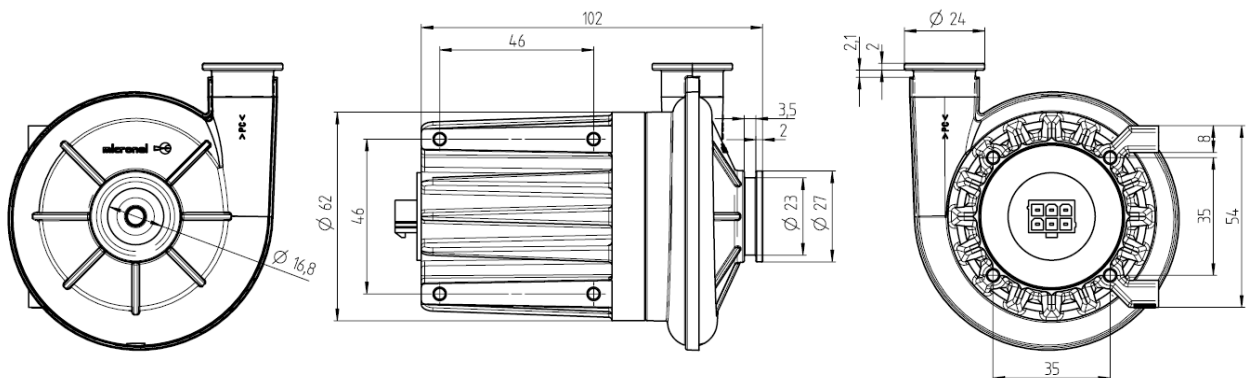
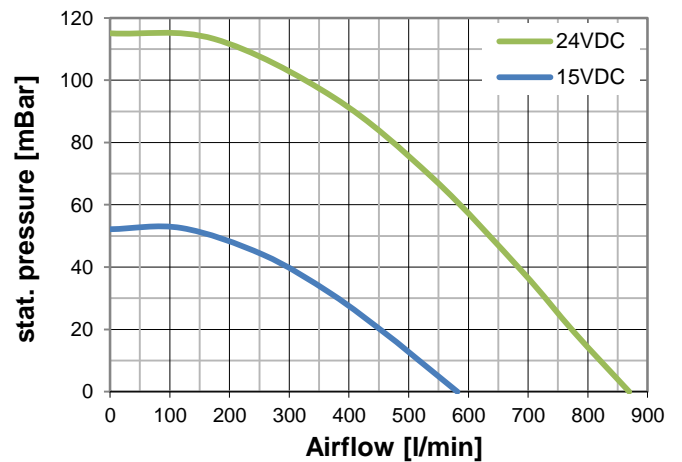
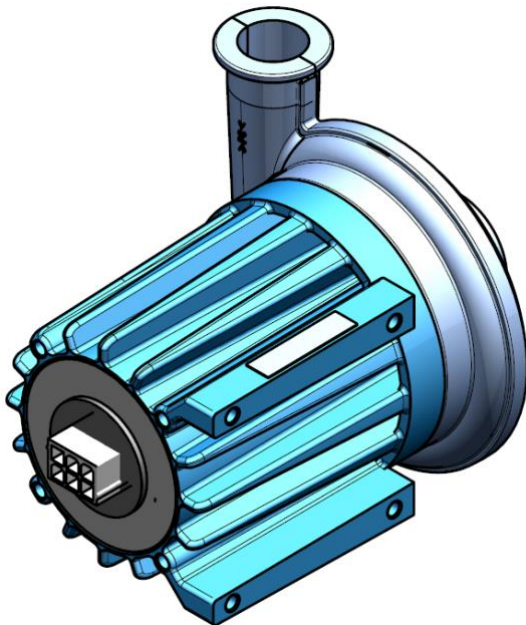
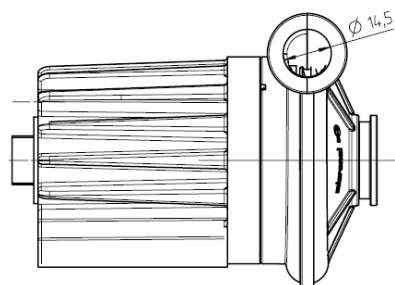


**Miniatur Radial Gebläse mit integrierter Elektronik**  
**Miniature Radial Blower with integrated electronic**



**Adapter cable**  
 M450X-527A9



Direction of rotation CCW



## Technische Daten

### Allgemeine Beschreibung

Kompakter Lüfter mit effizientem Motor. Eigenschaften: Gehäuse: PC, Flügelrad: PA. Bürstenloser und sensorloser 3-Phasen Motor mit integrierter Treiber Elektronik. Anschluss über MOLEX-Stecker.

## Technical data

### General description

Compact blower with an efficient motor. Features: housing: PC, impeller: PA. Brushless and sensorless 3-Phase motor with integrated driver electronic. Connection via MOLEX-connector.

		U85HL-024KH-4
$U_N$	VDC	<b>24 ± 10%</b>
$U$	VDC	15.0-26.4
$I_N$ freeblowing	mA	7'200
$I_N$ static	mA	2'400
$P_N$ typ. freeblowing	W	170
$n$ freeblowing	min <sup>-1</sup>	37'200
$n$ static	min <sup>-1</sup>	43'000 *
$V$ freeblowing	l/min	850
$p$ static	Pa	11'500
$T$	°C	0...+45
$m$	gr	545
Housing material		PC
Impeller material		PA6
Ball Bearing		•
Tacho		•
Speed control SP		•
NTC		NTCG164KF104F TDK

Data's at Density: 1.2kg/m<sup>3</sup>

\* Rated-speed 43'000 rpm by static pressure

General tolerances ISO 13348 Grade AN4

Power consumption + 16%  
Flow pressure ± 10%


## Operating Instruction and Warning

U85HL-024KH-4

### Electrical connection

Connector type: MOLEX 46015-0603

PIN	Description	3	6
1	GND	2	5
2	Frequency	1	4
3	NTC		
4	Vcc + Power		
5	Set Speed		
6	NTC		



### Blower Features

- Integrated speed control input
- FG frequency signal output
- Speed control by analogue or resistive input on SP (set speed)
- Current limitation when locked rotor
- No polarity protection

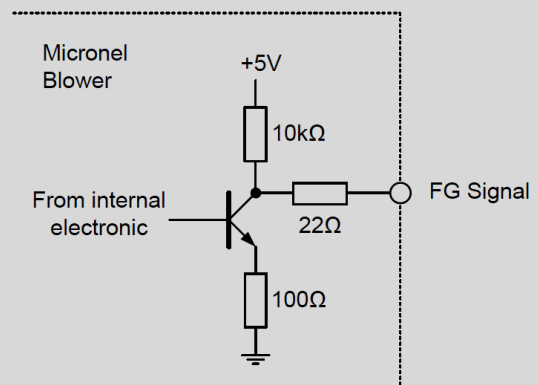
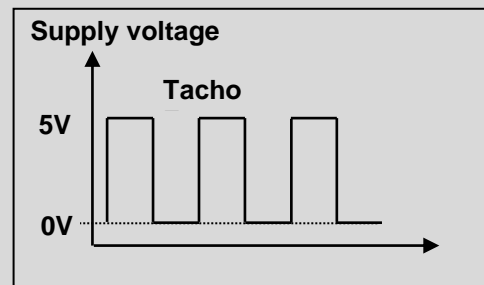
### FG Frequency signal (yellow wire)

Speed calculation

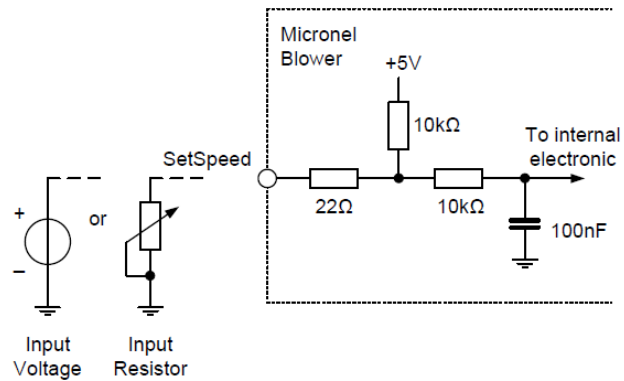
$$f * 20 = \text{rpm (3 pulse / rotation)}$$

f = FG Frequency Generator [Hz]

rpm = Rotation speed [min<sup>-1</sup>]



**SP Set speed  
(green wire)**



Input voltage	0...0.2VDC	→	Stop
	0.2...1.5VDC	→	Not defined, if blower RUN or STOP
	2.0 VDC	→	min. Start voltage
	1.5...4.0 VDC	→	Fan is running compare to VDC
	4.0...5.0 VDC	→	Fan is running with 100% speed

Negative voltage or >5VDC not allowed

Input resistor	Connect between SP (green) and GND (black)
	Values at Nominal Voltage 24VDC
	0...0.5kΩ → Stop
	0.5...4.3kΩ → Not defined, if blower RUN or STOP
	6.7kΩ → Minimum start kΩ
	4.3...39kΩ → Fan is running compare to kΩ
	39...∞ kΩ → Fan is running with 100% speed

SP not connected      Blower operates at 100% Speed

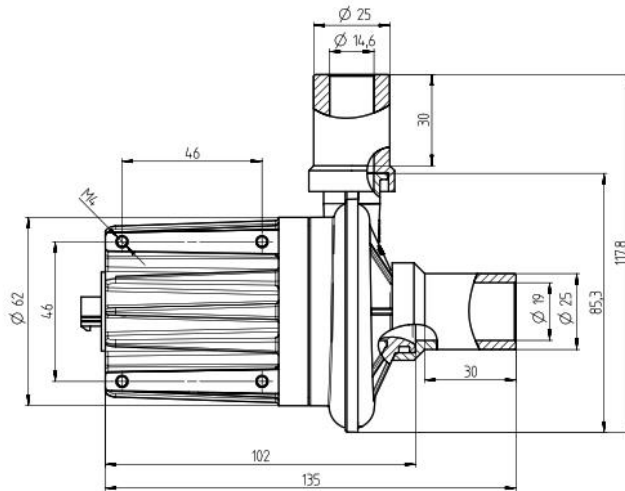
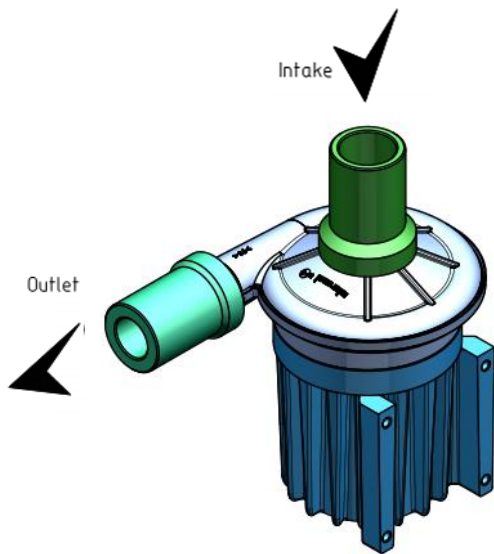
**Blower limits**

- Max. allowed temperature on heat sink surface: 65 °C
- Maximum speed 45'000 1/min
- Orifice diameter at outlet / inlet diameter > 4mm (Q > 80 l/min)

**Power supply requirement**

Ripple voltage < 5%,  
Continuous operation: 10A\*

\* The start-up current can be three times higher. Pay attention that the power supply supports this short (25µs) current peak.



Product no. incl. option / Produkt Nr. inkl. Option	Intake / Einlass	Outlet / Auslass	Description / Beschreibung
U85HL-024KH-4			Without intake / without outlet Ohne Einlass / ohne Auslass
U85HL-024KH-41	•		With intake / without outlet Mit Einlass / ohne Auslass
U85HL-024KH-42		•	Without intake / with outlet Ohne Einlass / mit Auslass
U85HL-024KH-43*	•	•	With intake / with outlet Mit Einlass / mit Auslass

\* The drawings show intake and outlet connections. Both options are independent of each other.  
Die Zeichnungen stellen beide Anschlussmöglichkeiten (Ein-und Auslass) dar.

#### Info

**Specifications are subject to change without notice.  
Specifications on this Datasheet are for reference.**

Version: 14.06.19 / RZ

Doc: U85HL-024KH-4 with integrated electronics.doc