Automatic Snow/Ice Melting System Control Panel

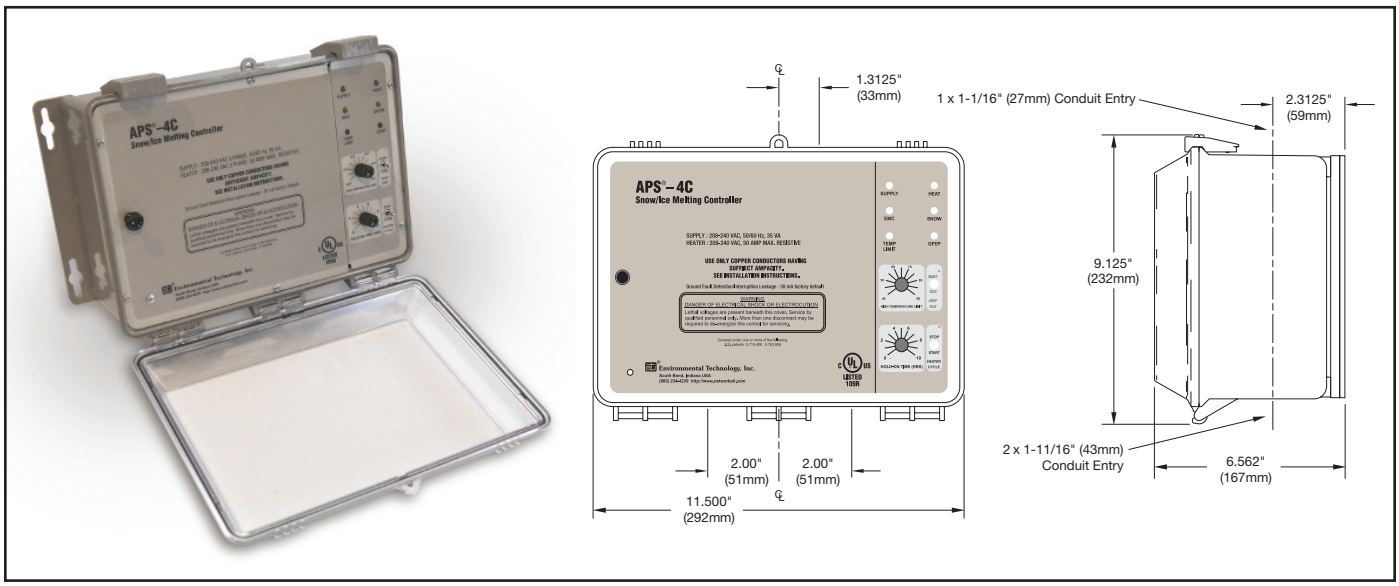
MODEL APS®–4C SNOW SWITCH®

DATA SHEET

WARMZONE
PREMIER RADIANT HEATING

FEATURES & BENEFITS

- Automatic snow/ice melting control
- Satellite contactor interface for larger systems
- Energy management computer (EMC) interface
- Accommodates MI, constant wattage and self-limiting heaters
- Multiple sensor capability
- Advanced patented and patent pending ground fault protection
- Heater hold-on and test capabilities
- C-UL-US
- 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 Customer Service or check on the web at www.networketi.com.

SPECIFICATIONS

General

Area of use	Nonhazardous locations
Approvals	c UL us LISTED 109R Type 873 Temperature Regulating Equipment

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 mounted

Control

Supply	ETI PN 22472: 208-240 VAC, 35 VA, three phase 50/60 Hz ETI PN 22473: 277 VAC, 45 VA, single phase 50/60 Hz ETI PN 22475: 277/480 VAC, 45 VA, three phase 50/60 Hz ETI PN 22476: 600 VAC, 50 VA, three phase 50/60 Hz
Load	ETI PN 22472: 208-240 VAC, 50 amp max. resistive ETI PN 22473: 277 VAC, 40 amp max. resistive ETI PN 22475: 277/480 VAC, 50 amp max. resistive ETI PN 22476: 600 VAC, 50 amp max. resistive
Contact type	3 Form A
Maximum Ratings	Voltage: 600 VAC Current: 50 amps
Heater hold-on timer	0 to 10 hours; actuated by snow stopping or toggle switch
System test	Switch toggles the heater contact on and off. If temperature exceeds high limit, heater cycles to prevent damage.

Ground Fault Equipment Protection (GFEP)

Set point	30 mA (default); 60 mA and 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

Sensor type	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

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)

ORDERING INFORMATION

Order Number	Description
22472	APS–4C Control Panel, 208-240 VAC 50/60 Hz Three Phase
22473	APS–4C Control Panel, 277 VAC 50/60 Hz Single Phase
22475	APS–4C Control Panel, 277/480 VAC 50/60 Hz Three Phase
22476	APS–4C Control Panel, 600 VAC 50/60 Hz Three Phase
Accessories	
21358	RCU–4 Remote Control (Optional)
19272	High Temperature Sensor w/ 20' (6m) lead (Qty 1 included)
22690	PTS–100 Embedded Temperature Sensor (Optional)
Snow/Ice Sensors (Not Included)	
10001	CIT–1 Aerial Snow Sensor
11351	GIT–1 Gutter Ice Sensor
20756	SIT–6E Pavement Mounted Snow/Ice Sensor
Satellite Contactors (Not Included)	
22477	SC–40C Satellite Contactor, 208-240 VAC 50/60 Hz Three Phase
22478	SC–40C Satellite Contactor, 277 VAC 50/60 Hz Single Phase
22480	SC–40C Satellite Contactor, 277/480 VAC 50/60 Hz Three Phase
22481	SC–40C Satellite Contactor, 600 VAC 50/60 Hz Three Phase

LIMITED WARRANTY

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

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WARMZONE
PREMIER RADIANT HEATING
By: INNOVAIR SOLUTIONS