

CENTURION II

Centurion™ II

In the Roman Army, a Centurion™ was a commander of men, a field commander with direct charge and complete authority. Water King has designed a rugged, field tested controller for water softeners and filters. The unit has the following advantages:

- Full featured operations program
 - **Lead Lag and Big Brother** operating modes absolutely unique in the industry.
- Reliable, easily maintained, easily repaired hardware
- Allen Bradley Micrologix 1000 PLC in NEMA 4 enclosure.

Water King incorporates manufactured products by Allen-Bradley. Allen-Bradley products can be serviced anywhere in the world thus minimizing downtime if repairs are needed. In addition Allen-Bradley has the best longevity in controller systems, a perfect match to Water King's longevity in the soft water business.



PROGRAM CAPABILITIES:

- Operate 1 or 2 vessels
- Operate in four different modes
- Timed brine cycle
- Full demand regeneration
- Flow and total volume readouts
- Take any tank out of service
- Manually regenerate any softener upon command
- Functions with any Hall Effect flow meter.

The Centurion says,
“For I am a man under
authority, having
 soldiers under me: and I
 say to this man, Go, and
 he goeth; and to another,
 Come, and he cometh;
 and to my servant, Do
 this, and he doeth it.”
 Mathew 8:9 KJV

THE CENTURION II - FOUR DIFFERENT MODES:



1. **LEAD-LAG.** This mode used two tanks and two meters. In this mode, the system is capable of having one tank in service during low flow conditions, and two tanks in service during high flow conditions. The CenturionII™ program relies on the lead-lag sequence to control the steps necessary to regenerate multiple water softeners. Each softener has a flow meter with a computerized totalizer. The operator can set the volume of water to be

treated by each softener to allow full utilization of the softening capacity of each softener (called demand regeneration). At low flows, the system is designed for the unit with the least capacity remaining to be the lead unit or first on line. As the flow increases, the second unit is brought into service. As the flow decreases, both units remain in service until the lowest possible flow. This gives minimum leakage by operating at the least possible flow that still prevents channeling. Each unit has two set points, a minimum and a maximum or a lead and a lag. Demand regeneration allows maximum utilization of resin capacity thereby minimizing salt and rinse water requirements.

2. **BIG BROTHER.** For applications with widely varying flows a large “turn down” is required. This is accomplished by the CenturionII with a variant if Lead-Lag Sequencing. In this system one small tank and one large tank is used. The flow will switch completely from one tank to the other depending on flow. The Centurion II prevents simultaneous lock outs. Lead Lag sequencing prevents hunting by the controller and allows maximum resin utilization.
3. **TWIN PARALLEL.** In this mode, two softeners and two flow meters to operate simultaneously. Each softener is returned to service immediately after regeneration and simultaneous regeneration is prevented.
4. **TWIN ALTERNATING.** In this operating mode two softeners and one flow meter. One tank is in service at all times. The opposite tank is in either regeneration or stand-by. Tanks alternate as their softening capacity is expended.

SPECIFICATIONS: The PLC controller shall be an Allen-Bradley MicroLogix™ 1000 in a NEMA 4 fiberglass housing. Electrical shall be 120 VAC Input, 24 VDC Output with 5 amp capacity. Double pole double throw isolation relays shall be provided for the Taskmaster™ Valves. If a valve nest system, the stagers shall be mounted in the same housing as the PLC and no external wiring shall be required except for a power connection. Software shall be Windows-based accessible via a serial connection or modem (not provided). The operator interface shall be a nine-button, two-line, twenty-four character, EZ-220 DF1 Keypad Display. Part No. CENTURION-II

CENTURION™ AND TASK MASTER™: With the Centurion II™ electromechanical timers have been eliminated. All timing, sequencing, and programming are done by the real time clock in the PLC. The electrical portion of the Task Master™ has been greatly simplified by elimination of the timer on each valve.

CENTURION™ - VALVE NEST: Water King can provide a valve nest using pneumatically or hydraulically operated diaphragm valves or electric valves depending on customer’s requirements. Specific control of brining by PLC is included.

OPTIONS: Additional features are available including audible or visual alarms, Data logging, Remote access via modem.