

With over a thousand current leads in the field, the CryoSaver™ HTS current leads have demonstrated outstanding performance

HTS CURRENT LEADS

The CryoSaver™ family uses High Temperature Superconducting (HTS) tapes to create a robust, reliable lead. CryoSaver™ leads outperform competing solutions with unsurpassed build quality, mechanical strength and performance. CryoSaver™ second generation of current leads, CryoSaver™ II, rated from 150A to more than 2000A, deliver significantly improved performance with lower heat leak, reducing heat-load, and losses for client's systems. Applications include MRI, NMR, and beamline magnets as well as driven (non-persistent) superconducting magnets. Leads are available in a number of formats.

HTS-110 CURRENT LEADS BENEFITS INCLUDE:

- **LOW HEAT LEAK**

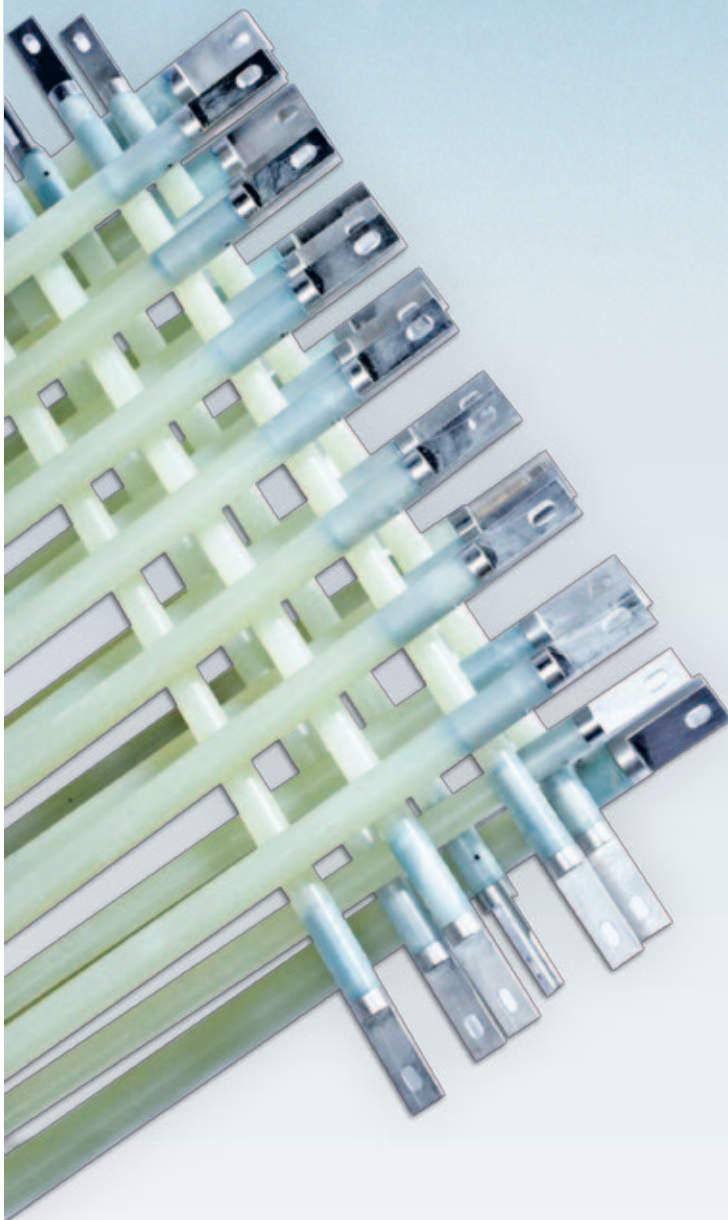
The composite conductor consists of HTS filaments in a low thermal conductivity matrix, providing a very high current density and low heat leak through the small cross-section.

- **FIELD TOLERANT**

The anisotropic nature of the CryoSaver™ current leads allows the lead to be positioned in a cryostat such that applied fields are along a favourable axis, an advantage over isotropic bulk materials.

- **EASE OF INTEGRATION**

Electrical connection to the caps is easily made, mechanically or by soldering, for low resistance and low Joule heating.



DURABLE AND STABLE

Standard CryoSaver™ leads use a fiberglass composite body to encase the HTS wire for structural integrity. This allows the lead to tolerate a large number of thermal and electrical cycles. Nickel plated copper endcaps are used for warm and cold end connections. Shorter versions of standard current leads are available for space-constrained applications.

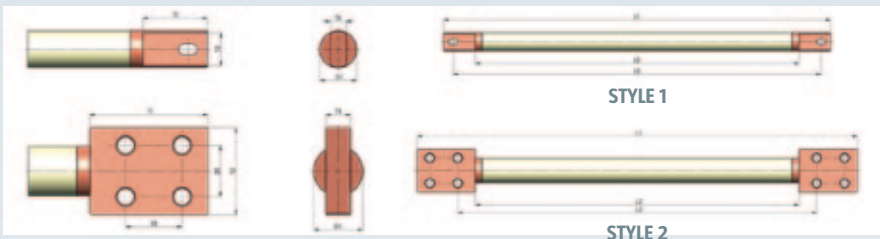
The HTS conductor exhibits tolerance to strain and thermal cycling superior to other types of HTS lead. CryoSaver™ leads have superior ability to tolerate and recover from minor cooling system upsets without damage or burn-out, as the metal matrix in the conductor slows temperature rise after loss of cooling.

HERMETIC LEADS

Designed for service in cryogenic liquid or vapour, CryoSaver™ hermetic leads utilize a thin-walled stainless steel outer body and lid to form a hermetic seal against absorption of helium into the HTS wire.

CUSTOMISATION

Customised CryoSaver™ current leads can be provided for high current (>10kA), custom terminals, complex geometry, or specific dimensions to meet client requirements.



Operating Current (at 64K)	Type	Body dia. (mm) D1	Overall length (mm) L1	Gap length (mm) L2	Fixing Centre Distance (mm) L3	Terminal					Calculated heat leak 64K-4.2K (pair)	Calculated mechanical limits		
						Style	Length (mm) T1	Width (mm) T2	Thickness (mm) T3	Hole/slot Size (mm)		Comp. (N)	Tension (N)	Torsion (Nm)
150 A	Standard	9.5	305	255	290	1	25	8.9	3.3	R1.6x3	32mW	200	1500	7
	Short	9.5	170	138	158	1	16	7.1	6.4	R1.6x2	56mW	-	-	-
	Hermetic	10.5	305	255	290	1	25	10	3.3	R1.6x3	50mW	-	-	-
250 A	Standard	11.1	305	255	290	1	25	9.4	6.4	R2.2x3	57mW	400	2000	11
	Short	12.7	170	138	158	1	16	11	6.4	R2.2x2	104mW	-	-	-
	Hermetic	12.2	305	255	290	1	25	10.4	6.4	R2.2x3	73mW	1600	1100	3
500 A	Standard	14.3	305	255	290	1	25	12.8	6.4	R2.2x3	130mW	1100	2500	18
	Hermetic	14.7	305	255	290	1	25	13.3	6.4	R2.2x3	140mW	-	-	-
1000 A	Standard	19.1	347	255	283	2	46	34	9.5	R3.3	212mW	3400	4000	38
	Hermetic	TBC	347	TBC	TBC	2	TBC	TBC	9.5	R3.3	TBC	-	-	-
2000A	Standard	25.4	347	255	283	2	46	34	12.7	R3.3	338mW	8400	5000	60

HTS-110

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