



INTEGRABLE INDUSTRIAL
LEAK DETECTOR
ASI 20 MD



ASI 20 MD: the reliable, flexible and high performance solution for all industrial helium leak test systems

The ASI 20 MD is the latest development of Alcatel's industrial modules of which hundreds are in successful daily operation in a wide variety of industrial leak detection systems throughout the world.

The design is compatible with most industrial leak test environments and applications.

The ASI 20 MD is composed of three separate modules for:

- easy integration: each module is 19" 3U compatible format.
- minimum space required.
- maximum flexibility: the flat control and display panel can be conveniently located up to 150 meters (500 feet) from the electronic module.

The unit incorporates unique, combined, operational features that include:

- gross leak test mode
- fine leak test mode
- sniffing test mode
- automatic calibration
- auto-zero
- auto-diagnostic

In summary: the best solution for any leak detection system

- The ASI 20 MD is ideally suited for easy integration into any leak detection system, including hard vacuum and sniffing tests.
- Thanks to the small size of the vacuum module, conductance and dead volume are optimized offering fast response and cycle time.
- Thanks to the flexibility of the interface (discrete I/O and RS 232), the unit can be totally controlled by a P.L.C.

Key Points

- Flexibility
- Ease of operation
- High level interfacing and built-in capabilities



Complete unit

ASI 20 MD: an extended range of applications

The ASI 20 MD is extremely flexible and offers the highest performance for various industrial requirements.

Integrated into a system, the ASI 20 MD can be used in multiple industrial applications:

Automotive industry

Air conditioning compressors, condensers, evaporators, manifolds and lines, fuel injectors, heat exchangers, aluminium rims, sealed beam lamps and assemblies, airbag cartridges and igniters, gas tanks, heating or cooling radiators, brake lines, plastic vessels,...

Aeronautics/Aerospace

Fuel tanks, window seal systems, pumps, hydraulic components,...

Electrical

Lightbulb and tube manufacturing, circuit breakers and transformers,...

Mechanical

Valves, manifolds, filters, ovens controlled environments, storage tanks, fire extinguishers, gas meters, storage water heaters,...

Refrigeration/Air conditioning

Compressors, evaporators, condensers, heat exchangers, lines and dryers, fittings,...

Package industry

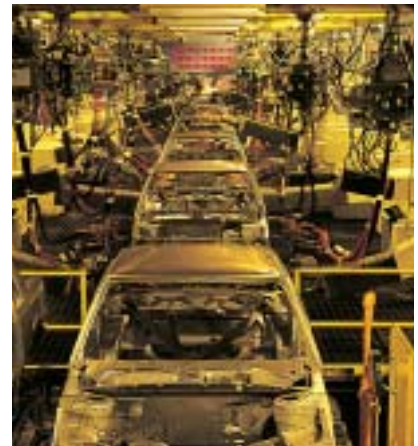
Hermetic medical and pharmaceutical packaging, food containers,...

Medical and pharmaceutical

Catheters, blood filters, hermetically sealed packaging, blister packs,...



Leak detection system



ASI 20 MD: advanced modular leak detector for industrial applications

Vacuum module:

Gross and fine leak test

The ASI 20 MD offers:

- High inlet test pressure, 20 mbar (15 torr) in gross leak test mode for fast cycle time.
- 2 mbar (1.5 torr) in fine leak test mode to avoid the effect of outgassing (water for example) during the cycle time.
- Isolation of mass analyzer from downstream helium contamination by unique molecular drag pump with optimized compression ratio ensures low, stable background.

Advanced analyzer cell

- Dual tungsten filaments.
- Unmatched stability, high sensitivity ($5 \cdot 10^{-11}$ mbar.l/s He), fast response time and excellent resolution thanks to:
 - the unique Multi Channel Plate amplification concept.
 - the 180° magnetic deflection principle.



Vacuum module

Electronic unit:

- Compact design.
- Simplified interfacing for a P.L.C and/or a PC.
- Adaptable cable lengths between the main unit and remote display panel.
- Ability to combine sniffing and hard vacuum test for optimum leak testing reducing cycle time considerably and preventing contamination of the pumping system.
- Automatic helium depollution for both the ASI 20 MD and the associated pumping system.
- Automatic calibration.
- Automatic digital scaling of the main system.
- Auto-zero function.
- Operational either in gross or fine leak test mode.
- Ability to externally control all functions.

Auto-calibration

The ASI 20 MD offers:

- a unique auto-calibration function with a temperature compensated built-in calibrated leak.
- helium background measurement during auto-calibration process to guarantee maximum accuracy.
- an auto-scaling function to have a direct readout on the digital display.

Advanced control and display panel:

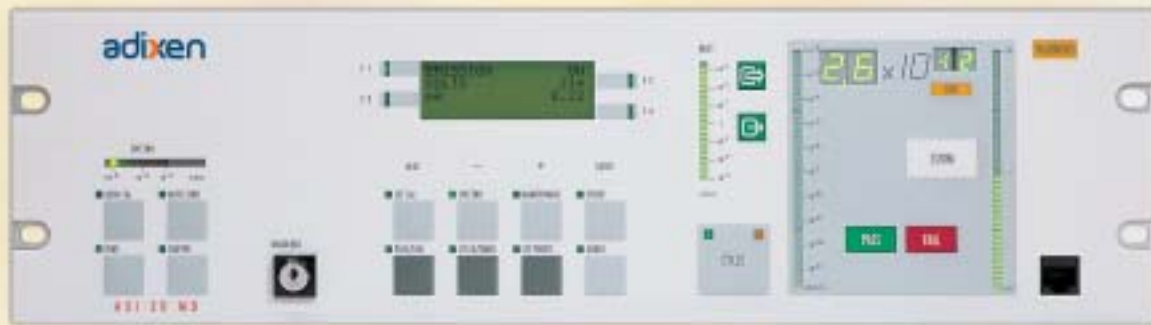
- digital display.
- bargraph display.
- alphanumeric display with clear messages (self diagnostic).
- comprehensive zoom function.
- direct access to main functions (auto-calibration, auto-zero, ...).
- Pass/Fail indicators.

User friendly

- Clear display of helium signal, with both bargraphs and digital display. Correction factor can be used on the digital display to accommodate various units of measurements or to display direct reading regardless of size or pumping systems.
- Auto-diagnostic: clear messages on the alphanumeric display.
- Auto-start with comprehensive self diagnostics
- Automatic ramp-up of the filament with automatic control of the emission according to analyzer cell pressure.
- Automatic reset of the filament in case of adverse conditions.
- Automatic switching from one filament to the other with proper warning and automatic auto-calibration sequence.
- Protected against improper operation.
- Main operational parameters are easily set.
- Direct access to the main functions and components.
- Automatic monitoring of calibration and main events.

ASI 20 MD: an user friendly industrial leak detector

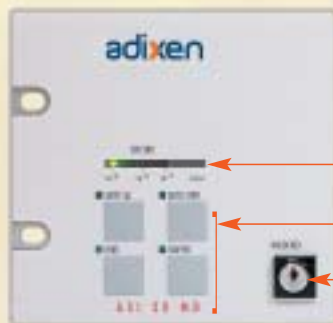
The control panel of the ASI 20 MD has been divided into three different segments to enhance human interface.



Main functions

Tuning and parameters set up with alphanumeric display

Displays and cycle related information



Analyzer cell pressure indication

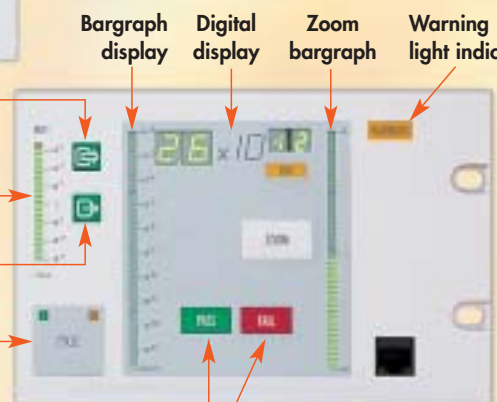
Auto-cal, auto-zero, vent, sniffer functions

Interlock function



Alphanumeric display

Set-up parameters, configurations or other functions



Bargraph display

Digital display

Zoom bargraph

Warning light indicator

Gross leak test mode light indicator

Inlet pressure indication

Fine leak test mode light indicator

Start/stop cycle switch

Go and NoGo lights

Technical specifications

Characteristics		Integrated functions
Smallest detectable leak rate (AVS 2.1 or ISO 3530 standards)	5.10⁻¹¹ atm.cc/s helium (*)	Auto-calibration
Helium reading range (display)	1.4.10⁻¹² to 10⁻² atm.cc/s	Background suppression
Maximum inlet test pressure	20 mbar	Built-in temperature compensated calibrated leak
High vacuum pump inlet pumping speed	7.5 l/s	Dynamic calibration
Time constant on a calibrated leak at the inlet port	< 0.2 s	Gross and fine leak tests
Start up time (including auto-calibration)	< 2.5 min	Audio alarm with variable pitch (90 dBA)

(*) 5.10⁻¹¹ atm.cc/s He = 5.10⁻¹² Pa. m³/s He = 1.8.10⁻¹² Pa. m³/s air

Lock-out of the control panel (key or password)

Interface	Dimensions and weight	
Comprehensive RS 232	Vacuum module	470 x 250 x 130 mm (18.5" x 9.8" x 5.2")
5 discrete I/O including: - 5 adjustable helium set points - 2 adjustable vacuum set points	Control and display panel	480 x 133.5 x 100 mm (18.9" x 5.3" x 3.9") 19" 3U compatible format
2 analog outputs	Electronic module	480 x 133.5 x 300 mm (18.9" x 5.3" x 11.8") 19" 3U compatible format

Power supply

100 V to 240 V - 50/60 Hz - 0.3 kVA

Accessories

Description	PART NUMBER
Long distance sniffer probe a 5 meters tube (16 ft)	SNC1E1T1
Dedicated sniffer probes	*
Special 2005 mechanical pump - 2 stages - LDS connection (**)	205SIXXXX
Fan with support for MDP	104762
Long distance sniffer kit (sniffing cell, 2 female quick connectors, 1.5 m of plastic tube with one male quick connector and one 1/8 male connection). The long sniffer probe has to be ordered separately.	104757
PI3C stainless steel gauge	785423
5 m (16 ft) special cable for PI3C gauge	104760
5 m (16 ft) cable for display panel	104663
10 m (33 ft) cable for display panel	104657

(**) for motor type (single or 3 phases), voltage, line cord set and oil configuration, see in the rotary vane pump section (Pascal Series)

Note: the PI3C gauge with the associated cable gives a display on the remote control and display panel and 2 adjustable vacuum set points with dry contact outputs.

(*) For accessories, see "Accessories for helium leak detectors".

Ordering information

V 0 0 0 0 0 0 0

Code	Sniffing option	
	Without	With
S		1

The sniffing option includes :
 - sniffing cell
 - 2 female quick connectors
 - 1.5 m of plastic tube with one male quick connector and 1/8" male connection.
 The long distance sniffer probe has to be ordered separately.

Code	Cable length for remote control and display panel	
	5 m (16 ft)	10 m (32 ft)
2		4

It is the cable between the remote control display panel and the electronic module. Connectors at both ends.

Code	Cable length for electronic module	
	2 m (6 ft)	5 m (16 ft)
0		D

Code	Main power supply	
	110/130 V-50/60 Hz	200/240 V-50/60 Hz
7		8

Code	Main power cable type				
	U.S.A.	France/Germany	U.K.	Italy	Switzerland
1	2	3	4	5	

For example
 You need ...

ASI 20 MD	V
With sniffing option	1
10 m (32 ft)	4
5 m (16 ft)	D
110/130 V- 50/60 Hz	7
U.S.A.	1

= V 1 4 D 0 0 0 0 0 7 1 0



Patented interstage rotary vane pump (3.2 cfm) required for fine leak test and sniffing modes 2005 IS.

CHINA

Alcatel Vacuum Technology Shanghai
Tel: (86) 21 5027 0628
Fax: (86) 21 3895 3815

FRANCE

Alcatel Vacuum Technology France
Tel: 33 (0) 4 50 65 77 77
Fax: 33 (0) 4 50 65 77 89

GERMANY

Alcatel Hochvakuum Technik GmbH
Tel: (49) 9342 96 10 0
Fax: (49) 9342 96 10 30

ITALY

Alcatel Vacuum Systems S.p.a.
Tel: (39) 039 686 3855
Fax: (39) 039 667 125

JAPAN

Alcatel Japan
Tel: (81) 44 797 5920
Fax: (81) 44 797 5932

KOREA

Alcatel Vacuum Technology Korea
Tel: (82) 2 409 6277
Fax: (82) 2 409 6279

NETHERLANDS

Alcatel Vacuum Technology
Netherlands
Tel: (31) 306 35 13 60
Fax: (31) 306 35 12 21

SINGAPORE

Alcatel Singapore Pte Ltd
Tel: (65) 6254 0828
Fax: (65) 6254 7018

TAIWAN

Alcatel Vacuum Technology Taiwan
Tel: (886) 3 5599 230
Fax: (886) 3 5599 231

UNITED KINGDOM

Alcatel Vacuum Technology (U.K.)
Tel: (44) 1 506 418 000
Fax: (44) 1 506 418 002

USA

Alcatel Vacuum Products
Tel: (1) 781 331 4200
Fax: (1) 781 331 4230



Alcatel Vacuum Technology

98 Avenue de Brogny - BP 2069 - 74009 Annecy Cedex - France - Tel.: 33 (0) 4 50 65 77 77 - Fax: 33 (0) 4 50 65 77 89

www.adixen.com