Aerco - distributor of electrical components

Aerco has been at the forefront of the electrical component distribution market for over 65 years. Having faced many challenges, it continues to evolve as it looks to the future.

Traceability and Approvals

Aerco's background in Civil Aviation has meant it has always needed to maintain traceability, and this is now part of our business culture. As times have changed and the need for certification has grown, Aerco has constantly adapted. We were one of the first distribution companies in the UK to gain UL approval to respool cable while retaining the UL approval for the product.

Current Market Trends

With increased economic volatility we have seen prices increase frequently and variable lead times from manufacturers

causing delays to projects and line stops in manufacturing. Customers need stability and consistency in their supply chain. We developed Our CallOff order service to counter these concerns. We hold larger quantities of stock for them, they can Call it off throughout the year at a fixed price. This gives them the reassurance of having the stock available to them at short notice but with fixed prices.

The future of the component supply chain

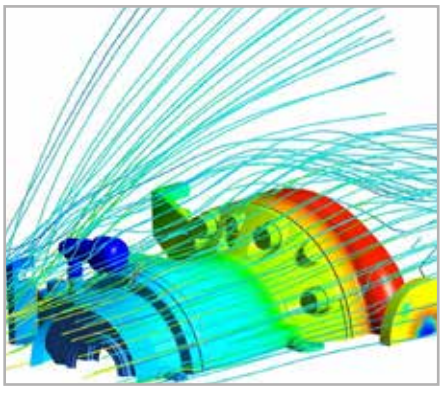
Lots of component manufacturers are looking to reduce their overheads and cut back on non-core activities which have seen them reduce sales team numbers and, on some occasions, reduce technical support to end users too. This leaves a void of support, especially for small and mid-size engineering firms who still require the technical expertise of the component manufacturer to aid with the designing process.

Seeing this knowledge gap in the market, Aerco has invested in its staff and created a knowledge bank to ensure that we deliver on our mission to provide real value-add technical expertise. Thanks to the Aerco Academy, our technical support team can help with the component selection and evaluation activities in our customers' design process.

www.aerco.co.uk

Multi-physics engineering analyses using combined Finite Element Analysis (FEA) and Computational Fluid Dynamics (CFD) tools:

The operation of certain products can involve the coupling of different physics with complex interactions. Multiphysics computational engineering analyses enable these complicated interactions between fluid, structural and thermal physics to be simulated and the product performance to be optimised. Various examples of Multiphysics analyses are:



Multi-physics thermal stress and fatigue analyses

For those products where heat transfer is either non-uniform or difficult to calculate owing to a complex product geometry, CFD enables three-dimensional wall heat transfer to be accurately predicted. These either static or time varying predictions can then be exported to FEA for Multi-physics thermal stress or thermal fatigue analyses that reflect the product reality more accurately.

Multi-physics fluid structural interaction (FSI) simulations

[CFD to FEA]: The full interaction between a product and its operational flow loads are evaluated using CFD and the resultant flow induced structural stresses or deformation are then quantified using CFD. This multi-physics FSI can be used to either avoid harmful flow resonances or evaluate structural fatigue life under a cyclic loading e.g. vortex shedding.
[FEA TO CFD]: FEA predictions are used to predict the product deformation under operational loading and the resulting modified flow field geometry is then used in CFD analysis for more accurate calculation of the product flow performance.

For the above multi-physics analyses, FEA and CFD solvers are directly coupled. Analyses can be fully coupled (two way) feeding information continuously in both directions or can just be connected in a single direction with one solver result serving as the initial condition for the secondary solver solution.

TriVista are now routinely providing multi-physics analyses services helping clients with product analyses. TriVista Engineering specialise in FEA, CFD, and mechanical design support. The organisation has been established in Sussex for over 21 years and have satisfied clients all over the UK.