

Condensation-free enclosure protects electrical components

An industrial enclosure which prevents condensation is being used to protect electrical distribution boards. Spelsberg's AK Air enclosure system features an integrated ventilation system whilst still delivering IP65 protection against ingress of water and dust particles.

Condensation causes short circuits and corrosion, degrading electrical components over time. As well as potentially cutting electrical supply, this can also lead to safety hazards. Condensation results from excessive heat, which increases air humidity. If humid air cannot escape the industrial enclosure, it will deposit as moisture on colder surfaces, such as the enclosure walls and electrical components.

Humidity build-up inside the enclosure can be a result of external heat sources, such as sunshine if the enclosure is mounted outdoors, as well as internal sources from heat generated by the electrical components. It's vital that humidity has a means of escape however, highly sealed enclosures which protect from external ingress can exacerbate condensation build-up.

Spelsberg's AK Air enclosure includes an integrated ventilation system which expels virtually all condensation from within, protecting the electrical distribution board. The system comprises a lower valve which channels cool air into the enclosure and a higher valve which expels hotter air. The air exchange system also compensates air pressure within the enclosure, where high pressure would otherwise accelerate the air temperature increase.

The air exchange system includes a rotating cover as well as a filter element, which is integrated on the inside of the enclosure. The system is also maintenance free, removing the time required for maintenance support.

Meeting IP65, the AK Air enclosure provides protection against dust and particulates as well as moisture protection from low-pressure jets from any angle. The enclosure is able to achieve this even with the air exchange system, as the valve vent membranes are also certified to IP65. Polycarbonate construction makes the enclosure extremely robust, achieving IK08, one of the highest impact ratings, protecting from as much as 1.7kg dropped from a height of 300mm.

The sealing protection and functional strength qualifies AK Air for outdoor, industrial and agricultural use. Relevant to agricultural environments, AK Air is tested for ammonia resistance to the German DLG standard and can withstand the influence of ammonia stable air for at least 20 years. The enclosures also meet UL-EU certification.

A range of enclosure sizes means AK Air can protect 14-70 modules, device sizes 1-3, which can be installed on height adjustable mounting rails. Knock-outs in the enclosure walls also provide flexibility for cable entry. A hinged, transparent door provides easy inspection of and access to distribution boards and attention to enclosure style means a professional though robust finish. Mounting the enclosure is achievable via three keyhole fittings or via external lugs.

Spelsberg also creates customised and bespoke options, and can advise how to avoid condensation occurrence with a well planned enclosure layout.

About Spelsberg

Spelsberg is one of the largest manufacturers of electrical enclosures in the world. With over 4,000 enclosures available as standard and further customisation possible, it offers solutions for almost any application.

With the largest supply of non-metallic enclosures, ex-stock in the UK, its products are often available for delivery within 24 hours; customisation is possible on any product, including bespoke entries, engraved corporate logos or fitted terminals, within 48 hours. Products can be ordered direct from Spelsberg or from most leading supply specialists including RS, Rapid, Farnell and CPC.

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