EC MOTORS
Magnet free IE5 motors

Production in Europe



EC motors utilizing synchronous reluctance technology represent a shift in fan application, boasting unparalleled efficiency and reliability. By eliminating the need for magnets and delivering superior thermal performance, they ensure consistent operation even in the most demanding conditions.

Simplified maintenance, user-friendly design, a wide operating temperature range, and integrated control capabilities position them as a forward looking, high-performance solution for HVAC.

KONČAR
MOTORS AND ELECTRICAL SYSTEMS

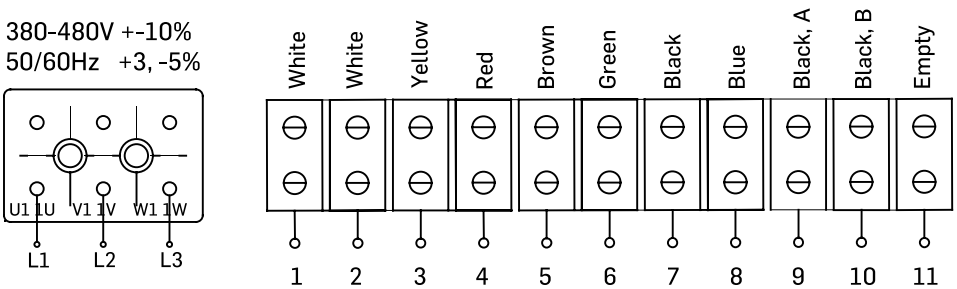
BENEFITS:

- **SUPPLY CHAIN RESILIENCE**
  – production in Europe, no permanent magnets
- **IE5** class **EFFICIENCY**
- **LOW NOISE** due high switching frequency drive
- More then 40 000 hours in operation, **ZERO MAINTENANCE**
- **USER-FRIENDLY DESIGN**
- **EASY MOUNTING AND CABLE CONNECTION**
- **WIDE OPERATING TEMPERATURE RANGE**
- **SUPPLY CHAIN RESILIENCE**
- **ENVIRONMENTAL SUSTAINABILITY**
- **PROTECTION AGAINST DUST AND WATER**

Motor type	5EC 63-132 as per IEC 60034 Synchronous reluctance technology without permanent magnets. Compact design with mounted frequency inverter on non-drive end motor side.
Application	Axial and backcurved centrifugal fans
Electrical features	
Shaft power	0.2-5.5kW S1/S9 – continuous operation
Motor cooling	IC418 (10.8m3/s air flow)
Voltage and frequency	3x380-460V 50/60Hz for P2>1.5kW 1x210-250V 50/60Hz for P2<1.5kW
Frequency/speed adjustment	100-1500rpm (up to 4200rpm in special application)
Efficiency class	IE5 as per IEC 60034-2-3
Insulation class	Cl. F – Rise in B as for heat class IVIC C/C as or voltage class as per IEC 60034-18-41
Thermal protection	Frequency inverter overload and overtemperature protection
Ambient temperature	-30/+40°C, down to -50°C (with heaters) and up to +55°C
Control functions	MODBUS, Analog 0-10Vdc
Connection	Via terminal board and terminal blocks, Or via Phoenix M12 connectors for “plug and play” easy connections.
Mechanical features	
Motor design	Compact housing, bearing shield and frequency inverter housing made from aluminum
Mounting aarrangments	B30 regulary for fan motor support mounting B3 (with foot) and B5/B14 (flange type) as variant According to IEC 60072-1
Mechanical protection	IP66
Anti corrosion protection	C3-m up to C5-vh
Bearings	SKF E2 high efficiency type, more then 40 000 hours in operation, “Zero” maintenance.

Synchronous reluctance motors offer optimal performance with minimal energy consumption, leading to significant cost savings and reduced environmental impact. These motors exhibit superior thermal performance, ensuring consistent operation even in demanding conditions and minimizing the risk of downtime. With a streamlined design and absence of magnets, maintenance tasks, such as bearing replacement, are easier to perform, reducing downtime and associated costs. Regular maintenance can be performed in any electric motor workshop or by onsite maintenance department. Easy mechanical mounting and electrical connection at user application, simplifies installation and reduces time and cost. Integrated electronic drive provide precise control over speed, allowing optimized energy efficiency and adaptability to varying cooling demands.

CONNECTION DIAGRAMS



1-2 - Status relay
3 - 24VDC output
4 - 10VDC output
5 - Digital input 1 - START/STOP
6 - Analog input 0-10V
7 - Digital input 2
Emergency max airflow
8 - GND
9 - MODBUS RTU A
10 - MODBUS RTU B
11 - Insulated terminal
For MODBUS cable shield

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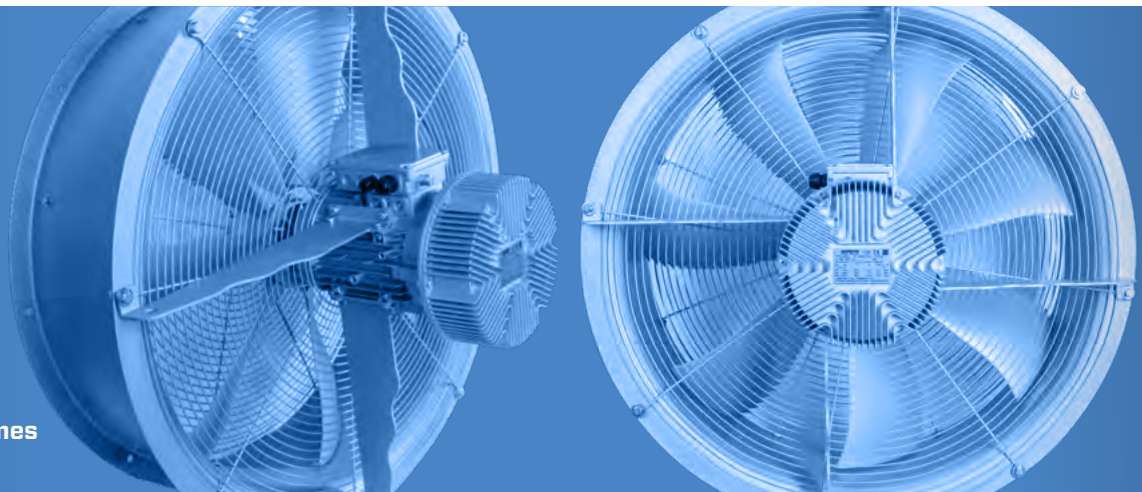

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