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INFICON

Wise™ TECHNOLOGY

Protec P3000 (XL)

Helium Sniffer Leak Detector



ACCURATE, RELIABLE LEAK DETECTION AT A DISTANCE

Sniffer leak detection you can rely on

INFICON Protec P3000 and Protec P3000XL Helium Sniffer Leak Detectors are specifically designed for full-time sniffing applications in demanding production environments.

The Protec P3000(XL) brings increased levels of productivity and reliability to the sub-assembly and midproduction testing of refrigerators, freezers, air conditioners, automotive air conditioners, RAC components and similar products. Numerous features make it easy and comfortable to use, while making it more immune to careless or untrained operation. It is also fast to make the best use of your available cycle time. Protec P3000(XL) uses innovative INFICON Wise Technology in this robust, reliable and maintenance-free sensor. The Wise Technology sensor combined with the unique design and ruggedness of the leak detector, provides a very low cost of ownership and high up-time.

USER ADVANTAGES

- Protec P3000 provides the minimum detectable leak rate on the market.
- Protec P3000XL is unique for detecting leaks at a considerable distance.
- A small display in the ergonomically-designed probe handle shows the leak rate, so the operator can concentrate on the sniffing process and monitoring the leak rate at the same time.
- Built-in illumination source of the probe helps precisely position the sniffer tip.
- Multiple alarm functions make sure alarms cannot be overlooked.
- Built-in PRO-Check reference leak allows for easy and fast calibration at the production line at any time.
- I·Guide mode ensures your operator is testing the right locations with the correct technique.
- Leak rates can be displayed in refrigerant equivalents from a gas library.
- New, low-maintenance sensor yields high reliability and low cost of ownership.
- Automatic standby prevents intake of contaminants into the sniffer probe, thus saving filter and sensor life.
- Operating software is available in many languages.

MORE RELIABLE LEAK DETECTION FOR INCREASED PRODUCTIVITY

- The Protec P3000(XL) is very tolerant of variations in operator technique. It detects leaks at a greater distance from the leak location, and the sniffer tip can be moved faster without missing leaks.
  A search mode allows operators to quickly scan for leaks. If any are detected, they can be easily localized.
- When a leak exceeding a preset rejection rate is detected, multiple alarms provide an indication that cannot be overlooked. The background color of the sniffer probe display changes from green to red, the LEDs lighting the sniffer tip flash, an acoustic alarm sounds and the probe handle vibrates.
- I·Guide, a new operator-guiding mode, ensures that each location is tested for the predetermined minimum time. Up to ten testing protocols can be easily preprogrammed to ensure that the correct number of locations for each product are tested. Individual leak rates can also automatically be added together to determine the overall leak rate for the unit being tested. This provides a more accurate basis for pass/fail decisions than the leak rates of individual joints, leading to lower rejection rates and increased manufacturing productivity.
- Protec P3000(XL) comprehensively monitors itself to notify the operator of any problems before any leaks can be missed.

PROTEC P3000RC FOR INTEGRATED LEAK DETECTION SYSTEMS

The Protec P3000RC, a member of the Protec P3000 family, is ideal for integration into automated leak detection systems with no access to the built-in display unit.

The Protec P3000RC can be connected to an external display unit for setup and maintenance. For everyday operation, the display on the sniffer probe can be used.

For easy troubleshooting, the status of the Protec P3000RC (ready, error, etc) is indicated by two small LEDs in the housing of the leak detector even when no external display unit is connected.

The Protec P3000RC is only available in a low flow version.



Protec P3000RC



Built-in light aids leak detection



Calibrating the Protec P3000



Remote calibrated test leak

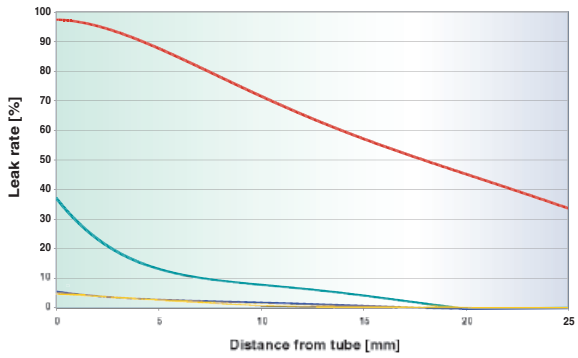
Detecting leaks at a distance

Designed to accommodate extra-large flow through the sniffer line, the Protec P3000XL detects leaks from a considerable distance from the leak. Now even leaks on the backside of a joint are detected quickly and reliably. And with the press of a button on the sniffer probe, the Protec P3000XL switches to the Protec P3000 configuration. This flexibility allows you to search for leaks at a very high flow (at a larger distance), but accurately localize the leak at the lower flow setting.

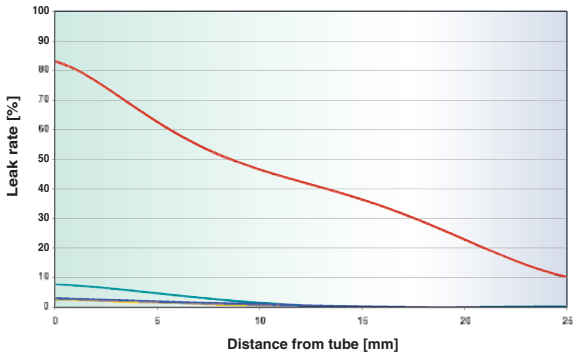
LEAK RATE SIGNAL FOR A LEAK ON BACKSIDE OF A TUBE JOINT



Leak rate signal for leak on backside of a 6 mm (0.25 in) tube joint, leak size 1 x 10^{-4} mbar l/s (i.e. 22 g/a R134a)

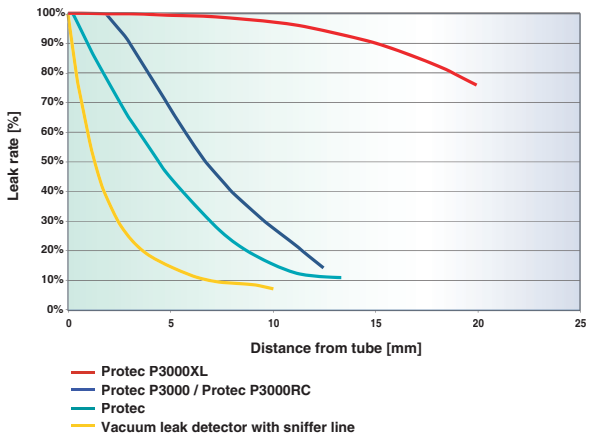


Leak rate signal for leak on backside of a 11 mm (0.45 in) tube joint, leak size 2 x 10^{-5} mbar l/s (i.e. 5 g/a R134a)



LEAK RATE SIGNAL FOR A LEAK ON FRONTSIDE OF A TUBE JOINT





EASY AND COMFORTABLE TO USE FOR FOOLPROOF OPERATION

- After the initial setup, there is no need to access the base unit, which frees the operator to concentrate on the sniffing process. All relevant messages will appear on the probe display and all operator commands can be entered via the two push buttons on the probe handle.
- The built-in PRO-Check reference leak allows the operator to verify the Protec P3000(XL) is functioning correctly at any time. The test leak can also be used remotely with the base unit placed conveniently out of the way.
- Protec P3000(XL) can convert helium leak rates and display them in refrigerant-equivalent leak rates. Differences in fill pressure from helium to refrigerant and the dilution of helium, to save helium cost, can be automatically calculated.
- The sniffer tip is positioned at an angle to the probe handle – an ergonomic design that allows for easy and comfortable access to all leak testing sites.
- A built-in, adjustable illumination source helps operators precisely position the sniffer tip.
- The newly designed graphic display makes entering setup parameters very easy. The menu is self-explanatory.

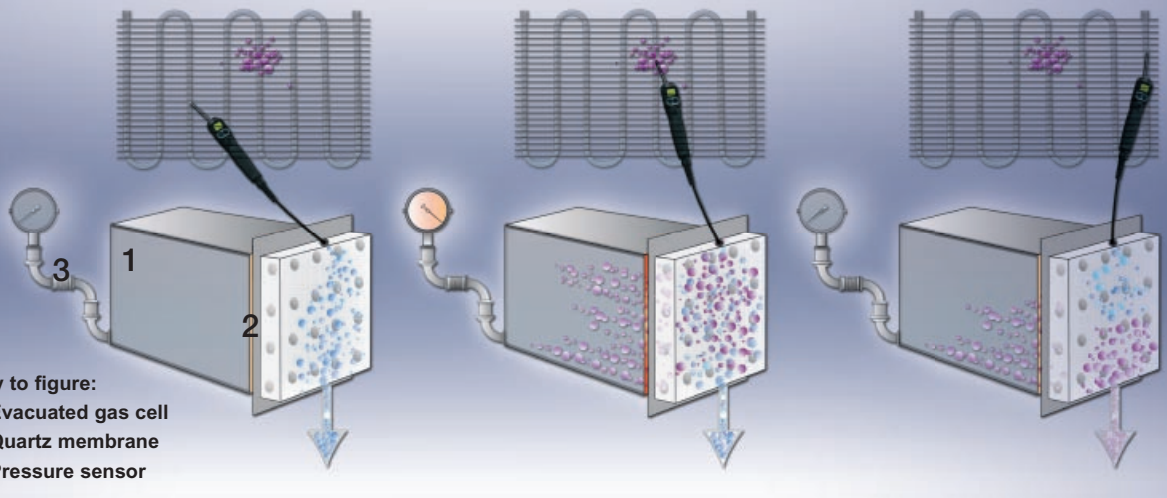
LOW COST OF OWNERSHIP

- In the Protec P3000(XL), INFICON Wise Technology powers the innovative, robust sensor which is maintenance free, so there is no need to change a filament and no interruption in the work process. In addition, INFICON Wise Technology eliminates the need for vacuum conditions, so there is no high-maintenance turbomolecular pump.
- Automatic standby stops the needless intake of contaminants and helium into the sniffer probe while the unit is idle, saving filter and sensor life. Standby mode is automatically activated after a preset time. Operation automatically resumes, as soon as the operator picks up the probe handle.

Wise™ TECHNOLOGY

HOW WISE TECHNOLOGY WORKS

INFICON Protec P3000 sensor powered by Wise Technology, consists of an evacuated gas cell covered by a quartz membrane.



Key to figure:
1 **Evacuated gas cell**
2 **Quartz membrane**
3 **Pressure sensor**

The quartz membrane only has permeability for helium. If helium is detected and is taken in through the sniffer line with air, only the helium fraction penetrates through the membrane, and the pressure in the gas cell rises as detected by the pressure sensor. If afterwards only air is pumped through the sensor, helium will escape the gas cell through the membrane, and the pressure in the gas cell decreases quickly.

INFICON

SPECIFICATIONS

	Protec P3000	Protec P3000XL
Minimum detectable leak rate	1 x 10^{-7} mbarl/s	1x10^{-6} mbarl/s @ 3000 sccm 1x10^{-7} mbarl/s @ 300 sccm
Measuring scale	5 decades	4 decades @ 3000 sccm 5 decades @ 300 sccm
Sensor response time		450 ms
Response time incl. sniffer line		< 0.7s
Leak rate units		mbar l/s; Pa m^3/s; ppm
Refrigerant equivalent leak rates		g/a; oz/yr; lb/yr
Start-up time		approx. 5 min
Dimensions (width x depth x height)		610 x 265 x 370 mm (24 x 10.4 x 14.6 in)
Weight		27 kg (60 lbs)
Gas flow	300 sccm	300 / 3000 sccm
Ambient temperature range		10-45°C (50-113°F)

ORDERING INFORMATION

	Cat.-Nr.
Protec P3000	
230 V, 50 Hz	520-001
100/115 V, 50/60 Hz	520-002
Protec P3000XL	
230 V, 50 Hz	520-003
100/115, 50/60 Hz	520-004
Remote controlled version	
Protec P3000, RC, 230 V, 50 Hz	520-103
Protec P3000, RC, 110/115 V, 50/60 Hz	520-104
Protec P3000XL, RC, 230 V, 50 Hz	520-105
Protec P3000XL, RC, 110/115 V, 50/60 Hz	520-106
Sniffer line for Protec P3000 with integrated display and push-buttons	
SL3000-3, 3 m length	525-001
SL3000-5, 5 m length	525-002
SL3000-10, 10 m length	525-003
SL3000-15, 15 m length	525-004
Sniffer line for Protec P3000XL with integerated display and push-buttons	
SL3000XL-3, 3 m length	521-011
SL3000XL-5, 5 m length	521-012
SL3000XL-10, 10 m length	521-013
SL3000XL-15, 15 m length	521-014
Holder for sniffer probe	525-006
Sniffer line adapter for system integration	
for Protec P3000	525-005
for Protec P3000XL	521-015
Oil / water protection tip	521-016
Spare filter for protection tip	521-017
XL filter cartridge	521-018

	Cat.-Nr.
Sniffer tips for SL3000 (Protec P3000)	
ST 312, 120 mm, rigid	12213
FT 312, 120 mm, flexible	12214
ST 200, 200 mm, rigid	12218
FT 250, 250 mm, flexible	12266
ST 385, 385 mm, rigid	12215
FT 385, 385 mm, flexible	12216
FT 600, 600 mm, flexible	12209
ST 400, 400 mm, 45° angled	12272
Sniffer tips for SL3000XL (Protec P3000XL)	
ST312XL, 120 mm, rigid	12280
FT312XL, 120mm, flexible	12281
ST385XL, 385 mm, rigid	12282
FT385XL, 385 mm, flexible	12283
FT250XL, 250 mm, flexible	12285
PRO-Check reference leak - Optional	521-001
Spare reservoir for PRO-Check	521-010
Display unit for Protec P3000RC	
Table top version	551-100
Rack version	551-101
Connecting cable for display unit	
5 m length	551-102
0.7 m length	551-103

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Due to our continuing program of product improvements, specifications are subject to change without notice.

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