



High Accuracy
Wall Mounted
Dual Adjustable Setpoints
RS232 Connection
NEMA Enclosure



PCA 300/PCA 301

Chlorine Analyzers



Continuous Monitoring of Chlorine is Essential.

DPD Method

PCA 300 - Free Chlorine Analyzer and PCA 301 - Total Chlorine Analyzer, continuously monitor and control the chlorine content in water and wastewater in the 0.00 to 5.00 mg/L range. These instruments base their operation on an adaptation of the EPA recommended DPD 330.5 method.

Dual adjustable set points

Two set points can be programmed and will act as lower and higher limits. An alarm system will signal the user when the chlorine concentration is outside the desired limits.

Proportional Dosing

A delta of 0.1 to 2.0 ppm from the set point can be keyed in. The meter will then automatically close the relay for a period inversely proportional to the difference between the measurement and set point. This way you are assured of an accurate and customized dosage without wasting any chemicals.

Recorder Output

Three voltage output levels or a current output of 4-20 mA are selectable for external devices such as chart recorders, plotters, or PLC's. Minimum and maximum values of the recorder span in mg/L are also adjustable.

Built-in Pressure Regulator

In order to prevent excessive in-line pressure damaging your controller, the PCA analyzers are supplied with a built-in regulator. Incoming pressure of up to 58 PSI (4 bar) is automatically stepped down to 14.5 PSI (1 bar).

Adjustable Sampling Time

The sampling time is user-selectable from 3 to 102 minutes. This way you can fine tune the sampling period to best fit your application and reduce chemicals used to an absolute minimum.

High Accuracy

These microprocessor-based analyzers automatically measure the sample blank absorbancy to establish the zero reference with each measurement. This assures best results for every test.

RS232 Connection

With an RS232 port for transfer of data, PCA 300 and PCA 301 can provide you with graphics or statistical analysis using common spreadsheet programs.

Long Lasting Reagents

The premixed reagents last for weeks and reduce likelihood of waste or error in their preparation. As a result, PCA 300 and PCA 301 can be left without supervision for extended periods and require minimum maintenance.

Quick Maintenance

The measurement cell is easily accessible from the top for periodic cleaning. It can also be drained at the end of a cycle or season through the cell discharge port, specifically designed for this purpose.

User-Friendly Alarm System

If for any reason the meter goes into system error, the source of the error can be assessed right on the LED to reduce troubleshooting time to a minimum.

Large LED with Self-Diagnostic Messages

A large display directly reports chlorine concentration in ppm (mg/L). The instruments also provide a full set of self-diagnostic messages during all operations.

Exclusive Calibration Check

No calibration is needed with these meters. However, an exclusive calibration check port is built into the PCA 300 and PCA 301 for the convenience of the operator to verify chlorine levels using a Hanna handheld colorimeter.

Max/Min level indication for continuous monitoring

User adjustable recorder outputs

Proportional dosing and alarm setpoints

Peristaltic Pump for accurate dosage

Access point to cell for speedy maintenance

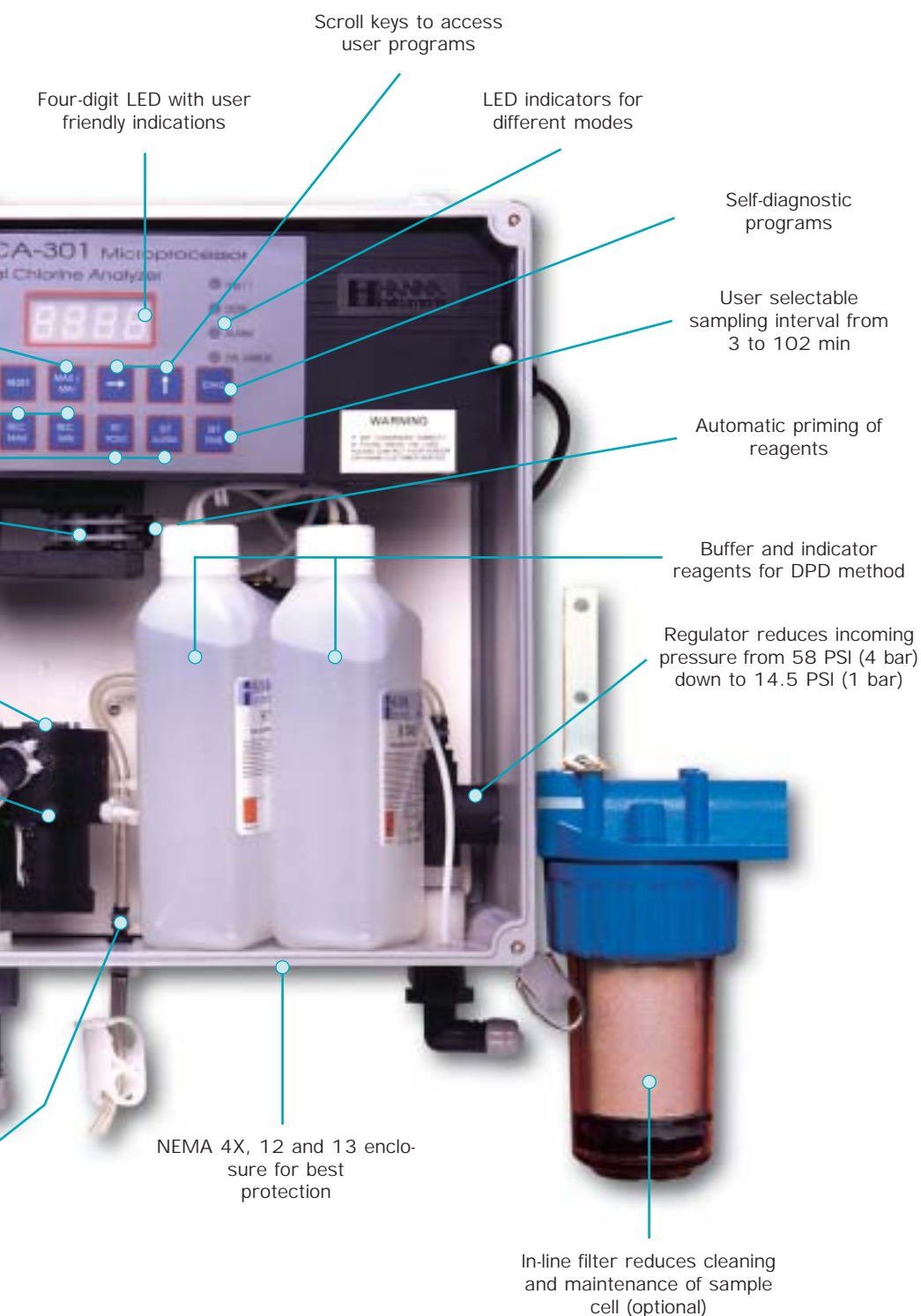
Photometric cell with LED as a light source

Hinged transparent window for quick and easy maintenance

Port to quickly drain the cell at the end of a cycle

PCA 300/PCA 301

Monitor Free & Total Chlorine with Hi



Four-digit LED with user friendly indications

Scroll keys to access user programs

LED indicators for different modes

Self-diagnostic programs

User selectable sampling interval from 3 to 102 min

Automatic priming of reagents

Buffer and indicator reagents for DPD method

Regulator reduces incoming pressure from 58 PSI (4 bar) down to 14.5 PSI (1 bar)

NEMA 4X, 12 and 13 enclosure for best protection

In-line filter reduces cleaning and maintenance of sample cell (optional)

Wastewater Treatment

Chlorine is one of the main additives used in wastewater. The measurement treatment process is necessary to verify that the values are within regulatory standards. In addition, by monitoring the chlorine level, particularly in the filtration and purification stages, different processes can be controlled independently.

Industrial Applications

In many manufacturing processes such as textile and paper, chlorine is commonly used. Its continuous monitoring can help in obtaining consistency and therefore enhance the quality of finished goods.

Drinking Water

Chlorine is one of the most important substances used as a drinking water disinfectant. When chlorine concentration is too high, the water has an unpleasant taste and odor. When it is too low, its effect as a disinfectant is diminished. The chlorine level should therefore be carefully kept within an acceptable range.

Swimming Pools

Swimming pools are one of the largest consumers of chlorine. The PCA 300 and PCA 301 can be used to check the chlorine levels in pools and spas to ensure public safety, prevent waste and protect the environment by reducing overdosage.

Heating and Cooling Systems

Chlorine is added for sterilization purposes to prevent biological fouling in heating and cooling systems. Continuous monitoring can best secure a constant chlorine feed and maintenance of optimal conditions.

Beverage Manufacturers

As a part of monitoring beverage production processes, it is important to check chlorine levels. In fact, most of beverage manufacturers use chlorine for sterilization and control of microbiological contaminants.

High Quality Microprocessor Analyzers.

SPECIFICATIONS

PCA 300

PCA 301

Range	0.00 to 5.00 mg/L free chlorine	0.00 to 5.00 mg/L total residual chlorine
Accuracy	± 8% of reading or ± 0.05 mg/L, whichever is greater	
Resolution	0.01 mg/L	
Minimum Detectable Level	0.05 mg/L	
Repeatability	±0.05 mg/L	
Reagents	HI 70450 indicator (included) HI 70451 buffer (included) HI 70452 DPD compound (included) life: 50 days with 10 min. sampling rate	HI 70460 indicator (included) HI 70461 buffer (included) HI 70452 DPD compound (included)
Response Time	Depends on the sampling time selected. Typical for a full scale step change and 5 minutes between two consecutive samples: one sampling cycle for 90% response and two sampling cycles for 100% response.	
Sampling Rate	Adjustable from 3 to 102 minutes per sample.	
Sample Inlet Pressure	1 psig (0.07 bar) min., 57.2 psig (4 bar) max. An internal regulator reduces pressure from 57.2 psig (4 bar) to 14.3 psig (1 bar)	
Sample Flow Range	Flow rate of 300 mL/min is recommended. Minimum and maximum allowed are 100 mL/min and 500 mL/min, respectively.	
Sample Temperature Range	5 to 40°C (41 to 104°F)	
Interferences	Oxidizing agents such as: iodine, bromine, ozone, chlorine dioxide, permanganate. Hexavalent chromium. Hardness must not exceed 1000 mg/L as CaCO ₃ . Alkalinity must not exceed 400 mg/L for Free or 700 mg/L for total chlorine.	
Operating Temperature Range	0 to 40°C (32 to 104°F)	
Recorder Output	Selectable: 0-10 mV, 0-100 mV, 0-1 V or 4-20 mA. Output span can be set anywhere in the 0-5 mg/L range	
Proportional Dosing	Dosing relay/alarm: Low or High, one system error alarm. Each equipped with a SPDT relay with contacts	
Relay/Alarms	rated for resistive load: 5 A at 250 VAC or 5 A at 30 VDC; inductive load: 2 A at 250 VAC or 3 A at 30 VDC.	
Power Requirements	20 VA at 115 VAC/230 VAC; 50/60 Hz. Frequency must be specified at order.	
Sample Inlet Connection	12 mm (1/2") male NPT fitting	
Drain Connection	10 mm (3/8") barb fitting	
Case	NEMA-4X molded fiberglass polyester instrument enclosure with transparent GE Lexan window.	
Dimensions	318 x 267 x 159 mm (12.5 x 10.5 x 6.25")	
Weight	5 Kg (11 lb.) without reagents	

ORDERING INFORMATION

PCA 300/U . . .Free chlorine analyzer complete with recorder and alarm outputs, NEMA casing, HI PCA R ext. regulator, reagents, RS232 and calibration port.
PCA 301/U . . .Total chlorine analyzer complete with recorder and alarm outputs, NEMA casing, HI PCA R ext. regulator, reagents, RS232 and calibration port.

ACCESSORIES

HI 70480Free Chlorine reagents set
HI 70481Total Chlorine reagents set
HI 70476Internal bottle reagent tubing
HI 70484Complete PCA maintenance tubing set
HI 70486Stirring bar (5 pcs)
HI PCA RExternal regulator
HI 704820.5/50 micron filter system
HI 92000Windows® compatible application software

Authorized Distributor www.clarksonlab.com



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