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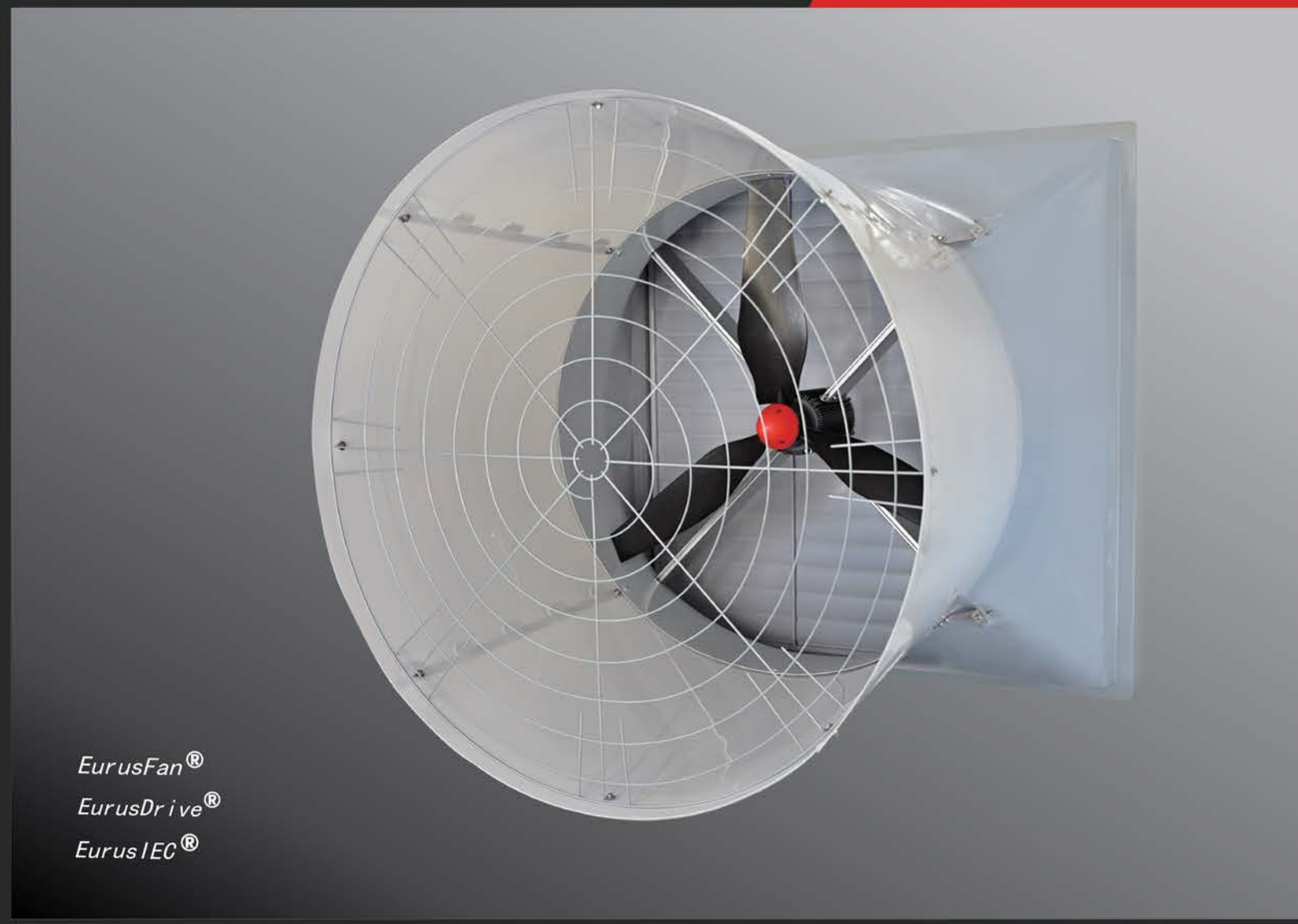
# Wall Fans

AC Line



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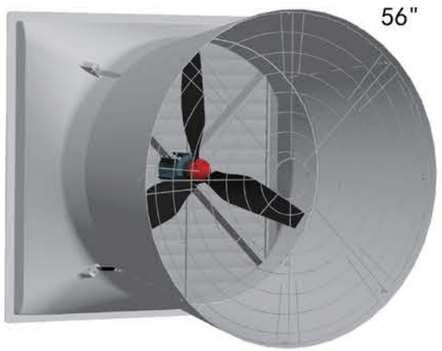
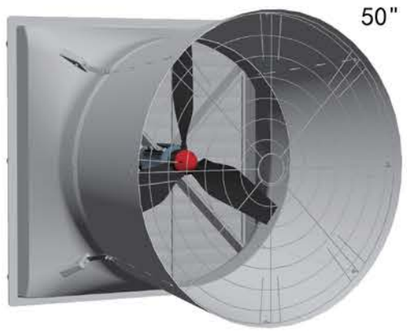
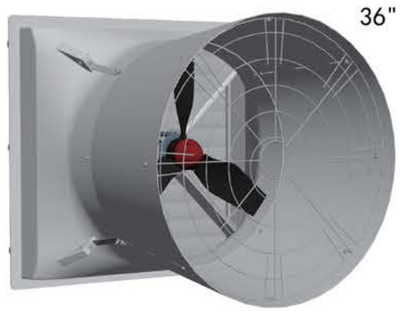
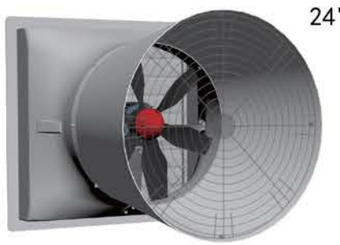




## High Performance

- High airflow ratio
- High VER
- Low noise
- No decline

## Energy Efficient

- IE3 AC motor
- Efficient impellers
- Housing with low airflow resistance
- Damper with low airflow resistance

## Reliable Quality

- Corrosion resistant materials
- Weather resistant materials
- Simple and reliable direct-drive
- In-house and on-site reliability testing

## Innovative Application

- Variable speed fan with AC motor integrated VFD
- Design for assembly (DFA)
- Design for installation (DFI)
- Airtight dampers and shutters

## Flexible Design

- Flexible & customized impeller system
- Flexible cone design
- Fan variants for different applications
- Optional dampers or shutters
- Standardized parts design

## Safety mesh

### Optimized aerodynamic performance

- Innovative design to minimize airflow resistance

### Safe operation

- Complied with safety standard

### Durable & reliable

- Double layers surface treatment for long-term use in high humidity and corrosive environments

### Stable structure

- Stable supporting & joint structure for cones

## Cones

### Optimized aerodynamic performance

- Optimized length & angel to maximize fan performance

### Simple and efficient

- Easy assembly & installation
- Flexible design and CNC machining
  Customizable for special demand

### Durable & reliable

- Anti - UV & corrosion resistant material
  Material with good impact

## Butterfly damper

### Optimized aerodynamic performance

- Air - operated butterfly damper
- with low flow resistance
  The aerodynamic design of deflectors ensures damper fully opening.

### High airtightness

- 360° seal design assures high air-
- tightness.
  Synchronized damper door panels ensure airtight closing.

### Maintenance free

- Hardly butterfly damper collects dust on door panels after long-term operation.

## Impellers

### Optimized aerodynamic performance

- High speed direct-drive impeller with superior aerodynamic design ensures fan performance while reducing fan
- energy consumption.
  The winglet design of impeller blade from bionics reduces energy loss and noise level.

### High performance material

- High performance fiber reinforced composite materials
- High strength and light-weighting impeller to reduce load on motor bearings
- High material strength, good deformation resistance, and outstanding creep resistance ensure no performance decline after long-term
- operation.
  The material strength no decrease due to water

### Precise fabrication and assembly

- High fabrication precision ensures consistent quality of mass production
- parts.
  High assembly precision

### Standardized design

- Standardized hub design ensures reliable power transmission and convenient
- assembly of impeller.
  3-blades or 6-blades setup of impeller ensure multiple variants for different applica-

## AC motor

### High performance and high efficiency

- IE3 high efficiency AC motors
- Motor efficiency tested and certified by CNAS.
- High power factor of motor ensures low current and lowers cost of transformer and distri-
- bution.
  With increasing of static pressure, motor speed remains stable to ensure high airflow ratio of fan
  performance.

### Durable and reliable

- Corrosion-resistant surface treat-
- ment
  NSK deep groove ball bearings with the high performance
- DDU sealing arrangement
  Motor insulation conforms to class F, and the actual motor temperature rise not exceed
- the limit of class B insulation to ensure motor durability.
  Vacuum dipping process applied to motor windings
- ensure higher
  insulation reliability, suitable for high humidity environment.
- Special insulation design applied to variable-frequency motor ensure operating frequency down to 15Hz.
  Special motor axial design with-

## Supporting frame

### Optimized aerodynamic performance

- Arc windward surface design of aluminum frame ensures minimum airflow resistance.

### Simple and efficient

- Direct-drive design ensures high efficiency of power
- transmission.
  Direct-drive design without
- belt-drive system ensures maintenance free.
- Stable "X" type frame reduces vibration.
  Optimized airflow cross-sectional area

### High performance material

- High material strength and good deformation resistance
- Anodized surface treatment for high corrosion resistance

### DFA / DFI

- DFA / DFI design ensures accuracy
  and efficiency of assembly
- and on-site installation.
  Idiot-proof designs applied to components ensure quality of

## Fan housing

### Optimized aerodynamic performance

- Surface fusion design minimizes airflow resistance and ensure excellent performance.
- Smooth inner surface reduces

### High performance materi

- Customized material of fiber
  reinforced plastic ensures high impact strength, tensile strength and flexural strength
- of finished product.
  Anti-UV & corrosion resis-
- tant
  material
  High dimensional stability and

## Shutters

### Optimized aerodynamic performance

- The airfoil design of shutter blade minimizes airflow resistance and improve fan
- performance.
  The bell-mouth design of shutter inlet frame maximize air inlet area, minimizes airflow resistance and improves fan

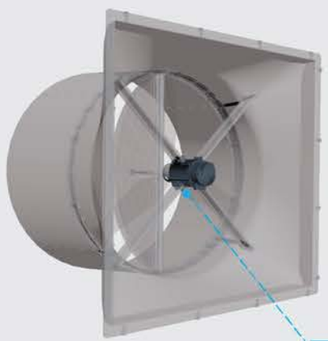
### High airtightness

- Shutter blades with overlapping soft edge design maintain
- airtightness.
  Seal blocks mounted on frame conform closely to the surface profile of shutter blades to
- maintain the airtightness of each blade.
  The sealing strips on upper and lower frames of the shutters ensure the overall air tightness.

### Durable and reliable

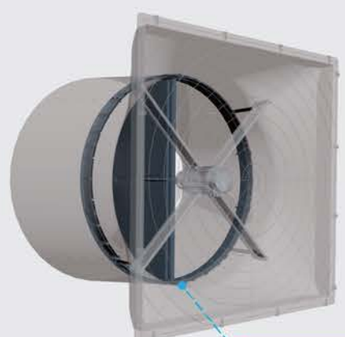
- Durable and reliable PVC
- material
  Assembled shutter frame structure has better overall rigidity and less deformation.

# AC Line – Variable Speed Fan with Integrated VFD



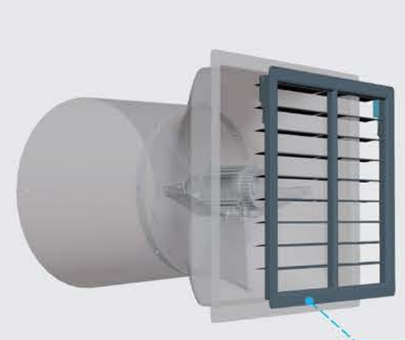

Applicable Models

VFA2-36HO-A3IMDV-CR
VFA2-36HO-A3IM-DV-CBA
VFA2-36HE -A3IMDV-CR
VFA2-24HO-A3IMDV-CP
VFA2-24HE-A3IMDV-CP
VFA2-24HE-A3IMDV-CR
VFA2-18-A3IMDV-CR



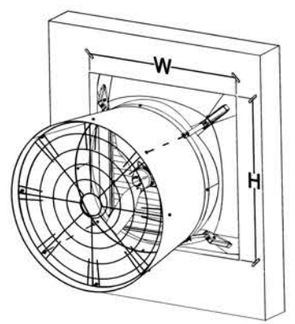

Applicable Models

VFA2-36HO-A3IM-DV-CBA




Applicable Models

VFA2-24HO-A3IMDV-CP
VFA2-24HE-A3IMDV-CP

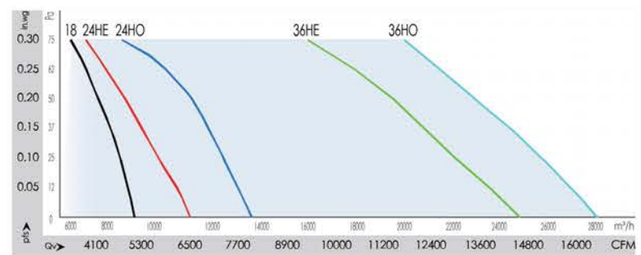


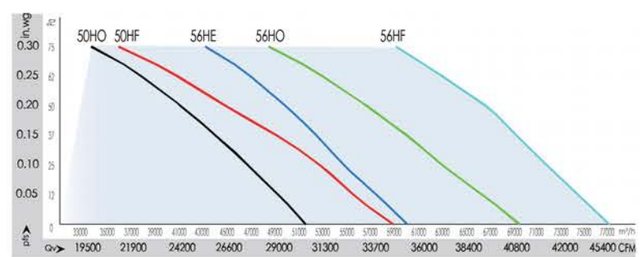

| Fan Sizes (inch) | Wall opening (mm) | |
|---|---|---|
| | Width | Height |
| 56" | 1620 | 1620 |
| 50" | 1455 | 1455 |
| 36" | 1110 | 1110 |
| 24" | 855 | 855 |
| 18" | 635 | 635 |

# Technical Data (3 Phases / 380V / 50Hz)

| Size (inch) | Model | Drive | RPM | Blades | Shutter or damper | 0 Pa | | 25Pa | | 50Pa | | 75Pa | | Tested by |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | QV M3/H | VER (M3/H)/W | QV M3/H | VER (M3/H)/W | QV M3/H | VER (M3/H)/W | QV M3/H | VER (M3/H)/W | |
| 56" | VFA2-56HF-A3IM-CR | Direct-drive/2.2KW/8-pole/IE3 | 715 | 3 | Standard airtight PVC shutter | 76900* | 31.5* | 71600* | 27.2* | 66500 | 23.4 | 59000 | 20.1 | Bess Lab #22073 |
| | VFA2-56HF-A3IM-CBM | Direct-drive/2.2KW/8-pole/IE3 | 715 | 3 | Air-operated airtight butterfly damper | 77650 | 31.8 | 71750 | 26.9 | 64870 | 22.8 | 56160 | 19.1 | Eurus Lab |
| | VFA2-56HO-A3IM-CR | Direct-drive/1.5KW/8-pole/IE3 | 710 | 3 | Standard airtight PVC shutter | 69300 | 38.6 | 62900 | 31.6 | 56600 | 26.4 | 48400 | 21.5 | Bess Lab #22089 |
| | VFA2-56HO-A3IM-CBM | Direct-drive/1.5KW/8-pole/IE3 | 705 | 3 | Air-operated airtight butterfly damper | 66900 | 37.4 | 60300 | 30.4 | 53200 | 25.0 | 44700 | 20.2 | Bess Lab #24133 |
| | VFA2-56HE-A3IM-CR | Direct-drive/1.1KW/8-pole/IE3 | 710 | 3 | Standard airtight PVC shutter | 58800 | 47.6 | 52700 | 37.5 | 44800 | 28.7 | 35900 | 22.0 | Bess Lab #22090 |
| | VFA2-56HE-A3IM-CBM | Direct-drive/1.1KW/8-pole/IE3 | 710 | 3 | Air-operated airtight butterfly damper | 60300 | 43.6 | 54100 | 34.5 | 47100 | 27.5 | 38700 | 21.6 | Bess Lab #24134 |
| 50" | VFA2-50HF-A3IM-CR | Direct-drive/1.5KW/8-pole/IE3 | 710 | 3 | Standard airtight PVC shutter | 60000 | 33.4 | 54700 | 28.0 | 49800 | 24.2 | 43100 | 20.4 | Bess Lab #22167 |
| | VFA2-50HF-A3IM-CBM | Direct-drive/1.5KW/8-pole/IE3 | 705 | 3 | Air-operated airtight butterfly damper | 57300 | 32.8 | 52000 | 27.3 | 46400 | 23.2 | 38700 | 19.0 | Bess Lab #24142 |
| | VFA2-50HO-A3IM-CR | Direct-drive/1.1KW/8-pole/IE3 | 710 | 3 | Standard airtight PVC shutter | 51500 | 41.8 | 46700 | 34.1 | 41100 | 27.8 | 33600 | 21.8 | Bess Lab #22166 |
| | VFA2-50HO-A3IM-CBM | Direct-drive/1.1KW/8-pole/IE3 | 710 | 3 | Air-operated airtight butterfly damper | 49300 | 39.5 | 44700 | 32.5 | 39400 | 26.9 | 32100 | 21.0 | Bess Lab #24141 |
| 36" | VFA2-36HO-A3IM-CR | Direct-drive/0.75KW/6-pole/IE3 | 965 | 3 | Standard airtight PVC shutter | 27900 | 35.9 | 25600 | 30.4 | 22800 | 25.5 | 19800 | 20.9 | Bess Lab #22189 |
| | VFA2-36HO-A3IM-CBM | Direct-drive/0.75KW/6-pole/IE3 | 965 | 3 | Air-operated airtight butterfly damper | 27120 | 32.7 | 24960 | 27.7 | 22220 | 23.5 | 18750 | 19.0 | Eurus Lab |
| | VFA2-36HO-A3IMDV-CR | Direct-drive/0.75KW/6-pole/IE3 VFD | 970 | 3 | Standard airtight PVC shutter | 27880 | 34.4 | 25670 | 28.6 | 22930 | 23.9 | 19960 | 19.8 | Eurus Lab |
| | VFA2-36HO-A3IMDV-CBA | Direct-drive/0.75KW/6-pole/IE3 VFD | 970 | 3 | Motorized airtight butterfly damper | 27400 | 33.2 | 25040 | 27.8 | 22240 | 23.1 | 19180 | 18.8 | Eurus Lab |
| | VFA2-36HE-A3IM-CR | Direct-drive/0.55KW/6-pole/IE3 | 965 | 3 | Standard airtight PVC shutter | 24700 | 40.3 | 22000 | 32.5 | 19400 | 27.0 | 15800 | 21.4 | Bess Lab #22190 |
| | VFA2-36HE-A3IM-CBM | Direct-drive/0.55KW/6-pole/IE3 | 965 | 3 | Air-operated airtight butterfly damper | 23900 | 36.9 | 21470 | 30.3 | 18800 | 25.2 | 15010 | 19.4 | Eurus Lab |
| | VFA2-36HE-A3IMDV-CR | Direct-drive/0.55KW/6-pole/IE3 VFD | 970 | 3 | Standard airtight PVC shutter | 24510 | 38.5 | 21670 | 31.1 | 19090 | 25.4 | 15510 | 19.9 | Eurus Lab |
| | VFA2-36HE-A3IMDV-CBA | Direct-drive/0.55KW/6-pole/IE3 VFD | 970 | 3 | Motorized airtight butterfly damper | 24100 | 37.1 | 21630 | 30.6 | 18930 | 24.9 | 15510 | 19.7 | Eurus Lab |
| 24" | VFA2-24HO-A3IM-CR | Direct-drive/0.37KW/6-pole/IE3 | 960 | 6 | Standard airtight PVC shutter | 13500 | 33.5 | 12300 | 28.2 | 11000 | 23.2 | 8100 | 16.8 | Bess Lab #22056 |
| | VFA2-24HO-A3IMDV-CR | Direct-drive/0.37KW/6-pole/IE3 VFD | 980 | 6 | Standard airtight PVC shutter | 13540 | 32.2 | 12350 | 27.0 | 11030 | 22.3 | 7950 | 15.9 | Eurus Lab |
| | VFA2-24HO-A3IMDV-CP | Direct-drive/0.37KW/6-pole/IE3 VFD | 980 | 6 | Motorized airtight PVC shutter | 13470 | 32.4 | 12310 | 27.3 | 11030 | 22.8 | 8540 | 17.3 | Eurus Lab |
| | VFA2-24HE-A3IM-CR | Direct-drive/0.25KW/4-pole | 1460 | 3 | Standard airtight PVC shutter | 10900 | 32.7 | 9600 | 27.4 | 8200 | 22.2 | 6600 | 17.8 | Bess Lab #22054 |
| | VFA2-24HE-A3IMDV-CR | Direct-drive/0.25KW/4-pole/IE3 VFD | 1470 | 3 | Standard airtight PVC shutter | 10780 | 32.0 | 9120 | 26.0 | 7600 | 21.7 | 5890 | 16.8 | Eurus Lab |
| | VFA2-24HE-A3IMDV-CP | Direct-drive/0.25KW/4-pole/IE3 VFD | 1470 | 3 | Motorized airtight PVC shutter | 10870 | 32.3 | 9230 | 26.6 | 7790 | 22.3 | 6220 | 17.9 | Eurus Lab |
| 18" | VFA2-18-A3IM-CR | Direct-drive/0.25KW/4-pole | 1460 | 3 | Standard airtight PVC shutter | 8600 | 27.5 | 8000 | 24.1 | 7100 | 20.4 | 5900 | 16.6 | Bess Lab #22053 |
| | VFA2-18-A3IMDV-CR | Direct-drive/0.25KW/4-pole/IE3 VFD | 1475 | 3 | Standard airtight PVC shutter | 8530 | 28.1 | 7760 | 24.4 | 6910 | 20.1 | 5480 | 15.5 | Eurus Lab |

* Data provided by Eurus Lab due to out of measurement range of Bess Lab.



## Product Models

**VFA2 - 56 HO - A3 IM - C R**

- VFA2: GEN II Direct-drive
- 56: 18: 18" Fan; 24: 24" Fan; 36: 36" Fan; 50: 50" Fan; 56: 56" Fan
- HO: HF: High Flow; HO: High Output; HE: High Efficien-
- A3: A1: 1-Phase 220V/50Hz; A3: 3-Phase 380V/50Hz; B3: 3-Phase 230V/60Hz; C3: 3-Phase 380V/60Hz; D3: 3-Phase 200V/60Hz; E3: 3-Phase 200V/50Hz; F3: 3-Phase 415V/50HZ
- IM: IM: AC motor; IMDV: AC motor intergrated VFD
- C: C: Cone
- R: P: Powered airtight PVC shutter; R: Standard airtight PVC shutter; BM: Air-operated airtight butterfly damper; BA: Motorized airtight butterfly damper

### Selection Instructions:

- Standard airtight PVC shutter as standard configuration for all fans.
- Air-operated airtight butterfly damper as optional for 56", 50" and 36" fans.
- AC motor with integrated VFD as optional for 36" and 24" variable speed fans.
- Motorized airtight butterfly damper as optional for 36" variable speed fan with integrated VFD.
- Powered airtight PVC shutter as optional for 24" variable speed fan with integrated VFD.
- Manual/Auto motor controller and standard motor controller as optional for all variable speed fans with integrated VFD.
  Both the Manual/Auto motor controller and the standard motor controller can force-start the fan by external thermostat input

## Disadvantages of Fan Using Standard AC Motor and Standard VFD

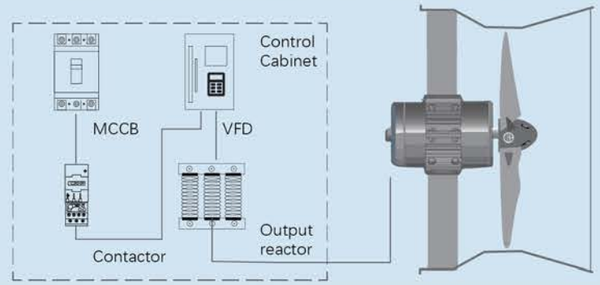
- The average lifespan of electrolytic capacitors used most common in VFDs is only a few years.
- If the variable speed motor and VFD are too far apart, the motor will be at higher risk of electrical damage.
- The VFD may generate EMI around the area
- along power supply cable from VFD to motor.
  The amount of heat generated by VFD, which installed in control cabinet,
- may shorten
  the service life of VFD if not properly heat
  dissipated.

- Using standard V/F control method, VFD cannot compensate for the loss of motor rotating speed, which will affect fan air flow with the increase of static pressure.
- The VFD setup is complicated and requires professionals to set up and
- operate.

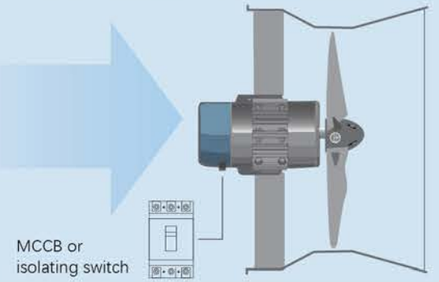
  The on-site setting and commission job of
- VFD are complicated and the work-load is large.

- The VFD installed in control cabinet requires distribution and protection circuits.
- The installation and commissioning work of VFD is complicated and needs high labor cost.
- Output reactor need to be installed if the variable speed motor and VFD are

Variable speed fan application of standard AC motor and standard VFD




Variable speed fan application of AC motor with integrated VFD




## Advantages of Fan Using AC Motor with Integrated VFD

### Reliability

- The average lifespan of film capacitor used in the integrated VFDs is several times that of electrolytic capacitors commonly used in standard VFDs.
- Insulation designs and materials for AC motors with integrated VFDs are designed for variable frequency use. The stator winding
  of motor is vacuum impregnated, which greatly improves the insulation performance and extends the life of the motor in a humid environment.
- The AC motors with integrated VFD has good cooling effect due to the airflow
- of fan.

  The AC motors with integrated VFD has low frequency operation protection to

### Use & Maintenance

- The FOC control method of AC motors with integrated VFD maintain motor speed constant to ensure optimal fan airflow as static pressure increases.
- The setting parameters of the integrated VFD are optimized and set for different models of motors in factory without on-site setting and commissioning. Greatly reduces the workload and difficulty of installation, commissioning, use and maintenance.

### Cost

- The AC motors with integrated VFD itself has multiple protections and doesn't require additional protection circuits.
- The AC motors with integrated VFD doesn't need control circuit and control cabinet. Greatly reduces the works of installation and commissioning due to the simplicity.
- The AC motors with integrated VFD

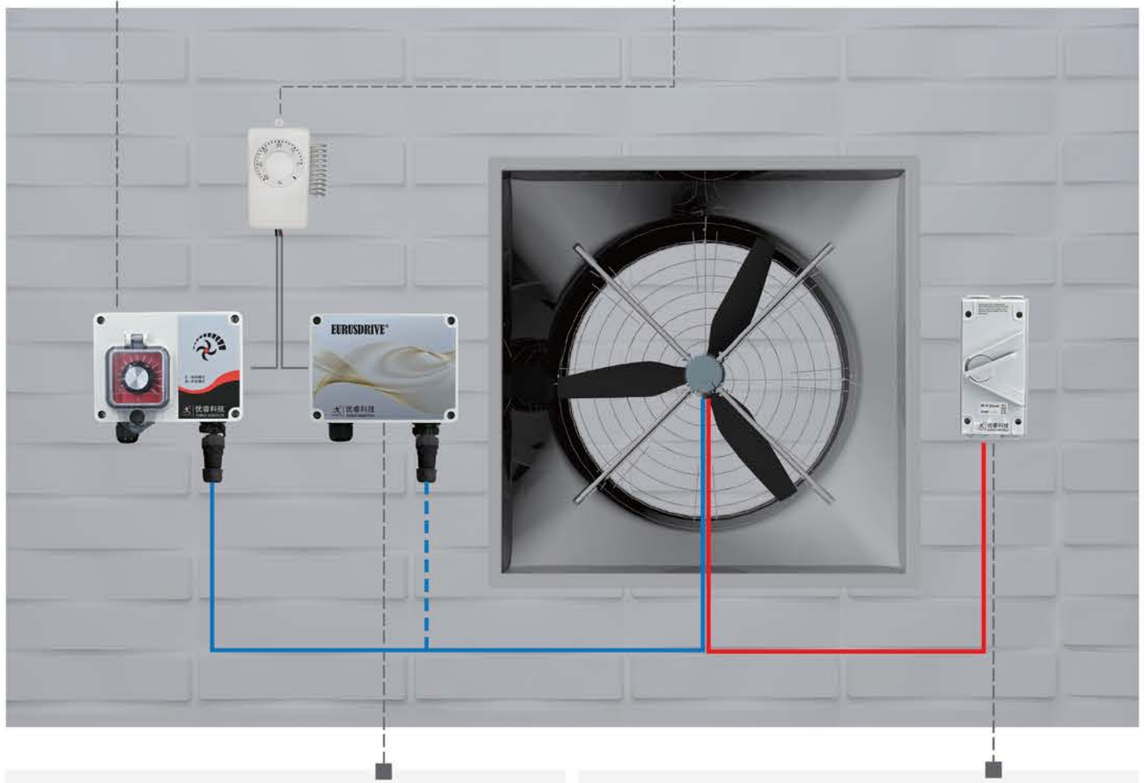
# Accessories of AC Motor with Integrated VFD

## Manual/Auto motor controller

- Plug & Play control cable from motor to controller
- Manual/Auto control switching in any control
- mode
  Protection function of force-start-ing the fan with external thermo-
- stat input signal in any control mode
  Functions of Manual/Auto control
- switching
  and signal extension are available

## Thermostat

- Mechanical self-sensing
- thermostat
- Adjustable temperature range is 0~40℃.
  With the Manual/Auto motor controller and the standard motor




## Standard motor controller

- Plug & Play control cable from motor to controller
- Protection function of force-start-ing the fan with external thermostat input signal in any control mode
- As slave controller of Manual/Auto motor controller to extend control
- signal
  IP Class : IP66

## Isolating switch

- Compatible with safety regula-tions and easy for operating, maintenance and
- troubleshooting
  Part of distributed control system
- to

# About Eurus

EURUS AGRITECH


Shanghai EURUS Agritech Co., Ltd., headquartered in Shanghai of China. Suzhou EURUS Agri-machinery Co., Ltd. is a wholly-owned subsidiary of Shanghai EURUS. As the factory and logistics center of EURUS, it is located in Suzhou, Jiangsu Province, China.

In recent years, EURUS has been dedicated to creating environmental control and ventilation solutions for the animal husbandry industry. Utilizing aerodynamics and proprietary control technologies, EURUS has developed a comprehensive range of high-performance, energy-efficient, and high-quality products for both domestic and international clients.

In close and strong collaboration with our customers, EURUS not only creates value through R&D innovation and the implementation of advanced technology, but also effectively realizes this value through our advanced quality and operational management systems.

- 2019 Obtained National High-Tech Enterprise Certification
- 2020 Took charge of drafting of the industry standard - T/CAAA
  056-2020 *Axial Fan for Livestock and Poultry Husbandry*
- 2021 Obtained ISO 9001 Certification