Model 3 / Model Y Third-Party CAN Bus Interface

This Service Document supersedes CD-20-17-002 R2, updated 8 March, 2022. This new revision, R3, adds information on the third-party CAN bus interface for the 2024+ Model 3. Each content change is marked by a vertical line in the left margin. Discard the previous version and replace it with this one.

Certain Model 3 and Model Y vehicles are configured with a third-party CAN bus interface on connector X181 as follows:

- 2017-2023 Model 3 produced from January 5, 2019 onwards (CAN bus is functional only with firmware version 2020.36 or later)
- 2024+ M3 (VIN starting with LRW) produced from September 1, 2024 onwards
- Model Y (VIN starting with 5YJ) produced from January 13, 2021 onwards
- Model Y (VIN starting with LRW) produced from December 14, 2020 onwards
- Model Y (VIN starting with 7SA or XP7) from start of production

Disclaimer

Connecting or hard-wiring non-Tesla or third-party accessories or equipment into existing Tesla vehicle electrical systems is not supported by Tesla, and the installer performs this modification at their own risk. Installed unapproved equipment is not covered by any Tesla warranty, and is considered a non-standard modification of the vehicle.

CAUTION: Installing unapproved components might be detrimental and incur damage to the vehicle. Tesla employees are not permitted to install or assist in the installation of any non-Tesla component. Service to rectify any damage caused by the installation of unapproved components is not covered by any warranty.

NOTE: Installing unapproved components might affect the serviceability of the vehicle. Tesla employees are not permitted to service any non-Tesla component. Should the vehicle require service of a Tesla system which has been modified, such service is regarded as Modified Service. Modified Service requires a signed SC-18-00-008, “Authorization and Release for Modified Service”, and may not be covered by any warranty. Tesla is not responsible for any damage incurred to an unapproved component while performing a Modified Service.

WARNING: Modifications can affect vehicle performance and behavior, and might compromise vehicle safety. Tesla does not guarantee the usability, functionality, or reliability of the modification, nor will Tesla bear any responsibility to the consequences of the modification.

Third-Party CAN Bus Connector Location

Connector X181 is an SAE J1962 connector located under the LH side of the instrument panel (Figure 1), and is accessed by removing the LH footwell cover.

NOTE: Depending on vehicle configuration, the connector may be accessible without removing the LH footwell cover.

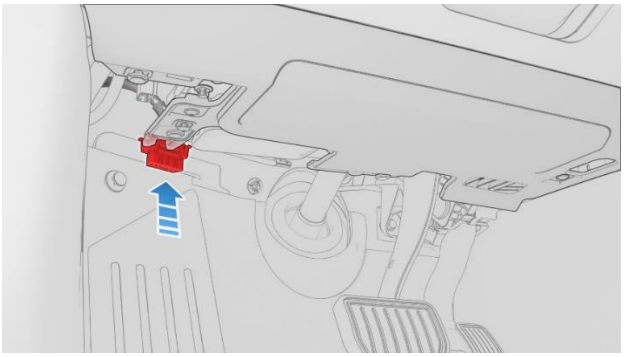
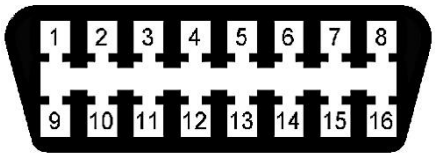


Figure 1 – Location of connector X181

Connector X181 Pinout and Considerations (except 2024+ Model 3)

The SAE J1962 connector offers a third-party CAN bus interface on Pin 6 and Pin 14. Additionally, chassis ground is available on Pin 4 and Pin 5, and Low Voltage+ is available on Pin 3, Pin 11 and Pin 16.



Pin 3	ACCESSORY FEED 2 - Low Voltage+
Pin 4	GND
Pin 5	GND
Pin 6	CAN HIGH - 500 kbps
Pin 11	ALWAYS ON - Low Voltage+
Pin 14	CAN LOW - 500 kbps
Pin 16	ACCESSORY FEED 1 - Low Voltage+

While the vehicle is awake, the device connected to connector X181 can be powered through Pin 16 (ACCESSORY FEED 1) or Pin 3 (ACCESSORY FEED 2), either of which can provide up to 1000 mA of current.

Pin 11 (ALWAYS ON) can provide up to 80 mA of current. This pin remains powered during vehicle sleep.

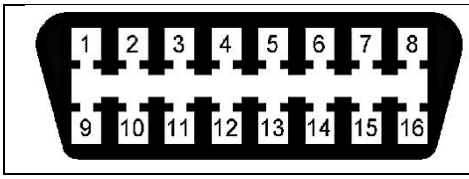
CAUTION: Do not splice Pin 3 (ACCESSORY FEED 2) and Pin 16 (ACCESSORY FEED 1) together. If greater current capacity is required, refer to CD-19-17-001, “Model 3/Y 12V Power Circuit for Third-Party Accessories, First Generation Center Console” or CD-20-17-002, “Model 3/Y 12V Power Circuit for Third-Party Accessories, Second Generation Center Console”.

NOTE: It is possible to splice Pin 11 (ALWAYS ON) and Pin 16 (ACCESSORY FEED 1) together. This provides a 1000 mA power supply when the vehicle is awake and an 80mA power supply during sleep. There is no risk of feeding power back from the ALWAYS ON circuit to the ACCESSORY FEED circuit.

NOTE: When the vehicle wakes up, Pin 3 (ACCESSORY FEED 2) and Pin 16 (ACCESSORY FEED 1) power on simultaneously. When the vehicle goes to sleep, Pin 3 (ACCESSORY FEED 2) powers off, and 10 seconds later, Pin 16 (ACCESSORY FEED 1) powers off. Pin 11 (ALWAYS ON) remains powered when the vehicle goes to sleep.

Connector X181 Pinout (2024+ Model 3)

The SAE J1962 connector offers a third-party CAN bus interface on Pin 6 and Pin 14. Additionally, chassis ground is available on Pin 4 and Pin 5, and Low Voltage+ is available on Pin 16.



Pin 4	GND
Pin 5	GND
Pin 6	CAN HIGH - 500 kbps
Pin 14	CAN LOW - 500 kbps
Pin 16	ACCESSORY FEED 1 - Low Voltage+

The device connected to connector X181 is powered while the vehicle is awake through Pin 16 (ACCESSORY FEED 1) which can provide up to 1000 mA continuous draw.
If greater current capacity is required, refer to CD-23-17-001, “LV Power Circuit for Third-Party Accessories - 2024+ Model 3”.