



GT SCAN



TECHNICAL DATA SHEETS



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DIRECTORY



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GT SCAN

ENVIRONMENTAL MONITORING



Guardtech offer a range of environmental monitoring system (EMS) solutions to best suit the needs of your application. Whether it's budget, lead time or performance that matters most, Guardtech provide a comprehensive choice of rapid rise door options to ensure your process requirements are achieved.

Whether it's a more basic analogue Magnehelic differential pressure gauge you need, all the way up to a comprehensive large-scale EU GMP Annex 11 monitoring system, Guardtech Group's Directors, Design Engineers and Installation team have worked together to carefully select four industry-leading ceiling options for your consideration.

Read on to discover the benefits and compromises of the different choices we have, then use this guide to make the most informed EMS choice possible.

Let Guardtech take your operation to the next level.



SCAN MAX

GT Scan Max is Guardtech's most comprehensive EMS system – an Annex 11-compliant solution that combines state-of-the-art hardware and software designed for monitoring Pharmaceutical applications.



SCAN PRO

GT Scan Pro is a high-spec EMS – an Annex 11-compliant system combining state-of-the-art software and hardware to provide accurate readings for temperature, humidity, differential pressure and more.



SCAN PLUS

GT Scan Plus is a flush-mounted multifunction pressure transmitter that can display up to three critical atmospheric parameters simultaneously and utilises an Annex 11 data acquisition-compliant software.



SCAN LITE

Wall-mounted transmitter with user-friendly touchscreen display in robust, attractive plastic housing. Multifunction sensors featuring interchangeable probes that can display and measure parameters simultaneously.



SCAN FIRE

This product range does not currently include a Fire Rated solution. Please consult a Guardtech rep for more information on your fire safety options.



SCAN HELIC

Guardtech's entry-level environmental monitoring system – a versatile analogue Magnehelic differential pressure gauge that indicates positive, negative or differential, accurate to within 1%.





GT SCAN MAX



GT Scan Max is Guardtech's most comprehensive EMS system – an Annex 11-compliant solution that combines state-of-the-art hardware and software designed for monitoring Pharmaceutical applications.

GT Scan Max is a world-leading facility and environmental monitoring solution, designed to provide unrivalled operational assurance and compliance for the most heavily regulated industries.

Bespoke GT Scan Max environmental monitoring systems combine elite high-performance software with a range of compatible hardware to bring innovative and creative solutions to the most challenging monitoring problems.

Covering all bases from viable air sampling and par-

ticle counting through to temperature, humidity, pressure and airflow measurements, GT Scan Max is an Annex 11-compliant system that has been designed for highly scrutinised GMP applications such as Pharmaceutical manufacturing.

The solution boasts a comprehensive support infrastructure, providing an agile and flexible solution to meet the constantly changing needs of a complex business in a regulated industry.



TECHNICAL FEATURES

The software suite ensures applications can meet the requirements of the EU-GMP Annex 11, cGMP, GAMP and 21 CFR Part 11 by offering a range of benefits.



- An easy-to-use graphical interface
- High level facility mimics and alarm displays
- Trending of real-time and historical data
- Compliance prediction tools
- Batch reporting with electronic signatures
- Reconciled alarm reports with Trend Metrics
- Powerful reporting and data analytics
- The ability to integrate with other data systems via OPC, Modbus and more
- Drivers for multiple particle counters, air samplers and environmental sensors

THREE SOFTWARE VARIANTS

enVigil V FMS: Environmental Monitoring System

A fully configurable EMS system aimed at GMP manufacturing environments. From high throughput biopharmaceuticals to patient specific ATMPs, each enVigil V system is tailored to client needs and aids their regulatory compliance. enVigil V can be configured to run on a single PC running on the Windows operating system to a full Windows Server based application running on virtual machines with optional Hot Standby functionality,

ensuring no loss of data. It features the most powerful reporting tools and electronic signatures to ensure full GMP compliance.

enVigil-PnP: Monitoring for Hospital Pharmacies

Simple to use, cost effective solution which ensures a GMP/GLP compliant system and is ideally suited to modern



day hospital pharmacy and IVF clinic operations. Range of package sizes optimised for systems up to 20 particle counters, 20 active air samplers and 60 environmental inputs.

enVigil-IMS: Isolator Monitoring System

Integrated monitoring for Isolators and RABS Filling Machines. Seamless integration of key environmental monitoring data between the two systems, accessed through a single HMI.

GT SCAN MAX HARDWARE

Alongside the GT Scan Max software suite, the Guardtech Group also supply a range of high-quality hardware to support and enhance the system

Viable Air Samplers – iVAS

conveniently distributed on larger sites and provide:

- Unrivalled efficiency and consistency in microbial monitoring.
- Integrated HPV tolerant controller measuring actual flow and sample volume.
- Compatibility with 90mm media plates.
- Regulatory compliance to EU-GMP Annex 1 and USP 797 requirements.



- Local logging of key data enabling total business continuity in the event of unscheduled server or network downtime.
- Used with enVigil FMS or PnP systems.

- Direct connection to transducers with no additional wiring or external energisation required.

Distributed or Rack-based I/O Modules

Series 2000 and MX5000 I/O modules can be deployed flexibly in central instrumentation panels or

Particle Counters

enVigil monitoring software is compatible with a wide range of particle counter manufacturers

allowing for easy integration with new or existing sensors.

Environmental Sensors

The Series 2000 and MX5000 I/O systems connect to a broad range of industry standard sensors to accurately measure key environmental conditions including:

- Differential pressure
- Humidity
- Temperature
- Airflow

Equipment storage facilities are also catered for and temperature accuracies of $\pm 0.1^{\circ}\text{C}$ can be achieved for the monitoring of fridges, freezers and incubators.



BENEFITS

- EU GMP Annex 11 compliant system
- Designed to meet the needs of the most heavily regulated industries
- Measurements and data provided for a comprehensive range of critical parameters – including viable air sampling and particle counts
- Highly sophisticated reporting and metrics
- UK-based support team

COMPROMISES

- The most expensive solution in the GT Scan EMS range
- Potentially longer lead times on replacement hardware
- Requires on-going maintenance from Guardtech or associated engineers

APPLICATIONS



Pharmaceuticals



Semiconductor



Graphene



Cell & Gene



Battery



Laser & Optical

GT Scan Max suits the most demanding of applications, typically where particulate needs to be controlled to extremely tight tolerances, including rooms required to comply with cGMP conditions outlined in EU GMP Annex 1 and ISO 14644-1.



GT SCAN PRO

GT Scan Pro is a high-spec EMS – an Annex 11-compliant system combining state-of-the-art software and hardware to provide accurate readings for temperature, humidity, differential pressure and more.



GT Scan Pro is Guardtech's intelligent Environmental Monitoring Solution (EMS), designed to provide continuous, real-time oversight of critical cleanroom and controlled environment conditions.

Delivering accurate data collection, automated reporting and instant alarm notifications, GT Scan Pro helps safeguard product quality, regulatory compliance and operational performance across a wide range of applications. The scalable platform continuously monitors key

environmental parameters including temperature, humidity, differential pressure, airflow, CO₂ levels and equipment status, providing complete visibility through an intuitive software interface accessible from desktop, tablet or mobile devices.

Custom dashboards, interactive trend analysis,



audit trails and automated reports support compliance with GMP, GxP, FDA 21 CFR Part 11 and Annex 11 requirements.

With configurable alerts delivered via email, SMS and mobile notifications, GT Scan Pro enables rapid response to critical events, while secure data management and remote accessibility ensure complete confidence in your environmental monitoring strategy.

PRODUCT FEATURES

CORE MONITORING FEATURES

- Continuous real-time environmental monitoring
- Temperature monitoring
- Relative humidity monitoring
- Differential pressure monitoring
- Airflow monitoring • CO₂ monitoring
- Cleanroom environmental monitoring
- Fridge, freezer and cold room monitoring
- Incubator and stability chamber monitoring
- Equipment and process status monitoring
- Digital input and output monitoring



Custom Parameters to Reduce Alarm Fatigue



Action Cards for Step-by-Step Instructions



Mobile App, Email, SMS, Software & Browser Notifications



Save Time with Automatic Data Capture

SOFTWARE & DATA MANAGEMENT

- Centralised monitoring dashboard
- Interactive graphs and trend analysis
- Customisable reports
- Automated report generation
- Audit trail functionality
- Historical data storage and retrieval
- Real-time data visualisation
- Facility map and plan views
- Multi-site monitoring capability

COMPLIANCE/DATA INTEGRITY

- GMP, GxP and Annex 11 support
- FDA 21 CFR Part 11 compatible
- Secure data storage/transmission
- Data integrity protection
- User access controls
- Complete event and action logging
- Automated data capture
- Validation documentation



ALARM & NOTIFICATION FEATURES

- Configurable alarm thresholds
- Instant alarm notifications
- Email alerts
- SMS alerts
- Mobile app notifications
- Browser and software notifications
- Escalation workflows
- Alarm fatigue reduction tools
- Alarm response action cards
- SOP-driven response management

CONNECTIVITY & ACCESSIBILITY

- Remote monitoring from any location
- Mobile app access
- Tablet and desktop compatibility
- Secure cloud connectivity
- Wireless sensor integration
- Two-way communication architecture
- Optional hardwired connectivity
- Secure encrypted communications



Whatever You Need

- Custom alerts, reports, and a variety of sensors to cover any facility.
- Overviews and interactive graphs, tables, and map views for detailed analysis.
- Prioritize data integrity with 2-way communication.



Whenever You Need It

- Remotely view your system and receive alerts through mobile APP, SMS, and email notifications to ensure that alarms reach the necessary users.
- Generate custom report templates and schedule them to run automatically.



Wherever You Are

- Access data and settings from anywhere in the world through the website and mobile app.
- Access the software through your smartphone, tablet, or local PC.

BENEFITS

- EU GMP Annex 11 compliant system
- Measurements and data provided for a wide range of critical cleanroom parameters
- Immediate alarm notification for superior safety
- Smartphone app
- Sophisticated software packages
- UK-based support team

COMPROMISES

- More expensive solution GT Scan Plus and Lite options
- Requires on-going maintenance from Guardtech or associated engineers
- Not designed specifically for the Pharma industry in the same manner as GT Scan Max
- Potentially longer lead times for replacement hardware than Plus and Lite

APPLICATIONS



Medical Device



Healthcare



Oil & Gas



Cell & Gene



Battery



Laser & Optical

GT Scan Pro Environmental Monitoring System (EMS) is suitable for a wide variety of applications in a diverse range of sectors. Whilst it may not provide as comprehensive a range of measurements as GT Access Max, this solution remains a high-performance EMS option for the full range of ISO classifications.



GT SCAN PLUS

GT Scan Plus is a flush-mounted multifunction pressure transmitter that can display up to three critical atmospheric parameters simultaneously and utilises a Annex 11 data acquisition-compliant software.

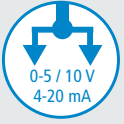


GT Scan Plus is a state-of-the-art wall-mounted panel transmitter that can simultaneously display three parameters including temperature, humidity, air velocity, pressure, atmospheric pressure, CO and CO2 levels, air quality and air flow readings.

This sleek, flush-mounted solution is designed to have minimal impact on

the internal layout of your cleanroom. Its front face is made of a high-grade stainless-steel with an integrated waterproof touchscreen. Equipped with the same technologies as GT Scan Lite, this panel-mounted version provides high reliability and accuracy. In addition, measurements can be recorded and downloaded via intelligent software.

- 

IP66 VHP resistant 316L stainless steel front
- 

3 configurable analog outputs
0-5 / 10 V
4-20 mA
- 

1 x input for external probe
- 

3 visual and audible alarms

Available versions: Optional wireless communication module
Integrated wireless communication module

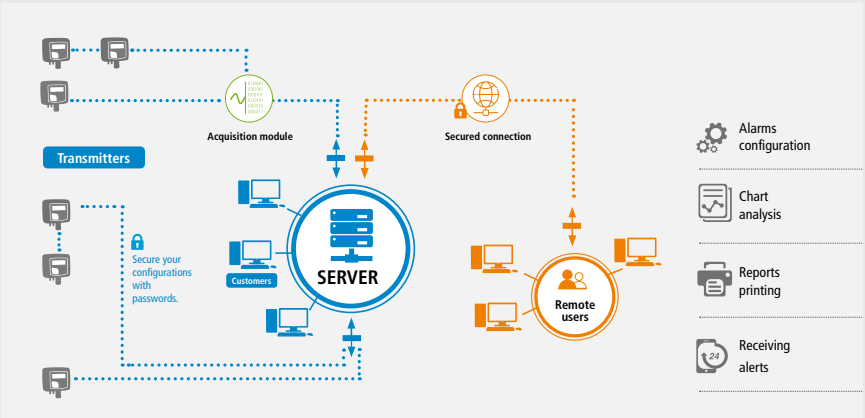
TECHNICAL FEATURES

TECHNICAL DETAILS	
Analogue outputs	3
Wireless communication module	Option
Ethernet Module	N/A
MODBUS Protocol	Yes
Relays	N/A
Visual and audible alarm	3
Type of probes	Interchangeable (not fixed)
Material	Stainless steel

TECHNICAL DETAILS	
Tightness according to model	IP66
VHP* resistant	Yes
PC Software	Control
Mobile App	Control
Mounting	Flush mount
Safety	The on-board menu is secured with an access code.
Standards	All sensors meet CE standard and EMC requirements



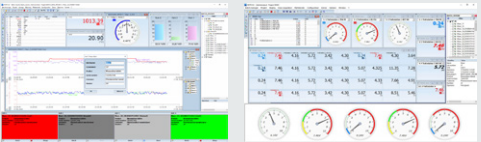
MONITORING SYSTEM



HIGH ACCURACY PROBES



GT Scan Plus offers a state-of-the-art software solution for data acquisition environment monitoring. The measurements collected from the transmitters are compliant with EU GMP Annex 11.



GT Scan Plus can be controlled and configured with a computer, smartphone or tablet via the Control app, allowing the user to manage all the device's parameters via its wireless connection module.

BENEFITS

- Measurements and data provided for an comprehensive range of critical parameters
- Reliable, user-friendly, flush-mounted transmitter hardware
- Utilises a reliable, intelligent software
- Smartphone app provides full device control

COMPROMISES

- Requires on-going maintenance from Guardtech or associated engineers
- Not advisable to be implemented by Pharmaceutical applications
- Software support team not based in the UK

APPLICATIONS



GT Scan Plus is a versatile EMS solution suitable for a significant number of different industries using controlled environments as part of their process. GT Scan Plus is ideal for controlled environments where the option for flush-mounted transmitters is in some way compromised.





GT SCAN LITE

Wall-mounted transmitter with user-friendly touchscreen display in robust, attractive plastic housing. Multifunction sensors featuring interchangeable probes that can display and measure parameters simultaneously.



GT Scan Lite provides differential pressure, hygrometry, temperature, air velocity, air-flow, air quality and Volatile organic compounds (VOC) readings.

For cleanrooms where highly accurate regulation and monitoring of the air parameters is required, GT Scan Lite transmitters provide reliable measurements and allow you to achieve compliance with the strictest standards.

The GT Scan Lite housing is waterproof, rugged and resistant to vaporised hydrogen peroxide (VHP). It also fea-

tures a colour touchscreen for comprehensive viewing and advanced control of measurement parameters.

In addition, measurements can be recorded and downloaded via an intelligent software solution.

-  **2 inputs for interchangeable probes**
-  **4 visual and audible alarms**
-  **4 configurable analog outputs**
0-5 / 10 V
4-20 mA



External protection against solar radiation and rain fall

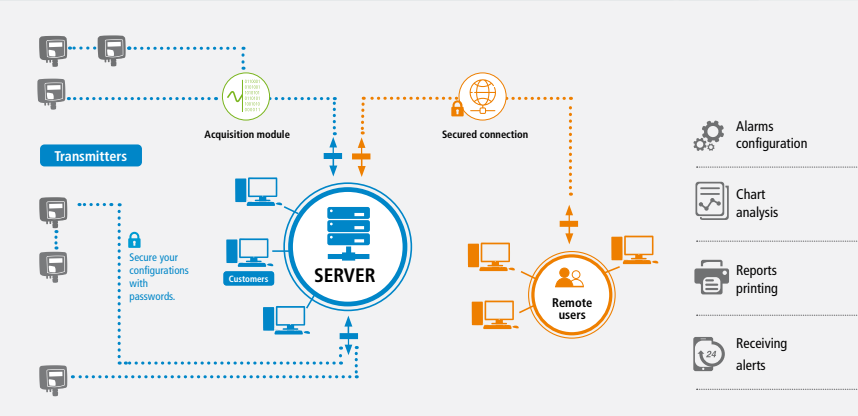
TECHNICAL FEATURES

TECHNICAL DETAILS	
Analogue outputs	4
Wireless communication module	Option
Ethernet Module	N/A
MODBUS Protocol	Yes
Relays	4 (optional)
Visual and audible alarm	4
Type of probes	Interchangeable (not fixed)
Material	ABS (thermoplastic polymer)

TECHNICAL DETAILS	
Tightness according to model	IP66
VHP* resistant	Yes
PC Software	Control
Mobile App	Control
Mounting	On wallmounting plate
Safety	The on-board menu is secured with an access code.
Standards	All sensors meet CE standard and EMC requirements



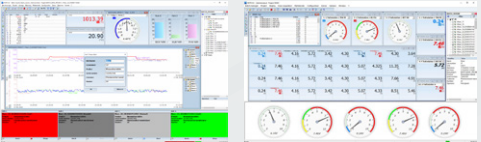
MONITORING SYSTEM



HIGH ACCURACY PROBES



GT Scan Lite offers a state-of-the-art software solution for data acquisition environment monitoring. The measurements collected from the transmitters are compliant with EU GMP Annex 11.



GT Scan Lite can be controlled and configured with a computer, smartphone or tablet via the Control app, allowing the user to manage all the device's parameters via its wireless connection module.

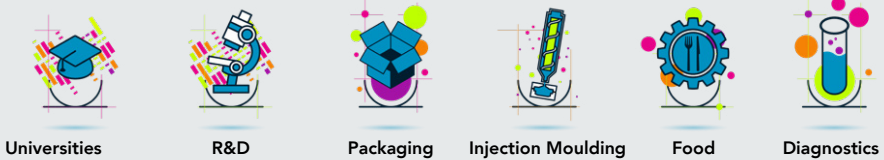
BENEFITS

- Measurements and data provided for a decent range of critical cleanroom parameters
- Robust hardware that copes well with the rigours of deep cleans
- Interchangeable probes that can display and measure parameters simultaneously

COMPROMISES

- Not a flush-mounted solution
- Requires on-going maintenance from Guardtech or associated engineers
- Not advisable to be implemented by Pharmaceutical applications
- Software support team not based in the UK

APPLICATIONS



GT Scan Lite suits the least demanding of applications – most commonly laboratories or non-classified controlled environments – where only differential pressure readings are required for the cleanroom's successful operation.



GT SCAN HELIC



Guardtech's entry-level environmental monitoring system – a versatile analogue Magnehelic differential pressure gauge that indicates positive, negative or differential, accurate to within 1%.

GT Scan Helic is a versatile low differential Magnehelic pressure gauge.

Using a simple, frictionless Magnehelic gauge movement, GT Scan Helic quickly indicates air or non-corrosive gas pressures – either positive, negative (vacuum) or differential. The design resists shock, vibration, over-pressures and is weather-proof to IP67.

Select the High Accuracy (HA) Magnehelic gauge option for an accuracy within 1% of full scale. Also included with the HA option at no extra cost are a mirrored scale overlay and a six-point calibration certificate.

STANDARD



HIGH ACCURACY



TECHNICAL FEATURES

• **Service:** Air and non-combustible, compatible gases (natural gas option).

Note: May be used with hydrogen. Order a Buna-N diaphragm. Pressures must be less than 35 psi.

• **Wetted Materials:** Consult factory. Housing: Die cast aluminium case and bezel, with acrylic cover. Exterior finish is coated grey to withstand 168 hour salt spray corrosion test.

• **Accuracy:** $\pm 2\%$ (-HA model $\pm 1\%$) of FS ($\pm 3\%$ (-HA $\pm 1.5\%$) on -0, -100PA, -125PA, -10MM and $\pm 4\%$ (-HA $\pm 2\%$) on -00, -60PA, -6MM ranges), throughout range at 70°F (21.1°C).

• **Pressure Limits:** -20 in Hg to 15 psig (-0.677 to 1.034 bar); MP option: 35 psig (2.41 bar); HP option: 80 psig (5.52 bar).



• **Enclosure Rating:** IP67.

• **Overpressure:** Relief plug opens at approximately 25 psig (1.72 bar), standard gages only.

• **Temperature Limits:** 20 to 140°F* (-6.67 to 60°C). -20°F (-28°C) with low temperature option.

Size: 4" (101.6 mm) diameter dial face.

• **Mounting Orientation:** Diaphragm in vertical position. Consult factory for

other position orientations.

• **Process Connections:** 1/8" female NPT duplicate high and low pressure taps - one pair side and one pair back.

• **Weight:** 1 lb 2 oz (510 g), MP & HP 2 lb 2 oz (963 g).

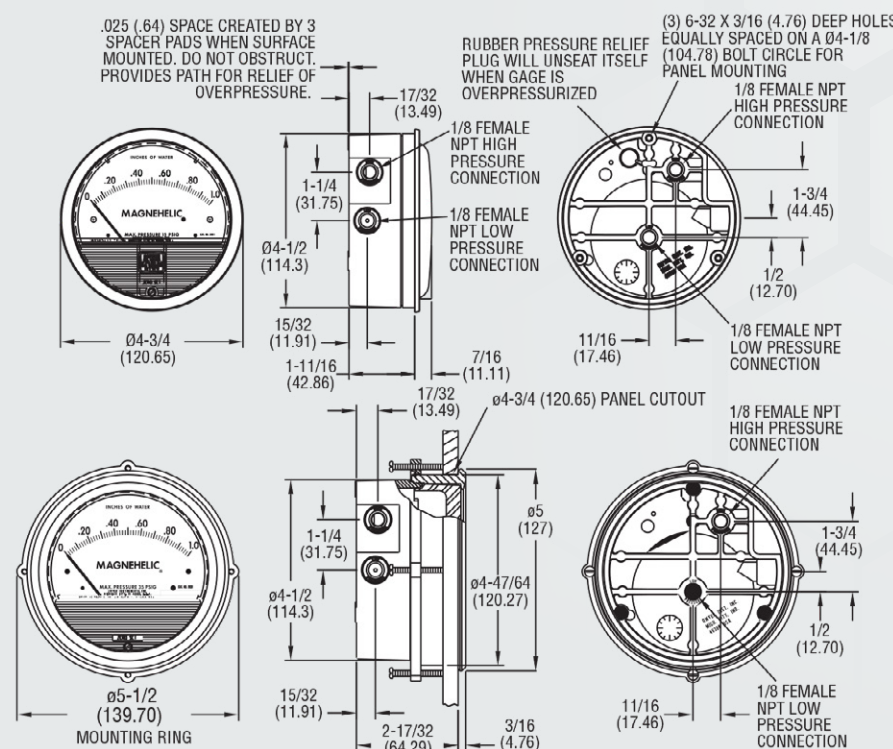
• **Standard Accessories:** Two 1/8" NPT plugs for duplicate pressure taps, two 1/8" pipe thread to rubber tubing adapter, and three flush mounting adapters with screws. (Mounting and snap ring retainer substituted for three adapters in MP & HP gage accessories.)

• **Agency Approvals:** Meets the technical requirements of EU Directive 2011/65/EU (RoHS II).

Note: -SP models not RoHS approved.



TECHNICAL DRAWINGS



*The blowout plug is not used on models above 180 inches of water pressure, medium or high pressure models, or on gauges which require an elastomer other than silicone for the diaphragm.

DIGIHELIC OPTION

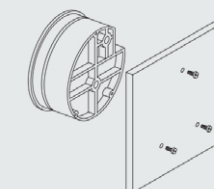


GT Scan Helic is also available as a digihelic option. Featuring a stylish digital display, this 3-in-1 differential pressure controller gives accurate readings for pressure, velocity, and volumetric flow, with optional unidirectional or bidirectional ranges. These units achieve a 1.5% or better accuracy on extremely low ranges, and 0.5% accuracy for ranges at or above 1 in w.c.

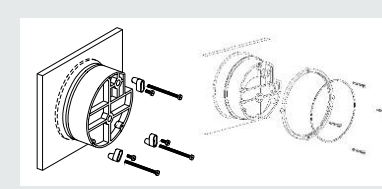
BENEFITS

- Easy-to-read gauge through undistorted plastic face permits viewing from far away
- Patented design provides quick response to pressure changes, meaning no delay in assessing critical situations
- Durable and rugged housing and high-quality components combine to provide long service life
- Flush mounting option

SURFACE MOUNT



FLUSH MOUNT



COMPROMISES

- GT Scan Helic magnehelics are equipped to measure pressure differential only
- Solely analogue device

APPLICATIONS



GT Scan Helic suits the least demanding of applications – most commonly laboratories or non-classified controlled environments – where only differential pressure readings are required for the cleanroom's successful operation.



QUICK-LOOK COMPARISON GUIDE

FEATURES	MAX	PRO	PLUS	LITE
Fully EU GMP Annex 11 compliant				
Temperature & humidity measurements				
Differential pressure readings				
Viable air sampling as standard				
Particle counting as standard				
Isolate and RABS filling monitoring option				
Air velocity & airflow measurements				
Carbon monoxide & carbon dioxide data				
Atmospheric pressure readings				
Outdoor weatherproof solution				
Smartphone app				



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