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Total hardness analyser Model 8810

data sheet

Applications

- On–line monitoring of calcium and magnesium in boiler feedwater
- On–line measurement of calcium and magnesium after a softening cycle
- On–line analysis of total hardness in cooling water (power plants)

Methodology

- Measurement principle: Complexometric titration of calcium and magnesium by EDTA and copper ion selective electrode as end-titration indicator.
- Unit: 1 d°F = 10ppm $CaCO_3$ = 4 ppm Ca2+ = 0.2 mVal
- Measuring range: 0–50 d°F/0–1 d°F
- Detection limit: 0.01 d°F (0–1 d°F range)
- Analysis frequency: Programmable – 1 analysis every 5 min. max.

Advantages

- Standard laboratory method
- No sample filtration (if any suspended particles <1% and <1 mm)
- Easy to set up–friendly programming
- Automatic reactor cleaning after each measurement cycle
- 2 analog outputs 0/4–20mA. One output is assigned to the measurement. The other is assigned to titration curve plotting
- Monthly maintenance only

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Distributor

TE 8810=A=909 - Rev. D - FR. 50622048726

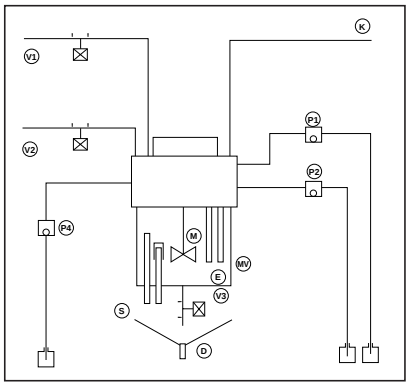
CE BVQI ISO 9001

Operating principle

The drain valve and the rinse valve open allowing rinse water to clean the reactor for a programmed time (see figure).

After the rinse valve, the sample valve opens while the drain valve stays open a few seconds in order to flush any remaining rinse water droplets with fresh sample solution.

The drain valve closes and the sample volume is accurately adjusted with the siphon. The conditioning pump is now actived and operates for a programmed time. The pump is used for the titration. The action time of is directly proportional to the concentration in hardness at the equivalence point.



V1	: Rinse valve	P4	: Volumetric pump for automatic calibration	S	: Siphon/overflow
V2	: Sample valve			P1	: Titration pump
V3	: Drain valve	D	: Drain	P2	: Sample conditioning pump
MV	: Reactor	M	: Stirrer	K	: Electrode cable
				E	: Electrodes

Specifications

SAMPLE
Number of sample streams:
1, up to 6 with sequencer model 8811
Sampling mode: cyclic, programmable
Sample temperature: 0–50 °C (32–122 °F)
Sample pressure: 0.5–6 bar (7.2-87 psi)
Sample flowrate: 50–300 l/h (10-80 GPH)
Flush-water pressure: 1–6 bar (14.5–87 psi)
Air instrument: 5-7 bar (72.5–101.5 psi)

INSTALLATION
Mounting: 19" panel, wall mounting unit or free-standing cabinet
Sample tubing: 12/14 mm
Flush water: tubing 6/8 mm
Air instrument: tubing 4/6 mm
Inches connectors on request with sample : 1/2" OD, rinsing : 3/8" OD, air : 1/4" OD

ANALYSIS
Analysis cycle: '5 min.
Cycle time: programmable 999 min. max.
Units : ppm, ppb, mg/l… programmable
Accuracy: ±2%
Reproductibility: <3%
Calibration: manual, process or automatic programmable

OUTPUTS
Analog outputs:
2 x 0 or 4/20 mA signal galvanically isolated
Alarms:
3 relays: 1 system alarm, 1 our limit, high limit
Control:
1 sample level detector
1 reagent level detector
1 calibration solution level detector
RS232 output
Remote start/stop

E.M.C.: This instrument conforms to European Directive 89/336/CEE concerning electromagnetic compatibility.

System configuration

8810 HARDNESS ANALYSER BASIC INSTRUMENT
P/N 368810,3xxxxx:
8810 HARDNESS ANALYSER 19" panel mounted includes:
- Titration vessel /Sprinkler
- Measuring copper electrode / reference
- One reagent pump for titration

P/N 368810,7xxxx:
Additionnal reagent pump for sample conditioning

OPTIONS
- P/N 368810,60000: Automatic calibration
- P/N 368810,56000: Chemical cleaning
- P/N 368810,65000: Manual sample entry system
- P/N 368810,40000: Fiberglass enclosure, wall mounting
- P/N 368810,45000: Steel cabinet, floor mounting

* Reagent pump are either peristaltic or micropiston (24V/50HZ or 24V/60HZ)
* The product can be configured with different frequency/voltage:
- 220V/50HZ - 240V/50HZ - 110V/50HZ - 110V/60HZ