

PowerFlex 6000 Medium Voltage AC Drives Packaged in Type 3R / IP54 Enclosures

Simple. Connected. Easy to Use and Install.

PowerFlex 6000 Medium Voltage Drives packaged in Type 3R / IP54 enclosures are designed and built specifically for outdoor or remote installations to eliminate the need for a control room.

Features and Benefits

- Type 3R or IP54 rated enclosure, provides protections against rain, sleet, snow, ice, dirt
- Can support a wide range of ambient temperature ratings: -40°C (-40°F) to +50°C (122°F)
- Choice of open loop, forced-air cooling or optional closed loop air-to-air heat exchanger solutions to suit the application
- PLC-controlled automatic enclosure ventilation system, which optimizes cooling system operation in order to help reduce operating costs
- Complete easy-to-install package that does not require special foundations, roofing or shielding
- Three cables in, three cables out



Type 3R / IP54 enclosure packaged PowerFlex® 6000 medium voltage drives are based on Rockwell PowerFlex 6000 drives technology, which are well suited for all-purpose, non-regenerative applications such as fans, pumps, compressors, mills and flat-land conveyors. They are an ideal solution for motor control applications from 150...11,000 kW (200...14,600 Hp), voltage rated 2.3...11 kV.

Air-cooled PowerFlex 6000 drives are designed to maximize energy efficiency by enabling soft-starting and variable-speed control in normal duty and heavy duty applications.

PowerFlex 6000 Type 3R or IP54 rated enclosures are designed for outdoor environments with the following features:

- Protection against falling rain, snow, sleet, dirt and external ice formation
- Minimum 2.5mm-thick galvanized steel sheet panel walls, roofs, with thick mineral wool internal insulation
- Outward-opening, commercial metal building grade doors
- Removable rear panels to facilitate equipment maintenance
- Easily mounts on the ground directly with leveled gravel and rig mats, eliminating the need for concrete pads or other special mounting provision (if specified or required)
- Choice of Non-Walk-In or Walk-In enclosure

Designed for Dependable Operation

Air entering the enclosure shall be clean without significant concentrations of sand, explosive gas, corrosive or conductive dusts or other contaminants as defined in IEC 61800-5 as a Pollution Degree 2 environment.

In order to address the particular environment, site installation and maintenance management conditions, two enclosure ventilation options are available: an **open loop forced-air system** or a **closed loop system with air-to-air heat exchanger**.

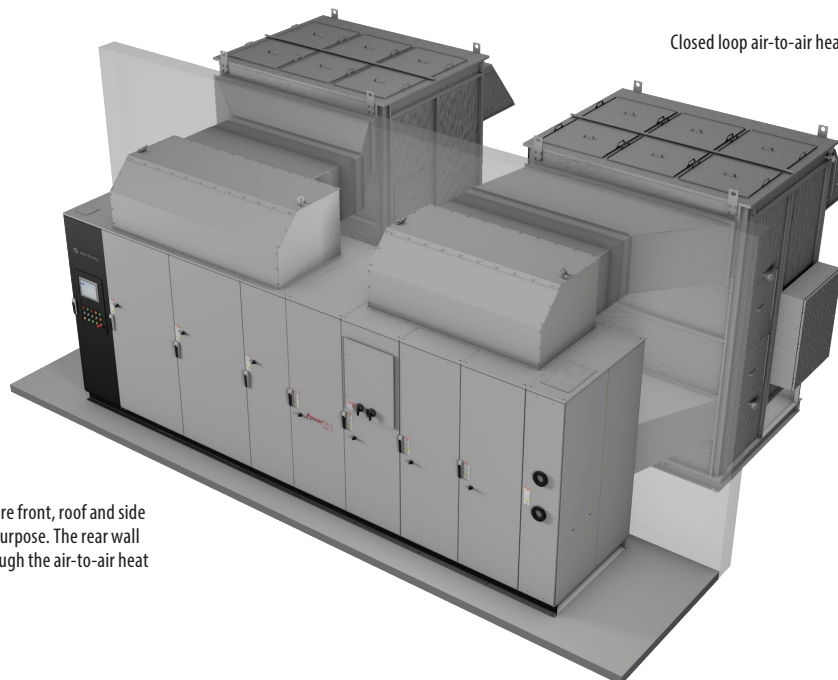
For the open loop forced-air solution, the enclosure design has inlet vents in the front, partition barrier inside enclosure to separate cool and warm air streams, and outlet vents at the back. Motorized damper systems on the partition barrier, inlet and outlet vents (if equipped), and enclosure space heaters are PLC controlled to open/close based on programmed enclosure temperature thresholds

Open loop forced-air solution



For the closed loop solution, depending on the drive rating and applicable heat-loss, one or two heat exchangers will be used. Heat exchangers can be attached to either end or at the back of the enclosure. If necessary, a motorized damper system on the partition barrier, and an electric heater will be included, supervised and controlled by the cooling system PLC. This allows the PowerFlex 6000 drive to provide pre-heating to the inlet air in cold conditions





Closed loop air-to-air heat exchanger solution



Type 3R / IP54 non-walk-in enclosure front, roof and side walls are removed for illustration purpose. The rear wall is shown as transparent to see through the air-to-air heat exchanger.

Technical Specifications

Input	
Input Voltage Rating	2.4kV...13.8kV (For other input voltage ratings, contact your local sales representative or factory)
Input Voltage Tolerance	±10% of Nominal
Input Frequency	50/60 Hz, ±5%
Output	
Output Voltage	2.3...11kV
Output Current Rating	Up to 680A
Output Frequency Range	1...75 Hz
Motor Type	Induction (asynchronous) motors
Enclosure Construction	
Enclosure Rating	Outdoor, Type 3R / IP54 (For other ratings, contact your local sales representative or factory)
Cable Entry	Back/Side/Top/Bottom for line/load cables
Cooling Type	Open loop forced-air cooling, Closed loop air-to-air heat exchanger
Enclosure Lifting	Provision for lifting from below or overhead
Enclosure Mounting	Directly on the ground with leveled gravel and rig mats (if required or specified)
Environmental Conditions	
Ambient Temperature	-40°C ... +50°C (-40°F ... 122 °F) (derating apply above +40°C)
Altitude	0...1000 m (0...3280 ft) (standard) 1001...5000 m (3284...16404 ft) (contact factory)
Relative Humidity, Max	95% noncondensing
Standards and Certifications	
Standards	UL, NEMA, CSA, IEC, CE

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