6448/19T - 329 DC Axial Fan

Axial fan with DC drive. The DC drive employs an electronically commutated external rotor motor with high efficiency. With integrated alarm circuit for speed monitoring. Drive electronics is completely integrated into the fan hub. The air flow and noise level can be controlled by varying the supply voltage in the admissible range.



Features

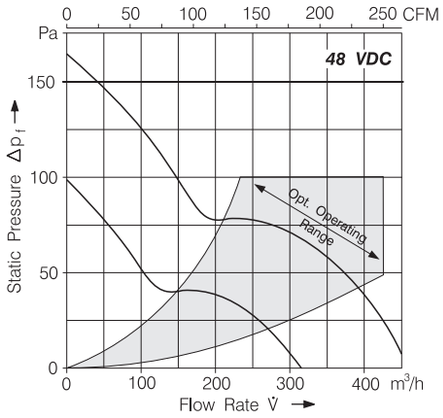
- Two-speed-fan.
- Electronic motor current limiting during start-up or blocking. Continuous blocking protection. Electronically safeguarded against incorrect polarity.
- Low noise level through aerodynamically optimized matching of the fan housing and impeller.
- Details on alarm see on backside.

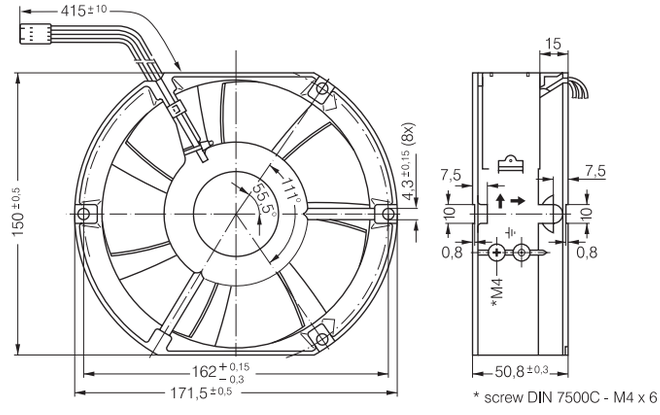
Patents granted or applied for.

General Data

Nominal voltage	V DC			48
Voltage range motor	V DC			38.5... 60
Voltage range alarm	V DC			4.5 ... 60
Speed control input		V_{low} max. = 0.4 V	/	open or 5V TTL
Nominal Speed	min^{-1}	2600	/	3800
Max. flow rate	m^3/h	313	/	457
Max. flow rate	CFM	184	/	269
Noise free air	dB(A)	48	/	59
Noise in opt. operating range	bels	5.7	/	6.7
Current consumption (at 48 V DC)	mA	210	/	455
Power consumption	W	10	/	21.8
Perm. amb. temperature at $V_{max.}$	°C			-20 ... +72
Service life at 72 °C	h			32,500
Service life at 40 °C	h			70,000
Approval				CSA, UL, VDE
Fan housing / impeller				metal / PA 6.6
Bearing system				Ball bearings
Mass	kg			0.76

All data are average figures at nominal voltage. Subject to technical change.



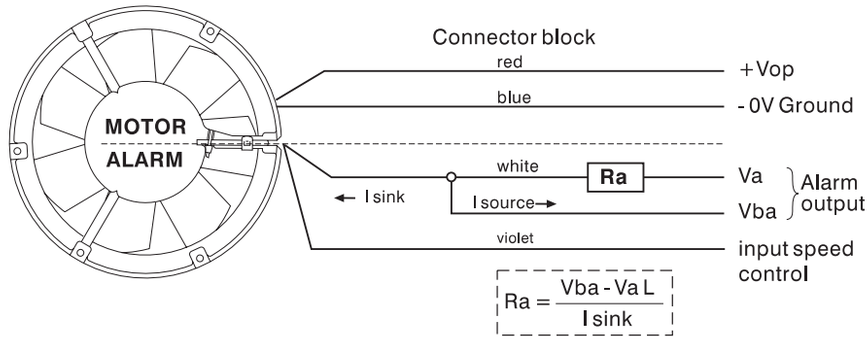


Electrical connection via 4 flying leads and connector.

red	+ 48 V DC commutation	pin 1
blue	- GND commutation	pin 4
white	output alarm	pin 2
violet	input speed control	pin 3

Connection Diagram

Operating voltage V_{op} according to admissible voltage range.
Alarm pull-up voltage $V_{ba} \leq$ 60 V.
All alarm voltages related to "Ground".
External pull-up resistor (Ra) needed.



Alarm Circuit

This fan is equipped with an integrated alarm circuit producing a continuous output signal V_a for monitoring fan speed.

At proper operation in the nominal voltage range the alarm output is a "Low" level.

When speed decreases below limit speed n_G = 1350 rpm, e.g. by high friction torques, locked rotor condition or low operating voltage, a "High" level output, depending on value of V_{ba} will occur.

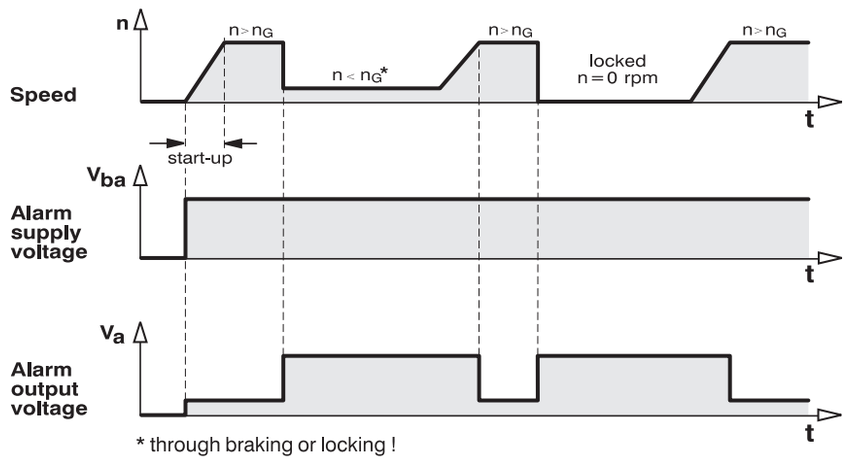
When speed recovers, the alarm signal goes back to "Low", i.e. alarm is non-latched.

Technical Data

Designation	Test Conditions	Symbol	Value
Alarm signal – pass – fail			 "Low" "High"
V_{out} Low $n > n_G$	I_{sink} < 15 mA	V_{aL}	≤ 0.6 V
V_{out} High $n < n_G$		V_{aH}	48V
Leakage current $n < n_G$	V_{ba} = 48 V	I_{sink}	max. 50 µA
Alarm delay time	at fan start-up only	t_d	6 ... 14 s
Signal rise and fall time V_a		t_r, t_f	min. 0,5 V/µs (TTL Std.)
Alarm trip speed		n_G	1350 ± 50 rpm

t_r ➠ Low-High-Flank t_f ➠ High-Low-Flank Alarmsignal surpression during start-up only

Signal Diagram



* through braking or locking !