



CAST - X 2000 Circulation Heater

IDEAL WHERE FLUID CLEANLINESS, TEMPERATURE ACCURACY AND HIGH PRESSURE ARE REQUIRED

The CAST-X 2000 circulation heater from Cast Aluminum Solutions is an ideal heating solution for demanding applications. The CAST-X 2000 heater consists of a helical coiled tube cast into an aluminum body with tubular elements. The aluminum body serves as the heat transfer media between the tubular element and the coiled tube through which the fluid being heated passes through.

The unique construction of the heater allows it to be used where thermally sensitive materials are being heated such as paints, resins and flammable materials such as fuels and solvents. The aluminum mass acts as a "thermal flywheel" and ensures accurate temperature control of the fluid to prevent degradation. The CAST-X 2000 is available with optional explosion proof enclosure for use in flammable environments.

The CAST-X 2000 is well suited to applications where fluid cleanliness is critical because the material being heated never comes in contact with the heating elements. This is a performance requirement in many foodservice equipment, semiconductor and analytical markets. The CAST-X 2000 heater comes with a heavy wall seamless stainless steel passageway that assures performance in high-pressure applications up to 4300 psi where viscous or mildly corrosive materials need to be heated.

APPLICATIONS

- Solvent Heating Diesel and Jet Fuel Heating Glycol Heating for Heat Transfer Systems**
- Sample Heating - Analytical Instrumentation Steam Generation**
- Food and Beverage Heating - Pasteurization Paint Heating**
- Two Part Urethane and Foam System Heating Air, CO₂ and Nitrogen**
- Deionized (DI) Water Heating**

FEATURES AND BENEFITS

Fluid path constructed independent from heater sheath

- Allows sensitive materials to be heated safely
- Prevents fluid contamination

Robust cast-in aluminum construction

- Assures longer heater life
- Provides accurate temperature control

Integrated thermostat and enclosure

- Assures easy use and installation
- Allows heater to run dry
- Provides protection in explosive environments

Standard 316L stainless steel fluid path

- Ensures material compatibility with many different materials

Non-welded construction

- Offers economical package price
- Minimizes potential leakage
- Allows high pressure operation up to 4300 psi with appropriate fittings
- Ensures self draining when mounted vertically



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SPECIFICATIONS

(4) 1/4 - 20, 1/2 in. (13 mm) deep mounting holes

Tubing - 1/2 in. dia. x 0.065 in. wall (12.7 x 1.65 mm)

Wetted area - 316 stainless steel

Process tube length - 150 in. (3.81m)

NEMA 1 metal enclosure

Up to 6000 watts, 3-phase

Max. working fluid pressure - 4300 psi (297 Bar)

Max. working temperatures - 250°F (NEMA 7)
350°F (NEMA 1, NEMA 4)
500°F (NEMA 4 with standoff)

Max. working temperature with stand-off housing is 500°F (260°C)

STANDARD OPTIONS

NEMA 1, 4 and 7 enclosures with and without process thermostats

Snap action high-limit thermostat

Insulated body

Process and high-limit thermocouples

NON STANDARD OPTIONS

ATEX explosion-proof enclosures

Passivated or electropolished wetted surfaces

Custom fittings

Custom sensors

Stand-off housing

Interconnect either a single or double-pole thermostat with a single-phase heater when the supply voltage does not exceed 277V $\sqrt{3}$ (ac) for SPST or 480V $\sqrt{3}$ (ac) for DPST

Only interconnect three-phase delta heaters to DPST thermostats

Use a single-pole thermostat for pilot duty where the thermostat is not interconnected with the heater, or heater exceeds the volt/amp rating

In single-phase applications one, two, or three elements may be connected in parallel

If selected, high limit snap action thermostat should be used for pilot duty only

WIRING

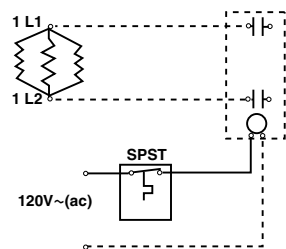
CONFIGURABLE ENCLOSURE / THERMOSTAT OPTIONS

DESCRIPTION	S2	S5	W2	W5	E1
300A = 6000 W, 480V, 3-phase (delta)	2	6	2	6	2
300B = 2000 W, 480V, 3-phase (wye)	3	7	3	7	3
300C = 6000 W, 480V, 1-phase (3 elements)	1	5	1	5	1
300D = 4000 W, 480V, 1-phase (2 elements)	1	5	1	5	1
300E = 2000 W, 480V, 1-phase (1 element)	1	5	1	5	1
300F = 6000 W, 240V, 3-phase (delta)	2	6	2	6	2
300G = 2000 W, 240V, 3-phase (wye)	3	7	3	7	3
300H = 6000 W, 240V, 1-phase (3 elements)	1	5	1	5	1
300J = 4000 W, 240V, 1-phase (2 elements)	1	5	1	5	1
300K = 2000 W, 240V, 1-phase (1 element)	1	5	1	5	1
300L = 1500 W, 240V, 1-phase	4	5	4	5	4
300M = 1000 W, 240V, 1-phase	4	5	4	5	4
300Q = 4500 W, 208V, 3-phase (delta)	2	6	2	6	2
300R = 1500 W, 208V, 3-phase (wye)	3	7	3	7	3
300S = 4500 W, 208V, 1-phase	4	5	4	5	4
300T = 3000 W, 208V, 1-phase	4	5	4	5	4
300U = 1500 W, 208V, 1-phase	4	5	4	5	4
300N = 1500 W, 120V, 1-phase	4	5	4	5	4
300P = 1000 W, 120V, 1-phase	4	5	4	5	4

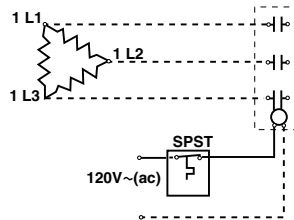
On the drawings below, the dashed lines represent components or wiring supplied by the customer.

DESCRIPTION	AMPACITY			
	LINE VOLTAGE			
	120V	240V	277V	480V
Single pole single throw for NEMA 1 and 4 housings	2	6	2	6
Double pole single throw for NEMA 1 and 4 housings	3	7	3	7
Single pole single throw for NEMA 7 housings	1	5	1	5
High limit snap action, single pole single throw	1	5	1	5

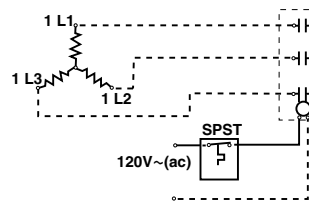
1 SPST, 1-PHASE



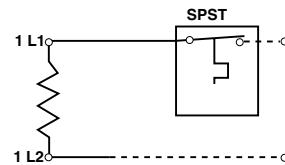
2 SPST, 3-PHASE DELTA



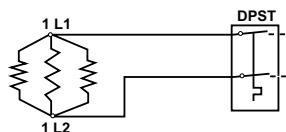
3 SPST, 3-PHASE WYE



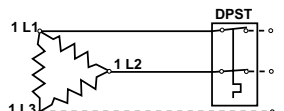
4 SPST, 1-PHASE



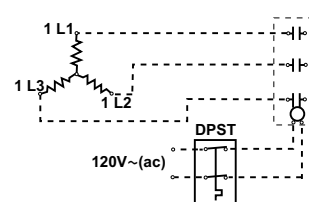
5 DPST, 1-PHASE



6 DPST, 3-PHASE DELTA

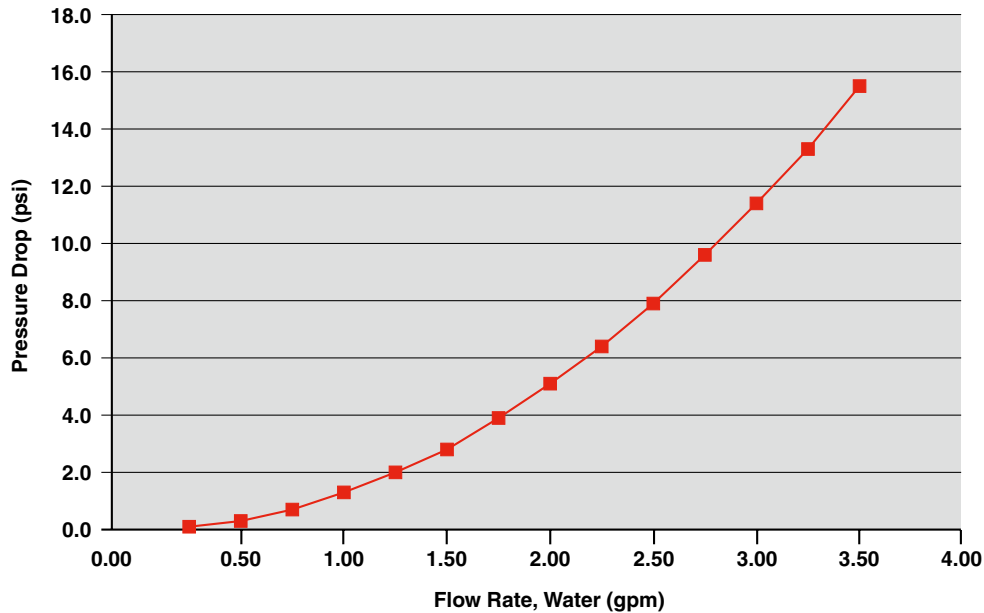


7 DPST, 3-PHASE WYE

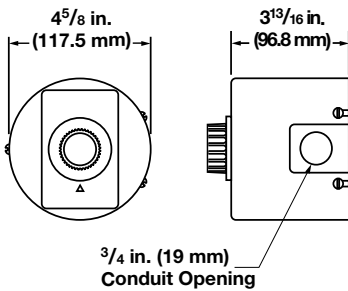


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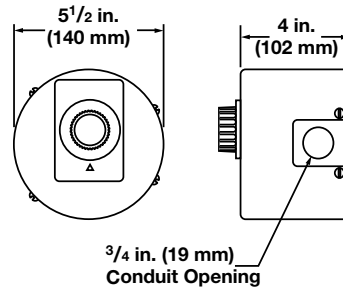
PRESSURE DROP



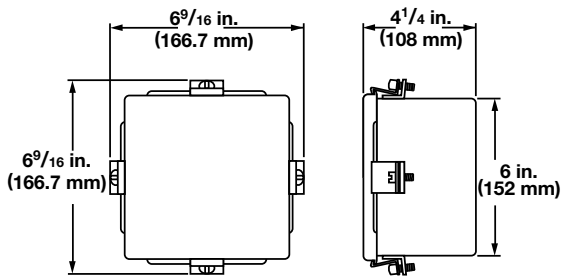
NEMA 1
HOUSING WITH SINGLE-POLE THERMOSTAT



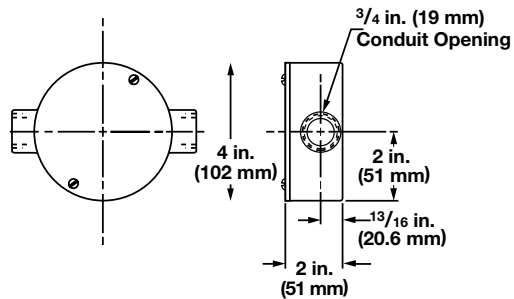
NEMA 1
HOUSING WITH DOUBLE-POLE THERMOSTAT



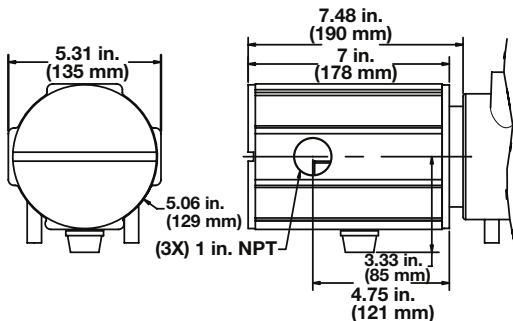
NEMA 4
HOUSING WITH SIN/DBLE-POLE THERMOSTAT



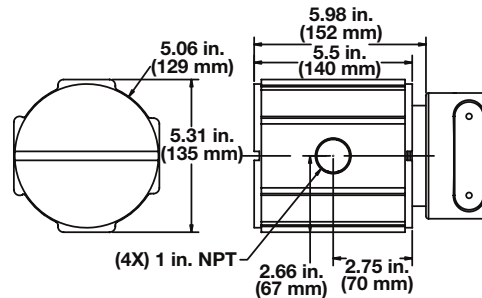
NEMA 4
HOUSING WITHOUT THERMOSTAT



NEMA 7
HOUSING WITH SINGLE-POLE THERMOSTAT



NEMA 7
HOUSING WITHOUT THERMOSTAT

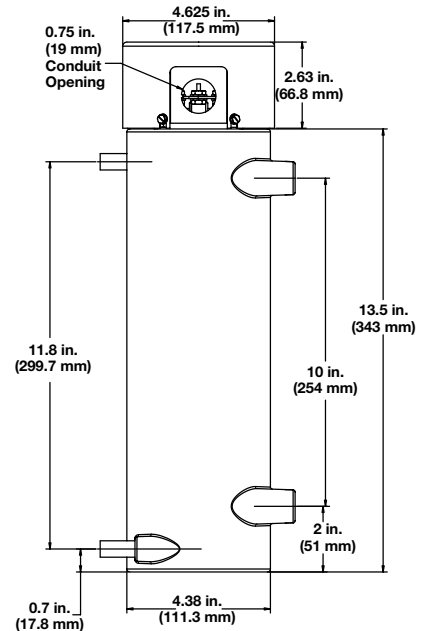
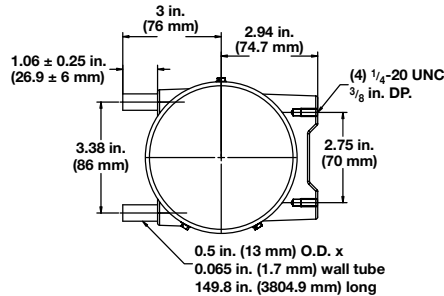


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DIMENSIONS



ORDERING INFORMATION

To order, complete the number code with the information below.

Cast-X 2000: 0.5 in. (13 mm) O.D. inlet/outlet, 0.065 in. (1.7 mm) wall seamless 316 SS tubing, NEMA 1 housing

Heater Wattage:

300A = 480V, 6000 W, 3-phase (delta)
300B = 480V, 2000 W, 3-phase (wye)
300C = 480V, 6000 W, 1-phase
300D = 480V, 4000 W, 1-phase
300E = 480V, 2000 W, 1-phase
300F = 240V, 6000 W, 3-phase (delta)
300G = 240V, 2000 W, 3-phase (wye)
300H = 240V, 6000 W, 1-phase
300J = 240V, 4000 W, 1-phase
300K = 240V, 2000 W, 1-phase
300L = 240V, 1500 W, 1-phase
300M = 240V, 1000 W, 1-phase
300Q = 208V, 4500 W, 3-phase (delta)
300R = 208V, 1500 W, 3-phase (wye)
300S = 208V, 4500 W, 1-phase
300T = 208V, 3000 W, 1-phase
300N = 120V, 1500 W, 1-phase
300P = 120V, 1000 W, 1-phase

Enclosures and Thermostats:

S2 = NEMA 1 housing with 30 to 250°F (-1 to 121°C) single-pole thermostat
S5 = NEMA 1 housing with 60 to 250°F (16 to 121°C) double-pole thermostat
W0 = NEMA 4 housing, no thermostat
W2 = NEMA 4 housing with 30 to 250°F (-1 to 121°C) single-pole thermostat
W5 = NEMA 4 housing with 60 to 250°F (16 to 121°C) double-pole thermostat
WJ = NEMA 4 housing with Type J process T/C in t-well
WK = NEMA 4 housing with Type K process T/C in t-well
SJ = NEMA 1 housing with Type J process T/C in t-well
SK = NEMA 4 housing with Type K process T/C in t-well
EJ = NEMA 7 housing with Type J process T/C in t-well
EK = NEMA 7 housing with Type K process T/C in t-well
E0 = NEMA 7 housing with no thermostat
EI = NEMA 7 housing with 50 to 250°F (10 to 121°C) single pole thermostat

High Limit:

1 = Snap action high limit set at 260°F (127°C)
2 = Snap action high limit set at 500°F (260°C)

B X I 3 J 4 G - _ _ _ - _ _ _

Accessories:

Compression fitting (high pressure) 274-55-6-5

Insulation jacket 307-0-11-1



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