



IMPORTANT: PLEASE READ THESE INSTRUCTIONS ALL THE WAY THROUGH BEFORE STARTING; NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS, AND CAUTIONS. USE THIS PRODUCT CORRECTLY, AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY.

1. SAFETY INSTRUCTIONS

1.1 ELECTRICAL SAFETY

- ❑ **WARNING!** It is the responsibility of the Installer, owner and operator to read, understand and comply with the following:
 - 1.1.1 All electrical wiring must be carried out by a fully qualified Electrician in accordance with the current IEE wiring regulations.
 - 1.1.2 Before any work starts make sure the Power is turned off and the cable is completely isolated.
 - 1.1.3 All Heating Cables Must be Earthed.

2. INTRODUCTION / SPECIFICATION

CRJ or CRJM self-regulating cable prevents water from freezing in metal and plastic pipes it can also be used to maintain temperature in pipes. We recommend a suitable thermostat is always used with the cable.

	CRJ-10	CRJM-17	CRJ-25	CRJ-40
Voltage	230V	230V	230V	230V
Nominal output at 0°C	10W/m	17W/m	25W/m	40W/m
Minimum installation temperature	-40°C	-40°C	-40°C	-40°C
Maximum exposure temperature- Power on	85°C	65°C	85°C	85°C
Maximum exposure temperature- Power off	85°C	85°C	85°C	85°C
Minimum bending radius	25mm	20mm	35mm	35mm
Maximum length at -20°C	176m	102m	112m	88m
Outer Jacket	Thermoplastic			
Earth Protection	Continuous metal braid			



3. IMPORTANT INFORMATION

- A 30mA RCD should be used.
- Never connect the cable's two parallel live conductors together.
- The cable's cut ends must be protected from moisture.
- Terminations must be made using BN Thermic's recommended devices.
- Do not install onto bitumen or tar related surfaces such as roofing felt.

Storage

- Upon receipt, cables must be inspected for transit damage.
- Cables must be stored in a clean and dry environment.
- Contact with chemicals (for example oil) must be avoided.
- Storage temperatures min. -40°C max +85°C.

Maximum Length Cable (m) / Circuit Breaker Size (type C)						
Cable	Start-up Temp	6A	10A	16A	20A	32A
CRJ-10	+10°C	84	136	198	-	-
	0°C	74	122	188	-	-
	-20°C	55	108	174	176	-
CRJM-17	+5°C	54	88	102	-	-
	0°C	50	84	102	-	-
	-20°C	34	56	88	102	-
CRJ-25	+10°C	-	74	118	124	124
	0°C	-	68	108	120	120
	-20°C	-	60	94	112	112
CRJ-40	+10°C	-	46	74	92	98
	0°C	-	42	66	84	94
	-20°C	-	36	58	74	88

If using the cable for Pipe freeze protection use Table 1

If using the cable for Pipe temperature maintenance use Table 2

Selection Table 1– Pipe Freeze Protection (based on a minimum ambient temperature of -20°C and mineral wool insulation). Cable installed in a straight line.			
Outside Pipe Diameter	Insulation Thickness (mm)		
	12	25	50
12mm (½" Pipe)	CRJ-10	CRJ-10	CRJ-10
25mm (1" Pipe)	CRJ-10	CRJ-10	CRJ-10
50mm (2" Pipe)	CRJM-17 or CRJ-25	CRJ-10	CRJ-10
75mm (3" Pipe)	CRJ-25	CRJM-17 or CRJ-25	CRJ-10
100mm (4" Pipe)	-----	CRJM-17 or CRJ-25	CRJ-10
150mm (6" Pipe)	-----	CRJ-25	CRJM-17 or CRJ-25
200mm (8" Pipe)	-----	-----	CRJM-17 or CRJ-25

Selection Table 2 – When using cable for Temperature Maintenance (based on a minimum ambient temperature of -15°C, Carbon steel pipe and mineral wool insulation). Cable installed in a straight line.			
Outside Pipe Diameter	Pipe Temperature	25mm Thick Insulation	50mm Thick Insulation
25mm (1" Pipe)	20°C	CRJ-25	CRJ-25
	30°C	CRJ-25	CRJ-25
	40°C	CRJ-40	CRJ-25
	50°C	-----	CRJ-40
50mm (2" Pipe)	20°C	CRJ-25	CRJ-25
	30°C	CRJ-40	CRJ-25
	40°C	-----	CRJ-40
	50°C	-----	CRJ-40
75mm (3" Pipe)	20°C	CRJ-25	CRJ-25
	30°C	CRJ-40	CRJ-40
	40°C	-----	CRJ-40
	50°C	-----	CRJ-40
100mm (4" Pipe)	20°C	CRJ-25	CRJ-25
	30°C	-----	CRJ-40
	40°C	-----	CRJ-40

4. INSTALATION

Installation Preparation - Please read and follow these instructions carefully to ensure an efficient and safe installation.

- The CRJ and CRJM heating cable is intended for use in non-hazardous areas and should only be used on pipes containing water or non-flammable substances for the prevention of the pipe contents from freezing.
- It should not be used if the pipe is likely to be heated above 65°C internally e.g. internal steam cleaning etc. Never use the cable whilst still in a coil.
- Protect the cable from the likelihood of mechanical damage or such things as being chewed by animals. Only use the approved termination and jointing kits, the use of any other components will void the warranty.
- Use a 500V insulation resistance tester to measure insulation resistance between the cable's earth braid and the live conductors. A minimum reading of 1MΩ is required.

Installation

Before applying the cable ensure the area and pipe work is clean and free of any sharp surfaces and combustible materials.

If you are using the cable on plastic pipe it should be first wrapped in aluminium tape to allow transfer of heat around the pipe.

Secure the cable to the pipe with PF-T insulating tape at intervals of no more than 200mm, with the cable run straight along the pipe or evenly spiralled.

The cable should also be wrapped around flanges, valves or vulnerable pumps to compensate for the extra heat loss, the cable may be allowed to touch or cross if necessary.

The system, when complete, should be fully insulated and protected from the weather and any mechanical damage. Warning labels should be placed on the outside of the insulation.

Where the circuit is to start, sufficient cable should be left outside of the insulation (approximately 300mm) to facilitate connection to a suitable junction box or thermostat using the Cable gland supplied in the CRJ-T1 Termination Kit.

All terminations and connections must be completed by a qualified electrician and carried out in accordance with current regulations.

5. ACCESSORIES



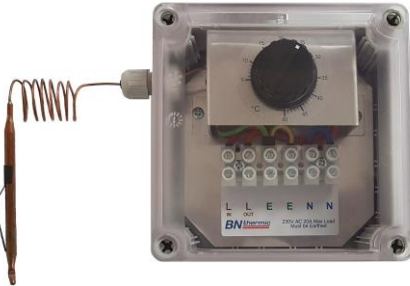
		
<p>CRJ-T1 - Termination Kit</p>	<p>CRJ-S - Splice Kit</p>	<p>AL-50 - Aluminium Tape</p>
<p>Prepares cable for electrical connection and seals the far end. Full colour instructions supplied with each kit. Uses heat shrink tubing.</p>	<p>Joins two lengths of cable or makes 'T' joint. Full colour instructions supplied with each kit. Uses heat shrink tubing.</p>	<p>Used for wrapping plastic pipes before installing cable. 45m long x 50mm wide.</p>
		
<p>PF-T - Fixing Tape</p>	<p>PF-L - Caution Labels</p>	<p>THJ - Junction Box</p>
<p>Heater cable fixing tape. 33m long x 19mm wide</p>	<p>Apply to outside of insulation to warn about heating cable below.</p>	<p>IP66 rated</p>

Notes regarding accessories

- IT IS IMPORTANT NOT TO EXPOSE THE CUT ENDS OF THE CABLE TO MOISTURE AS CAPILLARY ACTION CAN DRAW MOISTURE ALONG THE ENTIRE LENGTH OF THE CABLE VERY QUICKLY PERMENANTLY DAMAGING THE CABLE.
- The CRJ-T1 termination kit must be applied to both ends of the cable at the same time to protect the cable from moisture penetration.
- Suitable thermostatic control is recommended.

6. THERMOSTATS

We recommend that you use a Thermostat with Self-Regulating Cable.

		
<p>FST-RS - Frost Thermostat</p>	<p>FST3-EX - IP65 Frost Thermostat</p>	<p>THT – Weatherproof Capillary Thermostat</p>
<p>Frost thermostat for indoor use only. 230v 20A max loading. Tamper resistant.</p>	<p>Frost thermostat for outdoor use only. 230v 20A max loading. Tamper resistant.</p>	<p>+5°C to +50°C Thermostat. 230V 16A. Capillary (600mm long) can be placed on the pipe to measure temperature. IP66 rated. Tamper resistant.</p>

7. TESTING

After installation, use a 500V insulation resistance tester to measure insulation resistance between the cable's earth braid and the live conductors. A minimum reading of 1MΩ is required.

NOTE: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.

IMPORTANT: No liability is accepted for incorrect use of this product.

WARRANTY: Your BN Thermic product is guaranteed for one year from date of purchase. We will repair or replace at our discretion any part found to be defective. We cannot assume any consequential liability. This guarantee in no way prejudices your rights under common law and is offered as an addition to consumer liability rights.

REGISTER: Activate your warranty by registering online at www.bnthermic.co.uk and retain this installation data for future reference.

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