

Series
VENTS TTI



Inline mixed-flow fans in sound- and heat-insulated casing with air capacity up to **2350 m³/h.**

■ **Application**

New inline TTI fans are enclosed in a specially designed sound-insulated casing that ensures silent operation in combination with high aerodynamic characteristics. The fans are compatible with round air ducts Ø 200, 250 and 315 mm and produce maximum air flow 2350 m³/h. The VENTS TTI fans are featured

with wide capabilities and high performance of both axial and centrifugal fans, thus providing powerful air stream and high pressure. The VENTS TTI fans are recommended as a component of the air handling systems for various commercial and industrial premises with high requirements to noise level, i.e. in libraries, conference halls, educational institutions, kindergartens, etc.

■ **Design**

The external casing is made of polymer-coated steel. The inner casing perforation let sound waves pass through the holes and fall at a specific angle to the sound-absorbing layer. The casing is internally heat- and sound-insulated with 50 mm isover layer. The specially perforated casing and sound-absorbing material provide sound attenuation in a broad frequency band. The inner casing and the impeller are made of high-quality durable plastic. The motor and impeller block is easily detachable to facilitate servicing and maintenance. The conic impeller shape and the specially profiled blades enhance the circumferential speed of the air flow and provide higher air pressure and capacity as compared to standard axial fans. The diffuser, the specially profiled impeller and the directing vanes at outlet from the fan casing distribute air flow in such a way as to attain the best combination

of high performance and high pressure together with low noise level. The fan casing is equipped with an airtight terminal box for connection to power mains. The rubber seals on the connecting pipes provide airtight connection to the air ducts.

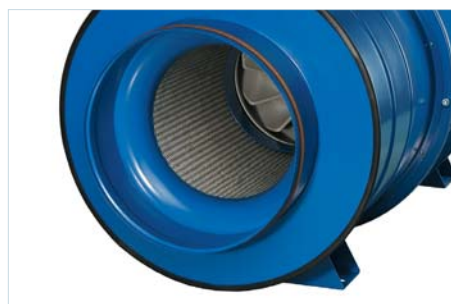
■ **Motor**

The fan is equipped with a single-phase double-speed motor on ball bearings. The ball bearings extend the motor service life up to 40 000 hrs. at non-stop operation. The motor has thermal overheating protection to prevent the motor overload. The motor has IP X4 ingress protection rating.

■ **Control**

The double-speed motors are controlled with a built-in switch (V option) or an external switch P2-1-300 or P2-5,0 for multi-speed fans (available upon separate order).

The models with T option are equipped with an adjustable turn-off delay timer with the delay time from 2 to 30 minutes. A built-in speed controller (P option), an external TRIAC or autotransformer speed controller (available upon separate order) are used for smooth motor speed control when connected to the maximum speed terminal.



Due to the sound-insulated casing the fan is distinguished with silent operation.



The motor and impeller block are easily detachable to facilitate servicing.



Fixing brackets for mounting to the wall

Designation key:

Series	Air duct diameter	Options
VENTS TTI	200, 250, 315	<p>T - timer;</p> <p>U - electronic module with temperature-based operating logic and the temperature sensor integrated into the air duct;</p> <p>Un - electronic module with temperature-based operating logic and the external temperature sensor;</p> <p>U1 - electronic module with timer-based operating logic and the temperature sensor integrated into the air duct;</p> <p>U1n - electronic module with timer-based operating logic and the external temperature sensor;</p> <p>R - power cord with a plug;</p> <p>V - three-position switch;</p> <p>P - built-in speed controller.</p>

Accessories



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■ Mounting

The fan may be mounted at any place and at any angle within the ductwork system. Several fans may be installed in one system in parallel to attain higher air capacity or in series to increase operating pressure in the system. The fan casing is equipped with fixing brackets for fastening to the wall.

■ Fan with electronic temperature and speed controller (U option).

The ideal solution for ventilation of the premises requiring permanent temperature control, i.e. greenhouses. The fan with the electronic temperature and speed control module provides automatic control of motor speed (air capacity) depending on air temperature in the air duct or in the room.

The front panel of the electronic module has the following control knobs:

- speed control knob for setting the motor speed;
- thermostat control knob for setting the temperature set point;
- thermostat light indicator.

The fan is available in two modifications:

- with the temperature sensor integrated inside the fan air duct (U/U1 option);
- with the external temperature sensor fixed on the cable, 4 m long (Un / U1n).

■ Control logic of the fan with the electronic temperature and speed control module

Set the desired air temperature (set point of the thermostat) with the thermostat control knob. Set the required minimum impeller speed (air flow) with the speed control knob. The motor switches to maximum speed (maximum air flow) as the temperature reaches and exceeds the set temperature set point. The motor switches to the pre-set lower speed as the temperature drops down below the set temperature point. To avoid the frequent motor speed changes, e.g. when the temperature in the supply air duct is equal to the threshold value, the switching delay time is activated. There are two switch delay patterns for various cases:

1. The temperature sensor-based switch delay

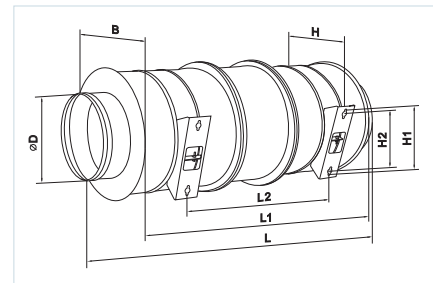
(U option): the motor switches to higher speed as the air temperature exceeds 2°C above the set thermostat set point. The motor reverts to the pre-set lower speed as the air temperature drops below the thermostat set point. This pattern is used to keep air temperature to within 2°C. In this case the motor speed switches are rare.

2. The timer-based switch delay (U1 option): as the air temperature exceeds the set thermostat set point, the motor switches to higher speed and the switch delay timer is activated for 5 min. The motor reverts to lower speed as the air temperature drops down below the thermostat set point and only after the timer countdown.

This pattern is used for exact air temperature control. The fan speed changes are more frequent as compared to the temperature sensor-based switch delay, however the minimum timer interval is 5 minutes.

Overall dimensions

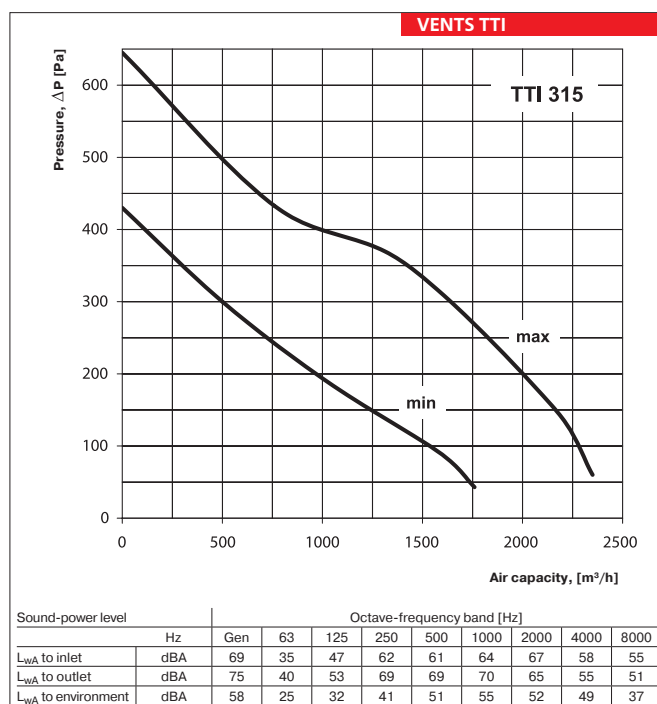
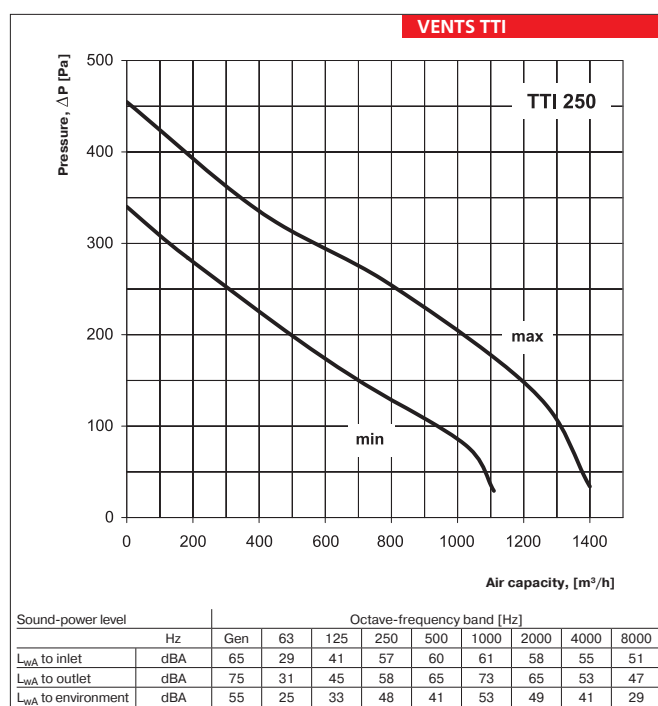
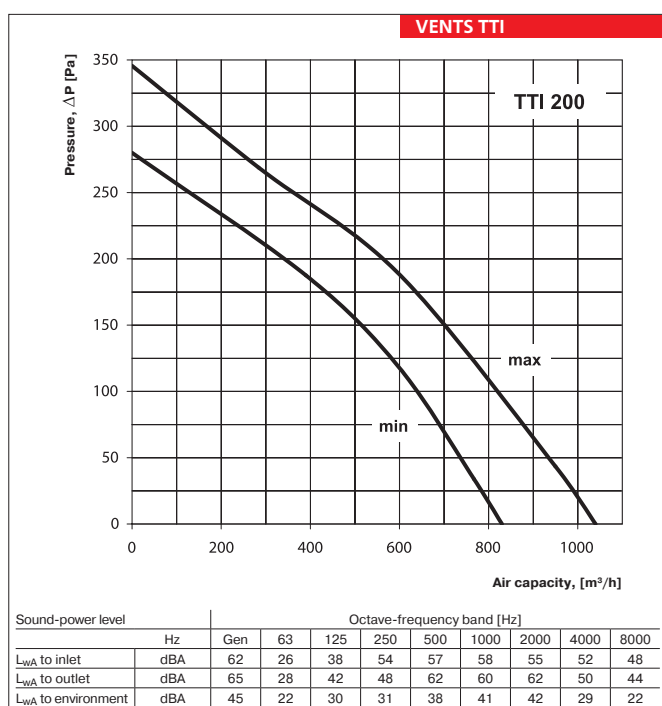
Type	Dimensions [mm]								Weight [kg]
	∅D	B	H	L	L1	L2	H1	H2	
TTI 200	200	350	353	1087	956	554	190	140	18,75
TTI 250	250	410	413	945	793	515	230	180	23,65
TTI 315	315	490	493	1407	1255	753	330	280	39,50



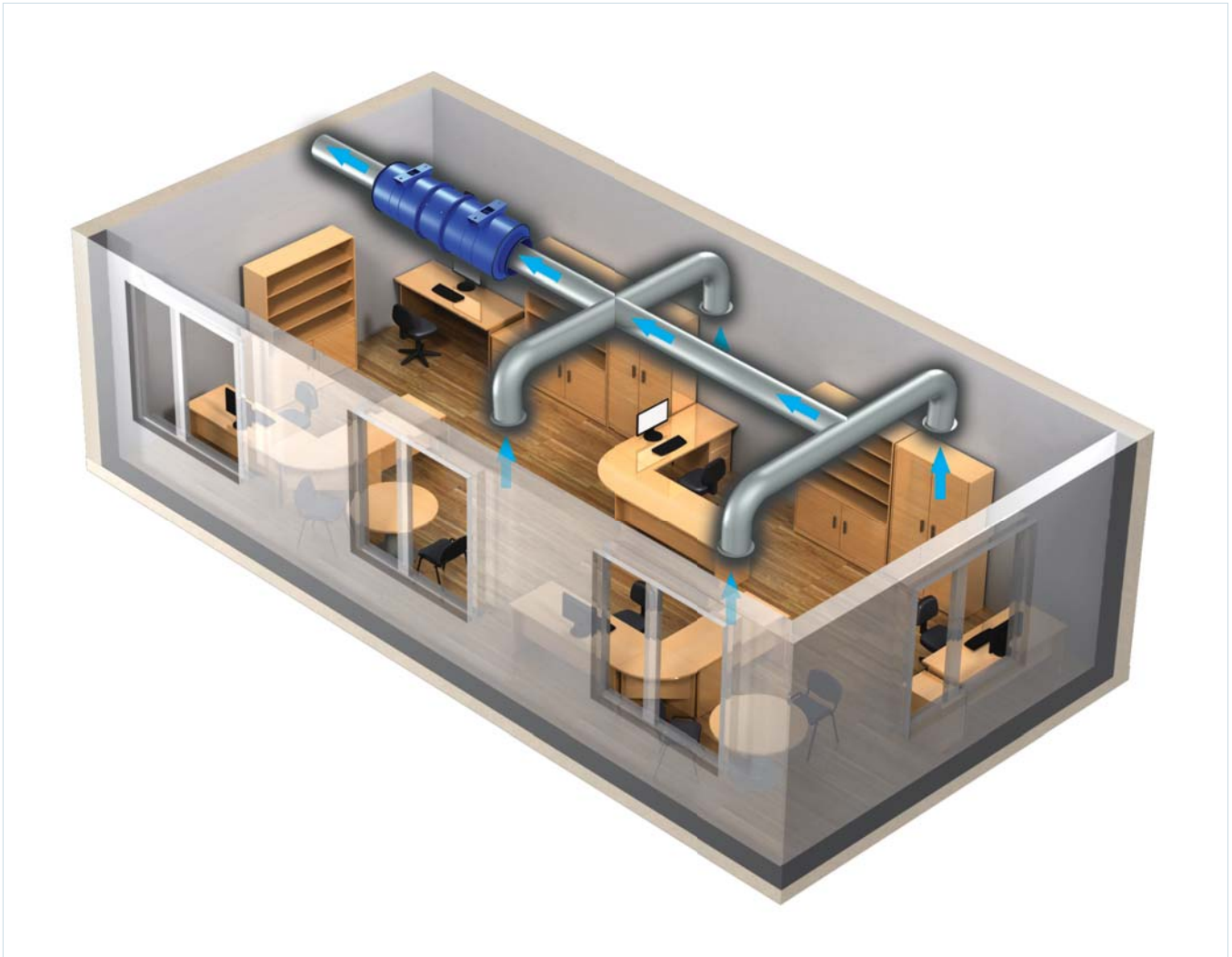
SOUND-INSULATED FANS

Technical data

	TTI 200		TTI 250		TTI 315	
Speed	min	max	min	max	min	max
Voltage, 50 Hz [V]	1~ 230		1~ 230		1~ 230	
Power [W]	90	125	125	177	225	330
Current [A]	0,4	0,55	0,54	0,79	0,98	1,43
Max. air capacity [m³/h]	830	1040	1110	1400	1760	2350
Rotation speed [min ⁻¹]	2045	2510	1955	2440	1980	2660
Sound pressure level at 3 m distance [dBA]	29	33	30	35	32	38
Max. transported air temperature [°C]	60		60		60	
Ingress protection rating	IP X4		IP X4		IP X4	



Mounting example



FAN SERIES VENTS TTI