



MSC-1 Control Panel for Snow & Ice Melting Installations

Specification & Application Guide

The MSC-1 Control Panel manages snow and ice melting systems for sidewalks, driveways, gutters and downspouts. Suitable for controlling heating cables and mats, the MSC-1 can monitor snow and ice accumulation in three separate snow melting application zones. The MSC-1 programming allows each zone to be controlled independently or on a priority basis.

General

The MSC-1 is housed in an enclosure suitable for commercial/industrial applications and features an LCD display, programming and associated indicator lights for operation of each zone.

The control signal relays operate external contactors.

Features

- Automatic snow/ice melting control
- Manual zone activation
- UL Listed to US and Canadian safety standards
- *Hold on Time*: Adjustable 0-10 hours in half-hour increments
- Maximizes energy efficiency
- Monitors and controls 3 separate zones, sequentially or independently
- Reduced power requirements when Priority operation mode is used

Electrical

Power Requirements

120 VAC, 450 VA

System Memory

Nonvolatile: no data loss with a loss of system power

Control Relays

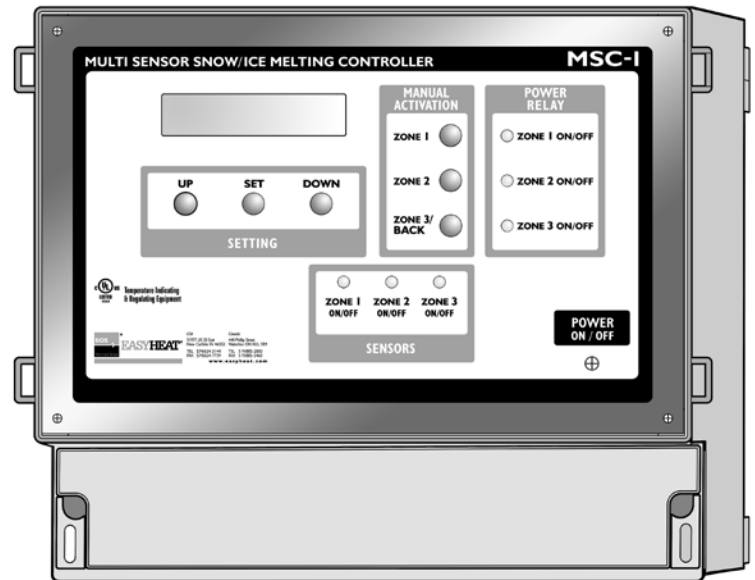
120VAC, 5 Amp contacts

Mechanical

Plastic enclosure

Dimensions

11" (27.94cm) wide
(cabinet; 12.375" (31.43cm) overall width)
X 10.25" (26.04cm) high
X 4.75" (12.07cm) deep



Operating Modes

Mode 1 – Independent

- programmable for 3 independent snow melting systems (zones) for any combination of snow/ice melting or roof & gutter de-icing systems
- Controlling any combination

Mode 2 – Priority

- sequentially operating 3 snow melting zones with individual zone priority level of 1 to 3
- With one in-ground sensor per zone and an optional Aerial sensor for priority zone 1

Manual Bypass

Manually cycles from 0-10 hours in half-hour increments

Environmental Specifications

Ambient Operating Temperature Range

-4°F to 50°F / -20°C to 70°C

Relative Humidity

0 to 90% RH, non condensing

Storage Temperature

-4°F to 185°F / -20°C to 85°C

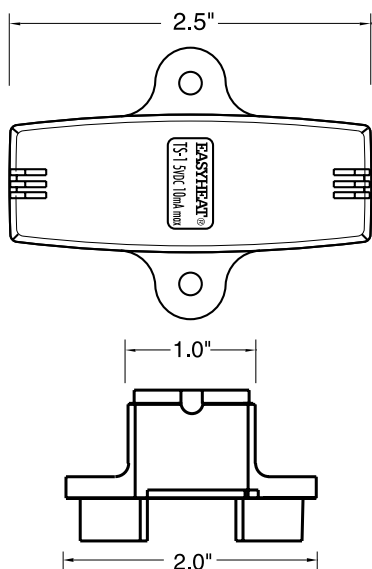
Mount the MSC-1 in an indoor location in an area that is dry and not subject to temperature extremes.

Temperature extremes may adversely affect components such as the Liquid Crystal Display (LCD).

Sensors for MSC-1

The MSC-1 can access information from three different types of moisture sensors—surface (in-ground), aerial and gutter—and one type of temperature sensor. The surface, aerial and gutter sensors detect moisture—snow, ice, sleet, etc.—and send appropriate signals to the MSC-1. Similarly, the temperature sensor sends temperature data back to the MSC-1. Independent temperature and moisture information is processed by the MSC-1 to ensure that heating equipment will only be energized during freezing conditions. Each MSC-1 must have a temperature sensor, TS-1, in order to function. The TS-1 (see below) is included with each MSC-1.

For each of the MSC-1 control zones up to two individual moisture sensors can be connected, however for each zone only one of these may be an in-ground sensor.

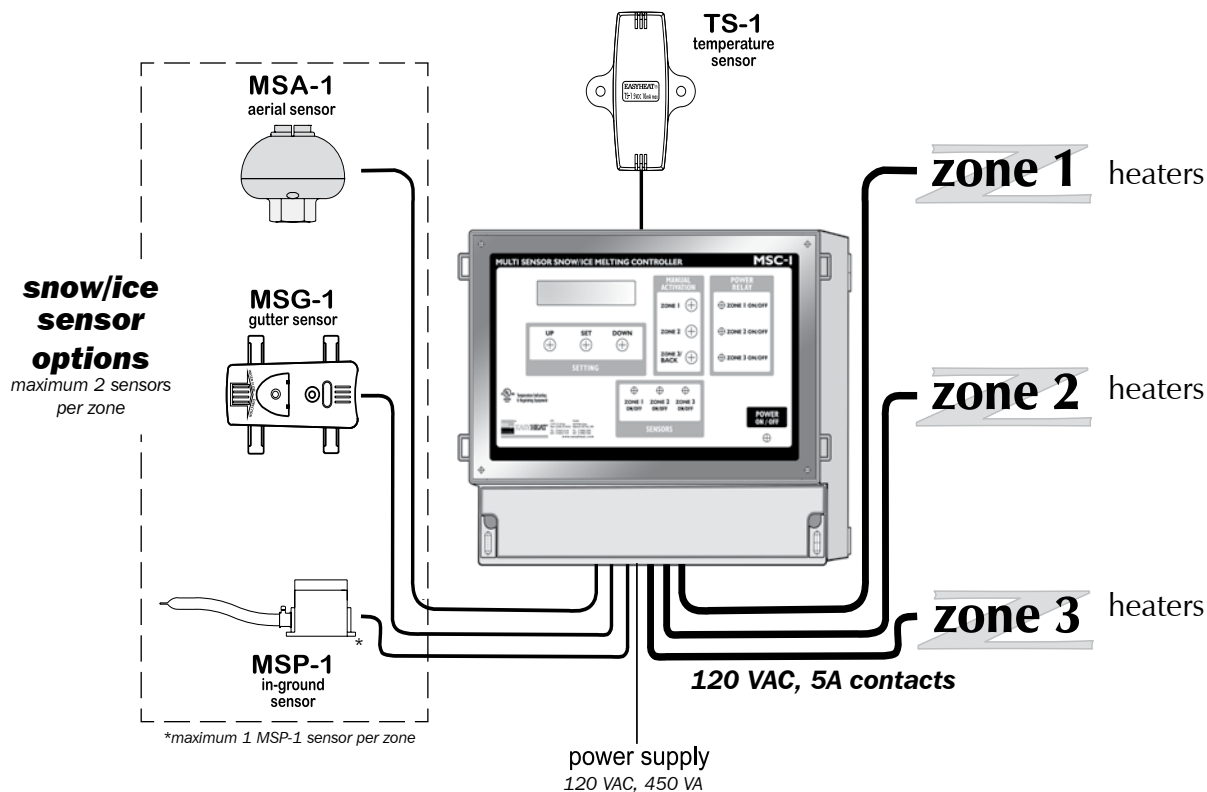


Temperature Sensor (TS-1)

The TS-1 sensor measures outside temperatures and is placed in the area that best represents the outdoor temperature conditions. Each MSC-1 includes a TS-1 temperature sensor. The TS-1 operates on low voltage provided by the MSC-1 control unit and allows the MSC to determine when to activate snowmelting or de-icing equipment. Easily affixed to a wall or fascia by two screws, the TS-1's small size and neutral color allows the sensor to discreetly blend with almost any background.

The TS-1 is supplied with 10' (3.05m) of connection wire which may be extended up to 500' (152.40m) with an appropriately rated 18 – 20 AWG 3 wire unshielded cable.

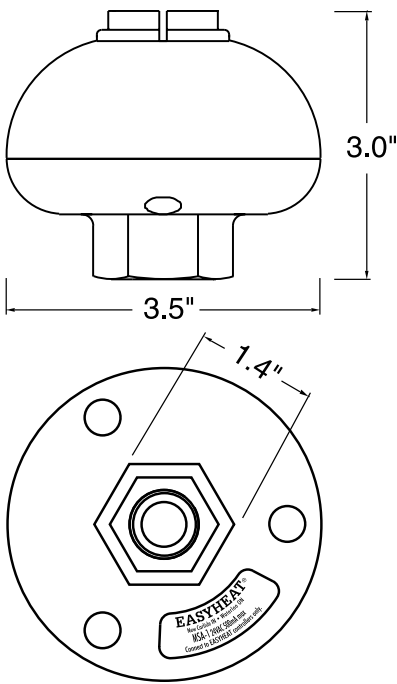
Sample Application Illustration



Optional Aerial Sensor (MSA-1)

The MSA-1 sensor detects falling or blowing snow coming in contact with the sensor grid, then sends a signal to the MSC-1 to energize heating equipment (snow melting or de-icing cables, etc.). (The TS-1 temperature sensor ensures that heating equipment will only be energized during freezing conditions.) The sensor operates on low voltage supplied by the MSC-1 control unit, has a built in 1/2" (12.70mm) NPT conduit connection and includes 10' (3.05mm) of wire for connection back to the MSC-1.

The MSA-1 is well suited for mast mounting and custom positioning. Rounded features and neutral color allows the sensor to discreetly blend into almost any environment.

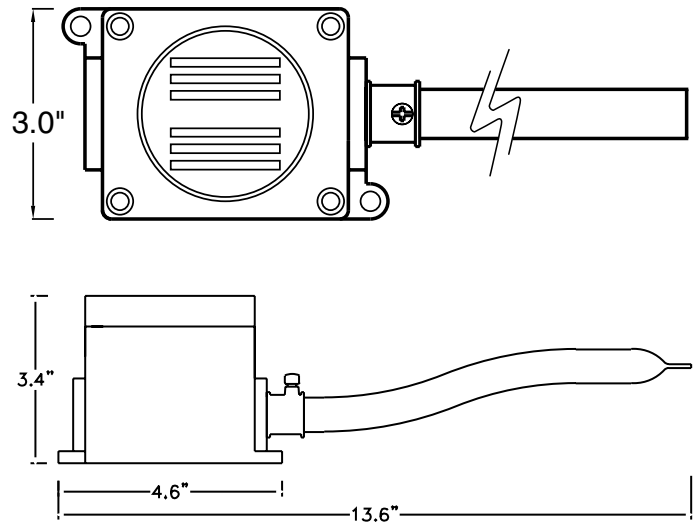


The MSA-1 connection wire may be extended up to 500' (152.40m) with an appropriately rated 18-20 AWG 3 wire unshielded cable.

Optional In-ground Sensor (MSP-1)

The MSP-1 in-ground sensor is encased within a rugged enclosure and is intended to be embedded within the surface being heated. The MSP-1 is supplied with a protective field cover to simplify asphalt or concrete installations, and comes with 30' (9.14m) of wire for connection back to the MSC-1 control unit. The sensor has an integral 1/2" (12.70mm) NPT conduit connection. The MSP-1 connection wire may be extended up to 500' (152.40m) with an appropriately rated 18-20 AWG 4 wire shielded or unshielded cable.

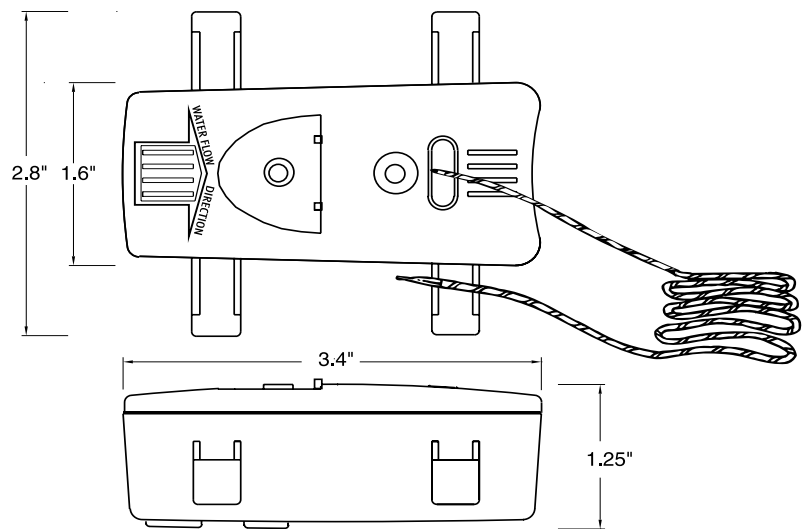
The low voltage MSP-1 monitors the temperature of the surface being heated and also senses falling or drifting snow. The control unit can then disable the heating equipment (heating mats, cables, etc.) when the surface temperature rises above about 41°F (5°C). The result of this dual sensing (temperature and snow) technology is the optimum means of keeping snow melting costs to a minimum while still providing reliable snow detection and melting capabilities.

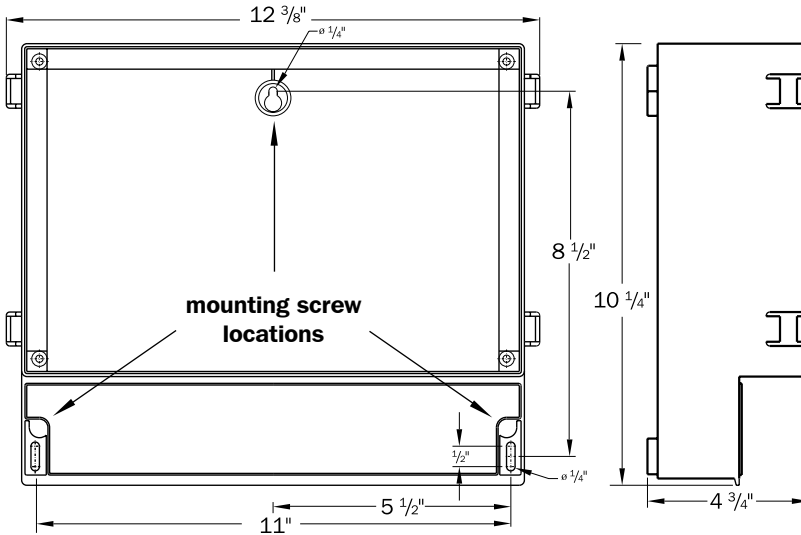


Optional Gutter Sensor (MSG-1)

The MSG-1 detects moisture on roofs and in gutters, sending a signal to the MSC-1. Roof moisture detection is made with the unique sensor wire design, gutter moisture detection is made by the traditional sensing grid. (The TS-1 temperature sensor ensures that heating equipment will only be energized during freezing conditions.) The combination roof and gutter detection system provides quick detection of potentially damaging roof and gutter icing conditions.

The sensor operates on low voltage provided by the MSC-1 control unit and includes 10' (3.05m) of wire, for connection back to the MSC-1, and mounting hardware for attachment in the gutter. The MSG-1 connection wire may be extended up to 500' (152.40m) with an appropriately rated 18-20 AWG 3 wire unshielded cable.





Mounting

Mounts to wall via three #10 screws.

Ordering Information

By component

Easy Heat Item #	Description	Ctn Qty	Ctn Wt	UPC
MSC-1	Controller (includes TS-1 temperature sensor)	1	8.5 lbs	0-13627-01500-5
MSA-1	Aerial Sensor	1	2.0 lbs	0-13627-01501-2
MSG-1	Gutter Sensor	1	2.0 lbs	0-13627-01502-9
MSP-1	In-Ground Sensor	1	6.5 lbs	0-13627-01503-6
TS-1	Temperature Sensor (for replacement)	1	1.5 lbs	0-13627-01504-3

By system

Easy Heat Item #	Description	UPC
MSCA-1	Controller (w/TS-1) and MSA-1 Aerial Sensor	0-13627-01505-0
MSCG-1	Controller (w/TS-1) and MSG-1 Gutter Sensor	0-13627-01506-7
MSCP-1	Controller (w/TS-1) and MSP-1 In-Ground Sensor	0-13627-01507-4

LIMITED WARRANTY

Easy Heat warrants that if there are any defects in material or workmanship in any heating cable or accessory during the first year after the date of purchase. We will provide new products to replace any defective items, or we will refund the purchase price paid for the accessory or cable, not including any labor or other installation costs. As an alternate, we may elect to repair the cable or accessory at our factory with all shipping and other removal costs borne by the purchaser.

We further warrant that for a period of twelve (12) months after the date of performance any services performed hereunder will be in a good and skillful manner, based on our understanding of pertinent technical data as of the date of performance of such services. Easy Heat's sole responsibility and liability in the event of any defect, error, omission, or failure in the services rendered hereunder shall be to provide corrected services of the type provided for herein, designed to correct such defect, error, omissions, or failure, and in no event shall Easy Heat's liability with respect to such warranty exceed the amount received by it from the Buyer on account of such services.

Our obligation to provide corrected services, new products, refund the purchase price, or perform the repair described above is conditioned upon (a) the installation of the accessory or cable conforming to the specifications set forth in our installation instructions and (b) the accessory or cable not having been damaged by mechanical or electrical activities unrelated to the operation of the accessory or cable.

A refund of your purchase price, provision of replacement products, repair of the accessory or cable or provision of corrected services as described above, shall be your sole and exclusive remedy for a breach of this warranty. THESE ARE THE SOLE AND EXCLUSIVE WARRANTIES GIVEN BY EASY HEAT WITH RESPECT TO THE GOODS AND SERVICES AND ARE IN LIEU OF AND EXCLUDE ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARISING BY OPERATION OF LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHETHER OR NOT THE PURPOSE OR USE HAS BEEN DISCLOSED TO EASY HEAT IN SPECIFICATIONS, DRAWINGS OR OTHERWISE, AND WHETHER OR NOT EASY HEAT'S PRODUCTS ARE SPECIFICALLY DESIGNED AND/OR MANUFACTURED BY EASY HEAT FOR YOUR USE OR PURPOSE.

This warranty does not extend to any losses or damages due to misuse, accident, abuse, neglect, normal wear and tear, negligence, unauthorized modification or alteration, use beyond rate capacity, or improper installation, maintenance or application. To the extent that you or your agents have supplied specifications, information, representation of operating conditions or other data to Easy Heat in the selection or design of the Goods and the preparation of Easy Heat's quotation,

and in the event that actual operating conditions or other conditions differ from those represented by you, any warranties or other provisions contained herein which are affected by such conditions shall be null and void.

If within thirty (30) days after your discovery of any warranty defects within the warranty period, you notify Easy Heat thereof in writing, Easy Heat shall, at its option, repair, correct or replace F.O.B. point of manufacture, or refund the purchase price for, that portion of the Goods found by Easy Heat to be defective. Failure by you to give such written notice within the applicable time period shall be deemed an absolute and unconditional waiver of your claim for such defects. Goods repaired or replaced during the warranty period shall be covered by the foregoing warranty for the remainder of the original warranty period or ninety (90) days from the date of shipment of the repaired or replaced goods, whichever is longer.

This limited warranty does not cover any costs relating to the repair or replacement of any accessory or cable at the installation site. Our accessories and cables are not easily accessible. A failed accessory or cable usually cannot be easily repaired. Replacement of a failed accessory or cable will require that the materials under which it is installed be removed to permit replacement of the accessory or cable. **We will not reimburse any costs relating to the repair or replacement of any accessory or cable at the installation site.**

IN NO EVENT, REGARDLESS OF THE FORM OF THE CLAIM OR CAUSE OF ACTION (WHETHER BASED IN CONTRACT, INFRINGEMENT, NEGLIGENCE, STRICT LIABILITY, OTHER TORT OR OTHERWISE), SHALL EASY HEAT'S LIABILITY TO YOU AND/OR YOUR CUSTOMERS EXCEED THE PRICE PAID BY YOU FOR THE SPECIFIC GOODS PROVIDED BY EASY HEAT GIVING RISE TO THE CLAIM OR CAUSE OF ACTION. YOU AGREE THAT WE SHALL NOT BE LIABLE TO YOU OR YOUR CUSTOMERS FOR ANY INCIDENTAL, SPECIAL OR CONSEQUENTIAL OR PUNITIVE DAMAGES. No agent, employee or representative of ours has authority to bind us to any affirmation, representation or warranty concerning the goods sold unless such affirmation, representation or warranty is specifically incorporated by written agreement.

To obtain new products, arrange repair of existing product, or a refund under this warranty, please contact Easy Heat with a description of the defect and proof of purchase at the address noted herein.

ATTN: WARRANTY DEPARTMENT:

In US - EasyHeat Inc; 2 Connecticut South Drive, East Granby, CT 06026
In CANADA - EasyHeat Ltd; 99 Union Street, Elmira, ON N3B 3L7

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