

# ***Dakota Digital***

## GSS-5000 DECODER FOR GM TRANSMISSIONS WITH PARK-NEUTRAL SWITCH AND GEAR POSITION OUTPUTS

This unit will convert a 4-wire transmission switch gear position signal into a separate 12 volt output for each gear to drive a row of lights or gear shift display and a serial output for 1-wire gear shift displays. This 4-wire switch is found on some 1996 and newer vehicles. The switch may be mounted on the side of the transmission or it may be part of the counsel shift assembly. The wiring terminal description is as follows:

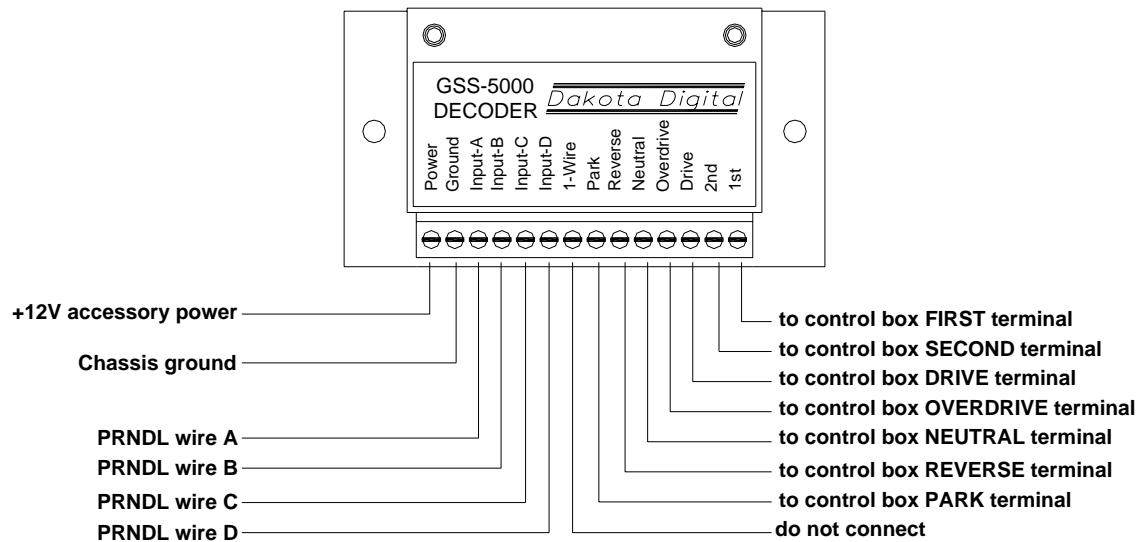
PWR	12 volt accessory power
GND	chassis ground
IN-A	gear signal A (BLACK/WHITE wire from park-neutral switch)
IN-B	gear signal B (YELLOW wire from park-neutral switch)
IN-C	gear signal C (GRAY wire from park-neutral switch)
IN-D	gear signal D (WHITE wire from park-neutral switch)
1-WIRE	1-wire output for VFD-3, VFD-3X, ODYR-01-1, or ODYR-02-1
PARK	park output
REV	reverse output
NTRL	neutral output
O.D.	overdrive output
DRIVE	drive output
2 <sup>ND</sup>	second output
1 <sup>ST</sup>	first output

Here is the truth table for the transmission switch outputs. The transmission outputs switch to ground. This can be used to determine which contact should connect to each signal input on the decoder if the transmission harness is missing or damaged. If the transmission switch needs to be adjusted, consult the vehicle service manual.

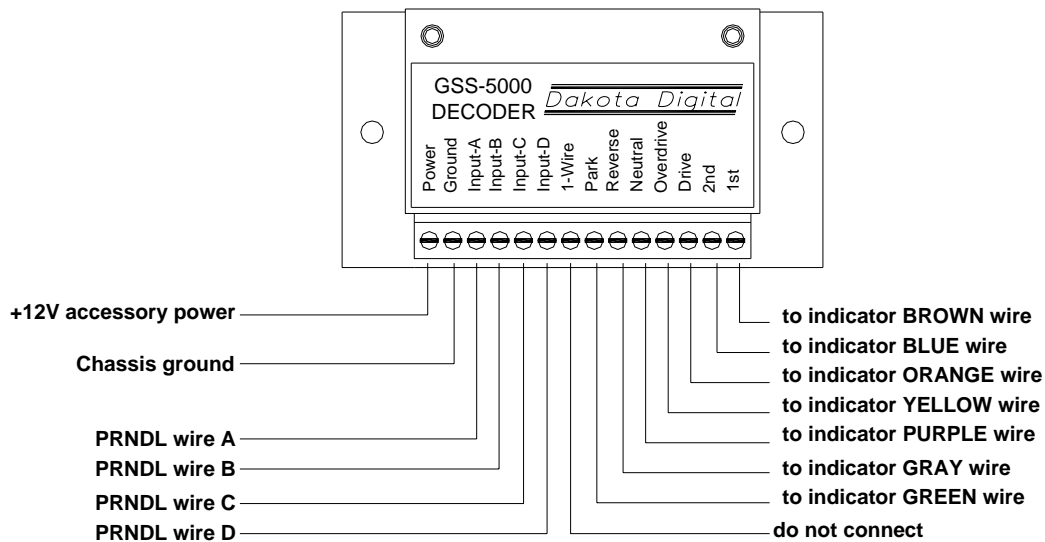
	Park	Rev.	Ntrl.	O.D.	Drive	2 <sup>nd</sup>	1 <sup>st</sup>
Signal A	GND	GND	Open	Open	GND	GND	Open
Signal B	Open	GND	GND	GND	GND	Open	Open
Signal C	Open	Open	Open	GND	GND	GND	GND
Signal D	GND	Open	GND	Open	GND	Open	GND

## CONNECTING TO THE GEAR SHIFT DISPLAY

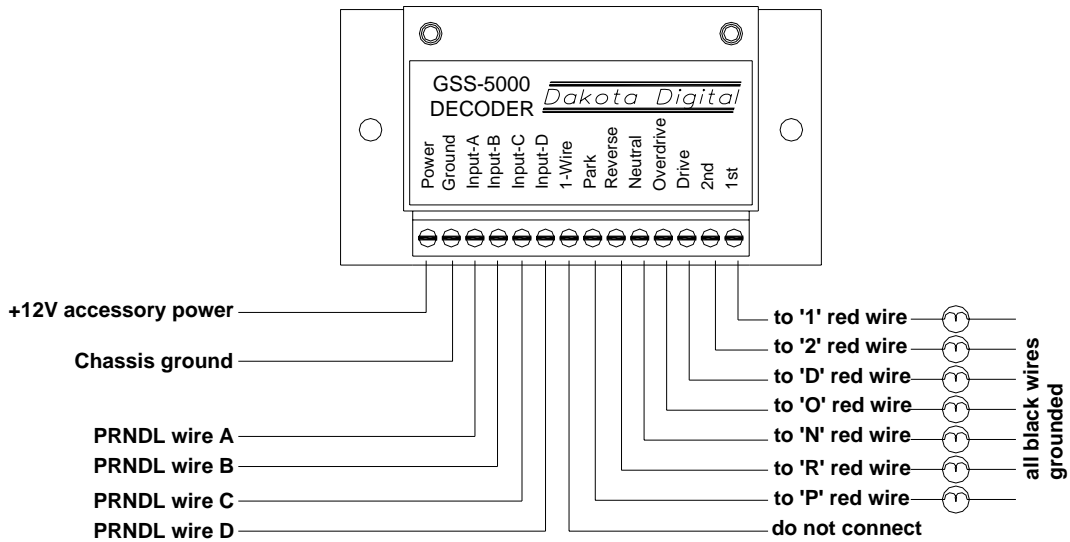
Gear shift displays are not included with the GSS-5000, but it will interface with all of the standard display systems available. Each gear output will provide 12 volts at up to 0.3 amperes. This is enough current capacity for any LED indicator or low power incandescent bulbs. When individual lights are used for each gear, connect the negative wire to ground and the positive wire to the appropriate gear output terminal on the decoder. When using Dakota Digital's Digital Gear Shift Indicator connect the wires to the decoder according to the instructions provided with the indicator. The GSS-5000 will also work with any Dakota Digital vacuum florescent display system. Connect wire jumpers between the decoder and the display system control box.



### Wiring GSS-5000 to Dakota Digital VFD instrumentation system (STR systems)



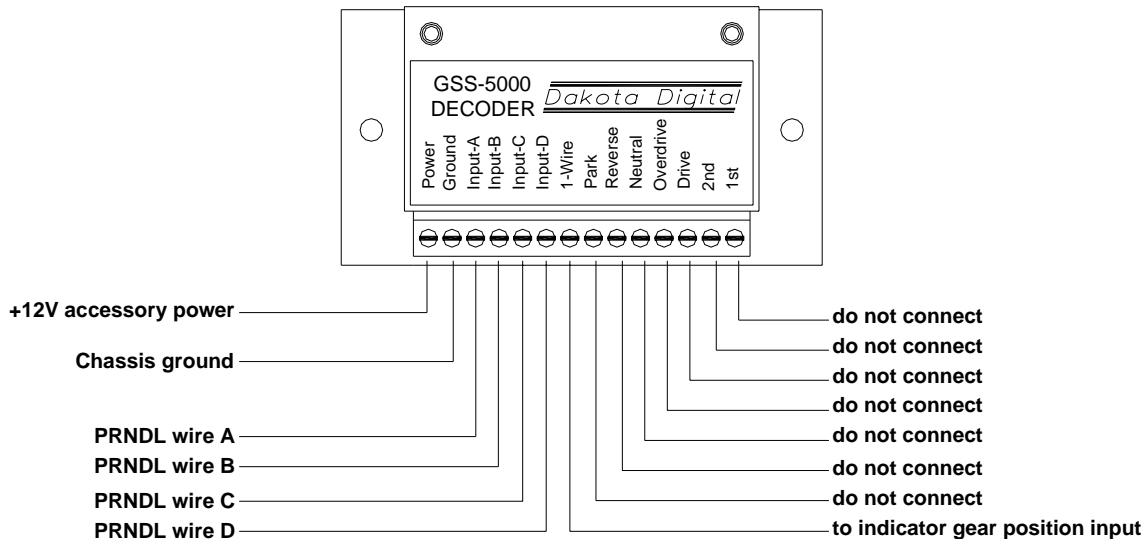
### Wiring GSS-5000 to Dakota Digital individual gear shift indicator (DGS-1 or DGS-2)



Wiring GSS-5000 to individual lights (GSS-5002 or GSS-5003)

### CONNECTING TO SINGLE-WIRE DISPLAYS

The VFD-3 and VFD-3X series III gauge systems have a single gear input terminal. The ODYR-01-1 and ODYR-02-1 gauges have a brown wire in their harness for connecting to the GSS-5000. Single-wire displays use only one wire to read the gear position from the GSS-5000 decoder instead of using six or seven wires (one for each gear position). The 1-wire terminal provides the output for this type of display. The other gear outputs will still work as well.



Wiring GSS-5000 to Dakota Digital single-wire gear shift indicator

## TROUBLE SHOOTING GUIDE

Problem	Cause	Solution
No indication on the display and no voltage on any output.	Power wire not connected.	Make sure +12 volt wire is connected.
	Ground wire not connected.	Make sure the ground wire is connected to a good ground.
Power on 1-WIRE terminal and no power on the gear outputs	Sensor is not connected.	Connect the transmission sensor wires to the decoder.
	Switch is not working.	Have the transmission switch checked by a service shop according to the GM service manual or use the truth table listed at the front of this installation guide.
Some gears are flashing, but they display correctly.	The IN-D terminal is not connected properly.	Check wiring connections.
	The transmission switch is not working.	Check transmission switch according to GM service manual.
The gears do not light up in the correct order.	Some of the wires from the switch are crossed.	Check wiring connections and verify the color code from the truth table.
	Switch is out of adjustment.	Consult GM service manual for adjustment.
Some gears are off by one.	Switch wires not connected correctly.	Make sure all wires from the sensor are connected correctly and are not shorted.
	The transmission switch is not working.	Check transmission switch according to GM service manual.
Always shows the same gear.	Some of the wires from the switch are crossed.	Check wiring connections and verify the color
	One or more wires from the switch are not connected.	Use the truth table to test what wires are not working. Replace or repair bad wires.
Some gears are flashing and do not light up correctly.	One or more wires from the switch are shorted to ground.	Use the truth table to test what wires are not working. Replace or repair bad wires.

### GSS-5000 UNIVERSAL GEAR SHIFT SENDER LIMITED LIFETIME WARRANTY

**DAKOTA DIGITAL, Inc.** (the Company) warrants to the ORIGINAL PURCHASER of this product that should the included electronic decoder or sender modules under normal use and condition, be proven defective in material or workmanship DURING THE LIFETIME OF THE CAR IN WHICH IT WAS ORIGINALLY INSTALLED, such defect(s) will be repaired or replaced (at the Company's option) without charge for parts or labor directly related to repairs of the defect(s).

To obtain repair or replacement within the terms of this Warranty, the product is to be delivered with proof of warranty coverage (e.g. dated bill of sale), specification of defect(s), transportation prepaid, to the factory. This Warranty is valid for the original purchaser only and may not be transferred.

This Warranty does not extend to damage to vehicle electrical system. This Warranty does not apply to any product or part thereof which in the opinion of the Company has been damaged through alteration, improper installation, mishandling, misuse, neglect, or accident.

This Warranty is in lieu of all other express warranties or liabilities. ANY IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, SHALL BE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. ANY ACTION FOR BREACH OF ANY WARRANTY HEREUNDER INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY MUST BE BROUGHT WITHIN A PERIOD OF 30 MONTHS FROM DATE OF ORIGINAL PURCHASE. IN NO CASE SHALL THE COMPANY BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, WHATSOEVER. No person or representative is authorized to assume for the Company any liability other than expressed herein in connection with the sale of this product.

The Company does not warrant that this product cannot be compromised or circumvented. THE EXTENT OF THE COMPANY'S LIABILITY UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT PROVIDED ABOVE AND, IN NO EVENT, SHALL THE COMPANY'S LIABILITY EXCEED THE PURCHASE PRICE PAID BY THE PURCHASER FOR THE PRODUCT.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation if incidental or consequential damage so the above limitations or exclusion may not apply to you. This Warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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