Selecting flameproof motors for underground mining

Canonical: https://electricmotors.teco.com.au/group-i-ex-d-motors-for-underground-mining/

Details:

For an underground motor, start with the installation’s hazardous-area requirements and the exact motor certification. We help match the motor, supply, duty and mechanical arrangement to the application.

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Keep the protection markings separate

Our article discusses Ex db I Mb for Group I mining applications and Ex db IIB T4 Gb for Group II gas applications. They are different marking scopes, not two certifications within Group I. The supplied motor’s marking, certificate, schedule and conditions of use determine its suitability. An ingress-protection rating alone is not hazardous-area approval.

Use the certificate for the actual frame

The reviewed flameproof product documentation separates BAS17.0040X for frames 80–180, BAS17.0085X for frames 200–280 and BAS16.0061X for frame 315. Their attached issues do not carry identical Group II markings or identical conditions. Our product guide retains the schedules separately. These documents do not establish the certification status of an unidentified motor, serial number or modification.

Supply voltage and availability

The application article discusses 415 V motors and variants available to order up to 1,000 V. Its off-the-shelf 0.75–110 kW statement differs from the product page and September 2025 brochure. Treat those as separate source statements: ask us to confirm the required output, voltage, frame and availability. Do not treat the article as a live stock list or extend a certificate to an unlisted voltage variant.

Thermal performance and duty

Our article describes Class F insulation with low temperature rise for continuous-duty applications. The insulation class is not the permissible ambient temperature or a guarantee of service life. Use the selected motor’s rated duty, ambient conditions, temperature-rise data and protection requirements. VSD operation needs the applicable converter conditions as well as the motor and drive ratings.

Local modification support

Our ModShop team can assess terminal-box orientation, cable entries, heaters, shaft and mounting requirements. For flameproof equipment, the permitted work and certification implications must be checked for the actual design and facility before modification. A general list of ModShop capabilities is not approval for every change or a guarantee that no factory work will be needed.

Before confirming a replacement

Send the existing nameplate and certification details, installation classification, supply voltage, load and duty, frame and shaft dimensions, mounting arrangement, terminal-box and cable-entry requirements, and any heater or VSD details. Typical enquiries include conveyor drives, dewatering pumps, auxiliary fans and ancillary mining equipment. We can provide the relevant technical and certification documents for the proposed configuration.

Related information

Flameproof motor product documentation

ModShop support

Request motor and certification information