

SPECIFICATION

Micronel Radial Blower

U100HL-024KA-4



GENERAL INFORMATION

Item

Product type	Radial blower with integrated electronics and solid aluminum housing
Article no.	U100HL-024KA-4 U100UL-024KA-4 with six pin connector (option)
Manufacturer	Micronel AG
Customer	N/A
Project no.	N/A
Modification	Standard product

APPLICATIONS

The versatile, high-power Micronel blower type U100HL-024KA-4 can be used for industrial applications, where highest vacuum or pressure performance is needed, i.e. for pick and place applications, particles and liquids suction and many more.

FEATURES

- Pressure: 114 hPa, flow rate: 865 l/min
- 24 V_{DC} brushless DC-motor
- Solid aluminum housing
- For harsh industrial environments
- Ingress protection (EN60529) IP67
- Speed control and tacho frequency output
- G3/4 inch thread at inlet and outlet

GENERAL CONDITIONS

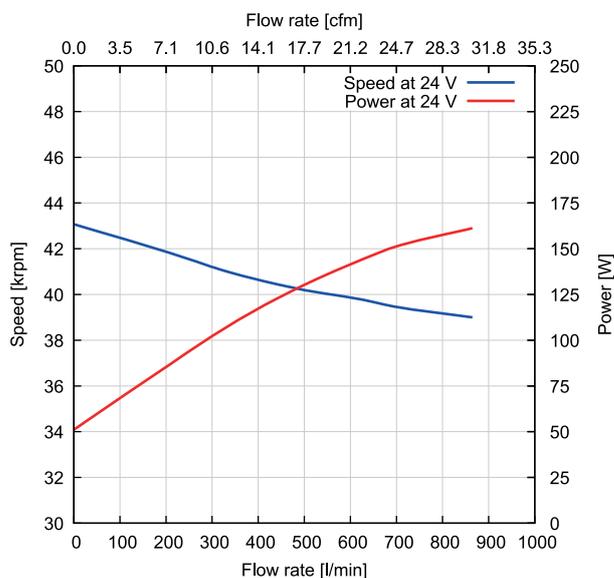
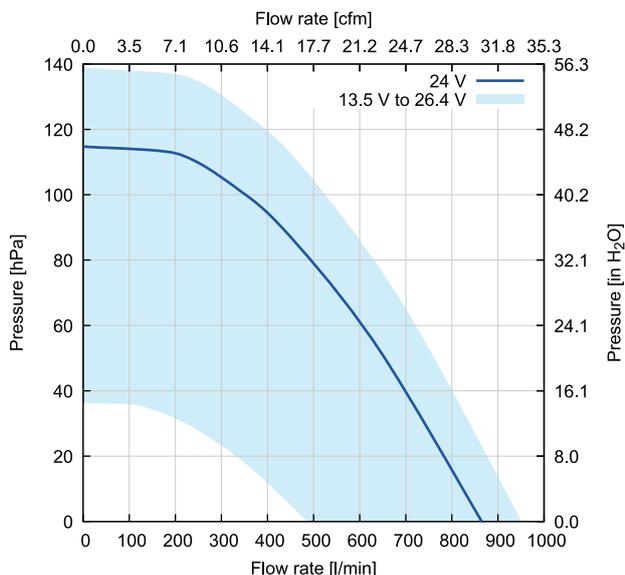
Unless otherwise stated all data are measured at nominal voltage and are valid at 20 °C ambient temperature and 1.2 kg/m³ standard air density. Values listed are nominal and can vary depending on the installation conditions and due to component tolerances. Test setup according to ISO 5801 with standardized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



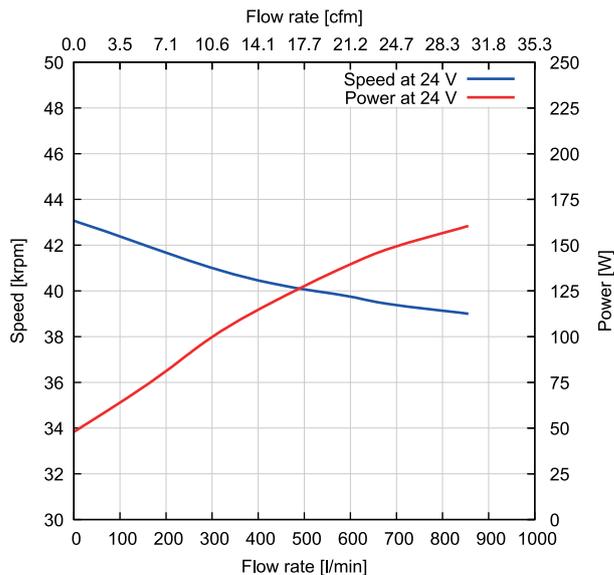
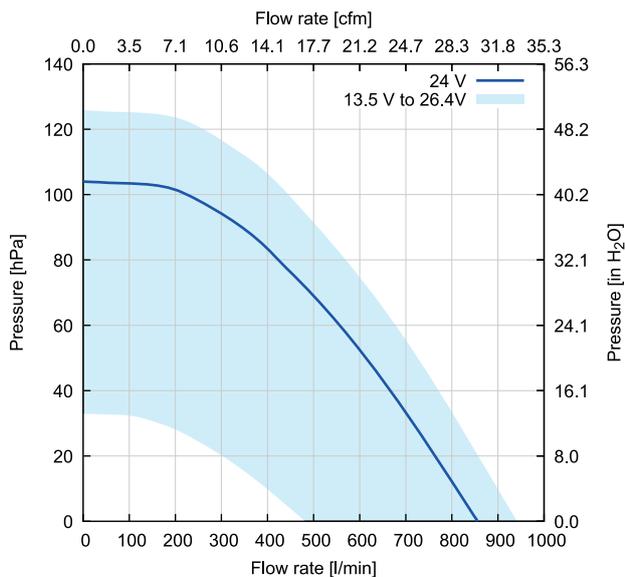
DECLARATION OF
CONFORMITY
NON-USE OF
CONFLICT MINERALS

PERFORMANCE

Pressure Operation at Outlet



Vacuum Operation at Inlet



Shut-Off in Pressure Operation (Zero Flow Rate)

	Unit	Value
Static pressure	[hPa]	114
Power consumption	[W]	51
Speed	[rpm]	43000

Shut-Off in Vacuum Operation (Zero Flow Rate)

Static pressure	[hPa]	104
Power consumption	[W]	48
Speed	[rpm]	43000

Free-Air (Zero Static Pressure)

Flow rate	[l/min]	865
Power consumption	[W]	161
Speed	[rpm]	39000

TECHNICAL DATA

Electrical	Unit	Value
Nominal voltage	[V _{DC}]	24
Voltage range	[V _{DC}]	13.5 to 26.4
Maximum start-up current (at nominal voltage) ⁽¹⁾	[A _{RMS}] [A _{Peak}]	12 15
Maximum ripple voltage	[%]	5
Maximum pin voltage range for tachometer and set speed	[V _{DC}]	0.0 to 5
Maximum Ratings for Continuous Operation		
Minimum flow rate	[l/min]	161
Maximum speed	[rpm]	43000
Maximum acceleration	[rpm/ms]	N/A
Maximum power consumption	[W]	161
Maximum housing surface temperature	[°C]	N/A
Maximum NTC temperature	[°C]	85
Environmental		
Ambient temperature (operating)	[°C]	-20 to 45
Ambient temperature (storage)	[°C]	-20 to 65
Relative humidity (noncondensing)	[%RH]	10 to 85
Ingress protection (EN60529)		IP67
Maximum oxygen concentration ⁽²⁾	[%]	N/A
Motor		
Type		Slotted brushless direct current motor
Winding insulation class		H, 180 °C
NTC type		TDK NTCG164KF104F -40 to 125 °C, 100 kΩ, B _{25/100} = 4508 K
Lifetime		
L10 at 25 °C ambient temperature ⁽³⁾	[h]	20000
Acoustics		
Sound pressure level	[dB(A)]	55
Leak Tightness		
Maximum leak flow rate	[l/min]	N/A
Mechanical		
Blower weight	[g]	875

⁽¹⁾ To be considered when maximum start-up acceleration is required.

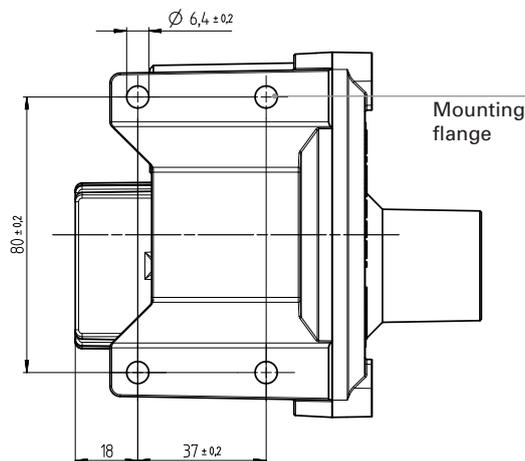
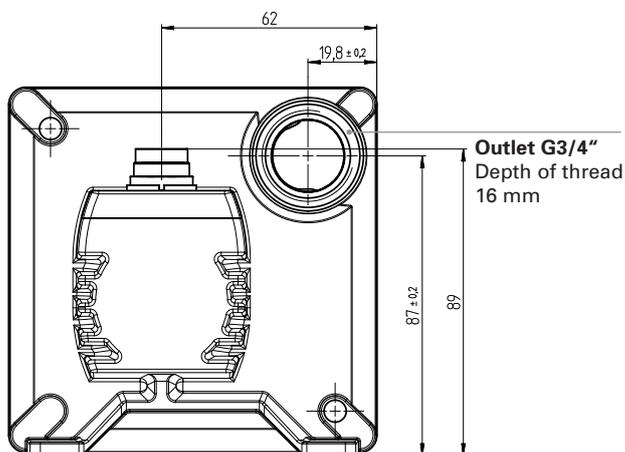
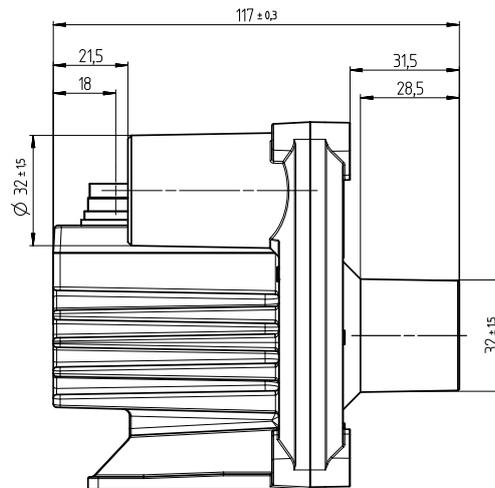
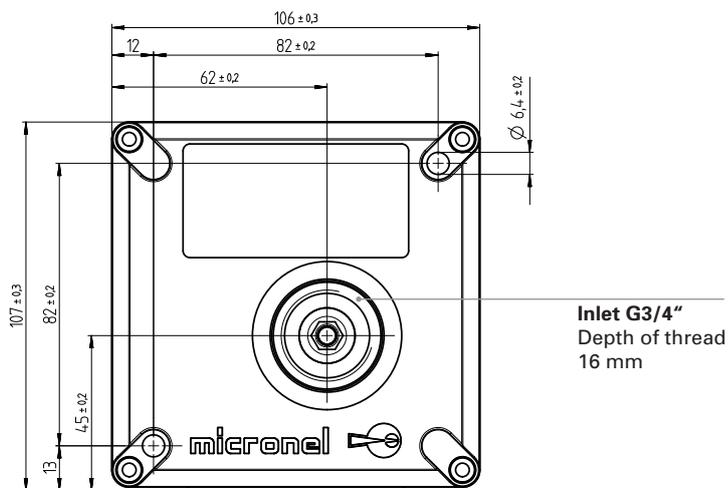
For constant speed operation current is according to the power graph ($I = P/U$), indicated under PERFORMANCE

⁽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, continuous operation, flow control with 4.5 mm diameter orifice plate at outlet, normal cleanliness according to ISO 281. Temperature dependency of lifetime according to IPC-9591: factor 1.5 per 10 °C.

DRAWINGS

Dimensions in mm



Orientations

Direction of rotation	↻ Counter-clockwise (view on inlet)
Mounting position	Any direction

MATERIALS

Components	Material
Fan housing	Aluminum, anodized, natural color
Impeller	Polyamide (PA6)
Hub	N/A
Motor housing	Aluminum, natural color
Label	Polyester, Flammability: UL 969
Connector	Body: Nickel plated brass Pin contacts: Brass, gold plated Protection class: IP67
Crimp terminal	N/A
Lead wire	N/A

IDENTIFICATION

Label

Design

Article number
Nominal voltage

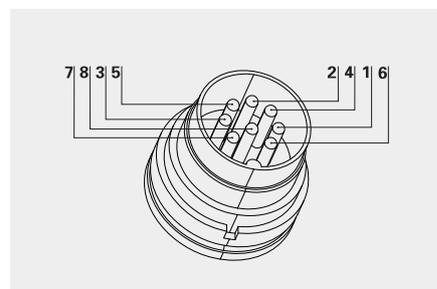


Identification number:
• Year, calendar week (YYWW)
• Fabrication number (6 digits)
• Serial number (3 digits)

BLOWER PINOUT

**Micronel Radial Blower
U100HL-024KA-4**

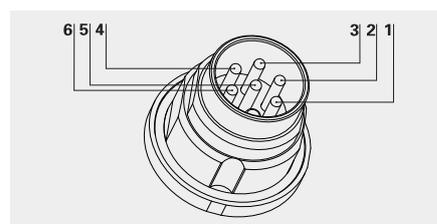
Pin	Color	Description	AWG
1	White	V _{CC}	19
2	Brown	GND	19
3	Green	Tachometer output	19
4	Yellow	V _{CC}	19
5	Grey	Set speed input	19
6	Rose	NTC ⁺	19
7	Blue	NTC ⁻	19
8	Red	GND	19



**Micronel Radial Blower
U100UL-024KA-4**



Pin	Color	Description	AWG
1	White	NTC ⁺	24
2	Red	V _{CC}	14
3	Black	GND	14
4	Green	Set speed input	24
5	Yellow	Tachometer output	24
6	Blue	NTC ⁻	24



ELECTRONIC FUNCTIONS

Integrated Electronic Motor Driver

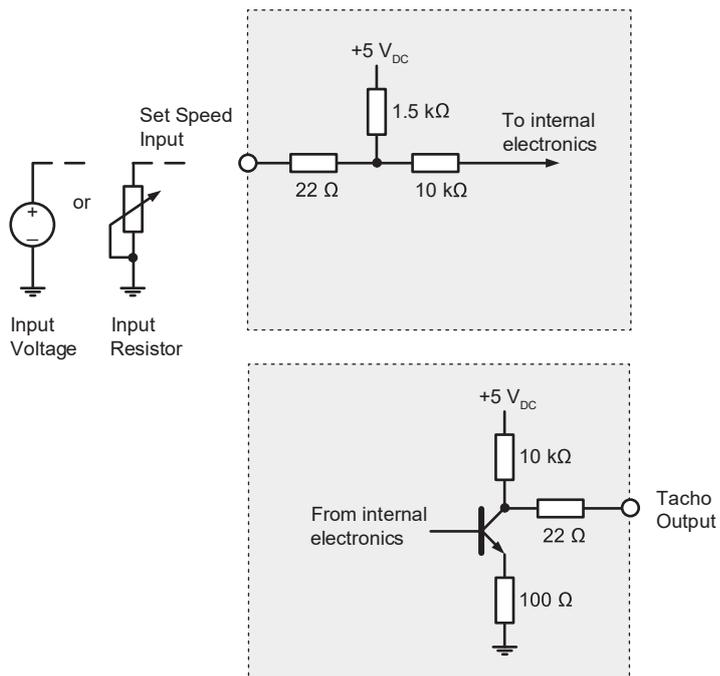
Type

Micronel brushless direct current motor driver

Features

- Integrated speed control (analog / resistive)
- Tachometer frequency signal
- Locked rotor protection
- Over current protection

ELECTRONIC FUNCTIONS



Speed Control Input

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

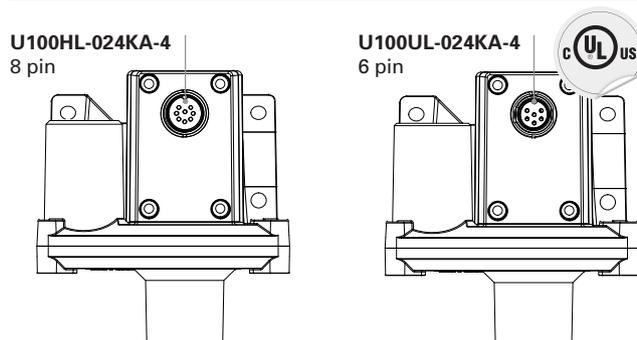
Tachometer Output

Tachometer frequency:
3 pulses per revolution
 $n = 20 \cdot f$
n Rotation speed [rpm]
f Tacho frequency [Hz]

Set Speed Input Voltage [V _{DC}]	Operation Mode
Set speed not connected	Blower speed at 100 %
Set Speed to ground	Stop
0.0 to 0.2	Stop
0.2 to 1.6	Not defined, blower might run or stop
2.0	Minimum start-up voltage
1.6 to 4.1	Blower speed depends on duty cycle
4.1 to 5.0	Blower speed at 100 %

Set Speed Input Resistor [kΩ]	Operation Mode
Set speed not connected	Blower speed at 100 %
Set speed to ground	Stop
0.0 to 0.047	Stop
0.047 to 0.72	Not defined, blower might run or stop
1.0	Minimum start-up voltage
0.72 to 6.8	Blower speed depends on resistor value
> 6.8 or open input	Blower speed at 100 %

OPTION FOR CONNECTION*



Article no. with option	6 pin	8 pin
U100HL-024KA-4		●
U100UL-024KA-4	●	

* The drawings show the blower connectors. Both blowers have the same dimensions.

ACCESSORIES

Not included!

**Micronel Cable U100-M16-P8**

Suitable for blower
 Micronel Radial Blower
 U100HL-024KA-4

**Micronel Cable U100-M16-P6**

Suitable for blower
 Micronel Radial Blower
 U100UL-024KA-4

**Micronel Cable U100-M16-P6**

Suitable for blower
 Micronel Radial Blower
 U100UL-024KA-4



Handle in power-off conditions only!



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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