

CRITICAL AND SUPERCRITICAL BEHAVIOR OF FLUIDS AND FLUID MIXTURES AND ITS APPLICATION

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Abstract This paper consists of three sections. Critical and supercritical characters of one-component fluids is presented in the first section. It contains the following contents: Classical and scaled equations of state; experimental evidence for the presence of anomalous behavior; calculation of thermodynamic function and transport property near critical point and so on. Critical and supercritical characters of binary fluid mixtures are described in section II. Application of supercritical gas extraction is introduced in the third section.

Keywords *critical fluids; supercritical fluids; critical singularity*

DG-10 数显光栅测微仪

由中国科学院力学研究所研制的 DG-10 数显光栅测微仪, 经中国计量科学研究院检定, 其主要技术指标:

1. 量程 0—10 mm;
2. 分度值 0.001 mm;
3. 示值误差在全量程内为 ± 0.001 mm;
4. 回程误差 0.001 mm;
5. 测杆受径向力作用时示值变化 0.001 mm.

数显光栅测微仪由光栅测量头和数显仪两部分组成。采用莫尔条纹测位移原理。光栅作为测量元件。用光敏管将接收到明暗变化的光讯号转换为电讯号, 输出两路相位差 90° 的正弦讯号, 经电缆将两路讯号送到数显仪器进行放大、细分、模数转换, 最后由数码管显示测量的长度 (图 1)。并有 BCD 码输出, 可接打印机。

数显光栅测微仪是具有任意零点的精密测长系统, 测量范围大, 分辨率高, 可以较好地解决量程与分辨率间的矛盾。利用光栅的平均效应来提高测量精度, 性能稳定可靠。主要用于土工试验, 研究在一定载荷下长时间连续观测土样的变形情况。同时也能广泛应用于工厂、计量和科研部门, 对精密零件的几何参数及各种位移量进行测量。

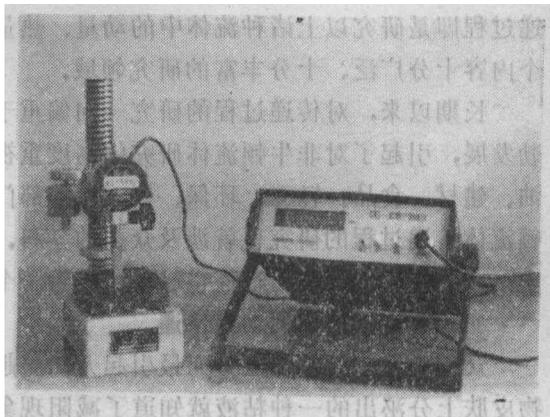


图 1 DG-10 数显光栅测微仪

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