

LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY  
- LIGO -  
CALIFORNIA INSTITUTE OF TECHNOLOGY  
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Technical Note    LIGO-E980029-A -    W    2/27/98

**HEATER BLANKET RELAY PANEL  
INSTALLATION - ASSEMBLY 'H'**

D. Hittle & Associates

**California Institute of Technology**  
**LIGO Project - MS 51-33**  
**Pasadena CA 91125**  
Phone (818) 395-2129  
Fax (818) 304-9834  
E-mail: info@ligo.caltech.edu

**Massachusetts Institute of Technology**  
**LIGO Project - MS 20B-145**  
**Cambridge, MA 01239**  
Phone (617) 253-4824  
Fax (617) 253-7014  
E-mail: info@ligo.mit.edu

WWW: <http://www.ligo.caltech.edu/>

## ASSEMBLY 'H'

DESCRIPTION

This section includes the installation of heating relay panels H1 through H4 and the associated cord assemblies involved in their operation.

REFERENCE DOCUMENTS

This section includes reference documents

H1	Heating Blanket Relay Box	E980006
H2	Heating Blanket Relay Panel	D980024
	Bill of Materials	D980039
H2-1	Heating Blanket Panel 'H2'	E980006
H3	Heating Blanket Relay Panel	D980028
	Bill of Materials	D980041
H3-1	Heating Blanket Panel 'H3'	E980006
H4	Heating Blanket Relay Panel	D980032
	Bill of Materials	D980043
H4-1	Heating Blanket Panel 'H4'	E980006
HC	Heating Blanket Cord Set	D980036
HJ1	6 Way Heating Blanket Junction Box	D980037
HJ2	2 Way Heating Blanket Junction Box	D980092

### COORDINATION

- A. Provide labor and equipment to mount portable relay panels H2 through H4 to the stand alone mounting frames as shown on drawings, described in equipment lists and as specified herein. Provide all material, not specifically listed as provided by LIGO including but not limited to mounting frame and fasteners. Completed assembly installation, where required, shall be inspected and approved by a Washington State Department of Labor and Industries representative and ready for operation.
- B. Provide labor, and equipment to distribute, connect and secure miscellaneous cords and hardware associated with heating blanket system as shown on drawings, described in equipment lists and as specified herein. Provide all material, not specifically listed as provided by LIGO.
- C. Provide labor, equipment and necessary miscellaneous materials to disconnect portable relay panel assemblies and prepare them for shipment to a remote location as directed by LIGO.
- D. Corner mid and end stations of the LIGO facility are maintained as a 'clean room' like environment. All units shall be assembled as completely as possible in assembly areas as directed LIGO. Any activity, other than bolting, that may produce dust or other contaminants such as drilling, grinding, sawing etc., in clean room environments shall be avoided. All unavoidable dust producing activity that would compromise the clean room environment shall conform to the requirements and procedures set forth by LIGO for such activity.

### PRODUCTS

- A. All equipment shall be new, UL approved with necessary modifications required for complete installation.
- B. See material lists for type and manufacturer of required equipment.

### INSTALLATION

- A. The Contractor shall mount relay panels H2, H3, and H4 on framing channel equal to Superstrut A-1200. Fastening devices and support brackets shall be plated in compliance with ASTM specification A 164-71, Type LS (RS for threaded parts). Assembly shall be constructed to stand alone without the need for attachment to floor, wall or other structure.
- B. The Contractor shall distribute relay panels H1 and associated cords and junctions along beam tube enclosure as directed by LIGO.
- C. The Contractor shall route electrical equipment cordsets required to connect and disconnect electrical equipment as directed by LIGO. Electrical cords shall be routed, to the extent possible, to provide physical protection for the cords and to maintain a safe, neat and orderly environment. Contractor shall provide and install cable ties or other approved bundling means as required to train cords.

DELIVERY

- A. Assemblies shall be transported between installation locations as directed by LIGO. Assemblies shall be packaged to prevent damage in transport from excessive vibration, shock and climatic condition.

END OF SECTION