

# CAN Bus

Controller Area Network  
CANopen Pinout

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## CAN Bus Description

The Controller Area Network (CAN) specification defines the [Data Link Layer](#), ISO 11898 defines the Physical Layer.

The CAN bus is a Balanced (differential) 2-wire interface running over either a Shielded Twisted Pair (STP), Un-shielded Twisted Pair (UTP), or Ribbon cable.

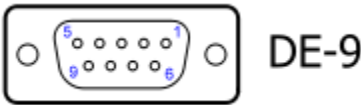
The pin outs on this page are associated with the CANopen protocol. For additional information refer to the main [CAN Bus](#) page.

CANbus is used as a vehicle bus, additional vehicle Buses refer to the [Automotive Bus](#) page.

CANbus is also used as an Industrial Field bus, for other Field Buses see the [Field Buses](#) page.

Related pages;  
[Listing of 'D' Connectors Manufactures](#)  
[Listing of Cable Manufactures](#)

## 9-Pin D, CAN Bus Pin Out



9 Pin (male) D-Sub CAN Bus PinOut

Pin #	Signal names	Signal Description
1	Reserved	Upgrade Path
2	CAN_L	Dominant Low

<b>3</b>	CAN_GND	Ground
<b>4</b>	Reserved	Upgrade Path
<b>5</b>	CAN_SHLD	Shield, Optional
<b>6</b>	GND	Ground, Optional
<b>7</b>	CAN_H	Dominant High
<b>8</b>	Reserved	Upgrade Path
<b>9</b>	CAN_V+	Power, Optional

Some systems may use pin 8 as an error line, to indicate an error on the net.  
Also see [9-pin Dsub Insert Locations](#).

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## 10-Pin header, CAN Bus Pin Out

Background information on [Un-shrouded Headers](#), or [Shrouded Headers](#).

**10-Pin Header CAN Bus PinOut**

<b>Pin #</b>	<b>Signal names</b>	<b>Signal Description</b>
<b>1</b>	Reserved	Upgrade Path
<b>2</b>	GND	Ground, Optional
<b>3</b>	CAN_L	Dominant Low
<b>4</b>	CAN_H	Dominant High
<b>5</b>	CAN_GND	Ground
<b>6</b>	Reserved	Upgrade Path
<b>7</b>	Reserved	Upgrade Path
<b>8</b>	CAN_V+	Power, Optional
<b>9</b>	Reserved	Upgrade Path
<b>10</b>	Reserved	Upgrade Path

Editor note; I am unsure what the function of pins 9 and 10 are.  
The cable shield is optional with CanBus, so may or may not be used.  
As with any interface standard, a pin that is reserved in one revision, may be used in the next version.

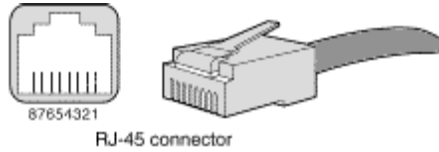
So leaving them as reserved is the safe course, but the incoming cable should be examined to determine the function.

According to the CANopen connector pin assignment [CiA draft DR-303-1];  
pins 9 and 10 are reserved supporting direct connection to a 9-pin D connector.

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## RJ-Style, CAN Bus Pin Out



**RJ10, RJ45 CAN Bus PinOut**

RJ45 Pin #	RJ10 Pin #	Signal name	Signal Description
1	2	CAN_H	Dominant High
2	3	CAN_L	Dominant Low
3	4	CAN_GND	Ground
4	-	Reserved	Upgrade Path
5	-	Reserved	Upgrade Path
6	-	CAN_SHLD	CAN Shield, Optional
7	-	CAN_GND	Ground
8	1	CAN_V+	Power, Optional

[Listing of Telcom Connectors Manufactures](#) {RJ10, RJ11, RJ45 phone jacks}

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## 7-Pin Open Style, CAN Bus Pin Out

**7-Pin Open Style CAN Bus PinOut**

Pin #	Signal names	Signal Description
1	CAN_GND	Ground
2	CAN_L	Dominant Low
3	CAN_SHLD	Shield, Optional
4	CAN_H	Dominant High
5	CAN_V+	Power, Optional

4-pin Open Style Connectors either use pins 1-4 (Version A) or pins 2-5 (Version B).

3-pin Open Style Connectors use pins 2-4.

The bus node provides the male pins of the connector.

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