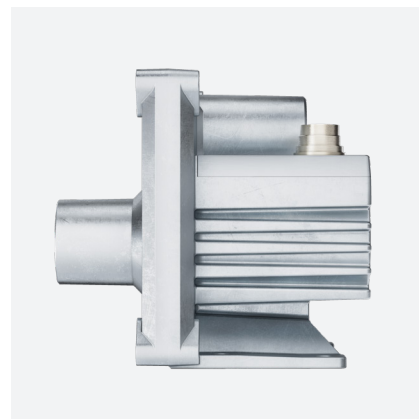
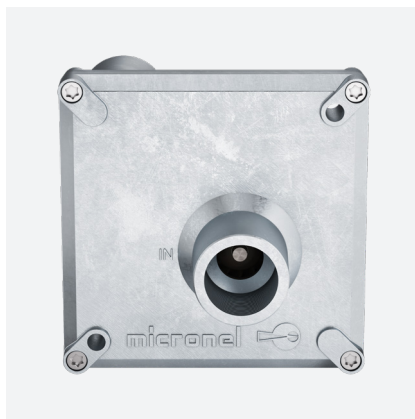
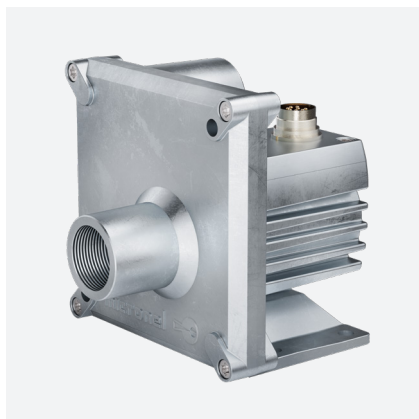


Specification

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.



SWISS
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Features

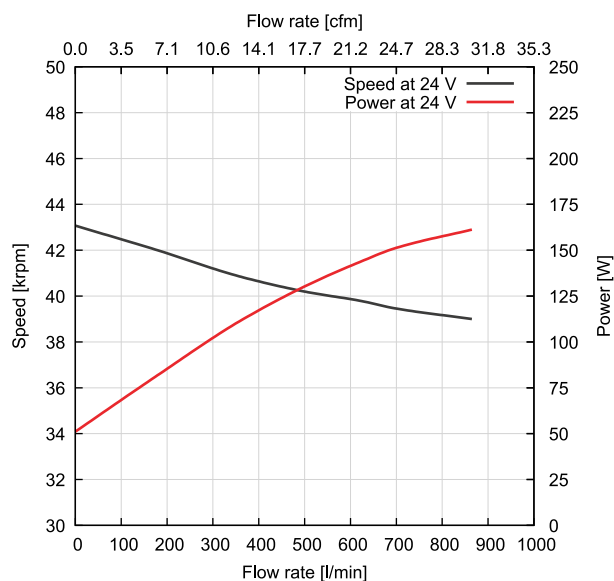
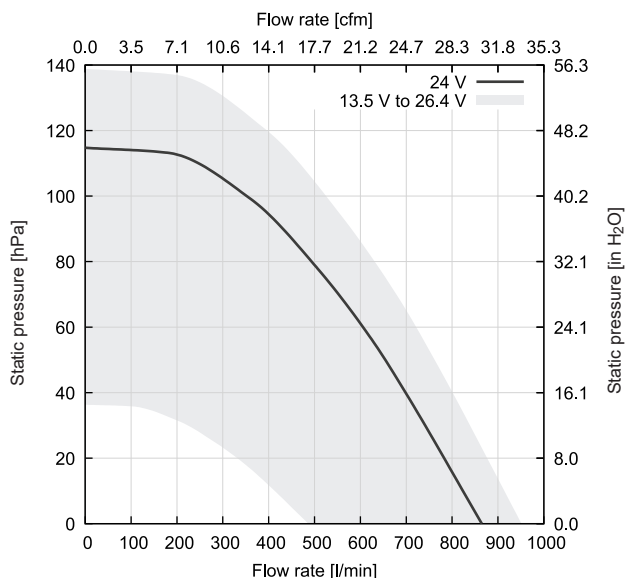
- Static pressure: 114 hPa, freeflow: 865 l/min
- 24 V_{DC} brushless DC-motor
- Solid aluminum housing
- For harsh industrial environments
- Ingress protection (EN60529) IP67
- Speed control and tacho frequency output
- G3/4 inch thread at inlet and outlet

General Conditions

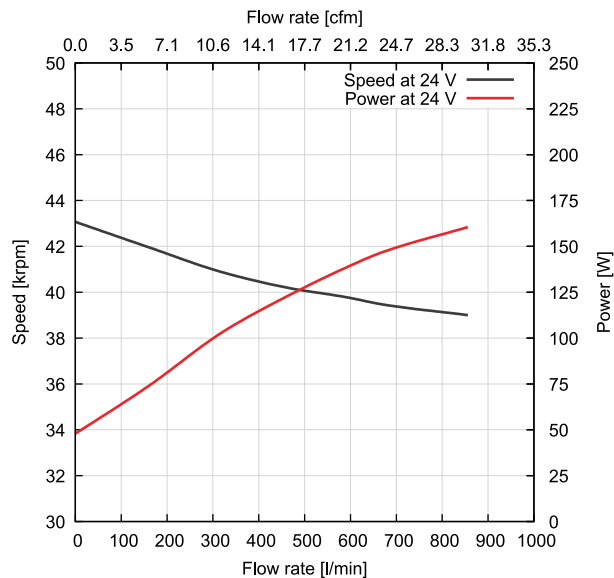
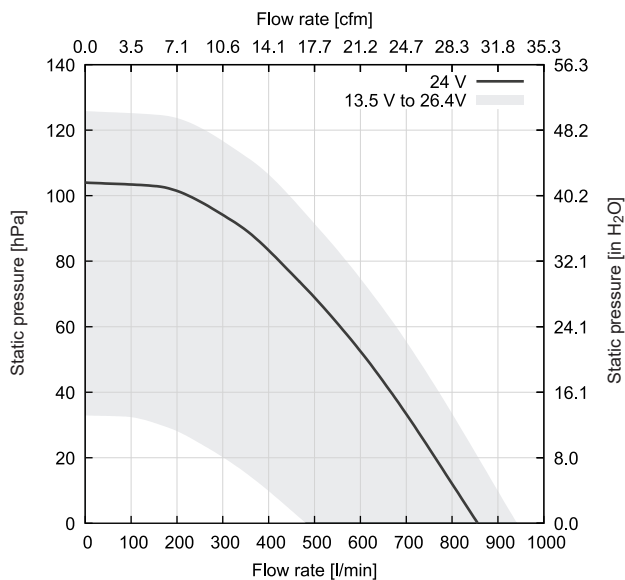
Unless otherwise stated all data are measured at nominal voltage and are valid at 20 °C ambient temperature and 1.2 kg/m³ standard air density. Values listed are nominal and can vary depending on the installation conditions and due to component tolerances. Test setup according to ISO 5801 with standardized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

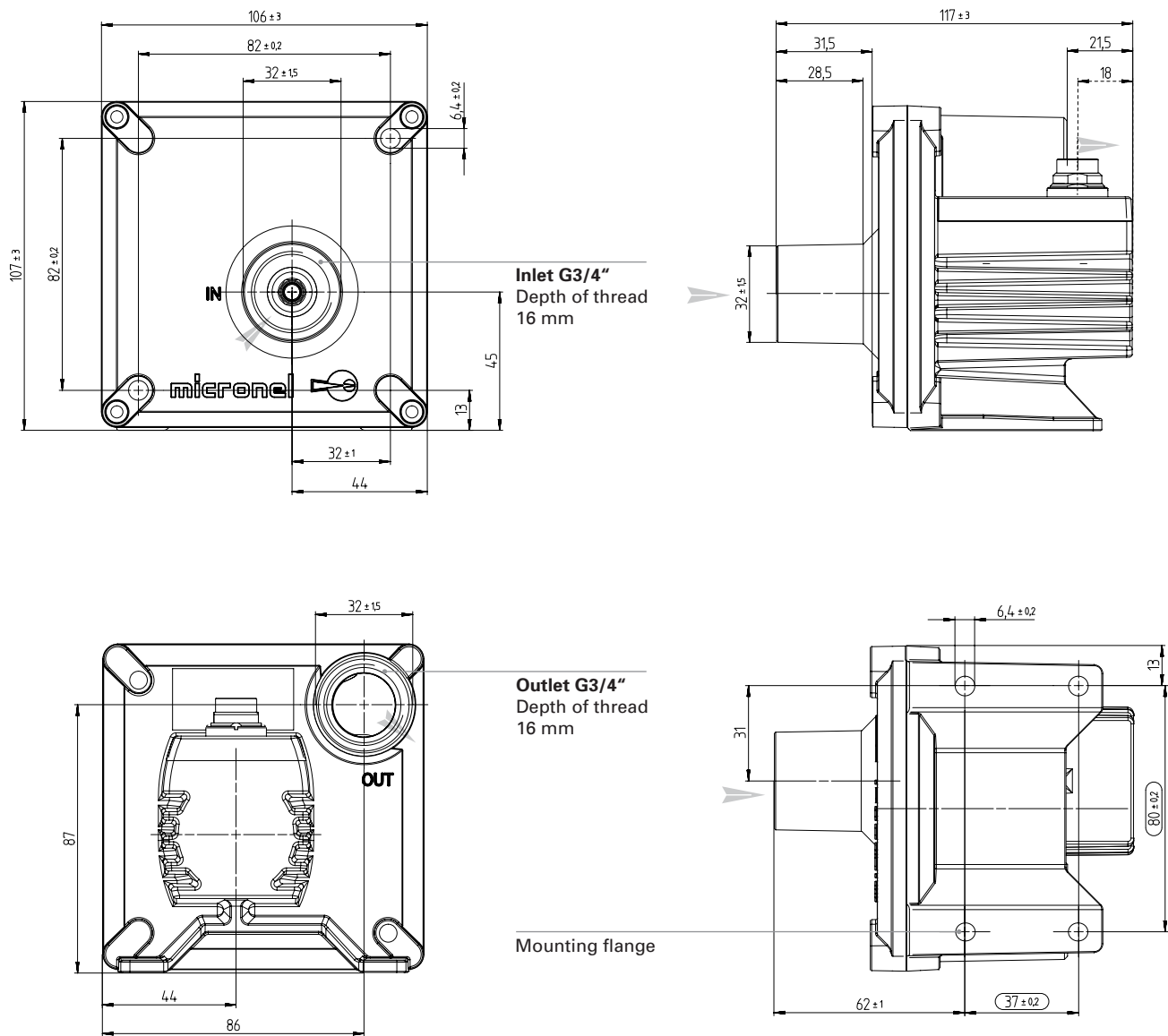
⁽¹⁾ Recommended minimum continuous power supply current for proper start-up behavior at nominal voltage. This is an indicative value. Power supply dimensioning, wiring, safety, setup and validation is the customer's responsibility.

⁽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)

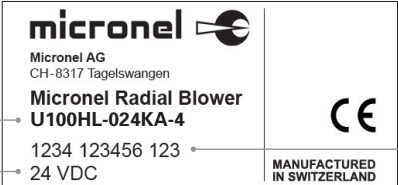
Mounting position

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 |

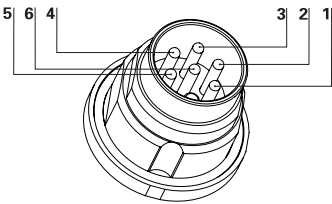
Identification

| Label | | |
|-----------------|--|--|
| Design |  | |
| Part number | 1234 123456 123 | Identification number: <ul style="list-style-type: none">• Year, calendar week (YYWW)• Fabrication number (6 digits)• Serial number (3 digits) |
| Nominal voltage | 24 VDC | |

Blower Pinout

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

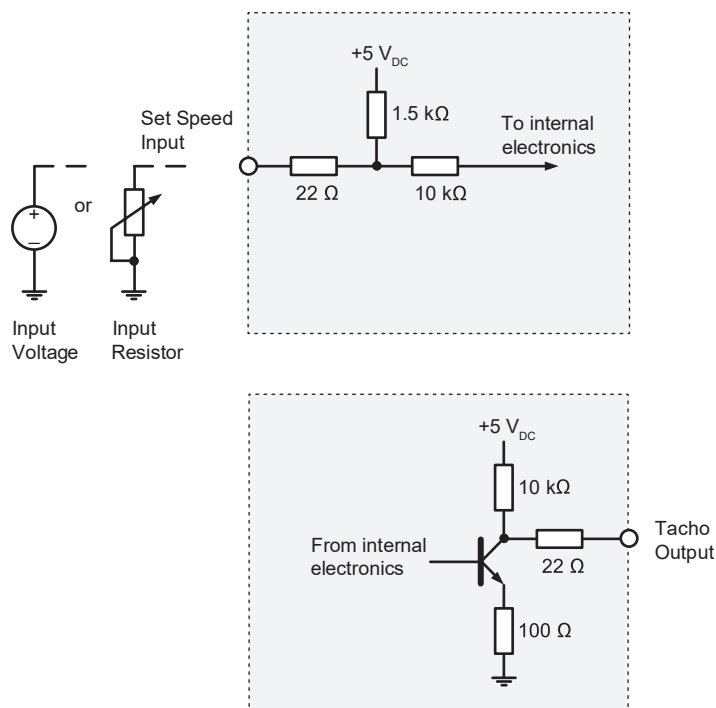
| Pin | Color | Description | AWG |
|-----|-------|-------------------|-----|
| 1 | N/A | NTC ⁺ | N/A |
| 2 | N/A | V _{CC} | N/A |
| 3 | N/A | GND | N/A |
| 4 | N/A | Set speed input | N/A |
| 5 | N/A | Tachometer output | N/A |
| 6 | N/A | NTC ⁻ | N/A |



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.