ODG

UPGRADE PACK

INSTRUMENTS CLUSTER

Ford Pickup
1953 - 1955

PRESENTATION

This instrument panel was developed to be used as a replacement for the original panel of FORD pickups manufactured between 1953 and 1955.

Its system is entirely digital, which allows the speedometer, tachometer and fuel level to be configured to work accurately in the vehicle.

The speedometer is suitable for any gear ratio and tire outer diameter. It is compatible with sensors that provide square signals (usually three-wire sensors).

The tachometers work with 4, 6, 8-cylinder Otto cycle engine.

The tachometers have an associated Shift Light RPM warning light.

The fuel level indicator can be configured for any fuel level sensor + tank set installed in the vehicle.

The pointers are moved by stepper motors that have great precision and a long service life. These motors are reset every time the ignition is turned on and off, allowing the panel to turn off completely useful. its power supply (battery) after turning off the ignition key. This feature prevents any battery consumption when turned off, allowing the panel to be used in competition/collection vehicles equipped with a master key.

The settings are saved in memory and are not lost when the power is turned off. The panel can be left without power for an indefinite period of time without the settings being maintained.

The translucent lighting combines the qualities of modern LED lighting with a graphic that recalls the original. The pointers have red lighting.

The lighting intensity can be adjusted via the keypad, with the DIMMER function.

FEATURES

• Fully electronic, pointer movement with stepper motors

• Translucent lighting and brightness adjustment (dimmer). Has output to control the brightness of compatible ODG instruments.

• Speedometer configurable for any gear ratio and tire outer diameter

• Total, partial and fuel reserve odometers* on high-contrast OLED display

• Tachometer configurable for Otto cycle engines

• Built-in Shift Light Alert function

- Engine temperature indicator, with sensor included
- Engine temperature indicator with programmable warning light.
- Fuel level indicator configurable for use with various level sensors
- Turn signal with lights (LED) indicating the original and additional functions:
  - Oil pressure, Alternator, Turn signals, High beam, Brake.

: The reserve odometer displays the distance traveled after reaching the fuel reserve. It is activated with a tank below 1/8 and automatically deactivated above 3/16 of a tank.

INSTALLATION PREPARATION

The panel installation is relatively simple, however, it is recommended that it be done by a professional with experience in automotive electrical systems and the tools required.

Use a circuit test light to identify the function of the original cables of the old panel connector and other necessary signals.

We recommend not soldering the cable joints, as this makes the joint rigid and may cause the cable to break.

Engine Temperature Sensor - The panel comes with a two-terminal sensor (MTE4054 - IG0803). This sensor has an M10 thread. If the original sensor has a different thread, it will be necessary to install an adapter bushing.

Speed Signal - The speed signal captured may have a square waveform. Typically, three-terminal sensors are those that require power and provide square signals for this reason, the panel provides a three-wire harness for three-terminal sensors (sensor power: red 12V, ground: black, and square signal: green/purple).

Fuel Level Sensor (float) - The fuel level indicator comes pre-configured to operate with the float (Empty: 260Ω; Half: 150Ω; Full: 40Ω).

If you are using a different float + tank set, you will need to configure it in adjustable float mode, selecting the **«OTHER FLOATS»** option, which will be demonstrated later.

Tachometer Signal:

Otto cycle engines - The tachometer input for Otto cycle engines can be connected to different points, such as:

- tachometer output from the ECU (electronic injection control unit)

- tachometer output from the ignition module.

- HALL distributor signal (middle pin of the 3-pin distributor)

- negative pulse signal from the coil. (*except in vehicles with MSD type ignition modules*)

These four sites provide a tachometer signal; however, to avoid electromagnetic noise problems, we do not recommend reading the signal directly from the coil, as it is a major generator of this type of interference.

In vehicles with MSD type ignition modules, the tachometer signal must be read from the exclusive tachometer output of the module itself.

Diesel cycle engines: for Diesel cycle engines, the tachometer signal must be obtained from the alternator (usually W terminal) using the ODG CSI-1 module.

Green cable: this is the rotation signal input with a square waveform.

White Cable / Lighting Signal - The White cable of the main harness is responsible for lighting the panel. It must be connected directly to the headlight switch (half light / taillights) BEFORE the vehicle's original rheostat / dimmer.

Yellow Cable / +12V battery - The Yellow cable of the main harness is part of the panel power circuit. It must be connected directly to the battery positive (line 30). It is responsible for maintaining the panel power supply and when the ignition is turned off, it allows the pointers to return to the beginning of the scale and the odometer values to be saved. As soon as the pointers return, the yellow cable circuit is turned off internally, completely interrupting battery consumption to prevent it from discharging.

Red Cable / +12V ignition - The red cable of the main harness is responsible for activating the panel. It must be connected to the +12V post-key (line 15) that does not turn off when the starter motor is activated.

The original panel harness normally has an accessory +12V, but this turns off during the start, causing the pointers to start twice and may even corrupt the panel's memory. It should not be used.

If the panel displays fluctuations in the indications, especially in RPM and SHIFT, it is likely that electromagnetic interference is occurring and causing such fluctuations.

In this case, check for wear on the spark plugs, spark plug wires, rotor and distributor cap. Always use suppressive spark plug wires and resistive spark plugs.

WE DO NOT RECOMMEND INSTALLING THIS PANEL ON VEHICLES WITH POINTS DISTRIBUTOR due to the high noise level generated by this type of distributor.

DISPLAY

The dashboard has a high-contrast OLED display that display the odometers, and settings. During normal use, the screens below are displayed.

SCREEN 1:

 ‣ Reserve Odometer
‣ Total Odometer
‣ Partial Odometer

The Reserve Odometer indicates the distance traveled after reaching the fuel reserve (less than 1/8 of the tank). It is automatically activated when this value is reached and turns off after the indicator reaches 3/16 of the tank).

The Total Odometer indicates the total distance traveled. It can be pre-loaded with the odometer value from the original dashboard, as will be demonstrated later.

The Partial Odometer also indicates the distance traveled, however, with a resolution of 0.1 mile and can be reset by pressing the **MPH** button for 3 seconds.

ASSEMBLY

The dashboard is designed to be assembled in the same way as the original. Remove the original instrument cluster and install the ODG dashboard.

SETTINGS:

Rev counter (Tachometer):

Otto cycle: With the ignition off, press the **SET** button, turn the ignition on. The display will show screen 2, release the button.

= SETUP =
SPEEDOMETER
FUEL LEVEL
TACHOMETER

The button ⟳ allows you to select between SPEEDOMETER, FUEL LEVEL, TACHOMETER and TEMPERATURE settings.

Select TACHOMETER and press the **SET** button to confirm.

= SIGNAL TYPE =
4 CYLINDERS
6 CYLINDERS
8 CYLINDERS

On screen 3 will offer the options of 4, 6 and 8 cylinders. Choose with the ⟳ button and confirm with **SET**. The instrument will initialize, confirming the configuration made.
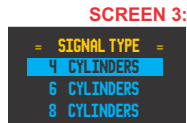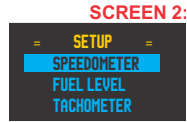
Shift Light:

To program the desired speed so that the alert (SHIFT) is activated, keep the engine at the desired speed and press the **SET** key for 1 second. The SHIFT LED will flash, indicating that the configuration has been saved.

If you wish to deactivate the function, simply perform this procedure with the rotation below 2000 rpm.

To record a value higher than the one previously recorded, first deactivate the function and then record the desired value.

Fuel level indicator:

For the panel to display the fuel level correctly, the PINK cable of the main harness must be connected to the vehicle's fuel level sensor (float).

After installation, the instrument must be configured according to the following steps:

Standard, pre-configured fuel level sensor:

If the application is in a vehicle that has one of the pre-configured sensors, follow the instructions:

1- With the ignition and headlights off, press the SET button and turn on the ignition (no need to start) and release the button.

= FUEL LEVEL =
STD SENSOR
CUSTOM SENSOR

2- On screen 2, select the FUEL LEVEL option.

3- On screen 4, select the desired float.
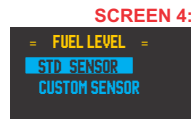
Other floats:

If you are using a sensor or tank other than the standard ones, you will need to configure a custom sensor.

This configuration can be done in two ways:

The first is **BY RESISTANCE**, when you already know the resistance value for an empty tank, half tank and full tank.

The configuration is done by selecting CUSTOM SENSOR on screen 4 and then BY RESISTANCE on screen 5.

On screen 6, enter the resistance corresponding to the EMPTY tank, pressing the **SET** key, the value of the highlighted digit is increased, pressing ⟲ selects the next digit to be changed.

To continue, select CONFIRM and press **SET**.

Next, enter the resistance corresponding to HALF tank, confirm and then enter the resistance for FULL tank and confirm.

After confirming, the message CONFIGURATION OK will be displayed.

The second and most accurate way is **BY FUEL**, which must be done with the float installed in the tank and adding fuel, recording the resistance for each point (empty, half and full).

SCREEN 4:

= FUEL LEVEL =
STD SENSOR
CUSTOM SENSOR

This way, the indication will be accurate, regardless of the shape of the tank.

To configure, on screen 5 select **BY FUEL**.

Screen 7 will be displayed with the resistance value read.

Make sure the tank is empty and confirm by pressing **SET**.

Then the screen asking for HALF TANK will be displayed, enter the amount of fuel corresponding to half a tank, wait for the resistance to stabilize and confirm with **SET**.
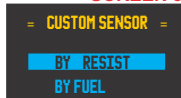
SCREEN 5:

= CUSTOM SENSOR =
BY RESIST
BY FUEL

Shortly after, the request TANK FULL will be displayed, add fuel until the tank is full, wait for the resistance to stabilize and confirm with SET.

SCREEN 6:

EMPTY TANK
250 Ω
CONFIRM

After confirming, the message CONFIGURATION OK will be displayed.

Speedometer Sensor:

In order for the speedometer to indicate the speed correctly, it is necessary to configure it in the vehicle itself. To do this, after installing the dashboard and the speed sensor, with the ignition key off, press the **SET** button, turn the ignition key, and screen 8 will be displayed.

Pressing the ⟳ button changes the highlighted menu.

With the SPEEDOMETER option highlighted, press the **SET** key to confirm.

On screen 9, select SETUP SENSOR.

The configuration can be done in two ways: By traveling a certain distance (264ft or 1 mile) or by maintaining a speed of 40 m/h for programming.

To configure by distance, on screen 10, select the option that corresponds to the distance to be traveled for configuration.

While on screen 11, travel or turn the wheel the number of times corresponding to the selected value. Note that the counter should increase as the wheel turns.

This counter indicates the number of pulses read from the sensor and not the distance traveled!!!

After traveling the selected distance, press **SET** to confirm the programming.

To configure by speed, on screen 10, use the ⟳ key to select the 40 m/h option and then press the **SET** key to confirm.

Screen 12 will be displayed.

At this point, in a safe place, start the vehicle moving

The words STOPPED or MOVING will appear on the yellow line, which serves to see if the sensor is working correctly.

If the vehicle does not indicate MOVING when driving, check the sensor connection.

SCREEN 8:

= SETUP =
SPEEDOMETER
FUEL LEVEL
TACHOMETER

TEMPERATURE

When you are at 40 m/h, press and release the **SET** key. The panel will initialize and will start to show the speed.

NOTE: *During this programming, all the pointers will remain stopped at the beginning of the scale. The speedometer's accuracy will depend directly on the speed m that the vehicle was going when this configuration was performed.*

SCREEN 9:

= SPEEDOMETER =
SETUP SENSOR
SET ODOMETER
RESET CONFIG

Total odometer - Preloading a mileage value:

It is possible to configure the total mileage value, allowing you to preload the odometer value from the vehicle's original panel. To do this, access the SPEEDOMETER ► SET ODOMETER function. (screens 8 and 9) The configuration screen 13 will be displayed. By pressing the **SET** key the value of the highlighted digit is incremented, pressing   selects the next digit to be changed.

SCREEN 10:

= SETUP SENSOR =
264 FEETS
1 MILE
40 MILES/H

SCREEN 11:

= SETUP SENSOR =
RUN OR SPIN
264 FEETS
PULSES: 0

To finish, select CONFIRM and press M/H.

The panel will restart, completing the configuration.
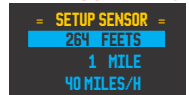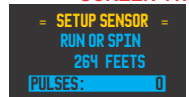
Temperature sensor type selection:

To choose between the two possible sensor types, on screen 8 select the TEMPERATURE option.Screen 14 will be displayed.Select the SENSOR CONFIG option and then select the installed sensor (MTE3088 or MTE4054) and confirm with the **SET** key.

High temperature alert:

To configure the temperature at which the alert LED is activated, on screen 8 select the TEMPERATURE option, screen 14 will be displayed.Select the ALERT CONFIG option.On screen 15,holding down the key ○ , the alert value will vary between 180º and 250ºF.When the desired temperature is reached, press the **SET** key to confirm.
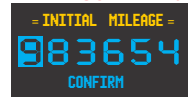
Reset configuration:

To return the speedometer to the factory settings (500 pulses per 0.1 mile and odometers reset), on screen 9, select the RESET CONFIG option and confirm.

Note: This procedure does not change the other settings.

Resetting the Partial Odometer:

To reset the partial odometer count, at any time during operation, press the **SET** key for 3 seconds.

Selecting the Lighting Color:

To select the lighting color, follow the procedures below:

With the ignition key and headlights off, press and hold the **DIMM** key.

Turn on the headlights and wait 3 seconds, then release the key.

The panel will light up in the last programmed color. Each time you press and release the **DIMM** key again, the lighting color will change with each key press.

When you reach the desired color, just wait 15 seconds and the lighting will flash, indicating that the selected color has been memorized.

DIMMER - Adjusting the lighting intensity:

To adjust the lighting intensity, at any time the headlight is on, press the **DIMM** key. The lighting intensity will vary between minimum and maximum while the key is pressed, and the display will indicate the lighting intensity. When you release the key, the setting is saved.

Note: In order for the panel to control the intensity of other instruments in the Fullcolor line, the brown cables of the other instruments must be connected to the brown cable on the panel. Therefore, when changing the intensity using the DIMMER function, all instruments will have their intensity changed.

Checking settings:

To view the values of the saved settings, turn on only the headlight and then press the **SET** key.

A screen will be displayed with the W values (pulses per 0.1 mile), the firmware version, the cylinder configuration and the float resistance values corresponding to empty, half and full tanks.

PACKAGE CONTENT
1 Instrument Cluster
1 Main Harness
1 Indicators Harness
1 Water temp. Sensor with Harness

1 Configuration Keyboard
1 Instructions Manual
1 Warranty Certificate
1 ODG Sticker

TECHNICAL SPECIFICATIONS

Supply Voltage: . . . . 9 a 16 Vdc

Maximum Fuel Level Resistance: . . . . 1k ohm

Compatible Temperature Sensor: . . .. MTE4054 / MTE3088

Compatible Speed Sensor: . . . . Sensor type HALL or INDUTIVE

Operating Current: . . . . 750mA (max)

Resting Current: . . . . < 1mA

Cables: . . . . 20AWG x 20"

ELECTRICAL DIAGRAM:

The **RED** cable must be connected to the +12V ignition that does not turn off when starting, preventing the device from starting when turning the key and trying to start again when starting.

The **YELLOW** cable must be connected to the +12V battery (line 30), as it is responsible for maintaining the device's power supply and allows the pointer to return to its initial position after the ignition is turned off.

The rotation signal, **GREEN** cable, can be read directly from the **ECU** tachometer output, from the **ignition module**, from the **distributor** or from the **negative of the coil**.
Give preference to the first options.

MAIN HARNESS - 14 Ways
Isolate unused cables

1 - Black	GND	7 - Brown	Dimmer Output
2 - Red	+12V Ignition	8 - Green	RPM Hall
3 - Blue	Temp. signal sens.	9 - Branco	+12V Taillight
4 - Black	GND to temp. sens.	10 - Gr/Pr	MPH Hall
5 - Yellow	+12V Battery	11 - Red	+12V Ign. to speed.
6 - Pink	Fuel Level sens.	12- Black	GND to speed sens.

INDICATORS HARNESS - 6 Ways

Positive Signals ⊕

Gy/Wh   Gy/Bk   Blue

Negative Signals ⊖

Pink   Orange   Purple

Ignition Coil (without MSD)

HALL Distributor

RPM input for square signal

Ignition Module

ECU

GREEN

BROWN

PWM negative output for other ODG instruments Isolate when not in use

Tail Light key

WHITE

BATTERY

YELLOW

IGNITION KEY

RED

BLACK Ground

Fuel Level Sensor (sensor NOT included)

PINK

Speed Harness

Temperature Harness

BLACK: GND for sensor
BLUE: Temperature Signal

Setup Keys

Speed Sensor HALL Hall (sensor not included)
RED: 12V out for sensor
BLACK: GND for sensor
GREEN/PURPLE: Speed Signal
Ground the Green/Purple cable when not in use

Temperature Sensor MTE 4054 (sensor included)

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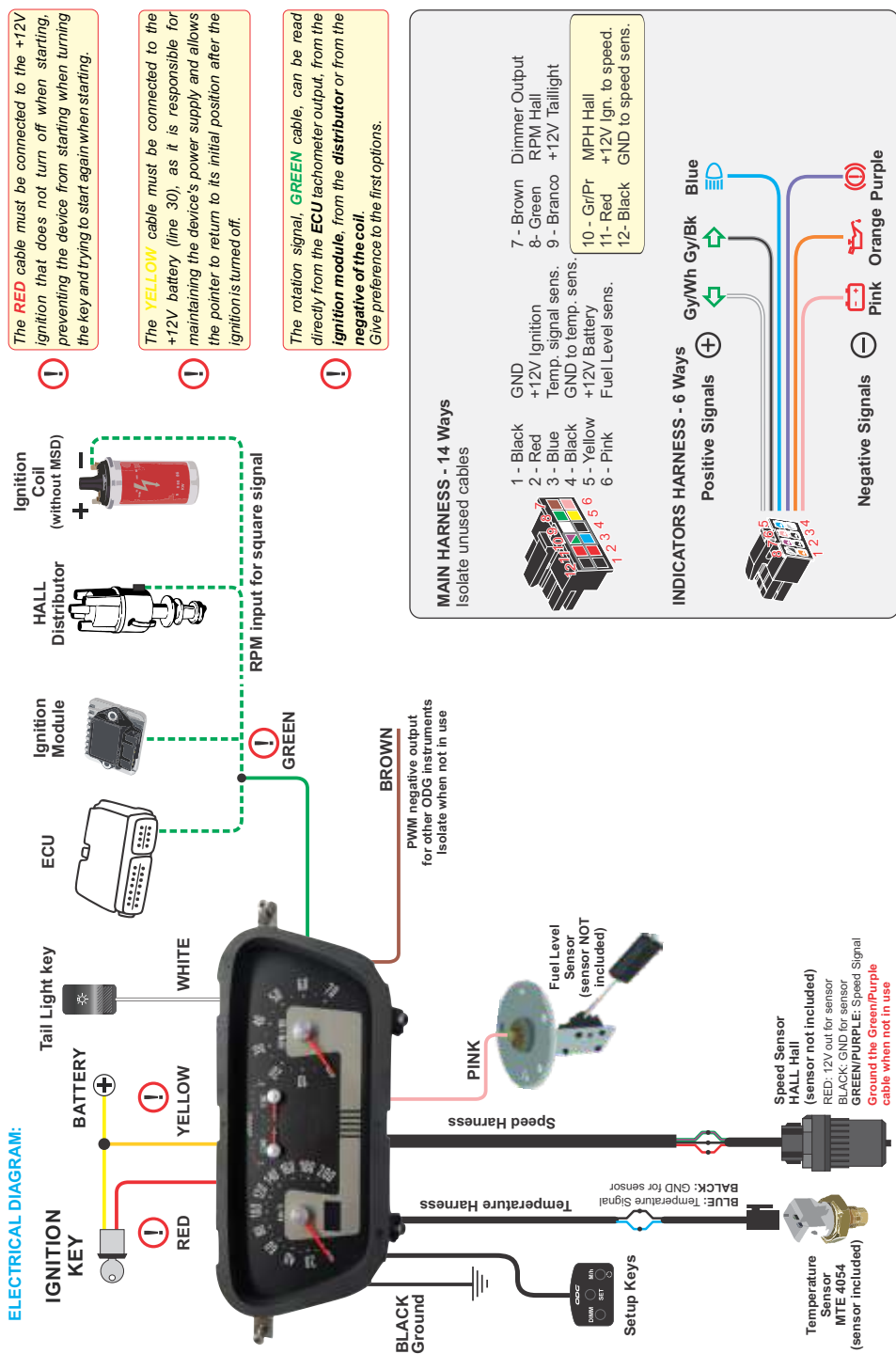
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