



Converter-fed operation up to 500 V +10 % mains voltage

The standard insulation of the 1LA and 1LG motors is designed such that operation is possible on the converter at mains voltages up to 460 V +10 % (for motor series 1LA8 to 500 V +10 %). This also applies for operation with a pulse-controlled AC converter with voltage rise times of $t_s > 0.1 \mu s$ at the motor terminals (IGBT transistors). At higher voltages, the motors require greater insulation resistance. Please inquire in the case of converter-fed operation with motors with protruding connection cables (order codes **L44**, **L45**, **L47**, **L48**, **L49**, **L51** and **L52**).

The 1LA8 non-standard motors of the types specially identified for converter-fed operation (the 9th and 10th position of the Order No. is filled with “**PB**”, “**PC**” or “**PE**”) have an insulated motor bearing as standard at the non-drive end NDE (BS). The motors are equipped with standard insulation and standard rotors and are suitable for mains-fed and converter-fed operation.

Converter-fed operation up to 690 V +10 % mains voltage

1LA5, 1LA7 and 1LG6 standard motors as well as 1LA8 and 1PQ8 non-standard motors are also available with a higher insulation resistance for operation on the converter with supply voltages from 500 V ... 690 V (+10 %), and do not usually require a filter. These motors are identified by an “**M**” in the 10th digit of the Order No. (e.g. 1LA8315-2PM). With the reinforced insulating system, there is less space in the grooves in motor series 1LA8 and 1PQ8 for the same number of windings compared to the normal version, which slightly reduces the rated output of these motors.

Converter-fed operation for motors in type of protection “d” up to 460 V + 10 % mains voltage

Siemens 1MJ asynchronous motors can be operated on the mains as well as on a converter as explosion-proof motors in type of protection Ex de IIC “Explosion-proof enclosure”. In accordance with the test specifications, 1MJ motors must be equipped with PTC thermistors.

When 1MJ motors are connected to converters, like the 1LA motors of the same output, depending on their load characteristics their maximum admissible torque must be reduced.

1MJ motors have a connection box in type of protection Ex e II “Increased safety” as standard.

Note:

Special measures are necessary in the case of high-speed motors, especially when separately driven fans are used.
Please contact your local Siemens office for advice.