

APS-4C

Automatic Snow/Ice Melting System Controller

- **Automatic Snow/Ice Melting Control**
- **Satellite Contactor Interface for Larger Systems**
- **Energy Management Computer (EMC) Interface**
- **Accommodates MI, Constant Wattage and Self-Regulating Heaters**
- **Multiple Sensor Capability**
- **Advanced Ground Fault Protection**
- **Heater Hold-On And Test Capabilities**
- **C-UL-US Listed**
- **Simple to Install and Operate**
- **Low System Costs**
- **Minimum Energy Costs**



Description

The APS-4C Snow Switch when used with one, or more, compatible sensors automatically controls snow/ice melting heaters for minimum energy costs. Applications include pavement, sidewalk, loading dock, roof, gutter and down spout snow/ice melting in commercial and industrial environments. The APS-4C is interchangeable with the earlier APS-4.

The adjustable hold-on timer continues heater operation for up to 10 hours after snow stops to ensure complete melting. The optional RCU-4 Remote Control Unit can be located where system operation can be conveniently observed. It duplicates many of the APS-4C front panel functions.

The APS-4C provides advanced patented and patent pending ground fault equipment protection (GFEP) as required by the USA and Canadian National Electric Codes. The GFEP automatically tests itself every time the heater contactors operate and once every 24 hours. The trip current can be set at 60 or 120 mA via an internal switch or retained at the 30 ma default value. As an aid to troubleshooting heater ground faults, the APS-4C provides an output that can indicate the ground current on a service person's portable DVM.

The calibrated 40°F to 90°F (4°C to 32°C) high limit thermostat prevents excessive temperatures when using constant wattage and MI heaters. It also permits safe testing at outdoor temperatures too high for continuous heater operation. The temperature sensor is included.

The APS-4C provides a complete interface for use in environments supervised by an energy management computer (EMC). This feature can also be used for general purpose remote control and annunciation.

All sensor and communications wiring is NEC Class 2. This simplifies installation while enhancing fire and shock safety. The APS-4C can interface up to six sensors from the CIT-1 product family. Using more sensors provides superior performance by better matching the controller to site performance requirements.

The APS-4C is an exceptionally capable deicing controller. For complete information describing its application, installation and features, please contact your local Chromalox Sales Office.

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Automatic Snow/Ice Melting System Controller *(cont'd.)*

Specifications

General

Area of use Nonhazardous locations

Enclosure

Protection NEMA 3R
 Cover attachment Hinged polycarbonate cover, lockable
 Entries 1 × 1-1/16" entry (top) for NEC Class 2 connections
 2 × 1-11/16" entries (bottom) for supply and load power, except 277 VAC single phase
 2 × 1-1/16" entries (bottom) for supply and load power, 277 VAC single phase only
 Material Polycarbonate
 Mounting Wall mount
 Dimensions 5-1/2" (L) × 8-1/8" (W) × 4-3/8" (H)
 140mm (L) × 207mm (W) × 112mm (H)

Control

Supply Voltage PCN 389853 208-240 VAC, 35 VA, three phase 50/60 Hz
 PCN 389895 277 VAC, 45 VA, single phase 50/60 Hz
 PCN 389861 277/480 VAC, 45 VA, three phase 50/60 Hz
 Load PCN 399525 600 VAC, 50 VA, three phase 50/60 Hz
 PCN 389855 208-240 VAC, 50 amp max. resistive
 PCN 389845 277 VAC, 40 amp max. resistive
 PCN 389861 277/480 VAC, 50 amp max. resistive
 PCN 399525 600 VAC, 50 amp max. resistive
 Contact Type 3 Form A (NO)
 Weight 3 Pounds (not including sensors)
 Maximum Ratings Voltage: 600 VAC
 Current: 50 Amps
 Heater Hold-On timer 0 - 10 hours; actuated by snow stopping or toggle switch
 System Test Switch toggles heater contact on and off. If temperature exceeds high limit, heater cycles prevent damage.

Ground Fault Equipment Protection (GFEP)

Set point 30 mA (default); 60 mA & 120 mA selectable by DIP switch
 Automatic self-test Mode A: Verifies GFEP function before contactors operate
 Mode B: Verifies GFEP and heaters every 24 hours
 Manual test/reset Toggle switch provided for this function
 Maintenance facility DC output proportional to ground current provided for troubleshooting the heater system

Snow/Ice Sensors

Maximum Quantity Up to 6 sensors from the CIT-1 product family
 Circuit Type NEC Class 2
 Lead Length Up to 500' (152m) using 18 AWG 3-wire jacketed cable
 Up to 2,000' (609m) using 12 AWG 3-wire jacketed cable

High Limit Thermostat

Adjustment range 40°F to 90°F (4°C to 32°C)
 Dead band 1°F (0.6°C)
 Circuit type Thermistor network
 Sensor interface NEC Class 2
 Lead length Up to 500' (152m) using 18 AWG 2-wire jacketed cable
 Up to 1,000' (304m) using 12 AWG 2-wire jacketed cable

Heating Cable

APS-4C

Automatic Snow/Ice Melting System Controller *(cont'd.)*

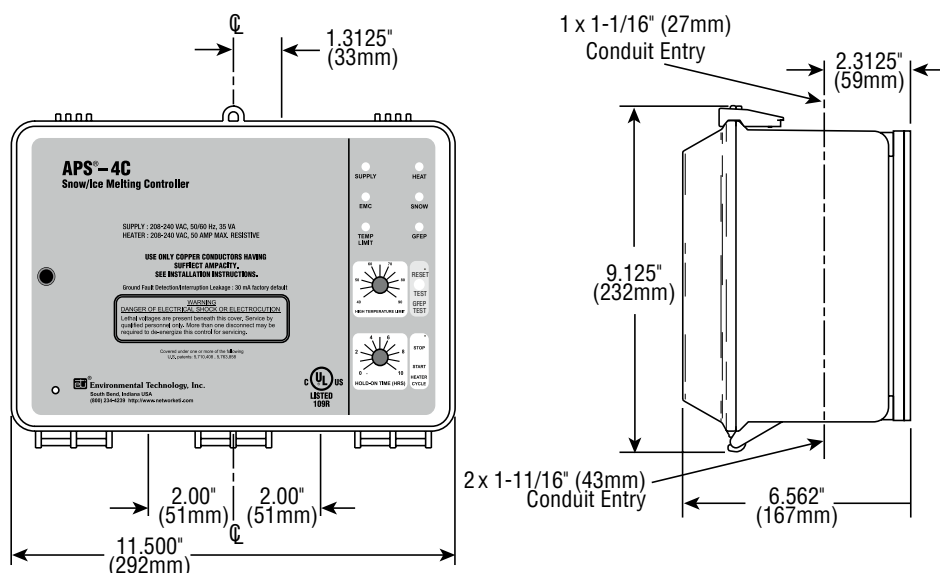
Energy Management Computer (EMC) Interface

Inputs	OVERRIDE ON (10 mA dry switch contact) OVERRIDE OFF (10 mA dry switch contact)
Outputs	SUPPLY (10 mA dry switch contact) SNOW (10 mA dry switch contact) HEAT (10 mA dry switch contact) HIGH TEMP (10 mA dry switch contact) ALARM (10 mA dry switch contact)

Environmental

Operating temperature	-40°F to 160°F (-40°C to 71°C)
Storage temperature	-50°F to 180°F (-45°C to 82°C)

Dimensions



Specifications and Ordering Information

Model Number	PCN	Stock
APS-4C Control Panel (277 Volt Single Phase)	389845	S
APS-4C Control Panel (208-240 Volt 3-Phase)	389853	S
APS-4C Control Panel (277/480 Volt 3-Phase)	389861	S
APS-4C Control Panel (600 Volt 3-Phase)	399525	NS

Stock Status: S = stock AS = assembly stock NS = non-stock
To Order—Specify model, PCN and quantity.