DANFOSS RX-C SELF-REGULATING HEATING CABLE SPECIFICATION FOR ROOF AND GUTTER DE-ICING

1.0 GENERAL

Supply and install a complete system comprised of heating cables, accessories and controls for keeping roof eaves, gutters and downspouts from being clogged by ice and snow

2.0 MATERIAL

2.1 Shall be Danfoss RX-C self-regulating heating cable.

2.2 The self-regulating heating cables shall consist of two (2) 16 AWG nickel-plated copper bus wires embedded in parallel in a radiation-cross linked polymer core that varies its power output in response to temperature all along its length, allows the heating cable to be cut in the field.

2.3 The heating cable shall be covered with a radiation cross-linked polyolefin dielectric jacket and protected by a tinned-copper braid and a polyolefin outer jacket.

2.4 The heating cable shall operate on line voltage of (select: 120V, 240V, 208V or 277V).

2.5 The heating cable shall have a nominal power output of 12W per foot in snow and ice and 5 watts per foot in air.

2.6 Power connection, end seal, splice, and tee connection kit, shall be able to be applied on site.

2.7 Shall be approved to applicable UL and CSA standards.

2.8 Heating cable circuit shall be protected by a ground fault device in accordance with section 426 of the NEC.

3.0 SYSTEM CONTROL

Option 1: Automatic Snow Controller

The system shall be controlled by Danfoss GX850 control panel with external digital temperature and moisture sensors either directly or through an appropriate contactor.

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Option 2: Snow Switch Control

The system shall be controlled by Danfoss DS-8 temperature and moisture sensor either directly or through an appropriate contactor.

Option 3: Thermostat

The system shall be controlled by an ambient sensing thermostat Danfoss 088L3422 either directly or through an appropriate contactor.

Option 4: Manual Switch

The system shall be controlled by a manual switch either directly or through an appropriate contactor.

3.1 Automatic Snow Controller shall be microprocessor based to provide effective, economical automatic control.

3.2 Automatic Snow Controller shall have dual zone capability.

3.3 Automatic Snow Controller shall have an adjustable timer providing up to 10 hours of system operation after snowfall ceases.

3.4 Automatic Snow Controller shall have the following modes

a. Automatic

b. Constant OFF

b. Constant ON (manual timer)

3.5 Automatic Snow Controller shall have adjustable parameters

a. Melting temperature (32 °F to 49 °F).

b. Moisture sensibility (5 to 95).

3.6 Automatic Snow Controller shall be able to indicate the actual temperature and moisture levels for sensors.

3.7 Automatic Snow Controller shall have info-button for help/information.

3.8 Automatic Snow Controller shall have self-diagnosis program, which will detect faults and give an alarm.

3.9 Automatic Snow Controller shall have individual LEDs to provide indication of alarm and heater operation.

3.10 Automatic Snow Controller shall be capable of accepting four roof sensors.

3.11 Automatic Snow Controller shall have multi-language capabilities (English, Spanish and French).

3.12 Sensors shall include 50' lead.

4.0 EXECUTION

4.1 Installation

a. The heating cable should be laid in gutters; shall be suspended in downspouts either as a loop or a single length and held in place by a downspout hanger (edge protection plate); and shall be attached to the roof using the roof clip.

b. The heating cable shall be protected from damage and installed according to manufacturer's instructions.

c. Inspect the cable and controls upon receiving the shipment. Note any damage and ensure materials received match the order and shipping documents.

4.2 Tests

a. After installation, the dielectric jacket's insulation resistance from the conductors to the shield shall be greater than 1000 megohms.

