

Definite Purpose Controls

Q&A

GENERAL

Q. What are DP contactors?

- A. Definite purpose (DP) contactors are application-specific contactors used in OEM businesses (such as HVAC) for such light-duty applications as hermetic compressors, farm equipment, air compressors and center pivot irrigation.. The major differences between DP and NEMA or IEC contactors are that DP's are designed to have a limited life and lower locked rotor capability. Locked rotor amp ratings are 600% for 240 volts, 500% for 480 volts and 400% for 600 volts.

Q. Do GE's new DP contactors meet meet the ARI 780/790?

- A. Yes. The three most significant tests performed for meeting ARI 780/790 are shown below.

Test	Description	ARI 780/790 Requirement
Mechanical Life	Mechanical cycling of a contactor's moving parts (springs, shorting bars, armature) without any electrical load	500,000 cycles
Endurance Life	Contactors ability to make, at locked rotor amperage (LRA) and break at 125% of full load current – on for 1 second (1/4 second LRA, 3/4 second 125% full load), off for 9 seconds	200,000 cycles
Recycle Life	Contactors ability to make and break LRA (a stringent test, as LRAs are approximately 6 times full load amps [FLA] in normal applications – 1 second on, 19 seconds off	10,000 cycles

CR453A 3-POLE CONTACTORS

Q. What changes is GE making to its CR453A DP contactors and why?

- A. GE has led this market for many years, but recognized the need for product improvements. The most important features are smaller size and lower coil inrush currents. Other changes include:
- DIN rail mounting
 - snap-together assembly, *including auxiliary contacts*
 - use of front and side accessories at 600 volts
 - lower costs
 - global approvals.
- The redesigned devices meet UL Component Recognized, CSA, ARI 780, CE and IP20 finger-safe standards and approvals, and they are horsepower rated.

Q. What specific products reflect these changes?

- A. Two- and three-pole contactors, starters and two-speed units from 25-40 amps have been completely redesigned. But 50-60A 3-pole devices and 25-40A 4-pole devices are unchanged and retain the CR353 catalog number. (When in need of 4-pole units above 40 amps, consider C-2000 devices.)
- All 25-40A CR354 starters are being replaced by CR454 starters that use RT1 overloads from the C-2000 line. These overloads eliminate heaters, provide differential and Class 20 protection (at overload amp ranges above 2.5A), and enhance mounting flexibility.

Q. Can you explain the nature and purpose of the *no-burn* coils featured in the new DPs?

- A. In situations – such as brownouts – where the voltage dips too low to close the contactor, these coils will not burn out, as might otherwise happen. It's a self-protective feature that's very important in areas plagued by potential power shortages.

Q. What is meant by the DPs' *pokayoke* assembly?

- A. *Pokayoke* is a Japanese term for an assembly – such as on the CR453A – in which the parts are keyed in a way that makes it impossible to put them together incorrectly. This makes for easy, foolproof assembly.

Q. Is GE discontinuing CR353 products for which there are corresponding new CR453 devices?

- A. Yes. New products should be specified for new and redesigned applications, and GE will provide engineering and application assistance to do that. We will continue to offer the entire CR353 line during a transition period, but will phase out devices that have been replaced as time goes on. We will still offer a small variety of CR353s for customers with special requirements.

CR453A 3-POLE CONTACTORS (cont.)

Q. Can customers use C-2000 line accessories with the new CR453A DPs?

- A. Yes. The front- and side-mounted aux contact blocks, mechanical interlock, overload relays (and remote resets) used with the new line are the same as those for the C-2000 line. GE chose not to renumber these products so that it would be easier for customers to make field modifications on devices when necessary. The similarity of products reduces inventory, and this interchangeability provides another reason to convert to the CR453A line.

Q. What advantages are there to CR455 two-speed contactors?

- A. The use of the C-2000's BEL02 mechanical interlock allows assembly of CR455 two-speed units in the field as well as at the factory. The metal arms, pins, levers and auxiliary contact limitations are gone, along with the space they used to take up. Simply select the contactor, add the interlock with built-in auxiliaries, add a wiring kit (if desired), and you're done.

Q. How do I know what new product to buy?

- A. A cross-reference (DEC-062) from old GE catalog numbers and competitive products to the new line is available to simplify the transition. The catalog (DET-264) demonstrates catalog number construction. Selection is simple, pricing is very competitive, and the features and functions are the best in the industry.

CR453C 1- & 2-POLE CONTACTORS

Q. Why change from the current 1- and 2-pole compact CR353C?

- A. The CR353C has been a good performer for GE over the years but has become non-competitive in the marketplace. Customers are demanding better performance and lower cost. The CR453C is designed to put GE in a much better competitive position.

Q. Can I be price competitive?

- A. Over the past several years, GE has turned down business opportunities because the market prices were lower than GE's cost. The new CR453C creates an opportunity for GE to reverse this trend and allow for growth of market share.

Q. What is the best application for the single pole with shunt?

- A. The single pole with shunt is used on single-phase applications where only one side of the line is interrupted. The shunt serves as a convenient termination point for the other side of the line.

Q. What are the advantages of the CR453C over the competition?

- A. The difference is in the performance. Some of GE's competitors have a published life of only 100,000 operations vs. 200,000, and they do not meet the 6x, 5x, 4x locked rotor ratings.

Q. What are the disadvantages of the CR453C over the competition?

- A. At product introduction, GE will not be offering coils for the 300-600 volt range. In the past these applications were very infrequent. Several competitors do offer coils in this range; if the marketplace demands higher voltage coils, then arrangements will be made to meet the demand.