

Specification

Radial Blower U100HL-024KA-4



General Information

Item

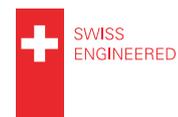
Product type	Radial blower with integrated electronic motor driver
Part no.	U100HL-024KA-4 (6-pole connector)
Customer	N/A
Project no.	N/A
Modification	Standard product

Description

This ruggedized and IP67 proof, versatile 24 VDC blower offers standardized G 3/4" screw 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 pre-assembled cables in various configurations.

Features

- Static pressure: 114 hPa, freeflow: 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

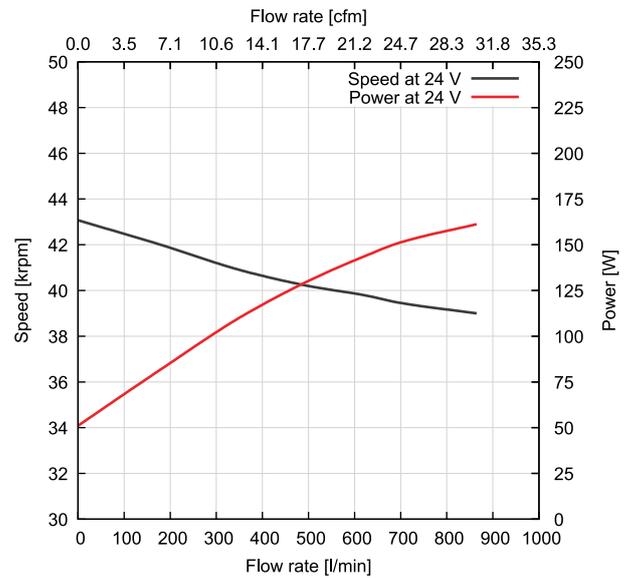
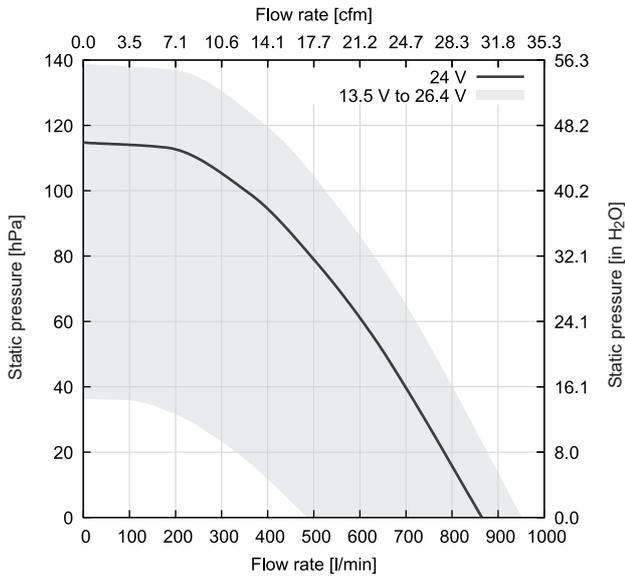


General Conditions

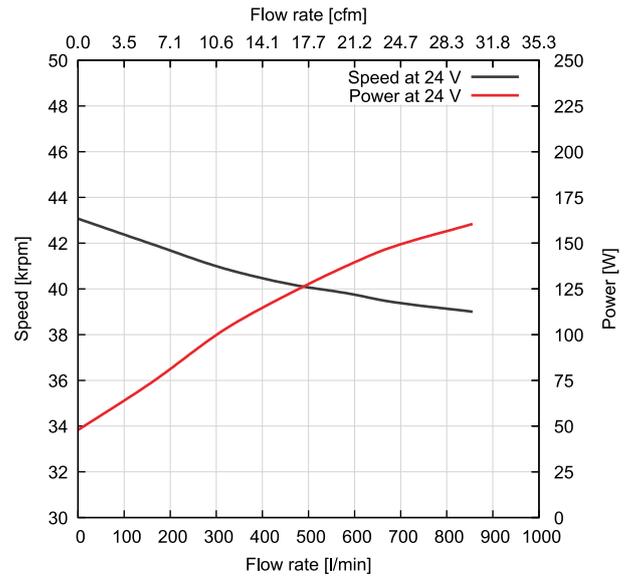
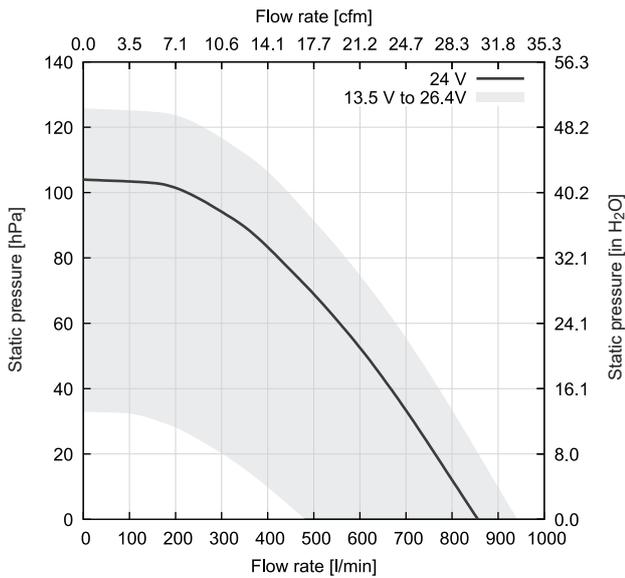
Unless otherwise stated all data are measured at nominal voltage and are valid at 20 °C ambient temperature and 1.2 kg/m³ standard air density. Values listed are nominal and can vary depending on the installation conditions and due to component tolerances. Test setup according to ISO 5801 with standardized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

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 supply voltage	[V _{DC}]	24
Supply voltage range	[V _{DC}]	13.5 to 26.4
Minimum power supply current ⁽¹⁾	[A]	10
Maximum start-up time	[s]	3
Maximum ripple voltage	[%]	5
Maximum Ratings for Continuous Operation		
Minimum flow rate	[l/min]	161
Maximum speed	[rpm]	43 000
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 (non-condensing)	[%RH]	10 to 85
Ingress protection (EN60529)		IP67
Maximum oxygen concentration ⁽²⁾	[%]	21
Motor		
Type		Brushless direct current motor
Winding insulation class		H, 180 °C
NTC type		TDK NTCG164KF104F R ₂₅ = 100 kΩ, B _{25/100} = 4508 K -40 to 125 °C
Lifetime		
L10 at 25 °C ambient temperature ⁽³⁾	[h]	20 000
Acoustics		
Sound pressure level	[dB(A)]	55
Leak Tightness		
Maximum leak flow rate	[l/min]	N/A
Mechanical		
Blower weight	[g]	875

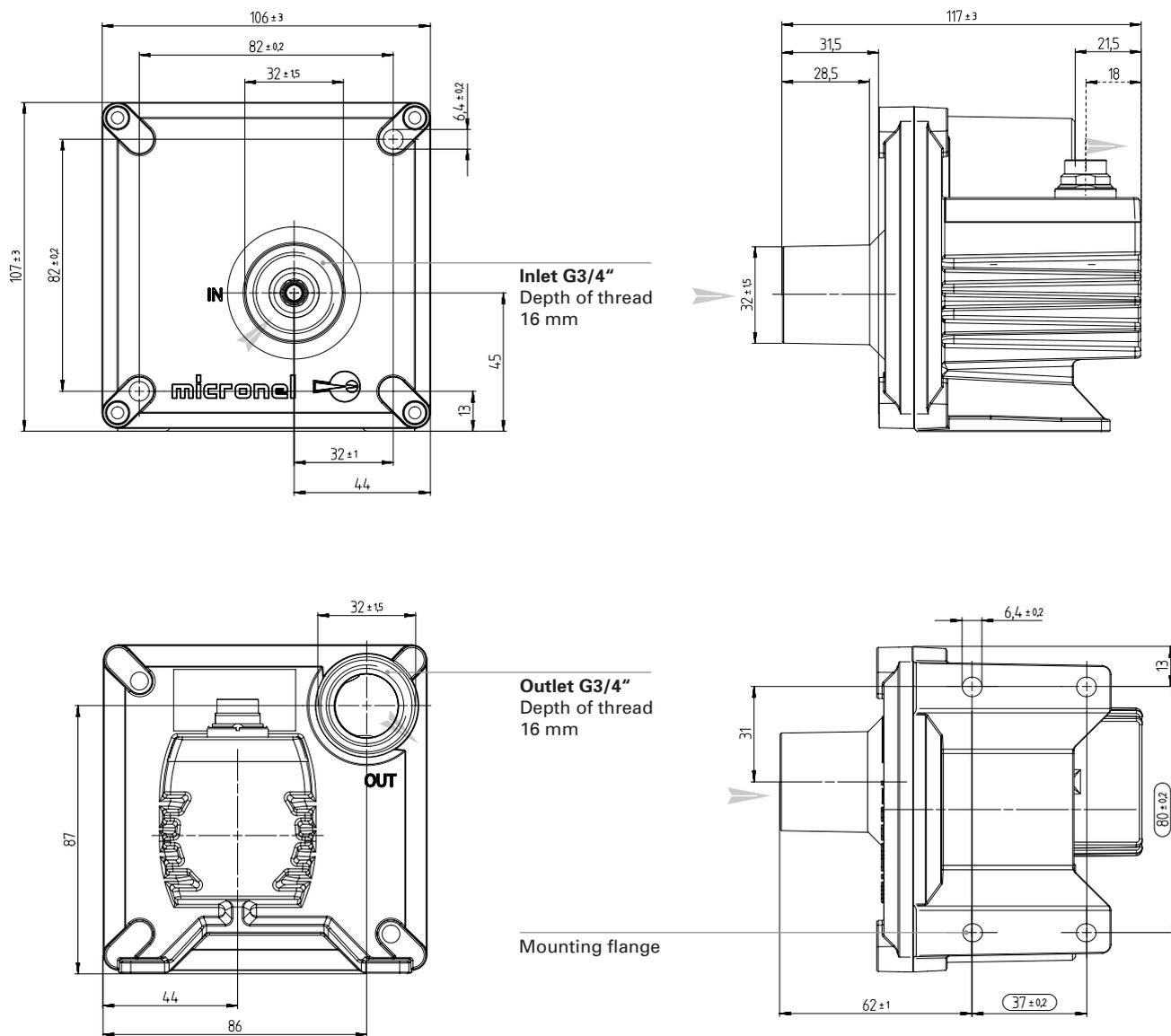
⁽¹⁾ Recommended minimum continuous power supply current for proper start-up behavior at nominal voltage. This is an indicative value. Power supply dimensioning, wiring, safety, setup and validation is the customer's responsibility.

⁽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, 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
Impeller	Polyamide (PA6)
Hub	1.4057
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	 Micronel AG CH-8317 Tagelswangen Micronel Radial Blower U100HL-024KA-4	 MANUFACTURED IN SWITZERLAND
Nominal voltage	1234 123456 123 24 VDC	

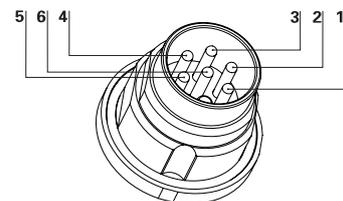
Identification number:

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

Blower Pinout

Micronel Radial Blower U100HL-024KA-4
(6-pole connector)

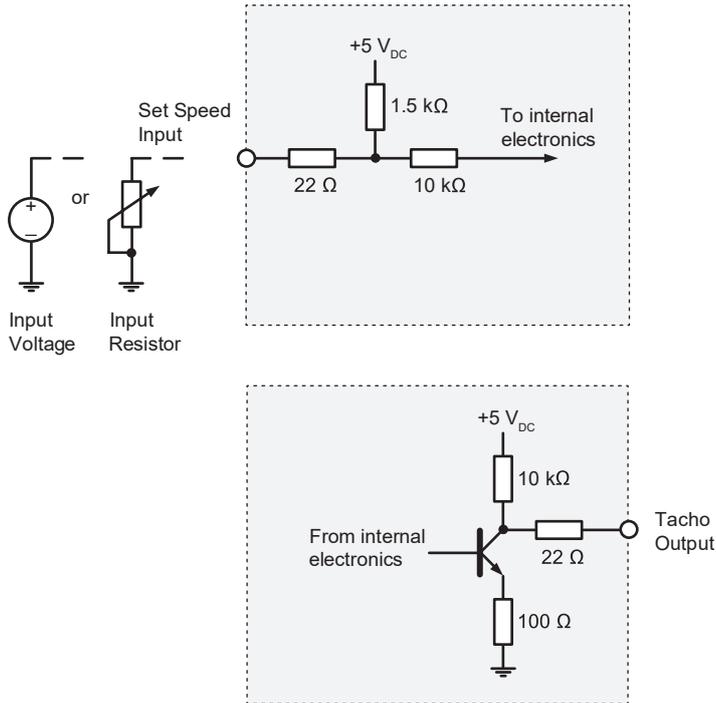
Pin	Color	Description	AWG
1	N/A	NTC ⁺	N/A
2	N/A	V _{CC}	N/A
3	N/A	GND	N/A
4	N/A	Set speed input	N/A
5	N/A	Tachometer output	N/A
6	N/A	NTC ⁻	N/A



Electronic Functions

Integrated Electronic Motor Driver

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



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 depending on input voltage
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 resistance
0.72 to 6.8	Blower speed depending 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.