



低压烟道电机附加说明书
Additional manual for Smoke
extraction motors

低压烟道电机附加说明书

电机在以下工作温度下的最短运行时间

300°C , 60min / 250°C , 120min

注意!

本文件是标准低压电机使用维护说明书的补充。同一事项在两份文件中同时出现，请以本文为准。

1. 有效性

本指导适用以下 ABB 电机型号

- 电机系列 M2SE

M2SE 系列电机可以提供日常通风，以及火灾下的排烟。如果紧急情况发生，电机必须能有效地在接近地板处建立无烟层，使得逃生、拯救人和动物和生命财产，并在初期战胜火灾成为可能。这套系统也可以在火灾初期帮助消除燃烧产生的炙热气体。

由于电机运作对于紧急情况下非常重要，ABB 建议对电机进行额外的检查和维护，以保证它们在需要安全保障时的完美运作。

M2SE 烟道电机可在不高于环境温度 40°C 下由变频器驱动。作为选项，M2SE 可以被设计为适用于更高的环境温度。

当紧急状况发生时，M2SE 电机应由工频正弦电网驱动。

2. 维护检查

2.1 日常通风工作制

重要!

轴承服务寿命 L10 必须超过 20 000 小时以确保紧急状况下的可靠使用。

ABB 建议每 12 个月检查一次安装。润滑铭牌上的润滑间隔必须被遵守。润滑间隔可能少于 12 个月。

以下要点需要检测中被检查：

- 环境温度
- 清洁情况（散热筋和风罩等）
- 安装螺栓
- 排水孔
- 终端接线
- 润滑间隔
- 运转小时数
- 轴承和绕组温度
- 振动等级
- 轴封状况

重要!

在电机服役期间或最近一次更换轴承后，轴承不应必须超过 20 000 小时累积运行时间。

2.2 仅在高温排烟工况下紧急通风工作制

ABB 建议每三个月检查一次安装。检查过程中的以下要点和步骤需要被遵守。

- 环境温度
- 清洁情况（散热筋和风罩等）
- 安装螺栓
- 排水孔
- 终端接线
- 加热带需要在检查前启动
- 测量绝缘电阻
- 旋转轴，保证转轴能正常旋转
- 运转小时数
- 轴承和绕组温度
- 轴封状况

当以上要点被按顺序检查和确认以后，启动电机，润滑轴承，让它运转数分钟，测量振动等级。

绕组的绝缘电阻在 25℃，用 500V 直流电阻测量仪下应高于 10MΩ。（否则，绕组必须按照主说明书烘干。）

为了在紧急情况下保证装置的可靠性。ABB 建议 10 年过后更换整个电机。

3. 额外指导

烟道电机绕组不允许重绕。

重要！

任何事件后必须检查电机状况，无论该事件是在电机运行或者静止状况下发生。非正常的振动、过载、电网的内在失效 - 诸如下降、暂开、微小中断、谐波等 - 必须考虑在内。外在可能对电机造成损害的现象 - 洪水或极端潮湿、低环境温度、灰尘环境、径向和轴向压力作用在转轴上等 - 必须考虑在内，哪怕仅出现了短暂的时间。因此强烈建议电机参数，如电流、噪音、振动等需要被检查以及跟踪，与初始状态比较以提供进一步的耗损警告或可能的故障。

警告！

当电机在紧急高温下运行后，不能再保持安全运作，必须被另一台同特性的电机替换。

3.1 变速运行下的烟道电机

变速运行下的烟道电机必须被特殊设计。请见主说明书中关于变速运行的章节。

Additional manual for Smoke extraction motors

Motors can operate at the following temperature class and within minimum functioning period:

300°C , 60min / 250°C , 120min

NOTE!

This document is supplementary to the manual for standard low voltage motors (ABB / Low Voltage Motors / Manual) provided with the motor. When the same issues are addressed in both documents, instructions given in this document should take priority.

event of an emergency, ABB recommends that additional inspection and maintenance operations are performed in order to ensure their perfect operation when the safety function is required. Motors can be energized by frequency converters up to a maximum ambient temperature of 40°C . As an option, M2SE can be designed for higher temperatures. In the event of an accident with increased ambient temperature the motors should be energized by an industrial sinusoidal network

1. Validity

These instructions apply to the following ABB electric motor types:

- Motors series M2SE

Motors manufactured according to this standard are capable of providing daily comfort ventilation, as well as smoke extraction in the event of fire. In both applications, if an emergency situation occurs, the motors must be effective in creating a smoke-free layer near the floor allowing possible evacuation and rescue of people and animals, as well as the protection of property, and in allowing fires to be fought in their initial stages. These systems also help eliminate hot gases produced by combustion in the first stages of a fire.

Since their operation will be vital in the

M2SE motors are equipped with a fan as standard. As an option they can also be delivered without a fan. In this case the motors should not be installed away from the airflow produced by the ventilators they drive.

2. Maintenance inspection

2.1 Normal ventilation only

IMPORTANT!

Bearing service lifetime L10h must exceed 20 000 hours to ensure reliable operation in case of an emergency.

ABB recommends inspecting the installation at least every 12 months. Regreasing intervals are indicated on the grease plate on the motor and must be followed. The regreasing intervals may be shorter than 12 months.

The following points should be checked during the inspection:

- Ambient temperature
- Cleanness (ribs, fan cover, etc.)
- Mounting bolts
- Drain holes
- Terminal connections
- Lubrication intervals
- Running hours
- Bearing and winding temperatures
- Vibration levels
- Condition of shaft seals

IMPORTANT!

The bearings should not exceed 20 000 ACCUMULATED RUNNING HOURS in the period between the motor commissioning, or the last bearing replacement.

- Heating elements should be switched on before inspection
- Measure the insulation resistance
- Rotate the shaft to ensure free rotation
- Running hours
- Bearing and winding temperatures
- Condition of shaft seals

When the above points have been checked and confirmed to be in order, start the motor, lubricate the bearings and let it run for few minutes. Measure vibration levels.

The insulation resistance of the winding must be higher than 10 M Ω when measured at 25° C with a 500 V DC insulation resistance meter (otherwise, the winding of the stator must be dried in accordance with the instructions provided in the main ‘ABB / Low Voltage Motors / Manual’).

To ensure the reliability of the installation in case of an emergency, ABB recommends replacing the whole motor when 10 years has elapsed.

2.1 Emergency ventilation only

ABB recommends inspecting the installation at least every three months. During the inspection the following points should be checked / steps should be performed:

- Ambient temperature
- Cleanness (ribs, fan cover, etc.)
- Mounting bolts
- Drain holes
- Terminal connections

3. Additional instructions

Rewinding of smoke extraction motors is not allowed.

IMPORTANT!

Motor condition must be checked after any incident, regardless of whether the incident occurred while the motor was operating or at a standstill. The occurrence of abnormal vibrations, overloads, failures intrinsic to the electrical network – such as sags, swells, micro-interruptions, harmonics, etc. – must be taken into account. External phenomena that might damage the motor – flood or extreme humidity, low ambient temperature, dusty conditions, radial or axial stress on the shaft, etc. – must also be taken into account, even if present for only short periods of time. Therefore, it is strongly recommended that the motor parameters, such as absorbed current, noise, vibrations, etc., are checked and followed up since a comparison with the initial parameters can provide advance warning of wear or potential malfunctioning.

CAUTION!

After an emergency in which the motor is subjected to high temperatures, it is not able to perform its safety function, and will have to be replaced by another motor with the same features.

3.1 Smoke extraction motors in variable speed operation

Smoke extraction motors must be specially designed for variable speed operation. Please see the chapter about variable speed operation in the main motor manual.



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