



DIAG4TRUCK

Installation Guide

For **VOLVO**



SCAN FOR
DIGITAL MANUAL

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READ THIS FIRST

LIABILITY

Dielektrik cannot be held responsible for any possible damage ensuing from the correct or incorrect following of the recommendations as listed in this document. The technical engineer remains responsible at all times for the correct installation and connection of the hardware. This manual is but a (partial) recording of, and an addition to, the practical knowledge of the average installer.

The illustrations and specific data of non-Dielektrik products have been checked thoroughly and have been found correct at the time this manual was composed. However, Dielektrik cannot accept any responsibility for possible adaptations by the manufacturer concerned. Dielektrik aims for a continuous improvement of its products; for the purpose of technical progress, we reserve the right to implement changes at any time, without prior notice.

SAFETY INSTRUCTIONS

Before starting the installation, carefully read the following safety instructions. All instructions, notes and regulations in this manual must be closely followed.

SAFE WORK ENVIRONMENT

Make provisions for a safe work environment:

- The installation and initial operation of the unit can only be performed by trained and qualified technicians.
- Use personal protective equipment if required (protective goggles, respiratory / ear protection, etc.).
- Make sure that the workplace is dry and provided with sufficient lighting.
- Pedal actuations can lead to severe injuries if persons are near the vehicle. Make sure that pedals cannot be actuated as follows:
 - Switch the transmission to “neutral” and actuate the park brake.
 - Secure the vehicle against rolling by using chocks.
 - Fasten a note clearly visible to the steering wheel indicating that work is being performed on the vehicle and that the pedals are not to be actuated.
- Always follow the safety regulations of the country, in which the unit is installed and/or operated.

IMPORTANT INSTALLATION / USE



During the entire connection procedure, the voltage must be turned off.

Use the device only for its intended purpose.

- Do NOT open the DIAG4TRUCK unit.
- Do NOT drill in the device housing.
- The device safety may be endangered in case:
 - The device is not firmly fastened;
 - The device has suffered from transportation damages;
 - The temperature limits are exceeded;
 - The device comes into contact with water;
 - The device is visibly damaged.
- If the device is visibly damaged, it must be immediately replaced and sent back to Dielektrik.
- Make sure that the unit is not exposed to direct sunlight.
- Do not mount the device or its accessories near the vehicle airbags or inside the impact area of head or legs.
- Always follow the specifications and instructions of the vehicle manufacturer.
- Observe all accident regulations of the respective company as well as regional and national regulations.

OPERATING CONDITIONS

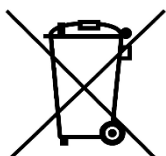
Input voltage range 20-31 VDC

Max. current 50 mA

Operating temperature range: -40 ~ +85 °C

Storage temperature range: -40 ~ +85 °C

DISPOSAL



In case you no longer want to use the Dielektrik unit, it is prohibited to dispose of it together with domestic waste as the system components are electronic scrap. When disposing components, please observe all laws and regulations applicable in your country. Dielektrik strives to protect the environment. As with other old devices, all components can be returned to Dielektrik.

BEST PRACTICES IN INSTALLATION

Required tools and materials :

- Plastic trim removal tools (for removing various cover without damages to reach wiring and control units);
- Multimeter (for test 24V source, GND, Ignition);
- Side cutting pliers (for cutting zip ties or to short wires length);
- Socket wrench set - be ready for bigger ratchet and sockets (for unscrew various bolts or screws);
- Various head screwdrivers or screwdriver bit set (must have TORX type);
- Headlamp or other portable source of light;
- Bag of plastic ties / zip-ties (better longer than 200mm);
- Wire harness tape (use quality one, suitable for truck cabin);
- Degreaser cleaner and piece of cloth (for surface cleaning where antennas will be stuck);
- IDC Tap connector / Scotchlok - 3M or other quality ones (for connect additional wires to existing ones in the truck);
- Combination pliers (for secure clamping tab connectors / Scotchlocks);
- Personal protective equipment (working gloves, safety glasses if you need).

ASSEMBLY

The assembly of the parts must be done using the accessories provided. Dielektrik cannot be held responsible for any errors resulting from the use of other materials. It is imperative that the device is disconnected when carrying out such activities.

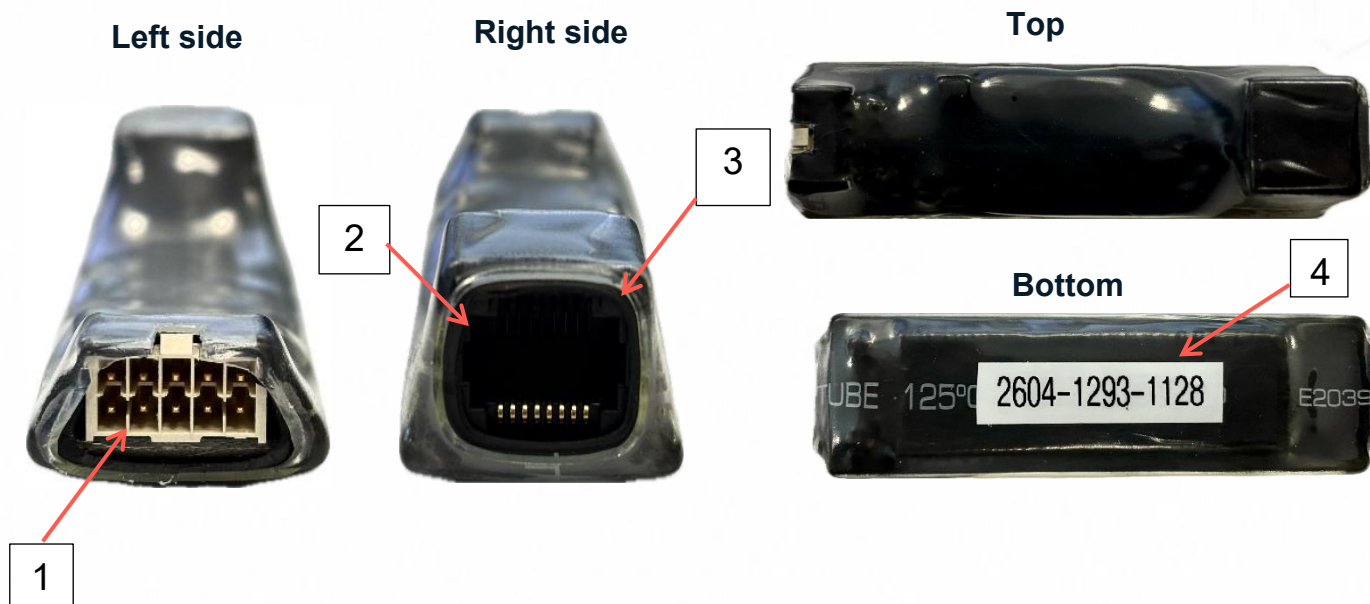
WIRE MANAGEMENT

All the wire ways shall be smooth and free from sharp edges. Wires shall be protected, so they do not come into contact with burrs, cooling fins, moving parts, etc., which could cause damage to the insulation of the conductors.

WHAT'S INSIDE THE BOX

Component	Content
DIAG4TRUCK main unit	
Ethernet Patch 30 cm cable (connect D4T with FMC650)	
Colored wires for connection to the vehicle wiring harness	
T-Type Quick Wire Connectors – 5 pcs.	

MAIN UNIT HARDWARE DESCRIPTION



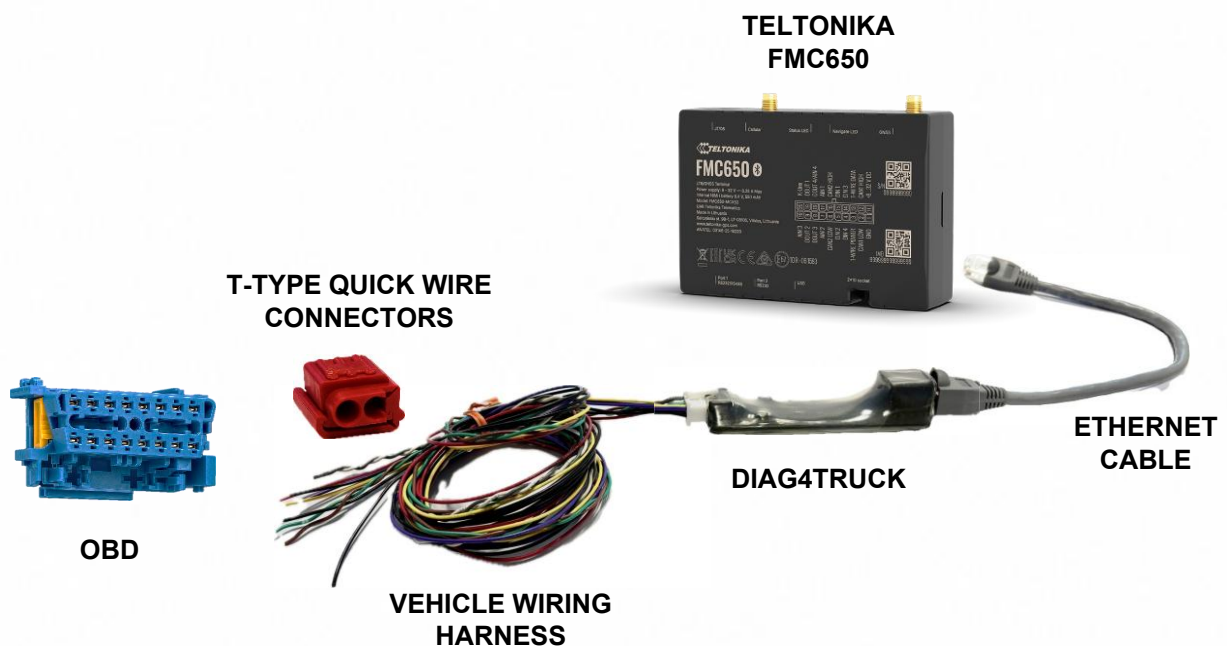
1	Vehicle wiring harness connector
2	Ethernet patch cable connector
3	Orange LED
4	Product serial number

CONNECT THE HARDWARE



Connections must be done with the vehicle ignition turned OFF! Any wires that are not used, must be tied up in a suiting way, so as not to cause a short circuit.

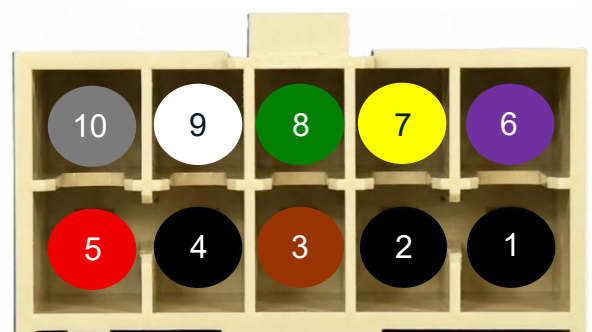
CONNECTION OVERVIEW



VEHICLE WIRING HARNESS CONNECTOR PINOUT

PIN	Signal	Wire color
1	GND	Black
2	GND	Black
3	J1708-	Brown
4	GND	Black
5	Power (+24)	Red
6	K-Line	Purple
7	IGN	Yellow
8	J1708+	Green
9	CAN-H	White
10	CAN-L	Grey

DIAG4TRUCK PINOUT SCHEME



VOLVO Pinout

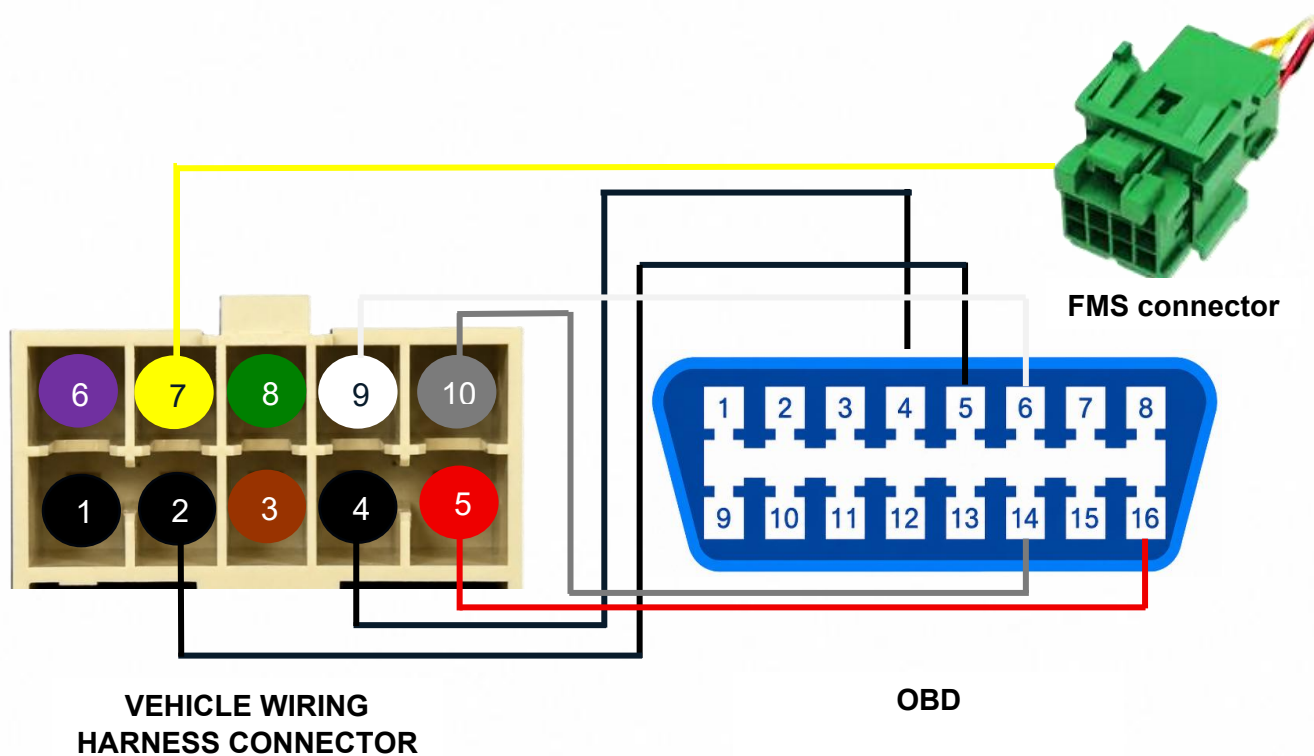
PIN	Signal
1	IGN
4	GND
5	GND
6	CAN H
14	CAN L
16	+24 (VBAT)

VOLVO OBD to DIAG4TRUCK Pinout

VOLVO OBD	DIAG4TRUCK
4	4
5	2
6	9
14	10
16	5

IGN Pinout

FMS connector	DIAG4TRUCK
10	7



The technical engineer remains responsible at all times for the correct installation and connection of the hardware. Always check all functionalities after each installation. Dielektrik cannot be held responsible for any possible damage / interruption ensuing from the correct or incorrect following of the recommendations as listed in this document.

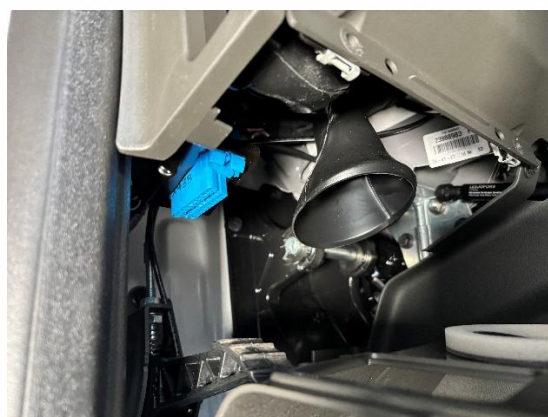
Truck



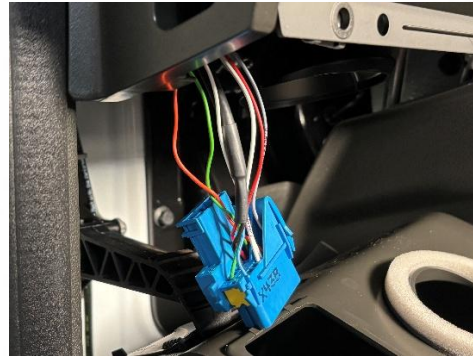
The recommended installation location inside the truck is below the OBD connector, behind the lower panel. The OBD connector is located on the driver's side, to the left of the steering wheel. Carefully remove the lower panel without causing damage.



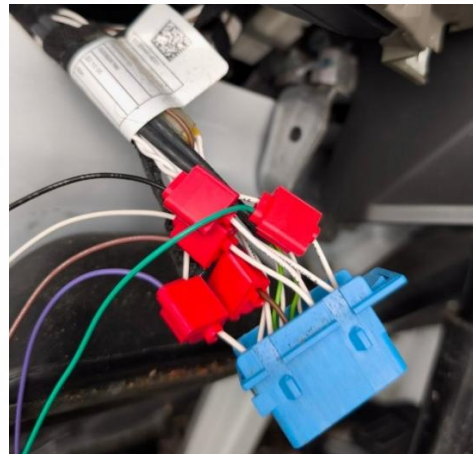
After opening the lower panel, carefully pull out the OBD connector to gain easier access to the wiring.



Take the Vehicle wiring harness connector and connect the wires using the T-Type Quick Wire Connectors according to the corresponding OBD pinout.



The connection between the OBD connector and the Vehicle wiring harness should look as shown in the image. Follow the Vehicle wiring harness pinout and OBD pinout diagrams carefully.

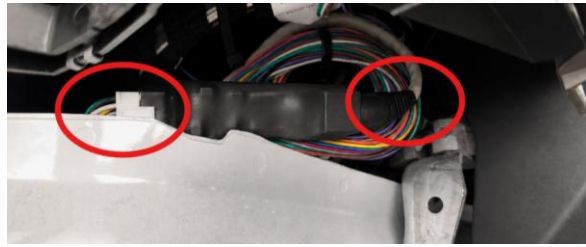


Secure and protect the OBD wires together with the existing Vehicle wiring harness using cable ties or protective tape.

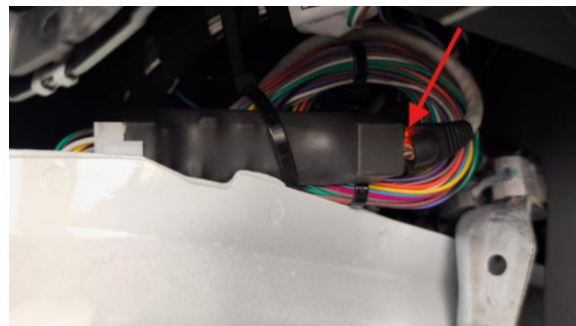


Connect the Vehicle wiring harness to the designated connector on the DIAG4TRUCK device, as shown in the image. Ensure the connector is fully inserted and securely connected. Connect the Ethernet cable to the Ethernet port located on the opposite side of the DIAG4TRUCK device.

Connect the Ethernet cable to the Teltonika FMC650 Ethernet port. The Ethernet port location on the FMC650 is shown in the image. It is recommended to use Port 1. If Port 1 is not available, Port 2 may also be used.



The final device placement should look as shown in the reference image. Turn the ignition ON and verify that the DIAG4TRUCK device is operating correctly. The device should display an orange LED.



Once the installation is completed and the device is operating correctly, reinstall the OBD connector and reinstall all previously removed panels and parts.



CONTACT INFORMATION

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