ENGINEERING
TOMORROW

Version #: VKAPA822

Electric Heating
Product Catalog

LX Electric Floor Heating, **GX** Snow Melting, **RX** Roof & Gutter De-Icing, **PX** Pipe Freeze Protection, **TX** Thermal Storage

COMFORT
and safety solutions for both indoor & outdoor applications.

www.heating.danfoss.us

Danfoss offers you **peace of mind...**

Here at Danfoss, we pride ourselves on producing high quality engineered electric heating systems, designed to improve the comfort, safety, and quality of daily living, and aid in the conservation of energy. The Danfoss portfolio includes a vast array of both indoor and outdoor electric heating products ideal for many applications including indoor floor heating, snow & ice melting, pipe tracing, thermal storage and roof/gutter de-icing.

What was once considered a luxury, has now become a practical, cost-effective, and popular upgrade for homes and commercial buildings alike.

With Danfoss Electric Heating, you can rest assured you're getting the very best products on the market because we've been manufacturing quality and reliable electric heating products for over 70 years!

Danfoss offers you peace of mind with one of the best, most all-encompassing warranties in the industry. Our genuine 20 year warranty covers our LX Floor Heating, GX Snow Melting & TX Thermal Storage Cables.*

Purchasing the Danfoss name means you will be getting the very best, time-tested products, a legendary warranty, and service that assures that your needs will be met.

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*For Additional Warranty Information Please Refer to Our Website or Page 35 of Our Catalog

Danfoss *LX* Electric Floor Heating

Dual Self-Adhesive Mats

Danfoss LX Electric Floor Heating System (Self-Adhesive Mat & Thermostat) is an affordable luxury that brings warmth to life . It's a proven technology that is safe, reliable and energy efficient. The unique adhesive system SAVES 70% ON INSTALLATION TIME!

- Pre-applied heating cable means even heat every time
- Dual-adhesive backing, no fastening required
- Single point connection
- Twin conductor cable
- Eliminates EMF's (electromagnetic fields)
- Customize mat on the job site
- Minimal thickness-only adds 3/16" height to the floor
- Safety approved for wet locations
- Even heat every time
- No fastening required
- Genuine twenty year warranty

Easy to Install!

Unroll the self-adhesive mat onto the floor

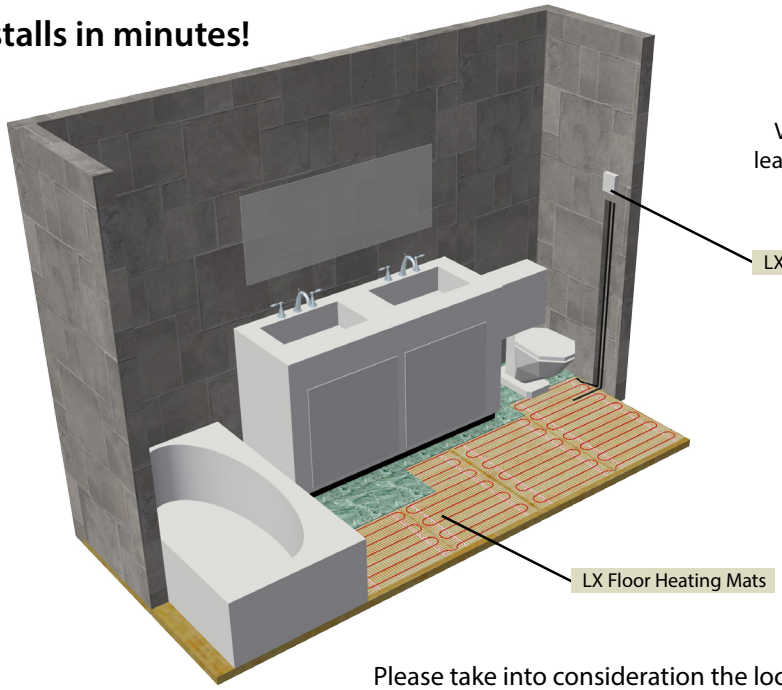
Cut the mesh to turn
Never Cut the *RED Cable*

Install tile / floor coverings

Please visit our YouTube channel for step by step installation instructions: www.youtube.com/danfossLX

Technical Data	LX Mats
Mat Construction:	Thermoplastic polymer coated fiberglass, self adhesive backing
Cable Construction:	Twin Conductor
Cable Diameter:	3/16" (4.8mm)
Rated Voltage:	120V, 208V, 240V
Max. Rated Temperature:	212°F (100°C)
Conductor Insulation:	Teflon™ FEP
Outer Insulation:	PVC

Installs in minutes!



Visit www.LXinstaller.com to learn about the Danfoss Installer Certification program

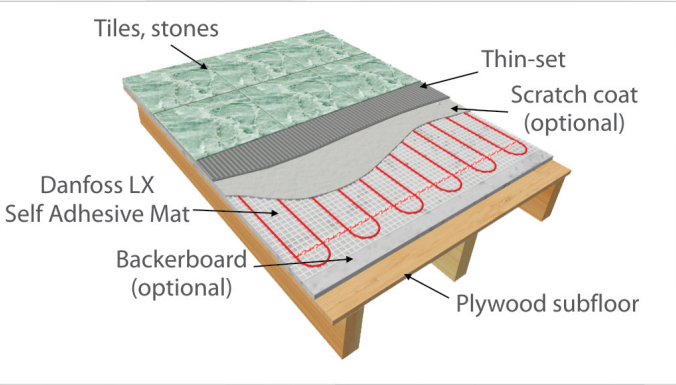
Please take into consideration the locations of sinks, tubs, toilets and objects on the floor when measuring the floor area

www.LX.Danfoss.com | For technical assistance call: 1-888-DANFOSS (326-3677) | Please fax/email orders to: 416-352-5981 or Heating.cs.na@danfoss.com

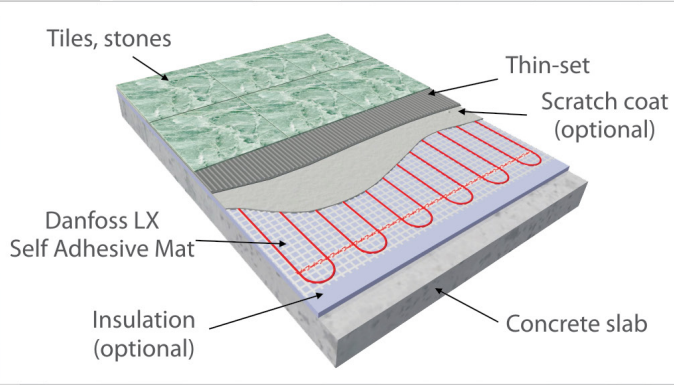
Danfoss *LX*
Electric Floor Heating

Typical Applications

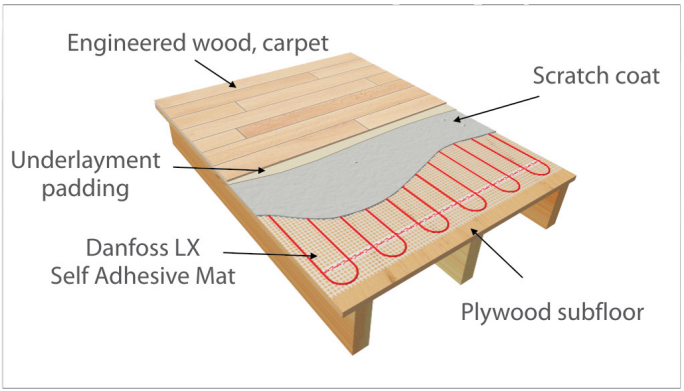
PLYWOOD SUBFLOOR



CONCRETE SUBFLOOR



ENGINEERED WOOD, LAMINATE OR CARPET



Ordering Information		LX Mats			120V, 240V	
Part No.		Length (feet)	Coverage (sq.ft.)	Amps		Watts (12W/sq.ft.)
120V	240V			120V	240V	
088L3150	-	5.0	10	1.0	-	120
088L3151	-	7.5	15	1.5	-	180
088L3152	-	10.0	20	2.0	-	240
088L3153	-	12.5	25	2.5	-	300
088L3154	-	15.0	30	3.0	-	360
088L3155	088L3175	17.5	35	3.5	1.8	420
088L3156	088L3176	20.0	40	4.0	2.0	480
088L3158	088L3177	25.0	50	4.9	2.5	600
088L3160	088L3178	30.0	60	6.0	3.0	720
-	088L3179	35.0	70	-	3.5	840
-	088L3180	40.0	80	-	4.0	960
-	088L3181	45.0	90	-	4.5	1,080
-	088L3182	50.0	100	-	5.0	1,200
-	088L3183	55.0	110	-	5.5	1,320
-	088L3184	60.0	120	-	6.0	1,440
-	088L3185	72.5	145	-	7.3	1,750

Notes:

- All mats are 2 feet in width
- Power leads are 10 feet in length
- Watt output of the 240V mats are reduced by 25% when operated at 208V (9W/sq.ft.)
- Floor sensor conduit is included
- Contactor or Power Module is required for loads exceeding 15 amps on a single thermostat (see pg.6 for details)

Controls - See PG. 5
Accessories- See PG. 6

Danfoss *LX* Electric Floor Heating

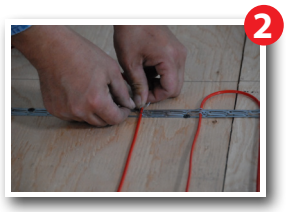
Electric Floor Heating Cables

Danfoss LX Electric Floor Heating Cable Systems combine the highest comfort levels with the maximum energy efficiency. Our Electric Floor Heating Cable Systems offer the following features:

- Single point connection
- Twin conductor cable
- Eliminates EMF's (electromagnetic fields)
- Safety approved for wet locations
- Flexible installation
- Durable construction
- Genuine twenty year warranty

Installation

Attach the Danfoss cable strapping to the sub floor (3' - 4' apart)



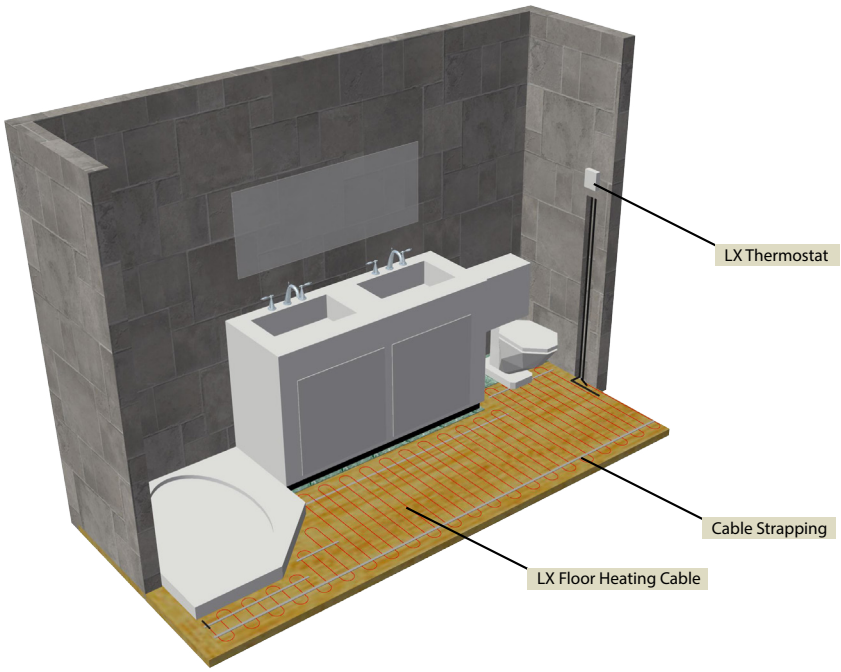
Place the LX cable in the tabs (3" standard spacing)

Clip the LX Cable in place

Technical Data	LX Cables
Cable Construction:	Twin Conductor
Cable Diameter:	3/16" (4.8mm)
Rated Voltage:	120V, 208V, 240V
Max. Rated temperature:	212°F (100°C)
Conductor Insulation:	Teflon™ FEP
Outer Insulation:	PVC

C SP US

Flexible installation!



Please visit our YouTube channel for step by step installation instructions: www.youtube.com/danfossLX

Please take into consideration the locations of sinks, tubs, toilets and objects on the floor when measuring the floor area

Danfoss *LX*
Electric Floor Heating

Electric Floor Heating Cables

Ordering Information	LX Cables						120V
Part No.	Length (feet)	Approximate Heat Coverage (sq.ft.)			Amps	Watts (3W/ft.)	LX Strapping included: feet (m)
		2" spacing	Standard 3" spacing	4" spacing			
088L3140	40	5	10	15	1.0	120	15 (4.6)
088L3141	60	10	15	20	1.5	180	15 (4.6)
088L3142	80	15	20	25	2.0	240	30 (9.1)
088L3143	120	20	30	40	3.0	360	30 (9.1)
088L3144	160	25	40	55	4.0	480	75 (22.9)
088L3145	200	35	50	65	5.0	600	75 (22.9)
088L3146	240	40	60	80	6.3	755	75 (22.9)
088L3147	280	45	70	95	7.2	865	75 (22.9)
088L3148	315	50	80	105	8.0	960	75 (22.9)

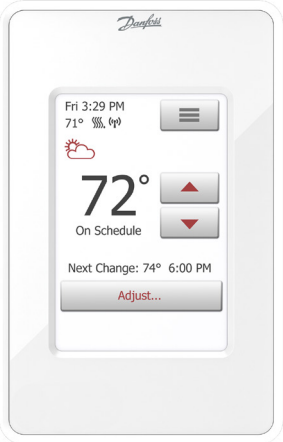
Ordering Information	LX Cables						240V
Part No.	Length (feet)	Approximate Heat Coverage (sq.ft.)			Amps	Watts (3W/ft.)	LX Strapping included: feet (m)
		2" spacing	Standard 3" spacing	4" spacing			
088L3080	80	15	20	25	1.0	240	30 (9.1)
088L3081	120	20	30	40	1.5	360	30 (9.1)
088L3082	160	25	40	55	2.0	480	75 (22.9)
088L3083	200	35	50	65	2.5	600	75 (22.9)
088L3084	240	40	60	80	3.0	720	75 (22.9)
088L3085	280	45	70	95	3.5	840	75 (22.9)
088L3086	320	55	80	105	4.0	960	75 (22.9)
088L3087	360	60	90	120	4.5	1080	105 (32.0)
088L3088	400	65	100	135	5.0	1200	105 (32.0)
088L3089	440	75	110	145	5.5	1320	150 (45.7)
088L3090	480	80	120	160	6.0	1440	150 (45.7)
088L3091	570	95	140	190	7.1	1705	150 (45.7)
088L3092	630	105	160	210	8.0	1920	150 (45.7)

Notes:

- Cable strapping is supplied with product. Additional cable strapping can be ordered separately (See pg. 6)
- 2" centers provide 18W/sq.ft.
- 3" centers provide 12W/sq.ft.
- 4" centers provide 9W/sq.ft.
- Watt output of the 240V cable is reduced by 25% when operated at 208V (approximately 2W/ft.)
- Power leads are 10 feet in length
- Floor sensor conduit is not included (Part # 19809099)
- Contactor or Power Module is required for loads exceeding 15 amps on a single thermostat (See Pg. 6)

Controls - See PG. 5
Accessories- See PG. 6

Danfoss *LX*
Electric Floor Heating



LX205 T WIFI Touch Thermostat
(Programmable)
Part # 088L5140

LX205 Thermostat
(Non-Programmable)

Part # 088L5137

Electric Floor Heating Thermostats

The Danfoss LX Thermostat raises the bar for aesthetic appeal while offering industry-leading functionality. The LX electronic thermostat offers optimum comfort and numerous user friendly features:

- 3.5" Color Screen with Easy Interactive Touch Control
- New Easy Scheduling method & even easier on the fly changes
- Track Power consumption and save it to a PC with a few simple steps
- Thermostat settings can be exported to web page for support
- Universal compatibility with existing floor heating sensors
- Suitable for tile, stone, laminate, concrete and engineered wood floor applications
- 5 Year Battery backup of clock and calendar
- Sleek design - Patent pending

Technical Data	LX Thermostats
Temperature Range:	41°F to 104°F 5°C to 40°C
GFCI:	Class A (5mA trip level)
Supply Voltage:	120V - 240V max., 50/60Hz
Max. Load:	15A max (resistive load)
Max. Power:	1,800W at 120VAC 3,120W at 208VAC 3,600W at 240VAC
Dimensions (HxWxD):	5.1" x 3.2" x0.8" 130mm x 82mm x 20mm
Programmable events:	1-6 events per day (*LX205T only)

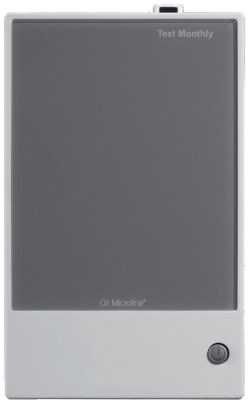
Ordering Information	LX Thermostats	120V - 240V
Part No.	Description	
088L5140	LX205T WIFI Touch Screen Thermostat (Programmable)	
088L5136	LX205T Touch Thermostat (Programmable)	
088L5130	LX Thermostat with Floor & Air Sensor (Programmable)	
088L5137	LX205 Thermostat (Non-Programmable)	

Note: All Thermostats include a Floor Sensor with a 10 foot lead.

Danfoss *LX*
Electric Floor Heating

LX Power Module

The LX Series Power Module makes it easy to connect more heating mats or cables to the same thermostat without the need for contactor panels.



- An easy control solution for large areas
- Receives on/off command from the main thermostat
- Each Power Module adds 15A switching capability
- Up to 5 Power Modules can be added to the thermostat
- Includes Class-A GFCI for safety (approved for wet locations)
- For use with Programmable LX thermostat only

Ordering Information	Power Module / Contactor			
Part No.	Description	Max. Amps	Coil Voltage	No. of Contactors
088L5135	Power Module with GFCI	15	N/A	1
088L3450	Single Contactor, 3P, 600V max.	120	120	1
088L3451	Single Contactor, 3P, 600V max.	120	208-240	1

Contactor or LX Power Module is required for loads exceeding 15 Amps on a single thermostat
All contactors are complete with NEMA 1 enclosure

Electric Floor Heating Accessories

Ordering Information	LX Accessories
Part No.	Description
088L1053	Cable Strapping (15 ft/4.5 m)
088L1054	Cable Strapping (75 ft/22.9 m)
088L3008	Replacement floor sensor for LX Thermostat Models **008L5130, 088L5132, 088L5133 only**
088L0014	LX Repair Kit (includes: crimp connectors, repair wire, heat shrink, tubes)
19809099	Sensor Conduit (8 ft)
088L0028	Little Buzzer (continuity alarm)
ETF-110/99C	Replacement Thin Floor Sensor (10K Ω) for Thermostat Models **008L5136, 088L5137, 088L5140 only**

Little Buzzer - Continuity Alarm (088L0028)

Simplify your installation process by using the Little Buzzer by Danfoss.
The Little Buzzer is designed to monitor Danfoss Heating Mats or Cables during installation and will sound an alarm if the heating element is cut or damaged. This allows an easy repair before the floor covering is laid. The Little Buzzer is battery powered with a set of batteries included.

NOTE: A continuity alarm does not replace the need for measuring and verifying the Ohm resistance three times throughout the installation process. Failure to do so may result in voiding the warranty.

Cable Strapping

Part # 088L1053/54

Little Buzzer

Part # 088L0028

Sensor Conduit

Part # 19809099

LX Repair Kit

Part # 088L0014

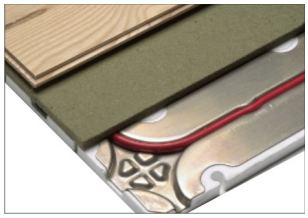
Floor Sensor

Part # 088L3008

Danfoss *Reflect* Electric Floor Heating

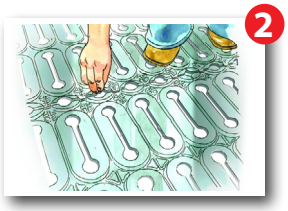
Reflect Insulation Plates

Reflect Insulation Plates are a revolutionary designed product that eliminates the need for a top coat on floating floors. When combined with Danfoss LX Heating Cables, Reflect provides the perfect solution for quick and easy installation of electric floor heating under engineered wood or laminate floors. The combination of an insulating sub floor and a heat conducting surface ensures optimum heat is delivered up through the floor.

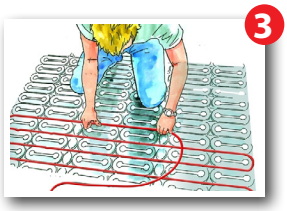


- Best solution available for heating under laminate and engineered wood flooring
- Saves time, no mixing of thin set or mud required
- Reflective plates heat quickly and evenly for maximum comfort
- High R-value insulation helps to reduce energy consumption
- Ideal for concrete floors and basement renovations

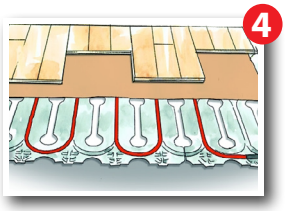
Lay out Reflect Plates



Clip plates together, cut plates with jigsaw if necessary



Install heating cable in grooves, pressing gently



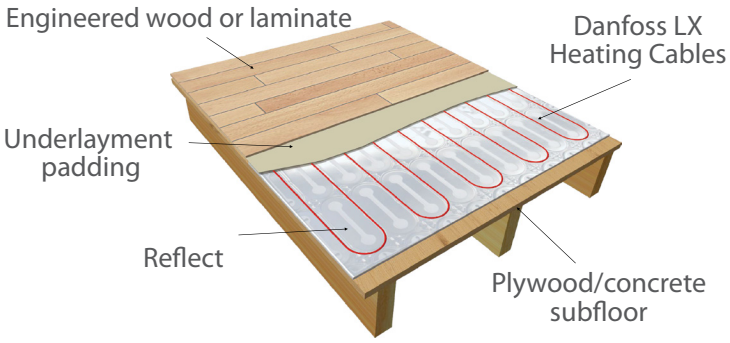
Lay underlayment padding and then the floor covering

Technical Data	Reflect
Construction:	Expanded polystyrene with aluminum surface
Size:	19.75" x 39.50" (501mm x 1003mm)
Height:	0.5" (12.7mm)
Insulation:	Expanded polystyrene (EPS)
Deformation Strength:	734 lbs/sq.ft.
R-Value:	1.5
Groove Spacing:	4" (center to center)

Ordering Information	Reflect		
Part No.	Description	No. of plates (per box)	Approx. sq.ft. (per box)
088L0076	Reflect Insulation Plates	10	50
088L0077	Reflect Insulation Plates	4	20

LX Cable sold separately - see page 8 for Typical Selection Chart

ENGINEERED WOOD OR LAMINATE



Danfoss *Reflect*
Electric Floor Heating

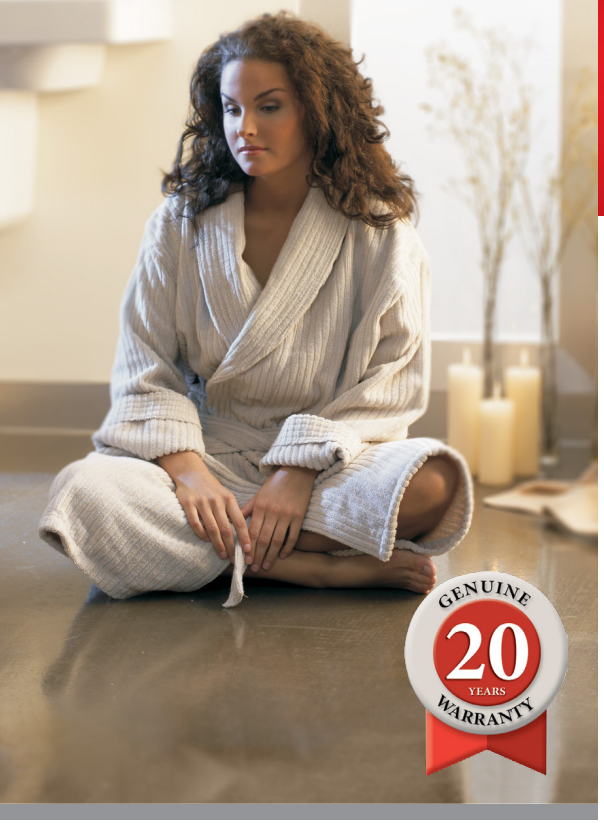
Typical Selection Chart

Ordering Information	LX Cable & Reflect	120V
Coverage (sq.ft.)*	LX Cable	Reflect Required
15	088L3140	1 x 088L0077
20	088L3141	1 x 088L0077
25	088L8142	2 x 088L0077
40	088L3143	2 x 088L0077
55	088L3144	3 x 088L0077
65	088L3145	1 x 088L0076 + 1 x 088L0077
80	088L3146	4 x 088L0077
95	088L3147	2 x 088L0076
105	088L3148	1 x 088L0076+ 3 x 088L0077

*Based on 4" center to center spacing
All plates are approximately 20" (508mm) in width
LX Cable sold separately - see page 4 for ordering information

Ordering information	LX Cable & Reflect	240V
Coverage (sq.ft.)*	LX Cable	Reflect Required
25	088L3080	2 x 088L0077
40	088L3081	2 x 088L0077
55	088L3082	1 x 088L0076
65	088L3083	1 x 088L0076 + 1 x 088L0077
80	088L3084	4 x 088L0077
95	088L3085	2 x 088L0076
105	088L3086	2 x 088L0076
120	088L3087	2 x 088L0076 + 1 x 088L0077
135	088L3088	1 x 088L0076 + 4 x 088L0077
145	088L3089	2 x 088L0076 + 2 x 088L0077
160	088L3090	3 x 088L0076 + 1 x 088L0077
190	088L3091	4 x 088L0076
210	088L3092	4 x 088L0076 + 1 x 088L0077

*Based on 4" center to center spacing
All plates are approximately 20" (508mm) in width
LX Cable sold separately - see page 4 for ordering information



Danfoss *TX*FH Electric Floor Heating

Electric Floor Heating Cables

Danfoss TXFH Cables are a thick floor heating solution. Thick cables have a larger diameter than the Danfoss LX Floor heating cables, allowing them to be lower in COST, higher in HEAT OUTPUT and more DURABLE. They are installed in mud beds below the flooring materials and are most often used in new construction where overall material cost is a primary concern.

- Extremely durable
- High output means less cable required
- Single point connection
- Twin conductor cable
- Eliminates EMF's (electromagnetic fields)
- Safety approved for wet locations
- Genuine twenty year warranty

Technical Data	TXFH Floor Heating Cables
Cable Construction:	Twin Conductor
Cable Diameter:	1/4" (6mm)
Rated Voltage:	240V
Max. Rated Temperature:	220°F (105°C)
Conductor Insulation:	Teflon™ FEP and XLPE
Outer Insulation:	PVC

C US

Technical Data	TXFH Floor Heating Cables			240V	
Part No.	Length (ft.)	Approximate Heat Coverage (sq. ft.)			Watts (6W/ft.)	Amps
		4" Spacing	5" Spacing	6" Spacing		
088L3700	60	20	25	30	335	1.4
088L3701	90	30	35	45	505	2.1
088L3702	115	40	50	60	670	2.8
088L3703	145	50	60	75	865	3.6
088L3704	175	60	75	90	1030	4.3
088L3705	210	70	90	105	1225	5.1
088L3706	240	80	100	120	1395	5.8
088L3707	300	100	125	150	1730	7.2
088L3708	355	120	150	180	2065	8.6
088L3710	415	140	170	205	2400	10.0
088L3711	470	155	195	235	2760	11.5
088L3712	530	175	220	265	3095	12.9
088L3713	595	200	250	295	3480	14.5

Cable Notes:

- Cable strapping is not supplied with product. Additional cable strapping can be ordered seperately.
- Power leads are 10 feet in length
- 4" centers provide approximately 17W/sq.ft.
- 5" centers provide approximately 14W/sq.ft.
- 6" centers provide approximately 12W/sq.ft.
- Watt output of the 240V cable is reduced by 25% when operated at 208V (approximately 4.5W/ft.)

Controls - See PG. 11
Accessories- See PG. 11

Danfoss *TX*SH Thermal Storage Heating

Thermal Storage Heating Cables

Danfoss TXSH (Storage Heating System) heating cables are energized to warm a thermal mass below the floor surface. Danfoss TXSH is the ideal way to take advantage of local on-peak and off-peak energy prices. When the power system is in off-peak times, energy rates are lower. When on peak times resume, the Danfoss TXSH system shuts off and the heat stored in the floor gently emanates across the floor surface for hours. The Danfoss TXSH system provides an energy efficient and cost effective method of heating, in a clean and silent manner.

- Twin conductor cable
- Single point connection
- Easy and flexible installation
- Durable construction
- Eliminates EMF's (electromagnetic fields)
- Silent, efficient, automatic and safe
- Lower capital and operational costs
- Genuine twenty year warranty

Technical Data	TXSH Storage / Slab Heating Cables
Cable Construction:	Twin Conductor
Cable Diameter:	1/4" (6mm)
Rated Voltage:	240V
Max. Rated Temperature:	220°F (105°C)
Conductor Insulation:	Teflon™ FEP
Outer Insulation:	PVC

Technical Data	TXSH Storage / Slab Heating Cables 240V				
Part No.	Length (ft.)	Approximate Heat Coverage (sq. ft.)			Watts (9W/ft.)	Amps
		4" Spacing	5" Spacing	6" Spacing		
088L3723	115	40	50	60	1080	4.5
088L3729	190	60	80	95	1750	7.3
088L3733	240	80	100	120	2160	9.0
088L3735	285	95	120	145	2590	10.8
088L3737	330	110	140	165	3025	12.6
088L3739	375	125	160	185	3480	14.5
088L3741	425	140	175	210	3865	16.1
088L3743	475	155	200	235	4365	18.2
088L3745	545	180	225	270	5015	20.9

Cable Notes:

- Cable strapping is not supplied with product. Additional cable strapping can be ordered seperately.
- Power leads are 10 feet in length
- 4" centers provide approximately 27W/sq.ft.
- 5" centers provide approximately 22W/sq.ft.
- 6" centers provide approximately 18W/sq.ft.
- Watt output of the 240V cable is reduced by 25% when operated at 208V (approximately 4.5W/ft.)

Controls - See PG. 11
Accessories- See PG. 11

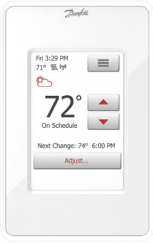
Danfoss *TX*
Thermal Storage Heating

TX Controls

Ordering Information	TXFH Controls	120V - 240V
Part No.	Description	
088L5140	LX205T WIFI Touch Thermostat (Programmable)	
088L5136	LX205T Touch Thermostat (Programmable)	
088L5130	LX Programmable Thermostat with Floor & Air Sensor	
088L5137	LX205 Thermostat (Non-Programmable)	

Floor sensing thermostats include a Floor Sensor with a 10 foot lead
For more information see page 5

LX205T WIFI Touch Thermostat



Part # 088L5140

Ordering Information	Timer / Contactor Panel			
Part No.	Description	Max. Amps	Coil Voltage	No. of Contactors
088L5135	Power Module with GFCI	15	N/A	1
088L3450	Single Contactor, 3P, 600V	120	120	1
088L3451	Single Contactor, 3P, 600V	120	208 - 240	1

Contactor or Power Module is required for loads exceeding 15 Amps on single thermostat
All contactors are complete with NEMA 1 enclosure

ENERGY STAR PARTNER

Power Module

Part # 088L5135

Single Contactor

Part # 088L3450

TX Accessories

Ordering Information	TX Accessories
Part No.	Description
088L0010	TX Repair Kit (Includes: Crimp connector, repair wire, heat shrink tubes)
088L0028	Little Buzzer - Continuity Alarm
088L1053	Cable Strapping (15ft. / 4.5m)
088L1054	Cable Strapping (75ft / 22.8m)
088L3008	Replacement floor sensor for Thermostat Models **008L5130, 088L5132, 088L5133 only**
ETF-110/99C	Replacement Thin Floor Sensor (10K Ω) for Thermostat Models **008L5136, 088L5137, 088L5140 only**
19809099	Sensor Conduit (8ft / 2.4m)

Cable Strapping

Part # 088L1053/54

Little Buzzer

Part # 088L0028

Sensor Conduit

Part # 19809099

Floor Sensor

Part # 088L3008

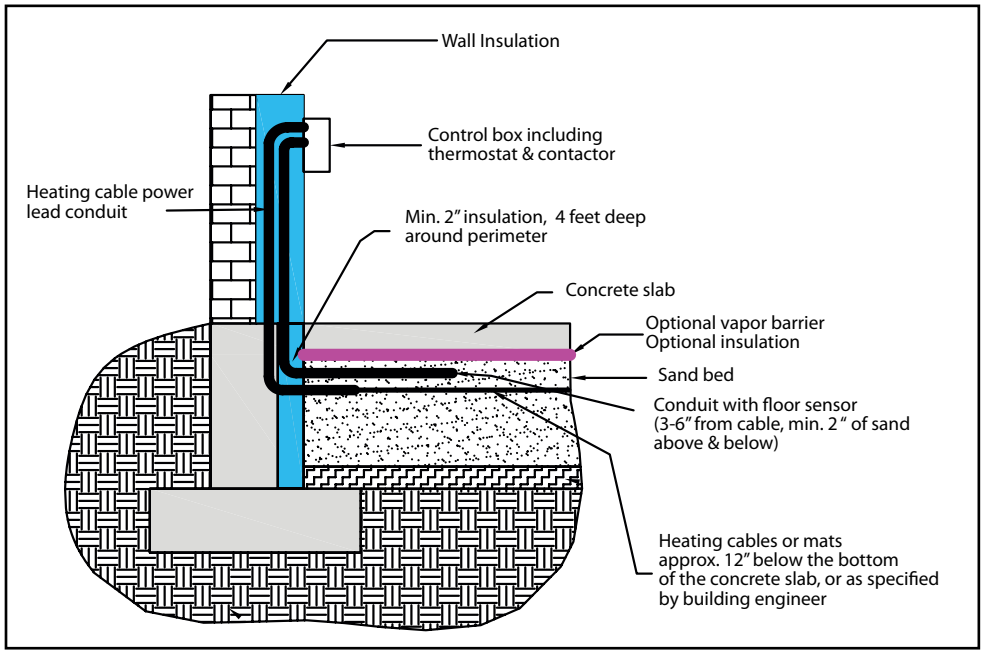
TX Repair Kit

Part # 088L0010

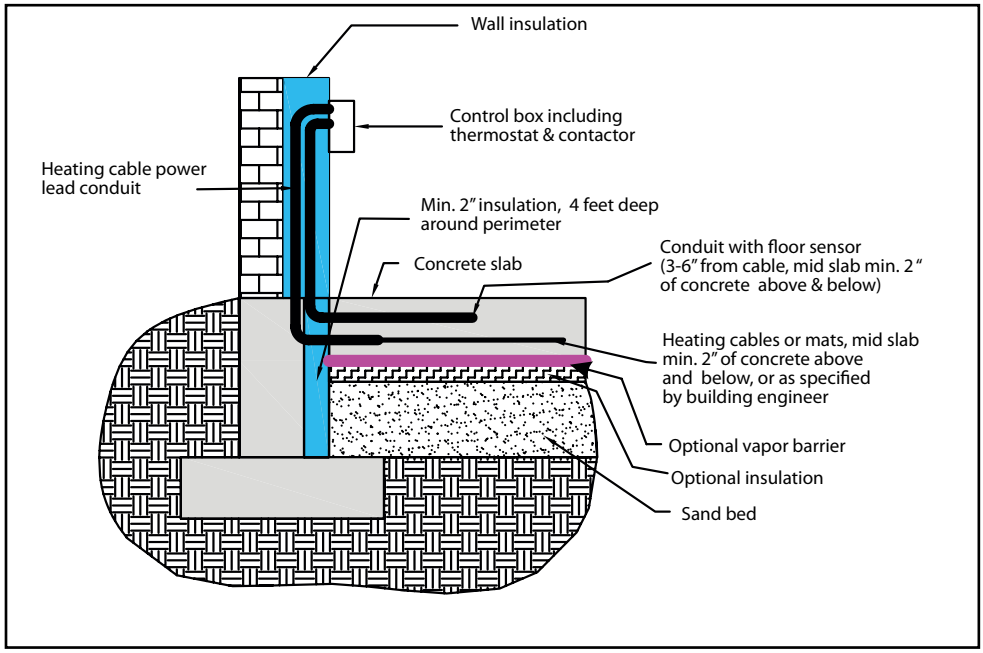
Thermal Storage Heating Mats & Cables

Typical Applications

SAND BED INSTALLATION



CONCRETE INSTALLATION



Danfoss *GX* Electric Snow Melting

Electric Snow Melting Mats & Cables

Installing a Danfoss GX Snow Melting System provides a permanent solution to the problems caused by cold weather. The GX Snow Melting System is an on demand system that will provide you with improved safety by providing instantaneous relief from snow build up and ice forming. There is no need for costly snow melting chemicals that can damage interior and exterior flooring finishes. The GX Snow Melting System allows you to improve your bottom line by reducing the labor and machinery costs associated with clearing snow and ice.

- Twin conductor cables
- Single point connection
- Flexible and simple to install
- Durable construction
- Operates silently, efficiently and safely
- Ideal for driveways, parking lots, sidewalks, stairs, ramps, bridges and many other applications
- For use in concrete, asphalt and under pavers
- Eliminates EMF's (electromagnetic fields))
- GX Heating Mats significantly reduce installation time and labor
- Genuine twenty year warranty

Installation

Prepare the area. Insulation below and on the sides of the slab are recommended

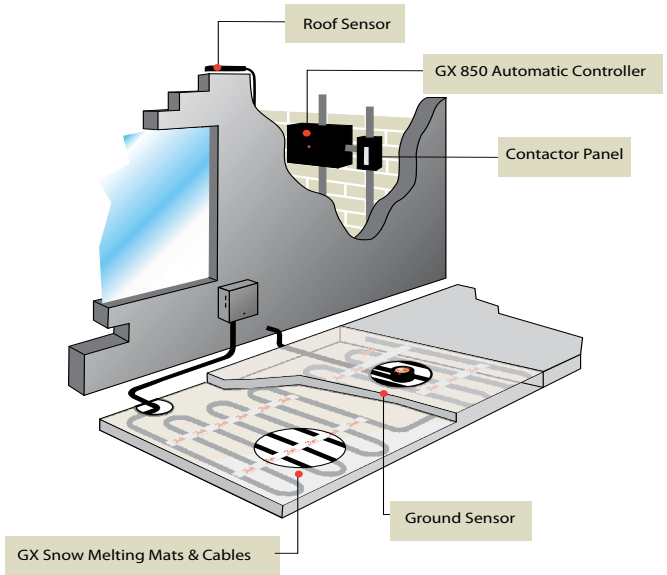
Lay out the GX Mats or Cables

Install ground sensors at opposite ends of the area

Technical Data	GX Mats & Cables
Cable Construction:	Twin Conductor
Cable Diameter:	1/4" (6mm)
Rated Voltage:	208, 240, 277, 480, 600V
Max. Rated Temperature:	220°F (105°C)
Conductor Insulation:	Teflon™ FEP
Outer Insulation:	PVC

C SP US

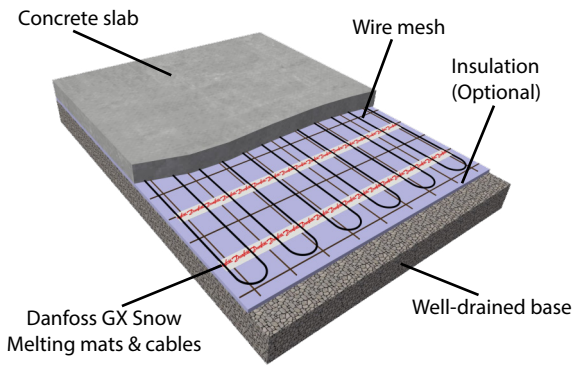
SYSTEM COMPONENTS



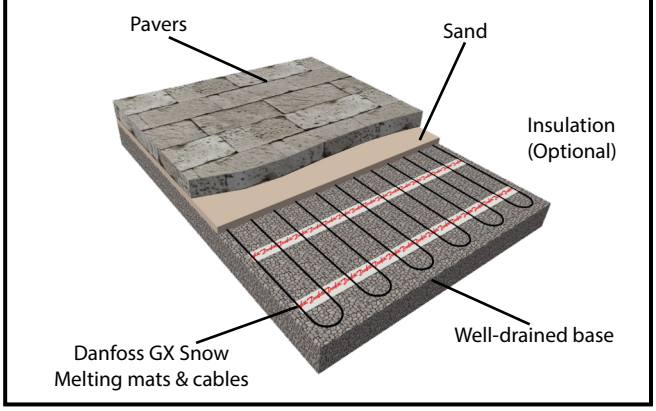
Danfoss *GX*
Electric Snow Melting

Typical Applications

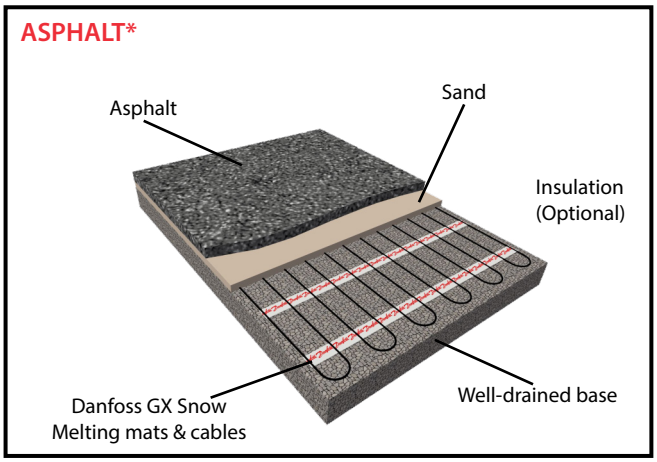
CONCRETE



STONEWORK



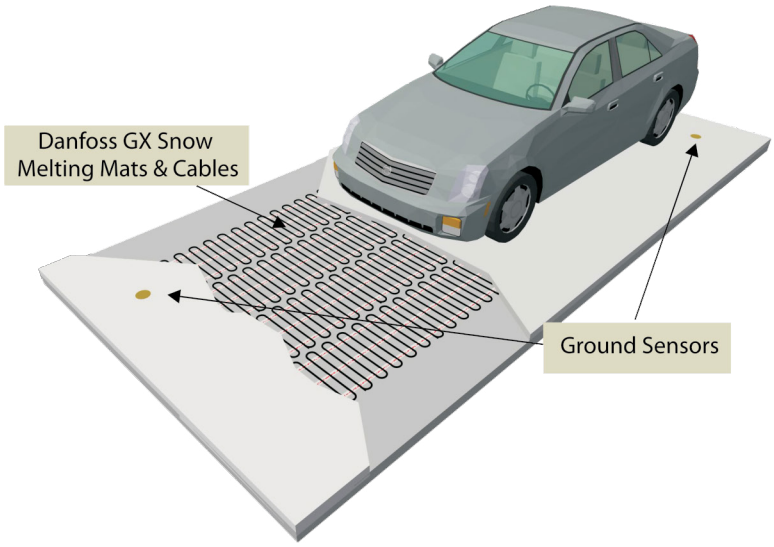
ASPHALT*



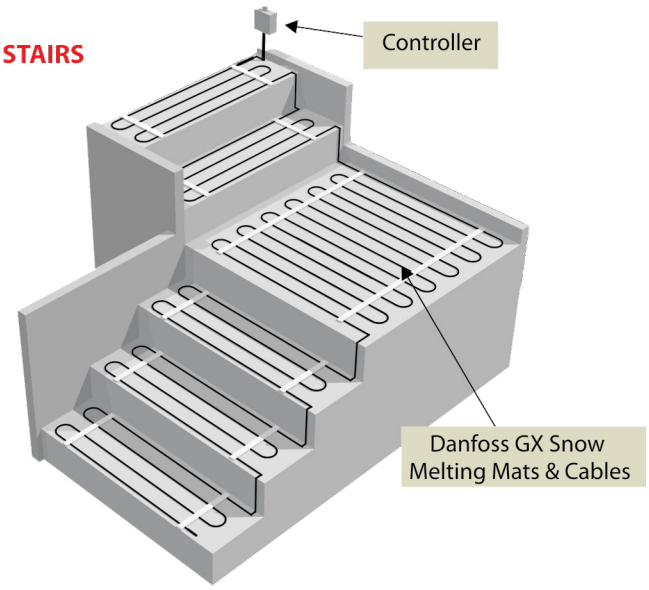
*Notes:

- Cables can be embedded in sand or concrete (1.0"/25.4mm) for extra protection
- If using sand or concrete with asphalt, allow asphalt to cool to 265° F (130° C) before pouring directly on mats/cables
- If using without sand or concrete allow asphalt to cool to 220°F (105° C) before pouring directly on mats/cables

DRIVEWAY



STAIRS



Danfoss *GX*
Electric Snow Melting

Electric Snow Melting Mats

Ordering Information	GX Mats			208V
Part No.	Length (feet)	Coverage (sq.ft.)	Watts (50W/sq.ft.)	Amps
088L3222	6.5	15	645	3.1
088L3223	10.0	20	1100	5.3
088L3225	15.0	30	1540	7.4
088L3227	20.0	40	1910	9.2
088L3229	25.0	50	2390	11.5
088L3230	30.0	60	3055	14.7
088L3231	35.0	70	3410	16.4
088L3232	40.0	80	3805	18.3
088L3233	45.0	90	4220	20.3
088L3234	50.0	100	5010	24.1

Ordering Information	GX Mats			240V
Part No.	Length (feet)	Coverage (sq.ft.)	Watts (50W/sq.ft.)	Amps
088L3201	7.5	15	745	3.1
088L3202	10.0	20	1010	4.2
088L3204	15.0	30	1510	6.3
088L3206	20.0	40	1990	8.3
088L3208	25.0	50	2500	10.4
088L3209	30.0	60	3500	12.5
088L3210	35.0	70	3505	14.6
088L3211	40.0	80	4010	16.7
088L3212	45.0	90	4510	18.8
088L3213	50.0	100	4990	20.8
088L3214	57.5	115	5750	24.0
088L3215	65.0	130	6505	27.1

Ordering Information	GX Mats			240V (37.5 W/sq.ft)
Part No.	Length (feet)	Coverage (sq.ft.)	Watts (37W/sq.ft.)	Amps
088L3301	20.0	40	1485	6.2
088L3302	45.0	90	3505	14.6
088L3303	60.0	120	4510	18.8
088L3304	77.5	155	5710	23.8

Notes:
- All mats are 2 feet wide
- Power leads are 20 feet in length
- Watt output of the 240V mat is reduced by 25% when operated at 208V (Approximately 37.5 W/sq.ft.)

Controls - See PG. 19
Accessories- See PG. 22

Danfoss *GX*
Electric Snow Melting

Electric Snow Melting Mats

Ordering Information	GX Mats			480V
Part No.	Length (feet)	Coverage (sq.ft.)	Watts (50W/sq.ft.)	Amps
088L3270	10.0	20	1005	2.1
088L3272	20.0	40	2015	4.2
088L3274	30.0	60	3025	6.3
088L3276	40.0	80	3985	8.3
088L3278	50.0	100	4990	10.4
088L3279	60.0	120	6000	12.5
088L3280	70.0	140	7005	14.6
088L3281	80.0	160	8015	16.7

Electric Snow Melting Cables

Ordering Information	GX Cables				208V
Part No.	Length (feet)	Approx. Heat Coverage(sq.ft.)		Watts (12W/ft.)	Amps
		Standard 3" Spacing	4" Spacing		
088L3123	85	20	30	1020	4.9
088L3124	105	25	35	1265	6.1
088L3125	125	30	45	1500	7.2
088L3126	145	35	50	1745	8.4
088L3127	160	40	55	1915	9.2
088L3128	180	45	60	2165	10.4
088L3129	210	50	70	2515	12.1
088L3130	245	60	85	2930	14.1
088L3132	320	75	110	3850	18.5
088L3133	355	85	120	4265	20.5
088L3134	410	100	140	4930	23.7
088L3135	460	110	160	5510	26.5

Danfoss *GX* Electric Snow Melting

Electric Snow Melting Cables

Ordering Information	GX Cables			240V
Part No.	Length (feet)	Approx. Heat Coverage(sq.ft.)		Watts (12W/ft.)	Amps
		Standard 3" Spacing	4" Spacing		
088L3100	40	10	15	480	2.0
088L3101	60	15	20	720	3.0
088L3102	80	20	25	960	4.0
088L3103	100	25	35	1200	5.0
088L3104	120	30	40	1440	6.0
088L3105	145	35	50	1750	7.3
088L3106	165	40	55	1990	8.3
088L3107	185	45	65	2230	9.3
088L3108	205	50	70	2470	10.3
088L3109	245	60	85	2950	12.3
088L3110	285	70	100	3430	14.3
088L3111	325	80	110	3910	16.3
088L3112	370	90	125	4440	18.5
088L3113	410	105	140	4920	20.5
088L3114	475	120	165	5710	23.8
088L3115	535	135	185	6430	26.8

Ordering Information	GX Cables			277V
Part No.	Length (feet)	Approximate Heat Coverage (sq.ft.)		Watts (12W/ft.)	Amps
		Standard 3" Spacing	4" Spacing		
088L3065	170	40	60	2020	7.3
088L3066	190	45	65	2325	8.4
088L3067	215	50	75	2600	9.4
088L3068	240	55	80	2855	10.3
088L3069	285	65	95	3435	12.4
088L3070	330	80	115	4015	14.5
088L3071	375	90	125	4600	16.6
088L3072	425	100	145	5150	18.6
088L3073	475	115	160	5760	20.8
088L3074	545	130	185	6590	23.8

Notes:

- Power leads are 20 feet in length
- 3" centers provides 50W/sq.ft.
- 4" centers provides 35W/sq.ft.
- Watt output of the 240V mat is reduced by 25% when operated at 208V (Approximately 9 W/ft.)

Controls - See PG. 19
Accessories- See PG. 22

Danfoss *GX*
Electric Snow Melting

Electric Snow Melting Cables

Ordering Information	GX Cables			480V
Part No.	Length (feet)	Approximate Heat Coverage (sq.ft.)		Watts (12W/ft.)	Amps
		Standard 3" Spacing	4" Spacing		
088L3640	80	20	25	1010	2.1
088L3644	200	50	70	2450	5.1
088L3646	330	85	110	4030	8.4
088L3648	490	125	160	6000	12.5
088L3650	735	185	240	8930	18.6
088L3652	820	205	270	10030	20.9
088L3654	940	235	310	11475	23.9

Ordering Information	GX Cables			600V
Part No.	Length (feet)	Approximate Heat Coverage (sq.ft.)		Watts (12W/ft.)	Amps
		Standard 3" Spacing	4" Spacing		
088L3621	150	40	50	1860	3.1
088L3623	300	75	100	3720	6.2
088L3624	360	90	120	4440	7.4
088L3625	415	105	135	5040	8.4
088L3627	515	130	170	6240	10.4
088L3629	715	175	235	8700	14.5

Notes:
- Power leads are 20 feet in length
- 3" centers provides 50W/sq.ft.
- 4" centers provides 35W/sq.ft.
- Watt output of the 600V mat is reduced by 35% when operated at 480V (Approximately 7.5W/ft.)

Controls - See PG. 19
Accessories- See PG. 22

Danfoss *GX*
Electric Snow Melting

GX 850ACP

Part # 088L3412

Ground Sensors

Part # 088L3051

Roof Sensor

Part # 088L3052

GX-850M

Part # 088L3415

Electric Snow Melt Controllers

GX 850 Dual Zone Automatic Control Panel

The AWARD WINNING Danfoss GX Dual Zone Automatic Control Panel (ACP) is the most optimal solution for keeping any area free of ice and snow. The GX 850 acts on information received from sensors which register both temperature and moisture, then calculates the information ensuring that the heat will only be turned on when snow and/or ice is present. The result is optimal performance with maximum energy savings and minimum operating costs.

- User interface allows total control of snow melting system set points
- Set to maximum melting, or maximum energy savings or anywhere in between
- Dual zone feature allows for energy savings
- Digital sensors provide precise feedback on snow and ice conditions
- Fault finding program detects and alarms on faults
- Can be field upgraded to take advantage of new features
- Integrate one to four separate sensors
- Two year warranty

Technical Data	GX850 ACP
Control Voltage:	120V
Max. Heating Load:	150A
Max. Ambient Temperature:	14°F to 104°F (-10°C to +40°C)
Enclosure Type:	NEMA 4X
Mounting:	Wall mounted, indoors
Dimensions (H x W x D):	10.5" x 12.5" x 7" (267mm x 318mm x 178mm)

Technical Data	GX - 850M
Control Voltage:	120V
Max. Heating Load:	NA, Contactors Required
Max. Ambient Temperature:	14°F to 104°F (-10°C to +40°C)
Enclosure Type:	NEMA 1X
Mounting:	Wall mounted, indoors
Dimensions (H x W x D):	7" x 7" x 3" (177mm x 177mm x 76mm)

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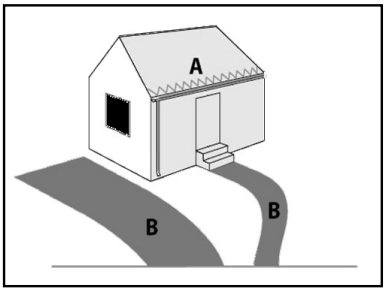
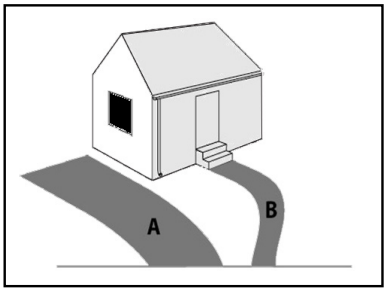
Requires ground and / or roof sensors.

DUAL ZONE EXAMPLES

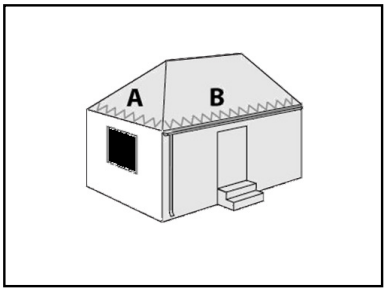
Roof & Ground Zones



Two Ground Zones



Two Roof Zones



Danfoss *GX*
Electric Snow Melting

Electric Snow Melt Controllers

The DS-2C/DS-5C Snow Melt Controllers are designed for pavement snow melt applications. They can be used as a stand alone controller or as a sensor for larger control systems.

DS-2C

- Housed in a weatherproof enclosure
- Senses both moisture and temperatures
- Adjustable temperature trigger point
- Expanded 30-90 min. & 2-6 hr. delay off drying time
- Manual override capable
- Selectable low temperature cutoff with unique Recover module
- Super bright front panel power/activation LED indicator
- Remote control and monitor capabilities
- Easy to install
- Two year warranty

DS-5C

- Housed in a weatherproof enclosure
- Senses both moisture and temperatures
- Adjustable temperature trigger point
- Adjustable delay off drying time
- Manual override capable
- Selectable low temperature cutoff
- Remote control and monitor capabilities
- Easy to install
- Two year warranty

Technical Data	DS-2C	DS-5C
Power Control Voltage:	100-277V Universal input	100-277V field selectable
Max. Heating Load:	30A	60A (2 x 30A)
Max. Ambient Temperature:	-40°F to +185°F (-40°C to +85°C)	
Enclosure Type:	NEMA 3R	
Mounting:	Wall/pole mounted, outdoors	
Dimensions (H x W x D):	4.75" x 7.00" x 2.75" (121mm x 178mm x 70mm)	

Intertek

Ordering Information	GX Controls	
Part No.	Description	Voltage
088L3044	DS-2C Snow Melt Controller (30A)	100-277V
088L3046	DS-5C Snow Melt Controller (60A)	100-277V
088L3412	GX850 Dual Zone Automatic Control Panel (ACP)*	120V
088L3415	GX850M*	120V

*Requires ground and / or roof sensors
*Control voltage 120V

GX 850 ACP

Part # 088L3412

DS-5C Controller

Part # 088L3046

Danfoss *GX*
Electric Snow Melting

Contactor Panel

Electric Snow Melting Panels

Contactor & Timer Panels

The Danfoss Contactor and Timer panels are primarily designed for snow and ice melting applications. All panels are pre-wired and UL listed complete with a NEMA 1 enclosure, wiring diagram, terminal connection block, timer (timer panels), and two or four 3-pole contactors. Timer panels can be used stand alone or in conjunction with an automatic controller. Contactor panels must be used in conjunction with an automatic controller.

- Low Cost
- Easy to install
- NEMA 1, UL listed panel box
- Heat on indicator light
- Pre-wired terminal connections
- Two year warranty

Technical Data	Contactor / Timer Panels
Power Voltage Range:	208V - 600V
Max. Heating Load:	300A/600A
Control Voltage:	120V
Enclosure Type:	NEMA 1
Mounting:	Wall mounted, indoors
Dimensions (H x W x D):	10" x 10" x 4" (254mm x 254mm x 102mm) 14" x 12" x 6.5" (355mm x 305mm x 165mm)
Timer Override:	4 Hours

c UL us

GFEP (Ground Fault Equipment Protection) Contactor Panels

Simplify your installation with the GFEP Panels. Danfoss GFEP panels have built-in ground fault equipment protection, minimizing the risk of faults and eliminating extra wiring installation steps and costs. The panel can be activated by a Danfoss GX 850 ACP, DS controller or any other type of controller.

- Easy to install
- NEMA 1, UL listed enclosure
- Integrated 30mA GFEP (Optional)
- A LED trip indicator (internal)
- A LED heat on indicator
- Pre-wired terminal connections
- 120V on/off remote heat indicator
- Two year warranty

Technical Data	GFEP Panels
Power Voltage Range:	208V - 600V
Max. Heating Load:	300A/600A
Control Voltage:	120V
Enclosure Type:	NEMA1
Mounting:	Wall mounted, indoors
Dimensions (H x W x D)	12" x 12" x 6" (305mm x 305mm x 152mm) 14" x 12" x 6.5" (355mm x 305mm x 165mm)
GFEP:	30mA trip

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Danfoss *GX*
Electric Snow Melting

GX Timer / Contactor Panels

Ordering Information	GX Timer / Contactor Panels			
Part No.	Description	Max. Amps	Coil Voltage	No. of Contactors
088L3450	Single Contactor, 3P, 600V	120	120	1
088L3451	Single Contactor, 3P, 600V	120	208-240	1
088L3440	GX Timer Panel with 4hr Timer, 600V, 6 Pole	300	120	2
088L3442	GX Timer Panel with 4hr Timer, 600V, 12 Pole	600	120	4
088L3444	GX Contactor Panel with Timer and GFEP, 300A, 6 Pole	300	120	2
088L3446	GX Contactor Panel with Timer and GFEP, 600A, 12 Pole	600	120	4

All contactors are complete with NEMA 1 enclosure
300A contactor / timer panels consist of two, 3P, 50A contactors
600A contactor / timer panels consist of four, 3P, 50A contactors

Single Contactor

Part # 088L3450

Electric Snow Melting Accessories

Ordering Information	GX Accessories
Part No.	Description
088L1053	Cable Strapping (15 ft. / 4.5m)
088L1054	Cable Strapping (75 ft. / 22.9m)
088L3051	Ground Sensor (Two per package, includes 50 ft. / 15m lead wire)
088L3052	Roof Sensor (includes 50 ft. / 15m lead wire)
088L3405	Nameplate (per NEC 426-13)
088L0010	GX Repair Kit (includes: crimp connectors, heat shrink tubes, repair wire)
088L3038	CDP-2 Remote Control & Display for Snow Sensors*
088L3039	CS-1 Remote Control / Monitor Pigtail for CDP-2
89999997	Extended Power leads, factory spliced, 5 ft increments **

*CDP-2 can be used with DS-2C and DS-5C controllers
**Allow 10-12 weeks delivery time

Cable Strapping

Part # 088L1053/54

Ground Sensors

Part # 088L3051

CDP-2 Remote Control

Part # 088L3038

GX Repair Kit

Part # 088L0010

Nameplate

Part # 088L3405

Roof Sensor

Part # 088L3052

Danfoss *RX* Roof & Gutter De-Icing (Residential)

Residential Roof & Gutter De-Icing Cables: RX -Kits

Danfoss RX Cables provide the protection needed to prevent ice dams and build-up from damaging RESIDENTIAL buildings, roofs, and gutters. Danfoss RX constant watt heating cables ensure maximum energy efficiency and are designed for use with metal or asphalt roofing. Durable and high-quality materials provide excellent moisture, corrosion and impact protection. Simply plug the RX kits directly to the power receptacle.

- Professional grade cable and AC Plug
- 100% aluminum foil screen
- Electrical Shock Resistant (ESR)
- High grade heating element
- Durable and high-quality materials provide excellent moisture, corrosion and impact protection
- Tough UV rated cable will withstand the harshest conditions
- Kit comes complete with necessary shingle and spacer clips
- Two year warranty

Technical Data	RX Kits
Cable Construction:	Twin Conductor, constant watt
Cable Diameter:	1/4" (6mm)
Rated Voltage:	120 V
Max. Rated Temperature:	220°F (105°C)
Conductor Insulation:	Teflon™ FEP
Outer Insulation:	PVC

Ordering Information	RX Kits			120V	
Part No.	Length (ft)	Watts	Amps	Shingle Clips Included in Kit	Spacer Clips Included in Kit
088L3500	30	170	1.4	25	10
088L3502	65	310	2.6	25	10
088L3503	80	395	3.3	50	10
088L3504	100	455	3.8	50	10
088L3505	120	540	4.5	75	10
088L3508	170	755	6.3	100	10
088L3510	230	1080	9.0	100	10
088L3511	265	1225	10.2	125	10

KIT INCLUDES:

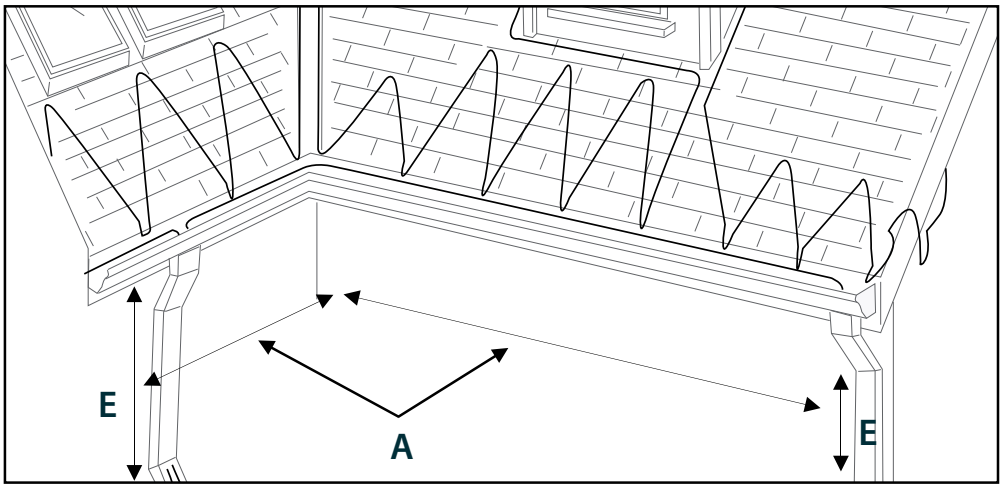
- 120V, HEATING CABLE WITH GROUNDED PLUG
- SPACER CLIPS
- SHINGLE CLIPS
- INSTRUCTION MANUAL
- 6FT. POWER LEAD

Controls - See PG. 24
Accessories- See PG. 24

Danfoss *RX* Roof & Gutter De-Icing: (Residential)

Product Selector for a Basic Roof **see manual for more complicated roof lines

1. Total length (ft) of roof line (A) X 5 = RL
2. Total length (ft) of all down spouts (E) X 2 = DS
3. Add RL + DS = estimated length (ft) of cable required



Residential Roof & Gutter De-Icing Controls

RX1200 Roof and Gutter De-icing Controller

The RX1200 offers an easy, no maintenance operation and is designed for use with Danfoss RX Cables. The RX1200 Controller senses both moisture and temperature conditions.

- Save up to 75% on energy consumption costs
- Fully automatic
- Plug and play installation
- Extends life of roof de-icing system
- Pre-assembled & ready-to-install
- Prevent roof damage and leaks

RX1200

Part # 088L9000

Technical Data/Ordering Information	RX1200
Part No.:	088L9000
Power Supply:	120VAC 50/60 Hz
Resistive Load (Output) max.:	10.2A @120V (1225W)
Turn On/Off Temperatures:	On at 39.2°F, off at 44.6°F (on at 4°C, off at 7°C)
Enclosure Type/Mounting:	Outdoor, under soffit/eave on wall protected against rain and direct sunlight
Dimensions (H x W x D):	1.73" x 4.57" x 2.84" (44mm x 116mm x 72mm)
Power Cord:	4.9 ft (1.5 m), 16AWGx3C, with ground plug, black
Probe Lead:	2.3ft (0.7m), black
Sensor Wire:	9.84 ft (3m), moisture sensor, black
Included:	Sensor Shingle Clips (6 pcs., aluminum alloy), Screws (2 pcs., M4x25)

Residential Roof & Gutter De-Icing Accessories

Ordering Information	RX Kits Accessories
Part No.	Description
088L3004	RX Kit Spacer Clips (10 / bag)
088L3005	RX Kit Shingle Clips (25 / Bag)

RX Kit Spacer Clips

Part # 088L3004

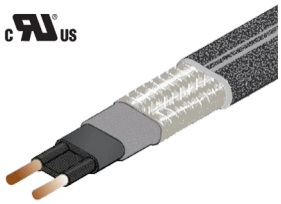
RX Kit Shingle Clips

Part # 088L3005

Danfoss *RX* Roof & Gutter De-Icing: (Commercial)

Commercial Roof & Gutter De-Icing Cables

Danfoss RX-C Roof and Gutter De-icing Self-regulating cables provide the protection needed to prevent ice dams and build-up from damaging COMMERCIAL buildings, roof, and gutters. RX-C Roof and Gutter De-icing Cables are UV-rated.



Technical Data	RX-C Cables
Cable Construction:	Self Regulating
Cable Diameter:	0.45" x 0.216" (11.5mm x 5.5mm)
Rated Voltage:	120V, 208V-277V
Max Rated Temperature:	150°F (65°C) powered 185°F (85°C) un-powered
Nominal Power Output:	5W/ft @ 50°F (10°C 16.4W/m)
Output in Ice or Snow:	12W/ft @ 32°F (0°C 40W/m)
Conductor Insulation:	PEX/TPE
Outer Insulation:	TPE

Ordering Information	RX-C Cables		
Part No.	Length (ft)	Volts	Output @ 50°F (10°C)
088L1422	250 ft. spool	120	5W/ft
088L1472	1000 ft. spool	120	5W/ft
088L1432	250 ft. spool	240	5W/ft
088L1473	1000 ft. spool	240	5W/ft
088L1462	Cut to order / by ft*	120	5W/ft
088L1463	Cut to order / by ft.*	240	5W/ft

***Minimum Order is 25 ft. (Non-Returnable)**

Commercial Roof & Gutter De-Icing Controls

DS-8C Remote Sensor Controller for Snow Melting Applications

The DS-8C is designed for roof and gutter/snow melting applications. It senses both moisture & temperature conditions in gutters or down spouts. The sealed low voltage, remote mount precipitation sensor can be mounted in a down spout, on the back of a gutter, under the drip edge, up to 10 ft. away, while keeping the main controller in a more convenient and protected location.

- Housed in a weatherproof enclosure
- Senses both moisture and temperatures
- Adjustable temperature trigger point
- Expanded 30-90 min. & 2-6 hr. delay off drying time
- Super bright front panel power/activation LED indicator
- Remote control and monitor capabilities
- Easy to install

DS-8C

Part # 088L3045

Technical Data	DS-8C
Power Control Voltage:	100-277V Universal input
Max. Heating Load:	30A @ 277V
Max. Ambient Temperature:	-40°F to +185°F (-40°C to +85°C)
Enclosure Type:	NEMA 3R
Mounting:	Wall/pole mount, outdoors
Dimensions (H x Wx D):	4.75" x 6.5" x 2.75" (121mm x 165mm x 70mm)
Trigger Temperature:	34°F to 44°F (1.1°C to 6.6°C), Field Selectable
Delay Timer:	30-90 minutes, Field Selectable

Danfoss *RX* Roof & Gutter De-Icing: (Commercial)

Ordering Information	RX-C Controls
Part No.	Description
088L3045	DS-8C Controller with Remote Snow Sensor

Commercial Roof & Gutter De-Icing Accessories

Ordering Information	RX-C Accessories
Part No.	Description
088L0024	RX-C Roof Clips Type A (25 / bag)
088L3002	Down Spout Edge Protection Plate (1 / bag)
088L3003	RX-C Roof Clips Type B (20 / bag)
088L3038	CDP-2 Remote Control & Display Panel for DS-8C
088L0006	Power Connection Kit, cable to power lead, includes one end seal
088L0008	Splice / Tee Kit, includes one end seal
088L1457	End Seal Kit, includes 5 end seals
088L0023	Power Connection Kit, cable to box, includes one end seal
088L3001	RX-C Roof Clips (50/ bag)
Roof Clip Glue	RX-C Roof Clip Adhesive (10.3 fl. oz. tube)

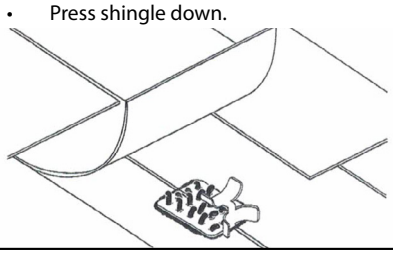
Typical Application with RX-C Clips

1. Apply Adhesive:

- Apply 0.2 oz. of adhesive to back of clip.
- **(Please note required application temperatures when applying glue.)**

2. Press Clip to Roof Surface:

- Lift shingle & orient clip.
- Press down (ensure adhesive flows through holes).
- Do not trim back adhesive beads.
- Press shingle down.



3. Install Cables/Close Clamps

- **Allow proper cure time (typically 24 hours- refer to adhesive.)**
- Install RX-C de-icing cable.
- Use pliers to close clamps (ensuring not to damage cable).

RX-C Roof Clips Type A

Part # 088L0024

RX-C Roof Clips Type B

Part # 088L3003

Power Connection Kit (Cable to Lead)

Part # 088L0006

Power Connection Kit (Cable to Box)

Part # 088L0023

RX End Seal Kit (5pcs)

Part # 088L1457

CDP-2 Remote Control

Part # 088L3038

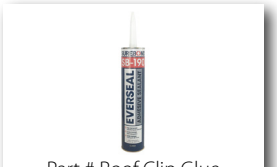
RX Downspout Edge Protection Plate

Part # 088L3002

RX-C Roof Clips

Part # 088L3001

Roof Clip Glue



Part # Roof Clip Glue

Danfoss *Ice Guard* Self-Regulating Cables

Freeze Protection

The Danfoss Ice Guard (SRIG) heating cable provides an easy to use solution for a variety of pipe freeze and roof and gutter applications. The heat output of the conductive core material increases and decreases when it is needed as it adjusts the power output to the varying conditions along the length of the pipe. This ensures maximum energy efficiency by producing heat only when and where it is needed.

- Cable can be overlapped without creating hot spots or causing a burn out
- 6 foot long power lead
- Pre-terminated with a plug and end seal
- Rugged 16 AWG bus cable with longer runs
- Limited 10 year warranty

Technical Data	Ice Guard (SRIG) Cables
Available Power Outputs:	5W / ft. at 240VAC and 120VAC at 50°F (+10°C)
Power Lead:	6ft. long
Cable Diameter:	0.45" x 0.216" (11.5mm x 5.5mm)
Rated Voltage:	120V - 277V Max.
Minimum Bending Radius:	1" (25mm)
Max. Rated Temperature:	150°F (65°C) Powered 185°F (85°C) Un-powered
Bus Wire Type:	16 AWG, (1.25mm^2), Tinned Copper

Ordering Information	Ice Guard (SRIG) Cable	120V
Part No.	Length (ft.)	Output @ 50°F
088L1480	6 ft	5W/ft
088L1481	12 ft	5W/ft
088L1482	18 ft	5W/ft
088L1483	24 ft	5W/ft
088L1484	50 ft	5W/ft
088L1485	75 ft	5W/ft
088L1486	100ft	5W/ft

Danfoss *PX* Self-Regulating Cables

Pipe Freeze Protection

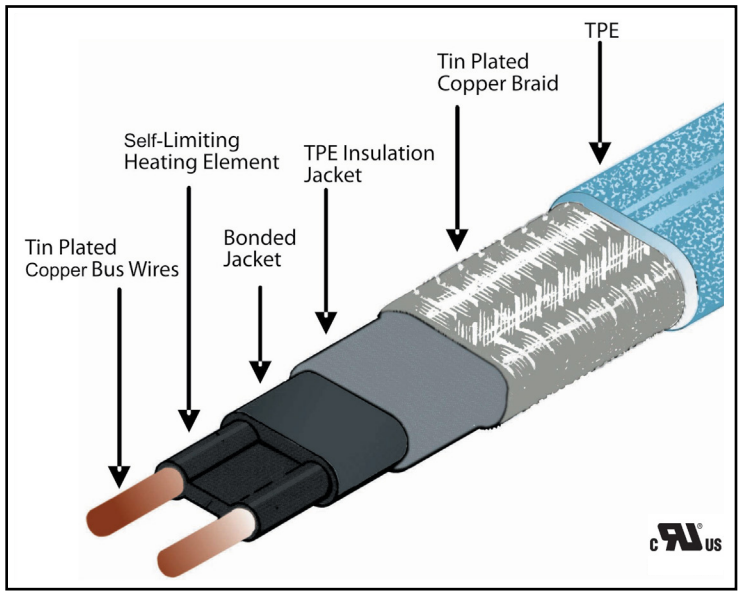
The Danfoss PX Series of SELF-REGULATING Parallel Circuit Heating Cables provide the solution to basic FREEZE PROTECTION applications. The self regulating Danfoss PX series ensures maximum energy efficiency by producing heat only when and where it is needed as it adjusts the power output to the varying conditions along the length of the pipe.

- Cable can be overlapped without creating hot spots or causing a burn out
- Cable can be cut and spliced in the field, simplifying the installation process and reducing waste
- Rugged 16 AWG bus cable with longer runs
- Wide variety of heat outputs available
- Limited 10 year warranty

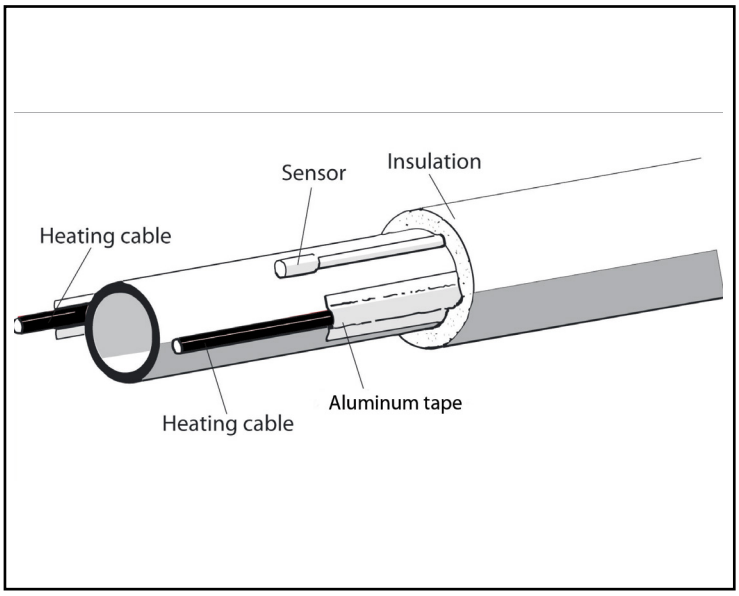
Technical Data	PX Cables
Available Power Outputs:	3, 5, 8, 10 W/ft at 240 VAC and 120 VAC at 50°F (+10°) (10, 15, 25, 33)W/m at 240 VAC and 120 VAC at 50°F (+10°C)
Cable Diameter:	0.45" x 0.216" (11.5mm x 5.5mm)
Rated Voltage:	120V - 277V Max.
Minimum Bending Radius:	1" (25mm)
Max. Rated Temperature:	150°F (65°C) Powered 185°F (85°C) Un-powered
Bus Wire Type:	16 AWG (1.25mm^2) Tinned Copper

c UL us

Danfoss PX Cables



Typical Applications



Danfoss *PX* Self-Regulating Cables

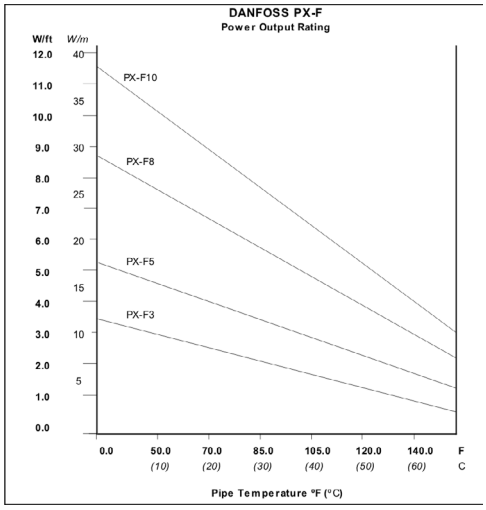
Pipe Freeze Protection

Ordering Information	PX Cables by the Spool		
Part No.	Voltage	Output at 50°F (10°C)	Spool Size (feet)
088L1402	120V	3W/ft	250
088L1470	120V	3W/ft	1,000
088L1412	240V	3W/ft	250
088L1471	240V	3W/ft	1,000
088L1422	120V	5W/ft	250
088L1472	120V	5W/ft	1,000
088L1432	240V	5W/ft	250
088L1473	240V	5W/ft	1,000
088L1516	120V	8W/ft	250
088L1517	120V	8W/ft	1,000
088L1518	240V	8W/ft	250
088L1519	240V	8W/ft	1,000
088L1520	120V	10W/ft	250
088L1521	120V	10W/ft	1,000
088L1522	240V	10W/ft	250
088L1523	240V	10W/ft	1,000

Ordering Information	PX Cables Cut to Length	
Part No.	Output at 50°F (10°C)	Voltage
088L1460*	3W/ft	120V
088L1461*	3W/ft	240V
088L1462*	5W/ft	120V
088L1463*	5W/ft	240V
088L1469*	8W/ft	120V
088L1468*	8W/ft	240V
088L1479*	10W/ft	120V
088L1478*	10W/ft	240V

***Minimum Order is 25 ft. (Non-Returnable)**

Danfoss PX Output Curves



Voltage Conversion Table W/ft (W/m) @50°F (10°C)

CABLE	208V	240V	277V
PX-F3	2.5 (8.5)	3.0 (10.0)	3.5 (12.5)
PX-F5	4.0 (13.5)	5.0 (15.0)	5.5 (17.5)
PX-F8	7.0 (23.0)	8.0 (25.5)	8.5 (27.5)
PX-F10	9.5 (31.5)	10.0 (33.0)	10.5 (35.0)

Controls - See PG. 31
Accessories- See PG. 31

Danfoss *PX*
Self-Regulating Cables

Pipe Freeze Protection

PX Cable Selection Chart						120V
Insulation Thickness	1/2" Min.		1" Min.		2" Min.	
Pipe Material	Metal	PVC	Metal	PVC	Metal	PVC
Pipe Diameter (Inches)						
1/2	3W/ft	5W/ft	3W/ft	3W/ft	3W/ft	3W/ft
3/4	3W/ft	5W/ft	3W/ft	3W/ft	3W/ft	3W/ft
1	5W/ft	5W/ft	3W/ft	3W/ft	3W/ft	3W/ft
1 1/4	5W/ft	8W/ft	3W/ft	5W/ft	3W/ft	3W/ft
1 1/2	5W/ft	8W/ft	3W/ft	5W/ft	3W/ft	3W/ft
2	5W/ft	8W/ft	5W/ft	5W/ft	3W/ft	3W/ft
2 1/2	8W/ft	Consult Factory	5W/ft	5W/ft	3W/ft	3W/ft
3	8W/ft	Consult Factory	5W/ft	5W/ft	3W/ft	5W/ft
4	10W/ft	Consult Factory	5W/ft	8W/ft	3W/ft	5W/ft
6	10W/ft*	Consult Factory	8W/ft	Consult Factory	5W/ft	5W/ft
8	-	Consult Factory	10W/ft	Consult Factory	5W/ft	8W/ft

Chart based on minimum ambient temperature -22°F (-30°C)
*Requires 2 runs

PX Cable Selection Chart						240V
Insulation Thickness	1/2" Min.		1" Min.		2" Min.	
Pipe Material	Metal	PVC	Metal	PVC	Metal	PVC
Pipe Diameter (Inches)						
1/2	3W/ft	5W/ft	3W/ft	3W/ft	3W/ft	3W/ft
3/4	3W/ft	5W/ft	3W/ft	3W/ft	3W/ft	3W/ft
1	5W/ft	5W/ft	3W/ft	3W/ft	3W/ft	3W/ft
1 1/4	5W/ft	8W/ft	3W/ft	5W/ft	3W/ft	3W/ft
1 1/2	5W/ft	8W/ft	3W/ft	5W/ft	3W/ft	3W/ft
2	5W/ft	8W/ft	5W/ft	5W/ft	3W/ft	3W/ft
2 1/2	8W/ft	Consult Factory	5W/ft	5W/ft	3W/ft	3W/ft
3	8W/ft	Consult Factory	5W/ft	5W/ft	3W/ft	5W/ft
4	10W/ft	Consult Factory	5W/ft	8W/ft	3W/ft	5W/ft
6	10W/ft*	Consult Factory	8W/ft	Consult Factory	5W/ft	5W/ft
8	-	Consult Factory	10W/ft	Consult Factory	5W/ft	8W/ft

Chart based on minimum ambient temperature -22°F (-30°C)
*Requires 2 runs

Controls - See PG. 31
Accessories- See PG. 31

Danfoss *PX* Self-Regulating Cables

Pipe Freeze Protection

Maximum Total Cable Length ft (m)									
Start-up Temp.		120 VAC				240 VAC			
Breaker Size		15A	20A	30A	40A	15A	20A	30A	40A
PX-F3	50°F (+10°C)	315 (95)				672 (205)			
	5°F (-15°C)	266 (69)	295 (90)	312 (95)		460 (140)	610 (186)	640 (195)	
	-15°F (-25°C)	197 (60)	266 (81)	312 (95)		400 (123)	541 (165)	640 (195	
PX-F5*	50°F (+10°C)	197 (67)	262 (80)			475 (145)	532 (162)		
	5°F (-15°C)	148 (45)	200 (61)	262 (80)		300 (93)	410 (125)	525 (160)	
	-15°F (-25°C)	131 (40)	177 (54)	262 (80		265 (82)	365 (111)	525 (160)	
PX-F8*	50°F (+10°C)	141 (43)	190 (58)	206 (63)		285 (88)	384 (117)	413 (126)	
	5°F (-15°C)	96 (30)	128 (39)	190 (58)	203 (62)	197 (60)	246 (75)	384 (117)	410 (125)
	-15°F (-25°C)	88 (27)	108 (33)	167 (51)	203 (62)	164 (50)	230 (70)	345 (105)	410 (125)
PX-F10*	50°F (+10°C)	108 (33)	148 (45)	177 (54)		230 (70)	295 (90)	354 (108)	
	5°F (-15°C)	82 (25)	108 (33)	150 (46)	174 (53)	165 (50)	213 (65)	312 (95)	345 (105)
	-15°F (-25°C)	72 (22)	98 (30)	141 (43)	174 (53)	148 (45)	190 (58)	279 (85)	345 (105)

*RX-C Cable

Pipe Freeze Protection

Weatherproof Thermostat

The Weatherproof Thermostat is designed for temperature control applications and serves as operational control only.

- Automatic activation - reduced operational costs
- Remote bulb temperature sensing
- Large, readily visible dial
- Wall mounted
- Water-tight enclosure

Ordering Information	PX Controls	
Part No.	Description	Voltage
088L3422	Weatherproof thermostat with water-tight enclosure	120V - 277V

For technical data on Weatherproof Thermostat (see page 25)

Ordering Information	PX Accessories
Part No.	Description
088L0006	Power Connection Kit, Cable to power lead, includes one end seal
088L0008	Splice / Tee Kit, one end seal
088L1457	End Seal Kit, includes 5 end seals
088L0409	Aluminum Application Tape (165 ft.)
088L0023	Power Connection Kit, cable to box, includes on end seal
088L0412	Warning Labels, 10 pcs.

Warning Labels

Part # 088L0412

RX End Seal Kit (5pcs)

Part # 088L1457

Splice / Tee Kit

Part # 088L0008

Power Connection Kit (Cable to Lead)

Part # 088L0006

Power Connection Kit (Cable to Box)

Part # 088L0023

Aluminum Tape

Part # 088L0409

Common Conversion Factors

To Convert	Multiply By	To Obtain
Kilowatt/hours (kWh)	3,412	British ther. units/hr (Btuh)
Kilowatt (kW)	3,412	British thermal units (Btu)
Meter (m)	3.281	Feet (ft)
Meter (m)	39.37	Inches (in.)
Square feet (ft^2)	0.0929	Square meters (m^2)
Square meters (m^2)	10.76	Square feet (ft^2)
Inches (in.)	2.54	Centimeters (cm)
Inches (in.)	25.4	Millimeters (mm)

$$\text{Cable spacing (inch)} = \frac{\text{Area (sq.ft.)} \times 12}{\text{Cable length (ft)}}$$

Fahrenheit to Celsius $^{\circ}F = 1.8 \times {}^{\circ}C + 32$

Celsius to Fahrenheit $^{\circ}C = 5/9 \times ({}^{\circ}F - 32)$

°C	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60
°F	-22	-13	-4	-5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140

Ohm's Law

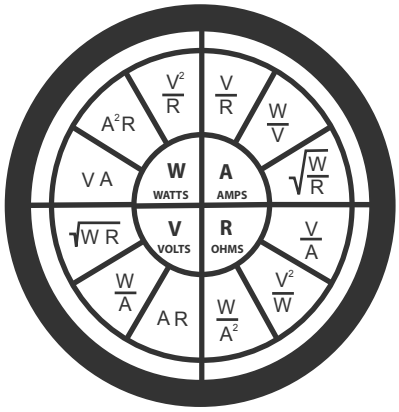
Ohms law states that current in a resistance varies in direct proportion to voltage applied and inversely proportional to resistance.

I=V/R
V= voltage in volts (V)
I= current in amps (A)
R= resistance in ohms (R)

The 3 most common mathematical expressions are:

V=I*R I=V/R R= V/I

An unknown electrical value can be obtained by using any two known values in one of the variations of Ohm's Law shown in the circle.



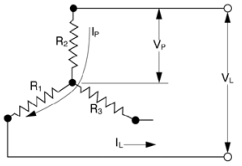
Percentage of Rated Wattage for Different Applied Voltages

Applied Voltage	Rated Voltage						
	120V	208V	240V	277V	347V	480V	600V
120V	100%	33%	25%	19%	12%	6%	4%
208V		100%	75%	56%	36%	19%	12%
240V			100%	75%	48%	25%	16%
277V				100%	64%	33%	21%
347V					100%	52%	33%
480V						100%	64%
600V							100%

Typical 3-Phase Wiring Diagrams & Equations for Resistive Heaters

VP= Phase Voltage
VL= Line Voltage
IP= Phase Current
IL= Line Current
R=R1=R2=R3= Resistance of each branch
W= Wattage

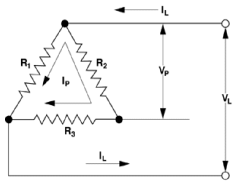
3-Phase Wye (Balanced Load)



Equations for Wye Only

$I_P = I_L$
$V_P = V_L/1.73$
$W_{WYE} = V_L^2/R = 3(V_P^2)/R$
$W_{WYE} = 1.73 V_L I_L$

3-Phase Delta (Balanced Load)



Equations for Delta Only

$I_P = I_L/1.73$
$V_P = V_L$
$W_{DELTA} = 3(V_L^2)/R$
$W_{WYE} = 1.73 V_L I_L$

New! Request for Quote Forms

Danfoss asks specific questions when quoting a job and have compiled these into easy to complete forms to get you the best quote possible. Please provide answers to these questions when requesting a quote. To request these forms in interactive electronic copies please email **electricquotes@danfoss.com** .

Request for Quote: LX & TX Floor Warming

ENGINEERING TOMORROW

Name: _____

Phone: _____ **Email:** _____

Location: _____ **Project:** _____

Distributor/Representative: _____

Voltage: ☐120 ☐240 ☐208

Typically we heat the walk area of the room; This is based on the square - foot measurement.

What are the dimensions and square- foot area to be heated?

Room #1: _____

Room #2: _____ **Room #3:** _____

Which system do you prefer?: ☐Mat ☐Cable Notes: _____

Subfloor: ☐ Plywood ☐ Concrete ☐ Cement Board ☐ Other _____

Floor Finish: ☐ Ceramic ☐ Stone ☐ Tile ☐ Marble ☐ Engineered Wood ☐ Other _____

Secondary Heat: _____ **Primary Heat:** _____

Typically we supply a Secondary Heat at approximately 12 watts/square –foot output.

Is this a: ☐ Bathroom ☐ Kitchen ☐ Sunroom ☐ Basement ☐ Other _____

Thermostat: ☐ Programmable ☐ Non-Programmable Notes: _____

Comments: _____

_____

Please provide sketches, photos, drawings, etc.

LX Floorwarming | RX Roof & Gutter | GX Snowmelting | PX Pipe Trace | TX Thermal Storage
For Technical or Quoting Questions Please Email: **Electricquotes@danfoss.com**

Request for Quote: RX Roof/Gutter Deicing

ENGINEERING TOMORROW

Name: _____

Phone: _____ **Email:** _____

Location: _____ **Project:** _____

Distributor/Representative: _____

Voltage: ☐120 ☐208 ☐240 ☐277

Area to be heated:

☐ **Commercial** or ☐ **Residential**

Gutter Length? _____

Downspout Length? _____

Are the gutters and downspouts residential or commercial sized? _____

Is there a Roof Overhang Area?: ☐ **Length:** _____

Valley Lengths?: _____

What is the roofing material?: ☐Asphalt Shingles ☐EDPM (Rubber) ☐ Other: _____

☐ Metal (what is the measurement between each standing seam? _____

Do you want Automatic Controls that sense Moisture & Temperature?: _____

Do you have a preference?: ☐Plug-In (Constant Watt) ☐ Hard Wire Commercial Self-Regulating

Comments: _____

_____

_____

_____

Please provide sketches, photos, drawings, etc.

LX Floorwarming | RX Roof & Gutter | GX Snowmelting | PX Pipe Trace | TX Thermal Storage
For Technical or Quoting Questions Please Email: **Electricquotes@danfoss.com**

New! Request for Quote Forms

ENGINEERING TOMORROW

Request for Quote: GX Slab/Step/Stair Snow Melting

ENGINEERING TOMORROW

Name: _____

Phone: _____ **Email:** _____

Location: _____ **Project:** _____

Distributor/Representative: _____

Voltage: ☐208 ☐240 ☐277 ☐480 ☐600

Please identify where you are melting snow?

Embedded In Concrete? _____

Embedded Under Pavers? (Paver Thickness?) _____

Under Asphalt? _____

Embedded Under Flagstone _____

Dimensions of Area to be Heated (sq. ft.)

☐ **Area #1:** _____ **Area #2:** _____

Area #3: _____

☐ **Steps:** How Many _____ Width _____ Depth (tread) _____ Riser _____

☐ **Landings:** _____ Length x Width _____

_____ Length x Width _____

Which system do you prefer? (Cables typically used in step applications): ☐Mat ☐Cable

Please choose: ☐Pedestrian or ☐Vehicular | ☐Commercial or ☐Residential

☐ **Expansion Joints:** (Please identify where if any planned. Do not cross any expansion joints with cable/mat products.) _____

_____

Do you want just the Tire Tracks Heated?: _____ **How Many?:** _____

Length of Tire Tracks: _____

Is the Slab on Grade? _____ **Is Insulation Planned?** _____

Do you want Automatic Controls that sense Moisture & Temperature?: _____

What is the size of your Panel?: ☐100Amp ☐200Amp ☐400 Amp ☐Other: _____

Do you have any obstructions such as light poles, hand rails, power poles, etc.? _____

_____

LX Floorwarming | RX Roof & Gutter | GX Snowmelting | PX Pipe Trace | TX Thermal Storage

Request for Quote: PX Pipe Trace

ENGINEERING TOMORROW

Name: _____

Phone: _____ **Email:** _____

Location: _____ **Project:** _____

Distributor/Representative: _____

Voltage: ☐120 ☐208 ☐240 ☐277

Pipe Material: ☐Cast Iron ☐Steel ☐PVC ☐Other: _____

	Diameter	Length	Insulation Thickness & Type
Pipe #1			
Pipe #2			
Pipe #3			
Pipe #4			

Pipe Location:

☐ Ordinary (Explain): _____

☐ Hazardous (Explain): _____

☐ Corrosive (Explain): _____

☐ High Temp. (Explain): _____

How Many:

Valves: # _____

Elbows: # _____

Flanges: # _____

Supports: # _____

Is this for Freeze Protection? _____

Is this for Pipe Temperature Maintenance (what temp. would you like to maintain)? _____

_____

What is the lowest Ambient Temperature?: _____

Comments: _____

_____

_____

_____

LX Floorwarming | RX Roof & Gutter | GX Snowmelting | PX Pipe Trace | TX Thermal Storage

Summary Conditions for Sale & Warranty

SUMMARY CONDITIONS FOR SALE AND WARRANTY

The acceptance of the order confirmation by the purchaser includes the acceptance of our "General Conditions of Sale and Warranty" as the only ruling condition. No modification of these conditions will be recognized by Danfoss. Any express or implied condition, statement or warranty, statutory or otherwise - not stated herein is excluded.

1. INCOTERMS

The international rules for the interpretation of trade terms "Incoterms" shall apply to the commercial terms used herein.

2. CONFIRMATION OF ORDER

Danfoss shall not be deemed to have accepted an order until written confirmation of the order from Danfoss is dispatched to the prospective purchaser. Quotations, pro forma invoices and the like, shall be subject to confirmation by Danfoss.

3. TERMS OF DELIVERY

At Danfoss' option, the goods can be delivered from any of the Danfoss factories, subsidiaries, or affiliated companies in or outside Canada. Failing special instructions, the goods will be dispatched in the way which Danfoss deems best without guaranteeing this to be the cheapest way of transport.

4. PRICE REGULATIONS

Danfoss reserves the right to adjust accepted prices in the event of alterations in rates of exchange, variations in costs of materials, changes in wages, interference on the part of the Government or similar conditions over which Danfoss has no control.

5. PACKING

Disposable packing is included in the price and will not be credited if returned. Reusable packing is not included in the price and shall be returned in accordance with Danfoss' instructions at purchaser's expense.

6. RISK

From the moment of delivery the purchaser shall bear all risks for the goods, and Danfoss shall not be responsible for loss and damage incurred during the transportation. If so desired by the purchaser, Danfoss will at the cost of and on behalf of the purchaser, effect marine Insurance in English all risk conditions from warehouse to warehouse, at the c.i.f. value of the goods plus 10% and, likewise, Danfoss will effect war risk insurance.

7. TERMS OF PAYMENT

Where payment is not received when due, an interest rate of 10% per annum over and above the actual total back charge will be payable. This rate of interest will also be used in cases where an extension of the period of credit has been granted. The purchaser shall not be allowed to retain payments, or to settle debts by setting off same against possible counterclaims, disputed by Danfoss, or to reduce the invoiced price.

8. TRANSFER OF OWNERSHIP

Until full payment for the goods has been received by Danfoss, the goods shall remain the property of Danfoss and shall not be pawned or pledged in any way.

9. TIME OF DELIVERY

Time of delivery is stated approximately. Danfoss shall not be liable for any delay due to causes beyond Danfoss' control, including but not restricted to strikes, lockouts, labour disturbances or the like, or in consequence of extraordinary measures on the part of government, hindrances to transportation including ice or other transport difficulties, delayed, incomplete or defective delivery of material ordered in due time from sub-suppliers, failing supply of electricity and similar obstacles to production, fire or workshop accidents at own factories or at sub-suppliers.

10. INFORMATION

The information and technical data contained in catalogues, leaflets and other written material constitutes an approximate guide only. No responsibility for errors or wrong interpretation can be placed on Danfoss. The purchaser cannot claim any rights based on this material. Such reservation shall also apply to suggestions, advice and other services rendered to customers, including installation and servicing instruction for the product delivered.

11. ALTERATIONS

Danfoss reserves the right to make alterations to their products without notice, also to products already placed on order.

12. WARRANTY

Danfoss warrants its products to be free of defects in material and workmanship for a period of time from the shipment to the original purchaser, assuming proper installation, proper maintenance, and normal operating conditions. Unless otherwise stated, Danfoss' obligation under this warranty shall be limited to repairing at its factory any part or parts thereof which shall be returned to its factory with transportation charges prepaid, and which upon examination shall appear to Danfoss' satisfaction to have been defective. Danfoss does not cover the cost of removal, freight, delivery and re-installment of the product. Correction of such defects by repair or replacement shall constitute fulfilment of all obligations to purchaser under this warranty. There is no other express warranty. Danfoss shall not be liable for incidental, consequential, or special damages arising from or in connection with the product use or performance. Danfoss assumes no liability of expenses of repairs made outside of its factory except by express written contract. This warranty supersedes all prior warranties.

Further information regarding the specific warranty details and period for each Danfoss product line can be found online and in the instruction manual and/or warranty card included with the product."

13. SECONDARY DAMAGES

Danfoss shall not be held responsible for any indirect or consequential damage e.g. damages to person or property, consequential loss, including loss of production, loss of profit, loss on goods in store or the like, which might arise out of defects and/or delay in delivery of the products sold, irrespective of the cause, including faulty manufacture, design of material.

14. NOTICE OF CLAIMS

Any claim or complaint as to defects and/or delay in delivery of the products shall be submitted in writing by the purchaser to Danfoss immediately.

General Conditions for Sale & Warranty

GENERAL CONDITIONS FOR SALE AND WARRANTY

Taxes:

All applicable taxes are extra.

Minimum Order:

Handling charges of $50 will be added to all orders less than $100 net.

Freight:

Partial shipment less then $1500 net will not be freight allowed.
Lowest cost transportation allowed on orders of $1500 net or more.
All prices are FOB point of shipment.

Shipments:

All damages or shortages must be reported within 48 hours from date of receipt.

Payment Terms:

Net 30 days.
All orders subject to credit approval.
Interest rate of 1% per month applies to late payment.

Returns:

Returns accepted only with Returned Goods Authorization (RGA) obtained from Danfoss Customer Service. Return Goods Authorization (RGA) must be received *prior* to return.

Any Returns received without a Returned Goods Authorization Number will be returned to sender collect.

All returns subject to a 25% restocking fee. Danfoss reserves the right to limit the number of returns.

Goods returned must be new, unused, in original packaging, and in resalable condition. Goods are subject to inspection at Danfoss and goods failing inspection will be returned collect to customer with no credit issued.

No returns on special order items.

Warranty:

Warranty Returns accepted only with Returned Goods Authorization (RGA) obtained from Danfoss Customer Service. Warranty items must be identitied with explanation of defect.

Warranty Returns must be shipped pre-paid.

Danfoss reserves the right to repair and/or replace product when deemed defective. Goods are subject to inspection at Danfoss and goods failing inspection will be returned collect to customer with no credit issued.

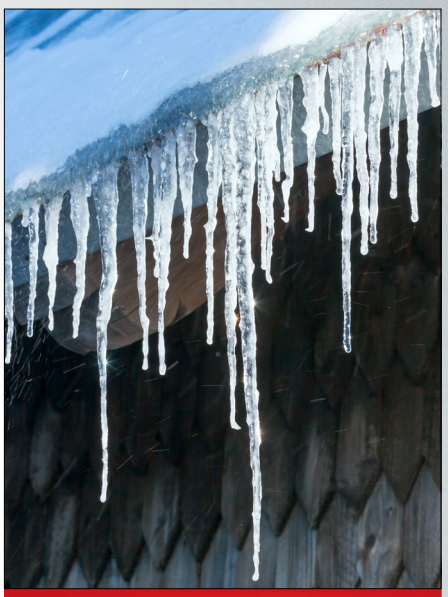
Further information regarding the specific warranty details and period for each Danfoss product can be found online, and in the instruction manual and/or warranty card included with the product.

See Summary Conditions for Sale and Warranty for complete Terms.

ENGINEERING
TOMORROW

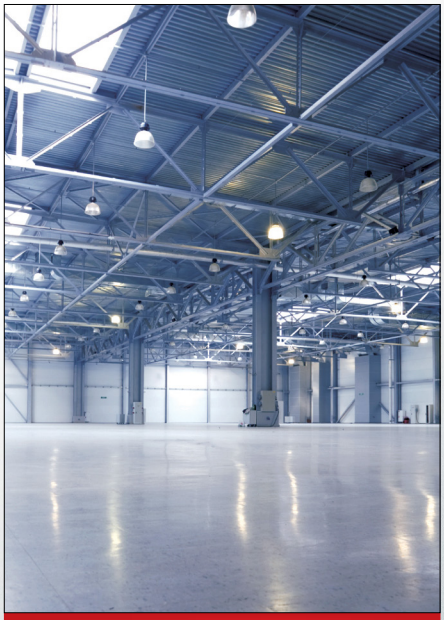
GX Snow Melting

LX Floor Heating



RX Roof & Gutter De-Icing

PX Pipe Freeze Protection



TX Thermal Storage

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