



IRwin

Methane Leak Detector 甲烷/可燃气体泄漏检测仪

FOR SAFETY – INFICON ALWAYS WITH YOU

英福康始于和你一起为了安全

Target Markets

目标市场

Semi and Vacuum Coating	Security and Energy	Refrigeration, Air Conditioning and Automotive	General Vacuum
<ul style="list-style-type: none"> • Display • Optics • Semiconductor • Solar 	<ul style="list-style-type: none"> • Emergency Response • Environmental Health and Safety • Military • Alternative Energy and Petrochemical • Public Utilities 	<ul style="list-style-type: none"> • Refrigeration • Air Conditioning • Automotive • Service Tools 	<ul style="list-style-type: none"> • Research and Development • Vacuum Furnace and Metallurgy • Industrial Vacuum Coating



Security and Energy 安全与能源

产品：

- HAPSITE 化学品鉴定系统及附件
- CMS 水质监控系统
- Fusion 便携式色谱
- IRwin® 便携式燃气泄漏巡检
- 手持式有机挥发物检测仪
- 耗材、培训和服务



IRwin Methane Leak Detector

IRwin 甲烷/可燃气体泄漏检测仪

IRwin in short 简介

- A multi-function Natural Gas detector for easy survey of gas pipe networks
- Proprietary IR sensor for all concentrations
- Certified explosion proof for use in hazardous areas
- 一款便捷燃气管道巡检的多功能天然气检测仪
- 自主研发的全量程红外传感器
- 具备在危险区域使用的防爆认证



IRwin Methane Leak Detector

IRwin 甲烷/可燃气体泄漏检测仪

IRwin in short 简介 (cont.ed)

- Models S, SX, SXT, SXG, SXGT
- Innovative system with modular accessories
- Developed in accordance with DVGW (German Regulations)
- Universal Mode for simplified use (Non-DVGW countries)
- 多种型号S, SX, SXT, SXG, SXGT
- 创新型模块化探头和附件
- 根据DVGW（德国燃气供水科技协会）标准研发（德国规范）
- 用于通用情况的全覆盖通用操作模式（未采用德国标准的国家）



Applications应用

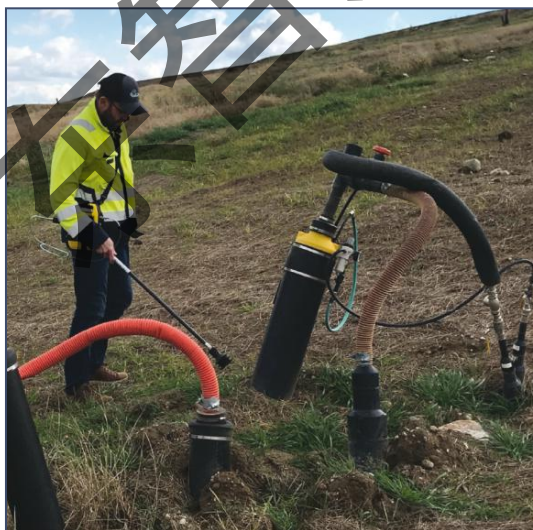
Natural Gas Pipelines Survey天然气管道巡检

- DGVW countries = IRwin with Carpet Probe
- Non-DGVW countries = IRwin with Bell Probe
- 等效德国标准国家 = Irwin+手推车探头
- 非德国标准国家 = Irwin+钟形探头



Landfill Surface Emission Monitoring

垃圾填埋场甲烷排放监测



Innovation Improves 创新与提高

IRwin Technology IRwin技术

- IR sensor developed for low ppms to high volume%
- Fast reaction – short recovery
- Improved ergonomics for operator
- Modular system to allow operator to bring more tools during survey walks
- Bluetooth and GPS as standard
- 检测范围从ppm到高浓度Vol的红外传感器
- 反应迅速 – 归零快
- 改进的人体工程学设计，方便巡检人员携带
- 模块化探头系统，方便使用人员巡检过程中携带更多探头
- 标配蓝牙和GPS



Innovation Improves 创新与提高

IRwin Technology (cont.ed) IRwin 技术

- Distinguishes swamp gas from natural gas
- IP54 for all weather conditions
- Universal Mode for simplified use
- Generic Calibration enables 1, 2 or 3 points calibration
- 区分天然气和沼气
- IP54防护等级
- 应用于简易巡检的通用巡检模式
- 通用标定模式下，可采用1、2或3点标定



Operating Modes - Universal Mode

运行模式 – 通用模式

For simplified use

简易巡检

- Measuring range is from 1ppm – 100Vol% of Methane (CH_4)
- Simplified use
(mainly for Non-DVGW countries)
- Measured values displayed in large digits
- 检测范围从1ppm至100Vol%（甲烷）
- 全覆盖通用巡检（主要针对采用非德国标准国家）
- 清晰数字显示



Operating Modes – Germany

运行模式 – 德国

Operating modes required by DVGW

德国标准要求的运行模式

-  Above Ground地面巡检
-  Bar Hole打孔定位
-  Confines Space密闭空间
-  House户内巡检
-  Gas Purity置换
-  Ex防爆监护
-  GC Analysis气相色谱分析
-  Ex Tox防爆和有毒气体监护

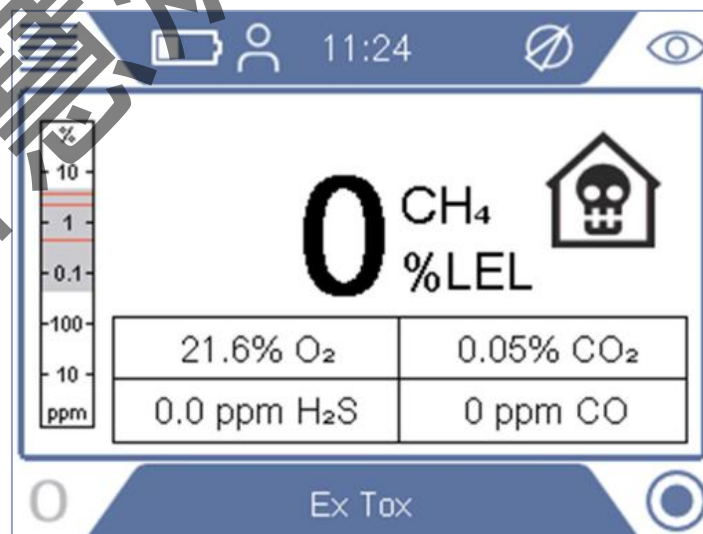


Operating Modes - Tox Mode

运行模式 – 有毒气体监护









For increased safety **更加安全**

- For check and monitoring oxygen levels, toxic gases and explosion risk in the work environment
- Tox Mode meets current international standards
- Software is certified by TÜV Rheinland
- Concentration is measured in %LEL (Lower Explosion Limit)
- 用于工作和施工环境中氧含量、有毒气体和爆炸危险的检测和监护
- 有毒气体监护模式满足目前最新国际标准
- 软件具备TUEV（德国莱茵技术监督协会）认证
- 检测浓度以%LEL显示（爆炸下限百分比）



Models vs Operating Modes

设备型号与运行模式

DETECTOR MODELS	IRwin S	IRwin SX	IRwin SXT	IRwin SXG	IRwin SXGT
Universal Mode	■	■	■	■	■
 Above Ground	■	■	■	■	■
 Bar Hole	■	■	■	■	■
 Confined Space		■	■	■	■
 House		■	■	■	■
 Gas Purity		■	■	■	■
 Ex		■	■	■	■
 GC Analysis				■	■
 Ex Tox			■		■

IRwin Infrared Sensor

IRwin红外传感器

IRwin IR 的红外传感器

- Fast reaction and short recovery time
- No false alarms
- IR-Ethane Analysis on the spot in seconds
- 反应迅速且回零快
- 无误报
- 红外乙烷分析功能可在现场迅速完成



Fast Survey 快速巡检

Quick results with less efforts

快速获得巡检结果

- Fast distinction between natural gas and swamp gas
- Smart and rapid survey with the Carpet Probe
- Minimum need for drilling bar holes thanks to the Bell Probe pulling gas through ground surface
- Quick install fittings to easily apply the right probe
- Fast GC Analysis
- 快速区分天然气和沼气
- 借助灵巧设计的手推车探头，快速完成巡检
- 得益于钟形探头的出色密封和抽吸性能，有效减少打孔数量
- 快插头连接方式，迅速更换安装合适探头
- 快速GC分析（气相色谱分析）



Increased Efficiency 提升效率

Single operator survey 单人巡检

- Only one operator needed for survey
- All needed probes easily carried by one single operator thanks to the modular system
- Remote Control software for detector overlay on map system
- Rapid battery charging in car
- 一人完成巡检任务
- 得益于模块化探头设计，单个巡检人员可携带全部所需的探头
- 遥控软件可将检测界面叠加在地图系统上显示
- 在车内完成快速充电



IRwin – Remote Control

Irwin – 遥控

IRwin Remote Software **IRwin**遥控软件

- Allows for operator to have GIS system in front and IRwin on his back
- Displays critical detector data in window on GIS display
- Bluetooth connection
- Only one operator needed
- For Windows 7, 8 and 10 (32/64 bits)
- Included in all IRwin deliveries
- 巡检人员可将其GIS系统置于胸前，IRwin置于后背
- Windows系统下在GIS上方显示重要巡检数据
- 蓝牙连接
- 单人完成巡检
- 适用于Windows7、8和10（32/64bits）
- 适用于IRwin全系列



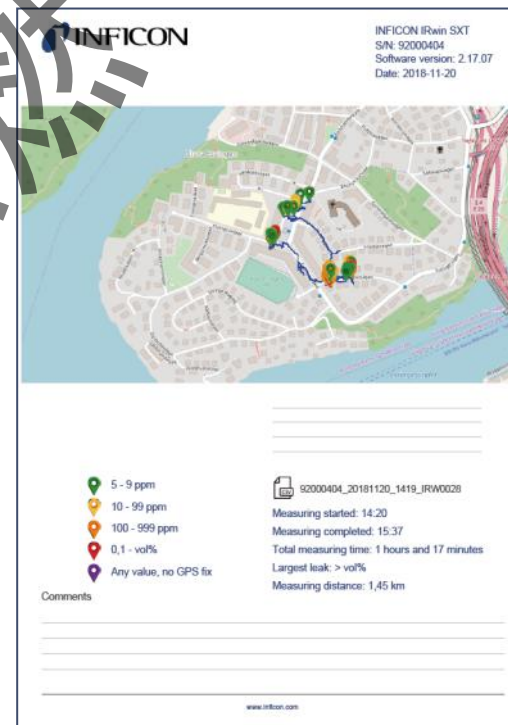
IRwin – Viewing data on PC

Irwin – 在计算机上查看检测数据

IRwin App Software

IRwin APP

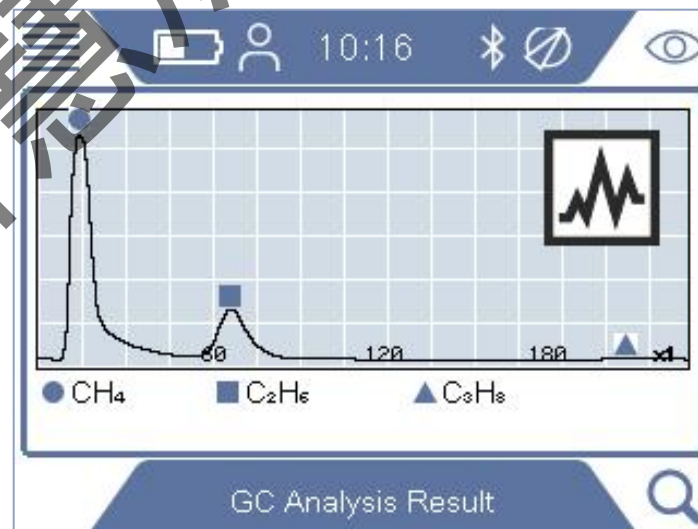
- Displays surveys on map systems
- Pdf reports of recorded survey
- Allows to manage data files – read, save or delete log files from the device
- Allows to stream data in real time under survey – data is shown in graph
- Included in all IRwin deliveries
- 在地图系统显示巡检数据
- 以pdf格式生成巡检记录报告
- 管理数据文件 – 读取、保存或删除设备记录文件
- 巡检过程中实时显示检测数据 – 图形显示
- 适用于IRwin全系列



Innovative Gas Chromatograph

创新的气相色谱

- Included in SXG and SXGT models
- Finds ethane down to 0,5%
- Analyzes samples from 1000 ppm methane
- Ethane content is displayed within 60-80 seconds
- Propane content is displayed within 180 seconds
- Test result stored as pdf-file
- SXG和SXGT具备该功能
- 乙烷含量低至0.5%时可检出
- 气样甲烷含量1000ppm可进行分析
- 60-80秒显示乙烷分析结果
- 180秒内显示丙烷分析结果
- 分析结果以pdf格式存储



Innovative Survey System 创新的巡检探头系统

Modular accessories 模块化附件

- Mono-wheeler Carpet Probe 单轮手推车探头
- Hand Probe 手持式探头
- Bar Hole Probe 打孔定位探头
- Bell Probe 钟形探头
- Extension Connector 延长件接头
- Hand Probe Flexible 鹅颈探头 extension
- Flexi Bell 柔性钟形探头
- Swan Neck 小表面探头
- Rod extension 推杆延长件
- Short Rod 短推杆



Innovative Mono-wheeler Carpet Probe

创新的单轮手推车探头

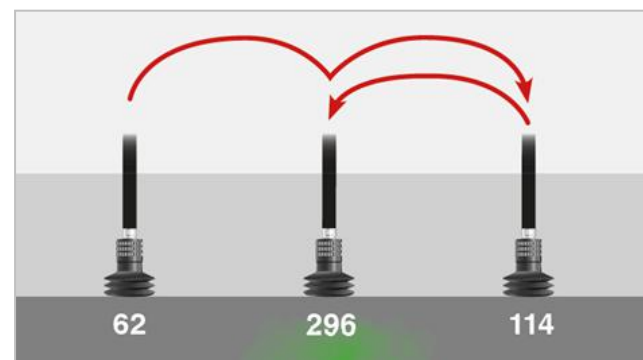
- Mono-wheeler Carpet improves access to cracks
- Reverse flip of carpet enables search under cars
- Transparent hose for water ingress check
- Fork-to-carpet locking mechanism for easy lifts over obstacles (optional)
- Extension rod for different height operators
- 单轮手推车探头更易接近裂缝部位
- 可翻转功能使我们可以对车下的部分进行检测
- 透明材料的吸气管路，及时防止吸入水或其它液体
- 单轮叉架机械式自锁装置，可方便巡检人员将集气毯提升越过障碍



Innovative Bell Probe

改进的钟形探头

- Pulls gas through most surfaces, due to combination of bell design, pump and IR sensor
- Enables pin pointing the leak with a minimum of bar hole drilling
- Enables swamp gas analysis
- Light weight carbon fiber rod
- 得益于将钟罩设计、吸气泵选择以及红外传感器的优化组合，钟形探头可以从大部分表面将气样吸出
- 在泄漏定位过程中，使冲孔数量降至最少成为可能
- 可用于直接取样进行区分沼气天然气分析
- 轻量化的碳纤维手柄杆/推杆



Innovative Bar Hole Probe

创新的打孔定位探头

- Light weight to be easily carried by the operator
- Expands and seals off bar hole by simple rotation
- Connects to hand probe
- 重量轻，便于巡检人员携带
- 旋转后封堵探孔，保持密闭
- 与手持探头连接使用



Hand Probe Flexible Extension 鹅颈探头

- Flexible tip for hard to reach areas
- Extension to the hand probe
- Can be connected to rod for longer reach area
- 便于接近其它探头难以检测的位置
- 扩展手持探头的检测范围
- 可与推杆连接，进行更远距离的检测



Generic Calibration

通用型标定

- Increased robustness against CO₂ levels
- Possibility to choose 1, 2 or 3 points for calibration
- Recommendation to use at least 1-point for calibration at 2,5 Vol% or higher (enables to measure the full range with acceptable accuracy)
- 提高了抵御CO₂干扰的能力和水平
- 可选1点、2点或3点标定
- 在选择使用1点标定时，推荐标气的浓度至少在2.5Vol%或更高
(以便保证在进行全量程检测时依然具有可接受的准确性)



On-Demand Flow Regulator
自适应流量压力调节阀

IRwin Compliance

IRwin所遵循的法规和具备的认证

IRwin Certificates 认证

- ATEX (Europe) 欧洲
- CSA (USA and Canada) 美国和加拿大
- NEPSI (China) 中国
- Kiwa (Netherlands) 荷兰
- IECEx (International) 国际电工协会
- TÜV certificate (Oxygen and toxic capability)
- 德国质量监督协会认证（氧含量和有毒气体浓度检测能力）
- TÜV certificate (Software safety)
- 德国质量监督协会认证（软件安全）



IRwin – Ownership

Irwin – 维护保养分工

Serviceability 维修保养能力

By operator: 使用人员

- Filters 滤芯
- Mat 集气毯
- Wheel 手推车车轮
- Calibration 标定

At INFICON service center: 英福康维修中心

- Pump and battery change 更换电池的泵
 - Sensors 传感器
 - Ex-check 防爆检查
 - Yearly service 年度保养
 - Factory calibration 出厂标定
-
- 2 year warranty of the instrument 仪器2年质保



IRwin – Models vs Gas Sensed

Irwin – 型号与检测气体

Sensing Abilities	IRwin S	IRwin SX	IRwin SXT	IRwin SXG	IRwin SXGT
Methane	■	■	■	■	■
Carbon dioxide	■	■	■	■	■
Ethane	□ ¹	□ ¹	□ ¹	■	■
Propane		□ ²	□ ²	■	■
Butane		□ ²	□ ²	■	■
Carbon monoxide			■		■
Hydrogen sulfide			■		■
Oxygen			■		■

1 = For swamp analysis only
2 = Replaces methane through settings in Ex-mode

S = Survey

巡检

X = Explosion proof

防爆

G = Gas Chromatograph

气相色谱

T = Toxic sensing

检测有毒气体

IRwin - Technical Data

Irwin – 技术参数

Detectable gases 检测气体	CH ₄ , CO ₂ , CO, O ₂ , H ₂ S, C ₂ H ₆ , C ₃ H ₈ , C ₄ H ₁₀
Sensitivity检测范围	1 ppm – 100Vol% CH ₄
Operating time运行时间	>8h
Power Supply 电源	锂电池 标准充电时间: 4 h至100%充满 快充: 3 h至100% 充满 (30 min快充可满足2 h运行)
IP protection防护等级	IP54
Operating temperature 运行环境温度	S/SX/SXG model: -20 to +50°C (-4 to 122°F) SXT/SXGT model: -15 to +40°C (5 to 104°F)
Storage temp. 存储温度	-25° to + 50°C (-13° to 122°F)
Air humidity空气湿度	ax. 95% RH, non-condensing
Dimensions (W x H x D)尺寸	197 x 256 x 62 mm (7.7 x 10 x 2.4 in.)
Weight detector重量	S model: 1.4 kg (3 lb) All other models: 1.6 kg (3.5 lb)
Weight instrument, bell probe, carpet probe	Approx 3 kg (6.6 lb)

IRwin – 一款从使用人员视角出发的检测设备



IRwin - Mobile Methane Leak Detector

IRwin – 便携式甲烷/可燃气体泄漏检测仪

For more information about IRwin Methane Leak Detector contact the nearest INFICON office, visit www.inficon.com and our [YouTube channel](#)

获取更多IRwin信息，请与最近的英福康办公室联系，或访问英福康网站www.inficon.com或我们的[YouTube/YouKu](#)频道

