FD EVO OBD II MULTI-FUNCTIONAL DISPLAY

Ver.0.0.3

SW10166

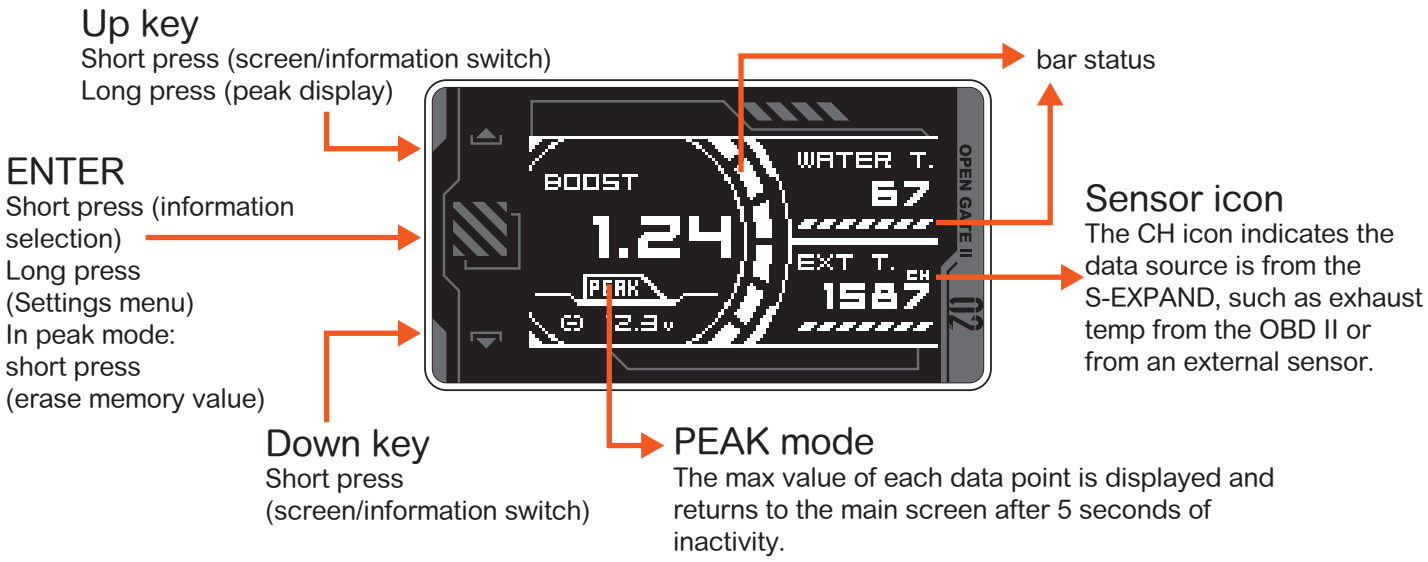
FEATURES

FD EVO Multi-functional Display offers powerful OBD II scanning with up to 22 data points and supports independent sensor expansion for easy upgrades to a racing dashboard. It’ s the ideal choice for modern enthusiasts, providing comprehensive monitoring and customizable sensor options.

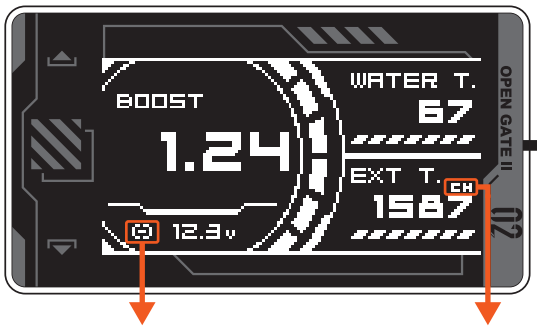
OPERATION INSTRUCTION

This product allows you to switch between six main screens using the up/down keys. Press ENTER briefly to select display info, hold the up key to show PEAK values, and hold ENTER to access the settings menu.

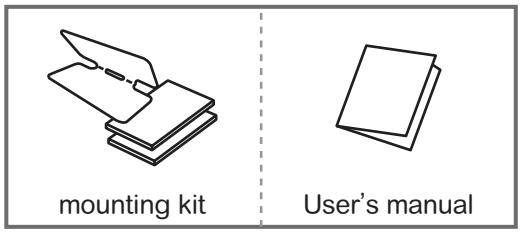
- If no action is taken for 10 seconds while selecting display info, it returns to the main screen.



Basic configuration



FD EVO display



OBD II cable

S-EXPAND connection icon

Signal from the expansion hub

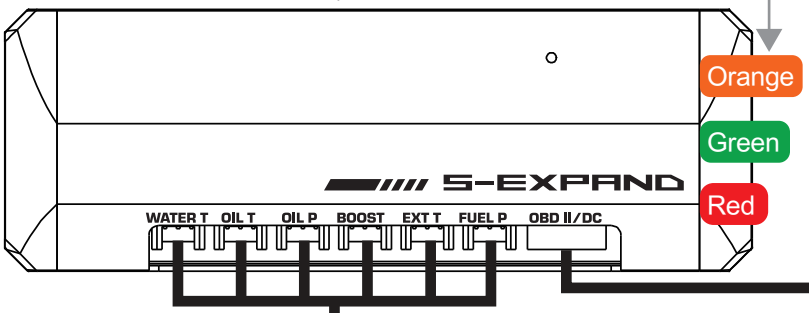
Optional

Advanced configuration

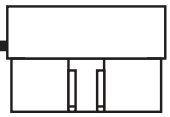
Indicator light

S-EXPAND sensor expansion hub SW10167-03

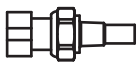
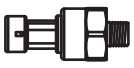
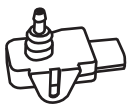
S-EXPAND signal cable



OBD II cable



Optional Sensor

SW49038-00	SW49039-00	SW49040-00	SW49041-00
			
Water Temp / Oil Temp Sensor	Oil Press / Fuel Press Sensor	Boost / IN-MF Press Sensor	Exhaust Temp Sensor
Temp Sensor Cable Set	Press Sensor Cable Set	Press Sensor Cable Set	EGT Sensor Cable Set

ACC Tap Wire (Note 1)

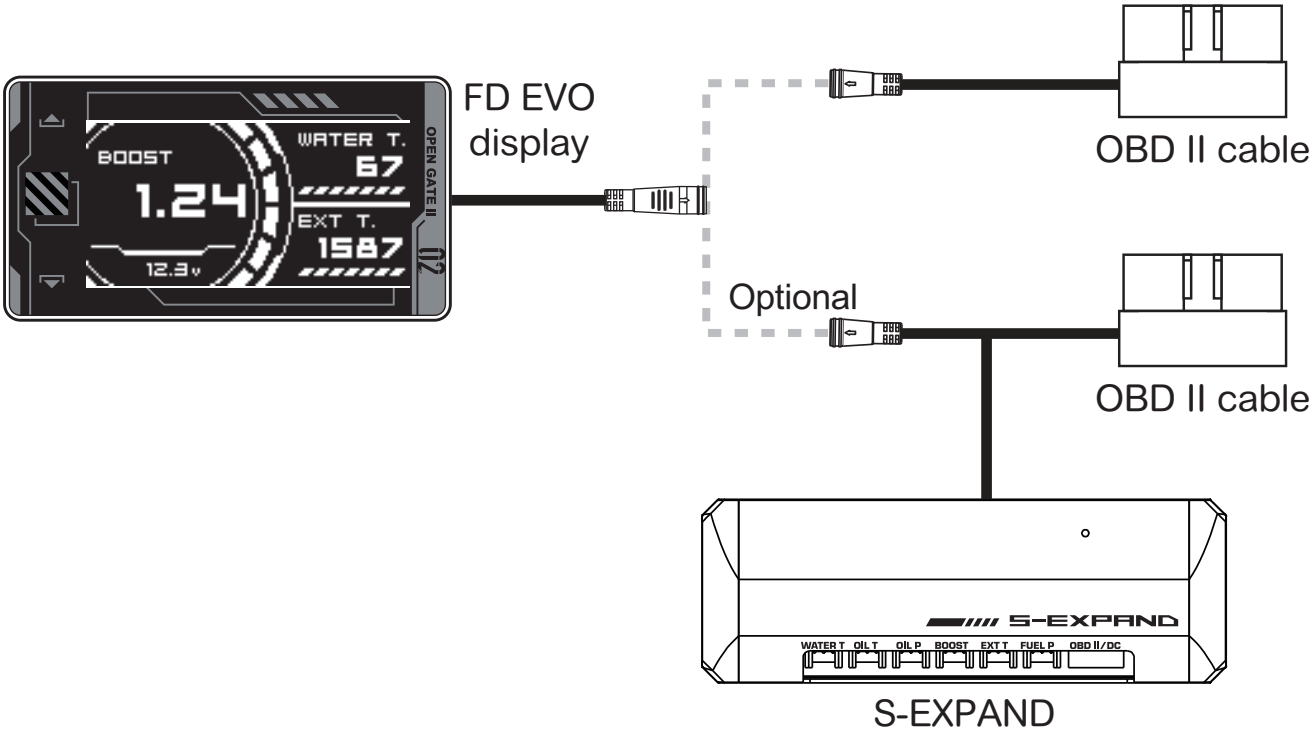
GND

ACC(+12V)

- S-EXPAND allows for independent sensor expansion, supporting water temp, oil temp, oil pressure, boost, exhaust temp, and fuel pressure, ensuring comprehensive engine monitoring.
- If the vehicle lacks an OBD II signal, the S-EXPAND can be connected to a 12V power source and used with the vehicle's ACC for power on/off control.
- It includes a communication indicator light to detect operational issues.
- When successfully connected, icon appears in the voltage display of the FD EVO.
- The power on/off is synchronized with FD EVO, requiring no extra setup.

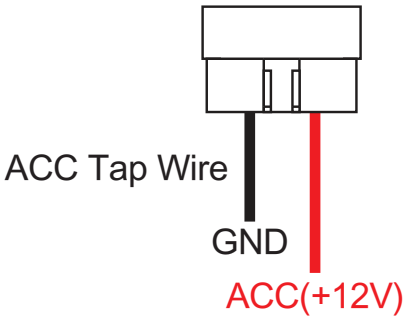
1. OBD II Connection

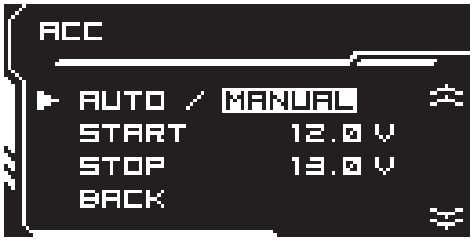
For vehicles equipped with standard CANBUS protocol, connect directly via the OBDII port. This method works with or without the S-EXPAND sensor box. Power is supplied through the OBDII port with automatic on/off functionality, significantly simplifying installation.



2. ACC Connection (Note 1)

Use the ACC power method if using the S-EXPAND box without OBDII signal control.



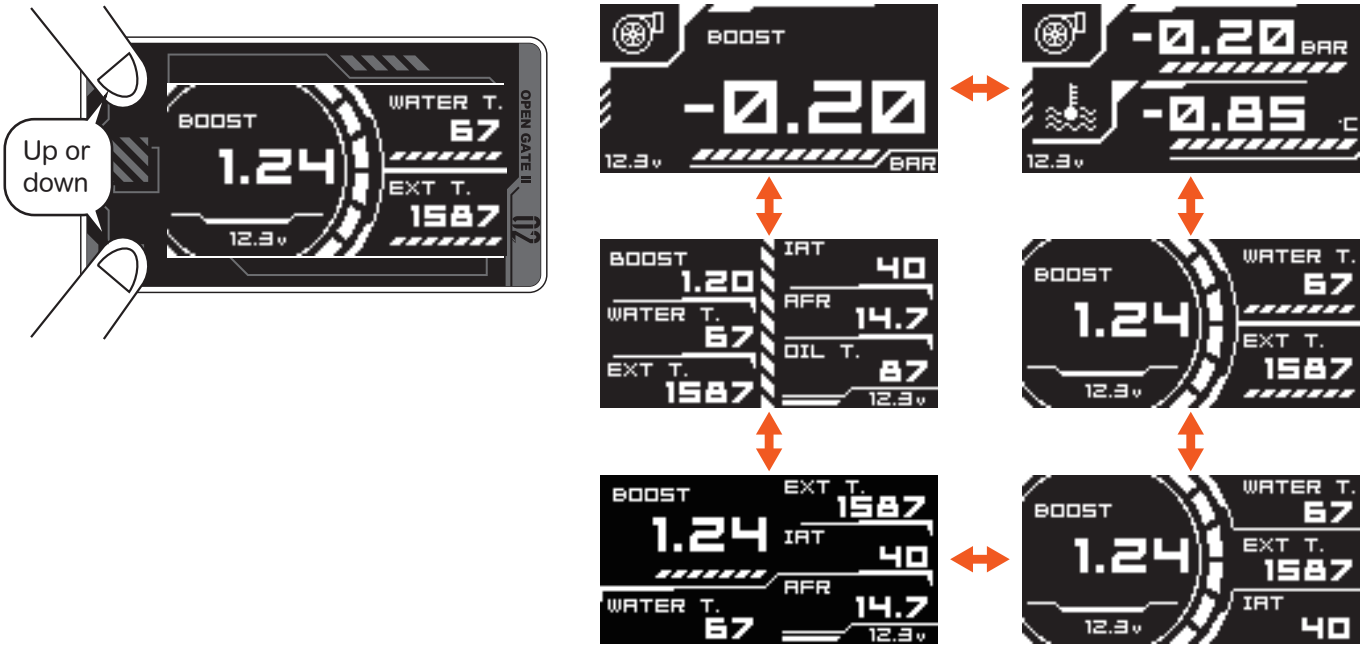


* After powering on, navigate to ACC and select MANUAL. The system will then automatically switch on/off based on the input voltage. Please refer to "More Setting" on page 6.

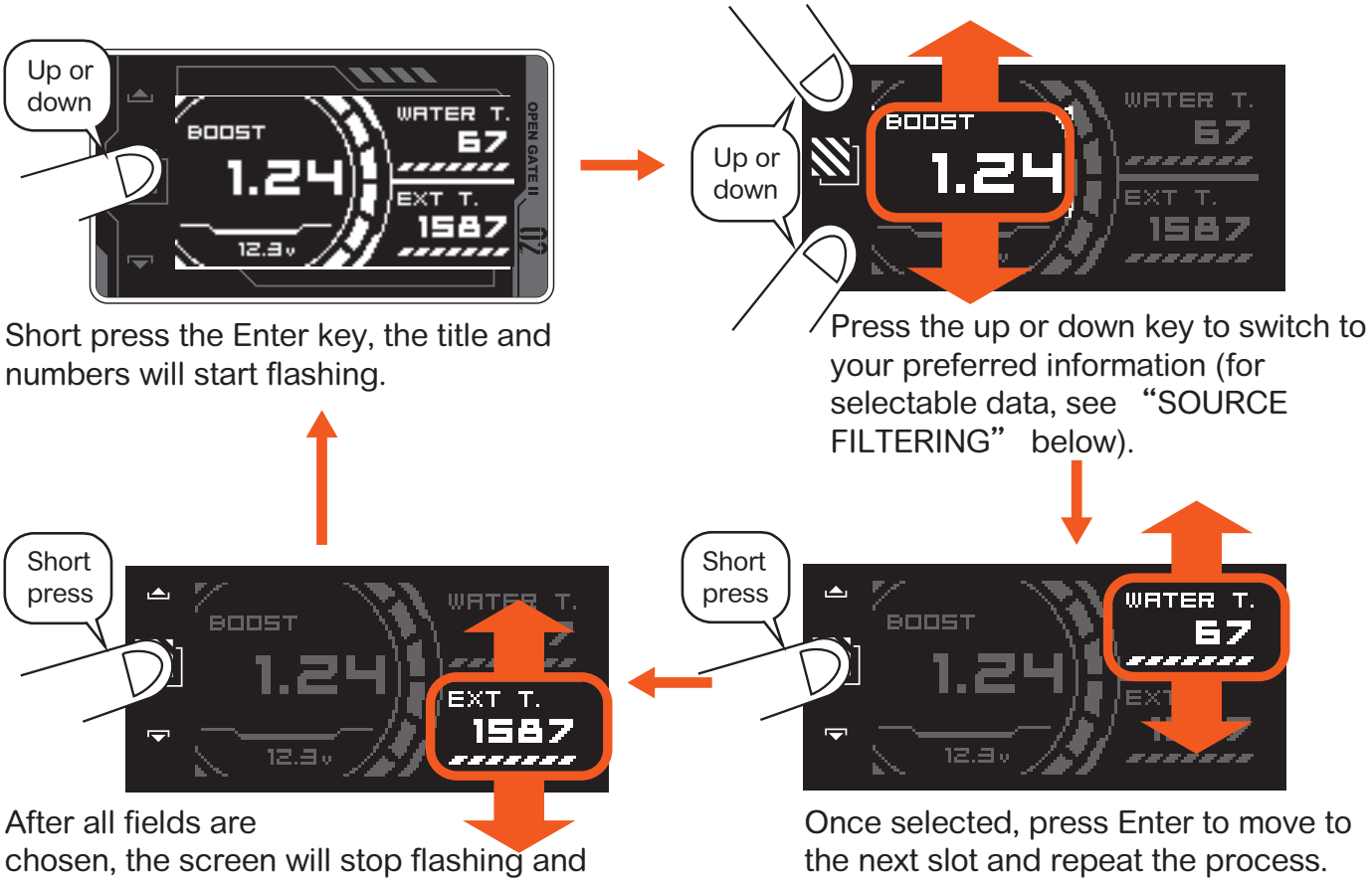
OPERATION INSTRUCTION

1. Change the number of fields.

Short press the up or down key to enter a screen cycle of one to six information.



2. Change the information in each field.



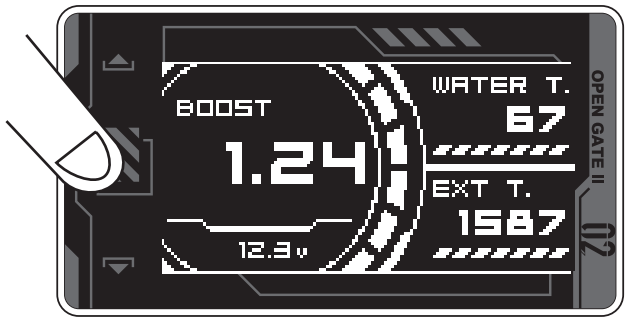
Short press the Enter key, the title and numbers will start flashing.

Press the up or down key to switch to your preferred information (for selectable data, see “SOURCE FILTERING” below).

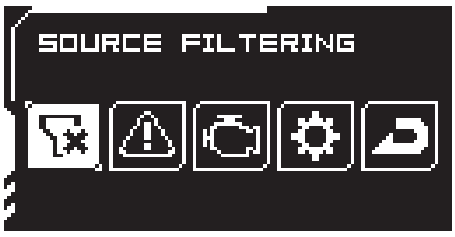
Once selected, press Enter to move to the next slot and repeat the process.

After all fields are chosen, the screen will stop flashing and return to the main display.

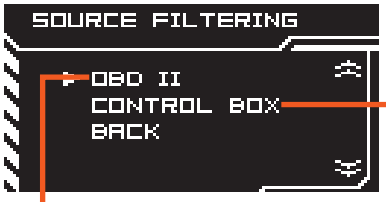
ENTER SETTINGS



Press and hold Enter for 3 seconds to enter settings.



1. SOURCE FILTERING



S-EXPAND information

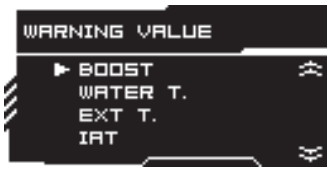
- WATER TEMP.
- BOOST
- OIL TEMP.
- FUEL PRESS.
- OIL PRESS.
- EXHAUST TEMP.

OBD II scan information

- ENGINE LOAD
- O2
- WATER TEMP.
- FUEL RAIL PRESS.
- SHORT TERM
- AFR
- LONG TERM
- FUEL LEVEL
- BOOST
- ATMOSPHERIC PRESS.
- RPM
- EXHAUST TEMP.
- SPEED
- OUTSIDE TEMP.
- SPARK ADVANCE
- THROTTLE POSITION
- INTAKE AIR TEMP.
- OIL TEMP.
- MASS AIR FLOW
- TRANSMISSION TEMP.
- ACCELERATOR POSITION
- TRIP

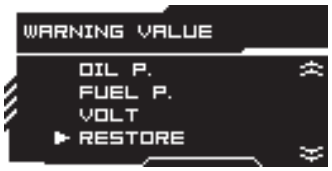
- Data can be read and displayed during operation mode.
- Data can be read but turned off manually, hidden in operation mode.
- Data cannot be read and will be hidden in operation mode.

2. WARNING VALUE



Enter after selecting.

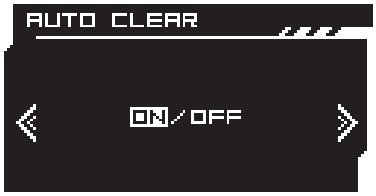
Use the up key to increase, down key to decrease, and press Enter to confirm settings.



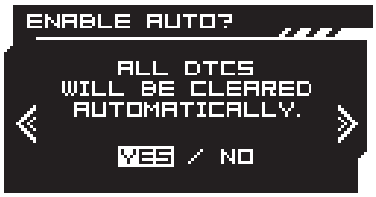
RESTORE: All warning values can be reset to factory defaults.

3. CHECK ENGINE

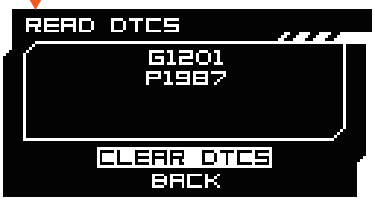
Enter after selecting.



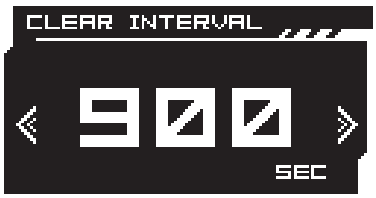
Auto Clear.



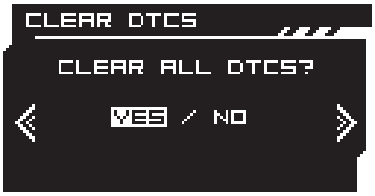
When enabled, a warning will appear: "ALL DTCS WILL BE CLEARED AUTOMATICALLY."



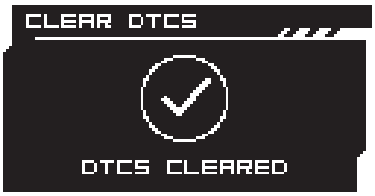
Read DTCs: Displays current fault codes.



Adjustable auto-clear interval duration:
Setting Range: 10 – 900 SEC
Default Value: 300 SEC



Selecting "CLEAR DTCS" will prompt a confirmation asking whether to clear them.



Clearing complete.

4. MORE SETTING

More settings are available; see below for details.

BRIGHTNESS

Four adjustable levels: 25%, 50%, 75%, 100%.

UNIT

Units can be customized based on preference.

SOUND

Independent toggle for key tones and alert sounds.

DIRECTION

Screen orientation can switch left/right for easier installation.
*In HUD mode, the screen mirrors to project on the windshield.

ACC

AUTO: Auto-detects.
MANUAL:
*Manually set on/off voltage.
*Can also force shutdown at 0 RPM.

If no CANBUS signal, use the OBD II cable (red: +, black: -) with ACC for power control.

CALIBRATION

*BOOST: Calibrate baseline for different atmospheric pressures.

*TRIP: Reset daily mileage.

*SPEED: Adjust speed with percentage correction.

RESTORE DEFAULT

If the device is used in a different vehicle, be sure to reset it.

OBD II MODE

*STANDARD：Default mode, suitable for general vehicle models.
*2025+：Applicable to select 2025 and newer models.

PRODUCT SETTING CORRESPONDENCE LIST

FUNCTION	Default warning value		Setting range		Default unit
BOOST	>1.5 BAR	>21.7 PSI	OFF~3.0 BAR	OFF~43.51 PSI	BAR
WATER TEMP.	>105 ℃	>221 ℉	OFF~120 ℃	OFF~248 ℉	℃
EXT TEMP.	>950 ℃	>1742 ℉	OFF~1100 ℃	OFF~2012 ℉	℃
IAT.	>75 ℃	>167 ℉	OFF~140 ℃	OFF~284 ℉	℃
RPM	>7000 RPM		500~10000 RPM		RPM
SPEED	OFF		OFF~400 km/h	OFF~248 MPH	km/h
OIL TEMP.	>120 ℃	>248 ℉	OFF~140 ℃	OFF~284 ℉	℃
TRANS TEMP.	>115 ℃	>239 ℉	OFF~140 ℃	OFF~284 ℉	℃
OIL PRESS. (NOTE)	<1.0 BAR	<14.5 PSI	OFF~9.99 BAR	OFF~144.89 PSI	BAR
FUEL PRESS. (NOTE)	<2.0 BAR	<29.0 PSI	OFF~9.99 BAR	OFF~144.89 PSI	BAR
VOLT.	<11.0 V		8~18 V		V

● NOTE: The information will appear only if a sensor is installed.

Troubleshooting

When you think the machine is faulty, please confirm the following items before sending it for repair:

Problems	WHY	Confirm items
No data is displayed or the device shuts off after starting the vehicle.	1. OBD II connector may be loose. 2. Vehicle may lack CANBUS signals.	1. Check if the OBD II plug is firmly connected. 2. Ensure the vehicle’ s make and model supports OBD II reading. 3. If using the ACC wiring method, check the power connection.
"---" appears on the screen.	it means the value cannot be displayed, likely because the vehicle’ s ECU does not support the corresponding PIDs, preventing OBD II data display.	"---" appears, it indicates the vehicle’ s ECU does not provide that data.
The upper-left icon blinks continuously.	Another mode’ s warning has been triggered.	1. Switch to the blinking mode to check if data or the vehicle is abnormal. 2. Adjust the alert value or disable the warning.
The engine shuts off but the device remains on.	FD EVO powers on/off based on the ECU signal. In some vehicles, it may take time for the ECU to enter sleep mode before the device powers off.	The ACC settings allow you to manually adjust the power control mode: 1. Default is AUTO, using ECU signals for power control. 2. In MANUAL mode, you can set the device to power on/off based on voltage or RPM.
Oil temperature or transmission oil temperature is not displayed.	FD EVO uses independent channels for different vehicle brands’ oil and transmission temperatures. When selecting display channels, only one or two channels will show data.	It’ s recommended to use SOURCE FILTERING - OBD II during engine start to choose the correct channel. If no data appears, the vehicle does not support this feature.
Some data is not displayed (boost, exhaust temp, AFR).	FD EVO uses international standard OBD II Parameter IDs (PIDs) for data mapping. If data is not displayed, it may be due to the vehicle’ s factory settings not supporting those PIDs.	Data availability depends on what the ECU provides. Diesel engines typically lack AFR and exhaust temp data; some models may lack boost data.
Displayed speed does not match the vehicle dashboard.	According to vehicle safety standards, dashboard speed readings are generally slightly faster than actual speed.	FD EVO allows speed calibration to adjust for discrepancies caused by the dashboard or changes in tire size, matching the actual speed more accurately.
Boost values show discrepancies with atmospheric pressure.	Boost pressure may vary due to elevation or sensor shifts, causing the baseline value to be non-zero in relative pressure.	FD EVO supports boost sensor calibration, allowing adjustments based on local atmospheric pressure as the baseline. Note: Boost calibration only applies to external MAP sensors; turbo values read from the ECU via OBD II cannot be adjusted.

When the product needs to be repaired, please collect the product body and accessories and return them to the original place of purchase.

www.shadowmotor.com.tw

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