R3G190-RC05-03 ebmpapst

Brand: ebmpapst
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Category: EC Centrifugal Fans
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Product Description

The ebmpapst R3G190-RC05-03 is a highly efficient 230 VAC EC centrifugal fan from the

RadiCal® series, engineered for advanced industrial and commercial thermal management. Integrating ebmpapst's state-of-the-art GreenTech EC motor technology (M3G055-BI), this backward-curved, single-inlet fan delivers a powerful maximum air flow of up to 735 m³/h at free air, while maintaining a nominal power consumption of just 83 W. Housed in a die-cast aluminum electronics casing with an aerodynamically optimized 7-blade PA plastic impeller, the unit weighs 1.1 kg and features an overall size footprint of 190 mm. Equipped with maintenance-free ball bearings and an IP54 protection rating, it operates reliably across an ambient temperature range of -25 °C to +60 °C. Boasting intelligent control inputs (0-10 VDC / PWM), a tachometer output, and built-in electrical safeguards, the R3G190-RC05-03 provides a superior, precision-controlled cooling solution for sophisticated enclosures and automation systems.

1. Key Features & Benefits

- **GreenTech EC Motor Integration:** Features an advanced electronically commutated motor (M3G055-BI) with 0-10 VDC / PWM control inputs and a tachometer output for precise speed regulation and remote system monitoring.
- **RadiCal® Aerodynamics:** The backward-curved radial impeller maximizes air intake and minimizes energy losses and acoustic noise for highly efficient operation under system resistance.
- **Intelligent Motor Protection:** Built-in electronics provide essential safety mechanisms, including locked-rotor protection, soft start, motor current limitation, and over-temperature protection for the motor and electronics.
- **Rugged Construction & IP54 Rating:** Durable die-cast aluminum housing for the electronics and IP54 moisture/dust protection ensure consistent operation in demanding industrial environments.
- **Global Voltage Adaptability:** Designed to operate flawlessly within a nominal AC voltage range of 200 to 240 VAC (50/60Hz), making it highly adaptable for international power grids, etc.

2. Technical Specifications Model R3G190-RC05-03 Type EC centrifugal fan - RadiCal® (backward curved, single inlet) Nominal Voltage 230 VAC Voltage Range 200 ... 240 VAC (50/60 Hz) Speed 3200 RPM (Nominal max load) / up to 3530 RPM (Free air) Power Input 83.0 W Maximum Air Flow 735 m³/h (at 0 Pa / Free air) Current Draw 0.75 A Operating Temperature -25 °C to +60 °C Dimensions 190 mm (Size) Weight 1.1 kg 3. Materials, Structure & Installation

The R3G190-RC05-03 is constructed utilizing durable composite and metallic materials to guarantee consistent structural integrity over years of continuous use.

- **Electronics Housing Material:** Die-cast aluminum for optimal heat dissipation and structural protection.
- **Impeller Material:** PA plastic, featuring 7 aerodynamically optimized blades.
- **Rotor Surface:** Thick layer passivated for enhanced durability and corrosion resistance.
- **Direction of Rotation:** Clockwise, viewed toward the rotor.

- **Installation Position:** Any orientation, featuring an open rotor design with no condensation discharge holes.
- **Electrical Connection:** Configured with variable cable exits for direct system integration, etc.

4. Life Expectancy & Approvals

Insulation & Protection:

- Insulation class "B", providing robust thermal stability for internal motor windings.
- Features an IP54 degree of protection, ensuring high-level safety against dust ingress and splashed water.
- Equipped with high-performance motor ball bearings engineered for S1 (continuous) operation mode.

The unit complies with major global industrial safety standards, carrying CCC, EAC, and CE (EN 60335-1) approvals. It also meets strict EMC guidelines for interference immunity (EN 61000-6-2), harmonics (EN 61000-3-2/3), and interference emission (EN 55022 Class B), etc.

5. Typical Applications

Thanks to its energy-efficient AC-driven EC motor and high-pressure backward-curved design, the R3G190-RC05-03 is perfectly adapted for the following high-demand deployments, among others:

- **Cleanrooms and Filter Units:** Provides the necessary static pressure to push air efficiently through dense filters.
- **Data Centers & Server Racks:** Ideal for specialized cooling modules requiring continuous, speed-controlled airflow.
- **HVAC & Air Handling Units:** Integrates seamlessly into residential and commercial ventilation systems prioritizing high efficiency.
- **Renewable Energy Infrastructure:** Cooling solutions for solar inverter housings and power electronics.
- **Industrial Automation Machinery:** Essential ventilation for continuous-duty motor drives, control cabinets, production line control units, etc.

R3G190-RC05-03 ebmpapst AC 3200RPM 520m3/h 200~240V 50/60Hz centrifugal compact fan

Technical Specifications

Attribute	Value
Part Number	R3G190-RC05-03
Manufacturer	ebm-papst
Cooling Type	Centrifugal Fan

Fan Size	Ø 190 mm
Fan Speed Range	2,000 – 4,500 RPM
Voltage Rated	230 VAC

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