



## TK Series frameless motors

### *Safety information*



The user must have read and understood the manual "*TK frameless motor manual rel 2.4 doc MA 0012\_4 ENG*" before carrying out any activity. The manual is available for download at web site [www.phase.eu](http://www.phase.eu). In case of unclear information, please contact PHASE MOTION CONTROL.

Pay particular attention to safety information and precautions detailed in paragraphs "Precautions" and "Motor Integration"

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## Safety

Handling, installation and maintenance must be done by competent and trained technical personnel according to IEC 364. Non-compliance with the safety instructions, statutory and technical regulations may lead to injuries to persons, damage to property and the environment.

### *General safety instructions*



Anyone having active implants (pacemakers) or having any other ferromagnetic prosthesis is not qualified to work with these kinds of devices, or to approach them. Keep at safe distance from the motor!



Electronic devices and measuring equipment may be affected or destroyed by strong magnetic fields. Avoid placing devices with magnetic parts close to computers, monitors and all magnetic data carriers (e.g. disk, credit cards, audio and videotape, etc). Because of strong attraction forces, special caution is required in the direct proximity of the rotor (i.e. under 100 mm). Therefore heavy or wide objects made of steel or iron must never be brought close to the rotor by free hand. As magnetic forces are invisible, their effects are generally overlooked close to the rotor.



To cope with any event of an accident while handling the motor, always have at hand at least two wedges of solid, non-magnetic material (i.e. aluminium) as well as a non-magnetic hammer (approx. 2-3 Kg). In emergency cases, these tools are for separating parts magnetically attached to the rotor in order to free caught limbs (finger, hand, foot).

### *Electrical risk*

Before installation verify the motor about any damage due transportation and handling, that may impair electrical safety.

Drive start-up may produce sudden uncontrolled movement. Keep away from all moving parts to avoid injury!

Do not connect motor to power supply other than specified by PHASE MOTION CONTROL.

A defective power supply may damage the TK assembly.

It is dangerous to interrupt earth or grounding connections. In no way must an earth wire be disconnected!

Before servicing, make sure that the TK is not powered.

TK motors may have hot surfaces also when the motor is not powered. Normal operating temperature could be over 100°C.

Slow turning motors have high back-EMF. For example, a TK-xxx-xxx-100 would develop 300 Vac at its terminals when manually rotated at 5 rpm. Beware of manual or gravitational rotation, dangerous voltage can be present at the motor terminals even if the machine is not connected.

***WARNING: Deep deflux motors (constant power range > 1:2) may deploy higher than mains voltage between motor and series inductor. Verify maximum interconnection voltage while sizing the plant.***