



# CAN1 (Control Area Network) Bus Interface Installation Guide

**NOTE:** This product is intended for installation by a professional installer only! Any attempt to install this product by any person other than a trained professional may result in severe damage to a vehicle's electrical system and components.

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## LIMITED ONE-YEAR CONSUMER WARRANTY

For a period of ONE YEAR from the date of purchase of a Directed Electronics remote start or security accessory product, Directed Electronics, Inc. (hereinafter "DIRECTED") promises to the original purchaser, to repair or replace (at DIRECTED's election) with a comparable reconditioned piece, the security or remote start accessory piece (hereinafter the "Part"), which proves to be defective in workmanship or material under normal use, provided the following conditions are met: the Part was purchased from an authorized DIRECTED dealer in the United States; and the Part is returned to DIRECTED, postage prepaid, along with a clear, legible copy of the receipt or bill of sale bearing the following information: consumer's name, address, telephone number, the authorized licensed dealer's name, date of purchase and complete product and Part description.

This warranty is non-transferable and is automatically void if the Part has been modified or used in a manner contrary to its intended purpose or if the Part has been damaged by accident, abuse, unreasonable use, neglect, water, theft, improper service, installation or other causes not arising out of defect in materials or construction. This warranty is automatically void if any Part has had the serial number defaced, altered, or removed. This warranty is automatically void if the Part has had Repair Service performed by anyone other than the Directed Repair Department. This warranty does not cover damage to any Part caused by installation or removal of the Part or any system related thereto. This warranty does not cover labor costs for the removal or reinstallation of the Part.

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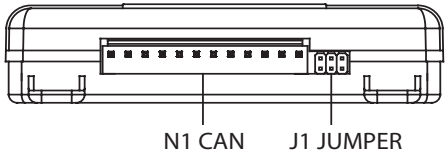
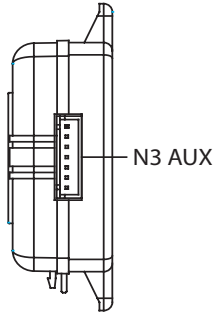
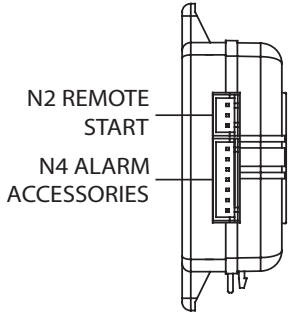
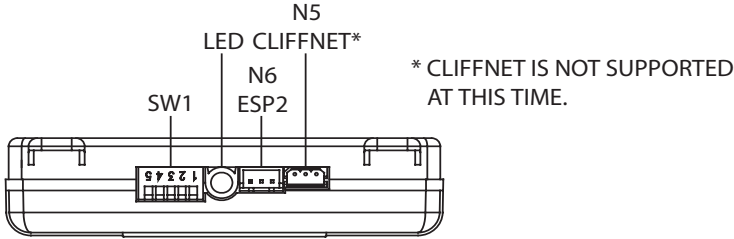
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# Vehicle Application

The CAN1 interface module is applicable for the following vehicles:

Vehicle	Year(s)
Audi	
A3	2004-up
A4	2004-up
A4 Cabriolet	2007-up
A6	2004-up
A6 allroad quattro	2007-up
TT	2007-up
Q7	2006-up
Porsche	
Cayenne	2003-up
Skoda	
Octavia II	2004-up
Octavia Tour	2002-2007
Superb	2004-2007
Seat	
Altea	2004-up
Leon	2006-up
Leon Facelift	2006-up
Toledo	2005-up
Volkswagen	
Caddy	2004-up
EOS	2006-up
Golf IV	2001-2004
Golf V	2004-up
Jetta V	2005-up
Passat (old)	2002-2004
Passat	2005-up
Touareg	2003-up
Touran	2004-up

# CAN1 Module Features and Interface



# Main Harness (N1) Wire Connection Guide

## Main Harness Wiring Diagram

N1/1	RED	(+) Constant 12V Power Input (5A fused)
N1/2	BLACK	(-) Chassis Ground Input
N1/3	WHITE	(-) Parking Light Flash Input
N1/4	WHITE/BROWN	(-) Turn Signal Indicator Light Input
N1/5	BLACK/WHITE	(-) Domelight Input
N1/6	YELLOW	(+) Ignition Status Output
N1/7	GREEN	(-) Door Status Output
N1/8	BLUE	(-) Trunk Status Output
N1/9	GRAY	(+) Trunk Release Output
N1/10		Not Used
N1/11	ORANGE/GREEN	CAN-H Bus Wire
N1/12	ORANGE/BROWN	CAN-L Bus Wire

## Main Harness Wiring Instructions

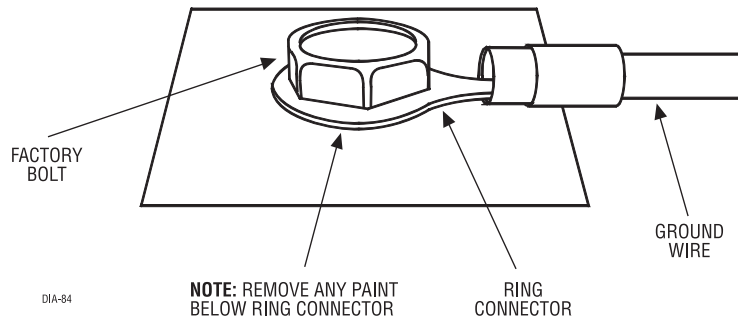
This guide describes in detail the connection of each wire. Some of the wires may have more than one possible function. Please read carefully to ensure a thorough understanding of this unit.

### *N1/2 RED (+) 12V constant power input*

Before connecting this wire, remove the supplied fuse. Connect to the battery positive terminal, the constant 12V supply to the ignition switch, or the fusebox.

### *N1/2 BLACK (-) chassis ground connection*

Connect this wire to a clean, paint-free sheet metal location (driver kick panel). A screw should only be used when in conjunction with a two-sided lock washer. Under dash brackets and door sheet metal are not acceptable ground points. It is recommended that all security components be grounded at the same location.



*N1/3 WHITE (-) parking light input*

Connect this wire to the “indicator light output” of the security system. Configure the security system as a negative output.

*NOTE: This input will be enabled only with the ignition OFF (not usable during a remote start operation).*

*N1/4 WHITE/BROWN (-) turn signal input*

Connect this wire to the “indicator light output” of the security system. Configure the security system as a negative output.

*N1/5 BLACK/WHITE (-) domelight input*

Connect this wire to the “domelight supervision relay output” of the security system. Configure this output as negative.

*N1/6 YELLOW (+) ignition status output*

Connect this wire to the “switched ignition input” of the security system.

*N1/7 GREEN (-) door status output*

Connect this wire to the “(-) door trigger input” of the security system.

*N1/8 BLUE (-) trunk status output*

Connect this wire to the “(-) instant trigger input (trunk input/shunt)” of the security system.

*N1/9 GRAY (+) trunk release output*

Connect this wire to the trunk release input of an added security system. Only connect if an added security system is installed to prevent the security system triggering if the trunk status output becomes active during after the trunk release button is pressed on the vehicle’s original factory remote control.

N1/10 not used

*N1/11 ORANGE/GREEN CAN-H bus wire*

Connect this wire to the CAN-H ( ORANGE/GREEN) wire in the car.

*NOTE: Do not cut or interrupt the wire in the car.*

*N1/12 ORANGE/BROWN CAN-L bus wire*

Connect this wire to the CAN-L ( ORANGE/BROWN) wire in the car.

*NOTE: Do not cut or interrupt the wire in the car.*

# Remote Start (N2) Wire Connection Guide

## Remote Start Harness Wiring Diagram

<b>N2/1</b>	<b>VIOLET/WHITE</b>	<b>RPM (Tachometer) output</b>
<b>N2/2</b>	<b>BLUE</b>	<b>(-) Remote start status input</b>
<b>N2/3</b>	<b>BROWN</b>	<b>(+) remote start shutdown output</b>

## Remote Start Harness Wiring Instructions

*N2/1 VIOLET/WHITE RPM (Tachometer) output*

Connect this wire to “Tachometer Input wire” of the remote start module.

*NOTE: This output is active only during remote start.*

*N2/2 BLUE (-) remote start status input*

Connect this wire to the “Status Output” of the remote start module.

*N2/3 BROWN (+) remote start shutdown output*

Connect this wire to a positive shutdown input wire, such as the “Brake Switch” or “Reverse Backup Shutdown” wire of the remote start module.

# Auxillary Harness (N3) Wire Connection Guide

## Aux Harness Wiring Diagram

<b>N3/1</b>	<b>GREEN/BLACK</b>	<b>(-) Arm/lock input</b>
<b>N3/2</b>	<b>BLUE/BLACK</b>	<b>(-) Disarm/unlock driver's door input</b>
<b>N3/3</b>	<b>BLUE</b>	<b>(-) Disarm/unlock all doors input</b>
<b>N3/4</b>	<b>GREEN/WHITE</b>	<b>(-) Arm output</b>
<b>N3/5</b>	<b>BLUE/WHITE</b>	<b>(-) Disarm output</b>
<b>N3/6</b>	<b>BROWN</b>	<b>Not used</b>
<b>N3/7</b>	<b>GRAY</b>	<b>(-) Hood status</b>

## Aux Harness Wiring Instructions

### *N3/1 GREEN/BLACK (-) arm/lock input*

Connect this wire to “lock #30 common output” of the door lock harness of the security system. The “lock #87 normally open input” of the security system must be grounded.

*NOTE: If the “Comfort Closure” option is enabled in the CAN1 (DIP3 ON) and the ignition is OFF (the windows cannot be activated with the ignition ON), then the comfort closure function will be implemented by the CAN1 when this input is activated. If DIP5 is ON the sunroof will also close.*

### *N3/2 BLUE/BLACK (-) disarm/unlock driver's door input*

Connect this wire to “unlock #30 common output” of the door lock harness of the security system. The “unlock #87 normally open input” of the security system must be grounded.

### *N3/3 BLUE (-) disarm/unlock all doors input*

Connect this wire to “(-) second unlock” of the auxiliary harness of the security system.

### *N3/4 GREEN/WHITE (-) arm output*

Connect this wire to the “(-) Arm input” only if an added security system is installed in order to arm this system when the arm/lock button is pressed on the original factory remote control of the vehicle.

*NOTE: If the “Comfort Closure” option is enabled in the CAN1 (DIP3 ON) and the ignition is OFF (the windows cannot be activated with the ignition ON), then the comfort closure function will be implemented by the CAN1 when this input is activated. If DIP5 is ON the sunroof will also close.*

*N3/5 BLUE/WHITE (-) disarm output*

Connect this wire to the “(-) Disarm input” only if an added security system is installed in order to disarm this system when the disarm/unlock button is pressed on the original factory remote control of the vehicle.

*N3/6 BROWN (-) not used*

This input must not be connected. The function is not available.

*N3/7 GRAY (-) hood status*

Connect this wire to the “(-) hood pin input” of the security system.

# Alarm Accessories (N4) Wire Connection Guide

## Alarm Accessories Harness Wiring Diagram

<b>N4/1</b>	<b>WHITE/BLUE</b>	<b>(-) Front windows down input</b>
<b>N4/2</b>	<b>WHITE/BLACK</b>	<b>(-) Rear windows down input</b>
<b>N4/3</b>	<b>VIOLET/BLACK</b>	<b>(-) Sunroof input</b>
<b>N4/4</b>	<b>BROWN</b>	<b>(-) Headlight input</b>
<b>N4/5</b>	<b>GRAY/BLACK</b>	<b>(-) Fuel door release input</b>
<b>N4/6</b>	<b>ORANGE/BLACK</b>	<b>(-) Radio input</b>
<b>N4/7</b>	<b>RED/WHITE</b>	<b>(-) Trunk release input</b>

## Alarm Accessories Harness Wiring Instructions

### *N4/1 WHITE/BLUE (-) front windows down input*

Connect this wire to a channel output of the security system. Configure the security system output type as “validity” .

### *N4/2 WHITE/BLACK (-) rear windows down input*

Connect this wire to a channel output of the security system. Configure the output type as “validity” .

### *N4/3 VIOLET/BLACK (-) no connection*

This input **must** not be connected. The function is not available.

### *N4/4 BROWN (-) headlight input*

Connect this wire to the security system channel output required for headlight activation feature or to the “(+/-) Light/Flash” wire of the remote start module. Configure this as a negative output from that system.

### *N4/5 GRAY/BLACK (-) fuel door release input*

Connect this wire to a channel output of the security system.

### *N4/6 ORANGE/BLACK (-) radio input*

Connect this wire to “retained accessory output” of the security system. Or connect to a channel output of the security system. Configure the security system channel output type as “latched” .

*N4/7 RED/WHITE (-) trunk release input*

Connect this wire to the “(-) 200mA Channel 2 output” of the security system.

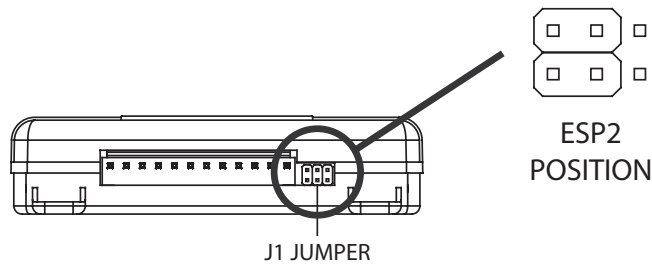
## ESP (N6) Wire Connection Guide

This connector is used to connect a Directed VIPER, PYTHON, or MATRIX ESP2 alarm unit with the CAN1 module.

This connector is also used to program the alarm unit with the Bitwriter®.

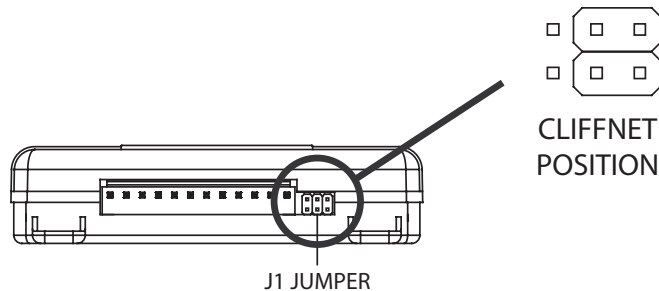
## Jumper (J1) Connector Setting Guide

Position the 2 jumpers in the same position (left) for ESP connection enable.



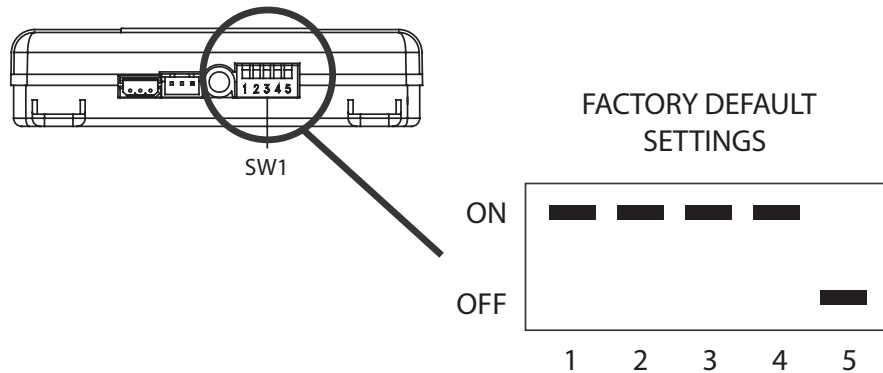
Position the 2 jumpers in the same position (right) for CliffNet connection enable.

*NOTE: Not supported at this time.*



# DIP Switch (SW1) Setting Guide

There are 5 selectable DIP switch settings (factory default settings shown below) on the CAN1 module that provide following functions:



1. Factory Ignition Locking ON/OFF - When this switch is ON (default) the CAN1 will configure the vehicle convenience module so that the “Lock at 9 miles/hour (15 KM/hour)” feature is ON. If this switch is OFF, the CAN1 will configure this feature OFF in the vehicle convenience module. If this switch is ON the security system Ignition lock feature should be turned OFF.
2. Factory Ignition Unlocking ON/OFF - When this switch is ON (default) the CAN1 will configure the vehicle convenience module so that the “unlock when key removed” feature is ON. If this switch is OFF, the CAN1 will configure this feature OFF in the vehicle convenience module. If this switch is ON the security system Ignition unlock feature should be turned OFF.
3. Comfort Closure ON/OFF - When this switch is ON (default) the CAN1 will provide the comfort closure feature any time a valid pulse is detected on the ARM/LOCK input. The CAN1 will close all windows and doors included in the factory comfort closure feature. Comfort closure will monitor the windows position and close all openings completely. Comfort closure will stop immediately if a valid pulse is detected on the UNLOCK (either) input wire. If any opening is obstructed during the comfort closure, the vehicle will automatically reverse the window. The CAN1 will detect this condition and retry to close any window or sunroof that has reversed after 10 seconds. The CAN1 will try a maximum of three times to close the opening and then stop. Comfort closure will not occur when a valid pulse is detected on the ARM/LOCK input when the ignition is ON.
4. Prevent Door Locking if Key left in Ignition ON/OFF - When this switch is ON (default) the CAN1 will not lock the doors when the ARM/LOCK input is received and the key is left in the ignition. In addition, the CAN1 will flash the turn signals rapidly (100 msec on 100 msec off) for 5-seconds to notify the user. During this flashing sequence, the CAN1 will ignore the turn signal input. The CAN1 will also send back the disarm/unlock command to the security system

through the ESP bus.

5. Sunroof include in comfort closure ON/OFF - When this switch is ON (up position—not default) the CAN1 will include the sunroof in the comfort closure.

*NOTE: DO NOT set this switch to ON if the car is not equipped with sunroof or improper function of the central locking system may result.*

## Bi-Color LED

The CAN1 has one bi-color LED that will visually report the status of the initialization routine and the active/inactive status of the module. The operation and interpretation of the LED colors is described in the next section.

## Powering Up the CAN1

After power-up, the CAN1 must first always reads the CAN bus of the vehicle in order to identify if the type of the car is compatible with the firmware of the module.

LED indications

- \* Solid green LED - power-up successful
- \* Red LED on for 2.5 seconds - vehicle is not recognized
- \* Red LED on for 5 seconds - Internal Error

# Finding the Wires in the Vehicle

The CAN-L wire (ORANGE/BROWN) and CAN-H wire (ORANGE/GREEN) can be found easily in one of the following places:

- ▶ In the Driver's kick panel (twisted pair of wires found in the harness coming in from the driver door) (T28/5 for CAN-L and T28/4 for CAN-H).
- ▶ Under the steering column (connector T20d/15 – J527 for CAN-L and connector T20d/14 – J527 for CAN-H).

In case that a Directed remote start module is used (VALET 561T) the following connections with wires in the vehicle must be made:

## Recommendations for Channel Connections

The following channels of a VIPER system are recommended for connection with the CAN1 module:

- ▶ Channel 2 for “Trunk release” function
- ▶ Channel 3 for remote start

*NOTE: If a remote start module is not needed this channel can be used for “Headlight ON/OFF” function.*

- ▶ Channel 4 for “Front windows down” function
- ▶ Channel 5 for “Rear windows down” function
- ▶ Channel 6 for “Fuel door release” function or “Headlight ON/OFF” function.

# Quick Reference Wiring Diagram

