Series
VENTS TT PRO

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

Series
VENTS TT

Inline mixed-flow fans with the air flow up to **1850 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

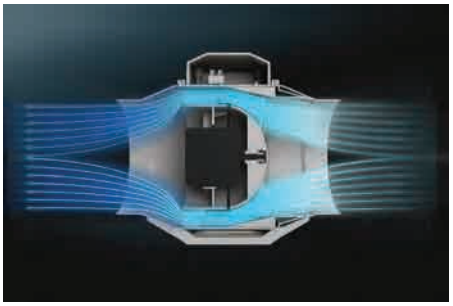
The casing is made of high-quality durable plastic. The removable impeller and motor block with a terminal box is fixed to the casing assembled with the spigots by means of special clamps with latches. This makes the fan maintenance fast and easy. The fan maintenance does not require total disassembling. 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
VENTS TT PRO **VENTS TT**	100; 125; 150; 160; 200; 250; 315	**S**: high-powered motor. **T**: adjustable timer from 2 to 30 minutes. **U**: speed controller with electronic thermostat and temperature sensor integrated into the air duct. Equipped with power cord and IEC C14 electric plug. Temperature-based operation logic. **Un**: speed controller with electronic thermostat and external temperature sensor fixed on 4 m cable. Equipped with power cord and IEC C14 electric plug. Temperature-based operation logic. **U1**: speed controller with electronic thermostat and temperature sensor integrated into the air duct. Equipped with power cord and IEC C14 electric plug. Timer-based operation logic. **U1n**: speed controller with electronic thermostat and external temperature sensor fixed on 4 m cable. Equipped with power cord and IEC C14 electric plug. Timer-based operation logic. **R**: power cord with IEC C14 electric plug. **V**: threeposition speed switch (for TT PRO series fans only). **P**: built-in smooth speed controller and power cord with IEC C14 electric plug.

ErP data	
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

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.

Two modifications are possible:

– temperature sensor integrated inside a fan duct (U/U1 option);

– external temperature sensor fixed on 4 m power cable (Un / U1n 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:

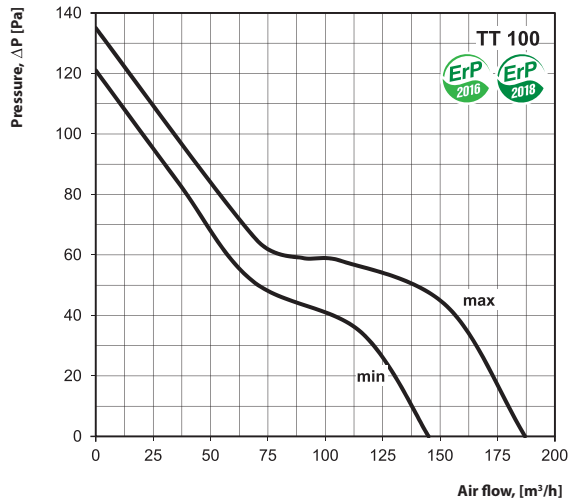
1. The temperature sensor-based switch delay (U option): the motor switches to higher speed as the air temperature exceeds 2 °C above the set thermostat set point. The motor revers to the pre-set lower speed as the air temperature drops below the thermostat set point.

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.

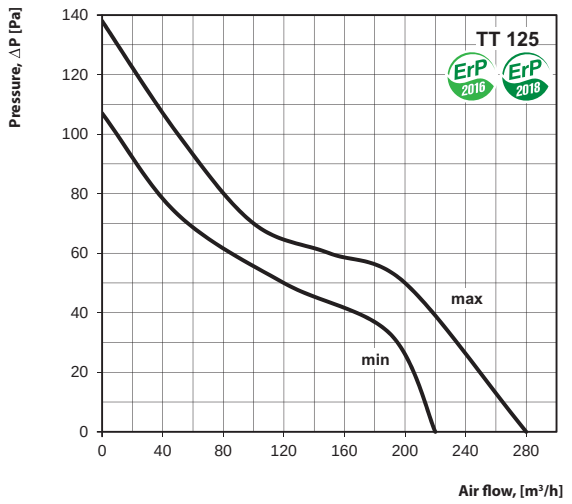
This pattern is used for exact air temperature control. The fan changes its speed more often as compared to the temperature sensor-based switch delay, however the minimum timer interval is 5 minutes.

VENTS TT



Sound-power level, A - weighted	Hz	general	Octave frequency band, Hz								Sound pressure level at 3 meters, A-filter applied	Sound pressure level at 1 meters, A-filter applied
			63	125	250	500	1000	2000	4000	8000	LpA, 3m [dBA]	LpA, 1m [dBA]
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



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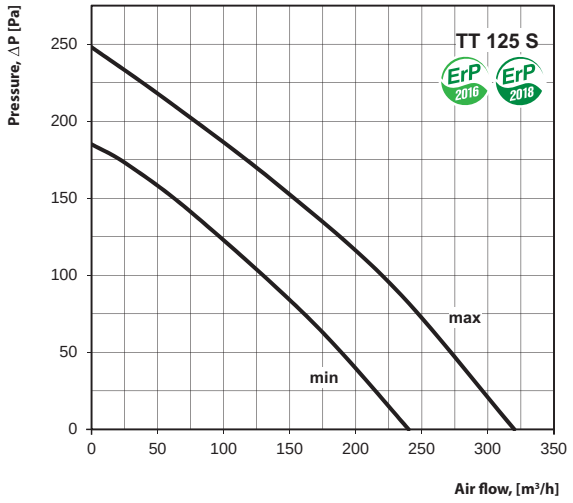
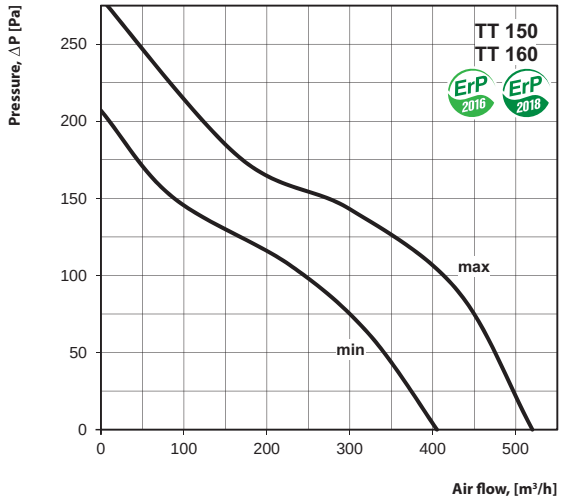
			63	125	250	500	1000	2000	4000	8000	LpA, 3m [dBA]	LpA, 1m [dBA]
Min speed												
L_{WA} to inlet	dBA	53	17	30	48	48	48	43	35	22	33	43
L_{WA} to outlet	dBA	52	16	29	47	47	47	43	34	21	32	42
L_{WA} to environment	dBA	49	13	26	43	44	44	40	32	20	28	38
Max speed												
L_{WA} to inlet	dBA	62	28	38	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 - weighted	Hz	general	Octave frequency band, Hz								Sound pressure level at 3 meters, A-filter applied	Sound pressure level at 1 meters, A-filter applied
			63	125	250	500	1000	2000	4000	8000	LpA, 3m [dBA]	LpA, 1m [dBA]
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



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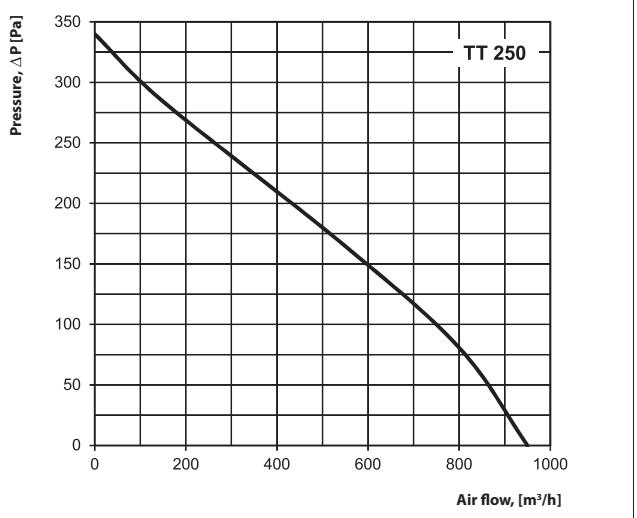
			63	125	250	500	1000	2000	4000	8000	LpA, 3m [dBA]	LpA, 1m [dBA]
Min speed												
L_{WA} to inlet	dBA	66	35	46	63	60	57	53	43	28	45	55
L_{WA} to outlet	dBA	65	34	45	62	59	56	53	43	28	44	54
L_{WA} to environment	dBA	54	24	35	50	49	47	44	36	23	34	44
Max speed												
L_{WA} to inlet	dBA	75	42	52	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	
Speed	min	max	min	max	min	max
Voltage [V/50 (60) Hz]	1~ 230		1~ 230		1~ 230	
Power [W]	21	33	23	37	28	54
Current [A]	0.11	0.21	0.18	0.27	0.12	0.16
Max. air flow [m³/h]	145	187	220	280	240	320
RPM [min⁻¹]	2180	2385	1950	2455	1850	2510
Noise level at 3 m [dBA]	27	36	28	37	31	42
Max. transported air temperature [°C]	60		60		60	
SEC class	C		B		C	
Protection rating	IPX4		IPX4		IPX4	

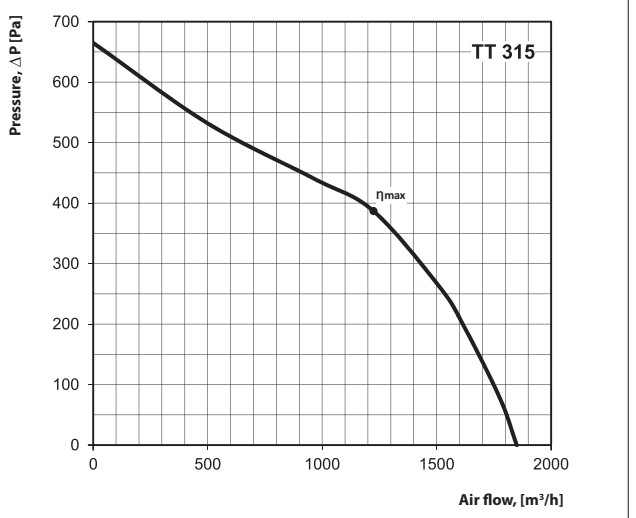
	TT 150 / TT 160		TT 250	TT 315
Speed	min	max	–	–
Voltage [V/50 (60) Hz]	1~ 230		1~ 230	1~ 230
Power [W]	30	60	120	314
Current [A]	0.17	0.27	0.52	1.42
Max. air flow [m³/h]	405	520	950	1850
RPM [min⁻¹]	1680	2460	1840	2335
Noise level at 3 m [dBA]	33	44	45	48
Max. transported air temperature [°C]	60		60	60
SEC class	B		B	-
Protection rating	IPX4		IPX4	IPX4

VENTS TT



Sound-power level, A - weighted		general	Octave frequency band, Hz								Sound pressure level at 3 meters, A-filter applied	Sound pressure level at 1 meters, A-filter applied
	Hz		63	125	250	500	1000	2000	4000	8000	LpA, 3m [dBA]	LpA, 1m [dBA]
L_{WA} to inlet	dBA	78	46	53	71	73	74	68	57	45	58	68
L_{WA} to outlet	dBA	78	45	52	71	73	73	68	56	44	57	67
L_{WA} to environment	dBA	66	34	41	58	60	62	57	48	37	45	55

VENTS TT



Sound-power level, A - weighted		general	Octave frequency band, Hz								Sound pressure level at 3 meters, A-filter applied	Sound pressure level at 1 meters, A-filter applied
	Hz		63	125	250	500	1000	2000	4000	8000	LpA, 3m [dBA]	LpA, 1m [dBA]
L_{WA} to inlet	dBA	80	35	49	68	75	76	72	61	46	59	69
L_{WA} to outlet	dBA	79	34	48	67	74	75	70	60	46	58	68
L_{WA} to environment	dBA	69	26	40	57	64	65	62	52	40	48	58

η, [%]	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
41.7	A	Static	57.4	No	0.310	1.43	1224	387	2350	1

Fan overall dimensions

Type	Dimensions [mm]				Weight [kg]
	ØD	B	H	L	
TT 100	96	167	190	246	1.45
TT 125	123	167	190	246	1.35
TT 125 S	123	223	250	295	3.14
TT 150	146	223	250	295	2.65
TT 160	158	233	250	295	2.65
TT 250	247	287	323	383	6.9
TT 315	310	362	408	445	10.35