Thermo Scientific Alpha pH 2000 pH/ORP Controller/Transmitter:

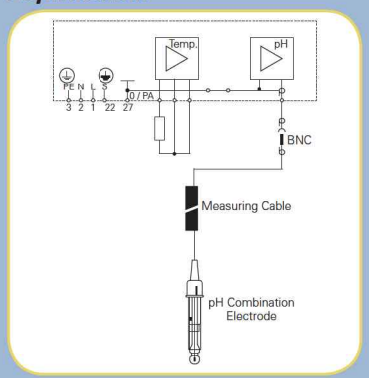
pH/ORP:

Built for the rugged industrial environment, the Alpha pH 2000 transmitter comes with an option for symmetrical mode of operation, making it ideal for electrically noisy environments. IP65 NEMA 4X casing is weatherproof and corrosion-resistant, protecting meter against harsh elements.

The Alpha pH 2000 is user-friendly and intuitive: controller alerts when meter or electrode requires maintenance, and provides trouble-shooting prompts in plain language.

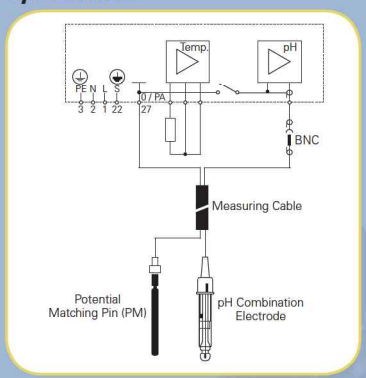
- Wide pH range of -2.00 to 16.00 pH at two-decimal accuracy
- ORP mode measures in mV or % concentration, with independent calibration modes
- Quick, easy push-button calibration with auto-buffer recognition. Meter displays electrode status after each calibration
- Accepts Antimony electrodes – useful in applications involving Hydrofluoric (HF) Acid
- Control and measure pH and ORP simultaneously with master-slave operation by placing two controllers side by side

Asymmetrical



Asymmetrical mode works well in environments with where there is little or no electrical noise. When there is electrical noise, the noise acts as a common signal and is picked up by both the pH and the reference electrodes. However, since the reference electrode is grounded to the ground potential of the amplifier, electrical noise will be present only on the pH electrode. This noise is amplified along with the pH signal, which causes reading fluctuations in an electrically noisy atmosphere. Electrical noise from a DC source (as in an electroplating tank) will typically result in stable but incorrect values.

Symmetrical



Symmetrical mode avoids grounding the reference electrode by reconfiguring the input to a floating differential mode. The electrical noise appears equally on the pH and reference electrodes, and is therefore rejected by the operational amplifier.

The Alpha pH 2000 transmitter offers an option for Symmetrical Mode of Operation. To take advantage of Symmetrical operation, you must have an electrode with a solution ground (potential matching) pin. If your electrode does not have a solution ground, be sure to set the controller to Asymmetrical mode.

Specification Information

pH/ORP Controller/Transmitter	Alpha pH 2000D (Wall mount)	Alpha pH 2000W (Wall mount)	Alpha pH 2000P (Panel mount)
Order Code	**TSPHCTP2000D**	**TSPHCTP2000W**	**TSPHCTP2000P**
Part No.	**01X275375**	**01X275373**	**01X275374**
pH:			
Range:	-2.00 to 16.00 pH		
Resolution:	0.01 pH		
Accuracy:	±0.01 pH		
ORP:			
Range:	-1000 to 1000 mV / 0 to 100 %		
Resolution:	1 mV / 0.1 %		
Accuracy:	±1 mV / ±0.2 %		
Temperature:			
Range:	-10.0 to 110 °C / 14.0 to 230.0 °F	-10.0 to 125.0 °C / 14.0 to 257.0 °F	
Resolution:	0.1 °C / 0.1 °F		
Accuracy:	±0.5 °C / ±1.0 °F		
Sensor:	NTC 300; 2 wire	Pt100 / Pt1000 (jumper selectable); 2 or 3 wire	
Compensation:	Auto/manual (independent process/CAL temperature)		
Set point & controller functions:			
Set point 1 (SP1) / set point 2 (SP2):	-2.00 to 16.00 pH or -1000 to 1000 mV or 0 to 100 %		
Switching pH hysteresis:	0.1 to 1 pH		
Switching ORP hysteresis:	10 to 100 mV or 1 to 10.0 %		
Function (switchable):	P/PI control (pulse length/pulse frequency/proportional integral); limit control; off		
Adjustable period with pulse length controller:	0.5 to 20 sec		
Adjustable period with pulse frequency controller:	60 to 120 pulse/min		
Integral action time (IAT):	0 to 999.9 min		
Pickup/dropout delay:	0 to 2000 sec		
Wash cycle:	0.1 to 200.0 hr		
Wash duration:	1 to 2000 sec		
Contact outputs:	1 SPDT, 3 SPST relays		
Switching voltage/current/power:	1/8 HP: at 125 VAC / max. 0.74 A / max. 93 VA 1/8 HP: at 250 VAC / max. 0.37 A / max. 93 VA		
Alarm functions:			
Function (switchable):	Steady or fleet (pulse)		
Pickup delay:	0 to 2000 sec		
Switching voltage/current/power:	1/8 HP: at 125 VAC / max. 0.74 A / max. 93 VA 1/8 HP: at 250 VAC / max. 0.37 A / max. 93 VA		
Electrical data & connections:			
Transmitter function:	Two 0/4 to 20 mA scalable outputs for pH/ORP and temperature, galvanically isolated		
CU 22 function:	22 mA current output		
Isolated output voltage:	12 V ±0.5 V (max. 50 mA)		
Hold function switch:	To freeze output current and deactivate control relays		
Load:	Max. 600 Ω		
pH/ORP input:	2-pin terminal (Differential)	BNC (10^{12} impedance); asymmetrical/symmetrical	
Connection terminal:	5-pin, 8-pin, 9-pin & 13-pin terminal, detachable blocks	3-pin, 8-pin, 9-pin & 13-pin terminal, detachable blocks	3-pin, 9-pin & 19-pin terminal, detachable blocks
Display:			
LCD:	UV coat, backlit 14 segments display with symbols for status information		
Backlight:	On/off selectable with four levels of brightness control		
Power supply:			
Input:	80 to 250 VAC/DC ; 50/60 Hz ; 10 VA		
Main fuse:	315 mA time delay, 250 V, Bussmann BK/GDC-315 mA	250 mA, anti-surge, S504 Bussmann	
Pollution degree:	2		
Transient overvoltage category:	II		
EMC specifications:			
Emitted interference:	According to EN 61326		
Immunity to interference:	According to EN 61326		
Environmental conditions:			
Operating temperature range:	0 to 40 °C		
Max. relative humidity:	80 % up to 31 °C decreasing linearly to 50 % at 40 °C		
Mechanical specifications:			
Dimensions (WxHxD):	144 x 144 x 110 mm		96 x 96 x 175 mm
Weight:	950 g (unit) / 1100 g (packed)	745 g (unit) / 1100 g (packed)	550 g (unit) / 950 g (packed)
Ingress protection:	IP66 (NEMA 4X)		IP54 (front panel)