

Application-specific motors

Chemical industry

Overview

In the chemical industry, motors are subjected to external influences in the extreme. Operation in hazardous areas and aggressive atmospheres, in particular, result in a need to protect the motor using special measures.

To ensure safe and reliable operation, it is important to verify the following:

- Explosion protection
- Degree of protection
- Ambient conditions

To meet the requirements of the chemical industry, SIMOTICS FD motors are available in a large number of industry-specific versions.

VIK version

The recommendations of the VIK (Verband der Industriellen Energie und Kraftwirtschaft e. V.) describe the requirements for three-phase induction motors as often required by the chemical industry:

- VIK standard version:
1L.1 + order code **K30** – "VIK" marking on the rating plate
- VIK Ex n version:
1M.1 + order code **K30** – "VIK" marking on rating plate;
"Ex nA IIC T3 Gc" on an additional rating plate in accordance with Directive 2014/34/EU

Both motor versions include the technology for Zone 2 in "Non-sparking" type of protection. In accordance with the technical requirements of VIK, motors can be supplied in frame sizes 315, 355, 400 and 450.

Application

Options for special environments

In the chemical industry, a wide range of different environmental conditions occur. Through a series of options, the motors can be adapted to the conditions at the installation site.

Order code	Characteristics
K26	Outdoor use: Exposure to the weather admissible, minimal chemical pollution (SO ₂), direct solar radiation; Special finish in RAL 7030 stone gray (corrosivity category C2)
E83	Outdoor use: Municipal and industrial atmospheres, moderate chemical pollution (SO ₂), minimal salinity, direct exposure to weather; special finish (corrosivity category C3)
E82	Outdoor use: Industrial areas and coastal areas with moderate salinity, direct exposure to weather, frequent condensation, special finish (corrosivity category C4)
E81	Outdoor use: Coastal and offshore areas with a high level of pollution and almost continuous condensation or industrial areas with high levels of humidity or corrosive atmospheres; special finish (corrosivity category C5-M/C5-I)
M06	Special case: Sulfurous atmosphere; special finish (corrosivity category C3)

Other options for the chemical industry

Additional options are listed below that are typically required for applications in the chemical industry.

Order code	Characteristics
M72	Design for Zone 2 for line operation Ex nA II T3 according to IEC/EN 60079-15
M73	Design for Zone 2 for converter operation, with derating Ex nA II T3 according to IEC/EN 60079-15
M35	Design for Zone 22 for non-conductive dust (IP55) for line operation
M39	Design for Zone 22 for non-conductive dust (IP55) for converter operation, derating
K52	IP56 degree of protection (non-heavy sea)
K50	IP65 degree of protection
M27	Rust-resistant screws