AMK AMKASYN

VARIABLE SPEED DRIVES

Application notice No. AP 1997-13-1e

Date of issue: 01.04.97

Motor chokes

When are motor chokes required?

1. At too low motor stray inductance to reduce the motor losses.
2. With very long motor cables to reduce excess voltages at the motor because of wave phenomena.
3. With external motors with windings not suitable for converter operation.

Minimum stray inductance

For correct operation of AMKASYN converters, the minimum total stray inductance $\mathbf{L_{\sigma,\,M}}$ of the motors should not be less than 400 µH. If $\mathbf{L_{\sigma,M}} < 400$ µH, then a motor choke $\mathbf{L_D}$ must be provided:

$$\mathbf{L_D = 400\ \mu H - L_{\sigma,M}} \qquad (0 < L_D \leq L_{\sigma,M}\ !)$$

$\mathbf{L_{\sigma,\,M}}$ is the total stray inductance of the motor and is calculated from

$$\mathbf{L_{\sigma,M} = L_{\sigma,S} + L_{\sigma,R}'}$$

whereby

$\mathbf{L_{\sigma,S}}$ Stator stray inductance
$\mathbf{L_{\sigma,R}'}$ Rotor stray inductance converted to the stator side

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Technical data of AMK motor chokes

Designation	ALV 66/150	ALV 66/300	ALV 100/150	ALV 100/300
AMK Part No.	24667	24495	24668	24669
Inductance myH	150	300	150	300
Nominal current A	66	66	100	100
Nominal voltage to PE	230 V	230 V	230 V	230 V
Frequency Hz 1)	0 - 200	0 - 200	0 - 200	0 - 200
Ambient temperature °C	45	45	45	45
Insulation class	E	E	E	E
Type of protection	IP 00	IP 00	IP 00	IP 00
according to VDE	0550	0550	0550	0550
Maximum temperature °C	110	110	110	110
T. - Time constant	90 min	90 min	90 min	90 min
for AW module	20/. - 40/60	20/30 - 40/60	50/75 - 60/90	50/75 - 60/90

1) Refer to the derating Table 1 or 2 for frequency range up to 800 Hz

Derating factors for motor rotating field frequency greater than 200 Hz

Derating factors with regard to the current ratio **I / I_N** at 100% ON duration

Frequency Hz	200	300	400	500	800	Remarks
ALV 66 / 150	1.15	1.0	0.9	0.8	0.6	2)
ALV 66 / 300	1.05	0.85	0.7	0.65	0.5	2)
ALV 100 / 150	1.0	0.75	0.6	0.5	0.3	2)
ALV 100 / 300	0.8	0.60	0.4	0.3	0.2	2)

Derating factors with regard to the ON ratio **T_E / T**
T_E = ON duration, T = Cycle duration = 30 min. at $I = I_N$

Frequency Hz	200	300	400	500	800	Remarks
ALV 66 / 150	1.0	1.0	0.8	0.6	0.45	2)
ALV 66 / 300	1.0	0.8	0.65	0.5	0.35	2)
ALV 100 / 150	1.0	0.75	0.6	0.45	0.3	2)
ALV 100 / 300	1.0	0.7	0.55	0.4	0.25	2)

2) With forced convection by means of fans with at least 2 m / s air velocity, the derating factors can be multiplied by a factor of 1.25.

Version, type of construction

See enclosure

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