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III HPT63 pH / Redox Transmitters

The HPT63 pH / Redox transmitters combine modern technology with over 35 years of experience in building high quality sensors for liquid analysis to provide a range of competitively priced transmitters to cover a wide range of process applications.



- Custom IP66 enclosure
- Available as head mounted or Wall mounted versions
- Large back lit multifunction display
- Displays pH or Redox and temperature units
- Dual isolated 4-20mA & relay outputs
- Relays can be configured for On/off, Time & Pulse Proportional
- 3 Digital inputs to control specific functions
- Supplied complete with sensor & 'T' Piece. (Headmount version only)
- Purpose built detachable electrodes for easy calibration & maintenance
- Differential input to overcome earth loop problems
- Measured process & temperature can be displayed together
- Bar graph indication of current output status
- Cable termination via detachable connectors, no need to open enclosure
- Low voltage operation 15-30v AC/DC
- Simple intuitive programming
- On Line multilingual Help with text error messages

/// HPT63 pH / Redox Transmitters

The HPT63 is a microprocessor based pH or Redox transmitter. Two different options of the HPT63 transmitter will be available with the Base model offering a single industry standard 4-20mA output.

The Advanced HPT63 will offer two 4-20mA outputs enabling the process temperature to be measured and transmitted as well as either the pH or Redox value. The Advanced HPT63 model will have 2 relay outputs for process control and also 3 digital inputs for on-line/off line and clean function selection via a plc.

Both of the HPT63 versions are available as head mounted transmitters mounted with either a pH or Redox electrode. If ordered as a head mount version this will be supplied complete with electrode and PVC 'T' piece. The wall-mounting version allows a separate LTH pH or Redox electrode and connection cable to be used.

The HPT63 is able to display the measured value either in pH or Redox (mV) as well as displaying the process temperature in °C or °F. (When using a suitable electrode).

The 2 off independent relay outputs can be allocated to either process or temperature measurement, with on/off control, variable hysteresis and time delays along with time and pulse proportional relay operation that is all configurable from the user menu.

Relays can also be programmed to energise on a variety of different functions including errors, instrument status, e.g. off-line/calibration mode, or if a dose alarm time has been exceeded.

Up to 2 industry standard, isolated outputs provide retransmission of the measurement as 0/4-20 mA signals and can be configured to represent process measurement or temperature.

Automatic temperature compensation can be selected when used with either a Pt1000 or 3k Balco thermistor pH electrode system or the transmitter can be configured for manual operation.

The detachable pH electrode also comes as standard with a solution ground connection enabling a differential input connection to help eliminate any ground loop earthing problems.

The HPT63 has been designed with two levels of programme complexity to cater for both novice and experienced instrument operators.

All cable connections to the HPT63 are by detachable connectors with no need to open the HPT63 enclosure.

On-line HELP facilities consist of a series of text error messages which are displayed when programming is incorrect, or if a sensor is not reading a sensible value for the instrument set-up.

A further enhancement is multi-level security, where day to day operator access can be limited to viewing data and settings only, while allowing full access to the instrument programmer.

Configuration data can be saved in one of two independent back-up locations, which can be used for fast reconfiguration, emergency restoration of settings, recovery after tampering by unauthorised operators, etc.

Multilingual text displays can be selected with a choice of English, French, Spanish and Italian language.

The HPT63 can also display the current outputs as a bar graph as an alternative to showing a digital displayed value. It is possible to display either current output A, current output B, either current output alternating in the bar graph mode. The mode of display can be changed under the configuration menu.

Both measurement inputs and current output can be individually calibrated from the front panel. An off-line facility allows the instrument to be adjusted without disturbing external processes by de-energising the set point relays & holding the current output(s) at the last on-line value.

The HPT63 also has a simulate mode enabling the user to test the operation of the set point & current outputs.

Off-line & Sensor Cleaning

For applications, which require automatic sensor cleaning, either set point relays can be configured as a clean initiator. The clean duration, recovery time and interval period are all programmable. During the clean and recovery periods it is possible for the instrument to go off-line and hold the current outputs and disable the control relays.

The clean cycle and off-line mode may also be initialised remotely via separate digital switch inputs.

Specification

Measurement input	Single ended or differential with solution ground.	Ambient temperature variation	±0.01% of range / °C (typical)												
pH	Combination electrode or Separate glass and reference electrode pair. Combination Antimony electrode or separate Antimony and reference electrode pair.	Current output (s)	Each selectable 0-20 mA or 4-20 mA into 1500 Ohms max., fully isolated to 2kV. Expandable up to 5% of any operating range (pH, mV, °C) and offset anywhere in that range.												
Redox	Combination electrode or Separate metal and reference electrode pair. Other manufacturers' sensors can be accommodated.	Operator adjustment (Current) Set points and control relays (Advanced model only)	±1 mA zero and ±1 mA span for remote monitor calibration. Fully configurable set points (pH, mV, °C) with volt free contacts for both relays. Rated at 5A 30V DC / 5A 250VAC (non-inductive). Red LED's indicate relay energised.												
Ranges of measurement	0.00 to 14.00pH -1999mV to +1999mV -50°C to +300°C	Operating modes (Control, All relays)	On/Off, Time Proportioning, Pulse Proportioning, Band and Clean modes selectable for each relay. Adjustable delay timers up to 10:00 mm:ss and hysteresis in the On/Off mode. Adjustable dose alarm timer up to 15:00 mm:ss in all modes. Adjustable cycle time and proportional band in the proportional modes. Adjustable duration, recovery and interval periods in the clean mode.												
Accuracy	±0.05pH ±3mV	Operating modes	The relay can be set to energise on any of the following instrument conditions:- Sensor alarm, Dose alarm, Calibration, Off line, Any error												
Linearity	±0.1% of range	Switches	Four tactile feedback push buttons												
Repeatability	±1% of range	EMC : Immunity	BS EN 50082-2 1995												
Operator adjustment	<table><thead><tr><th></th><th>Slope</th><th>Offset</th></tr></thead><tbody><tr><td>pH</td><td>60-120%</td><td>3 to 11 pH</td></tr><tr><td>Antimony</td><td>60-120%</td><td>-4 to +4 pH</td></tr><tr><td>Redox</td><td>NA</td><td>-400mV to +400mV</td></tr></tbody></table>		Slope	Offset	pH	60-120%	3 to 11 pH	Antimony	60-120%	-4 to +4 pH	Redox	NA	-400mV to +400mV	EMC : Emissions	BS EN 50081-1 1992
	Slope	Offset													
pH	60-120%	3 to 11 pH													
Antimony	60-120%	-4 to +4 pH													
Redox	NA	-400mV to +400mV													
Temperature sensor	PT1000 RTD, 3K Balco	Safety	Designed and manufactured in accordance with BS EN 61010-1 1993												
Temperature accuracy	±0.2°C	Power Supply	15 to 30V AC or DC at 200 mA												
Operator adjustment (Temp)	± 50°C, or ± 122°F	Head Mount Housing	Conductive ABS blue plastic, rated IP66												
Temperature compensation type	Automatic or manual 0°C to 100°C	Weight	600g (instrument only)												
Off-line Facility (for calibration and commissioning)	The relays are de-energised and the current output is held at the last on-line value. Can be initiated remotely by a contact closure.	Dimensions	110mm high x 116mm wide x 145mm deep, excluding connectors												
Ambient Operating Temperature	-20°C to +50°C (-4°F to +122°F) for full specification.														
Display	Custom back lit LCD module. 4 character (& sign) 7 segment (20mm high) for measured value, 2x3 dot matrix for unit's indication, and 1x16 dot matrix for information and programming														



Order Codes

Part No	Model
2084	HPT63 Wall mounting transmitter complete with mounting kit, single 4-20mA output.
2082	HPT63 Head mounting transmitter complete with S400/HPT pH sensor & PVC tee piece. Single 4-20mA output.
2529	HPT63 Head mounting transmitter complete with S400/HPT Redox sensor & PVC tee piece. Single 4-20mA output.
2085	HPT63 Advanced Wall mounting transmitter complete with mounting kit, 2 x 4-20mA outputs & 2 x relay outputs
2083	HPT63 Advanced Head mounting transmitter complete with S400/HPT pH sensor & PVC tee piece. 2 x 4-20mA outputs & 2 x relay outputs.
2530	HPT63 Advanced Head mounting transmitter complete with S400/HPT Redox sensor & PVC tee piece. 2 x 4-20mA outputs & 2 x relay outputs.
138/038	S400/HPT Replacement pH sensor.
138/039	S400/HPT Replacement Redox sensor.
134/002	Spare pair of Wall mounting brackets.

For separate pH / Redox electrodes and connection cables please contact Royce Water Technologies sales department for details and prices.

NOTE: Temperature, pressure & solution composition will influence the life expectancy of the measurement sensor.