

DTC120-S AND DTC120-PS

Slab Snow Melting Controls



DTC120-S AND DTC120-PS SYSTEM COMPONENTS

The system consists of a control panel (DTC), and a NEMA 1 enclosure with a 20 AMP N.O. (Normally Open) relay output contact, one or two slab sensors, and one ambient thermostat.

Each slab sensor (MS, PS, SS) is epoxy encapsulated and housed in a 6061-T6 aluminum corrosive resistant alloy and coated with a nylon powder coat for additional environmental protection against alkalis in concrete. It houses the sensing unit, solid state switch and heater.

A low voltage #22 AWG 4-conductor cable is brought from the slab sensor(s) to the control panel. All cable leads are color coded for ease of field wiring.

The ambient thermostat (OTS-F1) is located inside a weather proof and corrosion resistant (NEMA 4X) gray thermoplastic noryl enclosure with a 10 Ft. (3m) capillary.

NOMINAL COMPONENT DIMENSIONS

DTC Control Panel:	
W/H/D (cm)	10"8"4" (25/20/10)
MS, PS, SS Sensor:	
Dia./H (cm)	5"4" (13/10)
MS, PS, SS Sensor Conduit:	
Dia./L (cm)	3/4"6" (2/15)
Diameter threaded on both ends.	
RID:	
H/W (cm)	2.75"4.5" (7/11)
OTS-F1 Thermostat:	
W/H/D (cm)	3"7"3" (71/168/71)

INPUT POWER REQUIREMENTS

120 VAC

DELTA-THERM Corporation, P.O. Box 345, Wauconda IL, 60084

DESCRIPTION

The DTC120-S and DTC120-PS are designed to detect snow or ice and automatically activate contactors for snow melting cables or mats. The system will remain activated until conditions at the sensors do not require snow melting.

The DTC120-S contains one main slab moisture/temperature sensors (MS). You can install an optional second MS. Only one MS sensor needs to sense moisture to activate the snow melting system.

The DTC120-PS contains one primary slab moisture/temperature sensor (PS) and one secondary slab moisture sensor (SS). Both the PS and SS sensors must sense moisture to activate the snow melting system.

SYSTEM OPERATION

The snow melting system activates when the following three conditions are met:

1. The ambient temperature is less than the set point of 40°F (4°C).
2. The slab temperature is less than 40°F (4°C).
3. Snow or moisture is present on at least one MS moisture sensor, or on both PS and SS moisture sensors.

Once these conditions are met, the snow melting system remains activated until the slab temperature reaches 60°F (15°C) (all snow has melted and all water has evaporated) or the ambient temperature exceeds 40°F (4°C). The snow melting system then deactivates and remains deactivated until the three conditions reoccur.

APPLICATIONS

Snow Melting

APPROVALS

UL Listed



DTC COMPONENT LOCATION

Locate the DTC control panel indoors in a dry location. The OTS-F1 enclosure may be placed indoors or outdoors. The OTS-F1 bulb must be placed outdoors in an area shielded from direct sunlight.

Locate the MS, PS, and SS sensor(s) between two cable runs in an area most indicative of snow fall. Do not locate the sensor(s) under trees, awnings, next to a structure, or in any location which may be blocked from snow.

DTC CONFIGURATIONS

The DTC120-S or DTC120-PS can be configured as follows:

DTC120-S BASE MODEL

- 1 - DTC
- 1 - MS
- 1 - OTS-F1

1. One main (MS) slab sensor installed to activate the melting system,
2. A second MS slab sensor can be installed as an optional component, either of which can activate the melting system.

DTC120-PS BASE MODEL

- 1 - DTC
- 1 - PS
- 1 - SS
- 1 - OTS-F1

One primary (PS) and one secondary (SS) slab sensor are installed. Both sensors have to sense moisture to activate the melting system.

The primary and secondary slab sensor configuration helps prevent accidental activation from moisture such as wet shoes or tires and the ambient thermostat prevents the system from activating at an air temperature above 40°F (4°C).

MAINTENANCE

The only field maintenance required is surface cleaning of the sensing units prior to the winter season. Clean with a mild soap solution and bristle brush to remove oil, dirt, or any other foreign substance that may have accumulated.

100% FACTORY TESTED

All controls and sensors are functionally tested and inspected.

AUTOMATIC SHUTOFF

The slab snow melting system is designed to deactivate automatically at 60°F (15°C) — when all snow has melted and all water has evaporated.

ECONOMICAL

The snow melting system activates only when specific atmospheric and surface conditions exist. The system automatically deactivates when it is no longer needed, helping keep utility costs to a minimum.

MEASURES SURFACE CONDITIONS

The control measures slab temperature and moisture conditions on the slab with 1 or 2 sensors.

DELTA-THERM Corporation, P.O. Box 345, Wauconda IL, 60084

NO OPERATOR ADJUSTMENTS

The DTC system operates automatically.

OPTIONAL REMOTE INDICATOR AND ACTIVATION TIMER (RID)

The optional remote indicator and activation timer option will allow an operator to remotely activate and monitor the system. This optional remote indicator and activation timer (RID) can be mounted up to 100 Ft. (30m) from the DTC control panel. Supplied with 8" of 3 conductor #22 AWG factory connected extension wire.



Detail 2. RID.

The RID switch can manually activate the roof de-icing or snow melting cable(s) on the RID's internal 75-minute or 5-hour timer. When the RID activates the cable(s); it can also deactivate the cable(s) if the DTC sensor(s) have not called for the snow melting cable to be activated.

The bottom indicator light (system on) is lit whenever the snow melting cable is operating.

The top indicator light (timer on) flashes when the snow melting cable is operating on the RID timer.

OPTIONAL MS SENSOR

One additional MS sensor is option on the DTC120-S model only. The RID is an optional component for either the DTC120-S or DTC120-PS.



Detail 1. MS Sensor.

SENSOR WIRE EXTENSION CHART

Wire Gauge	Maximum Sensor Cable Length Ft. (m)
16 AWG	1000' (305)
18 AWG	600' (183)
20 AWG	400' (122)
22 AWG	250' (76)

DTC120-S AND DTC120-PS OPTIONS

Part No.	Description
RID	Remote Indication And Activation Timer
MS	Main Slab Temperature/Moisture Sensor (up to 2 can be installed on DTC120-S)
MSHR	MS Sensor Head Replacement Kit, Contains Materials To Replace One MS Sensor Head
SW-50	Plenum-Rated Four Conductor #22 AWG Sensor Extension Wire For MS And PS Sensors

DISCLAIMER

Delta-Therm reserves the right to make changes and improvements to the products described and to revise this publication without notice.

LIMITED WARRANTY

Delta-Therm provides a two year limited warranty covering defects in materials and workmanship.

TECHNICAL SUPPORT

A full set of installation instructions is included with order. Please call 1-800-526-7887 with any questions.

(847) 526-2407 Fax (847) 526-4456 **(800) 526-7887**