



**OUELLET**  
CHAUFFAGE ÉLECTRIQUE  
ELECTRIC HEATING

# OHX

## *Explosion-Proof Unit Heater* **Owner's Manual, Version: OHX-OM-E**

This manual covers installation, maintenance,  
repair, and replacement parts.



## **Forced-Air Heater for Hazardous Locations**



Class I, Divisions 1 & 2, Groups C & D  
Class II, Divisions 1 & 2, Groups F & G  
Temperature Code T3B (35 kW = T3A)

Class I, Zones 1 & 2, Groups IIA & IIB, T3



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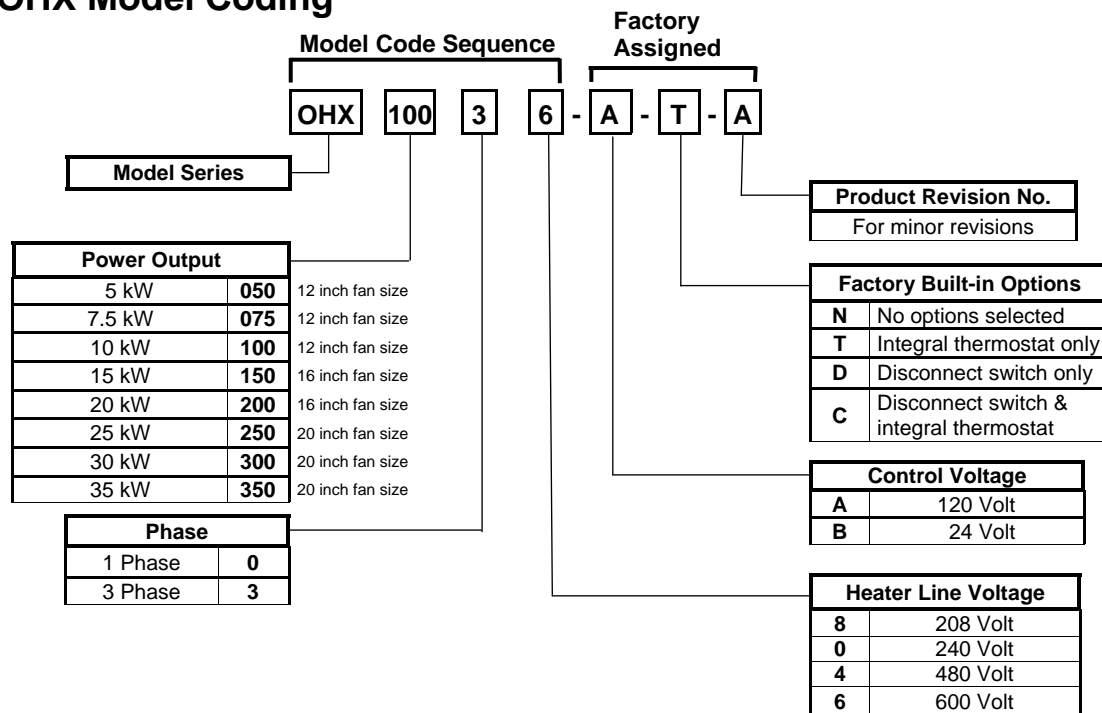
### **WARNING!**

Please adhere to all instructions published in this manual.  
Failure to do so may be dangerous and may void your warranty.

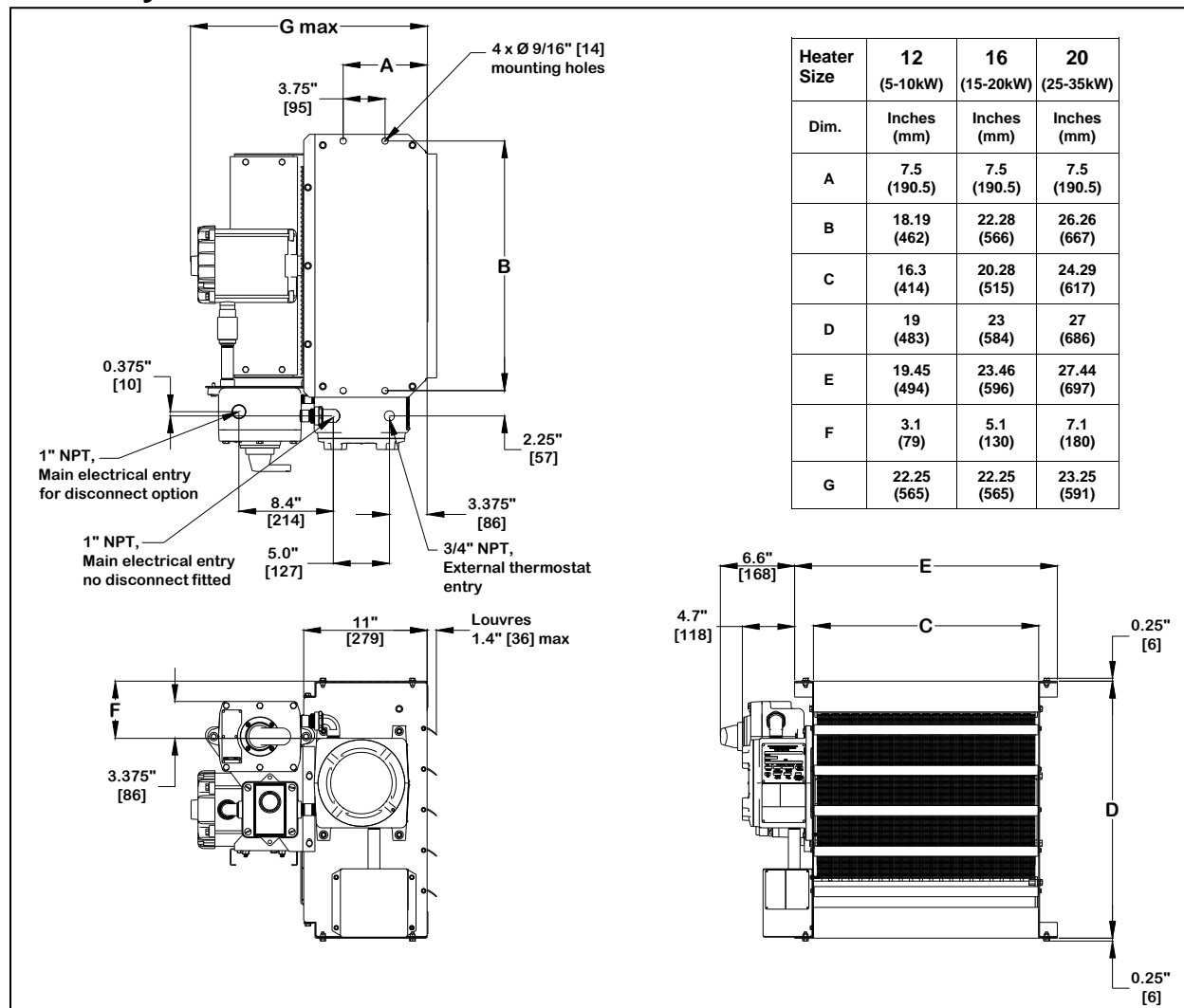
**Note:** OHX heaters should not be exposed to rain or snow. This applies to installed & stored heaters.  
The OHX heater should not be modified in any way.

**[www.Ouellet.com](http://www.Ouellet.com)**

# OHX Model Coding



## OHX Physical Dimensions



## OHX Specifications By Model Size

Model		5 to 10 kW			15 to 20 kW		25 to 35 kW		
Fan Diameter	in. (mm)	12 (304.8)			16 (406.4)		20 (508.0)		
Nominal kW		5	7.5	10	15	20	25	30	35
Air Delivery	CFM	400	600	800	1200	1700	2100	3000	
	m³/hr	680	1019	1359	2039	2888	3568	5097	
Approx. Air Velocity	FPM	47	718	958	808	1145	916	1309	
	m/s	2.4	3.6	4.9	4.1	5.8	4.6	6.6	
Approx. Horizontal Air Throw	ft.	15	22	30	33	46	41	61	
	m	4.6	6.7	9.1	10.1	14.0	12.5	18.6	
Motor Power	HP (Watts)	¼ (186)			¼ (186)		½ (373)		
Maximum Mounting Height (to underside of heater)	ft.	7	7.5	9.5	10	11	12	15	
	m	2.1	2.3	2.9	3.0	3.4	3.6	4.6	
Approx. Net Weight Lbs (kg)	(without disconnect)	129 (58.5)		133 (60.3)	161 (73.0)		192 (87.1)		
	(with disconnect)	142 (64.4)		146 (66.2)	174 (78.9)		205 (92.9)		
Approx. Shipping Weight Lbs (kg)	(without disconnect)	188 (85.3)		192 (87.1)	224 (101.6)		261 (118.4)		
	(with disconnect)	201 (91.2)		205 (93.0)	237 (107.5)		274 (124.3)		

## OHX General Specifications

Approvals	Certification	CSA <sub>CUS</sub> - 235730 - Certified to Canadian and U.S. standards
	North American Hazardous Location Classifications	<p>Class I, Divisions 1 &amp; 2, Groups C &amp; D  Class II, Divisions 1 &amp; 2, Groups F &amp; G  Temperature Code T3B (35 kW = T3A)</p> <p>Class I, Zones 1 &amp; 2, Groups IIA &amp; IIB, T3</p>
	Temperature Code	Division System - T3B 165°C (329°F); [35 kW = T3A 180°C (356°F)] Zone System - T3 200°C (392°F)
Cabinet	Cabinet Material	14-gauge (0.075 in.) (1.9 mm) steel. Red epoxy/polyester powder coated with five-stage pretreatment, including iron phosphate.
	Fan Guard	Split design with close wire spacing. A 3/8 in. (9.5 mm) diameter probe will not enter. Black polyester powder coated.
	Louver Blades	Anodized extruded aluminum.
	Conduit Materials & Fittings	Plated steel and aluminum alloy for corrosion resistance.
	Fasteners	Zinc plated steel for corrosion resistance.
	Enclosures	Cast aluminum (non-copper alloy) NEMA Type 7 & 9 with O-ring.
	Mounting Holes	9/16 in. diameter holes – Four located on the top face of heater.
Motor/Fan	Motor Type	Explosion-proof, thermally protected, 1725 RPM permanently lubricated ball bearing type with 56 frame and "easy-off" fan blade replacement feature.
	Fan	Three-blade aluminum, steel spider and hub with 5/8 in. bore
Heat Exchanger	Heating Elements	Long-life, low watt-density, high grade metal-sheathed elements.
	Heat Transfer Fluid	Ethylene glycol and water including corrosion inhibitors.
	Header Material	Carbon steel.
	ExCaliber™ Core	Carbon steel shells and carbon steel tubes with copper-free, roll-formed aluminum fins @ 10 fins per in. Evacuated and sealed. Sprayed with black, high heat enamel paint.
Protection	Temperature High Limits	One automatic reset rated for 100,000 cycles, and one manual reset. Both are snap-action bimetal type, open on temperature rise.
	Pressure Relief	High-quality preset 100 psig (689 kPa) stainless steel pressure relief device.
Controls	Control Circuit	Built in 120 V control. Optional 24V control (recommended) is available.
	Control Contactor	40 FLA (50 A resistive per pole) Definite Purpose. Rated for 500,000 mechanical operations.
	Control Transformer	Multitap primary, 120V or 24V secondary.
	Fuse Protection	Thermal delay fuse with spare, 1/4 in. x 1 1/4 in., 120V = 1/4 A, 24V = 1 A.
	Room Thermostat (optional)	Built in, OHX-T explosion-proof thermostat, 40°F to 80°F (5°C to 27°C)
Load Isolation	Disconnect Switch (optional)	Built-in, OHX-DIS explosion-proof disconnect switch, 600V, 50A max with lock-out feature. Also available in a wall mount version.
Operating Limits	Ambient Temperature	-40°F to 104°F (-40°C to 40°C). Storage: -40°F to 140°F (-40°C to 60°C)
	Maximum Altitude	10,000 ft (3048 m) above sea level.

— WARNING! —

Read and follow the instructions in this manual. Failure to do so may result in severe or fatal injury.

**IMPORTANT SAFETY INFORMATION**

1. Heater is to be connected and serviced only by qualified electrician experienced with hazardous location equipment. It is the responsibility of the installer to verify the safety and suitability of the installation.
2. Installation and wiring of the heater must adhere to all applicable codes. Heater must be effectively grounded to eliminate shock hazard.
3. Heater is to be used only in atmospheres having an ignition temperature higher than the heater's maximum rated operating temperature as shown on the heater data plate. For details of hazardous locations with potential for explosion, refer to the Canadian Electrical Code, Part 1, Section 18 or Articles 500 through 516 of the National Electrical Code.
4. Do not operate heater in ambient temperatures above 40°C (104°F).
5. Do not plug heater outlet with gloves, clothing, etc. or operate heater with louvers fully closed.
6. **Explosion/Electric Shock Hazard.** Disconnect heater from power supply or fuse box before opening enclosures or servicing heater. Lock the switch in the "OFF" (open) position and/or tag the switch to prevent unexpected power application.
7. Operate the heater only while it is permanently mounted in an upright position. Failure to comply will cause overheating of the heat exchanger and shutting down of the unit by tripping the high temperature cutout.
8. **This heater is equipped with two bimetal thermal high-limit cutouts**, one automatic reset type and one manual reset type. The heater is not to be operated with the high-limit cutouts disabled or disconnected from the control circuit.
9. Keep all electrical enclosure covers tightly closed and secured with all bolts and threads. Cover joints must be clean before replacing covers. Keep away from rain or snow. Heater is for dry indoor use only.
10. All unused threaded openings not used for supply wiring or remote mount room thermostat must be fitted with threaded plugs approved for use in hazardous locations.
11. The heat exchanger is a factory vacuum-sealed unit. Do not attempt to loosen or tighten the vacuum plug or pressure relief device. A loss of vacuum could cause nuisance tripping of the thermal cutouts or high pressures which will cause the relief device to actuate with an accompanying loss of fluid.
12. The heat exchanger is filled with a mixture of water and inhibited **ethylene glycol** which **is poisonous**. Contact with the fluid at operating temperatures may produce a burn hazard. Suggested first aid consists of flushing eyes with plenty of water and to wash off skin in flowing water or shower. If any fluid leakage occurs from the heater, disconnect it from the power supply and have the heat exchanger replaced with a factory supplied unit.
13. Heater must be kept clean. When operating in a dirty environment, regularly clean the fin tubes, fan, and fan guard. Refer to recommended maintenance procedures.
14. Do not operate heater in atmospheres which are corrosive to aluminum or steel.
15. See applicable electrical codes for seal requirements in field installed conduits. Factory installed conduits require no further sealing.
16. **Crackling or pinging noises within the heat exchanger during start up may occur. This is normal.**
17. Air discharge at the bottom of the heater may be warmer than at the top. This is normal.
18. Do not attempt to install a Remote Fan Only Switch. **Do not modify the heater in any way.**
19. Use factory approved replacement parts only.
20. Contact factory for any questions or concerns.

— WARNING! —

Read and follow the instructions in this manual. Failure to do so may result in severe or fatal injury.

— INSTALLATION —  
Mechanical

## Location

Please follow guidelines below for optimum heating results:

1. Do not install heaters such that airflow is blocked or impeded by equipment or walls.
2. For occupant comfort, position heaters so that air discharge is directed across areas of highest heat loss, such as doors, windows, and outside walls.
3. For large areas, arrange heaters such that the air discharge of one heater is directed towards the inlet of the next heater. This sets up a rotational airflow with air circulation in the central area of the building.
4. For equipment freeze protection, direct air discharge at equipment.
5. For large workshops or warehouses it may be acceptable to use fewer, larger heaters.
6. Locate remote mount room thermostat on interior partition walls or posts away from cold drafts, internal heat sources, and away from heater discharge air streams.

## Mounting

1. A variety of mounting brackets are available from the factory to aid in installation.
2. The heater is designed to be installed in an upright and level position. All models should not be more than  $\pm 15$  degrees or 2.5 in. (63.5 mm) from level when measured front-to-back, and  $\pm 5$  degrees 1.7 in. (43.2 mm) on 5 to 10 kW models, 2.0 in. (50.8 mm) on 15 to 20 kW models, and 2.4 in. (60.9 mm) on 25 to 35 kW models from level when measured side-to-side. Failure to comply will cause high limit shut down. Refer to heater data plate for tilt angles.
3. If using mounting hardware or a supporting structure not supplied by the factory, the unit should be suspended through the four 9/16 in. (14 mm) mounting holes on top of the unit with 1/2 in. UNC bolts. Lock washers should be used on all mounting nuts and bolts to ensure they don't vibrate or work loose due to fan vibration or other vibration transmitted to the heater. If in doubt consult factory.
4. It is essential that adequate structural support be provided for installation. **The mounting structure must be strong enough to support the heaters weight**, provide sufficient stiffness to prevent excessive vibration, and withstand all probable abusive situations such as transportable installations where truck off-loading impacts, etc. may occur. Refer to table on Page 3, OHX Specifications by Model Size, for heater net weights.

## Mounting Heights and Clearances

1. To ensure that warm air reaches the floor observe the recommended maximum mounting heights in table on Page 3, OHX Specifications by Model Size. Heaters may be mounted at higher elevations and still provide warm air at floor level however, the maximum mounting elevation at which this occurs depends on location and operational conditions.
2. Louvers may be adjusted to provide greater downward deflection of the discharge air. However, louvers must not be set less than 30 degrees of the closed position.
3. Leave at least 10 in. (254 mm) clearance between the rear of the motor and the nearest obstruction.
4. For easy removal of the core, leave clearance beneath the heater equal to the height of the heater cabinet plus 2 in. (51 mm).

**— WARNING! —**

**Read and follow the instructions in this manual. Failure to do so may result in severe or fatal injury.**

**— INSTALLATION —  
Electrical**

1. Heater is to be connected and serviced only by qualified electrician experienced with hazardous location equipment. It is the responsibility of the installer to verify the safety and suitability of the installation.
2. **Explosion/Electric Shock Hazard.** Disconnect heater from power supply or fuse box before opening enclosures or servicing heater. Lock the switch in the "OFF" (open) position and/or tag the switch to prevent unexpected power application.
3. Use copper conductors only for supply wires and approved explosion-proof means of wiring during installation. Use minimum 90°C rated wire. Refer to "Supply Wire Requirements" table and heater data plate for conductor wire rating.

4. Installation must include appropriate over-current protection devices (fusing or circuit breakers) as required by the CEC or NEC. Refer to "Supply Wire Requirements" table and heater data plate for current ratings. Supply voltage is to be within 10% of the data plate voltage.
5. Confirm that the electrical power supply matches the nameplate voltage, phase, amperage and frequency rating of the heater to be connected.
6. Supply conductors and ground conductor pass through the 1 in. NPT rigid conduit opening on the control enclosure.
7. Proper installation of the heater requires that an adequate grounding conductor be connected to the ground terminal. This terminal is made of copper and is located on the top right-hand corner of the printed circuit board within the control enclosure.
8. Heater may be supplied with a factory installed integral room thermostat (See Figure 1). On heaters not supplied with this option, it is recommended that an **external explosion-proof room thermostat** be used. The wiring to the external thermostat must be copper wire, 16 gauge minimum (for Class II) or 14 gauge minimum (for Class I). Thermostat conductors may also be passed through the 1 in. NPT conduit opening or through the convenient 3/4 in. NPT dedicated external thermostat conduit opening in the enclosure. Connect the external thermostat conductors to the printed circuit board terminal block marked "T'STAT". The built-in control transformer supplies the heater with either 120V or 24V for internal unit operation. This voltage will appear across the thermostat contacts when they are open. The minimum thermostat contact rating should be 1 amp @ 120 VAC. Refer to nameplate for control voltage of unit.
9. Refer to wiring diagram on Page 9 to ensure that all connections are as required and securely fastened.

**OHX Supply Wire Requirements**

Model	kW	Volts	Ø	Total Current Amps	Minimum Circuit Ampacity	Max F use Amps	Supply Wire 90°C (AWG)
OHX05008-	5	208	1	26.5	33.2	35	8
OHX05000-	5	240	1	23.3	29.2	30	10
OHX05038-	5	208	3	14.6	18.2	20	12
OHX05030-	5	240	3	12.7	15.9	20	12
OHX05034-	5	480	3	6.7	8.4	15	14
OHX05036-	5	600	3	5.5	6.9	15	14
OHX07508-	7.5	208	1	38.6	48.2	50	6
OHX07500-	7.5	240	1	33.8	42.2	50	8
OHX07538-	7.5	208	3	21.5	26.9	30	10
OHX07530-	7.5	240	3	18.7	23.4	30	10
OHX07534-	7.5	480	3	9.7	12.2	15	14
OHX07536-	7.5	600	3	7.9	9.9	15	14
OHX10000-	10	240	1	44.2	55.2	60	6
OHX10038-	10	208	3	28.5	35.6	40	8
OHX10030-	10	240	3	24.8	30.9	35	8
OHX10034-	10	480	3	12.7	15.9	20	12
OHX10036-	10	600	3	10.3	12.9	15	14
OHX15038-	15	208	3	42.3	52.9	60	6
OHX15030-	15	240	3	36.8	46.0	50	6
OHX15034-	15	480	3	18.7	23.4	25	10
OHX15036-	15	600	3	15.1	18.9	20	12
OHX20034-	20	480	3	24.8	30.9	35	8
OHX20036-	20	600	3	19.9	24.9	25	10
OHX25034-	25	480	3	31.1	38.8	40	8
OHX25036-	25	600	3	25.1	31.3	35	8
OHX30034-	30	480	3	37.1	46.4	50	6
OHX30036-	30	600	3	29.9	37.3	40	8
OHX35034-	35	480	3	43.1	53.9	60	6
OHX35036-	35	600	3	34.7	43.3	50	6

10. For heaters supplied with a factory installed integral disconnect switch (See Figure 1), field wiring is as follows:
  - a. Remove the Disconnect cover assembly from the base by removing the six (6) cover bolts. Set the cover assembly aside. CAUTION: Damaging the mating surfaces of the enclosure could destroy the flame path and jeopardize the integrity of the flame proof enclosure.
  - b. Supply conductors and ground conductor pass through the 1 in. NPT rigid conduit opening located on the top or bottom of Disconnect Enclosure. Supply conductors to be wired to DIN rail mounted Disconnect Switch inside. Ground conductor to be wired to Ground Lug fastened to inside of Disconnect Enclosure. Refer to wiring diagram on Page 9.
  - c. Attach cover to the enclosure using the six (6) bolts. **Tighten to 150 inch-pounds ± 5 in-lbs.**
11. **All** unused threaded openings in enclosures, not used for supply wiring or external room thermostat, must be fitted with threaded plugs approved for use in hazardous locations (included). Factory installed conduits require no additional sealing.
12. Installer must seal each conduit run within 18" (457 mm) of enclosure. This seal must be suitable and listed for hazardous locations.
13. Ensure that input conductors and conduit have adequate strain relief at installation.
14. Before application of electrical power, recheck all connections to ensure compliance with the wiring diagram and any code requirements. Remove any foreign objects from the control box and heater. Reinstall cover tightly.
15. **On all three-phase heaters, it is necessary to verify that the fan rotation is correct** (counter clockwise when facing the rear of the heater). If air delivery is not from the front of the heater, reverse any two supply leads at the main power contactor located in the control enclosure.
16. The explosion-proof control enclosure and element enclosures are designed with O-rings, threaded joints and metal-to-metal contact at the lid or cover joint to prevent an explosion. Do not attempt to install gasket material of any type at these joints. A light coating of anti-seize compound may be applied to the threads to prevent seizing.



Figure 1

## — WARNING! —

Heater is to be serviced only by qualified electrician experienced with hazardous location equipment.

**Explosion/Electric Shock Hazard.** Disconnect heater from power supply or fuse box before opening enclosures or servicing heater. Lock the switch in the "OFF" (open) position and/or tag the switch to prevent unexpected power application.

## — Repair and Replacement —

### Heat Exchanger Replacement

The heat exchanger has been air evacuated, fluid filled, and sealed at factory and is not field repairable. Replacement heat exchangers are available from the factory and are inspected and electrically tested for correct heat output and proper operation of the high-limits.

1. **Explosion/Electric Shock Hazard.** Disconnect heater from power supply or fuse box before opening enclosures or servicing heater. Lock the switch in the "OFF" (open) position and/or tag the switch to prevent unexpected power application.
2. To prevent burn hazard, be sure heat exchanger and fluid has been allowed to cool before proceeding.
3. Remove cabinet bottom panel, element housing cover, element enclosure cover, & control enclosure cover.
4. From the control enclosure, disconnect two high-limit wires from printed circuit board terminal block marked 3 & 4 and disconnect three output heating element wires from contactor terminals marked T1, T2, & T3.
5. Slightly loosen all cabinet bolts and louver screws to prevent heat exchanger from binding.
6. The heat exchanger is secured by three 1/4 in. bolts on the right-side cabinet panel (when facing front of heater) and one 1/4 in. bolt located on the left side of heater. On 5 - 10kW models the left-side bolt is located at the top right-hand foot of control enclosure. On 15 - 35kW models the left-side bolt is located above the control enclosure. With an assistant supporting the weight of the heat exchanger remove these 4 bolts. Carefully lower the heat exchanger from the cabinet.
7. Reverse the above procedure when installing a new heat exchanger.

### Temperature High-Limit Replacement

This heat-exchanger includes one automatic reset & one manual reset temperature high-limit that are wired in series. The automatic reset high-limit is rated for 100,000 cycles and is for a temporary failure condition. Continuous nuisance tripping of the automatic reset is generally not the fault of the high-limit but is usually caused by incorrect operating voltage, blocked air inlet or outlet, fan/motor malfunction, high ambient temperatures, excessively dirty heat exchanger or leaking heat exchanger. **Care should be taken to determine the exact reason that the automatic reset high-limit control tripped so the problem can be resolved immediately.** The automatic reset high-limit normally fails in the open position, however, it can also fail closed.

If the automatic reset fails in the open position the heater will not function and the high-limit should be replaced. **The occurrence of the manual reset high-limit control to trip is an abnormal condition and indicates that the automatic reset high-limit has failed in the closed position. If this occurs remove the heater from service immediately and replace the automatic reset high-limit. Determine the exact reason that the automatic reset high-limit control tripped so the problem can be resolved immediately.** If the manual reset high-limit shuts down the heater it will have to be reset by pressing on the small reset button protruding from the center of the high-limit device.

1. De-energize the heater electrical supply circuit.
2. Remove element housing cover, and element enclosure cover.
3. Remove spade connection from the automatic reset high limit lugs.
4. Remove automatic reset high-limit assembly by unscrewing, and clean the inside of the thermowell. A clean thermowell ensures good thermal contact.
5. Replace high-limit with a factory supplied unit only. Apply a small drop of heat sink conductive cement around the base of the high-limit, but not on the threads, and screw into thermowell. Attach spades to automatic reset high-limit .
6. Replace control enclosure cover, element housing cover, and element enclosure cover.
7. Energize the heater electrical supply circuit and let run for 15 minutes to reach a stable operating temperature.
8. If heater operation appears to be normal, place unit into service.

— WARNING! —

Heater is to be serviced only by qualified electrician experienced with hazardous location equipment.

**Explosion/Electric Shock Hazard.** Disconnect heater from power supply or fuse box before opening enclosures or servicing heater. Lock the switch in the "OFF" (open) position and/or tag the switch to prevent unexpected power application.

— Repair and Replacement, Continued —

### Fan, Fan Guard or Motor Replacement

**The motor is a sealed unit that requires no lubrication. If the motor is defective, it must be replaced with an original factory supplied motor.**

1. Remove four bolts holding motor to the motor mount, and covers from junction box and control enclosure. On units with an integral room thermostat, remove 4 bolts on front face of thermostat enclosure .
2. Detach and remove two-piece fan guard assembly by removing top and bottom screws that attach the fan guard to the cabinet.
3. Loosen fan blade set screw and remove fan blade from end of motor shaft leaving it in fan panel opening.
4. Unscrew the expansion union fitting between motor and motor enclosure (or integral thermostat enclosure).
5. **If replacing motor**, note wire connections for future reference and cut all wires leading to the motor close to the terminations. All motor wires are permanently marked according to the nameplate on the motor. Lift the motor assembly off the motor mount.
6. **If replacing fan blade only** do not cut any wires and move the motor assembly back sufficient to assist fan blade removal.
7. To reassemble, place fan blade inside fan panel opening and then place motor onto motor mount. Slip fan blade onto motor shaft and ensure fan hub is flush with end of motor shaft. Tighten set screw to 150 in-lbs torque.
8. Fasten the two-piece fan guards to the cabinet.
9. Tighten conduit fittings between motor and motor enclosure (or integral thermostat enclosure). Center fan in fan-panel opening and leave approximately 1/16" to 3/16" (1.6 to 4.8 mm) gap between motor face and fan guard.
10. Bolt motor to motor mount, tighten nuts to 250 in-lbs torque. Manually spin the fan blade to ensure it rotates freely before reconnecting heater to power supply. Fan must rotate counterclockwise when viewed from rear of heater.

Torque Settings	
Item	Torque (in-lbs)
Fan blade set screw (1 only)	150
5/16 - 18 UNC motor nuts	250
5/16 - 18 UNC motor mount bolts	250
1/4 - 20 UNC fan panel bolts	100
1/4 - 20 UNC fan guard self tapping screws	100
#10 - 24 UNC louver blade screws	28

### Contactors

1. Loosen, but do not remove contactor mounting screws. Slide contactor off mounting screws.
2. Replace with a factory supplied contactor of the same rating.

### Transformer

1. Replace with a factory supplied transformer of the same rating.
2. On the new transformer, select primary wires to match heater voltage. Ensure that the correct transformer secondary lead is grounded (see wiring diagram). Individually terminate all unused wires using closed end connections.

### Printed Circuit Board

1. Replace with a factory supplied P.C. Board.

### Thermal Delay Fuse

1. Replace fuse with one of the same type and rating as indicated on P.C. Board or refer to parts list. An extra fuse should be stored in the clips marked "SPARE".

**Wiring should only be connected by qualified personnel experienced in electrical work.**

Disconnect  
Integral or external

L3  
L2  
L1

3 pole contactor relay

Supply Voltage  
208 or 240 V  
Single Phase

Fan blade Motor

Heater Elements

120 or 24V AC  
Contactor coil

Voltage Transformer

Terminal panel mounted on transformer

Explosion-proof enclosure

Common N/C

120/24 Volt Thermostat  
Integral or external

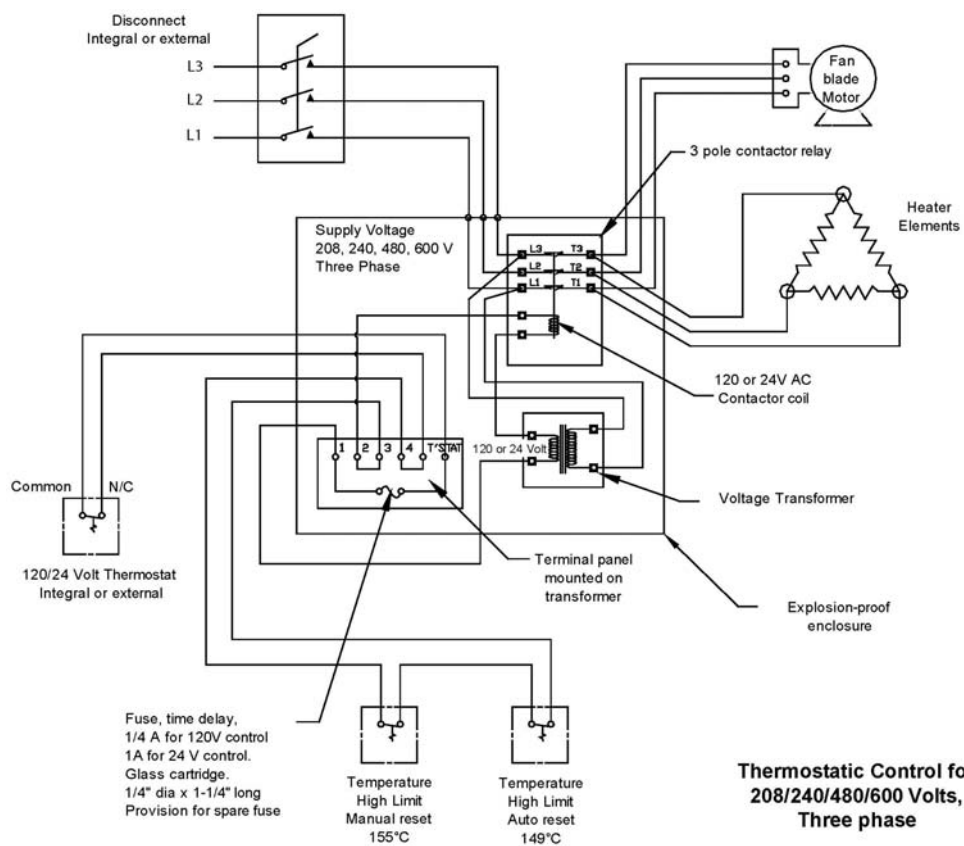
Fuse, time delay,  
1/4 A for 120V control  
1A for 24 V control.  
Glass cartridge.  
1/4" dia x 1-1/4" long  
Provision for spare fuse

Temperature  
High Limit  
Manual reset

Temperature  
High Limit  
Auto reset

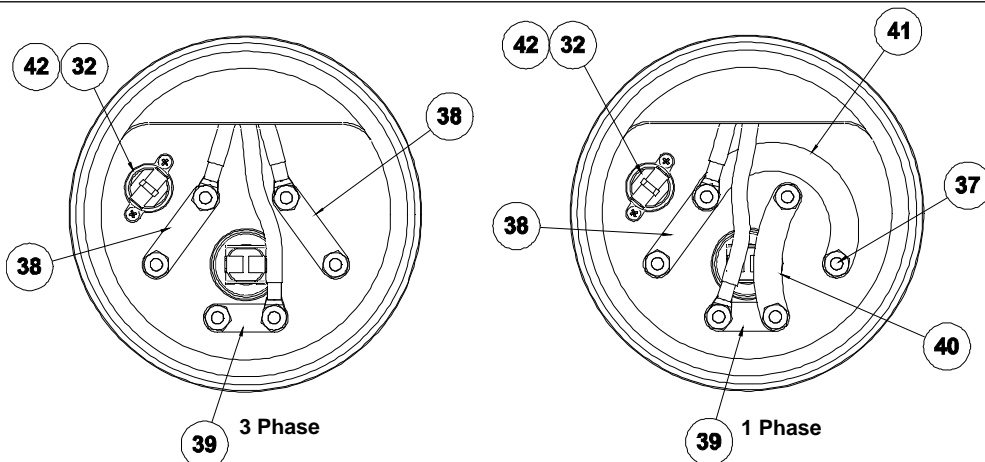
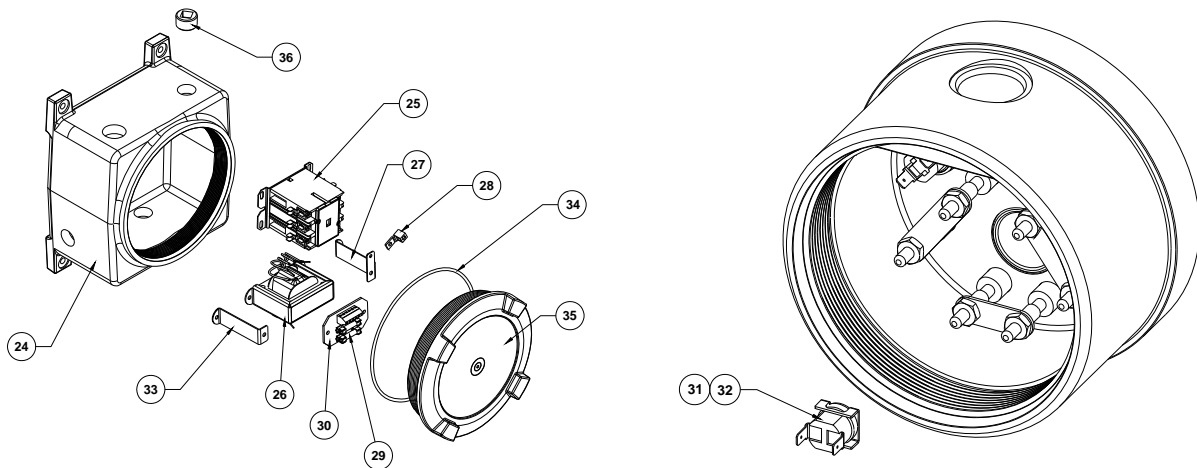
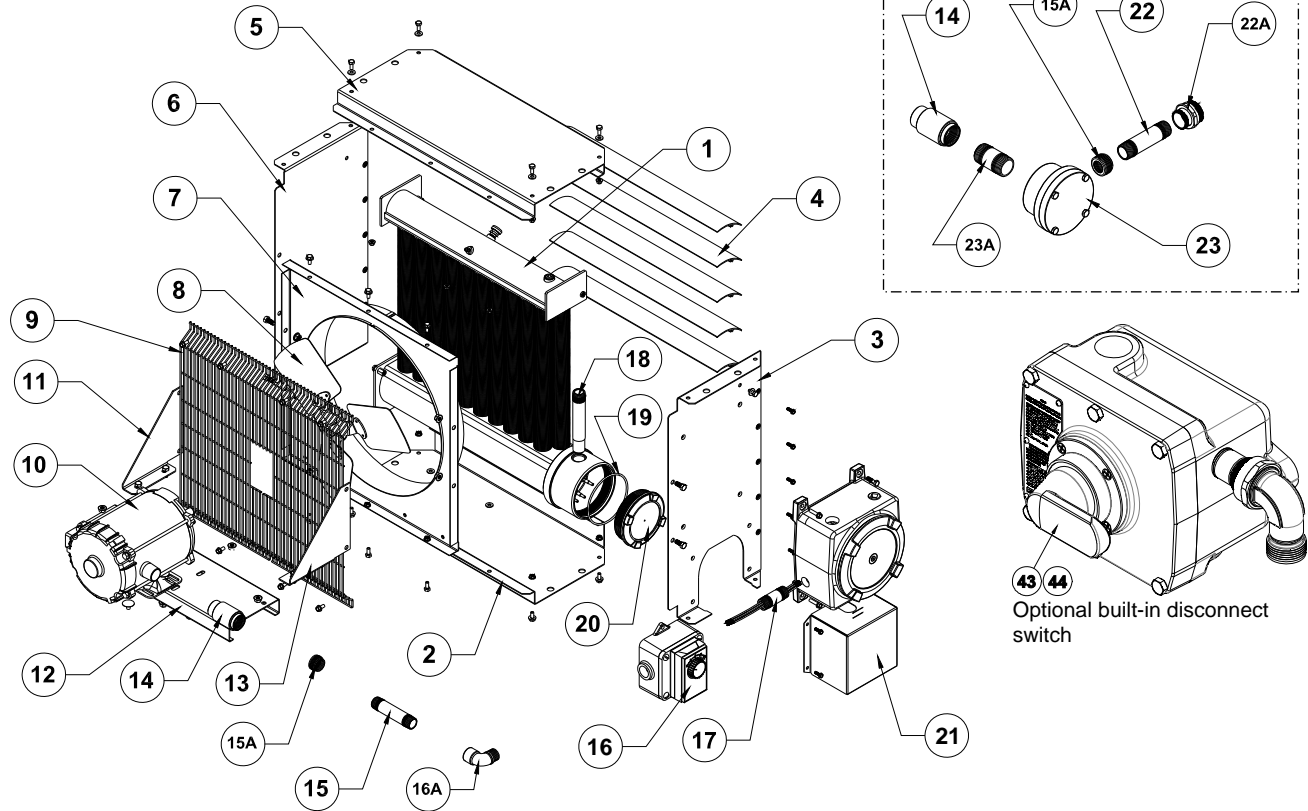
**Thermostatic Control  
208 or 240 Volts,  
Single phase**

**Thermostatic Control for  
208 or 240 Volts,  
Single phase**



**Thermostatic Control for  
208/240/480/600 Volts,  
Three phase**

— Assembly Diagram —



**— Parts List —**

**\*\*\* Please have model & serial number available before calling \*\*\***

Item No.	Description	12" fan size		16" fan size	20" fan size
		5 & 7.5 kW	10 kW	15 & 20 kW	25, 30 & 35 kW
1	Core assembly ( with bus bars)	Specify Voltage, phase, and kilowatts ( V-Ph-kW)			
2	Bottom panel	OHX1-12-2		OHX1-16-2	OHX1-20-2
3	Left side panel	OHX1-12-3		OHX1-16-3	OHX1-20-3
4	Louver blades	OHX1-12-4		OHX1-16-4	OHX1-20-4
5	Top panel	OHX1-12-5		OHX1-16-5	OHX1-20-5
6	Right side panel	OHX1-12-6		OHX1-16-6	OHX1-20-6
7	Fan panel	OHX1-12-7		OHX1-16-7	OHX1-20-7
8	Fan blades	5.0 kW = OHX-12-050 7.5 kW = OHX-12-075	10.0 kW = OHX-12-100	15.0 kW = OHX-16-150 20.0 kW = OHX-16-200	25.0 kW = OHX-20-250 30.0 & 35.0 kW = OHX-20-300
9	Fan guard (2 pieces)	OHX1-12-9		OHX1-16-9	OHX1-20-9
10	Motor, explosion-proof	115/208-230V, 1Ø, 60Hz = G639 208-230/460V, 3Ø, 60Hz = G646 575V, 3Ø, 60Hz = G664			208-230/460V, 3Ø, 60Hz = G649 575V, 3Ø, 60Hz = G666
11	Right side motor bracket	OHX1-11			
12	Motor base	OHX1-12-12		OHX1-16-12	OHX1-20-12
13	Left side motor bracket	OHX1-13			
14	Expansion union, female	OHX1-14			
15	Conduit, expansion union to elbow	OHX1-12-15		OHX1-16-15	OHX1-20-15
15A	Reducing bushing	OHX1-15A			
16	Thermostat, ex-proof	OHX-TM			
16A	Elbow, 90°	OHX1-16A			
17	Conduit, potted	OHX1-12-17 with thermostat OHX1-12-17A without thermostat			OHX1-20-17 with thermostat OHX1-20-17A without thermostat
18	Conduit, vertical	OHX1-12-18		OHX1-16-18	OHX1-20-18
19	O-ring, element enclosure cover	OHX1-19			
20	Cover, element enclosure	OHX1-20			
21	Guard, element enclosure	OHX1-21			
22	Conduit, motor box to enclosure	OHX1-12-22			OHX1-20-22
22A	Union	OHX1-22A			
23	Box, motor outlet	OHX1-23			
23A	Conduit, motor to motor box	OHX1-12-23A		OHX1-16-23A	OHX1-20-23A
24	Enclosure, control	OHX1-24			
25	Contactor	120V = OHX1-25, 24V = OHX1-25A			
26	Transformer	120V = OHX1-26, 24V = OHX1-26A			
27	Bracket, Transformer ground	OHX1-27			
28	Grounding lug	OHX1-28			
29	Fuse	120V = 1/4 Amp (OHX1-29), 24V = 1 Amp (OHX1-29A)			
30	Printed circuit board assembly	120V = OHX1-30, 24V = OHX1-30A			
31	High limit, automatic reset	OHX1-31 (also requires Part # OHX1-32)			
32	Conductive cement, high limit	OHX1-32			
33	Bracket, transformer	OHX1-33			
34	O-ring, control enclosure cover	OHX1-34			
35	Cover, control enclosure	OHX1-35			
36	Plug, 3/4" NPT explosion-proof	OHX1-36			
37	Nut, bus bar	OHX1-37			
38	Bus bar, long straight	OHX1-38			
39	Bus bar, short straight	OHX1-39			
40	Bus bar, short curved	OHX1-40			
41	Bus bar, long curved	OHX1-41			
42	High limit, manual reset	OHX1-42 (also requires Part # OHX1-32)			
43	Handle, Disconnect	OHX1-43			
44	Switch, Disconnect 60A Non-Fused	OHX1-44			

## — WARNING! —

Heater should only be service by qualified personnel experienced in electrical work.

Disconnect unit heater from power supply before starting any service or repair work. Lock the disconnect switch in the "OFF" (open) position and/or tag the switch to prevent unexpected power application. Failure to follow these procedures may result in severe or fatal injury.

## — Maintenance Program —

***Regular inspection, based on a schedule determined by the amount of dirt in the atmosphere, assures maximum operating economy and heating capacity.***

### **Annual Inspection** (before each heating season)

1. Check all terminal connections and electrical conductors for damage, looseness, defects, fraying, etc. and replace or tighten where applicable.
2. Inspect contactor contacts. If badly pitted, burned or welded shut, replace with factory supplied contactor. It is recommended that the contactor be replaced every three (3) years.
3. Inspect thermal delay fuses. Fuse rating and type are printed on circuit board. Correct fuse must be in the "ACTIVE" fuse clip. An extra fuse should be stored in the clips marked "SPARE".
4. Check for fluid leakage from heat-exchanger. The heat exchanger is filled with a mixture of water and inhibited **ethylene glycol, which is poisonous**, and is factory vacuum-sealed. If fluid leakage occurs, remove heater from service and have the heat-exchanger replaced by a factory replacement unit. Refer to "Repair and Replacement" section for complete details. Do not attempt to loosen or tighten the vacuum plug or pressure relief device. A loss of vacuum could cause nuisance tripping of the thermal cutouts or high pressures which will cause the relief device to actuate with an accompanying loss of fluid.
5. Check all explosion-proof conduit and fittings. Replace damaged components. All threaded conduit connections must have a minimum 5 turns of engagement. Taper threaded connections must be at least hand tight. Inside of enclosures must be clean, dry, and free from any foreign materials. Enclosure covers must also be completely on and tight.
6. Check electrical resistance on all load side legs. Reading should be balanced ( $\pm 5\%$ ).
7. Check motor shaft bearing play. Replace motor if play is excessive or if motor does not run quietly and smoothly. Motor bearings are permanently lubricated.
8. Check fan blade. Replace immediately if cracked or damaged.
9. Check louvers. Louver screws should be tight. Louvers must not be set less than 30 degrees of the closed position.
10. Check the tightness of all hardware. All nuts and bolts, including mounting hardware, must be tightened to correct torque settings on Page 8.
11. Turn heater motor on for a minimum of 10 minutes. Crackling or pinging noises within heater during start-up are normal. Check for air exiting heater through louvers and smooth running of motor.

### **Periodic Maintenance** (before and as required during heating season)

1. Clean the following (remove dust using compressed air):
  - Finned tubes
  - Fan
  - Fan Guard
  - Motor
  - Louvers
2. Check the following:
  - Motor for smooth and quiet operation
  - Louvers for proper angle and tightness
  - All explosion-proof covers and fittings for tightness
  - Contactor for signs of wear of pitting



## HEATER MAINTENANCE RECORD

Heater Model: \_\_\_\_\_

Serial No.: \_\_\_\_\_

[illegible]

## NOTES

## NOTES

## Limited 36-Month Warranty

**Ouellet** warrants all **OHX** series of explosion-proof electric heaters against defects in materials and workmanship under normal conditions of use for a period of thirty-six (36) months from date of purchase based on the following terms:

1. The heater must not be modified in any way.
2. The heater must be stored, installed and used only in accordance with the owner's manual and attached data plate information.
3. Replacement parts will be provided free of charge as necessary to restore any unit to normal operating condition, provided that the defective parts be returned to us freight prepaid and that the replacement parts be accepted freight collect.
4. The complete heater may be returned to our manufacturing plant for repair or replacement (at our discretion), freight charges prepaid.
5. Components damaged by contamination from dirt, dust, etc. or corrosion will not be considered as defects.
6. This warranty shall be limited to the actual equipment involved and, under no circumstances, shall include or extend to installation or removal costs, or to consequential damages or losses.



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