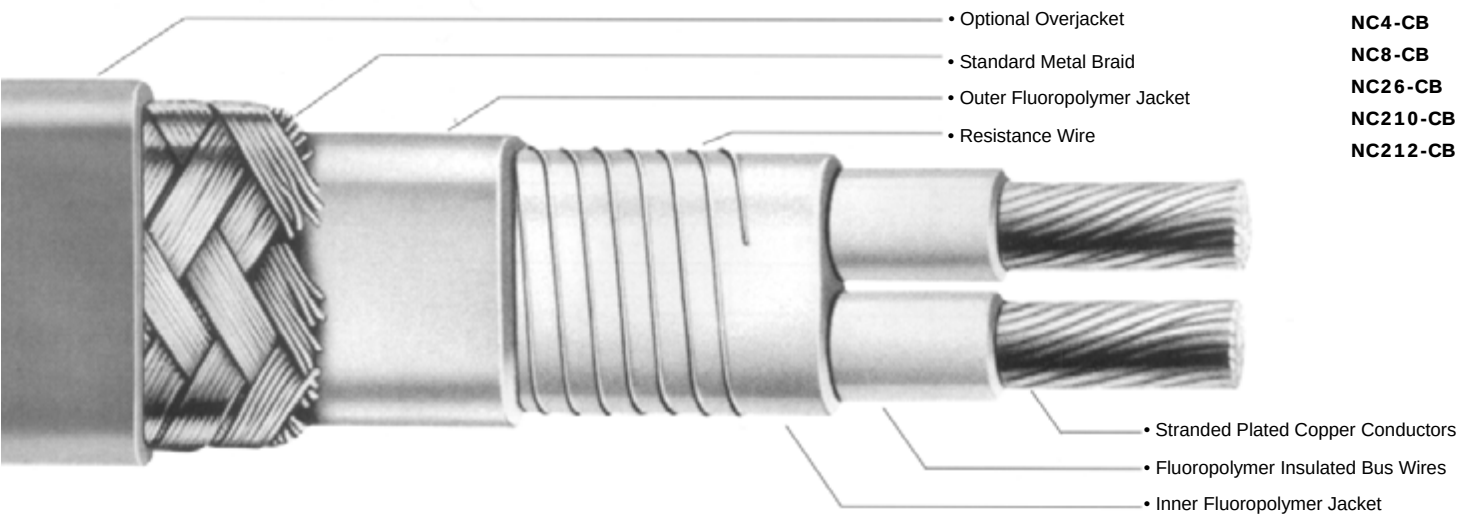
NELSON™

NC CONSTANT WATTAGE HEATER CABLE

SPECIFICATION / APPLICATION INFORMATION



NC4-CB
NC8-CB
NC26-CB
NC210-CB
NC212-CB

Description:

Nelson Type NC constant wattage heater cable is a parallel resistance electric heater strip. A fluoropolymer sheath material is extruded over the two multi-stranded, nickel-plated, 12-gauge copper bus wires. The nichrome heating element is spirally applied around parallel construction and in contact with the bus wires at specific intervals known as zones. A fluoropolymer outer jacket is then extruded over the construction to provide dielectric strength, moisture resistance, and for protection from impact and abrasion damage.

A stranded tinned copper metal braid is supplied on all heaters. An optional stainless steel braid is available for mechanical abuse situations. An optional fluoropolymer overjacket can be specified when the heater cable is to be installed in wet or corrosive environments.

Principle of Operation:

The parallel bus wires supply voltage along the entire length of the heater cable. A resistance wire heating element is spirally wrapped around bus wires contacting alternate bus wires at specific intervals forming heating zones. This series of parallel heating zones provides a constant power output for each zone, irrespective of where the cable is cut along the length of the bus wires.

Each cable construction has the heating zone resistance sized to provide multiple power ratings when used on different voltages. This variation is accomplished by the use of different spiral wrap spacings and heater zone lengths.

There is no change of power output as the temperature changes, giving a steady power output anywhere in its recommended operating range.

Application:

Nelson's Type NC constant wattage heater cable is ideal for use in maintaining fluid flow under low ambient conditions. Freeze protection and process temperature maintenance systems such as product pipelines, fire protection, process water, dust suppression systems, lube oil, condensate return, hot water and structure de-icing are typical applications for this product.

The base product is supplied with a tinned copper metal braid that may be used in both general applications and in dry, non-corrosive hazardous (classified) areas. It is also used to provide a conductive ground path when cable is installed on nonconductive surfaces, such as plastic or painted pipe.

Performance and Rating Data:

Catalog Number	Service Voltage	Watts/Ft.	Maximum Length	Maximum Maintenance Temperature	Maximum Exposure	T-Rating
NC4	120	4.0	405	300°F	400°F	T3
	208	12.0	405	150°F	400°F	T3
NC8	120	8.0	285	210°F	400°F	T3
NC26	120	1.5	665	300°F	400°F	T3
	208	4.5	665	285°F	400°F	T3
	220	5.0	665	270°F	400°F	T3
	240	6.0	665	245°F	400°F	T3
	277	8.0	665	210°F	400°F	T3
NC210	120	2.5	515	300°F	400°F	T3
	208	7.5	515	215°F	400°F	T3
	220	8.5	515	200°F	400°F	T3
	240	10.0	515	175°F	400°F	T3
NC212	120	3.0	470	300°F	400°F	T3
	208	9.0	470	190°F	400°F	T3
	220	10.0	470	175°F	400°F	T3
	240	12.0	470	150°F	400°F	T3

Circuit Breaker Selections:

Catalog Number	Volts	MAXIMUM CIRCUIT LENGTH (FEET) BY CIRCUIT BREAKER SIZE									
			115/120/VAC			208/220 VAC			240/277 VAC		
		Watts/Ft.	15A	20A	30A	15A	20A	30A	15A	20A	30A
NC4	120	4.0	385	405	-	-	-	-	-	-	-
	208	12.0	-	-	-	210	285	405	-	-	-
NC8	120	8.0	185	255	285	-	-	-	-	-	-
NC26	120	1.5	665	-	-	-	-	-	-	-	-
	208	4.5	-	-	-	590	665	-	-	-	-
	220	5.0	-	-	-	555	665	-	-	-	-
	240	6.0	-	-	-	-	-	-	500	665	-
	277	8.0	-	-	-	-	-	-	430	590	665
NC210	120	2.5	515	-	-	-	-	-	-	-	-
	208	7.5	-	-	-	340	470	515	-	-	-
	220	8.5	-	-	-	320	445	515	-	-	-
	240	10.0	-	-	-	-	-	-	295	400	515
NC212	120	3.0	470	-	-	-	-	-	-	-	-
	208	9.0	-	-	-	285	390	470	-	-	-
	220	10.0	-	-	-	265	365	470	-	-	-
	240	12.0	-	-	-	-	-	-	245	330	470

NOTES:

1. Circuit breakers are sized per article 427-4 of N.E.C.
2. When using 2 or more heater cables of different wattage ratings in parallel on a single circuit breaker, use the 15A column amperage of 15 amps, divide it by the maximum footage to arrive at an amps/foot figure for each cable. You can then calculate circuit breaker sizes for these combination loads. These amps/foot factors include the N.E.C. sizing factor in Article 427-4.
3. Heater cables with CB optional constructions contain a metal ground shield as required by Article 427-23 of the NEC.
4. Article 427-22 of the NEC requires ground-fault equipment protection for each branch circuit supplying electric heating equipment. Exceptions to this requirement can be found in the 1996 NEC.

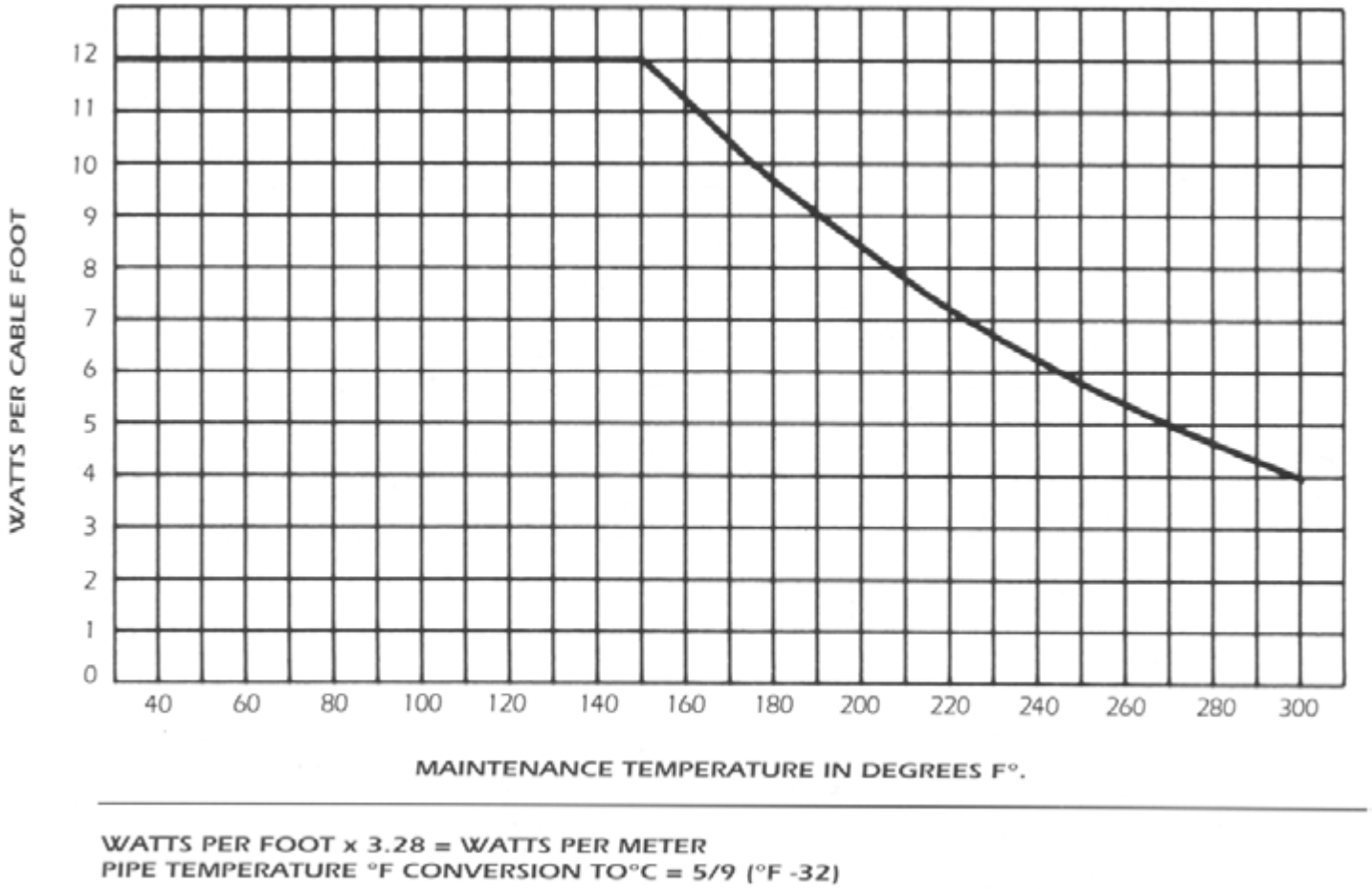
Power Ratings by System Voltages:

240/120 VAC		
W/Ft.	Voltage	Cat. No.
12.0	240	NC212
10.0	240	NC210
8.0	120	NC8
6.0	240	NC26
4.0	120	NC4
3.0	120	NC212
2.5	120	NC210
1.5	120	NC26

220/115 VAC		
W/Ft.	Voltage	Cat. No.
10.0	220	NC212
8.5	220	NC210
7.3	115	NC8
5.0	220	NC26
3.7	115	NC4
2.7	115	NC212
2.3	115	NC210
1.4	115	NC26

208/120 VAC		
W/Ft.	Voltage	Cat. No.
12.0	208	NC4
9.0	208	NC212
8.0	120	NC8
7.5	208	NC210
4.5	208	NC26
4.0	120	NC4
3.0	120	NC212
2.5	120	NC210
1.5	120	NC26

Maximum Allowable Wattage Based on Maintenance Temperature:



WATTS PER FOOT x 3.28 = WATTS PER METER
PIPE TEMPERATURE °F CONVERSION TO°C = 5/9 (°F -32)

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Catalog Numbers:

RATED WATTS PER FOOT					
	Basic Catalog Numbers				
Voltage	**NC4**	**NC8**	**NC26**	**NC210**	**NC212**
120VAC	4.0	8.0	1.5	2.5	3.0
208VAC	12.0	-	4.5	7.5	9.0
220VAC	-	-	5.0	8.5	10.0
240VAC	-	-	6.0	10.0	12.0
277VAC	-	-	8.0	-	-

Standard Feature Suffix:

-CB Tinned Copper Braid

Approvals:

FM

Ordinary Locations
Hazardous /Classified/ Locations
(-CB)
Class I; Division 2; Groups B, C, D
Class II; Division 2; Groups F, G
Class III; Division 2

FM APPROVED

Accessories:

- Connection Kits for Power Connection, Tee Splice, Splices and End Seals (Nelson LT, PLT and ALT Series)
- Thermostatic Controls (Nelson TA, TH, TE and HC Series)
- Junction Boxes, Tapes and Warning Signs
- Custom Control, Monitoring and Power Panels

Nelson Heat Tracing Systems products are supplied with a limited warranty. Complete Terms and Conditions may be found on Nelson's website at www.nelsonheaters.com.