

Unlock Your Process



Transpector[®] MPS Transpector[®] MPH

Residual Gas Analyzers for
General Vacuum Applications

Superior Performance, Exceptional Reliability

INFICON, the world leader in RGA technology, offers a choice of standard and high performance Residual Gas Analyzers to fit your vacuum application needs. Both Transpector MPS and Transpector MPH feature industry-leading data collection speed, minimum detectable partial pressure (MDPP) and signal-to-noise ratio. Combined with low overall costs of ownership and high mean-time-between-failures (MTBFs), Transpector MPS and Transpector MPH help your bottom line more than any other RGA family on the market.

TRANSPLECTOR MPS – THE STANDARD IN GAS ANALYSIS

Transpector MPS is designed for use in general vacuum applications that require the robust performance of the proven Transpector brand of RGAs. Transpector MPS offers a standard level of performance with either a 100 or 200 amu mass range. The RGA can be equipped with either a standard Faraday Cup detector, or for applications which require the ability to monitor lower levels of gas concentrations, an optional Electron Multiplier detector is available.

TRANSPLECTOR MPH – HIGHER PERFORMANCE FOR MORE DEMANDING APPLICATIONS

Transpector MPH is designed for applications that require the highest level of performance from an RGA. Transpector MPH is available in 100, 200 and 300 amu mass ranges with the industry's lowest MDPP. Transpector MPH can be equipped with either a Faraday Cup or Electron Multiplier detector and offers an optional calibration reference used for easy, automatic mass-scale tuning of the RGA.

SENSOR DESIGNED FOR INDUSTRY LEADING MTBF AND LOW OVERALL COST OF OWNERSHIP

With the help of comprehensive customer feedback and in-depth market analysis, INFICON has revolutionized the ion source design used for both Transpector MPS and Transpector MPH. The new ion source incorporates two filaments in a combined anode, cathode and repeller assembly. The twin filament design allows for extended operation of the RGA and avoids an unexpected system down situation with a backup filament. Transpector MPH also offers application specific filament choices (either tungsten for halogen containing processes or yttria-coated iridium for oxygen containing processes) ensuring that the process itself will not shorten

the filament lifetime. Transpector MPS is equipped with yttria-coated iridium filaments for general vacuum applications. Replacing the filament kit in either Transpector MPH or Transpector MPS is equivalent to replacing the entire ion source of traditional RGAs. This cost savings will significantly reduce the total cost of ownership of both RGAs.

The new sensor design provides the added benefit of a field-replaceable Electron Multiplier (EM), if equipped. You can quickly replace the EM on-site, during regularly scheduled maintenance. The new multiplier was also developed to provide both higher Faraday Cup (FC) sensitivity and increased gain for longer lifetimes.

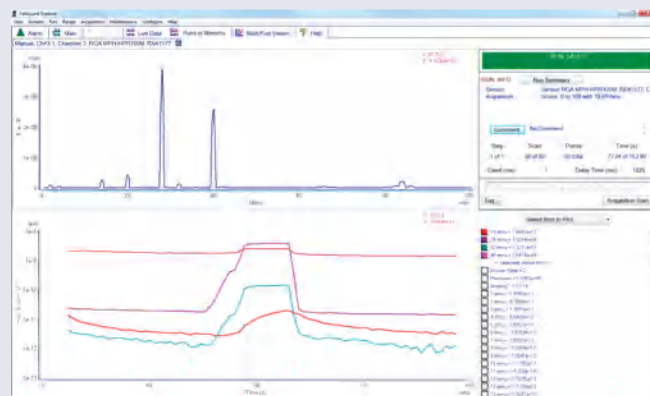
SCALABLE COMMUNICATIONS METHODS FOR MODERN FACILITIES

Transpector MPS and MPH use Ethernet as the default means of communication between the RGA and your computer. For single sensor operation, the sensor can be connected either to

APPLICATIONS

Vacuum Furnace

Vacuum furnaces appear in many shapes and sizes. Regardless of their use, they are all prone to contamination and developing leaks. INFICON Transpector MPS and MPH are designed to protect you from these inevitable problems. Think you have an air leak? Use the Transpector MPS or MPH RGA to scan for gases present in your system. If you find air (nitrogen and oxygen in a 4:1 ratio), use the built-in leak check function to turn the RGA into an in situ helium leak detector. Want to be alerted when an air leak first starts? FabGuard Sensor Controller can be programmed



Air leak as can be seen by increasing signals of N₂ and O₂ in a 4:1 ratio

an existing network or connected directly to the Ethernet port on any computer. Multiple sensor operation is possible using an existing network or with an optional router or Ethernet switch.

SOFTWARE THAT FITS YOUR NEEDS

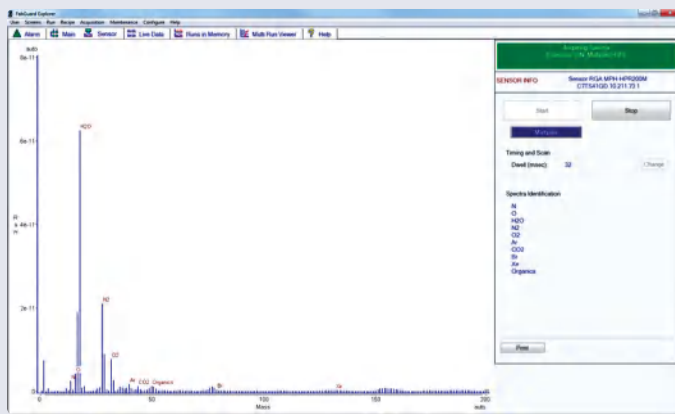


Transpector MPH is fully compatible with the award-winning FabGuard Suite of programs, including FabGuard Integrated Process Monitor and FabGuard Explorer. For ease of operation, Transpector MPS

is designed for use in FabGuard Explorer. Both RGAs also offer an onboard web server which allows for software-free operation of your Transpector MPS or MPH from any network connected device. This web server isn't just a simple program that allows for standard data viewing. Instead, the web server allows for all of the manual data viewing techniques that you expect along with the standard maintenance functions of leak checking and sensor tuning.

FEATURES AT A GLANCE

- Ultrafast Data Collection
- Calibration reference
- TCP/IP Ethernet connectivity
- Dual Filaments
- Field replaceable Electron Multiplier
- Combined anode, cathode and repeller filament kit
- Interchangeable sensors and electronics
- RoHS Compliant



Vacuum diagnostics identifies gases present in your vacuum system

to use Transpector MPH to detect the formation of air leaks and automatically notify you by alarm, trigger (digital outputs or relays) or even an email. Transpector MPS or MPH can also inform you of contamination from pump backstreaming or unclean parts.

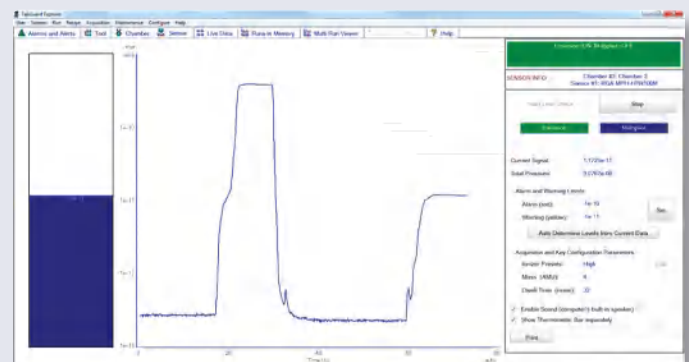
Vacuum Coating

Regardless of the type of PVD you utilize in your process (EB-PVD, IB-PVD, Standard PVD), INFICON Transpector MPS and MPH will provide a view into your system unlike any other monitoring method. Whether it's monitoring the process chamber for air leaks or your gas lines for contamination, Transpector MPS and MPH can provide manual or automated

detection. Need to find out why your chamber isn't pumping down to its base vacuum? Using the built-in Vacuum Diagnostics mode in FabGuard Transpector MPS or MPH will automatically identify the gas species present in your system.

Heat Treating

Any low-pressure heat treating applications can benefit from the use of Transpector MPS or MPH. Is there a particular gas that you are worried will interact with your metal? Transpector MPS or MPH can monitor for that mass and show you its presence and relative amount. Transpector MPS or MPH can also be used for real time leak monitoring or manual leak checking at base pressures.



Leak checking with the Leak Check mode inside of FabGuard

SPECIFICATIONS

	MPS100F	MPS100M	MPS200F	MPS200M	MPH100F	MPH100M	MPH200F	MPH200M	MPH300F	MPH300M	
Sensor Length (vacuum side)	14.3 cm (5.63 in.)	19.3 cm (7.83 in.)	14.3 cm (5.63 in.)	19.3 cm (7.83 in.)	14.3 cm (5.63 in.)	19.3 cm (7.83 in.)	14.3 cm (5.63 in.)	19.3 cm (7.83 in.)	14.3 cm (5.63 in.)	19.3 cm (7.83 in.)	
Mass Range	1 to 100 amu		1 to 200 amu		1 to 100 amu		1 to 200 amu		1 to 300 amu		
Detector Type	FC	EM/FC	FC	EM/FC	FC	EM/FC	FC	EM/FC	FC	EM/FC	
Filament Type	Dual Y ₂ O ₃ /Ir filaments				Dual Y ₂ O ₃ /Ir (for general applications) or tungsten (for halogen environment applications) filaments						
Resolution (per 1993 AVS Recommended Practice)	<1 amu wide @ 10% peak height over the entire mass range										
Temperature Coefficient (during an eight-hour period, after a half hour warm up)	<1% of peak height per degree C (for FC Only)										
Sensitivity – amps/Torr (amps/mbar)	FC	3x10 ⁻⁴ (2.3x10 ⁻⁴)			6x10 ⁻⁴ (4.5x10 ⁻⁴)		5x10 ⁻⁴ (3.8x10 ⁻⁴)		4x10 ⁻⁴ (3x10 ⁻⁴)		
Min. Detectable Partial Pressure – 256 ms dwell Torr (mbar)*	FC	2.6x10 ⁻¹² (3.5x10 ⁻¹²)	N/A	2.6x10 ⁻¹² (3.5x10 ⁻¹²)	N/A	1.2x10 ⁻¹² (1.6x10 ⁻¹²)	N/A	1.6x10 ⁻¹² (2.1x10 ⁻¹²)	N/A	2x10 ⁻¹² (2.7x10 ⁻¹²)	N/A
	EM	N/A	1.5x10 ⁻¹⁴ (2x10 ⁻¹⁴)	N/A	1.5x10 ⁻¹⁴ (2x10 ⁻¹⁴)	N/A	7x10 ⁻¹⁵ (9.3x10 ⁻¹⁵)	N/A	1x10 ⁻¹⁴ (1.3x10 ⁻¹⁴)	N/A	1.2x10 ⁻¹⁴ (1.6x10 ⁻¹⁴)
Min. Detectable Partial Pressure – 4 s dwell Torr (mbar)*	FC				3x10 ⁻¹³ (4x10 ⁻¹³)	N/A	4x10 ⁻¹³ (5.3x10 ⁻¹³)	N/A	5x10 ⁻¹³ (6.7x10 ⁻¹³)	N/A	
	EM				N/A	2x10 ⁻¹⁵ (2.7x10 ⁻¹⁵)	N/A	3x10 ⁻¹⁵ (4x10 ⁻¹⁵)	N/A	4x10 ⁻¹⁵ (5.3x10 ⁻¹⁵)	
Max. Data Rate (analog scans OR selected peaks)	3 ms per point				1.8 ms per point						
Zero Blast Interference at Mass 2	<100 ppm				<5 ppm		<65 ppm		<100 ppm		
Total Pressure Measurement Range, Torr (mbar) **	2x10 ⁻⁷ – 5x10 ⁻⁴ (2.7x10 ⁻⁷ – 6.7x10 ⁻⁴)										
Max. Operating Pressure – Torr (mbar)	5x10 ⁻⁴ (6.7x10 ⁻⁴)										
Max. Bakeout Temperature (electronics removed)	300°C										
Max. Sensor Operating Temperature	FC	200°C	200°C	200°C	200°C	200°C	200°C	200°C	200°C	200°C	200°C
	EM	N/A	150°C	N/A	150°C	N/A	150°C	N/A	150°C	N/A	150°C
Power Input	20-30 V (dc), 30W max – typical 24 V (dc) 1.25 A max										
Ethernet Communications Interface	Standard: CAT5e Ethernet cable connection										
Optional Calibration Reference	Not available				Argon for EM calibration or test mix for tuning						
Relay Outputs	One relay, 24 V at 0.5 amps										
Inputs	One analog input, Two digital inputs										
LED Indicators (green)	One for power status, One for emission status										

* Calculated using one standard deviation of the baseline noise divided by the sensitivity for nitrogen.

** Independent of partial pressure measurement for continuous filament protection and analysis.



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