

FR 100 Centrif. Inline Fan

4" inline duct fan w/plastic housing, 120V, 1~

Item #: 411330

Variant: 115V 1~ 60Hz



A multi-purpose inline duct fan for exhaust or supply air; ideal for various residential and commercial ventilation applications including crawl-space venting, and air duct boosting.

The FR100 is not for Radon mitigation use. For Radon applications, use our Rn1 Radon mitigation fan.

- Durable, leak-free, low noise operation
- Corrosion and heat-resistant housing
- Indoor/outdoor use
- Built-in thermal overload protection with automatic reset
- Operable in air stream temperatures up to 140°F
- Mounting bracket and hardware included
- ENERGY STAR® listed
- Five-year factory warranty

With the motor in the airstream, the FR100 series fan provides constant dissipation of heat build-up that gives the fan first-in-class longevity and reliability backed by an industry leading warranty.

The housing is manufactured from two molded, plastic pieces. The unique, vibration welding process uses reciprocating motion at the point of contact to join the two halves and create a single housing. The fused seam is inherently airtight and permanent.

The fan housing uses a large, electrical wiring enclosure to make electrical installation easier. This airtight fan ensures that contaminants do not spill because of leakage and it can be mounted in indoor, outdoor, and damp locations.

The fan's motor bearings are permanently sealed and self-lubricating for maintenance-free life.

Choose from a variety of duct accessories to make your installation straightforward and time efficient.



Technical parameters

Nominal data		
Voltage (nominal)	115	V
Frequency	60	Hz
Phases	1~	
Input power	20	W
Input current	0.17	A
Impeller speed	3,000	rpm
Air flow	max 151	cfm
Temperature of transported air	max 140	°F

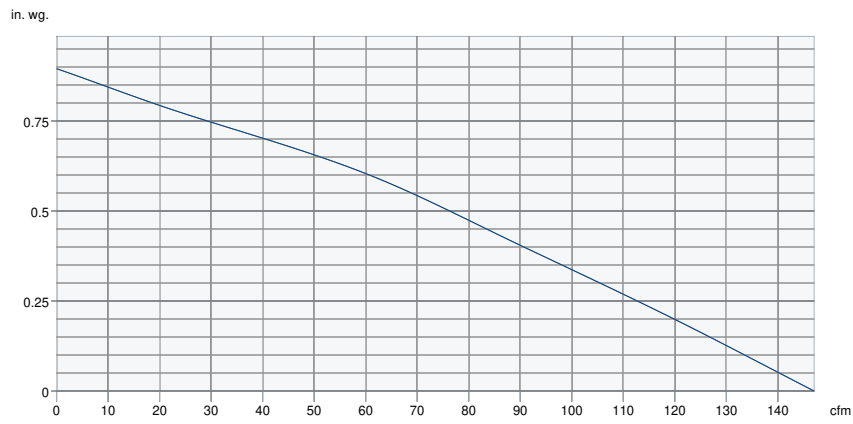
Protection/Classification		
Enclosure class, motor	IP44	
Insulation class	B	

Dimensions and weights		
Duct dimension; Circular, inlet	4	in.
Duct dimension; Circular, inlet	100	mm
Duct dimension; Circular, outlet	4	in.
Duct dimension; Circular, outlet	100	mm
Weight	4.3	lb

Optional		
Duct connection type	Circular	
Motor type	AC	

Performance

Performance curve



Hydraulic data

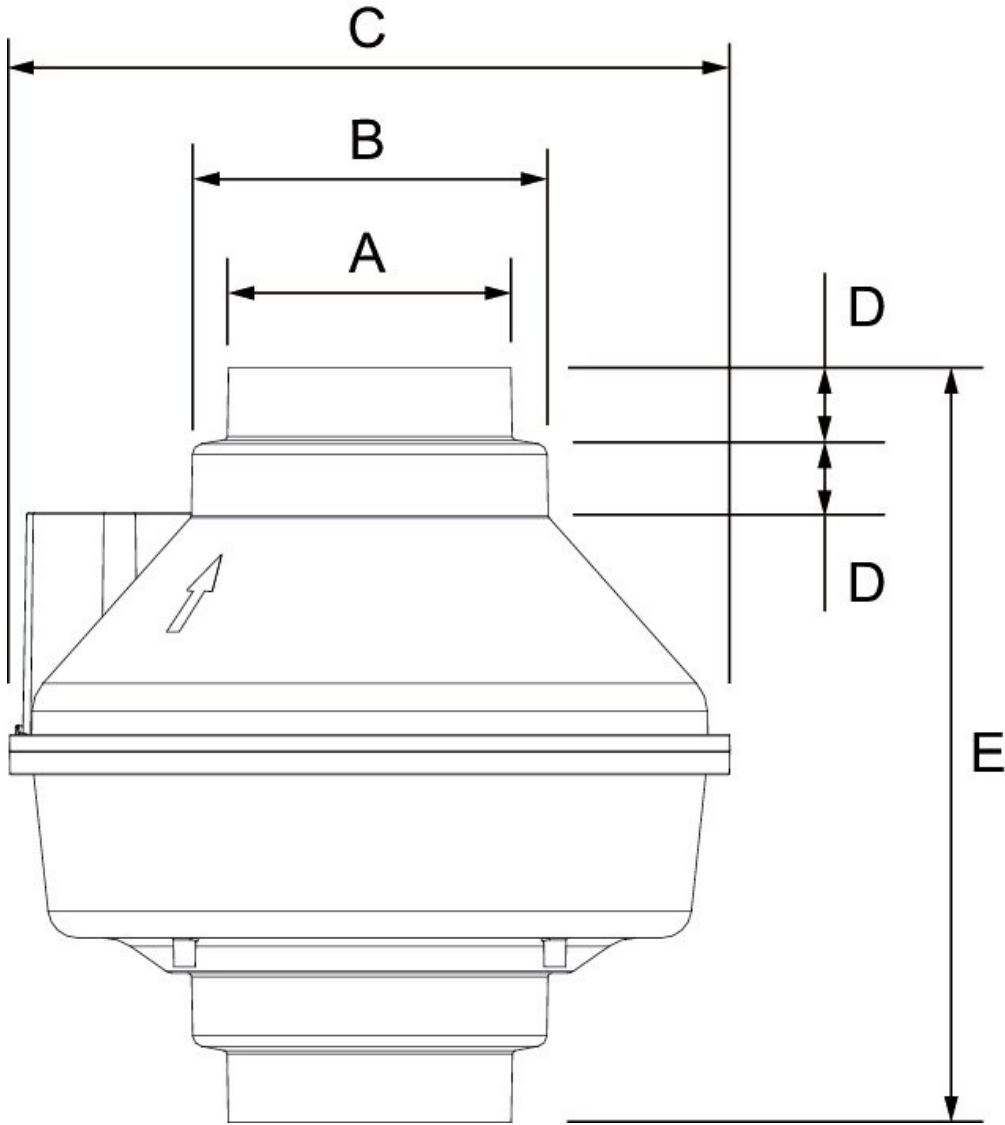
Air density 0.075 lb/ft³

Performances

HVI Certified Rating(s)

Static Pressure (In. Wg.)	Rated Airflow (CFM)	Rated Power (Watts)
0.20	120	20

Dimensions

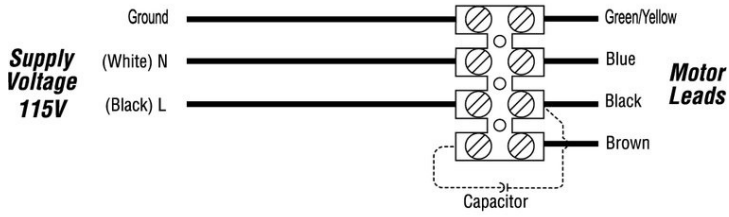


Model	A	B	C	D	E
FR 100	3 31/32 (100.5)	4 31/32 (126.5)	10 (254)	1 (25)	10 9/16 (268)
FR 110	3 31/32 (100.5)	4 31/32 (126.5)	10 (254)	1 (25)	10 9/16 (268)

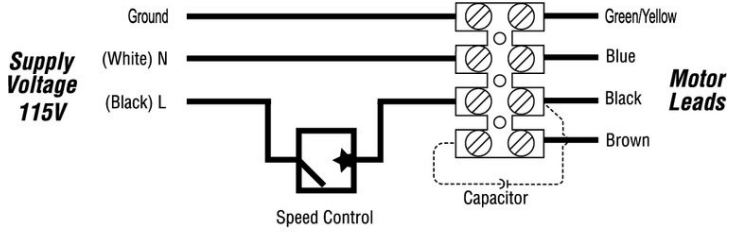
Dimensions are in inches (mm)

Wiring

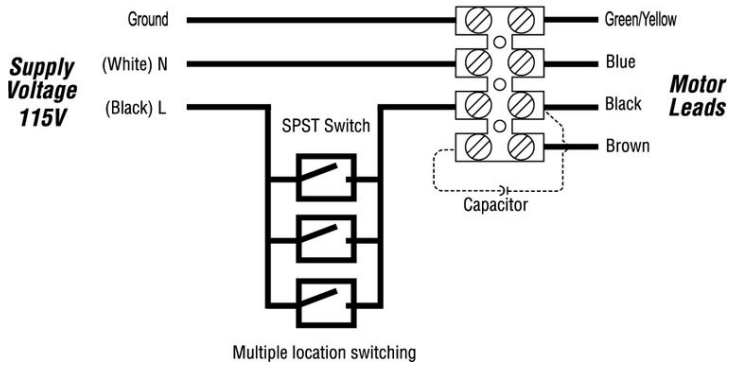
Without Motor Speed Controller



With Motor Speed Controller



Multiple Location Switching Wiring Diagram



Accessories

- FAT10 Attic thermostat (411233)
- VT20M Bath fan control (45386)
- HS 4W External Louver Exhaust (45151)
- FC 4 Mounting Clamps (2 pcs) (411295)
- IR 4 Iris Damper (411234)
- DHS 05 Humidity/Fan control (494044)
- IPF05 Speed control (484164)
- WC 15 Speed control (411102)
- RSK 4 Backdraft Damper (411112)
- IG 4 Inlet Guard (411301)
- LD 4 Silencer (411282)

Documents

- 450371 FR Submittal Sheet EN.pdf
- 450418 FR Guide Spec EN.pdf
- 401444 FR OIPM EN FR ES.pdf

CSI Specification

GUIDE SPECIFICATION

Specifier Notes: This guide specification is written in Construction Specifications Institute (CSI) 3-Part Format in accordance with The CSI Construction Specifications Practice Guide, MasterFormat, SectionFormat, and PageFormat.

Specifier Notes: This Section must be carefully reviewed and edited by the Architect or Engineer to meet the requirements of the Project and local building code. Coordinate this Section with Division 01, other specification sections, and the Drawings. Delete all Specifier Notes after editing this Section.

Section numbers and titles are based on MasterFormat 2014 Update.

SECTION 23 34 00

HVAC FANS

Specifier Notes: This Section covers Fantech FR Series circular inline duct fans with alternating current (AC) motors. Consult Fantech for assistance in editing this Section as required for the Project.

PART 1. GENERAL

1.1 SECTION INCLUDES

A. Circular inline duct fans with alternating current (AC) motors.

1.2 RELATED REQUIREMENTS

Specifier Notes: Edit the following list of related sections as required for the Project. Limit the list to sections with specific information that the reader might expect to find in this Section, but is specified elsewhere.

A. Section 23 31 00 – HVAC Ducts and Casings.

B. Section 26 05 00 – Common Work Results for Electrical.

1.3 REFERENCE STANDARDS

Specifier Notes: List reference standards used elsewhere in this Section, complete with designations and titles. Delete reference standards from the following list not used in the edited Section.

A. Home Ventilation Institute (HVI) (<https://www.hvi.org/hvi-certified-products-directory/>):

1. HVI 916 – Listed and Tested Accordingly

B. Underwriting Laboratory (UL) (<https://productiq.ulprospector.com/en>):

1. UL 507- Electric Fans

2. CSA 22.2 No 113- Fans and Ventilators

1.4 PREINSTALLATION MEETINGS

Specifier Notes: Edit the Preinstallation Meetings article as required for the Project. Delete article if not required.

A. Convene preinstallation meeting [1 week] [2 weeks] before start of Work of this Section.

B. Require attendance of parties directly affecting Work of this Section, including Contractor, Architect, installer, and manufacturer's representative.

C. Review the Following:

1. Materials

2. Installation

3. Adjusting

4. Protection

5. Coordination with other Work

1.5 SUBMITTALS

Specifier Notes: Edit the Submittals article as required for the Project. Delete submittals not required.

- A. Comply with Division 01.
- B. Product Data: Submit manufacturer's product data, including installation instructions.
- C. Shop Drawings: Submit manufacturer's shop drawings, including plans, elevations, sections, and details.
 - 1. Wiring Diagrams: Indicate wiring for each item of equipment and interconnections between items of equipment.
 - 2. Include manufacturer's names, model numbers, ratings, power requirements, equipment layout, device arrangement, complete wiring point-to-point diagrams, and conduit layouts.
- D. Manufacturer's Certification: Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.
- E. Operation and Maintenance Data:
 - 1. Submit manufacturer's operation and maintenance manual; including the following:
 - a. Operation, maintenance, adjustment, and cleaning instructions.
 - b. Troubleshooting guide
 - c. Parts list
 - d. Electrical wiring diagrams if required.
 - 2. Provide detailed information required for Owner to properly operate and maintain equipment.
- F. Warranty Documentation: Submit manufacturer's standard warranty.

1.6 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Manufacturer regularly engaged in the manufacturing of circular inline duct fans to that specified for a minimum of 10 years.
- B. Installer's Qualifications:
 - 1. Installer regularly engaged in installation of circular inline duct fans of similar type to that specified for a minimum of 5 years.
 - 2. Use persons trained for installation of circular inline duct fans.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery Requirements: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage and Handling Requirements:
 - 1. Store and handle materials in accordance with manufacturer's instructions.
 - 2. Keep materials in manufacturer's original, unopened containers and packaging until installation.
 - 3. Store materials in clean, dry area indoors.
 - 4. Keep materials from freezing.
 - 5. Protect materials during storage, handling, and installation to prevent damage.

1.8 WARRANTY

Warranty Period: 5 years

PART 2. PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer: Fantech Inc., 10048 Industrial Blvd., Lenexa, Kansas 66215. Phone 800-747-6217. www.fantech.net. ussupport@fantech.net.
Specifier Notes: Specify if substitutions will be permitted.
- B. Substitutions: [Not permitted] [Comply with Division 01].
- C. Single Source: Provide materials from single manufacturer.

2.2 HVAC FANS

- A. Circular inline duct fans with alternating current (AC) motors: FR Series
 - 1. cULus Listed
 - a. Additional Evaluation(s): Outdoor Use
- 2. ENERGY STAR® Rated
- 3. HVI 916

Specifier Notes: Specify circular inline duct fan models as required for the Project. Delete models not required.

- B. Model: "FR100"
 - 1. Inlet Diameter: 4 inches
 - 2. Outlet Diameter: 4 inches
 - 3. Casing Diameter: 10 inches
 - 4. Inlet and Outlet Connection Collars: 1 inch
 - 5. Casing Material: Composite material with air-tight seam. Inlet and outlet halves are joined via a vibration welding process. A housing seam joined with screws or rivets is unacceptable.
 - 6. Motor: Alternating current external-rotor motor
 - 7. Speed Control: by altering supply voltage via an external stepless controller
 - 8. Motor Protection: electronically protected
 - 9. Blades: Backward curved

10. Voltage: 120 V
 11. Frequency: 50/60 Hz
 12. Nominal Voltage Range: 100 to 130 V
 13. Phase: 1
 14. Maximum Airflow: 151 cfm
 15. RPM: 1,833
 16. Power Rating, Motor: 20 W
 17. Current: 0.17 A
 18. Operational Temperature: minus 13 to 140 degrees F
 19. Weight: 4.3 lbs
 20. Motor Insulation Class: B
 21. Motor Enclosure Class: IP44
- C. Model: "FR125"
1. Inlet Diameter: 4 inches
 2. Outlet Diameter: 5 inches
 3. Casing Diameter: 10 inches
 4. Inlet and Outlet Connection Collars: 1 inch
 5. Casing Material: Composite material with air-tight seam. Inlet and outlet halves are joined via a vibration welding process. A housing seam joined with screws or rivets is unacceptable.
 6. Motor: Alternating current external-rotor motor
 7. Speed Control: by altering supply voltage via an external stepless controller
 8. Motor Protection: electronically protected
 9. Blades: Backward curved
10. Voltage: 120 V
 11. Frequency: 50/60 Hz
 12. Nominal Voltage Range: 100 to 130 V
 13. Phase: 1
 14. Maximum Airflow: 171 cfm
 15. RPM: 2,874
 16. Power Rating, Motor: 20 W
 17. Current: 0.17 A
 18. Operational Temperature: minus 13 to 140 degrees F
 19. Weight: 3.3 lbs
 20. Motor Insulation Class: B
 21. Motor Enclosure Class: IP44
- D. Model: "FR150"
1. Inlet Diameter: 5-7/8 inches
 2. Outlet Diameter: 5-7/8 inches
 3. Casing Diameter: 11 1/2 inches
 4. Inlet and Outlet Connection Collars: 1-1/4 inch
 5. Casing Material: Composite material with air-tight seam. Inlet and outlet halves are joined via a vibration welding process. A housing seam joined with screws or rivets is unacceptable.
 6. Motor: Alternating current external-rotor motor
 7. Speed Control: by altering supply voltage via an external stepless controller
 8. Motor Protection: electronically protected
 9. Blades: Backward curved
10. Voltage: 120 V
 11. Frequency: 50/60 Hz
 12. Nominal Voltage Range: 100 to 130 V
 13. Phase: 1
 14. Maximum Airflow: 324 cfm
 15. RPM: 2,630
 16. Power Rating, Motor: 68 W
 17. Current: 0.59 A
 18. Operational Temperature: minus 13 to 140 degrees F
 19. Weight: 6 lbs
 20. Motor Insulation Class: B

21. Motor Enclosure Class: IP44

2.3 ACCESSORIES

A. Silencers for Circular Ducts

Specifier Notes: Delete accessories not required.

1. Model: ["LD 4"] ["LD 5"] ["LD 6"]
2. Insulation Thickness: 2 inches.

B. Mounting Clamps for Circular Ducts

Specifier Notes: Delete accessories not required.

1. Model: ["FC 4"] ["FC 5"] ["FC 6"]
2. Material: Galvanized sheet metal with 1/3 inch neoprene lining
3. Width: 2-1/3 inches
4. Clamps Together: 2 screws

5. Quantity: 2 pcs per kit

C. External Remotely Mounted Speed Controller

Specifier Notes: Delete if not required.

1. Model: WC15
2. Remotely mounted manual-speed control for air flow adjustments and balancing.
3. Voltage: 120V
4. Amperage: 5A max
5. Enclosure class: IP54

D. Inlet Safety Guard

Specifier Notes: Delete if not required.

1. Model: ["IG 4"] ["IG 5"] ["IG 6"]
2. Wire ring inlet guard prevents foreign objects from entering inline duct fan Zinc chromate plated steel.

PART 3. EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive circular inline duct fans.
- B. Notify Architect of conditions that would adversely affect installation or subsequent use.
- C. Do not begin installation until unacceptable conditions are corrected.

3.2 INSTALLATION

- A. Install circular inline duct fans in accordance with manufacturer's instructions at locations indicated on the Drawings.
- B. Attach duct work to inlet and outlet connection collars of circular inline duct fans in accordance with manufacturer's instructions.
- C. Electrical: Install electrical power to circular inline duct fans as specified in Section 26 05 00.

3.3 ADJUSTING

- A. Adjust circular inline duct fans for proper operation in accordance with manufacturer's instructions.

3.4 PROTECTION

- A. Protect installed circular inline duct fans from damage during construction.

END OF SECTION