AMKASYN
Servo inverter KE/KW and KU
Interface card ARCNET

Version: 2003/11
Part No.:   29756
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AMK

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Important advice:
Touching of the electrical connections on the card must be avoided, otherwise electronic components could be destroyed through static discharge.
Take card directly out of packing and install it on the controller card.

1 Interface card ARCNET

The option interface card ARCNET allows the communication between ARCNET MASTER and the inverter via **A**MK **F**ieldbus **P**rotocol **AFP** for drive commanding.

The interface card ARCNET can be installed on KU compact inverters (option KU-ARC) and KW compact inverters (option KW-ARC).

The option card is installed:
On KU: KU-ARC on controller card in option slot 2 (Order no. O563)

On KW: KW-ARC on controller card in option slot 1 or option slot 2 (Order no. O661)

The ARCNET interface card is based on the ARCNET Controller COM 20020.
Data blocks with 16 bytes each are used for data transmission in transmit and receive direction.

The data blocks consist of:
Telegram header with 8 bytes and
8 bytes AFP data.
All telegrams according to ARCNET specification „Short telegrams".

1.1 ARCNET Telegram structure

1.1.1 ARCNET Task telegram

Offset	Term	Note
0	SID	ARCNET Transmitter address
1	DID	ARCNET Receiver address, must comply with the BUS station address in ID 34023
2	CNTS (count short)	fix 240 (=256 –16)
:		
240	Physical receiver	must comply with the BUS station address in ID34023
241	Logical receiver	fix defined = 73
242	Physical transmitter	physical transmitter address = SID
243	Logical transmitter	logical transmitter address
244	AFP length	16 bytes fix length
246	AFP task code	is not evaluated
247	AFP attribute	is not evaluated
248	AFP control word	see „AMK Fieldbus Protocol AFP" documentation
250	AFP 16 Bit setpoint value	see „AMK Fieldbus Protocol AFP" documentation
252	AFP 32 Bit setpoint value	see „AMK Fieldbus Protocol AFP" documentation

1.1.2 ARCNET Acknowledgement telegram

Offset	Term	Note
0	SID	ARCNET Transmitter address, must comply with the BUS station address in ID 34023
1	DID	ARCNET Receiver address
2	CNTS(count short)	fix 240 (=256 –16)
:		
240	Physical receiver	physical transmitter address = SID
241	Logical receiver	logical transmitter address
242	Physical transmitter	must comply with the BUS station address in ID 34023
243	Logical transmitter	fix defined = 73
244	AFP length	16 bytes fix length
246	AFP task code	is not evaluated
247	AFP attribute	is not evaluated
248	AFP control word	see „AMK Fieldbus Protocol AFP" documentation
250	AFP 16 Bit setpoint value	see „AMK Fieldbus Protocol AFP" documentation
252	AFP 32 Bit setpoint value	see „AMK Fieldbus Protocol AFP" documentation

1.2 Timing

The time base for the ARCNET Controller is 5ms,i. e. every 5 ms a telegram can be received or transmitted.

Automatically a status telegam with the actual AFP status is transmitted after the receipt of an ARCNET AFP telegram.

1.3 ARCNET interface

− BUS / STAR topology

− Net work connection through "High Impedance Tranceiver HYC9088A".

− No termination resistor on board

− Bus connection via BNC socket:
Coaxial cable connection (cable type RG-62/U) with T connector BNC (75/90 Ohm),
Bus termination with bus terminator BNC 93 Ohm

The following parameters must be set:

− Baudrate, adjustable between 156,25 kBd and 2,5 MBd.

− Shortening of the "Timeout" time by factor 3 for short buses.

− Shortening of the "Timeout" time during transmission.
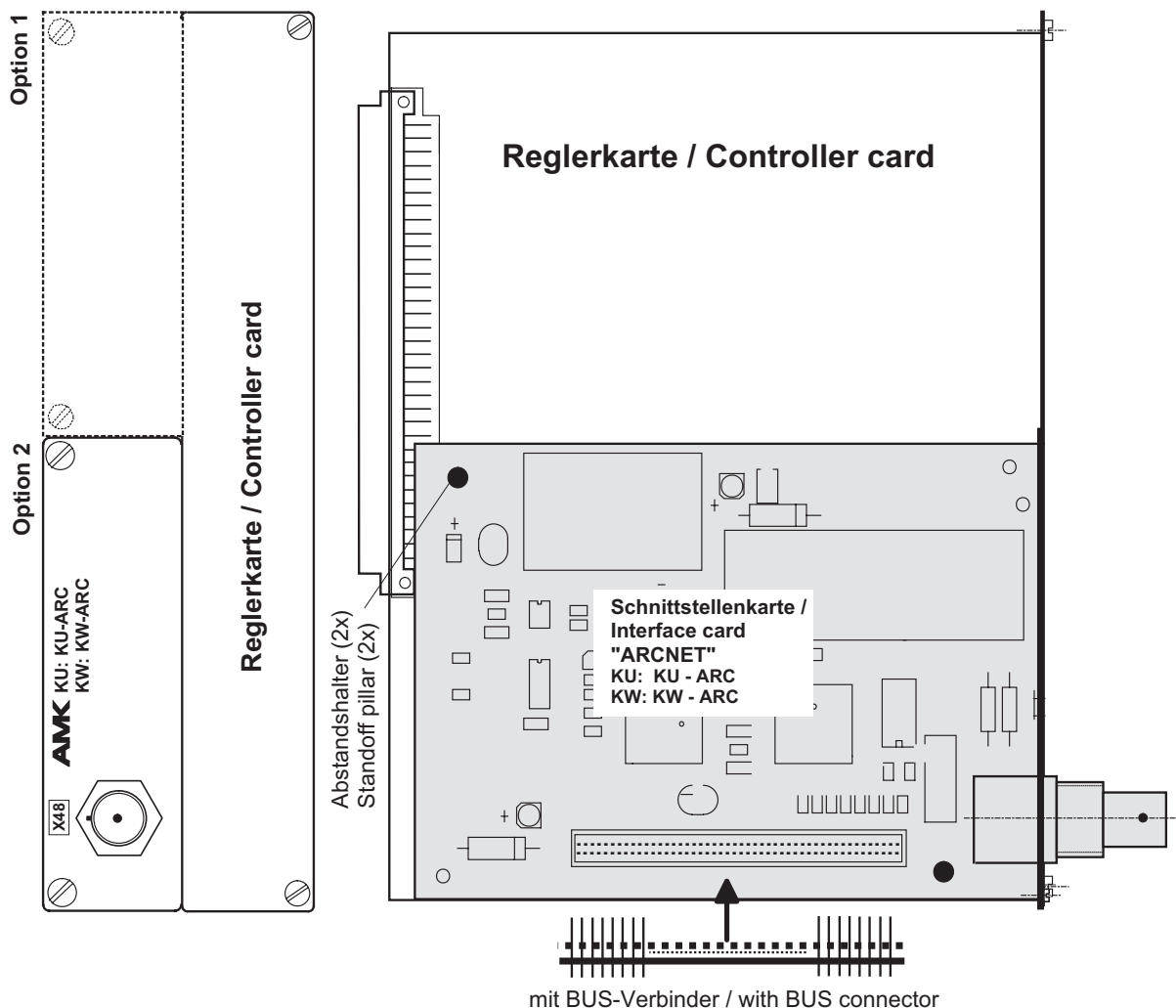
1.4 Used communication parameters

ID34023: **Bus station address**
Permissible values: 1..255

ID34024 **Bus transmission rate**
156,25 kBd, 312,5 kBd, 625 kBd, 1250 kBd, 2500 kBd

ID34025 **Bus mode**
Bit 0 = 0: Reserved
Bit 0 = 1: AFP (Default)
Bit 1..15: Reserved

ID34026 **Bus Mode attribute**
Bit 0 = 0: 0 (Default)
Bit 1-3 reserved (Default = 0)
Bit 4 = 1 RESET of the ARCNET controller after 4 reconfiguration attempts, caused by the controller
Bit 5 reserved (Default = 0)
Bit 6 Timeout during transmission
= 0 after 128 „Negative Acknowledgements" (NACK)
= 1 after 4 „Negative Acknowledgements"

For all not used communication parameters the AMK default values must remain unchanged!

After change of communication parameters the drive system must be rebooted by power OFF / power UP. Power UP only after a waiting period of approx. 30s. During booting the new data then are transferred into the EEPROM on the controller card.

1.5 Front view and component mounting diagram (on KU / KW controller card)

(KU-ARC installed in option slot 2)

mit BUS-Verbinder / with BUS connector
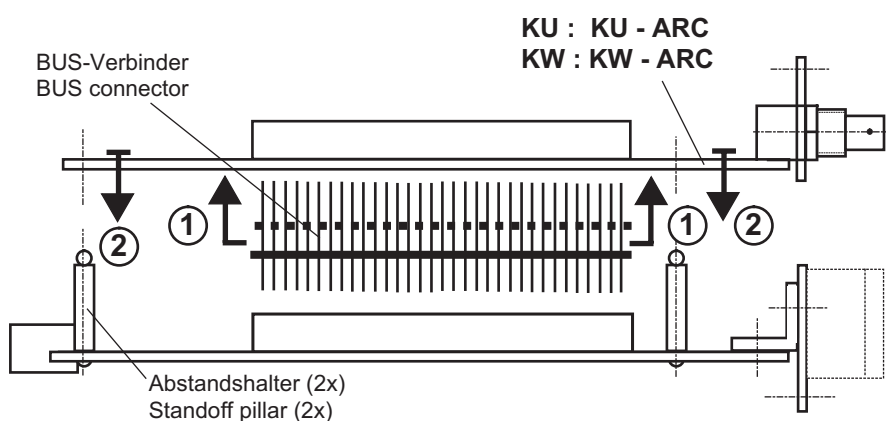
1.6 Important notes on handling

Because of possible destruction of components by static discharge, touching the electrical connections and the contacts on the solder and mounting side of the option card must be avoided.
For discharge first touch PE before handling the option card!

1.7 Installation instructions for "Interface card ARCNET"

The Interface card ARCNET must be inserted in the appropriate slot on the KU / KW controller card.

1. Ensure that the AMKASYN system is disconnected from the power supply and that the DC BUS capacitors are discharged.
2. Remove blanking plate at the selected slot by loosening the two captive screws.
3. If existing: Loosen the captive screws at the left edge of the option card in the other slot.
4. Loosen the two captive screws at the right edge of the controller card frontplate, then unplug the controller card together with the possible option card as one unit carefully. Place the card only on a non-conductive, padded surface.
5. Press the two snap-in plastic standoff pillars in the corresponding holes on the controller card (assigned to the selected slot 1 or 2).
6. Press the BUS connector with the longer pins fully into the socket connector of Interface card ARCNET (BUS connector pins must be flush with socket connector).
7. Insert the BUS connector on the Interface card ARCNET with the short pins into the socket connector on the controller card and at the same time snap in the standoff pillars into the holes of the Interface card ARCNET.

8. Plug-in the controller card with Interface card ARCNET as a whole carefully into the card shaft until the controller card is plugged securely in the mating connector.
9. Tighten the captive screws at the frontpanel of the controller card and of the option card(s).