

**Product Data Sheet**

**9545020051**  
VBS0160XQKDS  
RER160-28/56S

**ebmpapst**

The engineer's choice



RER160-28/56S

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## 1 General

Fan type	Blower without chassis with intake nozzle
Rotating direction looking at rotor	Counterclockwise
Airflow direction	Air in axially, Air out radially
Bearing system	Ball bearing
Mounting position - shaft	Any
Balancing grade	6,3

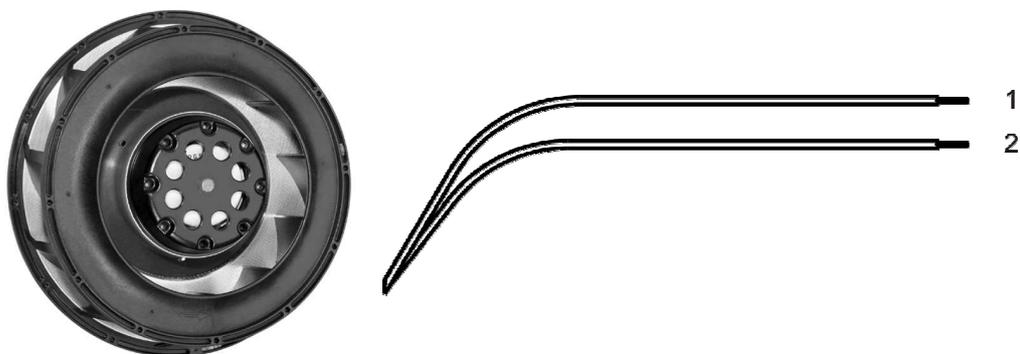
## 2 Mechanics

### 2.1 General

Width	0,0 mm	
Height	0,0 mm	
Depth	54,0 mm	
Diameter	176,0 mm	
Mass	1,000 kg	
Housing material		
Impeller material	Mixed	

2.2 Connections

Electrical connection	Wires	
Lead wire length	L = 425,0 mm	
Tolerance	+ - 10,0 mm	
Tube length	S = 385,0 mm	
Tolerance	+ - 10,0 mm	
Wire size (AWG)	18	
Insulation diameter	1,65 mm	
Plug	See drawing	
Contact	See drawing	



	Color	Operation
1	blue	L
2	blue	N

### 3 Operating Data

#### 3.1 Electrical Operating Data

For checking purposes the electrical data can be specified without an intake nozzle / aperture plate as well. For this the data have to defined by the appropriate quality assurance.

##### Electrical Operating Data with Intake Nozzle (for testing purposes)

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 should not be any solid obstruction within 0,5 m.

Measurement setup:	Measured between two steel plates
Steel plate:	260 mm x 260 mm
Intake nozzle:	D: 100 mm; R: 5 mm
Distance between bottom and top plate:	55 mm
Overlapping impeller / nozzle:	2 mm

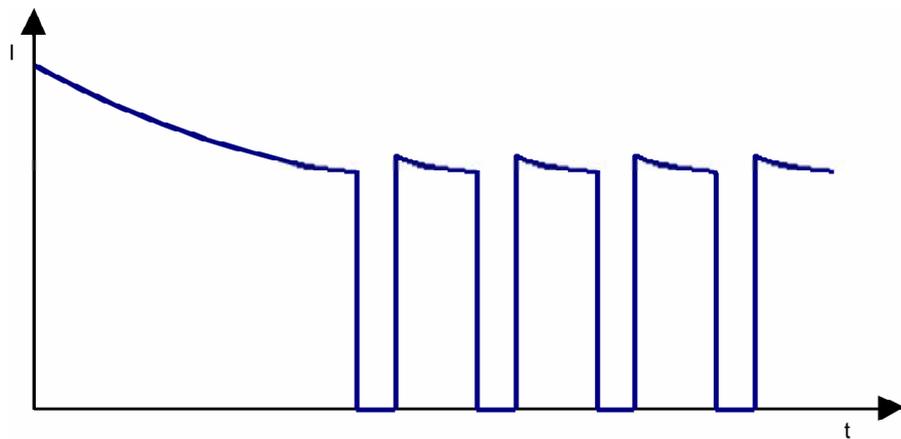
$\Delta p = 0$ : corresp. to free air flow (see chapter aerodynamics)

I: corresp. to RMS line current

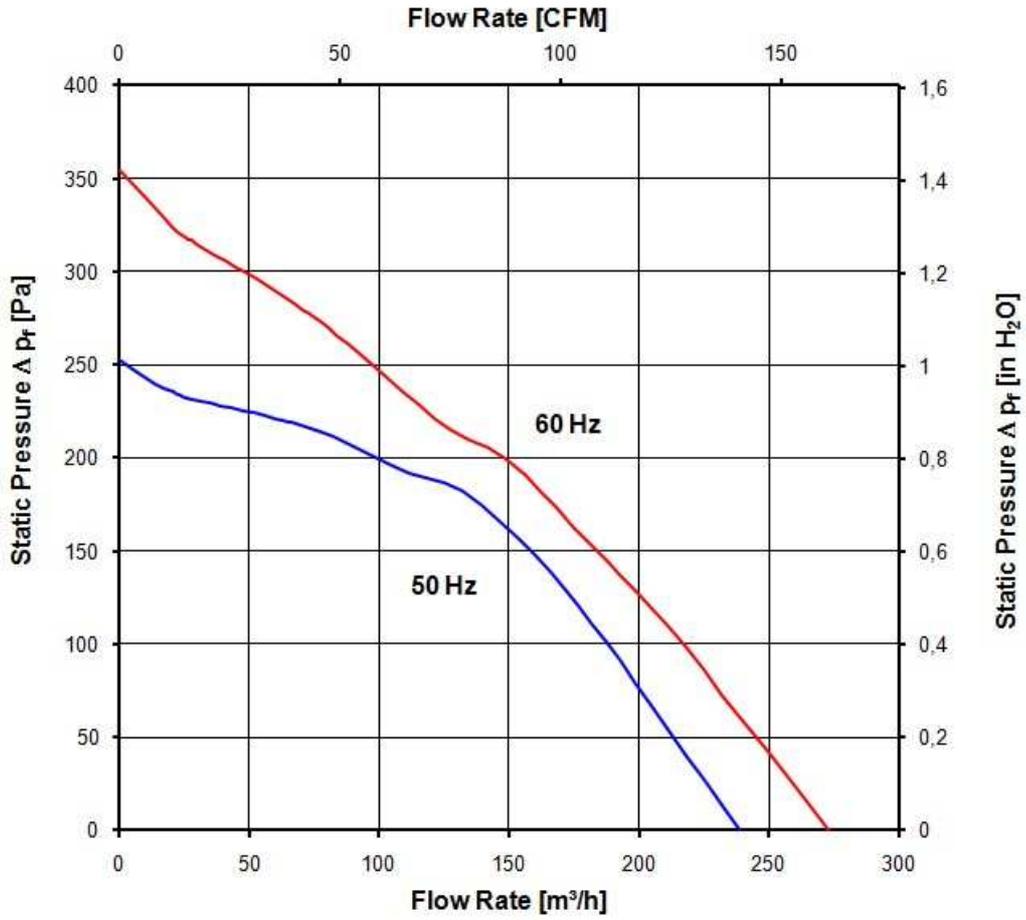
Features	Condition	Symbol	Values	
Frequency	$\Delta p = 0$	f	50 Hz	60 Hz
Nominal voltage	$\Delta p = 0$	$U_N$	230,0 V +/- 10,0 %	230,0 V +/- 10,0 %
Tolerance				
Power consumption	$\Delta p = 0$	P	45 W	46 W
Tolerance			+ 5,0 %      - 10,0 %	+ 5,0 %      - 10,0 %
Speed	$\Delta p = 0$	n	2.850 1/min	3.250 1/min
Tolerance			+/- 3,0 %	+/- 3,0 %

3.2 Electrical Features

Locked rotor protection	Thermal circuit breaker
Locked rotor current at	







**3.4 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) Sound power level: Acc. to DIN 45635 part 38 (ISO 10302)  
 Measured in a semianchoic chamber with a background noise level of  $L_p(A) < 5 \text{ dB(A)}$   
 For further measurement conditions see chapter aerodynamics.

a.) Operation condition:  
 2.850 1/min at free air flow Frequency: 50 Hz

Optimal operating point	1,0 m <sup>3</sup> /h @ 215 Pa	
Sound power level at the optimal operating point	6,5 bel(A)	
Sound pressure level at free air flow, measured in rubber bands		

b.) Operation condition:  
 3.250 1/min at free air flow Frequency: 60 Hz

Optimal operating point	12,0 m <sup>3</sup> /h @ 280 Pa	
Sound power level at the optimal operating point	6,8 bel(A)	
Sound pressure level at free air flow, measured in rubber bands		

**4 Environment**

**4.1 General**

Min. permitted ambient temperature TU min.	-30 °C / 50 Hz -30 °C / 60 Hz	
Max. permitted ambient temperature TU max.	60 °C / 50 Hz 70 °C / 60 Hz	
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	
Dust requirements	None	
Salt fog requirements	None	

Permitted 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.	1500 VAC / 1 Min.  1500 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 > 50 MOhm
Clearance / creepage distance	2,0 mm / 1,8 mm
Protection class	I

### 5.2 Approval Tests

CE	EC Declaration of Conformity	Yes
EAC	Eurasian Conformity	Yes
UL	Underwriters Laboratories	Yes / UL507, Electric Fans E38324
VDE	Association for Electrical, Electronic and Information Technologies	Yes / Approval acc. to EN 60950 (VDE 0805) - Information technology equipment
CSA	Canadian Standards Association	Yes / C22.2 No. 113 Fans and Ventilators
CCC	China Compulsory Certification	Yes / GB 12350 Safety Requirements for small Power Motors

The approval tests are observed to:

U approval max.: 230 V / f: 60 Hz @ TU approval max.: 80 °C

## 6 Reliability

**6.1 General**

Life expectancy L10 at TU = 40 °C	30.000 h / 50 Hz 30.000 h / 60 Hz	
Life expectancy L10 at TU max.	20.000 h / 50 Hz 15.000 h / 60 Hz	

