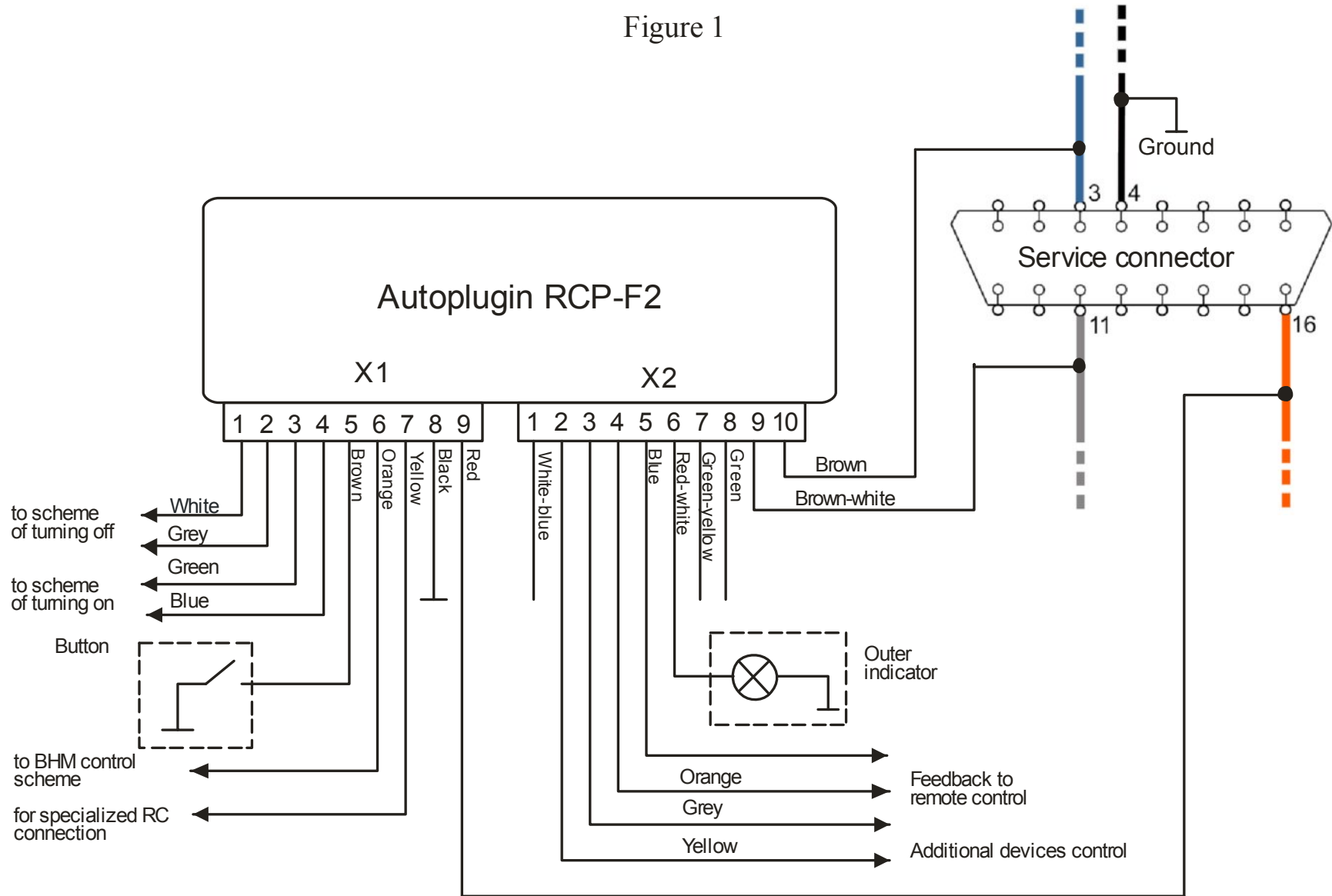


# **Autoplugin RCP-F2**

## **Installation Manual**

Figure 1



## 1) Connection variants

It is enough to connect supply wires (X1.8, X1.9) and CAN-bus wires (X2.9, X2.10) to the module to obtain a possibility to start the heater by Ford key. It can be made by plug-n-play cable (quick connection) or by quick splice connectors (permanent connection). If you wish to connect additional remote control, permanent connection is recommended.

## 2) Permanent connection schemes

- **General connection scheme** (fig.1, page 2)

Explanations to the scheme:

- The car's wiring marked in colour.
- Optional elements are outlined by dashes
- An original Ford windscreen or back glass heating button can be additionally installed as a heater control button. The button pinout presented at the figure 2. Buttons are optionally available.

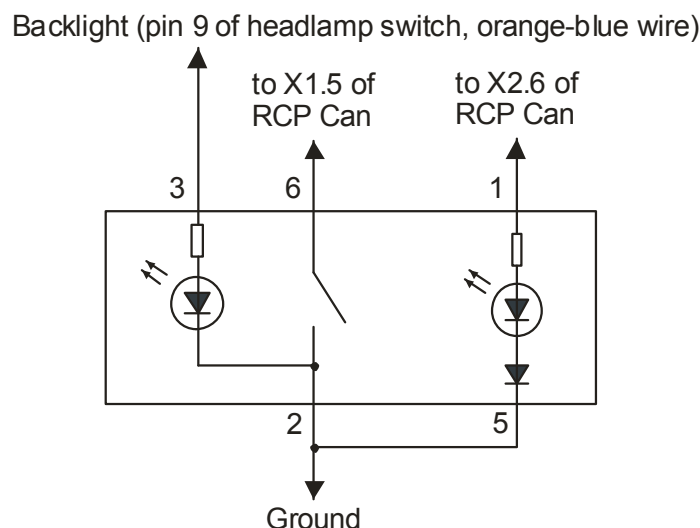


Figure 2

- **Connection of the inputs Heater\_on± and Heater\_off±**

You can connect and use a set of devices as a remote control of your fuel-fired heater: specialized heater remotes (such as Telestart, EasyStart, Smart Start), additional alarm systems remote controls, GSM mobile phones in conjunction with automotive GSM-modules, etc.

If your remote control has output channels that give short impulses in active state, it is possible to apply the schemes given at fig. 3-7. The remote control with two independent channels can separately turn the heater on and off.

- The fig.3 presents the scheme to turn the heater on by the impulse of positive polarity. The fig.4 presents the scheme to turn the heater on by the impulse of negative polarity.

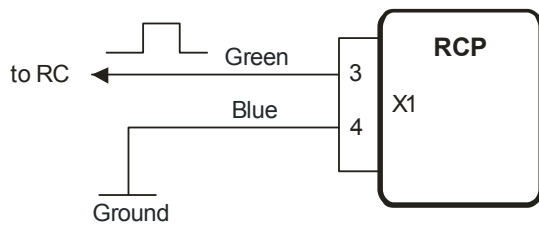


Figure 3

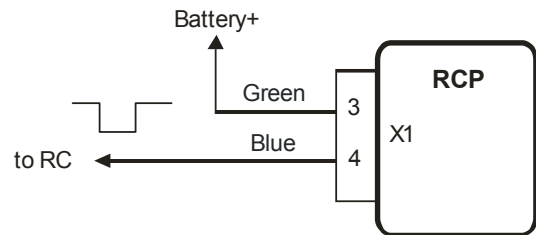


Figure 4

- The fig.5 presents the scheme to turn the heater off by the impulse of positive polarity. The fig.6 presents the scheme to turn the heater on by the impulse of negative polarity.

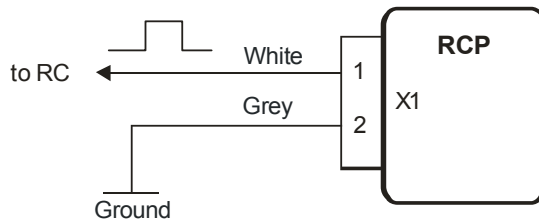


Figure 5

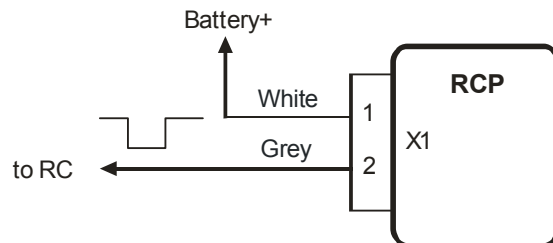


Figure 6

- The remote control with the only one output channel may be connected by the scheme at fig. 7 to add a possibility not only to turn the heater on, but also turn the heater off too. Every one impulse on the output of the remote control receiver unit will move the heater to the opposite state: switch on the idle heater, switch off the operated heater. To realize this mode it is necessary to connect in pairs the inputs Heater\_on+ with Heater\_off+, and the inputs Heater\_on- with Heater\_off-.

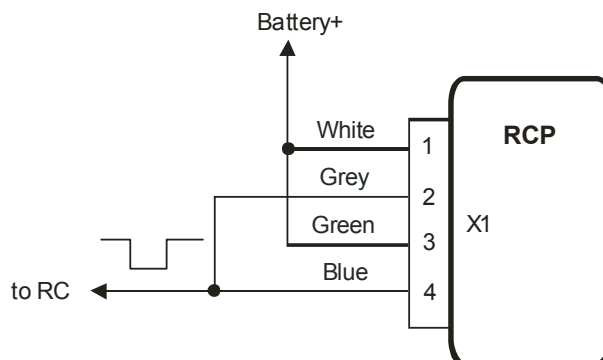


Figure 7

- **Connection of the input RC\_in**

- The input RC\_in is intended for the connection of specialized remote controls such as DEFA Smart Start, Hydronic Easy Start, Webasto Telestart. If a problem exists with direct connection of the remote control output line to the input RC\_in, it is recommended to make a connection by the scheme at the fig.8.

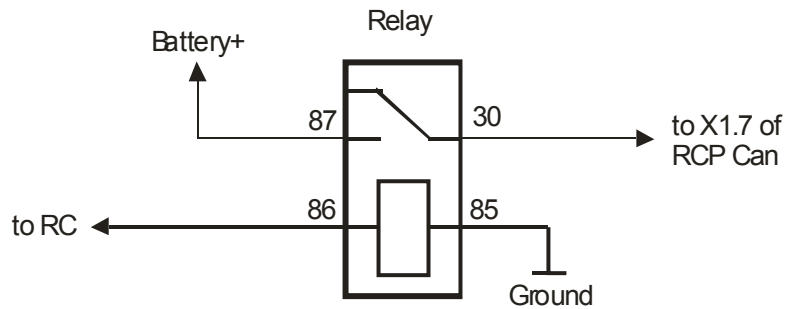


Figure 8

- Some GSM modules can control an additional device through the inner relay. They may be connected to RCP Can by the scheme at the fig.9

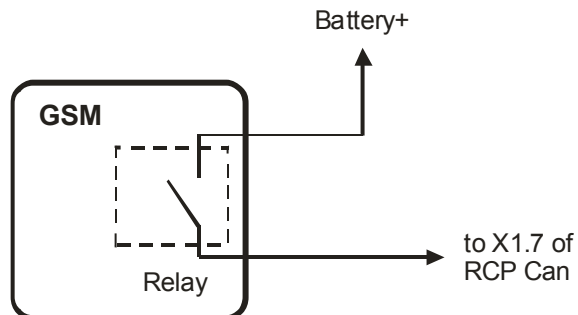


Figure 9

- **Alerts receiving**

If remote control unit has got inputs to obtain information about the heater operation, they can be connected to the RCP Can outputs Alert\_1 and Alert\_2. The outputs have negative polarity. Therefore if remote control unit don't fit it, it needs to apply a matching circuit (with relay ex.).

Events given on the outputs Alert\_1 and Alert\_2 are adjusted by the settings 7.3 and 7.4 accordingly. Also the RCP output line Timer\_out can be used as a notification how much time the heater operates.

- **Manual control of the boost heat mode**

The boost heat mode can be controlled manually by additional switch button (fig. 10). The button function will depend on the setting 1.1.

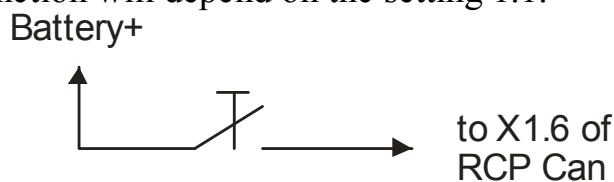


Figure 10

- **Status output line application**

1. Ventilation shut down during the heater autonomous operation.

The scheme with additional relay at fig.11 is used to turn off the automatic climate control module when the heater operates on pre-heat mode. This helps to prevent main battery from discharging if trips are not enough long to charge the battery between two cycles of the heater operation. To turn the ventilation off it is necessary to activate the setting 7.5.6, to turn on back – setting 7.5.8.

General Electronic Module (GEM) is placed in the deepening of the dashboard, under the glove compartment. The layout of C95 connector on GEM can be found at the fig.13 (page 8).

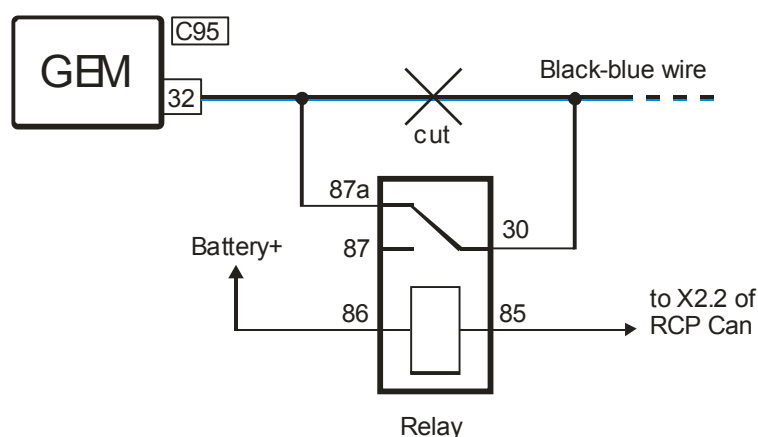


Figure 11

### 3) Installation procedure for permanent connection variant

- **General recommendations**

It is highly recommended to disconnect the main battery before the installation. Note that the battery disconnection will reset the power windows settings, the heater

settings in DIS, and also the radio will ask to enter the code after the battery reconnection. See vehicle's user manual for details.

The required tools: Torx T25 screwdriver, wire cutter, wire stripper.

- Remove the screw that secures the panel around the service connector on the left side of the dashboard. Gently pull the panel and remove it
- Find a place inside the dashboard to install the module (mounted on double-sided tape)
- Connect the module to the vehicle's wiring according to the scheme at the fig.1. Connect the module to the receiver unit of remote control, according to the schemes at the figures 3-9. Make task specific connections, if necessary. The module is powered and connects to the CAN-bus wires near the service connector by quick splice connectors (supplied). The backside view of the service connector presented at the fig.12.

The module's power (pin X1.9) connects to the orange wire of service connector (pin 16), the module's signal ground (pin X1.8) – to the black wire of service connector (pin 4).

The signal «CAN-L» (pin X2.9) connects to the blue wire (pin 11), the signal «CAN-H» (pin X2.10) – to the grey wire (pin 3). Twist the brown and brown-white wires of the connector X2 to the pair before making connections. It is not recommended to lengthen these wires.

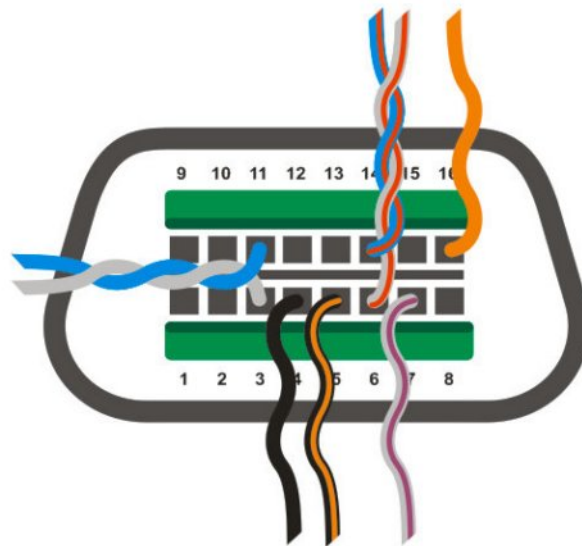


Figure 12

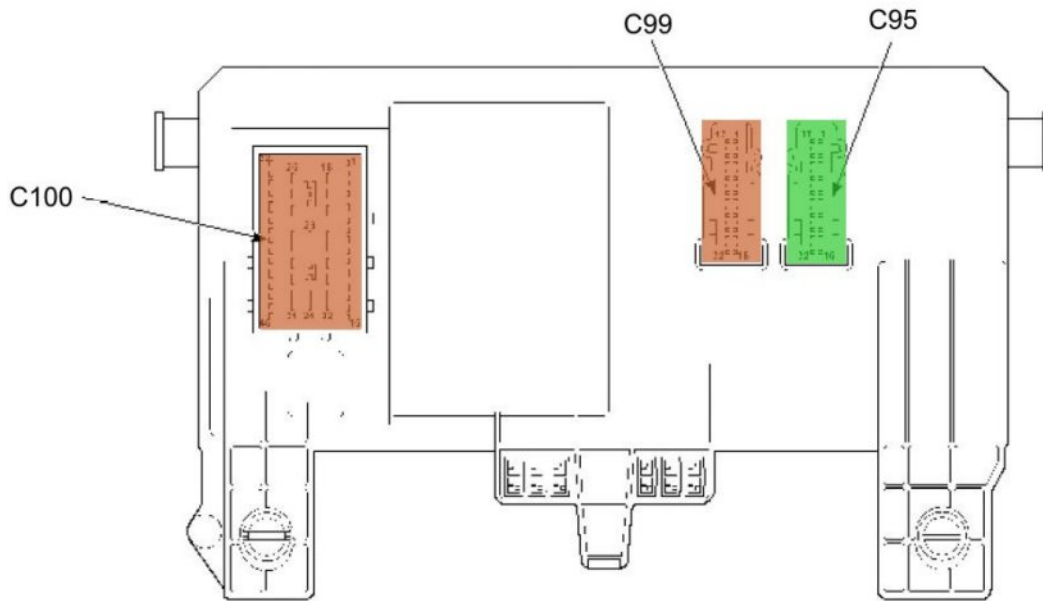


Figure 13

- Connect both connectors to the module (X2 should be connected first)
- Connect main battery
- Turn the ignition on to let the module get information from CAN-bus
- Adjust the heater in the driver information system (see user manual, chapter Preparation to Work)
- Test heater start by the module's command
- Fix the module using double-sided adhesive tape
- Install interior elements in the reverse order of removal
- Adjust the module in programming mode if it necessary. Make notes in the programming table of user manual about the adjustments