Is your Motor VSD compatible? Absolutely!

WISE® - WEG Insulation System Evolution

The WEG, WISE® insulation system (WEG Insulation System Evolution) has resulted from using enhanced insulation materials during the production of the electric motor insulation. Variable Speed Drive (VSD) compatible wire, insulation film, impregnation material and suitable cables are used during the insulation process. During the enamelling process, the 99.9% pure copper wire is covered by layers of LackTherm varnishes, which have been especially developed by WEG for the insulation systems of electric motors. The LackTherm varnishes have excellent dielectric strength, flexibility, hardness, and chemical resistance with brilliant adhesion properties. During the impregnation process, the stator coils receive layers of high solid resins and water-based coatings which are environmentally friendly and free from harmful solvents as per (ISO 14000 Guidelines).

The use of motors with VSDs is permitted because the WISE® insulation system ensures that the motor windings are protected against voltage peaks and voltage variations that continuously occur during the operation with VSDs. The WISE® insulation system is capable of withstanding dV/dt and voltage impulse conditions described in the table below:

Motor rated voltage	Voltage Spikes at motor terminals (phase-phase)	dV/dt(*) at motor terminals (phase-phase)	Rise time*	Time between pulses
Vn < 460 V	≤ 1.600 V	≤ 5.200 V/µs		
460 V ≤ Vn < 575 V	≤ 2.000 V	≤ 6.500 V/µs	≥ 0,1 µs	≥ 6 µs
575 V ≤ Vn ≤ 1000 V	≤ 2.400 V	≤ 7.800 V/µs		

(*) dV/dt and Rise time definition according to Nema Std. MG1 - Part 30.

With the introduction of the WISE® insulation system to all WEG motor lines, our customers have full assurance that all our WEG motors are VSD compatible. This is an important consideration to be made when selecting a motor to be controlled by a VSD.