

**Thermo Scientific
Alpha Process Products**



**Thermo Scientific Alpha 600 RF Transmitter System
• pH • ORP**



The Thermo Scientific Alpha pH 600 RF Transmitter System:

Now, monitoring pH/ORP at multiple locations is simply a matter of a few mouse-clicks.

The Thermo Scientific Alpha 600 RF Transmitter System sends readings from up to 10 locations to your computer using wireless radio frequency technology, round the clock and uninterrupted, so you can detect and react to system problems and malfunctions faster. This means higher efficiency, less disruption and more control over your water quality monitoring processes.

Increased System Efficiency:

- Monitors up to 10 remote locations simultaneously with a few mouse-clicks
- Eliminates manual sampling at multiple locations
- Allows you to spot and react to system malfunctions faster

Intelligent Data Management:

- Versatile data management software records data with time, date, temperature and location
- Displays information in data, pie-chart and run-chart format
- Logs down each time a reading falls outside set-range for future system troubleshooting and analysis

Improved Wireless Versatility:

- No messy cables to lay – measures up to a distance span of 550 m (1804.5 ft) (**Figure 1**)
- Portable, wireless transmitter allows flexibility of shifting transmitters to different points easily
- Minimal maintenance and down-time as transmitters run on DC Power source instead of batteries

How it works:

The Thermo Scientific Alpha 600 RF Transmitter System comprises a powerful data management software, a wireless transceiver and up to 10 Alpha 600 transmitters*. Each transmitter has its own unique ID, and can be placed remotely at a location within 100 m (328 ft) of the transceiver or 50 m (164 ft) from the next transmitter.

*Works on 923 to 928 MHz

One system monitors pH/ORP at up to 10 remote locations, real-time, round-the-clock

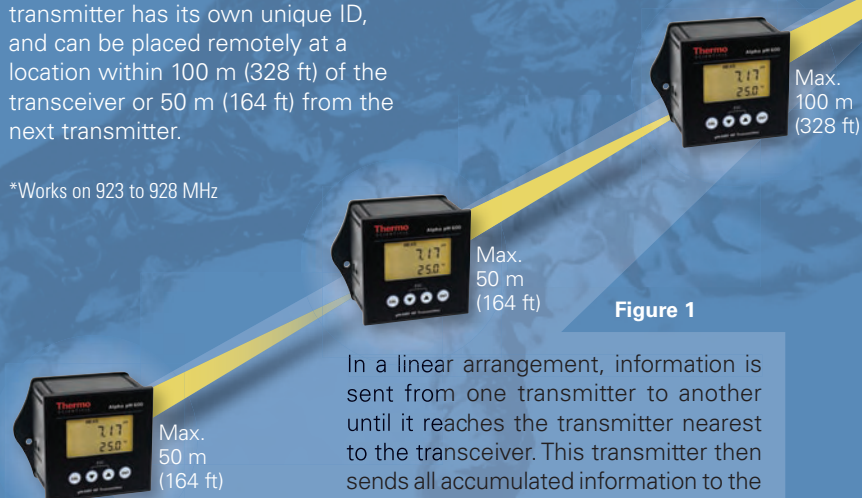
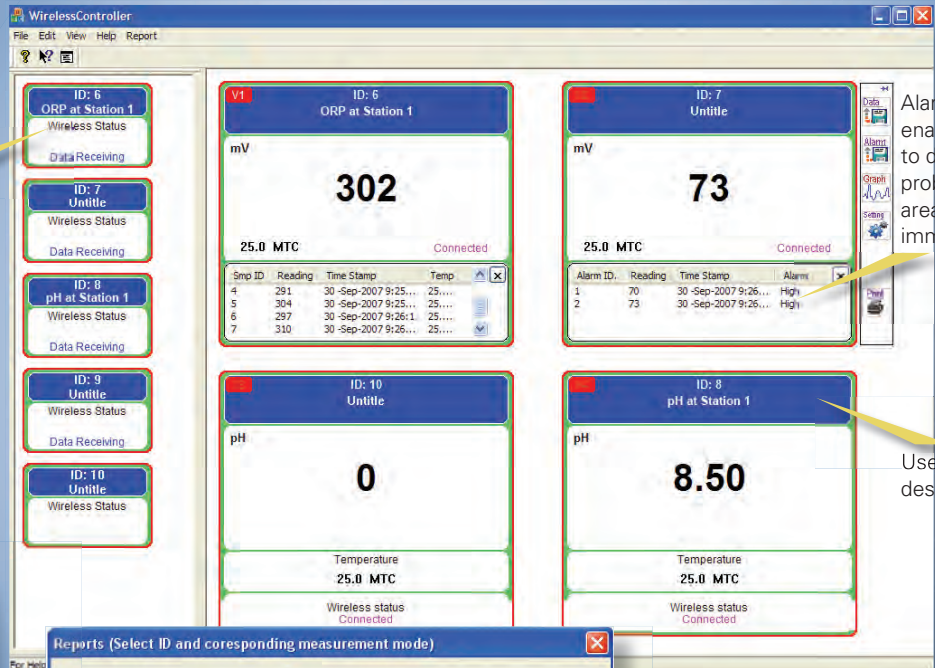


Figure 1

In a linear arrangement, information is sent from one transmitter to another until it reaches the transmitter nearest to the transceiver. This transmitter then sends all accumulated information to the transceiver, which, in turns, forwards the data to the host computer.

The software installed in the host computer displays all transmitters represented by their unique IDs on the left panel of the screen.

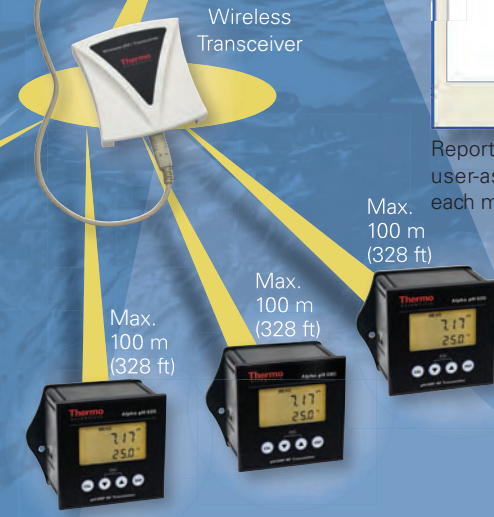
Details of up to four transmitters can be simultaneously displayed on one screen by simply selecting the transmitters displayed on the left panel. Users can choose to view these details in the form of raw data, line graph or pie chart.



Left panel displays all transmitters detected, each identified by their unique ID number

Alarm logging enables users to detect problematic areas immediately

User-assigned description

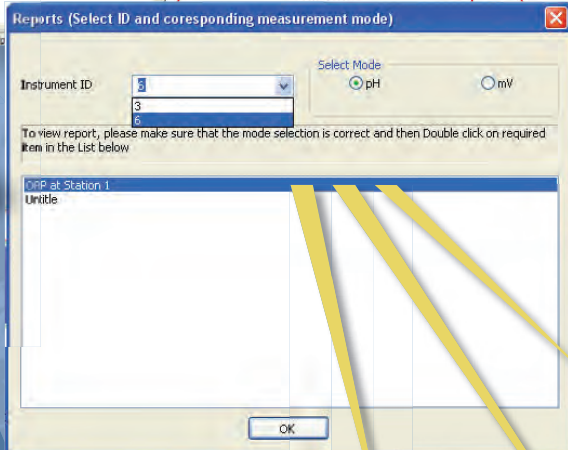


Wireless Transceiver

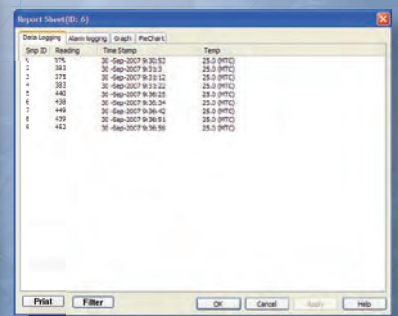
Max. 100 m (328 ft)

Max. 100 m (328 ft)

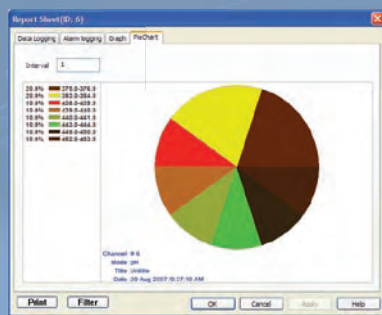
Max. 100 m (328 ft)



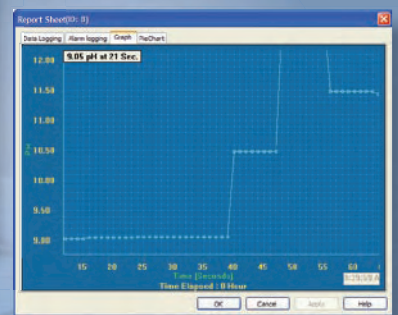
Reports are recorded according to user-assigned descriptions under each meter ID



Raw data is clearly documented with date, time and temperature. Filter function allows users to select data based on time and date



How efficient is your system? The pie-chart view presents the percentage of readings that are within your preset range, and the percentage of readings that are out-of-range



When did the problem occur? Was it a gradual process or a sudden change? The line graph view clearly captures real-time fluctuation of readings

In a radial arrangement, information is sent directly from individual transmitters to the transceiver, which will then forward these information to the host computer.



Thermo Scientific Alpha pH 600 RF Transmitter:

The Thermo Scientific Alpha pH 600 RF Transmitter system measures, compiles and delivers data from up to ten remote locations, thus eliminating the need for frequent manual sampling at multiple locations.

Each transmitter includes a large backlit LCD which doubles as a monitor for on-the-spot checking. User friendly with guiding prompts and error messages for easy set-up, calibration and trouble-shooting, each transmitter runs on +9 V DC power source.

- Measures full pH range of 0.00 to 14.00 pH at ± 0.01 pH accuracy and ORP range of -1000 to 1000 mV at ± 1 mV accuracy
- Portable wireless transmitter offers flexibility of shifting transmitters to different measurement points easily
- Symmetrical Mode Option – Ideal for electrically noisy environment
- Menu-driven programme: Clear indicators, operational and measurement status with error messages for easy set-up and trouble-shooting
- Single or double-point calibration with 5 buffer options for convenient calibration
- ATC/MTC option with temperature off-set of ± 10 °C / ± 18 °F
- Shield earth ground protects active sensors from electrical noises
- Waterproof and weather-proof with IP65-NEMA 4X rugged housing
- Non-volatile memory – calibration and set-up information are safe even in the event of a power failure
- Two level of password protection against unauthorised or accidental changes to calibration and set-up

Reliable water analysis for multiple location monitoring















Designed for use in 923 – 928 MHz ISM radio band transmission, which is currently license-free in the following countries:

- Argentina
- Australia
- Brazil
- Canada
- Chile
- China
- Costa Rica
- Dominican Republic
- Hong Kong
- Malaysia
- Mexico
- Peru
- Puerto Rico
- Singapore
- Taiwan
- Thailand
- United States
- Uruguay
- Vietnam

Specification Information

pH/ORP RF Transmitter	Alpha pH 600
Order Code	TSPHCTP0600
Part No.	01X448701
pH:	
Range:	0.00 to 14.00 pH
Resolution:	0.01 pH
Accuracy:	±0.01 pH
No. of calibration points:	1 or 2 points
pH buffer sets:	USA: 4.01, 7.00, 10.01 ; NIST: 4.01, 6.86, 9.18
ORP:	
Range:	-1000 to 1000 mV
Resolution:	1 mV
Accuracy:	±1 mV
Temperature:	
Range:	-10.0 to 110.0 °C / +14.0 to 230.0 °F
Resolution:	0.1 °C / 0.1 °F
Accuracy:	0.5 °C / 1.0 °F
Sensor:	3 wire / 2 wire – Pt100 or Pt1000 (jumper selectable)
Compensation:	Automatic or manual
Offset adjustment:	±10 °C / ±18 °F
Transmitter:	
Transmitter function:	UART serial comm. output for the RF RX/TX board: Protocol: 8-N-2 Data rate: 9,600 kbps
Transmission method:	TDMA, FSK modulation
Frequency:	923 to 928 MHz, ISM band region 2
Air baud rate:	16 kbit/sec
Range single unit:	100 m (328 ft) (in open air)
RF power:	+5dB
Antenna:	Internal diversity antenna
Network model:	Mesh
Electrical data & connections:	
pH/ORP input:	2-pin terminal; asymmetrical/symmetrical
Connection terminal:	8-pin terminal, detachable blocks, DC jack
Display:	
LCD:	UV coat, custom dual segments display with symbols for status information
Backlight:	On/off selectable with four levels of brightness control
Power supply:	
Input:	9 V DC
Pollution degree:	2
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):	96 x 96 x 66 mm
Weight:	210 g (unit) / 310 g (packed)
Ingress protection:	IP65

pH/ORP Electrodes

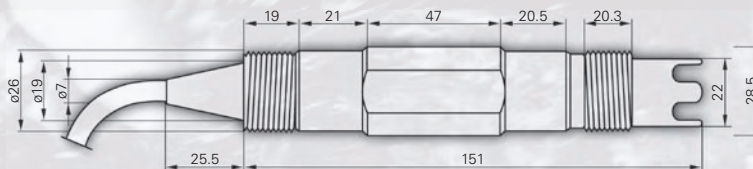
Order Code	EC100GTS020B	EC100GTS010B	EC100GTS005B	ECARGTS005B	ECARHTS005B	ECARTSOHF05B	ECARTS005B
Part No.	93X417005	93X417006	93X218865	93X218864	93X218860	93X218872	93X218859
pH Electrodes							
							
Classification	pH						
pH range	0 to 14					0 to 14, HF resistant	0 to 14
Reference	Annular PTFE, double junction						
Reference electrolyte	Saturated KCl, polymerized gel						
Operating temperature	0 to 80 °C / 32 to 176 °F				0 to 110 °C / 32 to 230 °F high temperature	0 to 80 °C / 32 to 176 °F	
Pressure tolerance	6 bars (87 psi)				9 bars (130 psi)	6 bars (87 psi)	
Temperature sensor	Pt 100			-			
Potential matching pin/liquid ground	Platinum				-		
Material	PPS (Ryton®)						
Thread	¾" NPT						
Cable	Integral 20 m (65.6 ft) low-noise semi-conductor screened	Integral 10 m (32.8 ft) low-noise semi-conductor screened	Integral 5 m (16.4 ft) low-noise semi-conductor screened				
Connector	BNC						
Dimensions	Length	151 mm (excludes cable)					
	Diameter	26 mm (external)					
Weight	950 g	850 g	650 g	430 g			

Order Code	ECHTAUTS005B		ECHTPPTS005B	
Part No.	93X219128		93X219126	
ORP Electrodes				
	Gold		Platinum	
Classification	ORP			
Sensor	Gold			
ORP range	± 1000 mV			
Reference	Annular PTFE, double junction			
Reference electrolyte	Saturated KCl, polymerized gel			
Operating temperature	0 to 80 °C / 32 to 176 °F			
Pressure tolerance	6 bars (87 psi)			
Potential matching pin/liquid ground	Platinum			
Material	PPS (Ryton®)			
Thread	¾" NPT			
Cable	Integral 5 m (16.4 ft) low-noise semi-conductor screened			
Connector	BNC			
Dimensions	Length	151 mm (excludes cable)		
	Diameter	26 mm (external)		
Weight	650 g			

Line Diagram (All dimensions are in mm unless specified otherwise)

pH/ORP Electrodes

- EC100GTSO20B
- EC100GTSO10B
- EC100GTSO05B
- ECARGTSO05B
- ECARTSOHF05B
- ECARTSO05B
- ECHTAUTS005B
- ECHTPPTS005B



Electrode Selection Guide

pH/ORP Electrodes	EC100GTSO20B 93X417005	EC100GTSO10B 93X417006	EC100GTSO-05B 93X218865	ECARGTSO-05B 93X218864	ECARHTTSO-05B 93X218860	ECARTSOHF-05B 93X218872	ECARTSO-05B 93X218859	ECHTAUTSO05B 93X219128	ECHTPTTSO05B 93X219126
General pH measurement	•	•	•	•	•	•	•		
pH measurement with ATC	•	•	•						
pH measurement in noisy environment eg. electroplating	•	•	•	•					
pH measurement at high temperatures (Up to 110 °C / 230 °F ; 9 bar / 130 psi)					•				
pH measurement in the presence of Hydrofluoric Acid (HF)						•			
General ORP/Redox measurement								•	•
ORP measurement in noisy environment								•	•
ORP measurement in Cyanide treatment								•	
ORP measurements in oxidising applications (above 500 mV)									•
ORP measurements in reducing applications (below 500 mV)								•	

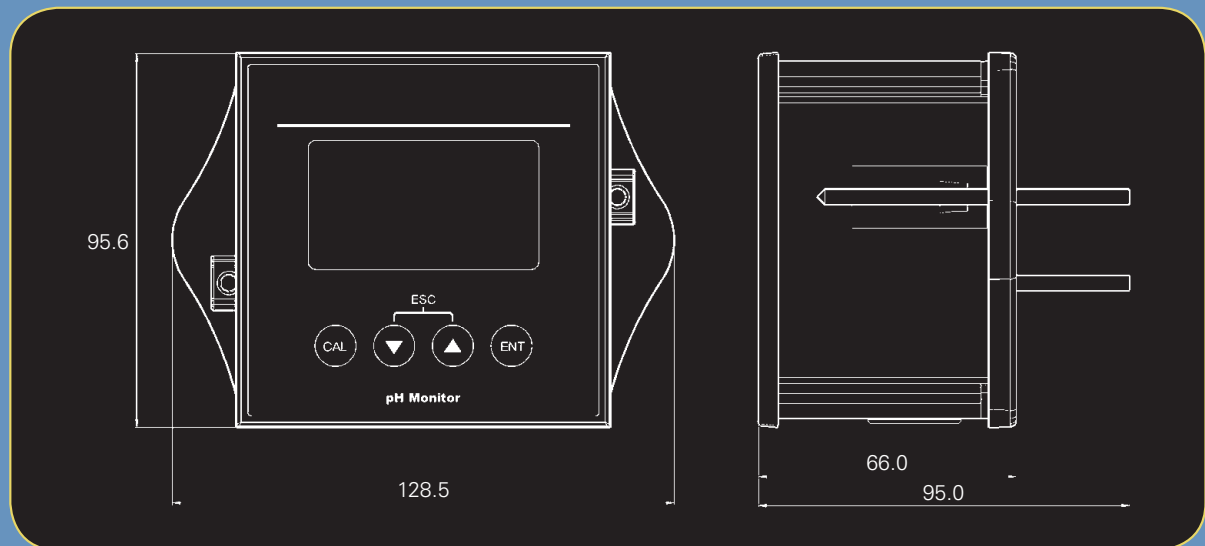


Ordering Information

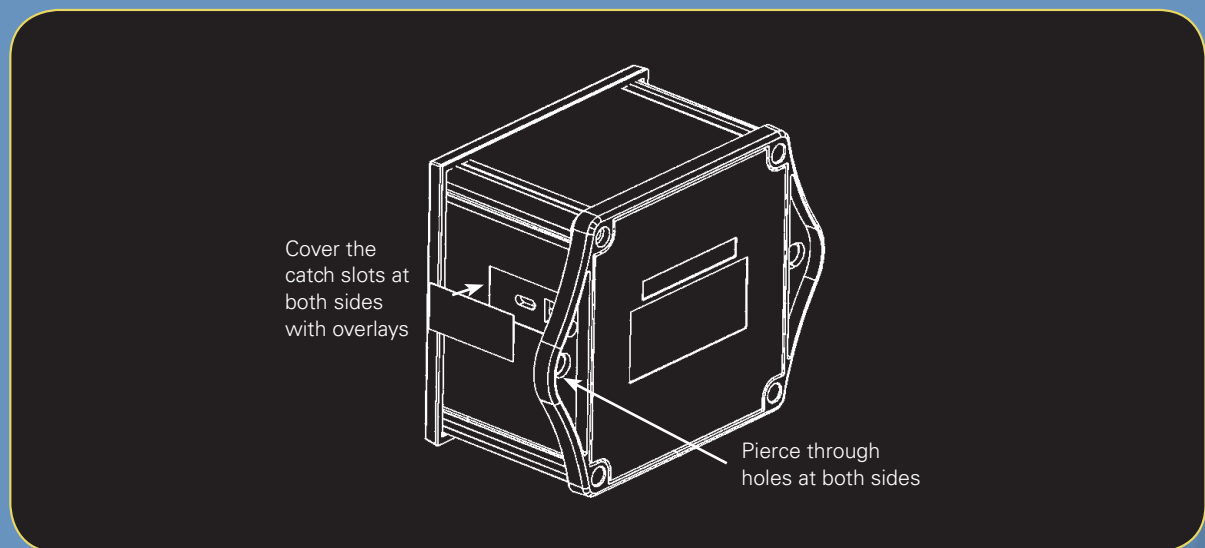
Order Code	Part Number	Description
TSPHCTP0600	01X448701	Alpha pH 600 wall-mount pH/ORP RF transmitter
TSRCV0600S	01X448901	Wireless (RF) receiver and application software
EC100GTS020B	93X417005	Ryton®-body pH combi electrode with Pt100 RTD (ATC) & 20 m cable with BNC & PMP
EC100GTS010B	93X417006	Ryton®-body pH combi electrode with Pt100 RTD (ATC) & 10 m cable with BNC & PMP
EC100GTS005B	93X218865	Ryton®-body pH combi electrode with Pt100 RTD (ATC) & 5 m cable with BNC & PMP
ECARGTS005B	93X218864	Ryton®-body pH combi electrode with 5 m cable with BNC & connector for PMP (no ATC)
ECARHTTS005B	93X218860	Ryton®-body pH combi electrode with 5 m cable with BNC connector (no ATC); measures up to 110 °C
ECARTSOHF05B	93X218872	Ryton®-body pH combi electrode without ATC & 5 m cable with BNC connector. HF resistant glass
ECARTS005B	93X218859	Ryton®-body pH combi electrode with 5 m cable with BNC connector (no ATC)
ECHTAUTS005B	93X219128	Ryton®-body ORP gold electrode with 5 m cable with BNC & PMP (no ATC)
ECHTPPTS005B	93X219126	Ryton®-body ORP platinum electrode with 5 m cable with BNC & PMP (no ATC)
ECCBL05SMK50	01X222801	Low-noise 50 m coaxial SMK cable for pH/ORP electrodes (without ATC), 5 mm, open-ended with no connectors
28X088001	28X088001	Male BNC connector for 5 mm extension cable; 1 unit (need BNC crimping tool to connect to extension cable)
ECCBL030510	01X222802	Low-noise 10 m coaxial cable for pH/ORP electrodes (without ATC; with PMP), 3 mm/5 mm, male-male BNC connectors (for extending ECARGTS005, ECHTAUTS005B & ECHTPPTS005B)
ECCBL030520	01X222803	Low-noise 20 m coaxial cable for pH/ORP electrodes (without ATC; with PMP), 3 mm/5 mm, male-male BNC connectors (for extending ECARGTS005, ECHTAUTS005B & ECHTPPTS005B)
ECCONBNCBNC	01X243102	BNC to BNC adapter (for extension of cable connection) – a pack of 10 units
ECAC021011	81X220801	CPVC electrode tee for pH/ORP electrodes with ¾" to 1" adapter
ECAK061014	81X220802	Kynar® electrode tee for pH/ORP electrodes with ¾" to 1" adapter
ECPREAMP	01X228601	Pre-amplifier (for cable length exceeding 25 m) with female-female BNC connectors at each side of the junction box; batteries included
ECPHSIMULATOR	01X373301	Precision hi-low impedance & multiple buffers pH simulator (with BNC-BNC cable provided)



Mechanical Dimensions (in mm)



Wall Mount



Trademarks Used:

Kynar® is a registered trademark of Arkema Inc.
Ryton® is a registered trademark of Chevron
Phillips Chemical Company LLC.

Warranty:

Thermo Fisher Scientific provides one year of warranty against manufacturing defects for meters, and six months for electrodes.

Disclaimers:

Specifications and terms are subject to change.
Not all products are available in all countries.
Please consult your local sales representative
for details.

All drawings and diagrams are for illustration
purposes only and are not drawn to scale.

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