

## Specification

### Radial Blower U100H4-024KA-4

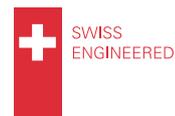


#### General Information

Item	
Product type	Radial blower with integrated electronic motor driver
Part no.	U100H4-024KA-4
Manufacturer	Micronel AG
Customer	N/A
Project no.	N/A
Modification	Standard product

#### Description

This ruggedized and IP67 proof, versatile 24 VDC blower offers standardized scew tubing connection for pressure and vacuum applications in super harsh, industrial environments. The integrated brushless driver provides set-speed input and tacho output. For the M16 cable connector we offer different mating cable harnesses.



#### Features

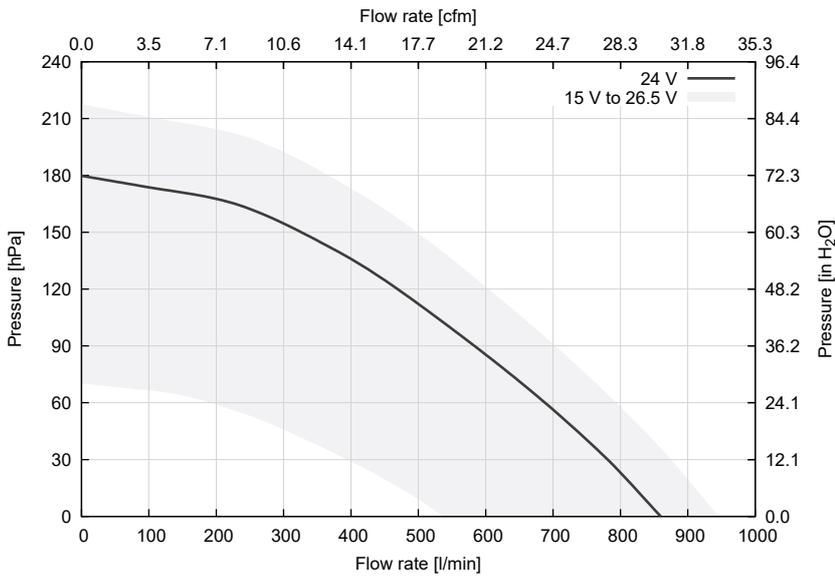
- Static Pressure: 180 hPa, freeflow: 860 l/min
- 24 V<sub>DC</sub> brushless DC-motor
- Solid full aluminum housing
- For harsh industrial environments
- Ingress protection (EN60529) IP67
- Speed control and tacho frequency output
- G3/4 inch thread at inlet and outlet

#### General Conditions

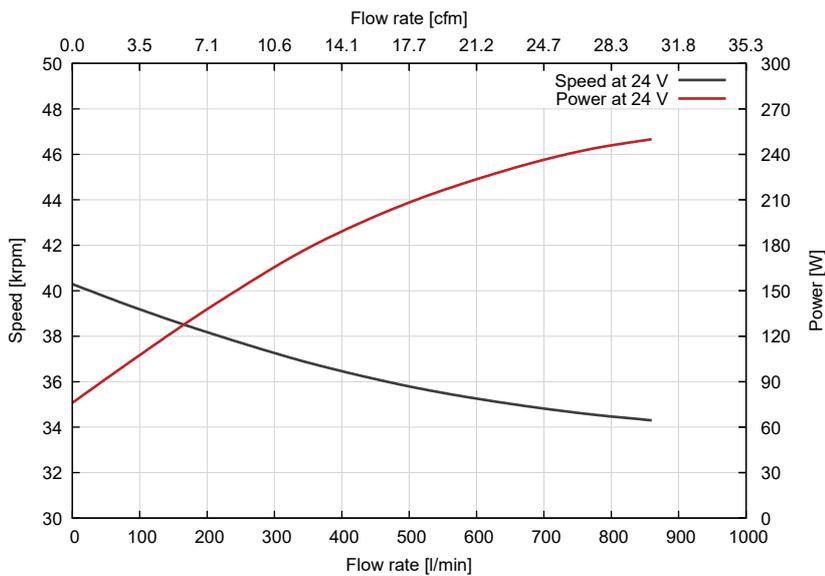
Unless otherwise stated all data are measured at nominal voltage and are valid at 20 °C ambient temperature and 1.2 kg/m<sup>3</sup> standard air density. Values listed are nominal and can vary depending on the installation conditions and due to component tolerances. Test setup according to ISO 5801 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 vs. Flow Characteristics



### Speed and Power vs. Flow Characteristics



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

	Unit	Value
Static pressure	[hPa]	180
Power consumption	[W]	76
Speed	[rpm]	40300

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

Static pressure	[hPa]	154
Power consumption	[W]	67
Speed	[rpm]	40600

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

Flow rate	[l/min]	860
Power consumption	[W]	250
Speed	[rpm]	34300

## Technical Data

Electrical	Unit	Value
Nominal voltage	[V <sub>DC</sub> ]	24
Voltage range	[V <sub>DC</sub> ]	15 to 26.4
Minimum power supply current <sup>(1)</sup>	[A]	12.5
Maximum start-up time	[s]	3.2
Maximum ripple voltage	[%]	5

### Maximum Ratings for Continuous Operation

Minimum flow rate	[l/min]	170
Maximum speed	[rpm]	39 500
Maximum acceleration	[rpm/ms]	N/A
Maximum power consumption	[W]	240
Maximum housing surface temperature	[°C]	75
Maximum NTC temperature	[°C]	75

### 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	[%]	21

### Motor

Type		Brushless direct current motor
Winding insulation class		H, 180 °C
NTC type		TDK NTCG164KF104F -40 to 125 °C, 100 kΩ, B <sub>25/100</sub> = 4508 K

### Lifetime

L10 at 25 °C ambient temperature <sup>(2)</sup>	[h]	20 000
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### Acoustics

Sound pressure level <sup>(3)</sup>	[dB(A)]	56
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### Leak Tightness

Maximum leak flow rate	[l/min]	N/A
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### Mechanical

Blower weight	[g]	1200
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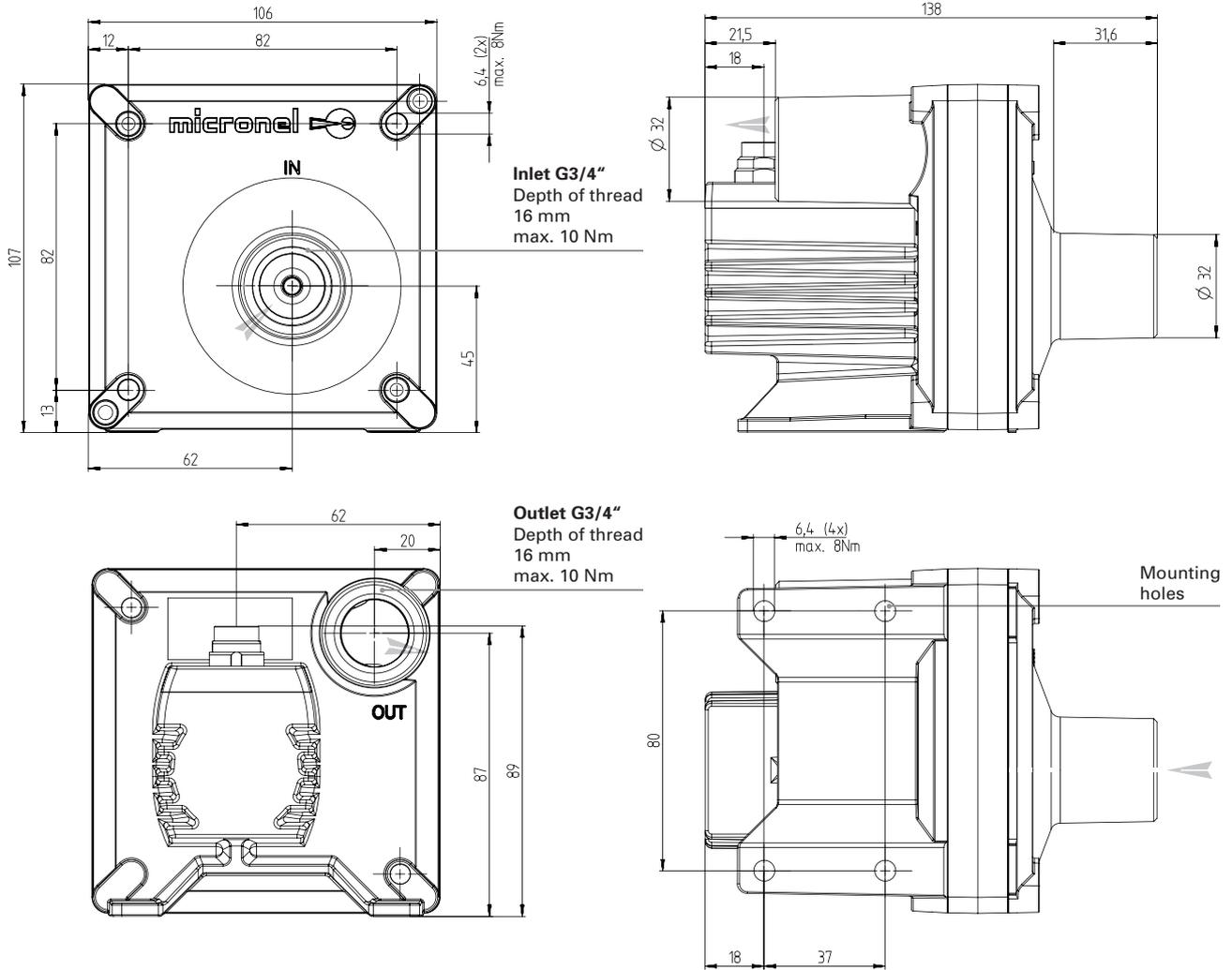
<sup>(1)</sup> Recommended minimum continuous power supply current for proper start-up behavior at nominal voltage. This is an indicative value. Power supply dimensioning, wiring, safety, setup and validation is the customer's responsibility.

<sup>(2)</sup> Continuous operation, normal cleanliness according to ISO 281. Temperature dependency of lifetime according to IPC-9591: factor 1.5 per 10 °C.

<sup>(3)</sup> Measured at distance of 1 meter from inlet, with hose connected to 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

Aluminum

Impeller

Polyamide (PA6)

Hub

Stainless steel

Motor housing

Aluminum

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

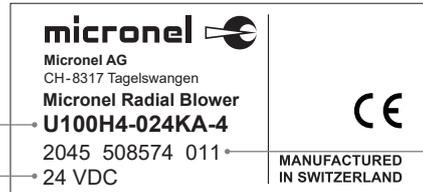
## Identification

### Label

Design

Part number

Voltage

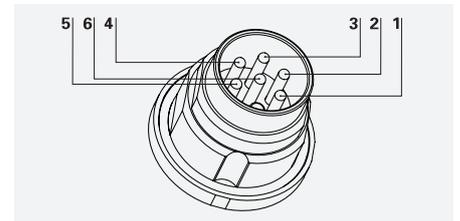


Identification number

- Year, calendar week (YYWW)
- Fabrication number (6 digits)
- Serial number (3 digits)

## Blower Pinout

Pin	Color	Description	AWG
1	N/A	NTC <sup>+</sup>	N/A
2	N/A	V <sub>CC</sub>	N/A
3	N/A	GND	N/A
4	N/A	Set speed input	N/A
5	N/A	Tachometer output	N/A
6	N/A	NTC <sup>-</sup>	N/A



## Electronic Functions

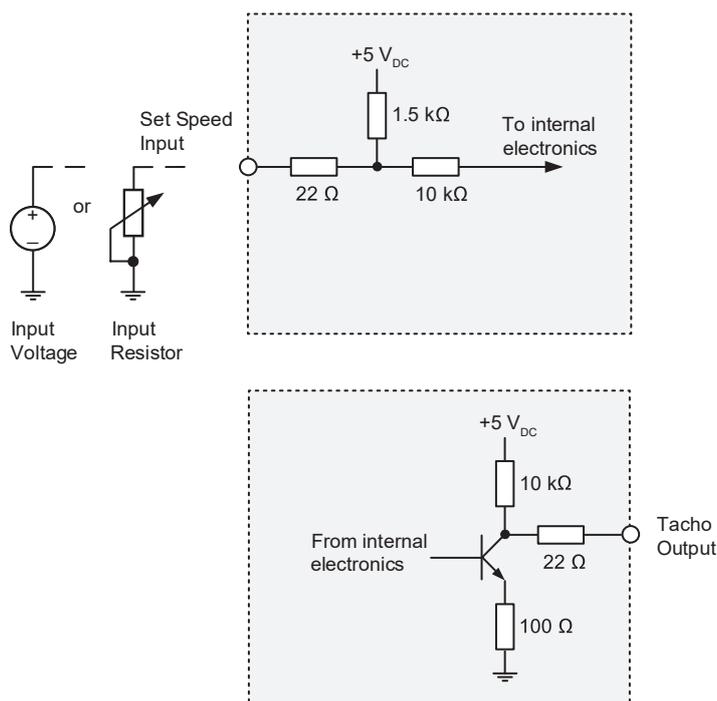
### Integrated Electronic Motor Driver

Type

Micronel brushless direct current motor driver

Features

- Integrated speed control (voltage/resistor)
- Tachometer frequency signal
- Locked rotor protection



### Speed Control Input

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

### Tachometer Output

Tachometer frequency:  
3 pulses per revolution

$$n = 20 \cdot f$$

**n** Rotation speed [rpm]  
**f** Tacho frequency [Hz]

## Electronic Functions

Set Speed Input Voltage [V <sub>DC</sub> ]	Operation Mode
Set speed not connected	Blower speed at 100 %
Set Speed to ground	Stop
0.0	Stop
0.2 to 1.5	Not defined, blower might run or stop
2.0	Minimum start-up voltage
1.5 to 4.5	Blower speed depends on input voltage
4.5 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 resistance
0.72 to 6.8	Blower speed depends on resistor value
> 6.8 or open input	Blower speed at 100 %

## Accessories

Not included!



**Micronel Cable U100X-M16 6-Pol**



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



**Micronel Cable U100X-M16 6-Pol**



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



Handle in power-off conditions only!  
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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