Amphenol®

Application Note

IAN-125-1

APC Series

BACKGROUND

Circular connectors are widely used in general duty and environmental applications for various markets. Amphenol industrial has been manufacturing metallic circular connectors for many years. Those connectors are known as a high reliability, robust design and provide a wide range of insert patterns.

PROBLEM

The traditional circular connector is not cost effective enough for newborn markets like energy storage which has a large demand for connectors but a high requirement of low cost.

AIO SOLUTION

Amphenol Industrial Operations' brand new APC Series circular connector has a plastic shell with stamped and formed contacts that make it cost competitive. The simple and innovative design greatly reduces installation time and also provides robust protection. It can be widely used in general duty and environmental applications for various markets.

Amphenol®

Application Note

APC and APC Mini Series

BACKGROUND

Circular connectors are core interconnects for general-duty and environmentally sealed systems in industrial controls, transportation, and energy. Amphenol Industrial has decades of experience producing metallic circular families with rugged shells, keyed polarization, and broad insert matrices. Options include crimp/solder terminations, EMI and strain-relief backshells, and elastomeric seals for vibration and thermal resilience. These elements sustain insulation resistance and contact retention over service life.

PROBLEM

High-growth sectors—especially energy storage—require high volumes at aggressive cost and lead-time targets while maintaining reliability, creepage/clearance, and ingress protection. Traditional machined shells and turned contacts deliver performance but add material, plating, and finishing costs, plus torque-controlled assembly labor and accessory fit-up, inflating total applied cost and slowing installation.

AIO SOLUTION

Amphenol Industrial's plastic circular platform uses precision-molded, glass-reinforced thermoplastic shells and stamped-and-formed contacts to reduce unit cost and mass while meeting mechanical and electrical requirements. Key features include bayonet/quarter-turn coupling, secondary contact locks, IP-rated sealing with O-rings and grommets, and common insert patterns for drop-in migration. Stamped crimp contacts enable automated termination for consistent pull-out and crimp height, improving throughput and quality. Corrosion-immune housings eliminate plating and mitigate galvanic risk. The result is a cost-competitive, installer-friendly circular connector for energy storage and other general-duty applications.