

MAXIMISE UPTIME

& performance of data centre *with*
energy efficient air solutions

Energy efficient air solutions are critical for data centre performance.

Are Data Centers a Valuable Asset to Business Agility?

Dr Vijay Chaudhry explains how quality air solutions play an important role in shaping the data-driven businesses.

Data Centres have become an inevitable part of the digital age. Easing up various functions like computation, data storage, and networking, along with various business applications, from big conglomerates to even medium and small enterprises are highly investing in data for access to critical and sensitive information.

Looking at the fast-paced adoption of data centres, Large Data Centres have become part of the mission-critical initiative that offers essential services across a wide range of sectors entailing banking, telecom, large firms, consultancies sectors, and even small businesses. But considering data centres hold such a crucial position in the industry, companies must be vigilant enough to look out

for any threat looming around the centre. In order to protect the integrity of the facility, close vigilance must be conducted with the help of manual intervention for the early detection of threatening factors within the space.

According to industry experts, Airborne Molecular Contamination is a serious threat to data centres. It occurs when vapor gases like sulphur, oxides of nitrogen, chlorine, ammonia, etc., trigger chemical contamination. Airborne Molecular Contamination plagues the efficiency of the system by causing corrosion which can damage the sensitive information stored in it. Together in combination with atmospheric particulates like smoke and suspended dust in the air, it can cause the downtime of the machine. The impact is even more intense in miniaturised electronics, which are highly vulnerable to undergoing micro corrosion/e-corrosion in the presence of harmful gases.

It has been found that a harmful environment is the major factor triggering corrosion in data centres¹. Infiltration of outdoor particulates and gaseous

contaminants are the major causes contributing to the formation of harmful environments. The problem is magnified in facilities near landfill sites, sewerage/drains, high-density traffic, process industries, etc. There is a continuous release of highly corrosive gases like SO₂, H₂S, NO₂, etc., which permeates through air conditioners into the server rooms, data centres/control rooms, switchgear rooms, process control, and signalling/switching rooms.

Looking at the damage, failing to control the contamination can escalate downtime in data centres and server rooms. The situation further becomes out of control in case high relative humidity comes in contact with gases, only to form a corrosive element on the electronic circuits. All the factors give rise to faulty operations, reliability issues, and meddle with the longevity of sensitive electronic process control equipment in industrial control rooms, besides data centres.

To curtail the menace of contamination,

DataCenter Air Purifier² (DAP) and advanced Gas Phase Filtration systems must be installed in the facilities to inhibit the process of contamination. The systems efficiently protect the data centres by simply directing contaminant-laden air streams through a gas adsorbent that contains neutralising chemicals. It filters out corrosive gases which inhibit damage to the microcircuitry of PCBs. Along with this, the air filtration systems also maintain the humidity at optimum levels, for preventing condensation on equipment.

Forming a better understanding of the process, it comes to light that media testing forms an important part of controlling corrosion in data centres. It comes with corrosion coupons that detect the influx of gases while identifying corrosion within the facility. Along with corrosion coupon ACM – Atmospheric Corrosivity Monitor

is there to recognise the corrosive gases, which also specifies the percentage in which they are present. It categorises corrosivity into G1, G2, G3, G4, etc., levels after analysing the criticality of the gases. As part of the mission-critical initiative, India comes with the back-up of media testing and lab services that is well adept at conducting predictive maintenance for checking the process of corrosion.

As air filtration comes with the ability to efficiently remove contaminants from the vicinity of data centres, it must be installed for quality air solutions, helpful in controlling moisture and contamination in server rooms. It ensures the smooth functioning of data centres for enabling efficient working of business dependent on it.

References

1. <https://www.bryair.com/industries->

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Dr Vijay Chaudhry, President, International Business & Gas Phase Filtration Business division of Bry-Air (Asia), has over 28 years of comprehensive experience in managing the entire business value chain including balance sheet and P&L management. His area of specialisation is in the field of Industrial Air & Gas Pollution Control (APC) and Purification Systems. He has held various key positions and roles for implementation of growth strategies and building businesses on a sustainable basis.

Emerson to help enable carbon-efficient production from Martin Linge North Sea Development

Emerson, a global software and engineering leader, has signed a five-year framework agreement with Equinor to provide operational support services to ensure continued safe and optimised oil and gas production from its pioneering Martin Linge platform in the Norwegian North Sea. The service agreement, which includes options for three additional five-year periods, covers maintenance and upgrades of the control technology, software and instrumentation. These technologies are helping to accelerate carbon-efficient production and empower remote operation from onshore for increased worker safety and reduced operating costs.

Martin Linge is a significant development for Norwegian oil and gas production, with expected recoverable resources of around 260 million barrels of oil equivalent. Emerson's technology, project expertise and global resources were crucial in helping achieve first oil safely, and with the award of this service contract, Equinor gains continued support to optimise production, reduce energy consumption and emissions, and maximise the potential of the Martin Linge development. Martin Linge, situated 42 kilometres west of Oseberg, was the first platform on the Norwegian continental shelf to be started up from shore. The 63 billion Norwegian krone (USD 7.3 billion) mega-project includes a production platform and a permanently anchored floating storage and offloading (FSO) vessel. These facilities are powered from onshore via the world's longest alternating-current sea cable, helping to reduce CO₂ emissions by 200,000 tonnes per year. Oil is processed on the FSO vessel before being transported in shuttle tankers to the global market, while gas is transported via pipeline to St. Fergus, Scotland.

"With proven automation technologies, collaborative work practices and extensive experience, Emerson is the ideal choice for a trusted partner on energy industry projects of this scale and magnitude," said Mark Bulanda, executive president of Emerson's Automation Solutions business. "With this service agreement, we look forward to helping Equinor achieve continued safe and carbon efficient production."

The award of the service agreement follows Emerson's implementation of a complete automation solution for the project, which incorporates the company's DeltaV™ distributed control system; advanced wired and wireless measurement instrumentation; critical control, emergency shutdown and isolation valves; metering technology and asset management software.