Self-Regulating **Trace Heaters** for Processes and Freeze Protection

eltherm's ELSR-NA line of self-regulating trace heaters are designed for freeze protection and process temperature maintenance up to 140 °F (60 °C) and are suitable for a wide range of commercial and industrial applications. The NA series of trace heaters are approved for use in non-hazardous and hazardous locations. The BOT version is configured for use in corrosive environments, including organic chemicals and corrosives found in the oil, gas, and petrochemical industry.

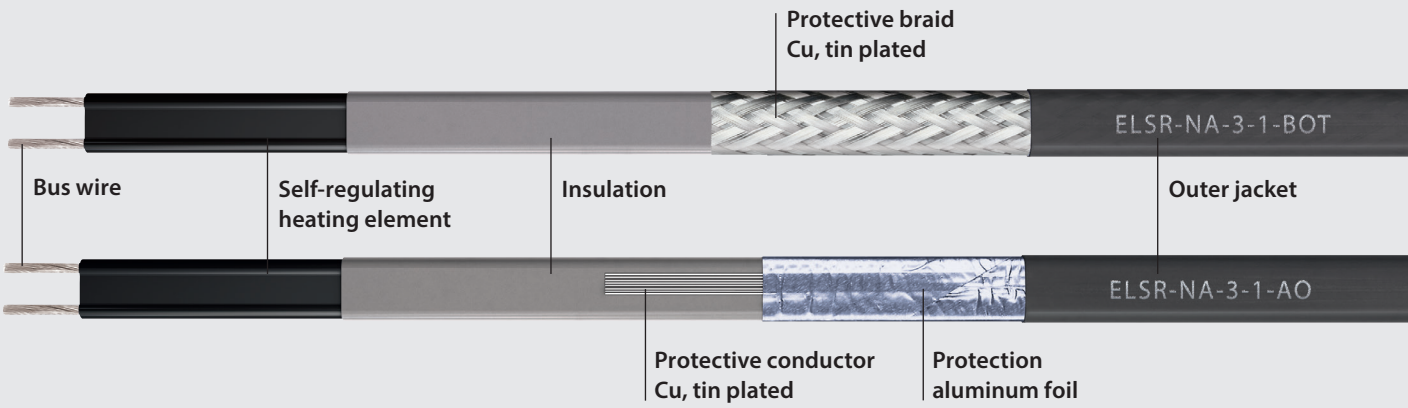
Advantages:

- Self-regulating
- Multiple nominal outputs
- May be cut to length in the field
- Weather Resistant
- UV-resistant
- Approved for use in hazardous areas

Applications:

- Freeze protection
- Heat tracing of instrumentation
- Pipes, vessel and tanks
- Chemical and petrochemical industries
- Oil and gas industries
- Food processing
- Automotive
- Tank bottom heating/frost heave prevention of LNG and cryogenic terminal storage tanks

Type **ELSR-NA**



Technical Information

Type ELSR-NA

Data

Outer jacket	Thermoplastic / Fluoropolymer
Bus wire	Nickel plated copper
Minimum start up temperature	-22 °F (-30 °C)
Maximum operating temperature, energized	140 °F (60 °C)
Maximum operating temperature, de-energized	176 °F (80 °C)
Nominal voltage	120 VAC (ELSR-NA-XX-1-XX) 240 VAC (ELSR-NA-XX-2-XX)
Bending radius, min.	25 mm (1 in)
Installation temperature, min.	-49 °F (-45 °C)
Classification	Class I Div 1* Group B,C,D Class II Div 1* Group E,F,G Class I Div 2 Group A,B,C,D Class II Div 2 Group E,F,G Class III T6 Class I Zone1 Ex e II T6 *with termination kit Hazelect (part no. 09CA051); Canada only
Certificates	CSA C US 2547790 CSA 22.2 130-16
Standards	IEEE 515, CSA 22.2 130-16 IEC/IEEE 60079-30-1
Rating	Wet rated, for outdoor use (WS)

Trace Heater	Nominal output 208 V vs. 240 V	Heating circuit length 208 V vs. 240 V
ELSR-NA-XX-2	0.88	0.93

Design

BO	Protective braid and a thermoplastic outer jacket
AO	Aluminum foil and a thermoplastic outer jacket
BOT	Protective braid and a fluoropolymer outer jacket

Type	Nominal output	Dimensions approx. (mm)	Weight approx. (g/m)	Part No.
ELSR-NA-3-1-AO	3 W/ft at 41°F *(5 °C)*	13.6 x 5.5	91	BA200131
ELSR-NA-3-1-BO	3 W/ft at 41°F *(5 °C)*	14.1 x 5.8	108	BA200111
ELSR-NA-3-1-BOT	3 W/ft at 41°F *(5 °C)*	13.8 x 5.6	108	BA200121
ELSR-NA-4-2-AO	4 W/ft at 41°F *(5 °C)*	13.6 x 5.5	91	BA200130
ELSR-NA-4-2-BO	4 W/ft at 41°F *(5 °C)*	14.1 x 5.8	108	BA200110
ELSR-NA-4-2-BOT	4 W/ft at 41°F *(5 °C)*	13.8 x 5.6	108	BA200120
ELSR-NA-5-1-AO	5 W/ft at 41°F *(5 °C)*	13.6 x 5.5	91	BA200231
ELSR-NA-5-1-BO	5 W/ft at 41°F *(5 °C)*	14.1 x 5.8	108	BA200211
ELSR-NA-5-1-BOT	5 W/ft at 41°F *(5 °C)*	13.8 x 5.6	108	BA200221
ELSR-NA-6-2-AO	6 W/ft at 41°F *(5 °C)*	13.6 x 5.5	91	BA200230
ELSR-NA-6-2-BO	6 W/ft at 41°F *(5 °C)*	14.1 x 5.8	108	BA200210
ELSR-NA-6-2-BOT	6 W/ft at 41°F *(5 °C)*	13.8 x 5.6	108	BA200220
ELSR-NA-7-1-AO	7 W/ft at 41°F *(5 °C)*	13.6 x 5.5	91	BA200331
ELSR-NA-7-1-BO	7 W/ft at 41°F *(5 °C)*	14.1 x 5.8	108	BA200311
ELSR-NA-7-1-BOT	7 W/ft at 41°F *(5 °C)*	13.8 x 5.6	108	BA200321
ELSR-NA-8-2-AO	8 W/ft at 41°F *(5 °C)*	13.6 x 5.5	91	BA200330
ELSR-NA-8-2-BO	8 W/ft at 41°F *(5 °C)*	14.1 x 5.8	108	BA200310
ELSR-NA-8-2-BOT	8 W/ft at 41°F *(5 °C)*	13.8 x 5.6	108	BA200320
ELSR-NA-10-2-AO	10 W/ft at 41°F *(5 °C)*	13.6 x 5.5	91	BA200430
ELSR-NA-10-2-BO	10 W/ft at 41°F *(5 °C)*	14.1 x 5.8	108	BA200410
ELSR-NA-10-2-BOT	10 W/ft at 41°F *(5 °C)*	13.8 x 5.6	108	BA200420

Heating Circuit Length

Type ELSR-NA

120 VAC

Start-up temperature	CB capacity (A)	Maximum heating circuit length (ft) for		
		ELSR-NA-3-1	ELSR-NA-5-1	ELSR-NA-7-1
50 °F *(10 °C)*	10	159	125	82
	15	238	187	123
	20	317	249	164
	25	397	312	205
	30	476	374	246
	35	555	436	287
	40	612	499	328
32 °F *(0 °C)*	10	143	112	75
	15	215	168	113
	20	287	224	151
	25	358	280	188
	30	430	336	226
	35	502	392	264
	40	573	448	301
14 °F *(-10 °C)*	10	130	102	69
	15	195	153	104
	20	260	204	139
	25	325	255	173
	30	390	306	208
	35	455	357	243
	40	520	408	277
-22 °F *(-30 °C)*	10	110	87	60
	15	165	130	90
	20	220	173	120
	25	275	217	150
	30	330	260	180
	35	385	303	210
	40	440	347	240

240 VAC

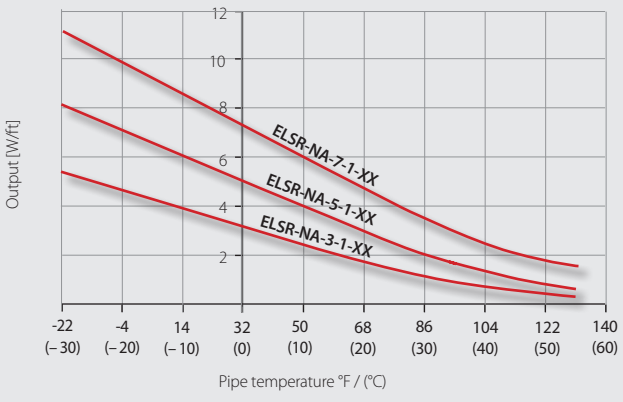
Start-up temperature	CB capacity (A)	Maximum heating circuit length (ft) for			
		ELSR-NA-4-2	ELSR-NA-6-2	ELSR-NA-8-2	ELSR-NA-10-2
50 °F *(10 °C)*	10	273	170	127	66
	15	410	255	191	99
	20	547	340	255	132
	25	683	425	318	165
	30	820	510	382	198
	35	957	595	446	231
	40	1087	857	509	264
32 °F *(0 °C)*	10	245	154	117	61
	15	367	231	175	91
	20	489	308	233	121
	25	612	385	292	152
	30	734	462	350	182
	35	856	539	408	212
	40	979	616	467	243
14 °F *(-10 °C)*	10	222	141	108	57
	15	333	211	162	85
	20	444	281	216	113
	25	555	352	270	142
	30	666	422	324	170
	35	777	492	378	198
	40	888	563	432	227
-22 °F *(-30 °C)*	10	187	120	93	50
	15	280	180	140	75
	20	373	240	187	100
	25	467	300	233	125
	30	560	360	280	150
	35	653	420	327	175
	40	747	480	373	200

Maximum heating circuit lengths ELSR-NA-XX based on the following conditions:

- Voltage 120VAC (-1-) / 240VAC (-2-)
- Voltage drop max. 10%
- MCB type QO (100% utilisation)
- Single heater fed from 1 end

ELSR-NA-XX-1-XX output

(on insulated metallic pipes)



ELSR-NA-XX-2-XX output

(on insulated metallic pipes)