

Active ion gauge (AIGX)

A compact active ion gauge with dual yttria coated iridium filaments, a wide measuring range from 6.6×10^{-2} to 6.6×10^{-10} mbar (5×10^{-2} to 5×10^{-10} Torr) and a 1 Volt/decade linear output.

The 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 6.6×10^{-10} mbar (5×10^{-10} Torr)
- Two versions available, each with three vacuum coupling variants:
 - 'D' versions have a 9-pin 'D' connector and standard interface
 - 'S' versions have enhanced functionality and are fully compatible with the range of Edwards controllers
- 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
- Gauge sensitivity remains constant over the whole measuring range, thus maintaining output accuracy at higher pressures
- Continuous pressure measurement output during degas
- Innovative design eliminates the effects of X-ray limits
- Bi-colour LED gives local indication of gauge status.
- Wide input voltage range
- Electronics very easily removable for bakeout at up to 200°C
- 'S' versions provided with seamless automatic emission current switching, for prolonged filament life
- 'S' versions provided with diagnostic outputs indicating 'emission off', 'broken filament' and 'overpressure trip' to help with troubleshooting
- 'S' versions provided with a push-button adjustable set point

Technical data

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 dc
Power consumption	Normal operation: 7W (max) Degas: 14W (max)
Output signal	Linear, 1 Volt/decade
Response time	1.33 x 10 ⁻⁸ mbar (>10 ⁻⁸ Torr) ≈100ms 1.33 x 10 ⁻⁸ mbar (<10 ⁻⁸ Torr) ≈1-2s
Tube details	
Accuracy*	Typically +/- 15% of reading (better with optional calibration)
Repeatability	+/- 5%
Filaments	Manually selectable dual yttria coated iridium
Degas	Three minute electron bombardment cycle
Emission current	0.1mA & 1mA
'S' versions	Automatically switches at 10 ⁻⁵ Torr (1.33 x 10 ⁻⁵ mbar) to protect filaments at higher pressures
'D' versions	Manual control
Maximum overpressure	10 bar absolute
Materials exposed to vacuum	Tungsten, Tantalum Pt clad Mo, Yttria coated Iridium, St St 340L and UHV compatible glass/ceramic
Vacuum fittings	NW25, DN16CF & DN40CF (CF couplings rotatable)
Bakeout	Max 200°C with electronics removed

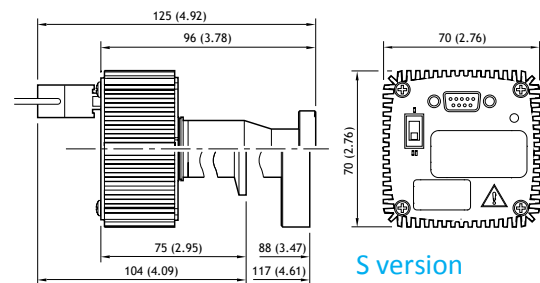
* Accuracy is reduced at the lower limit of the measuring range

Set point (open collector transistor)	
1 on 'S' versions only	
Maximum voltage	30 V dc
Maximum current	100 mA max
Temperature range	
Operating temperature	0° to +40°C
Storage temperature	-30° to +70°C
External interface connectors	
'S' versions	8-way FCC68/R145 socket
'D' versions	9-way 'D' type plug (pins)

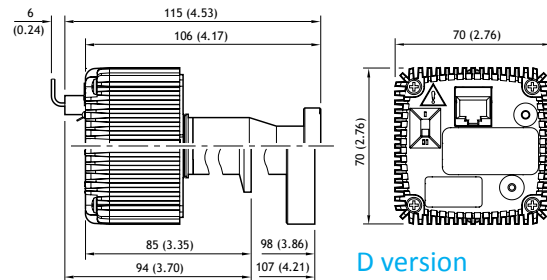
Ordering information

Product description	Order no.
GAUGES	
AIGX-S-NW25	D04850000
AIGX-S-DN16CF	D04851000
AIGX-S-DN40CF	D04852000
AIGX-D-NW25	D04860000
AIGX-D-DN16CF	D04861000
AIGX-D-DN40CF	D04862000
Certificated gauges are supplied with a certificate traceable to national standards	
AIGX-S NW25 certificated	D0485000C
AIGX-S DN160CF certificated	D0485100C
AIGX-S DN40CF certificated	D0485200C
AIGX-D NW25 certificated	D0486000C
AIGX-D DN16CF certificated	D0486100C
AIGX-D DN40CF certificated	D0486200C
ELECTRONICS MODULES	
AIGX-S	D04850800
AIGX-D	D04860800

Dimensions - shown in mm (inch)

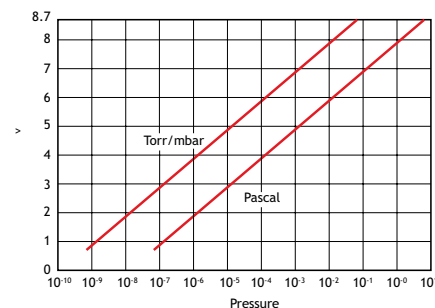


S version



D version

Gauge output



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