

# 614 NHHR-137

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**1 General**

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

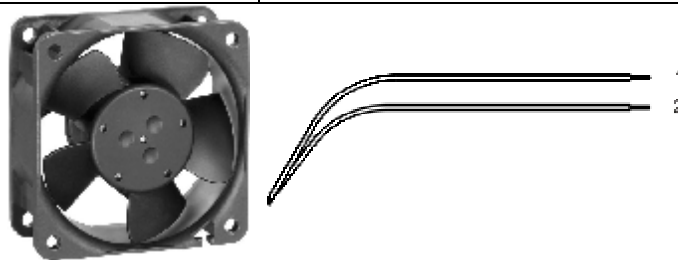
**2 Mechanics**

**2.1 General**

Width	60,0 mm	
Height	60,0 mm	
Depth	25,0 mm	
Weight	0,066 kg	
Housing material	Plastic	
Impeller material	Plastic	
Max. torque when mounted across both mounting flanges	wire outlet corner: 20 Ncm remaining corners: 40 Ncm	
Screw size	ISO 4762 - M3 degreased, without an additional brace and without washer	

**2.2 Connections**

Electrical connection	Wires - Plug	
Length of lead wire	70 mm	
Tolerance	+/- 10,0 mm	
Wire gauge (AWG)	22	
Insulation diameter	1,70 mm	
Contact	AMP 641 437-2	



	Colour	Operation
Wire 1	red	+ UB
Wire 2	blue	- GND

More details see drawing

Measurement conditions: Normal air density = 1,2 kg/m<sup>3</sup>; 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		26,0 V
Nominal voltage	$\Delta p = 0$	$U_N$		24,0 V	
Power consumption	$\Delta p = 0$	P	1,6 W	2,9 W	3,5 W
Tolerance	0001		+/- 17,5 %	+/- 12,5 %	+/- 17,5 %
Current consumption	$\Delta p = 0$	I	90 mA	120 mA	135 mA
Tolerance	0001		+/- 17,5 %	+/- 12,5 %	+/- 17,5 %
Speed	$\Delta p = 0$	n	5.300 1/min	6.850 1/min	7.300 1/min
Tolerance	0001		+/- 15,0 %	+/- 10,0 %	+/- 15,0 %

**2.4 Operating Data - Electrical Interface -Output**

Tacho type	None
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Alarm type	None
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**2.5 Electrical Features**

Electronic function	None	
Reversed polarity protection	Polarity protected diode	
Max. residual current at $U_N$		
Locked rotor protection	Electronically restart	
Locked rotor current at $U_N$		

## 2.6 Aerodynamic

Measurement conditions: Measured with a double chamber intake rig acc. to DIN 24163 Part 3.  
 Normal air density = 1,2 kg/m<sup>3</sup>; 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:

6.850 1/min at free air flow		
Max. free-air flow ( $\Delta p = 0 / \dot{V} = \text{max.}$ )	54,0 m <sup>3</sup> /h	
Max. static pressure ( $\Delta p = \text{max.} / \dot{V} = 0$ )	120 Pa	

## 2.7 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<sub>p</sub>(A) < 5 dB(A)  
 For further measurement conditions see section 3.5

a.) Operation condition:

6.850 1/min at free air flow		
Optimal operating point	34,0 m <sup>3</sup> /h @ 33,0 Pa	
Sound power level at the optimal operating point	5,6 bel(A)	
Sound pressure level at free air flow, measured in rubber bands	42,0 dB(A)	

## 3 Environment

### 3.1 General

Min. permitted ambient temperature TU min.	-20 °C	
Max. permitted ambient temperature TU max.	70 °C	
Min. permitted storage temperature TL min.	-40 °C	
Max. permitted storage temperature TL max.	80 °C	

### 3.2 Climatic requirements\*)

\*) Permitted application area:

The product is for the use in sheltered rooms with limited controlled temperature. Occasionally condensed water is allowed. Directly exposure to water must be avoid. Saline ambient conditions must be avoid.

**4 Safety**

**4.1 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.	Not applicable	
B.) Routine test Measuring conditions: At indoor climate. No arcing or breakdown is allowed! All connections together to ground.	Not applicable	
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	

**4.2 Approval Tests**

CE	Yes
UL	Yes / UL507, Electric Fans
VDE	Yes / Approval acc. to EN 60950 (VDE 0805) - Information technology equipment - Part 1 Safety - Connection to a SELV circuit.
CSA	Yes / C22.2 No. 113-M1984 Fans and Ventilators
CCC	No

The approval tests are observed to:  
U approval max.:28,0 V @ TU approval max.: 70,0 °C

**5 Reliability**

**5.1 General**

Life expectancy L10 at TU = 40 °C	60.000 h	
Life expectancy L10 at TU max.	30.000 h	
Life expectancy L10 Delta (40 °C)	120.000 h	

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