Autoplugin RCP-B1

Installation Manual

Rev A

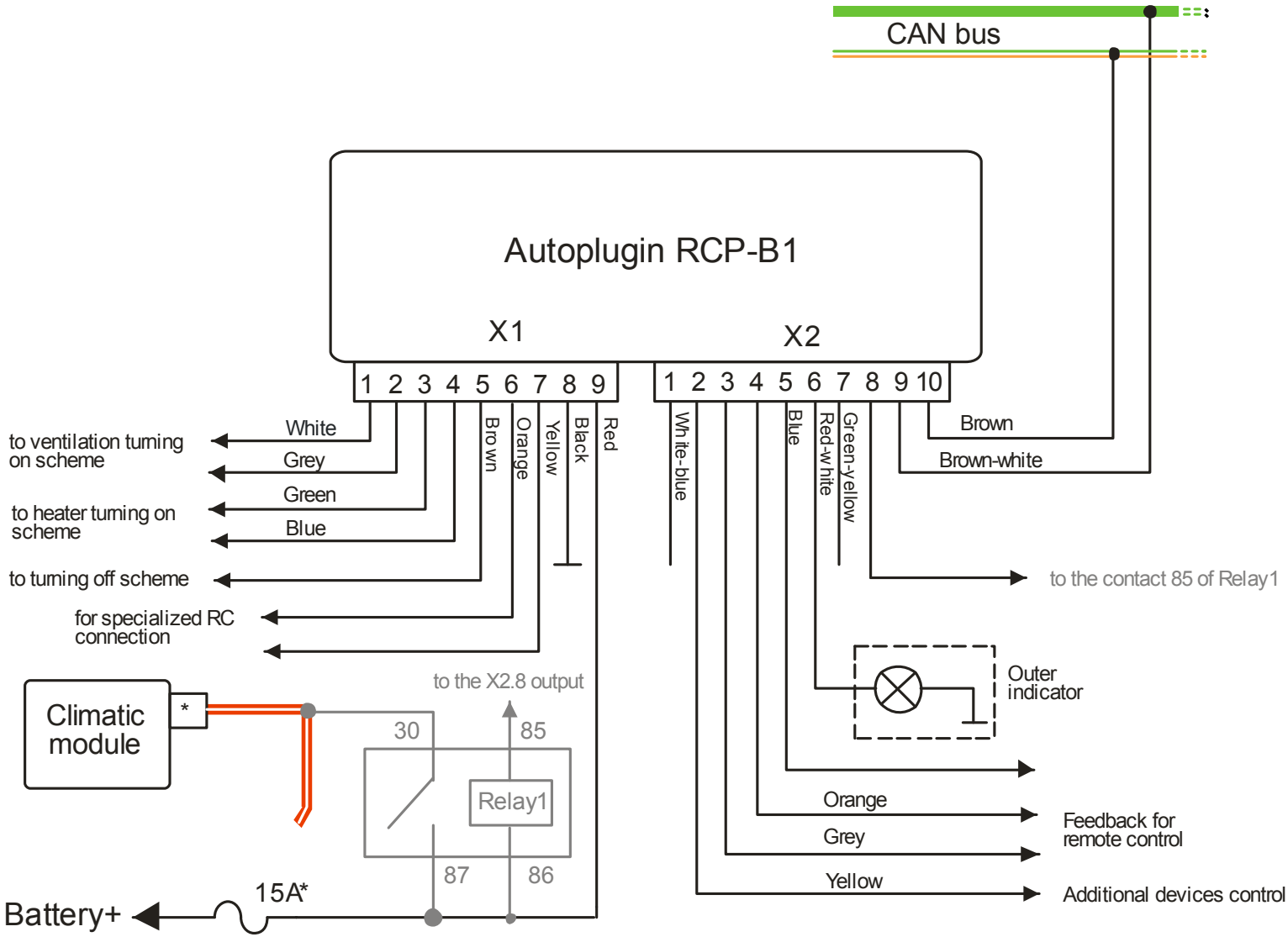
CAN bus
Autoplugin RCP-B1
X1
X2
1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9 10
White
Grey
Green
Blue
Brown
Orange
Yellow
Black
Red
White-blue
Blue
Red-white
Green-yellow
Brown
Brown-white
to ventilation turning on scheme
to heater turning on scheme
to turning off scheme
for specialized RC connection
to the contact 85 of Relay1
Outer indicator
Climatic module
*
to the X2.8 output
30
85
Relay1
87
86
15A*
Battery+
Orange
Grey
Yellow
Feedback for remote control
Additional devices control

Figure 1

1) Permanent connection schemes

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

Explanations to the scheme:

- The additional relay connection (Relay 1 at the figure) may be required for some models of E-series:
  * is a contact number 4 (red-yellow wire) for BMW X1,
  * is a contact number 1 (red-white wire) for BMW X5/X6
- Optional elements are outlined by dashes

- **Connection of the inputs Heater ± and Ventilation±**

You can connect and use a set of devices as a remote control for the fuel-fired heater: specialized heater remotes (such as Telestart, EasyStart, Smart Start), automotive GSM-modules, etc.
If the remote control has output channels with short impulses given in active state, it is possible to apply the schemes at fig. 2-6. The remote control with two independent channels can separately turn the heater on and off.

- The fig.2 presents the scheme of turning the heater on by the impulse of positive polarity. The fig.3 presents the scheme of turning the heater on by the impulse of negative polarity.

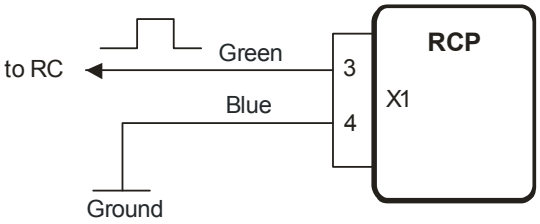

Figure 2

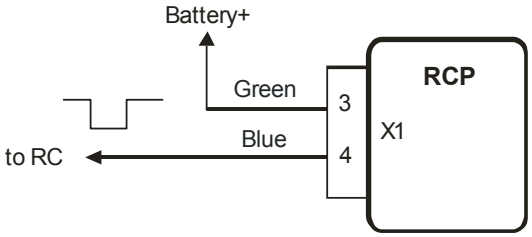

Figure 3

- The fig.4 presents the scheme of turning ventilation on by the impulse of positive polarity. The fig.5 presents the scheme of turning ventilation on by the impulse of negative polarity.

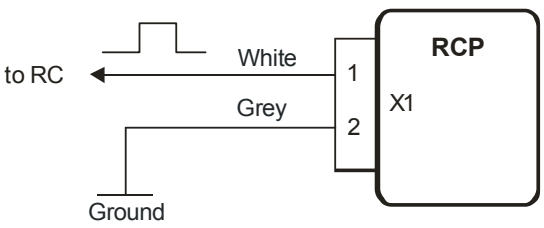

Figure 4

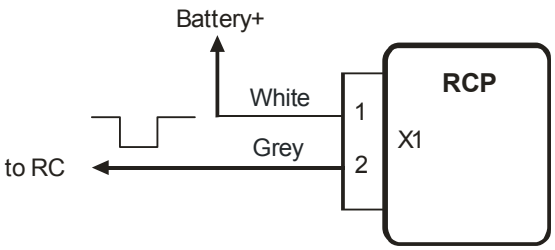

Figure 5

- The scheme of heater/ventilation turning off by the impulse of negative polarity

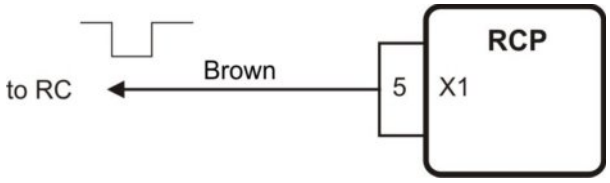

Figure 6

- **Connection of inputs Heater_RC and Ventilation_RC**

- The inputs are intended for connection of specialized remote controls such as DEFA Smart Start, Hydronic Easy Start, Webasto Telestart. If direct connection of remote control's output line to an input is not functional, the scheme at the fig.7 can be applied.

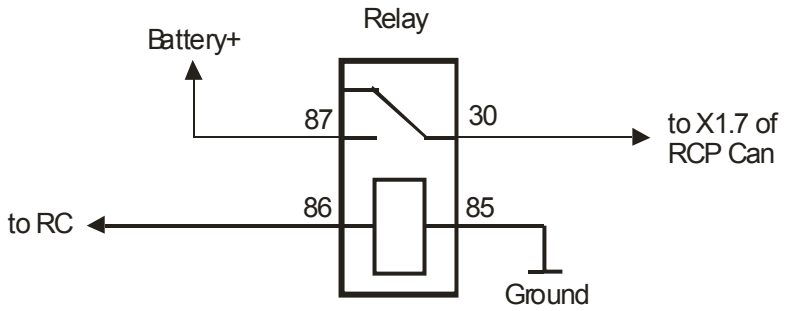

Figure 7

- Some GSM modules can control external device by the means of inner relay. These may be connected to RCP by the scheme at the fig.8

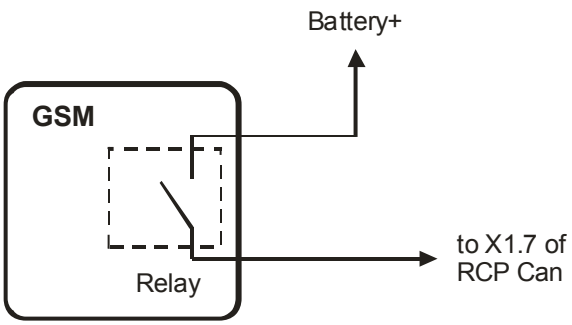

Figure 8

- **Alerts receiving**

If remote control unit has got inputs to obtain information about the heater operation, they can be connected to the RCP's outputs Alert_1 and Alert_2. These outputs are negative polarity ones. Therefore if remote control unit has got inputs of positive polarity, it needs to apply matching circuits (with relay ex.).
Events given on the outputs Alert_1 and Alert_2 are adjusted by the settings 7.3 and 7.4 accordingly.

2) Installation procedure

- **General recommendations**

It is highly recommended to disconnect the battery before making connections to the wiring. Note that the battery disconnection may reset the power windows settings, heater settings, etc. See car's User Manual for details.

- Detach climate-control's faceplate from central console
- Find place inside the dashboard to install the module (mounted on double-sided tape).
- Connect the module to the 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 beside the climate-control's connectors using quick splice connectors (supplied). Twist the brown and brown-white wires of the module's connector X2 to the pair before making connections. It is not recommended to lengthen these module's wires.

- Connect both connectors to the module (X2 should be connected first)
- Connect the car's battery
- Turn the ignition on to let the module get information from CAN-bus. Wait until the LED goes off.
- Test heater start from remote controller or a car's key.
- Fix the module using double-sided adhesive tape
- Adjust the module in Setup mode if necessary. Make notes in the programming table of User Manual about adjustments
- Attach climate-control's faceplate to its place

3) Troubleshooting

If a run-time error occurs during heater operation, RCP informs about error code with LED flashing. The number of flashes in series corresponds to the error code. See table 5 for the codes description and possible solutions.

Table 5

Error Code	Error Description	Possible Reasons of Error Appearance	Solutions
2	No answer from the heater followed the start command	No heater control in iDrive menu available	Change car configuration by the means of dealer equipment
		On-board electronics has detected that battery voltage is too low to start the heater	Charge battery with special charger (or start engine to charge)
		Fuel level in the tank is close to empty ("Fuel Low" warning indicator is lighting in CIP)	Refuel the car
		The heater is blocked	Try to start the heater from iDrive menu. If it not started to burn, check for fuel and coolant quality (especially at extreme cold temperatures) and possible heater's exhaust system clogging by snow. Then unblock the heater using special equipment
3	Battery low	The module has determined that the battery voltage at heater startup or during heater operation is below the specified settings 3.1 and 3.2	Charge battery with special charger (or start engine to charge) or cancel 3.1/3.2 settings
4	Time limits exceeded	Time limit for autonomous operation of the heater has achieved (with active setting 2.1.2 - 2.1.9)	Run the engine. It is recommended to have trips between heater operation cycles longer than heater operation cycles
5	Unsuccess-ful start	The heater switched off spontaneously at startup	Make diagnostics of the heater if the error appears again
6	Operation cycle too	The heater was switched off spontaneously with	Make diagnostics of the heater if the error appears again

	short	operating time of less than 20 minutes	
8	CAN-bus error	There is a problem with connection of the module to the CAN-bus	Check for the module's cables connection
9	Settings error	Settings have been incorrectly stored in RCP's memory	Reset the settings (8.1.1), readjust RCP
11	Heater no connection	The heater is unplugged from CAN-bus or is out of order	Make diagnostics of the heater

Glossary

CAN - Control Area Network (digital network for data transfer in vehicles)
RCP - Remote Control Plug-in (electronic module for the heater remote control)
CIP - Combined Instrument Panel
BHM or Boost Heat Mode – operational mode of the heater, when it operates together with the engine to help the engine and the interior warm up more quickly.