

REZTOR[®]**Model UDAS**

Separated Combustion, Low Static Commercial/Industrial Unit Heaters

Sizes 30-125 carry an additional approval for use in residential garage/workshops under CSA International Requirement 10.96 - U.S. and CR96-0005 - Canada



CSA 2.6b



ANSI Z83.8b



DESCRIPTION

Reznor[®] V3 Series Model UDAS gas-fired separated combustion unit heaters are available in 14 sizes ranging from 30,000 to 400,000 BTUH gas input. All sizes are approved for commercial/industrial installations. Sizes 30-125 carry an additional approval for use in attached residential garage/workshop application. Model UDAS heaters are designed for 82-83% thermal efficiency and are approved for installation in the United States and Canada by the Canadian Standards Association (CSA).

Reznor[®] V3 Series unit heaters have a refreshing new appearance with a glossy white cabinet finish and less visible hardware. Each size cabinet is easily suspended from either 2 or 4 suspension points. Or, an optional hanger kit for Sizes 30-125 allows for ceiling mounting. The low voltage terminal strip on the outside of the cabinet makes connecting control wiring easy with no panels to remove. The addition of a "G" terminal to the low voltage strip, along with the new design of the circuit board, allows for fan only operation (without adding relays). All units have a factory installed gas line nipple to the exterior of the cabinet for easy gas service connection.

The preeminent new internal feature is the T_{CORE}²[®] heat exchanger and single burner combustion system. Other standard features include a single-stage gas valve, multi-try direct spark ignition with timed lockout, pressure switch to verify vent flow, resiliently isolated venter motor, venter wheel with improved housing, resiliently isolated axial fan and motor assembly, a high temperature limit control, interlock door switch, and a built-in disconnect switch. Sizes 30-125 also include a flame rollout safety switch. Operation is controlled through an integrated circuit board. The circuit board monitors heater operation and has LED diagnostic indicator lights to identify abnormalities in control functions.

The 1st ever separated combustion system in the commercial/industrial heating industry **was introduced on a Reznor heater** in the 1960s, and that proven technology is continued in this new separated combustion product. Model UDAS separated combustion units require installation of a specially designed combustion air/vent system including the unique concentric adapter box that allows for only one building penetration for both the vent and combustion air.

The new V3 Series unit heaters are designed to provide all the features you expect in a Reznor heater plus improved efficiency, easier installation, and a new look ~ **both inside and out**. Look for the unique white unit with no visible front and bottom hardware, deep red louvers, black side handle, and angled corner to know you have a genuine Reznor unit by Thomas & Betts.

STANDARD FEATURES

- Sizes 30-400 certified for commercial/industrial heating application
- Sizes 30-125 carry an additional approval for use in residential garage/workshop heating applications
- 82-83% Thermal efficient ~ **TOP in its class!**
- 50-60°F Rise range
- T_{CORE}² titanium stabilized aluminized steel heat exchanger
- Patented ^A single burner combustion system including a one-piece burner assembly
- 115/1/60 Supply voltage
- 115 Volt open fan motor with internal overload protection
- Transformer for 24-volt controls
- Integrated circuit board with diagnostic indicator lights
- Multi-try direct ignition with timed lockout
- Fan relay (included on the circuit board)
- Single-stage natural gas valve (field adjustable for operation to 9,000 ft. elevation[®])
- Vibration/noise isolated fan and venter motors
- Sealed control compartment houses all electrical components
- 2-pt **and** 4-pt Suspension ~ **standard on all sizes**
- Built-in disconnect switch (20A @ 115V Rating)
- External terminal strip for 24-volt wiring
- Sealed junction box for supply wiring
- External gas connection
- Fully gasketed door panel with safety door switch
- Full fan guard ~ **engineered for safety**
- Improved cabinet design with less visible hardware

^A U.S. Patent No. 6,889,686.

**OPTIONAL FEATURES -
FACTORY INSTALLED**

**ACCESSORIES - FIELD
INSTALLED**

- Single-stage, propane gas valve (field adjustable for operation to 9,000 ft. elevation ^a)
- Two-stage natural gas or propane gas valve - Sizes 60-400
- 409 or 316 Stainless steel heat exchangers
- Totally enclosed fan motor (Sizes 30-250, 115V only)
- Horizontal or Vertical Combustion Air/Vent Kit including concentric adapter ^b
- Thermostat
- Thermostat guard with locking cover
- Vertical louvers
- Downturn nozzle kits
- Gas conversion kits (natural and propane)
- Primary/secondary controls for zoning up to six units
- Ceiling suspension kit - Sizes 30-125
- Hanger kits for 1" pipe
- Stepdown transformer (for 208/115, 230/115 or 460/115 supply voltage)
- Manual shutoff valves

^a Pressure switch change required for installations above 6,000 ft.
^b Selection of either a horizontal or vertical combustion air/vent kit is required.

TECHNICAL DATA

Model UDAS

| Size | | 30 | 45 | 60 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 | 350 | 400 |
|---|-----------------------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Input Heating Capacity | BTUH | 30,000 | 45,000 | 60,000 | 75,000 | 105,000 | 120,000 | 150,000 | 175,000 | 200,000 | 225,000 | 250,000 | 300,000 | 350,000 | 400,000 |
| | (kw/h) | (8.8) | (13.2) | (17.6) | (22.0) | (30.8) | (35.2) | (44.0) | (51.3) | (58.6) | (65.9) | (73.3) | (87.9) | (102.6) | (117.2) |
| Thermal Efficiency (%) | | 82 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 |
| Output Heating Capacity ^p | BTUH | 24,600 | 37,350 | 49,800 | 62,250 | 87,150 | 99,600 | 124,500 | 145,250 | 166,000 | 186,750 | 207,500 | 249,000 | 290,500 | 332,000 |
| | (kw/h) | (7.2) | (10.9) | (14.6) | (18.2) | (25.5) | (29.2) | (36.5) | (42.6) | (48.7) | (54.7) | (60.8) | (73.0) | (85.1) | (97.3) |
| Gas Connection (inches) ^e | Natural | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 |
| | Propane | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 |
| Vent Connection ^f (inches diameter) | | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 |
| Combustion Air Inlet ^f (inches diameter) | | 4 | 4 | 4 | 4 | 4 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Control Amps (24 volt) | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Full Load Amps (115 volt) | | 1.9 | 2.4 | 2.4 | 3.3 | 3.9 | 5.1 | 3.8 | 3.8 | 4.6 | 7.5 | 7.5 | 11.0 | 11.0 | 11.0 |
| Maximum Over Current Protection (115V) ^g | | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 20 | 20 | 20 |
| Normal Power Consumption (watts) | | 109 | 155 | 155 | 217 | 276 | 354 | 392 | 392 | 491 | 747 | 747 | 1086 | 1086 | 1086 |
| Discharge Air Temperature Rise (°F) | | 50 | 55 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| Air Volume | CFM | 456 | 629 | 769 | 961 | 1345 | 1537 | 1921 | 2242 | 2562 | 2882 | 3202 | 3843 | 4483 | 5123 |
| | (M ³ /min) | (12.9) | (17.8) | (21.8) | (27.2) | (38.1) | (43.5) | (54.4) | (63.5) | (72.5) | (81.6) | (90.7) | (108.8) | (126.9) | (145.1) |
| Discharge Air Opening Area | ft ² | 0.96 | 0.96 | 1.25 | 1.25 | 2.01 | 2.01 | 2.56 | 2.56 | 2.56 | 3.51 | 3.51 | 4.79 | 4.79 | 4.79 |
| | (M ²) | (0.09) | (0.09) | (0.12) | (0.12) | (0.19) | (0.19) | (0.24) | (0.24) | (0.24) | (0.33) | (0.33) | (0.45) | (0.45) | (0.45) |
| Output Velocity | FPM | 475 | 656 | 616 | 770 | 668 | 763 | 752 | 877 | 1003 | 820 | 911 | 802 | 936 | 1069 |
| | (M/min) | (145) | (200) | (188) | (235) | (204) | (233) | (229) | (267) | (306) | (250) | (278) | (244) | (285) | (326) |
| Fan Motor HP ^h | Open | 0.02 | 0.03 | 0.03 | 0.06 | 1/30 | 1/20 | 1/6 | 1/6 | 1/6 | 1/4 | 1/4 | 1/2 | 1/2 | 1/2 |
| | Enclosed | 0.06 | 0.06 | 0.06 | 0.06 | 1/20 | 1/20 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/2 | 1/2 | 1/2 |
| Fan Motor | RPM | 1550 | 1550 | 1550 | 1550 | 1050 | 1050 | 1050 | 1050 | 1050 | 1050 | 1050 | 1050 | 1050 | 1050 |
| Fan Diameter | inches | 10 | 10 | 12 | 12 | 16 | 16 | 18 | 18 | 18 | 20 | 20 | 24 | 24 | 24 |
| Sound Level | dba @ 15 ft | 40 | 40 | 40 | 49 | 54 | 55 | 51 | 52 | 53 | 56 | 56 | 59 | 61 | 62 |
| | | | | | | | | | | | | | | | |
| Approximate Net Weight | lbs | 55 | 60 | 68 | 73 | 97 | 102 | 173 | 188 | 188 | 204 | 216 | 270 | 295 | 307 |
| | (kg) | (25) | (27) | (31) | (33) | (44) | (46) | (78) | (85) | (85) | (93) | (98) | (122) | (134) | (139) |
| Approximate Ship Weight | lbs | 63 | 68 | 76 | 81 | 120 | 125 | 206 | 221 | 221 | 247 | 259 | 323 | 348 | 360 |
| | (kg) | (29) | (31) | (34) | (37) | (54) | (57) | (93) | (100) | (100) | (112) | (117) | (147) | (158) | (163) |

^p CSA rating for altitudes to 2000 ft.
^e Size shown is for gas connection to a single stage gas valve, not supply line size.
^f Smaller and/or larger vent and combustion air pipe diameters may be allowed; refer to the Venting Installation Manual for Separated Combustion Units, Form I-V-SC. If vent diameter is different from vent connection, reducer/enlargers will be field-required.
^g MOP = 2.25 x largest motor FLA + remaining load. Answer is rounded down to the next size of commercially available circuit breaker or fuse.
^h All other information in this table is based on a heater equipped with a standard 115 volt open fan motor.

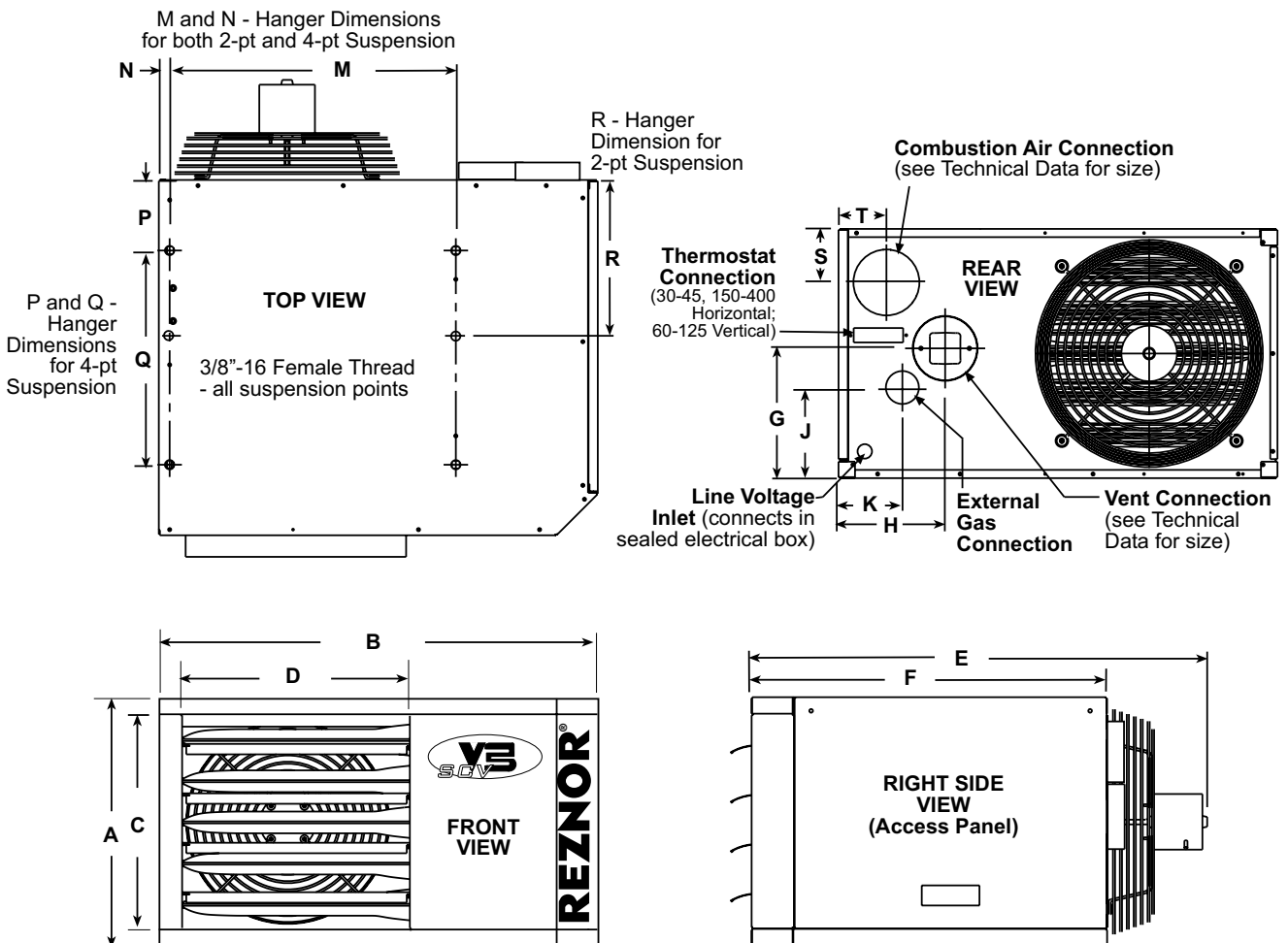
For installations where dirt, dust, and other air borne contamination is present in the indoor environment, it is recommended to use separated combustion units (Model UDAS). These models use air from outside the space for combustion. This will help reduce the build up of contaminants on the burner which would affect the combustion process. Refer to the installation manuals for recommended frequency of maintenance and cleaning.

DIMENSIONS

Model UDAS ±1/16" (2mm)

| Size | A | B | C | D | E | F | G | H | J | K | M | N | P | Q | R | S | T |
|---------------|--------|---------|----|----------|--------|---------|---------|---------|----------|--------|----------|-------|--------|---------|---------|---------|---------|
| 30, 45 | 12 1/8 | 26 5/8 | 10 | 13 13/16 | 26 | 21 9/16 | 5 3/16 | 6 1/2 | 2 11/16 | 3 7/8 | 17 3/8 | 11/16 | 4 5/16 | 13 | 9 9/16 | 2 15/16 | 2 15/16 |
| 60 | 15 1/8 | 26 5/8 | 13 | 13 13/16 | 27 | 21 9/16 | 7 7/8 | 6 1/2 | 5 1/2 | 3 7/8 | 17 3/8 | 11/16 | 4 5/16 | 13 | 10 1/2 | 3 1/4 | 2 15/16 |
| 75 | 15 1/8 | 26 5/8 | 13 | 13 13/16 | 27 5/8 | 21 9/16 | 7 7/8 | 6 1/2 | 5 1/2 | 3 7/8 | 17 3/8 | 11/16 | 4 5/16 | 13 | 10 1/2 | 3 1/4 | 2 15/16 |
| 100 | 23 1/8 | 26 5/8 | 21 | 13 13/16 | 28 5/8 | 21 9/16 | 14 1/2 | 6 1/2 | 8 3/4 | 3 7/8 | 17 3/8 | 11/16 | 4 5/16 | 13 | 10 1/2 | 4 5/8 | 2 15/16 |
| 125 | 23 1/8 | 26 5/8 | 21 | 13 13/16 | 29 3/8 | 21 9/16 | 14 1/2 | 6 1/2 | 8 3/4 | 3 7/8 | 17 3/8 | 11/16 | 4 5/16 | 13 | 10 1/2 | 4 5/8 | 2 15/16 |
| 150, 175, 200 | 20 1/8 | 38 3/16 | 16 | 23 | 42 | 35 3/8 | 8 1/2 | 8 1/4 | 5 7/16 | 6 1/2 | 25 11/16 | 1 3/8 | 8 3/16 | 22 3/16 | 16 3/8 | 4 1/8 | 8 5/16 |
| 225, 250 | 26 1/8 | 38 3/16 | 22 | 23 | 42 | 35 3/8 | 13 1/16 | 8 13/16 | 9 | 6 1/2 | 25 11/16 | 1 3/8 | 8 3/16 | 22 3/16 | 15 5/8 | 5 9/16 | 8 5/16 |
| 300, 350, 400 | 34 1/8 | 41 | 30 | 23 | 42 | 35 3/8 | 17 1/16 | 9 | 11 13/16 | 7 5/16 | 27 11/16 | 1 3/8 | 8 3/16 | 22 3/16 | 16 3/16 | 9 1/16 | 8 9/16 |

| Size | A | B | C | D | E | F | G | H | J | K | M | N | P | Q | R | S | T |
|---------------|-------|---------|-------|-------|---------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|
| 30, 45 | (308) | (676) | (254) | (351) | (660) | (548) | (132) | (165) | (68) | (98) | (441) | (17) | (110) | (330) | (243) | (75) | (75) |
| 60 | (384) | (676) | (330) | (351) | (686) | (548) | (200) | (165) | (140) | (98) | (441) | (17) | (110) | (330) | (267) | (83) | (75) |
| 75 | (384) | (676) | (330) | (351) | (702) | (548) | (200) | (165) | (140) | (98) | (441) | (17) | (110) | (330) | (267) | (83) | (75) |
| 100 | (587) | (676) | (533) | (351) | (727) | (548) | (368) | (165) | (222) | (98) | (441) | (17) | (110) | (330) | (267) | (117) | (75) |
| 125 | (587) | (676) | (533) | (351) | (746) | (548) | (368) | (165) | (222) | (98) | (441) | (17) | (110) | (330) | (267) | (117) | (75) |
| 150, 175, 200 | (511) | (970) | (406) | (584) | (1,067) | (899) | (216) | (210) | (138) | (165) | (652) | (35) | (208) | (564) | (416) | (105) | (211) |
| 225, 250 | (664) | (970) | (559) | (584) | (1,067) | (899) | (332) | (224) | (229) | (165) | (652) | (35) | (208) | (564) | (397) | (141) | (211) |
| 300, 350, 400 | (867) | (1,041) | (762) | (584) | (1,067) | (899) | (433) | (229) | (300) | (186) | (703) | (35) | (208) | (564) | (411) | (230) | (217) |



CLEARANCE FROM COMBUSTIBLES

| Size | Top | | Flue Connector | | Access Panel ^J | | Non-Access Side | | Bottom ^K | | Rear ^L | |
|---------|--------|-----|----------------|-----|---------------------------|-----|-----------------|----|---------------------|----|-------------------|-----|
| | inches | mm | inches | mm | inches | mm | inches | mm | inches | mm | inches | mm |
| 30-125 | 1 | 25 | 6 | 152 | 18 | 457 | 1 | 25 | 1 | 25 | 18 | 457 |
| 150-400 | 4 | 102 | 6 | 152 | 18 | 457 | 2 | 51 | 1 | 25 | 18 | 457 |

^J Access Panel clearance is required for service clearance to controls

^K Suspend the heater so that the bottom is a minimum of 5' (1.5M) above the floor.

^L Rear clearance is required for air movement. Rear clearance should be measured from the fan motor.

Refer to Reznor web site www.RezSpec.com for venting/inlet air requirements for Reznor Separated Combustion Units