

ENERVEX®

TDF 685 POWER VENTER

020.1098.0621 04.22

Product Information

Use

The TDF Power Venter is a true in-line power venter. It is specifically designed for applications where reliable and efficient operation, low noise level, low energy consumption, variable speed and compact design are of utmost importance.

Typical applications are: mechanical venting of gas-fired or oil-fired boilers and water heaters. For indoor or outdoor installation.

Description

The TDF Power Venter is an efficient, high-temperature ventilator with backward-inclined impeller. It can be installed horizontally or vertically in a chimney system.

The fan housing is made of stainless steel and equipped with an energy-efficient, totally enclosed, variable speed motor, which is mounted outside the air stream.

The complete drive unit (motor, impeller and mounting plates) can be removed from the fan without the need for removing the housing from the stack system.

The TDF is for use with condensing and non-condensing appliances operating where flue gas temperatures do not exceed 1400°F (760°C).

The TDF model is a component in the CASI, Chimney Automation System.

Material

The housing is made of 316L stainless steel and has flanged connection. The impeller is of the backward inclined type made of 316L stainless steel.

Motor

The motor is a TEFC air cooled, maintenance-free variable speed permanent magnet motor with pre-lubricated and sealed ball bearings and a Class H temperature rating. The motor with controller is rated at 92% efficiency and able to operate as low as 50 RPM. It has integrated protection against overloading, blocking over and under voltage and over-heating. The motor shaft is internally isolated to eliminate the need for external shaft grounding. It is rated for outdoor installation.

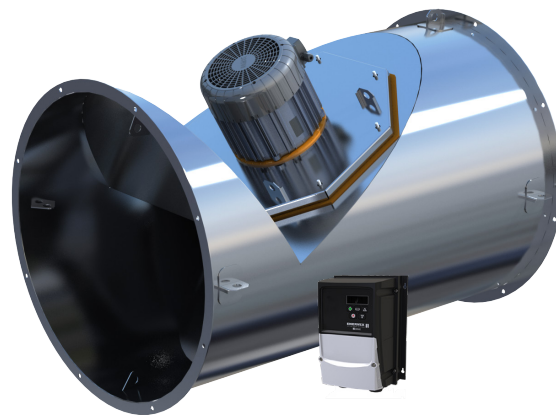
The included EDrive motor control (NEMA4X) is factory programmed by ENERVEX for optimal operation of the ventilator.

Standard Equipment

- EDrive Motor Control
- V-Bands (where used)



Specifications are subject to change without notice.



Optional Accessories

- EBC 30/31 Modulating Pressure Controller
- EBC 35 Modulating Pressure Controller
- EBC 24 Modulating Pressure Controller
- BDC 8 Modulating Pressure Controller
- Adapter Transitions

Listings

UL Listing under Category MCQX and ZACT under File No. E467733 and reference to the following standards:

- UL 378 Standard for Draft Equipment Edition 4 - Revision Date 2013/09/17
- UL 705 Standard for Power Ventilators Edition 6 - Revision Date 2013/12/17
- CSA C22.2 No. 113-12 Fans and Ventilators Edition 9 - Revision Date 2012/10/01
- CSA3-B255-M81 Standard for Mechanical Flue Gas Exhauster

Warranty

- 2-Year Factory Warranty
- 10-Year Warranty Against Corrosion Perforation

Complete warranty conditions are available from ENERVEX Inc.

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VENTING DESIGN SOLUTIONS

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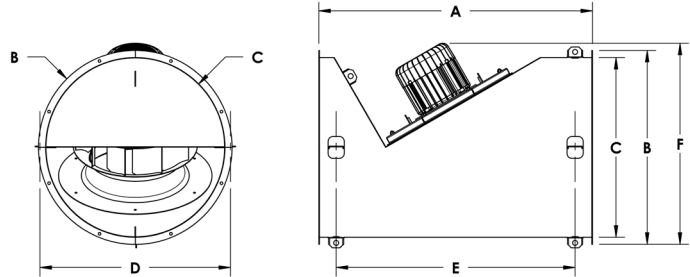
Product Information

Specifications

| | |
|-------------------------------|--------------------------------|
| Model | TDF 685 |
| Fan Type | Centrifugal Impeller (B-Wheel) |
| Motor Type | ECM, Permanent Magnet |
| Voltage Configuration | 3 x 380-480 VAC |
| EDrive Model | 321.0921.4200 |
| EDrive Ratings: | |
| NEMA / IP Rating | 4X / IP66 |
| Supply Voltage - VAC | 3 x 380-480 |
| Power - kW | 22.0 |
| Max Input Current - Amp | 51.9 |
| Max Output Current - Amp | 46.0 |
| Max Over-Current - % | 175 |
| Min Operating Temp. - °F / °C | -4 / -20 |
| Max Operating Temp. - °F / °C | 104 / 40 |
| Motor Ratings: | |
| Motor Efficiency Class | IE5 |
| Temperature Class | H |
| NEMA / IP Rating | 3S / IP55 |
| Max Current - Amp | 38 |
| Max Speed - RPM | 1750 |
| Power - kW / HP | 22.2 / 29.8 |
| Torque - Nm | 145 |
| Motor Operating Settings: | |
| Fan Speed - RPM | 1740 |
| Max Power - kW / ~ HP | Not Available |
| Max Torque - Nm | Not Available |
| Weight: | |
| TDF - lbs / kg | 682 / 310 |
| EDrive - lbs / kg | 20.9 / 9.5 |

Note: Use EDrive Ratings Data for Circuit Sizing

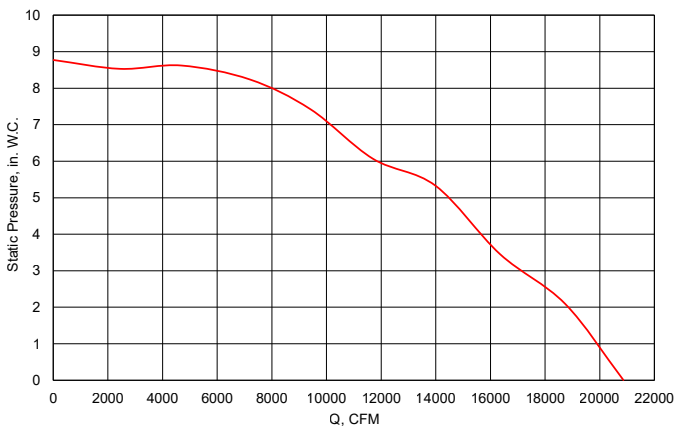
Dimensions



| | | |
|-----------------------------|--------------------------|-------------|
| Model | TDF 685 | |
| Duct Connection | 1 1/2" flange w 16-holes | |
| Dimensions | A in / mm | 62.0 / 1575 |
| | B in / mm | 45.0 / 1143 |
| | C in / mm | 42.0 / 1067 |
| | D in / mm | 44.4 / 1128 |
| | E in / mm | 55.3 / 1404 |
| | F in / mm | 54.3 / 1379 |
| Flange Bolt Center Diameter | in / mm | 43.7 / 1110 |
| Temp Rating * | °F / °C | 1400 / 760 |

* Maximum Intermittent Temperature Rating

TDF 685 Air Performance Comparison



Performance certified is for installation type D – Ducted inlet, Ducted outlet. Speed (RPM) shown is nominal. Performance is based on actual speed of test. Performance ratings do not include the effects of appurtenances (accessories).

Specifications are subject to change without notice.

Sound Table

| SP | Sound Power re 10 ⁻¹² Watts | | | | | | | | Sones | L _{w0} A |
|------|--|-----|-----|-----|-----|-----|-----|----|-------|-------------------|
| | Octave Bands | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |
| 0.00 | 114 | 106 | 109 | 105 | 104 | 102 | 100 | 96 | 117 | 110 |
| 1.00 | 114 | 105 | 108 | 105 | 103 | 101 | 99 | 94 | 109 | 109 |
| 2.00 | 114 | 105 | 109 | 104 | 103 | 100 | 98 | 93 | 103 | 108 |
| 7.50 | 111 | 102 | 105 | 99 | 98 | 94 | 91 | 86 | 72 | 103 |

Values shown are for outlet L_{w0}A sound power levels for Installation Type D: ducted inlet, ducted outlet. The sound power level ratings shown are in decibels, referred to 10-12 watts, calculated per AMCA International Standard 301. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. The sound ratings shown are loudness values in fan sones at a distance of 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for free outlet hemispherical sone levels. dBA levels are not licensed by AMCA International.

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