



QUALITY PARTS AND UNITS FOR THE REBUILDER

The Rotating Electrical Experts

Computer Controlled Starters: *Smart Start* GM 2001 & Up

Smart Start®

Starter failures due to operator error, particularly in Heavy Duty and Industrial applications where the noise levels are high and other distractions exist, has traditionally been a big source of damage to the units. When the starter stays engaged long enough to get destroyed or rapid re-engagement with a still spinning flywheel tears up the drive and DE housing, it is very hard to prove who is at fault and what has caused it.

However, there has been a major change in the automotive field where the PCM takes control of the starting system and crank duration away from the driver. The Heavy Duty field seems to have been stuck with traditional operator activated, switches, push buttons and relays.

To overcome this deficiency and modernize this old system, a new technology has been introduced to the market. "Smart Start"® (see *Illustration 1*) was first introduced to 2007 APRA Electrical Clinic attendees last October by Bruce Purkey, APRA's distinguished expert and instructor on Heavy Duty rotating electrical systems.

The system simply is an interconnect in line with the traditional system. It uses a programmable module that connects it to the vehicles starting circuit, but with a lot of features of its own.

Some of the main features of this device are:

- It prevents rapid re-engagement by applying a five second delay between each start
- Starter lockout which does not allow cranking when the engine is running
- Low voltage starter lock-out which does not allow cranking with low battery
- A 15-second timed-starter which restricts the durations of the crank cycle
- Engagement monitor assures the drive has cleared the tooth abutment, otherwise will disconnect to prevent solenoid burn-ups from high current
- Start counter shows number of the start cycles for vendors whose warranties are based on starting numbers and not necessarily the time
- Self-diagnostic---various LED's show internal damage to module, low and high voltage abnormalities.

-Contributed by Mohammed Samii, "Global Connection", January 2008, and AIM Product Engineer, George West



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POWER IN MOTION

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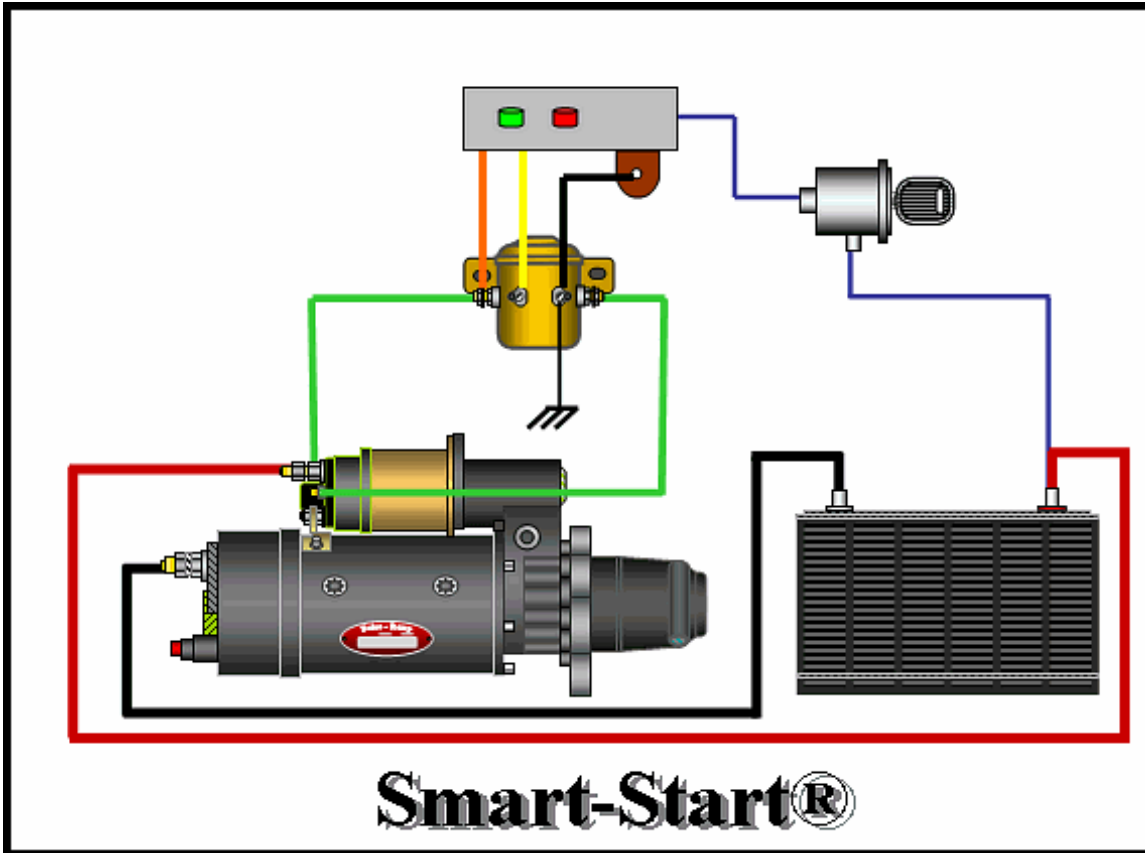


Illustration 1