

# MODEL 9258-0106 SNOW DETECTOR SYSTEM

The RAILWAY EQUIPMENT Co® Snow Detector System is a free standing unit that features the ability to monitor temperature and moisture conditions and control equipment dependent on these weather conditions.

## ***RAILWAY EQUIPMENT Co®*** *Instruction Manual for Digital Snow Detector System*

***RAILWAY EQUIPMENT Co.***

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## 1.0 WARNINGS, CAUTIONS, AND NOTES

Please read the entire instruction manual before using the Snow Detector System.

Also, read the warnings, cautions, and notes in Table 1. Failure to observe the warnings and cautions can lead to equipment damage or personal injury.

If you have any questions concerning the manufacture, design, function, installation, operation or maintenance, contact Railway Equipment Company before proceeding.

**Table 1. Warnings, Cautions, and Notes**

Symbol	Description
	WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate personal injury. It may also be used to alert against unsafe practices.
<b>NOTE</b>	NOTE indicates explanatory information that applies to the next step in the procedure. It is used to clarify and expand upon the importance of the procedural step when needed.
	If incorrectly wired, monitor can be damaged. Be sure to observe correct polarity on all DC wire connections, check the AC wiring instructions, and connect the ground wire.

## 2.0 OPERATION

The model 9258-0106 Snow Detector System is equipped to monitor temperature and moisture to operate equipment if weather conditions meet customer set parameters. A form C output relay is provided. The Snow Detector System features programmable moisture detection sensitivity, requiring moisture presence from 1 to 60 seconds before contact closure. Contact closure is maintained if temperature and moisture remain within the selected parameters.

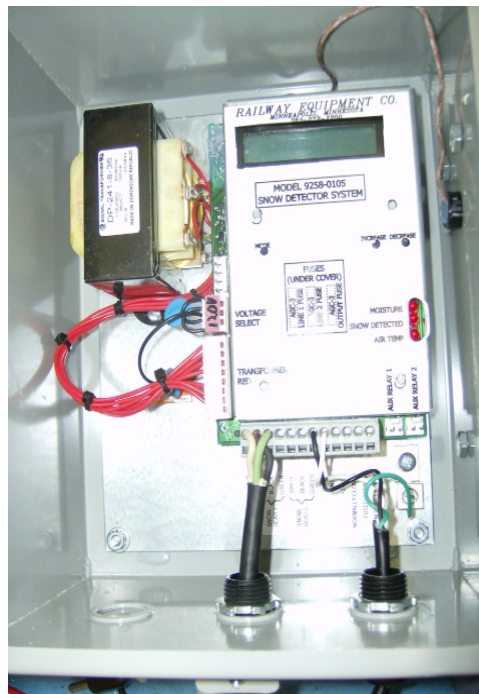
When moisture is no longer present, the contacts will remain closed for 10 to 999 minutes (selectable through out this range). Temperature setpoint (temperature below which the unit will cause contact closure if moisture is present) is adjustable from -40 F (-40C) to + 100F (+37.8C). Temperature can be displayed in either Fahrenheit or Celsius. If the temperature rises above the temperature setpoint, during either the moisture event or the timed run period following the event, contact closure will cease.

The system can be powered by either 120 or 240VAC, and strapping plugs for either power source are provided. Each strapping plug also provides overvoltage protection. Input and output lines are fuse protected.

The snow detector system is housed in a water tight enclosure, and features a removable WAGO connector to install input power, moisture detectors, and output wiring.

### 2.1 Front Panel Features and Components

This section describes the features and components that are on the front panel of the Snow Detector (see figure 2.1.1).



2.1.1 Figure 1. Front Panel of Snow Detector System

### 2.1.2 Digital Display

The idle screen displays the **AIR TEMP** and **SNOW TIMER** in minutes. If no Moisture has been detected, the **SNOW TIMER** will display 0. If moisture is being detected and the **MOISTURE DETECTED**, and **AIR TEMP** LEDs are lit, the **SNOW TIMER** setpoint will be displayed. If the **MOISTURE** LED is not illuminated, but the **SNOW DETECED** and **AIR TEMP** LEDs are, the **SNOW TIMER** will display the remaining time before the output contact closure ceases.

To scroll through the display screens, press the **MODE** button. To change the values of displayed parameters, use the **INCREASE** or **DECREASE** buttons. The screens are:

**PASSWORD \_\_\_** - The password to adjust parameters is 5. It is entered by pressing the **INCREASE** button until 5 appears in the parameter field.

#### **NO RAIL TEMP**

**SNOW STATUS 0** – This screen does not apply to the use of the module in this application.

#### **AIR TEMP**

**SETPOINT \_\_\_ F(C)** - This displays the temperature setpoint below which a moisture detection will cause a contact closure. It is adjustable between -40F (-40C) and +100F (+37.8C).

#### **RAIL TEMP**

**SETPOINT \_\_\_ F(C)** – This screen does not apply to the use of the module in this application.

#### **SNOW TIMER**

**SETPOINT \_\_\_ MIN** – This parameter selects the desired time for the contact closure to remain after moisture is no longer detected. It can be adjusted between 10 and 999 minutes.

#### **SNOW SENSITIVITY**

**SETPOINT \_\_\_ SEC** – Snow sensitivity can be adjusted from 1 to 60 seconds. This setting determines the amount of time moisture must be constantly present on the sensor before the output relay will be set.

#### **SELECT F OR C**

**FAHRENHEIT (CELSIUS)** – This will select which temperature scale will be displayed.

#### **REV LEVEL**

\_\_\_\_\_ - This displays the current software level.

### 2.1.3 Push Buttons

Below the digital display are three control push buttons:

**INCREASE** – This is used to increase the value of the displayed parameter, if enabled.

**DECREASE** – This button will decrease the value of the displayed parameter, if enabled.

**MODE** – This control is used to increment through the available screens.

### 2.1.4 LED Status Indicators

Three LEDs are used to indicate:

**MOISTURE** – Illuminated while moisture is being detected.

**SNOW DETECTED** –Indicates whenever the output contacts are activated.

**AIR TEMP** – Indicates that the air temp is below the temperature setpoint.

### 2.1.5 External Wiring Connector

Near the bottom of the front panel there is a twelve position socket with a removable connector for external wiring. The connection locations are shown below:

<u>PIN</u>	<u>CONNECTION</u>	<u>WIRE</u>
1	SNOW HEAD 1	WHITE
2	SNOW HEAD 1	BLACK
3	SNOW HEAD 1	GREEN
4	SNOW HEAD 2	WHITE
5	SNOW HEAD 2	BLACK
6	SNOW HEAD 2	GREEN
7	LINE 1	AC INPUT
8	LINE 2	AC INPUT
9	+24VDC	
10	NORMALLY CLOSED	OUTPUT RELAY
11	FUSED COMMON	OUTPUT RELAY
12	NORMALLY OPEN	OUTPUT RELAY

**AUX RELAY 1** – This 2 pin output plug will provide a 24VDC output on pin 1 and common on pin 2 when the air temperature is below the setpoint.

### **2.1.6 Air Temperature Sensor**

The air temperature sensor extends out the bottom of the control enclosure. It is a thermocouple device that plugs into the control module with a polarized plug.

## **3.0 SPECIFICATIONS**

Input power is 120/240VAC @ 3 AMPS. Two VOLTAGE SELECT connectors are provided for power strapping and over voltage protection.

Input and output fuse protection is provided.

Up to two moisture detectors can be used with this unit.

Outputs: SNOW DETECTION FORM C CONTACTS 3 AMP @ 125VAC

AIR TEMP: 24VDC 3 AMP OUTPUT