

FANS FOR ROUND DUCTS

Series
VENTS TT PRO



Inline mixed-flow fans with the air flow up to **2050 m³/h**

■ **Application**

The **VENTS TT** and **VENTS TT PRO** fans are featured with wide capabilities and high performance of axial and centrifugal fans and are specifically designed for supply and exhaust ventilation of premises requiring high pressure, powerful air flow and low noise level. The fans are compatible with round air ducts from Ø 100 to 315 mm. Exhaust ventilation systems based on the **VENTS TT** fans are the best solution for ventilation of bathrooms and kitchens and other humid premises as well for ventilation of flats, cottages, shops, cafes, etc.

■ **Design**

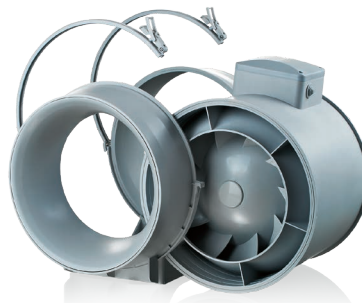
The casing is made of high-quality durable plastic. The removable impeller and motor block with a terminal box is fixed to the casing assembled with the spigots by

Series
VENTS TT



Inline mixed-flow fans with the air flow up to **520 m³/h**

means of special clamps with latches. This makes the fan maintenance fast and easy. The fan maintenance does



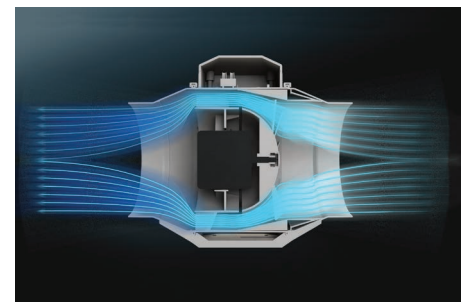
not require total disassembling. Just pull out the central block from the casing and perform required servicing. All the models may be equipped with a regulated timer with turn-off delay adjustable from 2 to 30 min.

■ **TT PRO design features:**

The **VENTS TT PRO** fan casing is made of low flammable polypropylene. The inlet spigot is equipped with a collector to enable smooth air inlet to the fan. The hemispheric impeller shape and specially profiled blades increase the air flow circular velocity and provide higher 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, enhanced pressure and low noise.

■ **Motor**

The models of **VENTS TT** series are equipped with a single phase motor and are available in single or two speed modifications. Some dimension types are available with a more powerful motor (**VENTS TT...S**). The models of



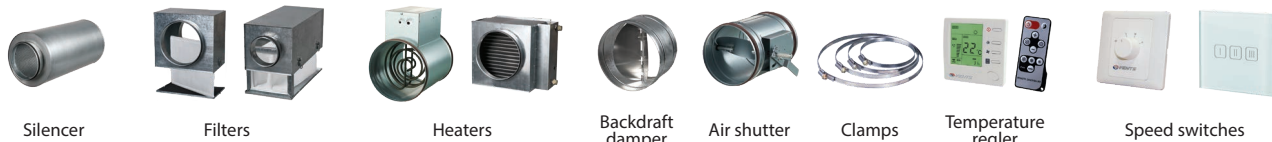
VENTS TT PRO series are equipped with single phased double-speed motors with low energy demand.

The motors have thermal overheating protection to prevent the motor overload. The ball bearings extend the motor service life up to 40 000 hrs. at non-stop operation. The motor has IPX4 ingress protection rating.

Designation key

Series	Air duct diameter	Options	ErP data
VENTS TT PRO VENTS TT	100; 125; 150; 160; 200; 250; 315	<p>S: high-powered motor. T: adjustable timer from 2 to 30 minutes. U: speed controller with an electronic thermostat and a temperature sensor integrated inside an air duct. Temperature-based operation logic. Un: speed controller with an electronic thermostat and a temperature sensor fixed on a 4 m cable. Temperature-based operation logic. U1: speed controller with an electronic thermostat and a temperature sensor integrated inside an air duct. Timer-based operation logic. U1n: speed controller with an electronic thermostat and a temperature sensor fixed on a 4 m cable. Timer-based operation logic. U2: speed controller with an electronic thermostat and a temperature sensor integrated inside an air duct. Temperature-based switching on/off. U2n: speed controller with an electronic thermostat and a temperature sensor fixed on a 4 m cable. Temperature-based switching on/off. R1: power cord with mains plug. V: threeposition speed switch (for TT PRO series fans only). P: built-in smooth speed controller.</p>	<p>Overall efficiency η [%] Measurement category MC Efficiency category EC Efficiency grade N Variable speed drive VSD Power kW Current A Air flow m³/h Static pressure Pa Speed n/min⁻¹ Specific ratio SR</p>

Accessories



Silencer

Filters

Heaters

Backdraft damper

Air shutter

Clamps

Temperature regler

Speed switches

■ **Speed control**



TT fan with a three-position speed switch

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

An integrated speed controller (option P), an external TRIAC or autotransformer speed controller (available upon separate order) are used for smooth speed control when connected to the maximum speed terminal.



TT fan with a built-in speed controller

■ **Mounting**

The fans are suitable for mounting at any angle and point of the system. Several fans may be installed inside one system. Several fans may be installed inside one system:

- **parallel mounting** to increase air flow;



TTP kit for parallel connection

- **in series mounting** to increase operating pressure; The fan case is equipped with a flat mounting plate to attach the fan to the wall. The mounting box may

be installed in any position to facilitate mounting and wiring.



TTS kit for series connection

■ **The fan with electronic module of the temperature sensor and speed controller (U option).**

The ideal solution for ventilation of the premises with high demands to permanent indoor temperature level, e.g. greenhouses.

The fan with the electronic module of the temperature sensor and the speed controller is used for automatic speed control (air flow regulation) depending on the air temperature in the ventilation duct or inside a room.



The electronic module of the front panel incorporates:

- the speed control knob for the setting the impeller speed;
- the thermostat control knob for setting the temperature set point.
- thermostat LED light.



Three modifications are possible:

- temperature sensor integrated inside a fan duct (U/U1/U2 option);
- external temperature sensor fixed on 4 m power cable (Un/U1n/U2n option).

■ **Operating logic of the fan with the electronic module of the temperature sensor and speed controller**

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 speed as the temperature drops down below the set temperature point.

To avoid the frequent motor switching, 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 fan switches are rare.

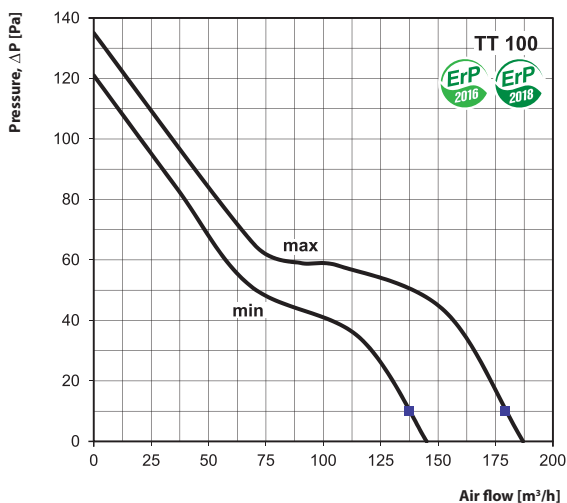
2. The timer-based switch delay (U1 option): as the air temperature exceeds the set thermostat set point, the motor switches to higher speed and the switch delay timer is activated for 5 min. The motor reverts to lower speed as the air temperature drops down below the thermostat set point and only after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

This pattern is used for exact air temperature control.

The fan changes its speed more often as compared to the temperature sensor-based switch delay, however the minimum timer interval is 5 minutes.

Temperature-based switching on/off (U2 option): the fan switches to a set speed when the air temperature exceeds 2 °C above the set thermostat set point. The fan turns off as the air temperature drops below the temperature threshold.

VENTS TT



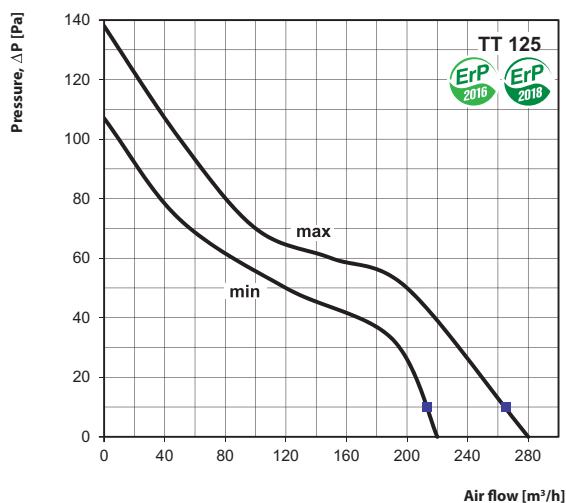
■ Sound power level, A-filter applied

Sound pressure level at 3 meters, A-filter applied
 LpA, 3 m [dBA]

Sound pressure level at 1 meters, A-filter applied
 LpA, 1 m [dBA]

	Hz	general	Octave frequency band, Hz								LpA, 3 m [dBA]	LpA, 1 m [dBA]
			63	125	250	500	1000	2000	4000	8000		
Min speed												
L _{WA} to inlet	dBA	54	16	28	51	45	49	41	35	24	33	43
L _{WA} to outlet	dBA	53	15	27	50	44	48	40	35	23	32	42
L _{WA} to environment	dBA	48	11	23	44	40	43	36	31	21	27	37
Max speed												
L _{WA} to inlet	dBA	64	23	35	61	58	56	48	43	30	43	53
L _{WA} to outlet	dBA	63	22	34	60	57	55	48	42	29	42	52
L _{WA} to environment	dBA	56	17	29	53	51	50	43	38	26	36	46

VENTS TT



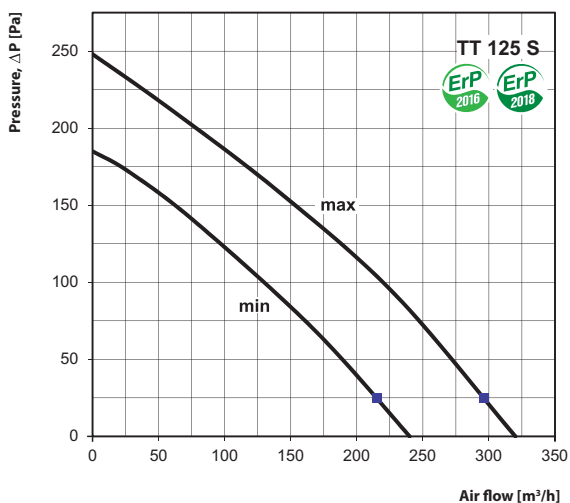
■ Sound power level, A-filter applied

Sound pressure level at 3 meters, A-filter applied
 LpA, 3 m [dBA]

Sound pressure level at 1 meters, A-filter applied
 LpA, 1 m [dBA]

	Hz	general	Octave frequency band, Hz								LpA, 3 m [dBA]	LpA, 1 m [dBA]
			63	125	250	500	1000	2000	4000	8000		
Min speed												
L _{WA} to inlet	dBA	53	17	30	48	48	48	43	35	22	33	43
L _{WA} to outlet	dBA	52	16	29	47	47	47	43	34	21	32	42
L _{WA} to environment	dBA	49	13	26	43	44	44	40	32	20	28	38
Max speed												
L _{WA} to inlet	dBA	62	28	38	57	58	57	52	43	29	42	52
L _{WA} to outlet	dBA	61	27	37	55	57	56	51	42	29	41	51
L _{WA} to environment	dBA	58	23	33	51	53	52	48	40	27	37	47

VENTS TT



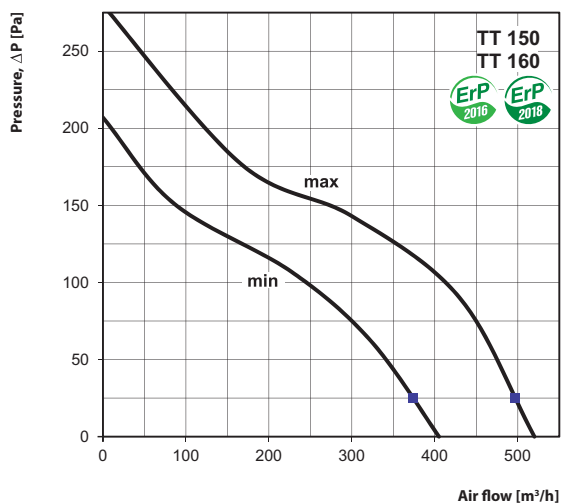
■ Sound power level, A-filter applied

Sound pressure level at 3 meters, A-filter applied
 LpA, 3 m [dBA]

Sound pressure level at 1 meters, A-filter applied
 LpA, 1 m [dBA]

	Hz	general	Octave frequency band, Hz								LpA, 3 m [dBA]	LpA, 1 m [dBA]
			63	125	250	500	1000	2000	4000	8000		
Min speed												
L _{WA} to inlet	dBA	56	28	38	53	51	49	46	37	24	36	46
L _{WA} to outlet	dBA	55	27	37	52	50	48	45	37	23	35	45
L _{WA} to environment	dBA	52	23	33	47	46	44	42	34	21	31	41
Max speed												
L _{WA} to inlet	dBA	67	38	49	63	63	60	57	50	38	47	57
L _{WA} to outlet	dBA	66	38	48	61	62	59	56	48	37	46	56
L _{WA} to environment	dBA	63	34	45	58	58	56	53	46	35	42	52

VENTS TT



■ Sound power level, A-filter applied

Sound pressure level at 3 meters, A-filter applied
 LpA, 3 m [dBA]

Sound pressure level at 1 meters, A-filter applied
 LpA, 1 m [dBA]

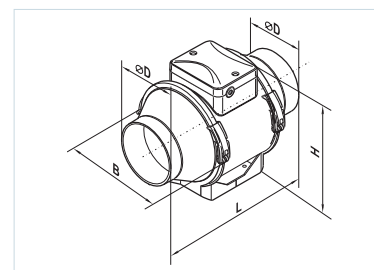
	Hz	general	Octave frequency band, Hz								LpA, 3 m [dBA]	LpA, 1 m [dBA]
			63	125	250	500	1000	2000	4000	8000		
Min speed												
L _{WA} to inlet	dBA	66	35	46	63	60	57	53	43	28	45	55
L _{WA} to outlet	dBA	65	34	45	62	59	56	53	43	28	44	54
L _{WA} to environment	dBA	54	24	35	50	49	47	44	36	23	34	44
Max speed												
L _{WA} to inlet	dBA	75	42	52	71	69	67	64	56	43	54	64
L _{WA} to outlet	dBA	74	41	50	70	69	66	63	56	42	53	63
L _{WA} to environment	dBA	64	32	41	59	58	57	54	48	36	43	53

Technical data

	TT 100		TT 125		TT 125 S		TT 150/TT 160	
Speed	min	max	min	max	min	max	min	max
Voltage [V/50 (60) Hz]	1~230		1~230		1~230		1~230	
Power [W]	21	33	23	37	28	54	30	60
Current [A]	0.11	0.21	0.18	0.27	0.12	0.16	0.17	0.27
Max. air flow [m ³ /h]	145	187	220	280	240	320	405	520
RPM [min ⁻¹]	2180	2385	1950	2455	1850	2510	1680	2460
Noise level at 3 m [dBA]	27	36	28	37	31	42	33	44
Transported air temperature [°C]	60		60		60		60	
SEC class	C		B		C		B	
Protection rating	IPX4		IPX4		IPX4		IPX4	

Fan overall dimensions

Type	Dimensions [mm]				Mass [kg]
	∅D	B	H	L	
TT 100	96	167	190	246	1,45
TT 125	123	167	190	246	1,79
TT 125 S	123	223	250	295	3,14
TT 150	146	223	250	295	3,19
TT 160	158	233	250	295	3,22



■ Mounting examples



in the bathroom



in the office



parallel mounting of the fans in storage room increases air capacity