

## SPECIFICATION

# Micronel Tube Fan

## D301P-006KH-4



### GENERAL INFORMATION

#### Item

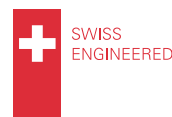
Product type	Tube fan with integrated electronic motor driver
Article no.	D301P-006KH-4 D303P-006KH-4 with flange at outlet (option) D304P-006KH-4 with flange at inlet (option)
Manufacturer	Micronel AG
Customer	N/A
Project no.	N/A
Modification	Standard product

### APPLICATION

Tube fan with high airflow, economic motor and integrated power electronic. Compared to a flat fan, the Micronel D-Line offers much higher pressure and still high volume flow at the same time. Typical applications are cooling and suction, where powerful fans are needed.

### FEATURES

- Pressure 3.40 hPa, flow rate 310 l/min
- 6 V<sub>DC</sub> brushless DC-motor
- Speed control and tacho frequency signal
- Small dimensions through slim design
- Options for mounting flange with holes



SWISS  
ENGINEERED



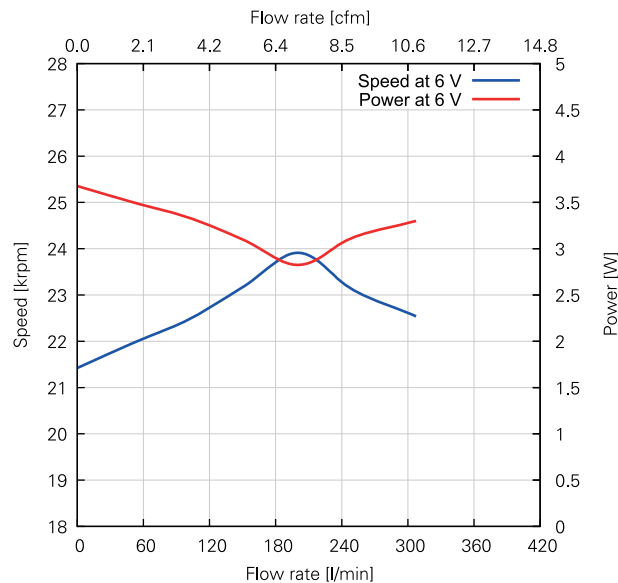
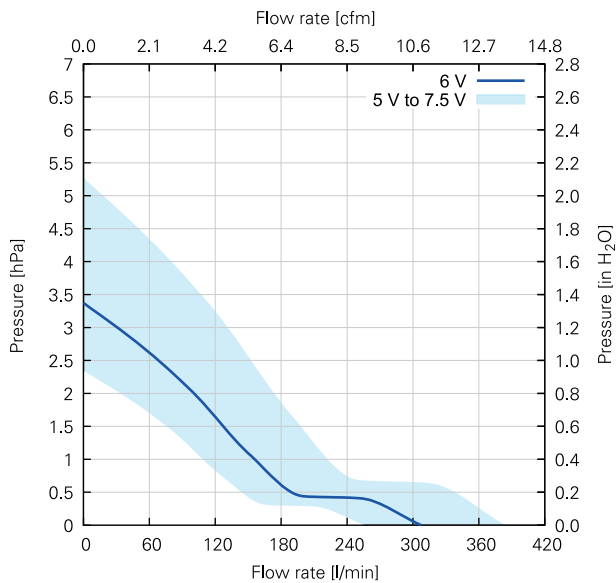
DECLARATION OF  
CONFORMITY  
NON-USE OF  
CONFLICT MINERALS

### GENERAL CONDITIONS

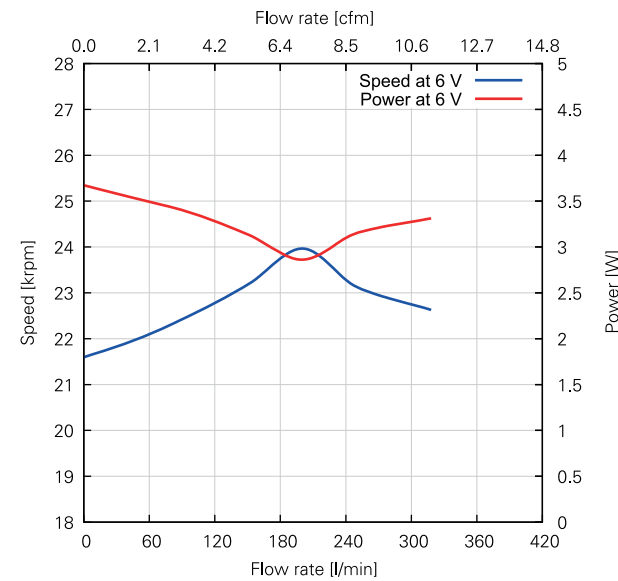
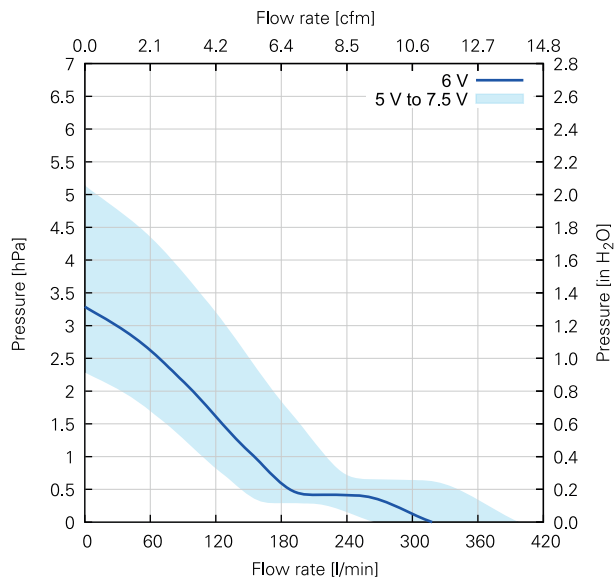
Unless otherwise stated all data are measured at nominal voltage and are valid at 20 °C ambient temperature and 1.2 kg/m<sup>3</sup> standard air density. Values listed are nominal and can vary depending on the installation conditions and due to component tolerances. Test setup according to ISO 5801 with standardized inlet and outlet chambers. Tolerances based on specified speed data according to ISO 13348, grade 4: pressure +/-10 %, power +16 %. Tolerances based on constant voltage: speed +/-10 %, pressure +/-21 %, power +33 %. For continuous blower operation please refer to specified maximum ratings. Performance data outside normal operating range plotted for information only.

**PERFORMANCE**

**Pressure and Vacuum Operation**



**Vacuum Operation at Inlet**



**Shut-Off in Pressure Operation (Zero Flow Rate)**

	Unit	Value
Static pressure	[hPa]	3.37
Power consumption	[W]	3.68
Speed	[rpm]	21 420

**Shut-Off in Vacuum Operation (Zero Flow Rate)**

Static pressure	[hPa]	3.44
Power consumption	[W]	3.72
Speed	[rpm]	21 480

**Free-Air (Zero Static Pressure)**

Flow rate	[l/min]	313
Power consumption	[W]	3.31
Speed	[rpm]	22 580

**TECHNICAL DATA**

<b>Electrical</b>	<b>Unit</b>	<b>Value</b>
Nominal voltage	[V <sub>DC</sub> ]	6
Voltage range	[V <sub>DC</sub> ]	5 to 7.5
Minimum power supply current <sup>(1)</sup>	[A]	N/A
Maximum start-up time	[s]	N/A
Maximum ripple voltage	[%]	5
<b>Maximum Ratings for Continuous Operation</b>		
Minimum flow rate	[l/min]	N/A
Maximum speed	[rpm]	N/A
Maximum acceleration	[rpm/ms]	N/A
Maximum power consumption	[W]	N/A
Maximum housing surface temperature	[°C]	N/A
Maximum NTC temperature	[°C]	N/A
<b>Environmental</b>		
Ambient temperature (operating)	[°C]	0 to 65
Ambient temperature (storage)	[°C]	0 to 65
Relative humidity (noncondensing)	[%RH]	10 to 85
Ingress protection (EN60529)		IP40
Maximum oxygen concentration <sup>(2)</sup>	[%]	N/A
<b>Motor</b>		
Type		Brushless direct current motor
Winding insulation class		H, 180 °C
NTC type		N/A
<b>Lifetime</b>		
L10 at 25 °C ambient temperature <sup>(3)</sup>	[h]	20000
<b>Acoustics</b>		
Sound pressure level <sup>(4)</sup>	[dB(A)]	55
<b>Leak Tightness</b>		
Maximum leak flow rate	[l/min]	N/A
<b>Mechanical</b>		
Blower weight	[g]	19

<sup>(1)</sup> Recommended minimum continuous power supply current for proper start-up behavior at nominal voltage. This is an indicative value. Power supply dimensioning, wiring, safety, setup and validation is the customer's responsibility.

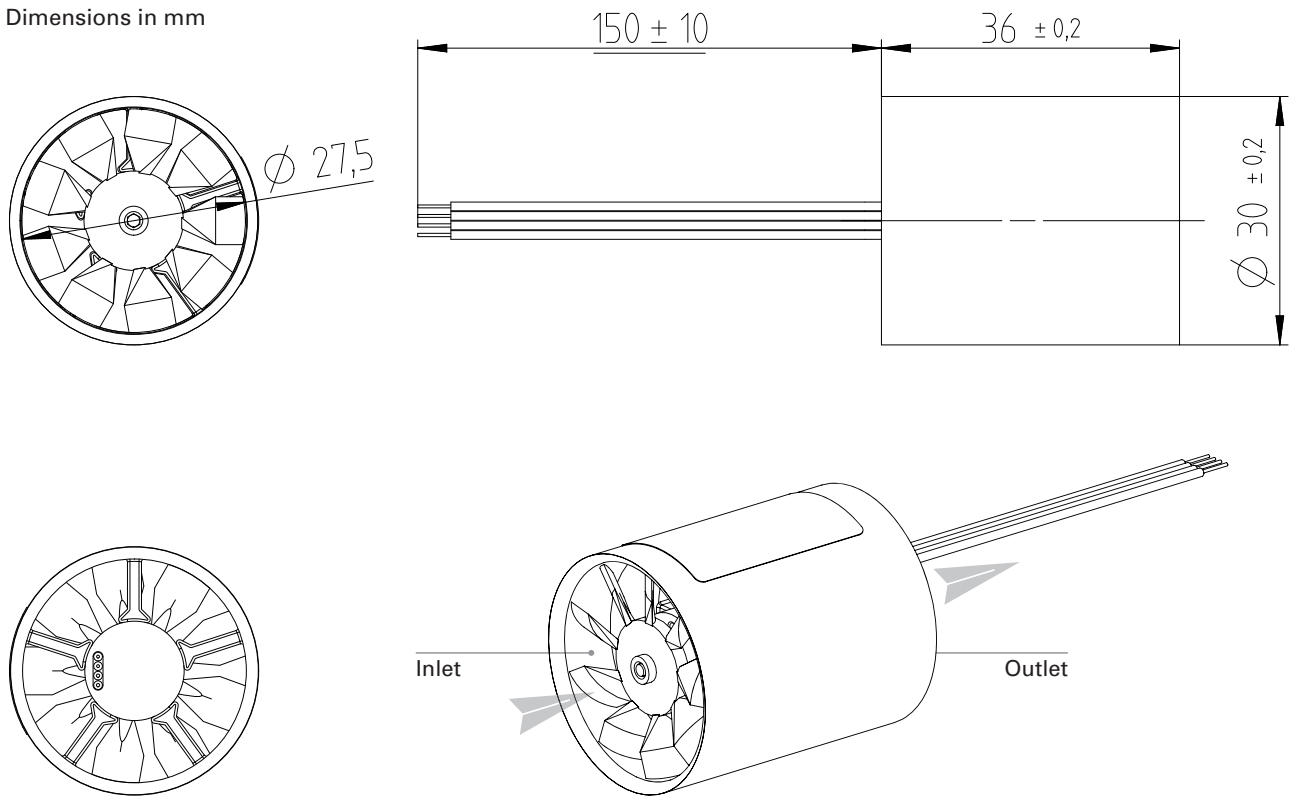
<sup>(2)</sup> Micronel blowers are designed for various levels of oxygen compatibility. Further information available on request.

<sup>(3)</sup> Accelerated aging test at 45 °C ambient temperature, operation cycle 11.5 h ON, 0.5 h OFF, normal cleanliness according to ISO 281. Temperature dependency of lifetime according to IPC-9591: factor 1.5 per 10 °C.

<sup>(4)</sup> Measured at distance of 1 meter from inlet, with open inlet and outlet.

**DRAWINGS**

Dimensions in mm

**Orientations**

Direction of rotation

↻ Counter-clockwise (view on inlet)

Mounting position

Any direction

**MATERIALS****Components****Material**

Fan housing

Polyphenylenoxide (PPO)  
Flammability: UL 94V-1

Impeller

Polyphenylenoxide (PPO)  
Flammability: UL 94V-1

Hub

-

Motor housing

-

Label

Plastic

Connector

-

Crimp terminal

-

Lead wire

Silicone insulated cable  
Flammability: UL 3239

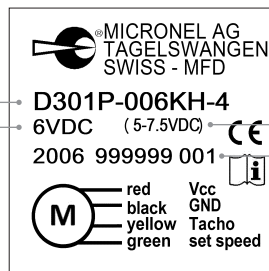
**IDENTIFICATION**

**Label**

Design

Article number

Nominal voltage



Voltage range

Identification number:  
 • Year, calendar week (YYWW)  
 • Fabrication number (6 digits)  
 • Serial number (3 digits)

**BLOWER PINOUT**

Pin	Color	Description	AWG
1	Red	V <sub>CC</sub>	28
2	Black	GND	28
3	Yellow	Tachometer output	28
4	Green	Set speed input	28

**ELECTRONIC FUNCTIONS**

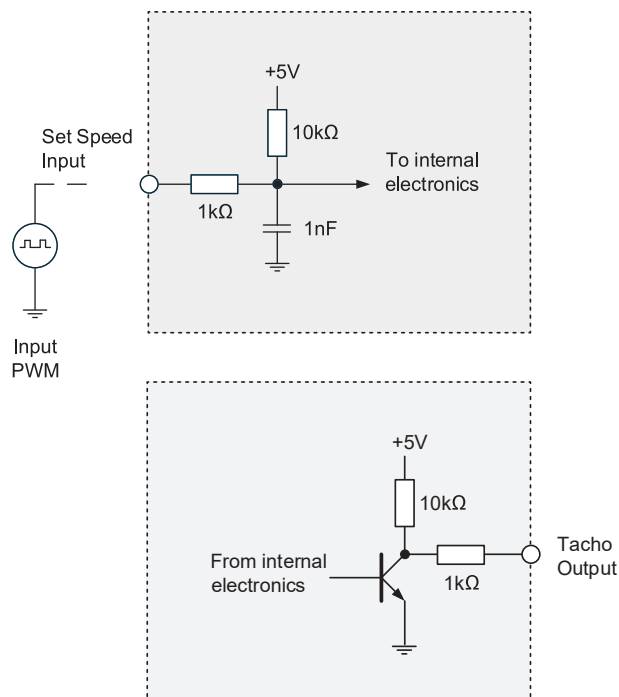
**Integrated Electronic Motor Driver**

Type

Micronel brushless direct current motor driver

Features

- Integrated speed control (analog / resistive)
- Tachometer frequency signal
- Locked rotor protection
- No polarity protection



**Speed Control Input**

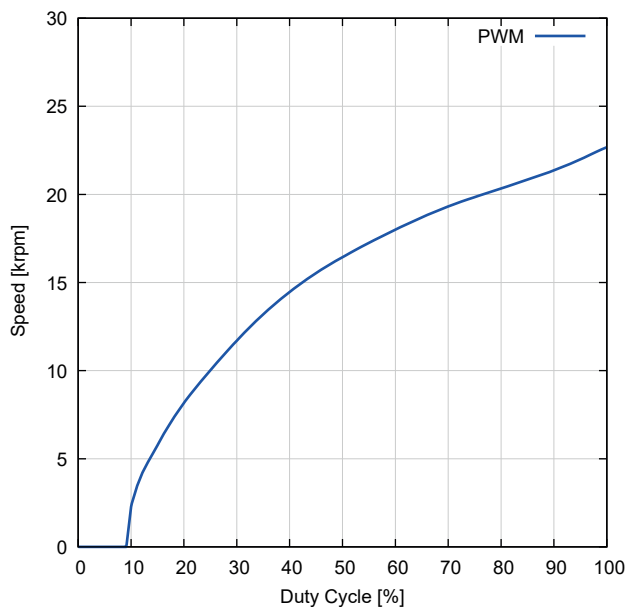
The blower speed can be controlled by PWM. See „Set Speed Input“ table for further details.

**Tachometer Output**

Tachometer frequency:  
 1 pulse per revolution  
 $n = 60 \cdot f$   
**n** Rotation speed [rpm]  
**f** Tacho frequency [Hz]

**ELECTRONIC FUNCTIONS**

Set Speed Input PWM [%]	Operation Mode
Set speed not connected	Fan speed at 100 %
0.0	Stop
0.1 to 9.0	Not defined, fan might run or stop
10.0	Minimum start-up
10.0 to 100.0 (after start-up)	Fan speed dependent on duty cycle

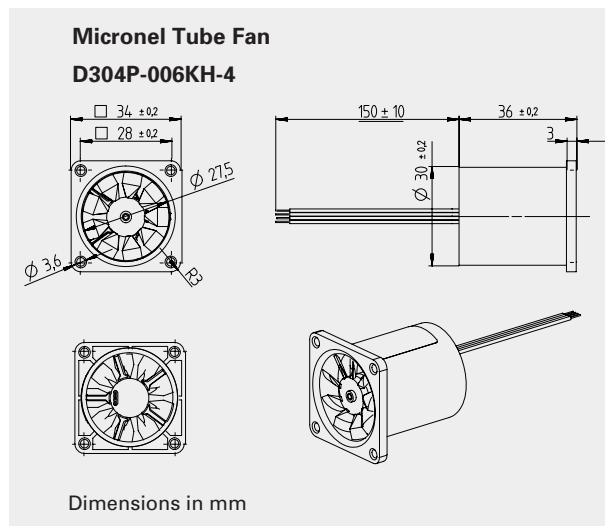
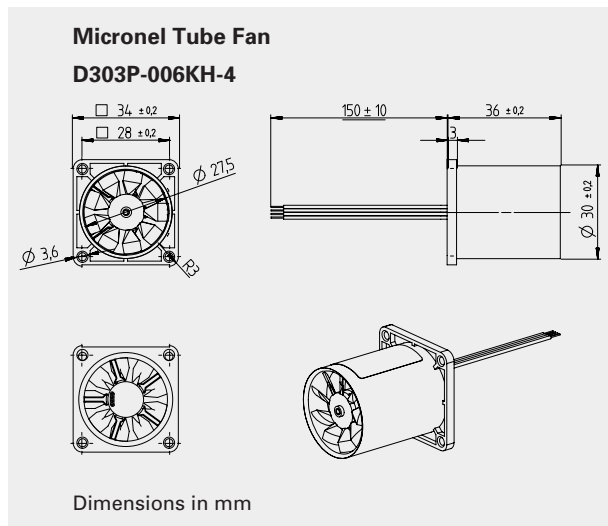


Frequency 1 kHz – 60 kHz; (TYP 10 kHz)

**OPTIONS FOR MOUNTING**

Product no. with options	Flange Inlet	Flange Outlet
Micronel Tube Fan D301P-006KH-4		
Micronel Tube Fan D303P-006KH-4*		●
Micronel Tube Fan D304P-006KH-4*	●	

\* The drawings show versions of flange.



Handle in power-off conditions only!  
Read operating manual!

All data are subject to change without advanced notice.  
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