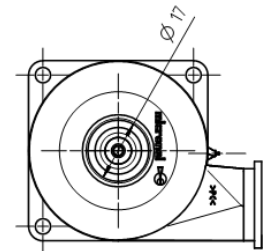
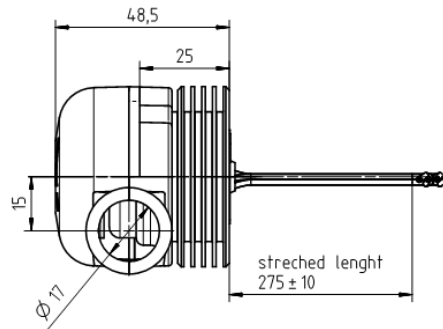
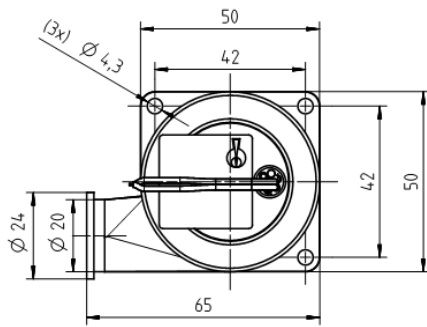
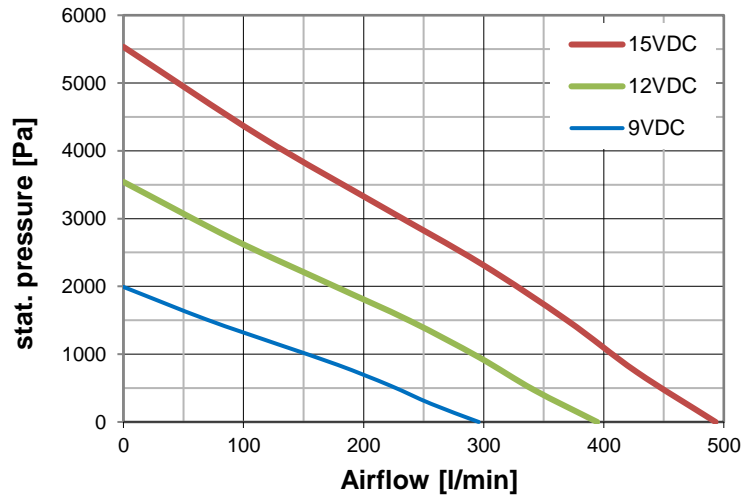
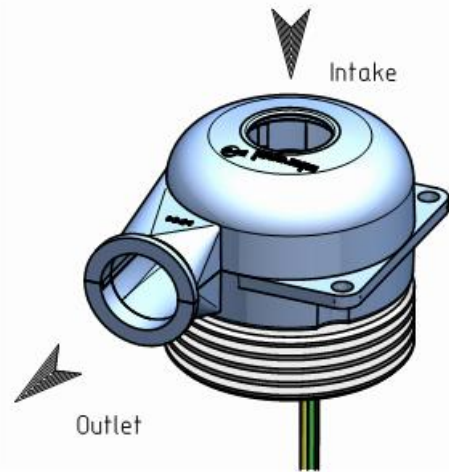


Miniatur Radial Gebläse mit integrierter Elektronik
Miniature Radial Blower with integrated electronic



Direction of rotation CCW



Technische Daten

Allgemeine Beschreibung

Kompakter Lüfter mit effizientem Motor. Eigenschaften: Material: Gehäuse: PC, Flügelrad: PA. Bürstenloser 3-Phasen Motor mit integrierter Treiber Elektronik. Anschluss über Einzelleitungen (AWG24).

Technical data

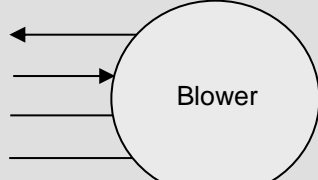
General description

Compact blower with an efficient motor. Features: Material: housing: PC, impeller: PA. Brushless 3-Phase motor with integrated driver electronic. Connection via single leads AWG 24.

		U51DL-012KK-4
U_N	VDC	12
U	VDC	9.0-15.0
I_N freeblowing	mA	2'700
I_N typ. work. point	mA	2'500
I_N static	mA	1'700
P_N typ. work. point	W	30
n freeblowing	min ⁻¹	40'200
n typ. work. point	min ⁻¹	42'700
n static	min ⁻¹	51'400
V freeblowing	l/min	440
V typ. work. point	l/min	180
p work. point	Pa	2'500
p static	Pa	4'200
LpA (WP)	dB(A)	61 dB(A) at 1'000 Pa (10 mbar) and 1m distance
T	°C	-20...+50
m	gr	120
Leads	mm	275 (AWG24)
Housing material		PC
Impeller material		PA6
Sleeve Bearing		N/A
Ball Bearing		•
Tacho		•
Speed control SP		•
NTC		N/A

Data's at Density: 1.2kg/m³

Operating Instruction and Warning

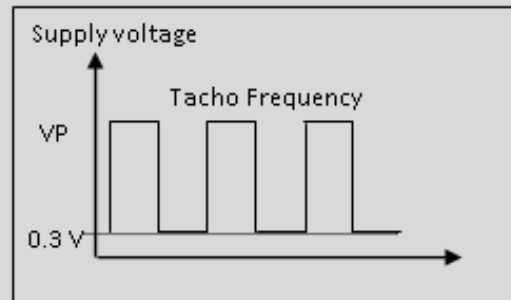
U51DL-012KK-4			
Electrical connection	Description	Lead wire	Diagram
FG	Frequency Generator output	yellow	
SP	Set speed input	green	
Vcc	+ Power	red	
GND	Ground	black	

Blower Features

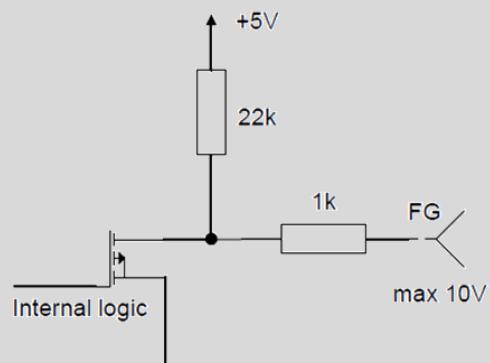
- - Integrated speed control input
- - FG Frequency generator output
- - ON /OFF control by logic signal
- - Locked rotor protection
- - Polarity protection
- - Integrated thermal protection (IC temp. > 165°C switch off)

FG Frequency signal (yellow wire)

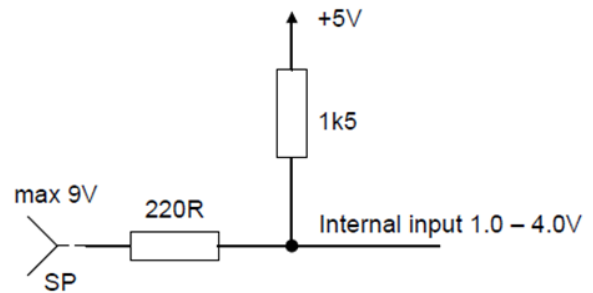
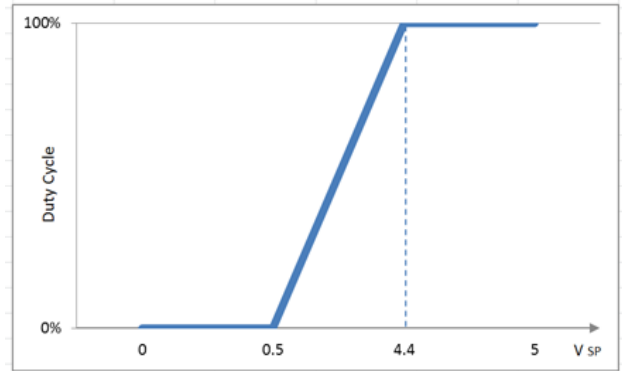
Speed calculation $f \cdot 20 = \text{rpm}$ (3 pulse / rotation)
 $f = \text{FG Frequency Generator}$
 $\text{rpm} = \text{Rotation speed [min-1]}$



Pull-up resistor (22kOhm) to 5 V is integrated
 Do not connect to Vcc!



**SP Set speed
(green wire)**



Input voltage	0 – 0.5 VDC	→ Stop
	0.5 – 2.0 VDC	→ Starting (not guaranteed)
	2.0 – 4.4 VDC	→ Fan is running compare to VDC
	4.4 – 5.0 VDC	→ Fan is running with 100% speed

>> or >>

Input resistor	Connect between SP (green) and GND (black)	
	< 0.4 kΩ	→ Stop
	0.4 – 1.2 kΩ	→ Starting (not guaranteed)
	1.2 – 7.5 kΩ	→ Fan is running compare to VDC
> 7.5 kΩ	→ Fan is running with 100% speed	

SP not connected	Blower operates at 100% Speed
SP to GND	Speed zero → Stop

Blower limits during continuous operation and warning



- Max. allowed temperature on heat sink surface: 75° C
- Maximum speed 50'000 1/min
- Heat sink temperature increase at 24 V, freeblowing 25 K
- Heat sink temperature increase at 24 V, static pressure 45 K

- **As a result of the sensorless driver technology, the startup behavior may be impaired under certain operating conditions. For safe start-up under all operating conditions, we recommend the use of a Hall sensor drive system or the use of an external monitoring function.**

- **Handle only in currentless condition**

Power supply requirement

Ripple voltage < 5%

3000 mA

Info

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

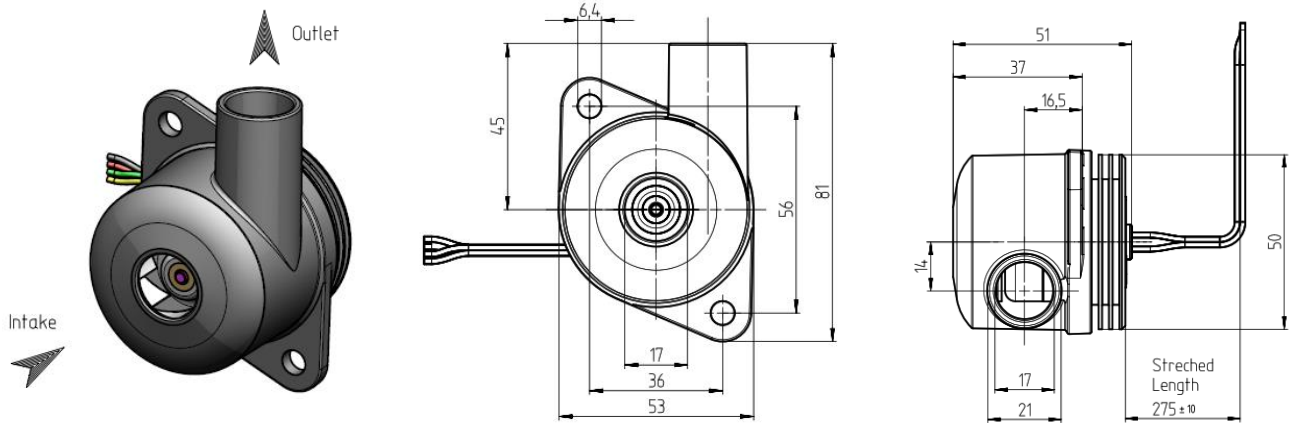
Version: 24.11.2022 / DH

Doc: U51DL-012KK-4 with integrated electronics.doc

Options for intake and outlet connections of U51DL-012KK-4

Product no. incl. option / Product Nr. inkl. Option	Intake / Einlass	Outlet / Auslass	Description / Beschreibung
U51DL-012KK-4			Without intake / without outlet Ohne Einlass / ohne Auslass
U51DL-012KK-42		•	Without intake / with outlet Ohne Einlass / mit Auslass
U51DL-012KK-43	•	•	With intake / with outlet Mit Einlass / mit Auslass

Drawing U51DL-012KK-42



Drawing U51DL-012KK-43

