



## **KJL610TC**

# **Thermocouple Vacuum Instrument**

## **Instruction Manual**

### **1. Specifications**

Power: 115 or 220 Volts AC, 50/60 Hz, 8' cord, 3 wire polarized plug

Size: 1/8 DIN, 1.7" High x 3.55" Wide x 6.5" Deep

Weight: 1.5 lbs.

Display: 3 1/2 Digit LED 0.56" High

Process Control: Two set points, adjustable from 1 to 1000 microns ( 0.01 - 20 Torr)

Setpoint Output (2): SPDT relays rated at 3 Amps @ 115 VAC, via 6 pin DIN connector

Recorder Output: 0 to 3 VDC, via 3/32" (2.5 mm) submini phone jack

Tube Type: KJL-6000, DV-6M or DV-4D

#### **Sensitivity Range**

DV-6M: 1 - 1000 microns, best sensitivity is 10 - 200

DV-4D: 0.01 - 20 Torr, best sensitivity is 0.2 - 5

Warranty: One year for parts and labor

## 2. **Installing**

### 2.1 Unpacking and Inspection

Inspect the shipping container for external damage. After unpacking inspect the instrument for any shipping damage. If visible damage exists, a claim should be filled with the carrier. If anything is missing from your order contact the Kurt J. Lesker Company.

Included with each KJL610TC is :

1 KJL610TC Controller  
1 Instruction Manual

### 2.2 Thermocouple Tube Installation

Situate the gauge tube in a clean, dry vacuum system. Ideally the open end should point down so as to be self-draining should any vapors condense in it. Thread metal tubes into 1/8" female NPT threads using Teflon tape or a thread sealant. For best accuracy, allow the tube to outgas in the vacuum system for approximately 24 hours before operating with the vacuum gauge.

### 2.3 Final Installation

Put the instrument on a stable surface. Install the 3 prong power cord to a 115 VAC single phase outlet. Plug the TC cable into the TC tube and the unit. If the process control setpoints are to be used, the connections to the relays are through the six pin DIN connector on the back of the unit. If a recorder is to be used, connect it to the 3/32" submini phone jack on the rear.

### 2.4 Tube Selection

The KJL610TC is configured to run the accompanying KJL-6000 tube shipped with the gauge. If the KJL610TC is shipped without a TC tube, the gauge will be setup for use with a KJL-6000 or DV-6M TC tube. For instructions on changing the tube type please contact the factory (pressure@lesker.com) or toll free at 1-800-245-1656.

### 3. Operation

#### 3.1 Vacuum Reading

With a tube connected to the unit, the display will show the vacuum in the tube. If the tube is a KJL-6000 or DV-6M, the vacuum reading will be in microns ( 1/1000 Torr). If the tube is a DV-4D, the reading will be in Torr.

The KJL-6000 and DV-6M tube reads vacuum from 1 to 1000 micron. Its most accurate range is from 10 to 200 microns. The KJL610TC will display 1000 if the tube is anywhere between 1000 microns and atmosphere.

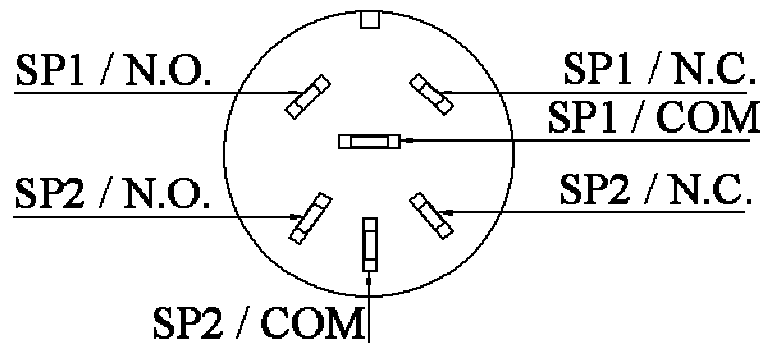
The DV-4D tube reads vacuum from 0.01 to 20 Torr. Its most accurate range is from 0.2 to 5 Torr. The KJL610TC will display 760 when the pressure is between 21 and 760 Torr.

#### 3.2 Setpoint Setup and Operation

The KJL610TC has two process control setpoints. Each one is connected to a SPDT 3A relay. The value of the setpoint is dependent on which tube is being used, but the full range of both tubes can be used. To adjust SP1 press the [SELECT] key once, the display will show the current value of SP1. To adjust the value press the [+] or [-] keys. Press the [SELECT] key once to adjust SP2 or twice to get back to the vacuum mode. The setpoint relay will switch when the vacuum is above or below the setpoint value.

The six pin DIN socket on the back panel accesses the setpoint relays.

The following is the pinout:



### 3.3 Recorder output

The recorder output will monitor the vacuum at the TC tube and give an output of 0 - 3 VDC that is log / linear. Below is a table that will give you an example of different voltages verses pressure.

<u>Voltage</u>	<u>DV-4D</u>	<u>KJL-6000 or DV-6M</u>
0.1	0.01 Torr	1.0 microns
0.7	0.07 Torr	7.0 microns
1.1	0.10 Torr	10 microns
1.5	0.50 Torr	50 microns
2.1	1.0 Torr	100 microns
2.3	3.0 Torr	300 microns
3.0	10.0 – 760 Torr	1000 microns



The recorder output is accessible through the 2.5mm jack on the back of the unit.