



Software description

AIPEX LITE 1.08

Version: 2018/23

Part no.: 204413

Translation of the "Original Dokumentation"

AMK

Notes on this document

Name: PDK_204413_AIPEX_LITE

Version:	Version	Change	Letter symbol
	2018/23	ID32843 'Service command' removed	STL

Previous version: 2017/04

Product version:	Product	Firmware Version (AMK part-no.)	Hardware Version (AMK part-no.)
	PC	AIPEX LITE 1.08 (203928)	

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For fast and reliable troubleshooting, you can help us by informing our Customer Service about the following:

- Type plate data for each unit
- Software version
- Device configuration and application
- Type of fault/problem and suspected cause
- Diagnostic messages (error messages)

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1 AIPEX LITE

AIPEX LITE is a part of the AMK Software AIPEX PRO. The functionality of AIPEX LITE is comparable with the AIPEX PRO functionality 'Direct mode'.



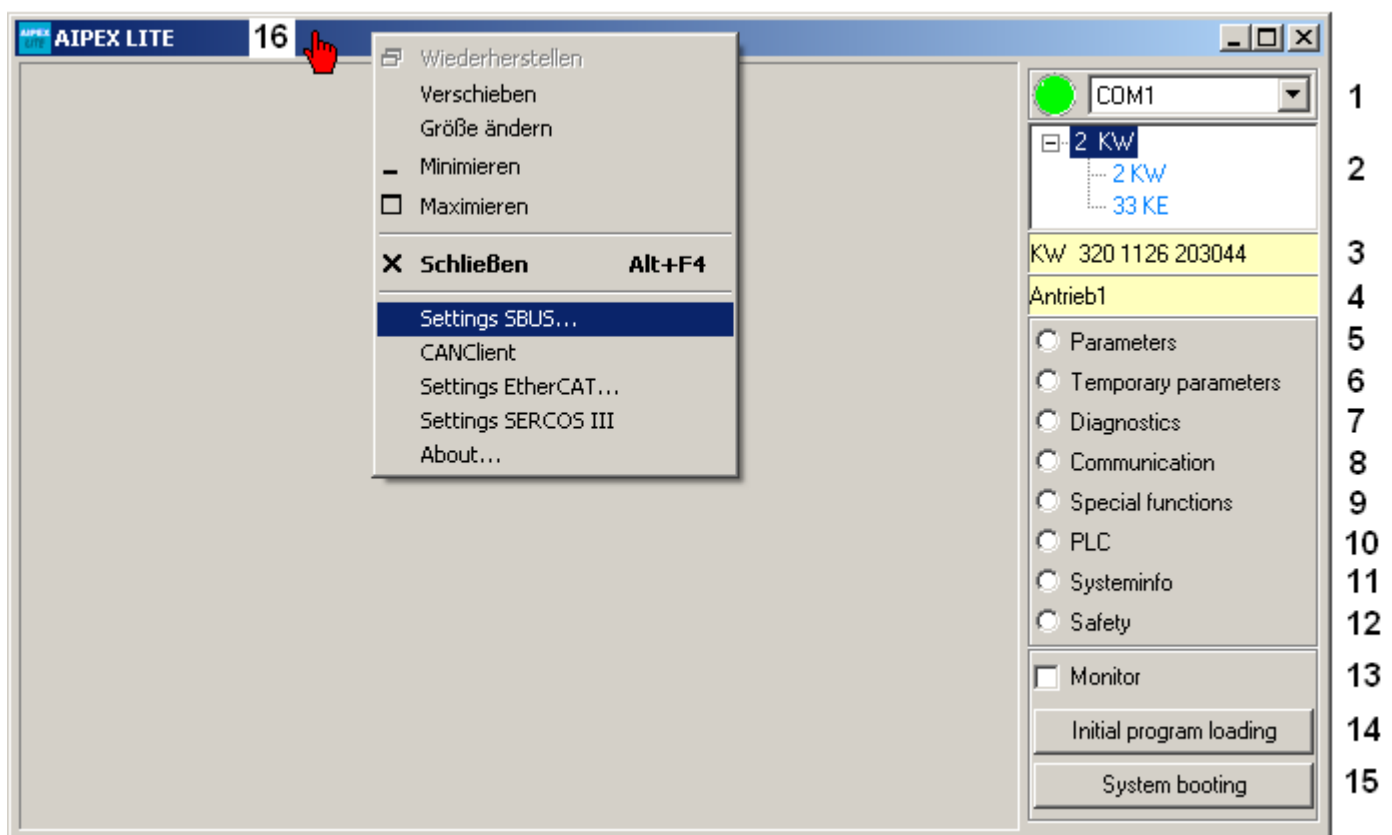
Differences between AIPEX LITE and AIPEX PRO 'Direct mode'

- AIPEX LITE is only in English available
- The function 'Download parameter set to the device' is not available
- Customer specific password protection is available

1.1 Installation

- The software must be installed on a 100% compatible PC running under Windows® 2000/XP/Vista.
- To install, launch the file: 'start.exe'

1.2 Program overview



No.	Meaning
1	Activated interface between PC and device Green: Link to the device available Red: Link to the device not available
2	Display of online available devices
3	Firmware Version
4	System name
5	Display and input possibility for parameter values See Direct mode: Function Parameters on page 20.
6	Display and input possibility for temporary parameter values See Direct mode: Function Temporary parameters on page 24.
7	Display of diagnosis messages and the functions error clear See Direct mode: Function Diagnostics on page 25.

No.	Meaning
8	Display and input possibility for bus parameters See Direct mode: Function Communications on page 26.
9	Set up functions See Direct mode: Function Special functions on page 27.
10	Display of PLC program information and the functions plc handling See Direct mode: Function PLC on page 28.
11	Display of System information and additional system handling See Direct mode: Function Systeminfo on page 30.
12	Option 'Safety Functionality'
13	Cyclic display of actual online values See Direct mode: Cyclic Monitor on page 31.
14	Function 'Initial program loading'. Device will be reset to AMK factory setting. See Direct mode: Button Initial program loading on page 34.
15	Function 'System booting' See Direct mode: Button System booting on page 33.
16	Hardware communication setup between PC and device Click to open with the right mouse button onto the AIPEX LITE window head

1.3 First Steps with AIPEX LITE

- Link the PC with the device, following possibilities are available
 - [See Direct connection via COM port on page 6.](#)
 - [See AMK Serial interface cable RS232 on page 8.](#)
 - [See AMK USB-RS232 Converter on page 9.](#)
 - [See Direct connection via CAN on page 15.](#)
 - [See Direct connection via USB port on page 11.](#)
 - [See Direct connection via Ethernet to EtherCAT slaves on page 13.](#)
 - [See Direct connection via Ethernet to SERCOS III slaves on page 18.](#)
- Start AIPEX LITE
- Click with the right mouse button onto the AIPEX LITE window head
- Choose via the menu 'Communication settings' (16) your physically available link
- Close the program AIPEX LITE
- Switch on the device
- Start AIPEX LITE
- Wait until the interface has done the initialization (LED display change from 'red' to 'green')
- To work with a defined device, you have to mark this device inside the field 2. (You can only see several devices if the system have an active fieldbus connection)

1.4 Customer specific password protection

If the ID32821 'Password' protection is active you can only read values with AIPEX LITE. If you want to write values, you have to enter the customer specific password.

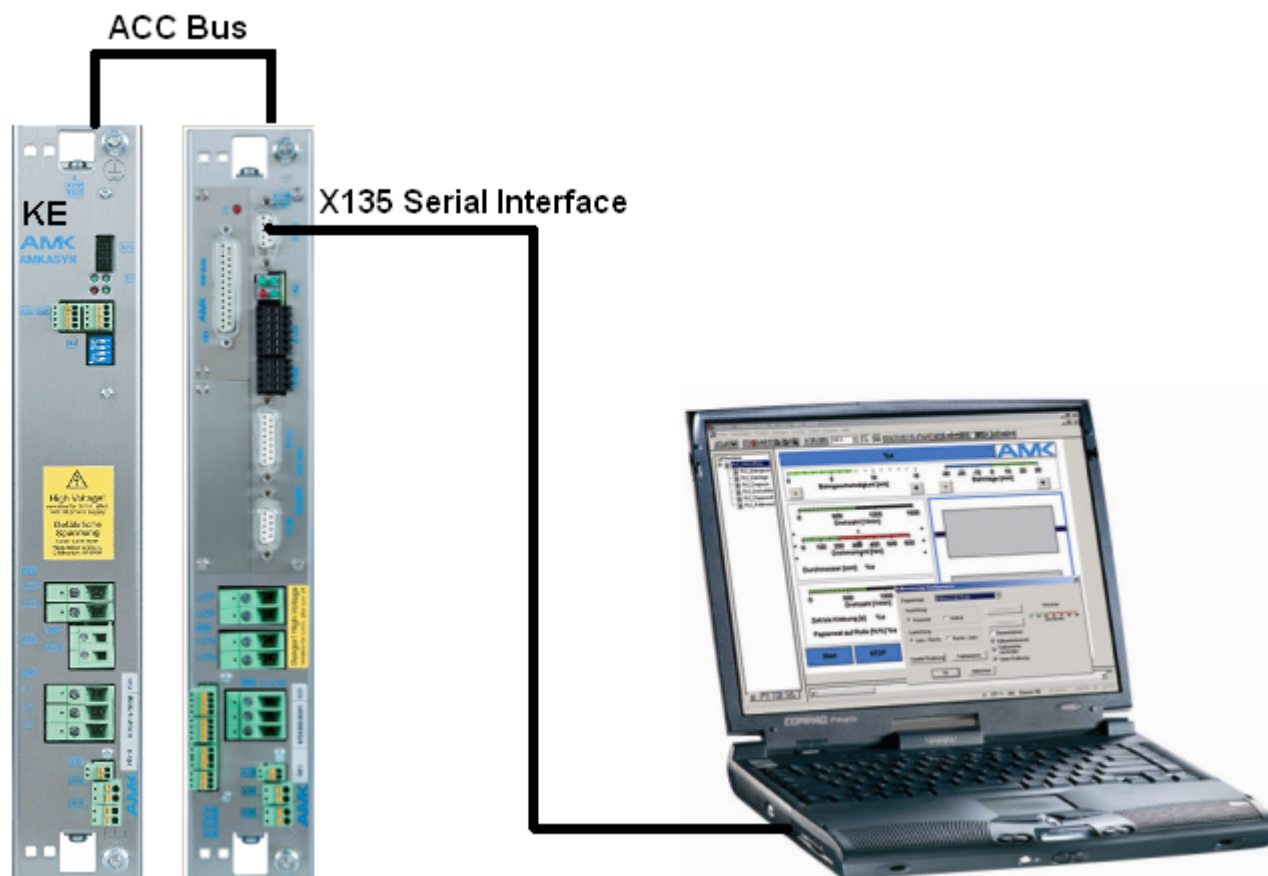
To release the write function, you have to open the menu 'Systeminfo' and use the button '**Password Device**' .

2 Communication between PC and Device

2.1 Direct connection via COM port



A direct connection is a point to point connection between PC and AMK controller.



Example:

KE with ACC bus and KW with KW-R03 (comparable with KU-/KW-R03(P) and KU-/ KW-R04).

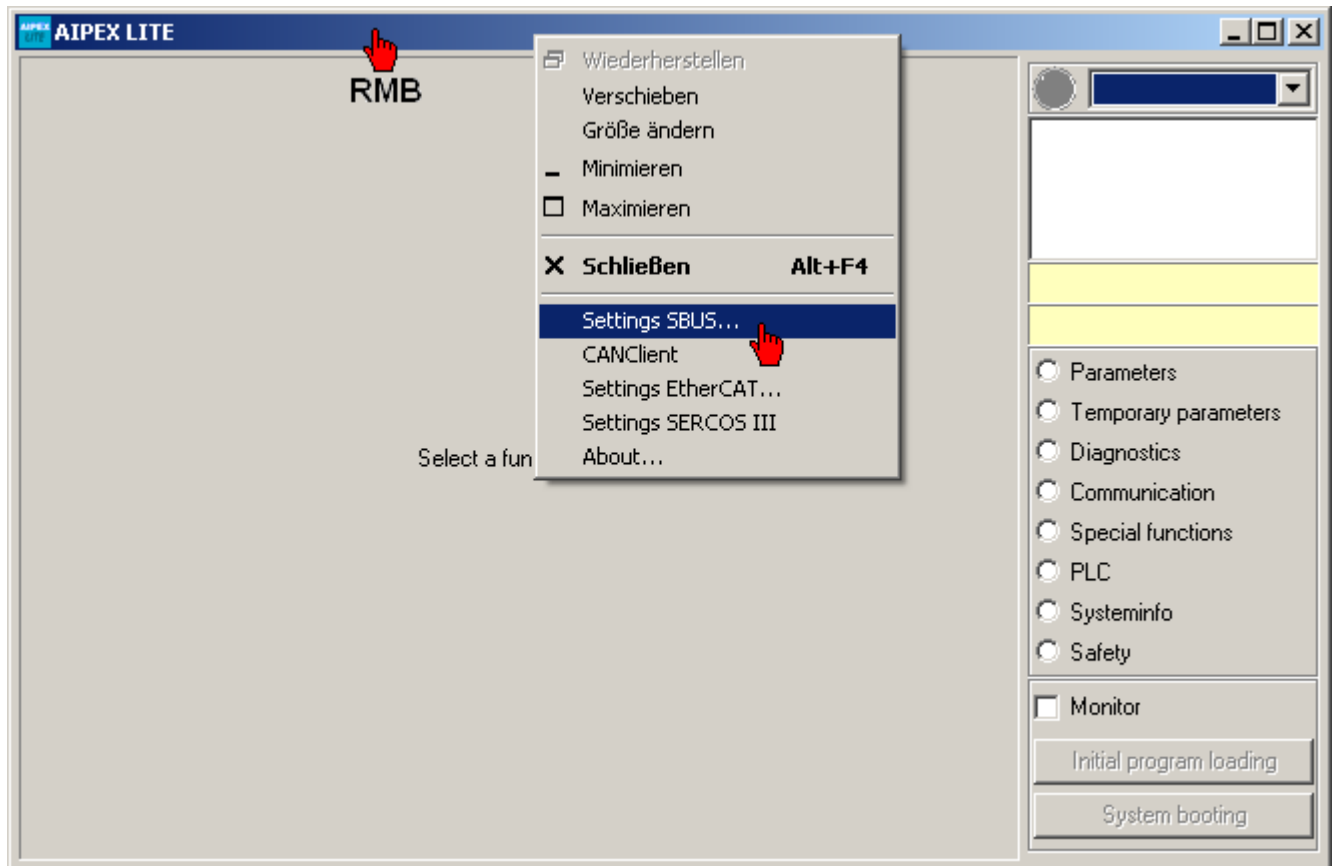
It is possible to get access over ACC bus to other devices. In this case the connected controller card must be defined as ACC bus master.

Cable:

- Serial interface cable AMK part-no. O576
Property of serial interface cable: [See AMK Serial interface cable RS232 on page 8.](#)
- AMK USB-RS232 converter AMK part-no. 200770: [See AMK USB-RS232 Converter on page 9.](#)

2.1.1 COM port adjustments

Open the menu 'Settings SBUS'

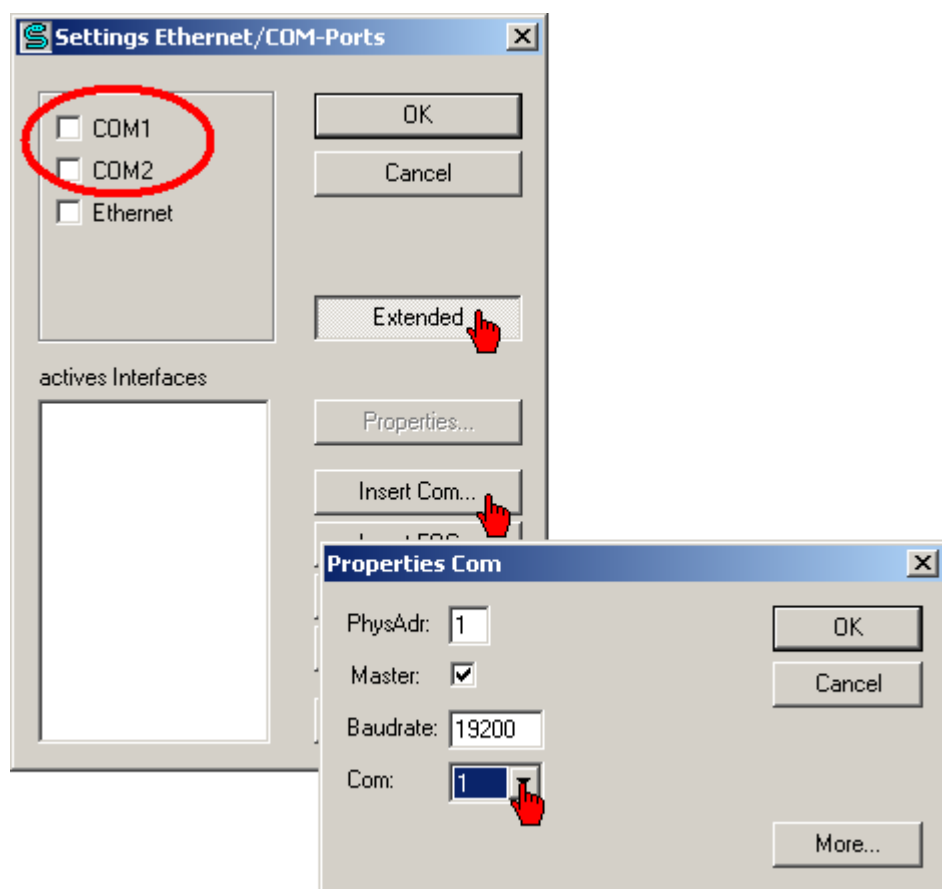


Set the desired port.

If you need a other port than COM1 or COM2, click the button '**Extended**' and than '**Insert Com...**'.



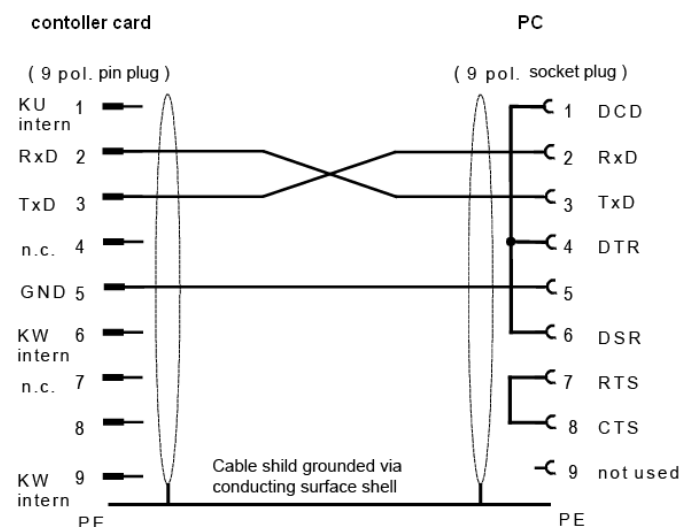
The predetermined properties may only be changed in connection with the AZ option card CNC or during a modem connection.



2.1.2 AMK Serial interface cable RS232

The AMK serial interface cable RS232 (AMK part-no. O576) connects the serial interface of the AMK KU-/ KW devices with the serial interface of the PC.

Property of serial interface cable:



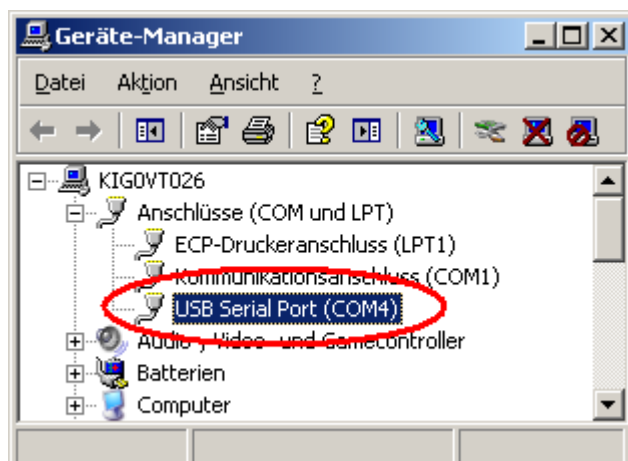
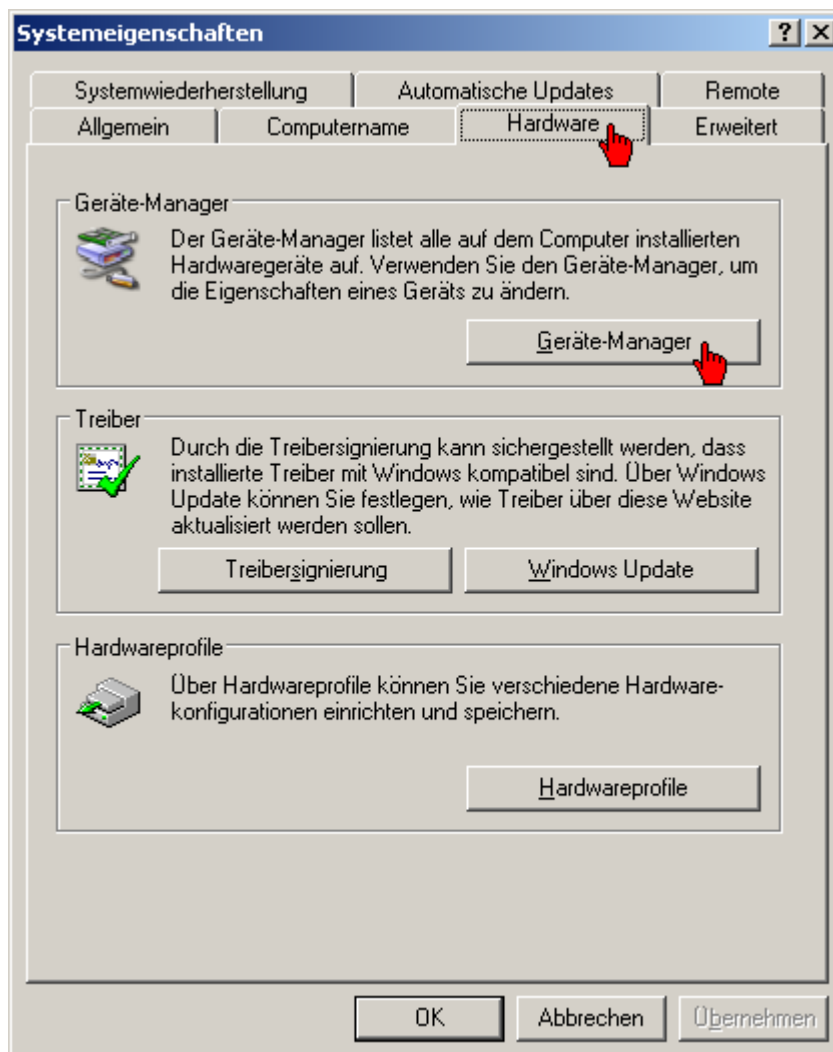
2.1.3 AMK USB-RS232 Converter

The AMK USB-RS232 converter (AMK part-no. 200770) connects the serial interface of the AMK KU-/ KW devices with the USB interface of the PC.

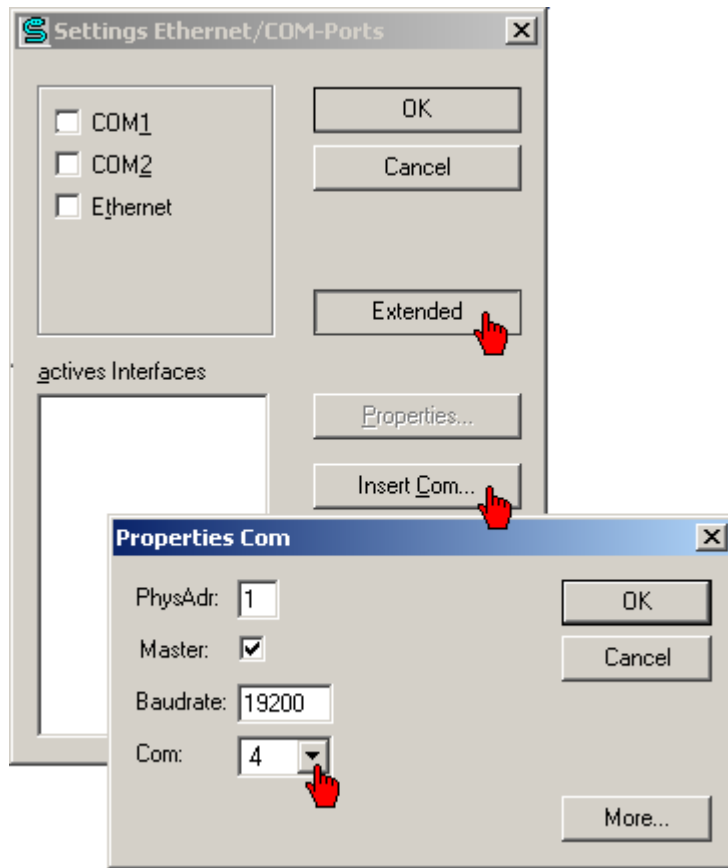
Example: [See Direct connection via COM port on page 6.](#)

2.1.4 Virtual COM port adjustments

During the driver installation of a AMK USB-RS232 converter, an additional virtual COM interface is generated by the PC. The interface number can be read out. Open **Windows -> System Properties -> Hardware -> Device Manager -> Ports (COM and LPT)**.



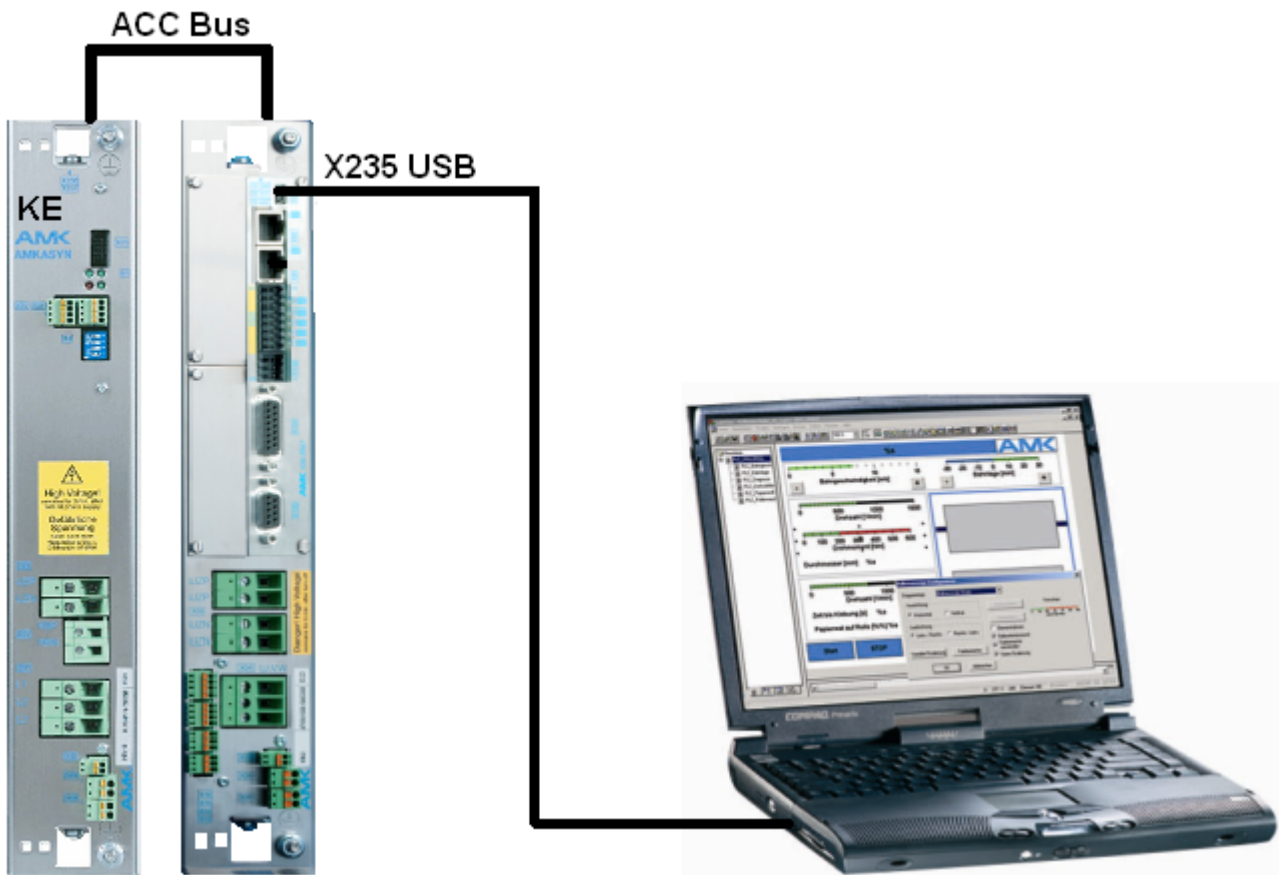
Enter the USB Serial Port interface number (in this example COM4). Open the menu **Settings SBUS**. Use for that the button **Extended** and the button **Insert Com...**



2.2 Direct connection via USB port



A direct connection is a point to point connection between PC and AMK controller.



Example:

KE with ACC bus and KW with KW-R06 (comparable with KW-R07, KW-R16 and KW-R17).

You get also access to ACC bus slave devices via the ACC bus connection of the controller card.

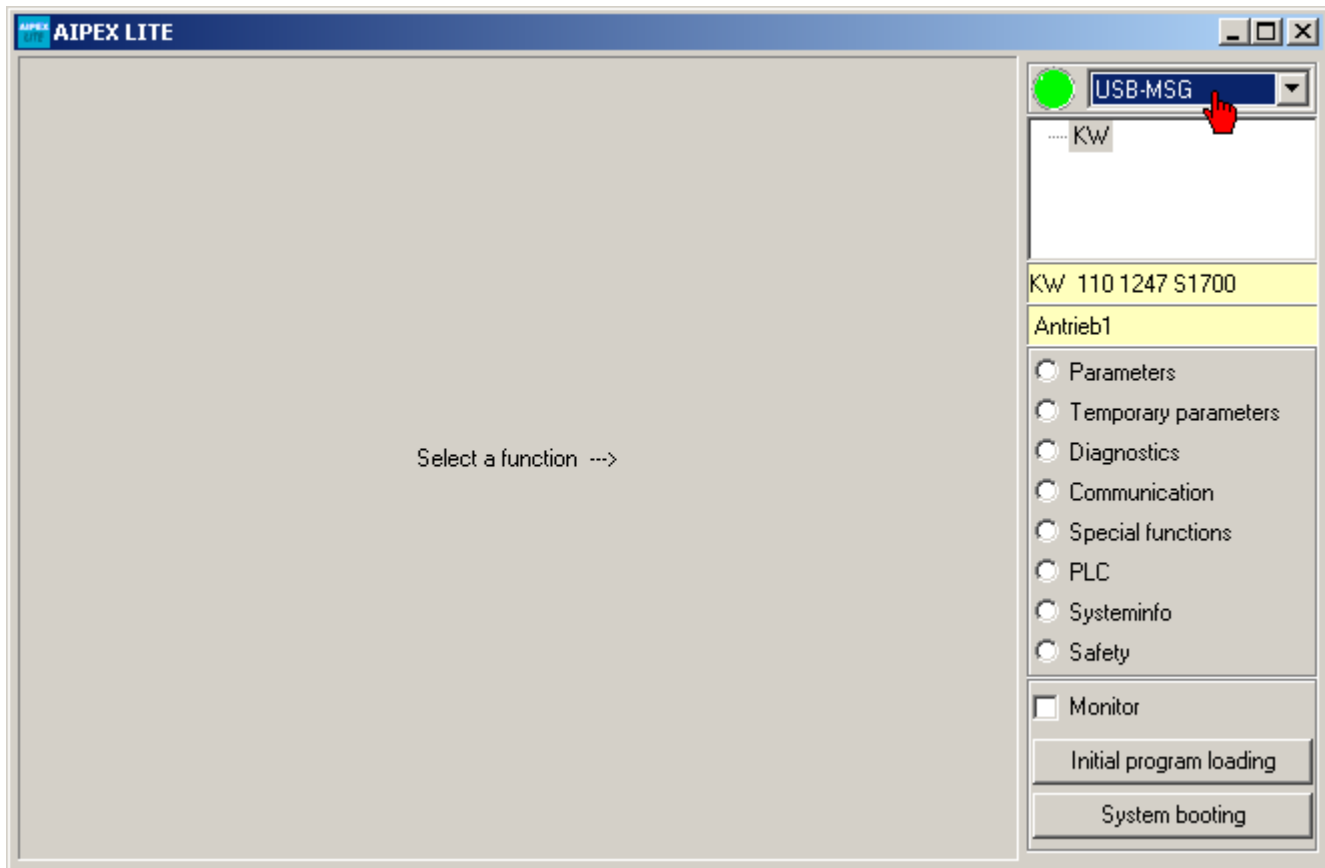
Cable:

AMK USB cable with ferrite core 3 m (AMK part-no. 47058).

2.2.1 USB port adjustments

If you use the USB port, it is not necessary to adjust the communication settings.

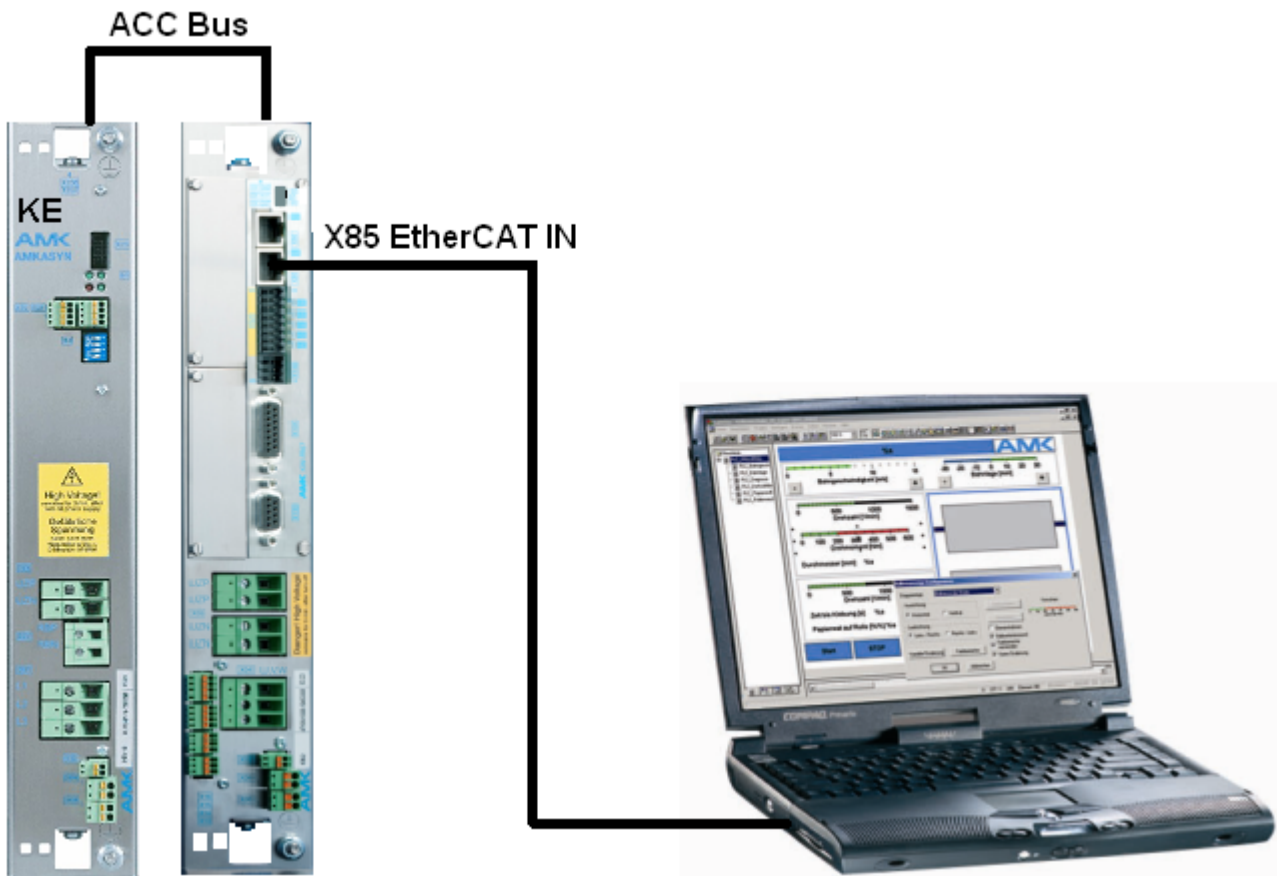
Activate 'USB'.



2.3 Direct connection via Ethernet to EtherCAT slaves



A direct connection is a point to point connection between PC and AMK controller.



Example:

KE with ACC bus and KW with KW-R06 (comparable with KW-R07, KW-R16 and KW-R17).

Access is possible via the EtherCAT connection to all connected modules. You can also access ACC bus slave devices via the ACC bus connection of the controller card.

Cable:

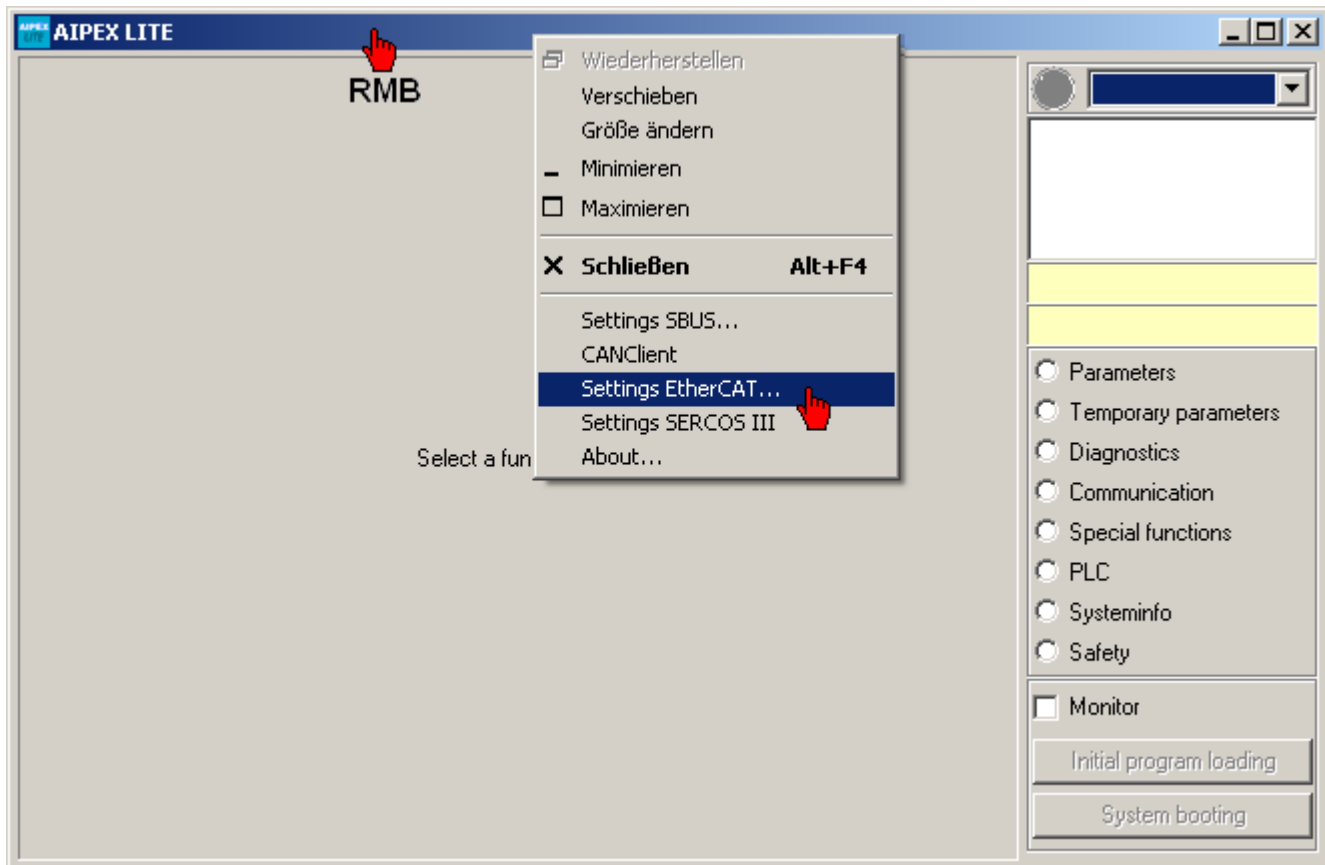
Ethernet Standard RJ45 Twisted Pair Patch cable.

2.3.1 EtherCAT port adjustments

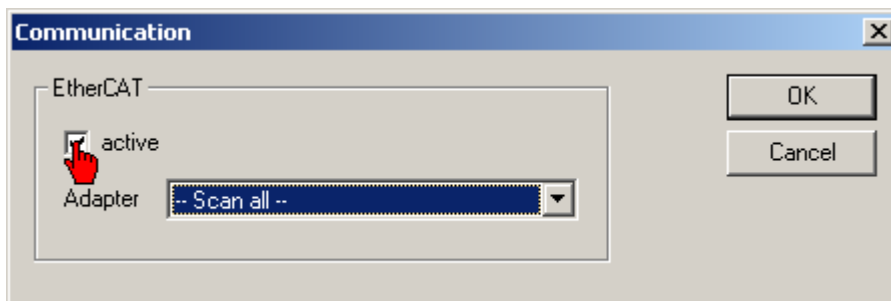
The PC takes over the task of an EtherCAT master.

No changes are necessary on the Ethernet settings of the PC.

Open the menu 'Settings EtherCAT'.



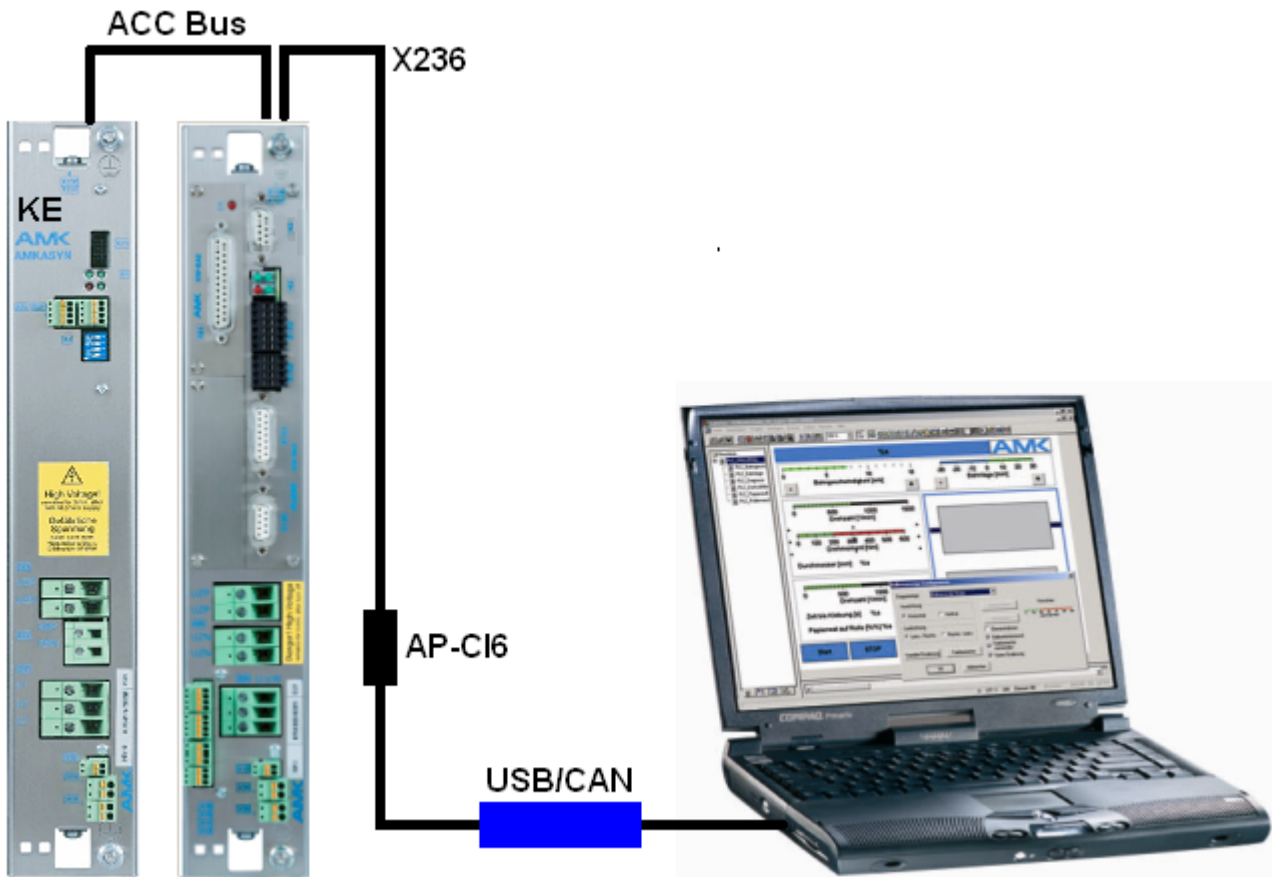
Activate EtherCAT. If you know the name of your PC Ethernet drive you can enter it inside the field 'Adapter'. In this case the initialization will run faster. If you do not know please choose **'Scan all'**.



2.4 Direct connection via CAN



A direct connection is a point to point connection between PC and AMK controller.



Example:

KE with ACC bus and KW with KW-R03 (comparable with KU-/KW-R03(P) and KU-/ KW-R04).

Cable:

- AMK USB-CAN converter (part-no. O755)
See [AMK Serial interface cable RS232](#) on page 8.



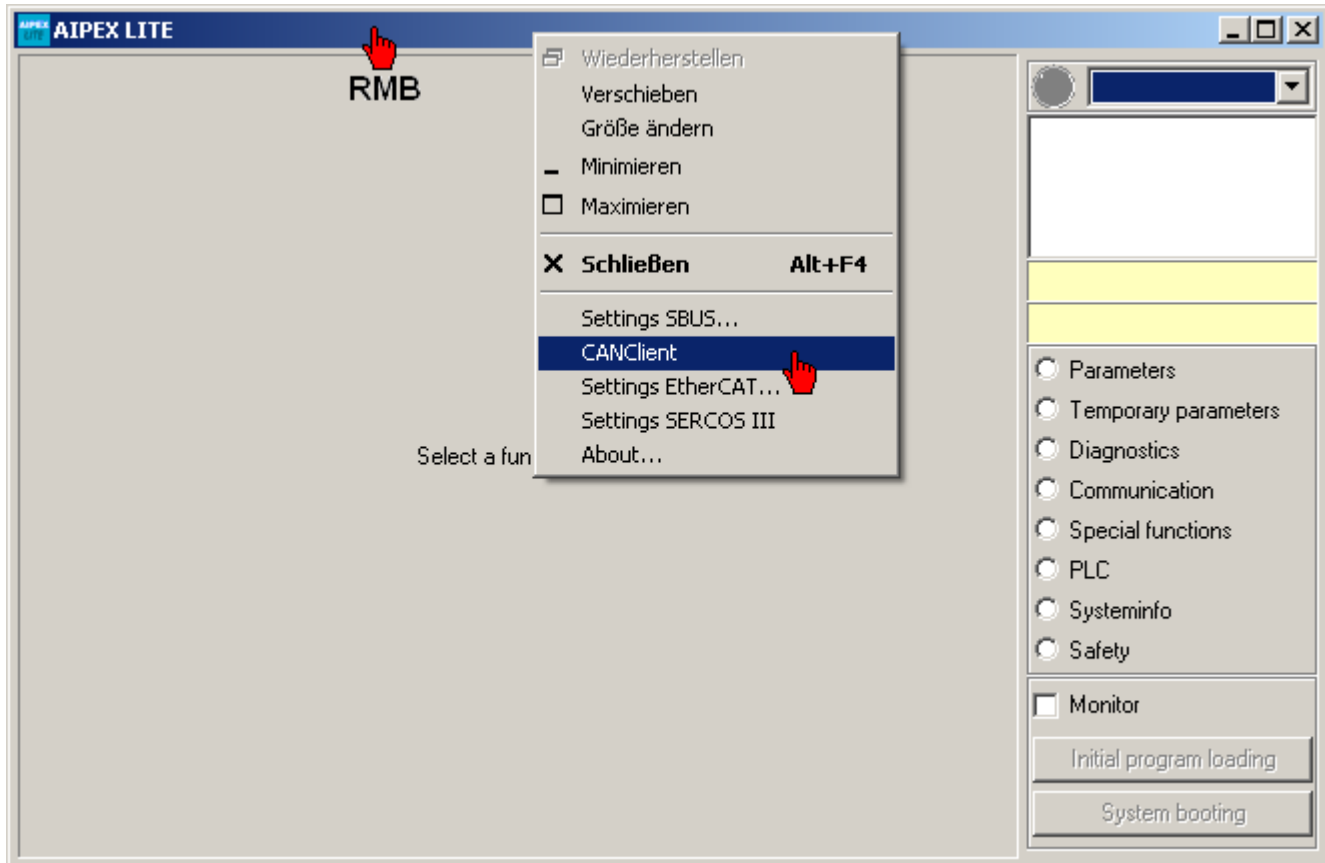
CAN networks without NMT master (CAN/ACC bus master) must set:
ID34026 'BUS mode attribute' Bit 11 = 1

2.4.1 CANclient adjustment

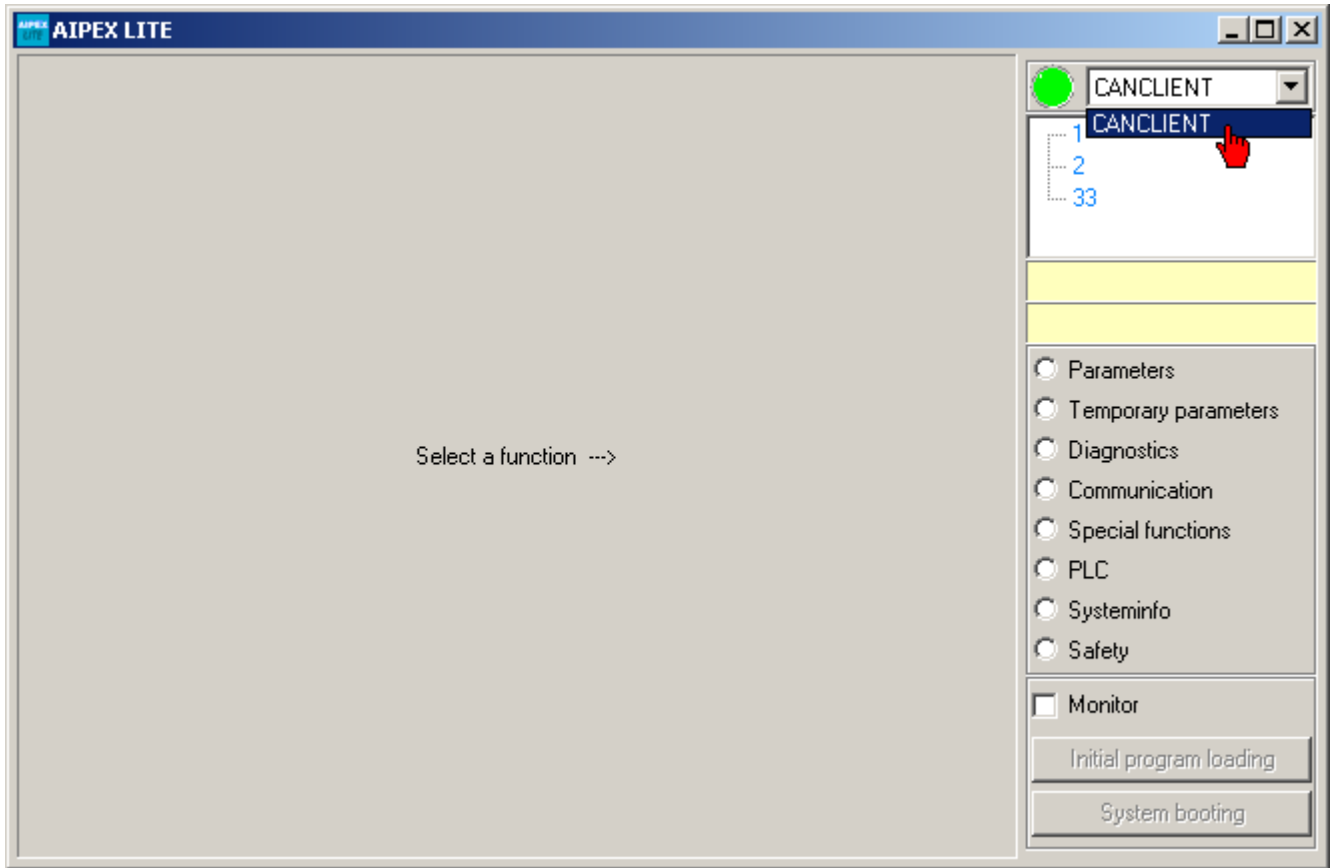


First install the USB-CAN software driver VCI (part-no. 46942).

Open the menu 'CANclient'.



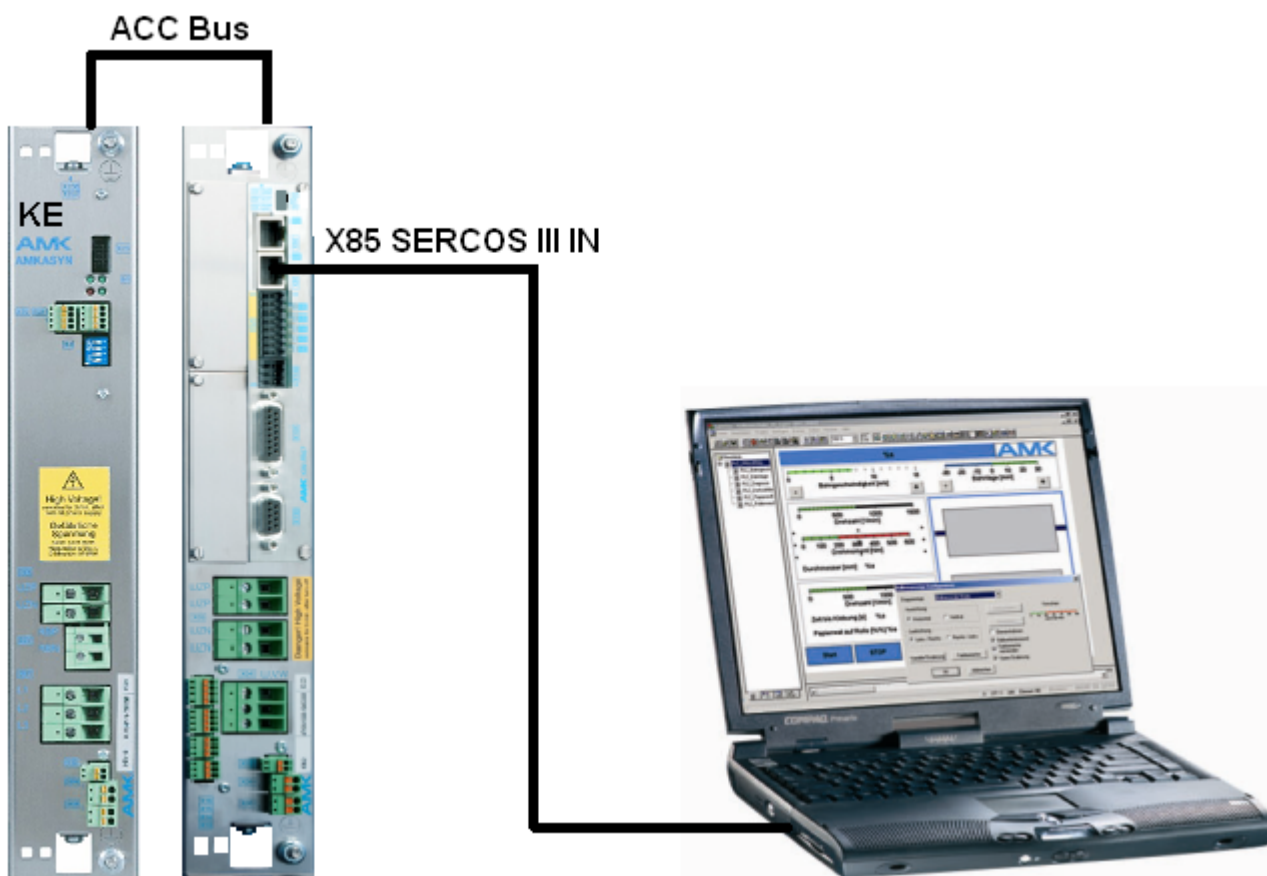
Activate 'CANCLIENT'.



2.5 Direct connection via Ethernet to SERCOS III slaves



A direct connection is a point to point connection between PC and AMK controller.



Example:

KE with ACC bus and KW with KW-R06 (comparable with KW-R07, KW-R16 and KW-R17).

Access is possible via the SERCOS III connection to all connected modules. You can also access ACC bus slave devices via the ACC bus connection of the controller card.

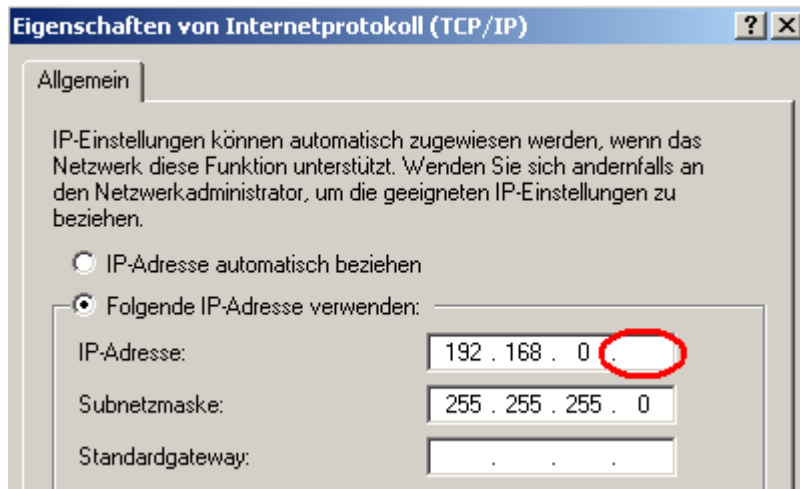
Cable:

Ethernet Standard RJ45 Twisted Pair Patch cable.

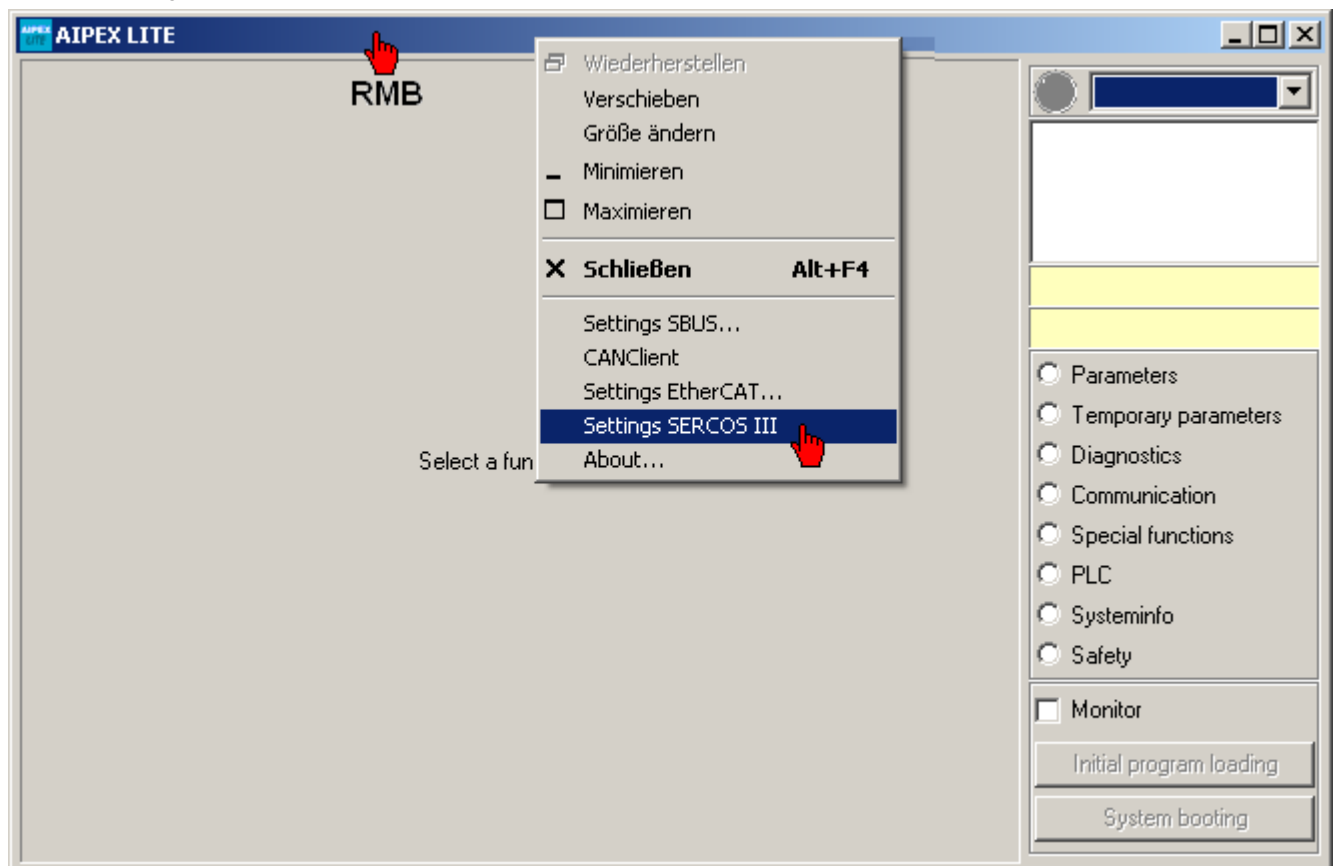
2.5.1 SERCOS III adjustment

PC adjustment: Enter a fix IP address which is not used by a SERCOS III node.

The SERCOS III node addresses are fixed given to 192.168.0.X.



Activate 'Settings SERCOS III'.



3 Direct mode functions

3.1 Direct mode: Function Parameters

The screenshot shows the 'AIPEX LITE' software interface. The main window is titled 'Parameter Selection' and contains a table of parameters. The table has columns: ID, Name, Value, Unit, Length, and Type. Parameters 17, 26, 30, 40, and 51 are highlighted in pink, indicating they are read-only. The right sidebar shows a tree view with 'Parameters' selected, and a list of parameters including '2 KW', '2 KW', and '33 KE'. The bottom of the window has buttons for 'P-Set 0' through 'P-Set 3' and 'Inst 0' through 'Inst 3'.

ID	Name	Value	Unit	Length	Type
1	NC cycle time	4.000	ms	2	Dec
2	SERCOS cycle	4.000	ms	2	Dec
17	List all op.data	582		*2	Dec
26	Conf.status bits	16		*2	Dec
30	Softwareversion	KW 320 1126 203044		*1	Ascii
36	Veloc. cmd.value	2000.0	1/min	4	±Dec
38	Pos. veloc.limit	5000	1/min	4	±Dec
39	Neg. veloc.limit	-5000	1/min	4	±Dec
40	Veloc.feedb.val.	-0.0	1/min	4	±Dec
41	Homing velocity	100	1/min	4	Dec
43	Veloc. polarity	0000 0000 0000 0000		2	Bin
44	Scaling of veloc	0000 0000 0000 0010		2	Bin
45	Veloc.scal.fact.	1		2	Dec
46	Veloc.scal.expo.	-4		2	±Dec
49	Pos.posit. limit	2147483647	incr.	4	±Dec
50	Neg.posit. limit	-2147483648	incr.	4	±Dec
51	Posit.feedb.val.	0	incr.	4	±Dec



Changes in the 'Parameters' are not effective immediately in the drive. It belongs to the parameter group what you have to do to activate.

- Group Global and Instance: Logic Voltage (24 VDC) off/on
- Group Drive specific: Controller enable RF off/on

3.1.1 Displaying Icons

Icon	Meaning
Parameter Selection	Window: Parameter selection and System internal parameters. See Parameter selection on page 42.
ID	Search: ID number
Name	Search: Parameter name
Value	Online value (value which is stored at the AMK device)
P-Set 0	Parameter set
Inst 0	Instance (used for bus parameters)
	Selection list input possibilities
Berlin	List Parameter
0.27	Pink background: Read only parameter

3.1.2 Displaying parameters

Field	Explanation
ID	Parameter number
Name	Designation of the parameter
Value	Current value of the parameter Folder icon = Parameter list
Unit	Unit of the parameter
Length	Data length of the parameter in byte <ul style="list-style-type: none"> • 1 byte • 2 byte • 4 byte
Type	Display of the parameter <ul style="list-style-type: none"> • Dec: decimal • \pmDec: decimal signed • Bin: binary • Hex: hexadecimal • Ascii: Ascii string
Remark	Text field, freely usable by the user
Background colour in the column "Value"	White: Value can be modified Pink: Value cannot be modified (write-protected or formal)
Text colour in the column "Value"	Blue: Value was modified, but not yet saved Black: Value is unchanged since the last saving Red: This is a system parameter (can be modified only if enabled)
Icon in column "Length"	Yellow: Parameter is specific for the parameter set Green: Parameter is specific for the instance



Pressing the 'F1' button invokes the online help for the respective parameter.

3.1.3 Display and structure of lists

Parameter Selection: test ...

ID	Name	Value	Unit	Length	Type
30	Softwareversion	KW 102 0941 20...		*1	Ascii
32798	User list 1	100		*2	Hex
2798-1	[maximum]	[254]			
2798-2		1002			
2798-3		0088			
2798-4		0000			
2798-5		0005			
2798-6		0101			
2798-7		0000			
2798-8		0000			
2798-9		0000			
798-10		0000			

P-Set 0 P-Set 1 P-Set 2 P-Set 3 Inst 0 Inst 1 Inst 2 Inst 3

Lists

- Lists are indicated by the folder icon in Value column.
- For non-ASCII lists, the number of list elements is indicated next to the icon. For ASCII lists, the text content is displayed here.
- All lists can be displayed in expanded form by a double-click in the Value column. The number of maximum possible list elements is shown in the first line underneath. All further lines display the list content by elements.
- The display of the list elements can be structured by entering own values in the columns lengths (1, 2, 4) and type (Dec, Hex, Bin, Ascii).

Entering values

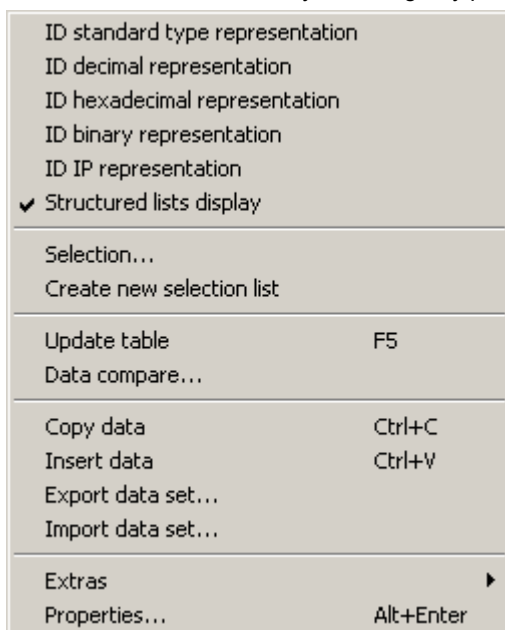
- The value of modifiable parameters can be edited directly in the table. Each input is completed by pressing the **Enter**.
- The input needs to be appropriate for the displayed data type.
- Some parameters have a minimum and a maximum limitation of the value. If these are breached during input, an error message is displayed.

Modifying lists

- For non-ASCII lists, entering a value next to the folder icon changes is current list length. The value may not be longer than the maximum list length.
- For ASCII lists, the input next to the folder icon is interpreted as a string and the list is modified appropriately.
- In expandable lists, the list elements can be modified directly. The input needs to be appropriate for the displayed data type of the element or in case none exists, fit the list.

3.1.4 Parameter context menu

Select the tab *Parameter*. By selecting any parameter with the right mouse button, the context menu opens.



Field	Explanation
Displaying ID in the standard type	The selected parameter will be displayed as indicated in the see ID Properties on page 40 .
Display ID decimally	The selected parameter will be displayed decimally.*
Display ID hexadecimally	The selected parameter will be displayed hexadecimally.*
Display ID binary	The selected parameter will be displayed binary.*
Structured list displays	If <i>Show lists with structure</i> is activated in the context menu, the user can specify <i>Name</i> , <i>Value</i> , <i>Unit length</i> (e.g. user lists).
Selection	Opens the window 'Parameter selection'. See Parameter selection on page 42 .
Save ID in selection list	The number of the selected parameter is saved in the currently specified <i>own list</i> (s. see Parameter selection on page 42 . It is of no importance if the <i>own list</i> is active.

Field	Explanation
Update display	Updating the online values. All values are discarded and read in anew from the connected drive.
Data compare	The content of the currently displayed parameter set can be compared with an already saved one. See Data compare on page 35.
Download/Copy project parameters set	With this menu item, the selected parameter is transferred between data set and online device. If the selection is in the column of the device data set, the parameter is copied from the offline data set to the online device. If the selection is in the column of the online data set, the parameter is saved from the online device to the offline data set. The name of the menu item changes, depending on the selected column.
Copy data	The contents of currently marked parts of the parameter table are copied to the Windows clipboard and thus are available as insertable text for many applications, such as text programs. If complete lines are marked in the table, an internal copy of this parameter is made as well.
Insert data	If there is an internal copy of parameters, then its content is inserted in the corresponding parameter. If no internal copy exists, then the content of the Windows clipboard is inserted unchecked as text as of the currently selected point in the table.
Export data set	See Export data set on page 39.
Import data set	See Import data set on page 41.
Properties	Display of the properties and attributes of the selected parameters. See ID Properties on page 40.

* This excludes ASCII lists

3.2 Direct mode: Function Temporary parameters

The screenshot shows the AMK AIPEX LITE software interface. The main window is titled 'Parameter Selection' and contains a table of parameters. The table has columns for ID, Name, Value, Unit, and Type. The 'Value' column shows values for various parameters, some of which are highlighted in green. The right-hand side of the interface shows a menu with options: Parameters, Temporary parameters (selected), Diagnostics, Communication, Special functions, PLC, Systeminfo, and Safety. Below the menu are buttons for 'Monitor', 'Initial program loading', and 'System booting'.

ID	Name	Value	Unit	Type
36	Veloc. cmd.value	2000.0	1/min	±Dec
38	Pos. veloc.limit	5000	1/min	±Dec
39	Neg. veloc.limit	-5000	1/min	±Dec
41	Homing velocity	100	1/min	Dec
49	Pos.posit. limit	2147483647	incr.	±Dec
50	Neg.posit. limit	-2147483648	incr.	±Dec
80	Torque cmd.value	10.0	% MN	±Dec
82	Pos.torque limit	120	% MN	Dec
83	Neg.torque limit	-120	% MN	±Dec
100	Veloc. gain KP	200		Dec
101	Int.time veloc.	5.0	ms	Dec
102	Diff.time speed	0.0	ms	Dec
104	Position loop KV	400		Dec
124	Zero veloc.wind.	50	1/min	Dec
125	Veloc.thresh. nx	1000	1/min	Dec
126	Torq.thresh. Mdx	100	% MN	Dec

Additional information displayed on the right side of the interface includes a green status indicator, a dropdown menu set to 'COM1', a list of parameters (2 KW, 2 KW, 33 KE), a yellow bar with 'KW 320 1126 203044', another yellow bar with 'Antrieb1', and a list of radio buttons for selecting different functions: Parameters, Temporary parameters (selected), Diagnostics, Communication, Special functions, PLC, Systeminfo, and Safety. Below these are buttons for 'Monitor', 'Initial program loading', and 'System booting'.

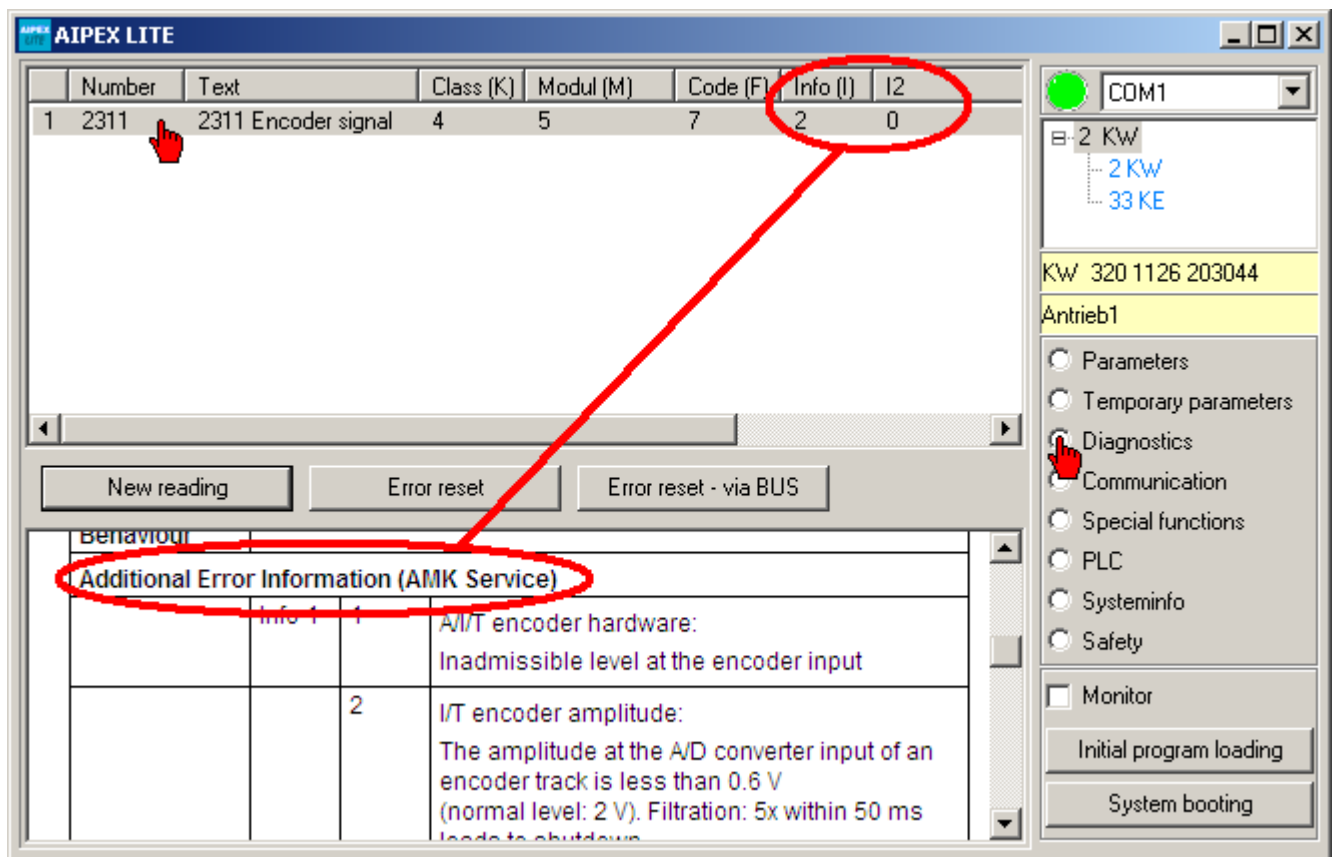
Changes in the 'Temporary parameters' are effective immediately in the drive.

In the selection list, only parameters are offered that can be modified temporarily.

All modified values are displayed in green font.

When the temporary window is closed, you can specify whether or not the changes should be saved permanently.

3.3 Direct mode: Function Diagnostics



With 'Diagnostics', the diagnostic messages can be read out from the selected device.

Click on each message to receive an explanation for it. You get further information if you analyse Info (I), I2 and I3

The first message of the list is the main activator of the fault; further displayed numbers might be resulting errors which will not appear any longer after rectifying the cause of the first diagnostic message.

Button 'New reading'

Diagnostic messages will be read out from the selected device.

Button 'Error reset'

The errors will be deleted in the selected device .

Button 'Error reset - via BUS'

The errors of all devices of a bus line will be deleted. To do this, select the bus in the device tree.

3.4 Direct mode: Function Communications

The screenshot shows the AMK AIPEX LITE software interface. The main window is divided into several sections:

- ACC:** Contains fields for Address (set to 1), Master (checked), and a Configuration section with a 'Clear' button.
- Ethernet:** Contains fields for IP address, Subnet Mask, and Gateway. There are buttons 'A', 'B', 'C' for subnet mask selection and 'Delete' and 'Detect' for gateway.
- EtherCAT Master:** Features a table with columns 'Actual', 'Fix addr.', and 'Device type'. Below the table are buttons 'Set Simple Mode' and 'Set Standard Mode'. A 'Configuration' section at the bottom has 'Clear', 'Show', 'Show device list', and a 'Show in table' checkbox.
- EtherCAT Slave:** Contains an 'Address' field set to 0.

The right sidebar shows a tree view with 'COM1' selected. Below it, a list of devices is shown: '2 KW', '2 KW', and '33 KE'. The 'KW 320 1126 203044' device is highlighted. Below this, 'Antrieb1' is listed with a red hand cursor pointing to the 'Communication' radio button. Other options in the sidebar include Parameters, Temporary parameters, Diagnostics, Special functions, PLC, Systeminfo, Safety, Monitor, Initial program loading, and System booting.

ACC bus (instance 0)

Address: ACC bus device address (ID34023)

Master: Click in the checkbox to declare the device as ACC bus master. (ID34025)

Configuration: Button '**Clear**' delete the ACC bus configuration (ID34036)

Ethernet

IP address: Display and input box for the device IP address

Subnet mask:

Button '**A**' / Class A network / 255.0.0.0

Button '**B**' / Class B network / 255.255.0.0

Button '**C**' / Class C network / 255.255.255.0

Gateway:

Button '**Delete**': Deactivates the current gateway setting.

Button '**Detect**': Set the address of the current gateway of the PC in the Gateway setting of the selected device (this address is often, but not always, identical for both devices).

EtherCAT Master

Column 1 : Physical position after the EtherCAT master, XML network file valid or not valid.

Column Actual: Current EtherCAT address

Column Fix addr.: Manual input of the EtherCAT address by the user (fixed address)

Column Given: Address information which are saved in the automatically generated XML network file.

Column Device type: Device type and EtherCAT revision stand

Button **'Direction sign'**: Refresh the device list.

Button **Set Simple Mode**: Deletes the 'Fix' addresses in all slaves.

Button **Set Standard Mode** The 'Fix' slave addresses will be set to the actual Position value.

Configuration

Button **'Clear'**: Deletes the current EtherCAT configuration.

Button **'Show'** : Reads out and displays the current device configuration from the parameters (ID).

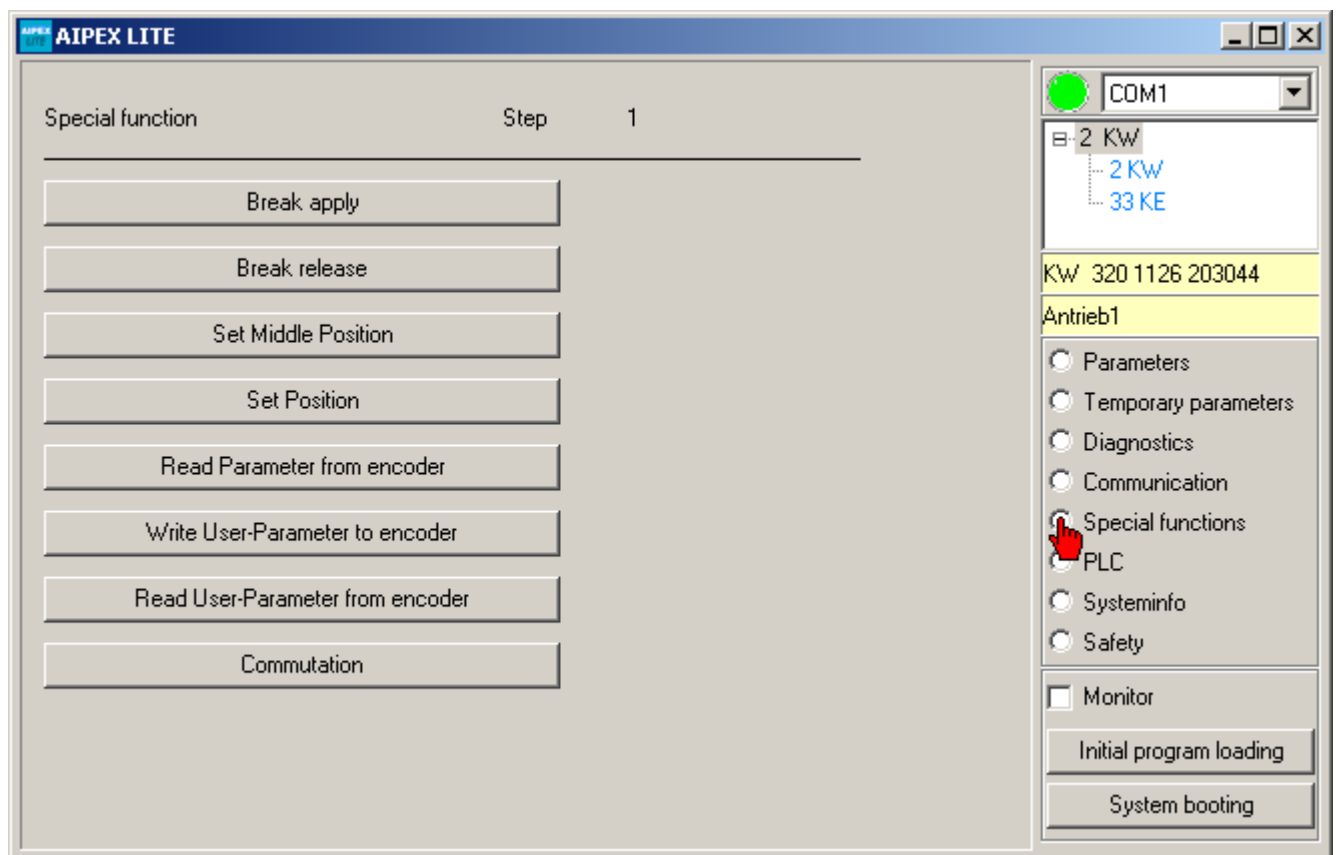
Button **'Show device list'**: Extracts the device list from the current device configuration and displays it in the editor.

Check box **'Show in table'**: Additional column 'Given' and 'Device type'.

EtherCAT Slave

Display and input box for the EtherCAT slave address.

3.5 Direct mode: Function Special functions



Button **'Brake apply'**

Motor holding brake will be closed (valid for IDT4, iX, iC, iDT5, iDP7).

Button **'Brake release'**

Motor holding brake will be opened. (valid for IDT4, iX, iC, iDT5, iDP7).

Button 'Set Middle Position'



Reserved for AMK internal use!

Button 'Set Position'



Reserved for AMK internal use!

Button 'Read parameter from encoder'

The parameter values set via ID32841 'Encoder list motor' are read from the encoder memory (E,F, P, Q, S, T encoder) and stored in the current parameter set.

Button 'Write User-Parameter to encoder'

The current values of the parameters entered in ID32842 'Encoder list customer' are written in the encoder memory (E, F, P, Q, S, T encoders).

After the parameters have been written in the encoder, network off / on must be carried out.

Button 'Read User-Parameter from encoder'

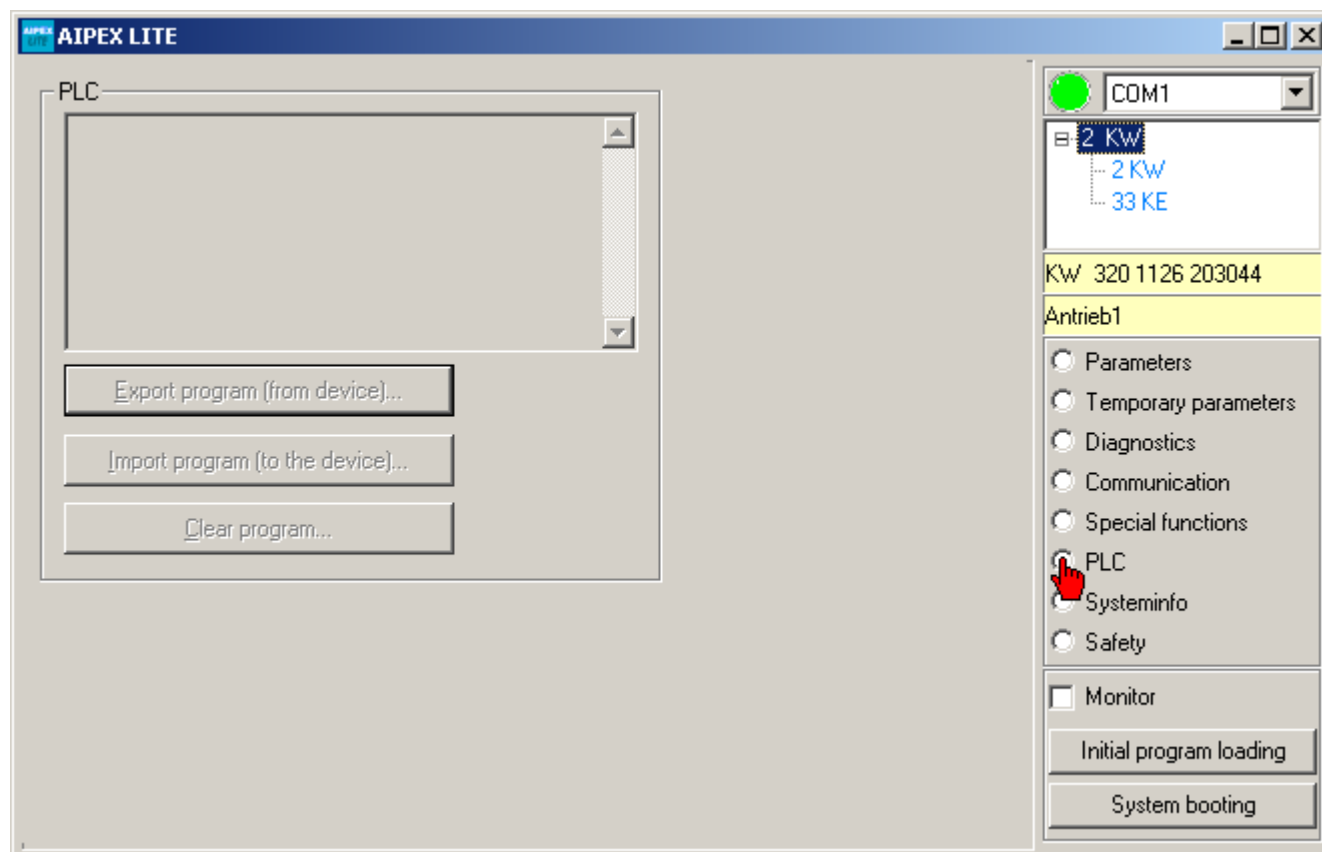
The parameter values set via ID32842 'Encoder list customer' are read from the encoder memory (E,F, P, Q, S, T encoder) and stored in the current parameter set.

Button 'Commutation'



Reserved for AMK internal use!

3.6 Direct mode: Function PLC



PLC

Display of the ID34172 'PLC project info'. The following data can be entered and displayed using the CoDeSys PLC editor (menu item **Project** -> **Project information**).

- Date
- Project name
- Title
- Version
- Author
- Comment

The function '**Import program (to the device)**' and '**Clear program**' are protected by AMK service password.
The PLC program is saved in ID34159 'PLC files'.

Button '**Export program (from device)**'

The PLC program is read by the selected device and saved in a freely selectable directory on the PC hard disk.
(A file with the suffix *.bin is created)

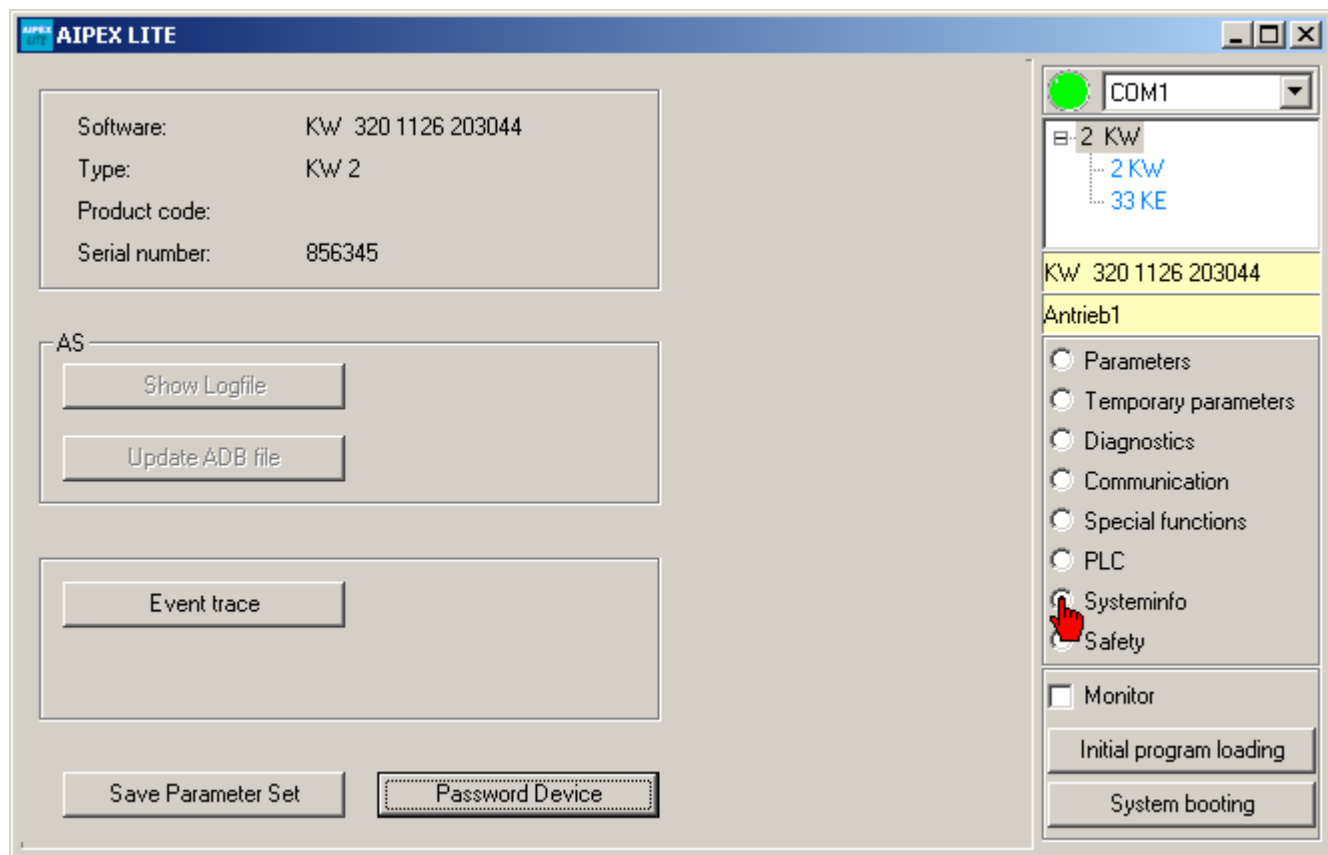
Button '**Import program (to the device)**'

The PLC program is read from a file (PC hard disk) and written into the selected device.
Only *.bin PLC files exported by AIPEX PRO can be imported.

Button '**Clear program**'

The PLC program will be deleted in the selected device.

3.7 Direct mode: Function Systeminfo



Systeminfo

Following information will be displayed for the selected device:

- Software
- Type
- Product code
- Serial number

AS - AMKAMAC controller

Button 'Show Logfile'

The Logfile of the currently selected controller will be displayed.

Button 'Update ADB file'

The ADB file of the currently selected controller will be updated.

Button 'Event trace'

The ID34088 'Event trace' of the currently selected device will be displayed.

[See Event trace on page 39.](#)

Button 'Save Parameter Set'

The parameter set of the currently selected device will be saved to the PC.

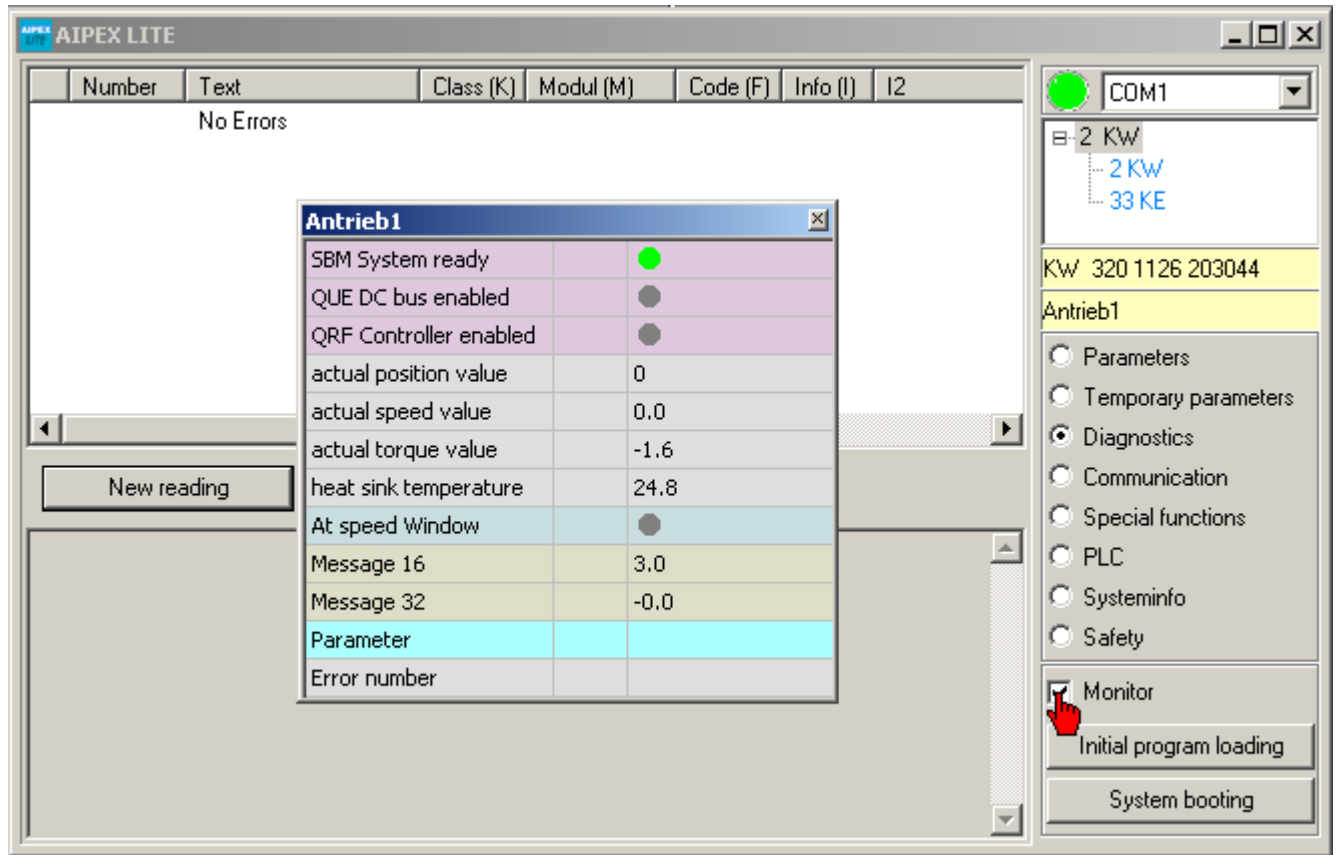


You can reopen the created file with the Software AIPEX PRO to display the parameter set.
It is not possible to download the saved *.apu parameter set to a device.
If you want to save and download a parameter set, you have to use the Software AIPEX PRO.

Button 'Password Device'

If the ID32821 'Password' protection is active you can only read values with AIPEX LITE. If you want to write values, you have to enter the customer specific password.

3.8 Direct mode: Cyclic Monitor



The 'Monitor' is a dynamic display of device data and statuses. A cyclic, but temporally undefined display of the values follows.

KW		
SBM System ready		●
QUE DC bus enabled		●
QRF Controller enabled		●
actual position value		7084
actual speed value		0.0
actual torque value		-0.9
At speed Window		●
Zero speed window		●
In position Window		●
Error number		

By clicking the right mouse button on the 'Monitor' a context menu opens that allows further display values to be taken into the 'Monitor'.

Antrieb 1		
SBM System ready		●
QUE DC bus enabled		●
QRF Controller enabled		●
actual position value		7559
actual speed value		-0.0
actual torque value		-0.6
heat sink temperature		31.9
Veloc. cmd.value		0.0
In position Window		●
Message 16		
Message 32		
Parameter	40	-0.0
Error number		

- ✓ Message 16
- ✓ Message 32
- byIn
- wIn
- dwIn
- byOut
- wOut
- dwOut
- ✓ Parameter
- ✓ Error number

- ✓ SBM System ready
- ✓ QUE DC bus enabled
- ✓ QRF Controller enabled
- ✓ actual position value
- ✓ actual speed value
- ✓ actual torque value
- position deviation
- ✓ heat sink temperature
- ✓ Veloc. cmd.value
- Position cmd.val
- At speed Window
- Zero speed window
- ✓ In position Window
- Speed Threshold
- Torque Threshold

Parameter

With the field Parameter you can dynamic display any parameter.

Enter in the second column, the parameter number that should be displayed.

ByIn/Out, wIn/Out, dwIn/Out are PLC variables. Enter in the second column, the index of your PLC variable that should be displayed.

Example: In the PLC (controller configuration), the Word wOut4 is configured. Enter 4 as the index.

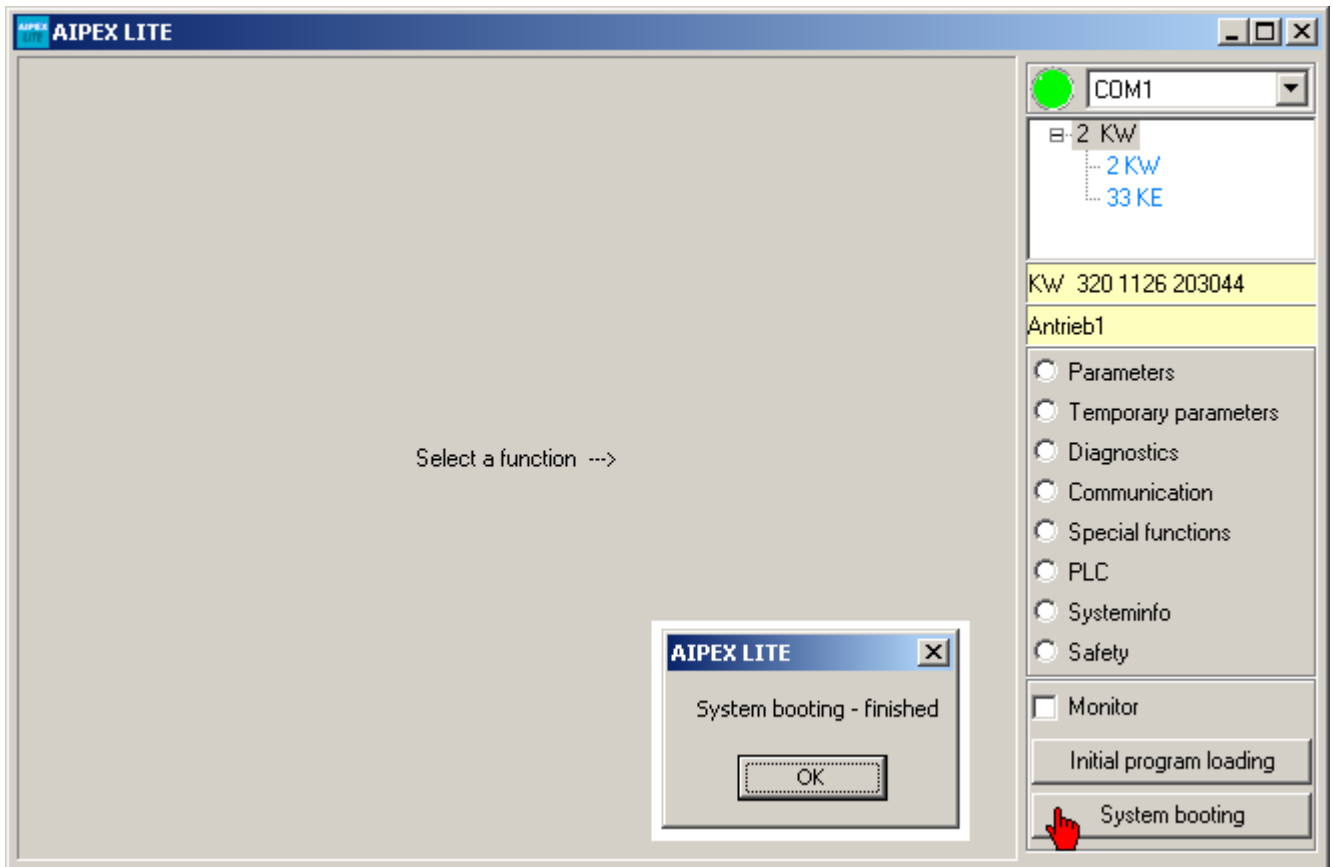
Dynamic display values, special for ACC bus

The content of the dynamic display of the *Message 16* can be modified by ID32785.

The content of the dynamic display of the *Message 32* can be modified by ID32786.

Example: ID32786 = 40 (actual speed); The actual speed is displayed dynamically by selecting Message 32.

3.9 Direct mode: Button System booting

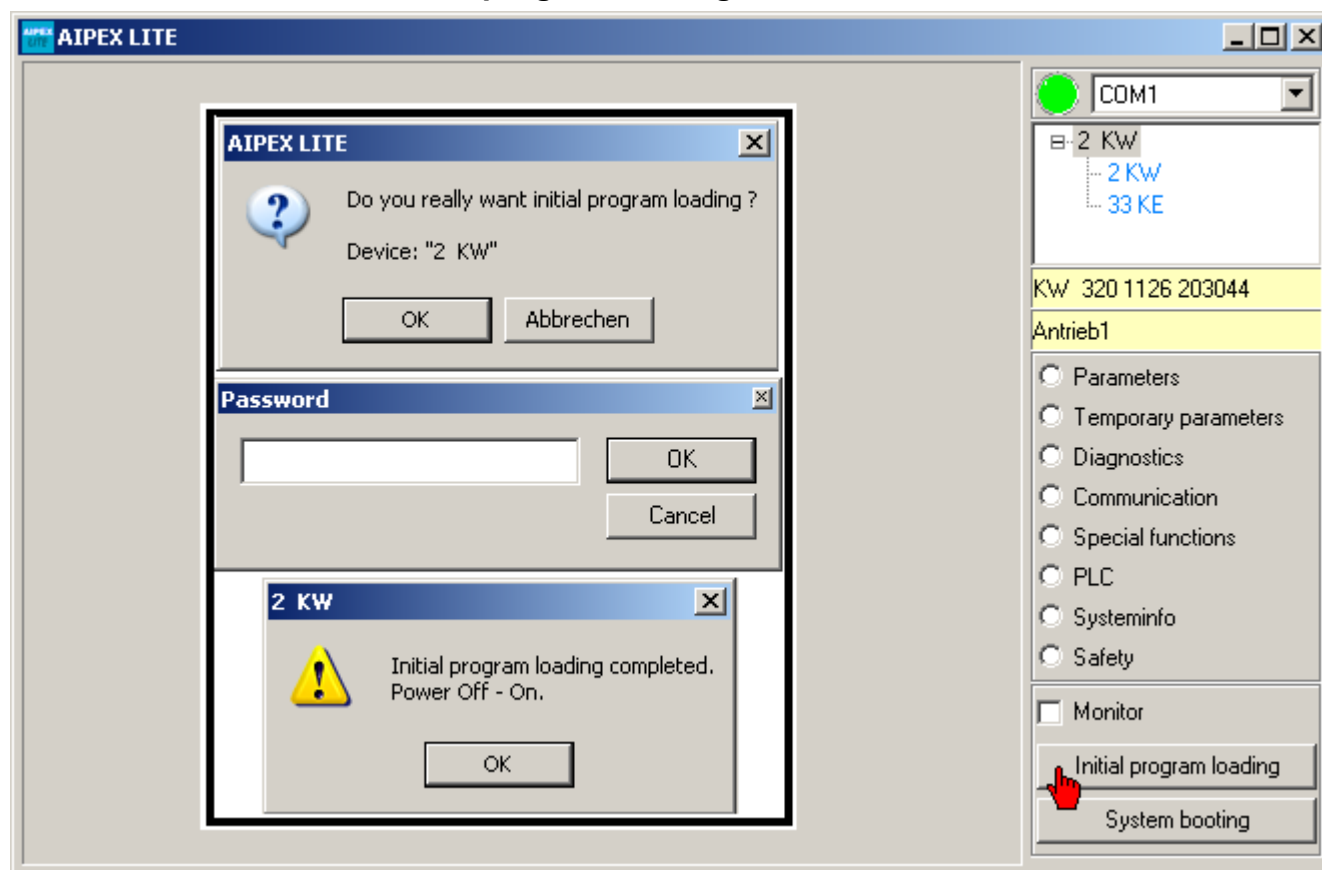


Button '**System booting**'

A 'System booting' is carried out on the selected device.

A 'System booting' causes a recalculation of the data management. (Actual values are maintained, drive bus continues running...)

3.10 Direct mode: Button Initial program loading



Button 'Initial program loading'

The 'Initial program loading' function resets AMK devices into their initial status (delivery status).

After a completed initial program loading, a system reset needs to be done.

Prerequisites for the initial program loading: A direct connection between PC and AMK device, additional password input.

4 Appendix

4.1 Data compare

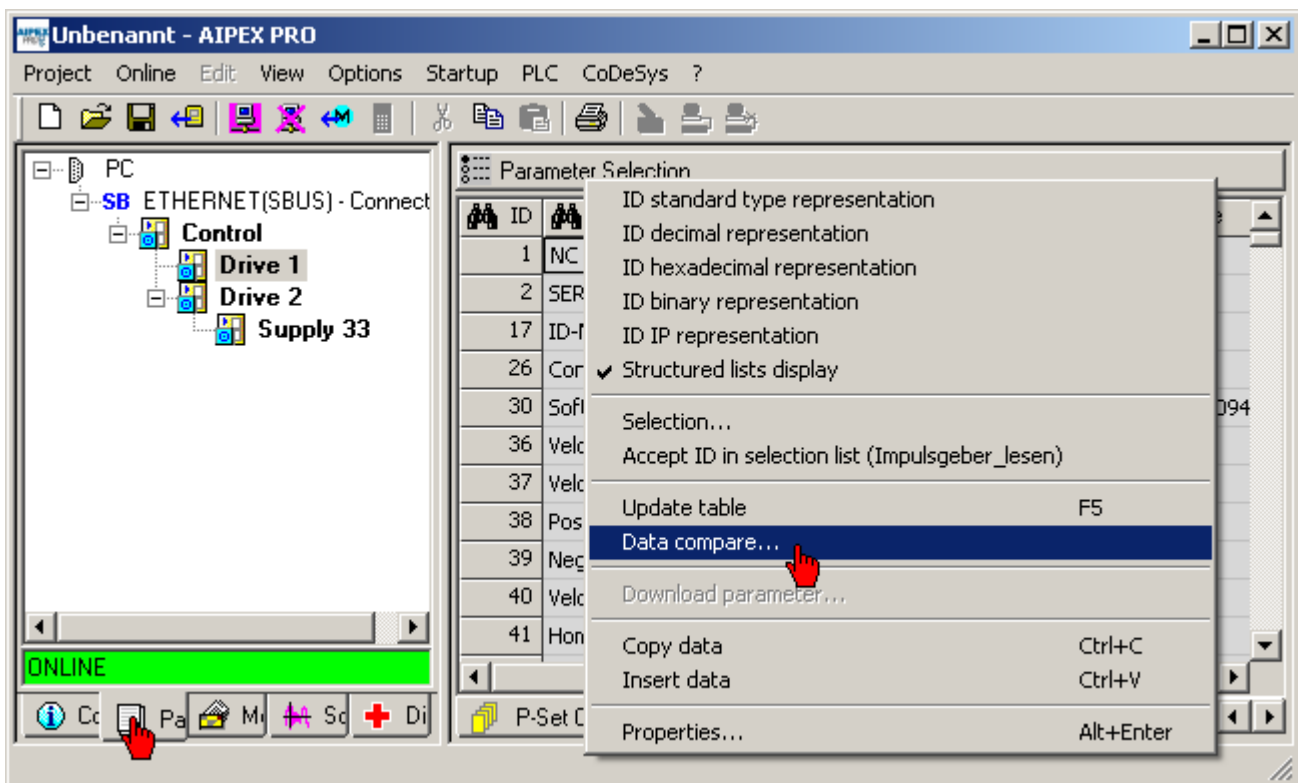
The function 'Data compare' works in the tab 'Parameter' and also in the 'Direct mode' on the same way.

With the function 'Data compare', you can compare the content of the currently displayed parameter set with an already saved data set.

The function 'Data compare' compares the currently displayed data set with an already saved one.

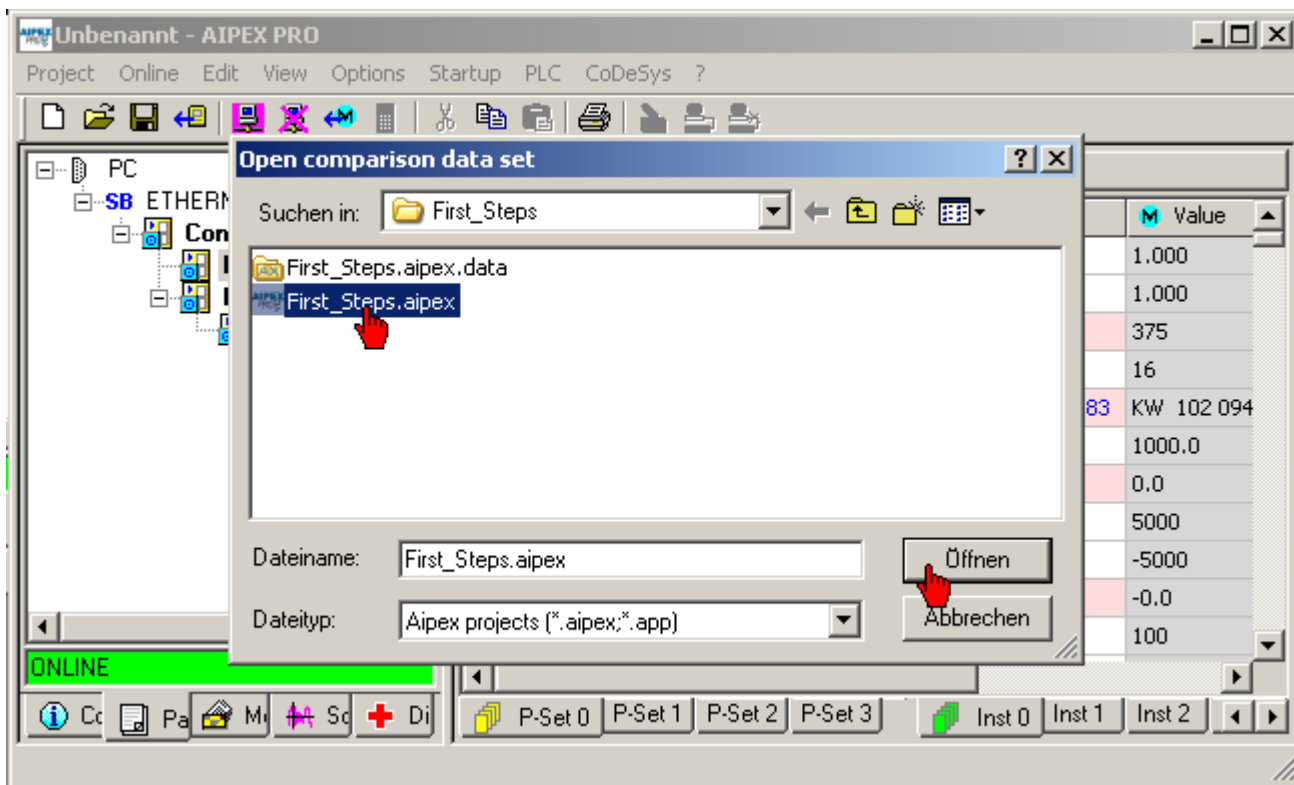
Goal: Compare saved data set with the current one.

Procedure: Select the tab '**Parameter**'. By selecting any parameter with the right mouse button, the context menu opens. Select '**Data compare**'.

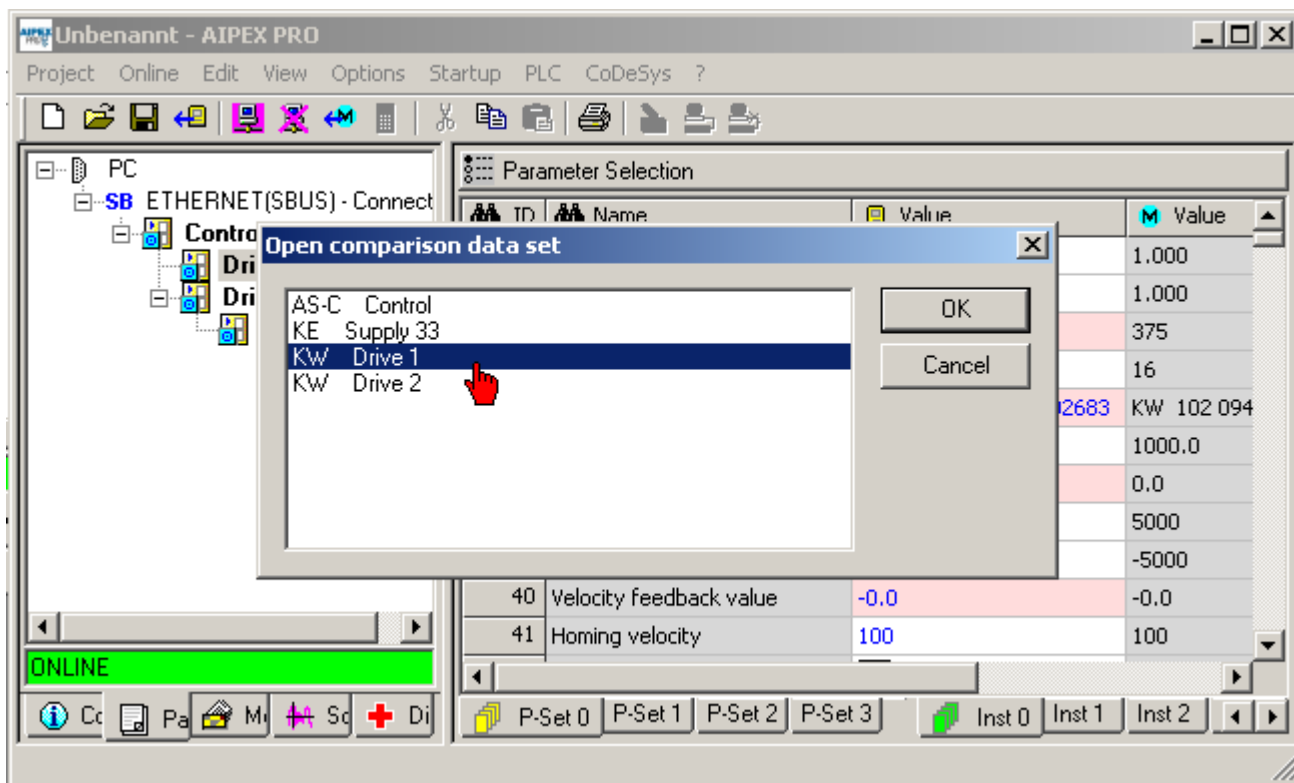


Goal: Open comparative data set.

Procedure: Select the directory and your comparative data set. Acknowledge the selection with the button 'Open'.

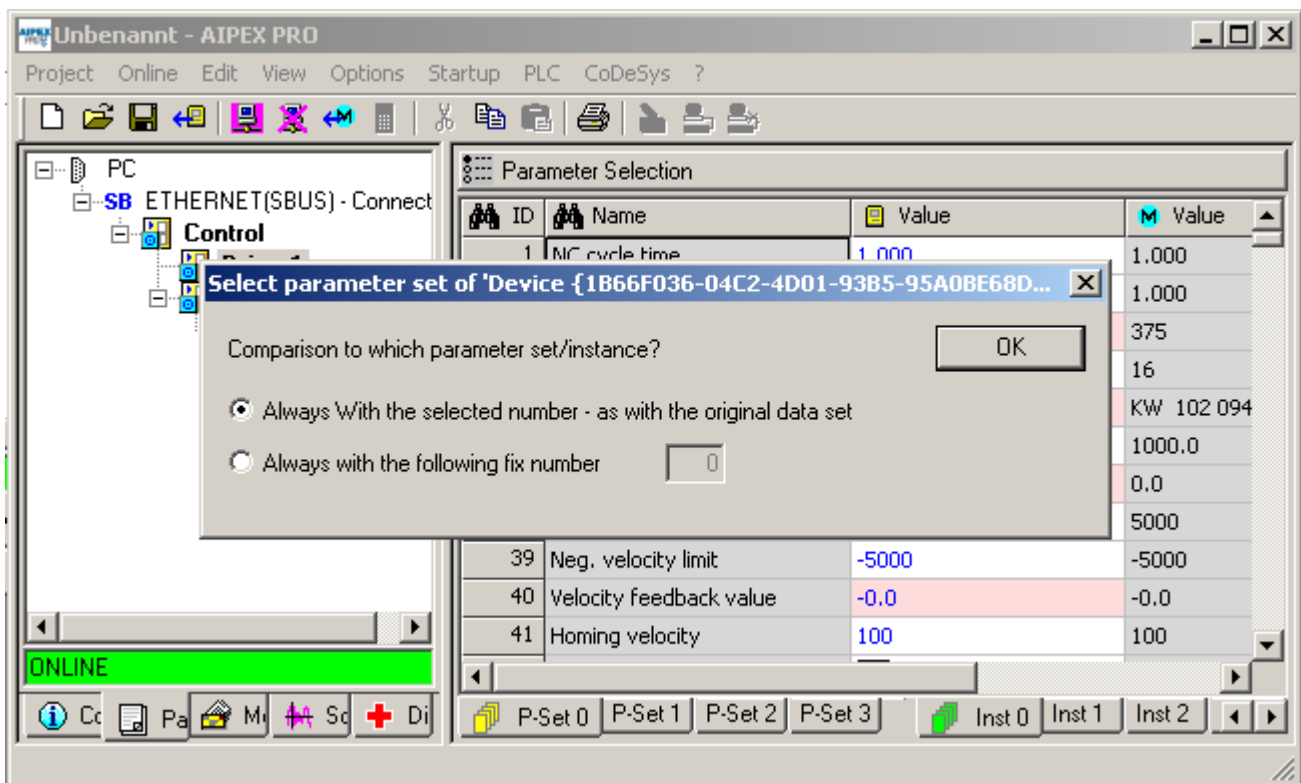


If the comparative data set contains several devices, you need to discern them based on the device address.



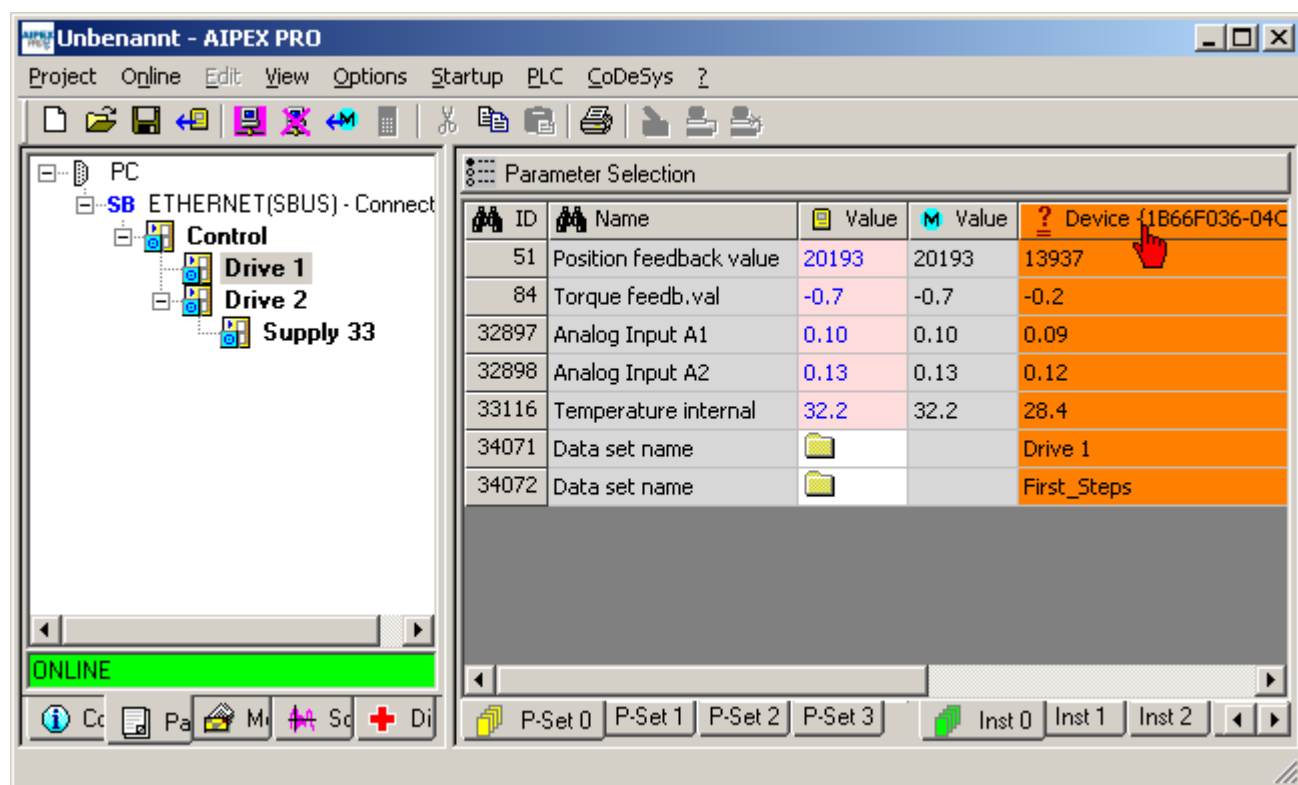
If you select the upper option, the same parameter set or otherwise the same instance of the comparative file is used as for the original data set; i.e. the tabs (*P-set 0, P-set 1... Inst 0, Inst 2...*) underneath the table are also valid for the comparative data set.

The lower option selects a set value for the parameter set and the instance of the reference file. The tabs (*P-set 0, P-set 1... Inst 0, Inst 2...*) underneath the table have no effect on the reference file in this case.



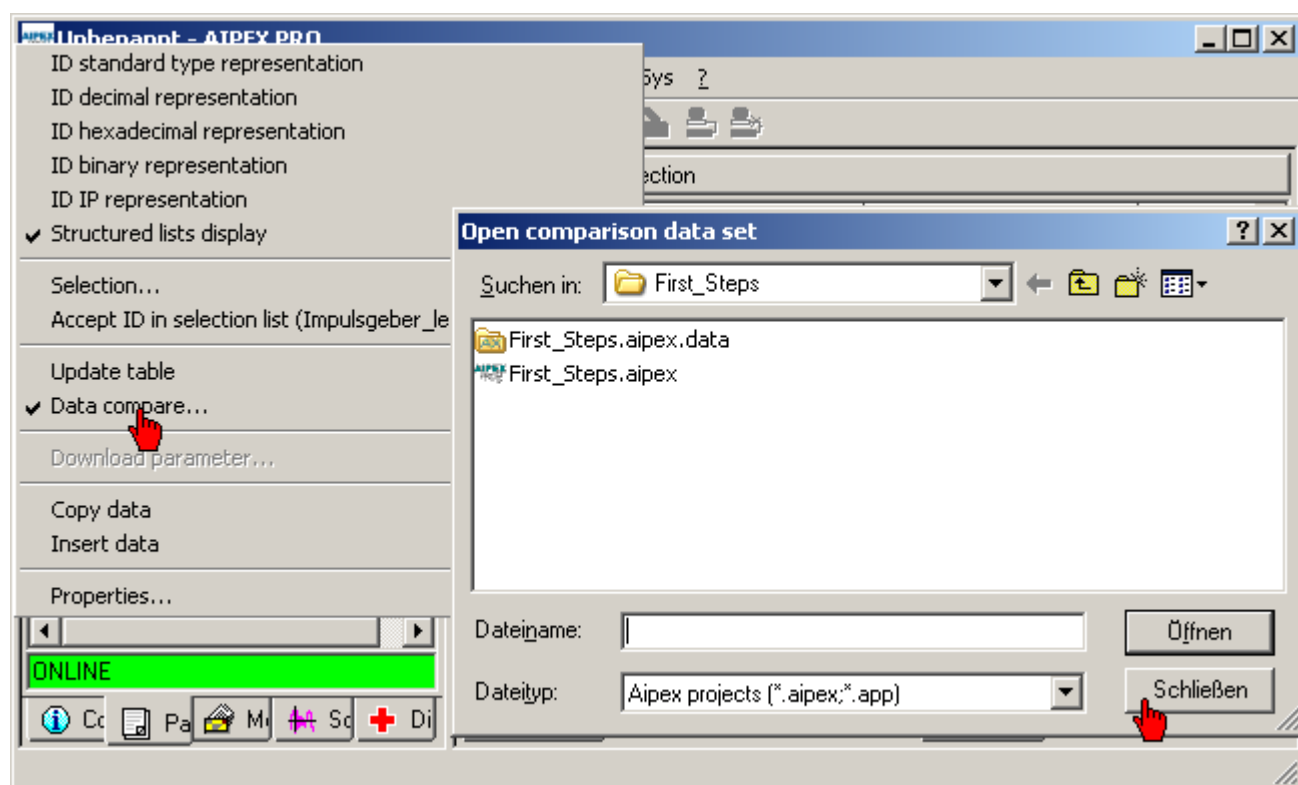
The data of the reference file are displayed in an additional column but cannot be modified. All data of the reference file differing from the original data set are marked in colour.

A click in the title field of the reference file changes between the display of all parameters and a display of the differentiating parameters.



Goal: Close comparative data set

Procedure: Open the context menu with the right mouse button. By clicking on the 'Data compare' menu item again, the button 'Close' in the subsequent dialog window can be activated then.

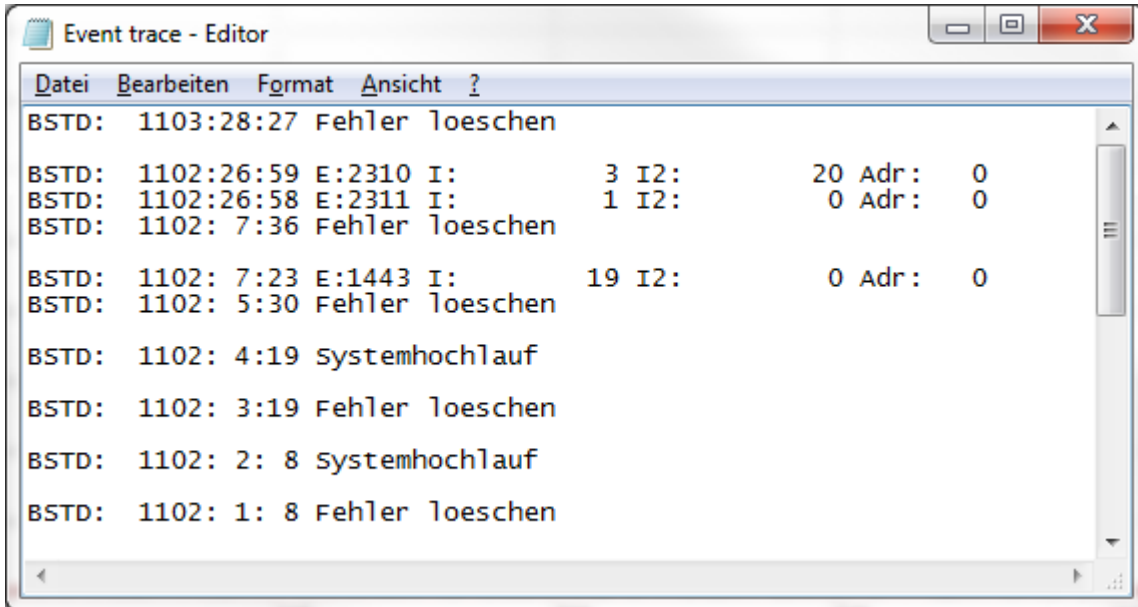


4.2 Event trace

The ID34088 'Event trace' of the currently selected device will be displayed.

The list is created in LIFO mode (last in, first out) so that the last entry is seen first.

The number of saved errors depends on the type of device.



BSTD: Operating hours

E: Error message number

I: Additional Information

Adr: Device Address

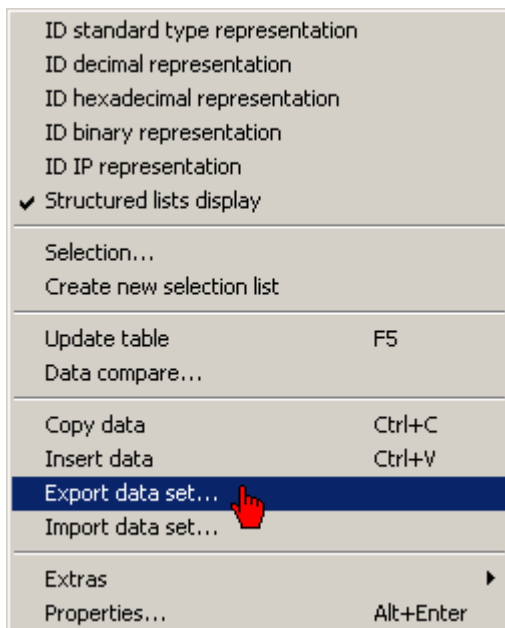
(1): Example Start of the device

(2): Example Restart of the device after FL 'Clear error'

4.3 Export data set

With using the function '**Export data set**', a XML file of the actual marked device will be generated and exported to the pc hard disk.

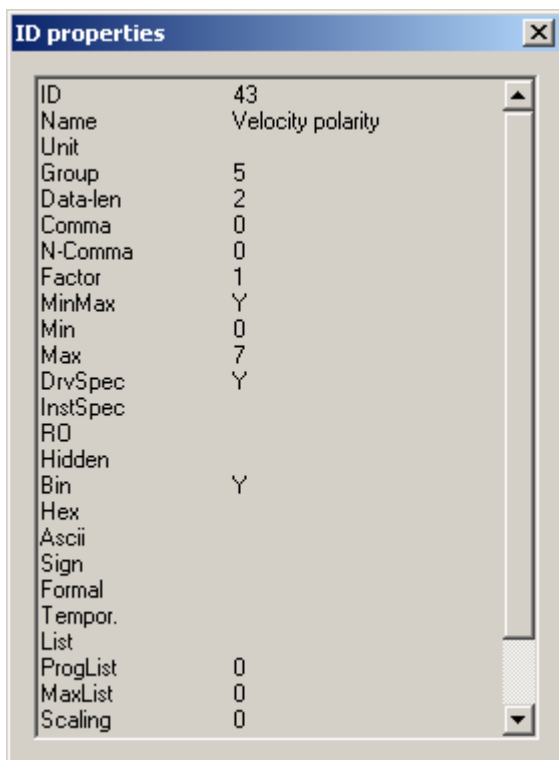
Click with the right mouse button on a parameter to start the context menu.



By using the context menu point **'Export data set'**, only the parameters of the active selection (e.g. motor parameters) will be exported.

4.4 ID Properties

Click with the right mouse button onto a parameter. Choose in the menu 'Properties'.

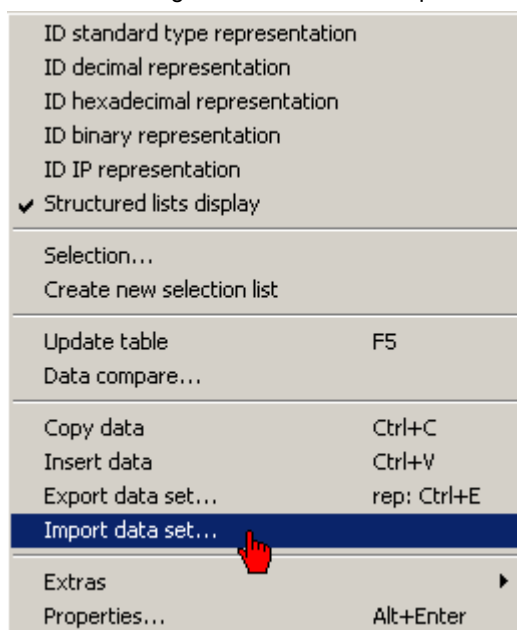


ID Properties	
ID	Parameter number
Name	Parameter name
Unit	Unit

ID Properties	
Group	Parameter group
Data-len	Data length of the parameter in byte
Comma	Power of 10 scaling factor X (for 10 to the power of X)
N-Comma	Decimal places for parameter value display
Factor	Scaling factor in 10 to the power of X
MinMax	Minimum value / maximum value available
Min	Minimum input value
Max	Maximum input value
DrvSpec	Drive-specific parameter
InstSpec	Instance-specific parameter
	[Not DrvSpec and not InstSpec = Global parameter]
RO	Read Only
Hidden	System-internal parameter
Bin	Input format binary
Hex	Input format hexadecimal
Ascii	Input format ASCII
Sign	Input format signed
Formal	Process date, entered value are not saved remanent.
Tempor.	Temporarily adjustable
List	Parameter is of the type list
ProgList	Current list length
MaxList	Maximum list length
Scaling	Quantification type
Complex	Type complex list
Data	Parameter value

4.5 Import data set

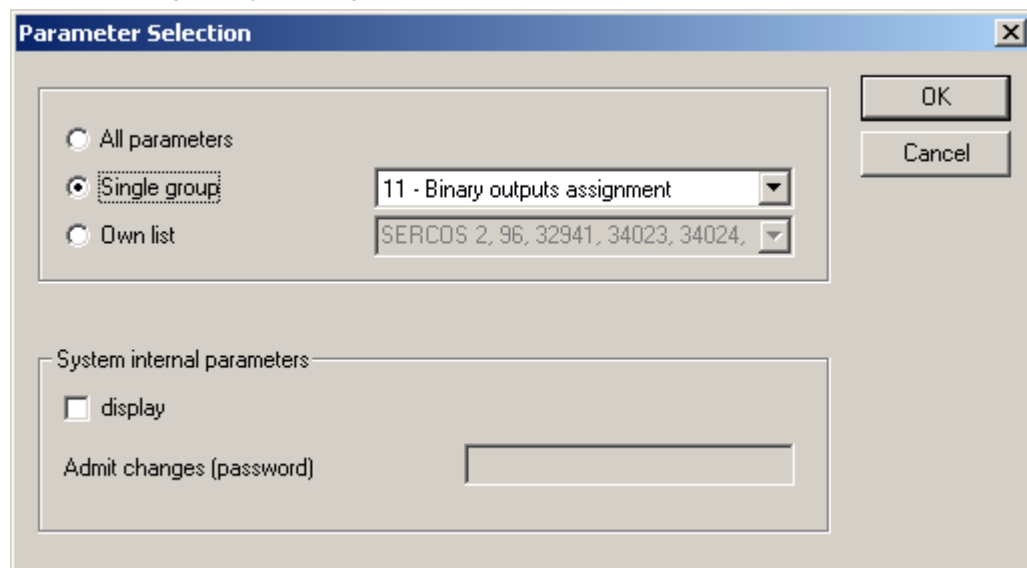
Click with the right mouse button on a parameter to start the context menu.



By using the function '**Import data set**' all existing and writable data of an external XML file will be imported.

4.6 Parameter selection

Open the dialog box by pressing the button **Parameter selection**.



The **Parameter Selection** dialog box contains the following elements:

- Three radio buttons for selection: **All parameters**, **Single group** (selected), and **Own list**.
- Two dropdown menus: the first shows **11 - Binary outputs assignment** and the second shows **SERCOS 2, 96, 32941, 34023, 34024,**.
- A section for **System internal parameters** with a **display** checkbox.
- A text field labeled **Admit changes (password)**.
- OK** and **Cancel** buttons on the right.

Selection	Description
All parameters	All parameters are displayed. (System-internal parameters need to be selected additionally)
Individual groups	All parameters of the selected parameter group are displayed.
Own list	All parameters of the selected own list are displayed. The own lists can be expanded as needed. Each list consists of a sequence of ID numbers or number ranges separated by commas and can be designated by a freely selectable name. Example: My list 1, 2, 5, 90, 32000-32100 Each list is deleted again by complete removal of the content.
System-internal Parameters	System-internal parameters are displayed in the parameter list (colour red)
Permit changes	After the release, system-internal parameters can be modified.

Glossary

A

ACC

AMK CAN Communication (CAN bus interface with standard CANopen protocol DS301 and additional hardware synchronization signal)

ADB

AMK database - file in XML format with information about all AMK parameters

AIPEX

AMK startup and parameterizing software (PC software): Programming, parameterization, configuration, diagnosis, oscilloscope, status information

ASCII

American Standard Code for Information Interchange

B

BIN

Binary

C

CAN

Controller Area Network

D

DEZ

Decimal

E

E-encoder

Absolute encoder, singleturn, EnDAT 2.1 with additional sine and cosine track

EtherCAT

Real-time Ethernet bus

F

F-encoder

Absolute encoder, multiturn, EnDAT 2.1 with additional sine and cosine track

Firmware

System software, loaded by AMK

FL

Command (Causes a new system run-up)

H

HEX

Hexadecimal, 0x...

I

iX

AMKASmart decentralized inverter

IDT

AMKASmart Servo motors with integrated inverter

iC

AMKASmart decentralized inverter with power supply

ID

Parameter identification numbers acc. to SERCOS Standard

K

KE

AMKASYN compact power supply with recovery

KW

AMKASYN compact inverter

KW-Rxx

AMKASYN controller card for installation into compact inverter

P

Parameter

Identification number acc. to SERCOS standard

PDK_XXXXXX_abcdefgh

Product documentation; XXXXXX - AMK part no. , abcdefgh - name

P-encoder

Absolute encoder singleturn, EnDAT 2.2 light

Q

Q-encoder

Absolute encoder multiturn, EnDAT 2.2 light

S

SERCOS

Standardized digital interface for communication between controller and field bus participants.

SBUS

AMK-specific protocol for serial interfaces

S-encoder

Absolute encoder, singleturn, RS485 Hiperface with sine and cosine track

T**T-encoder**

Absolute encoder, multiturn, RS485 Hiperface with sine and cosine track

Your opinion is important!

With our documentation we want to offer you the highest quality support in handling the AMK products.

That is why we are now working on optimizing our documentation.

Your comments or suggestions are always of interest to us.

We would be grateful if you take a bit of time and answer our questions. Please return a copy of this page to us.



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or

fax no.: +49 7021/50 05-199

Thank you for your assistance.

Your AMK documentation team

1. How would you rate the layout of our AMK documentation?
(1) very good (2) good (3) satisfactory (4) less than satisfactory (5) poor
2. Is the content structured well?
(1) very good (2) good (3) moderate (4) hardly (5) not at all
3. How easy is it to understand the documentation?
(1) very easy (2) easy (3) moderately easy (4) difficult (5) extremely difficult
4. Did you miss any topics in the documentation?
(1) no (2) if yes, which ones:
5. How would you rate the overall service at AMK?
(1) very good (2) good (3) satisfactory (4) less than satisfactory (5) poor

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