Operator's Manual indicates the source and likely remedy for the fault. When the status fault is corrected the STATUS LED will turn back to green.

ENCLOSURE

Model 2200D is packaged in a rugged NEMA 4X fiberglass reinforced polyester enclosure. It is ideally suited for heavy-duty outdoor applications such as municipal and industrial wastewater applications.

Features

- Dissolved Oxygen level displayed in PPM or Percent Saturation
- Intuitive step-through menu design for quick and easy setup
- Bidirectional control through two control relays with independent setpoints for Relay On and Relay Off
- High/low alarm relay
- ALARM LED on front panel
- Membrane perforation alarm
- Output signal is field-scalable for maximum resolution
- Altitude compensation for maximum accuracy
- STATUS errors illuminate LED on front panel
- Test feature allows simulation of DO readings to test relay setpoints and analog settings
- Password protection and watchdog timer

Applications

- Industrial and Municipal Waste Treatment
- Aeration Basin Monitoring
- Aquariums
- Fish Hatcheries

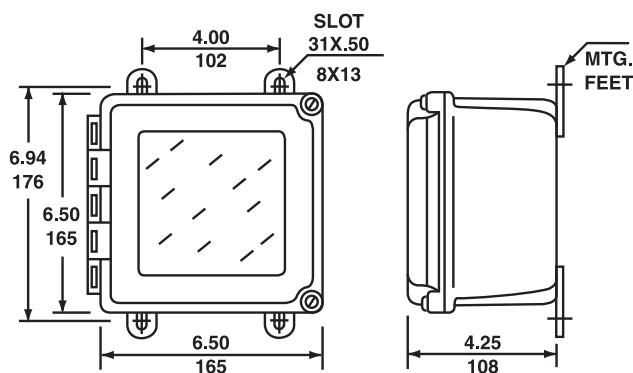
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Technical Data

Display	4 x 7 segment 1/2" LED Display
Indicator Lights	4 LED indicators: Status, Alarm, Relay A, Relay B
Measuring Range	
D.O.	0 - 20.00 ppm or 0 - 250 % saturation
Temperature	0 to 40°C (32 to 104°F)
Power Requirements	
Standard	98-132 Vac 50/60 Hz, (less than 10 VA)
Optional	196-264 Vac 50/60 Hz (less than 10 VA) 23-26 Vdc (nominal current: 150 mA)
Ambient Conditions	
Temperature	-30 to 50°C (-22 to 122°F)
Humidity	0 to 90% RH non-condensing
Control Relays	
Number	Two Control Relays: Relay A, Relay B
Rating	5A 115/230Vac, 5A 30Vdc, SPDT
Bidirectional	Relays factory preset for bidirectional control, can be individually field set for rising or falling process
On/ Off Setpoints	Field selectable full scale
Fail-safe	Normal or fail safe operation
Alarm Relay	
Number:	One High and Low Alarm Relay
Rating	5A 115/230Vac, 5A 30Vdc, SPDT
Alarm High	Field selectable full scale
Alarm Low	Field selectable full scale
Deadband	Fixed at 2% of full scale
Fail-safe	Normal or fail safe operation
Relay Indicators	Three individual LED's indicate status of two control relays and alarm relay.
Analog Outputs	
Non-isolated	0-1 mA, 100 W maximum load
Non-isolated	0-5 Vdc, 1000 W minimum load
Isolated	4-20 mA, 800 W maximum load Output is isolated from the input, the ground, line power and all other outputs.
Range Expand	Outputs can be scaled to represent any segment of the instrument scale to a minimum of 10% of full scale.
Output Holds	The analog outputs are automatically placed on hold when the instrument is placed in the menu mode.
Temperature	The 0-1mA and 0-5V dc output can be selected to track either the dissolved oxygen level of the process or the temperature of the process.

Calibration	One point, seven methods: in process to a portable meter or lab meter; in clean water to a portable meter or a lab meter; in a saturated process; in saturated clean water and in air.
Temperature Compensation	Automatic 0-40°C (32 to 104°F)
Diagnostics	
Invalid Entries	Identified by flashing LEDs.
System Error	Two color STATUS LED indicates system status: Green no fault, Red system fault. Status menu value indicates system problem and likely solution.
Alarm LED	Illuminates red when Alarm Relay is energized, indicating high/low process value or memory loss.
Test	Display value and analog outputs can be manually set to any value for testing and diagnostic purposes.
Safety & Security	
Operator	Password protected (activated by DIP switch)
Memory	Nonvolatile memory (EPROM)
Microprocessor	Watchdog timer monitors microprocessor. Instrument automatically returns to online operation if left in menu mode for more than 10 minutes and no key is pressed.
Sensitivity	0.1% of span
Stability	0.1% of span per 24 hours non-cumulative
Temperature Drift	Zero: 0.01% of span per °C Span: 0.01% of span per °C
Response Time	0.5 second to 90% of value upon step change
Enclosure	NEMA 4X molded fiberglass reinforced polyester enclosure with four 1/2" conduit holes and mounting feet for surface mount. A NEMA 4X plug is provided for one hole.
Mounting	
Standard	Surface Mount
Optional	Panel Mount kit P/N C35-68 Pipe Mount kit P/N C35-69
Weight	3.5 lbs. (1.6 kg)
Approvals	CSA

Dimensions



Related Products

P91	Dissolved Oxygen probe, for use with P91D cartridge
P91D	Replaceable cartridge for P91 probe; thick membrane
MHDS	Submersion Mounting Hardware
MHBF	Ball Float Hardware
FTA2	Inline Mounting Hardware

Ordering Information

2200D	Dissolved Oxygen Analyzer/Controller
1	120 Vac, 50/60 Hz Power
2	240 Vac, 50/60 Hz Power
	A Surface Mount
	B Panel Mount
	C Pipe Mount
	1 Reserved
2200D	_____ - _____ - _____



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