

CR1 Series Triton™ Corrosion-Resistant Washdown Heaters

Ruffneck™ CR1 Triton™ Series is a new generation of NEMA 4X corrosion-resistant washdown heaters. The first UL listed Type 4X heater with models ranging from 3 kW to 39 kW.

IMPORTANT: Ruffneck™ CR1 heaters are suitable for non-hazardous locations only. For washdown applications use water pressure less than 70 psi.

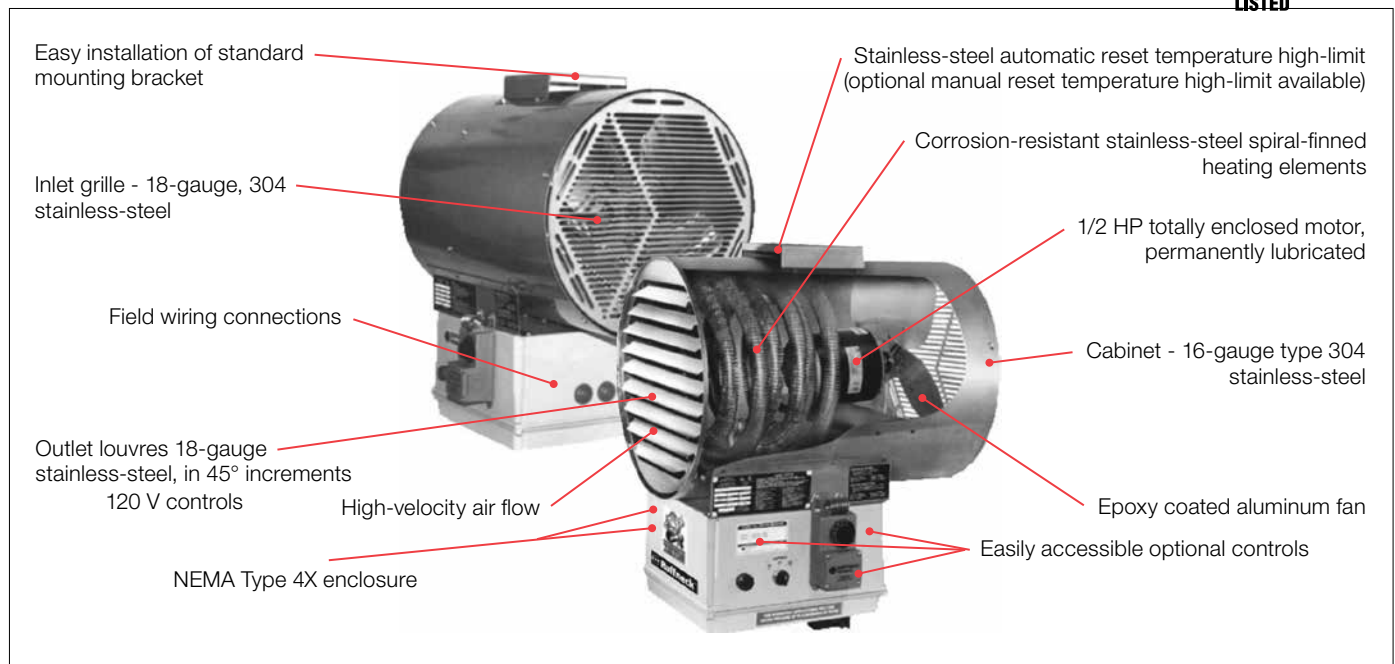


Figure 6

Features

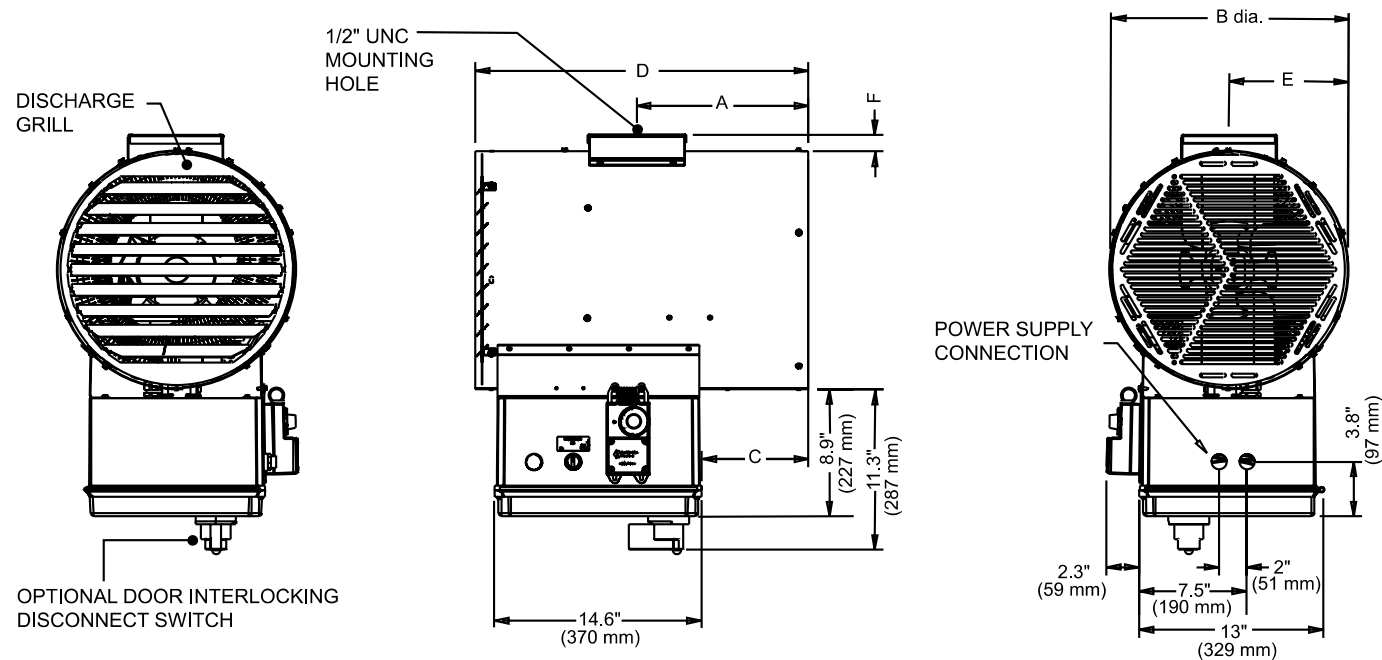
- Entire heater is NEMA Type 4X
- Epoxy coated fan blade
- 16-gauge stainless-steel cabinet
- Custom configured stainless-steel elements
- Optional built-in accessories
- Stainless-steel wall/ceiling mounting kit
- 120 V controls
- Stainless-steel temperature high-limit

Benefits

- Increased safety and protection against water penetration
- Added corrosion protection
- Better resistance to corrosion for longer life
- Improved heat distribution and corrosion protection
- Flexibility and reduced field installation costs
- Flexible options for mounting heater
- Better contactor pull-in reliability
- Increased safety and reliability

Physical Dimensions

CR1 Triton™ Physical Dimensions



Heater kW Rating	Dimensions					
	A	B	C	D	E	F
3 to 10 kW	12.5" (318 mm)	12.8" (325 mm)	8.5" (216 mm)	24.4" (620 mm)	6.4" (162.5 mm)	0.9" (23 mm)
15 and 20 kW	12.1" (307 mm)	16.7" (425 mm)	7.5" (190 mm)	23.4" (595 mm)	8.4" (212.5 mm)	1.2" (30 mm)
25 to 39 kW	12.1" (307 mm)	20.7" (526 mm)	7.5" (190 mm)	23.4" (595 mm)	10.3" (262.5 mm)	1.3" (33 mm)

CR1 Triton™ Mounting Options

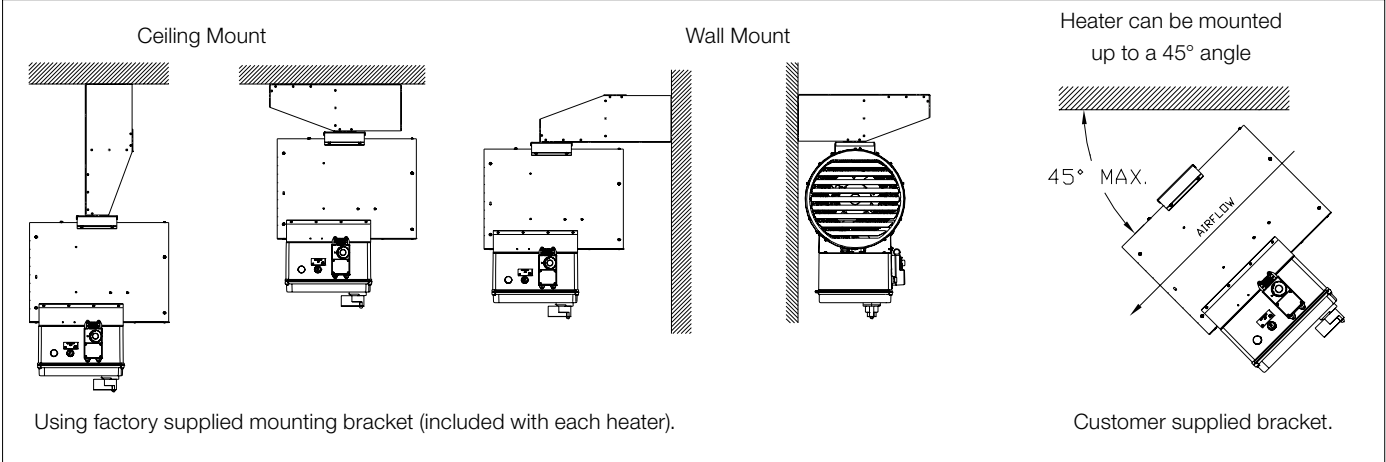


Figure 7 – Mounting options

Table 19 – CR1 Triton™ 60 Hertz Technical Data

Model	Nominal Power	Unit Voltage	Phase	Unit Current	Air Temperature Rise		Btu/hr
	kW			A	°F	°C	
CR1-208160-030	3	208	1	17.4	13.5	7.5	10250
CR1-240160-030	3	240	1	15.5	13.5	7.5	10250
CR1-208360-030	3	208	3	11.3	13.5	7.5	10250
CR1-240360-030	3	240	3	10.2	13.5	7.5	10250
CR1-480360-030	3	480	3	5.1	13.5	7.5	10250
CR1-600360-030	3	600	3	3.9	13.5	7.5	10250
CR1-208160-050	5	208	1	27	22.5	12.5	17050
CR1-240160-050	5	240	1	23.8	22.5	12.5	17050
CR1-208360-050	5	208	3	16.9	22.5	12.5	17050
CR1-240360-050	5	240	3	15	22.5	12.5	17050
CR1-480360-050	5	480	3	7.5	22.5	12.5	17050
CR1-600360-050	5	600	3	5.8	22.5	12.5	17050
CR1-208160-075	7.5	208	1	39.1	33.8	18.8	25600
CR1-240160-075	7.5	240	1	34.3	33.8	18.8	25600
CR1-208360-075	7.5	208	3	23.8	33.8	18.8	25600
CR1-240360-075	7.5	240	3	21	33.8	18.8	25600
CR1-480360-075	7.5	480	3	10.5	33.8	18.8	25600
CR1-600360-075	7.5	600	3	8.2	33.8	18.8	25600
CR1-240160-100	10	240	1	44.7	45	25	34100
CR1-208360-100	10	208	3	30.8	45	25	34100
CR1-240360-100	10	240	3	27.1	45	25	34100
CR1-480360-100	10	480	3	13.5	45	25	34100
CR1-600360-100	10	600	3	10.8	45	25	34100
CR1-208360-150	15	208	3	44.6	32.6	18.1	51200
CR1-240360-150	15	240	3	39.1	32.6	18.1	51200
CR1-480360-150	15	480	3	19.5	32.6	18.1	51200
CR1-600360-150	15	600	3	15.4	32.6	18.1	51200
CR1-480360-200	20	480	3	25.6	43.6	24.2	68250
CR1-600360-200	20	600	3	20.3	43.6	24.2	68250
CR1-480360-250	25	480	3	31.6	37.5	20.9	85300
CR1-600360-250	25	600	3	25.1	37.5	20.9	85300
CR1-480360-300	30	480	3	37.6	45.1	25	102350
CR1-600360-300	30	600	3	29.9	45.1	25	102350
CR1-480360-350	35	480	3	43.6	52.6	29.2	119400
CR1-600360-350	35	600	3	34.7	52.6	29.2	119400
CR1-480360-390	39	480	3	48	58.6	32.5	133100
CR1-600360-390	39	600	3	38.5	58.6	32.5	133100

Note:

1. To order a heater with a built-in room thermostat add a "T" suffix to model number.
2. To order a heater with a built-in pilot light add a "P" suffix to model number.
3. To order a heater with a built-in 3-position fan switch (on, off, fan only) add an "F" to model number.
4. To order a heater with a built-in door interlocking disconnect switch add a "D" suffix to model number.
5. To order a heater with a built-in manual reset temperature high-limit add an "M" suffix to model number. Also included is a built-in door interlocking disconnect switch to meet UL requirements. This option replaces the automatic reset temperature high-limit.

Note: To order a heater that meets U.S. Coast Guard regulations, order built-in control option #5 above.

Table 20 – Specifications

		Nominal kW		
		3, 5, 7.5, 10	15, 20	25, 30, 35, 39
Air Delivery (min.)	CFM	700	1450	2100
	m³/hr	1190	2465	3570
Approx Air Velocity	ft/min	785	950	900
	m/s	4.0	4.8	4.6
Horizontal Air Throw	ft	22	35	44
	m	6.7	10.7	13.4
Max. Mounting Height	Horizontal (to underside)	ft	8.5	11.5
		m	2.6	3.5
	45° Decline (to underside)	ft	12.8	18.0
		m	3.9	5.5
Min. Mounting Height	ft	6.0		
	m	1.8		
Fan Diameter	in	12	16	20
	mm	305	406	508
Net Weight	lbs	75.0	90.0	130
	kg	34.1	40.9	59.1
Shipping Weight	lbs	125.0	140.0	180
	kg	56.8	63.6	81.8

Model Coding

CR1	-	480	3	60	-	200	-	T
Model Series		Heater Voltage 208V, 240V, 480V, 600V	Phase 1, 3	Hertz 60		Heater Kilowatts 030 - 3 kW 050 - 5 kW 075 - 7.5 kW 100 - 10 kW 150 - 15 kW 200 - 20 kW 250 - 25 kW 300 - 30 kW 390 - 39 kW		T – Built-in room thermostat P – Built-in pilot light F – Built-in 3-position fan switch ("ON", "OFF", "FAN ONLY") D – Built-in door interlocking disconnect switch M – Built-in manual reset temperature high-limit E – Monel® elements
1st Generation								

Note:

This nomenclature illustration is intended primarily to explain how a product part number is defined. Not all voltage and/or wattage combinations are available - please consult the catalogue chart(s) for product availability.

General Specifications

1. Approvals	UL listed to U.S. & Canadian safety standards. Type 4X Complies with U.S. Coast Guard electrical engineering regulations subchapter J (46 CFR Parts 110-113) when manual reset temperature high-limit is ordered
2. Enclosure	NEMA Type 4X non-metallic enclosure
3. Motor Type	Thermally protected, ½ HP, 1725 RPM, permanently lubricated ball bearings.
4. Fan	Epoxy coated, aluminum blade, steel spider
5. Mounting Bracket	Type 304 stainless-steel universal mounting bracket Minimum 16-gauge (0.06" / 1.52 mm)
6. Heating Elements	Type 321 stainless-steel sheath with Type 304 stainless-steel spiral fins
7. Temperature High-Limit	Automatic reset, stainless-steel bulb and capillary. Optional manual reset, stainless-steel bulb and capillary. Replaces automatic reset.
8. Temperature Limitations	Storage: -4°F to 140°F (-20°C to 60°C) Operating: -4°F to 104°F (-20°C to 40°C)
9. Control Circuit	120 Vac
10. Optional Built-in Thermostat	NEMA Type 4X thermostat
11. Control Transformer	Multi-tap primary, 120 V secondary, 50 VA
12. Contactor	40 or 75 amp. Rated for 500,000 mechanical operations. 120 V, 15 VA coil
13. Cabinet Material	Type 304 stainless-steel, 16-gauge (0.06" / 1.52 mm) All external fasteners are stainless-steel
14. Inlet Grille	Type 304 stainless-steel, ¼" (6.3 mm) maximum openings Minimum 18-gauge (0.05" / 1.21 mm)
15. Discharge Grille	Type 304 stainless-steel. Rotatable in 45° increments Minimum 18-gauge (0.05" / 1.21 mm)