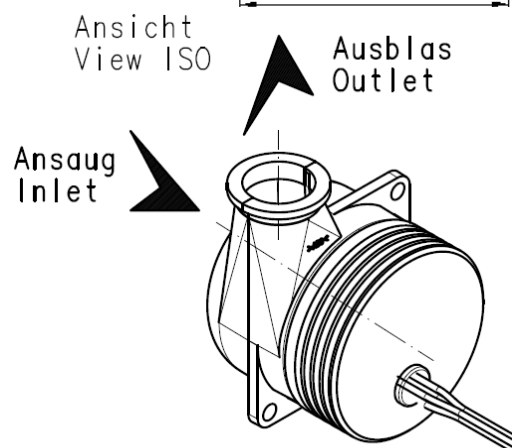
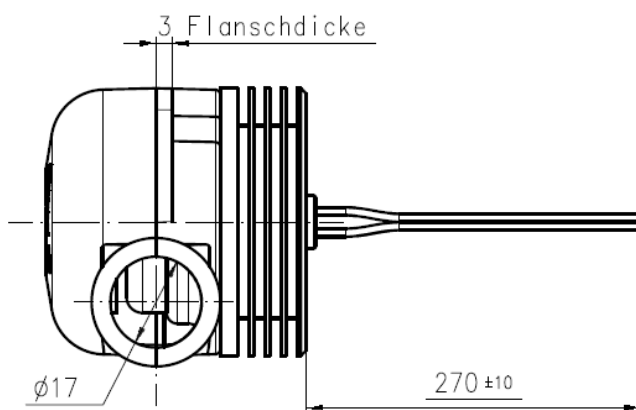
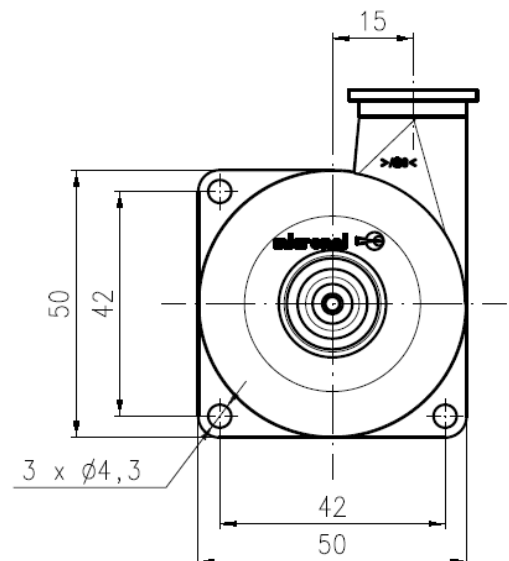
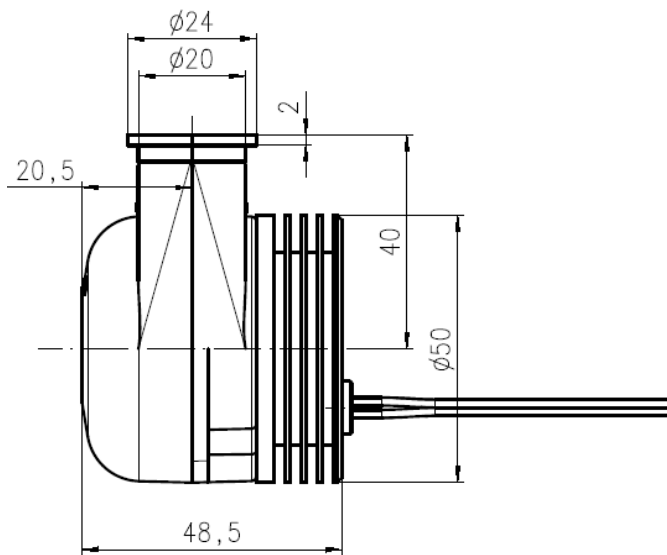
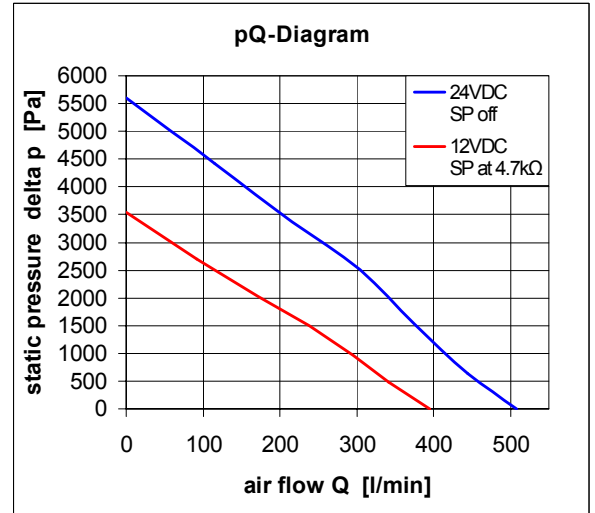
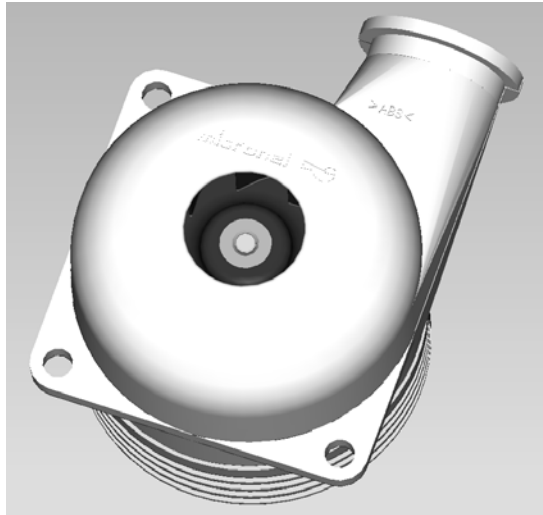




Miniatur Radial Gebläse
Miniature Radial Blower
Ventilateur miniature radial

U51DL-012KK-4
 SP at 4.7kΩ

U51DL-024KK-4
 SP off



Z5208-226A4 U51DL-4 2709

Technische Daten

Technical data

Caractéristiques techniques

Motor

Bürstenloser und sensorloser
3-Phasen Motor mit integrierter Treiber
Elektronik

Standardluftdichte 1.2kg/m³

Motor


























Brushless and sensorless 3-Phase
motor with integrated driver electronic

Standard air density 1.2kg/m³

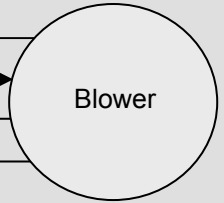
Moteur

Moteur à 3 phases, sans brosses et capteur,
avec électronique intégré.

Densité de l'air standard 1,2 kg/m³

			U51DL-012KK-4 Data at SP 4.7kΩ	U51DL-024KK-4 Data at SP off
	U _N	V	12	24
	U	V	10 - 16	12 - 28
	I _{N freeblowing}	mA	1'840	1'770
	I _{N typ. work. point}	mA	1'780	1'690
	I _{N static}	mA	960	1'070
	I _{block}	mA	3A peak	3A peak
	P _{N typ. work. point}	W	21.3	40
	n freeblowing	min ⁻¹	34'480	45'980
	n typ. work. point	min ⁻¹	34'930	45'720
	n static	min ⁻¹	43'720	55'560
	V freeblowing	l/min	395	510
	V typ. work. point	l/min	240	300
	p work. point	Pa	1'490	2'500
	p static	Pa	3'540	5'600
	LpA _(WP)	dB(A)	61	66
	MTTF _(WP)	hr	15'000 / 25°C	
	T	°C/°F	-20...+50 / -5...+122	
	m	gr/oz	120 / 4.23	
	Leads	mm/inch	270 / 10.6 (AWG24)	
	Housing material Impeller material		ABS UL-94HB PA6 UL-94HB	
	Sleeve Bearing		N/A	
	Ball Bearing		•	
	Tacho		•	
	Speed control SP		•	
	Warning		Max. allowed temperature on heat sink surface: 75°C	

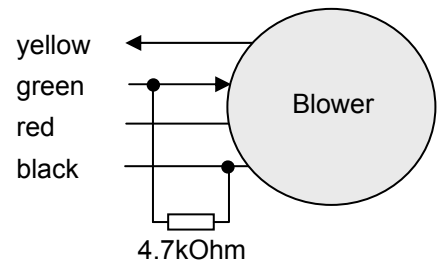
Operating Instruction and Warning

	U51DL-012KK-4	U51DL-024KK-4	
Electrical connection	Description	Lead wire	Diagram
	FG Frequency Generator output	yellow	
	SP Set speed input	green	
	Vcc + Power	red	
	GND Ground	black	



Warning for 12V Version:

External resistor 4.7kOhm is needed for operation at nominal voltage 12VDC and to work within the limits.

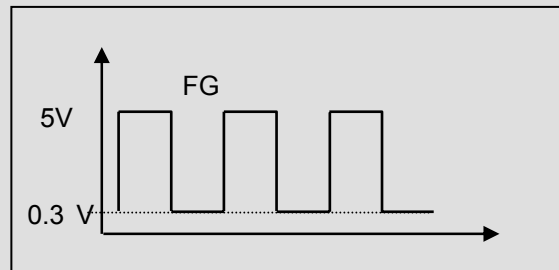


FG Frequency signal

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

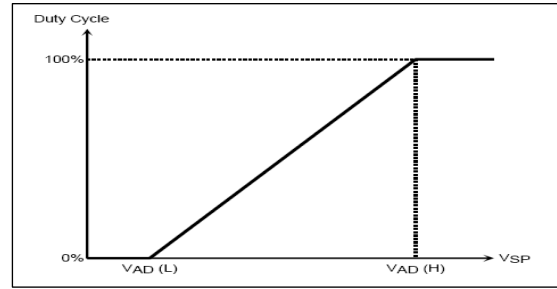
f = FG Frequency Generator [Hz]

rpm = Rotation speed [min-1]



Pull-up resistor (22kOhm) to 5 V is integrated

SP Set speed



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

Input resistor 10kOhm Potentiometer for Speed adjust
(Connect between SET and GND)

>> or >>

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

Blower limits and warning



- Max. allowed temperature on heat sink surface:	75° C
- Minimum airflow	50 l/min
- Maximum speed	51'000 min-1
- Maximum current at ambient temp. 25°C / 77°F	2'000 mA
- Maximum current at ambient temp. 50°C / 77°F	1'700 mA
- Heat sink temperature increase at 24 V, freeblowing	20 K
- Heat sink temperature increase at 24 V, static pressure	26 K
- Heat sink temperature increase at 12 V, freeblowing	20 K
- Heat sink temperature increase at 12 V, static pressure	23 K



- **Read instruction manual before use**
- **Handle only in currentless condition**

Power supply requirement

U51DL-012KK-4

Ripple voltage < 5%

3000 mA

U51DL-024KK-4

Ripple voltage < 5%

3000 mA

Blower Features

- Unique miniature blower in very compact design
- High efficient brushless, sensorless motor with integrated driver
- Powerful airflow and pressure performance

- 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)

Info

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

Version: 17.09.09 DH

Doc: U51DL with integrated electronics.doc