



## High Performance Line Regeneration

### RC5 Converter, 5 - 100 HP

The **RC5 Converter** is a high performance line regeneration unit for adjustable speed applications that include a high demand braking cycle. The RC5 is an excellent, competitive solution that takes excess regenerative energy from the driven motor and supplies it to the incoming AC power source. The RC5 is wired in parallel with the adjustable frequency drive and can be independently sized to suit the projected regenerative load. The RC5 is applicable to Yaskawa's drive families, including the F, G, P, and V series. Typical applications for the RC5 include:

- The stopping of high inertia loads such as centrifuges, presses, saws, large fans, and winders.
- The stopping of high duty cycle loads such as machine tool spindles.
- The running of eccentric loads such as punch and stamping presses, industrial dryers, and vibratory equipment.
- The holding back of loads such as downhill conveyors, unwinders and other web converting applications.

In these types of applications, the RC5 is cost competitive, especially when energy savings is considered. When resistors are used, the regenerated energy is dissipated as heat and therefore wasted. The RC5 returns the regenerated energy back to the power grid thus lowering the total energy consumption. Payback for high duty cycle applications is typically less than a year with the RC5.

The RC5 solution is perfect for dusty, wet, or volatile environments. Unlike braking resistors which have excessive heat generation and large footprints, the RC5 can be mounted inside the panel with the drive.

The RC5 is pre-engineered for standard and heavy duty cycle ratings. Additional configurations are available. Consult the factory.

#### Standard Duty

This rating is designed for applications requiring frequent stopping and starting. The standard duty rating is sized for applications requiring Continuous Energy Dissipation (80% or less braking torque), and Frequent Stopping (100% braking torque at a 25% duty cycle with 60 seconds maximum on-time).

#### Heavy Duty

This rating is designed for demanding "hold-back" type applications, such as unwinders or downhill conveyors. The heavy-duty rating is sized for applications requiring Continuous Energy Dissipation (100% regenerative torque).

## Performance Features

- Standard Duty Ratings:
  - 5 to 50HP, 230 VAC,
  - 5 to 100HP, 460 VAC
- Heavy Duty Ratings:
  - 3 to 40HP, 230 VAC,
  - 3 to 75HP, 460 VAC
- Power Factor: 0.9 or greater
- Control Method: 120° current conduction
- Overload: 150% for 30 seconds, 200% peak

## Design Features

- Keypad display:
  - LCD English 2 lines x 16 characters
- Control logic: 24VDC (sinking or sourcing)
- Optically Isolated controls
- Certifications: UL, cUL and CE
- MBTF: Exceeds 28 years

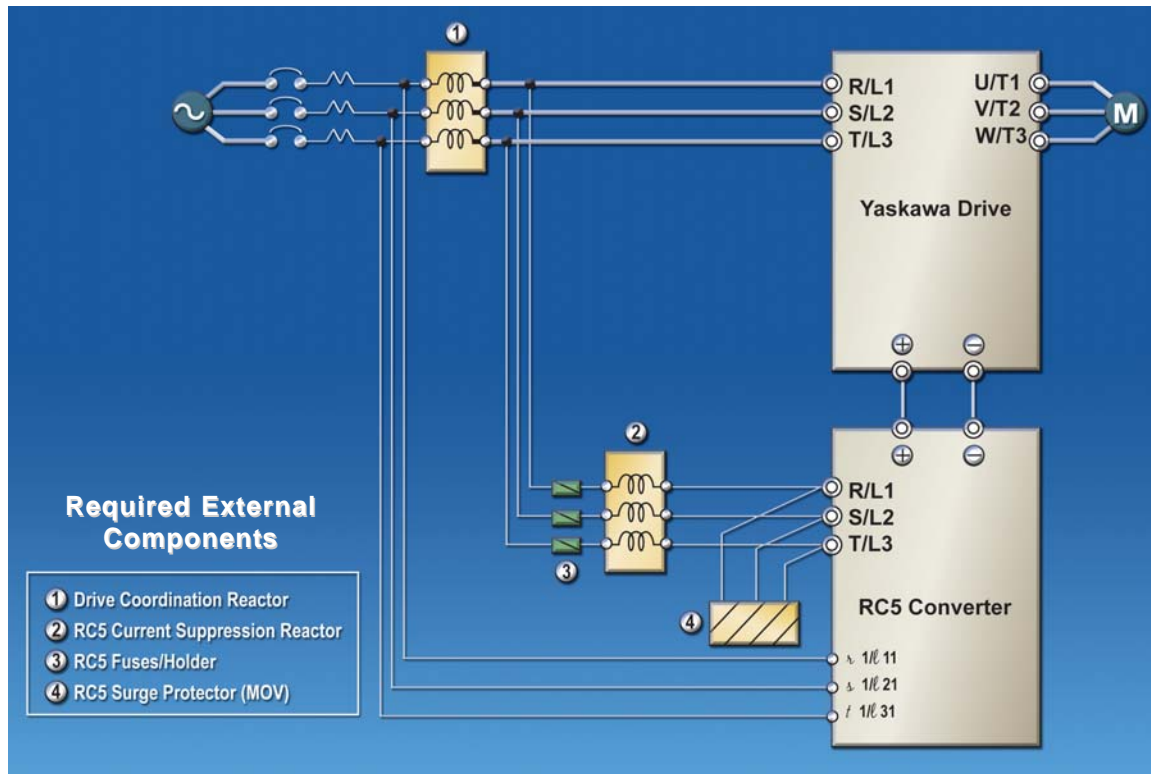
## Protective Features

- DC bus charge indicator (LED)
- Overcurrent
- Overvoltage
- Undervoltage
- Overtemperature
- Input phase loss
- Input frequency fluctuation

## Service Conditions

- Input voltage:
  - 200-230VAC, 380-460VAC
  - 3-phase, +10% / -15%
  - (2% or less phase imbalance)
- Input frequency: 50/60Hz ± 3Hz
- Ambient service temperatures:
  - 10 to 40°C (104°F) NEMA-1,
  - 10 to 45°C (113°F) protected chassis

## Typical RC5 Connection Diagram



## Other Industrial Drives



G7 Drive Ultimate Performance Solution 3 level Inverter, 1/8 - 500 HP. *Flyer FL.G7.01*



F7 Drive Industrial Workhorse, Normal and Heavy Duty, 1/2 - 500 HP. *Flyer FL.F7.01*



P7 Drive Industrial Fan/Pump, V/f, Normal Duty, 5 - 500 HP. *Flyer FL.P7.01*



V7 Drive General Purpose, V/Hz or Open Loop Vector, 1/8 - 10 HP. *Flyer FL.V7.01*



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