

SPECIFICATION

Micronel Tube Fan

D601P-024KM-4



GENERAL INFORMATION

Item

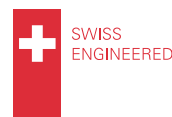
Product type	Tube fan with integrated electronic motor driver
Article no.	D601P-024KM-4 D603P-024KM-4 with flange at outlet (option) D604P-024KM-4 with flange at inlet (option)
Manufacturer	Micronel AG
Customer	N/A
Project no.	P19007
Modification	Standard product

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 8.3 hPa, flow rate 1910 l/min
- 24 V_{DC} brushless DC-motor
- Speed control and tacho frequency signal
- Small dimensions through slim design
- Options for mounting flange with holes



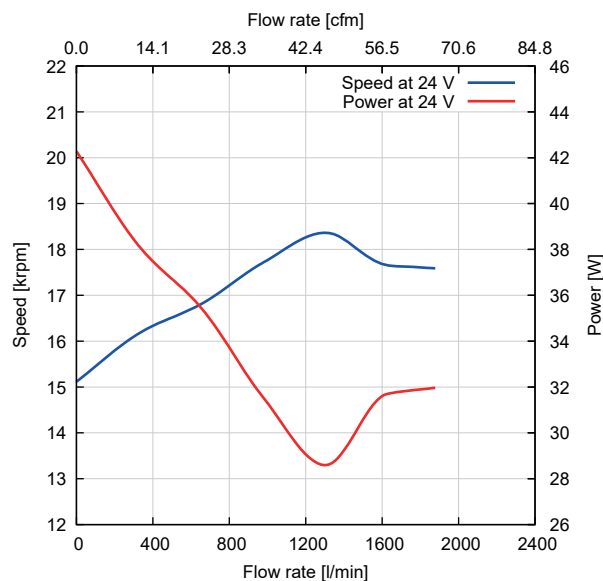
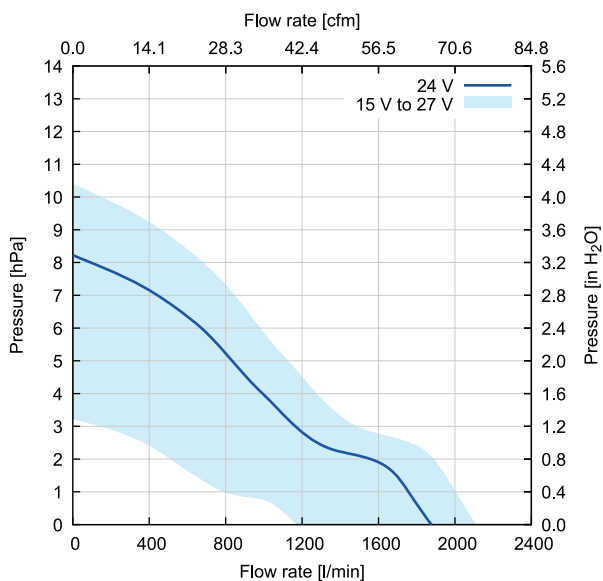
DECLARATION OF CONFORMITY
NON-USE OF
CONFLICT MINERALS

GENERAL CONDITIONS

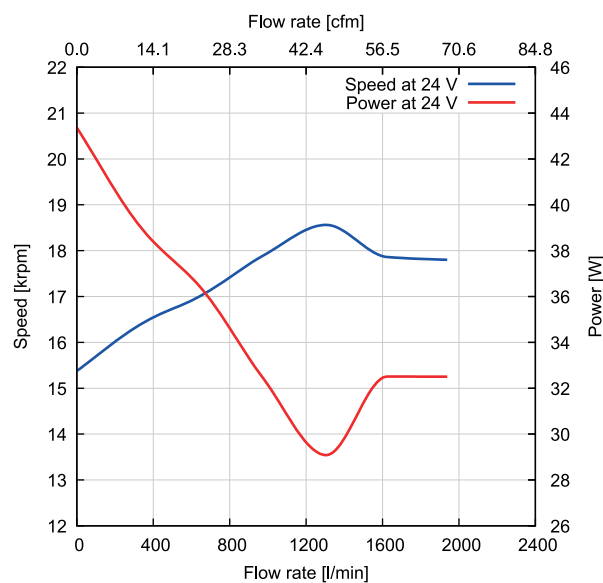
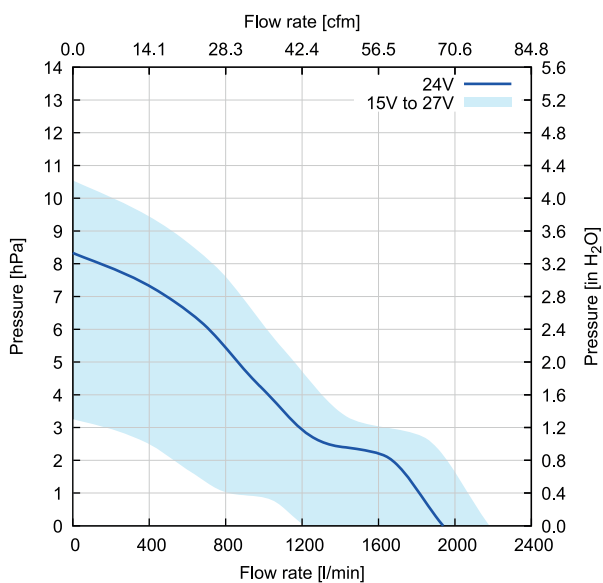
Unless otherwise stated all data are measured at nominal voltage and are valid at 20 °C ambient temperature and 1.2 kg/m³ standard air density. Values listed are nominal and can vary depending on the installation conditions and due to component tolerances. Test setup according to ISO 5801 with standardized 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]	8.2
Power consumption	[W]	42.3
Speed	[rpm]	15 120

Shut-Off in Vacuum Operation (Zero Flow Rate)

Static pressure	[hPa]	8.3
Power consumption	[W]	43.4
Speed	[rpm]	15 380

Free-Air (Zero Static Pressure)

Flow rate	[l/min]	1910
Power consumption	[W]	32.3
Speed	[rpm]	17 690

TECHNICAL DATA

Electrical	Unit	Value
Nominal voltage	[V _{DC}]	24
Voltage range	[V _{DC}]	15 to 27
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]	-20 to 60
Ambient temperature (storage)	[°C]	-20 to 60
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]	20000
Acoustics		
Sound pressure level ⁽⁴⁾	[dB(A)]	53
Leak Tightness		
Maximum leak flow rate	[l/min]	N/A
Mechanical		
Blower weight	[g]	152

⁽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

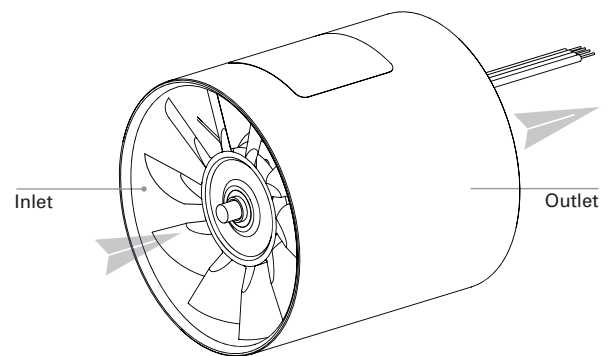
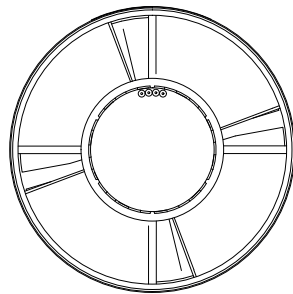
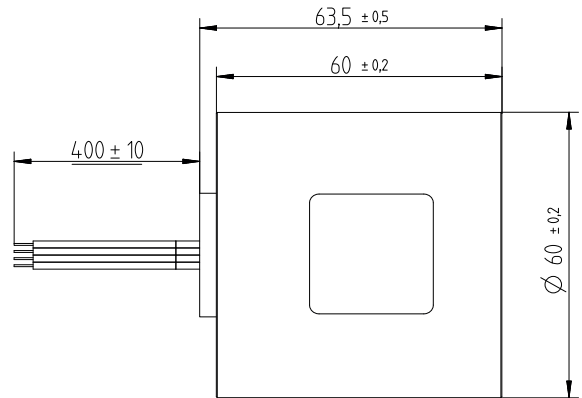
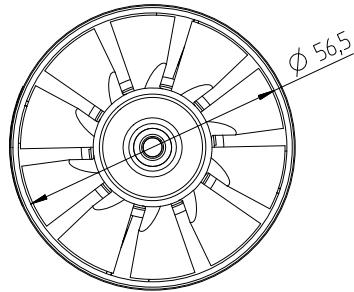
⁽²⁾ Micronel blowers are designed for various levels of oxygen compatibility. Further information available on request.

⁽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 to the fan, with hose connected to inlet and outlet.

DRAWINGS

Dimensions in mm

**Orientations**

Direction of rotation

↻ Clockwise (view on inlet)

Mounting position

Any direction

MATERIALS**Components****Material**

Fan housing

Aluminum anodized black

Impeller

Polyphenylenoxide (PPO)
Flammability: UL 94V-1

Hub

Steel

Motor housing

Polysulfon (PSU)

Label

Plastic (26 x 26 mm)
Flammability: UL 969

Connector

-

Crimp terminal

-

Lead wire

Silicone insulated cable
Flammability: UL 3239

IDENTIFICATION

Label

Design

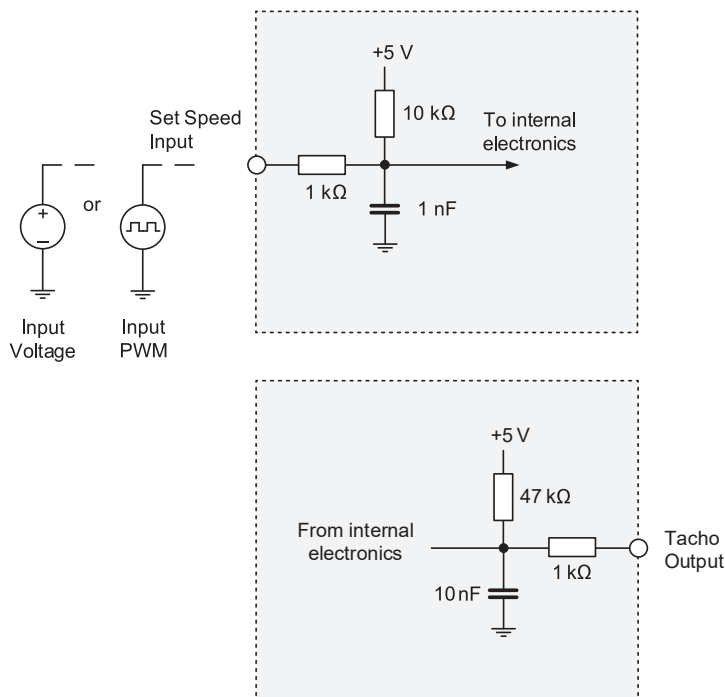
BLOWER PINOUT

Pin	Color	Description	AWG
1	Red	V _{CC}	24
2	Black	GND	24
3	Yellow	Tachometer output	24
4	Green	Set speed input	24

ELECTRONIC FUNCTIONS

Integrated Electronic Motor Driver

Type	Brushless direct current motor driver
Features	<ul style="list-style-type: none"> • Integrated speed control (PWM) • Tachometer frequency signal • Locked rotor protection • Over current protection



Speed Control Input

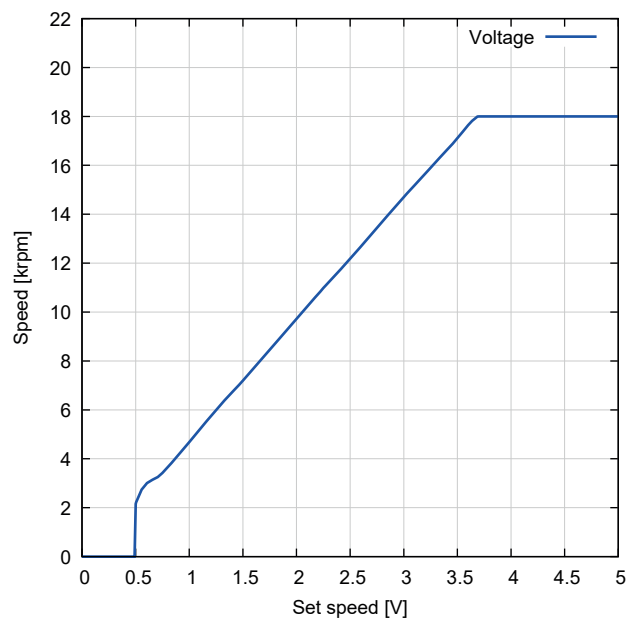
The blower speed can be controlled by either input voltage or PWM. See „Set Speed Input“ table for further details.

Tachometer Output

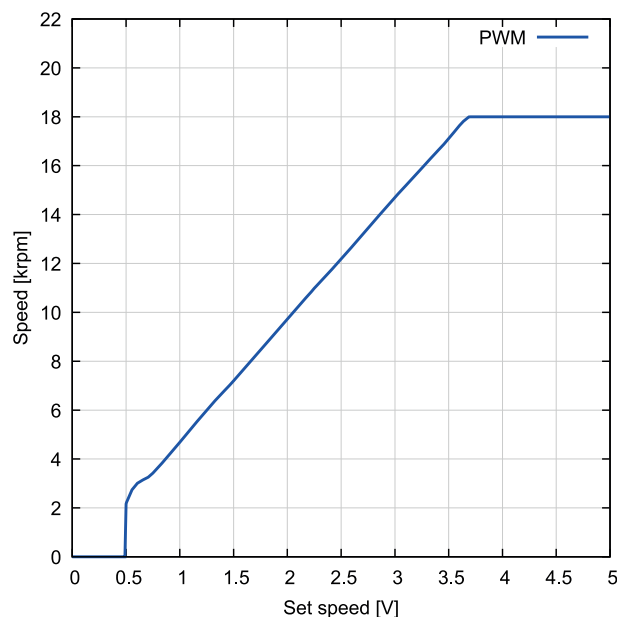
Tachometer frequency:
 1 pulse per revolution
 $n = 60 \cdot f$
 n Rotation speed [rpm]
 f Tacho frequency [Hz]

ELECTRONIC FUNCTIONS

Set Speed Input Voltage [V _{DC}]	Operation Mode
Set Speed not connected	Fan speed at 100 %
Set Speed to ground	Stop
< 0.0	Not allowed
0.1 to 0.3	Stop
0.3 to 0.5	Not defined, fan might run or stop
0.5	Minimum start-up voltage
0.5 to 3.7	Fan speed depends on external voltage
3.7 to 5.0	Fan speed at 100 %
> 5.0	Not allowed



Set Speed Input PWM [%]	Operation Mode
Set Speed not connected	Fan speed at 100 %
Set Speed to ground	Stop
0.1 to 0.9	Stop
10.0	Minimum start-up
10.0 to 75.0 (after start-up)	Fan speed depends on duty cycle
75.0 to 100.0	Fan speed at 100 %



PWM-Frequency

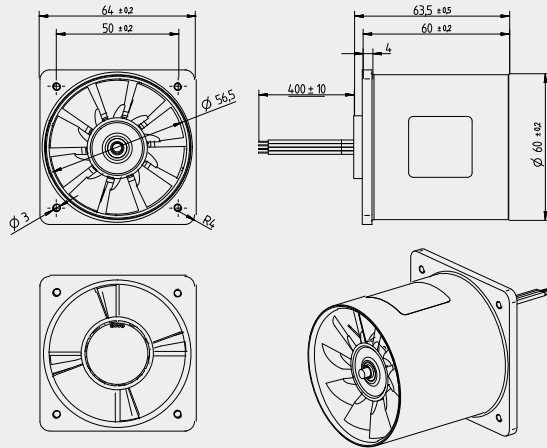
10 kHz – 60 kHz; (typical 20 kHz)

OPTIONS FOR MOUNTING

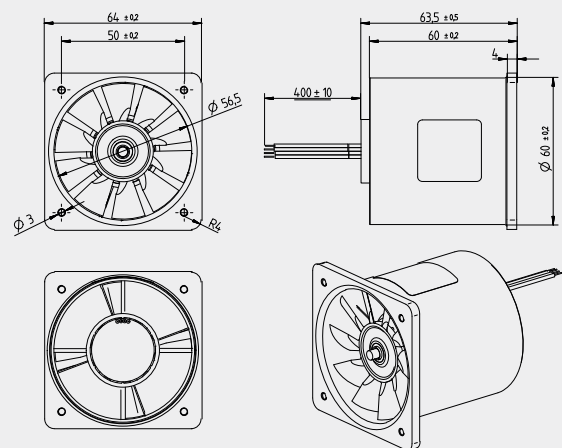
Product no. with option	Flange Inlet	Flange Outlet
Micronel Tube Fan D601P-024KM-4		
Micronel Tube Fan D603P-024KM-4*		●
Micronel Tube Fan D604P-024KM-4*	●	

* The drawings show versions of flange.

OPTIONS FOR MOUNTING

Micronel Tube Fan
D603P-024KM-4


Dimensions in mm

Micronel Tube Fan
D604P-024KM-4


Dimensions in mm



Handle in power-off conditions only!
 No application of forces on inlet and outlet ports!
 Read operating manual!



Please see separate accessories list or contact Micronel Sales for a full list of options and accessories.

All data are subject to change without advanced notice.
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