

GE
Energy

AltairAquila™

Filtration System



Offshore/Coastal Protection



imagination at work

Introduction

In operation in offshore and coastal environments worldwide, the compact AltairAquila™ filtration system protects gas turbines in the harshest environments.

Super-compact

The system operates at high velocity – up to three times faster than many traditional systems – which allows the face area of the filtration unit's housing to be up to 65% smaller than conventional low velocity systems. This space-saving feature allows for improved flexibility in site layout planning.

In the offshore environment, the removal of airborne salt from the air inlet is vital to guard against turbine damage. GE Energy's SRS Technology™ removes both wet and dry salt particulate.

The local atmosphere around offshore platforms can be laden with turbine-damaging contaminants, such as hydrocarbons, cement, shot blast debris, and sand. The AltairAquila range of high efficiency filters has been specifically designed to remove this harmful particulate without creating excessive inlet pressure loss. For especially dusty environments, a cleanable pre-filter can be used to extend the life of the main filter.

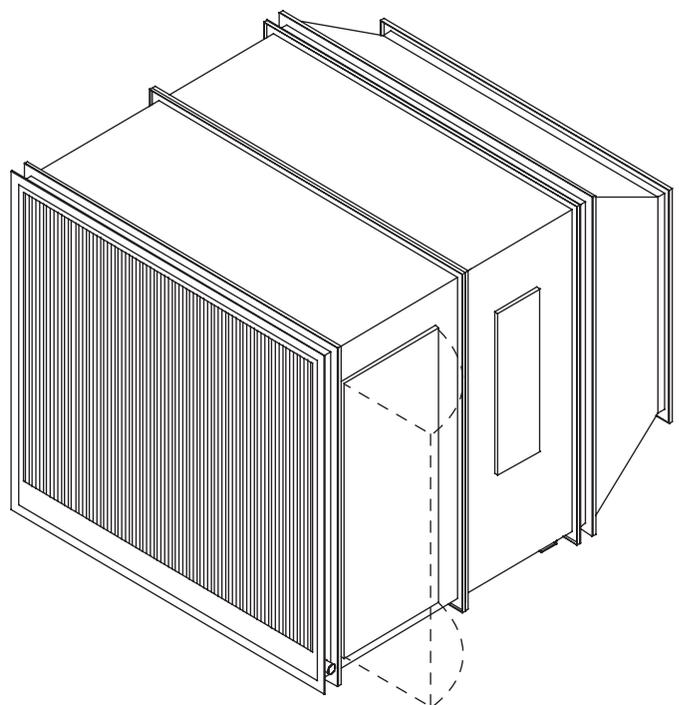


Range of optional enhancements

The system can be supplied in a number of corrosion-resistant materials, including stainless steel and marine-grade aluminum. Additional protection such as snow hoods, insect/trash screens, and anti-ice protection can be easily added to the system depending on specific environmental conditions.

Easy Access

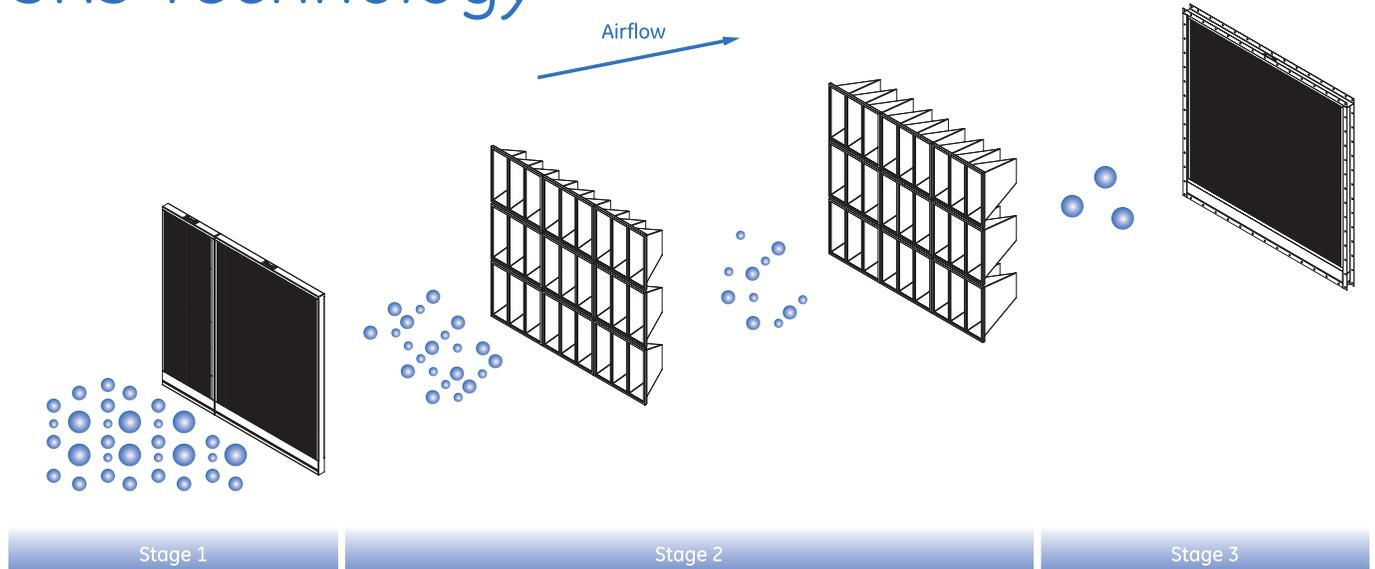
Fast and easy access to the filters minimizes system downtime during maintenance and filter change-out. The system comes in the Classic design with a dedicated walk-in section between the first-stage separator and the filters. The side-door gives operators easy access to both pre-filters and high efficiency filters.



Key Benefits

- Super-compact unit saves space and offers flexibility in site design
- High dust-removal efficiency helps increase time between compressor washes
- Effective salt removal minimizes turbine corrosion
- Flexible design allows the easy addition of enhancements, e.g. snow-hoods, insect screens, anti-ice
- Extensive selection of filter elements covers a wide range of applications
- Fully stainless steel housing provides for a long and low-maintenance life

SRS Technology™



The ingestion of airborne salt has long been proven to be a major contributing factor in both decreased turbine performance and reduced engine lifetime. The AltairAquila filtration system utilizes GE's unique SRS Technology process to protect the turbine from damage. This process, which is the result of nearly 40 years' experience in marine and offshore filtration, removes both solid and liquid contaminants in all weather conditions and at all levels of humidity. Salt removal performance is outstanding, with the capability to reduce the concentration of incoming marine air to less than 2 parts of salt per 100 billion parts of air.

SRS Technology is deceptively simple. Three key stages are employed:

Stage 1 is referred to as the 'bulk water removal' stage.

The majority of the liquid (rain, sea spray, coarse aerosols) entering the inlet is removed and drained away using a vane separator.

Stage 2 is the coalescence stage. Fine aerosols that have penetrated Stage 1 are coalesced to form larger droplets that can be easily removed by the third stage. Dust and other solid particulate is also removed. As all marine and offshore pre-filters and high efficiency filters in the range are optimized for coalescence as well as dust filtration, this dual function can be carried out without compromise.

Stage 3 is typically a vane separator or similar, which removes concentrated saline solution that has passed through Stages 1 and 2. Not only is this entrained liquid captured, but it is removed from the inlet by a manometrically-sealed drainage system.

AltairAquila Filter Elements

The AltairAquila range of filter elements includes a cleanable pre-filter and three disposable high efficiency bag filters. The filter elements provide a range of efficiency levels to suit different applications.



Filter Type	Product Name	Performance
High efficiency filter	HVA	Optimum performance for very high levels of small particulate; ideal for operators needing to maximize the intervals between compressor washing shut-downs
	HXA	Enhanced level of small particulate efficiency with minimal premium in terms of pressure loss
	HEA	Low pressure loss filter helps optimize turbine output
Pre-filter	PFA	Cleanable pre-filter for high dust environments to increase dust-holding capacity and extend the life of the high efficiency filter



Performance Data

	Hydra/ HEA /Hydra	Hydra/ HXA /Hydra	Hydra/ HVA /Hydra
System pressure loss at 1500 FPM (7.5 m/s) *	1.5 IN WG 41 mmH ₂ O	1.8 IN WG 48 mmH ₂ O	2.4 IN WG 62 mmH ₂ O
Gravimetric efficiency vs ASHRAE	98%	99%	99%
1 Micron fractional efficiency	95%	97%	99%
Salt output vs NGTE 30 knot aerosol ** (efficiency)	0.0002 ppm (99.99%)	0.00018 ppm (99.99%)	0.00018 ppm (99.99%)

NOTES

* System includes front and rear stage Hydra marine vane separator.

** 3.6 ppm input

All data are shown for indication purposes and are subject to change without notice. Actual results may vary.



For more information on Altair systems contact your GE Energy sales representative at +44 (0) 1420 541 188 (UK) / +1 502 499 2151 (US), or visit us on the web at ge-energy.com/airquality.

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