

The three-blade design of the AVD3 reduces weight, friction, and raw materials, which in turn minimizes the strain on the building, your energy consumption, and your budget. But can three blades do the job? Yes! Just like a wind turbine, we designed the AVD3 to be the optimal balance between weight, materials, and efficiency.



STANDARD FEATURES

- Direct Drive motor
- Clearcoat anodized airfoil blades with centrifugal cooling
- Forward, reverse, variable speed
- Rated for indoor and outdoor use*
- Capable of Building Automation Integration (with AirLynk upgrade) and fire alarm
- Digital wall controller with fault code access
- Safety Components: safety cable, Universal Mount with guy wires, blade retainer links



STEP 1: POWER UNIT

Item #	Options	Qty
M300-0025-MA	8-14 ft AVD3 Power Unit, .75 HP Equivalent	
M300-0035-MA	16-24 ft AVD3 Power Unit, 1 HP Equivalent	

STEP 2: BLADES

Item #	Diameter	Qty
60-30008-00	8 ft / 2.44 m	
60-30010-00	10 ft / 3.05 m	
60-30012-00	12 ft / 3.66 m	
60-30014-00	14 ft / 4.27 m	
60-30016-00	16 ft / 4.88 m	
60-30018-00	18 ft / 5.49 m	
60-30020-00	20 ft / 6.10 m	
60-30024-00	24 ft / 7.32 m	

STEP 3: VOLTAGE/PHASE

Item #	Options	Qty
33-21010-00	208-240V Single Phase, 50/60 Hz AVD3 DROP ENCL (for use with Universal Mount)	
33-21030-00	208-240V Three Phase, 50/60 Hz AVD3 DROP ENCL (for use with Universal Mount)	
33-41030-00	480V Three Phase, 50/60 Hz AVD3 DROP ENCL (for use with Universal Mount)	
35-21010-00	208-240V Single Phase, 50/60 Hz AVD3 SCHNEIDER CONT PNL (for use with Rapid Mount Industrial)	
35-21030-00	208-240V Three Phase, 50/60 Hz AVD3 SCHNEIDER CONT PNL (for use with Rapid Mount Industrial)	
35-41030-00	480V Three Phase, 50/60 Hz AVD3 SCHNEIDER CONT PNL (for use with Rapid Mount Industrial)	

STEP 4: MOUNTING

Item #	Options	Qty
60-50150-00	AVD Universal Mount with I-beam Hardware Kit	
60-40049-00	Glulam Hardware Kit	
60-50136-00	Rapid Mount Industrial with I-Beam Hardware Kit (requires drive in control panel, offboard)	

STEP 5: CONTROLS

Item #	Description	Qty
30-90308-00	Digital Remote Assembly (Standard)	
30-04006-00	Controller 4	
30-04007-00	Controller 4 + Single Temperature Sensor	
30-04030-00	Controller 30	
30-10012-00	AirLynk - BacNet	
30-10011-00	AirLynk - LonWorks	
30-04030-02	Dual Control Enabled Controller 30 (requires AirLynk-BacNet)	

*Motor unit only, consult with a MacroAir sales specialist for best practice

** MacroAir Technologies, Inc. certifies that the model AVD3 (diameters 8'-24') shown herein are licensed to bear the AMCA seal. The ratings shown are based on the tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.

STEP 6: STOCK DROP LENGTHS

Item #	Length (ft/in)*	Length (m)	Qty
51-X0200-02	2 ft**	0.61 m	
51-X0300-02	3 ft (Standard)	0.91 m	
51-X0400-02	4 ft	1.22 m	
51-X0500-02	5 ft	1.52 m	
51-X0600-02	6 ft	1.83 m	
51-X0700-02	7 ft	2.13 m	
51-X0800-02	8 ft	2.44 m	
51-X0900-02	9 ft	2.74 m	
51-X1000-02	10 ft	3.05 m	
51-Xftin-02	Customization fee		

* Lengths are +/- 1" depending on power unit selection/fan diameter.

X= substitute D for drops with UMH mount, F for drops with Rapid Mount Industrial (i.e. 51-F0500-02 describes a 5' drop for use with a Rapid Mount Industrial).

ft = length in **feet** (i.e. 04 for 4 feet, 10 for 10 feet)

in = length in **inches** (i.e. 05 for 5 inches, 10 for 10 inches)

**2 ft is the shortest allowed drop length for AVD3. Lengths shorter than the standard drop length are not recommended and will not work for some fan diameters. Consult MacroAir for more details.

DROP LENGTH is the distance from fan mounting point to the blades.

AirVolution-D3 fans can only be connected with a single-piece of custom length drop tube.

Measure the distance from the fan's mounting point down to the desired fan blade position and provide this information with the fan order to receive the correct custom drop length.

For custom drop lengths, order a length longer and MacroAir will cut it down to the requested length. Estimated lead time is 10 business days.

Do you have a custom color in mind? Custom powder coating is available for all our blades, mounts and drop lengths.

OPTIONAL: POWDER COATING

Item #	Diameter	Estimated Lead Time	Qty
60-30008-02	8 ft / 2.44 m	15 business days	
60-30010-02	10 ft / 3.05 m	15 business days	
60-30012-02	12 ft / 3.66 m	15 business days	
60-30014-02	14 ft / 4.27 m	15 business days	
60-30016-02	16 ft / 4.88 m	15 business days	
60-30018-02	18 ft / 5.49 m	15 business days	
60-30020-02	20 ft / 6.07 m	15 business days	
60-30024-02	24 ft / 7.32 m	15 business days	

For powder coating colors, please refer to Appendix A.



ADDITIONAL OPTIONS

Item #	Description	Qty
10-60200-00	AVD Fuse Disconnect*	

*IEC Compliance requires a fused disconnect switch. Fuse selection is input voltage specific, so fuses are not provided with purchase of a disconnect.

BASIC SPECIFICATIONS

AIRFOIL DIAMETER	8ft	10ft	12ft	14ft	16ft	18ft	20ft	24ft
Airfoil Style	7.375" Extruded Anodized Aluminum Airfoil							
Number of Airfoils	3							

PERFORMANCE

Max Speed	178 RPM	170 RPM	135 RPM	99 RPM	97 RPM	83 RPM	66 RPM	50 RPM
Recommended Spacing*	50 ft [15.2 m]	55 ft [16.8 m]	60 ft [18.3 m]	70 ft [21.3 m]	75 ft [22.9 m]	80 ft [24.4 m]	90 ft [27.4 m]	95 ft [29 m]
Max Affected Area	4,150 ft² [385 m²]	5,200 ft² [483 m²]	6,700 ft² [622 m²]	8,900 ft² [827 m²]	9,600 ft² [892 m²]	12,600 ft² [1,171 m²]	15,400 ft² [1,431 m²]	17,000 ft² [1,579 m²]
Sound Level dBA at Max Speed**	63	58	57	55	55	55	54	33
Carrier/Switching Frequency**	16,000Hz							

HANGING REQUIREMENTS

Hanging Weight	102.2 lbs [46.38 kg]	107.3 lbs [48.67 kg]	112.4 lbs [50.98 kg]	117.5 lbs [53.30 kg]	131.8 lbs [59.78 kg]	136.9 lbs [62.10 kg]	142.0 lbs [64.41 kg]	147.1 lbs [66.72 kg]
Max Torque	8 ft-lb [11 Nm]	16 ft-lb [22 Nm]	22 ft-lb [30 Nm]	25 ft-lb [34 Nm]	33 ft-lb [45 Nm]	36 ft-lb [49 Nm]	42 ft-lb [57 Nm]	40 ft-lb [55 Nm]
Max Thrust in Reverse	4 lbs [1.9 kg]	9 lbs [4.1 kg]	11 lbs [5.0 kg]	14 lbs [6.4kg]	18 lbs [8.2 kg]	20 lbs [9.1 kg]	22 lbs [10.0 kg]	18 lbs [8.2kg]

MOTOR AND DRIVE TRAIN

Motor Type	Gearless Direct Drive							
Equivalent Horsepower Rating	3/4 HP (8ft - 14ft) / 1.0 HP (16ft - 24ft)							
Operating Temp Range	16°F [-10C°] - 140 F° [60C°]							

MAX AMP DRAW

208-240V Single Phase	1.4A	2.6A	2.7A	2.7A	2.9A	3A	3.1A	2.3A
208-240V Three Phase	0.8A	1.3A	1.6A	1.7A	1.7A	1.7A	1.7A	1.2A
480V Three Phase	0.6A	0.9A	1.0A	1.0A	1.0A	1.0A	1.0A	0.7A

POWER AND CONTROLS

Power Source	Single Phase or Three Phase 208-240 VAC +/-5%, 50/60 Hz, Three Phase 480 VAC +/-5%, 50/60 Hz							
Control Options	Digital Touchpad, MacroAir Controller 4, Controller 30, AirLynk - BacNet							

INSTALLATION

Mounting Hardware	Universal Mount, Rapid Mount Industrial							
Drop Length	In addition to the standard drop length supplied, optional drop lengths are available in 1ft increments; all drop lengths require guy wires except when used with Rapid Mount Industrial							

RATINGS AND COMPLIANCE

Fire and Sprinkler	NFPA Compliant							
Outdoor Rating***	Rated for outdoor use							
Warranty	10 years mechanical (blades, hub, and frame), 7 years electrical (motor, controls, and remote), 1 year of labor coverage.							

*For spacing between fan units based on the dimensions of a specific space please refer to <https://macroairfans.com/airviz>.

**Sound testing taken with the sensor 5 ft above the ground and 20 ft from the center of the fan at 20 ft high. Carrier frequency will be audible to some listeners and is considered normal during operation. For more information on fan selection with regard to decible level and carrier frequency, please see page XXXX.

***Applicable to the fan unit only, does not include controller, control panel and accessories.



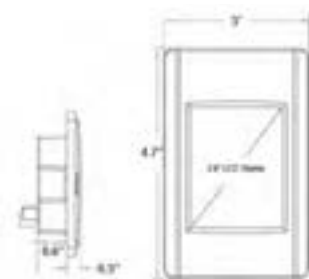
PERFORMANCE SPECIFICATIONS

Fan Diameter (Ft)	Fan Speed (% of max RPM)	Fan Speed (RPM)	Voltage/ Phase/ Frequency	Standby Power (Watts)	Electrical Input Power (Watts)	Airflow Rate (CFM)	CFEI 40	CFEI 100	Direction	Reverse Operation?
8	20	35.38	230/Single Phase/60Hz	6	48.09	5615.19	1.5	1.68	Forward	Yes
	40	71.01	230/Single Phase/60Hz		68.46	8220.68			Forward	Yes
	60	106.64	230/Single Phase/60Hz		110.82	15740.56			Forward	Yes
	80	142.45	230/Single Phase/60Hz		177.47	22910.32			Forward	Yes
	100	178.26	230/Single Phase/60Hz		302.38	28955.18			Forward	Yes
10	20	33.74	230/Single Phase/60Hz	6	54.19	4777.94	1.66	1.479	Forward	Yes
	40	67.71	230/Single Phase/60Hz		87.03	17734.02			Forward	Yes
	60	101.63	230/Single Phase/60Hz		163.15	28949.29			Forward	Yes
	80	134.81	230/Single Phase/60Hz		297.58	40008.54			Forward	Yes
	100	169.48	230/Single Phase/60Hz		547.13	50660.53			Forward	Yes
12	20	26.62	230/Single Phase/60Hz	6	53.01	9046.67	1.837	1.388	Forward	Yes
	40	53.76	230/Single Phase/60Hz		87.82	25273.03			Forward	Yes
	60	80.63	230/Single Phase/60Hz		171.57	40036.86			Forward	Yes
	80	75.46	230/Single Phase/60Hz		330.72	55256.96			Forward	Yes
	100	134.68	230/Single Phase/60Hz		638.20	69713.93			Forward	Yes
14	20	19.51	230/Single Phase/60Hz	6	44.04	1425.63	1.906	1.544	Forward	Yes
	40	39.33	230/Single Phase/60Hz		70.28	25865.40			Forward	Yes
	60	59.17	230/Single Phase/60Hz		126.88	42280.52			Forward	Yes
	80	78.92	230/Single Phase/60Hz		241.44	58561.71			Forward	Yes
	100	98.67	230/Single Phase/60Hz		434.25	75251.48			Forward	Yes
16	20	19.33	230/Single Phase/60Hz	6	54.50	15335.33	1.891	1.357	Forward	Yes
	40	38.95	230/Single Phase/60Hz		91.67	39545.21			Forward	Yes
	60	58.60	230/Single Phase/60Hz		180.74	61200.30			Forward	Yes
	80	78.07	230/Single Phase/60Hz		350.41	83384.88			Forward	Yes
	100	97.00	230/Single Phase/60Hz		684.09	104876.32			Forward	Yes
18	20	16.39	230/Single Phase/60Hz	6	53.12	17817.55	2	1.405	Forward	Yes
	40	32.95	230/Single Phase/60Hz		87.00	45635.74			Forward	Yes
	60	49.58	230/Single Phase/60Hz		168.67	70337.92			Forward	Yes
	80	66.08	230/Single Phase/60Hz		318.39	94305.04			Forward	Yes
	100	82.64	230/Single Phase/60Hz		620.56	119692.30			Forward	Yes
20	20	13.16	230/Single Phase/60Hz	6	47.55	16079.19	2.105	1.62	Forward	Yes
	40	26.52	230/Single Phase/60Hz		79.25	49292.86			Forward	Yes
	60	40.08	230/Single Phase/60Hz		148.22	77963.62			Forward	Yes
	80	53.58	230/Single Phase/60Hz		285.82	106186.57			Forward	Yes
	100	65.65	230/Single Phase/60Hz		514.42	135000.63			Forward	Yes
24	20	9.84	230/Single Phase/60Hz	6	48.84	21674.27	2.202	1.388	Forward	Yes
	40	19.65	230/Single Phase/60Hz		75.40	59144.25			Forward	Yes
	60	29.66	230/Single Phase/60Hz		140.83	94937.00			Forward	Yes
	80	39.73	230/Single Phase/60Hz		268.88	126192.12			Forward	Yes
	100	49.69	230/Single Phase/60Hz		502.45	157858.96			Forward	Yes

Digital Remote



- Standard on all MacroAir fan models (Except AirLegacy)
- Simple and intuitive control
- Easy ground-level troubleshooting and diagnostics



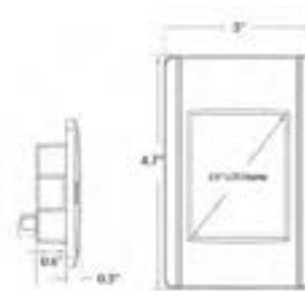
Features	Digital Touchpad Remote
Item #	30-90308-00
# Fans Controlled	1 fan
Display	2.8 TFT
Resolution	240x320x16 pixels
Backlight life time	20,000 hours
Backlight brightness	160 cd/m2
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6
Rating (front)	IP 40 / NEMA 1
Weight (incl. enclosure)	375 g
Communication Protocol	RS 485
Power Supply	24V from fan
Size (incl. enclosure)	91.2 x 135.5 x42.0
Operating Temperature	-4° to 158°F / -20° to +70°C
Storage Temperature	-22° to 176°F / -30° to +80°C

Note: Only one type of controller can be used when selecting Controller 4, Digital Remote Assembly or Analog Remote Assembly. AirLynk (BacNet) can be used as a stand alone, or paired with a Dual Control Enabled Controller 30 (see Dual Control page) or with Local Override Remotes for some fan models (see Local Override page)

Controller 4



- Available upgrade for all MacroAir fan models (Except AirLegacy)
- Control up to 4 fans from a single point
- Control fans individually, independent of speed & direction
- Simple and intuitive control
- Temperature sensor (optional upgrade) starts and stops the fan(s)
- 3-Year-Warranty



Features	Controller 4	Controller 4 with temperature sensor
Item #	30-04006-00	30-04007-00
# Fans Controlled	Up to 4 fans, individually	
Display	2.8 TFT	
Resolution	240x320x16 pixels	
Backlight life time	20,000 hours	
Backlight brightness	160 cd/m2	
Shock	IEC 60068-2-27	
Vibration	IEC 60068-2-6	
Rating (front)	IP 40 / NEMA 1	
Weight (incl. enclosure)	375 g	
Communication Protocol	RS 485	
Power Supply	24V from fan	
Size (incl. enclosure)	91.2 x 135.5 x42.0	
Operating Temperature	-4° to 158°F / -20° to +70°C	
Storage Temperature	-22° to 176°F / -30° to +80°C	

Note: Only one type of controller can be used when selecting Controller 4, Digital Remote Assembly or Analog Remote Assembly. AirLynk (BacNet) can be used as a stand alone, or paired with a Dual Control Enabled Controller 30 (see Dual Control page) or with Local Override Remotes for some fan models (see Local Override page)

Controller 30



STANDARD FEATURES

- Available upgrade for all MacroAir fan models (except AirLegacy)
- Provides a single point for individual or group fan control
- Enables run time, scheduling, grouping, and fan naming
- Secure remote login to controller via smart device or computer
- Password protection capabilities for scheduling, naming



Features	Controller 30
Item #	30-04030-00
# Fans Controlled	30 fans
Display	10.1" (16:9), TFT-LCD with LED backlight
Resolution	1024x600 pixels
Backlight life time	50000 hours
Backlight brightness	500 cd/m2
Shock	15g, half-sine, 11ms according to IEC60068-2-27
Vibration	1g, according to IEC 60068-2-6, Test Fc
Sealing front	IP65, NEMA 4X/ 12 and UL Type 4X/ 12
Sealing back (excl. enclosure)	IP20
Weight (incl. enclosure)	10 lb / 4.5 kg
Communication Protocol	MODBUS RS485
Ethernet Port	2x100 Mbit
USB Port	2
Power Supply	110-240 V
Size (incl. enclosure)	10.7 x 13.0 x 3.7 in (W x H x D) / 272 x 330 x 84 mm (W x H x D)
Operating Temperature	14° to 140°F / -10° to +60°C
Storage Temperature	-4° to 158°F / -20° to +70°C
Languages	English, Spanish, French, Malay

Note: Only one type of controller can be used when selecting Controller 4, Digital Remote Assembly or Analog Remote Assembly. AirLynk (BacNet) can be used as a stand alone, or paired with a Dual Control Enabled Controller 30 (see Dual Control page) or with Local Override Remotes for some fan models (see Local Override page)

Gives the ability to control your fans through BACnet® (MS/TP or IP) and LonWorks®.

BACnet and LonWorks are both protocols used to automate or manage buildings systems (commonly called a BMS or BAS). Our fans use MODBUS to communicate and the correct use of AirLynk, MacroAir's interface, will allow the integration of our fans into a BMS/BAS. A BMS/BAS enables you to run the fans in conjunction with your HVAC system to help save energy costs.

Our proven solution is AirLynk, an external, high-performance building automation multi-protocol interface that is pre configured to communicate between any MacroAir fan and various building automation protocols including: BACnet®MS/TP, BACnet/IP, Modbus TCP/IP, and LonWorks®.

Successful integration of any MacroAir fan with a BMS/BAS is dependent upon following these guidelines:

- Identify the BMS and its protocol before the purchase order is placed. This allows the fans to be pre programmed, dramatically reducing installation errors and integration time.
- Strictly adhere to the included installation manual to eliminate issues that will occur from wrong types of wire, improper wire terminations or wire routing.
- We highly recommend engaging our Controls Engineers to visit the site for fan start-up to ensure a smooth and successful integration. Our experience has found that many installers are unfamiliar with the subtle but critical differences between BMS systems, interfaces, fan models, connection methods and best practices. For a nominal fee plus travel expenses, one of our Controls Engineers can be on site to ensure a smooth and successful start-up. For more information about this service, please inquire with our Technical Services Department.

To Order BMS enabled fans and AirLynk please do the following:

- Identify the BMS network
- Discuss your network with MacroAir's Control Engineers
- Order one AirLynk to connect up to 30 fans

Item #	Description
30-10012-00	AirLynk - BACnet, (Works on all Fan Lines, except AirLegacy), Up to 30 Fans per AirLynk
30-10011-00	AirLynk - LonWorks, (Works on all Fan Lines, except AirLegacy), Up to 30 Fans per AirLynk
30-90315-00	Local Override Remote (each fan) for BMS (Works on all Fan Lines, except AirLegacy and AVD 370)
30-04030-02	Dual Control Enabled Controller 30 (Works on all Fan Lines, except AirLegacy) Up to 30 Fans per AirLynk
10-80632-00	Repeater (required for some older model fans; contact your sales rep for details)

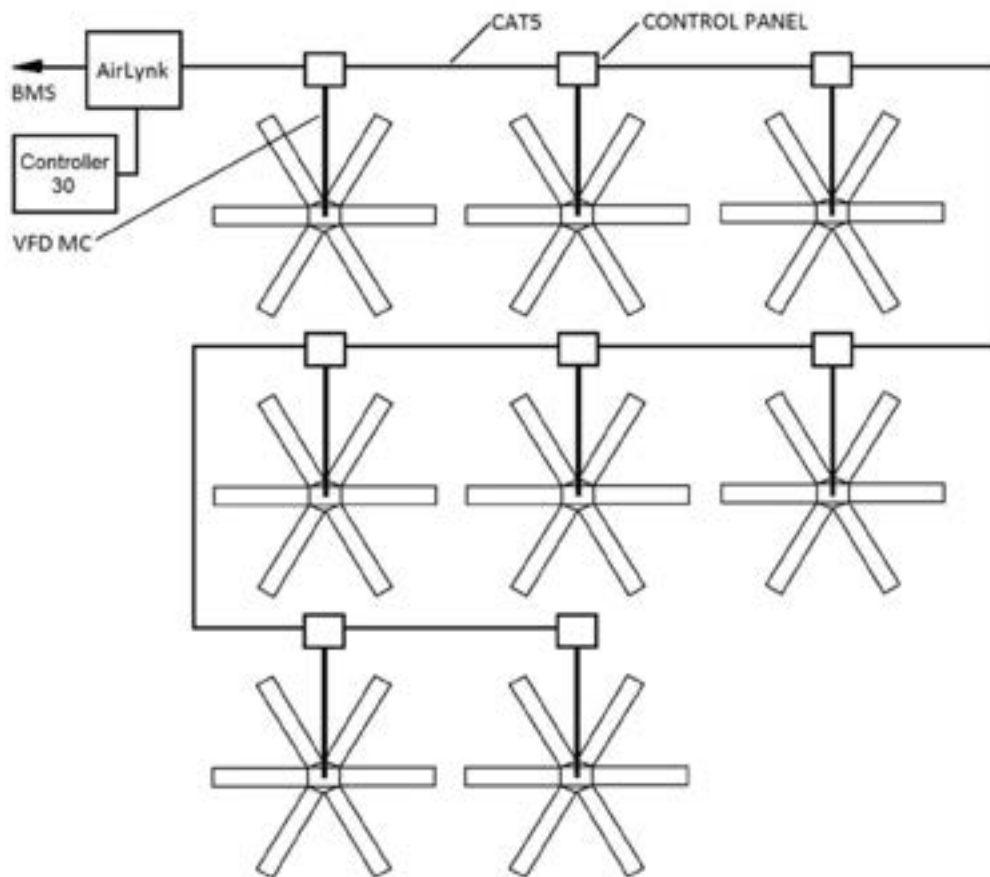
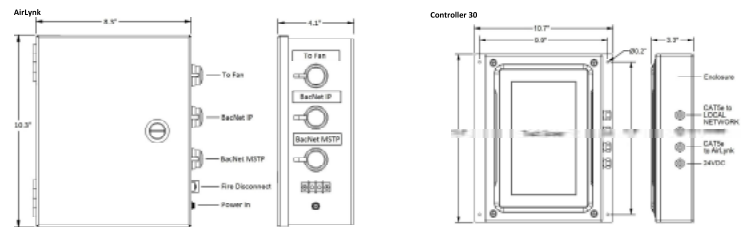
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Dual Control for BMS Integration



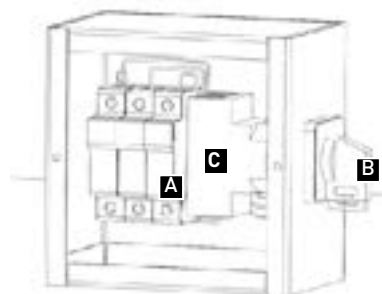
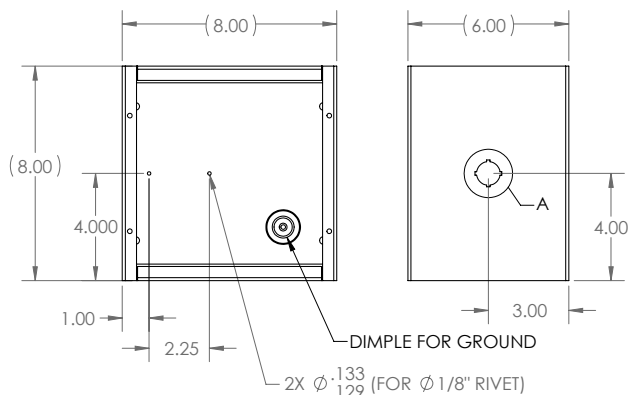
STANDARD FEATURES

- Seamless integration of a building management system and local fan network
- Fans take last known command, be it from the BMS, the Dual Control enabled Network Controller 30 screen(s), or VNC enabled smart devices
- Provides a single point of local control of up to 30 fans
- Enables grouping and fan naming
- Password protection capabilities for operation, naming, and grouping
- Requires AirLynk (BacNet) and Dual Control Enabled Controller 30*



MacroAir Fused Disconnect

To meet national and international codes (such as the NEC and IEC directives), all HVLS fans need a means of disconnect on the incoming power for emergency and maintenance purposes, typically within line of site of the fan. MacroAir HVLS fan models with an off-board control panel include this disconnect within the panel enclosure. Models with a VFD enclosure mounted directly on the fan require an additional disconnect. MacroAir offers an optional disconnect package for AVD fans, but fuses are not included as they depend on the field's power supply. Recommendations for fuse sizing and sourcing are found in each fan model's installation manual.



Part Number 10-60200-00	AVD Fuse Disconnect Switch
Enclosure Dimensions	8" x 6" x 8"
(A) Fuse Pole Block	IEC 60269-2 COMPLIANT (USED ON 480V 3PH; 240V 3PH)
(B) Rotary Handle, ON/OFF	Lock-out/Tag-out capable, replacement part number 10-50716-00
(C) Disconnect Switch	SCHNEIDER VLS3P025D1, Rohs Compliant
(D) Fuses	Class CC or gG Fast Acting Fuses (Not provided, reference fan installation manual for recommended size)

NOTE: Ensure that there is no power when installing this component.

Means for disconnection with contact separation at least 3mm.

4.1.1: Mount the fuse disconnect switch outside of the swept area of the fan airfoils.

4.1.2: Wire the power cable from the fan to the bottom of the fuse block. Then wire the incoming power source to the disconnect switch.

4.1.3: In the diagram below, a three phase system is shown. For a single phase system, phase 1 would be connected to L1, neutral would be connected to L2, and L3 would be left not terminated.

