voltmax

Design Specifications

Date :

Project :

Location :

Engineer :

Contractor :

THERMO 2000

THERMO 2000 | Peak-performance heating systems

Revision 1 – March 2025

VoltMax

Electric Boiler

Design Specifications

The **VoltMax** line of electric boilers was developed to efficiently supply hydronic heating systems in commercial, institutional and industrial applications. The boiler can meet any voltage demand for both single-phase and three-phase currents. Its easy-to-use electronic controller provides precise temperature and power control to minimize energy costs and to optimize the boiler's performance. **VoltMax's** compact design is great for small spaces and requires minimal clearance around the unit.

I - POWER AND VOLTAGE

A – 60HZ SINGLE PHASE

The boiler will be 100% efficient at the following powers and voltages:

	VOLTAGE		CONFIGURATION
POWER (KW)	208 VAC	240 VAC	
22.5	☐	NA	A
27	☐	NA	A
30	☐	☐	A
36	☐	☐	A
40	NA	☐	A
41	☐	NA	A
45	☐	NA	A
48	NA	☐	A
49.5	☐	NA	A
54	☐	NA	A
55	NA	☐	A
58	☐	NA	C
60	☐	☐	A (C for 208V)
63	☐	NA	C
66	☐	☐	A (C for 208V)
72	☐	☐	A (C for 208V)
77	NA	☐	C
80	NA	☐	C
84	NA	☐	C
88	NA	☐	C
96	NA	☐	C

NA: Not Available

THERMO 2OOO INC

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B – 60HZ THREE-PHASE

The boiler will be 100% efficient at the following powers and voltages:

	VOLTAGE				CONFIGURATION
POWER (KW)	208 VAC	240 VAC	480 VAC	600 VAC	
22.5	☐	NA	NA	NA	A
27	☐	NA	NA	NA	A
30	NA	☐	☐	☐	A
34	☐	NA	NA	NA	A
36	NA	☐	☐	☐	A
40.5	☐	NA	NA	NA	A
45	☐	☐	☐	☐	A
54	☐	☐	☐	☐	A
56	☐	NA	NA	NA	A
60	NA	☐	☐	☐	A
67.5	☐	NA	NA	NA	A
72	NA	☐	☐	☐	A
75	NA	☐	☐	☐	A
78.8	☐	NA	NA	NA	C
90	☐	NA	☐	☐	A (C for 208V)
94.5	☐	NA	NA	NA	C
99	NA	NA	☐	☐	B
105	NA	☐	NA	NA	C
108	☐	NA	☐	☐	B (C for 208V)
120	NA	☐	☐	☐	B (C for 240V)
126	NA	☐	NA	NA	C
132	NA	NA	☐	☐	B
144	NA	☐	☐	☐	B(C for 240V)
150	NA	NA	☐	☐	B
165	NA	NA	☐	☐	B
180	NA	NA	☐	☐	B
192	NA	NA	☐	☐	C
204	NA	NA	☐	☐	C
216	NA	NA	NA	☐	C
225	NA	NA	☐	☐	C
240	NA	NA	☐	☐	C
255	NA	NA	☐	☐	C
270	NA	NA	NA	☐	C
288	NA	NA	☐	☐	C
306	NA	NA	☐	☐	C
315	NA	NA	☐	☐	C
324	NA	NA	NA	☐	C
336	NA	NA	☐	☐	C
357	NA	NA	☐	☐	C
378	NA	NA	NA	☐	C
384	NA	NA	☐	☐	C
408	NA	NA	☐	☐	C

NA: Not Available

II – CONFIGURATION AN DESCRIPTION

The VoltMax electric boiler is offered in SCR version only. The SCR version allows for proportional power modulation from 0 to 100% using a solid-state SCR relay, with other additional features.

1. CONTROLLER

The boiler will be operated by a Schneider Electric controller with the following features:

- A 3-inch LCD screen
- The controller is accurate, easily-configured and has a rear-lit display
- The controller's displays the unit's operating status and the following information at a glance:
  - Heat demand
  - Set point temperature
  - Outlet temperature
  - Outdoor temperature when the sensor is connected
  - Boiler power in real time
  - Number of stages and percentage of the capacity being used
  - Operating pressure
  - Operating mode: electric, auxiliary or dual-energy
  - "Boost" mode in operation
  - "Warm Weather Shut Down": The boiler shuts down when the outdoor temperature is high
  - Visual and audible alarm with alarm code
  - Operating status indicator lights: green, amber or red
  - Unit (°C/°F) and language (English/French) selector
  - Return temperature display
  - Boiler flow-rate display
  - Display of amperage measured at the boiler
  - Power consumption estimate display

2. TEMPERATURE ADJUSTMENT

- Adjustable set point temperature ranges from 50°F to 200°F (10°C to 93°C)
- There are different ways to control the set point temperature:
  1. Fixed set point temperature
  2. Water temperature modulation via the outdoor temperature sensor
  3. Remote water temperature control using an external BACnet IP or MSTP controller
  4. Variable water temperature based on a building occupancy schedule
- The controller can be used to set a second, higher set point temperature, which allows you to use an indirect water heater with or without domestic hot water priority.
- "Boost" mode to automatically increase the temperature when demand persists
- Exterior temperature sensor included
- "Warm Weather Shut Down": The boiler shuts down when the outdoor temperature is high
- External 0-10Vdc temperature control

3. POWER ADJUSTMENT

- The maximum power can be controlled as follows:
  1. The controller has no constraints or limitations
  2. The maximum power is controlled manually
  3. Maximum power modulated based on the sensor's outdoor temperature
  4. Remote power control (using an external BACnet IP or MSTP controller)
  5. Variable maximum power based on a pre-set schedule
- External 0-10Vdc power control

- Auxiliary energy source used as a backup or master

4. CONNECTIVITY

- Ethernet and BACnet network communication ports enable remote communication
- Standard BACnet IP or MSTP network communication
- Ability to view the operating status and to remotely modify the settings on a webpage
- Operating anomalies information and history
- Can be configured to send alarms by email

5. ELECTRIC CIRCUIT

SINGLE PHASE, 60HZ

- The electrical connection must be 2-wire cable with ground.

THREE-PHASE, 60HZ

- The electrical connection must be 3-wire cable with ground.

SINGLE PHASE, 60HZ & THREE-PHASE, 60HZ

- The heating elements will be square flange immersion type. They will be low density equipped with high-temperature nickel-iron-chrome “incoloy” alloy.
- The boiler will be equipped with two limit controls, the first will be adjustable with an automatic reset and the second will be at a fixed temperature with a manual reset.
- Control circuit ON/OFF switch
- Electrical control circuits will be equipped with fuses to protect the low-voltage circuits.
- Electrical circuits will be equipped with fuses to protect the high-voltage circuits.
- A low water level control with an automatic reset will shut down the boiler when the water level is low and includes a test button and light indicators.
- The unit’s power can be modulated through a solid-state SCR relay from 0 to 100% based on the demand. In addition, it rotates through the stages to ensure components wear equally.
- A contact to activate an auxiliary boiler as a backup or in dual-energy mode
- Return temperature sensor
- Amperage measurement to detect anomalies and estimate power consumption
- An external contact lowers the heat demand when the building is unoccupied

III – IDENTIFICATION

VOLTMAX SCR (KW)-(VOLTAGE)- (X) PH

Example:
VOLTMAX SCR 77-240-1 PH
VOLTMAX SCR 408-600-3 PH

IV – PRESSURE VESSEL

1. CONFIGURATION A

The tank will be made of steel according to CSA B-51-14 standards and will bear a Canadian Registration Number (CRN) and an “H” seal certifying that the tank’s construction conforms to the standards of Section IV of the ASME Boiler and Pressure Vessel code. The tank will have a maximum operating pressure of 70psi (482kPa) and will hold 11 US gallons (42 liters) of water. It will undergo a 105 psi (724 kPa) ASME-compliant hydrostatic test.

The boiler will be installed directly on the ground and will be equipped with four (4) 1 ½’’ NPT M connections located on the sides of the tank to enable a multi-position installation and facilitate connection. There are 5 openings to install the square flange elements. The tank will be equipped with a ¾” ball drain valve and will be shipped from the factory also equipped with an ASME-compliant safety valve with a 60 psi (414 kPa) trigger point.

2. CONFIGURATION B

The tank will be made of steel according to CSA B-51-14 standards and will bear a Canadian Registration Number (CRN) and an “H” seal certifying that the tank’s construction conforms to the standards of Section IV of the ASME Boiler and Pressure Vessel code. The tank will have a maximum operating pressure of 125 psi (862 kPa) and will hold 30 US gallons (114 litres) of water. It will undergo a 188 psi (1296 kPa) ASME-compliant hydrostatic test.

The boiler will be installed directly on the ground and will be equipped with four (4) 2 ½’’ NPT M connections located on the sides of the tank to enable a multi-position installation and facilitate connection. There are 10 openings to install the square flange elements. The tank will be equipped with a ¾” ball drain valve and will be shipped from the factory also equipped with an ASME-compliant safety valve with a 125 psi (862 kPa) trigger point.

3. CONFIGURATION C

The tank will be made of steel according to CSA B-51-14 standards and will bear a Canadian Registration Number (CRN) as well as an “H” seal certifying that the tank’s construction conforms to the standards of Section IV of the ASME Boiler and Pressure Vessel code. The tank will have a maximum operating pressure of 160 psi (1103 kPa) and will hold 62 US gal (235 litres) of water. It will undergo an ASME-compliant 240psi (1655 kPa) hydrostatic test.

The boiler will be installed directly on the ground by means of four (4) seismic resistant holes. It will be equipped with four (4) 3’’ NPT M connections, located on the sides of the tank to enable a multi-position installation and facilitate connection. There are 24 openings to install the square flange elements. The tank will be equipped with a 1 ¼” ball drain valve and will be shipped from the plant equipped with an ASME compliant safety valve with 150 psi (1034 kPa) trigger point. See section VI for safety valves of 60 psi (441 kPa) or 125 psi (862 kPa).

V - CABINET

The steel cabinet’s outer wall is coated with a layer of baked enamel. The housing is designed to reduce space while facilitating access to the components. The lower front door provides access to the power components. The upper front compartment provides access to the low-voltage control components and the top cover provides access to the electric components. There is a 3” (75 mm) thick fibreglass insulating sheath.

VI – AVAILABLE OPTIONS

Add a power switch (three-phase models only)
☐ VOLTMAX - SWITCH

Add built-in switch fuses (three phase models only, not available models over 150A on configuration A and B or over 300A on configuration C)
☐ VOLTMAX – SWITCH&FUSE

A self-resetting low water level control will shut down the boiler in case of low water, including a test button and light indicators (standard on higher than 60 kW models).
☐ VOLTMAX – LEVEL

A 30 psi safety valve (available on configuration A models only)
☐ VOLTMAX – 30 PSI

A 60 psi safety valve (standard on configuration A)
☐ VOLTMAX – 60 PSI

A 125 psi safety valve (standard on configuration B)
☐ VOLTMAX – 125 PSI

Maximum operating pressure of 125 psi, a 125 psi safety valve (configuration A models only)
☐ VOLTMAX – 125 PSI

The tank will be made of steel according to CSA B-51-14 standards and will bear a Canadian Registration Number (CRN) and an “H” seal certifying that the tank’s construction conforms to the standards of Section IV of the ASME Boiler and Pressure Vessel code. The tank will have a maximum operating pressure of 125 psi (862 kPa) and will hold 30 US gallons (114 litres) of water. It will undergo a 188 psi (1296 kPa) ASME-compliant hydrostatic test.

The boiler will be installed directly on the ground and will be equipped with four (4) 2 ½’’ NPT M connections located on the sides of the tank to enable a multi-position installation and facilitate connection. There are 10 openings to install the square flange elements. The tank will be equipped with a ¾” ball drain valve and will be shipped from the factory also equipped with an ASME-compliant safety valve with a 125 psi (862 kPa) trigger point.

Maximum operating pressure of 160 psi, a 150 psi safety valve (configuration A and B models only)
☐ VOLTMAX – 160 PSI

The tank will be made of steel according to CSA B-51-14 standards and will bear a Canadian Registration Number (CRN) as well as an “H” seal certifying that the tank’s construction conforms to the standards of Section IV of the ASME Boiler and Pressure Vessel code. The tank will have a maximum operating pressure of 160 psi (1103 kPa) and will hold 62 US gal (235 litres) of water. It will undergo an ASME-compliant 240psi (1655 kPa) hydrostatic test.

The boiler will be installed directly on the ground by means of four (4) seismic resistant holes. It will be equipped with four (4) 3’’ NPT M connections, located on the sides of the tank to enable a multi-position installation and facilitate connection. There are 24 openings to install the square flange elements. The tank will be equipped with a 1 ¼” ball drain valve and will be shipped from the plant equipped with an ASME compliant safety valve with 150 psi (1034 kPa) trigger point. See section VI for safety valves of 60 psi (441 kPa) or 125 psi (862 kPa).

VII - WARRANTY

The boiler's heating element is covered by a 10-year limited warranty for closed-circuit heating applications. Parts and accessories have a 2-year warranty. The boiler must be tested, certified and bear the CSA Canada and US logos according to CSA C22.2 No. 165-92 and UL834 standards.

VIII – START UP

To facilitate start-up, a pre-adjustment form is available in the event you would like to change the VOLTMAX unit's default operating settings to values that correspond to your project's needs. Just indicate the values you need for your application and Thermo 2000 will program the controller in the factory.

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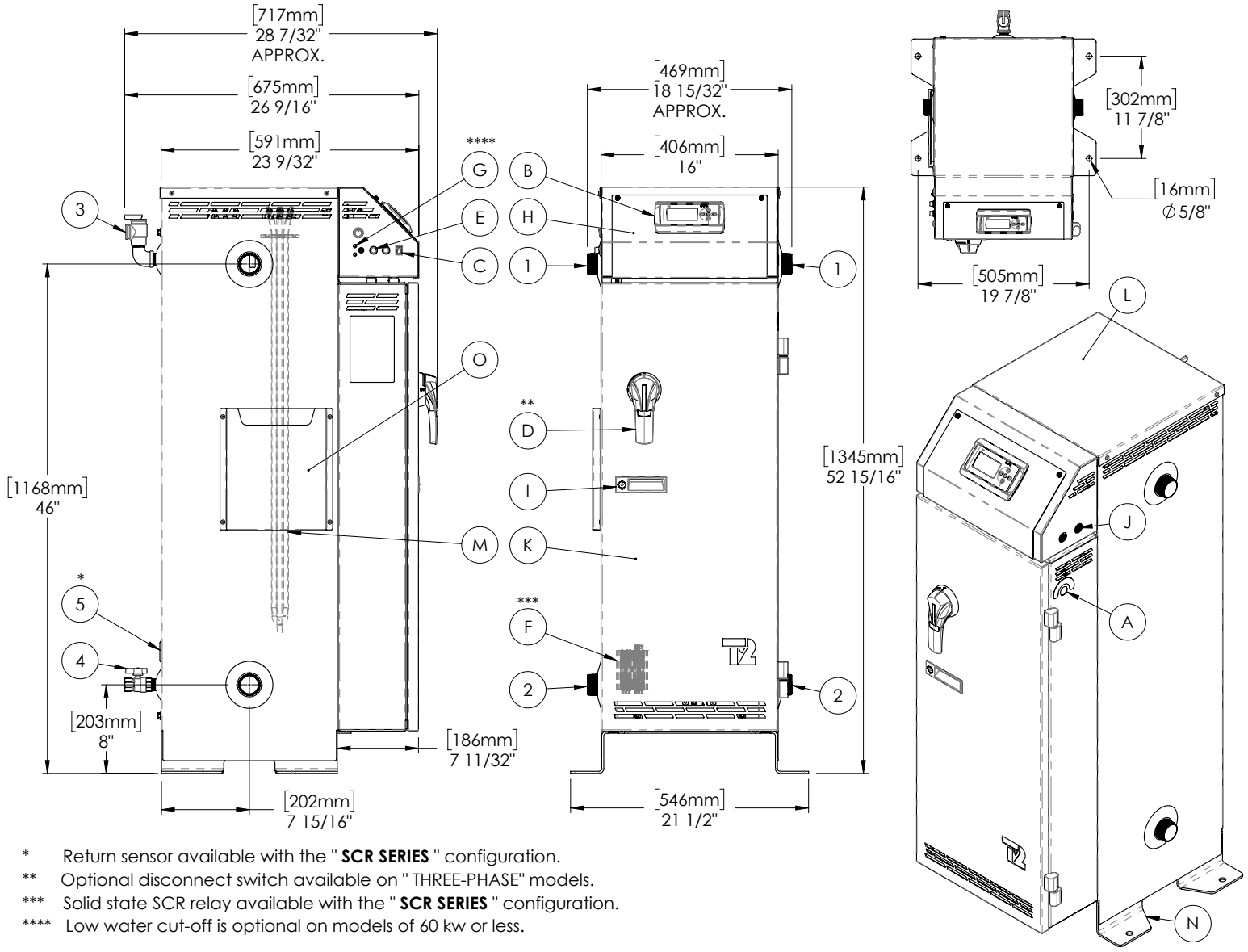


* Return sensor available with the " **SCR SERIES** " configuration.
** Optional disconnect switch available on " THREE-PHASE" models.
*** Solid state SCR relay available with the " **SCR SERIES** " configuration.
**** Low water cut-off is optional on models of 60 kw or less.

BOILER CONNECTIONS		
1	Boiler outlet	1 1/2" NPT M
2	Boiler inlet	1 1/2" NPT M
3	Pressure relief valve	3/4" NPT F
4	Drain Valve	3/4" NPT F
5*	Access to the return sensor	1/2" NPT F

COMPONENTS IDENTIFICATION	
A	Electrical main supply
B	Boiler controller
C	"On/Off" switch
D**	Disconnect switch & rotary handle
E	Fuses for controls
F***	Solid state SCR relay
G****	Low water cut-off, test button and indicator lights
H	Electrical control access door
I	Door handle for electric access with lock
J	Electrical control wires access holes
K	Access door power circuit
L	Access cover to Heating elements
M	Heating elements
N	Anti-Seismic anchors holes
O	Documents holder

MIN. CLEARANCES FOR INSTALLATION & MAINTENANCE	
Left & Right sides	3"/ 76mm
Rear	3"/ 76mm
Front	24" / 610mm
Bottom	0" / 0mm
Top	32" / 813mm

GENERAL INFORMATIONS	
Weight	310lbs / 141kg
Water volume	11 us gal./ 41.6 liters
Max. operating pressure	STANDARD: 30psi OPTION: 70 PSI 125PSI (See 99-180KW Shop Drawing)

VOLTMAX 208 VAC, 60 Hz, 1 ph.							
Model	**Power**		**Amps**	**Elements 240V**	**STG Series**	**SCR Series**	
	KW	**BTU/h**			**Relay Stages**	**Relay Stages**	**SCR Stages**
23	22.5	76 770	108.4	6 x 5 kW	3 x 7.5 kW	2 x 7.5 kW	1 x 7.5 kW
27	27	92 124	130.1	6 x 6 kW	3 x 9 kW	2 x 9 kW	1 x 9 kW
30	30	102 360	144.5	8 x 5 kW	4 x 7.5 kW	3 x 7.5 kW	1 x 7.5 kW
36	36	122 832	173.4	8 x 6 kW	4 x 9 kW	3 x 9 kW	1 x 9 kW
41	41	139 892	198.7	5 x 5 kW 5 x 6 kW	5 x 8.25 kW	4 x 8.25 kW	1 x 8.25 kW
45	45	153 540	216.8	10 x 6 kW	5 x 9 kW	4 x 9 kW	1 x 9 kW
49.5	49.5	168 894	238.4	6 x 5 kW 6 x 6 kW	6 x 8.25 kW	5 x 8.25 kW	1 x 8.25 kW
54	54	184 248	260.1	12 x 6 kW	6 x 9 kW	5 x 9 kW	1 x 9 kW

208V 1-phase electrical supply (L1-L2) with two 90 °C conductors and a ground.

VOLTMAX, 240V, 60 Hz, 1 ph.							
Model	**Power**		**Amps**	**Elements 240V**	**STG Series**	**SCR Series**	
	KW	**BTU/h**			**Relay Stages**	**Relay Stages**	**SCR Stages**
30	30	102 360	125	6 x 5 kW	3 x 10 kW	2 x 10 kW	1 x 10 kW
36	36	122 832	150	6 x 6 kW	3 x 12 kW	2 x 12 kW	1 x 12 kW
40	40	136 480	166.7	8 x 5 kW	4 x 10 kW	3 x 10 kW	1 x 10 kW
48	48	163 776	200	8 x 6 kW	4 x 12 kW	3 x 12 kW	1 x 12 kW
55	55	187 660	229.2	5 x 5 kW 5 x 6 kW	5 x 11 kW	4 x 11 kW	1 x 11 kW
60	60	204 720	250	10 x 6 kW	5 x 12 kW	4 x 12 kW	1 x 12 kW
66	66	225 192	275	6 x 5 kW 6 x 6 kW	6 x 11 kW	5 x 11 kW	1 x 11 kW
72	72	245 664	300	12 x 6 kW	6 x 12 kW	5 x 12 kW	1 x 12 kW

240V 1-phase electrical supply (L1-L2) with two 90 °C conductors and a ground.

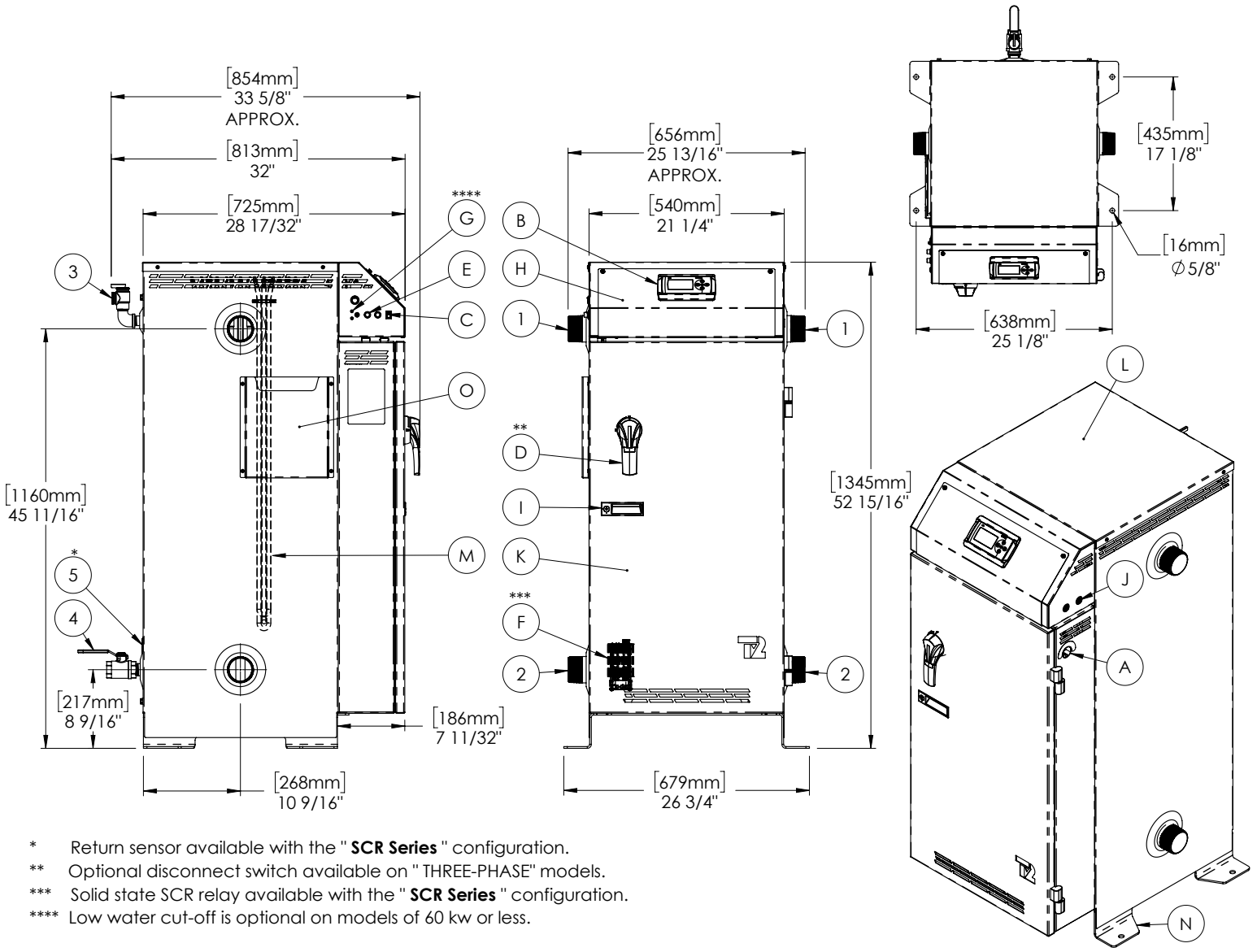
VOLTMAX, 208V, 60 Hz, 3 ph.							
Model	**Power**		**Amps**	**Elements 240V**	**STG Series**	**SCR Series**	
	KW	**BTU/h**			**Relay Stages**	**Relay Stages**	**SCR Stages**
23	22.5	76 770	62,6	2 x 15 kW	2 x 11.25 kW	1 x 11.25 kW	1 x 11.25 kW
27	27	92 124	75,1	2 x 18 kW	2 x 13.5 kW	1 x 13.5 kW	1 x 13.5 kW
34	34	116 008	93,9	3 x 15 kW	3 x 11.25 kW	2 x 11.25 kW	1 x 11.25 kW
41	40.5	138 186	112,6	3 x 18 kW	3 x 13.5 kW	2 x 13.5 kW	1 x 13.5 kW
45	45	153 540	125,1	4 x 15 kW	4 x 11.25 kW	3 x 11.25 kW	1 x 11.25 kW
54	54	184 248	150,2	4 x 18 kW	4 x 13.5 kW	3 x 13.5 kW	1 x 13.5 kW
56	56	191 072	156,4	5 x 15 kW	5 x 11.25 kW	4 x 11.25 kW	1 x 11.25 kW
68	67.5	230 310	187,7	5 x 18 kW	5 x 13.5 kW	4 x 13.5 kW	1 x 13.5 kW

208V 3-phase electrical supply (L1-L2-L3) with three 90 °C conductors and a ground.

VOLTMAX, 240V, 60 Hz, 3 ph.							
Model	Power		Amps	Elements 240V	STG Series	SCR Series	
	KW	BTU/h			Relay Stages	Relay Stages	SCR Stages
30	30	102 360	72,2	2 x 15 kW	2 x 15 kW	1 x 15 kW	1 x 15 kW
36	36	122 832	86,6	2 x 18 kW	2 x 18 kW	1 x 18 kW	1 x 18 kW
45	45	153 540	108,3	3 x 15 kW	3 x 15 kW	2 x 15 kW	1 x 15 kW
54	54	184 248	129,9	3 x 18 kW	3 x 18 kW	2 x 18 kW	1 x 18 kW
60	60	204 720	144,3	4 x 15 kW	4 x 18 kW	3 x 18 kW	1 x 18 kW
72	72	245 664	173,2	4 x 18 kW	4 x 18 kW	3 x 18 kW	1 x 18 kW
75	75	255 900	180,4	5 x 15 kW	5 x 15 kW	4 x 15 kW	1 x 15 kW
240V 3-phase electrical supply (L1-L2-L3) with three 90 °C conductors and a ground.							

VOLTMAX, 480V, 60 Hz, 3 ph.							
Model	Power		Amps	Elements 480V	STG Series	SCR Series	
	KW	BTU/h			Relay Stages	Relay Stages	SCR Stages
30	30	102 360	36,1	2 x 15 kW	2 x 15 kW	1 x 15 kW	1 x 15 kW
36	36	122 832	43,3	2 x 18 kW	2 x 18 kW	1 x 18 kW	1 x 18 kW
45	45	153 540	54,1	3 x 15 kW	3 x 15 kW	2 x 15 kW	1 x 15 kW
54	54	184 248	65	3 x 18 kW	3 x 18 kW	2 x 18 kW	1 x 18 kW
60	60	204 720	72,2	4 x 15 kW	4 x 15 kW	3 x 15 kW	1 x 15 kW
72	72	245 664	86,6	4 x 18 kW	4 x 18 kW	3 x 18 kW	1 x 18 kW
75	75	255 900	90,2	5 x 15 kW	5 x 15 kW	4 x 15 kW	1 x 15 kW
90	90	307 080	108,3	5 x 18 kW	5 x 18 kW	4 x 18 kW	1 x 18 kW
480V 3-phase electrical supply (L1-L2-L3) with three 90 °C conductors and a ground.							

VOLTMAX, 600V, 60 Hz, 3 ph.							
Model	Power		Amps	Elements 600V	STG Series	SCR Series	
	KW	BTU/h			Relay Stages	Relay Stages	SCR Stages
30	30	102 360	28,9	2 x 15 kW	2 x 15 kW	1 x 15 kW	1 x 15 kW
36	36	122 832	34,6	2 x 18 kW	2 x 18 kW	1 x 18 kW	1 x 18 kW
45	45	153 540	43,3	3 x 15 kW	3 x 15 kW	2 x 15 kW	1 x 15 kW
54	54	184 248	52	3 x 18 kW	3 x 18 kW	2 x 18 kW	1 x 18 kW
60	60	204 720	57,8	4 x 15 kW	4 x 15 kW	3 x 15 kW	1 x 15 kW
72	72	245 664	69,3	4 x 18 kW	4 x 18 kW	3 x 18 kW	1 x 18 kW
75	75	255 900	72,2	5 x 15 kW	5 x 15 kW	4 x 15 kW	1 x 15 kW
90	90	307 080	86,6	5 x 18 kW	5 x 18 kW	4 x 18 kW	1 x 18 kW
600V 3-phase electrical supply (L1-L2-L3) with three 90 °C conductors and a ground.							



* Return sensor available with the " **SCR Series** " configuration.
** Optional disconnect switch available on " THREE-PHASE" models.
*** Solid state SCR relay available with the " **SCR Series** " configuration.
**** Low water cut-off is optional on models of 60 kw or less.

BOILER CONNECTIONS		
1	Boiler outlet	2 1/2" NPT M
2	Boiler inlet	2 1/2" NPT M
3	Pressure relief valve	3/4" NPT F
4	Drain Valve	3/4" NPT F
5*	Access to the return sensor	1/2" NPT F

COMPONENTS IDENTIFICATION	
A	Electrical main supply
B	Boiler controller
C	"On/Off" switch
D**	Disconnect switch & rotary handle
E	Fuses for controls
F***	Solid state SCR relay
G****	Low water cut-off, test button and indicator lights
H	Electrical control access door
I	Door handle for electric access with lock
J	Electrical control wires access holes
K	Access door power circuit
L	Access cover to Heating elements
M	Heating elements
N	Anti-Seismic anchors holes
O	Documents holder

MIN. CLEARANCES FOR INSTALLATION & MAINTENANCE	
Left & Right sides	3"/ 76mm
Rear	3"/ 76mm
Front	24" / 610mm
Bottom	0" / 0mm
Top	32" / 813mm

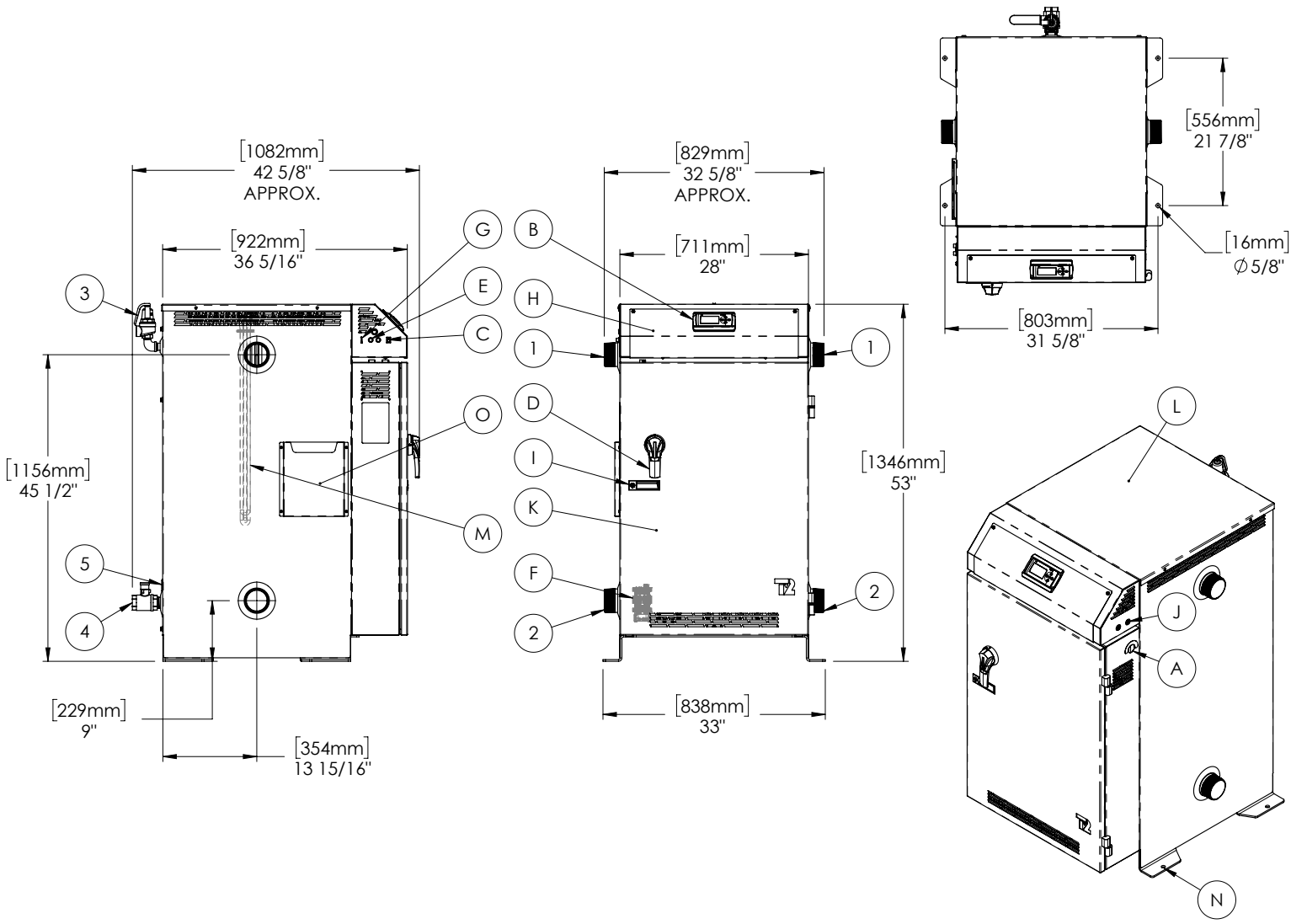
GENERAL INFORMATIONS	
Weight	550lbs / 250kg
Water volume	30 usgal./ 113.5 liters
Max. operating pressure	STANDARD: 60psi OPTION: 125 PSI

VOLTMAX, 480V, 60 Hz, 3 ph.							
Model	**Power**		**Amps**	**Elements 480V**	**STG Series**	**SCR Series**	
	KW	**BTU/h**			**Relay Stages**	**Relay Stages**	**SCR Stages**
99	99	337 788	119,1	3 x 15 kW 3 x 18 kW	3 x 33 kW	2 x 33 kW	1 x 33 kW
108	108	368 496	129,9	6 x 8 kW	3 x 36 kW	2 x 36 kW	1 x 36 kW
120	120	409 440	144,3	8 x 15 kW	4 x 30 kW	3 x 30 kW	1 x 30 kW
132	132	450 384	158,8	4 x 15 kW 4 x 18 kW	4 x 33 kW	3 x 33 kW	1 x 33 kW
144	144	491 328	173,2	8 x 18 kW	4 x 36 kW	3 x 36 kW	1 x 36 kW
150	150	511 800	180,4	10 x 15 kW	5 x 30 kw	4 x 30 kw	1 x 30 kw
165	165	562 980	198,5	5 x 15 kW 5 x 18 kW	5 x 33 kW	4 x 33 kW	1 x 33 kW
180	180	614 160	216,5	10 x 18 kW	5 x 36 kW	4 x 36 kW	1 x 36 kW

480V 3-phase electrical supply (L1-L2-L3) with three 90 °C conductors and a ground.

VOLTMAX, 600V, 60 Hz, 3 ph.							
Model	**Power**		**Amps**	**Elements 600V**	**STG Series**	**SCR Series**	
	KW	**BTU/h**			**Relay Stages**	**Relay Stages**	**SCR Stages**
99	99	337 788	95,3	3 x 15 kW 3 x 18 kW	3 x 33 kW	2 x 33 kW	1 x 33 kW
108	108	368 496	103,9	6 x 8 kW	3 x 36 kW	2 x 36 kW	1 x 36 kW
120	120	409 440	115,5	8 x 15 kW	4 x 30 kW	3 x 30 kW	1 x 30 kW
132	132	450 384	127	4 x 15 kW 4 x 18 kW	4 x 33 kW	3 x 33 kW	1 x 33 kW
144	144	491 328	138,6	8 x 18 kW	4 x 36 kW	3 x 36 kW	1 x 36 kW
150	150	511 800	144,3	10 x 15 kW	5 x 30 kw	4 x 30 kw	1 x 30 kw
165	165	562 980	158,8	5 x 15 kW 5 x 18 kW	5 x 33 kW	4 x 33 kW	1 x 33 kW
180	180	614 160	173,2	10 x 18 kW	5 x 36 kW	4 x 36 kW	1 x 36 kW

600V 3-phase electrical supply (L1-L2-L3) with three 90 °C conductors and a ground.



BOILER CONNECTIONS		
1	Boiler outlet	3" NPT M
2	Boiler inlet	3" NPT M
3	Pressure relief valve	3/4" NPT F
4	Drain Valve	1 1/4" NPT F
5	Access to the return sensor	1/2" NPT F

COMPONENTS IDENTIFICATION	
A	Electrical main supply
B	Boiler controller
C	"On/Off" switch
D	Disconnect switch & rotary handle (Optional)
E	Fuses for controls
F	Solid state SCR relay
G	Low water cut-off, test button and indicator lights
H	Electrical control access door
I	Door handle for electric access with lock
J	Electrical control wires access holes
K	Access door power circuit
L	Access cover to Heating elements
M	Heating elements
N	Anti-Seismic anchors holes
O	Documents holder

MIN. CLEARANCES FOR INSTALLATION & MAINTENANCE	
Left & Right sides	6"/ 152mm
Rear	6"/ 152mm
Front	24" / 610mm
Bottom	0" / 0mm
Top	32" / 813mm

GENERAL INFORMATIONS	
Weight	1200 lbs / 545kg APPROX.
Water volume	62 US gal / 235 liters APPROX.
Max. operating pressure	160 psi

Table 1 : *VoltMax* 600 VAC / 60 Hz / 3 Phases[1]

Model	BTU/h	kW	Amps	Elements 600V	Stage[2]
VoltMax 192	655 104	192	185	8 x 15 kW 4 x 18 kW	4 x 48 kW
VoltMax 204	696 048	204	197	8 x 18 kW 4 x 15 kW	4 x 51 kW
VoltMax 216	736 996	216	208	12 x 18 kW	4 x 54 kW
VoltMax 225	767 700	225	217	15 x 15 kW	5 x 45 kW
VoltMax 240	818 880	240	231	10 x 15 kW 5 x 18 kW	5 x 48 kW
VoltMax 255	870 060	255	246	10 x 18 kW 5 x 15 kW	5 x 51 kW
VoltMax 270	921 240	270	260	15 x 18 kW	5 x 54 kW
VoltMax 288	982 656	288	277	12 x 15 kW 6 x 18 kW	6 x 48 kW
VoltMax 306	1 044 072	306	295	12 x 18 kW 6 x 15 kW	6 x 51 kW
VoltMax 315	1 074 780	315	303	21 x 15 kW	7 x 45 kW
VoltMax 324	1 105 488	324	312	18 x 18 kW	6 x 54 kW
VoltMax 336	1 146 432	336	324	14 x 15 kW 7 x 18 kW	7 x 48 kW
VoltMax 357	1 218 084	357	344	14 x 18 kW 7 x 15 kW	7 x 51 kW
VoltMax 378	1 289 736	378	364	21 x 18 kW	7 x 54 kW
VoltMax 384	1 310 208	384	370	16 x 15 kW 8 x 18 kW	8 x 48 kW
VoltMax 408	1 392 096	408	393	16 x 18 kW 8 x 15 kW	8 x 51 kW

[1] Electrical supply 600 V 3 phase (L1-L2-L3) with 3 conductors Cu or AL ,90 °C with a ground.
[2] The 45 kW stage is composed of three 15 kW elements.
The 48 kW stage is composed of two 15 kW elements and one 18 kW element.
The 51 kW stage is composed of one 15 kW element and two 18 kW elements.
The 54 kW stage is composed of three 18 kW elements.

Table 2 : *VoltMax* 480 VAC / 60 Hz / 3 Phases[1]

Model	BTU/h	kW	Amps	Elements 480V	Stage[2]
VoltMax 192	655 104	192	231	8 x 15 kW 4 x 18 kW	4 x 48 kW
VoltMax 204	696 048	204	246	8 x 18 kW 4 x 15 kW	4 x 51 kW
VoltMax 225	767 700	225	271	15 x 15 kW	5 x 45 kW
VoltMax 240	818 880	240	289	10 x 15 kW 5 x 18 kW	5 x 48 kW
VoltMax 255	870 060	255	307	10 x 18 kW 5 x 15 kW	5 x 51 kW
VoltMax 288	982 656	288	347	12 x 15 kW 6 x 18 kW	6 x 48 kW
VoltMax 306	1 044 072	306	368	12 x 18 kW 6 x 15 kW	6 x 51 kW
VoltMax 315	1 074 780	315	379	21 x 15 kW	7 x 45 kW
VoltMax 336	1 146 432	336	405	14 x 15 kW 7 x 18 kW	7 x 48 kW
VoltMax 357	1 218 084	357	430	14 x 18 kW 7 x 15 kW	7 x 51 kW
VoltMax 384	1 310 208	384	462	16 x 15 kW 8 x 18 kW	8 x 48 kW
VoltMax 408	1 392 096	408	491	16 x 18 kW 8 x 15 kW	8 x 51 kW

[1] Electrical supply 480 V 3 phase (L1-L2-L3) with 3 conductors Cu or AL ,90 °C with a ground.
[2] The 45 kW stage is composed of three 15 kW elements.
The 48 kW stage is composed of two 15 kW elements and one 18 kW element.
The 51 kW stage is composed of one 15 kW element and two 18 kW elements.

Table 3: *VoltMax* 240 VAC / 60 Hz / 3 Phases[1]

Model	BTU/h	kW	Amps	Elements 240V	Stage
VoltMax 105	358 260	105	253	7 x 15 kW	7 x 15 kW
VoltMax 120	409 440	120	289	8 x 15 kW	8 x 15 kW
VoltMax 126	429 912	126	303	7 X 18 kW	7 X 18 kW
VoltMax 144	491 328	144	347	8 x 18 kW	8 x 18 kW

[1] Electrical supply 240 V 3 phase (L1-L2-L3) with 3 conductors Cu or AL ,90 °C with a ground.

Table 4: *VoltMax* 208 VAC / 60 Hz / 3 Phases[1]

Model	BTU/h	kW	Amps	Elements 240V [2]	Stage
VoltMax 79	268 695	78,75	219	7 x 15 kW	7 x 11,25 kW
VoltMax 90	307 080	90	250	8 x 15 kW	8 x 11,25 kW
VoltMax 95	322 434	94,5	263	7 X 18 kW	7 X 13,5 kW
VoltMax 108	368 496	108	300	8 x 18 kW	8 x 13,5 kW

[1] Electrical supply 208 V 3 phase (L1-L2-L3) with 3 conductors Cu or AL ,90 °C with a ground.
[2] 240V electrical element operated at 208V

Table 5: *VoltMax* 240 VAC / 60 Hz / 1 Phase[1]

Model	BTU/h	kW	Amps	Elements 240V	Stage[2]
VoltMax 77	262 724	77	321	7 x 5 kW 7 x 6 kW	7 x 11 kW
VoltMax 80	272 960	80	333	16 x 5 kW	8 x 10 kW
VoltMax 84	286 608	84	350	14 x 6 kW	7 X 12 kW
VoltMax 88	300 256	88	366	8 x 5 kW 8 x 6 kW	8 x 11 kW
VoltMax 96	327 552	96	400	16 x 6 kW	8 x 12 kW

[1] Electrical supply 240 V 2 phase (L1-L2) with 2 conductors Cu or AL ,90 °C with a ground.
[2] The 10 kW stage is composed of two 5kW elements
The 11 kW stage is composed of one 5 kW element et one 6 kW element
The 12 kW stage is composed of two 6 kW elements.

Table 6: *VoltMax* 208 VAC / 60 Hz / 1 Phase[1]

Model	BTU/h	kW	Amps	Elements 240V [2]	Stage [3]
VoltMax 58	197 043	57.75	278	7 x 5 kW 7 x 6 kW	7 x 8.25 kW
VoltMax 60	204 720	60	288	16 x 5 kW	8 x 7.5 kW
VoltMax 63	214 956	63	303	14 x 6 kW	7 X 9 kW
VoltMax 66	225 192	66	317	8 x 5 kW 8 x 6 kW	8 x 8.25 kW
VoltMax 72	245 664	72	346	16 x 6 kW	8 x 9 kW

[1] Electrical supply 240 V 2 phase (L1-L2) with 2 conductors Cu or AL ,90 °C with a ground.
[2] 240 electrical elements operated at 208V
[3] The 7.5 kW stage is composed of two 5kW elements
The 8.25 kW stage is composed of one 5 kW element et one 6 kW element
The 9 kW stage is composed of two 6 kW elements.

Table 7 : Maximum operating pressure

All models VoltMax [1]	
Standard maximum operating pressure	160 PSI

[1] Safety valve pressure of 60 psi, 125 psi or 150 psi (Standard)