



even**TUBE**[®]

SERIES ETSV SUBMITTAL DOCUMENT
MODELS: ETSV40, ETSV80



TABLE OF CONTENTS

SUBMITTAL FORM 3

PRODUCT DETAILS 4

PRODUCT BRACKET OPTIONS 4

ETSV FEATURES 6

PERFORMANCE CHARTS 7

 Input Updates 7

TECHNICAL SPECIFICATIONS 8

Pre-Install 8

 Dimensions 8

 Heater Mounting & Bracket Specifications 9

 Electrical Wiring 11

 Internal Wiring ETSV40 & 80 11

 Multiple Heaters Wiring (Thermostat) 12

 Timer Specifications 13

 Venting 14

Install 17

 External Wiring Options (Outdoor Installation Only) 17

 Multiple Heater Wiring (Switch P/N EE020) 18

 Connections 19

 Clearance to Combustibles 20

Post-Install 21

 Durability 21

 Applications 21

 Warranty 21

 Shipping Weights & Dimensions 21



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SUBMITTAL FORM

PROJECT: _____

ADDRESS: _____

CITY: _____ STATE/PROV: _____ POSTAL CODE/ZIP: _____ COUNTRY: _____

ENGINEER: _____ ENGINEER FIRM: _____

CONTRACTOR: _____ MODEL#: _____ DATE: _____

SUBMITTED BY: _____ APPROVED BY: _____

PRODUCT DETAILS

MODEL	QTY	EXTERIOR FINISH	LENGTH	GAS TYPE		RATED BTU/HR INPUTS
ETSV40		Marine Grade Aluminum	145.25"	 NG	 LPG	High 38,500 Low 23,000
ETSV40BL		High-Temp Black Powder Coated on Marine Grade Aluminum	145.25"	 NG	 LPG	High 38,500 Low 23,000
ETSV40MS		Marine Grade 316 Stainless	145.25"	 NG	 LPG	High 38,500 Low 23,000
ETSV80		Marine Grade Aluminum	264.50"	 NG	 LPG	High 80,000 Low 50,000
ETSV80BL		High-Temp Black Powder Coated on Marine Grade Aluminum	264.50"	 NG	 LPG	High 80,000 Low 50,000
ETSV80MS		Marine Grade 316 Stainless	264.50"	 NG	 LPG	High 80,000 Low 50,000

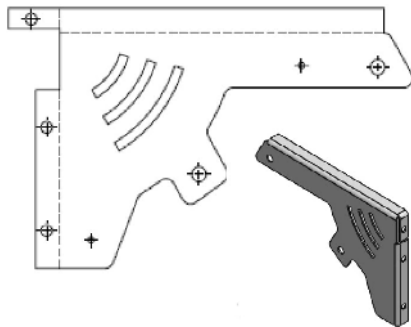
PRODUCT BRACKET OPTIONS

MODEL	EXTERIOR FINISH	LENGTH	CEILING BRACKET KIT HORIZONTAL MOUNT	WT. lbs.	CEILING BRACKET KIT 30° ANGLE MOUNT	WT. lbs.	WALL BRACKET KIT 30° ANGLE MOUNT	WT. lbs.
ETSV40	304 Stainless Steel	145.25"	 ETSVCB12S	4	 ETSVCAB12S	5	 ETSVWB12S	5
ETSV40BL	High-Temp Black Powder Coated on Marine Grade Aluminum	145.25"	 ETSVCB12BL	4	 ETSVCAB12BL	5	 ETSVWB12BL	5
ETSV40MS	304 Stainless Steel	145.25"	 ETSVCB12S	4	 ETSVCAB12S	5	 ETSVWB12S	5
ETSV80	304 Stainless Steel	264.50"	 ETSVCB22S	7	 ETSVCAB22S	8	 ETSVWB22S	8
ETSV80BL	High-Temp Black Powder Coated on Marine Grade Aluminum	264.50"	 ETSVCB22BL	7	 ETSVCAB22BL	8	 ETSVWB22BL	8
ETSV80MS	304 Stainless Steel	264.50"	 ETSVCB22S	7	 ETSVCAB22S	8	 ETSVWB22S	8

For further information and assistance please contact us at info@irenergy.ca or 1 855 295 3922

Combustible Wall Mounting Bracket kits

SRP has developed combustible wall mounting bracket kits for the model ETSV. The current wall mount bracket kit, in 304 S/S or black finish is made with a shorter bracket (CR139), which is only suitable for non-combustible installations. The new wall mount bracket kit in 304 S/S or black finish is made with a larger bracket (CR225) which meets the clearance requirements for mounting on a combustible surface.



CR139
Non-combustible Wall Mounting Bracket Kit
 Surface area = 79.08 square inches



CR225
Combustible Wall Mounting Bracket Kit
 Surface area = 140.69 square inches

MODEL	EXTERIOR FINISH	LENGTH	WALL BRACKET KIT 30° ANGLE MOUNT	WT. lbs.
ETSV40	304 Stainless Steel	145.25"	 ETSVCW12S	5
ETSV40BL	High-Temp Black Powder Coated on Marine Grade Aluminum	145.25"	 ETSVCW12BL	5
ETSV40MS	304 Stainless Steel	145.25"	 ETSVCW12S	5
ETSV80	304 Stainless Steel	264.50"	 ETSVCW22S	8
ETSV80BL	High-Temp Black Powder Coated on Marine Grade Aluminum	264.50"	 ETSVCW22BL	8
ETSV80MS	304 Stainless Steel	264.50"	 ETSVCW22S	8

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ETSV FEATURES

- **MADE IN CANADA**
Reliable • High Quality • Durable • Excellent Warranty
- **EASY TO INSTALL**
Maintenance free heat solution
- **ENCLOSED & SEALED BURNER**
High Quality • Engineered for harsh environments
- **VERSATILE**
Optional brackets to fit all ceiling heights & wall situations
- **AVAILABLE IN MULTIPLE FINISHES**
Marine grade aluminum, black or 316 marine stainless
- **SMART CONTROLS**
Compatible with smart controls and BACnet connection
- **0% TUBE IMPINGEMENT**
Absolutely no infrared is absorbed by the tube
- **MINIMIZED CLEARANCES**
Clearance to combustibles as low as 2"
- **LOWEST PROFILE IN THE INDUSTRY**
Heater dimensions at 6.85" height
- **TRUE TWO-STAGE TECHNOLOGY**
Air modulated on high fire and low fire
- **EVEN HEAT DISTRIBUTION**
100% efficient reflector in all models
- **NO VISUAL GLOW**
Low intensity tube heaters emit not visible light



CAD / SketchUp / Revit / BIM files
Available on CADdetails.com

PERFORMANCE CHARTS

Input Updates Power & Gas Specifications

MODEL	ETSV40	ETSV80
Rated Input		
High Fire Rate	38,500 BTU/HR	80,000 BTU/HR
Low Fire Rate	23,000 BTU/HR	50,000 BTU/HR
Inlet Pressure	Natural Gas	
Maximum	14.0" W.C.	
Minimum	5.0" W.C.	
Inlet Pressure	Propane	
Maximum	14.0" W.C.	
Minimum	11.5" W.C.	
Manifold Pressure	Natural Gas	
High Rate	3.3" W.C.	
Low Rate	1.5" W.C.	
Manifold Pressure	Propane	
High Rate	10.2" W.C.	
Low Rate	4.2" W.C.	
Inlet Connection	Natural Gas & Propane	
	½" Female NPT	

Electrical Supply

- 120 VAC 60Hz
- 1Amp: 36" cord with grounded 3 prong plug

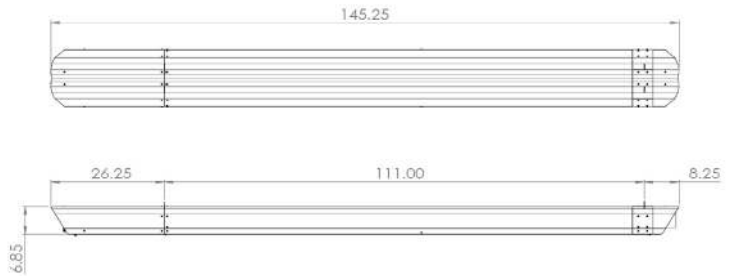
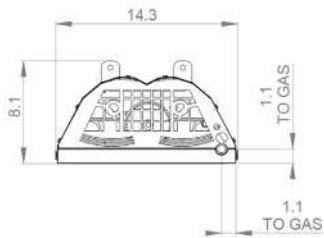
TECHNICAL SPECIFICATIONS

Pre-Install

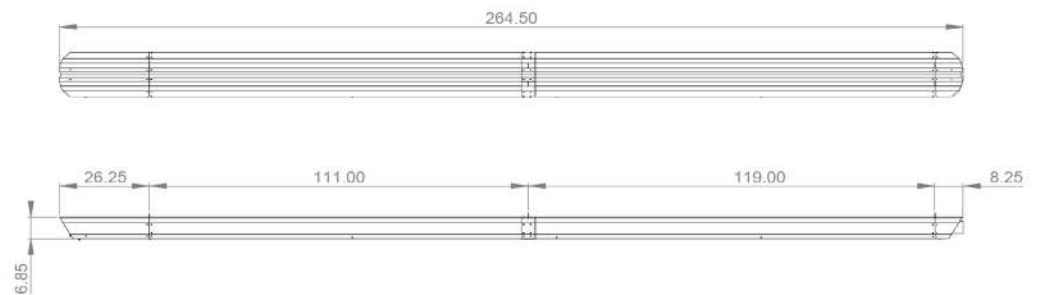
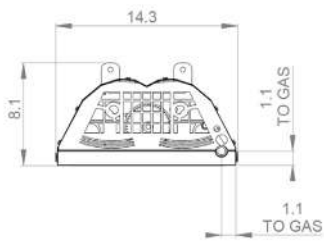
Dimensions

Note: All dimensions are in inches

Model ETSV40



Model ETSV80



Heater Mounting & Bracket Specifications

Standard ceiling/wall mounting kits

ETSV All Models

The heater can be mounted in a variety of ways, using a combination of chains or mounting brackets. It is critical that the heater is prevented from swaying and putting stress on the gas connection. Also, be sure to check local codes for seismic bracing requirements for outdoor heating equipment.

Note: Minimum mounting height is 7' in Canada and 8' in the US.

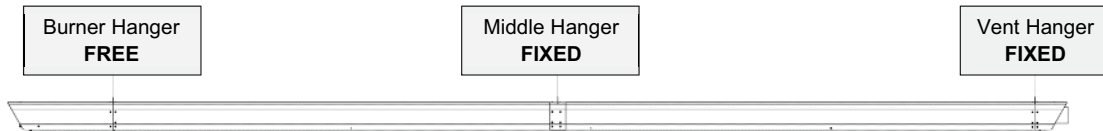
Rigid Surface Mounting


In order to allow for lateral tubing expansion in the case of rigid mounting, the burner hanger must be free and the rest of the hangers must be fixed, as outlined below.

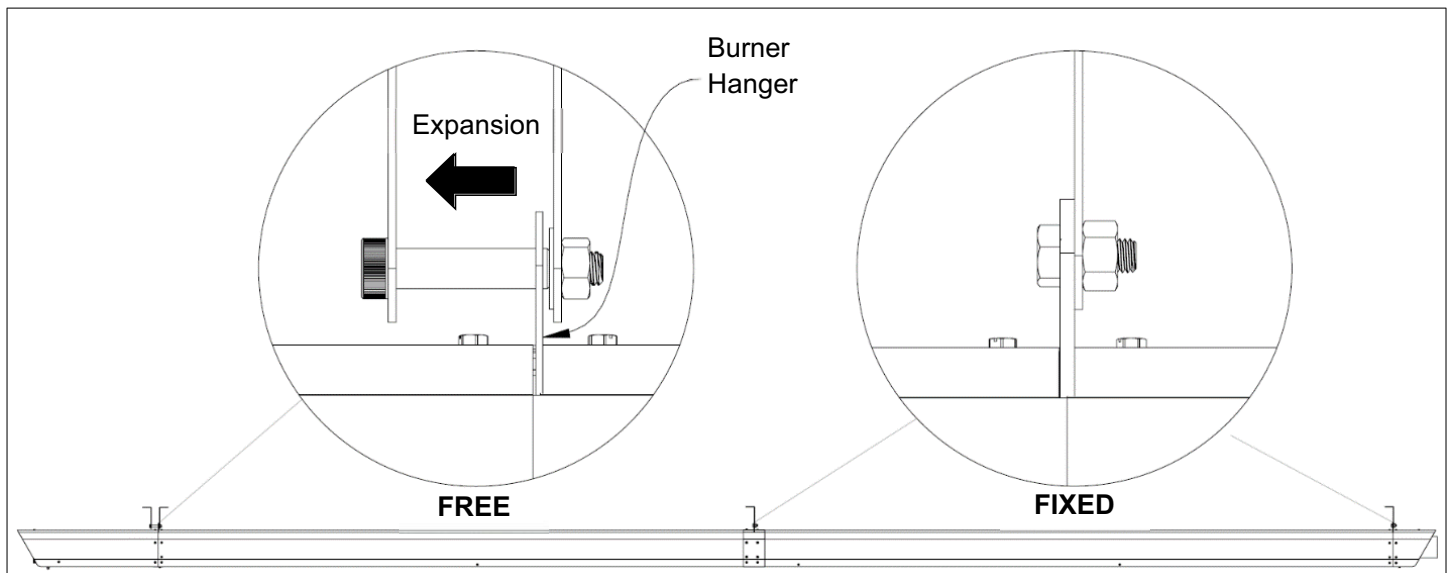
ETSV40



ETSV80

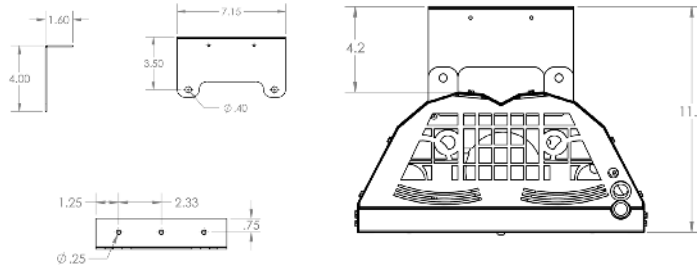


 It is crucial to position the free hanger such that the heater may expand in the direction of the burner. See diagram below for more details.

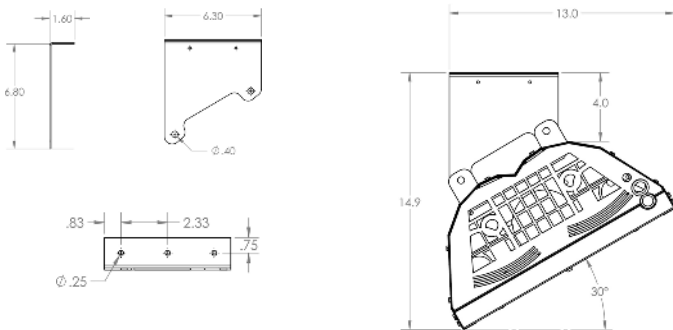


Ceiling and wall mount brackets are available for all ETSV models

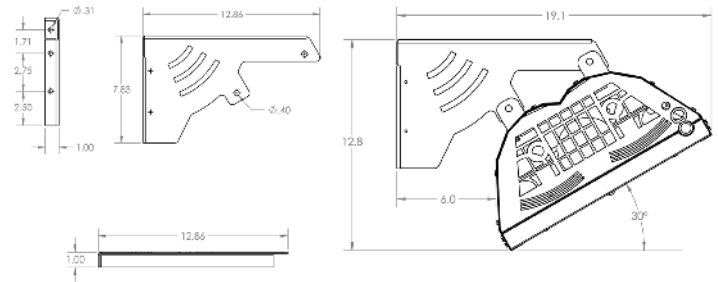
Standard Ceiling Mounting All Models



30° Ceiling Angle Mounting All Models

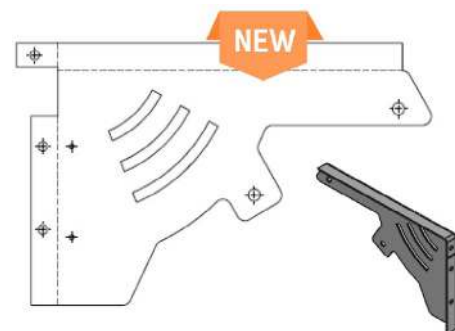


30° Wall Angle Mounting All Models



Combustible Wall 30° Angle Mounting Bracket kits All Models

CR225




Surface area = 140.69 square inches

For further information and assistance please contact us at info@irenergy.ca or 1 855 295 3922

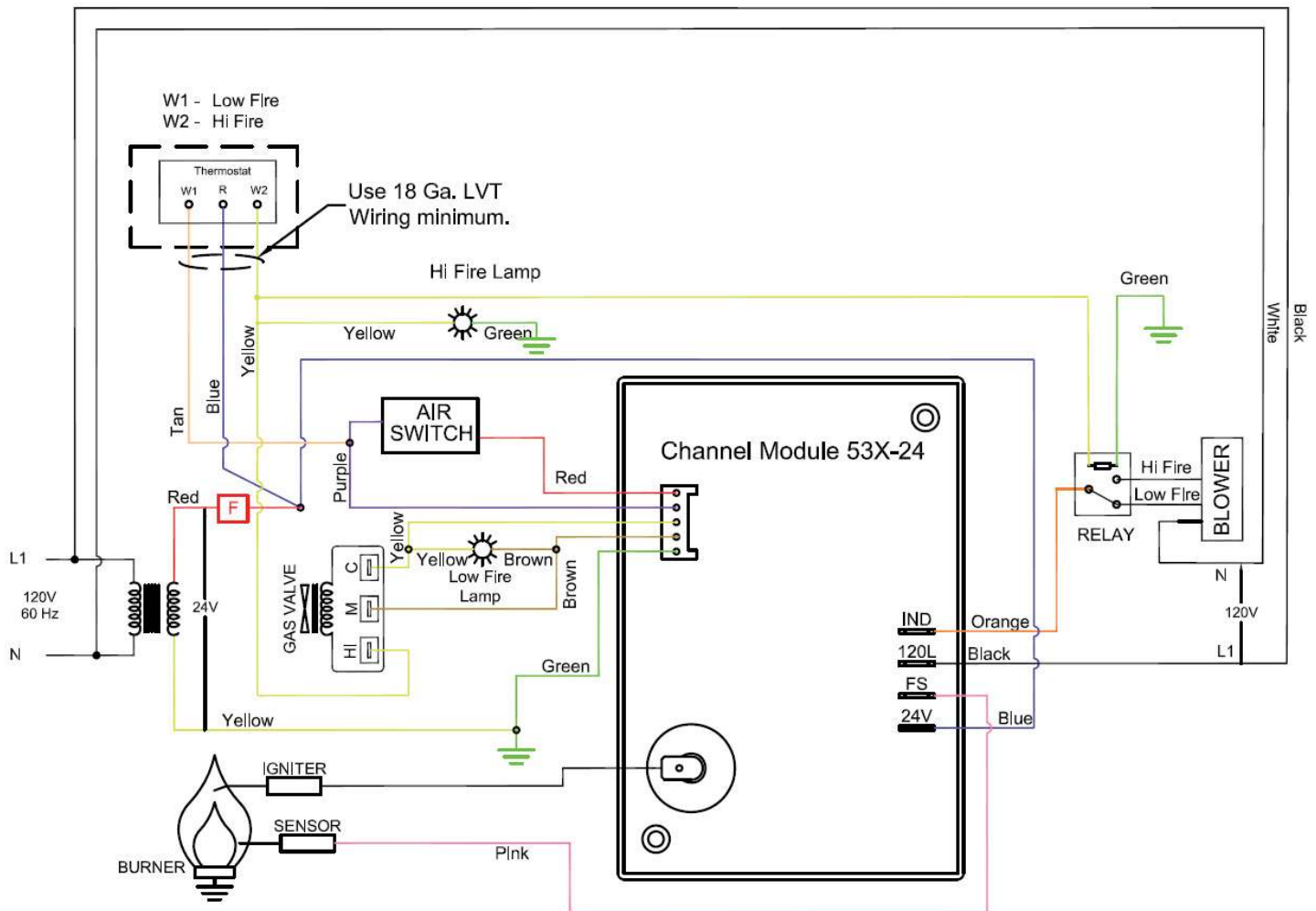
Electrical Wiring

General Requirements

Heaters are normally controlled by line voltage (120V) or low voltage (24V) thermostats. Line voltage thermostats are wired directly while low voltage thermostats use a relay. In all cases, heaters must be grounded in accordance with the National Electric Code, ANSI/NFPA 70 in the US, and the Canadian Electric Code, CSA C22.1 in Canada, and must comply with all local requirements. Heaters may also be controlled with a manual line switch or timer switch in place of the thermostat. Refer to wiring diagrams below for guidance on electrical wiring of heaters.

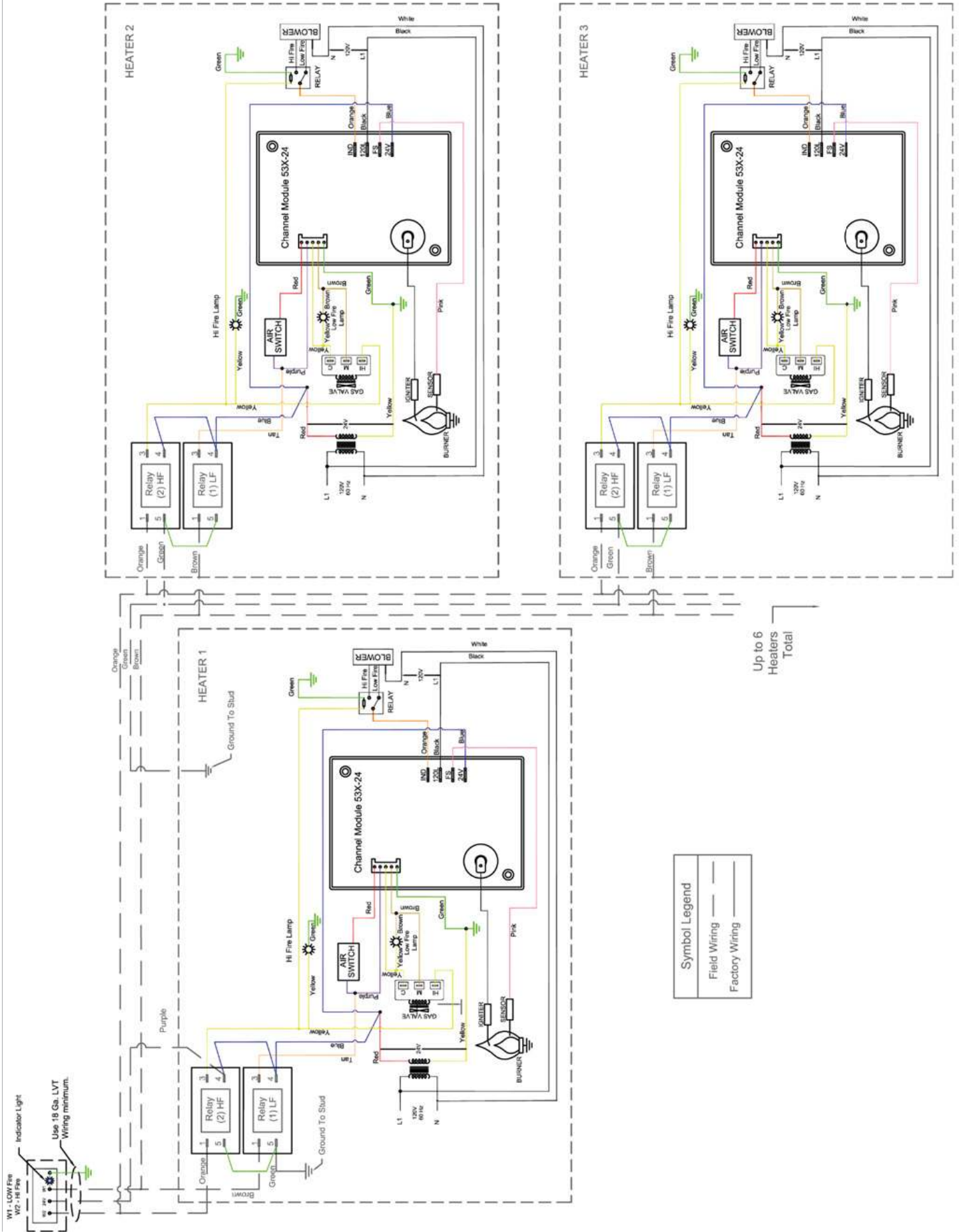
 If any of the original wire as supplied with the heater must be replaced, it must be replaced with wiring having a rating of at least 105°C temperature service and 600 volts capability.

Internal Wiring ETSV40 & 80



F - Fuse - 2 Amps (Optional)

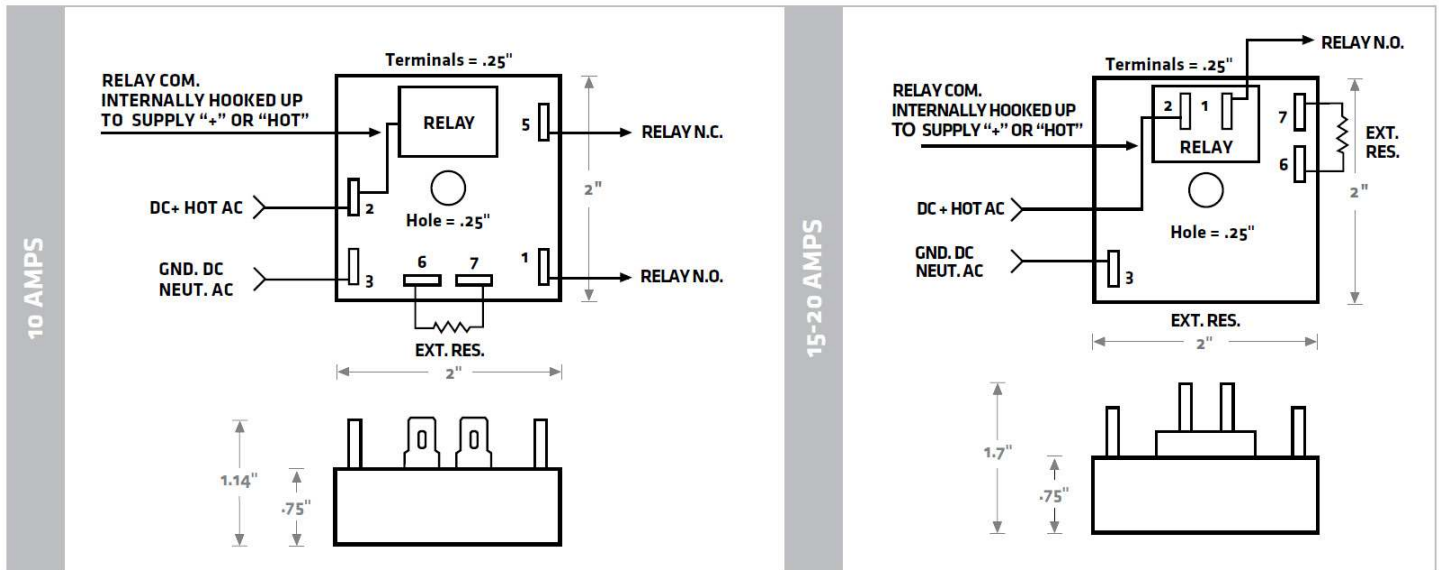
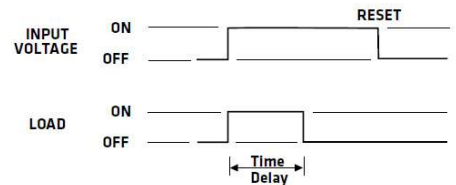
Multiple Heaters Wiring (Thermostat)



Timer Specifications

Timer Mode (Optional Feature)

Application of input voltage to the timer energizes the load and starts the time delay. At the end of the time delay, the load is de-energized. Removal and re-application of input voltage resets the timer. Has the capability to be installed in the burner or externally.



Input Voltage:

VDC: 12, 24 or 48
VAC: 24, 48, 120 or 230, 50/60 Hz

Repeatability: $\pm 0.5\%$

Relay Life Expectancy:

Mechanical: 20 million operations
Electrical: 1 million operations

Protection:

Polarity Protection: All DC units have reverse polarity protection
Transient Protection: 10 joules
Dielectric Strength: 1800V RMS 60Hz

Temperature Ranges:

Storage: -40°C to $+85^{\circ}\text{C}$
Operating Strength: -25°C to $+65^{\circ}\text{C}$

Venting

General Requirements

- Refer to the National Fuel Gas Code, ANSI Z223.1 (NFPA 54) in the USA and CSA B149.1 Installation Codes in Canada, as well as all local requirements for general venting guidance.
- Series ETSV Heaters may be installed vented or unvented.
- Series ETSV Heaters may be vented horizontally or vertically. This series of heaters are considered a Category I appliance for vertical venting and a Category III appliance for horizontal venting.
- If heater is to be vented horizontally, the vent from building must:
 - * Be not less than seven feet above grade when located adjacent to public walkways.
 - * Terminate at least three feet above any forced air inlet located within ten feet.
 - * Terminate at least four feet below, four feet horizontally from or one foot above any door, window, or gravity inlet into any building.
 - * Be located at least 12" (30cm) from any opening through which vent gases could enter a building.
 - * Extend beyond any combustible overhang.
 - * Be installed at a height sufficient to prevent blockage by snow.
- Secure all joints with three sheet metal screws.
- Optional outside air supply may be directed to the heater horizontally or vertically.

IMPORTANT

- Maximum total vent length allowed for any model heater is 15' (3m).
- Maximum total fresh air inlet duct length allowed for any model heater is 15' (3m).
- Total of vent length plus outside air supply duct length cannot exceed 30' (6m) for any heater.
- If condensation in the vent pipe or outside air supply duct is a problem, shorten or adequately insulate the section.

Note: The above stated requirements assume a maximum of 2 elbows in the total combination of vent and air supply duct. Subtract 5' of allowable length for each elbow if 3 or more elbows are used.

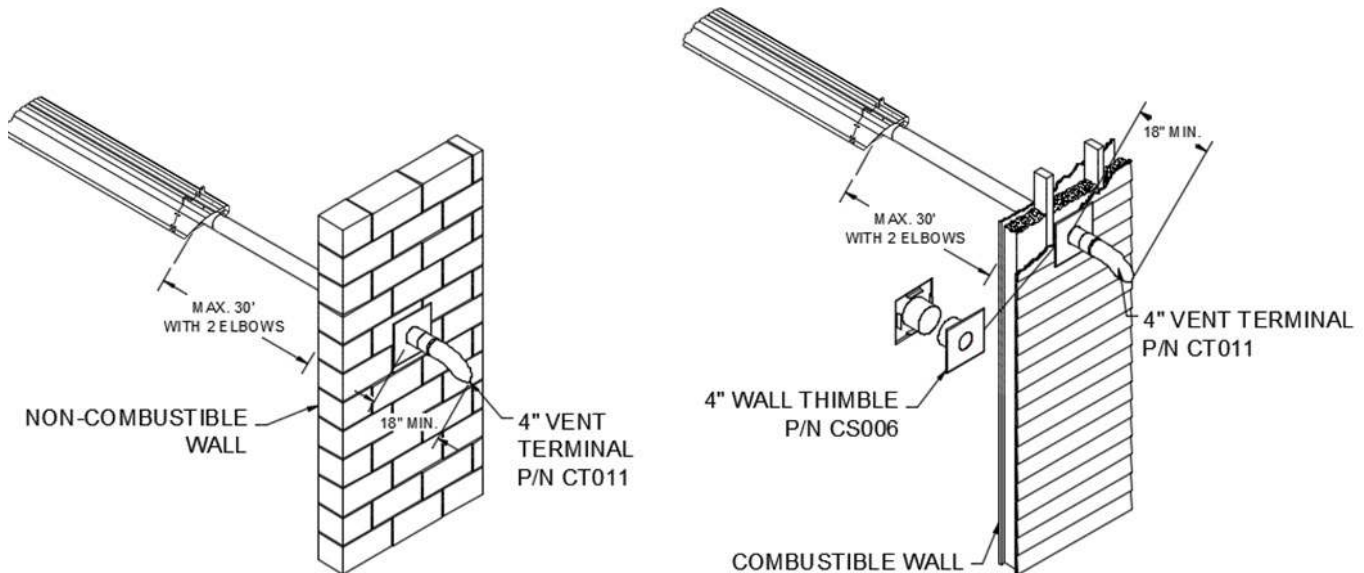
Un-vented Operation

- Requirements for combustion air supply and dilution air vary by jurisdiction, building type and specific installation details. See local codes for guidance. In general, fresh air ventilation must be provided to the building space at 3 cfm per 1000 BTU/Hr in Canada and 4 cfm per 1000 BTU/h in USA. The exhaust fan must be electrically interlocked with the heater.
- Optional outside air supply is not recommended for unvented heaters due to possible pressure imbalances in the building space.
- Ensure that minimum combustible clearances are maintained for unvented heaters. Refer to Clearance to Combustibles, for required clearance dimensions.

Vented Operation

Horizontal Venting

- Requirements for combustion air supply and dilution air vary by jurisdiction, building type and specific installation details. See local codes for guidance. In general, fresh air ventilation must be provided to the building space at 3 cfm per 1000 BTU/Hr in Canada and 4 cfm per 1000 BTU/h in USA. The exhaust fan must be electrically interlocked with the heater.
- Optional outside air supply is not recommended for unvented heaters due to possible pressure imbalances in the building space.
- Ensure that minimum combustible clearances are maintained for unvented heaters. Refer to Clearance to Combustibles, for required clearance dimensions.



NOTES:

- 4" WALL THIMBLE AND 4" VENT TERMINAL MUST BE USED WITH SINGLE WALL VENTING THROUGH A COMBUSTIBLE WALL.
- SINGLE WALL VENT MATERIAL: 26Ga. (GSG) GALV. or EQUIV.

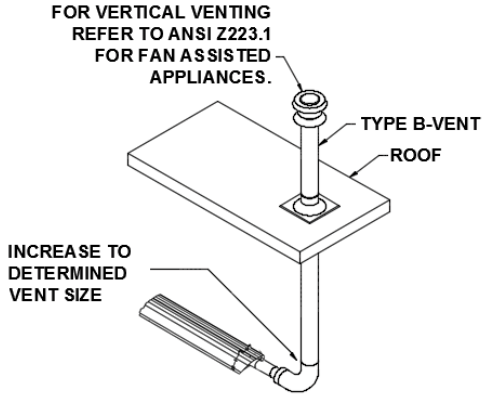
Vertical Venting

- The heater operates at a negative vent pressure.
- Refer to the National Fuel Gas Code, ANSI Z223.1 (NFPA 54) in the USA and CSA B149.1 Installation Codes in Canada, to size for Category I (B-vent) fan assisted appliances.
- Minimum vent pipe size is 4"(10cm) for an individual heater
- Use of an approved thimble to pass through combustible roof materials is required.
- Use of an approved vent cap is required.
- Check local codes for vertical vent size.

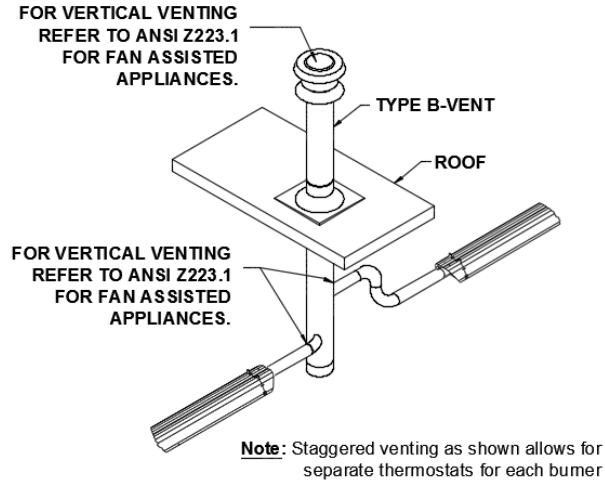
Common Vertical Venting

- Common vent sizing information is defined in the appropriate gas installation code (Refer to ANSI Z223.1 and CSA B149.1 for sizes and installation information).
- LT276 Series ETSV 59 Jan. 30, 2020
- Connection locations to the common vent should be offset to avoid pressure interferences between heaters, refer to ANSI Z223.1 and CSA B149.1.
- Use of approved thimble to pass through combustible roof material is required. Additionally, B type vent materials are required for stacks above the roof line. Use of approved vent cap is required.
- All heaters to a common vent are recommended to operate at the same time. Connect the electrical circuit to the same thermostat to ensure simultaneous operation.

SINGLE HEATER



MULTIPLE HEATERS

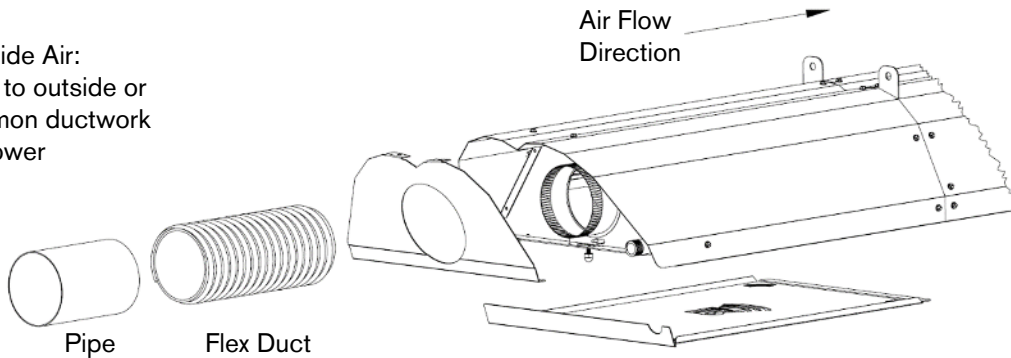


Note: Horizontally vented heaters must be individually vented and cannot use a common vent.

Combustion Air Supply (Optional)

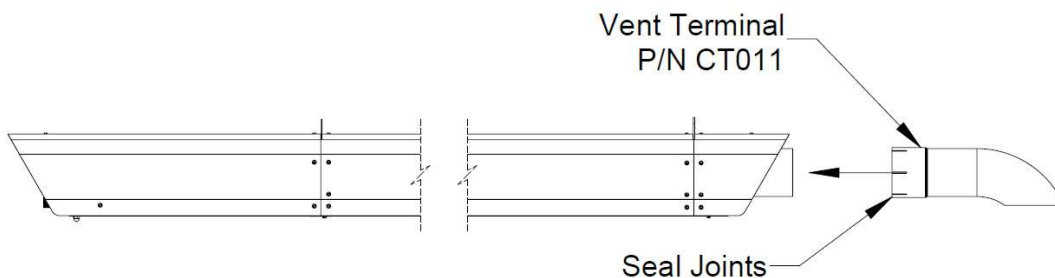
- An outside combustion air supply is strongly recommended if the building space encloses a negative pressure due to exhaust etc. or if the building contains materials which would expose the heater to halogenated hydrocarbon atmospheres.
- The outside air terminal must be of an approved type and should be located at an elevation equal to or below the vent terminal elevation to prevent back-venting of flue gases into the burner compartment.
- Install single wall pipe or PVC pipe and fittings with a 12" linear section of flexible duct to allow movement of the heater. Do not use flexible duct throughout the entire length of fresh air duct. This may cause nuisance air switch tripping.
- Optional: Fresh Air Kit #CT168

To Outside Air:
Directly to outside or
to common ductwork
from blower



Outdoor Installation

When a heater is to be mounted outdoors it must be installed in such a way that wind will have minimum effect on its movement. This consideration is intended to eliminate undue stress on the gas flex connector. A vent terminal of the approved type (Kit # CT011) must be used and all connections must be sealed with a high temperature sealant that can withstand 400°F.



Install

External Wiring Options (Outdoor Installation Only)

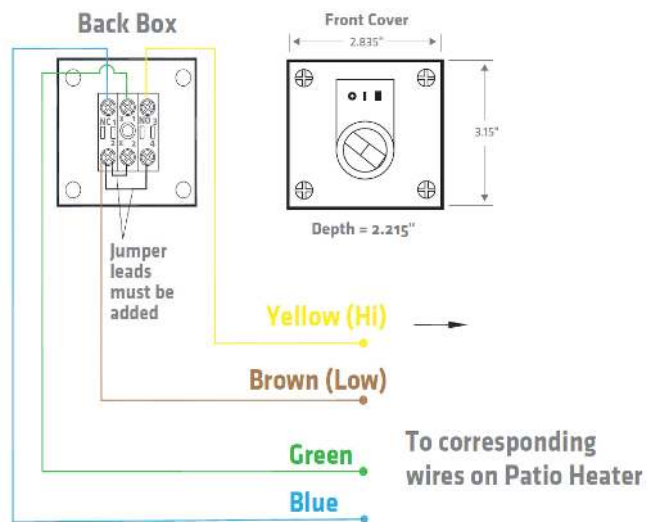
NEMA RATINGS

NEMA ratings are specific enclosure 'types', their applications, and the environmental conditions they are designed to protect against, when completely and properly installed.

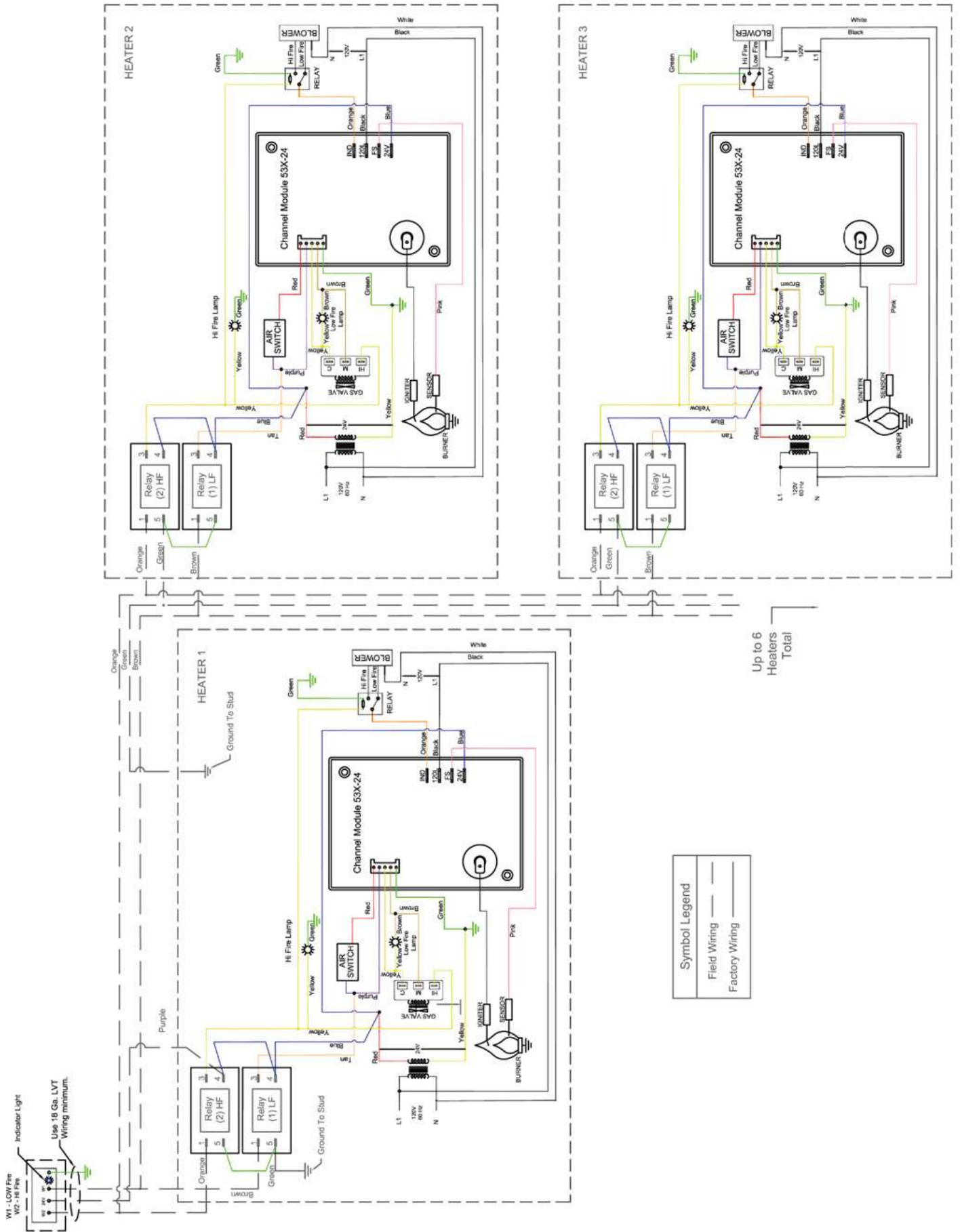
NEMA4 – Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, and hose-directed water and that will be undamaged by the external formation of ice on the enclosure.

Note:

- Using 2-stage switch (P/N EE020)
- Up to 6 Heaters per 1 switch



Multiple Heater Wiring (Switch P/N EE020)



Connections

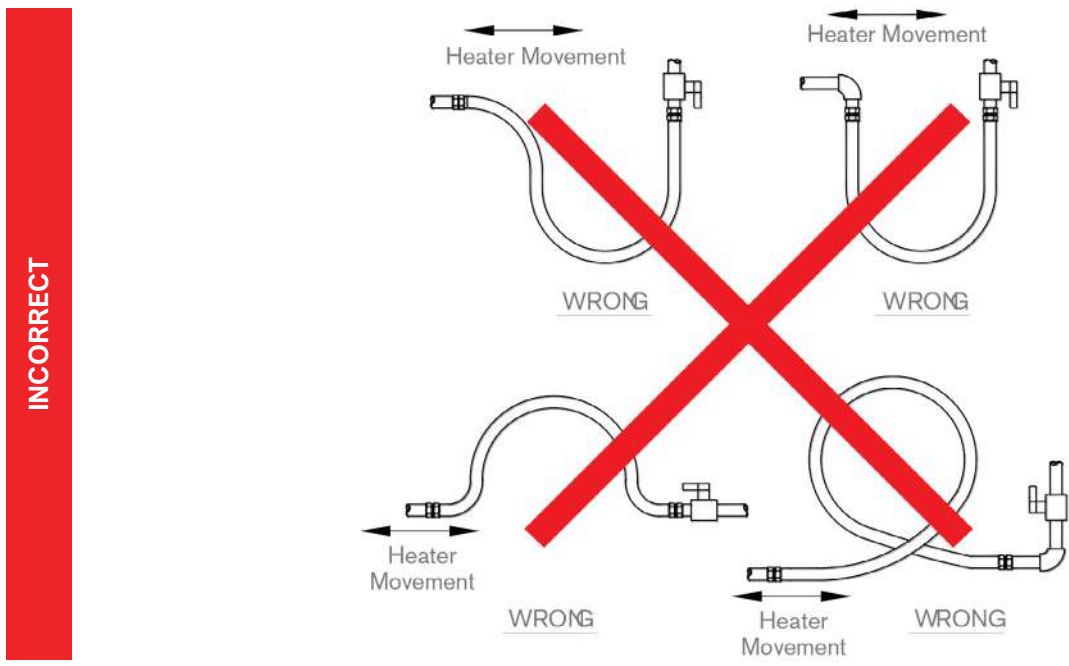
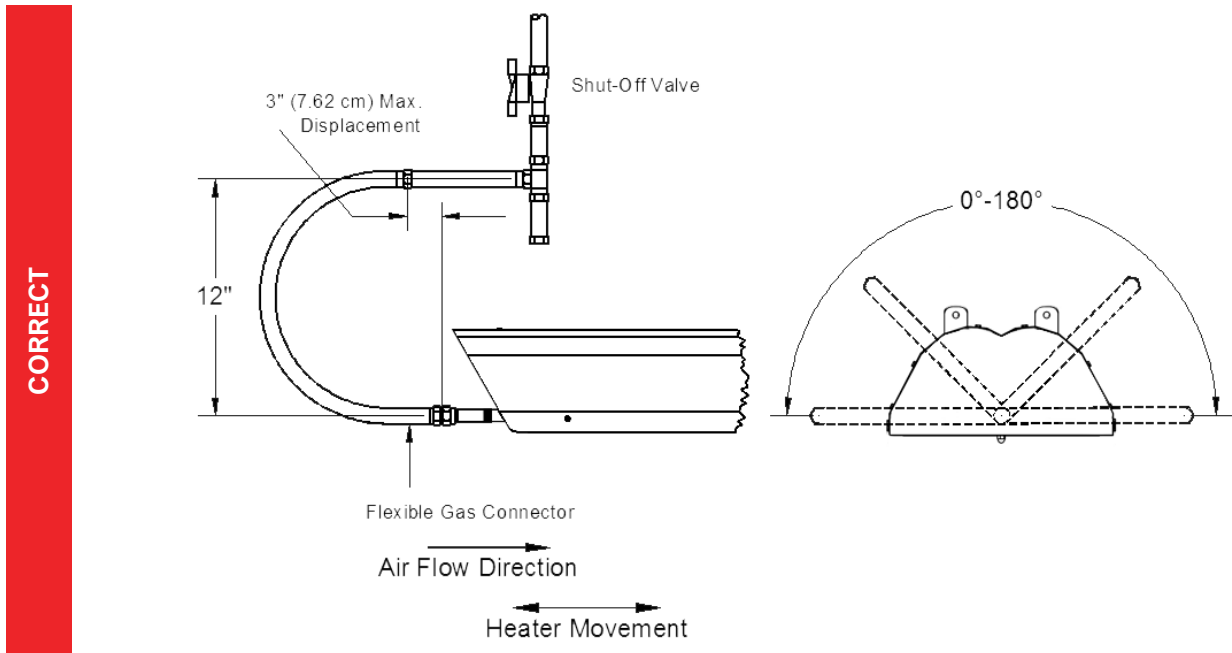
Connections for all ETSV Models

Installation must comply with local building codes and/or, for the USA/National Fuel Gas Code, ANZI Z 223.1 (NFPA 54) and for Canada, CSA B149.1 National Gas and Propane Installation Code (latest editions).

Appliance must be electrically grounded in accordance with local codes or, in their absence; the National Electrical Code, ANSI/NFPA 70 in the USA, CSA C22.1 Canadian Electrical Code in Canada.

Notes:

- Check for gas leaks at all connections with appropriate soap solution.
- Never connect an unregulated gas supply to the heater.
- Do not use high pressure (above ½ psig) to test the gas supply system with the appliance connected. Failure to comply can result in damage to the appliance.



Clearance to Combustibles

General Recommendations

A general clearance of 18" (0.5 m) in every direction is recommended for servicing around each Burner. This ensures adequate air flow in and around the Heating System.

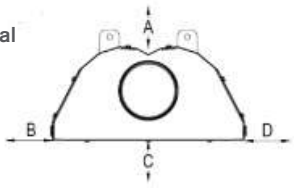
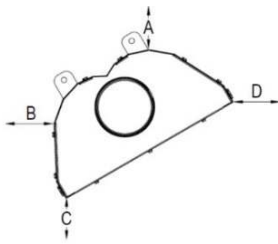
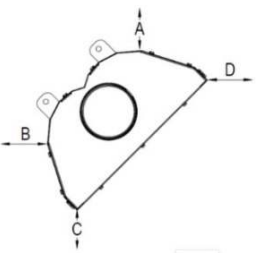
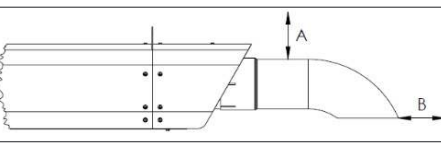
In addition to this it is very important to observe the minimum clearance to combustibles at all times to avoid any possibility of property damage or personal injury.

Table below lists the minimum clearance to combustible materials for various installation configurations. Additional clearance may be required for glass, painted surfaces and other materials which may be damaged by radiant or convective heat.

Combustible materials are considered to be wood, compressed paper, plant fibres, plastics, Plexiglas or other materials capable of being ignited and burned. Such materials shall be considered combustible even though flame-proofed, fire-retardant treated or plastered.

Adequate clearance to sprinkler heads must be maintained. NOTE: Sprinkler head heat fuse link performance may alter with age.

The stated clearance to combustibles represents a surface temperature of 90°C (50°F) above room temperature. Building materials with low heat tolerance (such as plastics, vinyl siding, canvas, tri-ply, etc.) may become subject to degradation at lower temperatures. It is the installer's responsibility to ensure that adjacent materials are protected from degradation.

Reflector Configurations	Dim.	ETSV40	ETSV80
Horizontal 	A	3"	2"
	B	18"	26"
	C	54"	64"
	D	18"	26"
30 Deg. 	A	4"	4"
	B	4"	6"
	C	46"	58"
	D	34"	36"
45 Deg. 	A	6"	4"
	B	4"	4"
	C	44"	58"
	D	38"	50"
	A	6"	6"
	B	16"	16"
Vent End	End	18"	16"

Post-Install

Durability

Some of our customers live around the coast, so we make sure our units are upgraded to a standard component and hardware list.

- Epoxy coated ignition module - Smart LED
- Hi-temp wires equipped with a rubber boot for the main ignition wire
- Deco grille is standard on all models
- Concealed burner components for minimum exposure to hard elements
- Brass and stainless steel hardware
- Marine grade aluminum and stainless steel internal burner components
- Plated burner cup
- 316 stainless steel hangers

Applications

Common Applications

- Residential garages.
- Workshops, man caves.
- Also ideal for aesthetically clean ceilings. Low profile lends itself to a sleek, non-obtrusive look.
- Covered patios (awning, canopy, pergola).
- Wall, ceiling, or post mount applications.

Warranty

These heaters have burner and controls warranty of 3 years & a tube warranty of 10 years. Visit our website info@irenergy.ca for our extensive warranty information.

Shipping Weights & Dimensions

- Every shipment MUST be palletized and shipped LTL (other shipment options may be available)
- Max of 10 units, plus accessories per pallet
- ETSV80 requires additional assembly time
- Two people are needed to lift each heater
- Bracket boxes can vary in size
- 23" x 126" pallets weigh 40lbs and the 42" x 126" pallets weigh 80lbs (Approximately)

MODEL	1 UNIT W/NET WEIGHT	2 UNITS W/NET WEIGHT	4 UNITS W/NET WEIGHT	10 UNITS W/NET WEIGHT
ETSV40	23" x 126" x 17" - 123lbs	23" x 126" x 25" - 205lbs	42" x 126" x 39" - 410lbs	42" x 126" x 58" - 905lbs
ETSV40BL	23" x 126" x 17" - 128lbs	23" x 126" x 25" - 215lbs	42" x 126" x 39" - 430lbs	42" x 126" x 58" - 955lbs
ETSV80	23" x 126" x 17" - 156lbs	23" x 126" x 25" - 271lbs	42" x 126" x 39" - 542lbs	42" x 126" x 58" - 1235lbs
ETSV80BL	23" x 126" x 17" - 166lbs	23" x 126" x 25" - 291lbs	42" x 126" x 39" - 582lbs	42" x 126" x 58" - 1335lbs

*** Shipping dimensions and weights vary by product (W x L x H)



even**TUBE**[®]

SERIES ETSV SUBMITTAL DOCUMENT
MODELS: ETSV40, ETSV80

CANADA

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