4214/17H-187 DC Axial Fan

Axial fan for DC operation driven by an electronically commutated external rotor motor with alarm output.
Electronics are completely integrated into the fan hub.
Air flow and noise level can be controlled by varying the supply voltage range.

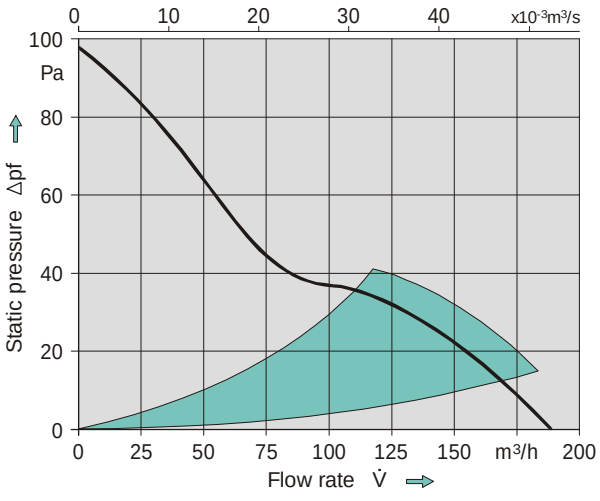
Features

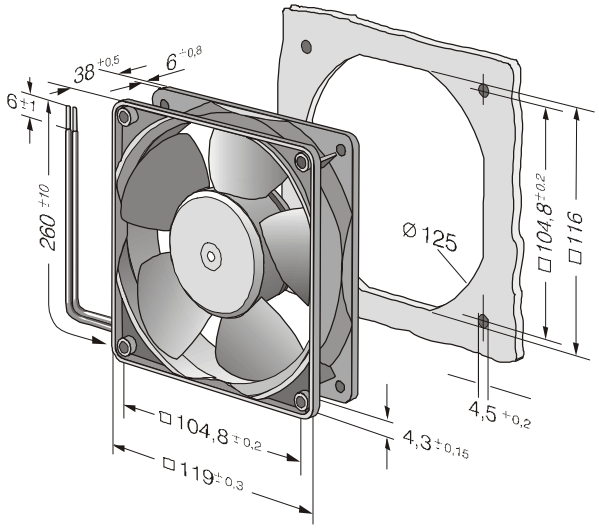
- Electronical protection against over-load, reverse polarity and blocking.
- Electrical connection via 3 leads AWG 22, 260mm long.
- Alarm output signal „/17“.
- Extremely low EMI.

General Data

Nominal Voltage	V DC	24
Voltage range	V DC	18 30
Nominal speed	min^{-1}	3400
Max. flow rate	m^3/h	184
Max. flow rate	CFM	108.3
Noise free air	dB(A)	49
Noise in opt. Operating range	Bels	5.9
Current consumption	mA	185
Power consumption	W	4.4
Permanent ambient temperature at max. voltage	°C	-20 ... +70
Service life (70°C)	h	30.000
Service life (40°C)	h	60.000
Approvals		CE
Fan housing / impeller		PBTP / PA 6.6
Bearing system		Ball bearings
Mass	kg	0.290

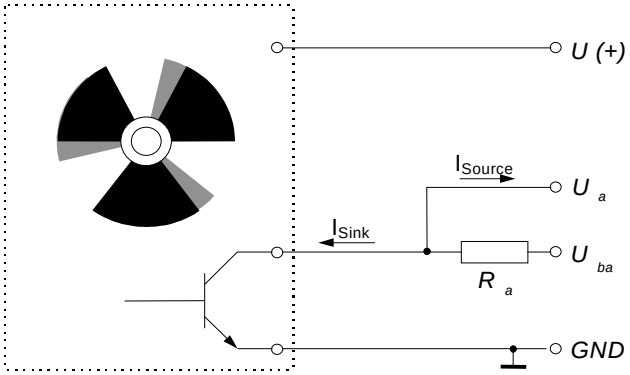
Alle Daten sind Mittelwerte bei Nennspannung. Technische Änderungen vorbehalten.





Electrical Connection

Operating voltage U(+) according to admissible voltage range.
Alarm supply voltage Uba ≤ 60V.
All voltages related to Ground.
External pull-up resistor (Ra) needed.



U (+) = Versorgungsspannung (+)
U_a = Alarmsignal
U_{ba} = Alarmversorgungsspannung
GND = Bezugspotential (-)
Ra = Extern vorzusehender Pull up-Widerstand

$$R_a = \frac{U_{ba} - U_{aL}}{I_{sink}}$$

Alarm Circuit

This fan is equipped with an integrated alarm circuit producing a continuous output signal Ua for monitoring fan speed. At proper operation in the nominal voltage range the alarm output is a „high“ level.
When speed decreases below limit speed nG = 1500rpm, e.g. by high friction torques, locked rotor condition, or low operating voltage, a „low“ level output will occur.
When speed recovers, the alarm signal goes back to „high“, i.e. alarm is non-latched.

Technical Data

Designation	Test condition	Symbol	Value
Max. alarm supply voltage		U_{ba} max	60 V DC
Max. sink current		I_{sink} max	20 mA
Output voltage Alarm signal „Low“ $n<n_G$	I_{sink} = 2 mA	U_a L	≤ 0,4 V
Output voltage Alarm signal „High“ $n>n_G$		U_a H	U_{ba}
Leakage current $n>n_G$	U_a = 60 V	I_{sink}	max. 15µA
Alarm delay time	at start-up only	t_2	≤ 15 s
Signal rise and fall time U_a		t_r, t_f	min. 0,5V/µs (Stand TTL)
Alarm trip speed		n_G	1500 rpm +/- 100 rpm

t_r **è** Low-High-Flanke t_f **è** High-Low-Flanke Alarmsignal-Unterdrückung im Anlauf

Alarm Signal Diagram