Measuring the rear window heating circuit

As an example for this task, the rear window hearing circuit of the Alfa Romeo Montreal is shown in fig 1. For more details, consult the complete diagram.
The circuit is protected by a fuse.

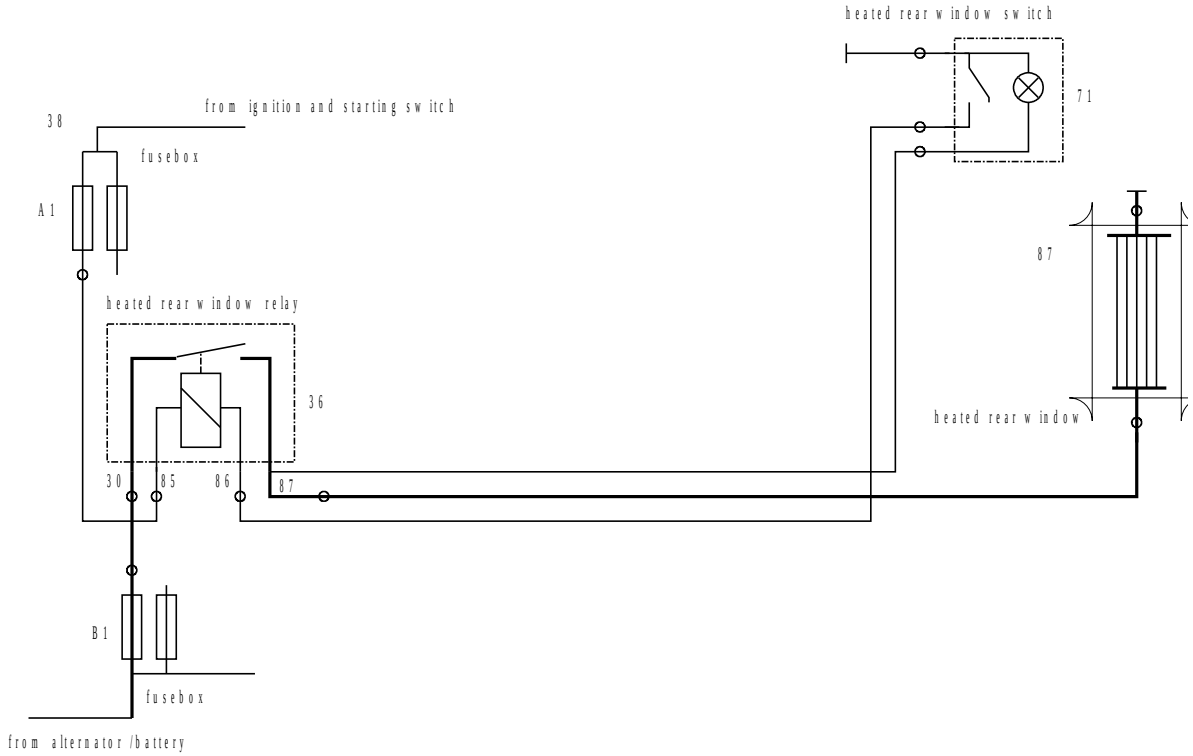

Fig. 1 Partial diagram of the rear window heater circuit

Assignment

1. Using your demonstration car, check to see how the rear window heating is connected. Use the demonstration car's electrical diagram for this. Locate the various components.

2. Draw your own partial diagram of the rear window heating circuit and mark the measurement points for the task.

3. If desired, add simple malfunctions to the circuit on the car such as:
•broken wire
•poor ground connection
•burnt-out fuse or wrong amp fuse
•extra resistance at the switch
•malfunctioning relay
•resistance too high at the relay points

Make sure that the measurement points are accessible for the students.

As an example, figure 2 shows a number of measurement points in the circuit along with a number

of measurement tasks.

The negative multimeter probe should be connected to the negative pole of the battery.

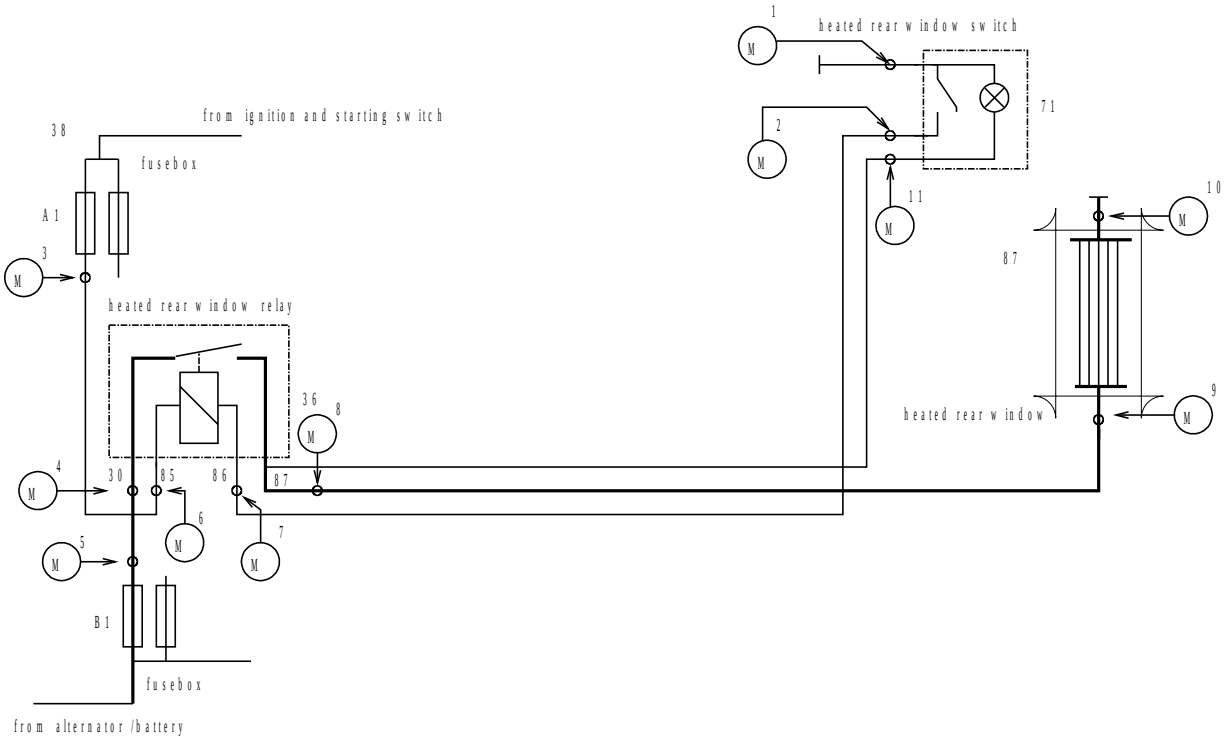

Fig. 2 Diagram of rear window heating circuit with possible measurement points.

Measurement tasks
Fill in the chart below with voltmeter readings in the following situations.

situation 1: the heating is off and the switch is open.
situation 2: the heating is on and the switch is closed.
situation 3: the switch is closed and fuse B1 is disconnected.

	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11
situation 1											
situation 2											
situation 3											

Conclusion:
The measured values in situation 1 are normal / abnormal
If they are abnormal, give a possible cause.

The measured values in situation 2 are normal / abnormal
If they are abnormal, give a possible cause.

The measured values in situation 3 are normal / abnormal
If they are abnormal, give a possible cause.

