# SNOW SWITCH MODEL EUR-5A

FULLY-AUTOMATIC SNOW / ICE MELTING SYSTEM CONTROLLER


## FEATURES & BENEFITS

- Fully automatic operation to continuously prevent ice buildup with minimum energy use
- Six-sensor capability to provide the system with complete environmental conditions information
- Remote control panel allows for system monitor or control from a convenient observation location
- Building and energy management computer interface for remote monitoring and control
- High temperature limit sensor for energy efficient operations
- 35 mm DIN rail or bulkhead mounting allows the control unit to be conveniently mounted in a panel
- NEC Class II operation for safe and easy installation

## PRODUCT OVERVIEW

The EUR–5A Snow Switch provides automatic control of a snow and ice melting system. It includes an interface for environmental sensors, heater contactors, and a building energy-management computer (if present). A remote-control panel is included to supplement the front panel controls.

The EUR–5A is compatible with all ETI snow and ice sensors including the CIT-1 aerial sensor, GIT-1 gutter sensor, and the SIT-6E pavement sensor. The EUR-5A also includes a High Temperature Limit Sensor for maximum energy efficiency.

The EUR–5A accommodates up to six environmental sensors. Using at least two environmental sensors improves system performance through superior coverage. When multiple sensors are connected, any one of them detecting snow or ice conditions will signal for the heating process to start.

When snow or ice is no longer detected by the environmental sensors, the heater hold-on time begins. During hold-on, heater operation continues for a user-adjustable time interval from 0 to 10 hours. The hold-on timer continues heating for this set amount of time to ensure complete melting and sufficient drying to prevent re-freezing.

The EUR–5A includes an adjustable high-temperature limit function. The high temperature limit can save energy by turning the heat off when the temperature is high enough for natural melting to occur. The high temperature limit is also useful in systems using MI cable and other constant-wattage heater cable to prevent unnecessarily high temperatures and excessive energy use. This feature can be overridden when using self-limiting heaters.

The EUR-5A comes with an RCU-3 remote control unit that can be mounted in a convenient place where an operator can monitor conditions and adjust the system operation accordingly.

The EUR–5A provides an interface that can communicate with a building's energy management computer (EMC) system. The EMC interface provides dry switch contacts for communicating system status and inputs to allow the EMC to override the EUR-5A.

The EUR–5A operates from a 24-volt ac NEC Class 2 power source.

A 24-volt control transformer is included for use in installations with 120 volt ac power. Since the EUR–5A is an NEC Class 2 device, it usually requires a customer supplied auxiliary relay for operating the heater control contactor.

## EUR-5A SPECIFICATIONS

### CONTROLS

| | |
|---|---|
| Heater Cycle | Pushbutton Initiates Heat and Hold On Time |
| Hold-On Time | Sets Hold-On Time from 0 to 10 hours |
| High-Temperature Limit | Sets maximum temperature from 40°F to 90°F (4°C to 32°C) with 1°F (0.6°C) hysteresis. |

### INDICATORS

| | |
|---|---|
| Supply | Green LED indicates when 24 V control power is present. |
| Heat | Yellow LED indicates heater output is on. |
| Snow | Yellow LED indicates sensors detect snow or ice. |

### INPUTS

| | |
|---|---|
| Environmental Sensors | 3-terminal connection supplies power to and accepts input signals from ETI sensors including CIT-1, GIT-1, and SIT-6E. Up to six sensors may be connected in parallel. |
| Temperature Limit Sensor | For ETI High Temperature Limit Sensor (ETI 25076, included). Can be bypassed with 470k resistor. |
| Remote Control Unit | For ETI RCU-3 Remote Control Unit (ETI 21357, included) |
| Remote Heat Cycle | Allows connection of external pushbutton for Heat Cycle control. |
| EMC Override On | Connection to EMC Common will force Heat On. |
| EMC Override Off | Connection to EMC Common will force Heat Off. |

### OUTPUTS

| | |
|---|---|
| Heater Control Relay | Form C Relay Contact Resistive<br>Load: 1 A 30 Vdc or 0.5 A 125 Vac<br>Max. switching power: 30 W or 62 VA |
| EMC Supply | Contact closure to common; Max. 0.5 A, 200 Vdc, 10 W |
| EMC Snow | Contact closure to common; Max. 0.5 A, 200 Vdc, 10 W |
| EMC Heat | Contact closure to common; Max. 0.5 A, 200 Vdc, 10 W |

### POWER SUPPLY

| | |
|---|---|
| Power Supply Voltage | 24 V +/- 20%; NEC Class 2 power source |
| Power Consumption | 2 W/80 mA (EUR-5A; excluding sensors) |
| Power Transformer (supplied) | 120 V to 24 V, 48 VA max. |
| Protection Fuse Ratings | 1.5 Amps for control unit, sensors, and aux. relay (if used)<br>1.5 Amps for separate protection of sensor power |

### TEMPERATURE RANGE

| | |
|---|---|
| Operating Temperature | −40°F (−40°C) to +140°F (+60°C) |
| Storage Temperature | −67°F (−55°C) to +167°F (+75°C) |

## RCU-3 SPECIFICATIONS

### CONTROLS

| | |
|---|---|
| Heater Cycle | Pushbutton Initiates Heat and Hold Time |
| Hold-On Time | Sets Hold-On Time from 2 to 8 hours |

### INDICATORS

| | |
|---|---|
| Supply | Green LED indicates when 24 V control power is present. |
| Heat | Yellow LED indicates heater output is on. |
| Snow | Yellow LED indicates detection of snow or ice. |

## ORDERING INFORMATION

| ORDER NUMBER | DESCRIPTION |
|---|---|
| 21496 | Model EUR–5A Snow Switch® |
| 14257 | 50 VA 120:24 VAC Control Transformer (bulkhead mounting, included) |
| 25076 | Temperature Sensor |

### ACCESSORIES (INCLUDED)

| | |
|---|---|
| 21357 | RCU-3 Remote Control (Qty 1) |

### SNOW & ICE SENSORS (NOT INCLUDED)

| | |
|---|---|
| 10001 | CIT–1 Aerial Snow Sensor |
| 11351 | GIT–1 Gutter Ice Sensor |
| 24219 | SIT–6E Pavement Mounted Snow/Ice Sensor |

## LIMITED WARRANTY

ETI's two year limited warranty covering defects in workmanship and materials applies. Contact Customer Service for complete warranty information.

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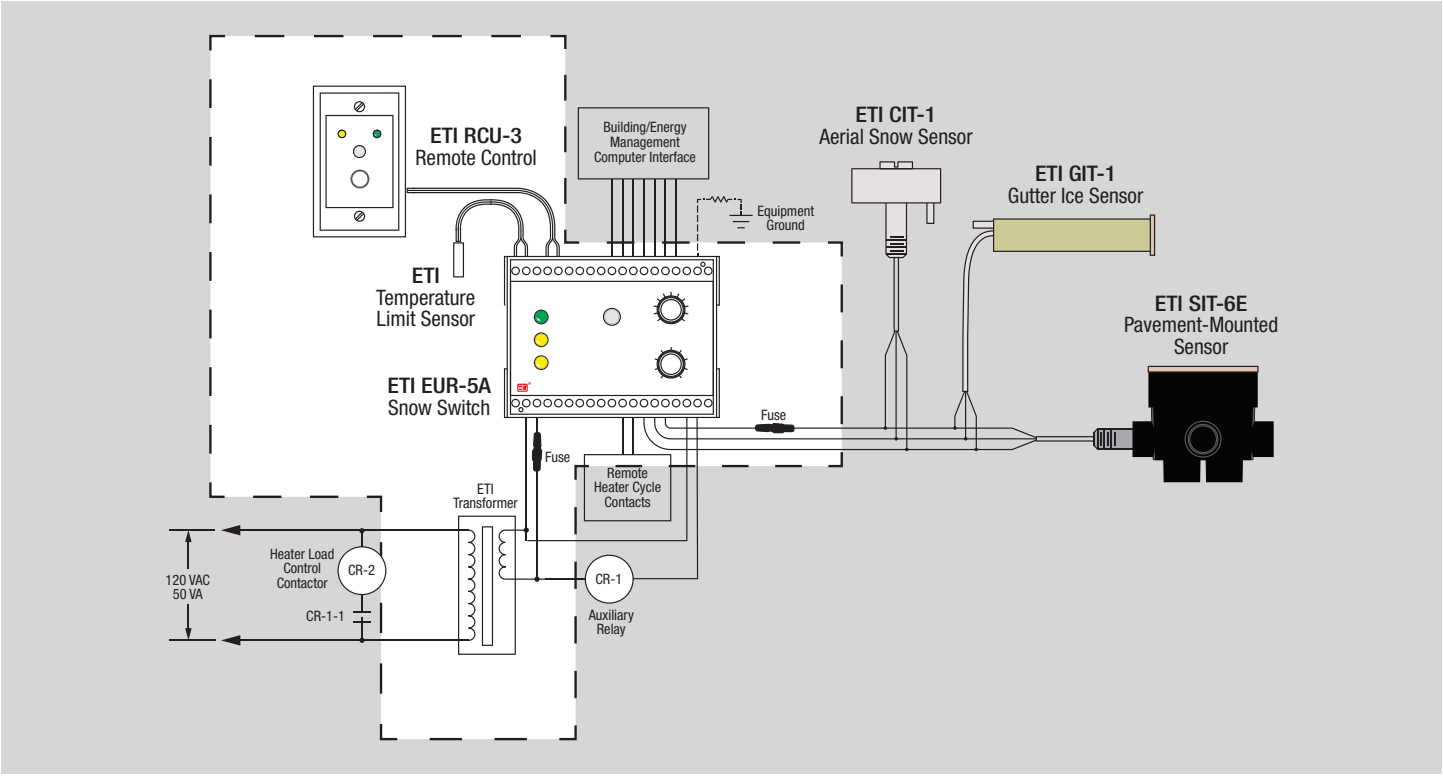
## SYSTEM DIAGRAM




## OPERATION

The snow melting system normally will operate automatically. When any sensor detects snow or ice, the heater output will turn on. When snow or ice is no longer present at any of the sensors, then the hold-on time starts. When the hold-on time is complete the heater output will turn off. If snow or ice is detected during the hold-on period, then hold-on is canceled while the heat remains on. The Hold-On Time control sets the amount of time that the heater remains on after snow or ice is no longer present. This is to ensure that the melting process is complete.

The High Temperature Limit setting allows energy savings by imposing a temperature limit on the heated area. Some conditions, such as a rise of air temperature or pavement temperature, might render electrical heating unnecessary to continue melting. The included temperature sensor, when mounted appropriately, can detect this condition and signal to the EUR-5A that heat is no longer necessary.

The RCU-3 remote control panel allows user control from a different location. The panel indicators show the presence of system power and whether the heat is on. The heat cycle pushbutton allows control of the heater hold-on – when the hold-on time is active, it can be interrupted or reinstated by pressing the button. The remote hold-on time control allows adjustment from 2 to 8 hours. This remote hold-on time applies only when the remote Heat Cycle pushbutton is used; during automatic operation, the setting at the EUR-5A will be used.

A separate panel-mounted pushbutton switch, a user option, can be connected to function identically to Heat Cycle pushbutton on the EUR-5A. This allows Heat Cycle operation with the hold time set on the EUR-5A. An energy-management computer connected to the EUR-5A can monitor the system status. Signaling is provided to the EMC for power supply present, snow present, and heater on/off status. In addition, inputs on the EUR-5A allow the EMC to override the EUR-5A automatic operation by either holding the heaters on or holding the heaters off at any time.

## DIMENSIONAL DRAWINGS