

Declaration of compliance with the order 2.1

Manufacturer: **Siemens AG**
Automation and Drives
Standard Drives

Address: **Frauenauracherstr. 80**
D-91056 Erlangen
Germany

Description of the product: **Drives of explosion-protected motors**
Category 2 and 3 for dust (Zone 21 and 22)

types of motor: **1LA5/6/7/9 ...-, 1LG4/6 ...-**
of BG 56 M – 315 L; 2 to 8 poles

types of converter: **6SE3...-, 6SE9...-, 6SE6...-: Micromaster**
6SL32...-: ET200S-FC
6SE7...-: Simovert Masterdrives VC
6SL3...-: SINAMICS G110

We confirm the fulfilment of basic health and safety requirements for the design and construction of equipment and protective systems, when used as directed in explosive areas according to appendix II of the directive 94/9/EU (ATEX), if:

- installed PTC thermistors are used in connection with a suitable trigger device (see monitoring device)
- the maximum frequency stated on the motor's rating plate is not exceeded;
- the motor and frequency converter as well as the requisite reduction of moment that depends on the set frequency range according to project document no. 001 "Permissible thermal motor torques in operation with inverter" have been allocated.

The basic health and safety requirements are fulfilled by compliance with:

EN 50281-1-1: 1998

The motor's identifying mark shall include the following information:

⊕ II 2D IP6X T 125 °C oder II 3D IP5X T 125 °C

Bad Neustadt, 22th May 2006



H.-J. Friese, Head of Quality Management



J. Schapawalow, Expert of explosion protection

Appendix

Declaration of compliance with the order 2.1 for converter-fed, explosion-protected motors

Description of the device:

Three-phase motors the speed (r.p.m.) of which can be adjusted via the frequency are operated via the intermediate voltage circuit's frequency converter for connecting to an A.C. system in the range from $0.9 \times U_N$ to $1.1 \times U_N$ at 50 Hz or 60 Hz.

Rated magnitudes and data of the motor/converter:

Motors and size	BG 56 M – BG 315 L
Output (P_2)	≤ 200 kW (at 50 Hz)
Voltage (U_{mains})	200 V to 500 V
Frequency (f)	5 Hz to 100 Hz ¹⁾
Permissible range of environmental temperature (T_A)	-20°C to +60°C* (valid for the motor) *: The reduction in output from $T_A = 40^\circ\text{C}$ and a site altitude of 1000 m upwards must be noted
Type of operation	S9

¹⁾: The limitations on the frequencies must be noted for mechanical reasons: BG 100 or larger for 2-pole motors, BG 315 or larger for 4-pole motors.

Advice:

The motor and frequency converter must be suitably chosen regarding output and voltage; a combined drive, IT power systems and operation with an AFE (active front end) are **impermissible**. Generating operation should be avoided. The motor's voltage, current and speed can vary with the frequency converter's input voltage. The maximum current that is stamped on the rating plate in the specified frequency range must be set as the frequency converter's continuous current (I_D). This current can be temporarily increased by 50% during acceleration processes (< 60 s). The U/f characteristic must be set correctly. The maximum frequency that is stated on the motor's rating plate must not be exceeded. This must be prevented by internal limiting (e.g. parameterization).

Insulated bearings of the BG 225 S to 315 L types are recommended in order to avoid damage by the bearing currents. The service life of the lubricant is reduced by operation at frequencies greater than 50 Hz. Standstill heating must only be switched on if the three-phase motors are not in operation.

The advice that is given in the appropriate operating instructions for the frequency converter must be followed regarding the motor's cable lengths and versions (e.g. EMC).

Monitoring device:

The motors are monitored by a device which monitors the temperature directly and is connected to setting data that has been stipulated for the frequency converter, in order to prevent impermissible heating as a result of overloading. This device consists of three temperature sensors that are installed in the coil, as well as a trigger device and the requirements on the protection systems according to the directive 94/9/EC, appendix II, have to be noticed.

For zone 21 trigger devices certified by a testing agency are required, for zone 2 and 22 certified trigger devices are recommended.

All of the remaining setting data must be chosen according to the drive's requirements. Compliance with the respective installation regulations must be ensured by the operator.