TELEDYNE
ANALYTICAL INSTRUMENTS
A Teledyne Technologies Company

(주)엠씨마스터스
MC Masters
Measurement & Control

Model
CA-600
ONLINE COLORIMETER

- **Simple** — Easy Installation User Friendly Menu Structure Touchscreen Interface Easy Process Configuration
- **Reliable** — Epoxy Powder Coated Rugged Cold Rolled Steel Cabinet Two separate Compartments (Electronics Hydraulics) Loss of Sample Low Reagent Alarms
- **Cost Effective** — Low Maintenance Adjustable Cycle Time to minimize Reagent usage

DESCRIPTION

The CA-600 Series Analyzers are a family of on-line sequential sampling analyzers that use Colorimetric or Ion Selective Electrode (ISE) technologies to perform an analysis. The analyzers can be configured to perform most colorimetric or ISE based laboratory analysis that use up to four reagents. The CA-600 Analyzers are easy to start up and use, simply connect the sample, waste and reagent lines and then power up the Factory Calibrated analyzer. Wall mounting hardware is standard but an optional bench top stand with reagent holder is also available. Accessing information or customizing an analysis routine are easily accomplished with the simple, user friendly menu structure and touch screen interface.

The analyzer has two separated enclosures with two lockable doors. The Top enclosure, called the ELECTRICAL enclosure, includes the main power supply, the controller PCB assembly and the touchscreen interface. The Bottom enclosure, called the LIQUIDS enclosure, includes all the components involved in the sample and reagent flow, mixing and reaction stages (sampling pump, reagent Micro Pumps and colorimetric reaction cell). Numerous analysis configurations can be programmed, depending on the accessories and the number of micro pumps mounted in the Liquids enclosure.

The colorimetric analysis are based on the measurement of color formation in the sample after the addition of reagents. The absorbance of the solution is measured though a Quartz Reaction Cell at a specific wavelength using a long life LED light source and a photometer. The absorbance is related to the sample concentration according to 'Lambert-Beer Law'.

The CA-600 Colorimeters make two measurements during an analysis cycle. The first measurement is of the raw sample which sets the base line for the compensation of color, turbidity and optical characteristics of the cell. The second measurement occurs after the color forming reagents have been added to the sample, mixed and adequate time has past to allow for color formation. The concentration is calculated using the difference between the two absorbance measurements and the stored calibration information in the analyzer.

The CA-600 analyzers typically make a single measurement per analysis cycle, although a user defined calibration or cleaning sequence can be added to proceed the measurement every "X"number of measurement cycles. A standard sequence would consist of a drain and rinse cycle, sample acquisition, addition of reagents, mixing time, waiting period and measurement. Higher Range samples are accommodated using the optional Dilution Module providing 10:1 or 50:1 dilution ratios. Several ISE's require significant sample conditioning before an accurate measurement can be made. In these cases, the CA-600 Analyzer facilitates the on-line measurement by reducing the amount of conditioning chemicals required and minimizing the associated volume of waste.

The CA-600 Analyzer home screen displays the measured parameter, the status, % reagent volumes, time and Menu choices. The on screen HELP menu includes information on Start Up, Shut Down, Start/Stop Commands, Calibration, Function List, Programing, Maintenance and Troubleshooting. Outputs include two Alarm Relays and a 4-20 mA channel.

Phosphate & Total Phosphorus

CA-600 - ONLINE COLORIMETER

PARAMETER	RANGE
Aluminum	(A) 0-0.2MG/L (B) 0-2.00mg/L (C) 0-10.0MG/L
Ammonia	(A) 0-1.0 mg/L - (B) 0-10.0 mg/L - (C) 0-50.0 mg/L
Chloride	(A) 0-3.0 mg/L - (B) 0-30.0 mg/L - (C) 0-150.0 mg/L
Chlorine (free-total)	(A) 0-3.0 mg/L - (B) 0-30.0 mg/L - (C) 0-150.0 mg/L
Chromium VI	(A) 0-1.0 mg/L - (B) 0-10.0 mg/L - (C) 0-50.0 mg/L
Copper	(A) 0-5.0 mg/L - (B) 0-50.0 mg/L - (C) 0-250.0 mg/L
Cyanide (free)	(A) 0-200 µg/L - (B) 0-2.0 mg/L - (C) 0-10.0 mg/L
Hardness	(A) 0-1.0 mg/L - (B) 0-10.0 mg/L - (C) 0-50.0 mg/L
Iron	(A) 0-1.0 mg/L - (B) 0-10.0 mg/L - (C) 0-50.0 mg/L
Manganese	(A) 0-100 µg/L - (B) 0-1.0 mg/L - (C) 0-5.0 mg/L

PARAMETER	RANGE
Nickel	(A) 0-3.0 mg/L - (B) 0-30.0 mg/L - (C) 0-150.0 mg/L
Hydrazine	(A) 0-500ug/L (B) 0-5.00mg/L (C) 0-20.0MG/L
Nitrite	(A) 0-600 µg/L - (B) 0-6.0 mg/L - (C) 0-30.0 mg/L
~~Total Nitrogen~~	1.00 - 100 mg/L
Phosphate	(A) 0-5.0 mg/L - (B) 0-50.0 mg/L - (C) 0-200 mg/L
Total Phosphorus	(A) 0-2.0 mg/L - (B) 0-20.0 mg/L - (C) 0-100 mg/L
Silica	(A) 0-1.0 mg/L - (B) 0-10.0 mg/L - (C) 0-50.0 mg/L
Sulfate	(A) 0-50 mg/L - (B) 0-500 mg/L - (C) 0-2500 mg/L
Phenoyl	(A) 0-5.00mg/L (B) 0-200mg/L
Zinc	(A) 0-2.0 mg/L - (B) 0-20.0 mg/L - (C) 0-100 mg/L

Ranges (B) and (C) require the addition of the Dilution Module Option

SPECIFICATIONS

Method: Photometric differential absorbance ~~or ISE~~

Measuring range: Refer to the specific parameter for the colorimetric measurement range

Response Time: Dependent on the specific colorimetric measurement

Repeatability: +/- 2% on absorbance value with turbidity < 80 NTU

Drift: +/- 2% per month on the absorbance measurement

Power supply: 110-220VAC, 50-60 Hz, 80 VA

Mounting: Wall mounting or with optional bench support

Operating temperature: 5-50°C

Cabinet: Cold rolled steel epoxy powder coated

Dimensions: 380L x 600H x 210D mm (15"x 24"x 8.25"in.)

Weight: Approx. Kg. 17 kg.(37.5 lbs)

Reagent consumption: Dependent on the specific colorimetric measurement, approximately 2500 tests per liter of reagent.

Analog output: 4-20 mA

Alarms: 4 Configurable Relays

Inlet sample pressure: Atmospheric

Outlet sample pressure: Atmospheric, waste tubing O.D.⅜

Sample flow for the fast loop reservoir: 100-500 ml / min

Connections: To the fast loop reservoir with flexible tubing O.D.1/4"

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Warranty
Instrument is warranted for one year against defects in material or workmanship

NOTE: Specifications and features will vary with application. The above are established and validated during design, but are not to be construed as test criteria for every product. All specifications and features are subject to change without notice.

ISO 9001:2008 - QMS