



# Snow Melting Solutions

Improve efficiency, safety & reliability in residential & commercial systems



Photo courtesy of Advanced Radiant Design



HVAC Systems



Multi-Staging



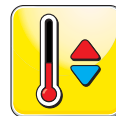
Alternative Energy



Zoning



Snow Melting



Setpoint

**tekmar**<sup>®</sup>  
Better Control. Better Systems.  
A Watts Water Technologies Company



# Reliable, Efficient Snow Melting

Lower operational costs by adjusting the melting temperature to match actual requirements.

tekmar snow melting controls calculate the lowest effective melting temperature by monitoring actual conditions. As the outdoor temperature increases, the heat output to the slab is reduced to save energy. Systems without 'Slab Outdoor Reset' can only operate using temperatures calculated for the coldest days of the year. This type of operation uses more energy than necessary during milder conditions.

## Automatic or Manual Operation

While tekmar controls reduce operating costs for either type of system, automatic operation offers the highest level of safety and convenience.

- Fully automatic operation is enabled through the use of an in-slab Snow/Ice Sensor 090 or 094.
- Systems without an in-slab sensor can be updated to provide automatic start with timed stop operation using an aerial mounted Snow Sensor 095.
- Manual systems are started with a button press and timed or manually stopped.

Automatic Start and Stop



Automatic Start/Timed Stop



Manual Start





## Choose Your Level of Control

Choose from 2 different product lines to suit your application needs. Classic & Performance series products offer distinct features & benefits to perfectly match your existing system or design requirements.

### Classic Series



Classic series controls are stand-alone units that provide automatic or manual operation of hydronic and electric snowmelting systems. Options for boiler and slab protection, mixing and boiler operation are included in the classic series. Both series include features such as slab outdoor reset, idling and warm weather shut down.

### Performance Series



The Performance series offers the benefits of tekmarNet® communication and support for up to 12 melting zones. Communication enables more features including remote access through tekmarNet® Gateways and User Switches. The Performance series is compatible with the full line of tekmar snow, ice & slab sensors.

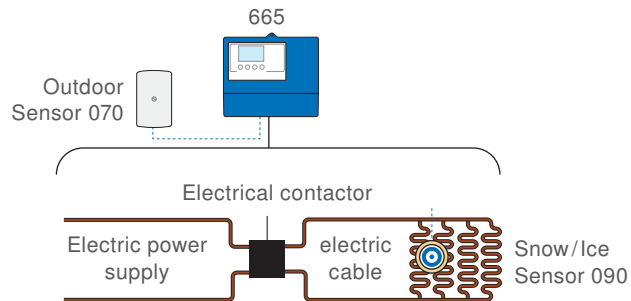
## Snow Melting Benefits

- Offer safe building access to residents, customers, visitors, and employees
- Reduce potential liability
- Save time and eliminate strains caused by shoveling
- Melt snow in difficult to access and steep locations
- Prevent damage to pavers, concrete, and structures caused by snow clearing equipment
- Eliminate the use of harmful chemicals
- Ensure critical locations such as emergency entrances and ramps are free of snow and ice 24-hours a day

## Single Zone Electric

The Snow Detector & Melting Control 665 operates an electric snow melting system using an electrical contactor. A Snow/Ice Sensor 090 is used to provide automatic start and stop operation.

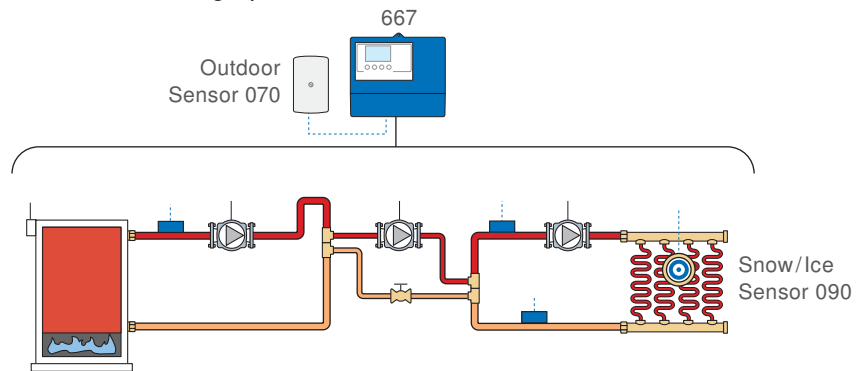
- Electric or hydronic snow melting
- Automatic or manual start & stop



## Single Zone Hydronic with Variable Speed Injection Mixing

The Snow Detector & Melting Control 667 operates a single zone snow melting system with heat provided by a dedicated non-condensing on/off boiler. The supply temperature to the slab is controlled using variable speed injection mixing. A Snow/Ice Sensor 090 enables automatic melting operation.

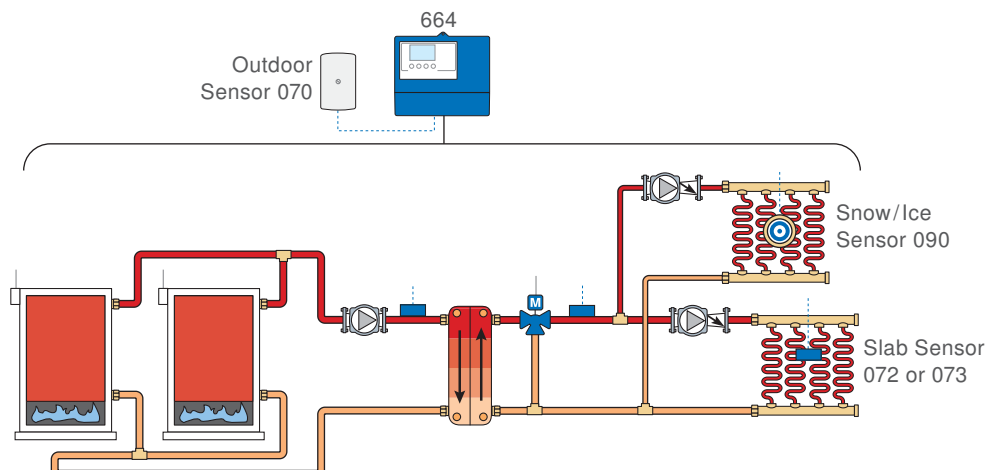
- Operation of one dedicated non-condensing boiler
- Variable speed injection mixing
- Automatic or manual start & stop



## Dual Zone Hydronic with Floating Action Mixing

The Snow Detector & Melting Control 664 operates two zones of snow melting with heat from two non-condensing boilers. The 664 adjusts the supply temperature to the zones using a 3-way mixing valve and actuator. A Snow/Ice Sensor 090 in zone one enables automatic melting operation. Zone two includes a Slab Sensor 072 for monitoring the slab temperature.

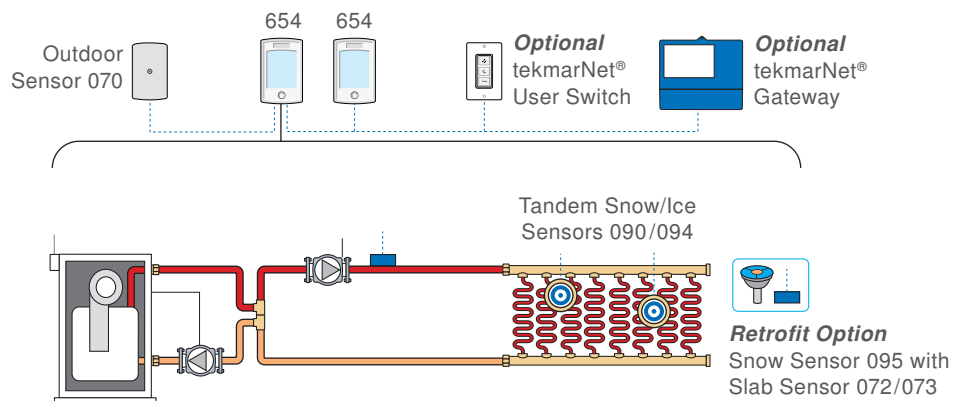
- Staging & rotation of two dedicated non-condensing boilers
- 4-20 mA, 0-10 V (dc), floating action or variable speed injection mixing options
- Two melting zones with priority
- Automatic or manual start & stop



## Single Zone Hydronic with Dedicated Boiler

The Snow Melting Control 654 provides a reset water temperature to the melting zone by operating a modulating boiler piped in primary-secondary to the snow melt system. This allows the system pump to operate continuously during melting or idling while the boiler is operated as required. Two Snow/Ice Sensors work in tandem to improve detection of snow over a large melting area. The second 654 is required for tandem operation. A tekmarNet® Gateway offers remote adjustment and monitoring capability. A tekmarNet® User Switch 480 or 481 makes it easy to change the operation of the system from anywhere in the building.

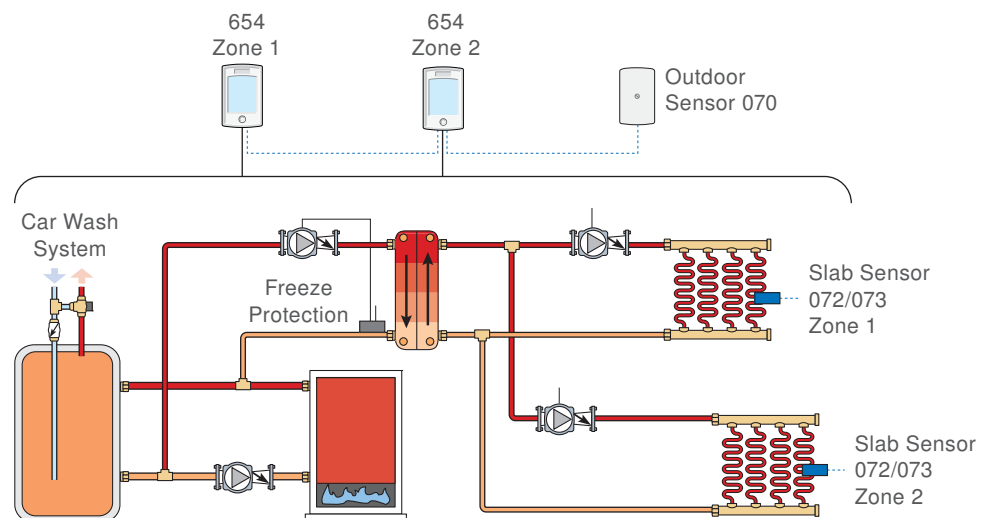
- Tandem Snow/Ice Detection
- Optional remote access via tekmarNet® communication
- Automatic start & stop or automatic start with timed stop



## Multi-Zone Car Wash

The Snow Melting Control 654 offers a built-in schedule to support car wash applications where prevention of freezing during specific hours is required. Up to 12 zones of melting can be operated with a 654 in each zone. The boiler is operated to provide hot water for both the wash system and the melting system. A heat exchanger allows the melting system to operate as a closed loop with anti-freeze. The programmable schedule saves energy by suspending operation when the car wash is closed.

- Up to 12 zones (requires one 654 for each zone)
- Scheduled melting operation
- Optional remote access via tekmarNet® communication







# Snow Melting

Controls & Snow / Ice Sensor

## ▶ Compare Snow Melting Controls



System Requirements		664	665	667	654
<b>Heat Source</b> Electric (E), Hydronic (H), Steam (S)		H/S	E/H/S	H	E/H/S
<b>On / Off Boilers</b>		•	•	•	•
<b>Modulating Boilers</b>		-	-	-	•
<b>Number of Stages</b> One or two on/off boiler stages		2	1	1	1
<b>Mixing Operation</b> Protect non-condensing boilers by controlling return water temperature		•	-	•	•
<b>Floating Action Output</b> Control for floating motor		•	-	-	-
<b>Analog 4-20 mA or 0 - 10 V (dc)</b> Options for control of valve actuators		•	-	-	•
<b>Variable Speed Output</b> Precise mixing injection using a standard wet-rotor circulator		•	-	•	-
Features & Benefits		664	665	667	654
<b>Automatic Snow/Ice Detection</b>		•	•	•	•
<b>Slab Outdoor Reset</b> Vary the slab core temperature as the outdoor temperature changes		•	•	•	•
<b>Slab Protection</b> Control heat delivery to the slab to prevent cracking		•	-	•	•
<b>tekmarNet® Communication</b> Network communication allows for greater functionality	User Switch 480 or 481 enable/disable	-	-	-	•
	Gateway 482 or 483 enable/disable	-	-	-	•
	tekmarNet® System Control communication	-	-	-	•
<b>Remote Enable</b> Supports an external melt or idle demand from an applied voltage		•	•	•	-
<b>Compatible with Snow / Ice Sensor 090 or 094</b> Supports the installation of the inslab, automatic Snow / Ice Sensor 090 or 094		•	•	•	•
<b>Tandem Snow / Ice Detection</b> Two Snow / Ice Sensor 090s or 094s in a single zone for added accuracy and redundancy		-	-	-	•
<b>Compatible with Snow Sensor 095</b> Supports the installation of the aerial retrofit Snow Sensor 095		-	-	-	•
<b>Melting Setpoint</b> Control the melting surface temperature for efficient system operation		•	•	•	•
<b>Idling Setpoint</b> Maintain a warm slab surface for faster response time		•	•	•	•
<b>Storm or Temporary Idle</b> Timed slab pre-heat for anticipated snow fall		•	•	•	•



### ► Compare Snow Melting Controls



664



665



667



654

#### Features & Benefits (continued)

##### **Warm Weather Shut Down**

Avoid snow melt operation in warmer weather for energy savings

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##### **Cold Weather Cut Out**

Avoid snow melt operation in extremely cold weather for energy savings

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##### **Programmable Schedule**

Scheduled snow melt operation for commercial applications

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##### **Snow Melt Zoning With Priority**

Supports zoning and the prioritization of zones

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##### **Number of Snow Melting Zones**

The maximum number of coordinated snow melt zones in a system

2

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12\*\*

##### **Snow Melt Zone Tracking**

Automatic operation for multiple zones with a single Snow / Ice Sensor 090

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##### **EconoMelt**

Follow mechanical snow removal with a shortened melt cycle

\*requires the Snow / Ice Sensor 090 or 094

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##### **Manual Start with Timer**

A manual enable with a timed disable can result in large energy savings

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\*\* Requires one control per zone

### ► Compare Snow Melting Accessories

#### Features & Benefits

##### **Automatic Start & Stop**

Start the system when snow or ice is detected and stop the system when the slab is dry

090

094

095

072

073

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##### **Automatic Start & Timed Stop**

Start the system when snow is detected and stop the system when a melt time has expired

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##### **Slab Temperature Control**

Measure the slab core temperature to allow for Slab Protection and Slab Outdoor Reset

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##### **Wire Length**

Some sensors are available with different wire lengths

65 ft  
(20 m)

208 ft  
(63 m)

N/A

20 ft  
(6 m)

40 ft  
(12 m)



Snow / Ice  
Sensor 090 or  
094 (in slab)  
with Sensor  
Socket 091



Snow Sensor  
095 (aerial)



Slab Sensor  
072 or 073

# Better Design, Better Control, Better Systems.

At tekmar Control Systems, we believe the indoor comfort of a building depends on the performance of its heating, ventilating & air conditioning (HVAC) system. That's why tekmar offers affordable control solutions designed to produce the best in comfort, efficiency & system performance.

Our focus on innovation to add greater value to our products & services allows us to pioneer technologies & anticipate the needs of tomorrow. We stand by our products & offer in-depth technical support & training to ensure our customers are completely satisfied.

## World Class Technical Support

Our local Representatives are knowledgeable experts in both HVAC controls & their operating mechanical systems. They offer assistance in system design, product selection & installation support. We're here when you need us most. To contact a Representative in your area, visit [www.tekmarControls.com](http://www.tekmarControls.com)

## Dependable Warranty

We strive to provide the highest quality products to our customers. In keeping with that goal, all of our products are 100% quality tested, & backed by the most dependable 3-year limited warranty in the industry.



## We Offer the Complete Solution

- *A wide range of products to match the needs of today's systems*
- *Manufactured in a state-of-the-art Canadian facility*
- *A network of experienced & knowledgeable Representatives*
- *Training & technical tools available to support your success*
- *Dedicated staff focused on innovation & customer service*

For more information regarding tekmar products, visit [www.tekmarControls.com](http://www.tekmarControls.com)

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