4312/12M

INDEX

1 General

Fan type	Fan	
Rotational direction looking at rotor	clockwise	
Airflow direction	Air outlet over struts	
Bearing system	Ball bearing	
Mounting position	any	

2 Mechanics

2.1 General

Width	119,0 mm	
Height	119,0 mm	
Depth	32,0 mm	
Weight	0,220 kg	
Housing material	Plastic	
Impeller material	Plastic	
Max. torque when mounted across both mounting flanges Screw size	wire outlet corner: 20 Ncm remaining corners: 20 Ncm ISO 4762 - M4 degreased, without an additional brace and without washer	

2.2 Connections

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

	Colour	Operation
Wire 1	red	+ UB
Wire 2	blue	- GND
Wire 3	yellow	Tacho

3 Operating Data

3.1 Operating Data - Electrical Interface - Input

Control input	None

3.2 Electrical Operating Data

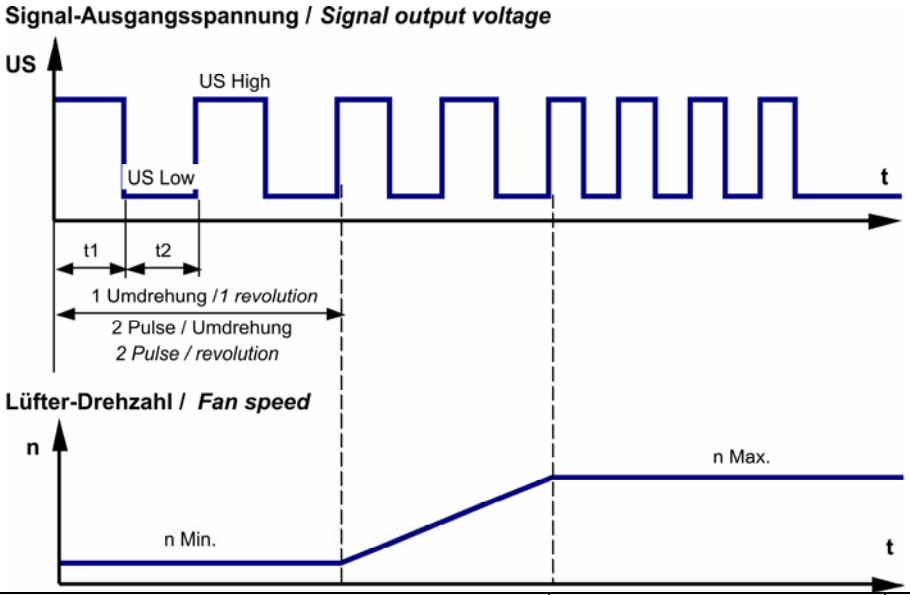
Measurement conditions: Normal air density = 1,2 kg/m3; Temperature 23°C +/- 3°C; Motor axis horizontal;warm-up time before measuring 5 minutes (unless otherwise specified).In the intake and outlet area should not be any solid obstruction within 0,5 m.

$\Delta p = 0$: 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	6,0 V		15,0 V
Nominal voltage	$\Delta p = 0$	U_N		12,0 V	
Power consumption Tolerance	$\Delta p = 0$ 0001	P	0,6 W +- 17,5 %	3,1 W +- 12,5 %	5,1 W +- 15,0 %
Current consumption Tolerance	$\Delta p = 0$ 0001	I	116 mA +- 17,5 %	258 mA +- 12,5 %	340 mA +- 15,0 %
Speed Tolerance	$\Delta p = 0$ 0001	n	1.250 1/min +- 12,5 %	2.300 1/min +- 7,5 %	2.700 1/min +- 10,0 %
Starting current consumption				< 860 mA	

3.3 Operating Data - Electrical Interface -Output

Tacho type	/12 (TTL)

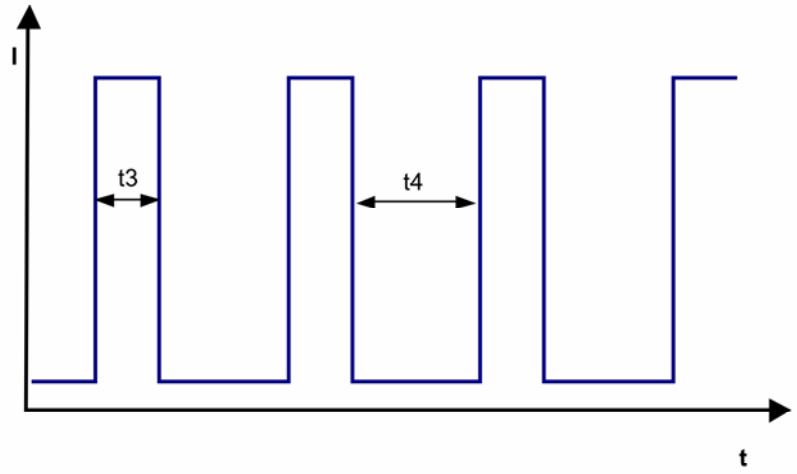


Features	Note	Values
Tacho signal TTL High		Min.: 2,5 V Max.: 5,5 V
Tacho signal Low	I sink: 1 mA	<= 0,4 V
Tacho signal High	I source: 1 mA	
Maximum sink current		<= 1 mA
External resistor	All voltages measured to GND.	
Tacho frequency	(2 x n) / 60	
Tacho isolated from motor	No	
Slew rate		=> 0,5 V/us

Alarm type	None

3.4 Electrical Features

Electronic function	None	
Reversed polarity protection Max. residual current at Un	Rectifying diode IF <= 600 uA	
Locked rotor protection	Auto restart	
Locked rotor current at Un	approx. 860 mA	
Clock signal t3/t4 at locked rotor	Typical: 0,6 s / 10 s	


I
t3
t4
t

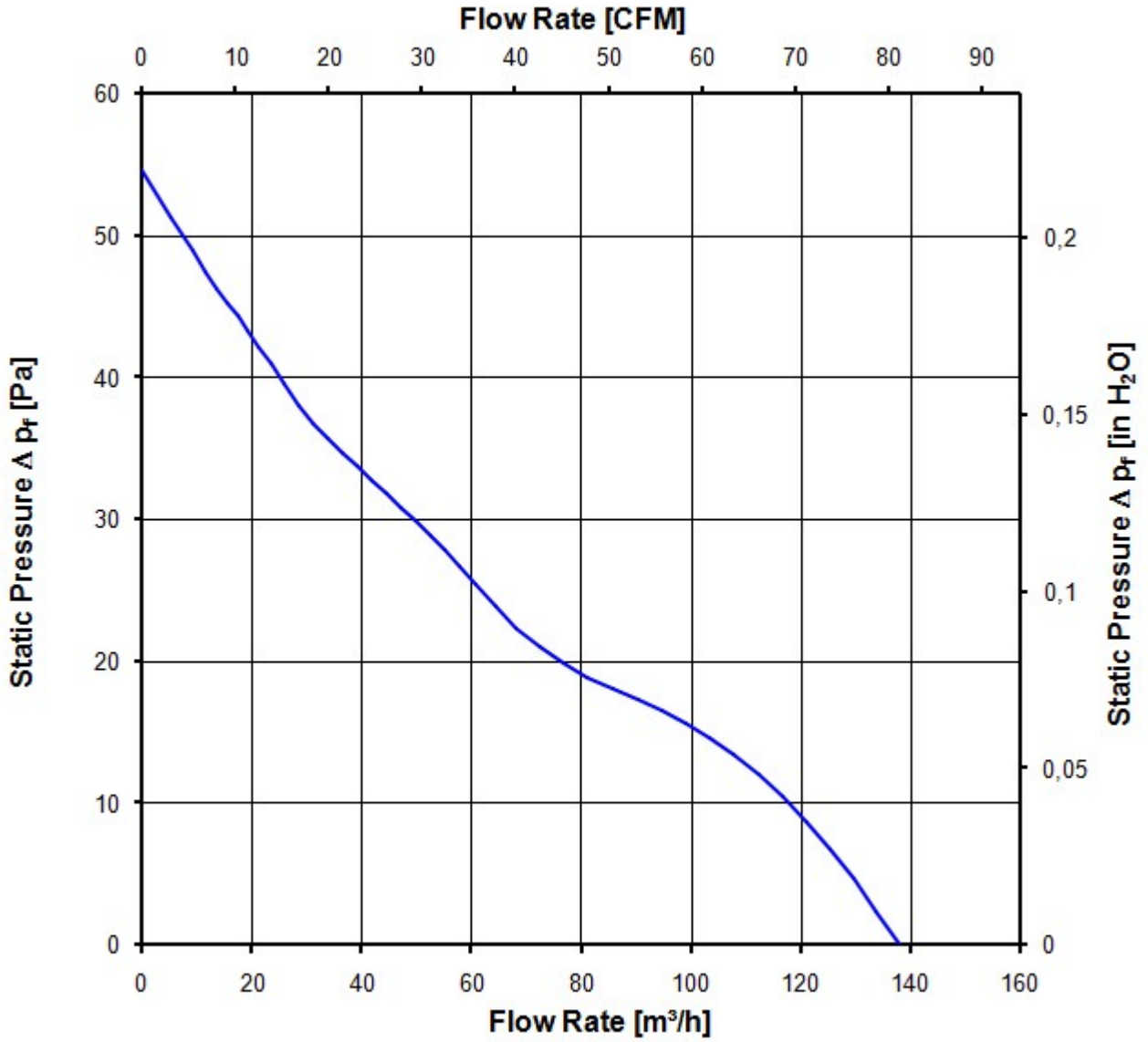
3.5 Aerodynamic

Measurement conditions:	Measured with a double chamber intake rig acc. to DIN EN ISO 5801. Normal air density = 1,2 kg/m3; Temperature 23°C +/- 3°C; In the intake and outlet area should not be any solid obstruction within 0,5 m.

a.) Operation condition:

2.300 1/min at free air flow

Max. free-air flow (Δp = 0 / $\dot{V}$ = max.)	138,0 m3/h	
Max. static pressure (Δp = max. / $\dot{V}$ =0)	54 Pa	



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 Lp(A) < 5 dB(A) For further measurement conditions see section 3.5

a.) Operation condition:

2.300 1/min at free air flow

Optimal operating point	118,0 m3/h @ 9 Pa	
Sound power level at the optimal operating point	5,3 bel(A)	
Sound pressure level at free air flow, measured in rubber bands	39,0 dB(A)	

4 Environment

4.1 General

Min. permitted ambient temperature TU min.	-20 °C	
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*)

Humidity requirements	humid heat, constant; according to DIN EN 60068-2-78, 14 days	
Water exposure	None	
Radiation exposure	None	
Dust requirements	None	
Salt fog requirements	None	
Harmful gas requirements	None	

*) Permittet application area:
The product is intended for use in sheltered rooms with controlled temperature and controlled humidity. Directly exposure to water must be avoided.

Pollution degree 1 (according DIN EN 60664-1)
There is either no pollution or it occurs only dry, non-conductive pollution. The pollution has no negative impact.

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.	
Isolation 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	

5.2 Approval Tests

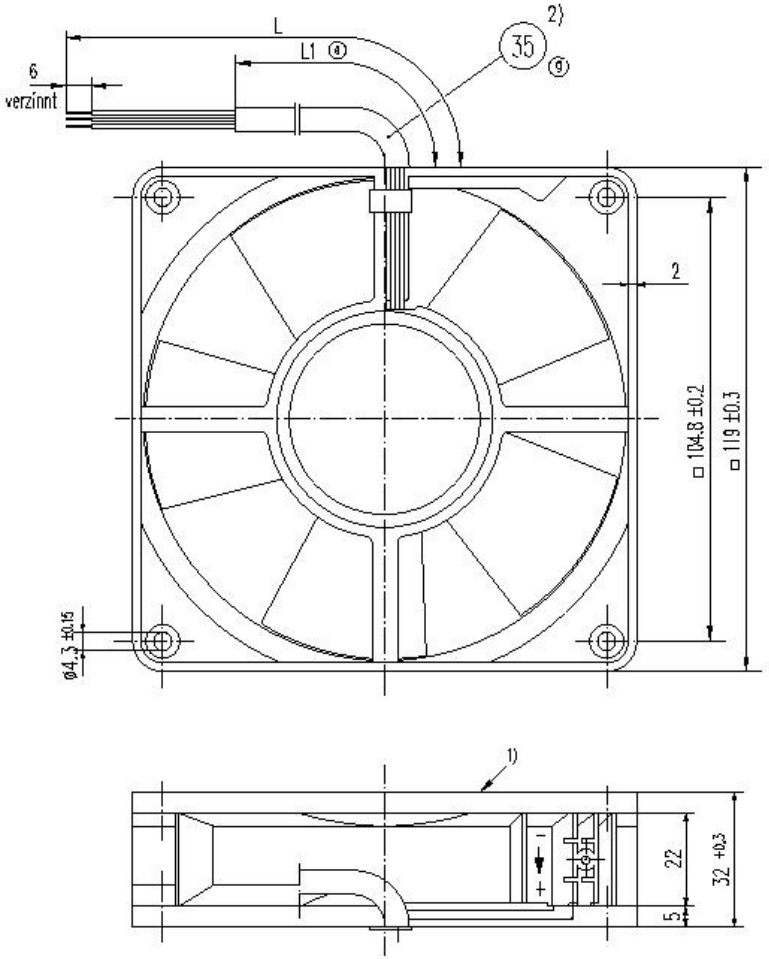
CE	Yes
UL	Yes / UL audited by CSA according to UL507, Electric Fans
VDE	Yes / Approval acc. to EN 60950 (VDE 0805) - Information technology equipment
CSA	Yes / C22.2 No. 113 Fans and Ventilators
CCC	No

The approval tests are observed to:
Maximal permitted operating voltage (see section 3.1) and max. permitted ambient temperature TU max.

6 Reliability

6.1 General

Life expectancy L10 at TU = 40 °C	70.000 h	
Life expectancy L10 at TU max.	30.000 h	
Life expectancy L10 Delta (40 °C)	135.000 h	



⑧

Erzeugnis-Nr.	Typ	Lagersystem K=Kugellager G=Gleitlager	Litzenl?nge L	Schlauch-l?nge L1
929 4305 020	4312 S	K	310 ±10	–
929 4305 021	4314 S	K	310 ±10	–
929 4305 024	4312 WS	K	310 ±10	–
929 4305 043	4318/2	K	310 ±10	–
929 4305 072	4312 WV	K	310 ±10	–
929 4305 085	4312 WV VP	K	310 ±10	–
929 4305 097	4312 WS-097	K	310 ±10	–
929 4305 101	4318/2-101	K	310 ±10	–
929 4305 107	4314/12	K	310 ±10	–
929 4305 122	4312 V VP	K	310 ±10	–
929 4305 127	4318/2-127	K	310 ±10	–
929 4305 156	4312/10 V	K	310 ±10	–
929 4305 171	4314/19-171	K	310 ±10	–
929 4305 174	4312 LS-174	K	310 ±10	–
929 4305 196	4312/17 L	K	310 ±10	–
929 4305 236	4314/12-236	K	310 ±10	–
929 4305 237	4312/12-237	K	310 ±10	–
929 4305 239	4314/12-239	K	310 ±10	–
929 4305 240	4318/12-240	K	310 ±10	–
929 4305 243	4312/12 L-243	K	310 ±10	–
929 4305 245	4312/12 M	K	310 ±10	–
929 4305 253	4314/2	K	310 ±10	–
929 4305 273	4318/12	K	310 ±10	–
929 4305 277	4318/17 M	K	310 ±10	–
929 4305 280	4314 V	K	310 ±10	–
929 4305 290	4318/2 M	K	310 ±10	–
929 4305 293	4312/2	K	310 ±10	–
929 4305 296	4312 V-296	K	310 ±10	–
929 4305 303	4312 L/12	K	310 ±10	–
929 4305 311	4312/2-311	K	310 ±10	–
929 4305 343	4318/2-343	K	310 ±10	–
⑧ 929 4305 350	4314/17 U-350	K	660 ±10	620 ±10
⑦ 929 4305 361	4312 V-361	K	625 ±10	–
⑨ 929 4305 383	4312/10 VR	K	310 ±10	–

1) Rotor?berstand bis max. 0.4 mm zul?ssig.

Axialspiel bei
- Kugellagerung (K): 0 (mit Federausgleich)
- Gleitlagerung (G): 0.1 – 0.6

⑨ 2) Pos. 35 nur wenn in St?ckliste vermerkt

Allgemeintoleranzen								
h	Erg?nzung	09.06.98	Koletzki M.		Datum	Name	Artikel	Maßstab
g	98047	27.01.98	Knapp U.	Erstellt	02.12.95	Kieninger	Axiall?fter	1:1
f	Erg?nzung	27.01.98	Kieninger	Gepr?ft	12.12.95	Wrobel G.		
e	97695	18.11.97	Knapp U.				Zchg.-Nr. 929 4305 020	Blatt 2
d	Erg?nzung	05.11.97	Kieninger					
Index	Änd.-Nr.	Datum	Geändert von	PAPST-MOTOREN GmbH & Co KG D-78112 St.Georgen Germany			Ers.f.Zchg.: gl. Nr. v. 24.03.86	K:\929\4305\
Zur Verwendung im Verteiler freigegeben von Koletzki M. am 10.06.98								

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240
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