AMK

AMKASYN

VARIABLE SPEED DRIVES

Application notice No. AP 1297-3e

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AMKASYN drive system: Compatibility with fault current protective devices

All converters with controlled or uncontrolled input rectifiers can lead to fault current incompatibility according to VDE 0664 in the case of a fault. Connection of such devices to the mains under sole use of the fault current protective device is not permitted.

This incompatibility is described in detail in the standard EN 50178 (VDE 0160) for different types of circuit (e.g. three-phase bridge circuit). New "all-current sensitive" fault current circuit breakers can also switch off DC fault currents as can occur in the three-phase bridge circuit used by AMKASYN.
For this reason, it is recommended that such drive systems are not operated in combination with fault current circuit breakers.

AMKASYN units must be installed permanently in an enclosed switchgear cabinet in compliance with the valid installation regulations (refer also to the "AMKASYN description, connection conditions, start-up" manual).

In correct operation, an earth leakage current > 3.5 mA flows. The PE connection must therefore be designed at least with a conductor cross-section of 10 mm^2. It must be taken into account in dimensioning that AMKASYN systems have an increased leakage current because of the built-in mains filters and interference suppression capacitors. Increased fault currents can occur especially when switching the line voltage on and off if switching contacts do not open and close simultaneously.

Type	Leakage current max.
AN 10F	200 mA
AN 20F	200 mA
AN 40F	250 mA
AN 60F	250 mA
AZ 05	50 mA

The maximum leakage current flows in the case of a fault or with asymmetrical line voltage. The PE leakage current is significantly smaller in normal operation.

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