



**MonsterFans**  
by Schwank

# **MonsterFans Geared-Drive [GD] Series**

## **Installation Manual**

## Table of Contents

### Installation & components

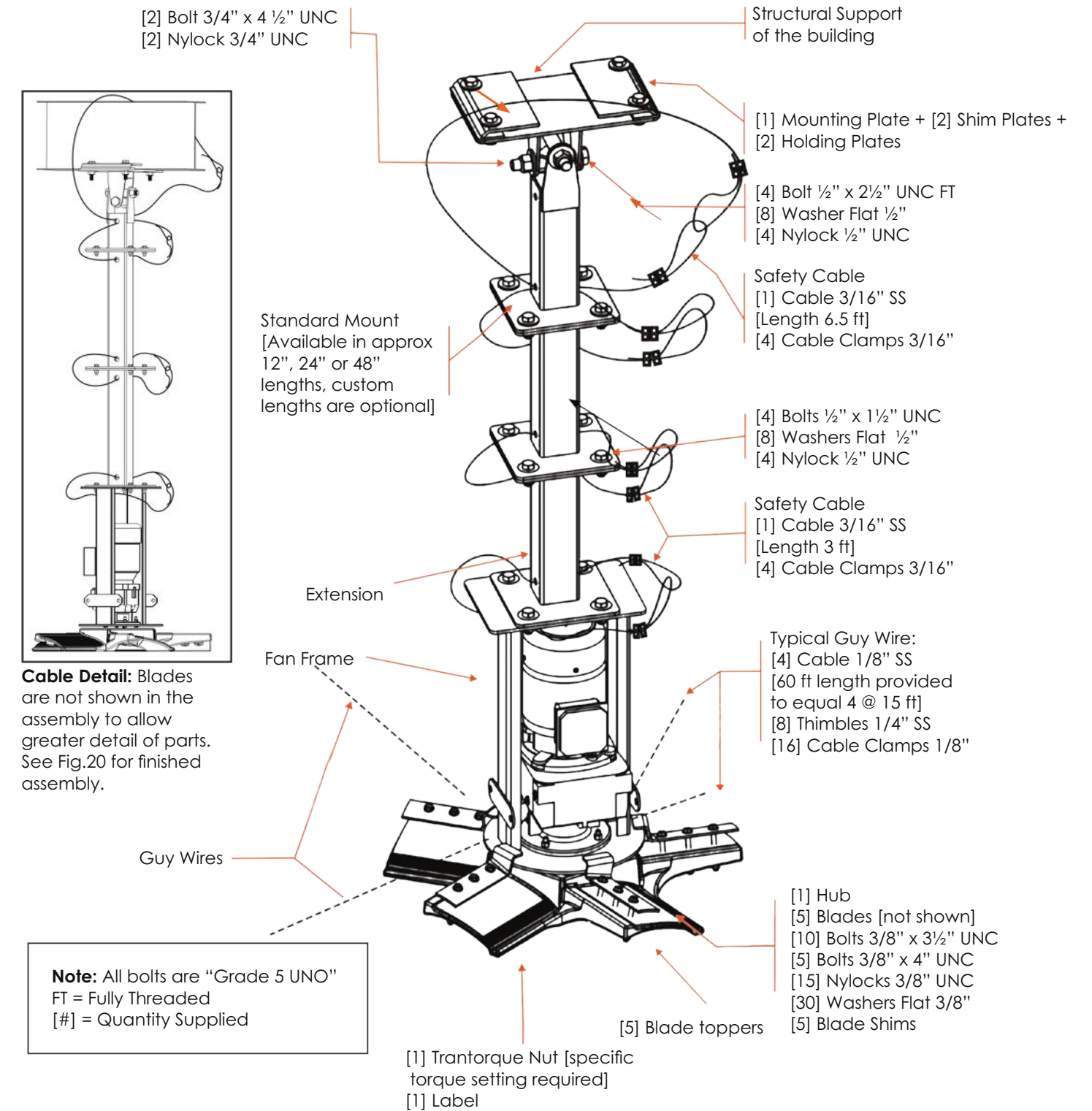
Components Diagram .....	3
Tools Required to Install the Product .....	4
Required Steps Before Installation .....	4
Mounting Applications.....	5
Standard Mount.....	6
Extensions .....	7
Main Hub & Drive Assembly .....	8
Guy Wires.....	9
Blade Assembly.....	10
Leveling the Fan .....	11
Fan Blade Clearances .....	12

### Documentation

Recommended Maintenance Schedule .....	13-14
--	-------

Engineers requiring AutoCAD or SolidWorks drawings can download them by accessing [www.schwankgroup.com/monsterfans](http://www.schwankgroup.com/monsterfans).

## Fan Components Diagram



## Tools Required to Install Product

- Level
- Cable cutters [for stainless steel aircraft cable]
- Ratchet or impact gun
- Basic imperial socket set up to 3/4"
- Basic imperial wrench set
- Lifting devices or scaffolding

## Required Steps Before Installation

- Check to see if you have all the tools required for the installation.
- Verify that all fan components were received.
- Check drawings and layouts provided to locate where the Fan is to be installed.
- Ensure work area is safe and that all security, policies and procedures for the facility are met.
- Inspect the lift device or mobile platform.
- Each person installing the Fan must use a safety harness at all times.
- Other safety requirements may be required for installation.
- All workspace safety requirements, lock out procedures and hoarding of construction zone for the assembly and installation must be met and followed.



### CAUTION

This unit has an unguarded impeller.

Do not use in locations readily accessible to people or animals.

To reduce the risk of injury to persons, install fan so that the blade is at least 10ft [3.05m] above the floor.



### WARNING

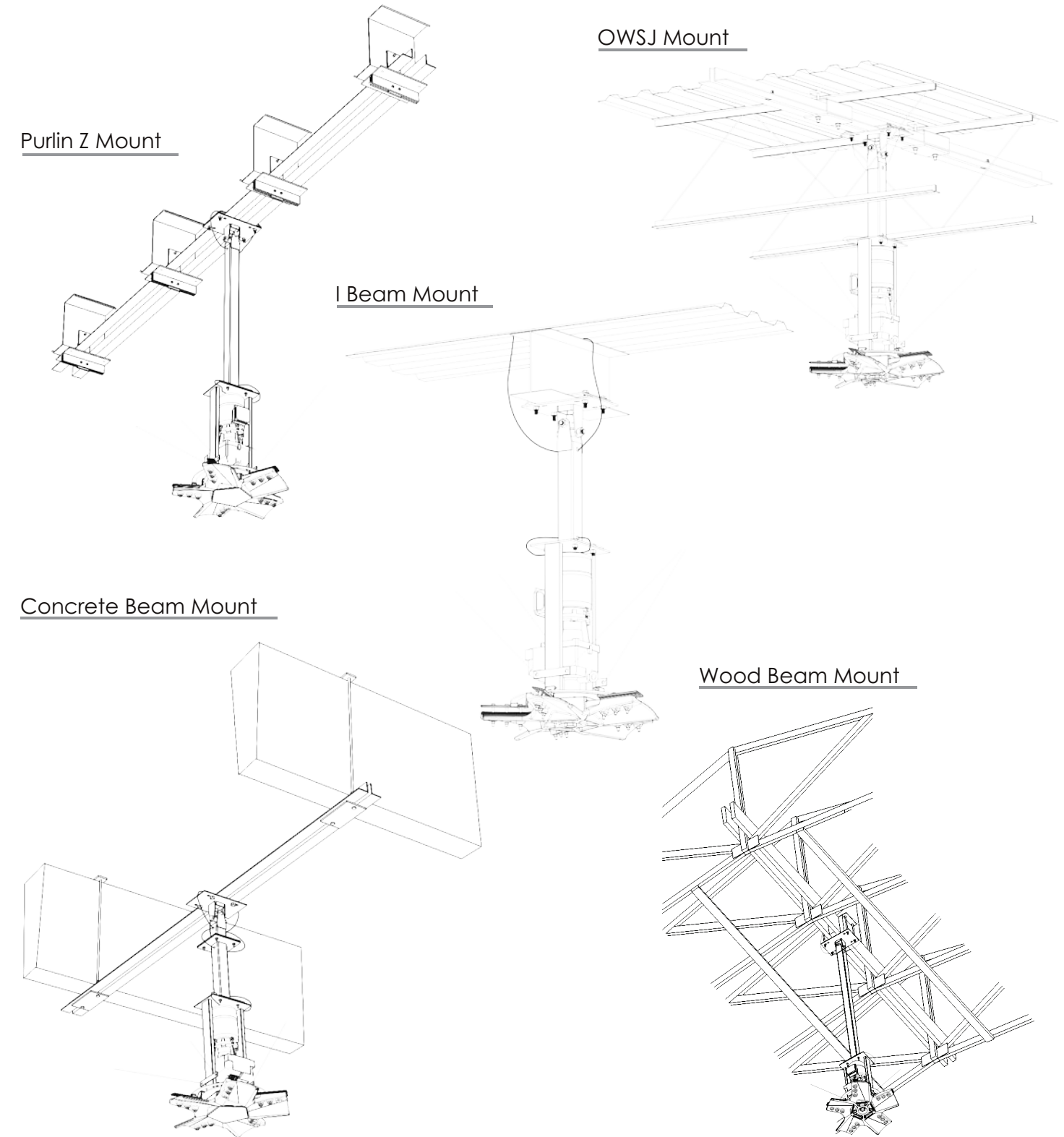
Support directly from building structure



### CAUTION

Mount with the lowest moving parts at least 10ft [3.05m] above floor or grade level

## 3. Different Mounting Applications



**Note:** The following mounting applications are representations only and are subject to change without notice. Contact your sales representative for complete mounting instructions.

## 4. Standard Mount

A Standard Mount package is used with all MonsterFans GD Series Assemblies [except "Wood" Beam Mounting]. Standard drop mounts of 12", 24" and 48" are available.

### The package includes:

- [2] mfg "I" Beam clamps
- [2] mfg "I" Beam spacers [may or may not be required for assembly]
- [1] Upper Pivot Plate
- [1] Upper Pivot [pre-assembled]
- [1] Stem for 12", 24" & 48" packages
- [4] Bolts, Nuts & Washers
- [1] Cable 3/16" SS [Length 6.5 ft]
- [4] Cable Clamps 3/16" [not shown]

**Note:** Spacer may or may not be required. This is dependent upon the thickness of the support structure.

### Installing the mount

1. Sandwich the "I" Beam or OWSJ Beam between the mfg "I" Beam clamps and the upper pivot plate. Insert the mfg "I" Beam spacers if required.
2. Insert the bolts, washers and tighten the nylocks. [Fig.8]
3. Position the safety cable as per Fig.8, loop at both ends.
4. Fasten cable clamps as typical cable clamp installation [Fig.9] Cable should be relatively snug.

### Typical cable clamp installation

When placing cable clamps on the wire, it is imperative that the U-bolt side of the clip is placed on the short turn back side and the saddle goes on the long side [the "live" end].

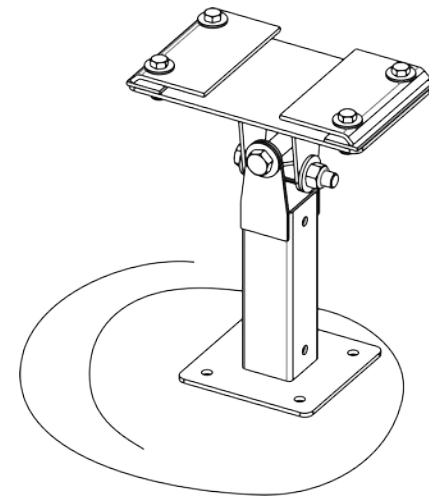


Fig.7

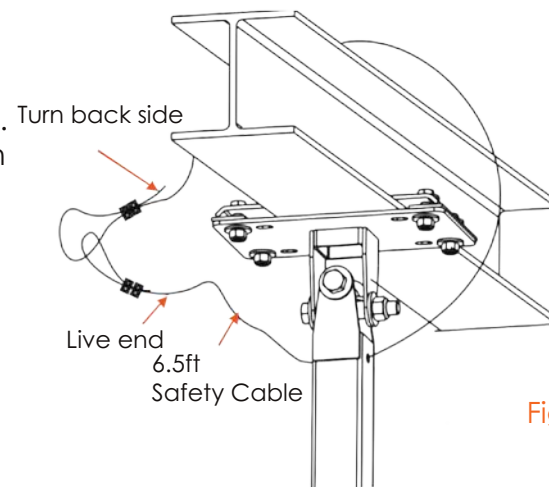


Fig.8

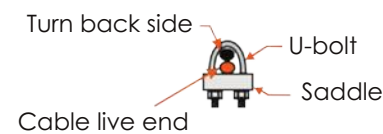


Fig.9

## 5. Extensions

### The package includes:

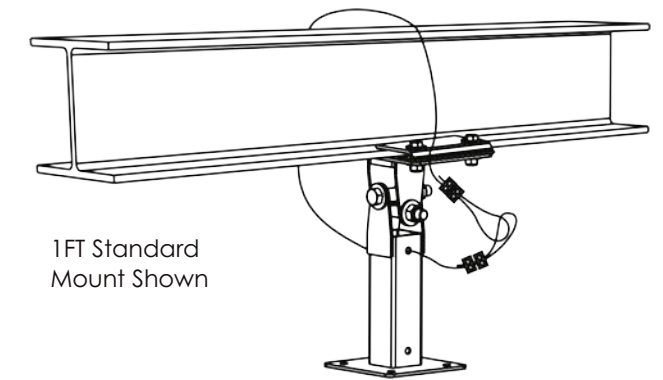
- [1] Extension [standard 2 ft or 4 ft]
- [4] Bolts 1/2" x 1 1/2" UNC
- [8] Washers Flat 1/2"
- [4] Nylocks 1/2" UNC
- [1] Cable 3/16" SS [Length 3 ft]
- [4] Cable Clamps 3/16"

Depending on your assembly, your package may include an extension. The extension with the standard mount will make up the overall drop length. If a specific drop distance is required, a custom extension may be an option and can be ordered.

### Installing the extension

1. Fasten top plate of extension to the bottom plate of the standard mount using 1/2" bolts, nuts and washers.
2. Position the safety cable as per Fig.11, loop at both ends.
3. Fasten cable clamps 2 per end and as per typical cable clamp installation [Fig.9]. Cable should be relatively snug.

Every connection between components [mounts, extensions and fan frame] must include a safety cable as shown throughout this manual.



1FT Standard Mount Shown

24" or 48" Standard Extensions are Available

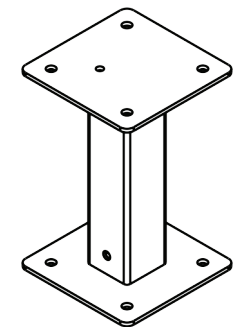


Fig.10

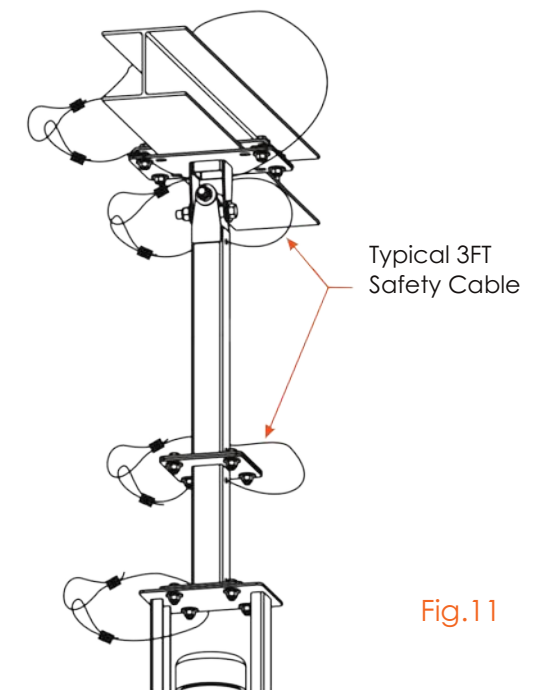


Fig.11

## 6. Main Hub & Drive Assembly

### The package includes:

- [1] Hub
- [1] Fan frame
- [1] Trantorque nut
- [1] Motor
- [1] Gear Reducer
- [1] MonsterFans sign
- [4] Bolts 1/2" x 1 1/2" UNC
- [8] Washers Flat 1/2"
- [4] Nylock 1/2" UNC
- [1] Cable 3/16" SS [4 ft]
- [4] Cable clamp 3/16"

All these items are pre-assembled.

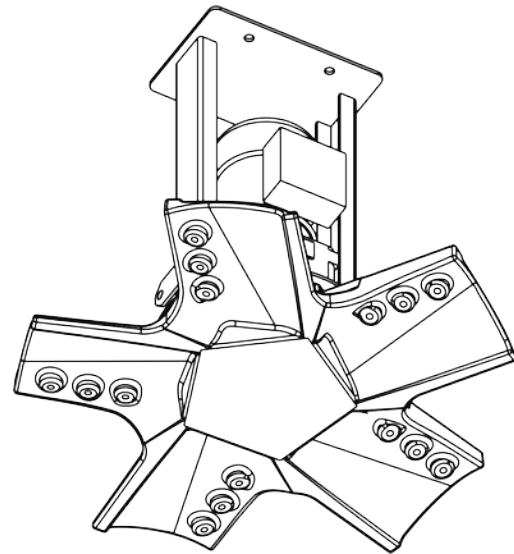


Fig.12

### Installing the Main Hub & Drive Assembly

1. Fasten top plate of fan frame to the bottom plate of the standard mount using 1/2" bolts, nuts and washers.
2. Position the safety cable as per Fig.13, loop at both ends.
3. Install and fasten cable clamps 2 per end as per Fig.9. Cable should be relatively snug.

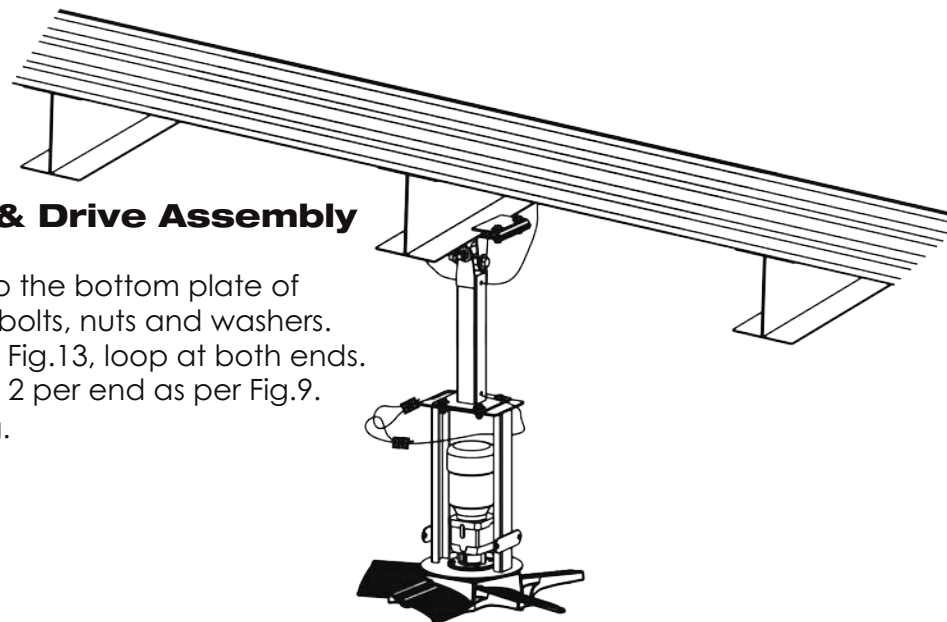


Fig.13

## 7. Guy Wires

### The package includes:

- [4] Cable 1/8" SS [60 ft]
- [8] Thimbles 1/4" SS
- [16] Cable Clamps 1/8"

### Extra hardware required:

- [4] Forged Eye Bolts 1/4"
- [4] Nuts 1/4"
- [4] Nylocks 1/4"
- [8] Washers Flat 1/4"

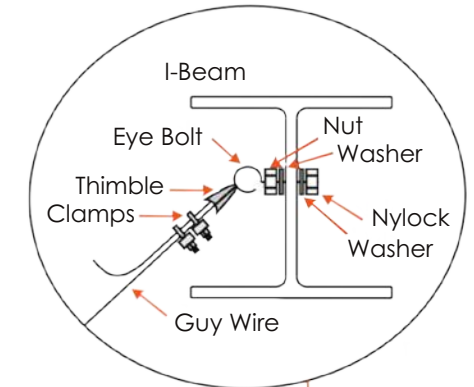


Fig.14



Fig.15

**Structural Note:** Guy cables must be installed or fastened to a structural component of the building at the angle shown in Fig.15 and Fig.17.

Fig.16

## Installing the Main Hub & Drive Assembly

1. Determine mounting position on ceiling and establish the angle between 45°- 60° for the cable. Determine correct location on the I-Beam to drill 5/16" diameter hole for the eye bolt. For example, if fan is 4 ft down from ceiling, cables should be mounted approximately 4 ft away from fan.
2. Install eye bolt with nuts and washers in I-Beam as per Fig.15.
3. Measure the run of cable required and cut cable approximately 2 ft longer. Note: longer runs than 15 ft will require additional hardware.
4. Secure it with 1 thimble and 2 cable clamps [Fig.16]. Repeat using the other 3 pieces of guy wire cables, thimbles and cable clamps [Fig.16].
5. Guy wires should be taut but not over-stressed to allow free self-levelling. They should also be approx. 90° apart [Fig.17].
6. Check to see if the fan is level by placing your level vertically on the side of the fan frame. If adjustment is needed, slightly tighten the guy wires on proper side.

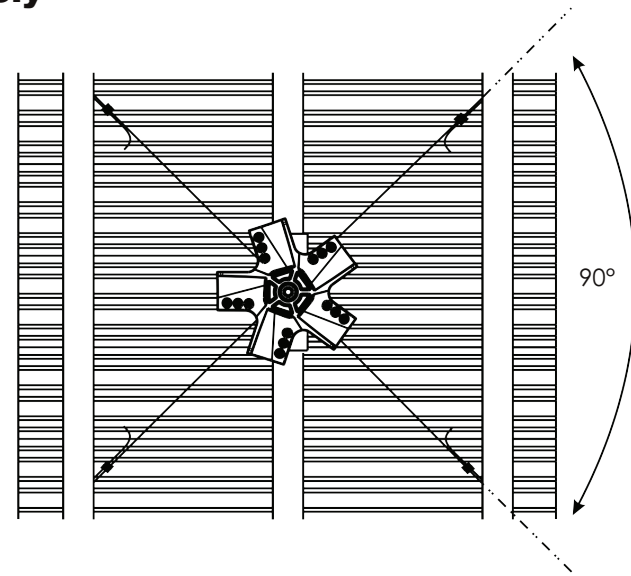


Fig.17

**Note:** Fans hanging lower than 10 ft from where the guy wires will mount will require additional cable.

## 8. Blade Assembly

### The package includes:

- [5] Blades
- [5] Blade Shims
- [5] Blade toppers
- [15] Bolts 3/8" x 3 3/4" UNC
- [15] Nylocks 3/8" UNC
- [30] Washers Flat 3/8"

### Installing the blade Assembly

1. Clamp a blade between blade topper and blade shim on each spoke of hub using 3/8" bolts, washers and nylocks [Fig.18].
2. Continue until all 5 blades have been fastened and tighten down.
3. Turn the fan by hand to ensure that there are no obstructions with the blades.

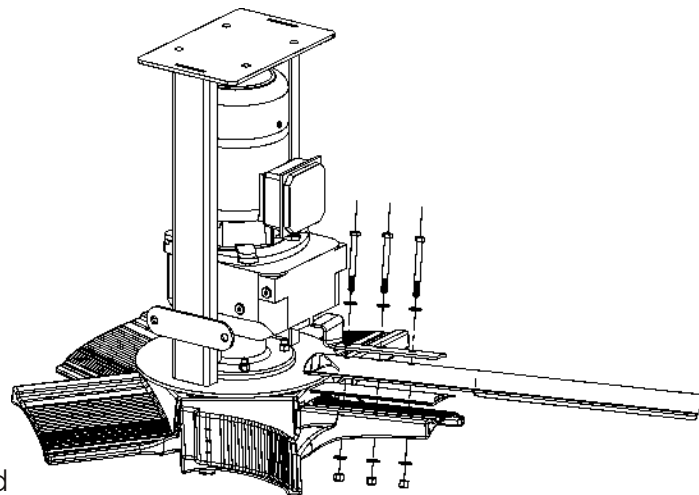


Fig.18

## 9. Leveling Fans

1. After your fan is installed, check the level again by placing your level vertically on the side of the fan frame. If adjustment is needed slightly tighten the guy wire on the appropriate side.
2. Once levelled your fan is installed and ready for electrical installation / connection.



Fig.19

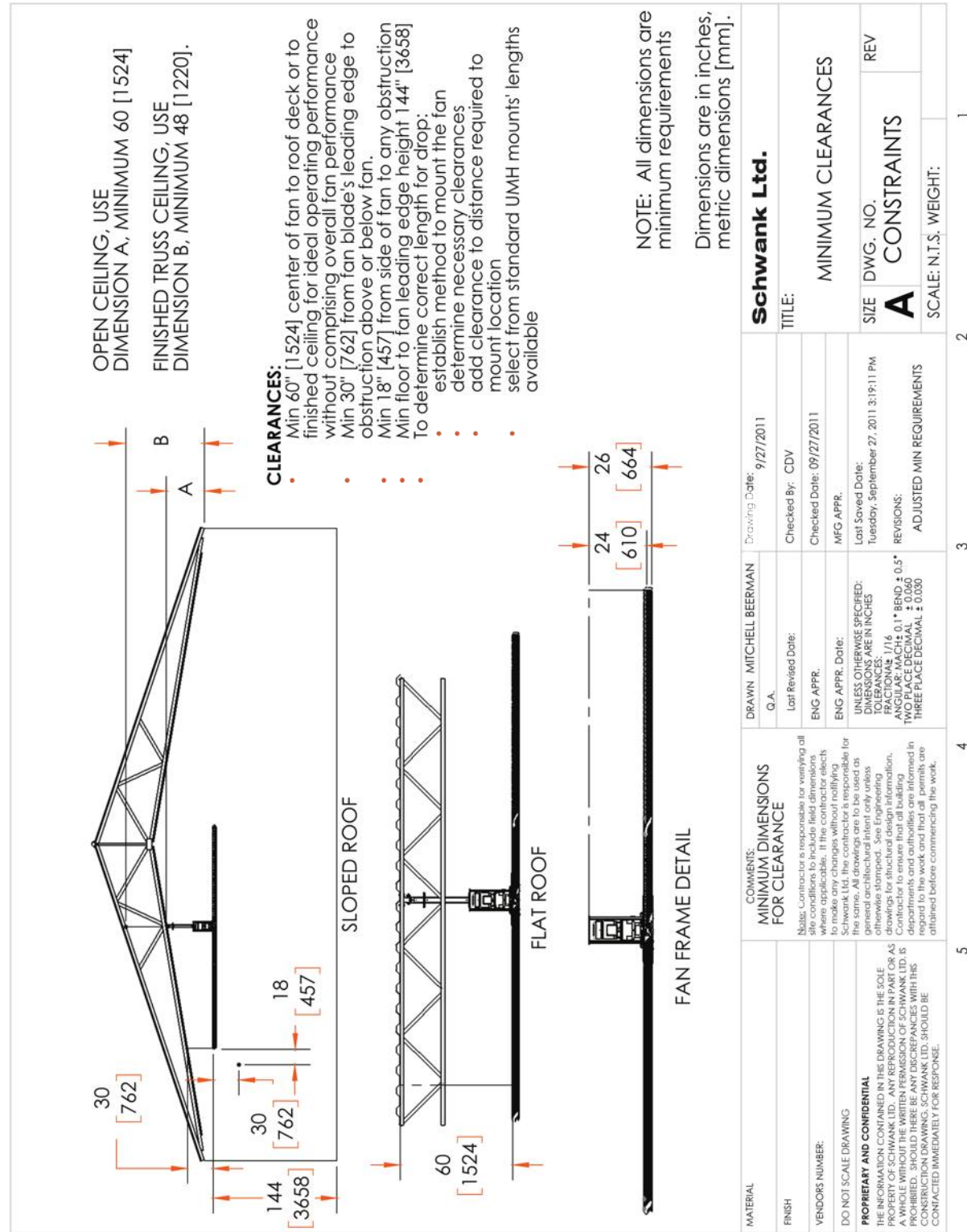
For proper electrical connection please consult the MonsterFans GD Series Electrical Installation Manual.

### Attention!

1. Remove rubber plug prior to start up.
2. Discard rubber plug after removal.
3. Discard pink tag if attached to unit.
4. If yellow sticker is attached to unit, it can remain in place.



## Fan Blade Clearance



## Recommended Maintenance Schedule

1. No maintenance shall be done on the fan, mount or guy wires while it is in operation or powered.
2. No maintenance shall be done on the fan controller while powered unless the task involves reprogramming or troubleshooting the electrical system.
3. No maintenance shall be done within a 6m horizontal radius of the fan and 4 ft below and none above the blade level while it is in operation.
4. While doing maintenance on the fan, mount, or guy wires, a safety barrier shall be erected at a radius of 6m of the center of the fan.
5. The fan controller shall be locked out while maintenance is ongoing on the fan, mount, or guy wires.
6. All personnel working on the fan, mount, or guy wires, shall wear the appropriate personal safety equipment as mandated by local, provincial, and national regulations.
7. A risk assessment shall be performed before any maintenance is done on the fan, mount, guy wires and fan controller.
8. A tailboard meeting shall be performed before any work is done. A checklist shall be completed and shall include any emergency contacts for the area.

## Power Unit

### Motor

Our motor or gearmotor manufacturers supply Schwank Ltd. with motors/gearmotors built for our application. Designed for use with variable frequency drives; they are wound with 200°C moisture resistant Inverter Spike Resistant [ISR] magnetic wire which dramatically extends the life of the motor compared to motors with non-ISR wire.

### Maintenance Schedule

- Initial Six Months
  - Check for hot spots
  - Re-tighten all loose electrical connections
- Repeat Every Eighteen Months Thereafter

### Gear Reducer / Motor

MonsterFans GD Series Fans are driven through Nord Helical Gear Reducers/Gearmotors. Nord is the best gear reducer for our particular application in terms of precision, durability, efficiency, reliability and quiet operation.

### Maintenance Schedule

- Initial Eighteen Months
  - Check oil level
- Change Oil Every 20,000 Hours of Normal Use

### Blades

The airfoil blades are designed for maximum efficiency and quietness with a minimum air disruption directly below the fan. All our blade shapes are extruded from 6063-aluminum alloy and heat-treated to T-5 condition. They are anodized to .0004 10 Microns clear for corrosion resistance and ease of cleaning. The blades have a lifetime warranty.

### Maintenance Schedule

- Initial Six Months
  - Ensure blades are intact, level and clean as required
- Every Eighteen to Thirty-Six Months Thereafter

## Drop / Mounting

The drop and mounting system is designed to prevent vibration or horizontal movement from being transferred back into the building structure. The system is easily installed in almost any building and allows fans to hang level from beams.

### Maintenance Schedule

Initial Six Months

- Physical check of fan guy wires, re-tightening of clamps if required
- Check all nuts/bolts/clamps [missing/loose/damaged]
- Physical check of safety cable, re-tightening of clamps if required

After Eighteen Months Thereafter

## Control Panel

Controls are variable frequency drives which provide soft start/stop, variable speed control and overload protection for the motors. The VFD also allows fan control to be automated and/or integrated with other systems.

### Maintenance Schedule

Initial Twelve Months

- Check for loose/discolored wires
- Check for hot spots
- Re-tighten all loose electrical connections

Every Eighteen Months Thereafter

**Note:** Maintenance schedule is based on running 5,000 hrs / year and is a guide line to ensure safe and continuous operation of the fan[s]. In case of extreme operating [e.g. high humidity, aggressive environment or large temperature variations], shorter intervals between service is recommended.



**1-877-446-3727 [toll-free]**  
**1-706-554-6191**

[monsterfans@schwankgroup.com](mailto:monsterfans@schwankgroup.com)

## USA

2 Schwank Way,  
Waynesboro, GA  
30830

## Canada

5285 Bradco Blvd.,  
Mississauga, ON  
L4W 2A6

[schwankgroup.com/monsterfans](http://schwankgroup.com/monsterfans)







**MonsterFans**  
by Schwank

# **MonsterFans Geared-Drive [GD] Series Fan**

## **Electrical Installation Manual**

## Table Of Contents

Safety Precautions.....	2
General Electrical Installation .....	3 - 4
LVC Wiring Diagram.....	5
MonsterFans Simple Fan Control Installation .....	6 - 9
MonsterFans Smart Fan Control Installation .....	10 - 18
MonsterFans Smart Multi-Fan Control Installation .....	19 - 30

## Safety Precautions



All installations must be installed by a qualified person.  
Do not work on live equipment. Use of lock-out procedures is a must.

### Important!

The installation of a wind sensor is mandatory in agricultural installations.

## Electrical Installation

### Included Components

- Fan Mounted VFD
- VFD Mounting Plate
- Remote Keypad in Control Box
- Wiring Harness
- 100' CAT 5 Cable

### Reference Acronym Key

- VFD - Variable Frequency Drive

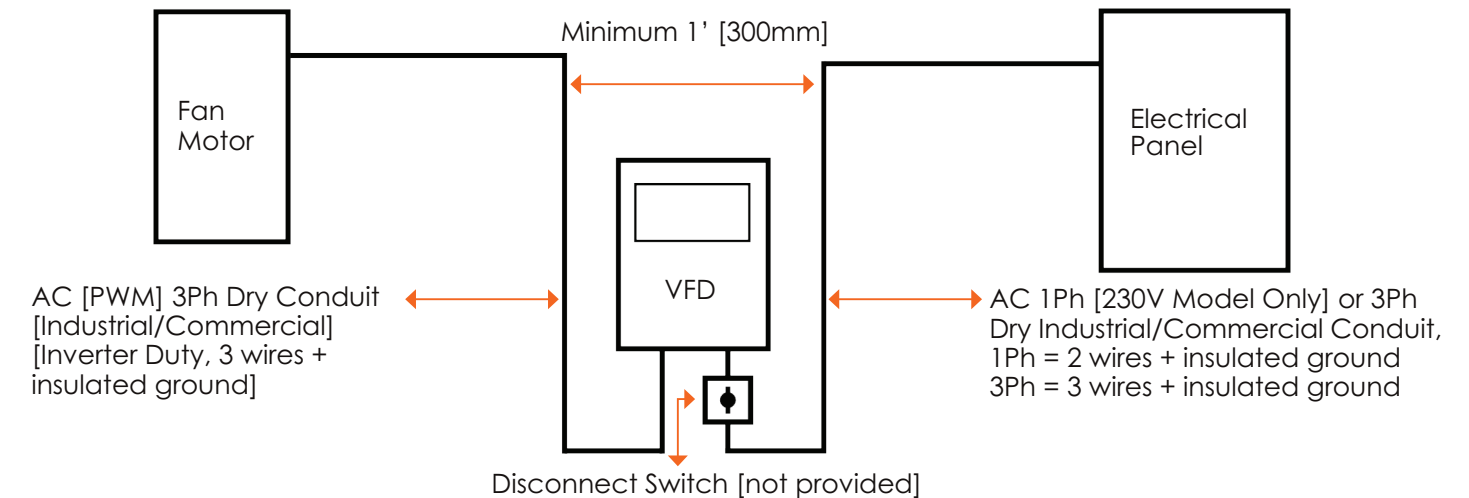
### Wire Requirements

- The size of the input and output wires depends on the length and current draw of the VFD and Motor.
- Use a continuous run of wires between the Motor and VFD [no splices or connections].
- Use adequately sized, shielded VFD cables for VFD to motor wiring.

A separate insulated ground must be provided to each VFD from the electrical panel.  
This will reduce the noise from being radiated in other equipment.

Motor is rated with an Insulation Class F;  
Ensure proper wiring is used as per current electrical codes.

### Wiring Schematic



### Wire Location

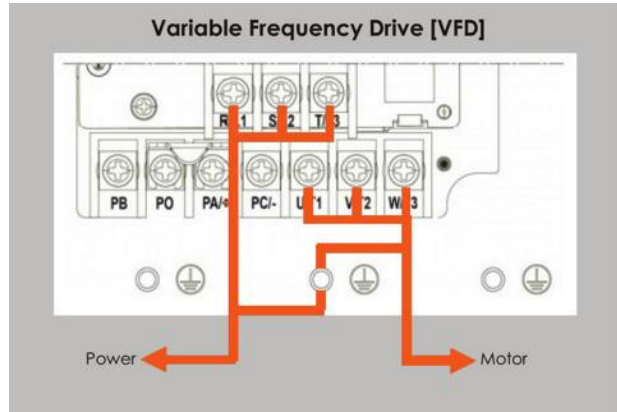
- DO NOT RUN input and output power cables in the same conduit
- DO NOT RUN control cables with any power cables in the same conduit
- DO NOT RUN different fan's output power cables in the same conduit

## Electrical Installation

### Wire Connections [VFD]

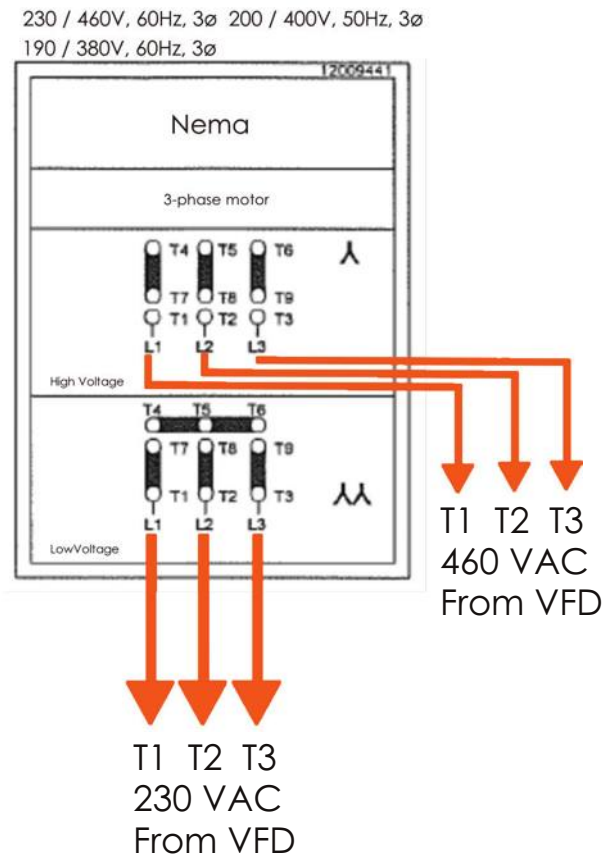
Input Power

- Single phase [1Ph] use L1 - L2 + PE [Ground]
- Three phase [3Ph] use L1 - L2 - L3 + PE [Ground]



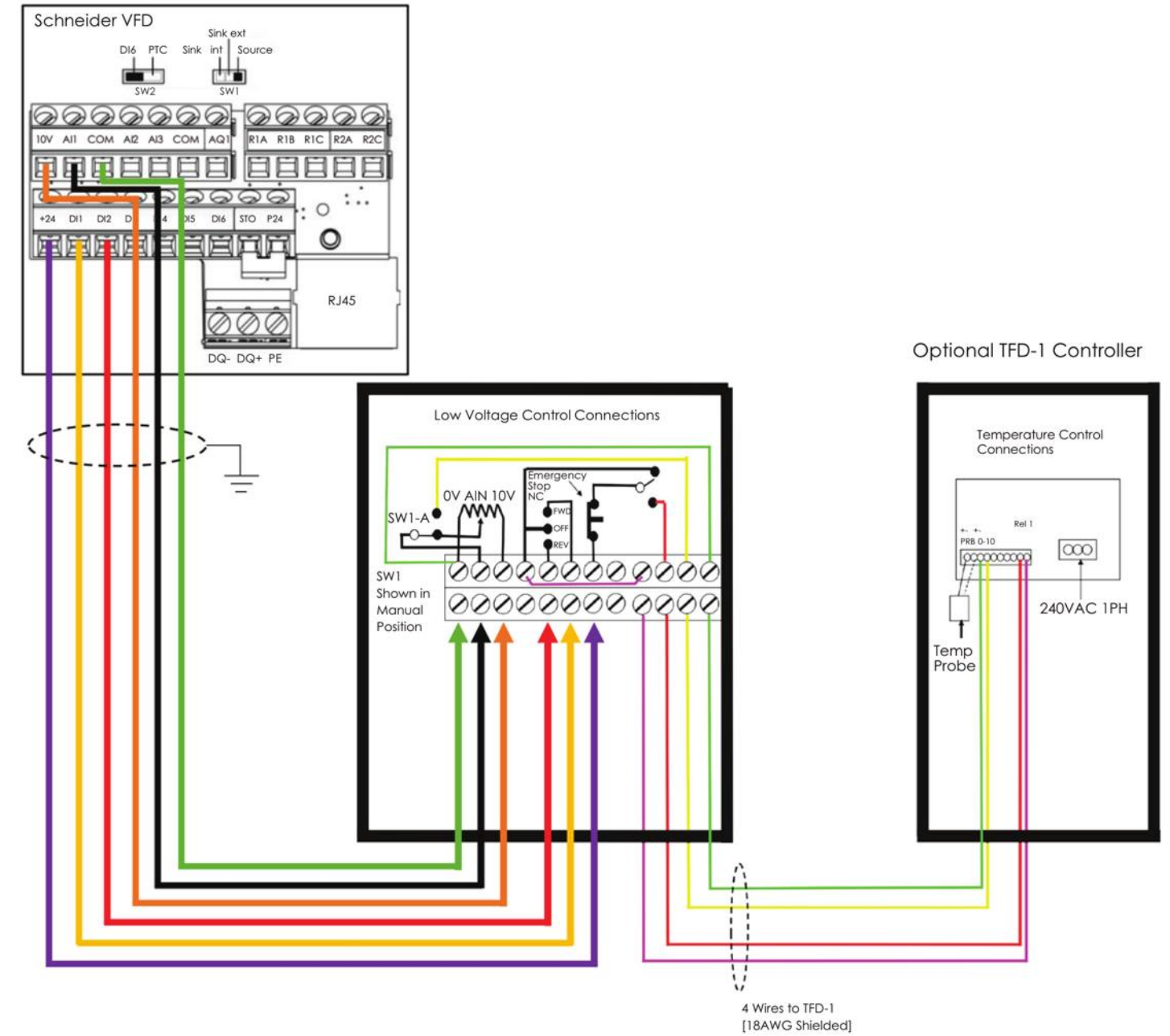
### Wire Connections [Motor]

The Variable Frequency Drive provides the over temperature and overload protection.



## LVC Controller Wiring Diagram

### Schneider VFD to Low Voltage Controller Wiring Diagram [OPTIONAL]



## MonsterFans Simple Fan Control Installation

### MonsterFans Simple Fan Control



#### Included Components

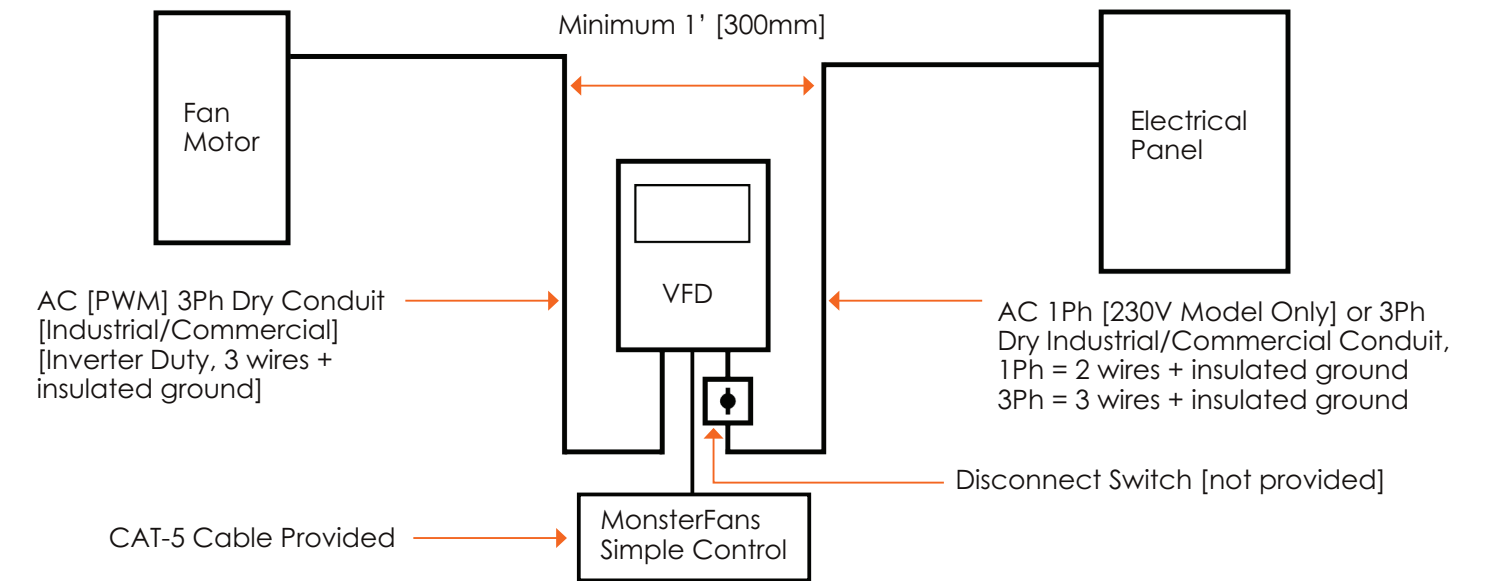
- MonsterFans Simple Control Keypad
- Split Cable Gland

#### Reference Acronym Key

- VFD- Variable Frequency Drive

## MonsterFans Simple Fan Control Installation

### Control Schematic



#### Cable Location:

DO NOT RUN control cables and any power cables in the same conduit.

#### Cable Connection [VFD]

Cat5 cable should be connected to the RJ45 port INSIDE of the VFD enclosure, as not to be exposed to environmental conditions. Do not connect to the external RJ45 port on the drive.

A minimum of Cat 5 cable must be used to connect between devices.

If required cable length is greater than the 100' of Cat5 supplied with the VFD, bulk cable should be used to make a cable with no additional connections.

\* Connect Cat5 Cable to port inside of VFD enclosure.



## MonsterFans Simple Fan Control Installation

### Cable Connection [Keypad]

Connect Cat5 cable from VFD to RJ45 port on the back of the keypad.



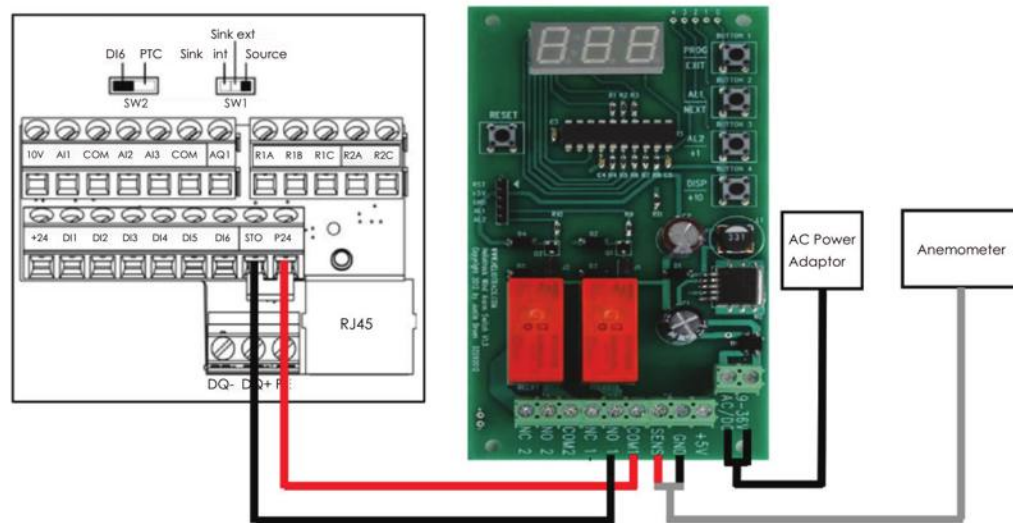
### Wind Speed Switch [Optional]

If a Wind Speed Switch is to be used, the control must be wired as pictured below, to allow for automatic shutdown of the fan based on high wind speeds.

The Keypad will display "STo" while high wind speeds are active.

The fan must be manually reset once the wind speed drops below the controller set point.

\* Please refer to Wind Speed Switch supplement for further installation and operation details.



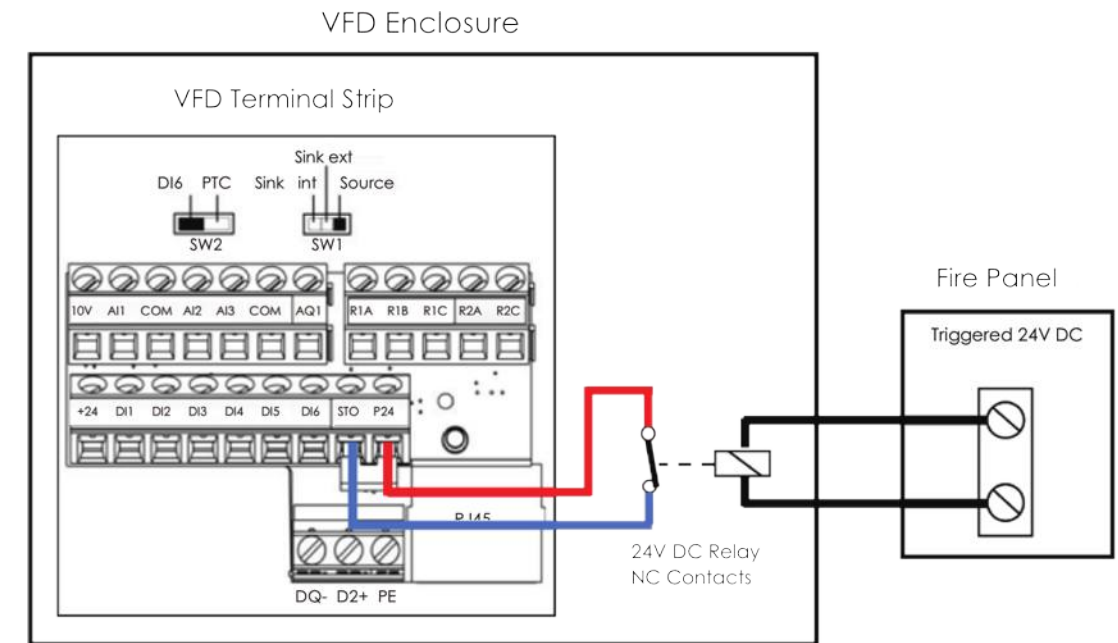
## MonsterFans Simple Fan Control Installation

### Fire Suppression System Relay [Optional]

To integrate fan controls with a fire detection / suppression system wire fire panel to supplied relay in VFD enclosure as shown below.

The Keypad will display "STo" while the fire shutdown is active.

The fan must be manually restarted once the fire suppression system has been reset.



### Operating Instructions

To Start:	
To Stop/Reset Fault:	
To Change Rotation:	
To Adjust Speed:	



## MonsterFans Smart Fan Control Installation

### MonsterFans Smart Fan Control

#### Included Components

- MonsterFans Smart Control Graphic Interface
- RJ45 Coupler
- 100' CAT5 Cable
- Split Cable Gland

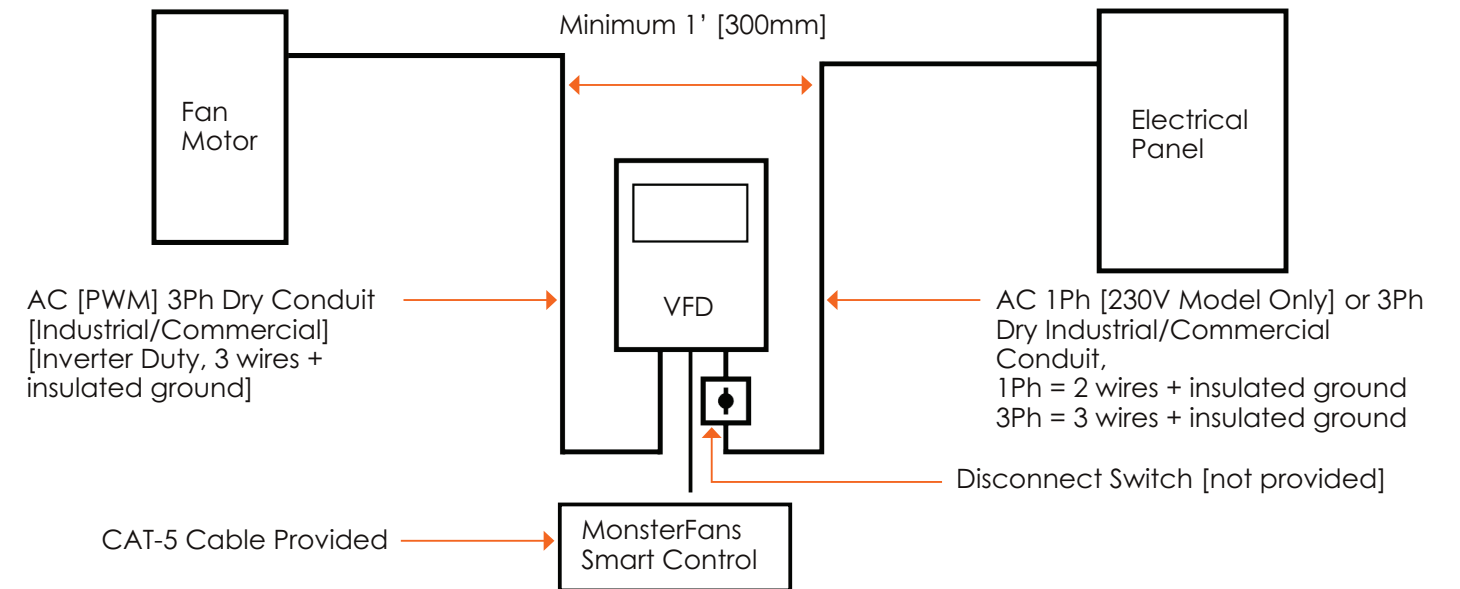
#### Reference Acronym Key

- VFD- Variable Frequency Drive



## MonsterFans Smart Fan Control Installation

### Control Schematic



### Cable Location:

DO NOT RUN control cables and any power cables in the same conduit.

### Cable Connection [VFD]

Cat5 cable should be connected to the RJ45 port INSIDE of the VFD enclosure, as not to be exposed to environmental conditions. Do not connect to the external RJ45 port on the drive. A minimum of Cat 5 cable must be used to connect between devices.

If required cable length is greater than the 100' of Cat5 supplied with the VFD, bulk cable should be used to make a cable with no additional connections.

\* Connect Cat5 Cable to port inside of VFD enclosure.



## MonsterFans Smart Fan Control Installation

### Installation Considerations

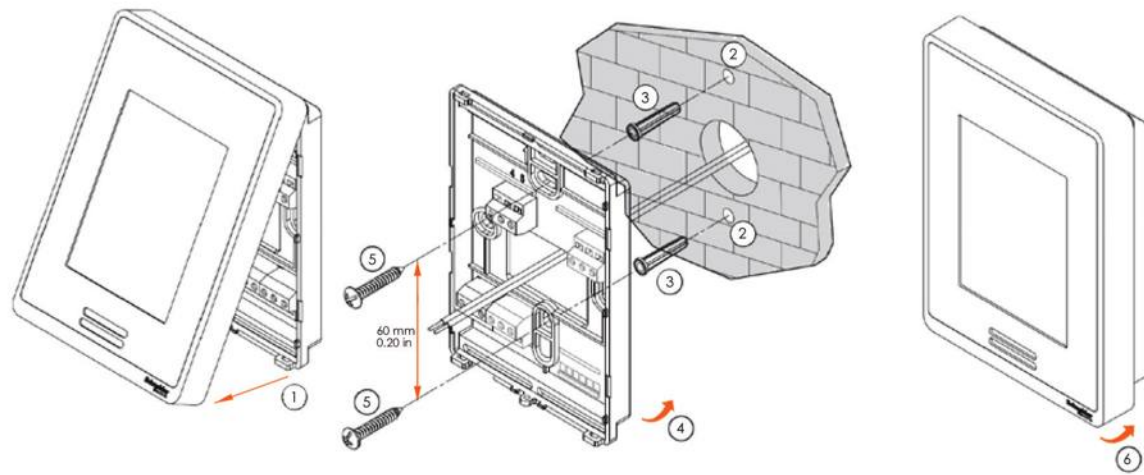
- The HMI must be mounted in a safe and dry location.
- It should not be mounted in a location that it is exposed to direct liquid contact [i.e., splashing or washdown].
- If utilizing the built-in temperature and/or humidity sensors of the HMI, placement of the HMI in a proper location to ensure its efficiency, accurate readings, and the proper automatic function of the fan is very important.

If possible place the HMI away from:

- Direct sunlight, drafts, exterior doorways, skylights, windows, and exterior walls.

### Mounting

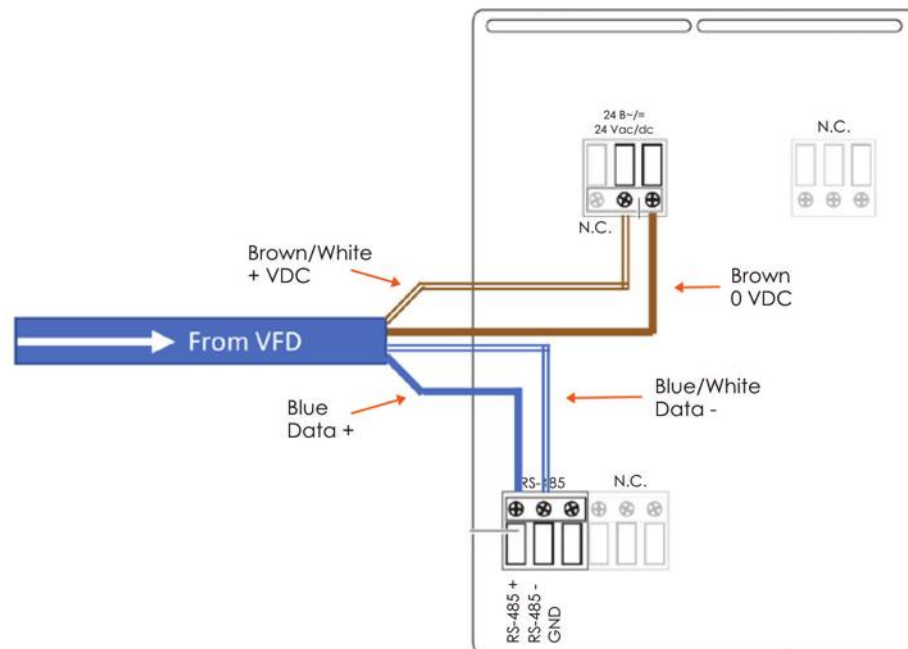
The HMI can be mounted directly to a wall with or without the use of a electrical box in the wall. If the HMI is to be mounted on a structural steel column or similar, a single gang weatherproof box is recommended to space the HMI off of the column to avoid inaccurate temperature readings.



### Wiring

The HMI comes with a Cat5 cable prewired.

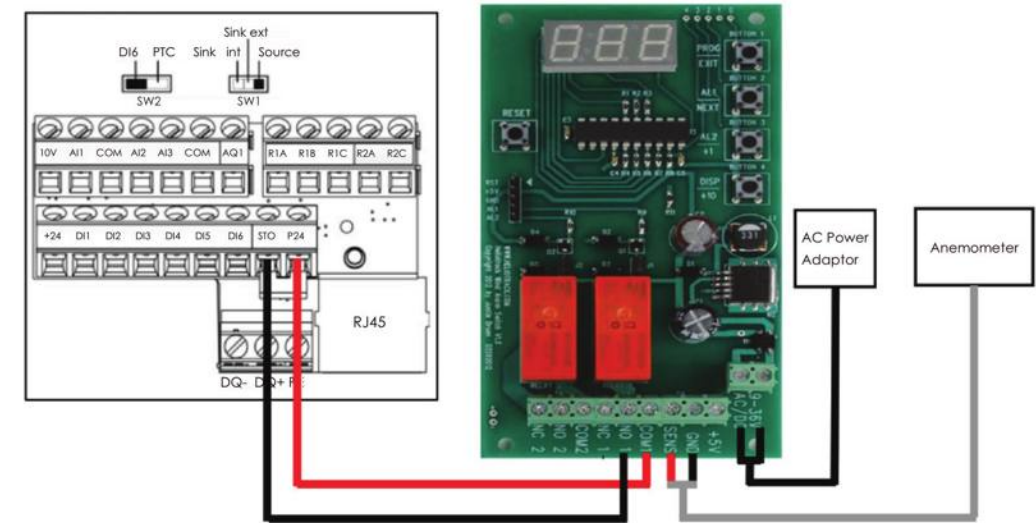
In some cases it may be necessary to terminate the Cat5 cable from the VFD directly to the HMI.



## MonsterFans Smart Control Fan Control Installation

### Wind Speed Switch [Optional]

If a Wind Speed Switch is to be used, the control must be wired as pictured below, to allow for automatic shutdown of the fan based on high wind speeds.



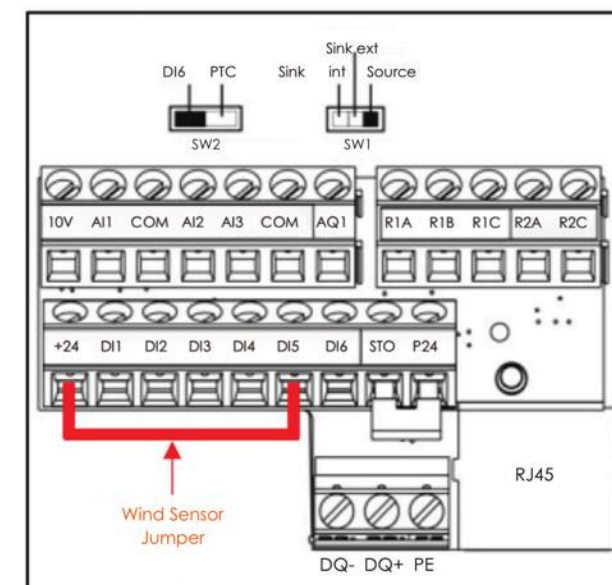
\* Please refer to Wind Speed Switch supplement for further installation and operation details.

### Wind Speed Alarm

If high wind speeds are detected the fan will decelerate to a stop and a message will display on the HMI [pictured below.] Once the wind speed drops below the set point the fan will automatically restart.

### Wind Sensor Jumper

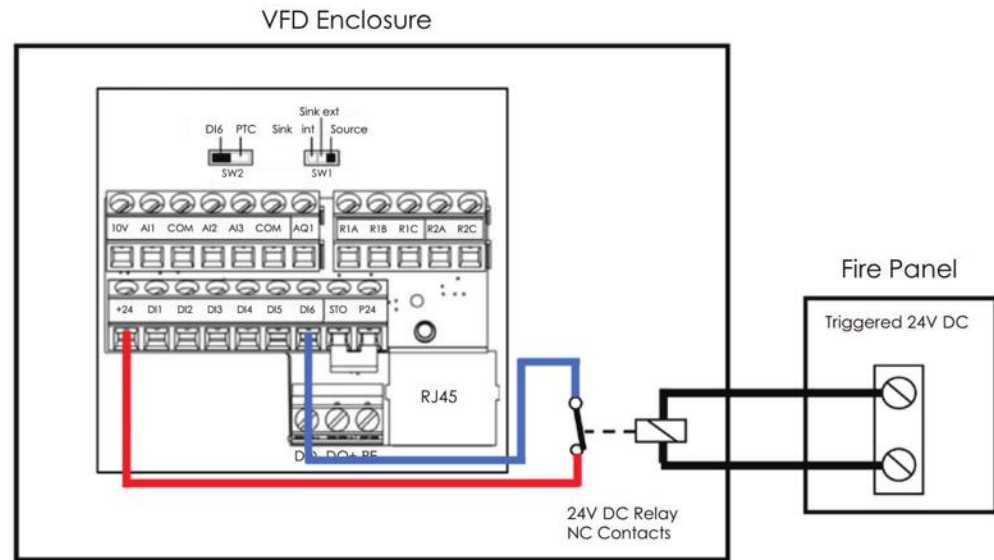
If no Wind Speed Sensor is to be installed a jumper MUST be installed as pictured below for the unit to operate with the MonsterFans Smart Control.



## MonsterFans Smart Control Fan Control Installation

### Fire Suppression System Relay [Optional]

To integrate fan controls with a fire detection / suppression system wire fire panel to supplied relay in VFD enclosure as shown below.

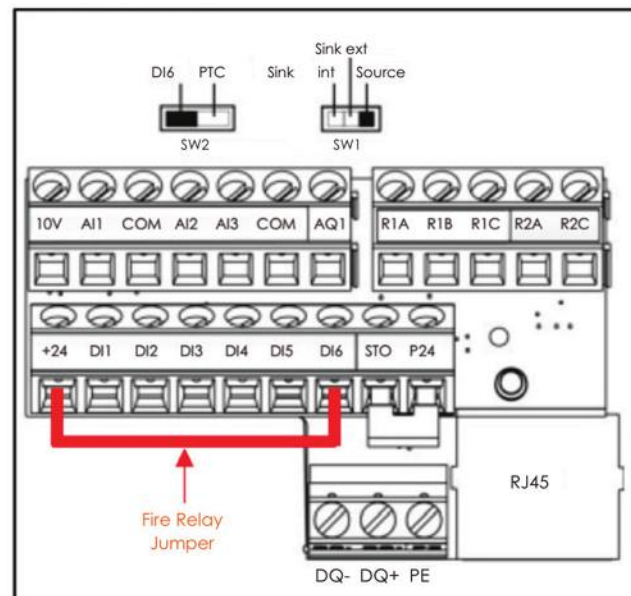


### Fire Relay Alarm

If the Fire Relay is activated the fan will decelerate to a stop and a message will display on the HMI [pictured below.] Once the Fire Relay is reset the fan will automatically restart.

### Fire Relay Jumper

If no Fire Relay is to be installed a jumper MUST be installed as pictured below for the unit to operate with the MonsterFans Smart Control.



## MonsterFans Smart Fan Control Installation

### Operation

Controlling the speed, direction of rotation, as well as the ON/OFF is done through the screens on the MonsterFans Smart Control HMI.

### Fan Control

Auto/Manual modes, speed and direction selections are done on this screen.

**Fault Indicator:**  
The bar at the top and bottom of all screens indicates the status of the FD.  
Green: Normal  
Red: Faulted

**Manual Controls:**  
Operational control of fan, ON/OFF and FWD/REV.  
Reset clears faults on drive.  
Set desired fan speed by tapping number or with +/- buttons.

**Readings Display:**  
Actual speed, Temperature, and Humidity readings displayed.  
Temperature reading units can be displayed in °C or °F.  
Units can be selected on Setting page 2.

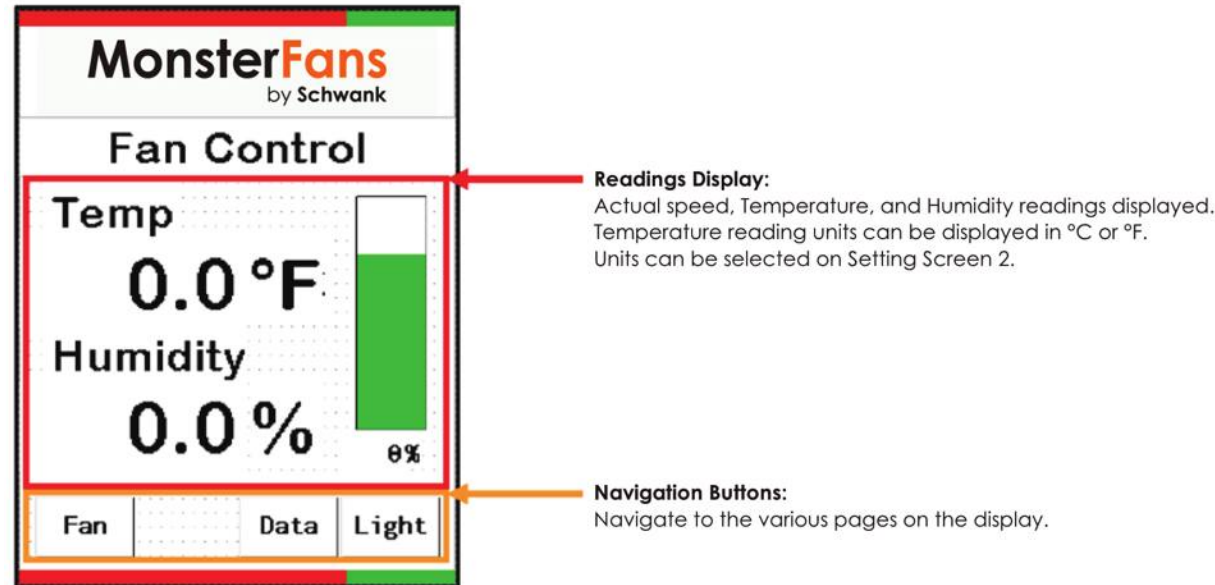
**Navigation Buttons:**  
Navigate to the various pages on the display.



## MonsterFans Smart Fan Control Installation

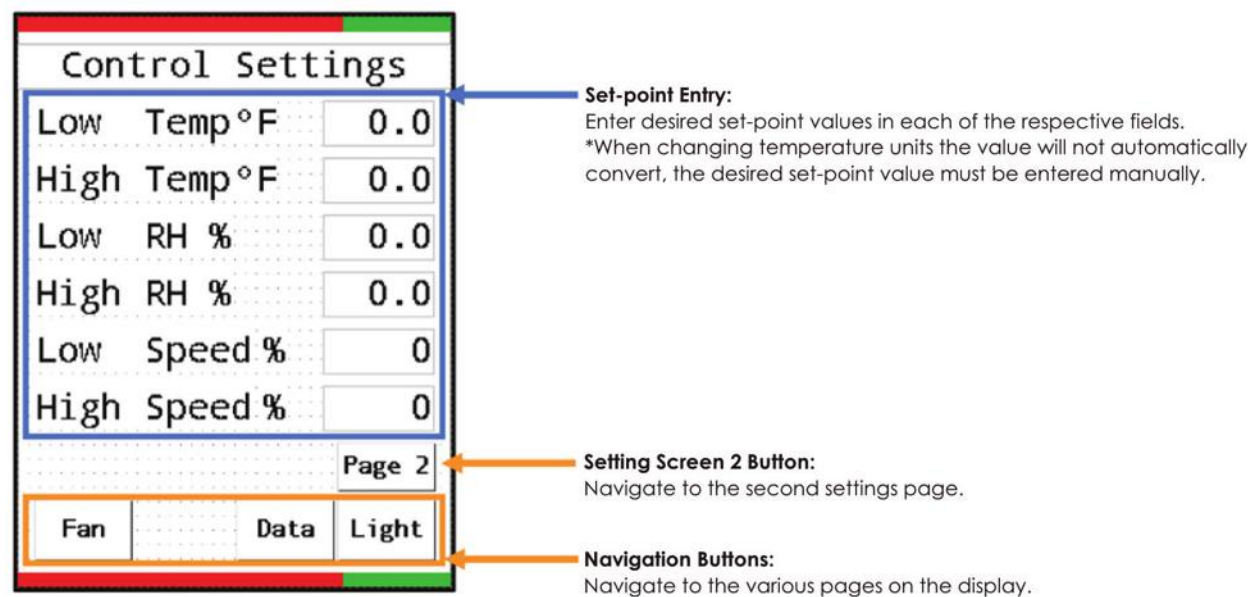
### Main Screen

Selecting this page enters the control into Auto Mode. This screen displays the sensor readings and the fans current speed as calculated based on the set-points set in the Settings screens.



### Settings Screen 1

Auto Mode speed is calculated based on the settings entered in the fields on this screen.

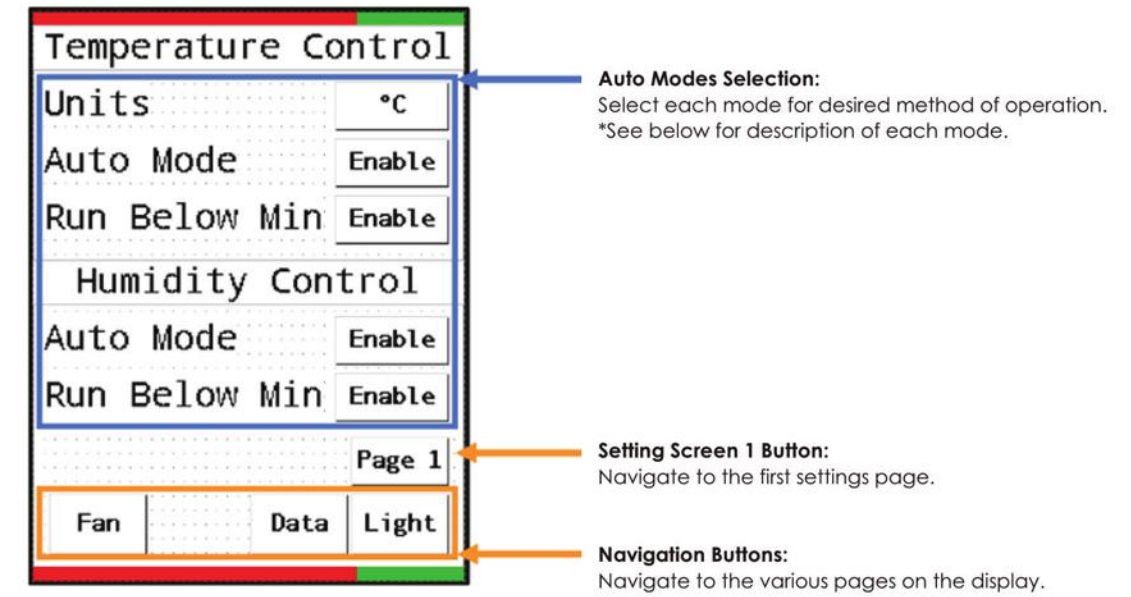


## MonsterFans Smart Fan Control Installation

### Settings Screen 2

Auto Mode functions are based on the settings enabled on this screen.

\* The settings on this screen are not retentive, if power to the HMI is lost, they will reset to Disabled and must be re-enabled for fan to function in Auto Mode



### Controls Modes

#### Units

Select temperature units displayed °C/°F.

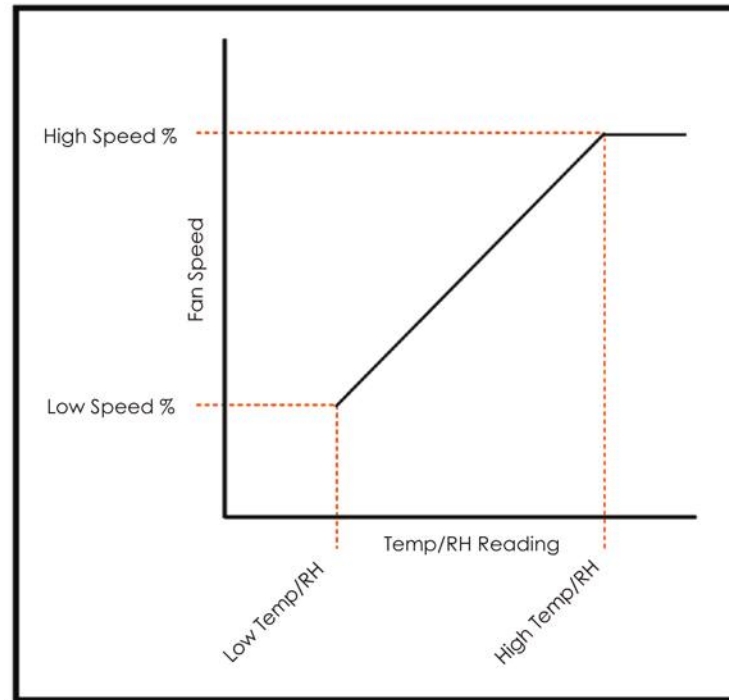
#### Auto Mode

- Enabling Auto Mode allows the fan to automatically start if the temperature or humidity rises to the Low Temp/RH set-point, beginning to run at the Low Speed % set-point.
- The fan speed will continue to increase to the High Speed % based on the sensed temperature or humidity until the High Temp/RH set-point is reached.
- The fan will continue to run at the High Speed % set-point if the sensed temperature or humidity is above the High Temp/RH set-point.
- If both Temperature and Humidity Auto Modes are enabled the fan will run at the higher calculated required speed.

#### Run Below Min

- Allows the fan to run at the Low Speed % set-point if the sensed temperature is below the Low Temp set-point.

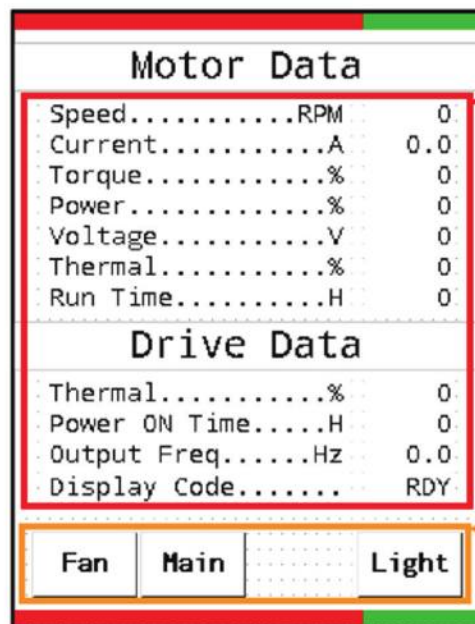
## MonsterFans Smart Fan Control Installation



This chart shows how the fan speed is calculated relative to the sensed temperature and humidity

### Data Screen

Realtime data from the drive is displayed on this page allowing live monitoring of fan performance



**Readings Display:**  
Realtime data of drive and motor displayed.

**Navigation Buttons:**  
Navigate to the various pages on the display.

## MonsterFans Smart Multi-Fan Control Installation

### MonsterFans Smart Multi-Fan Control

#### Included Components

- HMI Control
- Control Box
- RJ45 Splitters
- 100' CAT5 Cable

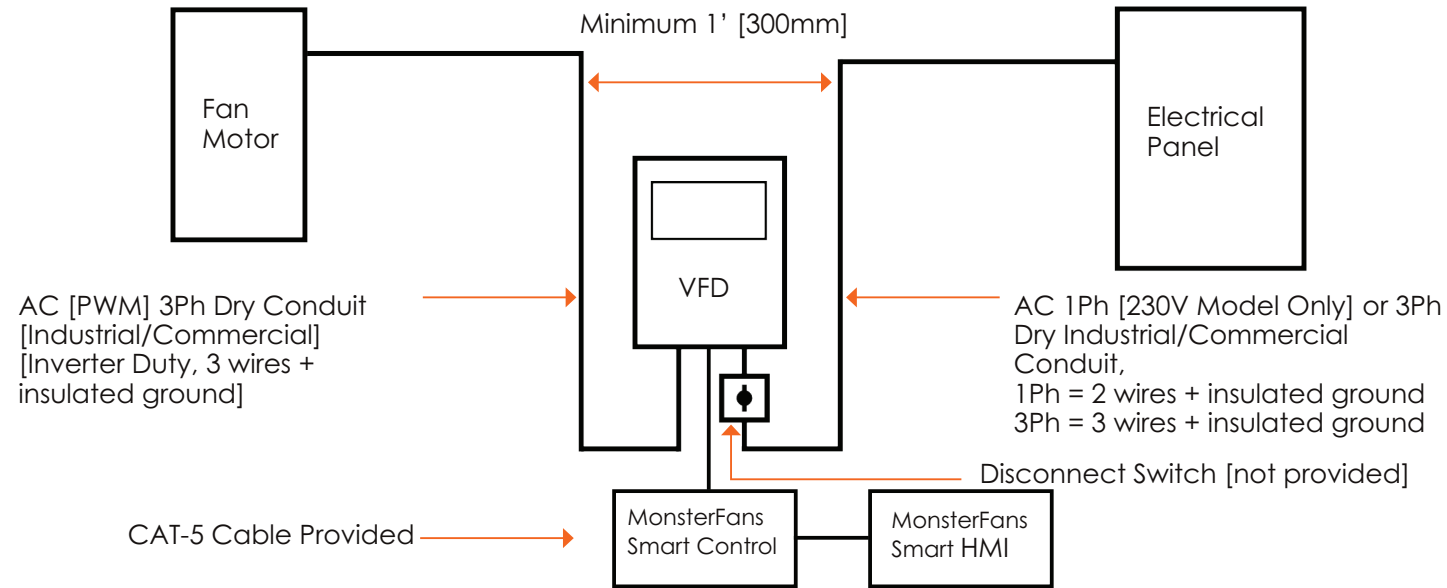
#### Reference Acronym Key

- VFD- Variable Frequency Drive



## MonsterFans Smart Multi-Fan Control Installation

### Control Schematic



### VFD Mounting and Electrical Connection:

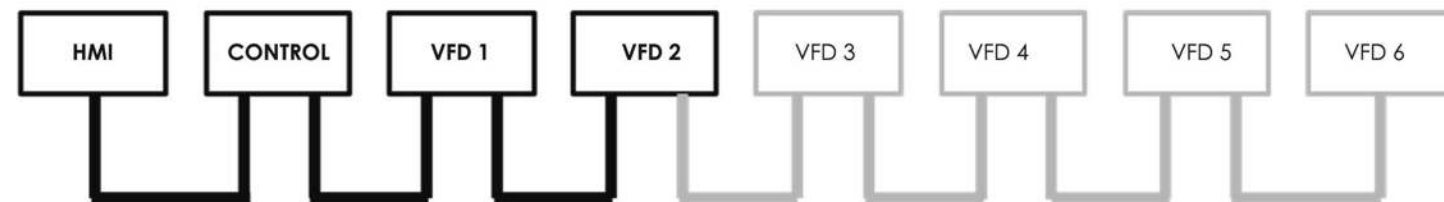
Please refer to the Electrical Installation Guide for full recommended VFD mounting and electrical connection instructions.

### Network Configuration

- Using the short CAT 5 cable in the VFD, connect the supplied RJ45 splitter as shown.
- Connect the CAT 5 cable from the control box to VFD 1 to one of the ports of the splitter.
- Connect a CAT 5 cable for VFD 2 to the remaining port of the splitter.
- Connect the remaining VFD's in the same manner.
- The last VFD in the network does not require a splitter. Remove the short CAT 5 cable from the VFD and connect the CAT 5 cable from the previous VFD directly to the RJ45 port inside the VFD enclosure.

\*\* All CAT 5 connections should be made inside of an enclosure.

The connection diagram below outlines how to create the fan control network. It is important to connect the Cat5 cables in the control box to the correct field device.



## MonsterFans Smart Multi-Fan Control Installation

### Cable Location:

- DO NOT RUN control cables and any power cables in the same conduit.

### Cable Connection [VFD]

Cat5 cable should be connected to the RJ45 port INSIDE of the VFD enclosure, as not to be exposed to environmental conditions. Do not connect to the external RJ45 port on the drive. A minimum of Cat 5 cable must be used to connect between devices.

If required cable length is greater than the 100' of Cat5 supplied with the VFD, bulk cable should be used to make a cable with no additional connections.

The last fan on the network does not require a splitter to be installed, connect directly to internal RJ45 port.



From Control Box/  
previous VFD

To next VFD

\* Connect Cat5 Cable and splitter to port inside of VFD enclosure

## MonsterFans Smart Multi-Fan Control Installation

### Installation Considerations

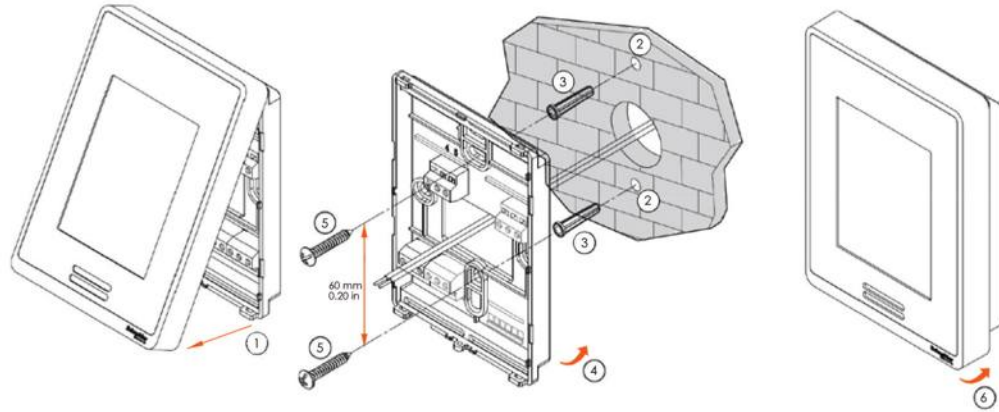
- The HMI must be mounted in a safe and dry location.
- It should not be mounted in a location that it is exposed to direct liquid contact [i.e., splashing or washdown].
- If utilizing the built-in temperature and/or humidity sensors of the HMI, placement of the HMI in a proper location to ensure its efficiency, accurate readings, and the proper automatic function of the fan is very important.

If possible place the HMI away from:

- Direct sunlight, drafts, exterior doorways, skylights, windows, and exterior walls.

### Mounting

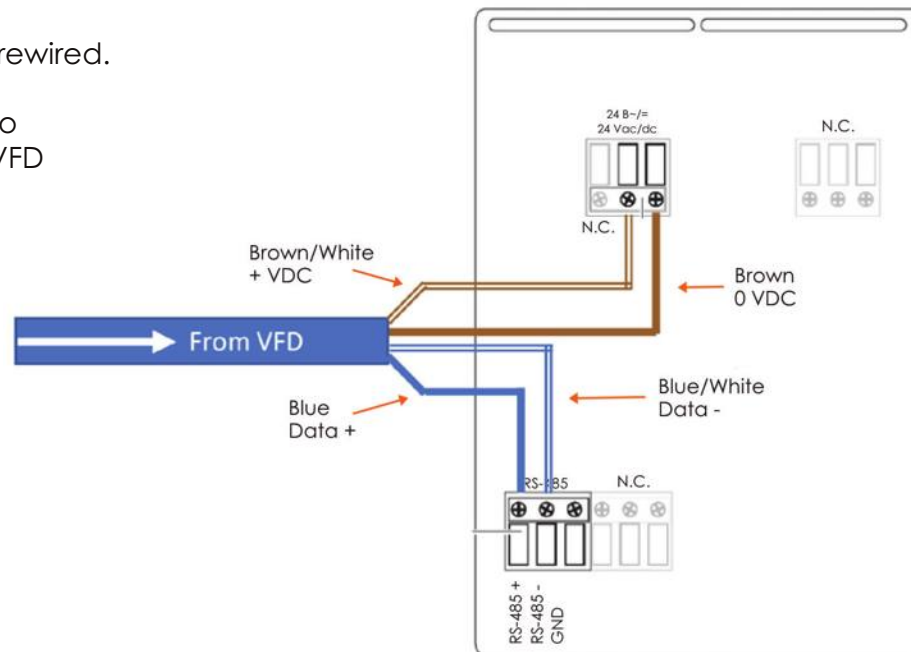
The HMI can be mounted directly to a wall with or without the use of a electrical box in the wall. If the HMI is to be mounted on a structural steel column or similar, a single gang weatherproof box is recommended to space the HMI off of the column to avoid inaccurate temperature readings.



### Wiring

The HMI comes with a Cat5 cable prewired.

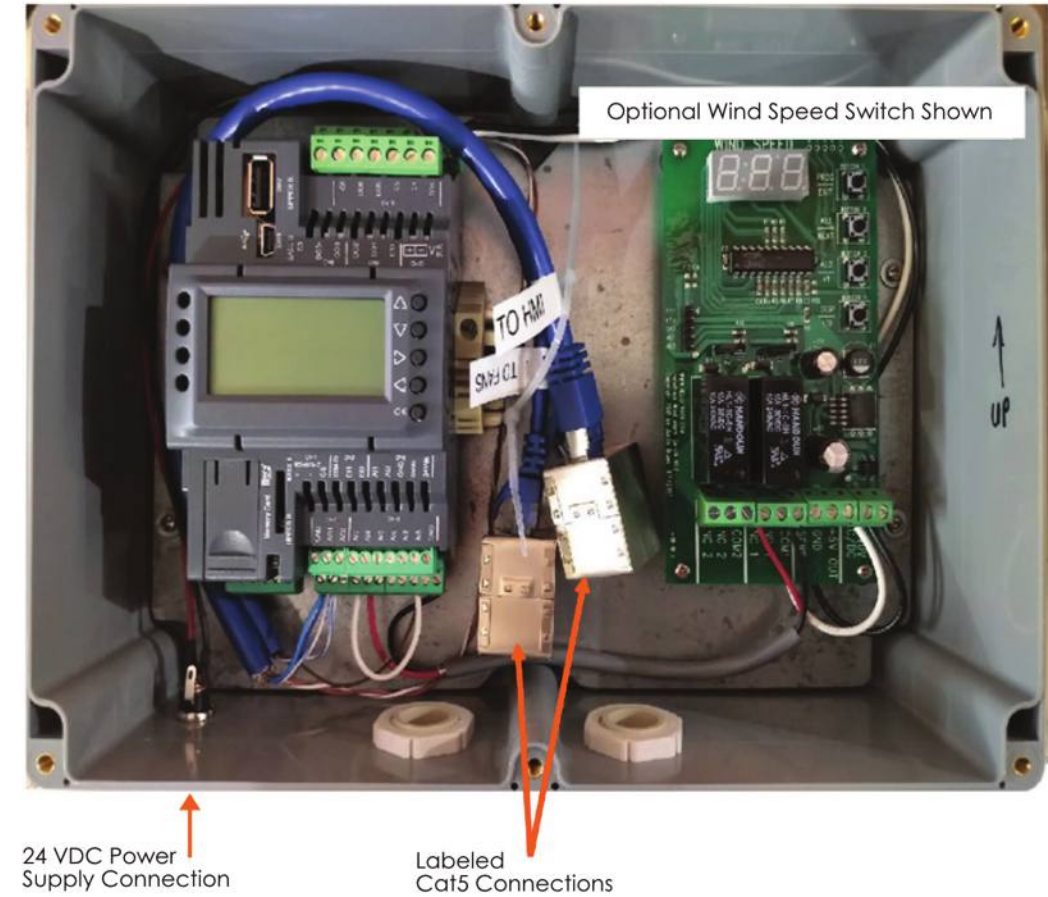
In some cases it may be necessary to terminate the Cat5 cable from the VFD directly to the HMI.



## MonsterFans Smart Multi-Fan Control Installation

### Control Box Mounting & Connections

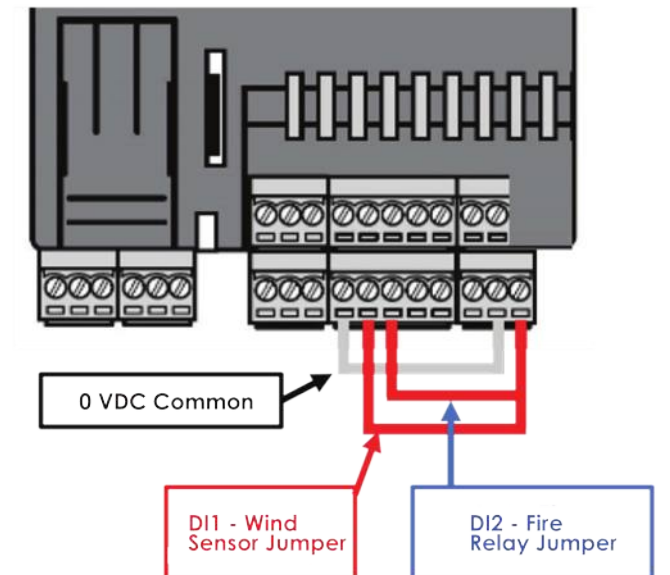
The control box should be mounted in a dry location, do not wash the control box with pressurized water. Connect CAT 5 cables for the HMI and VFD #1 to labeled connectors inside control box. Connect power supply to receiver on bottom of control box.



### Optional Equipment

The controller is provisioned for integration with a wind speed sensor or fire suppression system. If these options are not requested at time of manufacture, jumpers are installed to allow for normal operation of the fans.

The picture shows the jumper connections to the controller.

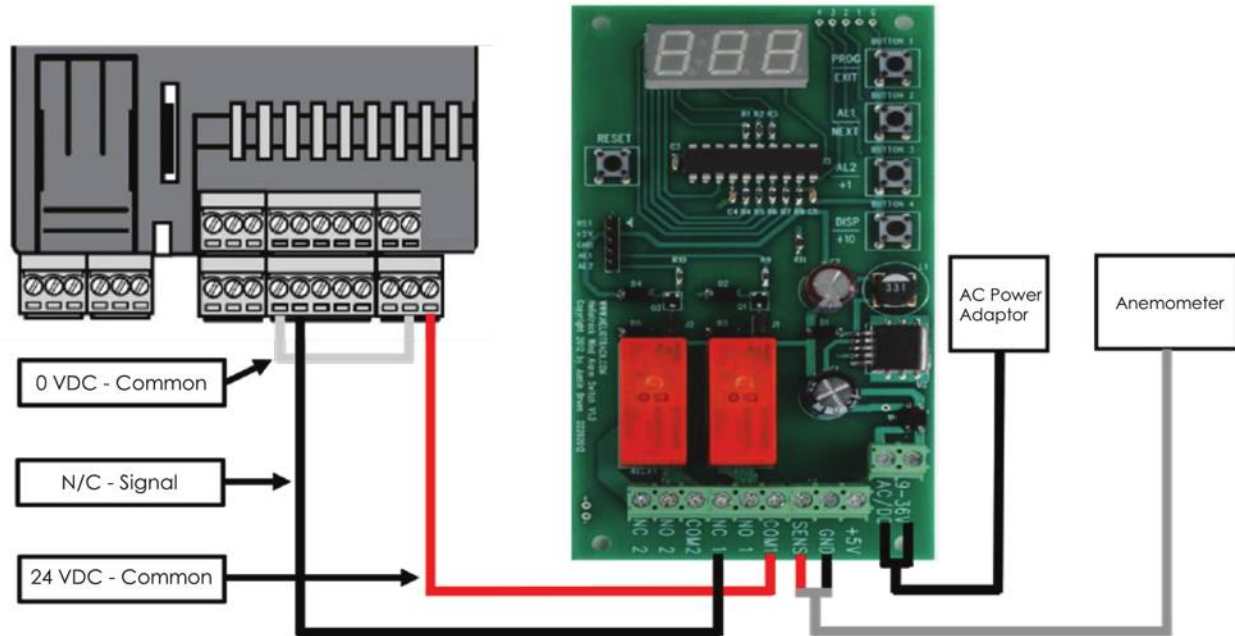


## MonsterFans Smart Multi-Fan Control Installation

### Wind Speed Switch [Optional]

If a Wind Speed Switch is to be used, the control must be wired as pictured below, to allow for automatic shutdown of the fan based on high wind speeds.

\* Please refer to Wind Speed Switch supplement for further installation and operation details.



### Wind Speed Alarm

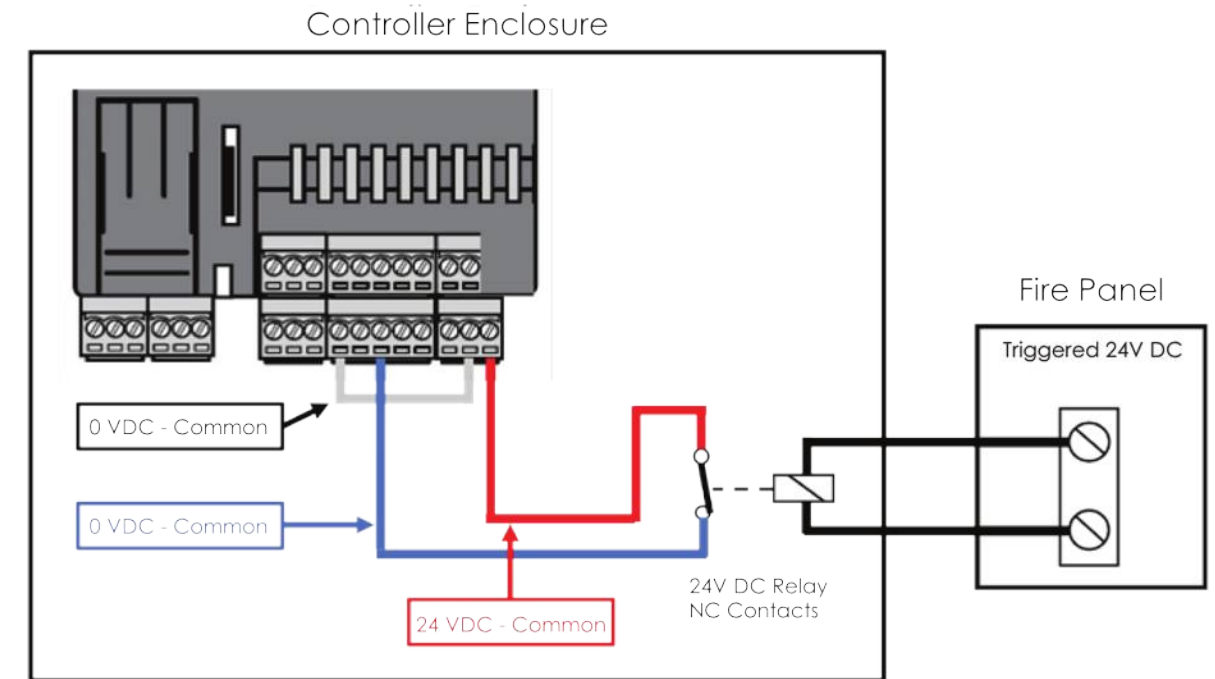
If high wind speeds are detected the fan will decelerate to a stop and a message will display on the HMI [pictured below.] Once the wind speed drops below the set point the fan will automatically restart.



## MonsterFans Smart Multi-Fan Control Installation

### Fire Suppression System Relay [Optional]

To integrate fan controls with a fire detection / suppression system wire fire panel to supplied relay in VFD enclosure as shown below.



### Fire Relay Alarm

If the Fire Relay is activated the fan will decelerate to a stop and a message will display on the HMI [pictured below.] Once the Fire Relay is reset the fan will automatically restart.



## MonsterFans Smart Multi-Fan Control Installation

### Operation

Controlling the speed, direction of rotation, as well as the ON/OFF and intensity of the optional LED light is done through the screens on the MonsterFans Smart HMI.

### Fan Control

Auto/Manual modes, speed and direction selections are done on this screen.

**Fan Selection**

1	2	3	4	5
6	7	8	9	10
All		None		

**Manual Controls:** Manual Stop Fwd Reset

**Readings Display:** Manual % 0 Temp°F 0.0 RH % 0.0

**Navigation Buttons:** Main Set Data Lights

**Fault Indicator:** The bar at the top and bottom of all screens indicates the status of the VFD. Green: Normal Red: Faulted

**Fan Selection:** Select which fan to adjust settings.

**Manual Controls:** Operational control of fan, ON/OFF and FWD/REV. Reset clears faults on drive. Set desired fan speed by tapping number or with +/- buttons.

**Readings Display:** Actual speed, Temperature, and Humidity readings displayed. Temperature reading units can be displayed in °C or °F. Units can be selected on Setting page 2.

**Navigation Buttons:** Navigate to the various pages on the display.

## MonsterFans Smart Multi-Fan Control Installation

### Main Screen

Sensor readings displayed on this screen.

**MonsterFans by Schwank**

**Fan Control**

**Temp:** 0.0°C

**Humidity:** 0.0%

**Navigation Buttons:** Fans Lights System

**Readings Display:** Temperature, and Humidity readings displayed. Temperature reading units can be displayed in °C or °F. Units can be selected on System Screen.

**Navigation Buttons:** Navigate to the various pages on the display.

### System Setting Screen

This screen allows selection of system wide settings.

**System Settings**

**Units** °C

**Navigation Buttons:** Main Fans Lights

**System Settings Selection:** Select temperature units displayed °C/°F.

**Navigation Buttons:** Navigate to the various pages on the display.

## MonsterFans Smart Multi-Fan Control Installation

### Settings Screen 1

Auto Mode speed is calculated based on the settings entered in the fields on this screen.

**Set-point Entry:**  
Enter desired set-point values in each of the respective fields.  
\*When changing temperature units the value will not automatically convert, the desired set-point value must be entered manually.

**Setting Screen 2 Button:**  
Navigate to the second settings page.

**Navigation Buttons:**  
Navigate to the various pages on the display.

### Settings Screen 2

Auto Mode functions are based on the settings enabled on this screen.

\* The settings on this screen are not retentive, if power to the HMI is lost, they will reset to Disabled and must be re-enabled for fan to function in Auto Mode

**Auto Modes Selection:**  
Select each mode for desired method of operation.  
\*See below for description of each mode.

**Setting Screen 1 Button:**  
Navigate to the first settings page.

**Navigation Buttons:**  
Navigate to the various pages on the display.

## MonsterFans Smart Multi-Fan Control Installation

### Controls Modes

#### Units

Select temperature units displayed °C/°F.

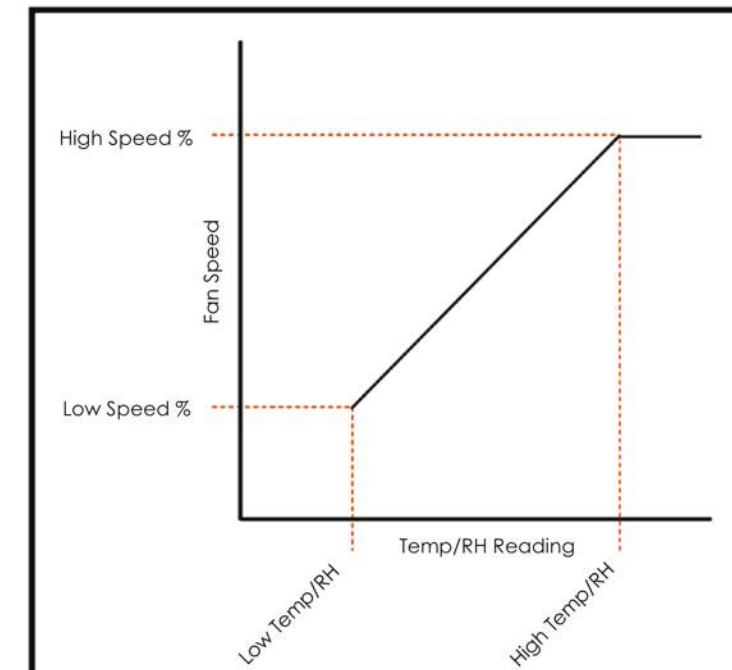
#### Auto Mode

- Enabling Auto Mode allows the fan to automatically start if the temperature or humidity rises to the Low Temp/RH set-point, beginning to run at the Low Speed % set-point.
- The fan speed will continue to increase to the High Speed % based on the sensed temperature or humidity until the High Temp/RH set-point is reached.
- The fan will continue to run at the High Speed % set-point if the sensed temperature or humidity is above the High Temp/RH set-point.
- If both Temperature and Humidity Auto Modes are enabled the fan will run at the higher calculated required speed.

#### Run Below Min

- Allows the fan to run at the Low Speed % set-point if the sensed temperature is below the Low Temp set-point.

This chart shows how the fan speed is calculated relative to the sensed temperature and humidity.



# MonsterFans Smart Multi-Fan Control Installation

## Data Screen

Realtime data from the drive is displayed on this page allowing live monitoring of fan performance.

Fan 1	
<b>Motor Data</b>	
Speed.....RPM	0
Current.....A	0.0
Torque.....%	0
Power.....%	0
Voltage.....V	0
Thermal.....%	0
Run Time.....H	0
<b>Drive Data</b>	
Thermal.....%	0
Power ON Time....H	0
Output Freq.....Hz	0.0

**Readings Display:**  
Realtime data of drive and motor displayed.

**Navigation Buttons:**  
Navigate to the various pages on the display.



**Toll Free: 1-877-446-3727  
1-706-554-6191**

[monsterfans@schwankgroup.com](mailto:monsterfans@schwankgroup.com)

### USA

**2 Schwank Way,  
Waynesboro, GA  
30830**

### Canada

**5285 Bradco Blvd.,  
Mississauga, ON  
L4W 2A6**

[schwankgroup.com/monsterfans](http://schwankgroup.com/monsterfans)







## **MonsterFan 575V Single Fan Control**

---

### Installation & Programming Guide

---

# Table of Contents

---

---

.....	1
I. <b>Table of Contents</b> .....	<b>2</b>
II. <b>Installation Preparation</b> .....	<b>2</b>
Important Note .....	2
Included Components .....	3
III. <b>Mounting &amp; Pre-Wiring Connections</b> .....	<b>4</b>
IV. <b>Connecting the Unit</b> .....	<b>7</b>
V. <b>Troubleshooting Connection Errors</b> .....	<b>7</b>
VI. <b>Programming the Command Control System</b> .....	<b>9</b>

## Installation Preparation

---

### Important Note

All installation wiring must conform to your National Electrical Code and local codes. While we believe that using Schwanks controls and following our instructions will result in an installation that meets those requirements, we cannot guarantee it. Code compliance is ultimately the installer's and/or user's responsibility. Subject to changes without notification.

---

## Included Components



Variable Frequency Drive (VFD) w/ Factory Installed Cable



CAT 5 Cable (100')



CAT 5 Connectors (2)



Remote Keypad



Shielded Cable



Mounting Plate



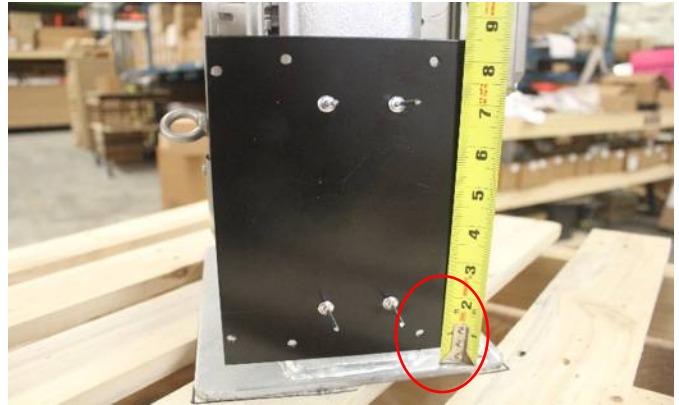
Hardware Pack

---

## Mounting & Pre-Wiring Connections

---

1. With the fan still on the pallet, locate and install the mounting plate. With the fan at a workable height, center the plate approximately  $\frac{1}{2}$ " under the top of the frame.
2. Use the 4 rivets (size 6-6) to secure the plate to the frame. Pre-drill using a  $\frac{3}{16}$ " drill bit.



3. Secure the VFD to the plate using the 10-32 machine screws and nylocks.
4. Remove the electrical "knock outs" as required from the bottom of the VFD. (fig. 5)



5. With the VFD, open the cover plate and remove the left side knock out on the bottom of the VFD.



6. Ensure the woven shield is in contact with the internal contact points of the connector. Insert the connector through the knock out hole, and secure in place with the supplied ring nut.



7. Connect the wires as follows: "ONE" to U; "TWO" to V; "THREE" to W, Green (Ground) to PE.



8. Remove side plug on the motor junction box.

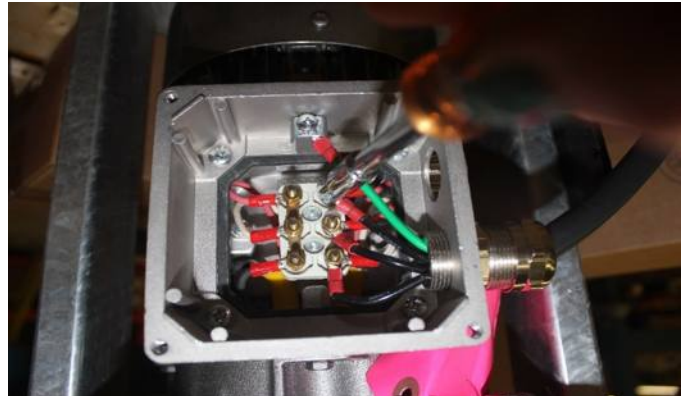


9. Push the Shielded cable through the connector to the point where the woven shield is in contact with the connectors internal contact ring.



10. The shielded cable wires are numbered "ONE" "TWO" "THREE". With the Green wire to the grounding screw, the remaining wires are connected as such:

"THREE" is connected to T3; "TWO" is connected to T2; "ONE" is connected to T1



11. The wiring can be done at ground level before the fan is hung from the ceiling. The following steps are recommended for the 230V / 460V / and 575V units. Once completed and the fan is turned on, if the fan runs in reverse (clockwise) but the controller shows "Forward", switch any 2 lines in on the VFD (L1, L2 or L3).



---

## Connecting the Unit

---

The new MonsterFan Control system is now "plug & play". The VFD (mounted to the fan) connects to the CAT 5 Cable using a CAT 5 Connector. Another CAT 5 Connector connects the CAT 5 Cable to the Remote Keypad (mounted to a wall or post).



---

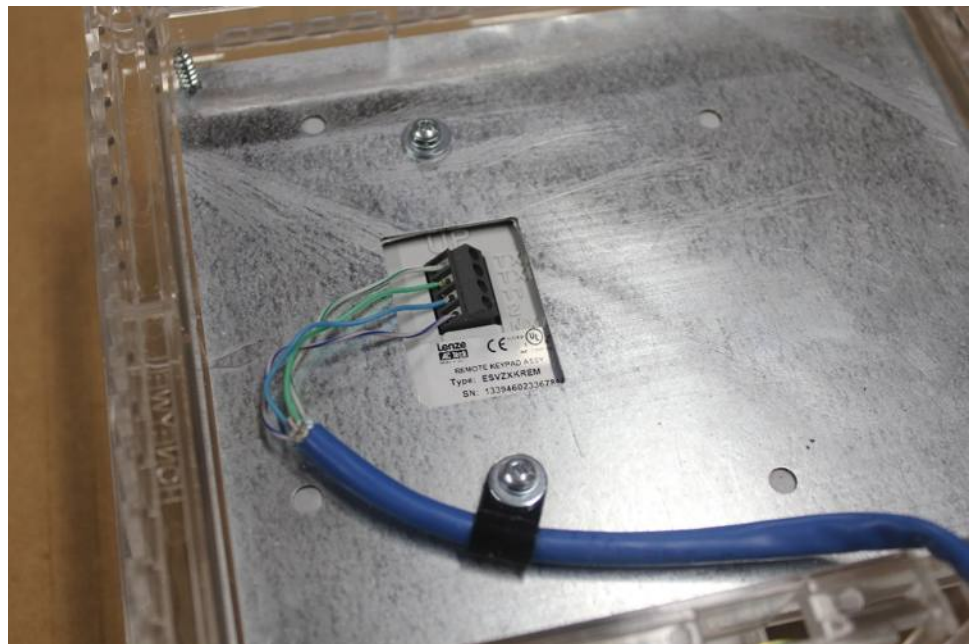
## Troubleshooting Connection Errors

---

If you experience a connection error message, please verify that all cable connections are secure. If still experiencing an error, please check the following connections.

1. On the back of the Remote Keypad, ensure that the wires are connected in the proper location and are secure as in image →

Wire Order:  
White/Green = TXA  
Green = TXB  
Blue = 11  
White/Blue = 2



2. Remove the cover on the front of the VFD. Verify that the wires are secure as in image →

Wire Order: White/  
Blue = 1 White/  
Green = 2 Green =  
4  
Blue = 5



3. If the issue has not been resolved, please call us at 1-877-686-3779 for further assistance.



---

# Programming the MonsterFan Control System

---

At this point, the MonsterFan Control System should be fully operational. If for some reason, your VFD needs to be reprogrammed, please follow the instructions below.

1. Power up the VFD. The VFD will say 'STOP'.



2. Press the mode button ('M').  
The display will show 'PASS' and then '0000'.



3. Press the 'UP' arrow until '0111' is reached.



---

4. Press the 'M' button. Display will show 'P100'.



5. Press the up arrow to 'P400' & then press 'M'.



6. Press the up arrow to '1' & press then 'M'.



7. Press 'M' again.



8. Display will show 'P400'. Press the down arrow to 'P100' & then press 'M'.



9. Press the 'UP' arrow until you get to '2' & then press 'M'.



10. The display should now say 'STOP'.

---

**11.** The Keypad control should now say 'STOP'. Trying to operate the fan from the VFD will result in the VFD displaying 'Err'.



**12.** The Remote Keypad will now have full control. Test all of the functions of the control to ensure proper operation.

Programming & installation complete.





## Schwank

1-877-686-3779 (toll-free)  
1-706-554-6191

[csr@schwankgroup.com](mailto:csr@schwankgroup.com)  
[schwankgroup.com/schwankair](http://schwankgroup.com/schwankair)

### USA

---

2 Schwank Way,  
Waynesboro, GA  
30830

### Canada

---

5285 Bradco Blvd.,  
Mississauga, ON  
L4W 2A6