

## Series VENTS TT



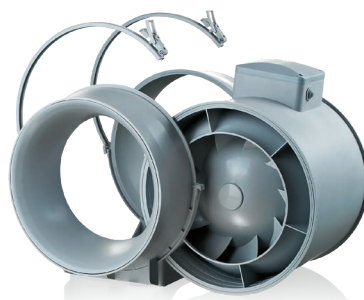
Inline mixed-flow fans with  
the air flow up to  
**520 m³/h**

### ■ Application

The VENTS TT 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 160 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.

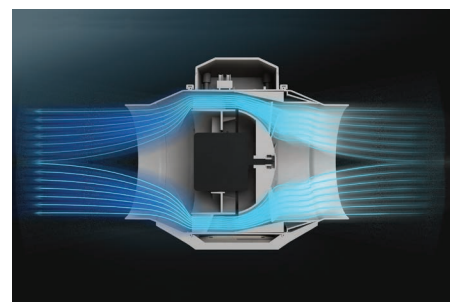
### ■ Design

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.



### ■ Motor

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

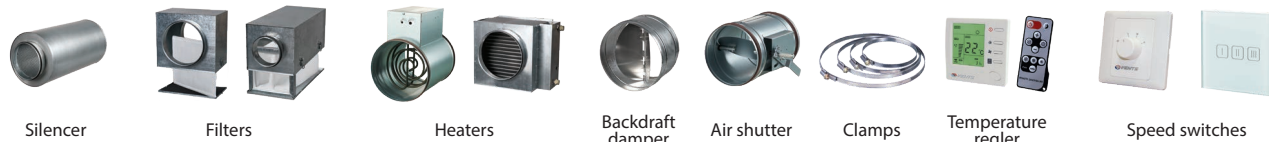


An integrated speed controller (option P), an external TRIAC or autotransformer speed controller (available upon separate order) are used for smooth speed control when connected to the maximum speed terminal.

### Designation key

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

### Accessories



Silencer

Filters

Heaters

Backdraft  
damper

Air shutter

Clamps

Temperature  
regler

Speed switches



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;



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 reverts to the pre-set lower speed as the air temperature drops below the thermostat set point.

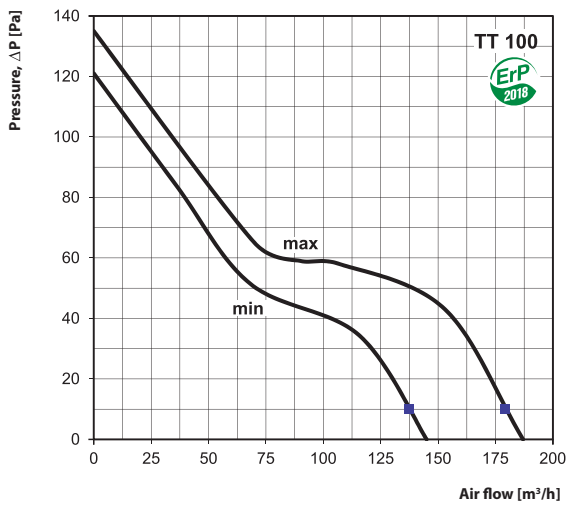
This pattern is used to keep air temperature to within 2 °C. In this case the fan switches are rare.

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.

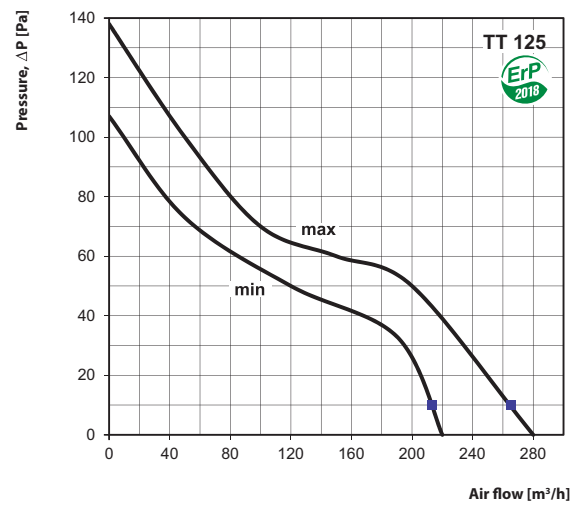
VENTS TT



■ Sound power level, A-filter applied

| ■ Sound power level, A-filter applied |     |         |                           |     |     |     |      |      |      |      | Sound pressure level at 3 meters, A-filter applied<br>LpA, 3 m [dBA] | Sound pressure level at 1 meters, A-filter applied<br>LpA, 1 m [dBA] |
|---------------------------------------|-----|---------|---------------------------|-----|-----|-----|------|------|------|------|----------------------------------------------------------------------|----------------------------------------------------------------------|
|                                       | Hz  | general | Octave frequency band, Hz |     |     |     |      |      |      |      |                                                                      |                                                                      |
|                                       |     |         | 63                        | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |                                                                      |                                                                      |
| Min speed                             |     |         |                           |     |     |     |      |      |      |      |                                                                      |                                                                      |
| L <sub>WA</sub> to inlet              | dBA | 54      | 16                        | 28  | 51  | 45  | 49   | 41   | 35   | 24   | 33                                                                   | 43                                                                   |
| L <sub>WA</sub> to outlet             | dBA | 53      | 15                        | 27  | 50  | 44  | 48   | 40   | 35   | 23   | 32                                                                   | 42                                                                   |
| L <sub>WA</sub> to environment        | dBA | 48      | 11                        | 23  | 44  | 40  | 43   | 36   | 31   | 21   | 27                                                                   | 37                                                                   |
| Max speed                             |     |         |                           |     |     |     |      |      |      |      |                                                                      |                                                                      |
| L <sub>WA</sub> to inlet              | dBA | 64      | 23                        | 35  | 61  | 58  | 56   | 48   | 43   | 30   | 43                                                                   | 53                                                                   |
| L <sub>WA</sub> to outlet             | dBA | 63      | 22                        | 34  | 60  | 57  | 55   | 48   | 42   | 29   | 42                                                                   | 52                                                                   |
| L <sub>WA</sub> to environment        | dBA | 56      | 17                        | 29  | 53  | 51  | 50   | 43   | 38   | 26   | 36                                                                   | 46                                                                   |

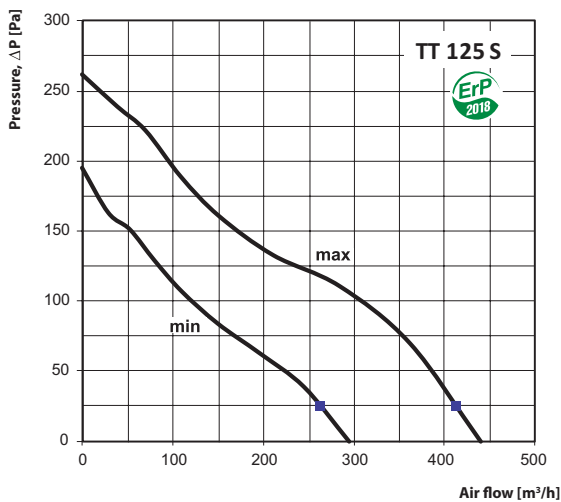
VENTS TT



■ Sound power level, A-filter applied

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|---------------------------------------|-----|---------|---------------------------|-----|-----|-----|------|------|------|----------------------------------------------------------------------|----------------------------------------------------------------------|------|
|                                       | Hz  | general | Octave frequency band, Hz |     |     |     |      |      |      |                                                                      |                                                                      |      |
|                                       |     |         | 63                        | 125 | 250 | 500 | 1000 | 2000 | 4000 |                                                                      |                                                                      | 8000 |
| <b>Min speed</b>                      |     |         |                           |     |     |     |      |      |      |                                                                      |                                                                      |      |
| L <sub>WA</sub> to inlet              | dBA | 53      | 17                        | 30  | 48  | 48  | 48   | 43   | 35   | 22                                                                   | 33                                                                   | 43   |
| L <sub>WA</sub> to outlet             | dBA | 52      | 16                        | 29  | 47  | 47  | 47   | 43   | 34   | 21                                                                   | 32                                                                   | 42   |
| L <sub>WA</sub> to environment        | dBA | 49      | 13                        | 26  | 43  | 44  | 44   | 40   | 32   | 20                                                                   | 28                                                                   | 38   |
| <b>Max speed</b>                      |     |         |                           |     |     |     |      |      |      |                                                                      |                                                                      |      |
| L <sub>WA</sub> to inlet              | dBA | 62      | 28                        | 38  | 57  | 58  | 57   | 52   | 43   | 29                                                                   | 42                                                                   | 52   |
| L <sub>WA</sub> to outlet             | dBA | 61      | 27                        | 37  | 55  | 57  | 56   | 51   | 42   | 29                                                                   | 41                                                                   | 51   |
| L <sub>WA</sub> to environment        | dBA | 58      | 23                        | 33  | 51  | 53  | 52   | 48   | 40   | 27                                                                   | 37                                                                   | 47   |

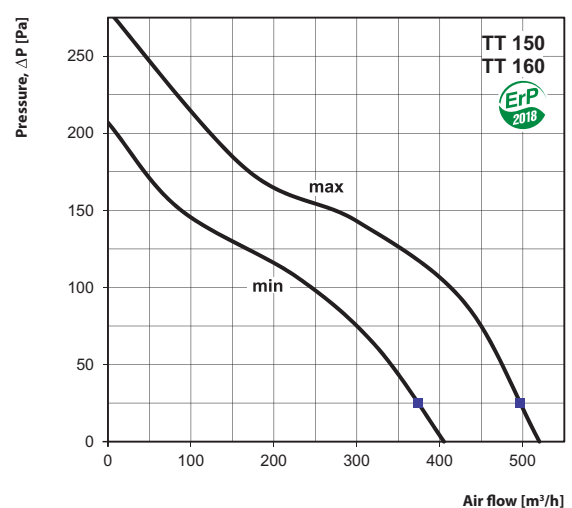
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■ Sound power level, A-filter applied

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|---------------------------------------|-----|---------|---------------------------|-----|-----|-----|------|------|------|------|-------------------------------------------------------------------------|-------------------------------------------------------------------------|
|                                       | Hz  | general | Octave frequency band, Hz |     |     |     |      |      |      |      |                                                                         |                                                                         |
|                                       |     |         | 63                        | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |                                                                         |                                                                         |
| Min speed                             |     |         |                           |     |     |     |      |      |      |      |                                                                         |                                                                         |
| L <sub>WA</sub> to inlet              | dBA | 56      | 28                        | 38  | 53  | 51  | 49   | 46   | 37   | 24   | 36                                                                      | 46                                                                      |
| L <sub>WA</sub> to outlet             | dBA | 55      | 27                        | 37  | 52  | 50  | 48   | 45   | 37   | 23   | 35                                                                      | 45                                                                      |
| L <sub>WA</sub> to environment        | dBA | 52      | 23                        | 33  | 47  | 46  | 44   | 42   | 34   | 21   | 31                                                                      | 41                                                                      |
| Max speed                             |     |         |                           |     |     |     |      |      |      |      |                                                                         |                                                                         |
| L <sub>WA</sub> to inlet              | dBA | 67      | 38                        | 49  | 63  | 63  | 60   | 57   | 50   | 38   | 47                                                                      | 57                                                                      |
| L <sub>WA</sub> to outlet             | dBA | 66      | 38                        | 48  | 61  | 62  | 59   | 56   | 48   | 37   | 46                                                                      | 56                                                                      |
| L <sub>WA</sub> to environment        | dBA | 63      | 34                        | 45  | 58  | 58  | 56   | 53   | 46   | 35   | 42                                                                      | 52                                                                      |

VENTS TT



■ Sound power level, A-filter applied

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

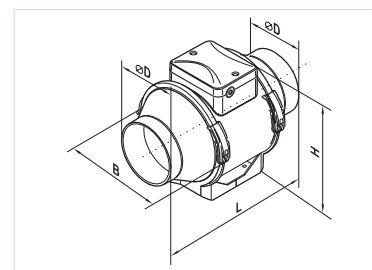
## Technical data

|                                  | 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   | 32        | 60   | 30            | 60   |
| Current [A]                      | 0.11      | 0.21 | 0.18      | 0.27 | 0.14      | 0.27 | 0.17          | 0.27 |
| Max. air flow [m³/h]             | 145       | 187  | 220       | 280  | 295       | 440  | 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] | -25...+60 |      | -25...+60 |      | -25...+60 |      | -25...+60     |      |
| SEC class                        | C         |      | B         |      | C         |      | B             |      |
| Protection rating                | IPX4      |      | IPX4      |      | IPX4      |      | IPX4          |      |

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

## Fan overall dimensions

| Type     | Dimensions [mm] |     |     |     | Mass [kg] |
|----------|-----------------|-----|-----|-----|-----------|
|          | ØD              | 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