

## **Accessories** - Cryogenic accessories to simplify experiment design and systems integration.

### **STAR Cryoelectronics**

offers an extensive assortment of cryogenic accessories to simplify experiment design and systems integration. Available accessories include mating cryocables and test probes for STARCryo dc SQUID sensors, Cryoperm 10 magnetic shields, individual mating connectors for STARCryo sensors and PC-based SQUID control electronics, cryogenic wire, and low-noise cryogenic dewars for liquid nitrogen and liquid helium.

### **FLEXIBLE CRYOCABLES**

STAR Cryoelectronics offers standard flexible cryocables that mate with the Model PFL-100 or high-speed Model PFL-102 Programmable Feedback Loops. The cold end of each cryocable is configured with a 10-pin or 14-pin LEMO receptacle that mates with STARCryo's SQUID sensor packages.



The Model [CBL-C2](#) cryocable is configured with a bulkhead-style warm-end connector that is vacuum sealed and passes through a 1/2-inch opening, CBL-C2 cryocable consists of three or four twisted pairs of phosphor-bronze wire and two twisted pairs of copper wire in a thin-wall Teflon sleeve and braided stainless steel shield. Alternate wiring, heat sinks, or stainless steel tube instead of braided shield configurations are available by special order. The stainless steel tubing offers excellent shielding against external electromagnetic interference (EMI) and may easily be formed by hand as required.

### **TEST PROBES**

Rigid test probes (e.g., Model [PRB-10-x](#)) are available for liquid nitrogen or liquid helium. The warm end connector box may be configured with up to three 10-pin or 14-pin LEMO receptacles that mate with STARCryo Model PFL-100 or high-speed Model PFL-102 Programmable Feedback Loops. The cold end may be configured with a 10-pin or 14-pin LEMO receptacle that mates with STARCryo standard cryogenic sensor packages or with a detachable phenolic tube that may be machined as required.

## MAGNETIC SHIELDS

STAR Cryoelectronics offers three cryogenic magnetic shields with optional mounting flanges for use with STARCryo test probes. The magnetic shields are manufactured from high-permeability Cryoperm 10 and are available in the following sizes:

Model	Material	ID [inch (mm)]	Length [inch (mm)]	Wall Thickness [inch (mm)]
<a href="#">CS-1</a>	Cryoperm-10	1.0 (25.4)	7 (178)	0.06 (1.5)
<a href="#">CS-2</a>	Cryoperm-10	1.38 (35.0)	8 (203)	0.06 (1.5)
<a href="#">CS-3</a>	Cryoperm-10	1.75 (44.5)	9 (229)	0.06 (1.5)

## LEMO CONNECTORS

The mating LEMO connectors for STARCryo sensor packages, cryocables and electronics are available individually in small quantities. Cable connectors also are available to build "pigtail" adapters for the Model PFL-100 and PFL-102 Programmable Feedback Loops. The available connectors are listed in the table below.

Model	Description
L-10FI	10-pin LEMO female connector insert; mates with cryogenic packages
L-10MI	10-pin LEMO male connector insert
L-10MP	10-pin LEMO male cable plug
L-10FR	10-pin LEMO female cable receptacle
L-10FC	10-pin LEMO female chassis-mount receptacle; mating connector for PFL-100
L-14FI	14-pin LEMO female connector insert; mates with cryogenic packages
L-14MI	14-pin LEMO male connector insert
L-14MP	14-pin LEMO male cable plug
L-14FR	14-pin LEMO female cable receptacle
L-14FC	14-pin LEMO female chassis-mount receptacle; mating connector for PFL-102

## CRYOGENIC WIRE

STAR Cryoelectronics maintains an inventory of fine wire used for building test probes and superconducting wire for coil assemblies. The table below lists the wire and sizes currently available.

Model	Material	Size [inch (mm)]	Insulation
W-C5	Copper	.005 (.13)	S-Poly Red
W-C5TP	Copper	.005 (.13) Twisted Pair	H-Poly Nylon, Green/Clear
W-PB5TP	Phosphor Bronze	.005 (.13) Twisted Pair	H-Poly Nylon, Green/Red
W-NB3	Niobium	.003 (.076)	H-Formvar

## SOLDERING EQUIPMENT

STAR Cryoelectronics recommends the use of a battery-powered soldering iron to make solder connections to SQUID printed circuit boards or package assemblies, as the use of improperly grounded ac-powered soldering equipment can damage SQUIDs.

STAR Cryoelectronics now offers the Model [B 50](#) soldering iron, a rugged battery-powered soldering iron made by Engel in Germany.

## CRYOGENIC DEWARs

STAR Cryoelectronics offers a line of non-magnetic dewars for liquid nitrogen and liquid helium. Please contact STAR Cryoelectronics for further information and specifications.