AMK AMKASYN

VARIABLE SPEED DRIVES

Application Note No. AP_2006_08-1e

Date: 2006/08

Author: FeG

Maximum CAN-Bus length

The length of line of a fieldbus cable depends on the transfer rate and the number of connected Bus participants. With each participant on CAN/ACC-Bus, the data transfer is delayed due to inductivities and capacities.

For the AMK devices the delay time is 2.5 ns for each participant.

Standard cables have a data speed of 5 ns/m. The delay time of 2.5 ns is therefore equivalent to a distance of 0.5 m for each Bus participant. The maximum length of line of a network (see following tables) reduces itself to 0.5 m for each participant.

In the following tables the maximum length of cables are displayed in dependence of the transfer rate.

Transfer rate	Max. cable length
1000 kBit/s	38m
500 kBit/s	80m
250 kBit/s	164m
125 kBit/s	332m

Example:

Transfer rate 500 kBit/s:	80	m
16 participants* à 0.5 m	-8	m
maximum Bus length	72	m

* Participants of the AMK device series KE/KW, KU, IDT, SYMAC

In reality, the calculation example can deviate due, for example, to unsuitable cable. Furthermore a safety reserve of approx. 20% has to be projected into the calculation.