

# HYDROGUARD HG 302

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## Colorimetric Analyzer & Multi-Parameter System

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Take a step up  
in pool water quality,  
health and safety





# HYDROGUARD HG 302

## Adaptable Multi-Parameter System

The HYDROGUARD™ HG302 brings lab-test accuracy to online monitoring and control for swimming pools. Free and/or total chlorine are measured using BIWT's proven colorimetric DPD test method that is not affected by pH changes or stabilizers. Additional measurements available in the same system:  
Turbidity, pH, ORP, temperature, flow.

## Remote Monitoring

The HG302- parameters and alarms can be transferred to any Internet connected device or Mobile phone. Remote monitoring and control means fewer site visits while ensuring the highest safety standards.






## Proven Results: Constantly Clear Water

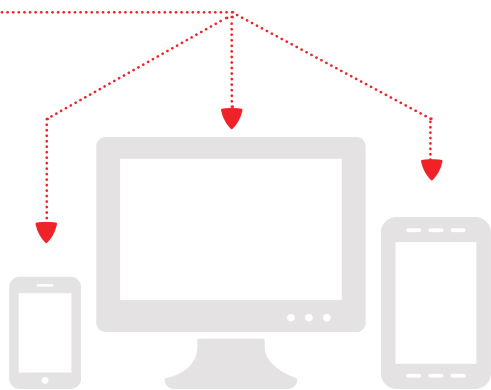
Based on the proven HYDROGUARD™ platform, the HG302- is the top pool monitoring and control solution on the market today. Our analyzers have been selected by leading global companies and are installed at a wide range of locations, including: The Beijing 2008 Olympic pools; Euro Disney's pools, numerous luxurious hotels, resorts and thousands of pools around the world.

## Easy to Operate, Reduced Total Cost of Ownership

Using Our In house technology advantages, i.e self-calibration, self-cleaning, de-bubbling, and customized measurement cycle the HG302- bring about fewer maintenance visits and reduced total cost of ownership . Detailed maintenance reminders and alarms provide actionable information on events, timing and causes, so that pool personnel can respond effectively.



-  Free chlorine
-  Combined chlorine
-  Total chlorine
-  Up to 6 parameters in one unit
-  Turbidity measured on one sample for accurate and reliable monitoring



# Product Highlights

- ▼ Accurate and reliable measurements
- ▼ Multiple parameters in a single system
- ▼ Free and/or total chlorine: 0.05-10 ppm
- ▼ Turbidity: 0-20 NTU
- ▼ Configurable measurement interval (2 to 10 minutes)
- ▼ Low reagent (DPD) consumption (~0.03 ml/sample)
- ▼ Automatic zero calibration before each reading, enabling "0" readings
- ▼ One unit performs reagent mixing, sample de-bubbling and cell cleaning

#### Mechanical

Dimensions (LxWxH) - Controller	670 x 330 x 130 mm / 26.4 x 13 x 5.1 Inch
Dimensions (LxWxH)- mounting board	800 x 550 x 5 mm / 31.5 x 21.7 x 0.2 inch
Weight	9.5 kg (21 lbs)

#### Electrical

Power supply	100 – 240VAC 50/60Hz
Maximum power consumption	Up to 60VA
Power supply for RTC	3.6V Lithium Battery

#### Relays

Chlorine set point 1	110-240VAC 8A Max / 12VDC
Chlorine set point 2	110-240VAC 8A Max / 12VDC
pH (Acid)	110-240VAC 8A Max / 12VDC
Turbidity (Coagulant)	110-240VAC 8A Max / 12VDC
General Alarm	110-240VAC 8A Max / 12VDC
Temp control	110-240VAC 8A Max / 12VDC

#### Communication

Analog input	1 x 4/20 mA (for flow meter)
Digital input	1 (for ext. flow switch)
Analog output	up to 4 x 4/20 mA
Digital output	RS 485 (Modbus or BIWT protocol)
Cellular Modem	VIA RS-485 (BIWT protocol)

#### Display

2 line 24 character LCD with backlight
2 x 7 Segments Red display 3 digits

#### Measured parameters

Temp, pH, ORP, Turbidity, Free Chlorine, Total Chlorine, Flow rate*
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#### Chlorine colorimeter

Type of measurement	Colorimetric DPD
Parameter	Free and/or Total chlorine, Combined chlorine (calculated)
Measuring Range (Chlorine)	0.01 - 10 ppm as Cl <sub>2</sub>
Measuring Cycle	2 -10 Min

#### Reagents

Reagent type	DPD1, DPD3, DPD4
Reagent consumption	Min ~0.033 ml per sample
Unmixed Storage lifespan	DPD1 & DPD3 - 3 Years DPD4 - 2 Years
Mixed Lifespan	60 Days

#### Turbidity

Sensor	White LED Light (90° and 180°)
Measuring Range	0-20 NTU
Accuracy	4% or ± 0.05 NTU

#### pH measurement

Electrode	Ceramic diaphragm and gel filling
Measurement Range	4-10

#### ORP (redox) measurement \*

Sensor	Ceramic diaphragm and gel filling
Measurement range	0 to 1000 mV

#### Temperature measurement \*

Sensor	PT-100
Measurement range	0-100°C (32-212°F)

#### Operational requirements

Back pressure	0-0.9 bar (13 psi)
Inlet Pressure range	0.5 - 1 bar (7.25-14.5 psi)
Ambient temperature	2°C to 50°C (35.6°F to 122°F)
Sample temperature	1°C to 45°C (33.8°F to 113°F)
Flow rate	30 to 60 LPH (8 to 16 GPH)

#### Ext flow measurment (main line)

Measurement range	0-1000 m <sup>3</sup> /h (0-11 Mgpd)
Frequency input	Via I/O card
4-20 mA input	Via NTU card

#### pH (acid) relay

Control function	Proportional or On/Off
Relay function	Pulse length proportional controller Pulse frequency proportional controller
Proportional band	Yes

#### Chlorine relay #1

Control function	Proportional or On/Off
Characteristics	Normal/Inverted
Proportional band	Yes
Relay function	Pulse length proportional controller Pulse frequency proportional controller

#### Chlorine relay #2 / turbidity / temperature

Control function	On/Off
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#### Certifications

CE	EN 61010-1:2001   EN 61326-1
FCC	47 CFR Part 15 SUB B
UL	CAN/CSA-C22.2 No. 61010-1-12U
IP	IP55

\* Flow meter (by customer) can be integrated with controller