

CONTACTLESS CAN BUS READER

4-774-90 (5V) and 4-774-91 (12-24V)

User's Manual V1.0



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1. Function, Application Fields, Features

Most modern (personal and commercial) vehicles are equipped with CAN communication system, as high-speed CAN (HS-CAN) system. The 4-774-90/91 CONTACTLESS CAN BUS READER(hereinafter referred to as "4-774-90 or 4-774-91") 4-774-90/91 is designed for capturing vehicle data from such CAN system.

4-774-90 only supports a 5-volt power supply, which is usually obtained from external devices, such as our 4-775-00 module. The 4-774-91 features a wider voltage range, supporting 7-32V.

The 4-774-90/91 is a contactless CAN-Bus reader, applying non-intrusive technology to acquire vehicle specific data. The usage of the 4-774-90/91 eliminates any vehicle warranty issue, since avoids galvanic connection to vehicle communication wires.

The 4-774-90/91 can be useful for any aftermarket 4-774-90/91 that requires vehicle CAN data, Such as:

- Fault Diagnosis,
- Real time Data Monitoring,
- Fleet Management,• CAN Bus Trigger Module,
- etc...

Features:

1. Contactless: Acquire CAN data without cutting wires (warranty kept).
2. Built-in protection: Guards against reverse polarity, overvoltage, and overheating.
3. LED status indicator: Get instant visual feedback during setup.
4. Plug & Play: Seamlessly integrates with all CAN trigger modules, FMS gateway, AVL, and othertelematics systems using standard CAN or J1708 protocols.
5. Strong grip: Perpendicular fixation ensures that the CAN wires do not slip.
6. 100% SILENT: Works in "listen only" mode and does not affect the CAN bus.



2. Notices

WARNING

- Vehicle ignition must be off at the start of installation.
- Before starting the installation, please read this document carefully! Appropriate operation of the 4-774-90/91 depends on proper installation.
- Do not remove the silicone rubbers from the cover of the contactless reader during the installation!
- Usage of the 4-774-90/91 is permitted for industrial purposes only. It must not be used in situations in which human lives depend upon the operation of this equipment.
- The installation of the 4-774-90/91 may eventually be in conflict with a country's regulations or the vehicle manufacturers (OEM) instructions. The conformance shall solely be the customer's responsibility. Improper 4-774-90/91 installation may have an effect on vehicle warranty.
- Durite® takes no responsibility for any damages originated in 4-774-90/91 installation.
- Aftermarket installed devices connected to CAN Bus may affect negatively the operation of 4-774-90/91.
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- Exceeding maximum allowable power supply may impair the 4-774-90/91.
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- Misuse and/or physical damage on 4-774-90/91 may lead to loss of warranty.
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- Vehicle CAN wires must not be cut, pierced, or soldered. CAN wires must be intact for undisturbed vehicle CAN communication. Inadequate connection to vehicle CAN wires may affect vehicle operation and may cause safety issues.
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- Fix 4-774-90/91 properly to avoid hitting to vehicle elements, or rattling!
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- 4-774-90/91 should be installed away from direct heat and moisture. Installation in cabin is recommended.
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- Avoid installation at steering column and above pedals!
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- Although reader contains (Multi) fuse, application of a 1...3 Amp fuse at power source is highly recommended.
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- 4-774-90/91 must be installed by professional skilled in automotive electronics.
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- Avoid damaging, polluting or scratching sensor surfaces! Also ensure clean wire surfaces (use isopropyl-alcohol for cleaning if necessary)!

3. Installation

3.1 Connection ports of the 4-774-90/91

- Signal input. 4-774-90/91 surfaces (horizontal, High and Low stripes).
- Power supply. Black: CR 0V or GND, Green: CR 5V or 12/24V.
- CAN output. Blue: CAN Low, White: CAN High.

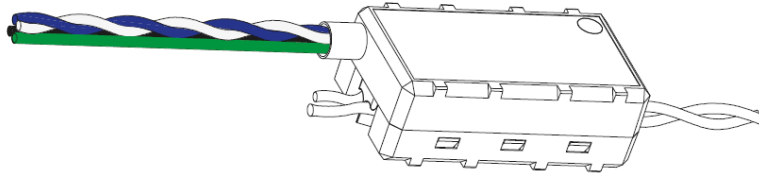


Figure 1. Internal view of 4-774-90/91

3.2 Installation steps

1. Mount output connector to 4-774-90/91.
2. Check voltage level of vehicle CAN H and CAN L wires.
3. Make sure ignition is off.
4. Provide power supply connection (5V or 12/24V). Recommended to use free points of fuse box.
5. Turn on ignition.
6. Place cover of 4-774-90/91 under vehicle CAN wires! Ensure vehicle. CAN wires are not strained and/or bent sharply, but run straight in the indicated High and Low slots! **Please do not remove the silicone rubbers from the cover!**

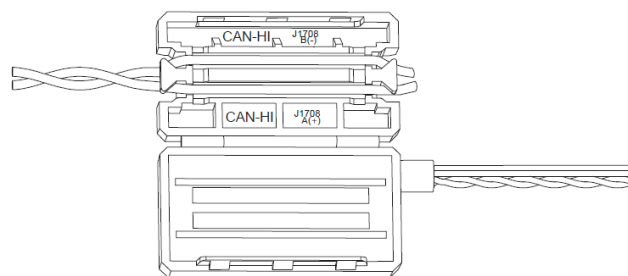


Figure 2. Intended Wire Paths

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7. Match cover to Can 4-774-90/91! Hole to be placed above the status LED.
8. (Optional) Check status LED (section 5)! If ignition is on, red light changes to green indicating proper vehicle CAN polarity.
9. Screws must be fixed tightly. Make sure vehicle CAN wires are not pinched!

4. Checking 4-774-90/91 Function

1. Turn ignition on.
2. LED must be light green (see Section 5, LED status).
3. Green light indicates data reception. To make sure data received correctly, check the 4-774-90/91 working normal.

5. Operating States

The 4-774-90/91 has a status LED on the back of the enclosure, which indicates the current operational mode.

Status		Status LED
Standby (in case no CAN communication for at least 2 seconds)		RED
No communication, or no power supply		No light
Communication		Green
CAN polarity error		Amber
Overheating (above 85°C)	communication	Blinking Amber and Green
	no communication	Blinking Amber and Red

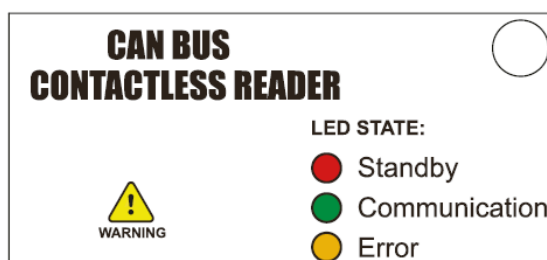


Figure 3. Short explanation of color signs, printed on the 4-774-90/91 label.

5.1 Description of the states

- **Standby (red light):** the 4-774-90/91 goes to this low consumption mode 2 seconds after ending communication on vehicle CAN bus, or after power on.
- **No light on LED:**
 - ✧ no communication (up to 2 seconds, then 4-774-90/91 goes to standby mode).
 - ✧ no power supply, or incorrect power polarity.
- **CAN polarity error (orange LED):** reversed CAN High and Low wires.
- **Overheating (alternating orange/green or orange/red):** Temperature too high in the box (85°C). Possible reasons: ✧
 - Heat in the environment.
 - Bus overload or multiple terminating resistor or short circuit on DEVICE output.

6. Specification

Voltage supply	5V or 12/24V
Operating current	20 - 50mA
Standby current	11mA
Baud rate	50 - 1000 kBaud
Terminating resistor	60 - ∞
Storage temperature	-40 - 85°C
Operating temperature	-40 - 75°C
Humidity	5 - 80%
Dimensions	48.57*24.39*14.7mm
Wire diameters	Ø0.8-2.0mm