

Dual Rectifier Part Numbering Guide

$$\frac{\text{DR } \underline{2} \ \underline{5} \ \underline{0} \ \underline{B} \ \underline{B} \ \underline{B} \ \underline{B} \ - \ \#}{\begin{matrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 \end{matrix}}$$

Example part is a Dual Rectifier, 250 amps, 24 volt system, All LEDS, Enabled Battery Combine Trigger, Enabled Alternator Excite Trigger (starter solenoid)

1: Unit Type

DR – Dual Rectifier

PG – Custom POWER-GATE¹

2: Maximum Continuous Current

050-300 in 50 A increments² , 400a, 500a, and 600a

3: Nominal Voltage Rating

A – 12VDC

B – 24VDC

4: LED Options

A – None, LEDS present but not active

B – All (factory default)

C – External Wires for Remote LEDS

D– Eliminated and not present on package

I – Custom

5: Battery Combine Trigger Option³

A – None

B – Enabled

6: Alternator Excitation Trigger⁴

A – None (default)

B – Enabled Switched System Trigger

C – Enabled Momentary Starter Trigger

D – Both Triggers Enabled (default on 400 to 600 amp devices)

7: Custom Order Number

4 digits for orders that have special requirements beyond those listed above. Default is omitted and manufacturer will add these as needed.

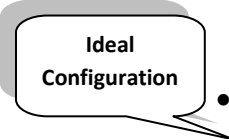
¹ Call manufacturer for more details

² POWER-GATE's can be designed to handle continuous currents larger than 600A with custom engineering.

³ Battery Combine Trigger forces the MOSFET arrays to turn-on which will combine the main and auxiliary batteries. Two green wires are added to the assembly and when the two wires are switched together, combine is active. When the connection is open, combine is disabled and default isolation takes place. Perfect Switch recommends the use of a momentary switch to insure the battery combine feature is not accidentally left on.

⁴ Alternator excitation trigger is necessary for most alternator voltage regulators to "turn-on" during the vehicle starting process. Although some external regulators do not require this trigger, all internally sensed internal voltage regulators do require excitation. When the excitation trigger is activated, first a four-second delay is observed after which the MOSFET array between the alternator (anode) and main battery (cathode) is enhanced for sixty seconds. While enhanced, cathode main battery voltage is conveyed to the alternator anode post which then allows the alternator's regulator to excite and start creating power. After sixty seconds, the excite circuit is disabled and normal isolation functionality resumes.

- Option A denotes no excitation trigger needed and the violet (purple) wire is not provided.
- Option B denotes an enabled excitation trigger, with the trigger source being switched system voltage meaning power is applied to the violet (purple) wire while the ignition is on and the vehicle is running, and power is removed from the trigger when the ignition is off and the vehicle is NOT running. Remember that the excitation circuit will stay energized for 60 seconds after trigger initiation, so the vehicle must be started within the first 60 seconds after trigger initiation. If the vehicle is started 5 minutes after the trigger is initiated, the vehicle will start and the alternator will spin, but the alternator will not create power as the excitation window has already opened and closed. To correct, user must key vehicle off, then restart the vehicle insuring that the vehicle is started and running within the 60 second excitation window.
- Option C denotes an enabled excitation trigger, with the trigger source being a momentary pulsed signal coming from the starter solenoid. Power is applied to the violet (purple) wire momentarily while the starter is engaged, then power is removed once the vehicle is running and the starter is no longer being cranked. This trigger is the best choice for insuring the alternator regulator excites at start-up, however in some vehicles, access to the starter solenoid may be difficult and if that's the case, the switched system trigger detailed in option B is an alternate solution.



Ideal Configuration

Contact technical support for guidance with respect to excitation trigger if necessary.