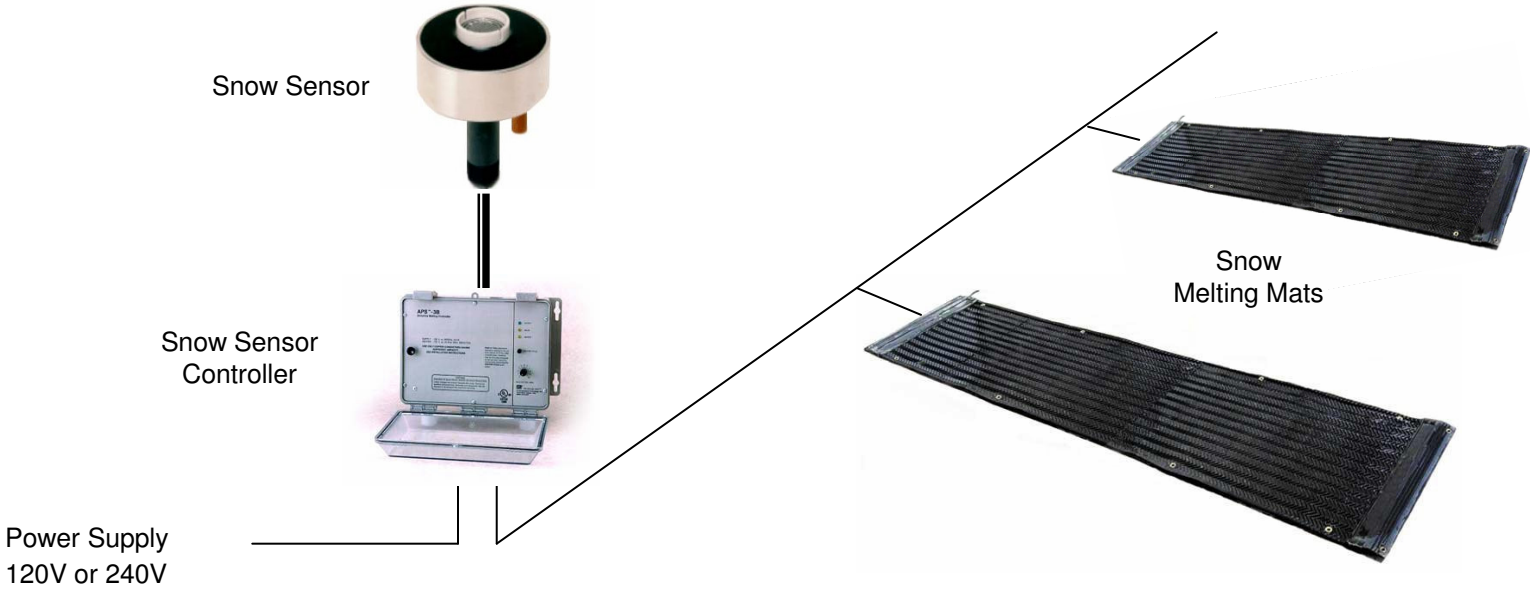


# Automated Snow and Ice Sensor System For Portable Electric Snow Melting Mats

Product Specifications and Installation Instructions



## SNOW SENSOR CONTROL (APS-3B)

### BENEFITS

- Automatic snow/ice melting control
- Minimum energy costs

### FEATURES

- Controls mechanically-held contactors
- Remote control/monitor (option)
- NEMA 3R enclosure
- U-L Listed
- Heater cycle push button
- Multiple sensor capability
- Simple installation
- Low cost



### DESCRIPTION

In conjunction with up to six sensors residing in target zones, the microprocessor-based APS-3B provides effective, economical automatic control of snow melting applications for walkways, ramps, driveways, gutters and downspouts.

Operating at either 120 VAC or 208-240 VAC, 50/60 Hz, the APS-3B's DPDT output relay switches 24 amp heater loads or directly operates both mechanically and electrically-held remote contactors. The adjustable hold-on timer provides up to 10 hours of heater operation after snow fall ceases to complete snow/ice melting. Independent of weather conditions, a manual heater cycle control operates heaters for the hold-on period to clear tracked slush and drifted snow. LEDs provide indication of power, sensor status and heater operation. Remote heater cycle and system indication is provided by the optional RCU-1 Remote Control Unit.

The APS-3B nonmetallic enclosure is suitable for NEMA 1, 2, 3R, 12 and 13 applications over an ambient temperature range of -40° to 136°F (-40° to 58°C). For economy and ease of installation, sensor and RCU-1 wiring may, each, have an installed length of 2,000' (609.6m) using NEC Class 2 #18 AWG multi-conductor jacketed cable.

## **SNOW SENSOR (CIT-1)**

### **BENEFITS**

- Minimum snow melting costs
- No supervision required

### **FEATURES**

- Reliable snow sensing
- Senses both temperature and precipitation
- Application flexibility
- Simple installation
- Field proven in thousands of installations



### **DESCRIPTION**

The CIT-1 Snow Sensor detects falling or blowing precipitation as snow at temperatures below 38°F (3.3°C). The CIT-1 provides the industry's most versatile and cost effective automatic snow melting control when used with an APS-3B Control Panel.

Reliability and sensitivity are key CIT-1 features. The solid state design, combined with a rugged aluminum housing and epoxy potting, ensure many years of trouble free service. Precision precipitation and temperature sensors assure snow detection accuracy.

Typical applications include controlling snow melting systems for sidewalks, doorways, stairs, loading docks, ramps for the physically challenged and parking garages. Easy installation is another key CIT-1 feature. Low voltage operation, up to 2000' (609.6m) separation from the control panel, mast or roof mounting, and non-critical extension wiring are just a few of the features making this possible.

## **INSTALLATION INSTRUCTIONS**

Install in accordance with the requirements of all applicable electrical and building codes and regulations.

### **Enclosure**

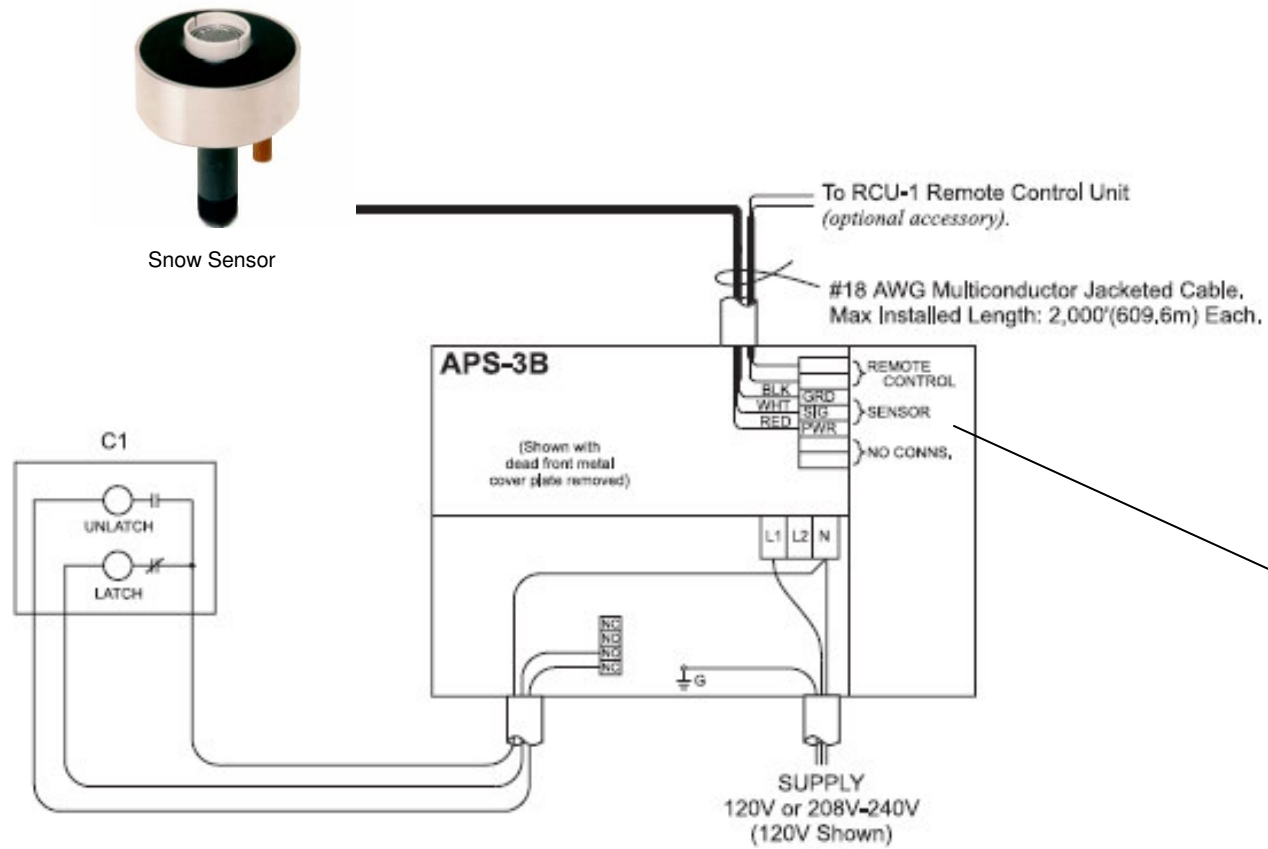
The APS-3B nonmetallic enclosure is suitable for installation in environments corresponding to NEMA 1, 2, 3R, 12 and 13 applications. The APS-3B was designed to operate satisfactorily over an ambient temperature range of  $-40^{\circ}$  to  $136^{\circ}\text{F}$ . ( $-40^{\circ}$  to  $58^{\circ}\text{C}$ .). Using the integral external mounting flanges, the APS-3B is intended to be installed on fixed, vertical, flat surfaces as it was shipped; no disassembly or component removal is required. The choice of anchors and companion mounting hardware should be appropriate for both the mounting surface and the environment. The mounting flanges accommodate a range of fastener diameters up to  $\frac{1}{4}$ " (6.35 mm).

### **Conduit**

The APS-3B nonmetallic enclosure is furnished with three  $\frac{3}{4}$ " (21 mm) conduit entries to be utilized in the following manner: (see page 5)

- Bottom, right: Line voltage (120 VAC or 208 – 240 VAC) supply branch circuit conductors.
- Bottom, left: Snow/ice melting system load branch circuit conductors or pilot duty conductors controlling remote contactor(s).
- Top, right: Low voltage (Class 2) wiring; principally intended for connection of the selected snow/ice sensor. Also to be used for the Class 2 wiring associated with both the optional RCU-1 Remote Control Unit.

Prior to finalizing the arrangement and selection of raceways, familiarize yourself with the specific requirements of both the grounding and wiring sections of these instructions. Should the use of a single line voltage conduit entry best serve the planned installation, a nonmetallic knockout enclosure has been furnished, permitting the unused opening to be permanently abandoned. If the APS-3B is to be installed in a hostile environment, ensure that all conduit terminations are watertight. See diagram on following page:



See Fig. 1 on page 6

## Wiring - Line Voltage

Line voltage (120 VAC or 208 – 240 VAC) supply and load branch circuit conductors must be copper and must have sufficient ampacity to limit the maximum insulation temperature to 60°C. (*Caution:* For circuits of extraordinary installed length, it may be necessary to utilize larger conductors to minimize voltage drop.)

Line voltage conductors, #10 AWG and smaller, must be served with appropriate one-hole lugs to be landed under the #8 binder head terminal screws of both the “Supply” and “Load” barriered terminal blocks.

## Wiring - Class 2 Low Voltage

The Class 2 low voltage terminal block, shown in Figure 1 below, contains three sets of terminals for, from top to bottom: Remote Control, Sensor, and Comm Link. Each of these Class 2 circuits may have an equivalent installed length of 2,000 feet (609.5 mm) utilizing multiconductor #18 AWG jacketed cable.

Proper automatic operation of the APS–3B requires the connection of at least one snow/ice sensor, color matching the sensor lead wires to the respective terminals as shown (blk-blk, wht-wht, red-red). Systems employing multiple sensors should be connected in parallel in whatever fashion may conveniently accommodate the planned installation; it is unnecessary to wire radially to each sensor.

If the system incorporated an (optional) RCU–1 Remote Control Unit, it is unnecessary to discriminate between the two required conductors when terminating. Upon completing all line and low voltage and grounding terminations, and prior to energizing the APS–3B, reinstall the deadfront metal compartment cover.

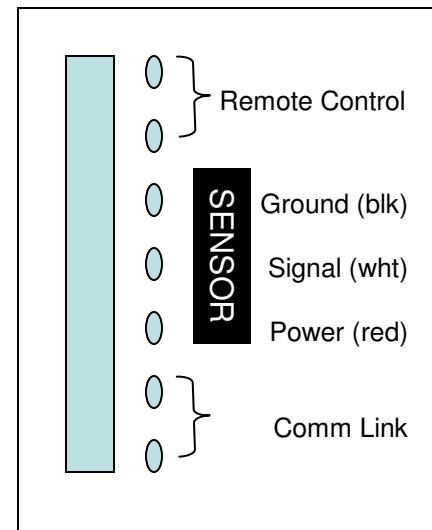


Fig. 1