



# Visionary Sensor Technology

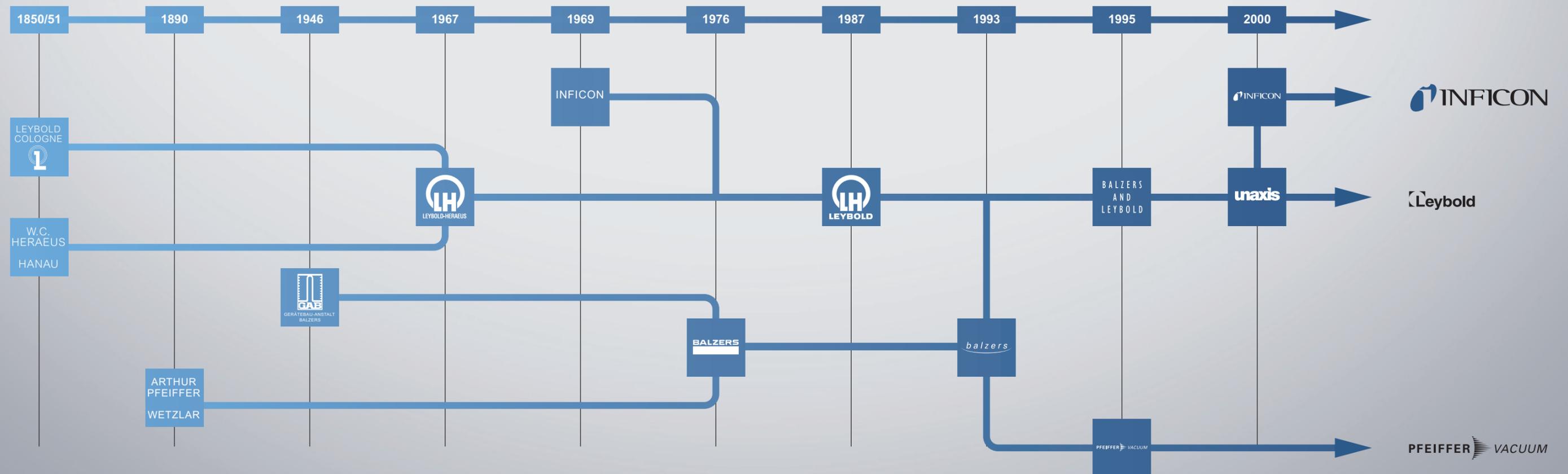
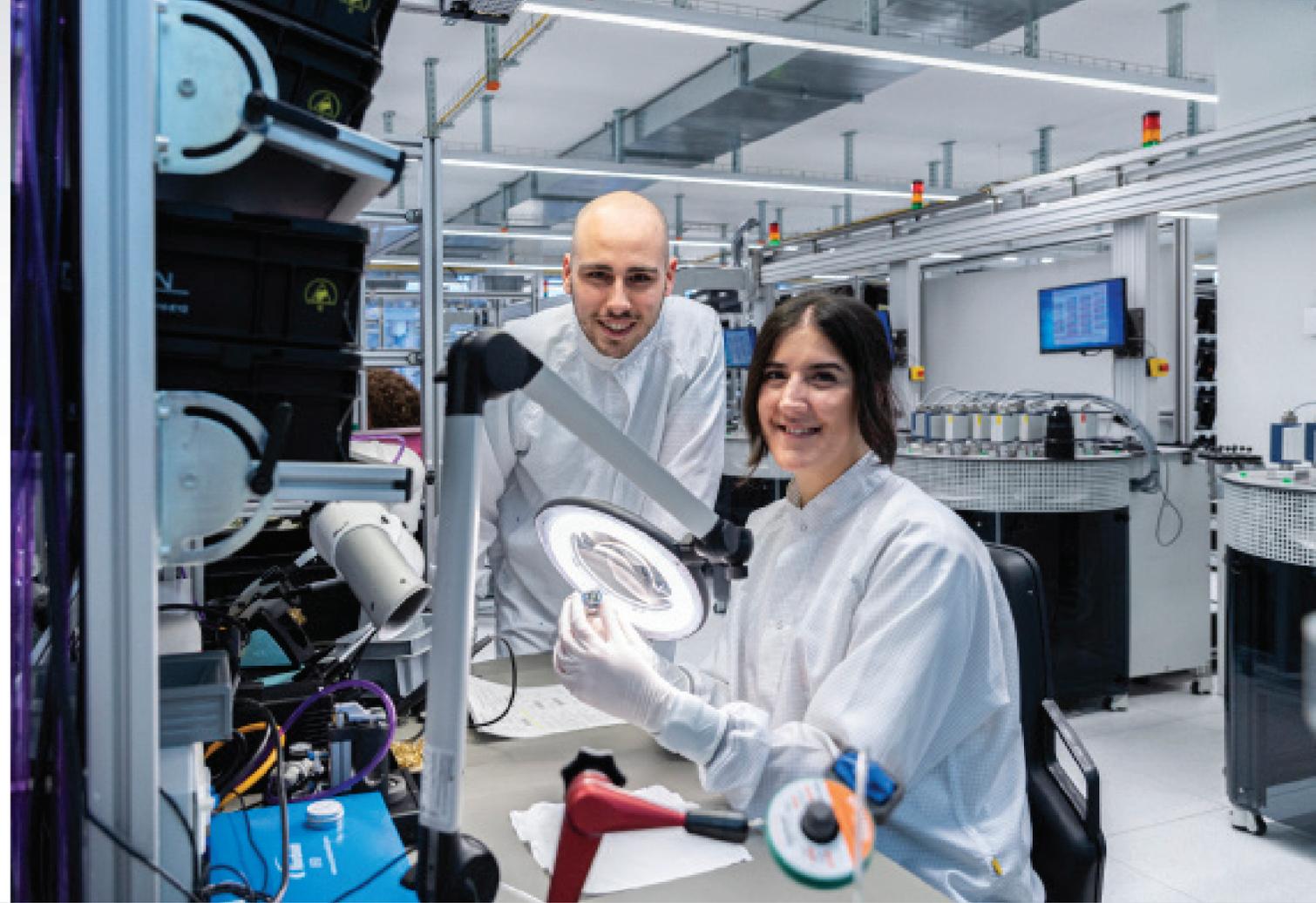
Vacuum Measurement

# Experience and Passion

INFICON provides you with precise pressure measurement instrumentation and quality fittings for any vacuum system. Our ceramic capacitance diaphragm gauges deliver higher accuracy, stability and longer lifetime than conventional metal diaphragm products.

INFICON invented vacuum combination gauge sensors and combine multiple technologies in a single unit to accurately measure a wide range of pressures with reduced complexity and cost.

With over 150 years of vacuum experience, INFICON is the worldwide leader in vacuum gauges. INFICON was formed as an independent company with a new market presence and has world-class manufacturing, sales and service facilities worldwide. The service spectrum includes development, production and sales of innovative products in the vacuum industry.



# INFICON at a Glance

## Products and Applications

INFICON offers vacuum measurement, components, gas analysis, measurement and advanced process control through residual gas analyzers (mass spectrometers), helium leak detectors, multi-gas leak detectors, thin film deposition controllers and monitors, RF sensors, sensor integration and analysis software. INFICON refrigerant leak detectors are the recognized market leaders in air conditioning / refrigeration and automotive and manufacturing for assembly line quality control. For field service, INFICON offers hand-held refrigerant leak detectors, refrigerant charging scales, refrigerant recovery systems and other service tools. INFICON chemical identification systems are used by emergency response, military and security personnel and environmental testing agencies worldwide.

## Quality Standards



For INFICON, quality is not limited to the products only. Our primary goal is the fulfilment of customer needs and customer expectations as copy exactly and change control (CE / CC). Total

Quality Management is an integral part of the thinking and performance of every INFICON employee and our suppliers. INFICON is ISO9001 and ISO14001 certified. These certifications allow us to consistently manufacture high-quality products, while closely monitoring our environmental impacts and the natural resources we use in our processes. Our products are RoHS / WEEE compliant!



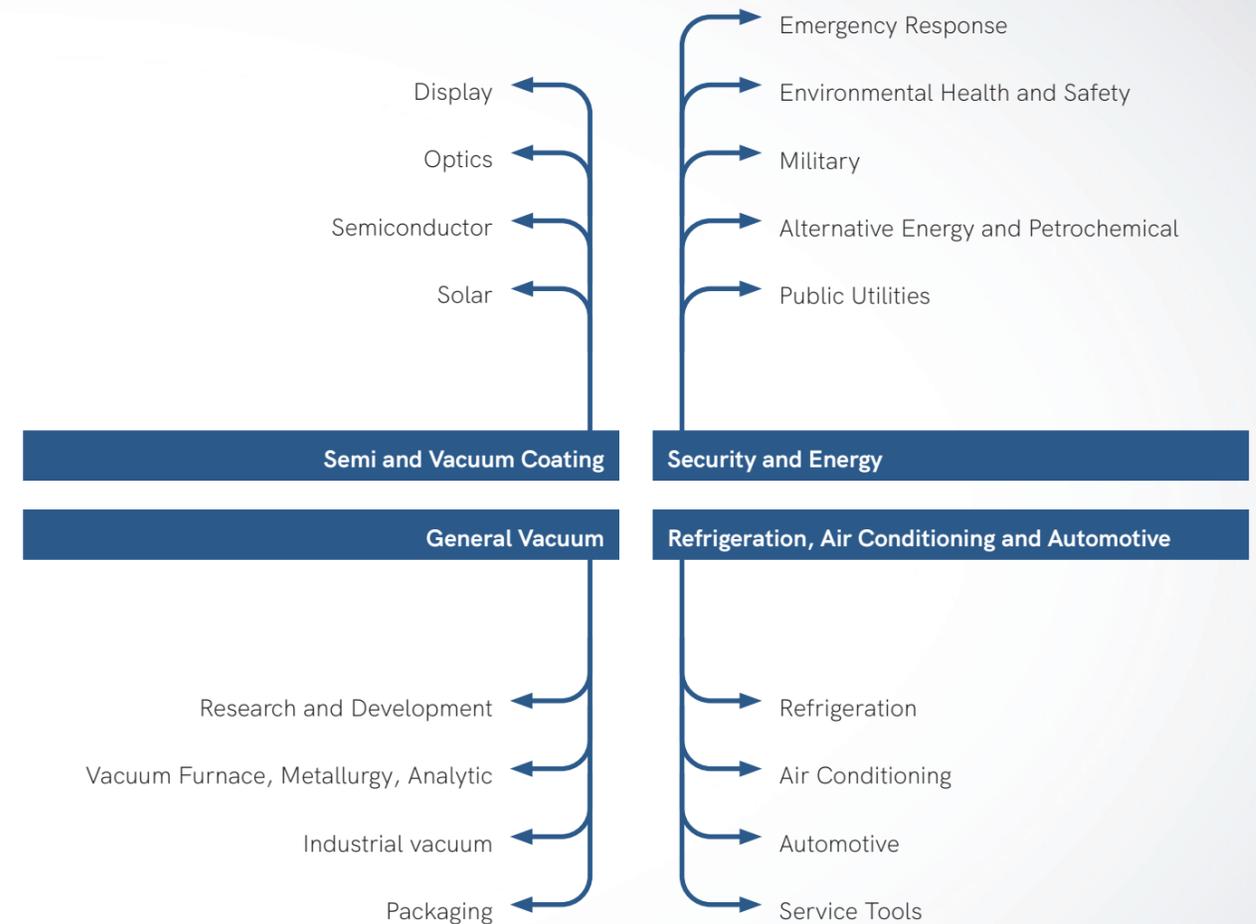
MASS SPECTROMETRY



VACUUM GAUGES



VACUUM GAUGE CONTROLLERS



FITTINGS AND FEEDTHROUGHS



LEAK DETECTORS



THIN FILM CONTROLLERS

# Experts in Precise Vacuum Measurement

Capacitive Diaphragm Gauges (CDG) measure vacuum pressures gas type independent with the INFICON unique ceramic cell. CDGs offer the best corrosion resistance with unmatched scale stability over many years. To cover the individual application needs, INFICON CDGs range from the cost effective, small sized

Porter® via the temperature compensated SKY® CDG025D, to the process gauges SKY®, Edge® and Stripe®. For calibration purposes, the Cube® CDGSci is the best choice. INFICON CDGs are available with all common vacuum flange connections used in the industry and can be customized to others. A variety of different electrical

interface options, including the EtherCAT® fieldbus interface make the integration easy. INFICON also offers pressure switches for process control and interlock functions. Nevertheless, INFICON also supports innovation by developing customized sensor solutions such as the Spot series and custom engineered solutions.

## Capacitance Diaphragm Gauges

### Capacitance Diaphragm

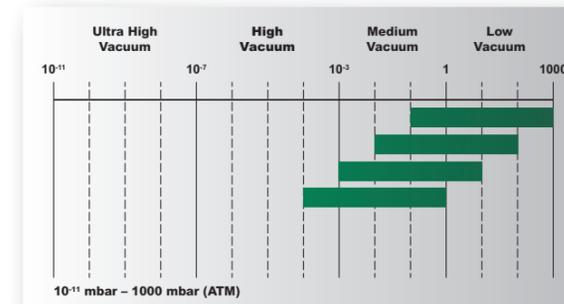
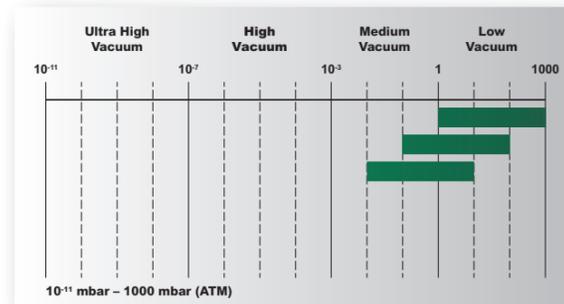


#### Porter® CDG020D

Temperature Compensated Capacitance Diaphragm Gauge

Accurate and gas type independent  
Compact, smallest size in its class

- Sterilization
- Vacuum coating
- Vacuum monitoring



#### Edge® CDG025D2, CDG045D2 & CDG100D2

Temperature Controlled Compact Capacitance Diaphragm Gauge

Compact, saves valuable tool space  
Long lifetime due to double sensor protection  
Corrosion resistant pure ceramic sensor

- Semiconductor and other harsh processes
- Chemical and corrosive applications
- Sterilization

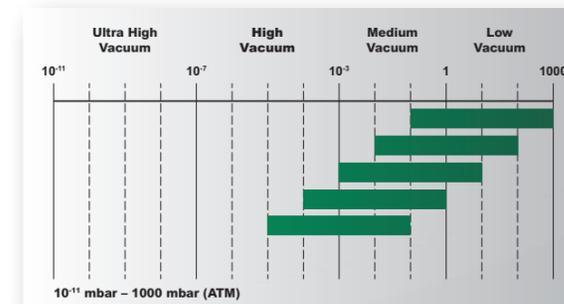
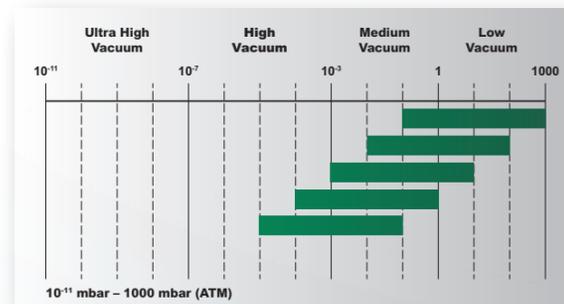


#### SKY® CDG025D & CDG025D-X3

Temperature Compensated Capacitance Diaphragm Gauge

Very accurate and gas type independent  
Excellent long-term and temperature stability  
Corrosion resistant pure ceramic sensor

- Semiconductor and other plasma processes
- Industrial vacuum applications
- Accurate pressure measurement



#### Stripe® CDG045Dhs & CDG100Dhs

Temperature Controlled High Speed Capacitance Diaphragm Gauge

Faster than 2 ms response time  
Flexible integration with EtherCAT fieldbus  
Corrosion resistant pure ceramic sensor

- Atomic layer deposition
- High speed process control
- PVD, CVD, Etch

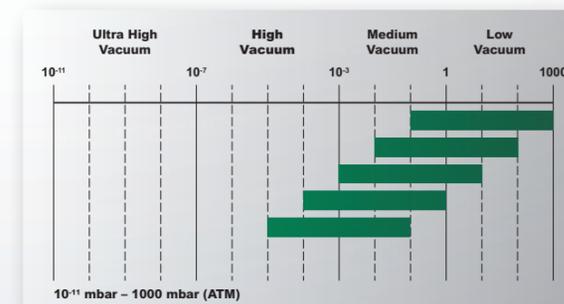
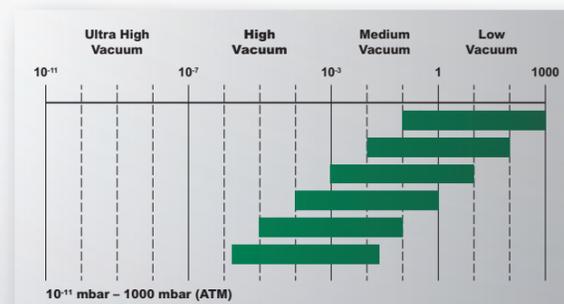


#### SKY® CDG045D - CDG200D

Temperature Controlled Capacitance Diaphragm Gauge

Very accurate and gas type independent  
Long lifetime due to double sensor protection  
Corrosion resistant pure ceramic sensor

- Semiconductor and other harsh processes
- Chemical and corrosive vacuum applications
- Quality and reference pressure monitoring

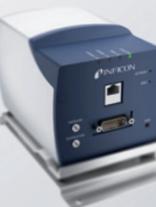


#### Cube® CDGSci

Temperature Controlled Reference Capacitance Diaphragm Gauge

True high precision vacuum measurement  
Full stable output - Proven by PTB  
Flexible communication - Various modern interfaces

- Transfer standard
- Main reference gauge
- Research



# Experts in Precise Vacuum Measurement

## Application Specific CDG Solutions

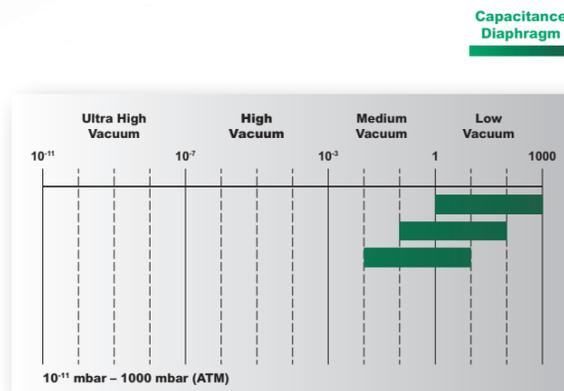


### Spot® CDS500D

Temperature Compensated OEM  
Capacitance Diaphragm Sensor

Excellent repeatability and long-term stability  
Fast response time  
Corrosion resistant pure ceramic sensor

- For integration into vacuum instrumentation and systems

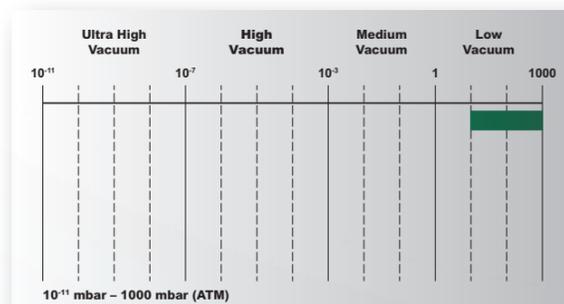


### VSA/VSD200

Absolute / Differential  
Vacuum Switch

Corrosion resistant fully stainless steel sensor  
High accuracy  
Excellent long-term stability

- Atmospheric pressure detection
- Pressure interlocks
- Industrial vacuum applications



### VGD500

Vacuum Gauge Display

Compact small size  
Four digit display for easy read out

### AllCeramic Option

The metal free process CDG

Only ceramic surfaces (aluminum oxide) are wetted to process media. This option is available for all CDG products (SKY, Edge, Stripe)

- Higher corrosion resistance
- Lower metal contamination
- Lower particle contamination
- Longer lifetime, less maintenance

# Experts in Wide Range Vacuum Measurement

INFICON wide range vacuum gauges offer superior accuracy and reliability in compact designs. Four physical measurement technologies cover the whole range of vacuum from ultra-high vacuum up to atmosphere.

The INFICON Pirani technology enables cost effective measurement in the low vacuum range and up to atmospheric pressure. The INFICON miniature capacitance diaphragm technology enables precise and

gas type independent measurement in the low vacuum range, whereas the ultra and high vacuum ranges are covered by the hot or cold ionization technologies.

Each measurement technology is available as a stand-alone sensor or combined with complementary measurement technologies to enable optimum price to performance ratio over the complete vacuum range.

## Thermal Conductivity Gauges

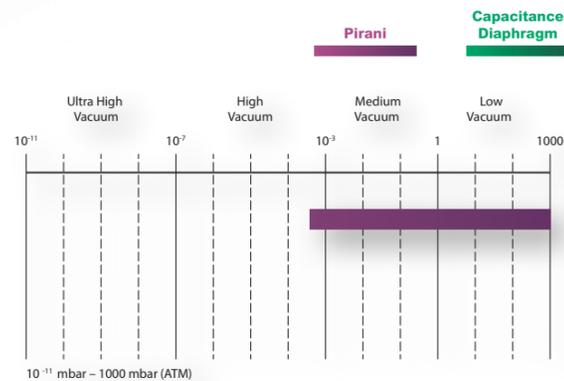


### PSG5xx

Pirani Standard Gauge

Single sensor technology  
Stainless steel measurement cell  
Space saving rugged design  
Corrosion resistant version

- Fore vacuum pressure measurement
- Interlocks in vacuum systems
- General vacuum measurement and control from low to high vacuum

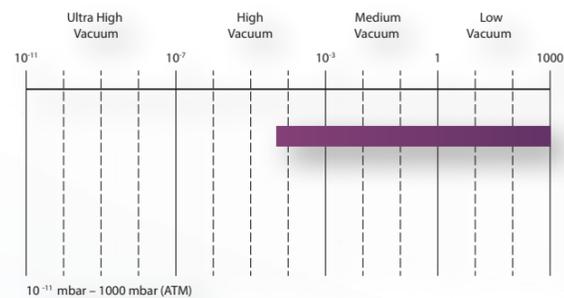


### PSG55x

Pirani Standard Gauge

Single sensor technology  
Tungsten, nickel or fully ceramic coated sensor

- Fore vacuum pressure measurement
- Interlocks in vacuum systems
- General vacuum measurement and control from low to high vacuum

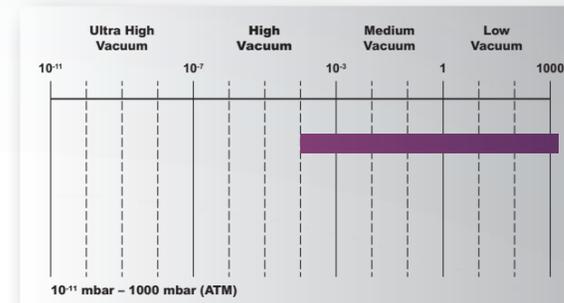
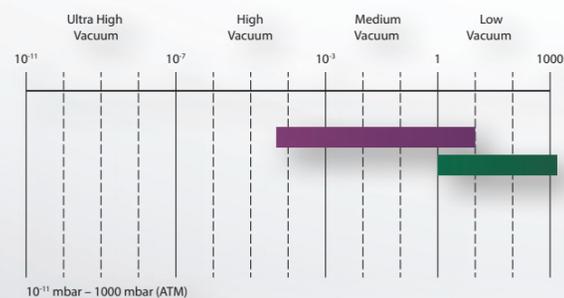


### PCG55x

Pirani Capacitance Diaphragm Gauge

Dual sensor technology  
Tungsten, nickel or fully ceramic coated sensor  
High accuracy and gas type independence above 10mbar

- Load lock control
- Fore vacuum pressure measurement
- Interlocks in vacuum systems

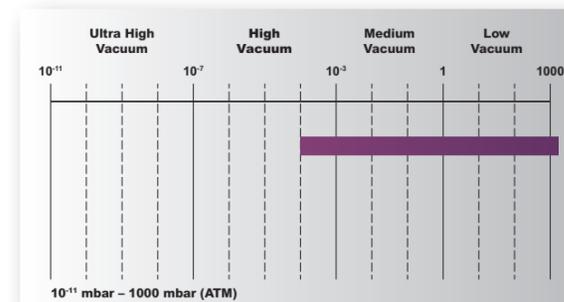


### PGE500

Pirani Gauge Enhanced

Gold plated tungsten filament  
All-in-one active gauge with analog output and integrated RS485 and OLED display

- Fore vacuum pressure measurement
- General vacuum measurement and control from low to high vacuum range

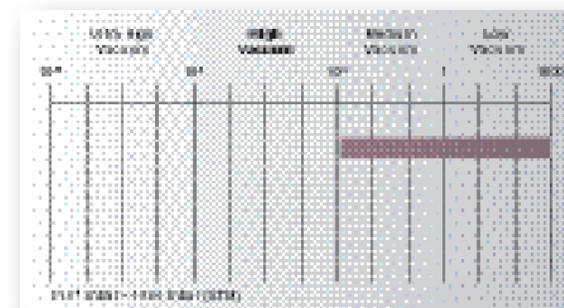


### PGE300

Pirani Gauge Enhanced

Gold plated tungsten filament  
All-in-one active gauge with integrated LED display  
Factory pre-set possibility

- Fore vacuum pressure measurement
- General vacuum measurement and control from low to high vacuum range

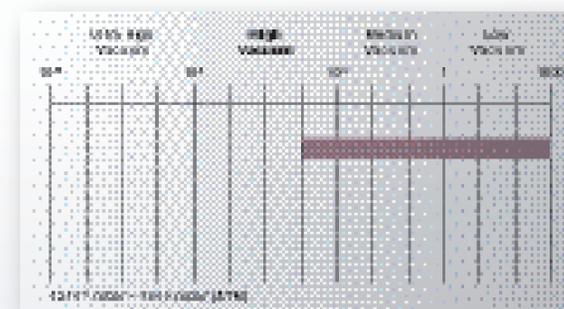


### PSG010 / PSG017 / PSG18

Pirani Standard Gauge - Passive

Long-established and robust design  
Bakeable up to 250 °C  
High ionizing radiation resistant

- General vacuum measurement and control for demanding and/or high temperature
- Applications from low to high vacuum range
- Particle accelerators and fusion machines
- Analytical and R&D applications



### PGE050

Pirani Gauge Enhanced - Passive

Convection enhanced principle  
Gold plated tungsten filament  
Ideal gauge sensor for upgrading your installed convection and thermocouple gauges

- General vacuum measurement and control from low to high vacuum range
- Fore vacuum pressure management



# Experts in Wide Range Vacuum Measurement

## Ionization Gauges (Hot and Cold)



### BPG400 / BPG402 / BAG402

Bayard Alpert Gauge  
Bayard Alpert and Pirani Gauge

Single sensor technology (BAG402)  
Dual sensor technology (BPG400/BPG402)  
Long lifetime  
Automatic emission control

- Semiconductor process and transfer chambers
- Industrial coating
- Measurement and control from atmosphere to ultra-high vacuum (BPG400 / BPG402)



### HPG400

High Pressure Ionization Pirani Gauge

Dual sensor technology  
Long lifetime  
Automatic emission control

- Sputter applications
- Semiconductor process and transfer chambers
- Industrial coating



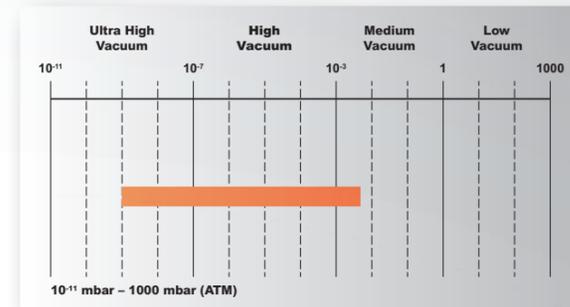
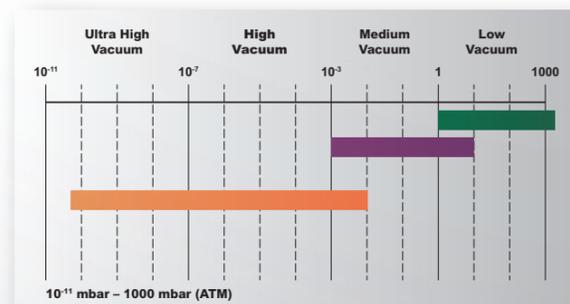
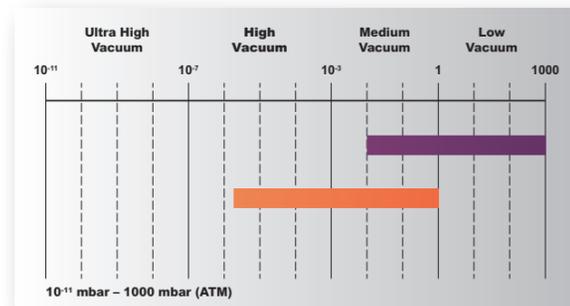
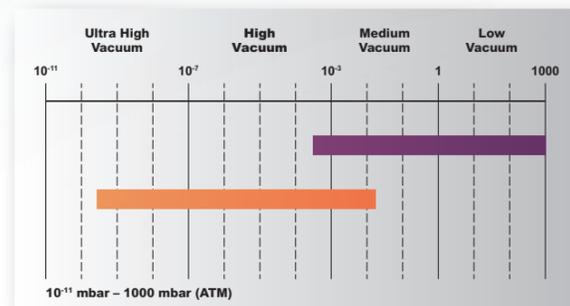
### TripleGauge® BCG450

Bayard-Alpert Pirani Capacitance Diaphragm Gauge

Triple sensor technology  
Gas type independence above 10mbar  
Long lifetime

- Semiconductor process and transfer chambers
- Industrial coating
- Measurement and control from atmosphere to ultra high vacuum

Hot Ion Cold Cathode Pirani Capacitance Diaphragm

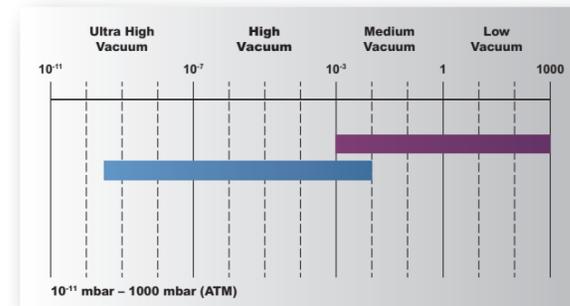


### BAG302

Bayard-Alpert Hot Ion Gauge

Two standard long-life yttrium oxide coated iridium filaments  
Digital OLED display with keypad  
Easy to exchange sensing element

- Semiconductor process and transfer chambers
- Industrial coating
- General vacuum measurement and control in low to ultra high vacuum range

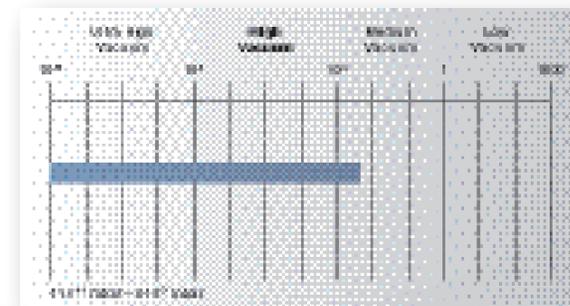


### Gemini MAG5xx / MPG5xx

Cold Cathode Gauge  
Cold Cathode and Pirani Gauge

Long lifetime in harsh environments  
Excellent ignition properties  
No stray magnetic field  
Exchangeable ionization chambers

- Analytical and R&D applications
- General vacuum measurement
- Base pressure monitoring and control, from atmosphere to ultra-high vacuum

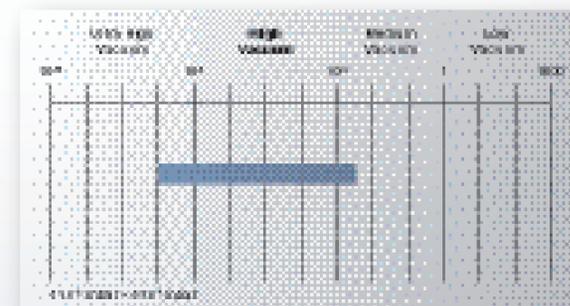


### MAG050 / MAG060 / MAG070

Cold Cathode Gauge – Passive

Long-established and robust inverted magnetron design. Bakeable up to 250 °C and high ionizing radiation resistant. Ceramic feedthrough, ignition aided. Long distance operation

- General vacuum measurement and control for demanding and/or high temperature applications from medium down to ultra-high vacuum range
- Particle accelerators
- Analytical and R&D applications



### MAG084

Cold Cathode Gauge – Passive

Unique magnetic field resistant inverted magnetron  
Innovative double ionization chamber, rare earth magnets, optimised and closed magnetic circuit  
Bakeable up to 230 °C and high ionizing radiation resistant

- Special Fusion and R&D applications presenting strong external magnetic fields



# Experts in Wide Range Vacuum Measurement and Gas Analysis

## Ionization Gauges (Hot and Cold)

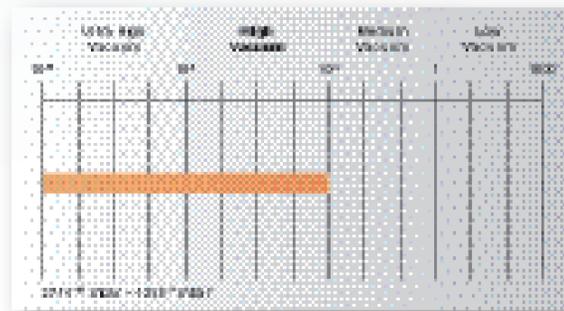


### BAG050 / BAG051 / BAG052 / BAG053

Bayard-Alpert Hot Ion Gauges - Passive

Drop-in solution for most nude and glass tube hot ion gauge heads  
Can be degassed using electron bombardment or resistive degas  
Wide range of emission currents

- General vacuum measurement and control from high to ultra-high vacuum range
- Industrial and analytical applications

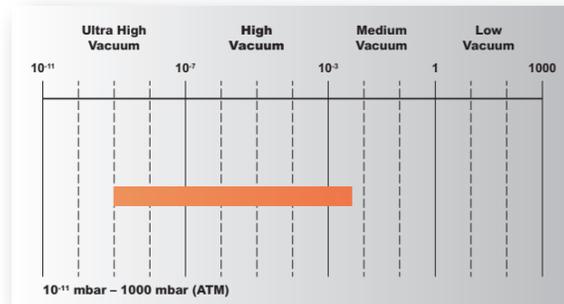


### BAG055

Mini Bayard-Alpert Hot Ion Gauge - Passive

Miniature and metal enclosed sensor  
Drop-in replacement thanks to compact size  
Electron bombardment degassing

- General vacuum measurement and control in the high vacuum range
- Industrial and analytical applications

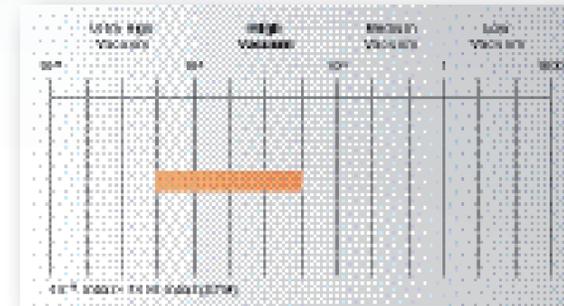
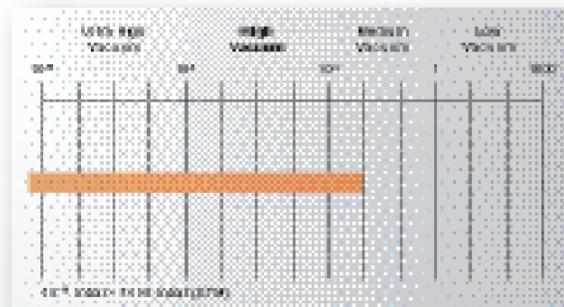


### IE414 / IE514

High-end Hot Cathode Ion Gauge - Passive

Precise Bayard-Alpert (IE414) and extractor (IE514) hot ion gauges  
High accuracy due to individual calibration  
Extreme high temperature bake-out up to 400 °C

- General vacuum measurement and control from medium down to ultra-high vacuum range
- Scientific and R&D applications



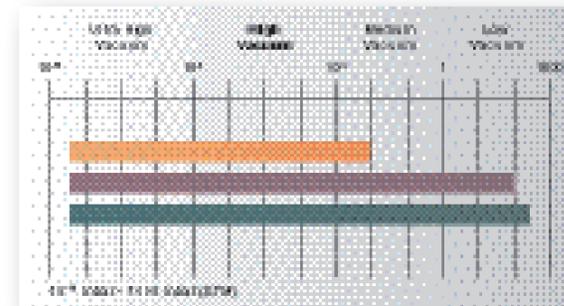
### IRG080

Ion Reference Gauge - Passive

Innovative concept of ionization vacuum gauge  
Electrode system configuration according to ISO TS 6737

Unmatched accuracy down to 1%, predictable gas sensitivity, true pressure measurement

- Demanding processes requiring high measurement accuracy
- Advanced industrial applications pursuing no calibration, calibration and metrology



### BAG552

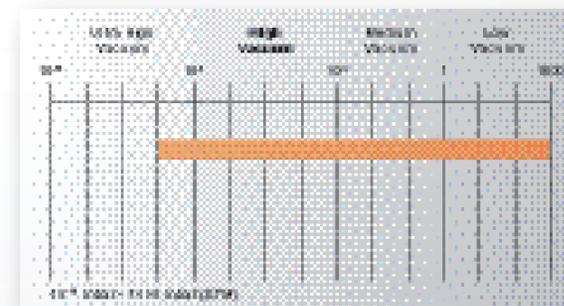
Hot Ion Single & Combi Vacuum Gauges

Combines the advantages of up to three different technologies in a single compact economic package  
Perfect longlasting fit from atmosphere to ultrahigh vacuum

- Single-, Dual, Triple Gauge Sensor
- Various varieties to fit individual demands
- Intelligent filament control on/ off for enhanced lifetime
- Sliding emission mode



## Optical Gas Analyzers



### OPG550

Optical Plasma Gauge

The compact and intelligent solution for vacuum monitoring

- Fast chamber leak check
- Industrial coating
- Increase in productivity and yield
- Smart algorithm for easy integration
- Compact size



# Experts in Vacuum Control and Components

## Gauge Controller



### VGC501 / 502 / 503

Active Gauge Controller for all Active Sensors including CDG

Automatic gauge identification  
High signal resolution  
Up to six free adjustable setpoints

- Remote gauge control applications
- Process pressure control
- Production site and test lab monitoring



### VGC094

Passive Gauge Controller for PSG01x, MAG0x0 and MAG084

Modular all-in solution for vacuum process measurement, control and data log  
Compatible to the wide range of INFICON passive gauges  
Plug-in boards for custom measurement and digital communication interface  
Industrial communication standards (Profibus DP, Profinet) option

- General vacuum measurement and control from low to ultra-high vacuum range
- Particle accelerators and fusion machines
- Analytical and R&D applications



### VGC083

Passive Gauge Controller for BAG05x, MAG05x and PGE050

Flexible solution for vacuum pressure monitoring and controlling  
Simple operation with three individual bright LED displays, parameter/sensor and general settings with softkeys  
Three analog outputs, six setpoint relays  
Remote digital RS232 / RS485 serial communication

- General vacuum measurement and control from low to ultra-high vacuum range
- Industrial and analytical applications



### IRC081

Passive Gauge Controller for IRG080

Operating and display solution to the standardized Ion Reference Gauge IRG080  
User control on all IRG080 gauge parameters set, read-out and switch on/off functionality remotely via USB  
Includes the intuitive «IRC081 User Interface» software

- Advanced industrial applications, calibration and metrology labs



### PGD500

Active Pirani Gauge Display for PSG, PCG, MPG

Large display  
Compact design for use on benchtop or rack mount  
Low cost of ownership pressure visualization device

- Filling stations in the automotive and RAC industry
- Pressure control in light bulb production lines
- General vacuum process and test lab monitoring



### VGC031

Passive Gauge Controller for PGE050

Displays and controls wide measurement range  
Bright digital OLED display with keypad

Four user selectable analog output signals, 2 setpoint relays

- Cost-effective general vacuum measurement and control from low to high vacuum range
- Fore vacuum pressure measurement, filling stations in the automotive and RAC industry



### IM540

Passive Gauge Controller for IE414/514

Versatile ionization gauge controller Combines up to 4 different principles of vacuum measurement Pirani and capacitive diaphragm (active), Bayard-Alpert and Extractor (passive)  
Simple operation with menu guided OLED display  
Built-in RS232 communication interface, optional Profibus DP communication card

- General vacuum measurement and control from low to ultra-high vacuum range
- Analytical and R&D applications

# Experts in Vacuum Control, Components and ALD-Coating

## Components



### Fittings

High- and Ultra-High Vacuum  
Components, Feedthroughs and Viewports

High quality fittings according to international standards,  
Stocked worldwide for immediate delivery  
Wide variety of mechanical and electrical feedthroughs

- All vacuum processes from low to ultra high vacuum
- High current feedthrough applications
- Visual inspection of vacuum systems through viewports



### Heated Components

Heated Exhaust Lines and Assemblies

Fully vulcanized surface heater for low power consumption  
Customized design with molded hard shell covers  
Cool to the touch on the outside

- Exhaust line applications
- Condensation exposed vacuum processes
- All vacuum systems

## ALD-Coating



### xParts

ALD Coating Service

Highly uniform, out of line of sight, thin film ALD coatings for complex 3D structures

- Longer lifetime - less corrosion with dense, pin hole free layer
- Higher process yield - less particles, metal-free surface
- Faster pump down without out-baking

# Maximizing Productivity and Yield

## Leak Detectors

INFICON refrigerant, hydrogen and helium leak detectors are the worldwide leading brand for quality control at refrigeration, air conditioner, food packaging, appliance and automotive manufacturing facilities and their supply chains, as well as in the semiconductor/coating markets. As product quality, safety and environmental concerns lead to more stringent leak testing requirements, INFICON helps you respond by providing a complete line of highly sensitive leak detectors in a variety of configurations for sub-assembly and mid-production quality testing, as well as final testing to ensure system integrity. Field service professionals in air conditioning/refrigeration and automotive rely on the superior performance of our reliable, convenient and affordable service tools.

The INFICON toolbox of market-leading products for service technicians includes innovative refrigerant leak detectors, combustible gas leak detectors, ultrasonic leak detectors, refrigerant recovery systems, refrigerant charging scales and vacuum pressure gauges. With INFICON service tools, you are assured of having the right tool to get the job done quickly and accurately, saving you time and money.



UL3000 Fab Helium Leak Detector



Sensistor Sentrac® Hydrogen Leak Detector

## Gas Analysis Systems

INFICON instruments are used in renewable energy research and production, hydrocarbon processing, refining and chemical productions. From research and development to production, we are investing in gas analysis technologies to help enable you to operate more efficiently. INFICON offers compact, transportable, easy-to-use instruments, like our Micro GC Fusion Gas Analyzer to make measurements in the lab, at the pilot plant or in the field close to the sample point. The accurate analysis provides better understanding of raw materials, process control of intermediates or the quality of final products.



Micro GC Fusion® Gas Analyzer



Transpector® MPH

## Chemical identification and Monitoring Systems

Gas chromatography / mass spectrometry (GC / MS) sets the benchmark for the most accurate identification of organic chemicals of any analytical technique. INFICON technology is being used throughout the world for emergency response, chemical warfare agent detection, early detection of chemical contamination in water source and distribution systems, hazardous waste site investigation and industrial hygiene. HAPSITE ER Chemical Identification Systems give you immediate, laboratory quality results in the field, and gives you the answers you need to make better and faster decisions about critical health and safety issues.



HAPSITE® ER Chemical Identification System

## Thin Film Controllers, Monitors, and Crystals

Control your profit and maximize your competitive edge with market-leading products for thin film deposition, proven expertise, and worldwide support from the technology leader in measurement and control. INFICON controllers, monitors, quartz crystal sensors, and quartz crystals are designed and manufactured to provide the best quality, accuracy, and the longest crystal life in thickness monitoring and process control for PVD applications.



IC6 Thin Film Deposition Controller



# Visionary Sensor Technology

## Excellent Customer Support is a Commitment

INFICON provides a global network of sales and service centers. These centers are staffed with local service and application experts who can assist you in choosing the best solution for your individual product application and provide fast support if service is needed.



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