

HI 504
S E R I E S

ISO 9001:2000 CERTIFIED

pH CONTROLLERS

WITH **SENSOR CHECK™**
CONTINUOUS PROBE DIAGNOSTICS



TELE-CONTROL TECHNOLOGY

HANNA®
instruments
With Great Products, Come Great Results™

HI 504^{SERIES}

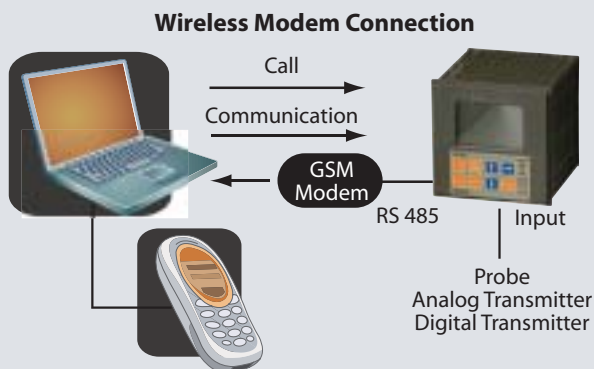
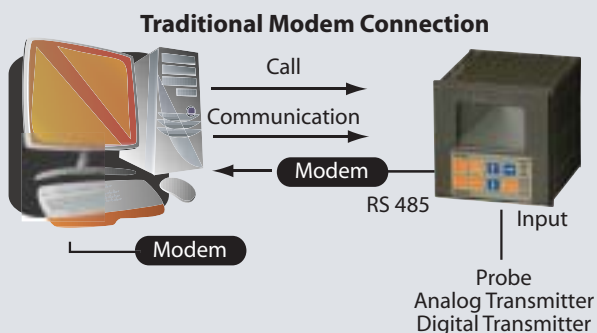
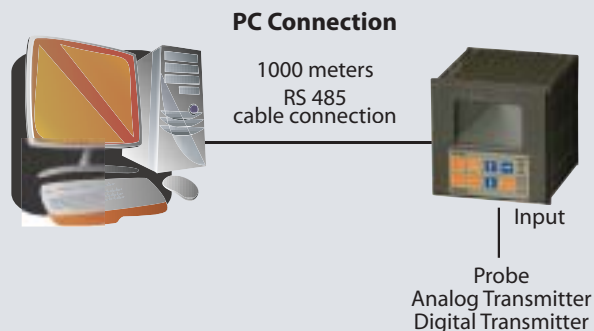
pH CONTROLLERS

WITH **SENSOR CHECK™**
CONTINUOUS PROBE DIAGNOSTICS

HANNA Instruments® introduces the innovative, new **HI 504** series. This series offers elevated performance, rugged design and Tele-control™ technology for users on the go. This technology supplies the means to control one or more installations from any distance - and in real time. Tele-control technology creates the opportunity to optimize operations such as maintenance cycles and reduces unscheduled and costly plant shutdowns. Operators can also control the complete regulation process by the RS 485 output and HANNA's Windows® compatible software (optional). Measurement reliability is guaranteed by self-diagnostic and troubleshooting functions.

With a host of configurations, the **HI 504** series is designed to fit your individual needs. The **HI 504** series in conjunction with HANNA's industrial *pH & ORP probes* is a powerful and efficient solution to industrial optimization.

- **SENSOR CHECK™ PH/ORP ELECTRODE DIAGNOSTIC SYSTEM**
- **RS 485 INTERFACE**
- **DIGITAL TRANSMITTER INPUT**
- **PROGRAMMABLE AUTO-CLEANING CYCLE**
- **FAIL SAFE ALARM SYSTEM**
- **AUTOMATIC TEMPERATURE COMPENSATION**
- **PROGRAMMABLE HOLD SYSTEM**



GSM CELLULAR MODULE

The optimization of an industrial process plant means the reduction of costly unscheduled shutdown time. With this in mind, HANNA Instruments® has developed the **HI 504900** GSM cellular module* (optional). The **HI 504900** is used for sending SMS alarm messages* and also requests live updates on actual process conditions from authorized personnel.

The GSM cellular module can memorize one or two mobile phone numbers, where alarm messages can be sent whenever a malfunction is revealed. The SMS message immediately reports the nature of the alarm. Some causes include: Damaged pH probe, Damaged temperature probe or High setpoint exceeded.

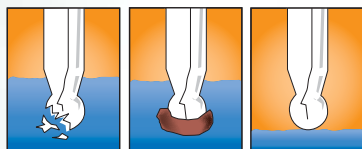


RECEIVE ELECTRODE STATUS & DIAGNOSTIC MESSAGES ON THE LCD DISPLAY OR VIA YOUR MOBILE-PHONE!*

SENSOR CHECK™ PH/ORP

Incorporated in the self-diagnostic functions of the **HI 504** series is the Sensor Check™ system which provides a continuous inspection of the probe's condition. With this troubleshooting system, a precise reading can be guaranteed. The test is not limited to a simple signal that indicates that an error is in progress. This signal reports the very nature of the breakdown, communicating a code that corresponds to an individual error directly on the instrument's display. With the **HI 504900** cellular module* accessory, errors or alarms can be sent directly to the operator's mobile phone in the form of an SMS message*. The types of breakdowns shown by the Sensor Check™ system are:

- *pH probe damaged*
- *Reference probe contaminated*
- *Reference or matching pin not immersed in liquid*
- *Dirty or blocked junction*
- *Short circuit between the cable and the probe*
- *Loss of signal from the cable or the connector caused by humidity or dirt.*



PROGRAMMABLE AUTO-CLEANING CYCLE

Heavy-duty applications often require an almost continuous maintenance of the probe. In a brief period, elements such as suspended solids, fat, oils, pigments and microorganisms can deposit and soil the glass bulb of a pH probe, ORP probe sensors or the reference junction (of both). The cleaning function permits the control of unwanted deposits by programming one or more wash cycles of the probe - an essential function, especially in batch production.

FAIL SAFE ALARM SYSTEM

Our exclusive Fail Safe alarm system offers efficient protection - both on a hardware and a software level.

Fail Safe protects against problems caused by interruption of the power supply or by human error, which are typical risks in an industrial environment. The alarm goes into action when there is a loss of tension. On a software level, the Fail Safe function activates an alarm in the case of abnormal circumstances, for example, if the dosing contacts remain closed for an excessive period. During a Fail Safe alarm, a red LED directly on the keyboard of the instrument starts to blink and can easily be seen from a distance.

WITH **TELE-CONTROL™** TECHNOLOGY

YOU DON'T HAVE TO BE THERE TO BE AWARE.



*Compatible phones, plans & SIM cards must be purchased separately by an outside provider and is not in any way covered by HANNA Instruments®.

SPECIFICATIONS	HI 504 series
RANGE	-2.00 to 16.00 pH / -2000 to 2000 mV / -30 to 130.0°C
RESOLUTION	0.01 pH / 1 mV / 0.1°C above -10°C; 1°C below -10°C
ACCURACY (@20°C/68°F)	±0.02 pH / ±2 mV / ±0.5°C (-9.9 to 130.0°C); ±1°C (-30 to -10°C)
TYPICAL EMC DEVIATION	±0.2 pH / ±10 mV / ±0.5°C
ANALOG INPUT	4 to 20 mA
DIGITAL INPUT FOR pH/ORP/°C DIGITAL TRANSMITTER	RS 485
OTHER INSULATED INPUTS	2 digital: 1 HOLD & 1 ADVANCED CLEANING; activated from 5 to 24 VDC
DIGITAL INSULATED OUTPUT	A digital insulated contact closed with instrument in HOLD mode
ANALOG OUTPUT	2 independent outputs (0-20 mA or 4-20 mA)
ANALOG OUTPUT RESOLUTION	0.1% F.S.
ANALOG OUTPUT ACCURACY	±2% F.S.
RELAYS: 1/2/3/4	Electromechanical with SPDT contacts; 5A-250VAC, 5A-30VDC (resistive load). Protection fuse: 5A, 250V Quick Blow Fuse
ALARM RELAY	Electromechanical with SPDT contacts; 5A-250VAC, 5A-30VDC (resistive load). Protection fuse: 5A, 250V Quick Blow Fuse
TEMPERATURE COMPENSATION	Automatic or manual from -30 to 130°C
DATA LOGGING	6000 pH/°C or ORP samples
TEMPERATURE PROBE	Pt 100 / Pt 1000 (with Sensor Check™ and automatic recognition)
POWER SUPPLY	230 ±10% VAC, 115 ±10% VAC or 100 ±10% VAC; 50/60 Hz (depending on the model)
POWER CONSUMPTION	10 VA
OVER CURRENT PROTECTION	400 mA 250V Quick Blow Fuse
MAX. OSCILLATION FREQUENCY	8 MHz
ENVIRONMENT	0 to 50°C (32 to 122°F); max 85% RH non-condensing
CASING / ENCLOSURE	IP20 (housing); IP54 (front panel) / Single case 1/2 DIN
INSTALLATION CATEGORY	II
WEIGHT	Approx. 1.6 kg (3.5 lb)

ORDERING INFORMATION

The models **HI 504XYZ-α** are pH/ORP controllers. Match the last letters in the product code to the corresponding numbers according to desired configuration.

X = 1, single setpoint
X = 2, dual setpoint
X = 8, single setpoint & advanced cleaning
X = 9, dual setpoint & advanced cleaning

Y = 1, ON/OFF control
Y = 2, ON/OFF & PID control

Z = 2, single analog output
Z = 4, dual analog output

α = 1, 115VAC power supply
α = 2, 230VAC power supply
α = 3, 100VAC power supply

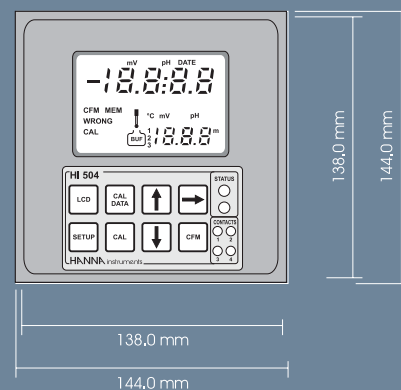
HI 504XYZ-α

SUGGESTED ACCESSORIES	
HI 504900-1*	Cellular phone interface for USA/Canada
HI 504114-1	pH/ORP digital transmitter
HI 504122-1	Calibrator for digital transmitter

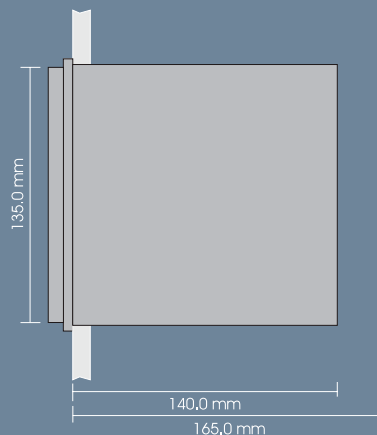
*A SIM card for HI504900 must be purchased separately by an outside provider and is not in any way covered by HANNA Instruments'.

AUTHORIZED DISTRIBUTOR

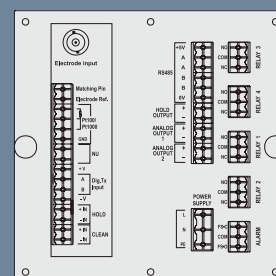
FRONT VIEW



SIDE VIEW



REAR VIEW



BNC Socket for pH or ORP electrode
Connection for Potential Matching Pin
Connection for electrode reference
Connections for Pt 100/Pt 1000
temperature sensor
Digital Transmitter input
HOLD input
Advanced Cleaning input (optional)
Power supply input
Alarm terminal
Relay 2 - second dosing terminal (optional)
Second analog output (optional)
Relay 1 - first dosing terminal
First analog output
HOLD output
Relay 4 - for Advanced Cleaning feature (optional)
Relay 3 - for Advanced Cleaning feature (optional)
RS485 output terminal