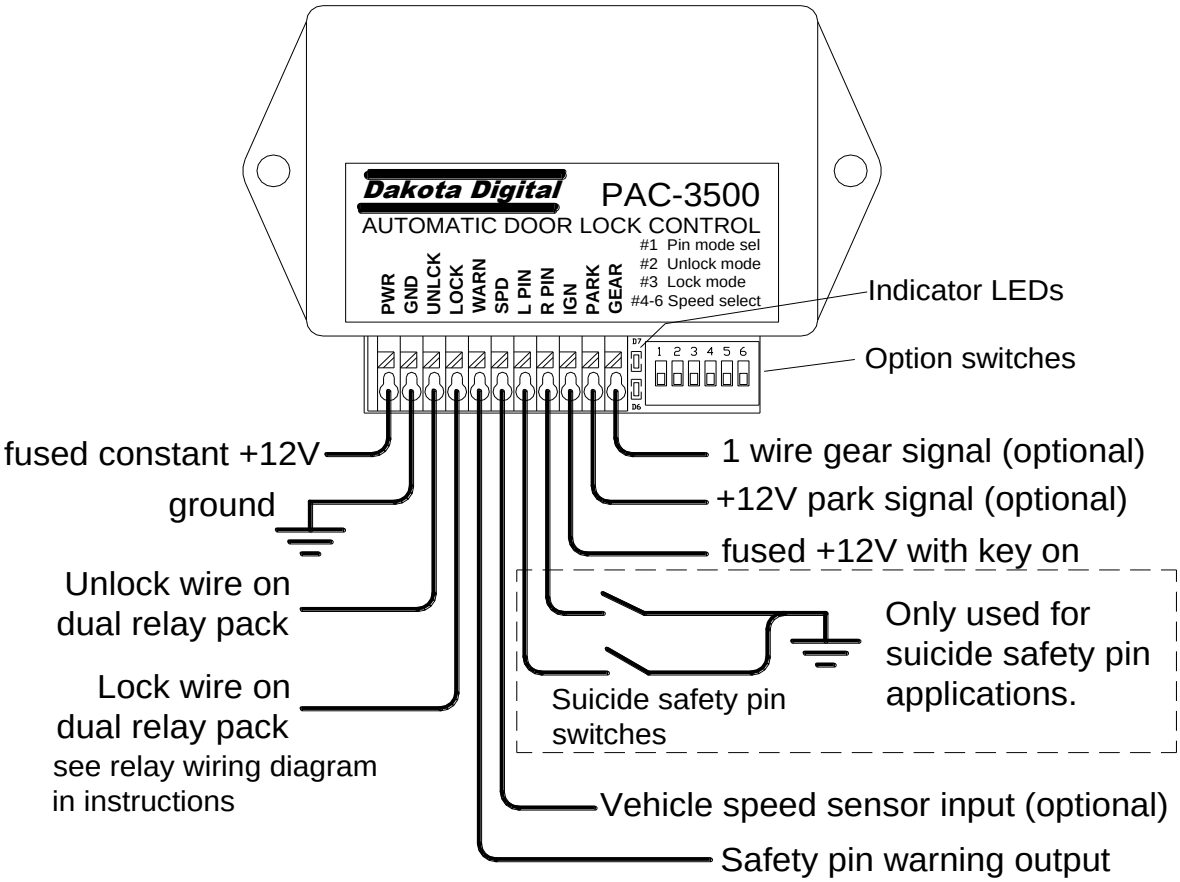
PAC-3500
AUTOMATIC DOOR LOCK CONTROLLER



SWITCH ARRANGEMENT

1	2	3	4	5	6	MODE SELECTED
OFF	-	-	-	-	-	**disable suicide safety pin mode**
ON	-	-	-	-	-	**enable suicide safety pin mode**
-	**OFF**	-	-	-	-	**unlock when ignition turned off**
-	**ON**	-	-	-	-	**unlock when put in park** (1 wire signal[1] or 12v park wire must be connected)
-	-	**OFF**	-	-	-	**lock at speed selected by switches 4-6** (Vehicle speed sensor must be connected)
-	-	**ON**	-	-	-	**lock when taken out of park** (1 wire signal[1] or 12v park wire must be connected)

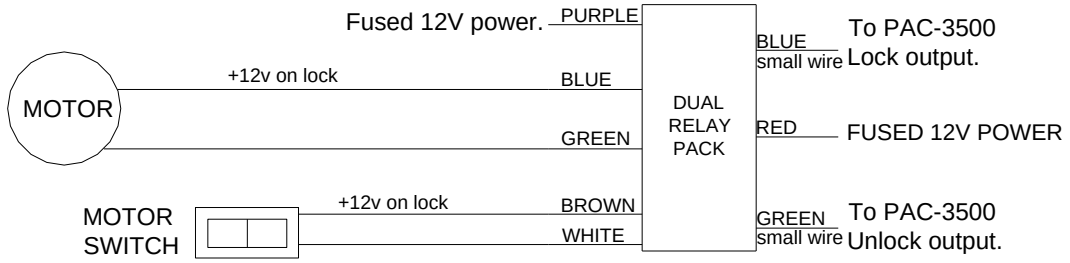
LOCKING SPEED FOR SENDER TYPE (ppm = pulse per mile)[2,3]

						2000 ppm	**4000 ppm**	**8000 ppm**	**16000 ppm**	**128000 ppm**
-	-	-	**OFF**	**OFF**	**OFF**	15MPH (24KPH)	7.5MPH (12KPH)			
-	-	-	**ON**	**OFF**	**OFF**	30MPH (48KPH)	15MPH (24KPH)	7.5MPH (12KPH)		
-	-	-	**OFF**	**ON**	**OFF**		30MPH (48KPH)	15MPH (24KPH)	7.5MPH (12KPH)	
-	-	-	**ON**	**ON**	**OFF**			30MPH (48KPH)	15MPH (24KPH)	
-	-	-	**OFF**	**OFF**	**ON**				30MPH (48KPH)	
-	-	-	**ON**	**OFF**	**ON**					7.5MPH (12KPH)
-	-	-	**OFF**	**ON**	**ON**					15MPH (24KPH)
-	-	-	**ON**	**ON**	**ON**					30MPH (48KPH)

[1]1 wire gear signal must be from Dakota Digital gear sender (GSS universal gear unit)
[2]Speed selection switches do not apply when SW 3 is on.
[3]Speeds are approximate and may vary slightly depending on application

Wiring to a door lock motor. Dakota Digital RLY-2 relay pack shown.

The wires between the switch and the motor will need to be cut, and the relay pack wired in between as shown.



Indicator LEDs

The green LED will turn on when the auto-lock module is receiving a signal from the ignition terminal. It will begin flashing if a vehicle speed signal is present at the SPD terminal.

The red LED will turn on solid if there is a +12v park signal. It will flash if it is receiving a park signal on the 1-wire gear input.

Switch 1 Suicide safety pin select switch

When turned on (switch toward case), this switch selects the Suicide safety pin mode of operation. This mode enables the warn output and the internal warning tone. It also enables the door pin inputs. After the auto-lock unit attempts to lock the doors, it checks the suicide safety pin switches (door pin inputs). If one of the pins fails to lock, the tone and warning output are activated. The tone and warning output will also be activated if the door pins become unlocked while the vehicle is still in lock condition (over set speed or out of park).

The tone and warning output will remain activated until the pins are manually operated to lock or the auto-lock can reattempt and succeed to lock the pins.

Switch 2 Unlock mode select

When switch 2 is turned on, the auto-lock unit will unlock the doors when it receives a park signal from either the +12v park input or the 1-wire gear input.

When switch 2 is off, the doors will only be unlocked when the ignition is turned off.

Switch 3 Lock mode select

When switch 3 is on, the auto-lock unit will lock the doors when there is no park signal on either the +12v park input or the 1-wire gear input.

When the switch is off, the auto-lock unit will lock when the vehicle exceeds the speed selected by switches 4-6.

Switch 4-6 Speed select

These switches are only valid when the auto-lock unit is set to lock on speed signal by turning switch 3 off. Different speeds may be selected for the most common speed sender types (see chart on first page). The speeds in the chart are approximate and may vary slightly depending on application. When the speed set by these switches is reached the auto-lock unit will attempt to lock the doors.

PWR Provide fused constant battery power (+12v) to this terminal.

GND Main ground for auto-lock unit. Poor ground connection may cause the system to not operate properly.

LOCK Negative output used to drive a relay for locking doors. Connect one side of lock relay coil to this terminal and other side to fused constant +12v.

UNLCK Negative output used to drive relay for unlocking doors. Connect one side of unlock relay coil to this terminal and other side to fused constant +12v.

WARN Negative output used to drive bulb for warning output, only used in suicide pin mode. It is capable of switching 0.25A, equivalent to a 3 watt 12V bulb. Connect one wire from bulb to terminal and other wire to fused +12V. If a larger or high power indicator is used a relay should be used to turn on the light. In this case connect one side of the relay coil to the WARN terminal and the other side to fused +12v. The relay contacts will then be used to power the light. Any 12v automotive relay can be used, such as the Dakota Digital, RLY-1 30A relay.

SPD Speed input required only if using lock on speed setting, leave unconnected otherwise.
For 2 wire pulse generators connect one wire to ground and the other wire to SPD terminal. If the signal is being shared by a cruise control or ECM, make sure they all use a common ground for the pulse generator.
For 3 wire Hall-effect sensors, refer to the installation instructions for the sensor to determine wire color code. Most 3 wire sensors use the following color code: RED – power, BLACK – ground, WHITE – speed signal.
For speed sensor integrated into a vehicle wiring harness, consult a service manual to determine the color code and location of the speedometer signal.

L PIN & R PIN Required if suicide safety pin mode set (switch 1). If not used leave unconnected. These are inputs from the switches on the suicide safety pin assemblies. The switch will connect the R PIN or L PIN terminal to ground when the pin is fully actuated. If either of the switches fails to close when pins are to be locked, the warning tone and output are activated.

IGN Should be connected to have +12v when key is ON. The auto-lock module will not operate unless it receives the ignition signal.

GEAR Required if set to lock or unlock using park signal and using Dakota Digital gear sender (GSS in 1-wire gear signal mode. Connect the 1-wire gear signal wire from sending unit to this terminal. If not used, leave unconnected.

PARK Required if set to lock or unlock on park and a +12V park signal is used. When +12v is applied to the park terminal, it is read as the vehicle being in park. If not used, leave unconnected.

NOTE: Use either the GEAR terminal or the PARK terminal, but do not use both. The unused terminal should be left unconnected.

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Module does not respond, no green light visible.	Poor connection on IGN terminal. Poor ground connection Poor connection to PWR terminal	Check for broken or pinched IGN wire. Check for broken or pinched ground wire. Check for broken or pinched PWR wire.
Module does not lock with speed signal	Lock on speed option not selected Speed setting two high Poor connection on SPD terminal Poor connection to lock relay	Check switch settings (see chart first page) Select slower speed setting from chart (settings above current setting on chart) Check for broken or pinched SPD wire. Check connections to dual relay pack.
Module locks at key on (park lock setting)	Poor connection to park input Gear sender unit needs calibration or is not operating correctly.	Red light stays off when placed in park, check that GEAR terminal is connected to 1-wire gear signal OR that PARK terminal is connected to 12v park signal. Check for broken wires. If red light stays off when placed in park and all connections are ok, see instructions for gear sender.
Module locks at speeds that are too fast or slow	Different setting needed on speed switches 4-6	For slower speeds use setting above current setting on chart. For faster speeds use settings below current setting on chart.
Module does not unlock	Unlock switch setting not as expected. Poor connection on park input (park unlock) Ignition terminal is constantly powered Poor connection to unlock relay	Check switch 2 setting to chart If red led doesn't light or blink when placed in park, check connection to park terminal being used. If green light doesn't go out when ignition turned off, relocate feed to ignition terminal to 12v only with key on. Check connections to dual relay pack.
Warning tone sounds	Suicide pin mode selected Door pins not fully locking Door pins became unlocked Broken wire from L PIN or R PIN terminal Poor ground on safety pin switches Poor connection on lock relay prevents locking	If not in suicide pin mode turn switch 1 off Check that door pins for binding or obstructions. Ensure that pins stay locked during normal operation Check for broken wire from pin assembly switch to unit check / relocate ground on pin assembly switches Check connections on dual relay pack
Module repeatedly locks and unlocks	Module receiving both a park signal and a speed signal (only if set to lock on speed and unlock on park) Noise on speed signal line (while in park)	Correct wiring so that no park signal is present when there is a speed signal. Reroute speed signal wire away from spark plug wires or other noisy wires.

SERVICE AND REPAIR

DAKOTA DIGITAL offers complete service and repair of its product line. In addition, technical consultation is available to help you work through any questions or problems you may be having installing one of our products. Please read through the Troubleshooting Guide. There, you will find the solution to most problems.
Should you ever need to send the unit back for repairs, please call our technical support line, (605) 332-6513, to request a Return Merchandise Authorization number. Package the product in a good quality box along with plenty of packing material. Ship the product by UPS or insured Parcel Post. Be sure to include the RMA number on the package, and include a complete description of the problem with RMA number, your full name and address (street address preferred), and a telephone number where you can be reached during the day. Any returns for warranty work must include a copy of the dated sales receipt from your place of purchase. Send no money. We will bill you after repair.

Dakota Digital 24 Month Warranty

DAKOTA DIGITAL warrants to the ORIGINAL PURCHASER of this product that should it, under normal use and condition, be proven defective in material or workmanship within 24 MONTHS FROM THE DATE OF PURCHASE, such defect(s) will be repaired or replaced at Dakota Digital's option.

This warranty does not cover nor extend to damage to the vehicle's systems, and does not cover removal or reinstallation of the product. 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 expressed 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 24 months from date of original purchase. No person or representative is authorized to assume, for Dakota Digital, any liability other than expressed herein in connection with the sale of this product.

⚠**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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