

# ERCT and ERCd

## NEMA 4/IP65 STYLE ENCLOSURE

Intended for indoor or outdoor use primarily to provide a degree of protection against corrosion, windblown dust and rain, splashing water, and hose-directed water; undamaged by the formation of ice on the enclosure. The enclosure door must be kept tightly closed. Any modifications to this product (i.e. added holes for cable entry/mounting, conduit connections...etc.) may void the intended NEMA4/IP65 rating. NEMA 4/IP65 and UL rated fittings should be used when modifying the enclosure.



## VARIABLE RESERVE FUNCTION (VRF)

The ERCd control has a variable reserve function, which automatically adjusts the reserve to the water usage schedule. Each day the ERCd reviews the last four weeks of water usage (demand as measured by the flow meter) for the same day of the week to determine if the remaining capacity is adequate for the next day. If not, it will initiate an automatic regeneration. Default regeneration time is 2:00 am. The VRF does not operate in twin alternating mode.

## INPUTS

**Terminal Strip 1 (TB1) High Voltage** (Connection provided via power cord, supplied by manufacturer)

TB1, Terminal "L": Line Voltage Input

TB2, Terminal "N": Neutral Input

Earth Ground, Terminal Post and Nuts located on motor plate. Identified by

## OUTPUTS

**Terminal Strip 2 (TB2) and 3 (TB3) High Voltage**

Terminal "NC":

Normally Closed Auxiliary Relay Contact Output

Terminal "NO":

Normally Open Auxiliary Relay Contact Output

Terminal "L":

Line Voltage Output (can be used to provide power to input "C").

Relative Humidity Operating Range

1 to 65°C (34 to 150°F) 10% to 100% Condensing  
38 to 55°C (100 to 131°F)

10% to 75% Non-Condensing

## CAT417.2

Pollution Degree	2
Overvoltage Category	11
Max. Rated Power	125 Watts
Altitude	6500 feet (2000 m)
Working Pressure	20 to 125 psi (1.4 to 8.6 bar)
Voltage Range	100 to 230 VAC ( $\pm 10\%$ )
Standard Electrical Rating	115 VAC, 230 VAC, 100 VAC, 200 VAC, 50/60 Hz
Electrical Cord Length	6 feet (1.8 m)
Electrical Connection	Terminal strip
Standard Plumbing Connections	1-1/2 in NPT/BSPT inlet and 1/2 inch NPT regenerant / 3/4 inch NPT/BSPT drain
Optional Plumbing Connections	1-1/2 inch NPT/BSPT drain
Rubber Parts	
Valve Body	CF8M (316) Stainless Steel (Passivated)
Injector	5 sizes available, (refer to Injector Flow Rate Chart)
Regeneration Control	ERCt Electronic Time Clock, ERCd Demand Systems
Conditioner and Filter Versions Available	
Backwash Cycle	0-250 minutes
Regenerant Draw Cycle	0-250 minutes
Slow Rinse Cycle	0-250 minutes
Fast Rinse Cycle	0-250 minutes
External Backwash Controller Required (over 40 gpm)	
External Regenerant Valve Required	Must have positive shut-off on refill and draw down
Ambient Temperature	34°F (1°C) to 150°F (65°C)
Fluid Temperature Range	34°F (1°C) to 180°F (82°C)
Riser Pipe Diameter Required	1-1/2 in schedule 40 PVC (42 mm O.D. x 3.8 mm wall)
Tank Adapters (Top Mount)	4 inch - 8 UN Thread with 1-1/2 inch Riser (42mm)
Tank Adapters (Side Mount)	1-1/2 inch NPT/BSPT

## ERC CONTROL SEQUENCES FOR RF AND MF SYSTEMS USING THE TASK MASTER III VALVE

**SIMPLEX (-SX).** Simplex systems shall have regeneration initiated by time of day or “clock time”. SX systems shall have one mineral tank, one brine tank, one Task Master III™ control valve, one ERCt controller. To avoid shutting off the water during regeneration, simplex systems bypass hard water during regeneration. Ordering an optional shut off kit will prevent hard water bypass.

**SIMPLEX METERED (-SM).** Simplex metered systems shall have regeneration initiated by gallons treated (demand). SM systems shall have one mineral tank, one brine tank, one Task Master III™ control valve, one ERCd controller, one flow meter. Regeneration initiation and meter display shall be provided by the ERCd. To avoid shutting off the water during regeneration, simplex systems bypass hard water during regeneration. Ordering an optional shut off kit will prevent hard water bypass.

**TWIN (-T).** Twin systems shall consist of two mineral tanks with attached Task Master III™ control valves and one brine tank with a brine director. Regeneration initiation shall be by an ERCt time initiated electronic regeneration controller on each unit. Vessels will regenerate on time of day. Simultaneous regeneration is prevented by setting regeneration of different units at different times of the day.

**TWIN ALTERNATING (-TA).** In twin alternating (TA) mode units operate so that once a predetermined amount of water has passed through the flow meter the ERCd initiates regeneration of the exhausted unit placing its twin in service. One unit is on line (in service) and one is either in standby or regeneration. The ERCd demand initiated regeneration controller controls the regeneration cycles for both of the twin alternating units in a master slave configuration. Twin alternating systems shall have two mineral tanks, two Task Master III™ control valves (a master and a slave), one brine tank with brine director, one ERCd controller, flow meter and two shut off kits. Regeneration initiation and meter display shall be provided by the ERCd.

**TWIN SEQUENTIAL (-TS).** In twin sequential (TS) mode both units are in service unless a unit is in regeneration. The flow through both units is directed into a single meter. Once a predetermined amount of water has passed through the flow meter the ERCd initiates sequential regeneration of both units. When regeneration of the primary tank is complete, the ERCd sends an initiation to the ERCt on the secondary tank causing it to regenerate. Twin sequential systems shall have two mineral tanks, two Task Master III™ control valves, one brine tank with brine director, one ERCd controller, one ERCt controller, one flow meter and two shut off kits. An advantage of the sequential configuration is that the secondary unit can operate independent of the primary unit. Regeneration initiation and meter display shall be provided by the ERCd. The ERCt controls the cycle times on the secondary vessel.

**TWIN, TRIPLEX AND QUAD PARALLEL (-TP, TXP, QP).** In parallel mode all units are in service unless a unit is in regeneration. Each softener has its own flow meter and regenerates independently of the other units. In parallel systems, simultaneous regeneration is prevented by using the variable reserve function (VRF) in the ERCd. Different time windows are set for regeneration of each unit. Regeneration initiation, cycle timing and meter display shall be provided by the ERCd. Twin Parallel systems shall have two mineral tanks, two Task Master III™ control valves, one brine tank with brine director, two ERCd controller, two flow meters and two shut off kits.

**TWIN, TRIPLEX AND QUAD SEQUENTIAL. (-TS, -TXS / -QS).** In twin, triplex and quad sequential mode all units are in service unless a unit is in regeneration. The flow through all units is directed into a single meter. Once a predetermined amount of water has passed through the flow meter the ERCd initiates regeneration of the primary unit. When regeneration of the primary unit is complete, the ERCd sends an initiation to the ERCt on the secondary tank causing it to regenerate. When the secondary unit is regenerated the ERCt on this unit sends an initiation signal to the third unit. When the third unit is regenerated, a signal is sent to the fourth unit. Twin sequential systems shall have two mineral tanks, two Task Master III™ control valves, one brine tank with brine director, one ERCd controller, one ERCt controller, one flow meter and two shut off kits. Triplex sequential systems shall have three mineral tanks, three Task Master III™ control valves, one brine tank with three brine valves, one ERCd controller, two ERCt controllers, one flow meter and four shut off kits. Quad sequential systems shall have four mineral tanks, four Task Master III™ control valves, one brine tank with four brine valves, one ERCd controller, three ERCt controllers, one PW, PWS or TM series flow meter and four shut off kits. An advantage of the sequential configuration is that the secondary units can operate independent of the primary unit. Regeneration initiation and meter display shall be provided by the ERCd. The ERCt controls the cycle times on the secondary and tertiary vessels.

