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5.1 ELECTRICAL SAFETY 7

Special features according to QMH 2-5.4.7 and company standard 1-23.00 have the following definitions:

"A" : Product features or process parameters which influence the safety of a product or the compliance of legal requirements. (Must not necessary verified and documented 100%. Standards and legal requirements must be considered.)

"FK" : Product features or process parameters which influence the fit and function of a product or which have to be controlled or documented for some other reasons (e.g. Customer requirements).



1 General

Fan type	Fan	
Rotational direction looking at rotor	clockwise	FK
Airflow direction	Air intake over struts	FK
Bearing system	Ball bearing	
Lubrication	see sectional drawing of the bearing	
Mounting position	any	
Tolerance		

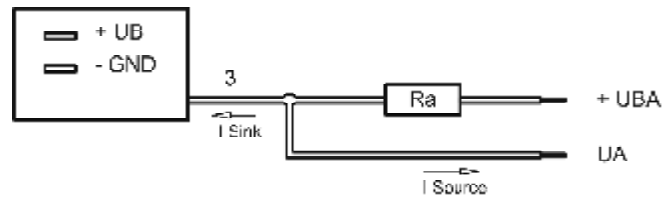
2 Mechanics

2.1 General

Width	119,0 mm	
Height	119,0 mm	
Depth	38,0 mm	
Diameter	0,0 mm	
Weight	0,390 kg	
Housing material	Metal	
Impeller material	Plastic	
Max. torque when mounted across both mounting flanges	wire outlet corner: 170 Ncm remaining corners: 300 Ncm	
Screw size	ISO 4762 - M3 degreased, without an additional brace and without washer	

2.2 Connections

Electrical connection	Plug	
Length of lead wire	310 mm	
Tolerance	+ - 10,0 mm	
Length of tube		
Tolerance		
Wire gauge (AWG)	22	
Insulation diameter	1,70 mm	
Plug	see drawing	
Contact	see drawing	



	Colour	Operation
Wire 3	white	Alarm

The auxiliary shown on the schematic diagram which are required for the intended use are not part of our delivery.

3 Operating Data

3.1 Operating Data - Electrical Interface - Input

Control input	None
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3.2 Electrical Operating Data

Measurement conditions: Normal air density = 1,2 kg/m³; Temperature 23°C +/- 3°C; Motor axis horizontal; warm-up time before measuring 5 minutes (unless otherwise specified). In the intake and outlet area there may not be any solid obstruction within 0,5 m.

$\Delta p = 0$: corresp. to free air flow (see section 3.5)

I: corresp. to arithm. mean current value

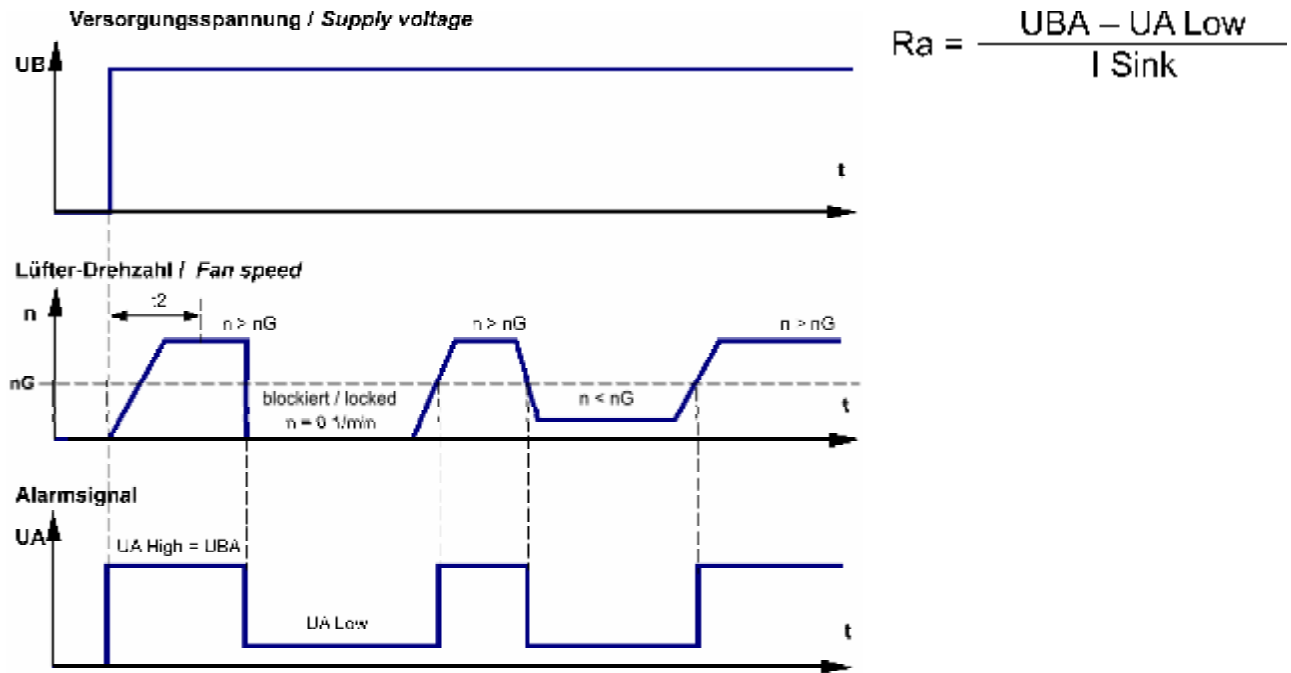
Features	Condition	Symbol	Values		
Voltage range	$\Delta p = 0$	U	18,0 V		32,0 V
Nominal voltage	$\Delta p = 0$	U_N		24,0 V	
Power consumption	$\Delta p = 0$	P	3,2 W	5,9 W	6,2 W
Tolerance	0001		+/- 25,0 %	+/- 25,0 %	+/- 25,0 %
Current consumption	$\Delta p = 0$	I	180 mA	245 mA*)	195 mA
Tolerance	0001		+/- 25,0 %	+/- 25,0 %	+/- 25,0 %
Speed	$\Delta p = 0$	n	2.450 1/min	3.200 1/min*)	3.200 1/min
Tolerance	0001		+/- 12,5 %	+/- 2,0 %	+/- 2,0 %
Starting current consumption				1.200 mA	

*) Attention: Marked values are "FK" features

3.3 Operating Data - Electrical Interface -Output

Tacho type	None
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Alarm type	/17 (high = ok, Open collector)
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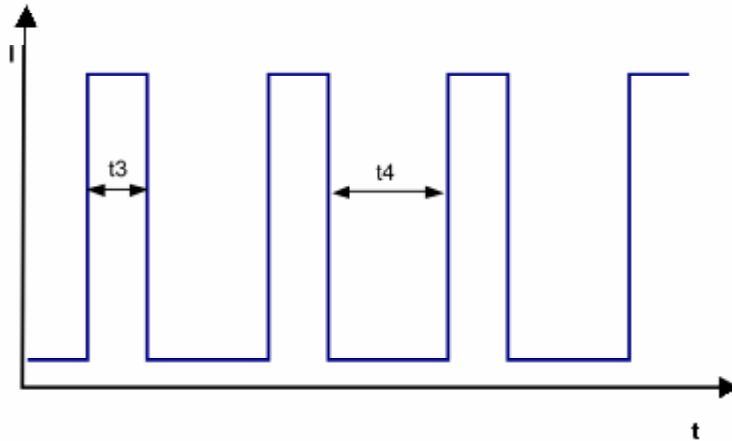


Features	Note	Values
Alarm operating voltage (UBA)		$\leq 60 \text{ V}$
Alarm signal Low *)	I sink: 2 mA	$\leq 0,4 \text{ V}$
Maximum sink current		20 mA
External resistor	External resistor Ra from UBA to UA required. All voltage measured to GND.	
Alarm start-up delay time (t2)		$\leq 15 \text{ s}$
Alarm trip speed limit (nG)		1.500 1/min +/- 100 1/min
Tolerance		
Alarm at sense failure	No	
Alarm latch	No	
Alarm isolated from motor	No	

*) Attention: Marked values are "FK" features

3.4 Electrical Features

Electronic function	Speed-Controlled	
Reversed polarity protection	Polarity protected diode	A
Max. residual current at Un	IF $\leq 20 \text{ mA}$	
Locked rotor protection	Electronically restart	A
Locked rotor current at Un	approx. 1.200 mA	
Clock signal t3/t4 at locked rotor	Typical: 0,4 s / 10 s	



3.5 Aerodynamic

Measurement conditions: Measured with a double chamber intake rig acc. to DIN 24163 Part 3.
 Normal air density = 1,2 kg/m³; Temperature 23°C +/- 3°C;
 In the intake and outlet area there may not be any solid obstruction within 0,5 m.

a.) Operation condition:

3.200 1/min at free air flow		
Max. free-air flow ($\Delta p = 0 / \dot{V} = \text{max.}$)	168,0 m ³ /h	FK
Max. static pressure ($\Delta p = \text{max.} / \dot{V} = 0$)	90 Pa	FK

3.6 Sound Data

Measurement conditions: Sound pressure level: 1 Meter distance between microphone and the air intake.
 Sound power level: Acc. to DIN 45635 part 38 (ISO 10302)
 Measured in a semianchoic chamber with a background noise level of L_p(A) < 5 dB(A)
 For further measurement conditions see section 3.5

a.) Operation condition:

3.200 1/min at free air flow		
Optimal operating point	104,0 m ³ /h @ 40 Pa	
Sound power level at the optimal operating point	5,6 bel(A)	
Sound pressure level at free air flow, measured in rubber bands	49,0 dB(A)	

4 Environment

4.1 General

Min. permitted ambient temperature TU min.	-30 °C	
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Max. permitted ambient temperature TU max.	75 °C	
Min. permitted storage temperature TL min.	-40 °C	
Max. permitted storage temperature TL max.	80 °C	

4.2 Climatic requirements *)

*) Permitted application area:

The product is for the use in sheltered rooms with controlled temperature and controlled humidity. Directly exposure to water must be avoid.

5 Safety

5.1 Electrical Safety

Dielectric strength DIN EN 60950 (VDE 0805) and DIN EN 60335 (VDE 0700) A.) Type test Measuring conditions: After 48h of storage at 95% R.H. and 25°C. No arcing or breakdown is allowed! All connections together to ground. B.) Routine test Measuring conditions: At indoor climate. No arcing or breakdown is allowed! All connections together to ground.	500 VAC / 1 Min. 500 VAC / 1 Sec.	A
Insulation resistance Measuring conditions: After 48h of storage at 95% R.H. and 25°C measured with U=500 VDC for 1 min.	RI > 10 MOhm	
Air and leakage distances	1,0 mm / 1,2 mm	
Protection class	III	