

Liquid Nitrogen Controller - LNN-101

Connection Details

1. General.

The LNN-101 is a liquid nitrogen controller suitable for use in the vacuum industry with pumping systems using a meissner coil in the vacuum chamber.

The LNN-101 includes a serial port for external PC control and monitoring.

This document describes the external connections required for correct operation. All external wiring is brought in to the rear panel.

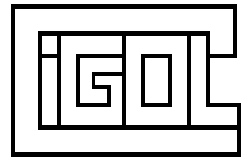
2. Thermocouple Connections.

A bank of eight grey “lever locking” connectors (numbered 1 to 8) and are used for the connection of Type T thermocouples, as follows:

EC	Label	Connection
1	1-	Positive lead - meissner thermocouple
2	1+	Negative lead - meissner thermocouple
3	2-	Not used - do not connect
4	2+	Not used - do not connect
5	3-	Not used - do not connect
6	3+	Not used - do not connect
7	4-	Not used - do not connect
8	4+	Not used - do not connect

3. Incoming Power and Relay Connections.

An internal 12 way connector is used for connection of mains voltage signals and the relay contact signals. This is mounted behind the rear panel so that access to the high voltage is not possible when the rear panel is in place. It carries the following signals. All five relays are fitted with internal 0.022 μ F/100R contact suppresser circuits. The connector pins are numbered 9 to 20 as follows.



EC	Description
9	Output relay signal for meissner LN ₂ valve open (Max. rating 1A 240Vac)
10	Output relay signal for meissner compressed air warm valve open (Max. rating 1A 240Vac)
11	Output relay signal for compressed air warm resistor. (Max. rating 1A 240Vac)
12 & 13	Output relay common - this line is connected to the common side of all four output relays.
14	Output relay signal to indicate vent enable. (Max. rating 1A 240Vac)
15	Isolated signal to one side of the Thermocouple Fault relay contact. (Max. rating 1A 240Vac)
16	Isolated signal to the other side of the Thermocouple Fault relay contact.
17 & 18	Electrical earth. For correct operation this must be connected to a good electrical earth.
19	Neutral - incoming power supply.
20	Live - 240Vac (50/60Hz) incoming power supply.

4. Serial Port Connections.

A 9 pin D plug is used for the RS232 connection. Pin assignments are as follows.

2	Rx	RS232 data in
3	Tx	RS232 data out
5	0v	RS232 signal ground

(All other pins are not connected)

In many applications the serial port is not used. Refer to reference 602910 for information on serial port operation.