

HOT63

Dissolved Oxygen Transmitters



Features

- IP66 enclosure.
- Wall or rail mounted versions with detachable cables
- Measurement in % saturation, PPM, mmHg & pO₂
- Suitable for use with Galvanic or Polarographic sensors
- Active or manual pressure compensation
- Advanced model has dual isolated 4-20mA & relay outputs.
- Relays can be configured for on/off, time & pulse proportional operation
- Digital inputs for auto-cal, clean and off line operation
- Cable termination for supply & outputs via detachable connectors, no need to open enclosure
- Low voltage operation 15-30v DC

Two different options of the HOT63 transmitter are available with the base model offering a single 4-20mA current output while the Advanced HOT63 will offer two 4-20mA current outputs enabling the process temperature to be measured and transmitted as well as the Dissolved Oxygen value.

The Advanced HOT63 model also has two relay outputs for process control and three digital inputs for remote range changing via a plc and automatic pressure compensation from an external pressure transmitter.

Both models are available as wall/rail mounting versions with a detachable cable & a choice of sensors.

The HOT63 is able to display the measured value in PPM, % saturation, mmHg and pO₂ as well as displaying the process temperature in C or F.

The two 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 all configurable from the user menu.

Relays can 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 two isolated current outputs provide retransmission of the measurement as 0/4-20mA signals and can be configured to represent process measurement or temperature.

The HOT63 has active or manual pressure compensation and salinity compensation to ensure accurate measurement in a variety of process applications.

All cable connections to the HOT63 are by detachable connectors with no need to open the HOT63 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.

The HOT63 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 outputs or 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 HOT63 has a simulate mode enabling the user to test the operation of the set point & current outputs.

Automatic temperature is available as standard on all models. For applications where temperature compensation is not required it can be switched out.

By providing the user with the option to select either a Galvanic (Makareth) or Polarographic (Clark) sensors, a selection of PT1000, 1Kohm or 22Kohm thermistor and providing software selection of bias voltage and membrane coefficient, the HOT63 Dissolved Oxygen transmitter is suitable for use with virtually any Dissolved Oxygen sensor. This flexibility makes the HOT63 transmitter suitable for the measurement of Dissolved Oxygen in rivers, reservoirs, sewage treatment, wastewater, fish farming, fermentation and cell culture applications.

Specification

Sensor input

Galvanic (Mackereth) 0 to 9.999mA
or Polarographic (Clark) 0 to 500.0nA.

Sensor bias voltage

Software programmable, -1.000
to +1.000V, resolution $\pm 1\text{mV}$,
output accuracy $\pm 3\text{mV}$

Sensor membrane correction factor

Software programmable 0 to 9999

Sensor cable

Up to 10 metres

Ranges of measurement

0-199.9% saturation, 0-20.00ppm

Accuracy

$\pm 3.0\mu\text{A}$ in Galvanic mode,
 $\pm 1.0\text{nA}$ in Polarographic mode

Linearity

$\pm 0.1\%$ of range

Repeatability

$\pm 0.1\%$ of range

Temperature sensor

$\pm 0.1\%$ of range

Measurement range

4 wire interface, operating on up to
100 metres of cable. Software selectable
sensor type including Pt1000 RTD,
1K ohm & 22K ohm thermistors

Temperature accuracy

50°C to +300°C (when using Pt1000).

Operator adjustment (temperature)

$\pm 0.2^\circ\text{C}$
(Dependant on sensor configuration).

Temperature compensation

$\pm 20^\circ\text{C}$

Pressure compensation

Automatic, or manual, set from 0°C to 100°C.
Active from 4-20 mA input (Direct or 24V
loop powered from the HOT63.) Software
scalable from 0.50-9.99 bar. Manual user
programmable from 0.50-9.99 bar.

Salinity compensation

User programmable from 0-40.0 ppt

Ambient operating temperature

-20°C to +50°C for full specification.

Ambient temperature variation

$\pm 0.01\%$ of range/°C (typical)

User interface

Large 4 character 7 segment display for
measured value, with alphanumeric dot
matrix characters for units, information
display and programming.

Four button user interface for easy
instrument programming.

Current output (optional 1 or 2 outputs)

Selectable 0-20mA or 4-20mA operation
into a 1000 ohms maximum load, fully
isolated to 2kV. Selectable transmission of
either sensor reading or temperature, and
software scalable within the operating range.

Operator adjustment (current)

$\pm 1\text{mA}$ zero and $\pm 1\text{mA}$ span for remote
monitor calibration.

Set point relays (advanced model)

Fully configurable set point relays
Relay 1 is internally wired to provide the
transmitter supply voltage to an external
device. For example a rotary cleaner.

Relay 2 has volt free contacts. Rated at
5A 30v DC/5A 250vAC (non-inductive).

Operating modes

Configurable high, low, band or latch trigger
conditions, with on/off, time proportioning,
pulse proportioning, and cleaning output
modes selectable for each relay.

Adjustable delay timers up to 10 mins,
and hysteresis in the on/off mode.

Adjustable dose alarm timer up to
15 mins in all modes.

Adjustable cycle time and band in the
"Proportioning" modes.

Adjustable duration, recovery and interval
periods in the "Cleaning" mode. The relay
can be set to energise on any one of the
following instrument conditions:- Sensor
alarm, dose alarm, calibration, off line,
any error.

Off-line facility

Initiated by remote contact closure or
software selection. Relays 1 & 2 are
de-energised and the current outputs
are held at the last on-line value
(for calibration and commissioning)

EMC:

2004/1008/EC using BS EN 61326: 2006

Low voltage directive:

2006/95/EC using BS EN 61010-1: 2001

Power supply

18 to 36vDC

Housing

Conductive ABS blue plastic, rated IP66.

Weight

600 grams (instrument only)

Dimension

110 x 116 x 145mm (H, W, D)
excluding connectors.

Order Codes

Part No	Model
4054	HOT63 wall mounting transmitter complete with mounting kit, single 4-20mA output.
4055	HOT63 advanced wall mounting transmitter complete with mounting kit, 2 x 4-20mA outputs & 2 x relay outputs.
134/002	Spare pair of wall mounting brackets

Please refer to the LTH Dissolved Oxygen price list for full details on the different Dissolved Oxygen sensor options for use with the HOT63 transmitter.



These products comply with current European Directives

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