

# Three Phase Fan Motors Support Next Generation Data Transfer Equipment



As our global society grows increasingly more digital, reliance on telecommunication networks has skyrocketed. The acceleration of 5G deployment generates unprecedented demands on current network infrastructure. PWM speed control fans equipped with 3-phase motor technology deliver increased speed, torque and P-Q performance for these high demand applications.

The 5G revolution represents a significant upgrade from 4G LTE networks, designed to meet the substantial growth in data and connectivity demands for today's modern society. The growing ecosystem of IoT devices along with emerging applications such as augmented reality and autonomous vehicles support the rapid development of 5G infrastructure. In addition, the global COVID-19 pandemic has put a spotlight on the need for remote work and education options, enhanced streaming services and more connected devices. The 5G rollout continues to gain momentum, however technical challenges in deploying the necessary high performance equipment remain.

In order to service more densely populated users with a low level of latency, 5G networks require a dedicated high-bandwidth framework.

In the past, macro cells would transmit data at 1 gigabyte per second. New 5G architectures require speeds of 10Gb/s at minimum and possibly up to 25Gb/s in the near future. Ultra-high performance network hardware is needed to achieve these rapid data transport speeds while simultaneously reducing power consumption and energy costs.

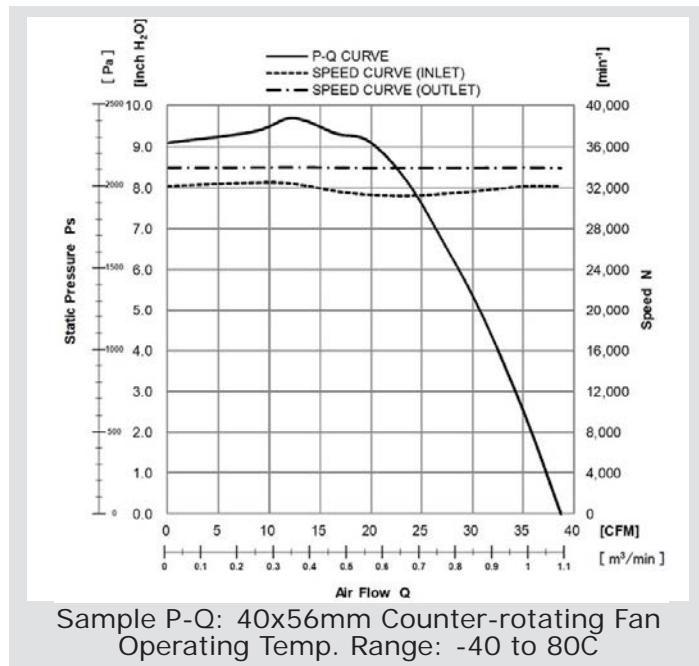


High data transfer rates typically translate to high heat dissipation, and require high power, reliable heat management components. In addition, some of this equipment may operate in an outdoor environment which can demand more advanced temperature compensation solutions.

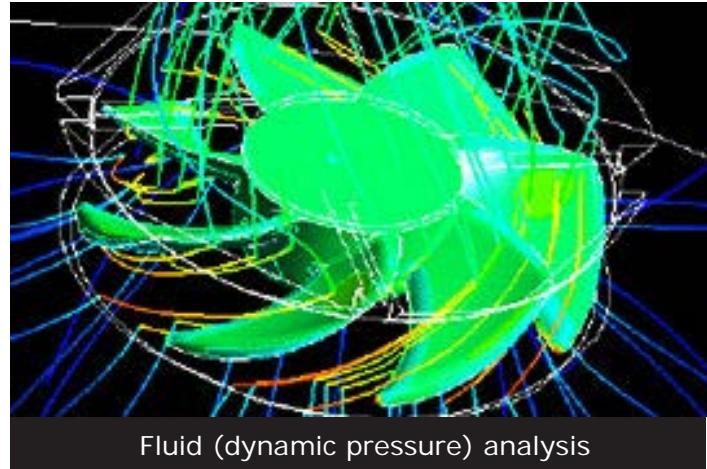


## NMB Cooling Fans for Telecom Equipment

NMB three phase fan motors deliver high speed and torque for improved P-Q performance within extreme operating conditions. Wide operating temperatures, from -40 to 80°C, are possible through careful consideration of materials, components and sophisticated design analysis. Our advanced potting process provides IP68 rated ingress protection that shields against entrance of water and dust in outdoor installations. These fans are also equipped with 4-wire PWM speed control to enable lower vibration and noise, and smoother rotational torque. PWM control also reduces the bearing load and wear because the fan will only spin fast when needed, therefore extending fan life.



By applying CAE, ANSYS and other advanced simulation technologies, we are able to create next generation, proprietary designs. Rapid prototyping and physical testing ensures our advanced thermal design meets performance expectations.



Fluid (dynamic pressure) analysis

We also employ an automated impeller balancing process using UV curing – an industry first. A vertically integrated manufacturing process allows us to ensure quality and reliability of each component. For example, the ball bearings integrated into each 3-phase fan motor are manufactured in-house. Lubrication can be optimized for high heat environment and extended life.



Our 3-phase fan motor with PWM speed control is an ideal solution for high performance, extended temperature range applications. The advanced thermal design delivers extended life and high reliability while reducing power consumption, therefore decreasing the overall project costs. NMB is a trusted supplier of cooling and thermal management solutions, and offers local engineering resources to support your projects.