

说明书

User Manual



KL 60
密度表

KL 60
Density Gauge

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1. 安全提示 Safety tips



在安装、启动和操作此仪表时，必须遵守相应国际安全规范，所有的工作必须在无电压状态进行。如果不按规程序操作，会造成严重的人身伤害或财产损失。只有经过专业培训的人员可以调装此仪表。

During installation, startup and operation of this instrument, all relevant international safety codes must be obeyed and all the work must be conducted under the voltage-free status. Failure to comply with specific instructions may cause severe injury or property damage. Only professionally trained personnel can debug or install this instrument.

2. 一般性提示 Common tips

A. 功能原理

Working principle

KL60型密度表是改型的压力表。温度对密度的影响由一个补偿系统平衡。密度表是针对每一个设备特殊设计的（气体的纯度，混合比例，校验压力）

KL60 density gauge is a modified pressure gauge. The effect of temperature on density is balanced by a compensation system. The density gauge is specially designed for each equipment (gas purity, mixing ratio, calibration pressure)

B. 使用前检测

Pre-use inspection

在运输或仓储过程中，可能使密度表变冷或变热。当温度不等于参考温度（20℃）时指针会动。这种现象是正常的，因为是温度补偿系统在工作。

During transportation or warehousing, Density gauge may become cold or hot. When the temperature is not equal to

become cold or hot. When the temperature is not equal to reference temperature (20°C), the pointer will move, which shows the temperature compensation system is working.

为了确定密度表与周围温度是否适应, 必须在温度是 $20\pm 1^{\circ}\text{C}$ 环境下, 恒温至少2个小时。这样指针才能指示到允许的误差范围内。

To determine whether density gauge adapts to ambient temperature, the temperature of $20\pm 1^{\circ}\text{C}$ must be maintained for at least 2 hours so that the pointer can work within the allowable error range.

3. 安装 Installation

一般仪表常用的技术性规范这里也使用 (如:En837-2),旋转安装时所用的力不允许直接作用到表壳上,而是通过合适的工具作用到扳手面上。

Technical codes (e.g., En837-2) applicable to ordinary instrumentation also apply here. The force applied for rotation installation shall not directly act upon the instrument housing or terminal box but act upon the wrenching face through a suitable tool.



4. 使用和维护 Use and maintenance

用在室外的密度表应避免阳光直射到仪表上,考虑在仪表上加装防护罩。

For density gauge used outdoors, direct exposure to sunlight is not allowed, and it is advisable to use a shield.

密度表安装部位应能较真实地反应设备内气体的温度。

Density gauge shall be erected at a proper position to reflect the temperature of gas in relevant equipment.

用肥皂水浸湿的擦布清洁仪表。

Clean the instrument with a wiping cloth soaked in soap water.

5. 技术参数 Technical parameters

外形尺寸 External dimension	φ64mm
量程范围 Measuring range	依据用户要求定制 customized
测量精度 Measuring precision	±1.5%FS (+20±1℃), ±2.5%FS (-20℃~+60℃) (气态) (gas phase) 可选 (options) ±1.0%FS (+20±1℃), ±1.8%FS (-20℃~+60℃) (气态) (gas phase)
抗振性能 Vibration resistance	10m/s ²
抗冲击性能 Shock performance	30g
工作环境 Working environment	-20℃~+60℃ 相对湿度 (relative humidity) ≤95 %RH 可选 (options) -40℃~+60℃
防护等级 Protection grade	IP 65
密封性能 Sealing performance	气路(Measuring system): ≤1X10 ⁻⁹ Pa·m ³ /s
外壳材质 Casing material	304不锈钢 SUS304
感压元件 Pressure sensing element	波登管 Bourdon tube
压力接口 Pressure interface	依据用户要求定制 Customized

6. 投诉/更换/修理 Complaint/replacement/repair

售后服务时请给出生产编号和产品型号,生产编号印在表盘上,产品型号印在标牌上。

At customer service, please provide with the production number and product model. The production number is printed on the dial, while the product model is printed on the nameplate.

密度表必须长时间恒温才能达到温度补偿作用（至少两小时）。

The density gauge must be kept constant for a long time to achieve temperature compensation (at least two hours).

只有厂家可以进行维修，不允许随便打开仪表，否则会使显示和开关点产生误差。

No one other than the manufacturer is allowed to disassemble the instrument for fear that any error may occur to the display and switch point.

7. 订货说明 Order instructions

型号/数量/量程/接口尺寸/接口方向/其它特殊事项

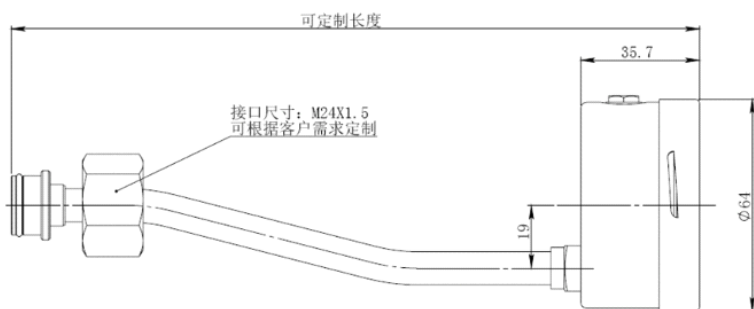
Model/Quantity/Measuring range /Interface dimensions/ Other special issues

注：说明书中为基础配置，其余定制化需求见客户图。

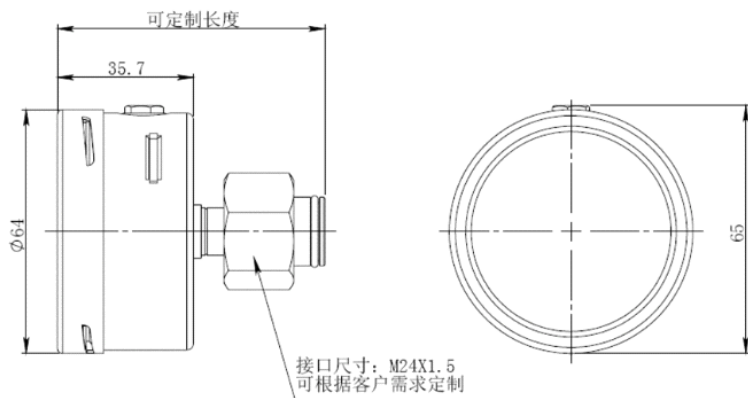
Note: Basic type is included in the manual, and other customized requirements are shown in the customer's drawing.

附图一：外形尺寸

Attached Drawing 1: External Dimensions



KL60偏心表样表尺寸



KL60正心表样表尺寸



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