THERMAL ELECTRIC ELEMENTS
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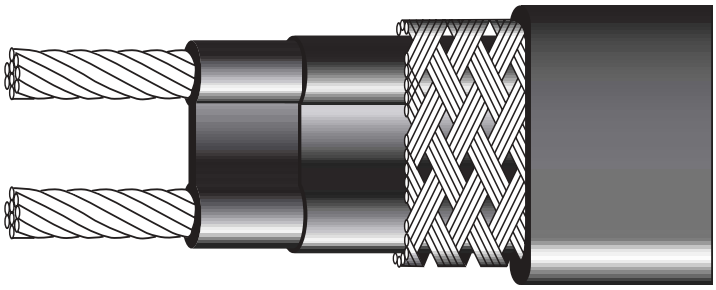
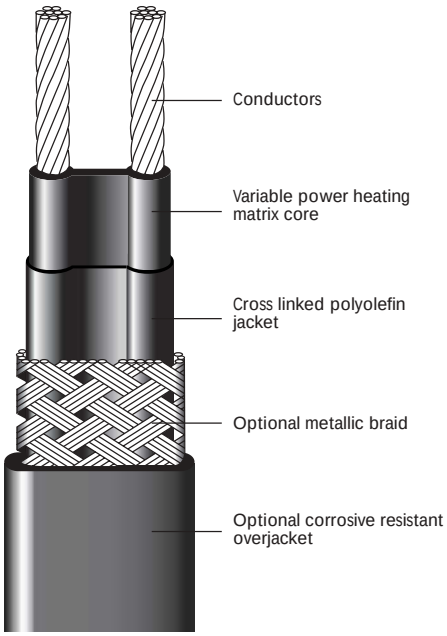


Electric Heat Tracing

16.1

Electric Heat Tracing



TSX - Self Regulating Heating Cable

Applications: TSX cables are used primarily for process maintenance and frost protection of piping which could be subject to steam cleaning up to 12 BARG saturated steam. TSX was the first matrix heater for process maintenance of temperatures up to 121°C. The low inrush feature of TSX cable eliminates excessive "start up" current. Options include braid and overjacket.

PSX - Self Regulating Heating Cable

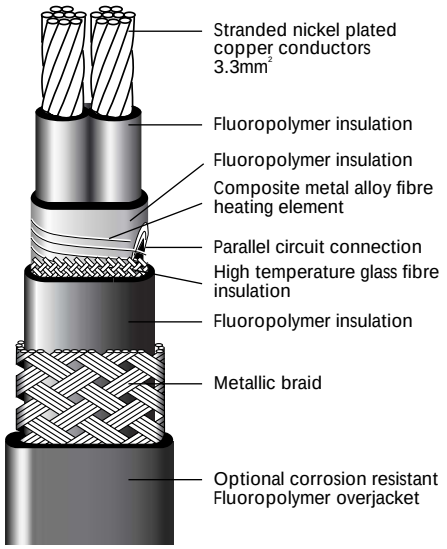
Applications: PSX cables are used primarily for process maintenance and frost protection of piping in hazardous, non - hazardous or corrosive areas. Options include braid and overjacket.

RSX - Self Regulating Heating Cable

Applications: RSX cables are used primarily for process maintenance and frost protection of piping in hazardous, non - hazardous or corrosive areas. Able to run at higher amperage than the PSX cable. Options include braid and overjacket.

FLX - Self Regulating Heating Cable

Applications: FLX cables are designed to provide freeze and temperature maintenance to metallic and non metallic piping, tanks and equipment. Options include braid and overjacket.



HPT - Power Limiting Heating Cable

Applications: HPT parallel resistance cables are designed for heating applications ranging from water freeze protection to process maintenance temperatures as high as 149°C.HPT is ideal for applications where steam purging or upset conditions preclude the use of lower temperature rated heat tracing cables. HPT is rated for a maximum continuous exposure temperature of 260°C (cable de-energised). Options include braid and overjacket.

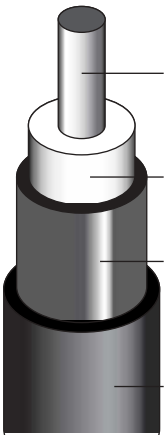
EconoTrace - Constant Wattage Heating Cable (Type FP)

Applications: EconoTrace Type FP parallel resistance, constant wattage heating cables are for water freeze protection and process temperature maintenance up to 66°C. Options include braid and overjacket.

Electric Heat Tracing

Part No.	Heater Type	Watt Density (w/m)	Standard Voltage	Electrical Insulation	Max Maintenance Temp	Max Continuous Exposure Temp
TSX 3	Self regulating	10	120 or 240 VAC	Teflon FEP	250°F(121°C)	375°F(191°C)
TSX 6	Self regulating	20	120 or 240 VAC	Teflon FEP	250°F(121°C)	375°F(191°C)
TSX 9	Self regulating	30	120 or 240 VAC	Teflon FEP	250°F(121°C)	375°F(191°C)
TSX 12	Self regulating	39	120 or 240 VAC	Teflon FEP	250°F(121°C)	375°F(191°C)
PSX 3-2	Self regulating	10	240 VAC	Cross-Linked Polyolefin	135°F(65°C)	185°F(85°C)
PSX 5-2	Self regulating	16	240 VAC	Cross-Linked Polyolefin	135°F(65°C)	185°F(85°C)
PSX 8-2	Self regulating	26	240 VAC	Cross-Linked Polyolefin	135°F(65°C)	185°F(85°C)
PSX 10-2	Self regulating	33	240 VAC	Cross-Linked Polyolefin	135°F(65°C)	185°F(85°C)
RSX 3	Self regulating	10	120 or 240 VAC	Cross-Linked Polyolefin	150°F(66°C)	185°F(85°C)
RSX 5	Self regulating	16	120 or 240 VAC	Cross-Linked Polyolefin	150°F(66°C)	185°F(85°C)
RSX 8	Self regulating	26	120 or 240 VAC	Cross-Linked Polyolefin	150°F(66°C)	185°F(85°C)
RSX 10	Self regulating	33	120 or 240 VAC	Cross-Linked Polyolefin	150°F(66°C)	185°F(85°C)
FLX 5-2	Self regulating	16	240 VAC	Cross-Linked Polyolefin	135°F(65°C)	175°F(85°C)
FLX 8-2	Self regulating	26	240 VAC	Cross-Linked Polyolefin	135°F(65°C)	175°F(85°C)
FLX 10-2	Self regulating	33	240 VAC	Cross-Linked Polyolefin	135°F(65°C)	175°F(85°C)
FLX 15-2	Self regulating	49	240 VAC	Cross-Linked Polyolefin	135°F(65°C)	175°F(85°C)
HPT 5	Power Limiting	16	120 or 240 VAC	Teflon PFA	300°F(149°C)	500°F(260°C)
HPT 10	Power Limiting	33	120 or 240 VAC	Teflon PFA	300°F(149°C)	500°F(260°C)
HPT 15	Power Limiting	49	120 or 240 VAC	Teflon PFA	300°F(149°C)	500°F(260°C)
HPT 20	Power Limiting	66	120 or 240 VAC	Teflon PFA	300°F(149°C)	500°F(260°C)
FP 2.5	Constant Watt Parallel	8	120 or 240 VAC	Teflon FEP	150°F(66°C)	400°F(204°C)
FP 5	Constant Watt Parallel	16	120 or 240 VAC	Teflon FEP	150°F(66°C)	400°F(204°C)
FP 10	Constant Watt Parallel	33	120 or 240 VAC	Teflon FEP	150°F(66°C)	400°F(204°C)
FP10-4	Constant Watt Parallel	33	480 VAC	Teflon FEP	150°F(66°C)	400°F(204°C)
FP10-5	Constant Watt Parallel	33	480 VAC	Teflon FEP	150°F(66°C)	400°F(204°C)
MIQ	Constant Series Resistance		300 or 600 VAC	Magnesium Oxide (with alloy 825 sheath)	800°F(427°C)	1100°F(593°C)

Electric Heat Tracing



MIQ - Mineral Insulated Heating Cables

Applications: MIQ high temperature mineral insulated heating cables are used extensively for high temperature maintenance, high temperature exposure and/or high watt density applications which exceed the limitations of thermoplastic insulated cables.

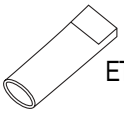
Features: The MIQ range are manufactured using Alloy 825. Alloy 825 is a high nickel chromium alloy which is ideally suited for high temperature service and offers exceptional resistance to stress conditions in chloride, acid, salt, and alkaline environments.

600V Rated Cable						300V Rated Cable			Resistance / Conductor	
1	Diameter		2	Diameter		2	Diameter			
Conductor	in	mm	Conductor	in	mm	Conductor	in	mm	Ohms/ft	Ohms/m
			MIQ-R29S2	0.215	5.5	MIQ-28S2	0.13	3.3	5.5	18.04
			MIQ-R27S2	0.215	5.5				4.5	14.76
			MIQ-R25S2	0.215	5.5	MIQ-25S2	0.135	3.4	3	9.84
MIQ-R24S	0.146	3.7	MIQ-R24S2	0.245	6.2	MIQ-24S2	0.146	3.7	2	6.56
MIQ-R23S	0.17	4.3							1.6	5.248
						MIQ-23S2	0.173	4.4	1.375	4.51
MIQ-R22S	0.16	4.1	MIQ-R22S2	0.245	6.2	MIQ-22S2	0.18	4.6	1	3.28
MIQ-R21S	0.16	4.1							0.7	2.296
MIQ-R19S	0.18	4.6	MIQ-R19S2	0.265	6.7	MIQ-19S2	0.196	5	0.5	1.64
MIQ-R18S	0.2	5.1							0.38	1.246
			MIQ-R18S2	0.265	6.7	MIQ-18S2	0.16	4.1	.35	1.148
MIQ-R17S	0.18	4.6							.3	0.984
			MIQ-R17S2	0.265	6.7	MIQ-17S2	0.196	5	0.25	0.82
MIQ-R16S	0.18	4.6							0.2	0.656
MIQ-R15S	0.18	4.5	MIQ-R16S2	0.29	7.4	MIQ-16S2	0.215	5.5	0.15	0.492
MIQ-R14S	0.196	5	MIQ-R15S2	0.245	6.2	MIQ-15S2	0.146	3.7	0.1	0.328
MIQ-R13S	0.215	5.5							0.08	0.262
			MIQ-R14S2	0.29	6.2	MIQ-14S2	0.16	4.1	0.075	0.246
MIQ-R12S	0.196	5							0.07	0.23
MIQ-R9S	0.215	5.5							0.06	0.197
			MIQ-R13S2	0.265	6.2	MIQ-13S2	0.18	4.5	0.05	0.164
MIQ-R11S	0.245	6.2							0.04	0.131
			MIQ-R11S2	0.29	7.4	MIQ-11S2	0.196	5	0.035	0.115
MIQ-R10S	0.245	6.2							0.03	0.098
			MIQ-R10S2	0.315	8	MIQ-10S2	0.215	5.5	0.025	0.082
MIQ-R8S	0.196	5	MIQ-R9S2	0.315	8				0.02	0.066
			MIQ-R8S2	0.346	8.8				0.015	0.049
MIQ-R20NC	0.198	48	MIQ-R20NC2	0.299	7.6				0.1	0.0328
MIQ-R18NC	0.199	5.1	MIQ-R18NC2	0.309	7.9				0.0065	0.0214
MIQ-R16NC	0.212	5.4	MIQ-R16NC2	0.34	8.7				0.0041	0.0134
MIQ-R14NC	0.24	6.1	MIQ-R14NC2	0.387	9.9				0.0026	0.001
MIQ-R12NC	0.253	6.4	MIQ-R12NC2	0.434	11.1				0.0016	0.0053
MIQ-R10NC	0.286	7.3							0.001	0.0033
MIQ-R8NC	0.319	8.1							0.00064	0.0021

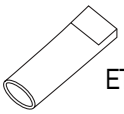
Cold Terminations for Heating Cables

Applications: Silicone Cold End Terminations allow for simple on-site termination in both hazardous and non hazardous areas. Cold terminations are available for all parallel heating cables type PSX, TSX, HPT and FP.

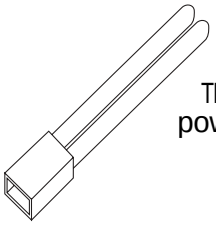
ET-7C endcap



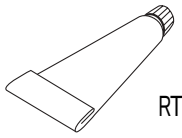
ET-8C endcap



ET-6C endcap



TBX-3L/4L powerboot



RTV silicone sealant

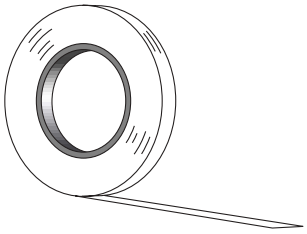
Cable Type Rubber	Endcap Type Silicone	Power Termination Type Silicone Rubber	Max Temp Rating
PSX-Bare	ET-8C	TBX-3L	200°C
PSX-BC	ET-8C	TBX-3L	200°C
PSX-OJ	ET-8C	TBX-3L	200°C
PSX-FOJ	ET-8C	TBX-3L	200°C
TSX-Bare	ET-8C	TBX-3L	200°C
TSX-BN	ET-8C	TBX-3L	200°C
PSX-FOJ	ET-6C	TBX-3L	200°C
HPT-BN (exp temp < 200°C)	ET-7C	TBX-4L	200°C
HPT-FOJ (exp temp < 200°C)	ET-8C	TBX-4L	200°C
FP-Bare	ET-7C	TBX-4L	200°C
FP-BN	ET-7C	TBX-4L	200°C
FP-FOJ	ET-8C	TBX-4L	200°C

*RTV silicone sealant rated at 265°C

Approvals: When used in conjunction with heated cables type TSX, PSX or HPT, the end terminations are approved by SAA for use in hazardous areas Zone 1 and 2.

PF Tape

Adhesive tapes for attachment of heated cables to piping.

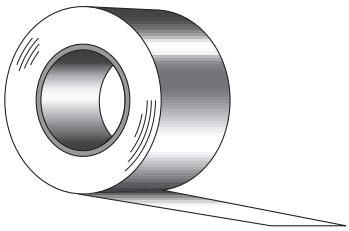


Type	Material	Size (L&W) (M x mm)	Max Exposure Temp
PF-1	Polyester Fibre	55 X 18	260°C
PF-2	Glass Cloth	55 X 18	315°C
PF-20	Glass Cloth	55 X 51	215°C
PF-30	Glass Cloth	55 X 76	215°C

NOTE: Discolouration will occur beyond 190°C, but PF-1 retains its ability to secure heat tracing cable in place.

Aluminium Tape

Aluminium adhesive tape for parallel coverage of heating cable attachment of thermostat capillaries to piping and for attachment of heating cable to vessel walls.



Type	Material	Size (L&W) (M x mm)	Max Exposure Temp
AL-20P	aluminium	45 X 51	204°C
AL-30P	aluminium	45 X 76	204°C
AL-303	reinforced al	9 X 51	204°C
AL-305	reinforced al	45 X 51	204°C