

# CPAP Radial Blower



# CPAP-Radial Blower

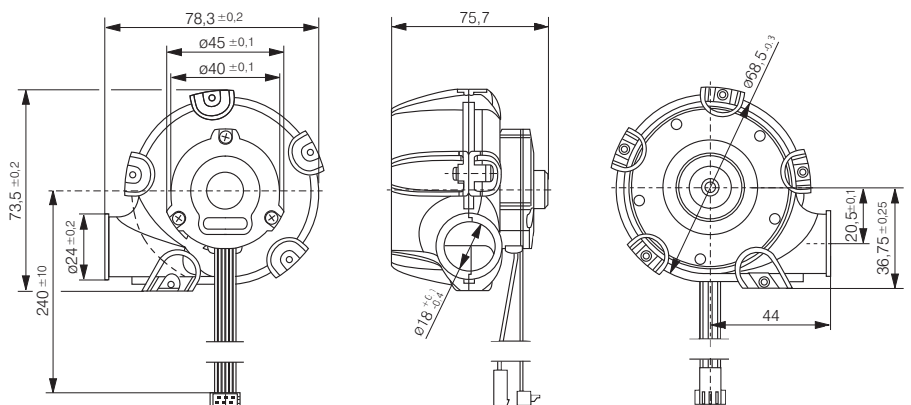
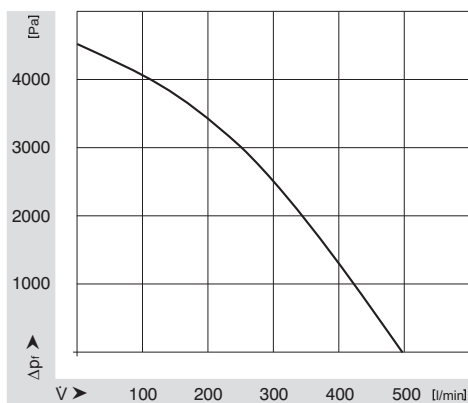
ECI 30.20



- High dynamic 3-phase, 6-pulse internal rotor motor.
- EC-technology with slotless stator design.
- Extremely silent running, no cogging torque.
- Very suitable for high speed applications due to minimized iron losses.
- Dynamically balanced rotor with 4-pole neodymium magnets.
- Determination of rotor via 3 Hall sensor.  
Option: motor without sensors for sensorless operation.
- Precision ball bearings for long service life and silent running.
- Motor supply and control via external operating electronics.

## Nominal Data

Type		CPAP 12 V	...24 V
Nominal voltage ( $U_{BN}$ )	V DC	12	24
Nominal speed ( $n_N$ )	min <sup>-1</sup>	18 500	18 500
Nominal current ( $I_{BN}$ )	A	3.0	1.5
Free-running speed ( $n_L$ ) / Free blowing out / Back pressure	min <sup>-1</sup>	35 600 / 40 400	35 600 / 40 400
Air Flow	l/min	500	500
Induced voltage ( $U_{i,max}$ )	V/1000min <sup>-1</sup>	0.30	0.62
Terminal resistance ( $R_V$ )	$\Omega$	0.48	1.9
Terminal inductance ( $L_V$ )	mH	0.06	0.26
Protection class		IP 20	IP 20
Ambient temperature range ( $T_U$ )	°C	0...+40	0...+40
Service Life $L_{10}$ ( 40 °C) Nominal operating point	h	20 000	20 000
Nominal operating point 1000 Pa @	l/min	32.5	32.5
Noise Nominal operating point	dB(A)	40	40
Motor mass (m)	kg	0.251	0.251
Order-No.		939 3020 008	939 3020 003



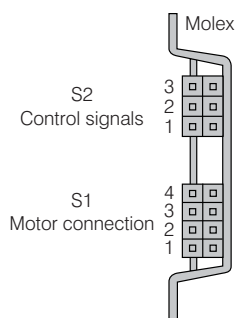
**VT-A Operating electronics** for driving 3-phase motors of the ECI 30.20. Simple OEM electronics for use in series applications. DRIVECONTROL is available for voltage-controlled operation. Only one supply voltage is required for motor and electronics.

- 1 quadrant controller.
- Speed setting via set value input (interface 0...10 V DC).
- Fixed limits for current and voltage. Voltage supply with input filter, filtering and generation of auxiliary voltage.
- Version with Molex plug.

### Nominal Data

Data	Unit	Voltage controlled
Nominal voltage ( $U_B$ )	V	24
Nominal voltage Range	V	10...30
Max. output voltage	V	$U_B - 2 V$
Output current, peak	A	2 - 5
Set value input	V DC	0...10
Speed adjusting range	$\text{min}^{-1}$	0 - max
Operating temperature range	$^{\circ}\text{C}$	0...40 $^{\circ}\text{C}$
Temperature monitoring		no
Mass	kg	0.2
Protection class		IP 00

### Pin connection



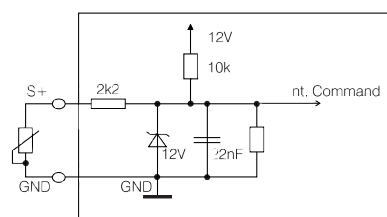
#### Plug S2

Pin	Type Molex
1	Gnd
2	A
3	$n_{\text{command}}$
4	$+U_B$

#### Plug S1

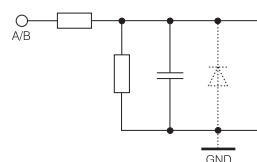
Pin	Type Molex
1	L 3
2	$+U_{\text{Hall}}$
3	RLG 2
4	RLG 1
5	L 2
6	L 1
7	$\text{Gnd}_{\text{Hall}}$
8	RLG 3

### Diagram of connections



Typical wiring of the reference input. Special features are described in the data sheets.

### Voltage controlled version



### Set value

The speed selection is normally made externally with a voltage in the range of 0...10 V DC. A voltage of 10 V is equivalent to the maximum speed determined internally. With the voltage controlled version of the VT-A, the set value is internally fixed at the maximum value. For reducing the set value an external potentiometer can be connected or an external set value voltage can be applied.

### Necessary cables

Connection Ltg. 194 0013 000  
Adaptor (Pseudo Code) 194 0000 999

**ebm-papst**  
**St. Georgen GmbH & Co. KG**

Hermann-Papst-Straße 1  
D-78112 ST. GEORGEN  
Germany  
Phone +49 (0) 7724 / 81-0  
Fax +49 (0) 7724 / 81-1309  
info2@de.ebmpapst.com

[www.ebmpapst.com](http://www.ebmpapst.com)