PERFECTION GROUP

SUBMITTAL SHEET

PROJECT KEVLAR – BJ'S RICKENBACKER

180 KENMORE BLVD.
COMMERCIAL POINT, OHIO 43116

GC: PEPPER CONSTRUCTION

Title: VAV UNITS

DATE: 3/26/2025

Project Name:	Project Kevlar
Project Location:	
Engineer:	
Contractor:	
Contact:	
Date:	February 5, 2025
Comments:	

Submitted By:	HABEGGER CORP 11413 ENTERPRISE PARK DRIVE CINCINNATI, Ohio United States, 45241
Telephone:	513 266 2825
Fax:	
Contact:	JAMES POWERS

Nailor Single Duct VAV Units

Weight values are typical unit dry weights, and may not be specific for that product.
Corner weights must be measured in the field with all components attached.
For blank weight values, please contact factory.

Project: Project Kevlar | Date Created: 1/30/2025

Customer: | Date Due: 1/30/2025

Engineer:

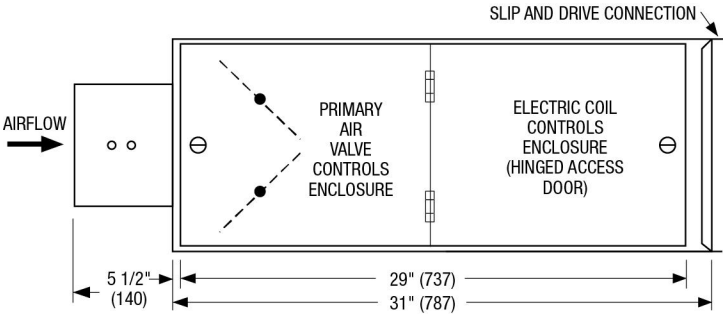
Item ID	Group	Floor	Tag1	Tag2	Model	ControlType	Heater Type	Quantity	Unit Size	Inlet Size	Outlet Size	Weight	Primary Max AF (cfm)	Primary Min AF (cfm)	Inlet SP (in wg)	Outlet SP (in wg)	Min Inlet SP (in wg)	MOP	MCA	Acoustic Media	Integral Attenuator	Rad NC	Dis NC	Rad NC OB	Dis NC OB	Calc Method	Htg AF (cfm)	KW	MBH (mbh)	Volt	Phase	Stages	Htr Amps	EAT (°F)	LAT (°F)
1			VAV01		D30RE	D	E	1	5	05	10 X 10		300	75	0.75	0.25	0.11	15	11.3		No	15	23		3	KW	225	2.5	8.5	277	1	1	9.03	55	89.9
2			VAV02		D30RE	D	E	1	8	08	12 X 12 1/2		1000	250	0.75	0.25	0.01	20	19.5		No	20	26	4	3	KW	750	7.5	25.6	480	1	2	15.62	55	86.4
3			VAV03		D30RE	D	E	1	8	08	12 X 12 1/2		600	150	0.75	0.25	0.01	25	20.3		No	15	19			KW	450	4.5	15.4	277	1	1	16.25	55	86.4
4			VAV04		D30RE	D	E	1	6	06	10 X 10		300	100	0.75	0.25	0.01	15	11.3		No	15	16			KW	225	2.5	8.5	277	1	1	9.03	55	89.9
5			VAV05		D30RE	D	E	1	6	06	10 X 10		400	100	0.75	0.25	0.01	20	18		No	15	20		3	KW	300	4	13.6	277	1	1	14.44	55	96.9
6			VAV06		D30RE	D	E	1	8	08	12 X 12 1/2		600	150	0.75	0.25	0.01	30	27.1		No	15	19			KW	450	6	20.5	277	1	1	21.66	55	96.9
7			VAV07		D30RE	D	E	1	6	06	10 X 10		500	125	0.75	0.25	0.01	25	22.6		No	15	24		3	KW	375	5	17.1	277	1	1	18.05	55	96.9
8			VAV08		D30RE	D	E	1	12	12	18 X 12 1/2		2000	400	0.75	0.25	0.01	25	21.8		No	25	28	4	2	KW	1500	14.5	49.5	480	3	3	17.44	55	85.4
9			VAV09		D30RE	D	E	1	8	08	12 X 12 1/2		1000	250	0.75	0.25	0.01	20	19.5		No	20	26	4	3	KW	750	7.5	25.6	480	1	2	15.62	55	86.4
10			VAV10		D30RE	D	E	1	8	08	12 X 12 1/2		1000	250	0.75	0.25	0.01	20	19.5		No	20	26	4	3	KW	750	7.5	25.6	480	1	2	15.62	55	86.4
11			VAV11		D30RE	D	E	1	10	10	14 X 12 1/2		1600	400	0.75	0.25	0.01	20	17.3		No	20	28	4	3	KW	1200	11.5	39.2	480	3	3	13.83	55	85.1
12			VAV12		D30RE	D	E	1	10	10	14 X 12 1/2		1400	350	0.75	0.25	0.01	25	20.3		No	18	25		3	KW	1050	13.5	46.1	480	3	3	16.24	55	95.4
13			VAV13		D30RE	D	E	1	8	08	12 X 12 1/2		800	200	0.75	0.25	0.01	25	20.8		No	18	21		3	KW	600	8	27.3	480	1	2	16.67	55	96.9
14			VAV14		D30RE	D	E	1	8	08	12 X 12 1/2		750	175	0.75	0.25	0.01	20	18.2		No	16	21		3	KW	563	7	23.9	480	1	2	14.58	55	94.1
15			VAV15		D30RE	D	E	1	8	08	12 X 12 1/2		750	175	0.75	0.25	0.01	25	22.6		No	16	21		3	KW	525	5	17.1	277	1	1	18.05	55	85
16			VAV16		D30RE	D	E	1	10	10	14 X 12 1/2		1200	350	0.75	0.25	0.01	25	23.4		No	16	23		3	KW	900	9	30.7	480	1	2	18.75	55	86.4
17			VAV17		D30RE	D	E	1	6	06	10 X 10		400	100	0.75	0.25	0.01	20	18		No	15	20		3	KW	300	4	13.6	277	1	1	14.44	55	96.9

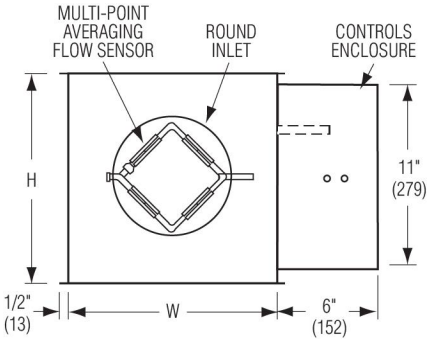
PROJECT SCHEDULE
Project Kevlar
Terminal Units

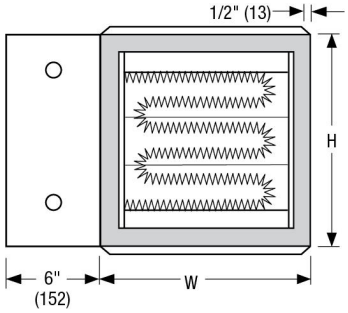
Item	Qty	Model	Tag 1	Unit Size	Max Cooling	Min Cooling	Aux. Min	kW	Option Codes
1	1	D30RE	VAV01	05	300	75	225	2.5	05 - NB - OR - QD - FDD - FN - 2771 - 1STG - BB
2	1	D30RE	VAV02	08	1000	250	750	7.5	08 - NB - OR - QD2 - FDD - FN - 4801 - 2STG - BB
3	1	D30RE	VAV03	08	600	150	450	4.5	08 - NB - OR - QD - FDD - FN - 2771 - 1STG - BB
4	1	D30RE	VAV04	06	300	100	225	2.5	06 - NB - OR - QD - FDD - FN - 2771 - 1STG - BB
5	1	D30RE	VAV05	06	400	100	300	4.0	06 - NB - OR - QD - FDD - FN - 2771 - 1STG - BB
6	1	D30RE	VAV06	08	600	150	450	6.0	08 - NB - OR - QD - FDD - FN - 2771 - 1STG - BB
7	1	D30RE	VAV07	06	500	125	375	5.0	06 - NB - OR - QD - FDD - FN - 2771 - 1STG - BB
8	1	D30RE	VAV08	12	2000	400	1500	14.5	12 - NB - OR - QD2 - FDD - FN - 4803 - 3STG - BB
9	1	D30RE	VAV09	08	1000	250	750	7.5	08 - NB - OR - QD2 - FDD - FN - 4801 - 2STG - BB
10	1	D30RE	VAV10	08	1000	250	750	7.5	08 - NB - OR - QD2 - FDD - FN - 4801 - 2STG - BB
11	1	D30RE	VAV11	10	1600	400	1200	11.5	10 - NB - OR - QD2 - FDD - FN - 4803 - 3STG - BB
12	1	D30RE	VAV12	10	1400	350	1050	13.5	10 - NB - OR - QD2 - FDD - FN - 4803 - 3STG - BB
13	1	D30RE	VAV13	08	800	200	600	8.0	08 - NB - OR - QD2 - FDD - FN - 4801 - 2STG - BB
14	1	D30RE	VAV14	08	750	175	563	7.0	08 - NB - OR - QD2 - FDD - FN - 4801 - 2STG - BB
15	1	D30RE	VAV15	08	750	175	525	5.0	08 - NB - OR - QD - FDD - FN - 2771 - 1STG - BB
16	1	D30RE	VAV16	10	1200	350	900	9.0	10 - NB - OR - QD2 - FDD - FN - 4801 - 2STG - BB
17	1	D30RE	VAV17	06	400	100	300	4.0	06 - NB - OR - QD - FDD - FN - 2771 - 1STG - BB

Dimensions are in inches (mm)

Items: 1, 4, 5, 7, 17; Tags: VAV01; VAV04; VAV05; VAV07; VAV17







Right-hand controls location shown
*Controls Enclosure optional with field mounted controls

DIMENSIONAL DATA

Unit Size	Min - Max Airflow Range cfm (l/s)	Width (W)	Height (H)	Inlet Size
5	45 – 400 (21 – 189)	10 (254)	10 (254)	4 7⁄8 (124) Round
6	65 – 550 (31 – 260)	10 (254)	10 (254)	5 7⁄8 (149) Round

FEATURES

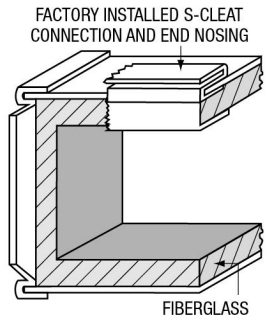
- 16 ga. (1.61) corrosion-resistant steel inclined single blade damper with extruded PVC seals. 45° rotation, CW to close. Tight close-off. Damper leakage is less than 2% of the terminal rated airflow at 3" w.g. (750 Pa)
- 1/2" (13) dia. plated steel drive shaft. An indicator mark on the end of the shaft shows damper position
- Multi-point averaging sensor. Supplied with balancing tees
- Electric Coil is mounted in an integral attenuator section
- Class A 80/20 Ni/Cr wire
- High performance ceramic insulators
- 24Vac Class II control transformer

Project:	Project Kevlar	**Date:**	2/5/2025
Engineer:		**Version No:**	
Contractor:			

Dimensions are in inches (mm)

- Hinged door control enclosure
- Positive pressure air proving switch
- Primary auto-reset high limit thermal cut-out (one per coil in control circuit)
- Secondary manual reset high limit thermal cut-outs (one per element)
- Magnetic contactor per stage
- Damper Actuator: Not Provided
- NB - Controls: By Others (Field Mounted)
- OR - 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction, right hand (determined when looking in the direction of airflow)
- QD - Transformer: 277/24V
- FDD - 3/4" (19) Dual Density Fiberglass Liner
- FN - Full NEMA 1 type 24V Controls Enclosure
- 2771 - Electric Coil: 277 volt/1 phase/2-wire
- 1STG - Electric Coil: 1 Stage
- BB - Door-Interlocking disconnect switch

FDD - Dual Density Fiberglass Liner

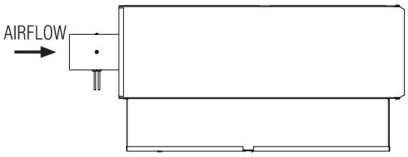


- 3/4" (19) thick dual density insulation, minimum 1.5 lb./cu.ft (24 kg/m3) density with exposed edges coated to reduce air erosion

Meets requirements:

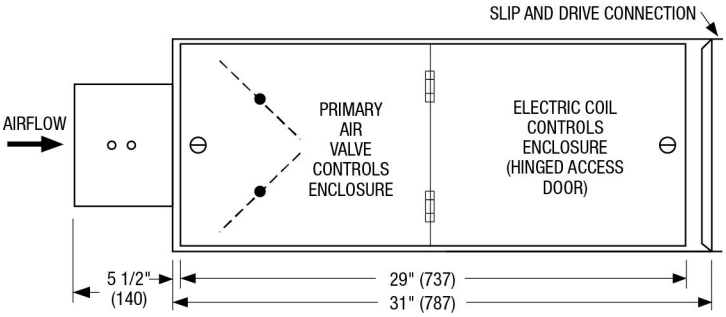
- UL 181 & 723
- NFPA 90A & 90B
- ASTM E 84 & C 1071
- CAN/ULC S102-M88

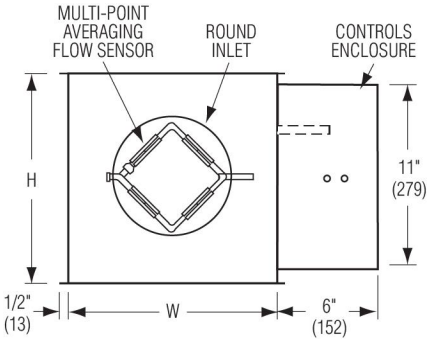
OR - Top View Orientation- Controls Location

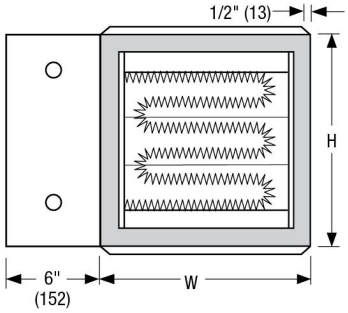


Right Hand Controls Location

Items: 2, 9, 10, 13, 14, 16; Tags: VAV02; VAV09; VAV10; VAV13; VAV14; VAV16







Right-hand controls location shown
*Controls Enclosure optional with field mounted controls

DIMENSIONAL DATA

Unit Size	Min - Max Airflow Range cfm (l/s)	Width (W)	Height (H)	Inlet Size
8	125 – 1100 (59 – 519)	12 (305)	12 1⁄2 (318)	7 7⁄8 (200) Round
10	215 – 1840 (101 – 868)	14 (356)	12 1⁄2 (318)	9 7⁄8 (251) Round

FEATURES

- 16 ga. (1.61) corrosion-resistant steel inclined opposed blade damper with extruded PVC seals. 45° rotation, CW to close. Tight close-off. Damper leakage is less than 2% of the terminal rated airflow at 3" w.g. (750 Pa)
- 1/2" (13) dia. plated steel drive shaft. An indicator mark on the end of the shaft shows damper position
- Multi-point averaging sensor. Supplied with balancing tees
- Electric Coil is mounted in an integral attenuator section
- Class A 80/20 Ni/Cr wire
- High performance ceramic insulators
- 24Vac Class II control transformer

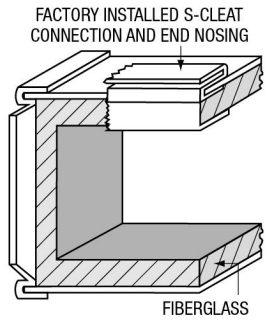
Project:	Project Kevlar	**Date:**	2/5/2025
Engineer:		**Version No:**	
Contractor:			

Dimensions are in inches (mm)

- Hinged door control enclosure
- Positive pressure air proving switch
- Primary auto-reset high limit thermal cut-out (one per coil in control circuit)
- Secondary manual reset high limit thermal cut-outs (one per element)
- Magnetic contactor per stage
- Damper Actuator: Not Provided
- NB - Controls: By Others (Field Mounted)
- OR - 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction, right hand (determined when looking in the direction of airflow)
- QD2 - Transformer: 480/24V
- FDD - 3/4" (19) Dual Density Fiberglass Liner
- FN - Full NEMA 1 type 24V Controls Enclosure
- 2STG - Electric Coil: 2 Stage
- BB - Door-Interlocking disconnect switch

480V/1 Phase/2-wire

FDD - Dual Density Fiberglass Liner

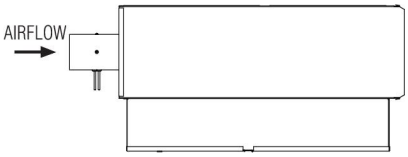


- 3/4" (19) thick dual density insulation, minimum 1.5 lb./cu.ft (24 kg/m3) density with exposed edges coated to reduce air erosion

Meets requirements:

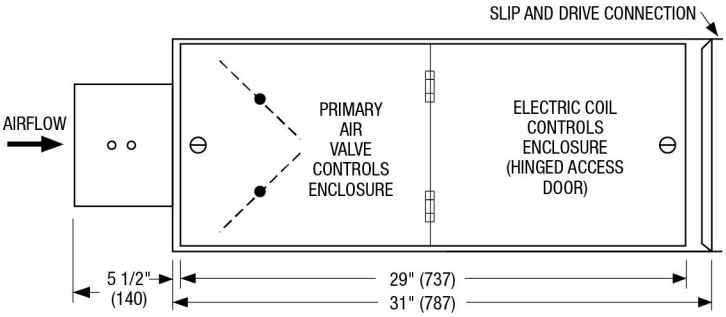
- UL 181 & 723
- NFPA 90A & 90B
- ASTM E 84 & C 1071
- CAN/ULC S102-M88

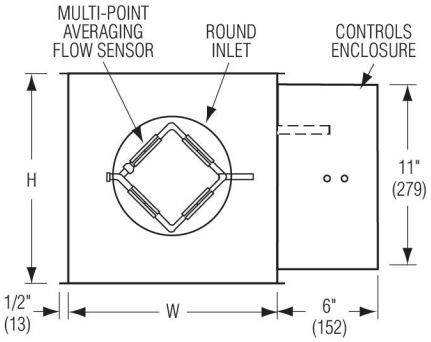
OR - Top View Orientation- Controls Location

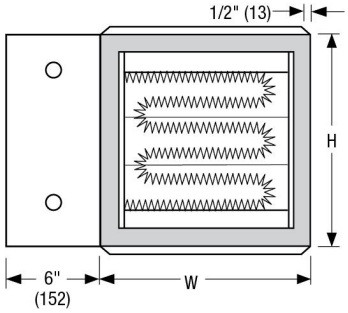


Right Hand Controls Location

Items: 3, 6, 15; Tags: VAV03; VAV06; VAV15







Right-hand controls location shown
*Controls Enclosure optional with field mounted controls

DIMENSIONAL DATA

Unit Size	Min - Max Airflow Range cfm (l/s)	Width (W)	Height (H)	Inlet Size
8	125 – 1100 (59 – 519)	12 (305)	12 1/2 (318)	7 7/8 (200) Round

FEATURES

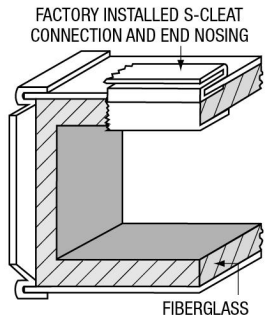
• 16 ga. (1.61) corrosion-resistant steel inclined opposed blade damper with extruded PVC seals. 45° rotation, CW to close. Tight close-off. Damper leakage is less than 2% of the terminal rated airflow at 3" w.g. (750 Pa)
• 1/2" (13) dia. plated steel drive shaft. An indicator mark on the end of the shaft shows damper position
• Multi-point averaging sensor. Supplied with balancing tees
• Electric Coil is mounted in an integral attenuator section
• Class A 80/20 Ni/Cr wire
• High performance ceramic insulators
• 24Vac Class II control transformer
• Hinged door control enclosure
• Positive pressure air proving switch

Project:	Project Kevlar	**Date:**	2/5/2025
Engineer:		**Version No:**	
Contractor:			

Dimensions are in inches (mm)

• Primary auto-reset high limit thermal cut-out (one per coil in control circuit)
• Secondary manual reset high limit thermal cut-outs (one per element)
• Magnetic contactor per stage
• Damper Actuator: Not Provided
• NB - Controls: By Others (Field Mounted)
• OR - 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction, right hand (determined when looking in the direction of airflow)
• QD - Transformer: 277/24V
• FDD - 3/4" (19) Dual Density Fiberglass Liner
• FN - Full NEMA 1 type 24V Controls Enclosure
• 2771 - Electric Coil: 277 volt/1 phase/2-wire
• 1STG - Electric Coil: 1 Stage
• BB - Door-Interlocking disconnect switch

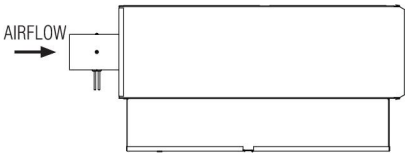
FDD - Dual Density Fiberglass Liner



• 3/4" (19) thick dual density insulation, minimum 1.5 lb./cu.ft (24 kg/m3) density with exposed edges coated to reduce air erosion

Meets requirements:
• UL 181 & 723
• NFPA 90A & 90B
• ASTM E 84 & C 1071
• CAN/ULC S102-M88

OR - Top View Orientation- Controls Location

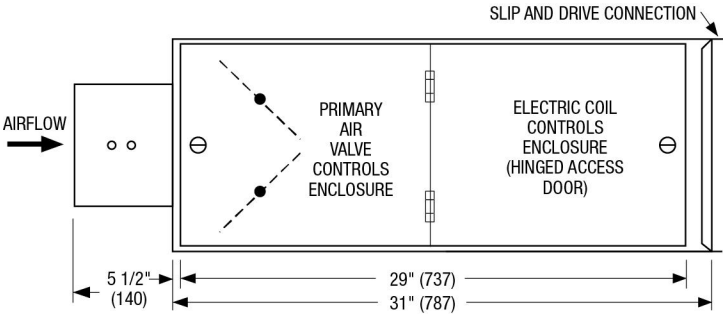


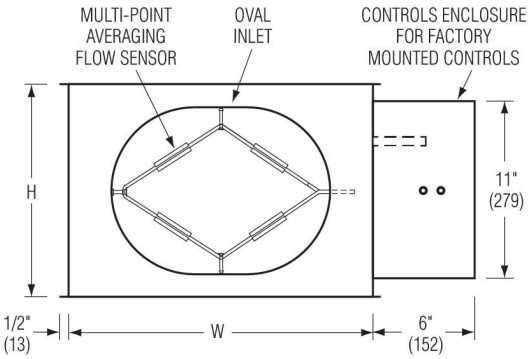
Right Hand Controls Location

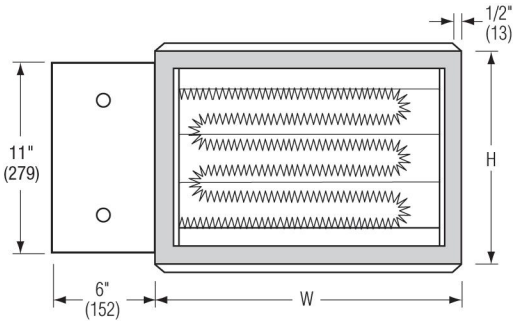
Project: Project Kevlar **Date:** 2/5/2025
Engineer: **Version No:**
Contractor:

Dimensions are in inches (mm)

Item: 8; Tags: VAV08







DIMENSIONAL DATA

Unit Size	Min - Max Airflow Range cfm (l/s)	Width (W)	Height (H)	Inlet Size
12	290 – 2500 (137 – 1180)	18 (457)	12 1⁄2 (318)	12 15⁄16 x 9 13⁄16 (329 x 249) Oval

FEATURES

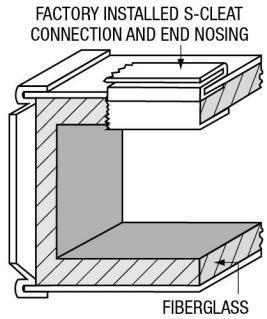
- 16 ga. (1.61) corrosion-resistant steel inclined opposed blade damper with extruded PVC seals. 45° rotation, CW to close. Tight close-off. Damper leakage is less than 2% of the terminal rated airflow at 3" w.g. (750 Pa)
- 1/2" (13) dia. plated steel drive shaft. An indicator mark on the end of the shaft shows damper position
- Multi-point averaging sensor. Supplied with balancing tees
- Electric Coil is mounted in an integral attenuator section
- Class A 80/20 Ni/Cr wire
- High performance ceramic insulators
- 24Vac Class II control transformer
- Hinged door control enclosure
- Positive pressure air proving switch
- Primary auto-reset high limit thermal cut-out (one per coil in control circuit)
- Secondary manual reset high limit thermal cut-outs (one per element)
- Magnetic contactor per stage
- Damper Actuator: Not Provided

Project:	Project Kevlar	**Date:**	2/5/2025
Engineer:		**Version No:**	
Contractor:			

Dimensions are in inches (mm)

• NB - Controls: By Others (Field Mounted)
• OR - 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction, right hand (determined when looking in the direction of airflow)
• QD2 - Transformer: 480/24V
• FDD - 3/4" (19) Dual Density Fiberglass Liner
• FN - Full NEMA 1 type 24V Controls Enclosure
• 4803 - Electric Coil: 480 volt/3 phase/4-wire
• 3STG - Electric Coil: 3 Stage
• BB - Door-Interlocking disconnect switch

FDD - Dual Density Fiberglass Liner



• 3/4" (19) thick dual density insulation, minimum 1.5 lb./cu.ft (24 kg/m3) density with exposed edges coated to reduce air erosion

Meets requirements:
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• NFPA 90A & 90B
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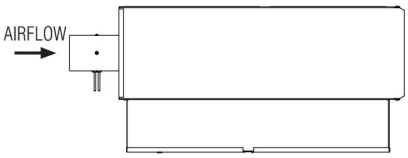
OR - Top View Orientation- Controls Location

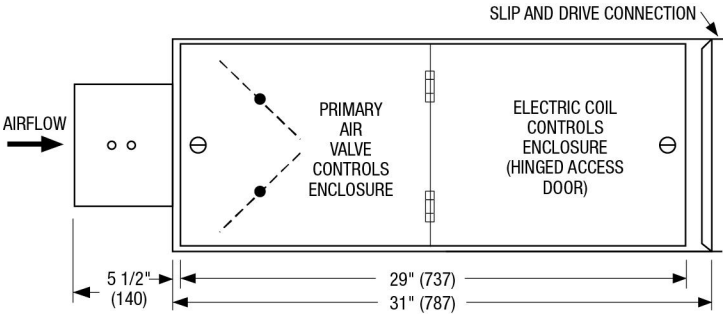


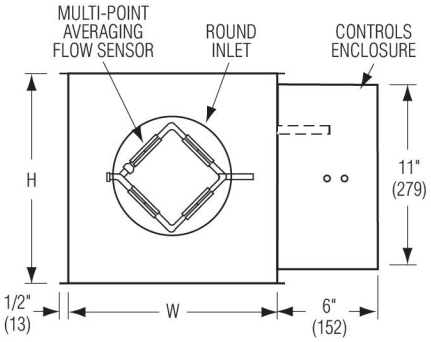
Right Hand Controls Location

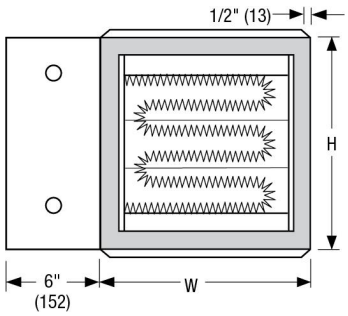
Project: Project Kevlar **Date:** 2/5/2025
Engineer: **Version No:**
Contractor:

Dimensions are in inches (mm)

Items: 11, 12; Tags: VAV11; VAV12







Right-hand controls location shown
*Controls Enclosure optional with field mounted controls

DIMENSIONAL DATA

Unit Size	Min - Max Airflow Range cfm (l/s)	Width (W)	Height (H)	Inlet Size
10	215 – 1840 (101 – 868)	14 (356)	12 1/2 (318)	9 7/8 (251) Round

FEATURES

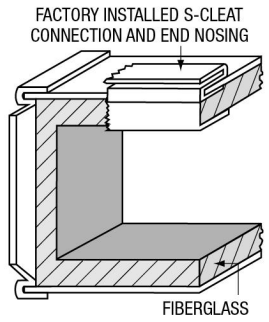
- 16 ga. (1.61) corrosion-resistant steel inclined opposed blade damper with extruded PVC seals. 45° rotation, CW to close. Tight close-off. Damper leakage is less than 2% of the terminal rated airflow at 3" w.g. (750 Pa)
- 1/2" (13) dia. plated steel drive shaft. An indicator mark on the end of the shaft shows damper position
- Multi-point averaging sensor. Supplied with balancing tees
- Electric Coil is mounted in an integral attenuator section
- Class A 80/20 Ni/Cr wire
- High performance ceramic insulators
- 24Vac Class II control transformer
- Hinged door control enclosure
- Positive pressure air proving switch

Project:	Project Kevlar	**Date:**	2/5/2025
Engineer:		**Version No:**	
Contractor:			

Dimensions are in inches (mm)

• Primary auto-reset high limit thermal cut-out (one per coil in control circuit)
• Secondary manual reset high limit thermal cut-outs (one per element)
• Magnetic contactor per stage
• Damper Actuator: Not Provided
• NB - Controls: By Others (Field Mounted)
• OR - 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction, right hand (determined when looking in the direction of airflow)
• QD2 - Transformer: 480/24V
• FDD - 3/4" (19) Dual Density Fiberglass Liner
• FN - Full NEMA 1 type 24V Controls Enclosure
• 4803 - Electric Coil: 480 volt/3 phase/4-wire
• 3STG - Electric Coil: 3 Stage
• BB - Door-Interlocking disconnect switch

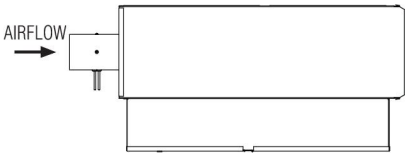
FDD - Dual Density Fiberglass Liner



• 3/4" (19) thick dual density insulation, minimum 1.5 lb./cu.ft (24 kg/m3) density with exposed edges coated to reduce air erosion

Meets requirements:
• UL 181 & 723
• NFPA 90A & 90B
• ASTM E 84 & C 1071
• CAN/ULC S102-M88

OR - Top View Orientation- Controls Location



Right Hand Controls Location

Project: Project Kevlar **Date:** 2/5/2025
Engineer: **Version No:**
Contractor:

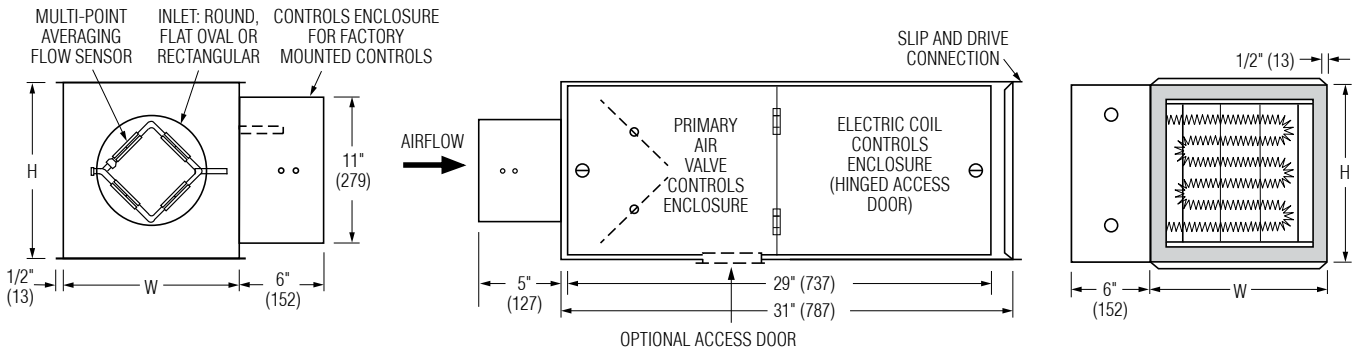
Dimensions are in inches (mm)

Nailor® Industries Inc.

SINGLE DUCT TERMINAL UNIT WITH ELECTRIC REHEAT

DIGITAL CONTROLS • PRESSURE INDEPENDENT

MODEL: D30RE



Dimensional Data

Unit Size	Min.– Max. Airflow Range* cfm (l/s)	W	H	Inlet Size
4	25 – 225 (12 – 106)	10 (254)	10 (254)	3 7/8 (98) Round
5	45 – 400 (21 – 189)	10 (254)	10 (254)	4 7/8 (124) Round
6	65 – 550 (31 – 260)	10 (254)	10 (254)	5 7/8 (149) Round
7	95 – 800 (45 – 378)	12 (305)	12 1/2 (318)	6 7/8 (175) Round
8	125 – 1100 (59 – 519)	12 (305)	12 1/2 (318)	7 7/8 (200) Round
9	165 – 1400 (78 – 661)	14 (356)	12 1/2 (318)	8 7/8 (225) Round
10	215 – 1840 (101 – 868)	14 (356)	12 1/2 (318)	9 7/8 (251) Round
12	290 – 2500 (137 – 1180)	18 (457)	12 1/2 (318)	12 15/16 x 9 13/16 (329 x 249) Oval
14	360 – 3125 (170 – 1475)	24 (610)	12 1/2 (318)	16 1/16 x 9 13/16 (408 x 249) Oval
16	430 – 3725 (203 – 1758)	28 (711)	12 1/2 (318)	19 3/16 x 9 13/16 (487 x 249) Oval
24 x 16	960 – 8330 (453 – 3931)	38 (965)	18 (457)	23 7/8 x 15 7/8 (606 x 403) Rect.

C ETL US LISTED Intertek

AHRI CERTIFIED™ www.ahridirectory.org VAV Terminals AHRI Standard 880

SSI Listed

***** Min & Max airflow limits are based on .02" w.g. (5 Pa) & 1.5" w.g. (373 Pa), respectively, differential pressure signal from Diamond Flow Sensor.

Standard Features:

• 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction.

• 16 ga. (1.63) corrosion-resistant steel inclined opposed blade damper with extruded PVC seals (single blade on size 4, 5, 6). 45° rotation, CW to close. Tight close-off. Damper leakage is less than 2% of the terminal rated airflow at 3" w.g. (750 Pa).

• 1/2" (13) dia. plated steel drive shaft. An indicator mark on the end of the shaft shows damper position.

• Multi-point averaging Diamond Flow Sensor. Aluminum construction. Supplied with balancing tees.

• Rectangular discharge with slip and drive cleat duct connection.

• Full NEMA 1 type low voltage controls enclosure for factory mounted controls.

• 3/4" (19), dual density insulation, exposed edges coated to prevent air erosion. Meets the requirements of NFPA 90A and UL 181.

• Electric Coil is mounted in an integral plenum section.

• 24 VAC Control transformer.

• Right-hand controls location is standard (shown) when looking in direction of airflow. Optional left hand controls mounting is available.

Digital Controls:

❑ Factory mounted (supplied by others)
❑ Field mounted (supplied by others)
❑ Nailor EZvav

See separate submittal.

Options and Accessories:

❑ Steri-liner.
❑ Fiber-free liner.
❑ Steri-liner + Perforated metal liner.
❑ Perforated metal liner.
❑ Solid metal liner.
❑ Fiberglass liner.
❑ 1" (25) liner.
❑ Low temperature construction.
❑ Round/Oval discharge collar.
❑ FMI Removable insert type Flow Sensor.
❑ 20 ga. (1.00) construction.
❑ Dust tight enclosure seal.
❑ Bottom access door.
❑ 24 VAC Control transformer.
❑ Hanger brackets.
❑ Ultra low leakage casing.
❑ Controls enclosure for field mounted controls.

Seismic Certification:

❑ Seismic Source International (Standard)
❑ HCAI (formerly OSHPD, California)
❑ Special Features: _____ .

Electric Coil Features, Options and Accessories: See page 2 of 2.

SCHEDULE TYPE:				
PROJECT: Project Kevlar	Page 1 of 2. Dimensions are in inches (mm).			
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**2 - 27 - 24**	**3000**	**11 - 3 - 23**	**D30RE-1**

Nailor® Industries Inc.

SINGLE DUCT TERMINAL UNIT WITH ELECTRIC REHEAT

DIGITAL CONTROLS • PRESSURE INDEPENDENT

MODEL: D30RE

Nailor manufactures its own electric heating coils. They have been specifically designed and tested for use with variable air volume single duct terminal units.

All terminals with electric heat have been tested and ETL listed as an assembly, eliminating the need to mount coils a minimum of 36" (914) downstream or having to ship a bulky length of ductwork when coils are to be supplied mounted on the terminal.

Nailor electric coils are factory mounted as an integral part of the terminal unit in an insulated extended plenum section. Total length of the casing including heater terminal is only 31" (787), providing a compact, easy to handle unit. Freight costs are therefore also reduced. The unique inclined opposed blade damper design provides improved and more even airflow over the coil elements compared with round butterfly damper designs, which helps to minimize air stratification, avoid nuisance tripping of the thermal cut-outs and maximize heat pick-up.

Electric Coil Limitations

Unit Size	Heating Range* cfm (l/s)	Maximum kW									
		Single Phase						Three Phase			
		120V	208V	220V	240V	277V	347/480V	208V	380V	480V	600V
4	25 – 225 (12 – 106)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
5	45 – 400 (21 – 189)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
6	65 – 550 (31 – 260)	5.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
7	95 – 800 (45 – 378)	5.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
8	125 – 1100 (59 – 519)	5.5	9.5	10.5	11.0	13.0	13.0	13.0	13.0	13.0	13.0
9	165 – 1400 (78 – 661)	5.5	9.5	10.5	11.0	13.0	16.0	16.0	16.0	16.0	16.0
10	215 – 1840 (101 – 868)	5.5	9.5	10.5	11.0	13.0	16.5	17.0	21.0	21.0	21.0
12	290 – 2500 (137 – 1180)	5.5	9.5	10.5	11.0	13.0	16.5	17.0	24.5	30.0	30.0
14	360 – 3125 (170 – 1475)	5.5	9.5	10.5	11.0	13.0	16.5	17.0	24.5	31.0	38.5
16	430 – 3725 (203 – 1758)	5.5	9.5	10.5	11.0	13.0	16.5	17.0	24.5	31.0	38.5
24 x 16	960 – 8330 (453 – 3931)	5.5	9.5	10.5	11.0	13.0	16.5	17.0	24.5	31.0	38.5

C ETL US LISTED

Intertek

Tested and approved to the following standards:

ANSI/UL 1996, 1st. ed.

CSA C22.2 No. 155-M1986.

* Minimum airflow must be the greater of the air volume listed or 70 cfm per kilowatt (33 L/s/kW).

Selection Guidelines:

The table above provides a general guideline as to the voltages and maximum kilowatts available for each terminal unit size. Up to three stages of heat are available. A minimum of 0.5 kW/stage is required.

For optimum diffuser performance and maximum thermal comfort, ASHRAE recommends that discharge temperatures do not exceed 15°F (8°C) above room set point, as stratification and short circuiting may occur. ASHRAE Standard 62.1 limits discharge temperatures to 90°F (32°C) or increasing the ventilation rate when heating from the ceiling. Never select kW to exceed a discharge temperatures of 120°F (49°C).

$$\Delta T \text{ (Air Temp. Rise, °F)} = \frac{kW \times 3160}{cfm}$$

The coils ranges listed are restricted to a maximum of 48 amps and do not require circuit fusing to meet NEC code requirements. A minimum of .1" w.g. (25 Pa) of downstream static pressure is required to ensure proper operation of the heater. To avoid possible nuisance tripping of the thermal cutouts due to insufficient airflow, a minimum airflow of 70 cfm (33 l/s) per kilowatt must be maintained. Check that desired minimum airflow is within recommended operating range.

Standard Features:

- Primary auto-reset high limit thermal cut-out (one per coil in control circuit).
- Secondary manual reset high limit thermal cut-outs (one per element).
- Positive pressure air proving switch.
- Class A 80/20 Ni/Cr wire.
- Magnetic contactor per stage.
- Line terminal block.
- High performance ceramic insulators.
- ETL Listed as an assembly.
- Hinged door control enclosure.
- Slip and drive discharge connection.

Voltage:

Single phase, 50 Hz, 60 Hz.

❑ 120V ❑ 208V ❑ 240V

❑ 277V ❑ 347V ❑ 480V

❑ 220V (50 Hz)

Three phase, 50 Hz, 60 Hz.

❑ 208V ❑ 480V ❑ 600V

❑ 380V (50 Hz)

❑ _____ .

Coil Options and Accessories:

❑ SCR control.

❑ SCR w/discharge temp. control.

❑ Toggle type disconnect switch.

❑ Door interlock disconnect switch.

❑ Mercury contactors.

❑ Quiet type contactors.

❑ Power circuit fusing.

❑ Dust tight construction.

❑ Special Features:

_____ .

SCHEDULE TYPE:				
PROJECT: Project Kevlar				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**2 - 27 - 24**	**3000**	**11 - 3 - 23**	**D30RE-1**

Dimensions are in inches (mm).