

CHANGE
ORDER

AIA DOCUMENT G701

CO #12

OWNER

☐

ARCHITECT

☐

CONTRACTOR

☒

FIELD

☐

OTHER

☐

PROJECT: Brookline High School
115 Greenough Street
BROOKLINE, MA 02445

CHANGE ORDER NUMBER: 12

DATE: 11/13/2023

ARCHITECT'S PROJECT NO.:

TO CONTRACTOR:

CONTRACT DATE: March 29, 2022

LAMBRIAN CONSTRUCTION Corp.

CONTRACT FOR: 3rd Floor Renovation & Quad Repairs

The Contract is changed as follows:

PCO103_DAVISON_FB40-Room 348 In-Line Fan

Approved Values

\$39,360.00

TOTAL

\$39,360.00

APPROVED:

President

Not valid until signed by the Owner, Architect and Contractor.

The original (Contract Sum) (Guaranteed maximum Price) was	\$8,482,000.00
Net change by previously authorized Change orders	\$806,984.60
The (Contract Sum) (Guaranteed maximum Price) prior to this Change order was	\$9,288,984.60
The (Contract Sum) (Guaranteed maximum price) will be (increased) (decreased)	\$39,360.00
(unchanged) by this Change Order in the amount of	
The new (Contract Sum) (Guaranteed maximum Price) including this Change order will be	\$9,328,344.60

The Contract Time will be (increased) (decreased) (unchanged) by

The date of Substantial Completion as of the date of this Change Order therefore is

NOTE: This summary does not reflect changes in the Contract Sum, Contract Time or Guaranteed Maximum Price which have been authorized by Construction Change Directive.

William Rawn Associates, Architects Inc.

Lambrian Construction Corporation

Town Of Brookline

ARCHITECT

CONTRACTOR

OWNER

27 School Street, Boston ma 02108

420 Turnpike Street, Canton, Ma 02021

333 Washington St, Brookline, Ma 02445

Address

Address

Address

Andrew Jonic, AIA
Associate Principal
William Rawn Associates,
Architects Inc.

BY James Lambrianidis - President

BY

BY

DATE November 13, 2023

DATE 11/13/2023

DATE

October 25, 2023

WILLIAM RAWN ASSOCIATES, Architects Inc.
27 School Street
BOSTON, MA 02108

Project:

BROOKLINE HIGH SCHOOL - 3RD FLOOR RENOVATIONS & QUAD REPAIRS
115 Greenough Street
BROOKLINE, MA 02445

PCO #103

OBJECT:

Per FB #40, Install in-lin fan to deliver make-up air through existing ductwork for room 348.

Note: Work will be performed during Christmas break.

Item #	DESCRIPTION	Unit	QTY	\$ / unit	Subtotal	Subtotal	TOTAL
	LAMBRIAN Construction : Supervision - 40 hrs (1week) @ \$65.00/hr.	hrs	40	\$65.00	\$2,600.00	\$2,600.00	
	<u>Materials: ADD</u>						
	See DAVISON's proposal, dated 10/17/2023	LS	1	\$32,824.00	\$32,824.00		
	G.C. Fees (5%)	%	5.00%		<u>\$1,641.20</u>		
	Subtotal				\$34,465.20	\$34,465.20	
	<u>Labor: ADD</u>						
	Remove Ceiling tiles and grid, as necessary, for HVAC to perform the work (by K&K Acoustical Ceilings).						
	1 Carpenter / 8 hrs ea. @ \$102.00/hr.	hrs	8	\$102.00	\$816.00		
	Reinstall Ceiling tiles and grid, as necessary, after HVAC work is performed (by K&K Acoustical Ceilings).						
	1 Carpenter / 8 hrs ea. @ \$102.00/hr	hrs	8	\$102.00	<u>\$816.00</u>		
	Subtotal				\$1,632.00		
	G.C. Fees (5%) - ADD	%	5.00%		<u>\$81.60</u>		
	Subtotal				\$1,713.60	\$1,713.60	
	SUBTOTAL					\$38,778.80	
	Bond Fee (1.5%) - ADD	%	1.50%			<u>\$581.68</u>	
	TOTAL					\$39,360.48	

SAY: \$39,360.00

TOTAL ADD AMOUNT: Thirty Nine Thousand Three Hundred Sixty Dollars.

Note: No demolition and resinstallation of existing pipes, ducts, electrical of other obstructions are included in this price.



Sincerely,

Alex Galanos - Project Manager
Lambrian Construction, Corp

Recommended for approval by the Town of
Brookline

Andrew Jonic, AIA
William Rawn Associates, Architects Inc.

11/1/23

Davison Co.,Inc

"Contractors specializing in HVAC since 1986"

90 Clarendon Ave
Somerville, MA 02144
Tel: 617-666-3174

Fax: 617-776-9535

Davisoncompany.net
David.cacciola@gmail.com

Date: 10/17/23

Change Order Proposal

COP #1001

To: Lambrian Construction Inc

ATTN: Alex Galons

Address: 420 Turnpike Street
Canton, MA 02021

Phone: 781-461-1100

Project Information:

Brookline High School Expansion

Architect / Engineer / Owner

WRA, Architects 27 School St, #2 Boston, MA 02108	GGD 375 Faunce Corner Rd Dartmouth MA 02747	Town of Brookline High School Brookline, 02445
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Description

Amount

This proposal includes all work shown in the circled areas shown on drawing M1-01-D which includes adding a new inline supply fan with duct heater and all related material. Electrical high voltage by others.

Labor

HVAC Mechanic. 40hrs @ \$100.59 plus 29% burden = \$129.76 per hour
HVAC Mechanic. 40hrs @ \$100.59 plus 29% burden = \$129.76 per hour

Totals

\$5,190
\$5,190

Material

Supply fan, duct heater, sound attenuator,
sheet metal, hangers/fasteners

\$7,160

Subs

Auto Temp controls by Viking
(proposal attached)

\$12,300

Additional Notes:

Not responsible for existing conditions preventing new work to be installed as shown i.e. electrical conduits, fire protection pipes, plumbing pipes, HVAC items.
Not responsible for removing/reinstalling ceiling grid or tiles

Labor Total \$10,380

Material Total \$7,160

Subs \$12,300

Max allowed mark up 10% \$2,984

Total: \$32,824

Authorized By: David Cacciola III Vice President

Singnature & Date:

David Cacciola 10/17/23

Thank you for your business!

QUOTATION

To:	Davison Co.,Inc
Attn:	David Cacciola
Tel:	(617) 666-3174
Email:	david.cacciola@gmail.com

From:	Karl Maseng
Date:	10/13/2023
Quotation #:	22-0053

Project Name: Brookline High 3rd Floor - SF-1 Controls

Description of Work:

Viking Controls will provide the following:

- SF-1/Duct Heater - Includes DDC controller, transformer, relays, current sensor, filter sensor, supply temp sensor, motorized damper, and all control wiring.
- Operations - Includes control drawings, programming, commissioning, graphics, and warranty.

This Complete Price Will Be: \$12,300.00**This Price Does Not Include :**

- Power Wiring.
- Motor starters or VFD's.
- Smoke detectors, smoke/fire dampers or fire alarm wiring.
- Premium Time.
- Startup of equipment or controls not furnished by Viking Controls.
- Demo.

We are pleased to submit the above quotation for your consideration. Should you place an order be assured it will receive our prompt attention. This quotation is subject to the conditions as noted and is valid for 30 days. Thereafter, it is subject to change without notice.

Accepted: _____ Date: _____

Please sign and return acceptance when ordering

THANK YOU FOR YOUR BUSINESS.

CUT SHEET

Job Name: BROOKLINE HS 3RD FL RENO

Job Site: DAVISON CO., INC
90 CLARENDON AVE
SOMERVILLE, MA 02144
United States

Customer PO#: 1807

Engineer: GGD

Contractor: DAVISON CO

Elevation: (ft) 30

Date: 10/12/2023

Submitted By: Michael Feehan

Agent Order#: H124080

BUCKLEY ASSOCIATES INC - 812
385 KING ST
HANOVER, MA 02339
US

Phone: (781)878-5000

Fax: (781)871-9435

Email Address: mfeehan@buckleyonline.com



IDHE Duct Heater

APPLICATION & DESIGN

The IDHE series is the industry's first and only electric duct heater approved by UL for multiple mounting positions. This allows the control cabinet to be installed on either side of a horizontal duct or in any orientation on a vertical duct. The control cabinet is offset from the heating elements similar to traditional heaters. However, the IDHE affords the installer the flexibility to position the offset on the left or right as preferred. Standard features include:

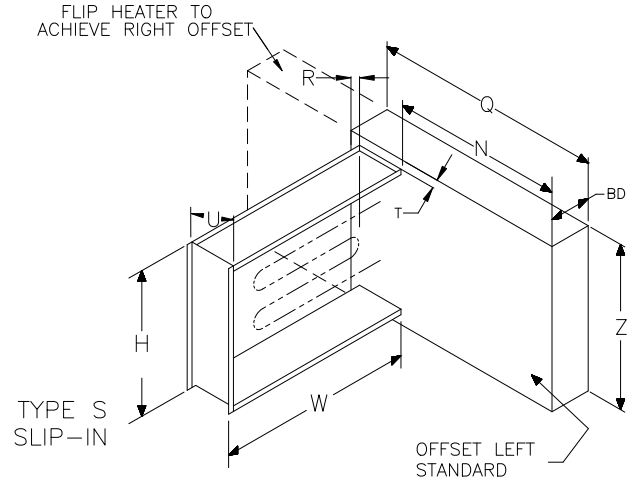
- UL 1996 certified
- 50/60 Hz compatibility
- Zero clearance rating
- Hinged control cabinet cover
- Power and control terminal boards
- Automatic reset thermal safety switch for primary over temperature protection
- Heavy gauge G60 construction

PRODUCT DETAILS

Airflow Direction	Universal
Control Box Offset	Universal
Control Voltage	24 VAC
Deration	None
Element Wire	Standard
Heater Type	Slip In
Heater Voltage/Phase	208/3
Stainless Hardware	No
Power Fusing	No Preference

OPTIONS & ACCESSORIES

Airflow Switch	Adjustable
Control Transformer	Fused
Contactors	Magnetic
Disconnect Switch	Yes
Thermostat	None
Fan Interlock	No
Vapor Barrier	No
Dust Tight Box	No
Pilot Light	None
Time Delay Relay	None



- This drawing shows a general damper configuration and is not intended to depict the exact configuration of the heater.
- All dimensions shown are in units of in.
- Individual maximum capacities are dependent on voltage/phase, control type and heater dimensions.
- Capacity: 478.8 kW maximum
- Greenheck duct heaters are universally configured to allow airflow in either direction in horizontal ducts.

ID #	TAG	QTY	WIDTH	HEIGHT	CONFIGURATION			
11-1	EHC-348	1	12.000 in.	8.000 in.	Kilowatts: 6	Stages: 1	Amps: 16.654	Heater Control: SCR
					Power Fusing: No	Dimension Q: 20.000 in.	Dimension Z: 9.938 in.	Dimension BD: 8.000 in.
					Dimension U: 6.000 in.	Dimension N: 13.000 in.	Dimension R: 1.000 in.	Dimension T: 1.000 in.

Minimum CFM*

Inlet Air Temp (F)	-25	0	20	40	60	70	80	100
Row ID 11-1	93	111	135	165	211	243	284	418

*Minimum air flow values are determined with uniform air volume across the face of heater coils. If air flow is not consistent across heater coils at minimum values, localized hotspots may occur and cause temperature overload to trip.

Minimum FPM*

Inlet Air Temp (F)	-25	0	20	40	60	70	80	100
Row ID 11-1	140	167	202	247	316	364	426	628

*Minimum air flow values are determined with uniform air flow across the face of heater coils. If air flow is not consistent across heater coils at minimum values, localized hotspots may occur and cause temperature overload to trip.

Model: SQ-98-VG

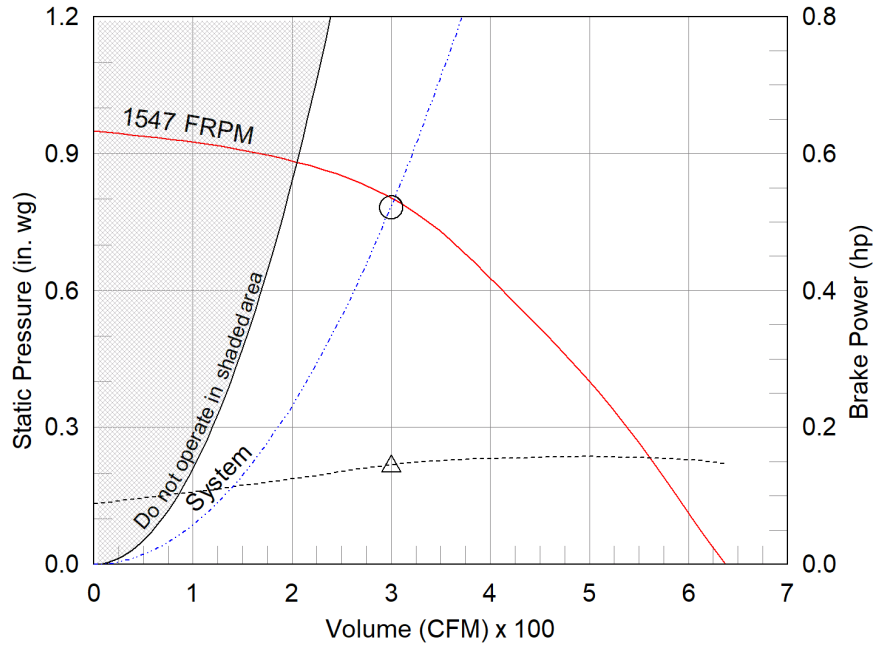
Direct Drive Centrifugal Inline Fan

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	50
Weight w/ Acc's (lb)	94
Optional Damper (in.)	12 x 12

Performance	
Requested Volume (CFM)	300
Actual Volume (CFM)	300
Total External SP (in. wg)	0.782
Fan RPM	1547
Operating Power (hp)	0.14
Elevation (ft)	30
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.075
Tip Speed (ft/min)	4,530
Static Eff. (%)	26

Misc Fan Data	
Fan Eff. Index (FEI)	-
Outlet Velocity (ft/min)	229

Motor	
Motor Mounted	Yes
Size (hp)	1/4
Voltage/Cycle/Phase	115/60/1
Enclosure	TENV
Motor RPM	1725
Windings	1
FLA (Amps)	2.85
Min. Circuit Ampacity (MCA)	4
Max. Overcurrent Protection (MOP)	15
Short Circuit Current Rtg (SCCR)	5 kA



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- System curve
- Brake horsepower curve

Static Pressure Calculations

External SP	0.75 in. wg
Filters	0.032 in. wg
Total External SP	0.782 in. wg

Nameplate Model: SQ-98-VG

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	79	82	71	68	61	57	55	50	71	59	10.9
Radiated	78	77	61	58	50	38	36	37	63	52	6.5

Notes:

All dimensions shown are in units of in.
 *NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory. MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).
 LwA - A weighted sound power level, based on ANSI S1.4
 dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
 Sones - calculated using AMCA 301 at 5 ft



Model: SQ-98-VG

Direct Drive Centrifugal Inline Fan

Greenheck model SQ Mixed Flow meets or exceeds legacy centrifugal models SQ/BSQ in performance and features. SQ Mixed flow is an approved equal and can be considered a direct replacement for these models.

Standard Construction Features:

- Galvanized steel housing - Backward inclined composite (sizes 60-95) or aluminum (sizes 97-160) wheel - Two bolted access panels - Integral duct connection flanges - Ball bearing motors (sizes 97-160 and all vari-green motors), sleeve bearing motors (sizes 60-95) - Corrosion resistant fasteners

Selected Options & Accessories:

Motor - Vari-Green EC motor

Control - Vari-Green Dial on Exterior of Fan Housing, Mounted and Wired

UL/cUL 705 Listed - "Power Ventilators"

Junction Box Mounted and Wired

Switch, NEMA-1, Toggle, Shipped with Unit,

Aluminum Wheel Material

Insulated Housing - 1 in. Thick: Fan Housing, Filter Box

Sloped Filter Box, 2 in. Pleated (MERV 8) Filters

Inlet/Outlet Companion Flange

Unit Warranty: 1 Yr (Standard)

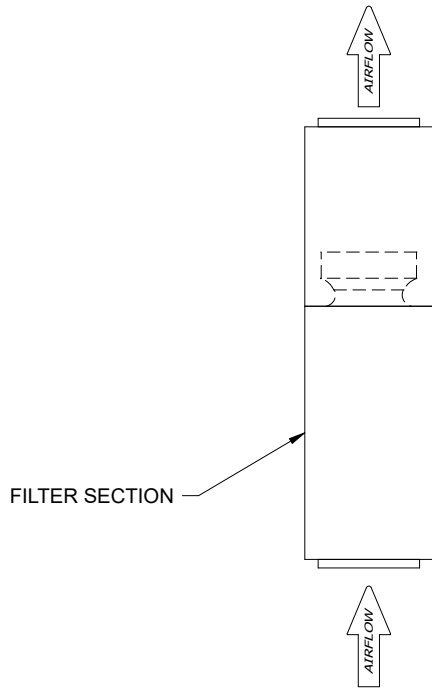
Damper Shipped Loose, Inline, WD-330-PB-12X12, Not Coated

Damper Actuator (MP-310), 115 VAC Actuated

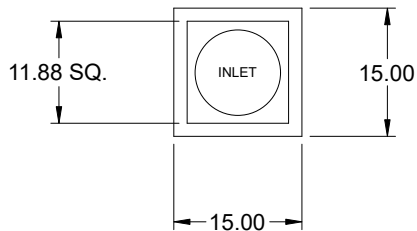
End Switch

SQ-98-VG

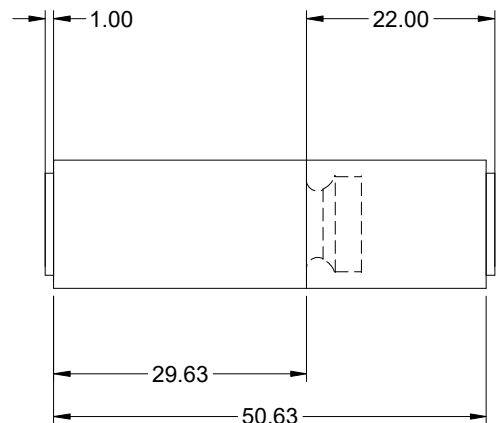
Direct Drive Centrifugal Inline Fan



TOP VIEW



END VIEW



SIDE VIEW

Notes: All dimensions shown are in units of in.

Disconnect Switch

Enclosure Rating: NEMA-1

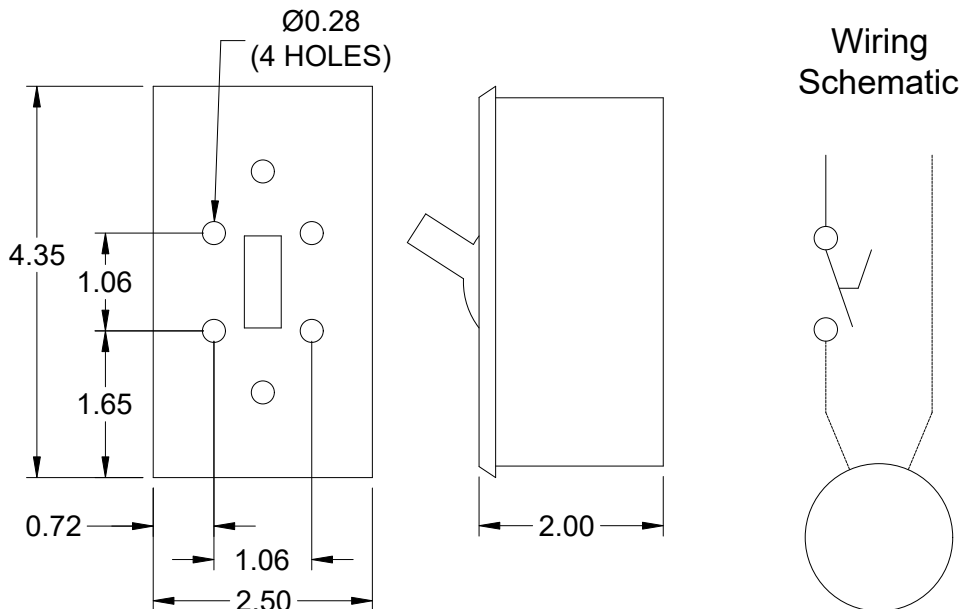
Standard Construction Features:

Enclosure constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment and to provide a degree of protection against falling dust. This enclosure meets the rod entry and the indoor corrosion protection design tests. The rod entry test is intended to simulate incidental contact with enclosure equipment. Enclosure is equipped with provision to lockout in the off position with customer supplied lock.

Disconnect Switch Configuration

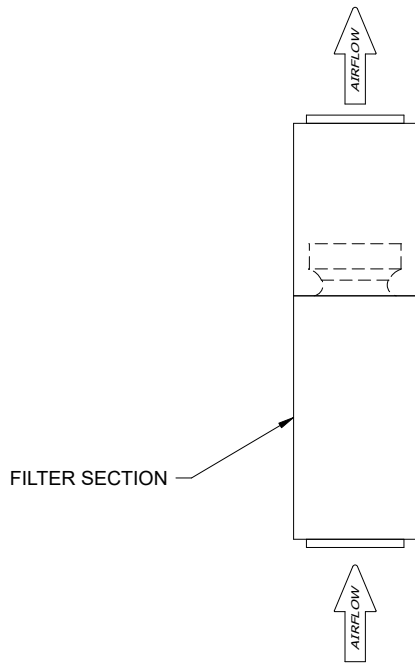
Type:	Toggle	Motor Size:	1/4 hp	Voltage:	115	UL Listed:	Yes
Manufacturer:	Pass and Seymour	Cycle:	60	Amperage:	15	CSA Approved:	Yes
Overload Protection:	None	Phase:	1	Switch Pole(s):	1	Rating:	1/2 hp
Junction Box Mtg.:	Ship With Unit	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped With Unit						

Electrical Drawing Details



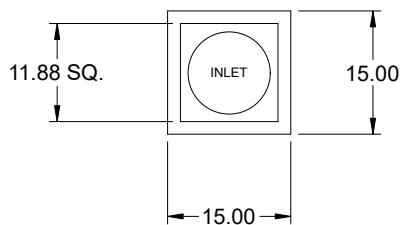
Assembly Drawing

Type: Direct Drive Centrifugal Inline Fan

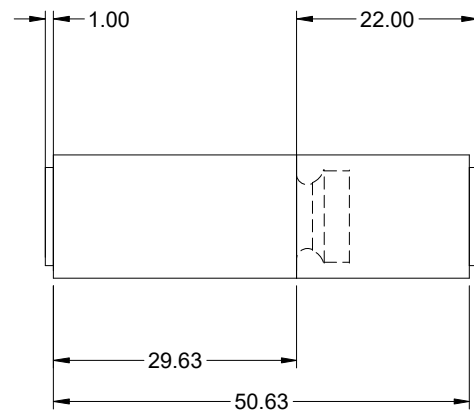


FILTER SECTION

TOP VIEW



END VIEW



SIDE VIEW

Notes: All dimensions shown are in units of in..

Vari-Green

Motor & Control Options

An EC motor that uses AC input power and internally converts it to DC power. Motor accepts a 0-10VDC control signal along with a 24V source to power controls in the motor. Motor is operable in the 2-10VDC range and off while in the 0-1.9VDC range. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated and the motor will automatically reduce speed or turn off if overloaded or it becomes too hot.

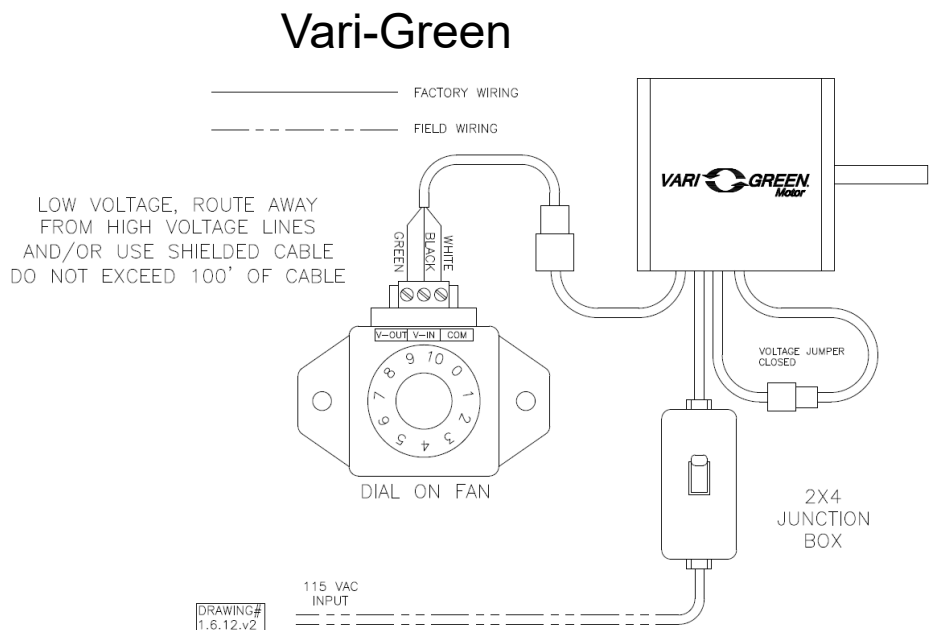
An EC motor that uses AC input power and internally converts it to DC power. Potentiometer (dial) mounted on the fan housing adjusts the speed (RPM) down 80%. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated and the motor will automatically reduce speed or turn off if overloaded or it becomes too hot.

Motor Configuration

Input Voltage: 115
 Speed Reference: 0-10VDC
 Permanent Dial: No
 Balance Dial Included: N/A

Control Configuration

Control Type: Dial on Fan
 Transformer: None



Vertical Mount Exhaust Damper

Model: WD-330

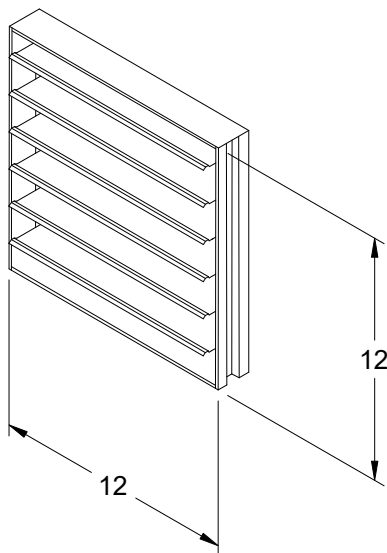
Standard Construction Features:

- Model WD-330 is a vertical mount exhaust damper and is constructed of galvanized steel with pre-punched mounting holes - Damper blades are 0.025 in. roll formed aluminum with vinyl seals on the closing edge - Steel axles are 0.188 in. diameter zinc plated steel - Nylon type bushings

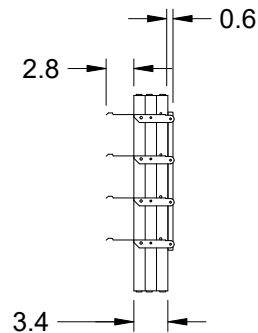
Damper Configuration:

Actuator Type: 115 VAC

End Switch: Yes



DAMPER



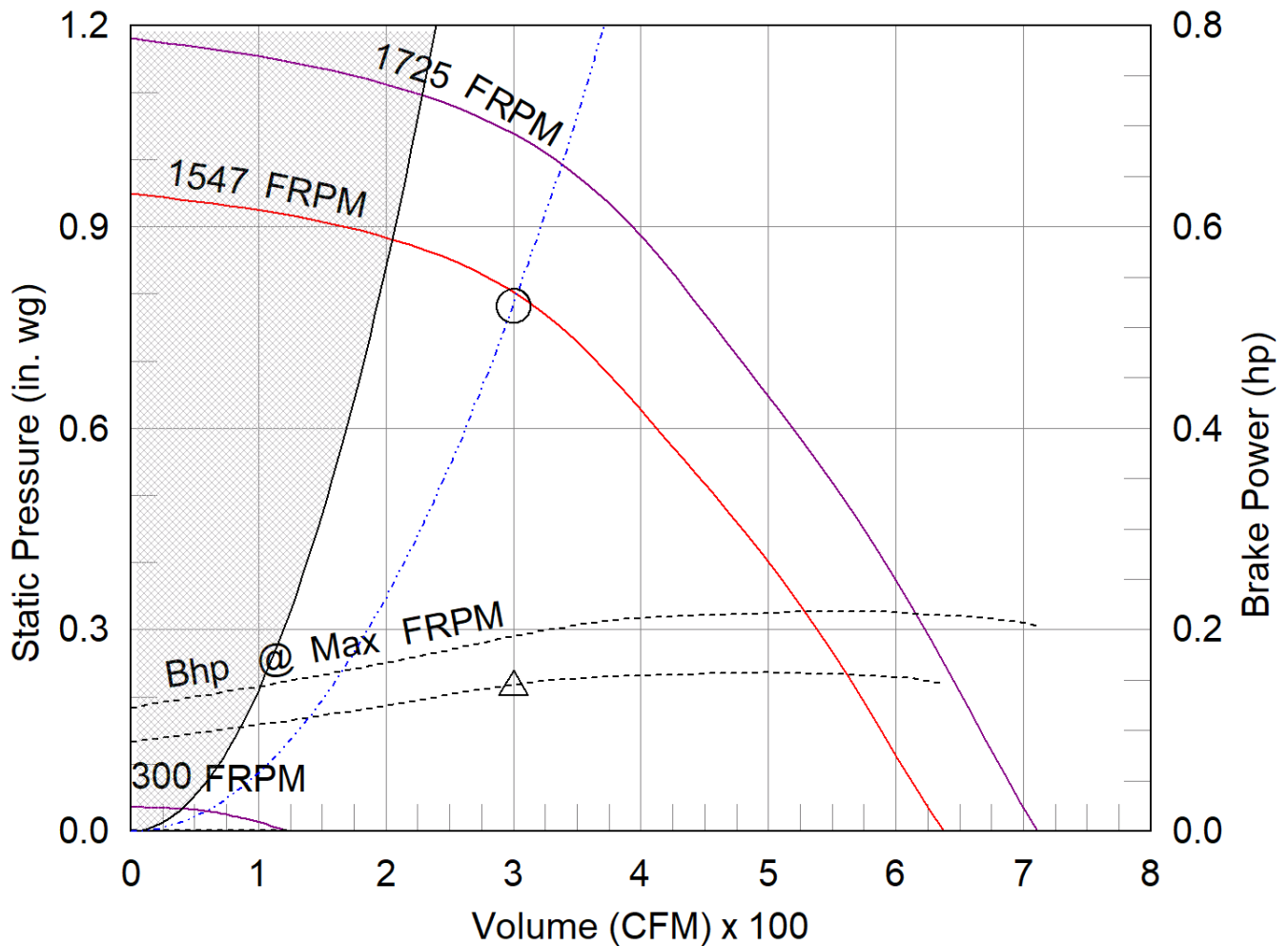
TYP. SECTION VIEW

SQ-98-VG

Min/Max Fan Curve

Performance

Requested Volume (CFM)	Actual Volume (CFM)	Total External SP (in. wg)	Fan RPM	Operating Power (hp)
300	300	0.782	1547	0.14



- △ Operating Bhp point
- Operating point at Total External SP
- Construction Limit
- Fan curve
- Min FRPM
- - - System curve
- - - Brake horsepower curve

Warranty

1 Yr (Standard)

WARRANTY AND LIABILITY: SELLER warrants to Buyer that products manufactured are free from defects in material and workmanship for a period of 1 Yr (Standard) from the date of shipment. SELLER's obligations and liabilities under this warranty are limited to furnishing FOB factory or warehouse at SELLER's designated shipping point, freight allowed to Buyer's city, (or point of export for shipments outside the conterminous United States) replacement equipment (or at the option of SELLER parts therefore) for all Seller's products not conforming to this warranty and which have been returned to the manufacturer. No liability whatever shall attach to SELLER until said products have been paid for and such liability shall be strictly limited to the purchase price of the equipment shown to be defective. Motors are warranted by the motor manufacturer for a period of one year. Should motors furnished by SELLER prove defective during this period, they should be returned to the nearest authorized motor service station. SELLER will not be responsible for any removal or installation costs. Electrical components, excluding motors, are warranted only to the extent warranted by the original manufacturer. To the extent that SELLER is entitled to pass through a warranty of the original equipment manufacturer of the electrical goods sold, SELLER will pass through such warranties to Buyer. The legal remedies described in this Warranty are the sole exclusive remedy of Buyer. SELLER MAKES NO OTHER WARRANTY, EITHER EXPRESS OR IMPLIED, REGARDING ITS PRODUCTS, OR ITS SELECTION AND APPLICATION, INCLUDING, BUT NOT LIMITED TO, COMPLIANCE WITH BUILDING CODES, SAFETY CODES, LAWS, MERCHANTABILITY OR FITNESS OR A PARTICULAR PURPOSE. This warranty is extended solely to the Buyer. It is nontransferable and non-assignable, and the Buyer shall not permit or authorize its employees, agents, representatives or customers to claim, represent or imply that this limited warranty extends or is available to anyone other than the Buyer. ANY MISUSE, NEGLIGENCE, FAILURE TO FOLLOW INSTRUCTIONS OR MANUALS OF INSTALLATION OF MAINTENANCE REPAIR, SERVICE, RELOCATION OR ALTERATION TO OR OF, OR OTHER TAMPERING WITH, THE PRODUCTS PERFORMED BY ANY PERSON OR ENTITY OTHER THAN SELLER WITHOUT SELLER'S PRIOR WRITTEN APPROVAL OR ANY USE OF REPLACEMENT PARTS NOT SUPPLIED BY SELLER, SHALL IMMEDIATELY VOID AND CANCEL ALL WARRANTIES WITH RESPECT TO THE AFFECTED PRODUCTS. THE WARRANTY AND LIABILITY SET FORTH HEREIN ARE IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES WHETHER IN CONTRACT OR IN NEGLIGENCE, EXPRESSED OR IMPLIED, IN LAW OR IN FACT, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE. SELLER PROVIDES NO INDEPENDENT WARRANTY FOR THIRD PARTY PRODUCTS OR COMPONENTS SOLD TOGETHER OR INCORPORATED WITH SELLER'S PRODUCT(S). THE SELLER HAS THE RIGHT TO SETTLE ANY AND ALL DISPUTES REGARDING THE WARRANTY.

AMCA



AMCA Licensed for Sound and Air Performance Without Appurtenances (Accessories). Power rating (BHP/kW) does not include transmission losses.

Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. Performance certified is for installation type B: Free inlet, Ducted outlet. Power rating (BHP/kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The inlet sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type B: free inlet hemispherical sone levels. dBA levels are not licensed by AMCA International. The AMCA Certified Ratings Seal applies to inlet sone ratings only. Radiated (casing) sound data is the sound generated through the fan housing when the fan is ducted on both the inlet and outlet.

The AMCA licensed air and/or sound performance data has been modified for installation, appurtenances or accessories, etc. not included in the certified data. The modified performance is not AMCA licensed but is provided to aid in selection and applications of the product.

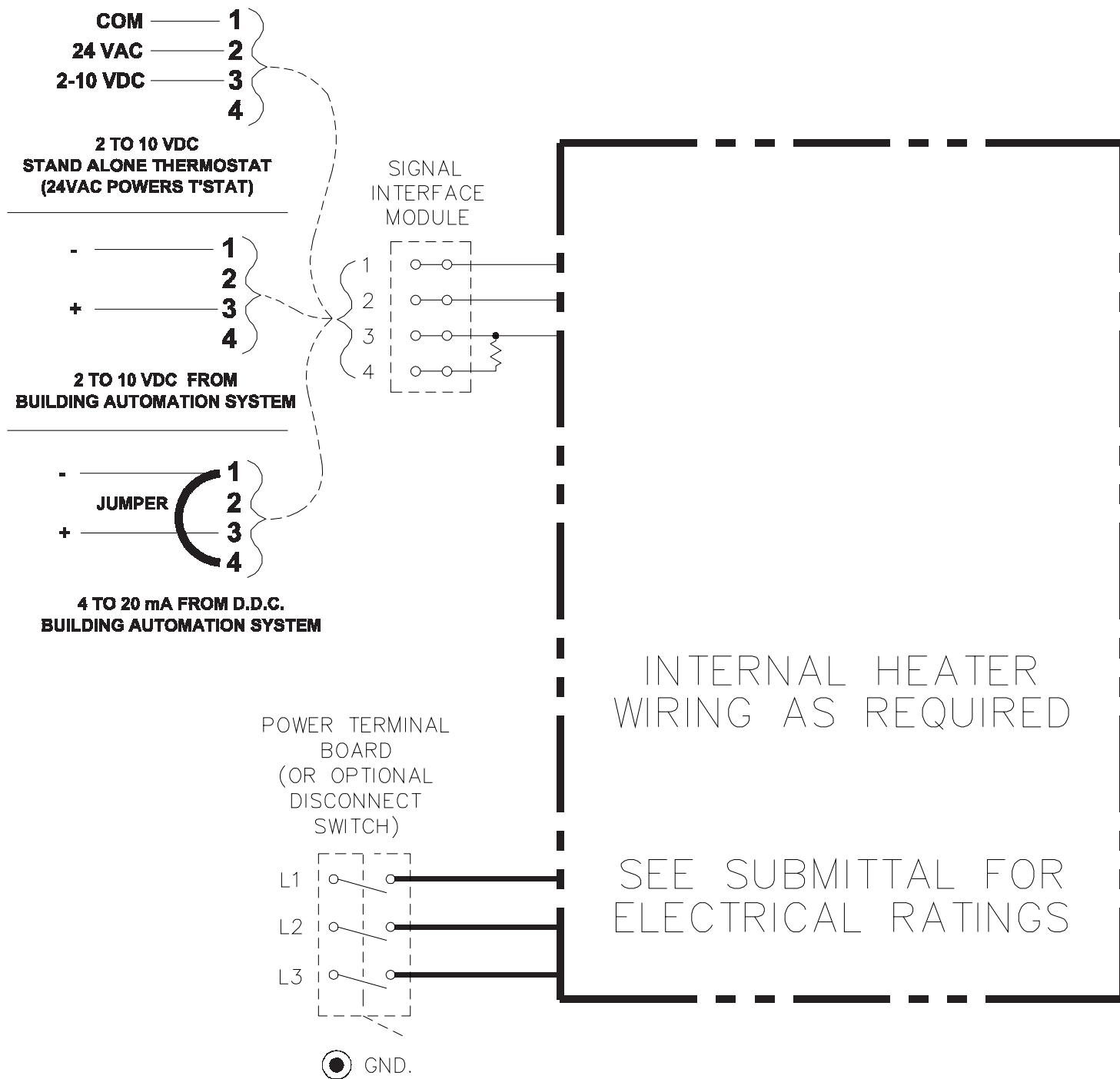
Filter Configuration:

ID #:	Tag:	Mark Qty:	Filter Type:	Filter W x L x H (in):	Qty of Filters:	Part Number (1 each):
14	SF-1	1	2 inch Pleated Filters, MERV 8	14 X 25 X 2	1	456526

Notes: All dimensions shown are in units of in.

DIAGRAM GQ-310

OPTIONS FOR CONTROL



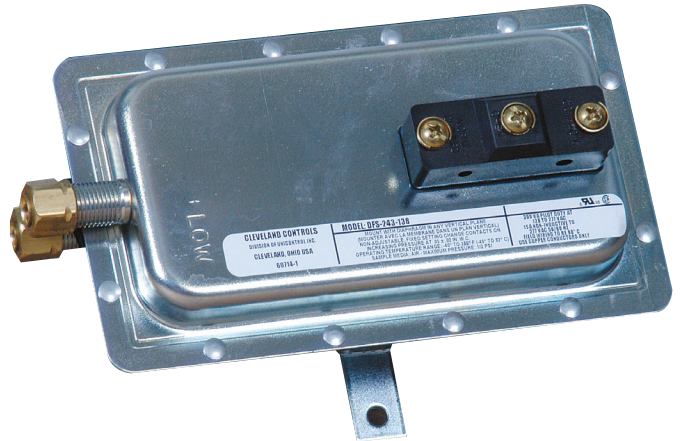
3-PHASE
ELECTRICAL CONNECTIONS FOR
A DUCT HEATER WITH AN
ELECTRONIC STEP CONTROLLER,
SCR OR SCR VERNIER CONTROL.



This print and the confidential business information which it contains are the property of Greenheck Fan Corporation of Schofield, WI. It is loaned for confidential use by recipient solely to further the business interests of Greenheck and is subject to return on request and with the mutual understanding that it will not be used in any manner detrimental to the interests of Greenheck.

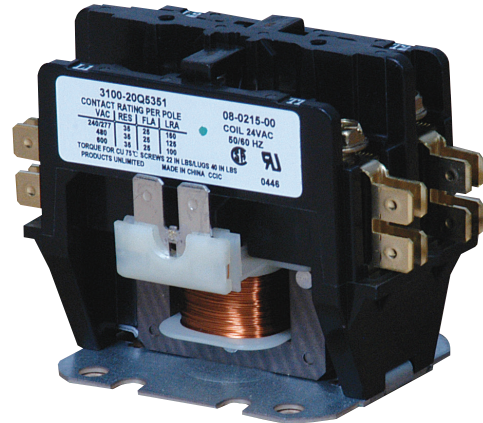
Airflow Switch for Duct Heaters

Prevents heater from being energized when the fan is not on.
Non adjustable airflow switch requires a minimum of .07 in. wc pressure.

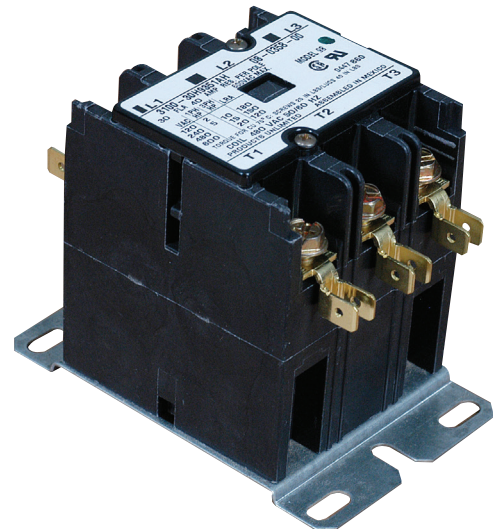


Magnetic Contactor

Magnetic contactors are standard in all duct heaters. They are used for primary or back-up control. UL approved for 250,000 cycle operation.



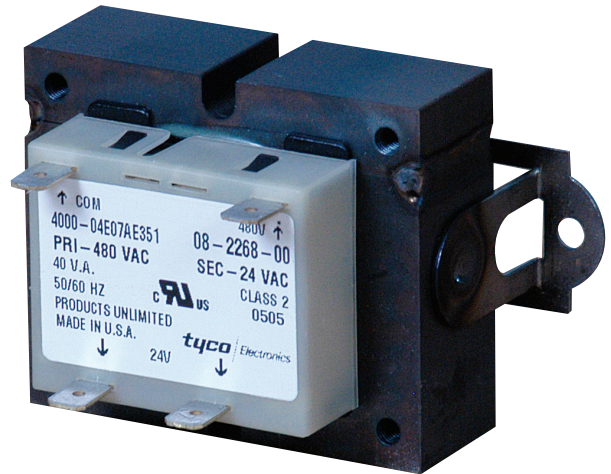
2 pole magnetic contactor



3 pole magnetic contactor

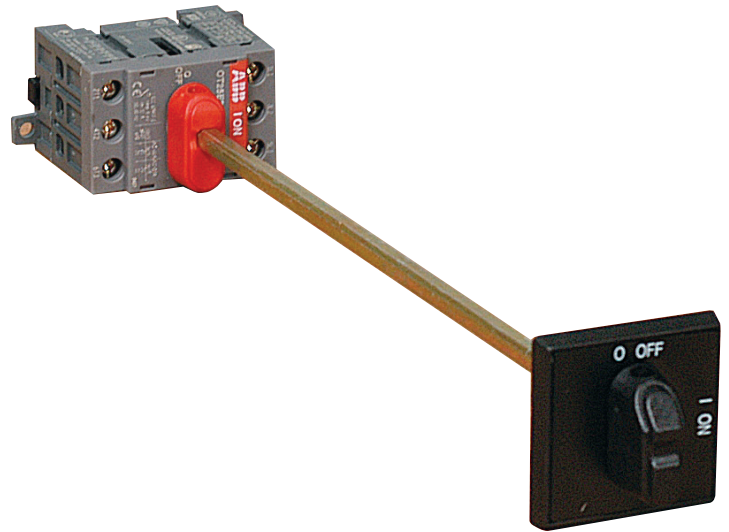
Control Transformer for Duct Heaters

Utilized when control voltage differs from line voltage. Primary over current protection. Class 1 units must have primary side protection by fusing. Class 2 units have internal protection and do not require additional fusing unless specified.



Disconnect Switches for Duct Heaters

Available unfused door interlocking disconnect switch (maximum 384 AMPS).



Solid state relays (SCRs or SSR) provide the finest in electric duct heater control. 100% solid state stepless modulation. Noiseless. Power and heat output precision.

