

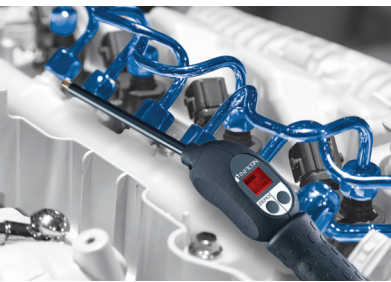


Ecotec E3000®

Multigas Leak Detector

LEAK TESTING MOBILE AIR CONDITIONING AND FUEL RAIL SYSTEMS IN ONE STEP

Today, almost all new cars are equipped with air conditioning. The refrigerant inside the air conditioner is usually a halogen, which if not contained is harmful to the environment. Also, if the refrigerant leaks out of the air conditioner, its cooling capacity will decrease.



At the same time, the need for lower fuel consumption drives the use of high pressure fuel injection. Fuel leaks can negatively influence the fuel consumption and could cause a fire in the engine compartment. With increasing fuel injection pressures, larger leak rates will be generated by the same size leak.

Typically subassemblies for air conditioners and fuel rails are pretested with helium at the supplier level. During final assembly, connectors within the air conditioning circuit as well as the fuel rail connectors need to be checked for leaks to reduce warranty cost and fulfill the customer's quality perception for a new car. Missing or improperly installed O-rings need to be identified. Additionally, legislation requires lower vehicle emissions, from the fuel system as well as from the air conditioning circuit. All these trends drive the need for more stringent leak testing.



The Ecotec E3000 Multi-Gas Leak Detector is the only instrument available today that detects quantitatively refrigerant and fuel simultaneously—without false alarms from other materials (washer fluid, coolant, lock tight, etc). Ecotec E3000 can be set-up to detect up to four different gases at the same time, making it the

ideal solution for leak testing of air conditioners and fuel rail connectors in just one testing step.

FEATURES AT A GLANCE

- Detects refrigerants and fuel simultaneously
- Clearly distinguishes between refrigerant and fuel leaks
- Well-suited for mixed production lines as each type of refrigerant (e.g. R134a and HFO-1234yf) is detected independently
- Unit can be operated via the probe display and probe buttons without access to the main unit
- Multiple alarms make sure leaks cannot be overlooked
- Built-in illumination source on the probe helps precisely position the sniffer tip
- Built-in ECO-check reference leak allows for easy and fast calibration at the production line at any time
- Detects leaks down to 0.05 g/a of refrigerant

Ecotec E3000 is also ideal for mixed refrigerant production lines. The phase out of R134a over the next couple of years will create a situation where older vehicle models will still be filled with R134a in final assembly while newer models will already be equipped with air conditioners operating with HFO-1234yf, for example. A leak detector that can detect both refrigerants while also clearly distinguishing between them is required for these mixed production lines.

Leak rate requirements for R134a are typically in the range of 5 g/a. As HFO-1234yf is a flammable gas, more stringent leak rate requirements are being discussed. Ecotec E3000 can detect leaks down to 0.05 g/a of refrigerant. Pressure decay testing can only find leaks in the 5,000 to 10,000 g/yr. range.

SPECIFICATIONS

Minimum detectable leak rate	R134a	0.05 g/a (0.002 oz./yr.)
	R1234yf	0.08 g/a (0.003 oz./yr.)
	Fuel (methane)	0.1 g/a (0.004 oz./yr.)
	Helium	1*10 ⁻⁶ mbar l/s (1*10 ⁻⁶ atm cc/s)
	Forming gas (5% hydrogen)	2*10 ⁻⁵ mbar l/s (2*10 ⁻⁵ atm cc/s)
Measuring scale	0.05 – 999.99 g/a (0.002 – 99.999 oz./yr.)	
Sensor response time	0.3 s	
Response time incl. sniffer line	0.8 s	
Maximum number of gases detectable simultaneously	four	
Leak rate units	g/a; oz./yr.; mbar l/s; Pa m ³ /s; ppm	
Start-up time	<2 min.	
Dimensions (W x H x D)	610 x 370 x 265 mm (24 x 14.6 x 10.4 in.)	
Weight	34 kg (75 lb.)	
Gas flow	160 sccm	
Ambient temperature range	10 – 45°C (50 – 113°F)	

ORDERING INFORMATION

Ecotec E3000 Multi-gas leak detector

230 V, 50 Hz	530-001
100/115 V, 50/60 Hz	530-002

Sniffer line 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 tips

ST 312, 120 mm, rigid	12213
FT 312, 120 mm, flexible	12214
ST 200, 200 mm, rigid	12218
FT 250, 250 mm, flexible	12266

Sniffer tips, continued

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
Holder for sniffer probe	525-006
ECO-Check reference leak, R134a*	531-001

Test leaks

R134a, 2 – 5 g/a	12220
R1234yf, 2 – 5 g/a	12235
R600a, 2 – 5 g/a	12221
R290 (Propane), 7 – 8 g/a	12231

* optional, not included with delivery of Ecotec E3000

Learn more about the Ecotec E3000 leak detector on our [website](#).

For more information on automotive testing applications, please visit www.inficonautomotive.com



www.inficon.com reachus@inficon.com

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

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