

Quick charging stations

Quiet and efficient cooling with EC centrifugal fans

ebmpapst

engineering a better life



Series	D3G133
Product type	EC centrifugal fan, dual intake
Fans per unit	2
Power consumption	159 W
Sound power level	74 dB(A)

Background

Electric Vehicle (EV) Charging Stations, also known as EVSE (Electric Vehicle Supply Equipment) or ECS (Electronics Charging Stations), supply electricity to recharge vehicles and offer electrical conversion, monitoring, and/or safety functions. Commercial versions support faster charging at higher voltages than residential models, and are typically owned and operated by utility companies or private entities.

The electronics inside the charging stations generate heat which needs to be dissipated quickly and efficiently for optimal operation. As newer and faster charging stations emerge, the need for improved thermal management increases exponentially. Active cooling solutions ensure both safety and a high charging rate so drivers know they can quickly and reliably charge their vehicles and be on their way.

The fans behind the scenes need to be compact, dependable, and quiet in order to provide the stable (and unobtrusive) environment needed. They also need to be able to withstand environmental factors like thermal cycling and various forms of precipitation as well as external disturbances like vibration.

Application



A leading manufacturer of EV charging infrastructure was developing a new quick charging station and required a reliable, efficient, and intelligent thermal management solution that could be controlled to run only when cooling was actually required. Many of the stations were going into residential areas and would therefore have to comply with local noise regulations, so quiet operation was also imperative.



Solution



ebm-papst D3G133 Series

Our D3G133 series features exceptional efficiency, low noise levels, and a rugged and compact design, all driven by an electronically commutated (EC) external rotor motor integrated into a forward-curved impeller. The design style reduces the space required for installation, and removes the need for the belt drive that is frequently used between an externally mounted motor and the impeller. Our GreenTech EC motors are extremely quiet, work at an efficiency of up to 90%, and the speed can be controlled smoothly and easily due to their built-in motor electronics.

Our axial fans and impellers can also be good contenders for these types of applications as charging stations come in many different sizes and shapes; some may require multiple smaller fans, others use one or more larger fans, etc.