

# Packaged Instantaneous Circulation Water Heater

Full kW selection in all voltages, single or three phase, use for domestic water and boiler applications

Engineered for your specific application to meet your exact needs

Full selection of materials and controls to meet even the most demanding application

- Constructed with high grade materials to ensure long operating life
- Standard ASME Section IV unless otherwise specified
- Turn-key package is simple to specify and operate
- Factory wired electrical controls provide trouble-free installation and operation
- Instantaneous design reduces standby heat loss and lowers operating costs

#### **Applications**

Process systems, wash downs, aquariums, heat pump back up, aqua stadiums, high-powered boiler systems, freeze protection, shipboard, and much more.



# Instantaneous water heater for naval, marine, and industrial applications

The Hubbell Signature CR is a highly reliable and easily maintained water heater designed for continuous operation in a commercial or industrial application. Each heater is constructed to meet the specific requirements of your system and is available in a full array of operating controls, materials, and design styles. Its compact, highly efficient design takes up minimal floor space, reduces operating costs, and is factory packaged with all operating controls.

#### Over 100 years of water heating expertise

Hubbell water heaters are the right choice for your commercial and industrial applications. We have water heating solutions for most energy sources with storage capacities from 1–10,000 gallons — all designed, engineered, and manufactured for reliability and longevity coupled with unparalleled support and service.











### **Standard Equipment**

#### **GENERAL**

Heavy duty 2" thick fiberglass type blanket insulation for maximum operating efficiency and minimal standby heat loss

Heavy gauge galvanized steel protective jacket keeps insulation in place to ensure high efficiency during operation

Horizontal configuration supported on heavy duty integrally welded steel supports for sturdy floor mounting

Full five (5) year Non Pro-Rated vessel warranty and one (1) year electrical component warranty

Bronze ASME rated combination temperature and pressure safety relief valve set at the vessel working pressure and 210°F

#### **VESSEL CONSTRUCTION**

Designed and built in strict accordance with the ASME Code Section IV and stamped, certified, and registered with the National Board of Boiler and Pressure Vessel Inspectors

All welded Stainless Steel pressure vessel

Designed for 150 psi working pressure and hydrostatically tested to 225 psi





### **Standard Equipment**

#### **ELECTRICAL OPERATING CONTROLS**

All electrical operating controls are factory sized, selected, wired, tested, and mounted in a NEMA 1 enclosure to ensure safe and reliable operation

Single point electrical connection for ease of installation

Fast acting power fuses rated at a maximum of 60 Amps protect each heating element branch circuit per NEC and UL requirements

Heavy duty resistive load type magnetic contactors with integrally mounted power fuse block assembly

Heavy duty low watt density 150# flange type incoloy 800 sheathed immersion heating element provides long service life

Factory installed flow switch prevents the element from energizing in low/no flow conditions

Fully adjustable temperature controller maintains accurate water temperature and is sized by the factory to control the appropriate number of heating element circuits

A high quality transformer provides fused 120V to the control circuit

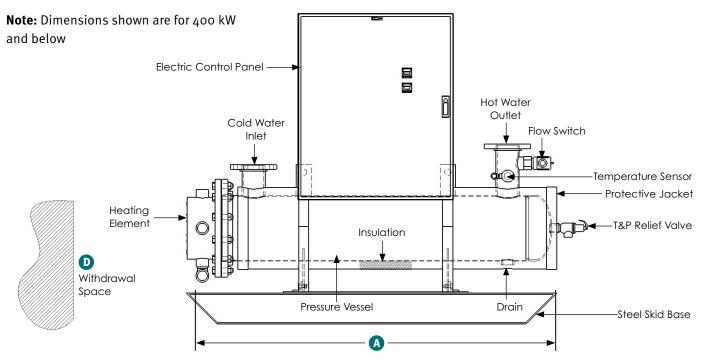
A fully adjustable (100-240°F) safety hi-limit device with manual reset interrupts power to the control circuit in the event of over-temperature water



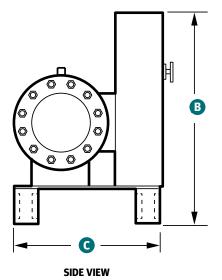


### **Dimensions**

The kW selections below are shown for convenience. A full selection of kW ratings up to 1600 kW is available, enter the desired kW into the model number.



kW	Appro	Inlot/Outlot				
Rating	Α	В	С	D	Inlet/Outlet (Inches)	
25	36	32	19	34	3/4 MNPT	
100	60	48	24	50	2 MNPT	
150	60	48	24	50	2 MNPT	
200	72	54	30	62	2 MNPT	
250	72	54	30	62	3 FLG	
300	72	66	36	62	4 FLG	
350	72	66	36	62	4 FLG	
400	84	66	36	70	5 FLG	
500	84	66	36	70	5 FLG	
600	96	72	48	84	5 FLG	
800	108	76	60	96	6 FLG	
1200	108	76	60	96	6 FLG	
1600	108	76	60	96	6 FLG	



#### **Notes**

Consult factory for vertical and wall mounted dimensions.



### **General Specifications**

The kW selections below are shown for convenience. A full selection of kW ratings up to 1600 kW is available, enter the desired kW into the model number.

	Recovery Rate in GPM at F° Temperature Rise						Amperage Rating Three Phase						
kW Rating	10°F ΔΤ	20°F ΔΤ	40°F ΔΤ	60°F ΔΤ	80°F ΔΤ	100°F ΔΤ	120°F ΔΤ	140°F ΔΤ	208V	240V	380V	415V	480V
25	17.1	8.5	4.3	2.8	2.1	1.7	1.4	1.2	69	60	38	35	30
100	68.2	34.1	17.1	11.4	8.5	6.8	5.7	4.9	278	241	152	139	120
150	102	51.2	25.6	17.1	12.8	10.2	8.5	7.3	417	361	228	209	181
200	136	68.2	34.1	22.7	17.1	13.6	11.4	9.7	556	482	304	279	241
250	171	85.3	42.7	28.4	21.3	17.1	14.2	12.2	695	602	380	348	301
300	205	102	51.2	34.1	25.6	20.5	17.1	14.6	834	723	456	418	361
350	239	119	59.7	39.8	29.9	23.9	19.9	17.1	973	843	532	487	421
400	273	136	68.2	45.5	34.1	27.3	22.7	19.5	1112	963	608	557	482
500	341	171	85.3	56.9	42.7	34.1	28.4	24.4	1390	1204	761	696	602
600	409	205	102	68.2	51.2	40.9	34.1	29.2	1667	1445	913	836	723
800	546	273	136	91	68.2	54.6	45.5	39	_	1927	1217	1114	963
1200	819	409	205	136	102	81.9	68.2	58.5	_	1	1825	1671	1445
1600	1092	546	273	182	136	109	91.0	78.0	_	_	_	_	1927

## **Signature CR Sizing Information**

#### Variables to Solve For:

**Step 1:** Solve for the unknown using the formulas below.

### **kW Requirement:**

\_\_\_\_\_GPM x \_\_\_\_\_°F
$$\Delta$$
T x 0.1465 = \_\_\_\_\_ kW   
Temperature Rise:

\_\_\_\_kW x 
$$6.824 \div$$
 \_\_\_\_\_GPM = \_\_\_\_°F $\Delta$ T Flow Rate:

kW x 
$$6.824 \div _{gain} \circ F\Delta T = _{gain} GPM$$

**Step 2:** Choose the CR model with the kW rating which meets the peak demand (GPM) of your system.

Step 3: Choose the voltage and phase power supply available. Note the total amperage draw of the unit and verify availability.

#### **Electrical**

$$\frac{\text{kW x 1000}}{\text{Volts}}$$
 ÷ 1.73 = Amps 3  $\oplus$ 

Note: Each branch circuit in the CR Model is typically rated at a maximum of 48 Amps and each circuit is operated as an independent temperature step.

**Example:** Signature CR250SST4 is 225 kW and 480V 3  $\phi$ 

$$\frac{250 \times 1000}{480}$$
 520 ÷ 1.73 = 301 Amps Total

301 ÷ 48 Amps max circuit rating = 6.3

Round up to 7 for the number of heating load temperature steps



### **Signature CR Model Number Designation**

MODEL	kW	TANK	VOLTAGE / PHASE	OPTIONAL EQUIPMENT
CR	Enter desired kW	SS = Stainless steel 316L CN = 90/10 copper-nickel BL = Carbon steel	R = 208/3 T = 240/3 T3 = 380/3 T7 = 415/3 T5 = 440/3 T4 = 480/3 T6 = 600/3	Write/type optional equipment code in the gray box below in alphabetical order. For multiple options separate codes with a dash (–). See options on page 7.

CR

### Example: CR100SST4-E2-E3

A Hubbell Signature CR water heater rated at 100 kW with a stainless steel vessel. Electrical rating is 480 volt, three phase, 60 Hz with optional indicating lamps and audible alarm.





**Upon Request)** 

304 Stainless Steel Protective Outer Jacket (Painted

ASME Section VIII Div. 1 Construction



### **Optional Equipment** Optional equipment must be called out using the codes in this section.

#### Controller General **C**5 Low Water Cutoff G1 Combination Temperature & Pressure Gauge: 3.5" Dial, C15 Non-Fused Disconnect Switch 70°F - 250°F, o - 200 PSI, Tank Mounted BACnet Communication Module with T1000 G9 Explosion Resistant Construction (Specify Class, Division, Digital Controller Group, and Temperature Class) C38 RS485 Communications Port for Remote Operation G15 Wall Hung Construction for Off the Floor Installation Solid State Power Controllers for Increased G16 **NEMA 4X Rating** Temperature Accuracy G17 NEMA 4 Rating **C**59 Integrated PLC Control Package 316L Stainless Steel Temperature and Pressure C62 **SCR Controls** Relief Valve Vessel **Electrical** ۷5 Optional 200 PSI Working Pressure. If Other than 200, Indicating Lamps (Specify Color and What it is Indicating) **E2** Use Code -V5-XX and Specify Pressure Audible Alarm (Specify Fault) **E**3 ۷9 Passivated/ Electropolished Pressure Vessel Built-In Circuit Breaker with Safety Handle **E8**

**V27** 

Please note: Optional equipment may impact overall dimensions and weight. Please request submittal drawing from factory. All orders will be on hold pending approval of submittal drawing.

#### **Available Accessories**

**E9** 

10-year Warranty: 10-year non pro-rated tank warranty, specify part number "VESSEL WARRANTY"

Fill out form below to order accessories.

Accessories Name Part #

Alternate Element Sheath Material (Specify Incoloy,

Stainless Steel, Monel, Steel, Teflon, or Titanium)







# HUBBELL SIGNATURE CR



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