Series
VENTS TT PRO

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

Application

The **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 PRO 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

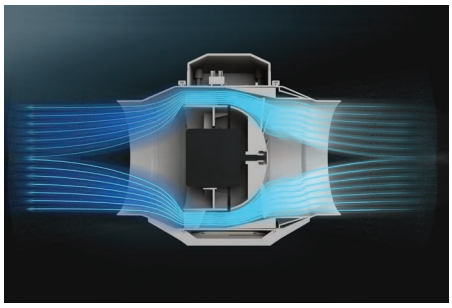
The fan casing is made of low flammable polypropylene. The inlet spigot is equipped with a collector to enable smooth air inlet to the fan. The hemispheric impeller shape and specially profiled blades increase the air flow circular velocity and provide higher pressure and capacity as compared to standard 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.

The removable central unit with a motor, an impeller and a terminal box is attached to the spigots by special clamps with latches. This makes fan maintenance easy and convenient. You do not need to disassemble the entire fan – simply remove the central unit from the casing for service operations. All models of the VENTS TT PRO series can be equipped with an adjustable turn-off delay timer with a delay from 2 to 30 minutes.

Motor

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.



Speed control

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).

TT PRO fan with a three-position speed switch

An integrated speed controller (option P), an external

Designation key

Series	Air duct diameter	Options
VENTS TT PRO	100; 125; 150; 160; 200; 250; 315	**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. **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.

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

TRIAC or autotransformer speed controller (available upon separate order) are used for smooth speed control when connected to the maximum speed terminal.

TT PRO 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;

TTS kit for series connection

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.

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 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.

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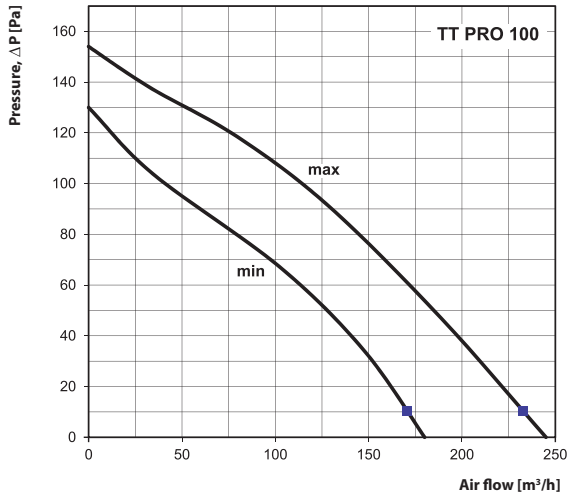
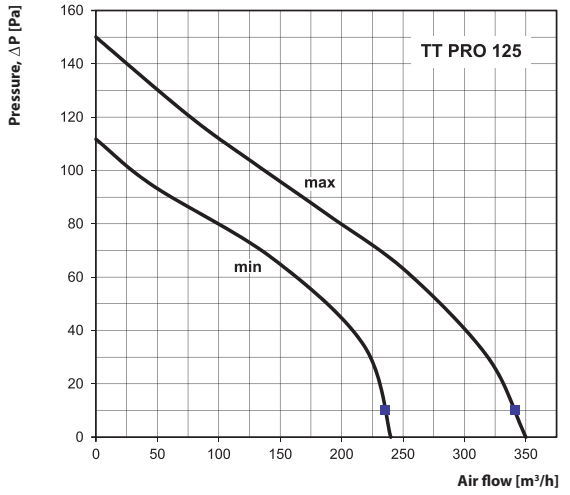


Sound power level, A-filter applied												Sound pressure level at 3 meters, A-filter applied	Sound pressure level at 1 meters, A-filter applied
		general	Octave frequency band, Hz										
	Hz		63	125	250	500	1000	2000	4000	8000		LpA, 3 m [dBA]	LpA, 1 m [dBA]
Min speed													
L_{WA} to inlet	dBA	54	19	35	50	49	44	37	25	17		33	43
L_{WA} to outlet	dBA	53	17	34	50	49	43	36	24	17		32	42
L_{WA} to environment	dBA	47	14	29	43	43	39	33	22	15		27	37
Max speed													
L_{WA} to inlet	dBA	59	24	34	53	54	53	48	37	26		38	48
L_{WA} to outlet	dBA	57	23	33	52	52	52	47	37	26		37	47
L_{WA} to environment	dBA	52	18	29	46	48	47	43	33	23		32	42

VENTS TT PRO



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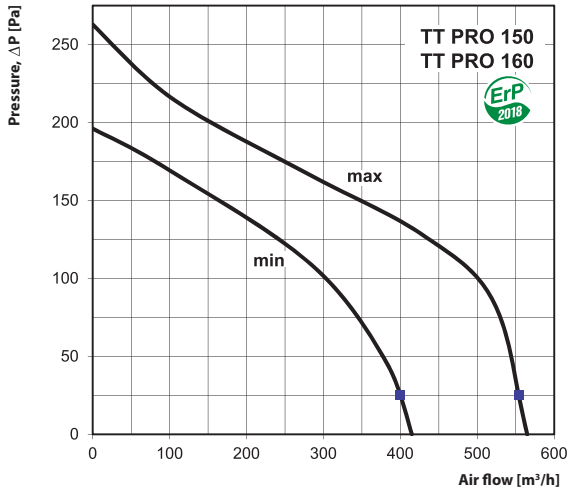
Min speed													
L_{WA} to inlet	dBA	54	26	38	52	50	44	38	27	17		34	44
L_{WA} to outlet	dBA	54	25	37	51	49	43	38	28	18		33	43
L_{WA} to environment	dBA	49	21	32	46	45	40	35	25	16		29	39
Max speed													
L_{WA} to inlet	dBA	60	20	31	57	51	51	50	39	27		39	49
L_{WA} to outlet	dBA	59	20	31	56	51	51	49	39	26		38	48
L_{WA} to environment	dBA	54	16	27	51	46	47	45	36	24		34	44

VENTS TT PRO



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Min speed													
L_{WA} to inlet	dBA	59	31	45	54	52	54	48	35	29		38	48
L_{WA} to outlet	dBA	63	37	49	56	56	60	48	39	30		42	52
L_{WA} to environment	dBA	52	21	30	48	48	45	42	34	23		32	42
Max speed													
L_{WA} to inlet	dBA	69	38	51	57	62	60	66	49	44		48	58
L_{WA} to outlet	dBA	72	42	55	66	67	68	65	53	45		52	62
L_{WA} to environment	dBA	65	23	37	56	59	57	61	47	35		44	54

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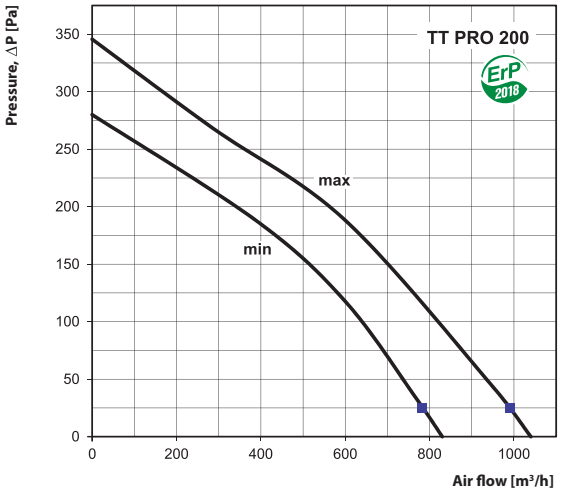

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		general	Octave frequency band, Hz										
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Min speed													
L_{WA} to inlet	dBA	66	38	50	58	59	60	59	55	45		45	55
L_{WA} to outlet	dBA	64	40	50	54	58	59	57	51	44		43	53
L_{WA} to environment	dBA	60	27	42	49	54	55	54	46	34		39	49
Max speed													
L_{WA} to inlet	dBA	71	41	50	63	64	65	64	62	52		50	60
L_{WA} to outlet	dBA	70	43	52	61	66	64	63	58	51		50	60
L_{WA} to environment	dBA	65	34	43	54	60	60	60	53	41		45	55

Technical data

	TT PRO 100		TT PRO 125		TT PRO 150/ TT PRO 160	
Speed	min	max	min	max	min	max
Voltage [V/50 (60) Hz]	1~230		1~230		1~230	
Power [W]	23	25	25	29	42	50
Current [A]	0.10	0.11	0.11	0.13	0.19	0.22
Max. air flow [m³/h]	180	245	240	350	415	565
RPM [min⁻¹]	2050	2620	1630	2300	1940	2620
Noise level at 3 m [dBA]	27	32	29	34	32	44
Transported air temperature [°C]	60		60		60	
SEC class	C		B		B	
Protection rating	IPX4		IPX4		IPX4	

	TT PRO 200		TT PRO 250		TT PRO 315	
Speed	min	max	min	max	min	max
Voltage [V/50 (60) Hz]	1~230		1~230		1~230	
Power [W]	76	108	125	177	230	320
Current [A]	0.34	0.48	0.54	0.79	1.0	1.42
Max. air flow [m³/h]	830	1040	1110	1400	1570	2050
RPM [min⁻¹]	1915	2380	1955	2440	1890	2430
Noise level at 3 m [dBA]	39	45	44	51	41	52
Transported air temperature [°C]	60		60		60	
SEC class	B		-		-	
Protection rating	IPX4		IPX4		IPX4	

To meet the requirements of ErP 2018, a speed controller and local demand control typology must be applied (connect a sensor).

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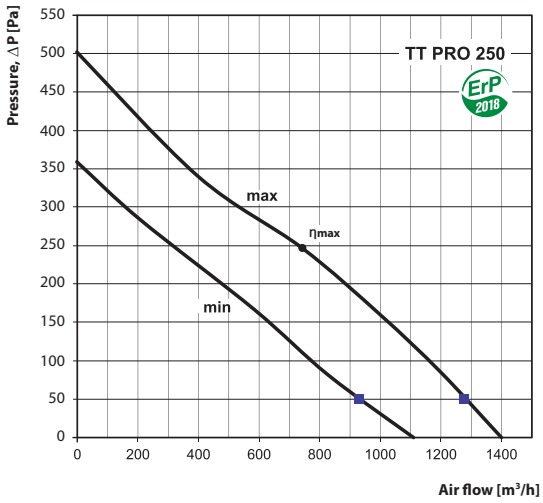

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Min speed												
L_{WA} to inlet	dBA	72	48	57	63	66	69	64	54	45	52	62
L_{WA} to outlet	dBA	75	48	56	64	70	71	66	56	45	54	64
L_{WA} to environment	dBA	65	32	51	57	61	59	56	45	32	44	54
Max speed												
L_{WA} to inlet	dBA	78	52	62	66	71	75	72	62	52	58	68
L_{WA} to outlet	dBA	81	52	60	66	76	77	74	63	52	60	70
L_{WA} to environment	dBA	72	35	50	63	69	66	63	53	40	51	61

η [%]	MC	EC	N	VSD	kW	A	m³/h	Pa	RPM	SR
30.6	A	Static	49.2	No	0.171	0.79	742	247	2465	1

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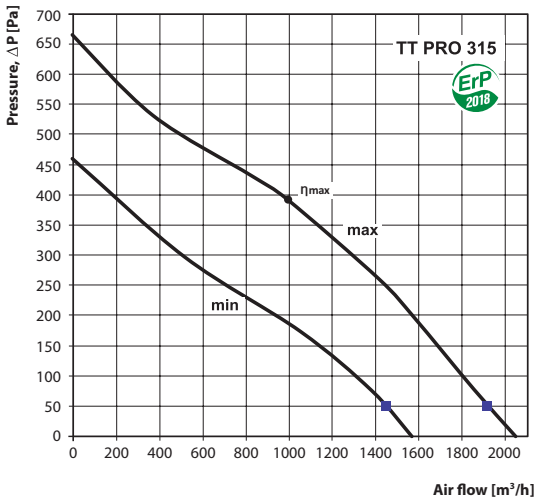

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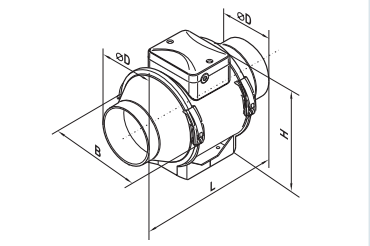
Min speed												
L_{WA} to inlet	dBA	72	43	54	62	67	66	67	58	47	52	62
L_{WA} to outlet	dBA	70	45	57	59	64	66	63	56	46	50	60
L_{WA} to environment	dBA	62	28	51	53	57	57	54	46	36	41	51
Max speed												
L_{WA} to inlet	dBA	80	50	59	68	73	77	74	70	59	60	70
L_{WA} to outlet	dBA	78	51	60	66	70	75	71	66	57	58	68
L_{WA} to environment	dBA	72	37	51	66	66	67	65	58	48	52	62

η [%]	MC	EC	N	VSD	kW	A	m³/h	Pa	RPM	SR
34.4	A	Static	50	No	0.322	1.45	996	392	2380	1

Fan overall dimensions

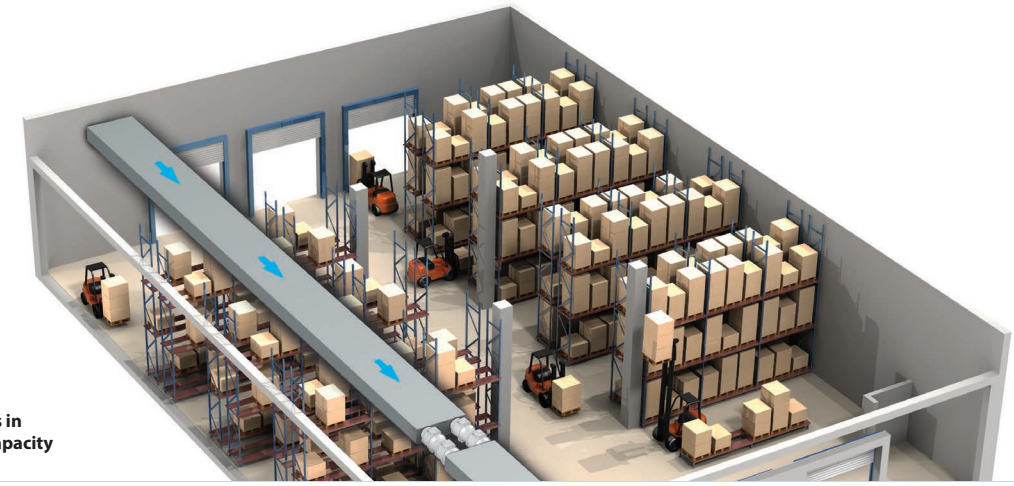
Type	Dimensions [mm]				Mass [kg]
	ØD	B	H	L	
TT PRO 100	97	195.8	226	302.5	1.75
TT PRO 125	123	195.6	226	258.5	2.15
TT PRO 150	148	220.1	247	289	2.95
TT PRO 160	158	220.1	247	289	3.25
TT PRO 200	199	239	261	295.5	3.95
TT PRO 250	247	287	323	383	7.80
TT PRO 315	310	362	408	445	11.95



Mounting examples

in the bathroom

in the office



parallel mounting of the fans in storage room increases air capacity