Autoplugin RCP-F2

Installation Manual

Rev E

Figure 1

Autoplugin RCP-F2

Service connector

Ground

Button

Outer indicator

Pin	Color
X2-10	Brown
X2-9	Brown-white
X2-8	Green
X2-7	Green-yellow
X2-6	Red-white
X2-5	Blue
X2-1	White-blue
X1-9	Red
X1-8	Black
X1-7	Yellow
X1-6	Orange
X1-5	Brown
X1-4	White
X1-3	Grey
X1-2	Green
X1-1	Blue

White — to scheme of turning off
Grey
Green — to scheme of turning on
Blue

Feedback to remote control
Additional devices control

Orange
Grey
Yellow

to BHM control scheme
for specialized RC connection

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 using of plug-n-play cable (quick connection) or by using of 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:
- o The car's wiring is marked in colour.
- o Optional elements are outlined by dashes
- o 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.
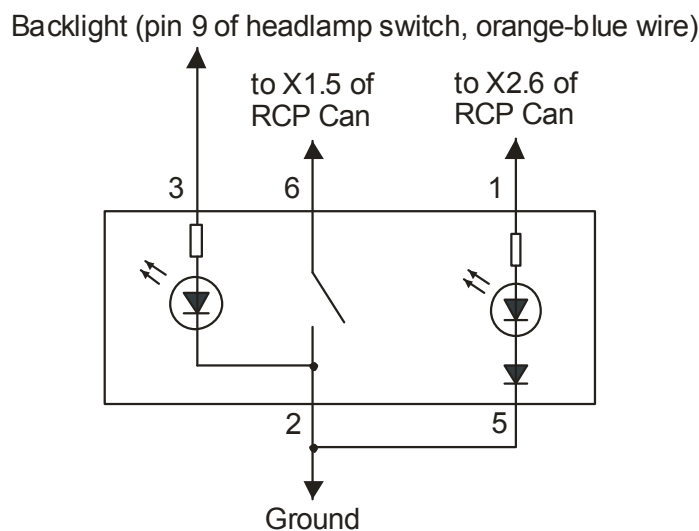

Figure 2

- **Connection of the inputs Heater_on± and Heater_off±**

You can connect various remote control devices for heater remote control: specialized heater remotes (such as Telestart, EasyStart, Smart Start), additional alarm systems remote controls, mobile phones in conjunction with automotive GSM-modules, etc.
If remote control unit has got output channels that give short impulses in active state, the schemes given at fig. 2-6 may be used. RC unit with two output channels can separately turn the heater on and off.

o The fig.3 presents the scheme of turning the heater on by the impulse of positive polarity. The fig.4 presents the scheme of turning the heater on by the impulse of negative polarity.
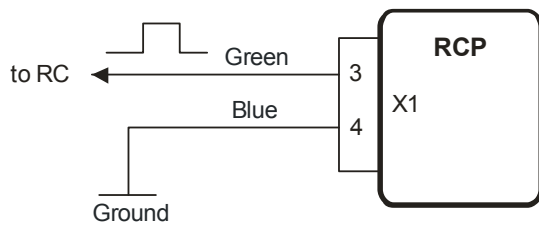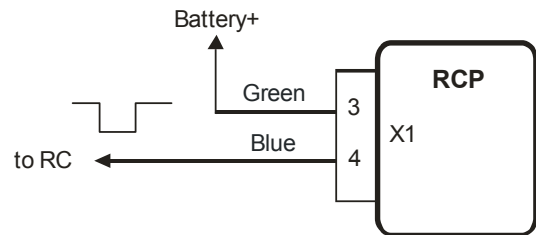

Figure 3

Figure 4

o The fig.5 presents the scheme of turning the heater off by the impulse of positive polarity. The fig.6 presents the scheme of turning the heater off by the impulse of negative polarity.
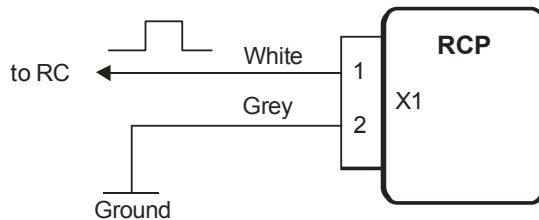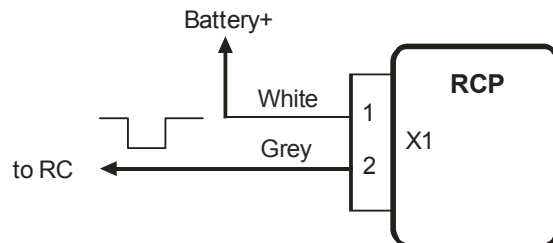

Figure 5

Figure 6

o The remote control with the only one output channel may be connected by the scheme at fig. 7 to add a possibility not only turn the heater on, but also turn the heater off too. Every one impulse on the output of the remote control receiver unit moves 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-.
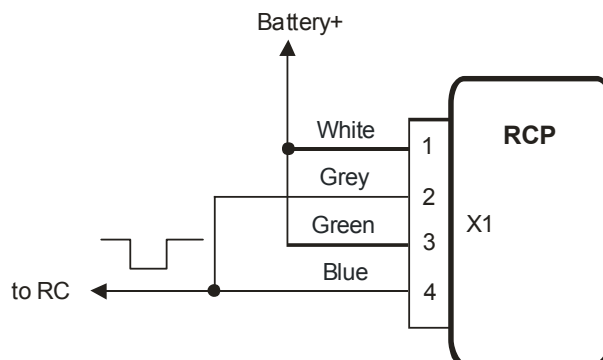

Figure 7

- **Connection of the input RC_in**

  o The input RC_in is intended for connection of specialized remote control devices such as DEFA Smart Start, Hydronic Easy Start, Webasto Telestart. If direct connection of RC's output control line to the RCP's input line RC_in is not functional, try the scheme at the fig.8.
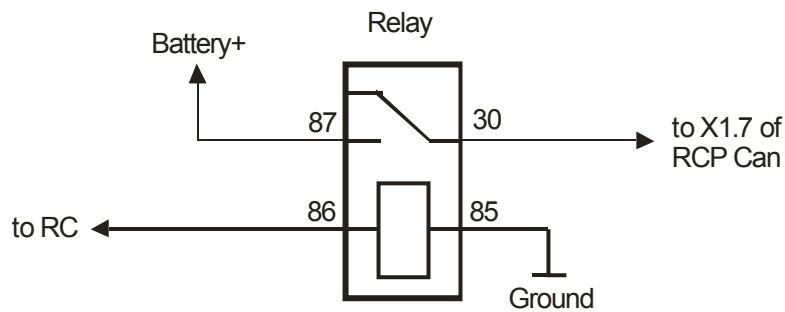
Figure 8

  o Some GSM modules can control additional device by the means of embedded relay. These may be connected to the RCP by the scheme at the fig.9
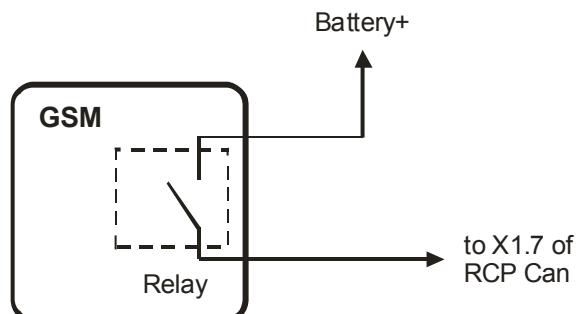
Figure 9

- **Alerts receiving**

If remote control unit has got inputs to obtain information about the heater operation, these can be connected directly to the RCP outputs Alert_1 and Alert_2. The outputs are negative polarity. If inputs of remote control unit are positive polarity, 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.
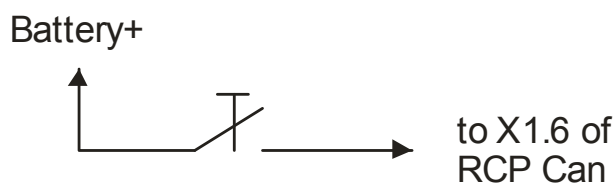
Battery+

to X1.6 of
RCP Can

Figure 10

- **Status output line application**

1. Ventilation shut down during 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 in pre-heat mode. This helps to prevent main battery from discharging if trips between two cycles of heater operation are not enough long to charge the battery. 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).
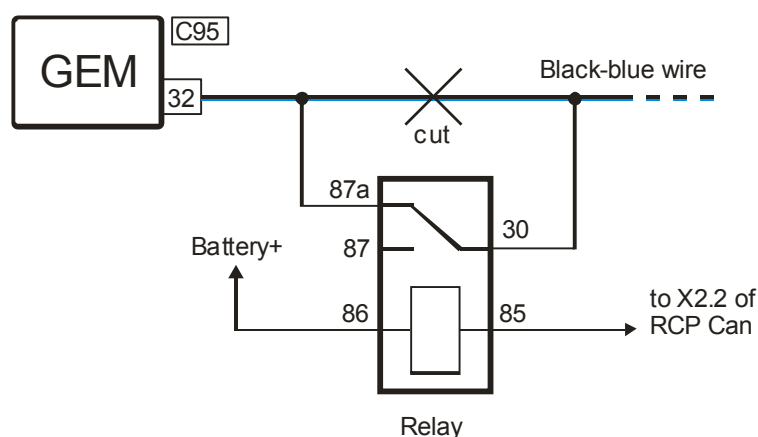
GEM C95
32   cut   Black-blue wire

87a
Battery+ 87   30
86   85   to X2.2 of
RCP Can

Relay

Figure 11

3) Installation procedure for permanent connection variant

- **General recommendations**

It is highly recommended to disconnect the main battery before installing. 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 battery reconnection. See car user manual for details.

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

- Remove the screw that secures the panel around the service socket on the left side of the dashboard. Gently pull the panel and remove it
- Find place inside the dashboard to install the module (mounted on double-sided tape)
- Connect the module to car's wiring according to the scheme at the fig.1. Connect the module to the receiver unit of remote control device, 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 socket by quick splice connectors (supplied). The backside view of the service socket presented at the fig.12.

The module's power (pin X1.9) connects to the orange wire of service socket (pin 16), the module's signal ground (pin X1.8) – to the black wire of service socket (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 brown and broun-white wires of the connector X2 to the pair before making connections. It is not recommended to lengthen these wires.
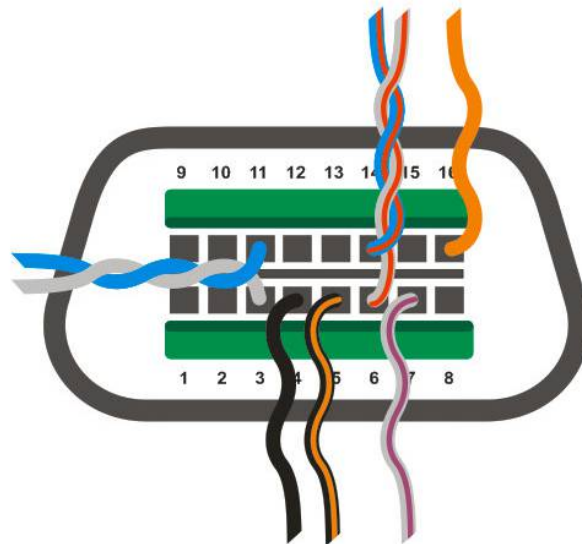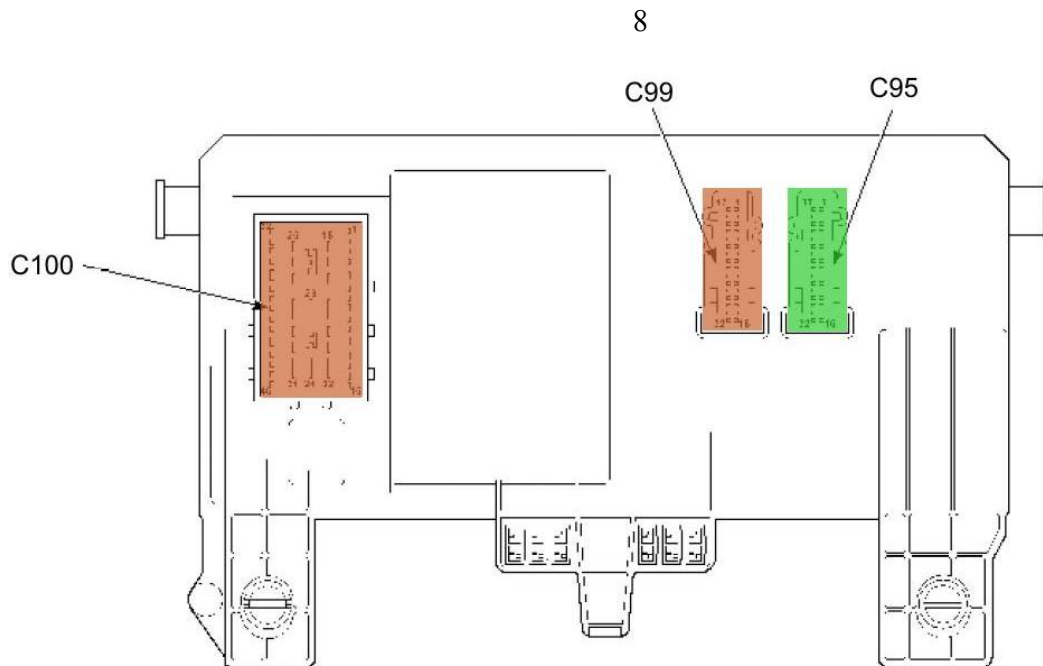

Figure 12

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)
- Check heater start via the RCP
- Fix the module using double-sided adhesive tape
- Install interior elements in 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