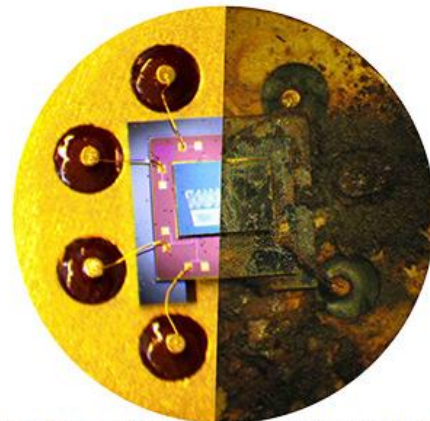


德国MessKonzept GmbH公司FTC300热导气体分析仪和热导气体传感器



热导芯片有保护层
With Protection

热导芯片没有保护层
Without Protection

德国 Messkonzept GmbH 公司的 FTC300 气体分析仪采用热导式原理，测试二元组份气体的量程可达到 0-100%Vol,分辨率为 1ppm,线性可达 1%FS,响应时间非常快,可达到 1 秒(T90)。FTC300 热导气体分析仪经过标定可以在特定的范围内对二元气体。热导传感器内部热导芯片经过特定的薄膜处理，可以在高湿和腐蚀性气体中测量。

FTC300热导气体分析仪特点:

- 6 次方线性化拟合，精度非常高。
- 隔离的 4-20mA 输出，在 100%Vol.的范围内，可以任意设置量程
- 自由设置开始和结束
- 经典的 2 点校准或单点校准
- 可自由设置显示屏 ppm 或 Vol.%显示，分辨率达到 1ppm
- 快速响应，T90 响应时间小于 1 秒(取决于流量)
- 耐正压(20bar)和真空密封不锈钢(LF316i) 气体管路
- 三个隔离继电器分别显示警报和仪器状态
- RS232 数字接口，可以输出所有参数
- 在整个 100%Vol.范围内，数字输出达到 1ppm 分辨率
- 小巧且坚固的变送器嵌入铝壳，适合野外作业（防护等级为 IP65）
- 尺寸：145mm(宽)x 80mm (高，没有连接器)x 85 mm(深)
- 电源：18V-36VDC/700mA

关于填充隔爆玻璃细珠

易燃易爆气体可能会被引入充满玻璃细珠的 FTC300 分析仪中。在这里，外壳的内部空间密布着玻璃细珠（直径 0.6mm）。在不太可能的泄漏导致爆炸性环境的情况下，玻璃细珠之间的很小的空间防止了由于分析仪的故障引起的同时点火。

当玻璃细珠松动时候，切勿打开 FTC300 的外壳。当分析仪外壳被打开时，它可能无法与易燃气体一起安全工作，引起爆炸。

一、FTC300热导氢气分析仪测量范围

| 测量气体 | 背景气 | 基本量程 | 最小量程 | 最小压缩零点量程 |
|------|-------|----------|---------|----------|
| H2 | N2或空气 | 0~100% | 0~0.5% | 98%~100% |
| H2 | Ar | 0~100% | 0~0.4% | 99%~100% |
| H2 | He | 20%~100% | 20%~40% | 85%~100% |
| H2 | CH4 | 0%~100% | 0~0.5% | 98%~100% |
| H2 | CO2 | 0%~100% | 0~0.5% | 98%~100% |

二、FTC300热导氦气分析仪测量范围

| 测量气体 | 背景气 | 基本量程 | 最小量程 | 最小压缩零点量程 |
|------|-------|--------|--------|----------|
| He | N2或空气 | 0~100% | 0~0.8% | 97%~100% |
| He | Ar | 0~100% | 0~0.5% | 98%~100% |

三、FTC300热导氩气分析仪测量范围

| 测量气体 | 背景气 | 基本量程 | 最小量程 | 最小压缩零点量程 |
|------|-------|----------|------|----------|
| Ar | N2或空气 | 0~100% | 0~3% | 96%~100% |
| Ar | O2 | 0~100% | 0~3% | 96%~100% |
| Ar | CO2 | 40%~100% | - | 80%~100% |

四、Messkonzept热导气体分析仪和热导气体传感器可测量的气体种类

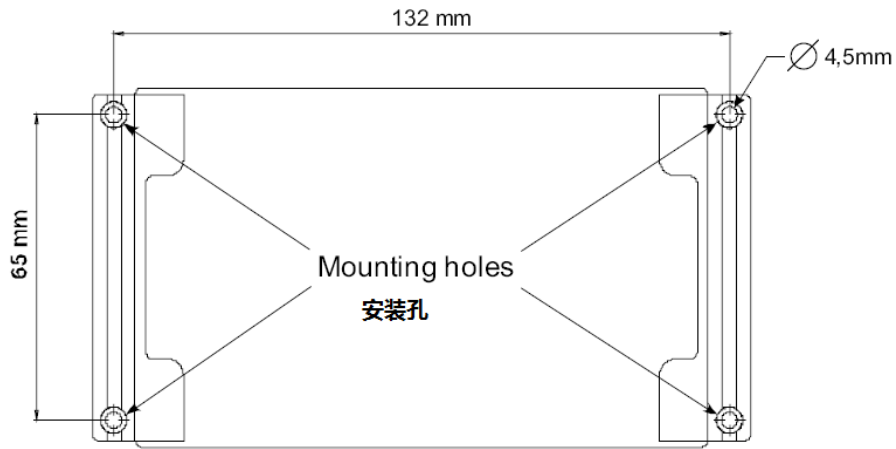
| 测量气体 | 背景气 | 基本量程 | 最小量程 | 最小压缩量程 | 多种气体测量 |
|----------|-----------------------|------------|-----------|------------|------------|
| D2 氘气 | N ₂ or air | 0% - 100% | 0% - 0.5% | 98% - 100% | 是 |
| H2 氢气 | N ₂ or air | 0% - 100% | 0% - 0.5% | 98% - 100% | 是 |
| H2 氢气 | Ar | 0% - 100% | 0% - 0.4% | 99% - 100% | 是 |
| H2 氢气 | He | 20% - 100% | 20% - 40% | 85% - 100% | On request |
| H2 氢气 | CH ₄ | 0% - 100% | 0% - 0.5% | 98% - 100% | On request |
| H2 氢气 | CO ₂ | 0% - 100% | 0% - 0.5% | 98% - 100% | On request |
| He 氦气 | N ₂ or air | 0% - 100% | 0% - 0.8% | 97% - 100% | 是 |
| He 氦气 | Ar | 0% - 100% | 0% - 0.5% | 98% - 100% | 是 |
| CO2 二氧化碳 | N ₂ or air | 0% - 100% | 0% - 3% | 96% - 100% | 是 |
| CO2 二氧化碳 | Ar | 0% - 60% | 0% - 10% | - | 是 |
| Ar 氩气 | N ₂ or air | 0% - 100% | 0% - 3% | 96% - 100% | 是 |
| Ar 氩气 | O ₂ | 0% - 100% | 0% - 3% | 96% - 100% | 是 |
| Ar 氩气 | CO ₂ | 40% - 100% | - | 80% - 100% | 是 |
| CH4 甲烷 | N ₂ or air | 0% - 100% | 0% - 2% | 96% - 100% | 是 |
| CH4 甲烷 | Ar | 0% - 100% | 0% - 1.5% | 97% - 100% | 是 |
| O2 氧气 | N ₂ | 0% - 100% | 0% - 15% | 85% - 100% | 是 |
| O2 氧气 | Ar | 0% - 100% | 0% - 2% | 97% - 100% | 是 |

| 测量气体 | 背景气 | 基本量程 | 最小量程 | 最小压缩量程 | 多种气体测量 |
|----------|-----------------------|-----------|----------|--------------|------------|
| N2 氮气 | H ₂ | 0% - 100% | 0% - 2% | 99,5% - 100% | 是 |
| N2 氮气 | Ar | 0% - 100% | 0% - 3% | 97% - 100% | 是 |
| N2 氮气 | CO ₂ | 0% - 100% | 0% - 4% | 96% - 100% | On request |
| NH3 氨气 | H ₂ | 0% - 100% | 0% - 5% | 95% - 100% | On request |
| NH3 氨气 | N ₂ | 0% - 100% | 0% - 10% | 60% - 100% | On request |
| CO 一氧化碳 | H ₂ | 0% - 100% | 0% - 2% | 99% - 100% | On request |
| SF6 六氟化硫 | N ₂ or air | 0% - 100% | 0% - 2% | 96% - 100% | On request |

五、FTC300热导气体分析仪技术参数

| | |
|------------------|---------------------------------------|
| 测量气体 | 基本量程 |
| 线性 | 1%FS |
| 重复性 | <量程的1% |
| 噪音 | <最小量程的1% |
| 零点漂移 | <最小量程的2%/周 |
| 误差（环境温度变化） | <最小量程的1%/10℃ |
| 误差（流量变化@80l/h） | <最小量程的1%/10l/h |
| 误差（压力变化，高于80kPa） | <最小量程的1%/1kPa |
| 预热时间 | 大约30分钟；1小时（小量程） |
| 工作温度 | -5~+50℃ |
| 流量 | 40l/h~150l/h; 60l/h~80l/h(推荐) |
| 响应时间（T90） | <1s @60l/h |
| 气体压力 | 最大20bar |
| 尺寸（没有接头）/重量 | 145mm(宽)x 80mm(高)x 85 mm(深)/1800g(最大) |
| 供电电压 | 18V-36VDC/700mA |
| 安装方式 | 墙壁安装 |

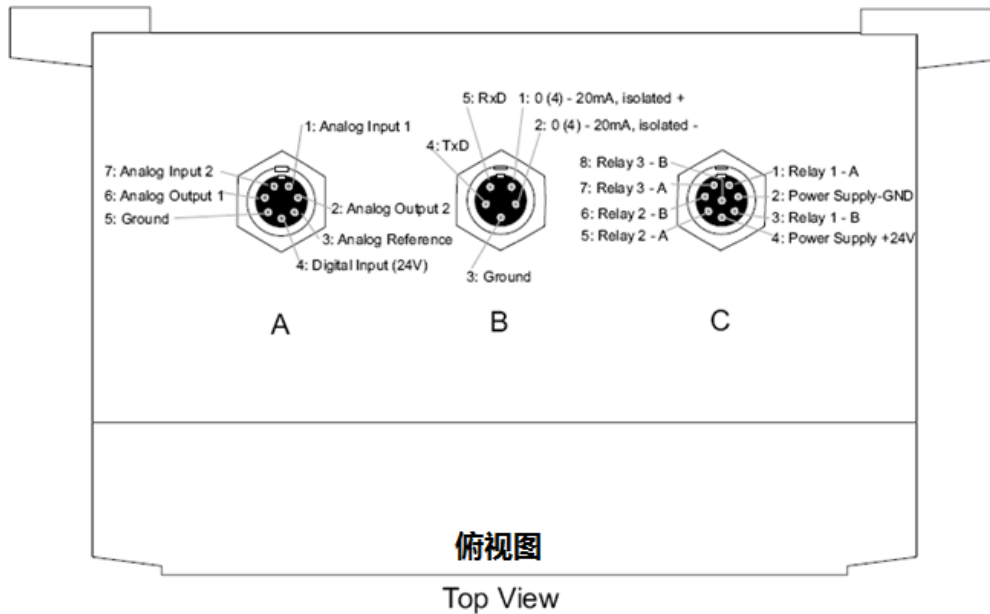
FTC300热导气体分析仪安装



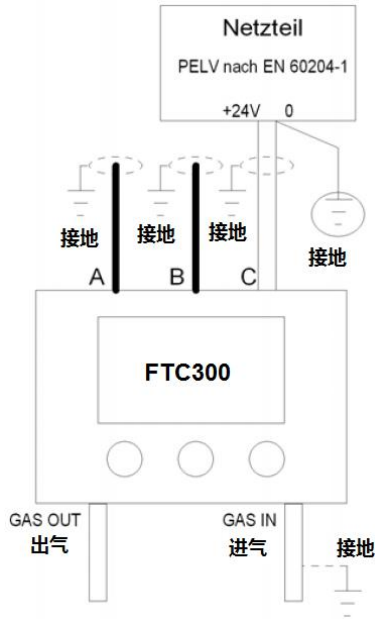
FTC300外壳背面安装孔

Mounting holes shown from the reverse side of the housing

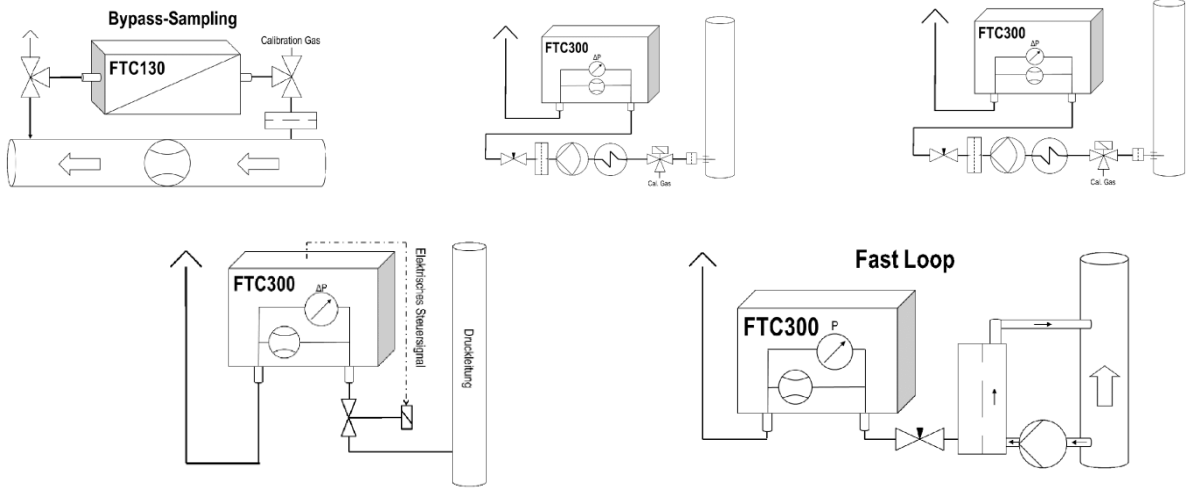
FTC300热导气体分析仪电气连接及接地



接头和电缆：（712，IP67）带挤压接头插头，长度为2米，电缆有开口端。电缆A和C中导体的横截面积为0.14平方毫米，电缆B为0.25平方毫米。



FTC300热导气体分析仪管路连接



安全提示!! 氢气 (H2) 属于爆炸性气体, 请勿带电拆开或安装分析仪!!



Fast Thermal Conductivity Analyzer FTC300



- Accurate and long term stable thermal conductivity measurement
- High sensitivity e.g. 0-0.5Vol.% H₂ in N₂ range; Low noise <10ppm H₂ in N₂
- Precise linearization for the gas mixtures as H₂, He, CO₂, CH₄ in N₂ or Ar and N₂ in Ar on board
- Customized linearization with polynomial up to sixth order
- Multi Gas Mode allows sequential indication of up to 15 binary mixtures
- Isolated 4-20mA output, expandable; free set of start and end within 100 Vol.% range
- Classic 2-point calibration or simple one-gas calibration
- Free set of display indication (ppm or Vol.%) at a resolution up to 1ppm
- Cross sensitivity compensation by feed in of external signal and internal calculation
- Fast response with a T90-time of less than 1 sec (depending on flow rate)
- Pressure proof (20bar) and vacuum leak tight stainless steel (LF316i) gas duct
- Three isolated relays for indication of alarms and instrument status
- RS 232 excess to all values and parameters
- Digital output with 1ppm resolution over the whole 100Vol.% range

- PC-based service program simplifies all settings, linearization and calibration
- Small and robust transmitter in Al-housing for field use (protection class: IP65)
- Dimensions: Width 145mm, Height 80mm (without connectors), Depth 85mm
- Power supply 18V to 36V DC / 700mA

Measuring Ranges:

| Measuring Gas | Carrier Gas | Basic range | Smallest range | Smallest suppressed zero range | Multi Gas Mode |
|-----------------|-----------------------|-------------|----------------|--------------------------------|----------------|
| H ₂ | N ₂ or air | 0% - 100% | 0% - 0.5% | 98% - 100% | Yes |
| H ₂ | Ar | 0% - 100% | 0% - 0.4% | 99% - 100% | Yes |
| H ₂ | He | 20% - 100% | 20% - 40% | 85% - 100% | On request |
| H ₂ | CH ₄ | 0% - 100% | 0% - 0.5% | 98% - 100% | On request |
| H ₂ | CO ₂ | 0% - 100% | 0% - 0.5% | 98% - 100% | On request |
| He | N ₂ or air | 0% - 100% | 0% - 0.8% | 97% - 100% | Yes |
| He | Ar | 0% - 100% | 0% - 0.5% | 98% - 100% | Yes |
| CO ₂ | N ₂ or air | 0% - 100% | 0% - 3% | 96% - 100% | Yes |
| CO ₂ | Ar | 0% - 60% | 0% - 10% | - | Yes |
| Ar | N ₂ or air | 0% - 100% | 0% - 3% | 96% - 100% | Yes |
| Ar | O ₂ | 0% - 100% | 0% - 3% | 96% - 100% | Yes |
| Ar | CO ₂ | 40% - 100% | - | 80% - 100% | Yes |
| CH ₄ | N ₂ or air | 0% - 100% | 0% - 2% | 96% - 100% | Yes |
| CH ₄ | Ar | 0% - 100% | 0% - 1.5% | 97% - 100% | Yes |
| O ₂ | N ₂ | 0% - 100% | 0% - 15% | 85% - 100% | Yes |
| O ₂ | Ar | 0% - 100% | 0% - 2% | 97% - 100% | Yes |
| N ₂ | H ₂ | 0% - 100% | 0% - 2% | 99,5% - 100% | Yes |
| N ₂ | Ar | 0% - 100% | 0% - 3% | 97% - 100% | Yes |
| N ₂ | CO ₂ | 0% - 100% | 0% - 4% | 96% - 100% | On request |
| NH ₃ | H ₂ | 0% - 100% | 0% - 5% | 95% - 100% | On request |
| NH ₃ | N ₂ | 0% - 100% | 0% - 10% | 60% - 100% | On request |
| CO | H ₂ | 0% - 100% | 0% - 2% | 99% - 100% | On request |
| SF ₆ | N ₂ or air | 0% - 100% | 0% - 2% | 96% - 100% | On request |

Other gases and ranges on request; Multi Gas Mode "Yes" means that these binary mixtures and in addition one customized gas mixture may be measured sequentially with one instrument

Specification:

| | |
|---|---|
| Dimensions without connectors; weight | 145mm x 80mm x 85mm; max. 1800g |
| Power supply | 24V DC (18V to 36V), 700mA |
| Ambient temperature range | -5°C to 50°C, other on request |
| Linearity | < 1% of range |
| Warm up time | About 30min; 1h for small ranges |
| Flow rate | 40l/h to 150l/h; 60l/h -80l/h recommended |
| T90-time | <1sec at flow rate higher 60l/h |
| Noise | < 1% of smallest range |
| Drift at zero point | < 2% of smallest range per week |
| Repeatability | < 1% of range |
| Error due to change of ambient temperature | < 1% of smallest range per 10°C |
| Error due to change of flow at 80l/h | < 1% of smallest range per 10l/h |
| Gas pressure | Max. 2MPa (20bar) |
| Error due to change of pressure (above 800hPa abs.) | < 1% of smallest range per 10hPa |

Important Notice: The specifications are given for guidance; they might differ for some gas mixture.