

# ACTIVE ION GAUGE (AIGX)

edwardsvacuum.com

A compact active ion gauge with dual yttria coated iridium filaments, a wide measuring range from  $6.6 \times 10^{-2}$  to  $6.6 \times 10^{-10}$  mbar ( $5 \times 10^{-2}$  to  $5 \times 10^{-10}$  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  $6.6 \times 10^{-10}$  mbar ( $5 \times 10^{-10}$  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

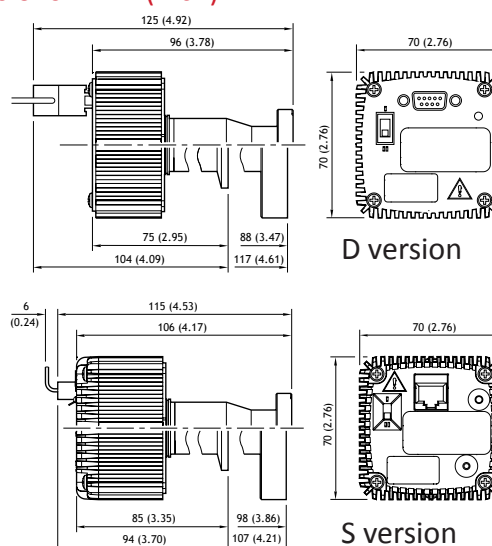
Technical data

|                             |   |
|-----------------------------|---|
| Pressure range              | 6.6 x 10 <sup>-2</sup> to 6.6 x 10 <sup>-10</sup> mbar<br>(5 x 10 <sup>-2</sup> to 5 x 10 <sup>-10</sup> Torr)              |
| Power supply                | +14.5 to +30.0 V d.c.   |
| Power consumption           | Normal operation: 7W (max)<br>Degas: 14W (max)  |
| Output signal               | Linear, 1 Volt/decade   |
| Response time               | 1.33 x 10 <sup>-8</sup> mbar (>10 <sup>-8</sup> Torr) ≈100ms<br>1.33 x 10 <sup>-8</sup> mbar (<10 <sup>-8</sup> Torr) ≈1-2s |
| Tube details                |   |
| Accuracy*                   | Typically +/- 15% of reading<br>(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 <sup>-5</sup> Torr (1.33 x 10 <sup>-5</sup> 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 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                 |
| External interface connectors         |                               |
| 'S' versions                          | 8-way FCC68/R145 socket       |
| 'D' versions                          | 9-way 'D' type plug (pins)    |

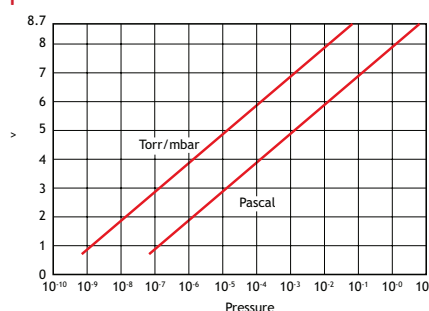
Dimensions - mm (inch)



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 |

Gauge output



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