SPECIFICATION

Micronel Tube Fan D241P-006KH-4

GENERAL INFORMATION

Item	
Product type	Tube fan with integrated electronic motor driver
Article no.	D241P-006KH-4 D243P-006KH-4 with flange at outlet (option) D244P-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.

SWISS ENGINEERED

CE

REACh Compliant

RoHS II Compliant

DECLARATION OF CONFORMITY NON-USE OF CONFLICT MINERALS

FEATURES

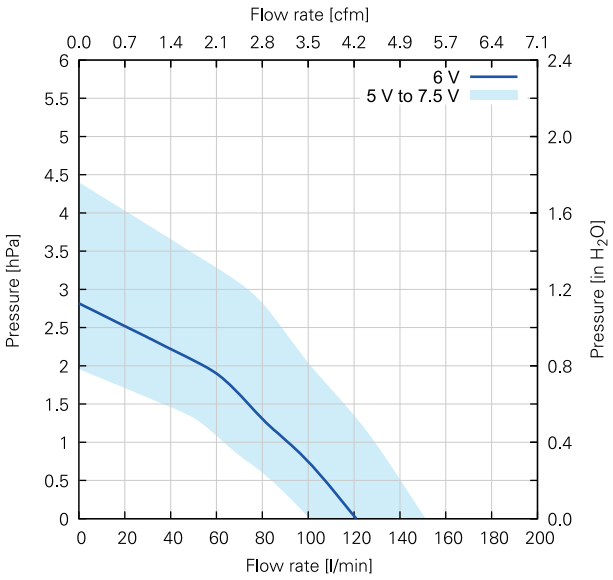
- Pressure 2.82 hPa, flow rate 120 l/min
- 6 VDC brushless DC-motor
- Speed control and tacho frequency signal
- Small dimensions through slim design
- Options for mounting flange with holes

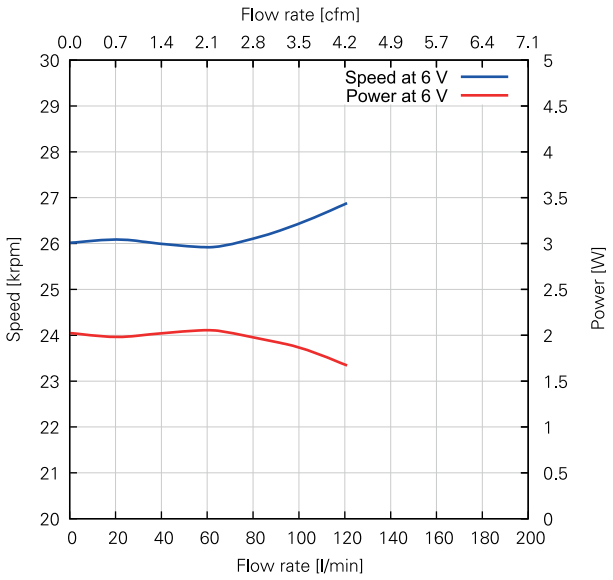
GENERAL CONDITIONS

Unless otherwise stated all data are measured at nominal voltage and are valid at 20 °C ambient temperature and 1.2 kg/m³ 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.

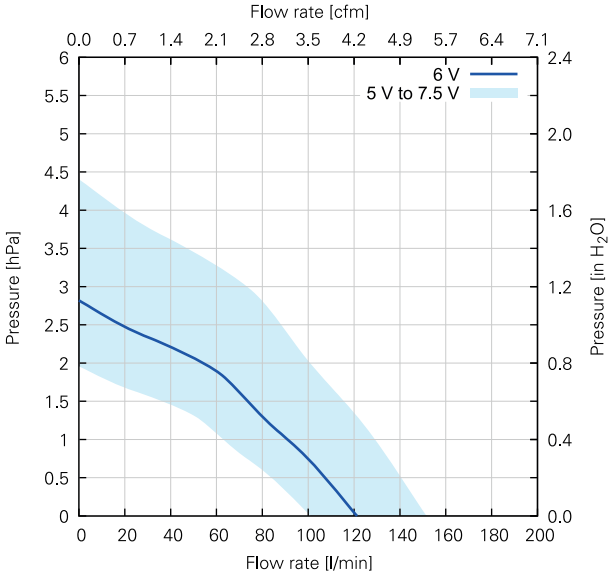
PERFORMANCE

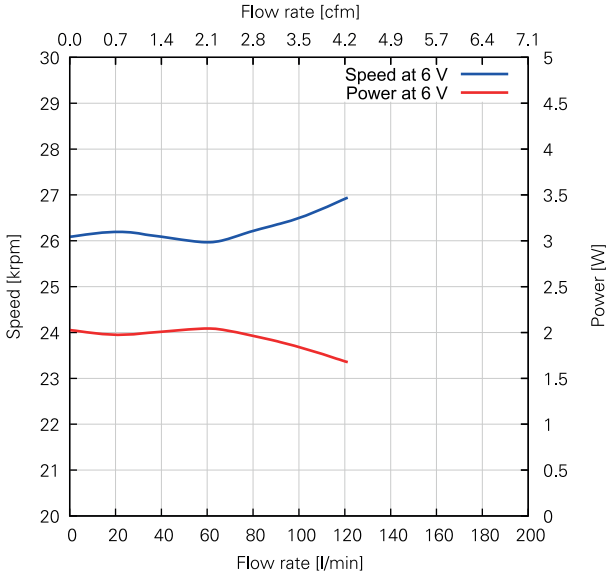
Pressure Operation at Outlet





Vacuum Operation at Inlet





Shut-Off in Pressure Operation (Zero Flow Rate)	Unit	Value
Static pressure	[hPa]	2.82
Power consumption	[W]	2.03
Speed	[rpm]	26020

Shut-Off in Vacuum Operation (Zero Flow Rate)		
Static pressure	[hPa]	2.82
Power consumption	[W]	2.03
Speed	[rpm]	26090

Free-Air (Zero Static Pressure)		
Flow rate	[l/min]	121
Power consumption	[W]	1.68
Speed	[rpm]	26910

TECHNICAL DATA

Electrical	Unit	Value
Nominal voltage	[V_{DC}]	6
Voltage range	[V_{DC}]	5 to 7.5
Minimum power supply current[1]	[A]	N/A
Maximum start-up time	[s]	N/A
Maximum ripple voltage	[%]	5
Maximum Ratings for Continuous Operation		
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
Environmental		
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[2]	[%]	N/A
Motor		
Type		Brushless direct current motor
Winding insulation class		H, 180 °C
NTC type		N/A
Lifetime		
L10 at 25 °C ambient temperature[3]	[h]	20 000
Acoustics		
Sound pressure level[4]	[dB(A)]	58.5
Leak Tightness		
Maximum leak flow rate	[l/min]	N/A
Mechanical		
Blower weight	[g]	16

[1] 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.

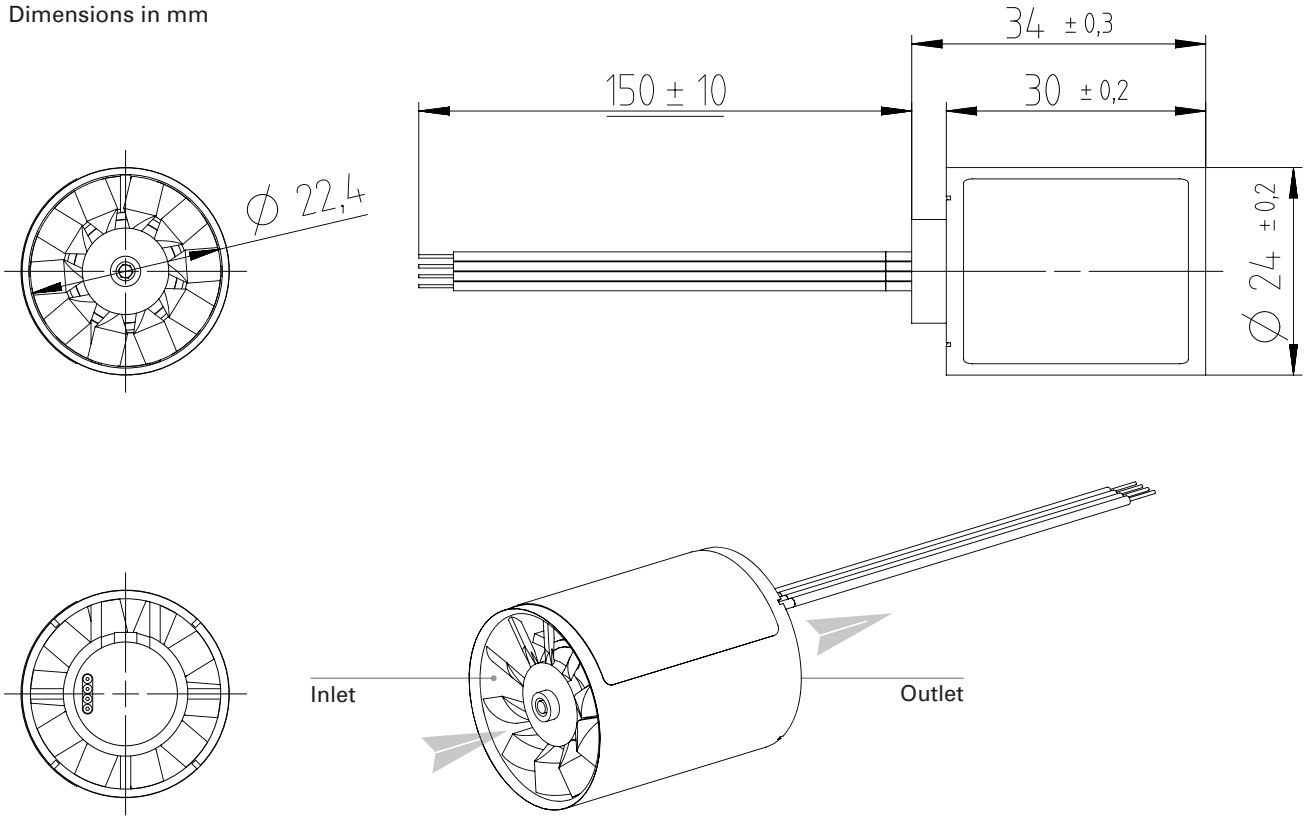
[2] Micronel blowers are designed for various levels of oxygen compatibility. Further information available on request.

[3] 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.

[4] 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

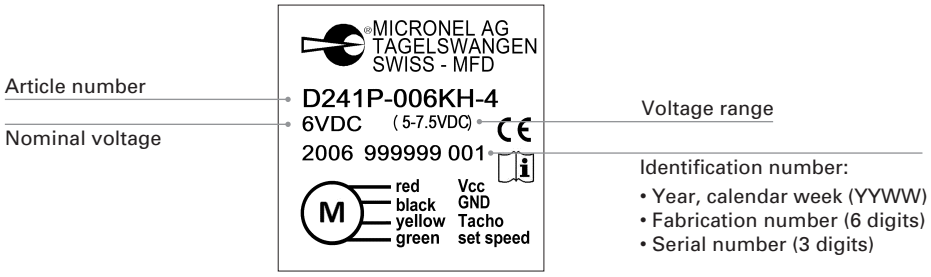
MATERIALS

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



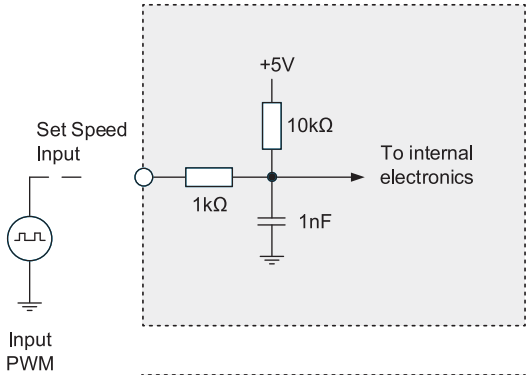
BLOWER PINOUT

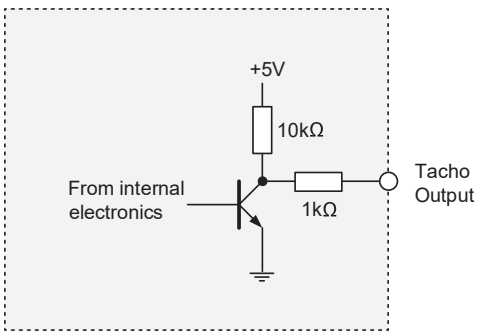
Pin	Color	Description	AWG
1	Red	V_{cc}	28
2	Black	GND	28
3	Yellow	Tachometer output	28
4	Green	Set speed input	28

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

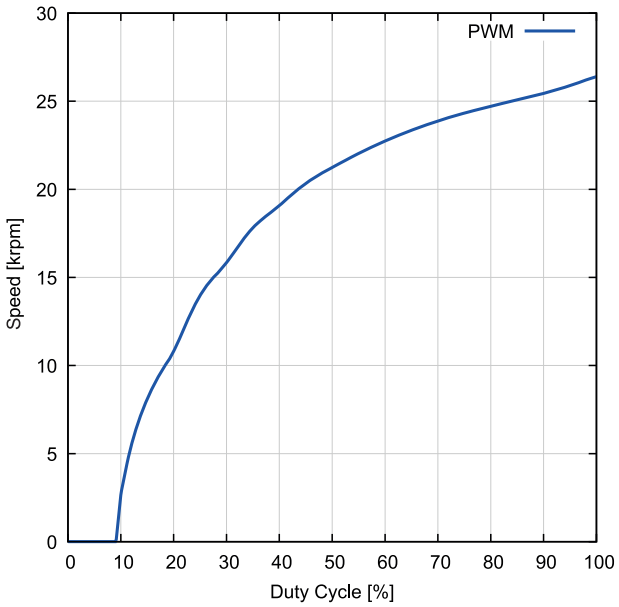
n = 60 • f

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)

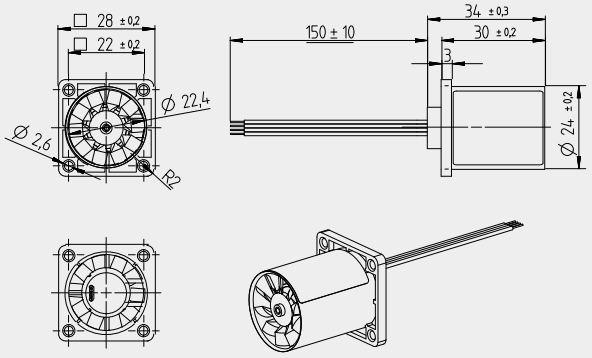


OPTIONS FOR MOUNTING

Product no. with options	Flange Inlet	Flange Outlet
Micronel Tube Fan D241P-006KH-4		
Micronel Tube Fan D243P-006KH-4*		●
Micronel Tube Fan D244P-006KH-4*	●	

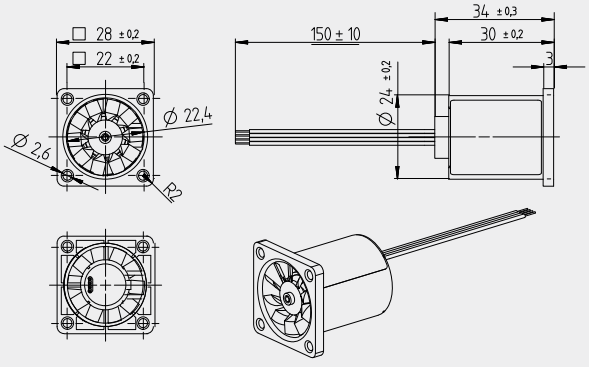
* The drawings show versions of flange.

Micronel Tube Fan
D243P-006KH-4



Dimensions in mm

Micronel Tube Fan
D244P-006KH-4



Dimensions in mm

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

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Miniature Fan & Blower Technology

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