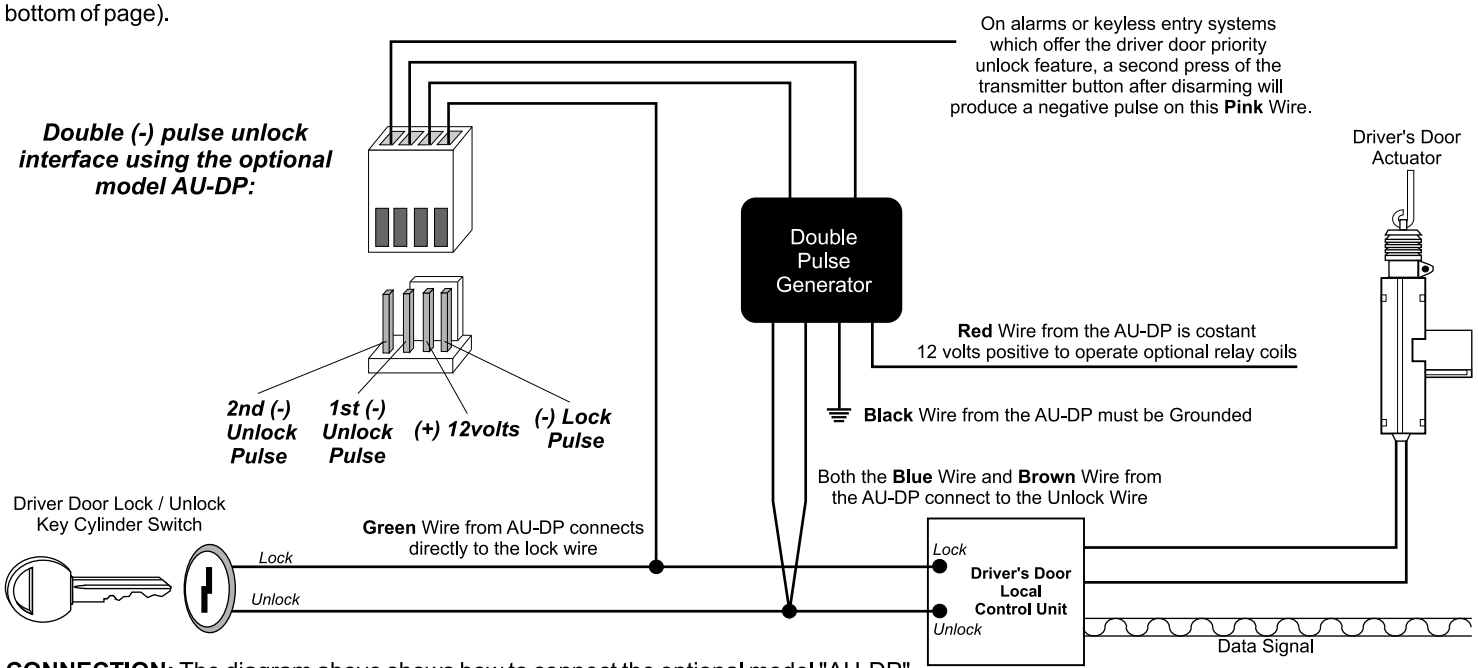
Note #214 - Double Pulse Door Lock Circuit

• Some vehicles have an In-Vehicle Multiplexing System (IVMS) which consists of a Body Control Module (BCM) and four to five Local Control Units (LCU). The Local Control Units "talk" to the Body Control Module through a pair of wires known as Data Links. Basically, a request for an electrical operation (lock doors or raise a window for instance) is made at the Local Control Unit. The LCU relays the request to the Body Control Module, and as in the case of locking doors, the BCM approves the request and instructs the LCUs to actually perform the operation. When the key is used in either front door, turning it to "lock" will lock all doors. When the key is turned to the "unlock" just once, just that door will mechanically unlock. Turning the key to "unlock" a second time within 5 seconds will electrically unlock all doors. A single negative pulse on the Lock wire leading from the Key Cylinder Switch to the Local Control Unit will lock all of the doors. A double negative pulse on the unlock wire will unlock all of the doors. Because the Key Cylinder Switch and the Local Control Unit are usually inside the driver's side door panel, the connections for the alarm or keyless entry interface may need to be made inside the driver's side door. If the alarm or keyless entry offers a double pulse unlock output, then the (-) lock and unlock outputs can be connected directly to key cylinder switch lock and unlock wires to operate the door lock system. A double pulse output can be added to the alarm or keyless entry's unlock output by using the optional model AU-DP. The AU-DP will change the single (-) output of the alarm or keyless entry to a double (-) pulse. If the alarm or keyless entry offers the driver door priority unlock feature, then the (-) lock and unlock outputs can be interfaced, with a relay and a couple of diodes to operate the driver door priority unlock feature (diagram at bottom of page).

Double (-) pulse unlock interface using the optional model AU-DP:



CONNECTION: The diagram above shows how to connect the optional model "AU-DP" to a Double Pulse type door lock system. The "AU-DP" is a pre-wired harness with a double pulse generator, which is an electronic circuit that changes a single (-) pulse to a double (-) pulse.

For Alarms or Keyless Entry units which offer a driver door priority unlock output. (Unlock driver door first, then pressing the button again within 3 seconds will unlock all doors):