

AmeriWind

E series

Owner's Manual



2021

Operation

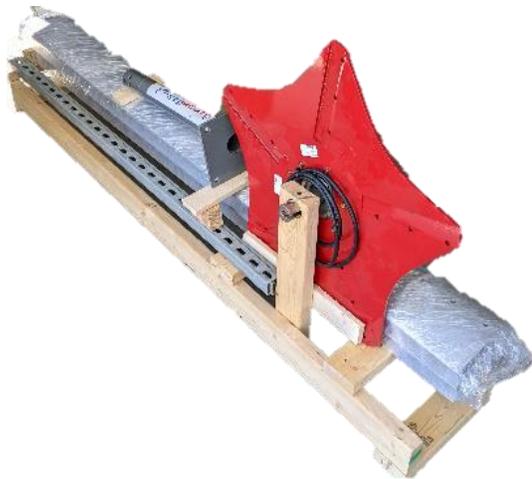
Always make sure all personnel are clear of the fan before starting.

The fan is rated to be running full speed continuously if needed.

Sudden voltage dips can cause the fan to stop. The fan will restart unattended on its own.

Shipping

The skid is 12 inches wide by 6.5 ft long 200 lb



Small Parts included

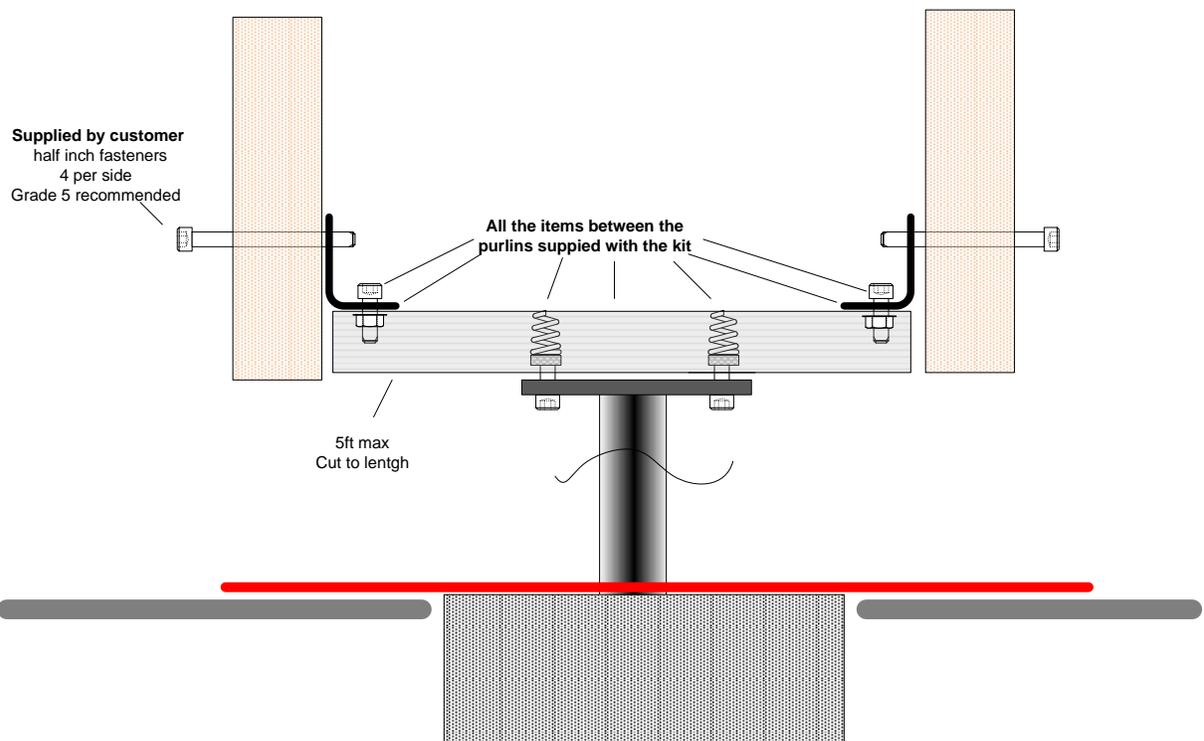


- (4) packets of bolts
- (1) Fan stem- For blades to be 24" inches below plate
- (5) Red end blade caps
- (5) Blade washers
- (1) Safety cable with clamps
- (2) L brackets 24" long
- (1) Manual control with 100ft wire

- Not pictured
- (1) Motor with hub and 4ft cord.
 - (2) 5' unit strut peices
 - (5) blades
 - (1) Motor control panel

Mounting brackets:

Included mounting assembly



Not to Scale

The included assembly consists of a pair of 24" long L-brackets, a pair of 5ft long Unistruts, and fasteners.

Installation:

- Loosely mount the L brackets onto the purlins.
- Cut the Unistrut to fit between the purlins, and loosely bolt to L-brackets.

- c. Loosely mount stem to Unistrut with the included spring nut and flange bolt.
- d. For max stability keep the fan stem near a purlin, as the Unistrut can flex.
- e. Once assembled, tighten all bolts to 58 ft-lbs. Double-check that you didn't miss any

Optional FanWTMT48A –



Adjustable wood mount bracket adjusts from 49 to 44" inches.

-Fasten between wooden trusses. Bolt to the truss with at least three bolts spaced evenly per side. These bolts are to be ½" diameter and supplied by the installer.

Normally the adjustable mount is used when installing a fan after a ceiling is installed. Often the trusses are not aligned perfectly and the adjustable width overcomes jobsite imperfections.

Installation thru existing ceilings.

- Take the bracket up into the attic and decide the exact spot where it's to be mounted.
- Loosely install the bracket so you can mark the center point of the square mounting plate.
- After you have double-checked the center point for the mounting stem, drill a 3" hole thru the ceiling.
- Slide the stem into the hole.
- Loosely bolt the stem to the bracket
- Loosely bolt the bracket to the truss
- After you are satisfied with the fit, tighten all the bolts to 58ft-lb.
- After it is securely fastened to the wooden truss, install and tighten the 4 jam bolts to 58ft-lb.

Optional - FanWTMT48 – 46.5" wide wood mount.



- Place between trusses; mount with a minimum of three bolts spaced evenly per side. These bolts are to be ½” diameter and supplied by the installer
- Tighten bolts to 58ft.lb.

Motor mounting

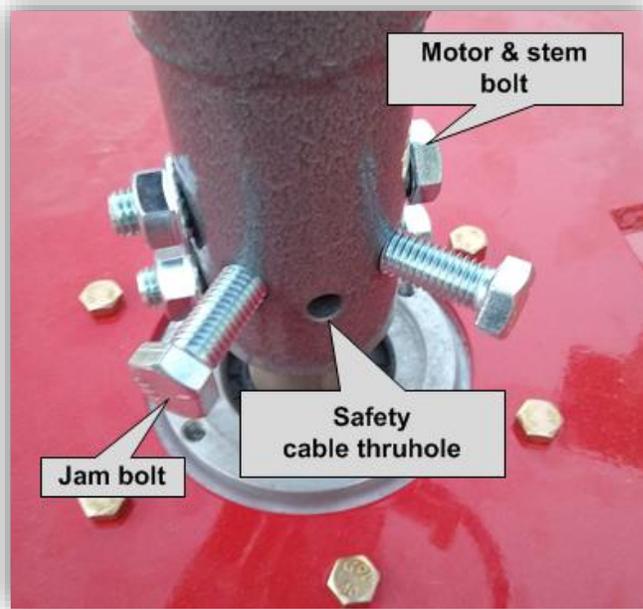


Figure 1 - Stem to motor bolts without guy wires

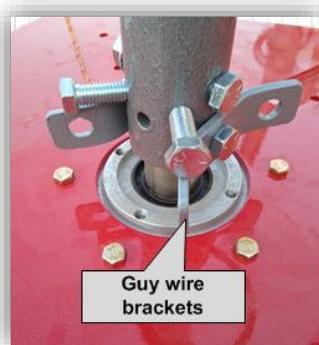


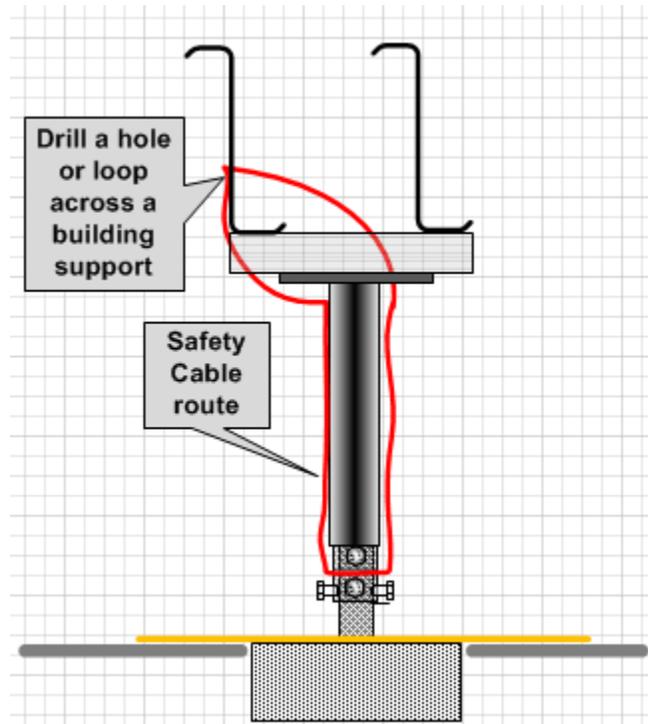
Figure 2 - Stem to motor bolts with guy wire brackets

Mount the fan as shown in the pictures. If using guy wires, put brackets on the bottom stem bolt. Tighten jam bolts, then retighten stem bolts

Guy wires

Stabilizing guy wires are needed if the fan stem is longer than 3ft. When using guy wires, install them at a 45° angle. Tension evenly.

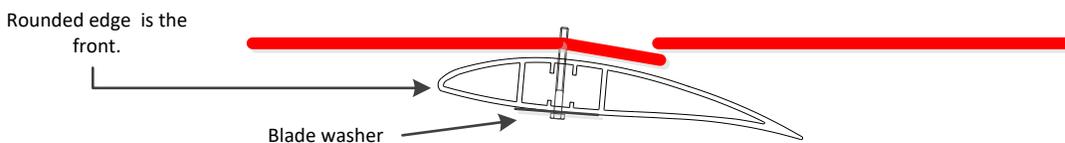
Safety cable.



The safety cable is designed to keep the fan from falling in the event the motor mount gets severely damaged.

Route the safety cable thru the hole and loop it up around a rafter or other sturdy building support. Pull the loop tight and use a pair of cable clamps to connect the safety loop. Fasten the cable and its extra tail so the cable cannot come into contact with any rotating part.

Fastening the blades



The blades mount on the bottom of the hub. The rounded edge leads into the wind. Forward blows down.

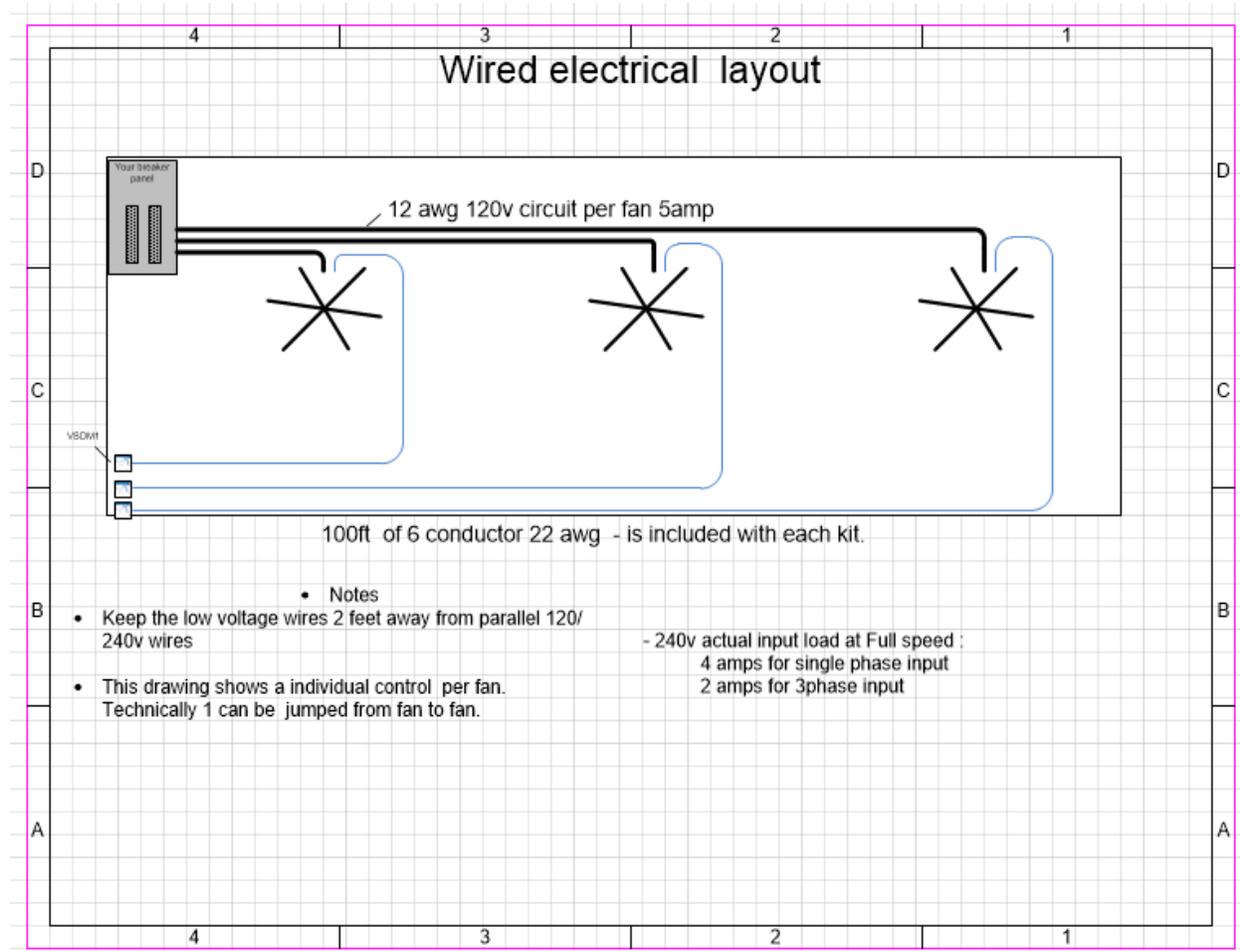
Fasten the blades with the 3 bolts and blade washer and flange nuts.
Torque blade bolts to 38ft.lbs.

Wiring

The E series fans are 240v single phase or 240v 3phase.

The VFD takes line power and converts it to usable electricity for the fan. The VFD/motor control panel is often mounted up near the fan. There is 1 VFD per fan.

The actual speed is then set by manual speed control. Optionally a temperature controller can set the speed for many VFDs.



Motor control panel placement

There is a 4ft of cord with the motor. While it can be extended, for livestock applications we recommend not beyond 10ft. Put the motor control panel in an accessible location above the fan if the building has an open ceiling.

Do not put the motor control panel in unventilated attics as it will overheat.

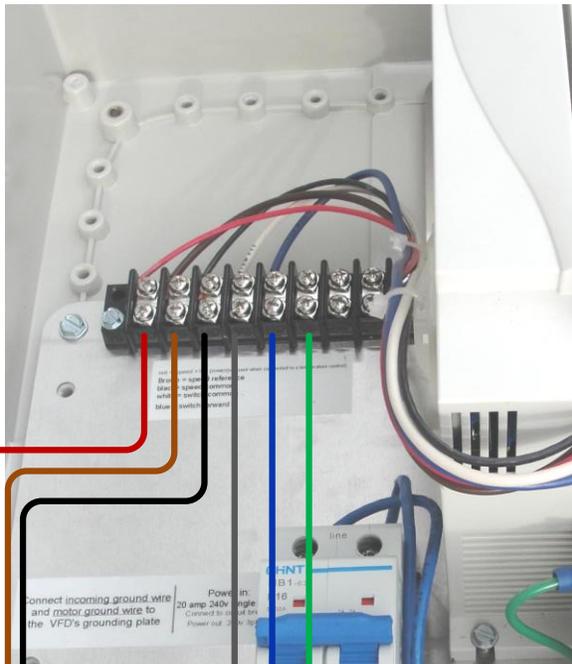
For most applications, keep the VFD within 100ft of the motor.

For livestock applications keep the VFD within 10ft of the motor

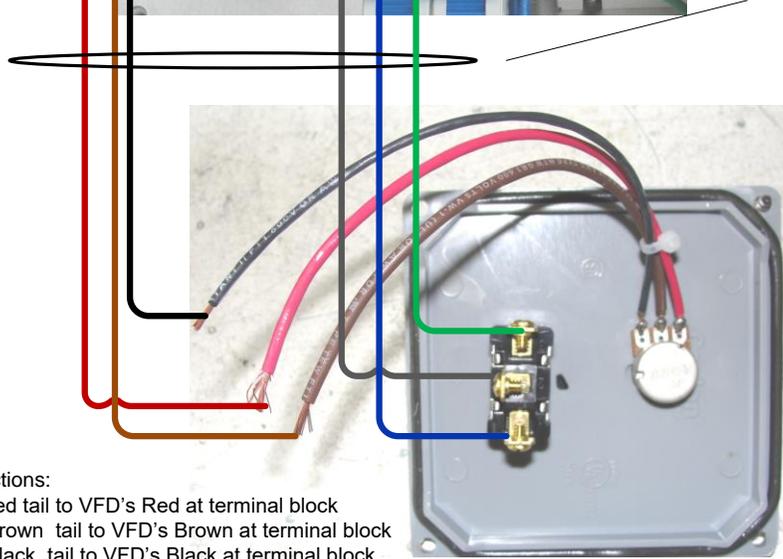
Beyond 100ft, consult with AmeriWind technical support for more details.

Manual control placement

The control can be placed in almost any convenient location. It includes 100ft of cord. This can be extended to 400ft if needed with a 6 conductor 22-gauge cord. Route away from high voltage wires by 1 ft.



100 ft wire pre connected to the VSDM1 is included.



The control wires can be daisy chained from fan to fan if individual control is not desired.

Connections:

Pot's red tail to VFD's Red at terminal block
 Pot's brown tail to VFD's Brown at terminal block
 Pot's black tail to VFD's Black at terminal block

Switch's top tab to VFD's Green at terminal block
 Switch's center tab to VFD's White at terminal block
 Switch's bottom tab to VFD's Blue at terminal block

Motor to VFD connection

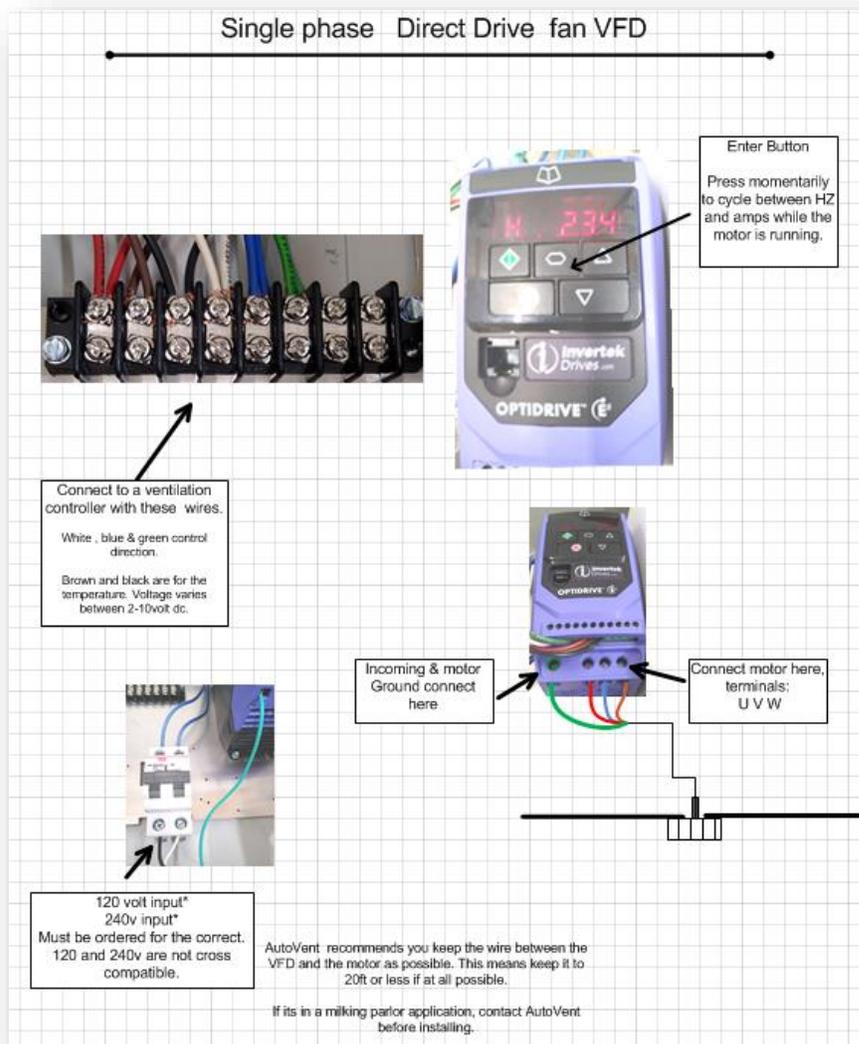
Green/yellow is the ground and connects to the ground screw

Red is L1 and connects to U

Blue is L2 and connects to V

Brown is L3 and connects to W

Make sure wire insulation is properly stripped and no insulation is pinched under the screw terminals.



Tuning the motor

Tuning the motor is required. Tuning is done after the fan is fully installed and ready to use.

Tuning the motor:

Power the VFD. Set the Forward/Reverse to off.

Scroll to P-52 and set it to a value of 1

The VFD will begin to identify the motor and you will hear it buzz. It should only take about 5 seconds.

Make sure blades are perfectly still and don't touch them while the VFD identifies the motor for useable results.

If you don't tune the motor, the fan might not run.

If you tune the motor with an accidental loose wire or something rotates the fan, the identification process will be corrupted. Redo the tuning procedure for any suspected problems.

Navigating the menu

Long press the enter button.

Then use the arrows to scroll to the desired parameter.

Long press again and use arrows to adjust the setpoint.

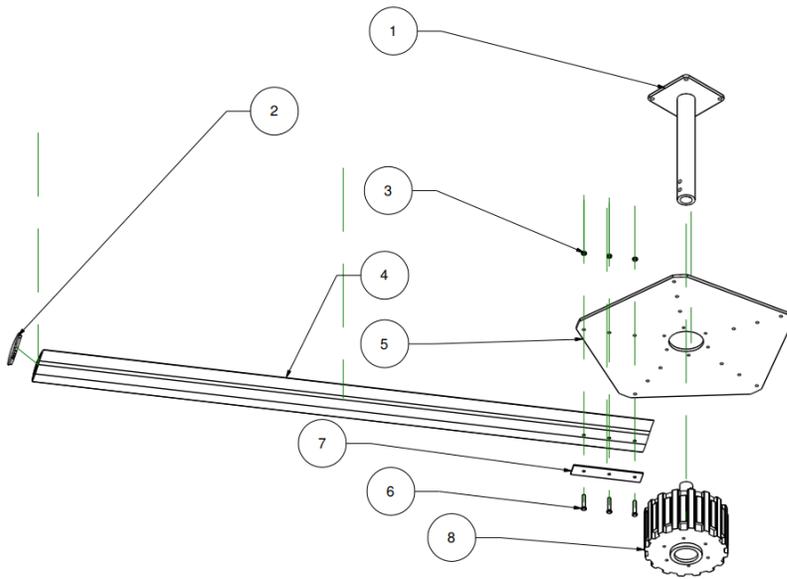
Long press again to save and exit.



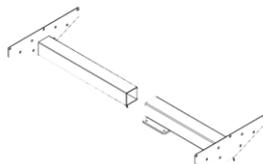
Fault codes

no-FLt	00	No Fault	Not required.
0l-b	01	Brake channel over current	Check external brake resistor condition and connection wiring.
0L-br	02	Brake resistor overload	The drive has tripped to prevent damage to the brake resistor.
0-I	03	Output Over Current	Instantaneous Over current on the drive output. Excess load or shock load on the motor. NOTE Following a trip, the drive cannot be immediately reset. A delay time is inbuilt, which allows the power components of the drive time to recover to avoid damage.
I-t-terP	04	Motor Thermal Overload (I2t)	The drive has tripped after delivering >100% of value in P-08 for a period of time to prevent damage to the motor.
0-uolt	06	Over voltage on DC bus	Check the supply voltage is within the allowed tolerance for the drive. If the fault occurs on deceleration or stopping, increase the deceleration time in P-04 or install a suitable brake resistor and activate the dynamic braking function with P-34.
U-uolt	07	Under voltage on DC bus	The incoming supply voltage is too low. This trip occurs routinely when power is removed from the drive. If it occurs during running, check the incoming power supply voltage and all components in the power feed line to the drive.
0-t	08	Heatsink over temperature	The drive is too hot. Check the ambient temperature around the drive is within the drive specification. Ensure sufficient cooling air is free to circulate around the drive.
U-t	09	Under temperature	The drive temperature is below the minimum limit and must be increased to operate the drive.
P-dEF	10	Factory Default parameters loaded	
E-tr iP	11	External trip	E-trip requested on digital input 3. Normally closed contact has opened for some reason. If motor thermistor is connected check if the motor is too hot.
SC-0bS	12	Optibus comms loss	Check communication link between drive and external devices. Make sure each drive in the network has its unique address.
FLt-dc	13	DC bus ripple too high	Check incoming supply phases are all present and balanced.
P-LOSS	14	Input phase loss trip	Check incoming power supply phases are present and balanced.
h 0-I	15	Output Over Current	Check for short circuits on the motor and connection cable. NOTE Following a trip, the drive cannot be immediately reset. A delay time is inbuilt, which allows the power components of the drive time to recover to avoid damage.
Eh-FLt	16	Faulty thermistor on heatsink	
dRAr-F	17	Internal memory fault (IO)	Press the stop key. If the fault persists, consult you supplier.
4-20 F	18	4-20mA Signal Lost	Check the analog input connection(s).
dRAr-E	19	Internal memory fault (DSP)	Press the stop key. If the fault persists, consult you supplier.
F-Ptc	21	Motor PTC thermistor trip	Connected motor thermistor over temperature, check wiring connections and motor.
FRn-F	22	Cooling Fan Fault (IP66 only)	Check / replace the cooling fan.
0-hERt	23	Drive internal temperature too high	Drive ambient temperature too high, check adequate cooling air is provided.
0Ut-F	26	Output Fault	Indicates a fault on the output of the drive, such as one phase missing, motor phase currents not balanced. Check the motor and connections.
ARF-02	41	Autotune Fault	The motor parameters measured through the autotune are not correct. Check the motor cable and connections for continuity. Check all three phases of the motor are present and balanced.
SC-F01	50	Modbus comms loss fault	Check the incoming Modbus RTU connection cable. Check that at least one register is being polled cyclically within the timeout limit set in P-36 Index 3.
SC-F02	51	CAN comms loss trip	Check the incoming CAN connection cable. Check that cyclic communications take place within the timeout limit set in P-36 Index 3.

Parts list



Item Number	Quantity	Part Number	Part Name
1	1	AW_E001	Mounting bracket
2	5	AW_T020	BladeCap
3	15	AW_T005	three eighths inch nut
4	5	AW_NJ7133-nnn	blade
5	1	AW_E002	hub
6	15	AW_T012	three eighths inch bolt
7	5	AW_T001	blade washer
8	1	AW_Y255	motor



Maintenance

Year maintenance is required on the E series fan for continued excellent performance and safety. Access to the fan is required for maintenance.

Once a year:

Step 1 – Lockout and tag out electric. Do not leave the fan energized while working on it

Step 2 – Wipe fan blades with warm soapy water and a rag. Clean all dust buildup from the blades as it hinders performance. Clean all dirt forming on the motor as dust buildup makes the motor run warmer and can cause overheating.

Step 3 - Attempt to physically shake fan – fan should not wobble. Check fan body and mount for any weakness related to loose fasteners.

Fan with guy wires. Inspect guy wire. Make sure cables are tight. Retention as necessary if cables are loose.

Step 4 – Check blade bolts for loose fasteners. Bolts need to be tensioned to 38 ft. lb. Retighten as necessary.

Step 5 – Check all mounting bolts for any signs of loosening or any signs of structural fatigue on the building to which the fan is mounted. Retighten as necessary

Step 6 - Check for any loose or frayed wires. Tighten or replace as needed.

Warranty

The E series fan has a 2-year mfg. defect warranty.