LEAK DETECTION SYSTEM
LEAK-MASTER® ONE

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Patented Technology
Protected by
European Patent EP 4 627 310

►Video

The LEAK-MASTER® ONE is an in-line system for highly sensitive leak testing of individual MAP packages (one by one) using CO_2. The system tests each package immediately after the packaging process and combines precise leak detection at the micrometre level with a high testing throughput of up to 120 packages per minute.

The LEAK-MASTER® ONE uses CO_2 as a tracer gas. The packages are positioned individually in test chambers using pick-and-place robotics and subjected to a defined vacuum. Any CO_2 escaping through minute leaks causes a measurable rise in concentration within the chamber, which is reliably detected by a highly sensitive CO_2 sensor.

Leaky packaging is clearly identified. In the event of a leak detection, various potential-free contacts are available for communication with upstream and downstream systems, via which, for example, alarms and/or pushers can be triggered and faulty packaging can be specifically diverted. This ensures that no leaky packages reach the customer.
The result: fewer re-inspections, less waste, greater product safety, fewer complaints, as well as increased trust and long-term customer loyalty.

Benefits

- highly sensitive individual packaging testing (one-by-one) using CO_2
- combines high testing accuracy with high speed
- detection of micro-leaks as small as 10 µm, depending on application conditions
- up to 120 cycles per minute, depending on packaging type, leak size to be detected, CO_2 content (min. 10% CO_2) and gas volume in the package
- unambiguous leak identification and targeted ejection of leaky packages
- for flexible and rigid packaging
- various chamber inlays optimised for different packaging formats
- simple, intuitive operation via integrated PLC with touchscreen
- complete quality documentation and data transfer via Ethernet
- robust, easy-to-maintain stainless steel housing with acrylic doors in the upper section

Other models, options and accessories available upon request.

LM4 - B01/6I subject to change

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Type	LEAK-MASTER® ONE
Machine type 6	6 Mini vacuum chambers
Machine type 12	12 Mini vacuum chambers
Conveying width	150 - 430 mm
Drive Mechanism	frequency-controlled belt conveyor
Measuring System	infrared sensor for CO_2
Leak size measurements	10 µm
Measuring range	0 ppm – 5 000 ppm (resolution: 1 ppm)
Response time	approx. 1 sec.
max. CO_2 concentration in ambient air	2 500 ppm (fluctuating CO_2 values impair measurement accuracy)
Leak testing cycle	
Machine type 6	max. 60 measures/min.
Machine type 12	max. 120 measures/min. depends on leak size, CO_2-percentage in package
Operating vacuum	up to 200 mbar abs.
Temperature range	5 – 40 °C (41 – 104 °F)
Humidity of ambient air	max. 90% at 20 °C (68 °F) / max. 50% at 40 °C (104 °F)
Alarms	potential free contact; max. 250 V AC or 24 V DC / 2 A
Communication	- data communication via Ethernet - digital output for take-over cycle - digital output for pusher unit
Compressed air connection	Plug nipple NW7.2 for compressed air coupling / 6 – 8 bar
Housing	stainless steel
Weight	
Machine type 6	approx. 1 400 kg
Machine type 12	approx. 2 200 kg
Mini vacuum chambers	
Test chamber width	240 mm
Test chamber height	90 mm (max. package height = chamber height - 10 mm)
Test chamber length	450 mm (max. package lenght = chamber lenght - 20 mm)
Total length	
Machine type 6	1 500 mm
Machine type 12	2 200 mm
Total width	1 760 mm
Total height	approx. 2 200 mm
Take-over-height	approx. 800 mm
Power consumption	400 V - 50 Hz, 3 Ph/N/PE
Approvals	Company certified according to ISO 9001 and ISO 22000 CE-marked according to: - EMC 2014/30/EU - Low Voltage Directive 2014/35/EU - Machines Directive 2006/42/EC

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