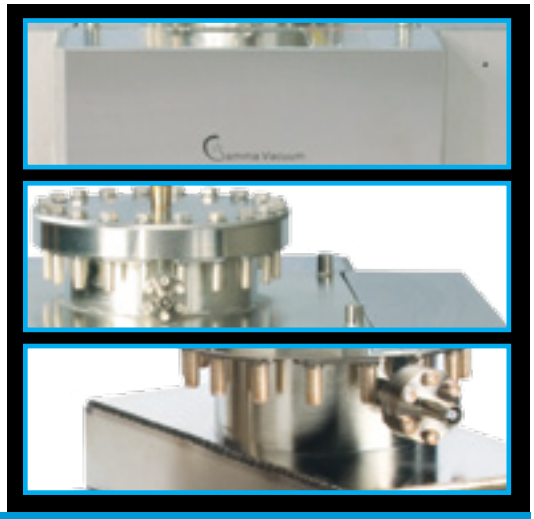
GAMMA ION PUMPS

PERFORMANCE YOU CAN RELY ON



Ion pumps create high vacuum and ultra-high vacuum (UHV) environments in a variety of applications, ranging from portable mass spectrometers to large scale particle accelerators.

Features and Benefits

Ion pumps are used in a wide variety of high and ultra-high vacuum (UHV) environments. They can reach the lowest possible vacuum for an economical cost. In addition, ion pumps have some technical advantages over other technologies:

- Vibration-Free Operation
- Low Operational Cost
- Bakeability
- Low Maintenance
- Pressure Indication
- Permanent Gas Capture
- Radiation Tolerance
- Long Operational Life
- Non-Contaminating Technology

Pump Range

Small ion pumps
- Mini - 75S

Low Profile ion pumps
- 100L - 1200LX

Tall Profile ion pumps
- 150TV - 600TV

Gamma Ion pump characteristics

Lifetime

All Gamma Vacuum ion pumps are designed to operate for 45,000 – 50,000 hours at $1x10^{-6}$ mbar. Lifetime increases linearly with decreased pressure. At $1x10^{-9}$, for example, an ion pump can last for many years.

Ultimate Pressure

Ion pumps are capable of reaching pressures below $1x10^{-10}$ mbar. Ultimate pressure of an ion pump is dictated by overall system conditions and materials.

Vacuum Processing

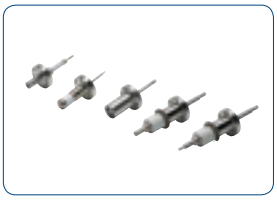
Ion pumps are shipped under vacuum at pressures less than $1x10^{-10}$ mbar. Certificates of conformance are provided and record all leak check points and pump characteristic values. RGA scans can be provided upon request.

Port Configurations

Each ion pump can be configured with a variety of pumping port options. Additional ports are available in most designs on the top, bottom, or side and can accommodate TSP or non-evaporable getter (NEG) modules.

Feedthroughs

Gamma Vacuum has standardized on the commercially available 10kV SHV feedhrough since 1996. For legacy purposes, alternate feedthroughs are available.

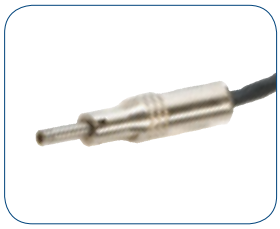


Heaters

Integrated heaters can be added to ion pumps for economical and efficient baking.

Cables

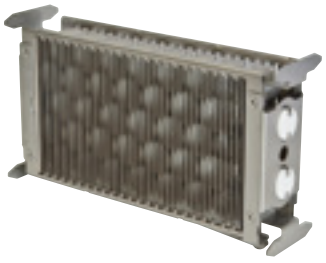
In addition to incorporating the SAFECONN interlock system, high voltage cables are made of flexible silicone materials that are bakeable and have high radiation tolerance.



Gamma Ion pump elements

Gamma ion pump elements are “tuned” for specific pumping applications. Surfaces are chemically processed to remove potential surface contaminants and provide maximum adhesion for extended lifetime. Ceramics are optimally shielded to reduce exposure to sputtered material.

- Gamma CV (Conventional) – two titanium cathodes for high pumping speed of reactive gases.
- Gamma DI (Differential) – a titanium and tantalum cathode for maintained pumping speeds of reactive gases and long term stability of noble gases.
- Gamma TR – classic triode element for higher pressure operation



Gamma Ion pumps

	SPECIFICATIONS				COMPATIBILITY			
	SPEED (l/s)	INLET FLANGE(S)	DIMENSIONS mm (in.) (H x L x W, max)	Weight, kg (lbs)	SPC	LPCe	MPCe	TSP
SMALL ION PUMPS								
MINI	0.2	DN 16 (1.33 in.)	38 x 38 x 51 (1.5 x 1.5 x 2.0)	0.35 (0.8)	X			
3S	2 - 3	DN 16 (1.33 in.)	45 x 45 x 108 (1.8 x 1.8 x 4.3)	0.35 (0.8)	X			
10S	8 - 10	DN 35 (2.74 in.)	107 x 113 x 190 (4.2 x 4.4 x 75)	6 (13)	X			
25S	15 - 20	DN 35 (2.75 in.)	202 x 125 x 130 (8.0 x 4.9 x 5.1)	9 (20)	X			
45S	30 - 40	DN 35 (2.75 in.) DN 63 (4.5 in.)	209 x 251 x 130 (8.2 x 9.9 x 5.1)	16 (34)	X	X		
75S	40 - 75	DN 35 (2.75 in.) DN 63 (4.5 in.) DN 100 (6 in.)	277 x 242 x 130 (10.9 x 9.5 x 5.1)	19 (42)	X	X		
LOW PROFILE ION PUMPS								
100L	80 - 100	DN 100 (6 in.)	325 x 325 x 128 (13 x 13 x 5)	29 (62)		X	X	
200L	160 - 200	DN 150 (8 in.)	325 x 413 x 233 (13 x 16 x 9)	49 (108)		X	X	X
300L	240 - 300	DN 150 (8 in.)	325 x 413 x 337 (13 x 16 x 13)	66 (145)		X	X	X
400L	320 - 400	DN 150 (8 in.)	325 x 413 x 413 (13 x 16 x 16)	72 (159)			X	X
400LX	320 - 400	DN 150 (8 in.)	508 x 413 x 233 (20 x 16 x 9)	115 (253)			X	X
600L	480 - 600	DN 150 (8 in.)	325 x 513 x 513 (13 x 20 x 20)	103 (226)			X	X
600LX	480 - 600	DN 150 (8 in.)	508 x 413 x 336 (20 x 16 x 13)	115 (253)			X	X
800LX	640 - 800	DN 150 (8 in.)	508 x 413 x 413 (20 x 16 x 16)	124 (273)			X	X
1200LX	960-1200	DN 150 (8 in.) DN 200 (10 in.)	537 x 513 x 513 (21 x 20 x 20)	206 (452)			X	X
TALL PROFILE ION PUMPS								
150TV	120 - 150	DN 100 (6”)	338 x 247 x 231 (14 x 10 x 9)	32 (70)		X	X	X
300TV	240 - 300	DN 150 (8”)	345 x 450 x 231 (14 x 18 x 9)	65 (143)		X	X	X
600TV	480 - 600	DN 150 (8”)	525 x 450 x 305 (21 x 18 x 12)	109 (243)			X	X

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TITANIUM SUBLIMATION PUMPING (TSP)

PERFORMANCE YOU CAN RELY ON

Titanium Sublimation Pumps (TSPs) are often used in combination with ion pumps or independently to remove reactive gases from the vacuum environment. Combined with an ion pump, the TSP allows for low ultimate pressures in a shorter amount of time. All TSP components are bakeable to 400˚C.

TSP filament cartridge

The filament cartridge is mounted on a 2- 3/4” CFF (DN 35). The feedthrough supports three titanium-molybdenum filaments and a return path for ground isolation. Each filament contains 1.5 grams of usable titanium and averages 20 hours of operation.

Ambient Sputter Shield

The ambient sputter shield economically maximizes surface area when cooling is not practical or possible. It provides 827cm2 (128 in. 2) of ambient temperature surface area that provides pumping speeds up to 2200 l/s for hydrogen (see table). The shield is mounted on an 8 in. CFF (NW 150) or a 6 in. CFF (NW 100).

Liquid Cryoshroud

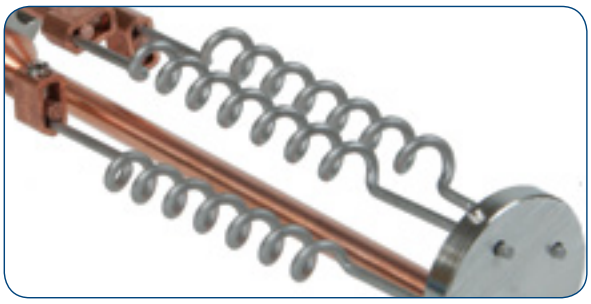
The liquid cryoshroud consists of a double walled, type 304L stainless steel cylinder with two liquid nitrogen feedthroughs (.375 in. diameter) with flare type fittings. It provides 1578 cm2 (245 in.2) of liquid nitrogen cooled surface area that provides pumping speeds up to 12,000 l/s for hydrogen (see table). The shroud is mounted on an 8 in. CFF (NW 150).

DIGITEL ™ TSP /NEG controller

The TSP/NEG controller has an easy-to-read touchscreen LCD display that displays all manual or programmed firing paramenters. Manual operation is as simple as pressing one button. Programming is just as easy by viewing all programming options on one screen. The TSP/NEG controller can operate up to 8 TSP filaments or 2 NEG pumps.

Ease of Use

The TSP/NEG and MPCe controllers are each fully controlled with an intuitive touch panel LCD.



Filaments

Each titanium-molybdenum filament contains 1.5 grams of usable titanium and averages 20 hours of operation.

Connectivity

TSP/NEG cables have MS style connectors that are bakeable and radiation resistant.

Safety

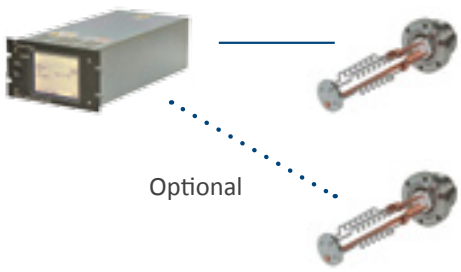
High currents travel over distances up to 10 meters through bakeable and radiation-resistant insulated and strain relief cabling.

Digitel™ FLEXIBILITY

The DIGITEL™ line is flexible enough to control a wide variety of ion pump and TSP configurations. The LPCe and MPCe can operate up to four ion pumps simultaneously or independent operation of one or two ion pumps respectively. The MPCe is capable of controlling one or two TSP/NEG cartridges independently from the Remote TSP/NEG controller or internal TSP (ITSP).

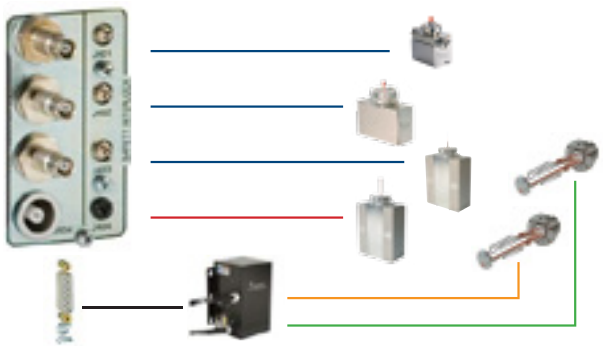
Example Configuration 1

Single or dual TSP operation from the TSP/NEG Controller.



Example Configuration 2

Three parallel diode ion pumps, one triode ion pump, and dual TSP/NEG operation from the MPCe.



TSP/NEG Controller Specifications

SPECIFICATIONS		DIGITEL TSP/NEG	REMOTE TSP/NEG
Input Power	Voltage	90-130 or 200-240 volts	90-130 or 200-240 volts
	Frequency	48-62 Hz	48-62 Hz
Output Power	Independent Outputs	1	1
	Open Circuit Voltage	+17 vac	+17 vac
	Current (maximum)	55A	55A
	Watts (maximum)	800 (max)	800 (max)
	Resolution	0.1A	0.1A
high current connections		1-2 MS Style, Configurable	1-2 MS Style, Configurable
Display	Type	1/4 VGA touchscreen LCD	1/4 VGA touchscreen LCD via MPCe
	Readouts	Current, on-time, and programmable options	Current, on-time, and programmable options via MPCe
Analog outputs	Voltage	linear configurable	linear configurable
	Current/Pressure	linear or logarithmic, configurable	linear or logarithmic, configurable
Control modes		Manual, programmed, or remote	Manual, programmed, or remote
communications		Local/Remote/Full	Local/Remote/Full via MPCe
		Ethernet	Ethernet via MPCe
		Serial: 232, 422, 485	Serial: 232, 422, 485 via MPCe
conformity to norms		EN 55011 Class A, IEC 801-2	EN 55011 Class A, IEC 801-2
		EN 801-3, IEC 801-4, EN 61010-1	EN 801-3, IEC 801-4, EN 61010-1
weight, kg (lbs)		16.8 (37)	13.1 (29)
size		3U high. 1/2 rack wide	293 x 219 x 130 mm (min)
		438 mm (17.2 in.) deep	(12 x 9 x 5 in)
			293 x 219 x 150 mm (max)
			(12 x 9 x 6 in)
Additional features		TSP Enable	TSP Enable via MPCe

Typical tsp pumping speeds

			H_2		CO		H_20	
	AREA (cm2/in.2)	TEMPERATURE (°C)	RATE (L/S/CM2)	SPEED (L/S)	RATE (L/S/CM2)	SPEED (L/S)	RATE (L/S/CM2)	SPEED (L/S)
LIQUID CRYOSHROUD (8 in.)	709/110	20° C	2.6	1,843	8.2	5,814	7.3	5,176
	1578/245*	-195° C	17	12,053	11	7799	14.6	23,039
AMBIENT SPUTTER SHIELD (8 in.)	827/128	20° C	2.6	2,150	8.2	6,780	7.3	6,037
AMBIENT SPUTTER SHIELD (6 in.)	621/96	20° C	2.6	1,614	8.2	5,092	7.3	4,533

*Applies to H2O speed only.

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DIGITEL™ ION PUMP CONTROLLERS

PERFORMANCE YOU CAN RELY ON

The DIGITEL family of Ion Pump controllers offers the right balance of performance, power and protection.

Digitel™ SPCe

Small Pump Controller

The SPCe is a versatile way to fully operate ion pumps 0.2 – 75 l/s. An LCD pressure/current/voltage display along with standard serial communications makes the SPCe able to accommodate the needs of basic and advanced users. Nano amp resolution provides gauging capabilities using the appropriate ion pump set-up.

Digitel™ LPCe

Large Pump Controller

Ion pumps 100 l/s and larger require higher currents for starting and higher pressure operation. The LPCe supplies higher currents to a dedicated single ion pump (or up to four ion pumps in parallel) and has an easy-to-read touchscreen LCD display that simultaneously displays pressure, current, and voltage.

Standard serial communications and eight set-points allow for easy system integration. The LPCe fits into any rack at just 3U high and 1⁄2 rack wide.

Digitel™ MPCe

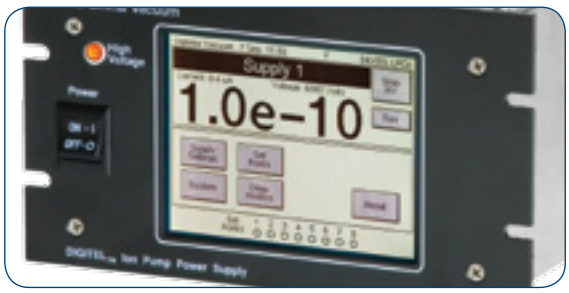
Multiple Pump controller

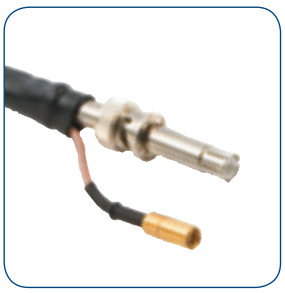
Ion Pump Control

Incorporating the same features as the LPCe, the MPCe allows for high current control of two ion pumps independently or up to four in parallel. At 3U high and a full rack in width, the MPCe is ideal for operating a wide variety of ion pump configurations on any system.

TSP/NEG Control

A TSP or NEG can be fully operated from the LCD touchscreen of the MPCe. They can be fired manually or automatically based on the pressure of either ion pump the MPCe is monitoring. Timed modes also let the user have full control over exact parameters of operation. A single remote controller can operate up to eight TSP filaments or two NEG pumps.



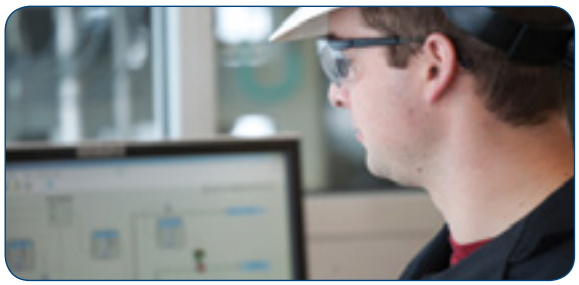


Ease of Use

Each DIGITEL™ has a highly visible display. The SPCe has an easy-to-read LCD that displays pressure, current and voltage. The LPCe and MPCe are each fully controlled with an intuitive touch panel LCD. Digital resolution down to 1nA is possible depending on pump size and current requirements.

Operator Safety

The integrated SAFECONN high voltage interlock system eliminates electrical shocks and false positive pressure readings. The controller automatically shuts off high voltage when the cable is disconnected
from the ion pump or controller end. The system is isolated and guarantees ground, high voltage, and safety connectivity that prevents accidental arcing.



Communications

Serial communications (RS232, RS422, and RS485) are standard on all DIGITEL™ products. Optional Ethernet protocol for advanced facility and instrumentation communications is available on all units.

Connectivity

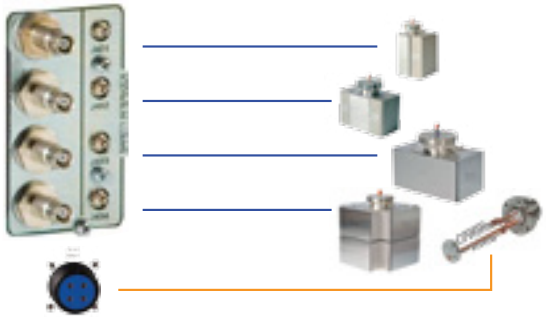
Each DIGITEL™ has programmable analog and interlock capabilities. This allows for optimal flexibility when integrating with standard or legacy setpoint and analog monitoring systems.

DIGITEL™ Flexibility

The DIGITEL™ line is flexible enough to control a wide variety of ion pump and TSP/NEG configurations. The LPCe and MPCe can operate up to four ion pumps simultaneously or independent operation of one or two ion pumps, respectively. The MPCe is capable of controlling one or two TSP/NEG cartridges independently.

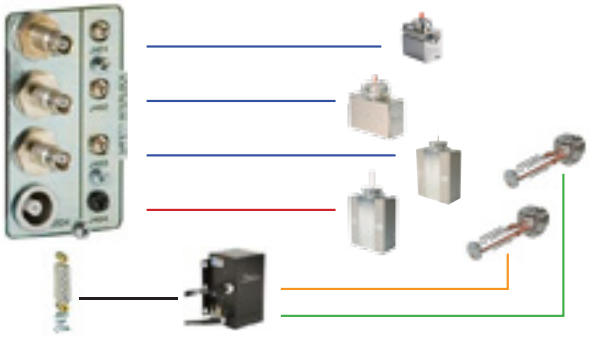
Example Configuration 1

Four diode ion pumps in parallel and Single TSP operation.



Example Configuration 2

Three diode ion pumps, in parallel, one triode ion pump and Dual TSP/NEG operation.



DIGITEL ION PUMP CONTROLLERS

SPECIFICATIONS	SPCe	LPCe	MPCe
Input Power			
Voltage	90-240 vac or 24 vdc	90-130 or 200-240 volts	90-130 or 200-240 volts
Frequency	48-62 Hz	48-62 Hz	48-62 Hz
Output Power			
Independent Outputs	1	1	1 or 2
Open Circuit Voltage	3000-7000 vdc (+/- configurable)	+/-5600 or 7000 vdc	+/-5600 or 7000 vdc
Current (maximum)	50 mA	100 mA	100 mA or 500 mA
Watts (maximum)	50	200	1000
Resolution	1 nA	1 nA	1 nA / 0.1 uA
high voltage connections	One 10kV SHV or Fischer	1-4, 10kV SHV or Fischer	1-4, 10kV SHV or Fischer
Display			
Type	LCD	1/4 VGA touchscreen LCD	1/4 VGA touchscreen LCD
Readouts	Pressure, current, voltage, and programmable options	Pressure, current, voltage, and programmable options	Pressure, current, voltage, and programmable options
Analog outputs			
Voltage	linear, configurable	linear, configurable	linear, configurable
Current/Pressure	linear or logarithmic, configurable	linear or logarithmic, configurable	linear or logarithmic, configurable
setpoints	One relay, one TTL	Four relay, four TTL	Four relay, four TTL
communications	Local/Remote/Full	Local/Remote/Full	Local/Remote/Full
	Ethernet	Ethernet	Ethernet
	Serial: 232, 422, 485	Serial: 232, 422, 485	Serial: 232, 422, 485
conformity to norms	EN 55011 Class A, IEC 801-2	EN 55011 Class A, IEC 801-2	EN 55011 Class A, IEC 801-2
	EN 801-3, IEC 801-4, EN 61010-1	EN 801-3, IEC 801-4, EN 61010-1	EN 801-3, IEC 801-4, EN 61010-1
weight, kg (lbs)	1.5 (3.3)	16.8 (37)	16.8 (37) minimum
			25.4 (56) maximum
size	2U high, 1/4 rack wide	3U high, 1/2 rack wide	3U high, full rack wide
	313 mm (12.3 in.) deep	438 mm (17.2 in.) deep	438 mm (17.2 in.) deep
Additional features	SAFECONN	SAFECONN	SAFECONN
	AUTOSTART/AUTORUN	AUTOSTART/AUTORUN	AUTOSTART/AUTORUN
	High Voltage Enable	High Voltage Enable	High Voltage Enable
	Fowler-Nordheim Calibration		Remote TSP Control
	High-Pot Capability		
compatibility (l/s)			
Mini/3S	X		
10-75	X	X	X
100-300		X	X
400-1200			X

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VACUUM INSTRUMENTS
PERFORMANCE YOU CAN RELY ON

VACUUM MEASUREMENT AND CONTROL SYSTEMS

The Edwards range of instruments offers:

- Measurement over the range 2000 to $<10^{-9}$ mbar
- Advanced microprocessor based controllers
- Calibration of instruments to UK national standards

Selecting Your Vacuum Gauge

Edwards offers a wide choice of vacuum measurement and control products – from dial gauges to microprocessor based gauge controllers. Within each product range, there is a family of models designed to meet the widest user specification.

The first step in selecting the right gauge to meet your application is to decide the range of pressures that you want to measure at each of your measuring points. The chart below indicates the broad pressure ranges covered by the spectrum of Edwards instruments: use this chart as a primary guide to the choice of gauge head. The second step is to establish your requirement for the output of the pressure measurement. If you simply want an indication that a certain level of vacuum has been reached (for example, to open a valve or start a process), then a vacuum switch or Active gauge head alone may be appropriate. If you want to display the pressure locally, then a dial gauge may be suitable. If you need the pressure display to be remote from the measurement point (for example, in a control panel) then select the TIC Instrument Controller or Active Digital Controller, depending on the features you require. (You will also need to select appropriate gauge head(s) to accompany these displays and controllers.) If your control system (such as a PLC, PC or dedicated microprocessor controller) needs to know the pressure to make sequence decisions but you do not need a separate vacuum display, then you can use an Active gauge head as a stand-alone transducer connected to an appropriate power supply and control system analog input.

Thirdly, you need to select a gauge suitable for the process gases and constructed to withstand exposure to the external environment of your vacuum system. Consider both whether the gauge will survive in the process and also whether the process gases will effect the gauge's measurement. For example, the measurement made by mechanical gauges (vacuum switches, dial gauges and strain gauges) is not affected by gas composition, whereas that made by other types of gauges is gas dependent.

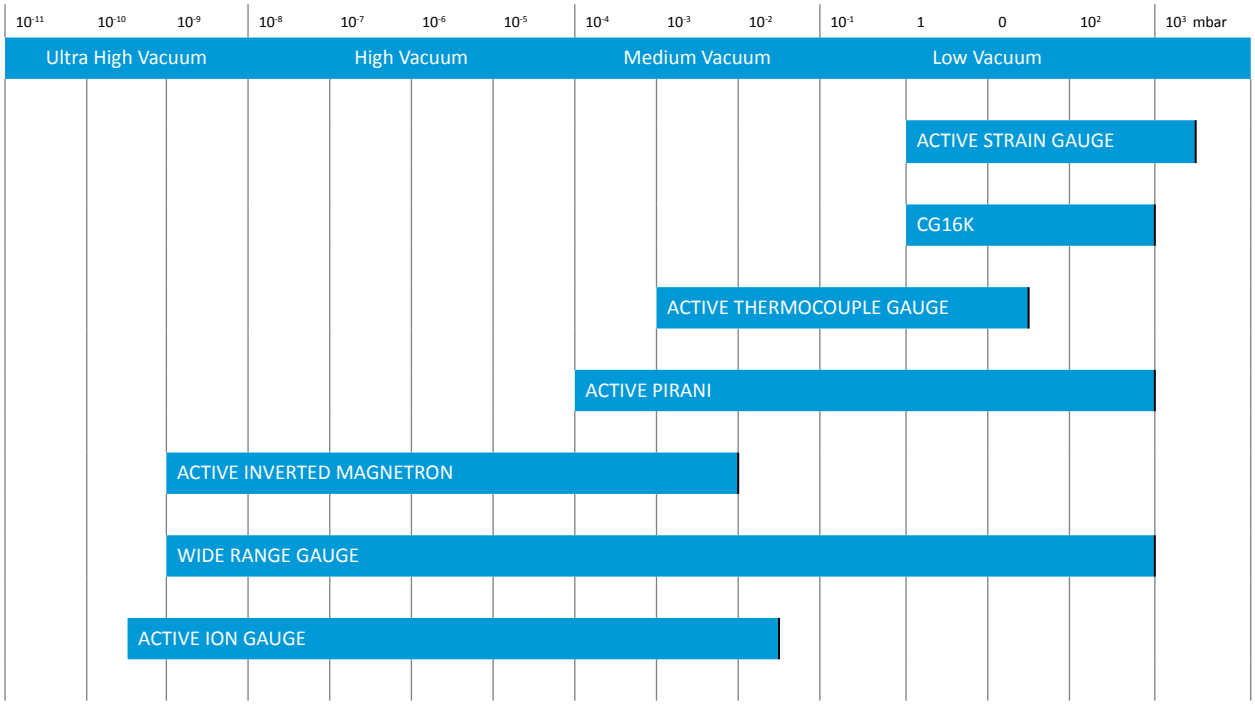
Calibration for Different Gases

All of our gauge heads are calibrated for dry nitrogen; the calibration for dry air is the same. If you use thermal conductivity or ionisation gauges with gases other than nitrogen or air, you may need to apply a gas correction factor for an accurate indication of your system pressure. Please contact us if you need more information.

Gauge Head Installation

How you install the gauge head into your vacuum system will affect the accuracy and reliability of your pressure measurement. For best performance we recommend that you:

- Connect the gauge head to your vacuum system with a straight, short branch pipe. This pipe should have an internal diameter no less than that of the gauge tube itself. Long, narrow or angled connections can cause a significant measurement error. Note that the indicated pressure may be higher or lower than the actual pressure.
- Connect the gauge head as close as possible to the point where you want to measure the system pressure.
- Orientate the gauge head so that it is vertical, with the connection to the vacuum system at its base. This prevents debris falling into the gauge.


10^{-11} 10^{-10} 10^{-9} 10^{-8} 10^{-7} 10^{-6} 10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 1 0 10^{2} 10^{3} mbar
Ultra High Vacuum
High Vacuum
Medium Vacuum
Low Vacuum
ACTIVE STRAIN GAUGE
CG16K
ACTIVE THERMOCOUPLE GAUGE
ACTIVE PIRANI
ACTIVE INVERTED MAGNETRON
WIDE RANGE GAUGE
ACTIVE ION GAUGE

The Active Gauge Concept

- Operate from standard power supplies for simple installation
- Gauge type identification signal and common 0-10V d.c. output
- Cable lengths of up to 100 m for remote operation
- Range of microprocessor based controllers
- The Active gauge range with TIC Instrument Controller give continuous measurement from 2000 mbar to $<10^{-9}$ mbar
- Low cost analog and digital displays and controllers available

Edwards Active vacuum gauges and controllers give unrivalled performance, flexibility and ease of use. Traditionally, vacuum gauges consisted of a sensing element and a separate display/controller. With Edwards' Active gauges, the functions that are specific to the gauge type (such as signal conditioning and specialised power supplies) have been moved from the dedicated controller and incorporated in the head itself. Now the gauge head can be used as a stand-alone transducer: it requires only a simple power supply and it provides a 2 to 10 V output. Alternatively, you can connect the gauges to a Edwards display or universal controller: these will accept all gauge types in any combination for the most flexible solution.

The Active Gauge Range

Active Pirani Gauge A range of Pirani gauges including linear measuring from above atmospheric pressure to 10^{-4} mbar, with integral set-point for OEM use.
Active Ion Gauge A new range of small self-contained Active ion gauges with a measuring range from 5 x 10^{-2} to 5 x 10^{-10} Torr. The gauges incorporate degas, automatic emission current switching, automatic filament protection, a push button adjustable set-point and status indicating LED.
Active Inverted Magnetron Operating through the range 10^{-2} mbar to 10^{-9} mbar, with integral set-point for OEM use. A low external magnetic active field version is available.
Active Wide Range Gauge A range of gauges measuring from atmosphere to 10^{-9} mbar with a linear output and integral set-point for OEM use. A low external magnetic field version is available.
Active Thermocouple Gauge A range of gauges measuring from atmosphere to 10^{-3} mbar, with integral set-point for OEM use and LED indication of vacuum status.
Active Strain Gauge A range of strain gauges measuring from 2000 mbar to 1 mbar. This type of gauge is extremely rugged and offers accurate, gas independent measurement.

Active Controllers and Displays

The Edwards Active range of gauges can operate as stand-alone pressure transducers requiring only a simple power supply and providing a 2 to 10V analog output. If you need a complete vacuum measuring and display system, we also offer a range of controllers and displays. Our displays and controllers are designed for maximum flexibility and ease of use. The range is suitable for bench-top or panel mounting and options include RS232 interfacing.
TIC Instrument Controller A compact instrument controller with a large clear graphical display, an intuitive user interface and serial communications providing full remote control and data logging functions for one or more TIC systems via a new Windows™ based PC program.
The controller supports, automatically recognises and controls up to six gauges from the Edwards range, with coverage from 2000 to 6.6 x 10^{-10} mbar. Low pressure gauges may be controlled and protected by high pressure gauges and there are open collector set-point outputs. An optional relay box uses these outputs to control mains changeover relays. The TIC instrument controller may be either rack or bench mounted and provides a useful hub for the flexible operation of a wide range of vacuum system configurations.
Active Digital Controller The Edwards Active Digital Controller (ADC) is a compact single gauge controller and display. It features a bright LED display and simple push-button controls. The ADC automatically recognises compatible Edwards gauges, loads the appropriate lookup table and displays the pressure in commonly used vacuum units.
The ADC is available in standard and enhanced versions. The standard controller displays the pressure measured by a single active gauge. The enhanced controller supports two similar gauges – it has two variable hysteresis set-points which are linked to 48V d.c. 1 A changeover relays and two 0-10V d.c. analog outputs. To aid system integration, the

enhanced controller is provided with an RS232 interface. When combined with a suitable gauge, such as the Edwards APGX-H Convection Pirani or Wide Range Gauge (WRG), the ADC represents a cost effective means of monitoring and controlling process vacuum in a broad range of applications.

Other Instruments

In addition to the range of Active gauges, Edwards offers a variety of more traditional vacuum measurement and control products. Our simple dial gauges provide rugged, local indication of pressures from atmosphere to 1 mbar and are ideal for vacuum chambers in an industrial environment. Vacuum switches, with high current ratings, give a simple method of directly controlling loads without the need for additional relays or power supplies.

Gauge Calibration Service

All Edwards gauges may either be supplied with a calibration certificate or re-calibrated by request.

- Provides certificate of calibration traceable to National Standards which meets ISO9000 requirements worldwide
- Service available for both new and returned instruments
- Transducers calibrated separately or with display/ controller

As a leading manufacturer of vacuum instruments, Edwards offers an expert calibration and repair service with 25 years of experience. Other manufacturers' vacuum instruments including Helium leaks are also covered. The instruments are calibrated with dry nitrogen; for calibration with other gases or at specific pressures, please consult Edwards. The option of calibration figures before and after adjustments and repairs is also available.

The range of instruments include:

- Active gauges, displays and controllers. Note that Active gauges can be calibrated on their own, with a display or with a controller.
- Capacitance manometers. Note that some types of manometers can be calibrated as stand-alone instruments, with a controller or with a pressure monitor, for example the TIC Instrument Controller.
- Helium quartz leaks for mass spectrometer leak detectors. Contact Edwards for details.

APG100 ACTIVE PIRANI VACUUM GAUGE

Features include compact size for easy installation, a linear output, and a replaceable sensor tube. The new gauges are compatible with all Edwards TIC instrument controllers and other active gauge controllers and displays. They are also CSA, C/US approved as well as fully RoHS compliant due to their lead-free construction.

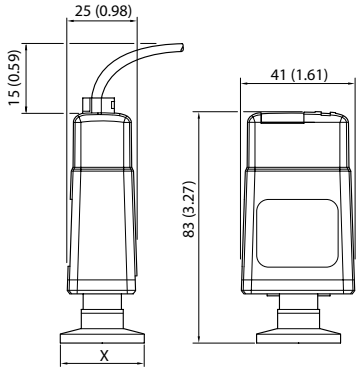
Features and Benefits

- Cable connections and gauge adjustment conveniently located, thereby minimising the space envelope required for access
- Sensor tube can be baked to 150°C
- Adjustable set-point for simple process control and interlocking
- Remote calibration possible
- CSA, C/US approved

Product Range

APG100
- APG100-XM
- APG100-XLC

APG100 Dimension



Flange	X
NW16	30 mm (1.18 inch)
NW25	40 mm (1.57 inch)

Technical Data

	APG100
Mass	85 g
Internal volume	5 cm^3
Enclosure rating	IP40
Measurement range	
(APG100-XM)	Atmosphere to 10^{-3} mbar
(APG100-XLC)	Atmosphere to 10^{-4} mbar
Accuracy (APG100-XM)	Typically +/- 15% at <100 mbar*
Accuracy (APG100-XLC)	Typically +/- 15% at <10 mbar*
Maximum over-pressure	10 bar absolute
Operating temp range	5o to 60 °C
Storage temp range	-30o to 70 °C
Bake-out with no electronics	150 °C
Humidity	80% RH up to 31 °C decreasing linearly to 50% RH at 40 °C and above
Maximum	3000 m
Filament temperature	100 °C above ambient
Electrical supply voltage	15 to 30 V d.c. nominal
	13.5 V d.c. minimum
	32 V d.c maximum
Power consumption	1 W
Output signal	0 to 10 V d.c. nominal
Set-point – open collector transistor	
Rating	30 V d.c. 100 mA
Range of set-point	1.8 to 9.2V d.c.
Fixed hysteresis	500 mV (1/2 decade)
Level setting resolution	6 mV

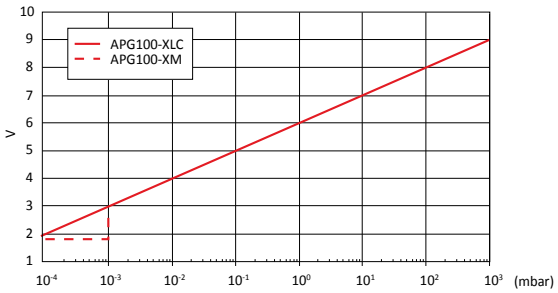
* Accuracy is reduced at the limits of measuring range

APG100 Active Pirani Vacuum Gauge

APG100

Mass	
	85g
Internal Volume	
	5 cm^3
Measurement range	
APG100-XM	Atmosphere to 10^{-3} mbar
APG100-XLC	Atmosphere to 10^{-4} mbar

APG100 Performance Curve



Ordering information

Product description	Order no:
APG100-XM, NW16	D02601000
APG100-XM, NW25	D02602000
APG100-XLC, corrosion resistant, NW16	D02603000
APG100-XLC, corrosion resistant, NW25	D02604000
APG100-XM, NW16, Certificated	D0260100C
APG100-XM, NW25, Certificated	D0260200C
APG100-XLC, NW16, Certificated	D0260300C
APG100-XLC, NW25, Certificated	D0260400C
APG100-XM, DN16CF	NRD710000
APG100-XLC, DN16CF	NRD712000

Service

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- Model and Item Number of your equipment.
- Serial number (if any).
- Item Number and description of the part.

Electronics Module

Product description	Order no:
Spare APG100-XLC electronics module	D02603800
Spare APG100-XM electronics module	D02601800

Mesh Filter

Product description	Order no:
Spare mesh filter for APG100 pack of 5	D04850805

Spare Sensor

Product description	Order no:
Spare sensor for APG100-XLC NW16 flange	D02603801
Spare sensor for APG100-XLC NW25 flange	D02604801
Spare sensor for APG100-XM NW16 flange	D02601801
Spare sensor for APG100-XM NW25 flange	D02602801
Spare sensor for APG100-XM DN16CF flange	NRD711000
Spare sensor for APG100-XLC DN16CF flange	NRD713000

APGX-H ACTIVE LINEAR CONVECTION GAUGE

Edwards Linear Convection Vacuum Gauge has a wide measuring range from 1333 to 3 x 10^{-4} mbar (1000 to 2.3 x 10^{-4} Torr). The use of convection technology ensures accuracy and sensitivity are maintained to the top of the range.
The gauge is compact and may be mounted in any orientation, simplifying installation where space is limited. The gauge incorporates a setpoint and two LEDs, which indicate setpoint and gauge status.

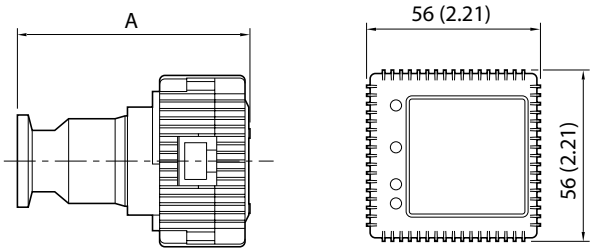
Features and Benefits

- Wide Measuring Range 1333 to 3 x 10^{-4} mbar (1000 to 2.3 x 10^{-4} Torr)
- Use of convection technology ensures consistent measuring accuracy (typically ±15%) and repeatability (±5%) to top of range
- Reduced cost of ownership
- Replaceable tubes are available
- CSA, C/US Approved

Product Range

APGX-H
- APGX-H

APGX-H Dimension



	A
NW16 Al	75mm / 2.95 inch
NW16 St St	75mm / 2.95 inch
NW25 St St	75mm / 2.95 inch
1/8 inch NPT St St	87mm / 3.42 inch

Technical Data

	APGX-H
Pressure range	1333 to 3 x 10^{-4} mbar (1000 to 2.3 x 10^{-4} Torr)
Power supply	14.5 to 30V d.c.
Power consumption	1.5 W maximum
Accuracy	±15% of reading ±3 x 10^{-4} mbar
Repeatability	±5% of reading
Resolution	6mV increments
Response time	< 100 ms
Maximum overpressure	10 bar absolute (145 psia)
Adjustments	Set vacuum and set atmosphere. To allow for variations in barometric pressure, atmosphere may be set in the range 700 to 1100 mbar (525 to 825 Torr).
Setpoints† (open collector transistor)	Range of setpoint 1.8 to 9.3V
	Rating 30V d.c. 100 mA
	Fixed hysteresis (1/2 decade) 500 mV

† The setpoint output will be turned off if an error is detected. For further information, please contact Edwards.

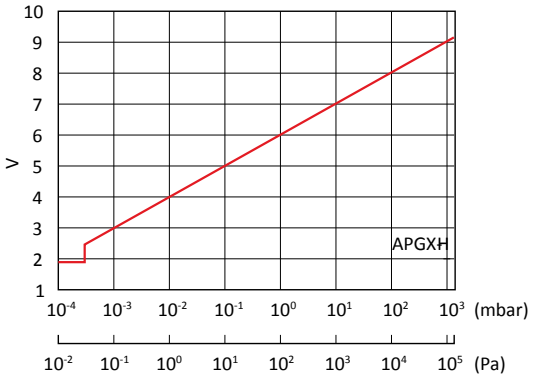
APGX-H Active Linear Convection Gauge

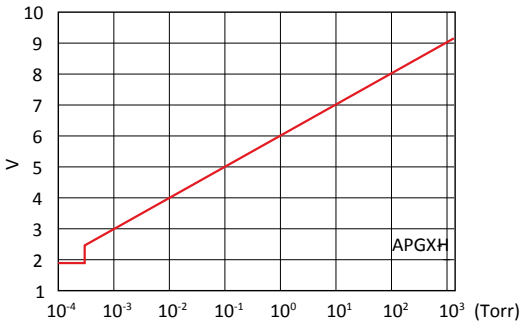
APGX-H

Pressure range
1333 to 3 x 10^{-4}mbar
(1000 to2.3 x 10^{-4}Torr)

Product description	Order no:
APGX-H-NW16, aluminium	D02391000
APGX-H-NW25 ST/ST	D02392000
APGX-H-NW16 ST/ST	D02395000
APGX-H 1/8" NPT ST/ST	D02396000
APGX-H-NW16 Aluminium, Certificated	D0239100C
APGX-H-NW16 ST/ST, Certificated	D0239500C
APGX-H-NW25 ST/ST, Certificated	D0239200C
APGX-H 1/8" NPT ST/ST, Certificated	D0239600C

APGX-H Performance Curve





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- Serial number (if any).
- Item Number and description of the part.

Active Gauge Cable

Product description	Order no:
0.5M Active Gauge Cable	D40001005
1M Active Gauge Cable	D40001010
3M Active Gauge Cable	D40001030
5M Active Gauge Cable	D40001050
10M Active Gauge Cable	D40001100
15M Active Gauge Cable	D40001150
25M Active Gauge Cable	D40001250
50M Active Gauge Cable	D40001500
100M Active Gauge Cable	D40001999

Upgrade Kit

Product description	Order no:
AGC EPROM Upgrade Kit	D38660800

Filter pack 5

Product description	Order no:
APGX-H Filter Pack 5 (not NPT version)	D02391805

Electronics module

Product description	Order no:
APGX-H Electronics Module	D02391800

Tube

Product description	Order no:
NW16 AL TUBE APGX-H SPARE	D02391801
NW16 STST TUBE APGX-H	D02395801
NW25 STS TUBE APGX-H SPARE	D02392801
Spare Tube 1/8” NPT ST/ST	D02396801

ATC ACTIVE THERMOCOUPLE GAUGE

The Edwards Active Thermocouple (ATC-E) gauges mount directly on either the ATC-D or ATC-M thermocouple tubes to form a compact, stand-alone transducer.
The ATC-E electronics module drives both medium and low pressure gauge tubes. These gauges offer a cost effective measuring solution for higher pressures.

Applications - Active thermocouple gauges are ideally suited to applications where a simple rugged gauge is required to measure higher pressures.

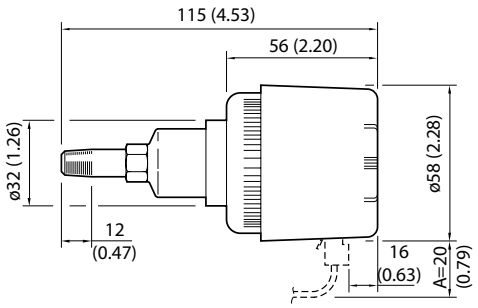
Features and Benefits

- Drive electronics mount directly on the gauge tube which simplifies the system design and saves valuable rack space
- Wide range, regulated, internal power supply runs from standard d.c. power supplies from +13.5 to +36 V and is tolerant to voltage fluctuations
- Standard analogue outputs of 0 to +10 V d.c. and gauge identifier allows for easy interface with a computer or PLC and provides fault output indication
- Adjustable set-point with vacuum status LED can be used for process control and interlocking and includes a digital vacuum status signal with set-point level ready visually
- Low output impedance and integral Faraday shield provides a high level of noise immunity and permits long cable runs of up to 100 meters

Product Range

ATC
- ATC-D
- ATC-E
- ATC-M

ATC Dimension



A
Allowance for cable and connector

Technical Data

	ATC
ATC-E Electronics Module	
Power supply	+13.5 to +36 V d.c. (max 1 V ripple)
Power consumption	0.54W maximum
Output signal	
Operating	2 to 10 V d.c.
Fault output	0 to 2 V d.c., 10 to 13.5 V d.c.
Output impedance	0.1 ohms
Minimum load	10 k ohms
Tube Type Selection	
Adjustments	Adjust set point visually via potentiometer
Set point	Open collector transistor
Range of set point	2 to 85 full scale voltage
Fixed hysteresis	12 full scale voltage
Level setting	±2 full scale voltage
Rating	40 V d.c., 100 mA maximum
Temperature range	
Operating	+5 to +60 °C
Storage	0 to +70 °C
Weight	110 g
External interface connector	8 way FCC68 / RJ45 socket
ATC-D, ATC-M gauge tubes	
ATC-D - Pressure range	65 to 6.5 x 10^{-2} mbar/ 50 to 5 x 10^{-2} Torr
ATC-M - Pressure range	1.3 to 1.3 x 10^{-3} mbar/ 1 to 1 x 10^{-3} Torr
ATC-D - Maximum overpressure	10 bar absolute
ATC-M - Maximum overpressure	3.4 bar absolute
Weight	55 g
ATC-D - Internal volume	1 cm^3
ATC-M - Internal volume	8 cm^3

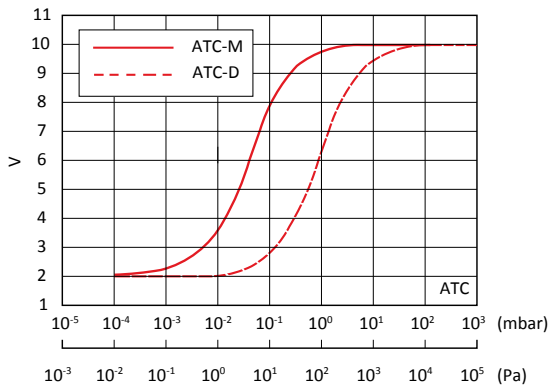
ATC Active Thermocouple Gauge

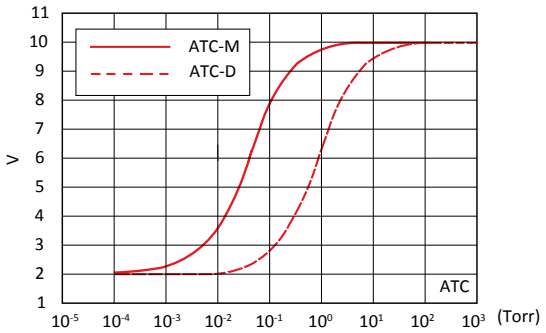
ATC

Power supply	
	+13.5 to +36 V d.c. (max 1 V ripple)
Power consumption	
	0.54W maximum

Product description	Order no:
ATC-E Electronics module	D35108000
ATC-D 1/8 inch NPT gauge tube	D35512000
ATC-M 1/8 inch NPT gauge tubes	D35513000

ATC Performance Curve





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- Serial number (if any).
- Item Number and description of the part.

Active Gauge Cable

Product description	Order no:
0.5M Active Gauge Cable	D40001005
1M Active Gauge Cable	D40001010
3M Active Gauge Cable	D40001030
5M Active Gauge Cable	D40001050
10M Active Gauge Cable	D40001100
15M Active Gauge Cable	D40001150
25M Active Gauge Cable	D40001250
50M Active Gauge Cable	D40001500
100M Active Gauge Cable	D40001999

Adapter Pipe

Product description	Order no:
NW10 Adapter Pipe 1/8NPT Female S/S	C10501072

Protector Box

Product description	Order no:
Surge Protector Box	D40006000

ASG2 ACTIVE STRAIN GAUGE

The Edwards Active Strain Gauge (ASG2) is a rugged, corrosion resistant diaphragm gauge which provides accurate, gas independent measurement from 2000 mbar to 1 mbar and 1000 mbar to 1 mbar. It can be used as a stand-alone transducer allowing OEMs and system builders to develop low cost, flexible solutions to their vacuum instrumentation needs. Alternatively, it can be connected to the TIC Instrument Controller where it can be combined with many other sensor types to provide a complete vacuum instrument solution.

Note: ASG adaptor cable supplied separately. This cable must be used with TIC, AGC, ADC & ADD.

Features and Benefits

- Drive electronics combined in the gauge head which simplifies system design and saves valuable rack space
- Wide range, regulated internal power supply which runs from standard d.c. power supplies of +12 to +32 V and is tolerant to voltage fluctuations
- Standard analogue output of 0 to 10 V d.c. which is easy to interface with a computer or PLC
- High accuracy and stability. Accuracy of ±0.2 full scale and stability 0.1% full scale
- Corrosion resistant, rugged design where the material exposed to vacuum is stainless steel 316 L & Hastelloy C276

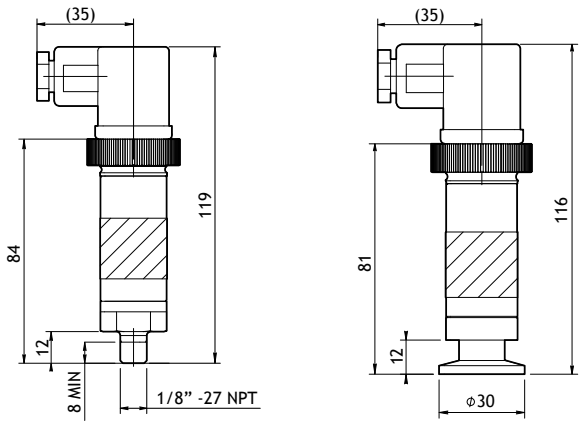
Applications

- Active strain gauges are an excellent choice where accurate, gas independent, measurement of pressures around atmosphere are required, making them ideal for applications such as load locks.
- It can be used as a stand-alone transducer allowing OEMs and system builders to develop low cost, flexible solutions to their vacuum instrumentation needs. Alternatively, it can be connected to the TIC Instrument Controller where it can be combined with many other sensor types to provide a complete vacuum instrument solution.

Product Range

ASG2

ASG2 Dimension



Technical Data

	ASG2
Full scale pressure range	1000 mbar, 2000 mbar
Accuracy / Stability	±0.2% full scale
Temperature coefficient	±0.03% full scale per °C
Power supply	12 to 32 V d.c.
Power consumption	0.1 W
Output signal	
Operating	0 to 10 V d.c. linear
Output impedance	51 Ω ohms
Minimum load	>10Ω k ohms
Adjustments	Set full scale and set zero
Temperature range	
Compensated	-10 to +50 °C
Operating	-40 to +80 °C
Materials exposed to vacuum	Stainless steel 316L, Hastelloy C276
Internal volume	2.78 cm^3
Weight	150g
Electrical connector	4 pin Din 43650 Form A
Vacuum fitting	1/8 Inch NPT, NW16
Standards	
Electromagnetic compatibility	EN 61326 -2-J for Transducers
Enclosure rating	IP65

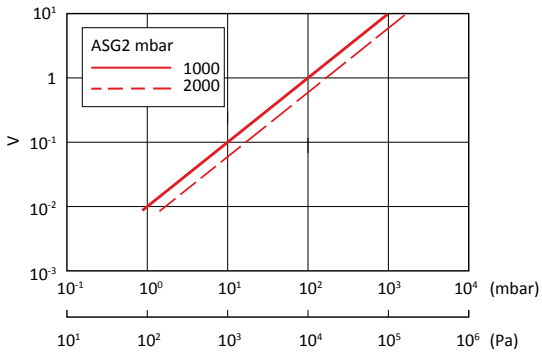
ASG2 Active Strain Gauge

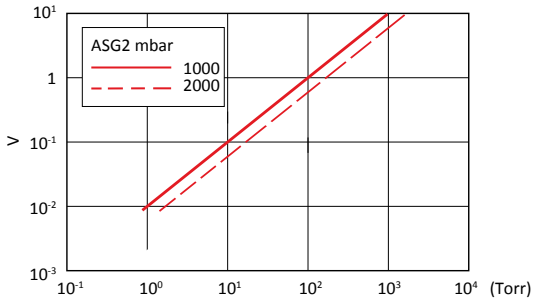
ASG2

Full scale pressure range	
	1000 mbar, 2000 mbar
Accuracy / Stability	
	±0.2% full scale
Temperature coefficient	
	±0.03% full scale per °C

Product description	Order no:
ASG2 1/8 Inch NPT, 1000 mbar	D35735000
ASG2 NW16, 1000 mbar	D35736000
ASG2 NW16, 2000 mbar	D35738000
ASG2 1/8 Inch NPT, 2000 mbar	D35737000
ASG2 1/8 Inch NPT, 1000 mbar, Certificated	D3573500C
ASG2 NW16, 1000 mbar, Certificated	D3573600C
ASG2 1/8 Inch NPT, 2000 mbar, Certificated	D3573700C
ASG2 NW16, 2000 mbar, Certificated	D3573800C

ASG2 Performance Curve





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- Serial number (if any).
- Item Number and description of the part.

Active Gauge Cable

Product description	Order no:
0.5M Active Gauge Cable	D40001005
1M Active Gauge Cable	D40001010
3M Active Gauge Cable	D40001030
5M Active Gauge Cable	D40001050
10M Active Gauge Cable	D40001100
15M Active Gauge Cable	D40001150
25M Active Gauge Cable	D40001250
50M Active Gauge Cable	D40001500
100M Active Gauge Cable	D40001999

Adapter Cable

Product description	Order no:
Adapter Cable AGC-ASG	D40003160

Surge Protector Box

Product description	Order no:
Surge Protector Box	D40006000

AIM-X ACTIVE INVERTED MAGNETRON GAUGE

The Edwards Active Inverted Magnetron Gauges (AIM) combine the gauge-head and controller in one compact Active unit. These gauges have proved to be rugged and reliable in a wide range of applications ranging from scientific instruments to industrial processes. This gauge features a linear output for easy integration with a computer or PLC.

Features and Benefits

- Drive electronics combined in the gauge head which reduces the system cost and saves valuable rack space
- Low output impedance and integral Faraday shield provides high level of noise immunity and permits long cable runs (up to 100 m)
- Low magnetic field version - XL - for sensitive applications, e.g. mass spectrometry and electron microscopy.
- Interchangeable body tube allows for rapid tube replacement without pre-calibration
- CSA, C/US approved

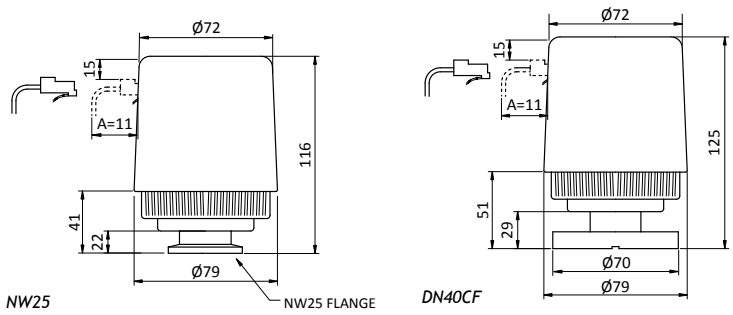
Applications

All vacuum applications requiring rugged and reliable pressure indication in the range 1 x 10^{-2} to 1 x 10^{-9} mbar. Typical processes range from general vacuum through industrial coaters and furnaces to scientific instruments and semicon.

Product Range

AIM
- AIM-X
- AIM-XL
- ATC-M

AIM-X Dimension



Technical Data

	AIM-X
Pressure Range	
AIM-X	10^{-2} to 10^{-9} mbar
Accuracy*	Typically ±30%
Maximum overpressure	10 bar absolute (145 psi)
Power supply	+13.5 to +36V d.c. (max 1 V ripple)
Power consumption	2 W Maximum
Output signal	2 to 10 V d.c.
Set point	Open collector transistor
Maximum voltage	40V d.c.
Current	100 mA max
Temperature range	
Operating	+5 to +60°C
Storage	0 to +70°C
Materials exposed to vacuum	
NW25 versions	Stainless steel 304 & 306 & 347, fluoroelastomer, glass
Internal volume	26 cm^3
Weight	0.81 kg
External interface connector	8-way FCC68/RJ45 socket
Vacuum fitting	NW25
Standards	
Electromagnetic compatibility	EN 61326
	(Class B Emissions)
Enclosure rating	IP40

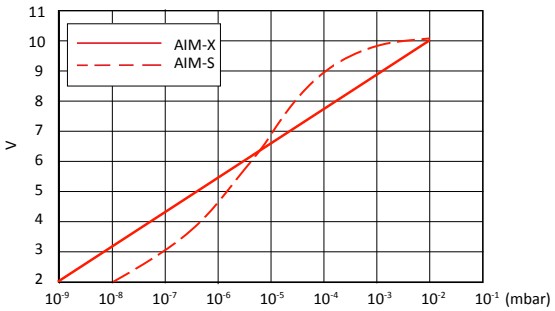
*Accuracy is reduced at the limits of the measuring range

AIM-X Active Inverted Magnetron Gauge

AIM-X

Pressure range	
AIM-X	10^{-2} to 10^{-9} mbar
Accuracy*	Typically ±30%
Power supply	
	+13.5 to +36 V DC (max 1 V ripple)
Power consumption	
	2 W Maximum

AIM-X Performance Curve



Product description	Order no:
AIM-X-NW25	D14642000
AIM-X-DN40CF	D14662000
AIM-X-NW25, Certificated	D1464200C
AIM-X-DN40CF, Certificated	D1466200C
AIM-XL-NW25	D14645000
AIM-XL-DN40CF	D14665000
AIM-XL-NW25, Certificated	D1464500C
AIM-XL-DN40CF, Certificated	D1466500C

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1M Active Gauge Cable	D40001010
3M Active Gauge Cable	D40001030
5M Active Gauge Cable	D40001050
10M Active Gauge Cable	D40001100
15M Active Gauge Cable	D40001150
25M Active Gauge Cable	D40001250
50M Active Gauge Cable	D40001500
100M Active Gauge Cable	D40001999

Aim Body Tube Assy

Product description	Order no:
Aim Body Tube Assy - NW25	D14545801
Aim Body Tube Assy - DN40CF	D14661801

Housing

Product description	Order no:
AIM-X Elect & Mag Housing	D14642800

Centering Ring

Product description	Order no:
NW25 Centering Ring 3D Baffle Viton	D02110000

Spares Kit Aim Body Tube

Product description	Order no:
Spares Kit Aim Body Tube	D14545802
Spares Kit Aim Body Tube DN40CF	D14661802

Nut & Bolt & Washer

Product description	Order no:
DN16CF/1.33 Nut & Bolt & Washer M4 Pk 25	C10001630
DN40CF/2.75 Nut & Bolt & Washer M6 Pk 25	C10005630

Protector Box

Product description	Order no:
Surge Protector Box	D40006000

WRG ACTIVE WIDE RANGE GAUGE

The Wide Range Gauge (WRG) family offers the capability of single port pressure measurement in the range atmosphere to 10^{-9} mbar with a linear output. It's a compact solution, halving the space and connectivity hardware requirement, which can be all important in many applications. The WRG has many novel features, including a new patented striker, push-button calibration and setpoint controls and comprehensive diagnostics. The WRG is a cost-effective vacuum management solution when used either with an Edwards controller or directly integrated into the system controls.

Features and Benefits

- Microprocessor signal processing gives seamless transition between Pirani and magnetron outputs as well as linear output (log pressure scale)
- D-type version including cable strain relief and enhanced ingress protection - IP44
- Low magnetic field version (SL) available for sensitive applications e.g. mass spectrometry and electron microscopy
- Easily programmed set-point covering entire measuring range
- Magnetron uses an advanced patented technique for highly reliable striking, even at high vacuum or in relatively contaminated conditions

Applications

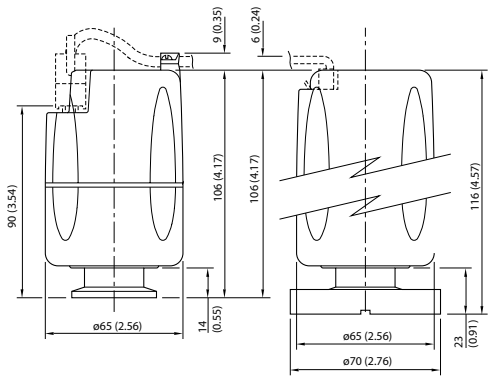
- Any vacuum system where there is a need to measure pressure over a wide range. The WRG with an AGD represents a very simple and cost effective means of achieving this.
- The linear output and equation make WRG's an attractive option for industrial OEM's where the gauge may be directly integrated into the process controller.
- The WRG is suitable for a wide range of HV and UHV applications, however if your process will spend a significant amount of time between $5x10^{-4}$ and $5x10^{-3}$ mbar then Edwards recommend using independent APG100 Pirani and AIM Penning gauges, as this will improve gauge reliability for your application.

Product Range

WRG

- WRG-S
- WRG-D
- WRG-SL

WRG Dimension



Technical Data

	WRG
Pressure range	Atmosphere to 10^{-9} mbar/Torr
Accuracy *	Typically ±15% <100 mbar and ±30%<10^{-3} mbar
Maximum over pressure	6 bar absolute (87 psia)
Power supply	+14.5 to +36 V d.c.
Power consumption	2 W maximum
Output signal	1.8 to 10.2 V d.c.
Adjustments	Atmosphere and setpoint
Set point	Open collector transistor
Maximum voltage	40 V d.c.
Current	100 mA maximum
Temperature range	
Operating	+5 to +60 °C
Storage	0 to +70 °C
Materials exposed to vacuum (Both NW and CF versions)	Stainless steel (AISI 304, 316, 321, 347), Fluoroelastomer, soda lime glass, Tungsten, trace of Nickel and Nickel Iron
Internal volume	26 cm^3
Weight	0.8 kg
External interface connector	8-way FCC68 / RJ45 Socket
Interface cables	Use range of active gauge cables
Standards	
Electromagnetic compatibility	EN 61326 Industrial Location, Class B emissions
Enclosure rating	IP40
Pin allocation **	
1. Power supply positive	5. Signal common
2. Power supply common	6. Set-point output
3. Gauge output	7. Atmosphere calibration
4. Gauge identification	8. Not connected

*Accuracy is reduced at the limits of the measuring range
** Not shown on diagram

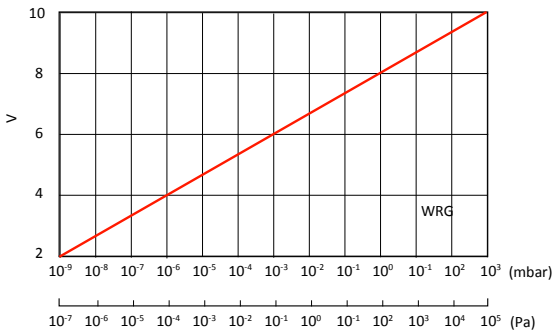
WRG Active Wide Range Gauge

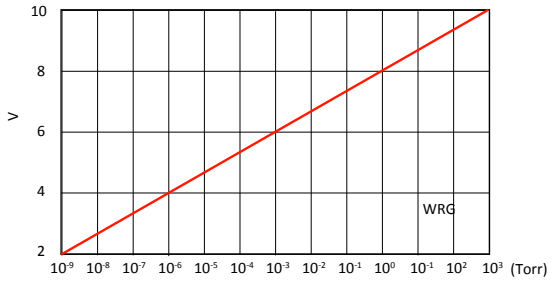
WRG

Pressure range	Atmosphere to 10^{-9} mbar/Torr
Accuracy	Typically ±15% <100 mbar and ±30%<10^{-3} mbar
Power consumption	2 W maximum

Product description	Order no:
WRG-S-NW25	D14701000
WRG-S-DN40CF	D14703000
WRG-S-NW25, Certificated	D1470100C
WRG-S-DN40CF, Certificated	D1470300C
WRG-D-NW25	D14702000
WRG-SL-NW25	D14711000
WRG-SL-NW25, Certificated	D1471100C

WRG Performance Curve





Service

Edwards products, spares and accessories are available from Edwards companies in Belgium, Brazil, China, France, Germany, Israel, Italy, Japan, Korea, Singapore, United Kingdom, U.S.A. and a world-wide network of distributors.

The majority of these centres employ Service Engineers who have undergone comprehensive Edwards training courses.
Order spare parts and accessories from your nearest Edwards company or distributor.
When you order, please state for each part required:

- Model and Item Number of your equipment.
- Serial number (if any).
- Item Number and description of the part.

Active Gauge Cable

Product description	Order no:
0.5M Active Gauge Cable	D40001005
1M Active Gauge Cable	D40001010
3M Active Gauge Cable	D40001030
5M Active Gauge Cable	D40001050
10M Active Gauge Cable	D40001100
15M Active Gauge Cable	D40001150
25M Active Gauge Cable	D40001250
50M Active Gauge Cable	D40001500
100M Active Gauge Cable	D40001999

Centering Ring

Product description	Order no:
NW25 Centering Ring 3D Baffle Viton	D02110000

Spares Kit

Product description	Order no:
Spares Kit WRG Electrode Assy	D14701802
Spares Kit WRG Full Body Tube	D14701804
Spares Kit WRG Pirani Tube	D14701803

Protector Box

Product description	Order no:
Surge Protector Box	D40006000

Body Tube

Product description	Order no:
WRG Body Tube Assy DN40CF	D14703801
WRG Body Tube Assy NW25	D14701801

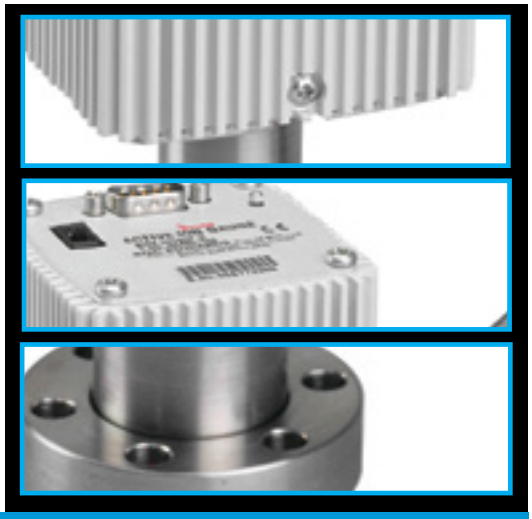
Adapter Cable

Product description	Order no:
WRG D Adapter Cable 9-Way D/Fcc68	D40003100

Elect & Mag Housing NW25

Product description	Order no:
WRG-D Elect & Mag Housing NW25	D14702800
WRG-S Elect & Mag Housing NW25	D14701800
WRG-SL Elect & Mag Housing NW25	D14711800

AIGX ACTIVE ION GAUGE



A compact Active ion gauge with dual yttria coated iridium filaments, a wide measuring range from 6.6 x 10^{-2} to 6.6 x 10^{-10} mbar (5 x 10^{-2} to 5 x 10^{-10} Torr) and a 1 Volt/decade linear output. The new AIGX gauge from Edwards incorporates all the benefits of the industry standard Active gauging concept, with integral electronics and replaceable tube. The gauge has a degas facility and includes features to protect and extend the life of the filaments.
The AIGX benefits from extremely low emissions of charged particles, which makes it an excellent choice for processes where background noise is undesirable.

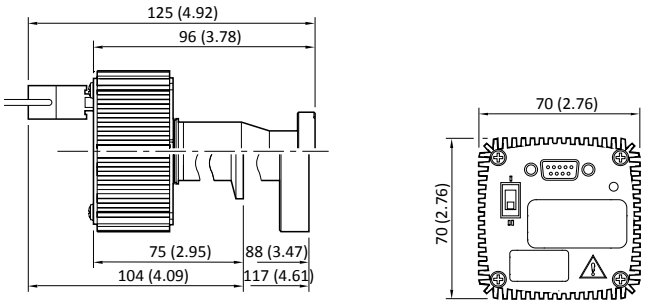
Features and Benefits

- Full 8-decade measurement capability, to 6.6 x 10^{-10} mbar (5 x10^{-10} Torr).
- Two versions available, each with three vacuum coupling variants: 'D' versions have a 9-pin 'D' connector and standard interface;
- Up to a thirty-fold reduction in charged particle process contamination compared to leading competitors.
- Automatic filament protection against switching on at atmosphere and running or degassing at high pressure.

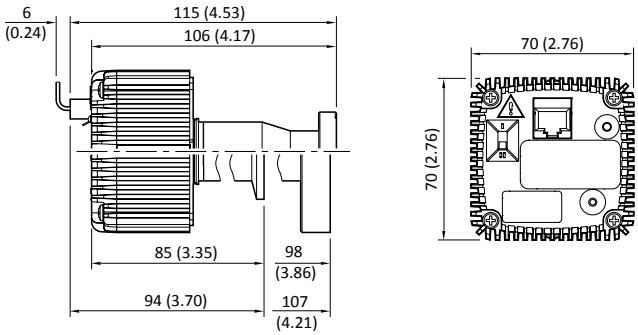
Pump Range

AIGX
- AIGX-D
- AIGX-S

AIGX -D Dimension



AIGX -S dimension



Technical Data

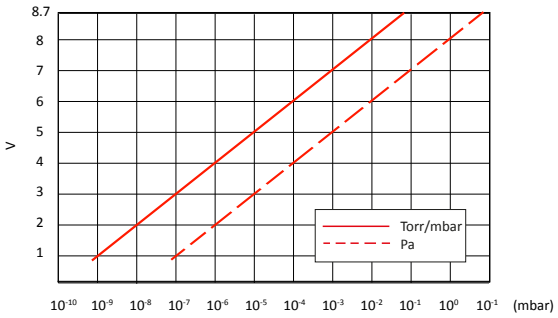
	AIGX
Pressure range	6.6 x 10^{-2} to 6.6 x 10^{-10} mbar
	(5 x 10^{-2} to 5 x 10^{-10} Torr)
Power supply	+14.5 to +30.0 V d.c.
Power consumption	Normal operation: 7 W (Max),
	Degas: 14W (Max)
Output signal	Linear, 1 Volt / decade
Response time	1.33 x 10^{-8} mbar (>10^{-8} Torr) ~ 100 ms
	1.33 x 10^{-8} mbar(<10^{-8} Torr) ~ 1-2 s
Maximum voltage	30 V d.c.
Maximum current	100 mA max
Operating environment	Dry non conductive atmosphere
Temperature range	
Operating temperature	0 to +40 °C
Storage temperature	-30 to +70 °C

AIGX Active Ion Gauge

AIGX

Pressure range	
	6.6×10^{-2} to 6.6×10^{-10} mbar
	(5×10^{-2} to 5×10^{-10} Torr)
Power supply	
	+14.5 to +30.0 V d.c.
Power consumption	
	Normal operation : 7W (Max)
	Degas: 14W (Max)

AIGX Performance Curve



Product description	Order no:
AIGX-D-NW25	D04860000
AIGX-D-DN16CF	D04861000
AIGX-D-DN40CF	D04862000
AIGX-D-NW25, Certificated	D0486000C
AIGX-D-DN16CF, Certificated	D0486100C
AIGX-D-DN40CF, Certificated	D0486200C
AIGX-S-NW25, Certificated	D0485000C
AIGX-S-DN16CF, Certificated	D0485100C
AIGX-S-DN16CF	D04851000
AIGX-S-DN40CF	D04852000
AIGX-S-DN40CF, Certificated	D0485200C
AIGX-S-NW25	D04850000

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Active Gauge Cable

Product description	Order no:
0.5M Active Gauge Cable	D40001005
1M Active Gauge Cable	D40001010
3M Active Gauge Cable	D40001030
5M Active Gauge Cable	D40001050
10M Active Gauge Cable	D40001100
15M Active Gauge Cable	D40001150
25M Active Gauge Cable	D40001250
50M Active Gauge Cable	D40001500
100M Active Gauge Cable	D40001999

AIGX Fuses

Product description	Order no:
AIGX Fuses Spare Pk5	D04850805

AIGX Tube

Product description	Order no:
AIGX Tube DN40CF	D04852801
AIGX Tube Spare DN16CF	D04851801
AIGX Tube Spare NW25	D04850801

Electronics module

Product description	Order no:
AIGX-D Electronics Module SP	D04860800
AIGX-S Electronics Module SP	D04850800

Annealed Copper Gasket

Product description	Order no:
DN16CF/1.33 Annealed Copper Gasket Pk 5	C10001270
DN40CF/2.75 Annealed Copper Gasket Pk 5	C10005270

Nut & Bolt & Washer

Product description	Order no:
DN16CF/1.33 Nut & Bolt & Washer M4 Pk 25	C10001630
DN40CF/2.75 Nut & Bolt & Washer M6 Pk 25	C10005630

O-Ring

Product description	Order no:
NW25 Trapped O Ring Viton	C10514490

CG16K DIAL GAUGE

Edwards CG16K capsule dial gauges are barometrically compensated with NW flange fittings. Designed to cover the range of 0 to 1040 mbar, these robust gauges provide accurate, repeatable performance even at low pressures making them equally suited for non-corrosive process plant or for laboratory applications. Fitting is simple: the gauges can be mounted direct or panel mounted using the kit supplied.

Features and Benefits

- Reading independent of gas type
- Accurate to ±2% of full scale
- Barometrically independent
- Pipeline or panel mounting
- Easy to read linear scale

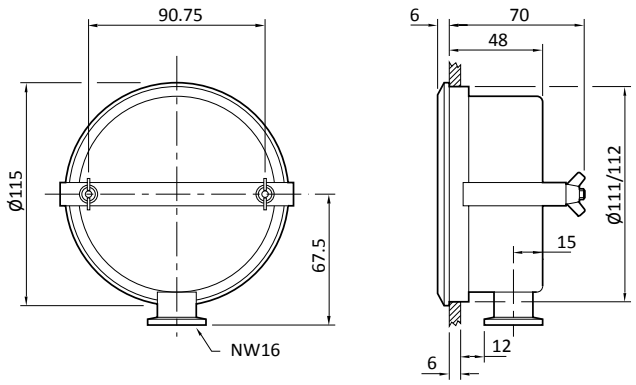
Applications

- Backfilling
- Portable equipment
- Degassing
- Refrigeration
- Flammable vapours

Product Range

CG16K

CG16K Dimension



Technical Data

	CG16K
Range	0-1040 mbar, 0-760 Torr
	0-125 mbar, 0.100 Torr
	0-50 mbar, 0-40 Torr
	0-25 mbar, 0-20 Torr
Accuracy	±2% of full scale deflection
Maximum applied pressure	
25 mbar version	1 bar absolute, 0 bar gauge
Other versions	2 bar absolute, 1 bar gauge
Weight	1 kg
Vacuum connection	NW16 Flange
Accessories supplied	Clamp and studs for panel mounting

CG16K Dial Gauge

Ordering information

Product description	Order no:
CG16K, 0-1040 mbar	D35610000
CG16K, 0-125 mbar	D35611000
CG16K, 0-50 mbar	D35612000
CG16K, 0-25 mbar	D35613000
CG16K, 0-760 Torr	D35630000
CG16K, 0-100 Torr	D35631000
CG16K, 0-40 Torr	D35632000
CG16K, 0-20 Torr	D35633000
CG16K, 0-1040 mbar, Certificated	D3561000C
CG16K, 0-125 mbar, Certificated	D3561100C
CG16K, 0-50 mbar, Certificated	D3561200C
CG16K, 0-25 mbar, Certificated	D3561300C
CG16K, 0-760 Torr, Certificated	D3563000C
CG16K, 0-100 Torr, Certificated	D3563100C
CG16K, 0-40 Torr, Certificated	D3563200C
CG16K, 0-20 Torr, Certificated	D3563300C

IS16K VACUUM INTERLOCK SWITCH

The IS16K vacuum interlock switch is designed to safeguard the operator by ensuring that electrical circuits in the vacuum chamber do not remain energised when the system is let up to atmosphere. Typical applications include interlocking of the HT cleaning or process circuits on thin film deposition and vacuum systems.
The IS16K is high vacuum compatible and corrosion resistant, with all wetted parts made from stainless steel. A high current rating allows direct switching of loads without additional relays or external power supplies.

Features and Benefits

- Single non-adjustable set-point, cannot be tampered with
- Positive break switch
- Rapid contact separation, prevents arcing
- Breaks circuit directly, no relays required
- Corrosion resistant materials exposed to vacuum

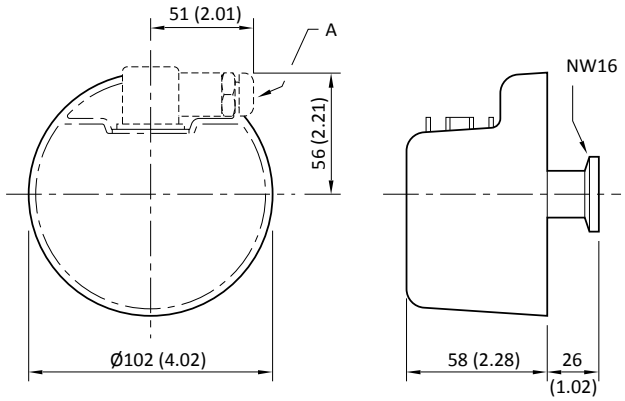
Applications

- Furnaces
- Laboratories
- Tank units
- Packaging
- General purpose pumping units

Product Range

IS16K

IS16K Dimension



A. Mating half shown fitted

Technical Data

	IS16K
Fixed set-point	640 ±120 mbar*
Maximum switching differential	100 mbar
Maximum working pressure	1 bar gauge (2 bar absolute)
Electrical rating	10 A resistive, 5 A inductive at 250 V a.c.
Electrical connection plug	Type 283 mPm
Internal volume	7 cm^3
Materials in vacuum	Stainless steel
Leak rate	<1 x 10^{-9} mbar ls^{-1}
Enclosure classification	IP52
Weight	0.7 kg
Vacuum connection	NW16
Accessories supplied	Mating electrical socket type 183 mPm

*Set point varies with barometric pressure

IS16K Vacuum Interlock Switch

Ordering information

Product description	Order no:
IS16K Vacuum Interlock Switch	D05914000

VS16K ADJUSTABLE VACUUM SWITCH

The VS16K is a general purpose vacuum switch with a user adjustable set-point and small switching differential. This diaphragm operated vacuum switch is high vacuum compatible and corrosion resistant with all wetted parts made from stainless steel. A high current rating allows direct switching of loads without additional relays or external power supplies.
This switch should not be used for safety critical applications. For many interlock applications the Edwards IS16K may be more suitable.

Features and Benefits

- Set-point range 30-1000 mbar
- User adjustable
- Reproducible
- Changeover contacts for normally open or normally closed operation
- Switch point independent of gas composition

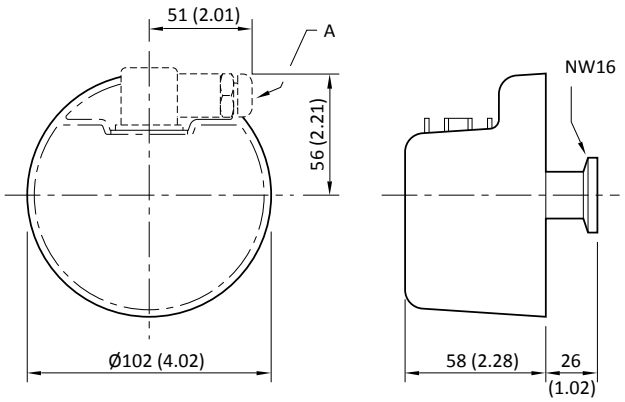
Applications

- Furnaces
- Laboratories
- Tank units
- Packaging
- General purpose pumping units

Product Range

VS16K

VS16K Dimension



A. Mating half shown fitted

Technical Data

	VS16K
Range of adjustment	30 to 1000 mbar
Maximum switching differential	30 mbar
Maximum working pressure	1 bar gauge (2 bar absolute)
Electrical rating	10 A resistive, 5 A inductive at 250 V a.c.
Electrical connection plug	Type 283 mPm
Internal volume	7 cm^3
Materials in vacuum	Stainless steel
Leak rate	<1 x 10^{-9} mbar ls^{-1}
Enclosure classification	IP52
Weight	0.7 kg
Vacuum connection	NW16
Accessories supplied	Mating electrical socket type 183 mPm

Set-point varies with barometric pressure

VS16K Adjustable Vacuum Switch

Ordering information

Product description	Order no:
VS16K Adjustable Vacuum Switch	D05915000

TIC 6 GAUGE CONTROLLER

The TIC Instrument Controller provides compact control with a large, clear graphical display, an intuitive user interface and serial communications. The supplied Windows™- based PC program provides full remote setup, control and data logging functions via the RS232 interface.
Three TIC Instrument Controllers are available; the three head and six head versions can accommodate 3 or 6 active gauges. The six head Capman version can accept up to three Edwards Barocel® Capacitance Manometers.

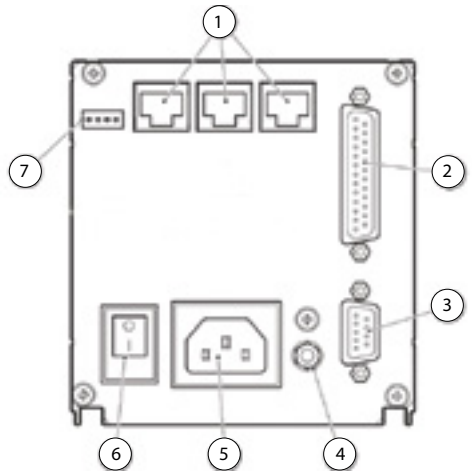
Features and Benefits

- TIC automatically recognises and controls active gauges including APG100 Pirani, convection, thermocouple, strain, inverted magnetron, wide range and active ion gauges. To enable complete integration into PC and PLC controlled processes, all TIC variants include RS232 and RS485 interface.
- TIC has six pressure related set-points, which operate open collector outputs rated at 24 V d.c. 50 mA. Using the optional relay boxes, these may be linked to 250 V a.c. changeover relays (dry non conductive atmosphere only) to provide a useful accessory control capability. All relay boxes include a logic bypass facility for further system integration.
- In most instances, TIC systems may be simply and quickly configured using the range of standard cables on offer, there is therefore no need for the customer to prepare loom assemblies or relay boxes and special interfaces
- TIC includes lookup tables for a range of commonly encountered process gases (N_2, He, Ar, CO_2, Kr & Ne). Selecting the appropriate gas enables direct readout of the correct pressure without the need to apply conversion factors.
- TIC is packaged in a compact case and may be panel or rack (¼ 19 inch rack 3U) mounted. With the addition of the bezel it becomes an attractive bench-top instrument. The large 128 x 64 pixel backlit graphics LCD and mobile phone style menu system simplifies programming and with a choice of summary screens excellent visibility of displayed parameters is assured.
- TIC will operate from mains supplies with voltages between 90 and 264 V a.c., and frequencies between 47 and 63 Hz. No user intervention being required.

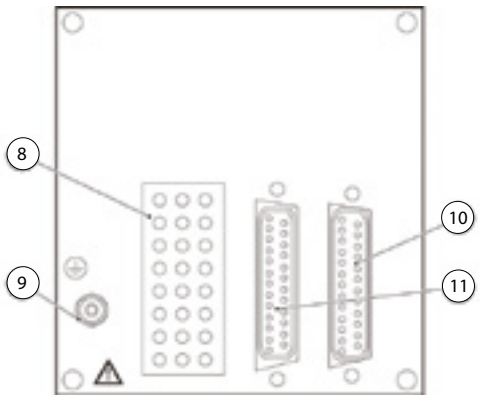
Product Range

TIC Instrument Controller

TIC 6 -Gauge Controller Back Panel



TIC 6 -Gauge Controller Setpoint Relay Box



1. Gauge inputs	5. Mains input	9. Earth stud
2. Logic interface	6. Mains on/off	10. TIC logic interface connection
3. Serial comms port	7. Analogue outputs	11. User logic interface
4. Earth stud	8. Set point relay connection	

Technical Data

	TIC Controller
Electrical Data	
Connector type	CEE/IEC 320
Electrical supply	90 to 264 V a.c., 47 to 63 Hz
Power consumption	3 head TIC 55 VA. 6 Head TIC 160 VA
Fuse	The unit is self-protecting and has no user replaceable fuse. The unit will recover once any overload is removed.
Earth stud	M4
Operating And Storage Data	
Ambient operating temperature range	0 °C to 40 °C (measured underneath TIC)
Maximum ambient operating humidity	Max 90% RH non-condensing at 40 °C
Maximum operating altitude	3000 m max
IP rating	20
IEC rated pollution degree	2
Mechanical Data	
Weight	1.7 Kg
Interfaces	
Analogue output	0-10V d.c. – one for each gauge
Serial Interface	The TIC has two built-in communications protocols, RS232 and RS485. These may be used either to interface to a PLC or, using the Windows™ PC software package supplied, connected to a PC for full monitoring and control of a TIC system.
Set-points	6 set-point (open collector) rated at 24V d.c. 50 mA can be assigned to any gauge. Use directly or in conjunction with TIC relay boxes.

Capacitance manometer compatibility – 6 head Capman versions only
For more information, contact Edwards.

TIC 6 gauge controller

Ordering information

Product description	Order no:
TIC Instrument Controller 3 Head RS232/RS485	D39700000
TIC Instrument Controller 3 Head RS232/RS485, Certificated	D3970000C
TIC Instrument Controller 6 Head RS232/RS485	D39701000
TIC Instrument Controller 6 Head Capman	D39702000
TIC Instrument Controller 6 Head RS232/RS485, Certificated	D3970100C
TIC Instrument Controller 6 Head Capman, Certificated	D3970200C

Active Gauge Cable

Product description	Order no:
0.5M Active Gauge Cable	D40001005
1M Active Gauge Cable	D40001010
3M Active Gauge Cable	D40001030
5M Active Gauge Cable	D40001050
10M Active Gauge Cable	D40001100
15M Active Gauge Cable	D40001150
25M Active Gauge Cable	D40001250
50M Active Gauge Cable	D40001500
100M Active Gauge Cable	D40001999

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- Item Number and description of the part.

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TIC RELAY BOXES

Two relay boxes are available for use with our TIC controllers:

- A small backing pump relay box is compatible with TIC turbo only and turbo and instrument controllers
- A small backing pump and instruments relay box is compatible with TIC turbo and instrument controllers

The small backing pump relay boxes are able to control mains backing pumps up to RV12/ nXDS10i. The relay box also controls a mains heater band and backing line isolation valve. In addition the small backing pump and instrument relay box includes three 250 V a.c. 3 A changeover relays, which are activated by the gauge open collector set point outputs.

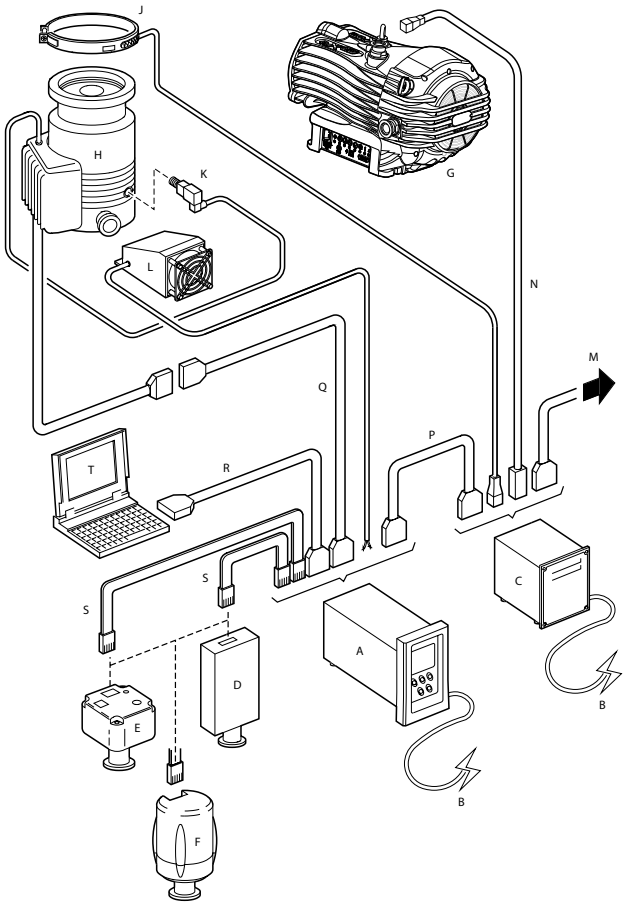
Features and Benefits

- Enables TIC to control mains backing pumps, up to and including nXDS10i and RV12.
- Provides interfaces for a turbo heater band, a backing line isolation valve and a logic bypass. All relay boxes include a logic bypass facility for further system integration.
- TIC relay is packaged in a compact case and may be panel or rack (¼ 19inch rack 3U) or bench mounted.
- TIC relay will operate from mains supplies with voltages up to 240V a.c.

Product Range

TIC Relay Box

TIC Configuration



A.	TIC200 turbo and instrument	K.	TAV5 vent valve
B.	Mains cable / line cord	L.	ACX air cooler
C.	Relay box	M.	TIC logic interface cable
D.	APG100 Pirani gauge	N.	IEC320 M/F cable
E.	AIGX Ion gauge	P.	TIC logic interface cable
F.	AIM Penning gauge	Q.	XDD/DX/EXDC extension cable
G.	nXDS scroll pump	R.	TIC RS232 interface cable
H.	EXT/nEXT turbopump	S.	Active gauge cable
J.	BX heater band	T.	PC with RS232 interface

Technical Data

	TIC Relay Boxes
Mains input	
Connector type	CEE/IEC320 inlet
Max rating	240V a.c.
Earth stud	M4
Heater band outlet	
Connector type	CEE/IEC320 inlet
Max rating	240V a.c. 1A
Fuse	20mm x 5mm, 250V, 1A type F
Backing pump outlet	
Connector type	CEE/IEC320 inlet
Max rating	240V a.c. 10A
Fuse	20mm x 5mm, 250V, 10A type T
Setpoint connector	
Connector type	12-way positronic PLC plug
Max rating	250V a.c. 3 A (resistive) Dry non conducting atmosphere only or 30 V d.c. 3A (resistive)
Mating half (supplied)	12-way positronic PLC socket with hood
Backing line isolation valve connector	
Connector type	3-way DIN socket
Max rating	24V d.c. 0.5A
Lead type	3 core 0,5mm^2
Weight	695g
Operating temperature	+0°C to +40°C
Storage temperature	-30°C to +70°C
Max ambient operating humidity	90% RH non-condensing at 40°C
Max operating altitude	3000m
Electronic design	EN61010-1
Enclosure rating	IP20

Service

Edwards products, spares and accessories are available from Edwards companies in Belgium, Brazil, China, France, Germany, Israel, Italy, Japan, Korea, Singapore, United Kingdom, U.S.A. and a world-wide network of distributors.

The majority of these centres employ Service Engineers who have undergone comprehensive Edwards training courses.
Order spare parts and accessories from your nearest Edwards company or distributor.
When you order, please state for each part required:

- Model and Item Number of your equipment.
- Serial number (if any).
- Item Number and description of the part.

TIC Relay Boxes

Ordering information

Product description	Order no:
TIC Relay Box Sml Bkg	D39711805
TIC Relay Box Inst & Sml Bkg	D39721806

Linecord

Product description	Order no:
Linecord 2M North Euro Plug	D40013030
Linecord 2M UK Plug	D40013025
Linecord 2m With US Plug	D40013120

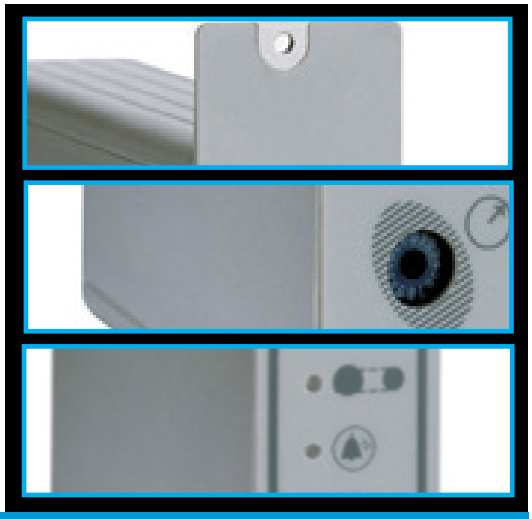
Interface Cable

Product description	Order no:
TIC Logic Interface Cable 2m	D39700833
TIC RS232 Interface Cable 2m	D39700834

Extension Cable

Product description	Order no:
XDD/DX/EXDC Extension Cable 1m	D39700835
XDD/DX/EXDC Extension Cable 2m	D39700836
XDD/DX/EXDC Extension Cable 5m	D39700837

PROFIBUS COMMUNICATIONS MODULE



Manufacturers, laboratories and research establishments are converting to fieldbus to take advantage of the reduced cabling and network equipment costs.
Edwards offers a compact, Din rail mountable module to allow Profibus protocol communications with the TIC Turbo and Instrument Controllers, or directly with Edwards DX/nEXT turbo pumps.
The TIC is a versatile, advanced system controller capable of controlling a series of vacuum pumps and up to three Edwards Active vacuum gauges. The addition of the Profibus module allows full advantage to be taken of digital multi-drop communications.

Features and Benefits

- Full Profibus International Accreditation
- Din Rail Or Rack Mounting
- Wide Operating Voltage Range 9 - 52 V
- Simple Set-up
- Field Software Upgrades Available
- Retrofit To Existing Installations

Product Range

Profibus
- TIC Profibus
- DX/ nEXT Profibus

Profibus Communication Module Dimensions

Technical Data

	Profibus
Electrical Data	
Electrical supply	
TIC Profibus module	9 - 52V d.c. 5W (switch on surge 500 mA)
Ambient operating temperature	0 to 40 °C
Ambient storage temperature	-30 to 70 °C
Max ambient operating humidity	90% RH non-condensing
Max operating altitude	2000 m
IP rating	IP30 - indoor use only
Mass	0.28 kg
Connectors	
DC power connector (supplied)	2-way receptacle. Mating part is cable mount terminal block (supplied). Suitable parts include: Phoenix MSTBV 2.5/2-G-5.08:Weidmuller BLZ 5.08/2: Amp796634-2: IMO 21.950/2
Profibus connector	
Connector type	9-way sub-miniature ”D” type socket
Profibus data signals	Electrically compliant with RS485 specification isolated from chassis
Profibus power supply	10 mA supply (protected for external terminator resistors if required)
Chassis	For Profibus cable screen convention
Repeater control signal	Digital signal, nominally 0-5 V but with series 340 ohm resistor. High = module transmitting. Low = receiving or idle
RS232 connector TIC version	9-way sub-miniature ”D” type plug
RS232 protocol	9600 baud, 1 stop bit, 8 data bits, no parity
Cables	
Profibus cable	Should be screened and comply with EN50170
RS232 cable TIC version	15 m max. Screening not required.
DX pump connection	Connection must be either directly to the DX pump flying lead or an Edwards DX pump extension cable.

Profibus Communications Module

Ordering information

Product description	Order no:
AIGX-D-NW25	D04860000
AIGX-D-DN16CF	D04861000

Cables

Product description	Order no:
TIC PROFIBUS 24V CABLE (0.3 m)	D39750835
TIC PROFIBUS RS232 CABLE (0.3 m)	D39750016
IC PROFIBUS UPGRADE CABLE (2 m)	D39750836
DX/nEXT PROFIBUS UPGRADE CABLE (2 m)	D39751831

Fuses

Product description	Order no:
DX/nEXT PROFIBUS SPARE FUSE (X 2)	D39751830

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- Item Number and description of the part.

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ADC ACTIVE DIGITAL CONTROLLER

The Edwards Active Digital Controller (ADC) is a compact single gauge controller and display. It features a bright LED display and simple push-button controls.
The ADC automatically recognises compatible Edwards gauges, loads the appropriate look-up table and displays the pressure in commonly used vacuum units.
Two versions are available; the standard ADC simply displays the pressure in choice of units, and the enhanced ADC includes a second gauge connection, two set-point relays, two analogue outputs and an RS232 interface. The ADC mk2 enhanced controller can now support 2 different gauges, e.g. APG100 and AIM.

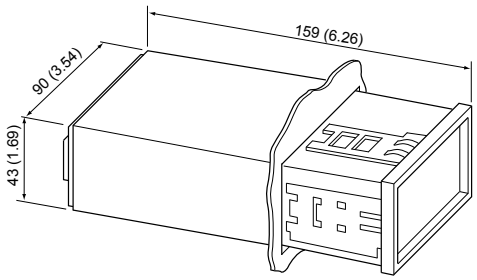
Features and Benefits

- Plug and measure operation means you simply plug in the mains supply, connect the gauge and ADC displays the measured pressure
- The ADC supports Edwards gauges with a total measuring range of 2000 to 1 x 10^{-9} mbar (1500 to 7.5 x 10^{-10} Torr)
- Bright LED display gives clear, long distance readability
- The ADC displays units in mbar, Torr, Pascal or Volts
- Small 1/8 DIN enclosure, may be panel or bench mounted
- Simple push-button control makes operation highly intuitive

Product Range

ADC
- ADC
- ADC MKII

ADC Dimensions



Technical Data

	ADC
Active gauge compatibility	
Standard	APG100, APG-L, APG-MP, APG-M, APGX-H, APGX-L, WRG
Enhanced	Up to two gauges from the standard version plus AIM-X, AIM-S & ASG
Display	High brightness green LED display (0.47 inch high)
	Units - mbar/Torr/Pa/Volts
Electrical supply	100 to 240V Aa.c.47 to 63 Hz
Dimensional Data	
Panel cut-out	92 + 0.8 x 45 + 0.6 mm (3.62inch x 1.77 inch) to DIN43700
Panel thickness	1.5mm (0.06 inch) Min
Weight	0.33Kg
Operating and storage data	
Operating temperature	+0 to +40°C
Storage temperature	-30 to +70°C
Max ambient operating humidity	90% RH non condensing at 40°C
Standards	
Electrical safety	BS EN 61010-1
Electrical noise immunity	BS EN 61326 (Industrial location, class B emissions)
Flame retardant case materials	UL94 V1
Enclosure rating	IP40
Enhanced features	
Two analogue output	0-10V d.c.
Two set-point relays, volt free single pole change-over	1A at 48V d.c. / 2A at 24V d.c.
Serial output	RS232

ADC Active Digital Controller

Ordering information

Product description	Order no:
ADC Standard	D39590000
ADC mkII Enhanced	D39591500
ADC Standard, Certificated	D3959000C
ADC mkII Enhanced, Certificated	D3959150C

Active Gauge Cable

Product description	Order no:
0.5M Active Gauge Cable	D40001005
1M Active Gauge Cable	D40001010
3M Active Gauge Cable	D40001030
5M Active Gauge Cable	D40001050
10M Active Gauge Cable	D40001100
15M Active Gauge Cable	D40001150
25M Active Gauge Cable	D40001250
50M Active Gauge Cable	D40001500
100M Active Gauge Cable	D40001999

TIC Interface Cable

Product description	Order no:
TIC RS232 Interface Cable 2m	D39700834

Linecord

Product description	Order no:
Linecord 2M North Euro Plug	D40013030
Linecord 2M UK Plug	D40013025
Linecord 2m With US Plug	D40013120

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GASCHECK G3

Introduced as an enhanced replacement for the popular GasCheck 3000, the Gascheck G3 incorporates a new backlit dot matrix LCD for improving viewing in poor lighting and leak rate indication by both flashing LED and sounder, for easier use in all environments. In addition the GasCheck G3 has a new tactile keyboard with fewer keys and improved temperature stability for better performance in uncontrolled areas.

Features and Benefits

- Detect leaks with automatic and direct display of gas leak rate
- New, simple to interpret graphical icon display menu. Choice of readings in cc/sec, mg/m^3 or ppm
- Rapidly detects almost any known gas mixture - particularly sensitive to ammonia, argon, butane, helium
- Data logging facility – 10 data points with date and time stamp

Applications

- Quality assurance testing on manufactured component seals
- Laboratory applications, such as the detection of leaks from gas chromatographs, from mass spectrometers, from gas cylinders and fittings
- Industrial applications, such as the detection of leaks from gas installations, in cylinder receiving rooms, from pipeline assemblies, the detection of leaks from stored gases and the detection of vapours released from stored chemicals
- Medical applications, such as the detection of leaks from gas bottles and pipelines and leak testing of membrane materials, glove boxes and so forth
- Pneumatic applications, such as leak testing of pipeline joints, gaskets and so forth

Technical Data

	GasCheck G3
Detector	Micro thermal conductivity sensor
Min detectable limits of some common gases:	
R134A	5.8 x 10^{-5} cc/sec
Helium	1.0 x 10^{-5} cc/sec
Argon	3.5 x 10^{-5} cc/sec
Carbon Dioxide	4.0 x 10^{-5} cc/sec
Sulphur Hexafluoride	2.2 x 10^{-5} cc/sec
Response/Recovery time	
Short probe	1s
Long probe	9s
Data logging	10 data points with date and time stamp
Batteries	4 off AA Alkaline or NiMH
Operating temp range	0 to 50 °C
Storage temp range	-25 to 70 °C
Length with 110 mm, short probe	390 mm
Length with 300 mm, long probe	580 mm
Storage Case	420 x 320 x 97 mm
Unpacked weight	0.5 kg
Packed weight	1.6 kg
Electrical noise immunity	EN61326, class B emissions

GasCheck G3

Ordering information

Product description	Order no:
GasCheck G3	D14132000

Accessories

Product description	Order no:
B Series Long Probe	D14128802
Gas Check Battery Holder	D14130802
Gas Check Nozzle	D14130800
Short Probe For B Series For Gas Check	D14128801

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