X Series

This fan boasts a bullet proof, industrial-grade, direct drive motor/controller platform more powerful and far superior than any fan before it. The X-Series is a true workhorse that can endure the harshest industrial environments without breaking a sweat, while the silent operation and sleek design features make it an excellent choice for even the chicest of spaces.

STANDARD FEATURES

- Direct Drive motor, rated for indoor/outdoor use*
- Clearcoat anodized airfoil blades
- Forward, reverse, variable speed
- Variable Frequency Drive – 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

STANDARD DROP LENGTH
(8'-18' FAN) (20'-24' FAN)
[0.90M]   [0.94M]
35.5"   37"

c(UL)us LISTED

STEP 1: POWER UNIT

Item #	Options	Qty
MX00-0085-MA	14-18 ft Power Unit, 1.25 HP Equivalent	
MX00-0185-MA	20-24 ft Power Unit, 2.3 HP Equivalent	

STEP 2: DIAMETERS

Item #	Diameter	Qty
60-10014-00	14 ft / 4.27 m	
60-10016-00	16 ft / 4.88 m	
60-10018-00	18 ft / 5.49 m	
60-10020-00	20 ft / 6.07 m	
60-10024-00	24 ft / 7.32 m	

STEP 3: VOLTAGE

Item #	Options	Qty
22017-MA	208-240V Single Phase, 50/60 Hz	
22038-MA	208-240V Three Phase, 50/60 Hz	
42039-MA	480V Three Phase, 50/60 Hz	

STEP 4: MOUNTING

Item #	Options	Qty
60-50135-00	X Series Universal Mount: I-beam Hardware Kit (Standard)	
60-50136-00	Rapid Mount Industrial w/ I-beam Hardware Kit	
60-40041-00	Glulam Hardware Kit (for Universal Mount)	

STEP 5: CONTROLS

Item #	Description	Qty
30-90308-00	Digital Remote Assembly (Standard)	
30-04006-00	Controller 4	
30-04007-00	Controller 4 + Temperature Sensor	
30-04030-01	Controller 30	
30-10012-01	AirLynk - BacNet	
30-10011-00	AirLynk - LonWorks	
30-90315-00	Local Override Remote (requires AirLynk-BacNet)	
30-04030-02	Dual Control Enabled Controller 30 (requires AirLynk-BacNet)	
30-04009-00	AirEffect (one per zone, up to 4 per Controller 30)**	

*Motor unit only
**Only compatible with Controller 30, pricing is per zone. Not compatible with Dual Control option

X Series

STEP 6: STOCK DROP LENGTHS

Item #	Length (ft/in)	Length (m)	Qty
51-60300-0x	3 ft (Standard)*	0.91 m	
51-60400-0x	4 ft	1.22 m	
51-60500-0x	5 ft	1.52 m	
51-60600-0x	6 ft	1.82 m	
51-60700-0x	7 ft	2.13 m	
51-60800-0x	8 ft	2.44 m	
51-60900-0x	9 ft	2.74 m	
51-61000-0x	10 ft	3.05 m	
(51-6ftin-0x)	Customization fee		

x = 2 for AVD Universal Mount,
  or 3 for 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)
* 3 ft is the shortest allowed drop for the X-Series

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

X Series fans can only be connected with a single-piece of custom length extension.

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.

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
60-10014-02	14 ft / 4.27 m	15 business days	
60-10016-02	16 ft / 4.88 m	15 business days	
60-10018-02	18 ft / 5.49 m	15 business days	
60-10020-02	20 ft / 6.07 m	15 business days	
60-10024-02	24 ft / 7.32 m	15 business days	
Special Finishes			
Mounting hardware & drop length	All Diameters	15 business days	

For powder coating colors, please refer to Appendix A.

X Series

BASIC SPECIFICATIONS

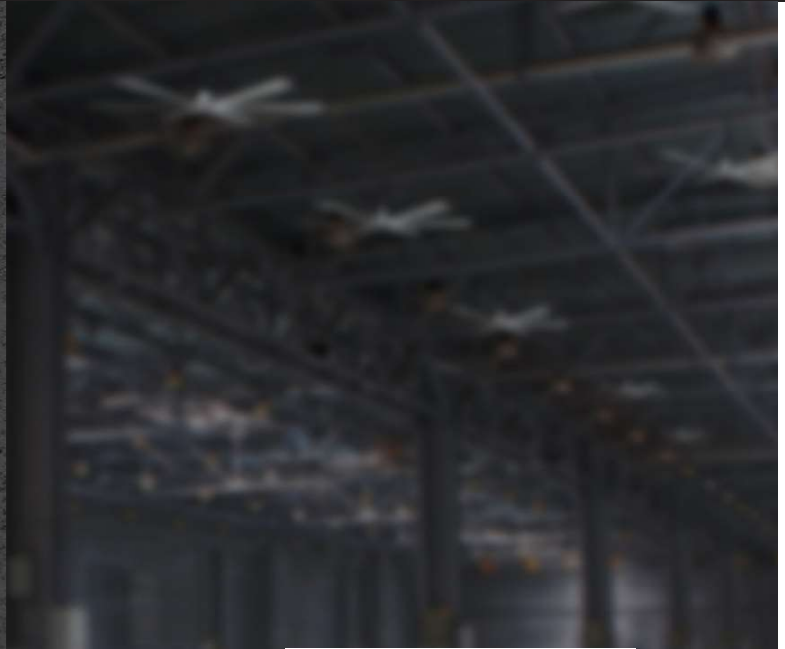| AIRFOIL DIAMETER	14ft	16ft	18ft	20ft	24ft
Airfoil Style	7.375'' Extruded Anodized Aluminum Airfoil				
Number of Airfoils	6				
PERFORMANCE					
Max Speed	110 RPM	90 RPM	74 RPM	75 RPM	60 RPM
Recommended Spacing*	70 ft [21.3 m]	85 ft [25.9 m]	90 ft [27.4 m]	100 ft [30.5 m]	110 ft [33.5 m]
Max Affected Area	10,000 ft^2 [929 m^2]	12,000 ft^2 [1,115 m^2]	14,000 ft^2 [1,301 m^2]	18,000 ft^2 [1,673 m^2]	20,000 ft^2 [1,858 m^2]
Sound Level dBA at Max Speed**	58	58	58	61	61
HANGING REQUIREMENTS					
Hanging Weight	183 lbs [83.01 kg]	192 lbs [87.10 kg]	201 lbs [91.17 kg]	242 lbs [109.77 kg]	260 lbs [117.93 kg]
Max Torque	43 lbf/ft [58 Nm]	40 lbf/ft [54 Nm]	58 lbf/ft [79 Nm]	88 lbf/ft [119 Nm]	126 lbf/ft [171 Nm]
Max Thrust in Reverse	14 lbs [6.4 kg]	15 lbs [6.8 kg]	21 lbs [9.5 kg]	31 lbs [14.1 kg]	44 lbs [20 kg]
MOTOR AND DRIVE TRAIN					
Motor Type	Radial Flux PMAC motor				
Equivalent Horsepower Rating	1.25 HP (8-18ft) / 2.3 HP (20-24ft)				
Operating Temp Range	16°F [-10C°] - 122 F° [50C°]				
MAX AMP DRAW					
208-240V Single Phase	9A	8.7A	8.4A	10.5A	13A
208-240V Three Phase	5.8A	6.1A	5A	6.2A	8.7A
400-480V Three Phase	2A	2A	2A	2.5A	3A
POWER AND CONTROLS					
Power Source	Single Phase 208-240 VAC 50/60 Hz / Three Phase 208-240 VAC 50/60 Hz / Three Phase 480 VAC 50/60 Hz				
Control Options	Digital Touchpad, MacroAir Controller 4, Controller 30, AirLynk - BacNet / LonWorks				
INSTALLATION					
Mounting Hardware	Universal Mount Hardware				
Extension	Optional extensions are available in 1ft increments; all drop lengths with Universal Mounting Hardware require guy wires				
RATINGS AND COMPLIANCE					
Fire and Sprinkler	NFPA Compliant				
Wash Down Duty Rating***	IP65				
Certifications	UL 507				

*For spacing between fan units based on the dimensions of a specific space please refer to https://macroairfans.com
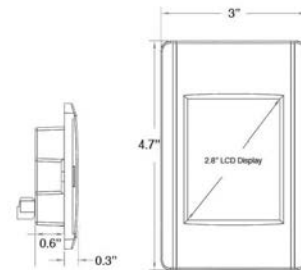
**Sound testing taken with the sensor 5 ft above the ground and 20 ft from the center of the fan at 20 ft high.

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

MacroAir Controllers - Digital Remote

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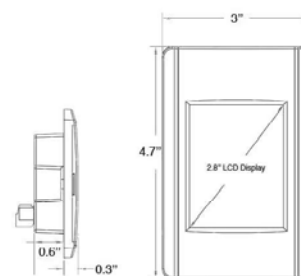- Easy ground-level troubleshooting and diagnostics

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	-4º to 158ºF / -20º to +70ºC
Storage Temperature	-22º to 176ºF / -30º to +80ºC

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)

MacroAir Controllers - Controller 4

- Available upgrade for all MacroAir fan models (Except Z Series)
- 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)

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)

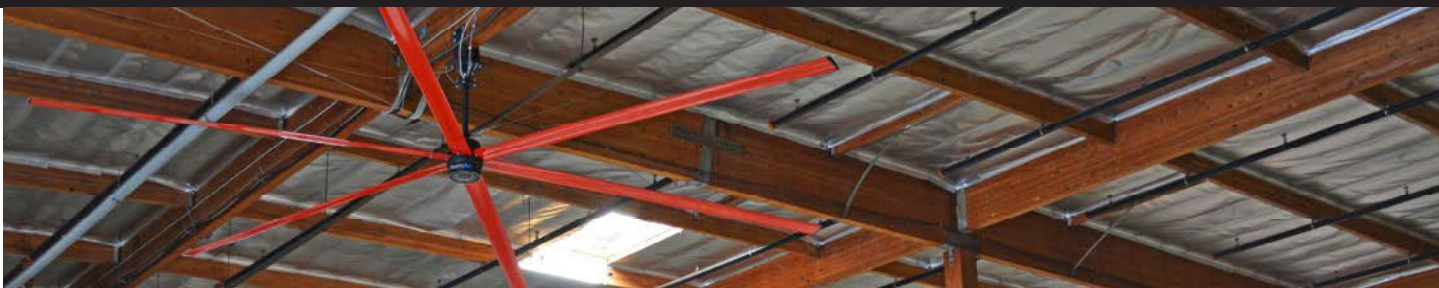# MacroAir Controllers - Controller 30

STANDARD FEATURES

- Available upgrade for all MacroAir fan models (except Z Series)
- 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
- Optional auto mode available with AirEffect
- Password protection capabilities for scheduling, naming, and temperature/humidity (with upgrade to AirEffect)

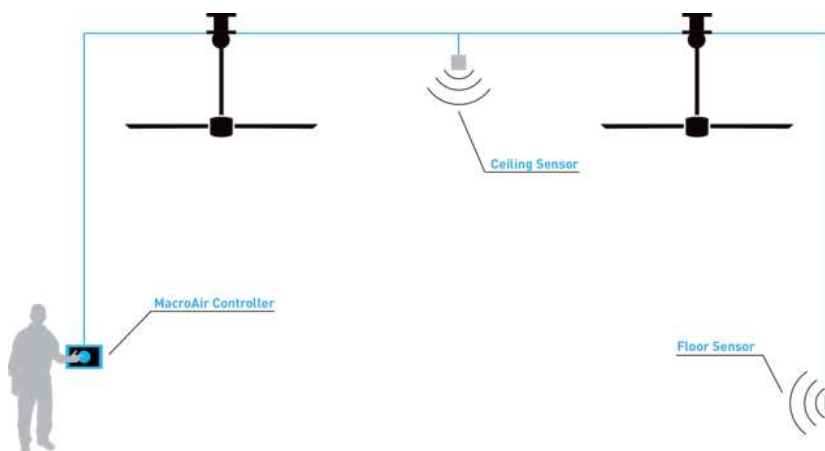| Features	Controller 30
Item #	30-04030-00
# Fans Controlled	30 fans
Display	10.1" (16:9), TFT-LCD with LED backlight
Resolution	1024x600 pixels
Backlight life time	50000 hours
Backlight brightness	500 cd/m2
Shock	15g, half-sine, 11ms according to IEC60068-2-27
Vibration	1g, according to IEC 60068-2-6, 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)

AirEffect Temperature Control

STANDARD FEATURES

AirEffect (only available with Controller 30) is an optional control system that senses and automatically maintains a desired room temperature. AirEffect gages the heat index by measuring the temperature and humidity at the ceiling and floor. To achieve the desired temperature, AirEffect takes the heat index and calculates the fan's ideal operating speed and direction and runs the fans accordingly. Simply setup AirEffect to the desired temperature range and enjoy a consistently comfortable environment.

- Senses and maintains desired room temperature
- Measurers temperature and humidity at two points (ceiling & floor)
- Calculates heat index through temperature and humidity calculations
- Runs fans in reverse or forward direction in response to heat index
- Compatible with all fans (except Z Series)
- Independent, external sensors allow the controllers to be mounted in a different room than the fans and sensors
- Password protected screen for scheduling, naming, and temperature set point

Features	AirEffect (up to 4 zones)
Item #	30-04009-00
Number of Sensors	2 (1 floor & 1 ceiling)
Measured temperatures	-40 through +125 °C (±2 to ±4 %)
Measured humidity	0 through 100% RH (±2 to ±4 %)
Communication Protocol	MODBUS RS485

*Controller not included

AirLynk BMS Integration

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
- Order one Repeater per every five AirVolution-D 370 fans connected to AirLynk
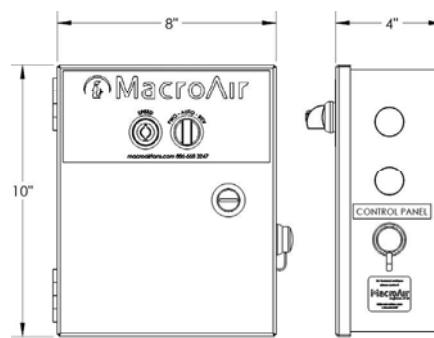
Item #	Description
30-10010-00	AirLynk – BACnet, (Works on all Fan Lines, except Z Series), Up to 30 Fans per AirLynk
30-10011-00	AirLynk – LonWorks, (Works on all Fan Lines, except Z Series), Up to 30 Fans per AirLynk
30-90315-00	Local Override Remote (each fan) for BMS (Works on all Fan Lines, except Z Series and AVD 370)
30-04030-02	Dual Control Enabled Controller 30 (Works on all Fan Lines, except Z Series) Up to 30 Fans per AirLynk
10-80632-00	Repeater (Only required for AirVolution-D 370 Fans; 1 for every 5 fans)

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)
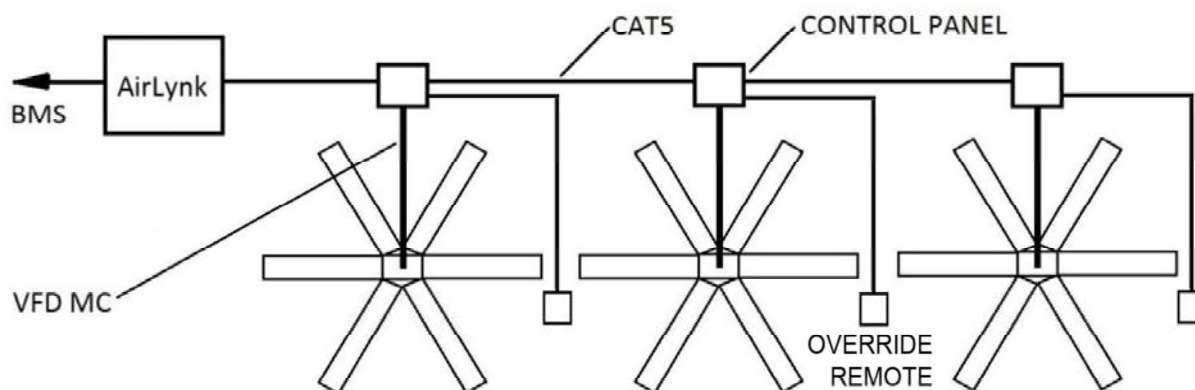
Local Override Remote for BMS Integration

- Works with X Series, Y Series, AVD 780, AVD 550, and AVD3 fans when paired with AirLynk
- Allows local user to control speed and direction when in FWD or REV Mode
- Allows Building Management System to control speed and direction when in Auto Mode
- Takes last known command from BMS when returned to Auto Mode
- Simple and intuitive control
- 3-Year-Warranty

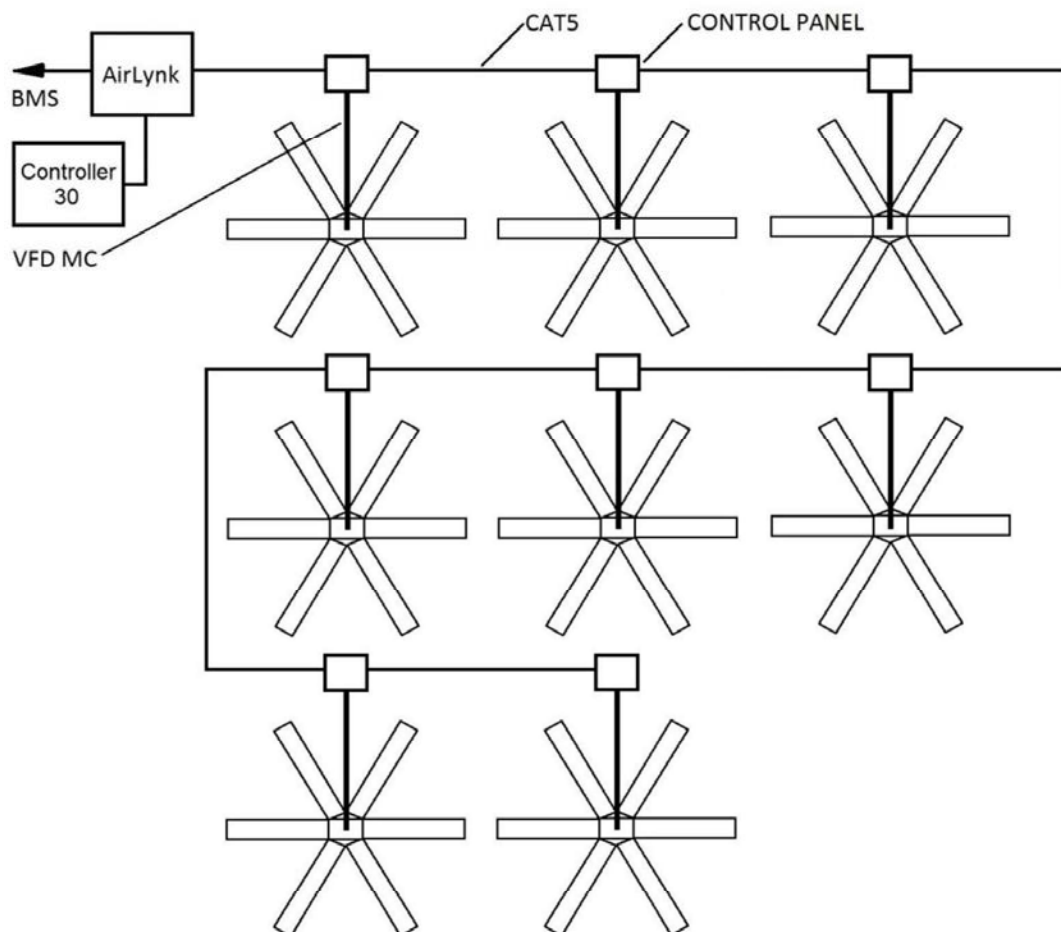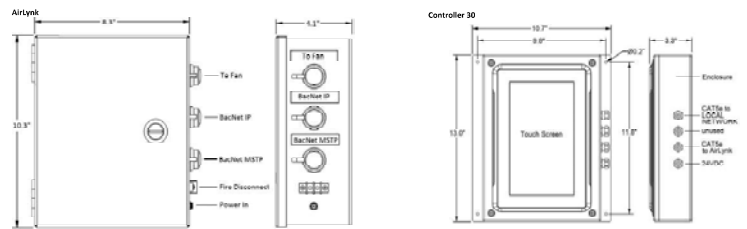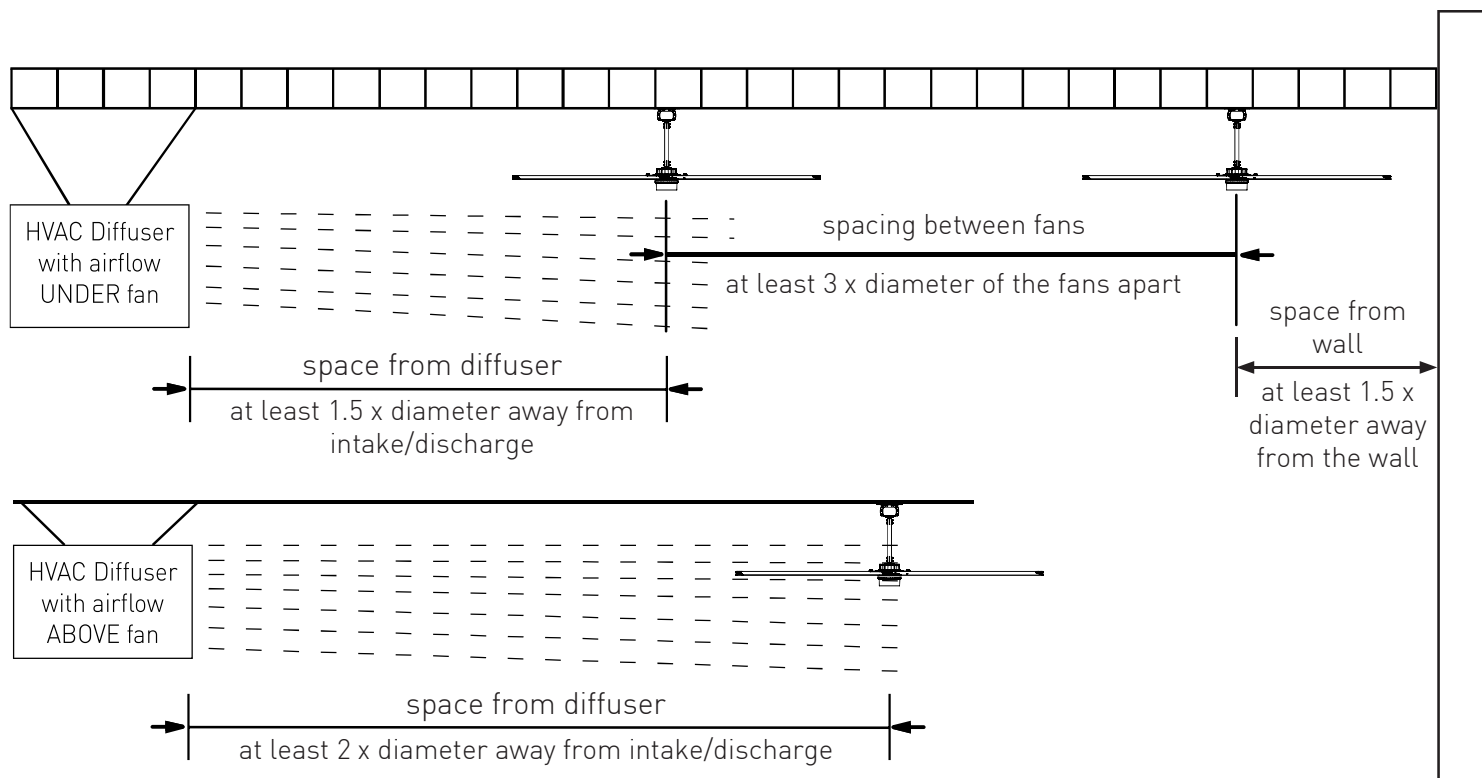| Features	Local Override for BMS
Item #	30-90315-00
# Fans Controlled	1 to 1 fan control by Local Override Remote, up to 30 by BMS/AirLynk
Rating	NEMA/EEMAC Type 1
Communication Protocol	0-10V Wall Mounted Override Remote, Modbus/BACnet AirLynk
Operating Temperature	-4º to 140ºF / -20º to +60ºC

Dual Control for BMS Integration

STANDARD FEATURES

- Seemless 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*

*AirEffect is not compatible with Dual Control. Temperature monitoring by BMS can regulate fan operation.

HVAC Diffuser with airflow UNDER fan

spacing between fans
at least 3 x diameter of the fans apart

space from wall
at least 1.5 x diameter away from the wall

space from diffuser
at least 1.5 x diameter away from intake/discharge

HVAC Diffuser with airflow ABOVE fan

space from diffuser
at least 2 x diameter away from intake/discharge

General Notes:

Dimension "A": The smaller the distance between the light and the blade, the higher concentration and frequency of shuttering. So the greater distance "A" is from the fan blade, the less the shuttering effect.

Dimension "B": The closer the light is located to the center of the fan, the higher the frequency of shuttering.

Ambient light: Another variable increasing the shuttering effect is the amount of ambient light available. The more lights, the less the effect. As shown, the more overlapping patterns the less shuttering/strobing. The type of light can also influence the effect. For example, a domed light is more sensitive than a fluorescent tube.

Summary: Variables that affect strobing are (1) blade to light height, (2) the fan center to light dimension, and (3) the amount of ambient light within the space. To minimize the possible negative effects of strobing, follow all MacroAir installation instructions including clearance requirements.

Light   Light   Fluorescent Light

A

B

Ambient light