



**Hotstart**<sup>®</sup>  
THERMAL MANAGEMENT



# HOTflow<sup>®</sup> ENGINE HEATERS

Meet Power Demands  
with Less Energy

**Improved Performance Starts Here<sup>™</sup>**

# THE HOTflow<sup>®</sup> ADVANTAGE



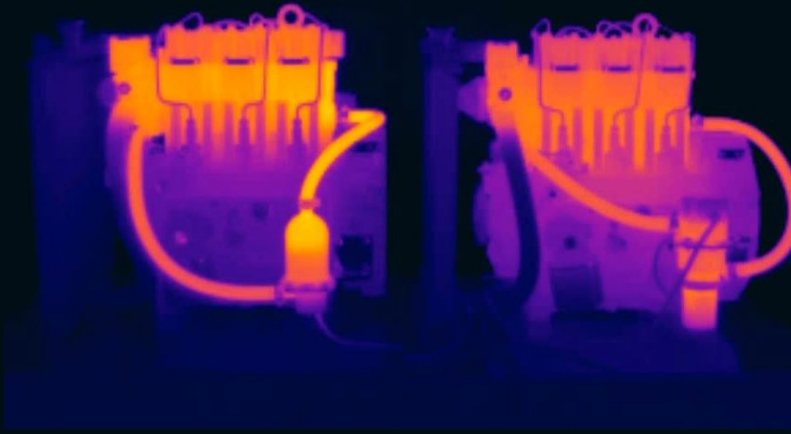
## LESS IS MORE

Efficiency is the key to reducing electrical power costs for utility customers. Kilowatt hours (kWhs) used to preheat standby generators can be lessened with a simple technology upgrade, resulting in savings throughout a utility's service territory.



## ALWAYS READY

By keeping standby generators always ready to start, HOTflow heaters enable emergency power systems to meet NFPA 110 load transfer requirements. This allows generators to provide full load power within 10 seconds of a power emergency while reducing energy use, lowering costs and lessening their environmental impact.



## Efficient Heating in Action

The thermosiphon system on the left, creates higher temperature extremes, which can result in engine hot and cold spots. The HOTflow heater on the right uses active circulation to produce efficient, even heating throughout the block and hoses.



## IMPROVED HEATING & REDUCED MAINTENANCE

HOTflow forced circulation engine heaters help utility customers reduce kWhs on their preheated standby generators by up to 35% compared to traditional heaters<sup>1</sup>.

More energy-efficient than standard block or thermosiphon heaters, HOTflow heaters use an integrated pump to circulate heated coolant throughout the engine block. Circulating heated coolant provides more even heat distribution across the block and reduces stress on critical hoses and seals, resulting in reduced overall engine maintenance.



## WIN-WIN WITH HOTSTART

The needs of utility power customers are increasing at the same time utilities work to conserve resources. HOTflow engine heaters effectively meet that challenge with innovative, proven engine heating solutions. Using less energy, reducing energy costs and conserving critical equipment is a "win-win" solution for utilities and standby generator users.

<sup>1</sup>Savings are dependent on local utility rates and installation variables.



# CTM HOTflow® Coolant Engine Heater

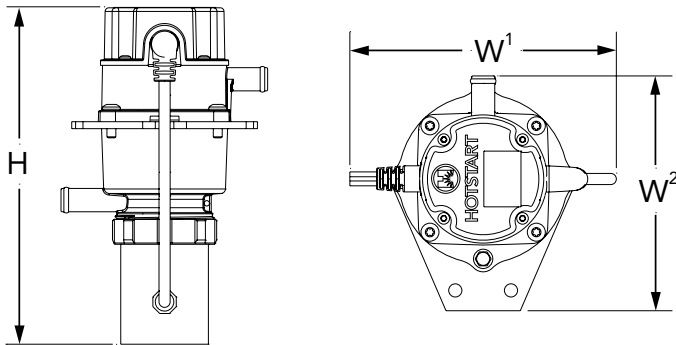


## COMPACT

Efficient forced circulation in a small footprint - up to 20 liters in displacement, allowing for a wide variety of small-engine applications. Reorient inlet and outlet in 90° increments to accommodate heater plumbing when installing.

## VERSATILE

The CTM can be configured for almost any weather-protected application. Multiple options are available, including UL/C-US listed and CE-compliant models.



Height (H)	Width 1 (W¹)	Width 2 (W²)	Weight
9.1"	5.7"	6.3"	3.5 lbs
230 mm	145 mm	161 mm	1.6 kg

System	
Phase	single-phase (1 Ø)
Voltage (60 Hz)	120V   240V
Voltage (50 Hz)	240V
Ingress	IP44
Min./Max. Ambient Temp	-40°F / 104°F (-40°C - 40°C)
Application	for use in weather protected applications
Certification	UL/C-US recognized models available (E250789) CE-compliant models available

Coolant		
Fluid Type	Water	Coolant mix (50% water/50% glycol)
Heat Power	1 kW	1.5 kW   2.5 kW
Temp. Control	Fixed, 100 – 120 °F (38–49°C)	
Temp. High Limit	300 °F (149°C)	
Flow	3.5 gpm @ 4 psi (13.3 L/min @ 28 kPa)	
Inlet/Outlet	0.625" (16 mm) hose barb	

### CTM with 8' (2.4 m) cord and NEMA plug\* (-N00)

Engine Displacement	Power Supply		Heating System		
	V	Hz	kW	Amps	Model Number
0–500 CID 0–8 L	120	60	1	8.8	CTM10110-N00
	240	50/60	1	4.4	CTM10210-N00
500–750 CID 8–12 L	120	60	1.5	13.0	CTM15110-N00
	240	50/60	1.5	6.5	CTM15210-N00
750–1000 CID 12–20 L	120	60	2.5	21.3	CTM25110-N00
	240	50/60	2.5	10.7	CTM25210-N00

### CTM with 9.8' (3 m) cord and Euro plug\*\* (-E00)

Engine Displacement	Power Supply		Heating System		
	V	Hz	kW	Amps	Model Number
0–500 CID 0–8 L	120	60	1	8.8	CTM10110-E00
	240	50/60	1	4.4	CTM10210-E00
500–750 CID 8–12 L	120	60	1.5	13.0	CTM15110-E00
	240	50/60	1.5	6.5	CTM15210-E00
750–1000 CID 12–20 L	120	60	2.5	21.3	CTM25110-E00
	240	50/60	2.5	10.7	CTM25210-E00

### CTM with 9.8' (3 m) cord and no plug (-A00)

Engine Displacement	Power Supply		Heating System		
	V	Hz	kW	Amps	Model Number
0–500 CID 0–8 L	120	60	1	8.8	CTM10110-A00
	240	50/60	1	4.4	CTM10210-A00
500–750 CID 8–12 L	120	60	1.5	13.0	CTM15110-A00
	240	50/60	1.5	6.5	CTM15210-A00
750–1000 CID 12–20 L	120	60	2.5	21.3	CTM25110-A00
	240	50/60	2.5	10.7	CTM25210-A00

\* – UL/C-US listed

\*\* – CE compliant

Other voltages available.  
Consult the factory.

# CKM HOTflow® Coolant Engine Heater

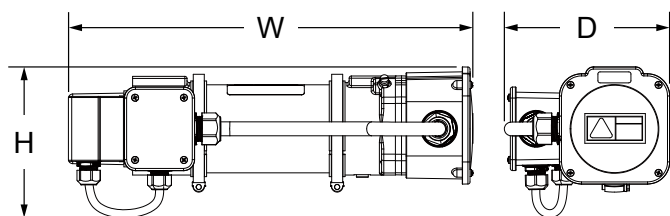


## USER FRIENDLY

Built in bleed screw allows installers to flush air from the heater before operation and an integrated high-limit thermostat can be manually reset without the need for expensive maintenance.

## EASY UPGRADE

Combined with its ability to be installed horizontally or vertically, the CKM's compact configuration makes it an easy drop-in replacement for traditional convection-based systems.



Height (H)	Width (W)	Depth (D)	Weight
6.9"	18.4"	8.5"	13.2 lbs
175 mm	467 mm	216 mm	6.0 kg

System	
Phase	single-phase (1 Ø)
Voltage (60 Hz)	120V   240V
Voltage (50 Hz)	230V
Terminal Box Ingress	IPX6
Motor Ingress (UL-recognized)	NEMA 2
Motor Ingress (CE-compliant)	IP44
Min./Max. Ambient Temp	-40°F / 104°F (-40°C / 40°C)
Vibration Specification	Meets IEC 60068-2-64
Shock Specification	Meets IEC 60068-2-27
Max Pressure	125 psi (860 kPa)
Certification	UL/C-US recognized models available (E250789) CE-compliant models available

Coolant				
Fluid Type	Water	Coolant mix (50% water/50% glycol)		
Heat Power	3 kW	4 kW	5 kW	6 kW
Temp. Control	Fixed, 100 – 120 °F (38–49°C)			
Temp. High Limit	205 °F (96°C)			
Pump Power	70 W (50 Hz) / 97 W (60 Hz)			
Flow	9 gpm @ 10 ft H <sub>2</sub> O (34.1 L/min @ 3 m H <sub>2</sub> O)			
Inlet/Outlet	SAE J1926/1:1 5/16-12 (SAE #16 STOR)			

## CKM

Engine Displacement	Power Supply		Heating System		
	V	Hz	kW	Amps	Model Number
1000–1500 CID 15–23 L	120	60	3	25.0	CKM1030160-000
	230	50	3	13.0	*CKM1030250-000
	240	60	3	13.0	CKM1030260-000
1500–2000 CID 23–30 L	230	50	4	13.0	*CKM1040250-000
	240	60	4	16.7	CKM1040260-000
2000–2500 CID 30–38 L	230	50	5	21.7	*CKM1050250-000
	240	60	5	20.8	CKM1050260-000
2500–3000 CID 38–50 L	230	50	6	26.1	*CKM1060250-000
	240	60	6	25.0	CKM1060260-000

\* – CE-compliant  
(All other models – UL/C-US recognized)

Optional Inlet/Outlet Adapter Fittings (CKM Models only)			
From	To	Part Number	Part Description
SAE #16 STOR	0.75" hose barb	HB-16STORX3/4HB	#16 STOR to 3/4" hose barb adapter. Installs in #16 STOR female inlet or outlet of heater.
SAE #16 STOR	1.0" hose barb	HB-16STORX1HB	#16 STOR to 1" hose barb adapter. Installs in #16 STOR female inlet or outlet of heater.

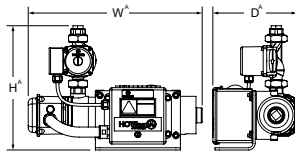
# CSM HOTflow® Coolant Engine Heater



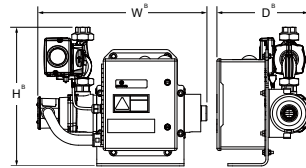
CSM Style B shown with flange pump.



CSM Style A shown with union pump.



CSM Style A shown with UL-recognized union pump. Dimensions may vary.



CSM Style B shown with CE-compliant union pump. Dimensions may vary.

Style A			
Height* (H <sup>A</sup> )	Width (W <sup>A</sup> )	Depth (D <sup>A</sup> )	Weight
15.0"	19.4"	9.5"	37 lbs
383 mm	493 mm	242 mm	16.8 kg

Style B			
Height* (H <sup>B</sup> )	Width (W <sup>B</sup> )	Depth (D <sup>B</sup> )	Weight
17.0"	19.4"	9.5"	54 lbs
434 mm	493 mm	242 mm	24.5 kg

\* Height values are stated for flange connection pump. If union pump is installed, the model's height will decrease by approximately 1.5" (38 mm).

System	
Phase	single-phase (1 Ø)   three-phase (3 Ø)
Voltage (60 Hz)	120V   208V   240V   440V   480V   575V
Voltage (50 Hz)	230V   400V
Control Box Ingress	NEMA 4/IP66
Motor Ingress	NEMA 2 (UL-listed) / IP44 (CE-compliant)
Min./Max. Ambient Temp.	-4–104°F (-20–40°C)
Certification	UL/C-US listed models available (E250789) CE-compliant models available

Coolant	
Fluid Type	Water   Coolant mix (50% water/50% glycol)
Heat Power	3 kW   6 kW   9 kW   10.5 kW   12 kW
Temp. Control	Fixed, 100–120°F (38–49°C)
Pump Power	97 W (60 Hz) / 70 W (50 Hz)
Flow	10 gpm @ 10 ft WC (37.9 L/min @ 3 m WC)
Max. Pressure	125 psi (860 kPa)
Pressure Loss	0.2 psi (1.5 kPa)
Inlet/Outlet	1" NPT

## HEAVY DUTY

Powerful pump (10 gpm flow) and heating element options (up to 12 kW) for pump-driven heating. This heating power is ideal for replacing inefficient, costly convection-based heaters in large-engine installations up to 100 L displacement.

## AUTOMATIC

Integrated control box allows for easy power connections and enables automatic heater operation, eliminating the need for additional customer-supplied control components.

## CSM

Engine Displacement	Power Supply				Heating System	
	V	Ø	Hz	kW	Amps	Style   Model Number
1000–1500 CID 15–25 L	120	1	60	3	26.3	A   CSM10301-000
	208	1	60	3	15.1	A   CSM10308-000
	208	3	60	3	8.7	B   CSM30308-000
	230	1	50	3	13.7	A   **CSM1030J-5A0
	240	1	60	3	13.1	A   CSM10302-000
	400	3	50	3	4.9	B   **CSM3030A-5A0
	480	1	60	3	3.8	B   CSM10304-000
	480	3	60	3	4.4	B   CSM30304-000
1500–3000 CID 25–50 L	208	1	60	6	29.6	A   CSM10608-000
	208	3	60	6	17.1	B   CSM30608-000
	230	1	50	6	26.7	A   **CSM1060J-5A0
	240	1	60	6	25.6	A   CSM10602-000
	400	3	50	6	8.9	B   **CSM3060A-5A0
	440	3	60	6	8.1	B   **CSM3060F-5A1
	480	1	60	6	12.8	B   CSM10604-000
	480	3	60	6	7.4	B   CSM30604-000
3000–4500 CID 50–75 L	575	3	60	6	6.2	B   CSM30605-000
	208	1	60	9	44.0	A   CSM10908-000
	208	3	60	9	25.4	B   CSM30908-000
	230	1	50	9	39.8	A   **CSM1090J-5A0
	240	1	60	9	38.1	A   CSM10902-000
	400	3	50	9	13.2	B   **CSM3090A-5A0
	440	3	60	9	12.2	B   **CSM3090F-5A1
	480	1	60	9	19.1	B   CSM10904-000
4500–6000 CID 75–100 L	480	3	60	9	11.0	B   CSM30904-000
	575	3	60	9	9.2	B   CSM30905-000
	208	1	60	10.5	51.2	B   CSM11058-000
	208	3	60	12	33.7	B   CSM31208-000
	230	1	50	12	52.8	B   **CSM1120J-5A0
	240	1	60	12	50.6	B   CSM11202-000
	400	3	50	12	17.5	B   **CSM3120A-5A0
	440	3	60	12	15.9	B   **CSM3120F-5A2
	480	1	60	12	25.3	B   CSM11204-000
	480	3	60	12	14.6	B   CSM31204-000
	575	3	60	12	12.2	B   CSM31205-000

\*\* – CE-compliant/union pump configuration

Other voltages available. Consult the factory.

Options shown represent typical tested or certified configurations. Additional options or configurations may be available. For assistance, contact HOTSTART at 509.536.8660 or [sales@hotstart.com](mailto:sales@hotstart.com).

# ON-DEMAND VIRTUAL TRAINING FROM HOTSTART



## ONLINE TRAINING ANYTIME, ANYWHERE

Participate in Hotstart's on-demand, virtual HOTflow Certified Technician Training course to learn best practices of engine heater installation for optimized performance and cost savings.

When compared to standard thermosiphon heaters, pump-driven heaters distribute heat more evenly across the engine block. Upgrade your generator today with a HOTflow engine heater and see the benefits of energy efficiency, reduced maintenance and longer engine life.

Visit [training.hotstart.com](https://training.hotstart.com) to participate in this training - anytime, anywhere.



Participants that successfully complete the training will be HOTflow Certified Technicians. Certified techs are listed on Hotstart's website as a resource for generator owners needing a certified technician to upgrade their existing heater.

