



MARC



ADS™ Dust Control Systems for Material Transfer Applications

ADS fog based dust control systems are an efficient, low cost method of controlling fugitive dust from crushing, screening, conveying, loading, and unloading activities in almost any bulk material handling application. They are as efficient as dust extraction systems with fabric filters or wet scrubbers but require only a fraction of the operating horsepower and maintenance costs.

ADS systems are simple to install and operate and they require no secondary dust or sludge handling systems.

Principal of ADS Fog System Operation

The principal of operation is based on the probability of like-sized water and dust particles colliding, agglomerating, and growing in size and mass. As the agglomerates become larger and heavier and they settle back onto their source where they are carried through the process without any special handling.

When the particles are significantly different in size, the larger particle displaces enough air to carry the smaller particle around it without collision.



Elements of ADS Fog Systems

An ADS system is comprised of a group of unique fog nozzles, their pressure and flow controls, air and water filters, and dust source enclosures.

Our compressed air driven FP series nozzles produce water droplets in the 0-30 micron range, ideal for capturing PM-10 dust particles. Three models are available with water flow rates from 4 to 70 litres per minute and corresponding air consumption ranging from 5 to 42 m³/hr. Operating pressures are normally compatible with standard plant air and water supply pressures.

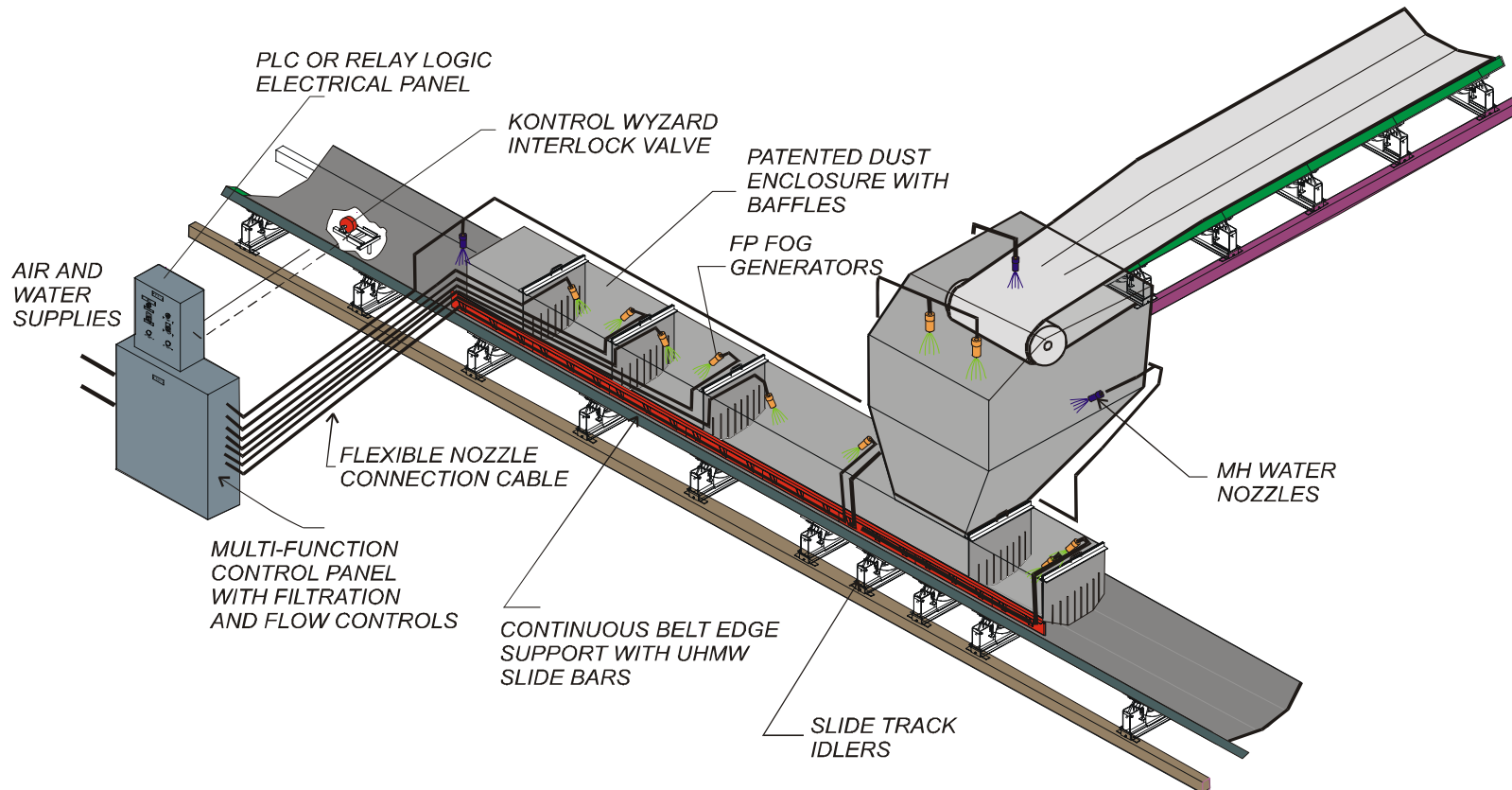
Controls are supplied in all standard voltages. PLC and relay logic systems are offered. Explosion proof models use air actuated valves with remote electrical controls. Freeze protected models operate to -4°C and below without problems.

Dust enclosures are a critical part of an ADS system as they are for any other effective dust control technology. Our enclosure specifications are presented in detail on subsequent pages.



ADS Fog System Enclosure Specifications

The following graphic depicts the elements of an ADS dust control system at a typical transfer point. Enclosure specifications follow the graphic.



ADS Dust Control System for Typical Transfer Point

US Patent # 5,803,955



MARC



**The
Raring
Corporation**

ADS Dust Control Systems

ADS™ Dust Control Enclosure Design Specifications

To achieve optimum dust control at transfer points and at drop points from crushers and screens onto belt conveyors, The Raring Corporation has developed the following specification for the design of dust enclosures and related equipment. US patent #5,803,955 has been granted to The Raring Corporation protecting certain elements of our ADS dust control system that cause it to be a highly efficient fine particulate scrubber unlike any other on the market.

Following are our general enclosure design specifications:

Belt enclosure dimensions:

The length of belt enclosures upstream of a chute is measured from the intersection point of the enclosure and the chute. The length of the down stream (or outgoing) belt enclosure should be five times the enclosure width. This rule may be adjusted in unusual cases of conveyor speed, belt width, chute height, or fines and moisture content.

The length of the up stream (incoming) belt enclosure should be at least one times the belt enclosure width.

The height of the incoming and outgoing belt enclosures is measured from the top of the material on the belt in its “normal” flow condition to the top of the enclosure. The measurement should be one times the belt enclosure width to a maximum of 600mm.

Belts being fed by multiple chutes should be covered continuously between the chutes.

Dust seals:

Skirt boards on belt enclosures must provide a tight seal to the belt. Conventional vertical dust seal designs do not work well. We recommend a dust seal system in which the rubber is angled to the belt so that it lays on the belt with positive force. This prevents dust and small rock from getting between the belt and the rubber which greatly reduces wear and provides a good seal against the positive air pressure within the belt enclosure.

The dust seal rubber must be protected from direct contact with the flow of larger rock. To do this, we recommend the use of internal rubber or steel wear plate liners.





MARC



Enclosure Baffles:

The feature of our enclosure design that distinguishes it from standard practice is the use of internal baffles that create multiple dust suppression chambers within the enclosure. These baffles are simple rubber curtains hung through slots in the top of the enclosure. They distribute airflow within the enclosure, impose a small backpressure to reduce the flow of air, and provide collection surface for the moist dust.

The use of baffles in conjunction with fog or water spray in conveyor enclosures (sometimes called stilling or expansion chambers) is protected under the patent sited.

Guaranteed Dust Control Efficiency

The dust control efficiency of an ADS system installed in a material transfer application has been measured by an independent testing service at 99.29%. TRC guarantees at least 97.5% dust reduction when systems are installed, operated, and maintained according to our instructions.

Cost of ADS Fog Systems

The cost of an ADS system depends on the application and features selected. A typical “self-contained” system suitable for one 900mm conveyor transfer point with (12) model FP-10 fog nozzles, nozzle mounting gear, controls, and filtration carries a supply only price of approximately AUD \$25,000. Freeze protection and other available features add cost while elimination of filtration or electrical controls will reduce cost. Systems designed for large numbers of application points consolidate electrical controls and filtration devices reducing per-point cost. Discounts are available on large volume purchases.

Applications and References

ADS dust control technology has been successfully applied to a wide variety of applications in the coal, wood, minerals mining, power generation, aggregate, cement, and bulk material handling industries.

Our references include most of the major minerals mining and related engineering companies' worldwide. For a list of references to installations similar to yours, please e-mail us at info@marctech.com.au



MARC



**The
Raring
Corporation**

ADS Dust Control Systems

Support Services

MARC Technologies provides on-site project definition, installation, and commissioning support on a fee basis. Please contact us for rate schedules.

Free support is also available by e-mail at info@marctech.com.au When using our free support services, you will need access to a digital camera or photo scanner to provide us with the information we will need to help you quickly.

Other Products and Services

MARC Technologies provides ADS fog based dust control systems for truck and rail car dumping, ship loading and unloading, and many other applications. Application specific brochures are available.

MARC Technologies provides water and chemical based ADS dust suppression systems, dust extraction systems with bag houses or wet scrubbers, and wind fence systems for storage pile protection. We also supply ancillary products such valves, belt cleaners, dust sealing systems, impact beds, and enclosure materials upon request.

For information relating to Coal Handling installations please refer to the web sites:

www.marctech.com.au

www.raringcorp.com