

# High-performing drives for regenerative load applications



The Eaton RGX is specifically designed to meet regenerative and low harmonic needs through the use of an active, bidirectional power converter on the front end of a common DC bus drive. The RGX provides dynamic performance for great motor handling, eliminating the need for an external resistor or mechanical braking, thus simplifying system design. It also delivers superior reliability, reducing total current distortion to 2–3%. The active front end design offers great energy savings and design compatibility for a wide range of applications.

## Advantages

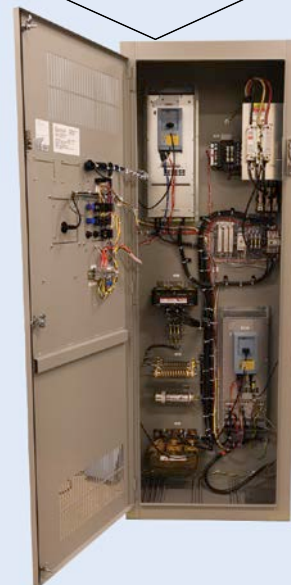
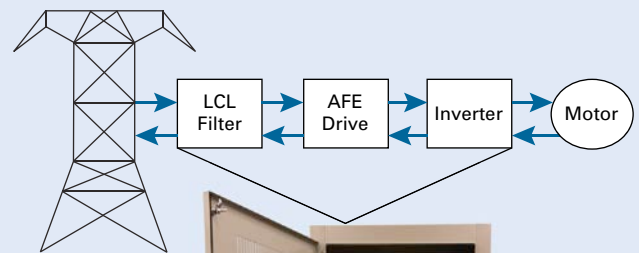
- Significant energy savings over mechanical and resistor braking methods
- IEEE® 519 compliant line harmonics of 2–3% THD
- Regenerative power flow
- Immune to voltage imbalance
- Improved power factor
- Voltage sag ride-through capabilities

## Applications

- Belt conveyor
- Ball mill
- Extruder
- Centrifugal pump
- Center driver winder
- Test stand
- Cyclic loads

## Power flow diagram and components

- Power flows from the utility through the LCL (inductor–capacitor–inductor) filter, active-front end IGBT bridge, and component inverter to the motor
- IGBT bridge components allow bidirectional current conversion and flow for power regeneration needs
- The active rectifier draws linear current off of the line, reducing peak currents on the input and reducing THD to 2–3%
- During regeneration, the LCL filter corrects the voltage waveform to return clean power back to the utility



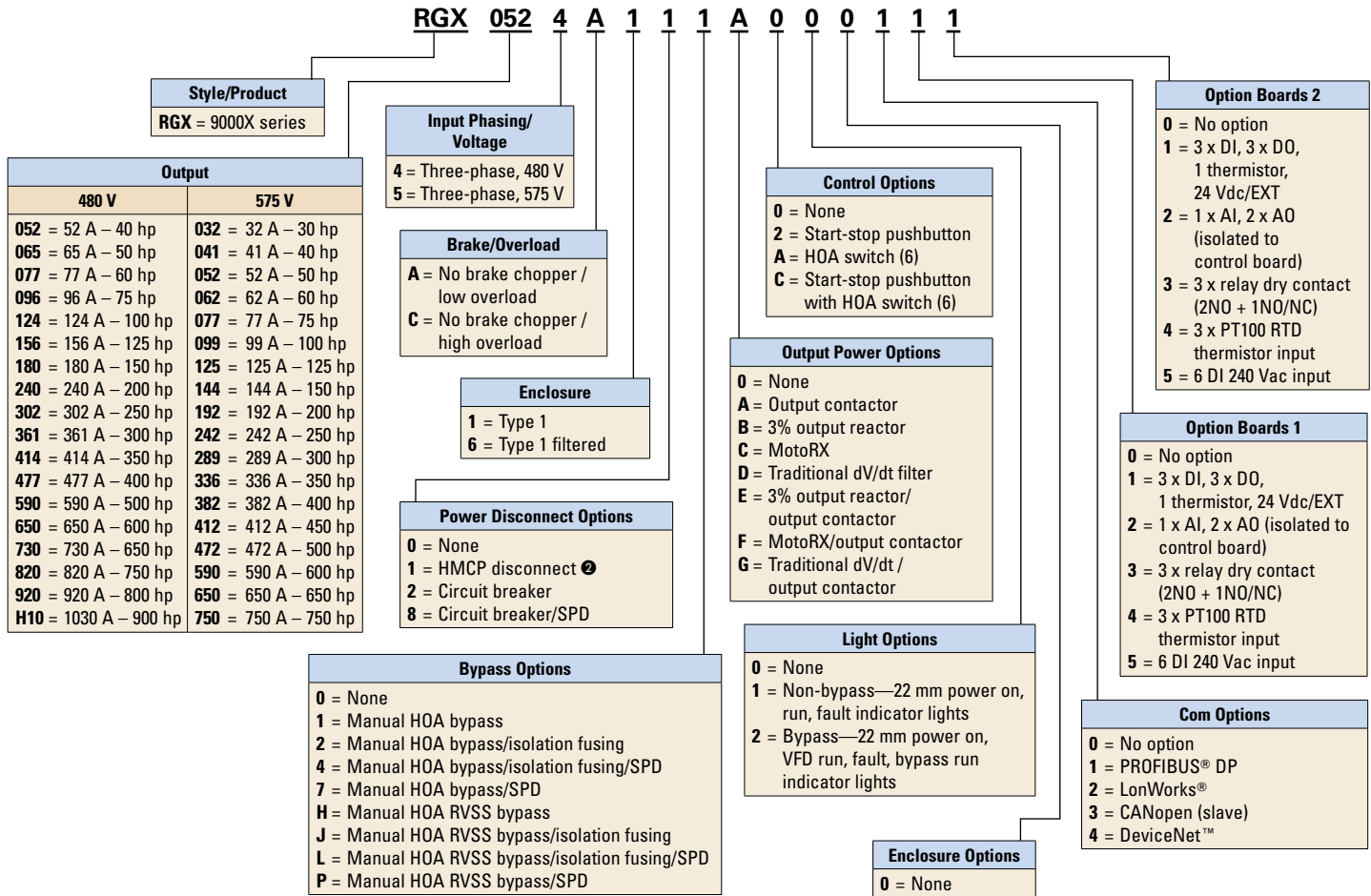
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## Specifications

Description	Specification
<b>Input Ratings</b>	
Input voltage (Vin)	380–500 Vac / 525–690 Vac ±10%
Input frequency (fi n)	48–63 Hz
Short-circuit withstand rating	100 kAIC
Connection to power	Once per minute or less (typical operation)
<b>Output Ratings</b>	
Output voltage	1.35 x Vin
Continuous output current	I <sub>H</sub> : Ambient temperature +50 °C; overloadability 1.5 x I <sub>H</sub> I <sub>L</sub> : Ambient temperature +40 °C; overloadability 1.1 x I <sub>L</sub>
Initial output current (I <sub>H</sub> )	250% for 2 seconds
Output frequency	0–320 Hz
Frequency resolution	0.01 Hz

Description	Specification
<b>Product Range</b>	
40–900 hp (above, consult factory)	480 V line voltage
30–750 hp (above, consult factory)	575 V line voltage
<b>Ambient Operating Conditions</b>	
Ambient operating temperature	–10 to +40 °C: I <sub>L</sub> ; –10 to +50 °C: I <sub>H</sub>
Storage temperature	–40 to +70 °C
Relative humidity	0–95% RH, noncondensing, non-corrosive
Air quality	Chemical: IEC 721-3-3, Class 3C2 Mechanical: IEC 7210303, Class 3S2
Altitude vibration	5–150 Hz
Enclosure class	FR4–FR7 NEMA® Type 1/IP21; FR8, FI9–FI14 chassis (IP00)

## Catalog numbering system ①



① Catalog number selection is for illustrative purposes only and not to be used to create new catalog numbers.

② HMCP disconnect is standard when bypass is selected.

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