



HEATED WINDOWS OPERATING PRECAUTIONS

Introduction

To ensure operating quality, a heated window may, or may not, be equipped with an internal temperature regulation system (thermostat or sensor).

1. Windows without integrated regulation system

1.1 The window is supplied without a thermostat or a sensor.

This case is limited to specific low heating capacities.

- a) The heating's ON/OFF switching must be operated by the driver starting or stopping the heating in relation to outdoors temperature conditions.
- b) A time controlled power supply (e.g. 15 minute periods) enables continuous heating to be avoided.

In no event should the window remain heated in the summer months or when there is no likelihood of frosting.

1.2 Special cases for heating systems with two heating rates (e.g. 7/28W/dm²).

These windows have a normal heating rate (e.g. 7W) and a forced defrosting rate (28W).

The normal rate is controlled as in point 1.1.

The forced rate should only be used for very short periods of time in the event of a major frost build up when stationary. The operating time should never exceed 10 minutes. A timer should be incorporated in the forced heating control system.

2. Windows with temperature regulation system

This configuration is used for cases of specific high capacity and for the case where window heating is not managed. The regulation system will prevent any abnormal situations that could cause damage to the window, such as prolonged heating or heating with a high ambient temperature.

2.1 Windows equipped with a thermostat

The thermostat measures the temperature on the glass's inner surface in order to regulate heating between two set temperature limits (e.g. 25°C/40°C)

The thermostat should not be located in a zone where blown air from the train's air conditioning system could influence temperature measurement.

The client should provide for the window heating system to be taken out of service during the summer months.

Alternating current: the thermostat is series mounted on the power supply if the current draw is <10A.

Above this current draw, the heating should be controlled via a relay installed in the electrical cabinet (diagram available on request).

Direct current: The thermostat is series mounted on the power supply if the current draw is 3A/30V or 6A/30V maximum. For other cases, the heating should be controlled via a relay installed in the electrical cabinet (diagram available on request).

2.2 Windows equipped with sensors

Overheating safety is guaranteed by measuring the temperature in the core of the laminated window connected to a regulator providing heating in a progressive manner.

The regulator can either be glued onto the window (always supplied by Sully), or mounted in the cabinet. In the latter case it is often supplied by the client.

In the event of sensor failure, the regulator should remain in the OFF position to avoid any abnormal temperature rise. Generally, our windows have 2 sensors, with the 2nd serving as a back-up, and only being connected in the event of failure of the 1st sensor.

The client should provide for the window heating system to be taken out of service during the summer months.

3. Important

In all cases, the window should not be subjected to blown hot air at temperatures higher than 60°C. If blown hot air ventilation exists, it should be diffused over the largest possible surface area to avoid localised overheating leading to thermal stresses.

The window heating system should not be put into operation if the outdoors or indoors temperature does not warrant it (no frost or misting).

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