# AMKASYN
# Parameter description
# KE / KEN / KES

Version: 2023/27
Part no.: 205911
Translation of the "Original Dokumentation"

AMKmotion
MEMBER OF THE ARBURG FAMILY

## Imprint

**Name:** PDK_205911_Parameter_KE_en

**Version:**

| Version: 2023/27 | |
|---|---|
| **Change** | **Letter symbol** |
| Changes are shown in the full documentation.<br>See document Parameter description, Part no. 203704) | LeS |

**Previous version:** 2022/21

**Product status:**

| Product | Firmware version (Part no.) |
|---|---|
| KE, KEN, KES | KE-E03 V3.04 2013/03 (204405) |



**Reservation:** We reserve the right to modify the content of the documentation as well as the delivery options for the product.

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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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## Conventions

| Depiction | Meaning |
|---|---|
|  | This symbol indicates passages in the text that deserve your particular attention. |
| 0x | 0x followed by a hexadecimal number, e.g. 0x500A |
| 'Name' | e.g.: Call up the 'Delete PLC program' function. |
| | Diagnostic messages, e.g. 2311 "motor encoder" |
| IDxxxxx.y | xxxxx: Parameter number<br>y: Bit number<br>e.g. ID32773.14 |

# Content

# 1 For your safety

## 1.1 Presenting safety messages

Any safety information is configured as follows:

| ⚠ SIGNAL WORD | |
|---|---|
|  | **Type and source of risk**<br>Consequence(s) of non-observance<br>**Steps to prevent:**<br>• ... |

## 1.2 Class of hazard

Safety and warning messages are graduated into classes of hazard (according to ANSI Z535). The class of hazard defines the potential risk of harm and is described by a single word, if the safety information is ignored. The signal word is followed by a safety alert symbol (ISO 3864, DIN EN ISO 7010). In accordance with ANSI Z535, the following signal words are used to define the class of hazard.

| Safety alert symbol and signal word | Class of hazard and its meaning |
|---|---|
| ⚠ DANGER | DANGER indicates a hazardous situation which, if not avoided, **will** result in death or serious injury |
| ⚠ WARNING | WARNING indicates a hazardous situation which, if not avoided, **could** result in death or serious injury |
| ⚠ CAUTION | CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, **could** result in minor or moderate injury |
| NOTICE | NOTICE is used to address preventions to avoid material damage, but not related to personal injury. |

## 1.3 Safety symbols used

| Safety symbol | Meaning |
|---|---|
|  | Generic warning! |

## 1.4 Always to be observed!

| ⚠ WARNING | |
|---|---|
|  | **Hazard due to changing parameters!**<br>The incorrect entering of parameters into the controller card significantly influences the drive system characteristics and creates an increased risk of accidents and damages!<br>**Steps to prevent:**<br>• Change parameters only if you are sure of the meanings and the consequences. If you are unsure, read the parameter documentation or ask the manufacturer or supplier. |

# 2 Parameter descriptions

## ID17 'ID-no. list all operational data'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | Device-specific values |
| **Access:** | READING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 2 byte/element | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | **Current list length:*** | Device-specific values |
| **List:** | YES | **Maximum list length:*** | Device-specific values |

* The list length is the number of usage data elements without 4 byte head elements.

**Values for KE(N,S) /**

| | |
|---|---|
| **Default value:** | 55 (current list length) |
| **Current list length:*** | 55 |
| **Maximum list length:** | 55 |

All of the parameters that support a device are listed in the 'ID-no. list all operational data'. The elements 0 and 1 of the list are head information (current and maximum list length). The first parameter is in the element 2.

**Configuration ID17 'ID-no. list all operational data'**

| List element | Content | Meaning |
|---|---|---|
| 0 | x | List head: Current list length without list head [x byte]<br>(x = n elements x 2 byte / element) |
| 1 | 2 x z | List head: Maximum list length without list head [byte] |
| 2 | 1 | ID1 |
| 3 | 2 | ID2 |
| ... | ... | ... |
| z+1 | | |

z = Maximum list length

## ID30 'Software version'

| | | | |
|---|---|---|---|
| **Sphere of action:** | Device-specific values | **Default value:** | - |
| **Access:** | READING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 1 byte / element | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | ASCII | **Current list length:*** | - |
| **List:** | YES | **Max. list length:*** | Device-specific values |

* The list length is the number of usage data elements without 4 byte head elements.

**Values for KE(N,S) /**

| | |
|---|---|
| **Sphere of action:** | FORMAL |
| **Max. list length:** | 37 |

ID30 is a ASCII list with 20-byte user data, which clearly identifies each firmware.

**Configuration ID30'Software version'**

| List element | Content | Meaning |
|---|---|---|
| 0 | x | List head: Current list length without list head [x byte]<br>(x = n elements x 1 byte / element) |
| 1 | 20 | List head: Maximum list length without list head [byte] |
| 2 | e.g.: K | Device e.g.: KW |
| 3 | e.g.: W | |
| 4 | e.g.: | |
| 5 | LZ | Space |
| 6 | e.g.: 2 | Version e.g.: 200 |
| 7 | e.g.: 0 | |
| 8 | e.g.: 0 | |
| 9 | LZ | Space |
| 10 | e.g.: 0 | Year e.g.: 01 |
| 11 | e.g.: 1 | |
| 12 | e.g.: 4 | Week e.g.: 40 |
| 13 | e.g.: 0 | |
| 14 | LZ | Space |
| 15 | e.g.: 0 | AMK parts no. e.g.: 023988 |
| 16 | e.g.: 2 | |
| 17 | e.g.: 3 | |
| 18 | e.g.: 9 | |
| 19 | e.g.: 8 | |
| 20 | e.g.: 8 | |
| 21 | 0 | |

* The list length is the number of usage data elements without 4 byte head elements.

| Instance | Controller | Software version (firmware) | Designation code |
|---|---|---|---|
| 0 | KE(N,S) / | Internal controller module | GGG_vvv_yyww_tttttt_MON_vvv_<br>P2_vvvvv |

**Key**

GGG: Device:
FPG: FPGA version
MON: Monitor
S: Safety Firmware
P1: Communication Controller (Net x)
P2 Motion Controller: SVN number
vvv Version
yyww Year/week
tttttt AMK parts no.

## ID182 'Diagnosis manufacturer status'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL / FORMAL | **Default value:** | 0000 0000 0000 0000 |
| **Access:** | READING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | BIN | | |
| **List:** | NO | | |

Diagnostic messages are shown in ID390 'Diagnostic number'.

**Configuration ID182 'Diagnosis manufacturer status'**

| Bit no. | Condition | Meaning |
|---|---|---|
| 0 | 0 | Reserved |
| | 1 | Reserved |
| 1-6 | 0 | Reserved |
| | 1 | Reserved |
| 7 | 0 | Reserved |
| | 1 | Reserved |
| 8 | 0 | Reserved |
| | 1 | Reserved |
| 9 | 0 | Reserved |
| | 1 | Reserved |
| 10 | 0 | Reserved |
| | 1 | Reserved |
| 11 | 0 | Message inactive |
| | 1 | Message active: acknowledgement, that the control bit DC bus ON (UE) was set |
| 12 | 0 | Message inactive |
| | 1 | Message active: Acknowledgement DC bus ON (QUE) |
| 13 | 0 | Message inactive |
| | 1 | Message active: Warning present |
| 14 | 0 | Message inactive |
| | 1 | Message active: Error present |
| 15 | 0 | Message inactive |
| | 1 | Message active: System ready message (SBM) |

## ID390 'Diagnostic number'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL / FORMAL | **Default value:** | 0 |
| **Access:** | READING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

If a diagnostic message appears (warning or error), the diagnostic number is written in ID390. The first occurred event (warning or error) is always entered. A warning message is not overwritten by a subsequent error message.

If different values are shown for multiple, directly consecutive read-outs of ID390, then the device has an extended diagnostic memory (e.g. KE, KES device), which also shows subsequent events.

An existing entry in ID390 is cleared by the 'Clear error.'

## ID32785 'Message 16'

| | | | |
|---|---|---|---|
| **Sphere of action:** | DRIVE | **Default value:** | 33101 |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

The configured display values can be evaluated by a controller via the ACC bus interface.

All 16-bit display values can also be configured in the 32-bit message ID32786.

| Code / ID | Designation | Description |
|---|---|---|
| 390 | 'Diagnostic number' | Siehe ID390 'Diagnostic number' auf Seite 9. |
| 32836 | 'DC bus voltage' | Siehe ID32836 'DC bus voltage' auf Seite 11. |
| 33101 | 'Display overload inverter' | Siehe ID33101 'Display overload inverter' auf Seite 15. |
| 33116 | 'Temperature internal' | Siehe ID33116 'Temperature internal' auf Seite 16. |
| 34144 | 'Nominal voltage effective' | Siehe ID34144 'Nominal voltage effective' auf Seite 22. |
| 34145 | 'Line current effective' | Siehe ID34145 'Line current effective' auf Seite 22. |
| 34197 | 'Display external component' | Siehe ID34197 'Display external component' auf Seite 24. |
| 34198 | 'mains frequency' | Siehe ID34198 'mains frequency' auf Seite 24. |

## ID32786 'Message 32'

| | | | |
|---|---|---|---|
| **Sphere of action:** | DRIVE | **Default value:** | 34058 |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

The configured display values can be evaluated by a controller via the ACC bus interface.

All 16-bit display values can also be configured in the 32-bit message ID32786.
Siehe ID32785 'Message 16' auf Seite 9.

| Code / ID | Designation | Description |
|---|---|---|
| 34058 | 'Line output' | Siehe ID34058 'Line output' auf Seite 20. |

## ID32795 'Source UE'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | 0 |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

For devices with an external main contactor, the source of the 'DC bus on' signal (UE) must be set via ID32795. The following sources are possible:

| Code | Designation | Description |
|---|---|---|
| 0 | UE via binary input | UE is configured for a binary input on the basic device. If this input is set, the UE control signal in the device is triggered and the DC bus is charged. |
| 5 | UE via fieldbus | UE is expected via fieldbus |
| 8 | UE automatically derived from SBM | The UE signal is automatically derived from the state of SBM. |
| 9 | UE via parameter ID32903 | A controller can set the UE signal by writing the parameter ID32903 'DC Bus on' in the target device. |

| Code | Designation | Description |
|---|---|---|
| 25 | UE via fieldbus AND-linked with the binary input UE | like code 5 but AND-linked with the binary input UE |
| 29 | UE AND-linked with binary input UE via parameter ID32903 | like code 9 but AND-linked with the binary input UE |

Changes in ID32795 'Source UE' are first effective with the next system start-up (mains OFF / ON). The command ID33730 'System booting' is not sufficient.

## ID32836 'DC bus voltage'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL / FORMAL | **Default value:** | 0 |
| **Access:** | READING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | V |
| **Data length:** | 2 byte | **Min. value:** | 0 V |
| **Signed:** | NO | **Max. value:** | 4096 V |
| **Format:** | DEC | | |
| **List:** | NO | | |

ID32836 displays the actual value of the DC bus voltage.

## ID32837 'DC bus voltage monitoring'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | 0 |
| **Access:** | READING / WRITING | **Scale:** | 0.1 |
| **Temporarily changeable:** | NO | **Unit:** | V |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

ID32837 defines the lower permissible voltage for the DC bus.
A device-specific value is to be entered in the SEEP memory at the factory for the DC bus voltage monitoring. (Typically 385 VDC)
The following applies:
ID32837 = 0 (The factory-set, device-specific value is the voltage for which the DC bus voltage is monitored.)
ID32837 ≠ 0 (The entered value is the voltage [0.1 V] for which the DC bus voltage is monitored.)

## ID32864 'Address output port 3'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | 544 |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

With ID32864, the standard binary outputs are assigned to parameters. With the parameters, the physical binary outputs can be assigned to real-time bit messages.

**Structure and use of the output port - function assignment via parameters**

| ID32864 'Address output port 3' | Binary output[1)] | Function assignment[2)] |
|---|---|---|
| 544 | BA1 | ID32865 |
| | BA2 | ID32866 |
| | BA3 | ID32867 |
| | BA4 | ID32868 |

1) The availability of physical binary outputs depends on the hardware used.
2) Real-time bits can be assigned to the binary outputs:
Siehe Codes for the configuration of the binary outputs auf Seite 27.
The statuses of the binary outputs are, if available, issued via the binary outputs on the hardware side.

## ID32865 'Port 3 Bit 0'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | Device-specific values |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 4 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

**Values for KE(N,S) /**

| | |
|---|---|
| Binary output default value: | 33029 (SRM) |

Siehe ID32864 'Address output port 3' auf Seite 11.

## ID32866 'Port 3 Bit 1'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | Device-specific values |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 4 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

**Values for KE(N,S) /**

| | |
|---|---|
| **Binary output default value:** | 33030 (QUE) |

Siehe ID32864 'Address output port 3' auf Seite 11.

## ID32867 'Port 3 Bit 2'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | Device-specific values |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 4 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

**Values for KE(N,S) /**

| | |
|---|---|
| **Default value:** | 0 |

Siehe ID32864 'Address output port 3' auf Seite 11.

## ID32868 'Port 3 Bit 3'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | 0 |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 4 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

Siehe ID32864 'Address output port 3' auf Seite 11.

## ID32901 'Global service bits'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | Device-specific values |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 4 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | BIN | | |
| **List:** | NO | | |

**Values for KE(N,S) /**

**Default value:** 0000 0000 0000 0000 (LSB)

**Configuration ID32901 'Global service bits'**

| Bit no. | Condition | Meaning |
|---|---|---|
| 0 | 0 | Mains monitoring ON |
| | 1 | Mains monitoring OFF<br>For devices with current regeneration, the regeneration is automatically disconnected internally, because no regeneration is possible without mains monitoring. (Bit 4 is not changed, we recommend however setting bit 4 =1 if the mains monitoring is switched off) |
| 1 | 0 | Reserved |
| | 1 | Reserved |
| 2 | 0 | Reserved |
| | 1 | Reserved |
| 3 | 0 | Extended mains phase failure signal VBNX inactive |
| | 1 | Extended mains phase failure signal VBNX active<br>The signal VBNX is generated from the internal BNX signal and can be assigned to a binary output with the code 33123. Short mains voltage failure <100 ms are displayed. Even the mains voltage failure disappears the VBNX signal is set at least for 22 ms. |
| 4 | 0 | Regeneration active with signal QUE |
| | 1 | Regeneration inactive |
| 5 | 0 | Reserved |
| | 1 | Reserved |
| 6 | 0 | Reserved |
| | 1 | Reserved |

| Bit no. | Condition | Meaning |
|---|---|---|
| 7 | 0 | Reserved |
| | 1 | A test current is generated on the output BA3 at low condition (BA3 = 0 ) to exclude cable breakage. Only after an edge change a fault is outputted. In high condition (BA3 = 1) the current is monitored to ≠ 0. If one of these conditions failed the error message 1100 is generated.<br>Reserved |
| 8 | 0 | Reserved |
| | 1 | Reserved |
| 9 | 0 | DC bus is discharged via external brake resistor after SBM withdrawal |
| | 1 | DC bus is not discharged in the event of SBM withdrawal<br>In the case of an error, the DC bus is not discharged via an external brake resistor to the power supply. |
| 10 | 0 | Prerequisite: Bit 9 = 1<br>DC bus is not discharged, even after additional UE withdrawal |
| | 1 | Prerequisite: Bit 9 = 1<br>DC bus is discharged via an external brake resistor in the event of UE withdrawal |
| 11 | 0 | Reserved |
| | 1 | Reserved |
| 12 | 0 | Reserved |
| | 1 | Reserved |
| 13 | 0 | Reserved |
| | 1 | Reserved |
| 14 | 0 | Reserved |
| | 1 | Reserved |
| 15 | 0 | Reserved |
| | 1 | Reserved for AMK internal use! Special function |
| 16 | 0 | Reserved |
| | 1 | Reserved |
| 17 | 0 | Reserved |
| | 1 | Reserved |
| 18-32 | 0 | Reserved |
| | 1 | Reserved |

## ID32903 'DC Bus on'

| | | | |
|---|---|---|---|
| Supported hardware: | KE(N,S) / | | |
| **Sphere of action:** | GLOBAL / FORMAL | **Default value:** | 0 |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | HEX | | |
| **List:** | NO | | |

The DC bus capacitors are charged via the charging connection with the control signal 'DC Bus on'. If the charging process is complete, the DC bus is directly supplied from the mains with the main contactor.

The control signal 'DC Bus on' is set if the value 0x1 is written in the parameter. 'DC Bus on' is reset if the value 0x0 is written in the parameter. The status of the command is displayed by the parameter being read.

| Read value | Meaning |
|---|---|
| 0x0 | Basic state, no command active |
| 0x3 | Command complete |
| 0x5 | Inhibit time for charging process not yet expired |

| Read value | Meaning |
|---|---|
| 0x7 | Command currently active |
| 0xF | Command completed with error |

## ID32913 'Clear error'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL / FORMAL | **Default value:** | 0 |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 2 byte | **Min. value:** | 0 |
| **Signed:** | NO | **Max. value:** | 1 |
| **Format:** | HEX | | |
| **List:** | NO | | |

The command 'Clear error' is started if the value 0x1 is written in ID32913 and causes an error message to be reset. If the cause of the error is remedied, the system changes to the error-free state (SBM = 1).

The status of the command is displayed by the parameter being read.

| Read value | Meaning |
|---|---|
| 0x0 | Basic state, no command active |
| 0x3 | Command complete |
| 0x7 | Command currently active |
| 0xF | Command completed with error |

The command is completed after the status is 0x3 or 0xF.

## ID32999 'Overload limit inverter'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | 500 |
| **Access:** | READING / WRITING | **Scale:** | 0.1 |
| **Temporarily changeable:** | NO | **Unit:** | % |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

The $i^2t$ monitoring for the converter is always automatically active. The 'Overload limit inverter' determines when the 'device overload warning' is generated. At the same time as the warning, the real-time bit (code 33016) is generated. If the value in ID32999 is fallen below again, the real-time bit is reset until the value is exceeded again. Upcoming warnings can be cleared by the user. If the $i^2t$-monitoring (ID33101 'Display overload inverter') achieves an overload value of 100%, the error message 'device overload error' is generated.

2349 'Inverter overload warning'

2345 'Inverter overload error'

In the case of an error, the SBM is withdrawn, the IGBT is therefore blocked and the main contactor is opened.

## ID33101 'Display overload inverter'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL / FORMAL | **Default value:** | 0 |
| **Access:** | READING | **Scale:** | 0.1 |
| **Temporarily changeable:** | NO | **Unit:** | % |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

ID33101 shows the current overload of the converter according to $i^2t$-calculation.

ID33101 = 0: Converter works in nominal operation or below the nominal rating
ID33101 > 0: Converter works in the overload operation, shutdown at 100%

Siehe ID32999 'Overload limit inverter' auf Seite 15.

## ID33116 'Temperature internal'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL / FORMAL | **Default value:** | 0 |
| **Access:** | READING | **Scale:** | 0.1 |
| **Temporarily changeable:** | NO | **Unit:** | °C |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | YES | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

ID33116 shows the temperature of the cold plate (heat sink of the IGBT and at the same time of the rear wall of the device). The triggering thresholds are device-specific, are set in the SEEP at the factory and cannot be changed by the user.

If critical temperatures occur for the devices, the warning 2350 'Device temperature warning' is generated as well as the error message 2346 'Converter temperature error' after the warning time[1)] (ID32943) has expired.

1) The warning time is 4 seconds and cannot be changed by the user.

## ID33730 'System booting'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL / FORMAL | **Default value:** | 0000 |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | HEX | | |
| **List:** | NO | | |

A system booting causes a re-calculation of the data management. Changed parameter values are active.

The command is started if the value 0x1 is written in the parameter.

The status of the command is displayed by the parameter being read.

| Read value | Meaning |
|---|---|
| 0x0 | Basic state, no command active |
| 0x3 | Command complete |
| 0x7 | Command currently active |
| 0xF | Command completed with error |

The command is completed after the status is 0x3 or 0xF.

## ID33732 'System reset'

Reserved for AMK internal use!

## ID34000 'Variable 0'

| | | | |
|---|---|---|---|
| **Sphere of action:** | DRIVE | **Default value:** | 0 |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 4 byte | **Min. value:** | - |
| **Signed:** | YES | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

This parameter can be used specific to the application in order to store data.

## ID34001 'Variable 1'

| | | | |
|---|---|---|---|
| **Sphere of action:** | DRIVE | **Default value:** | 0 |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 4 byte | **Min. value:** | - |
| **Signed:** | YES | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

This parameter can be used specific to the application in order to store data.

## ID34002 'Variable 2'

| | | | |
|---|---|---|---|
| **Sphere of action:** | DRIVE | **Default value:** | 0 |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 4 byte | **Min. value:** | - |
| **Signed:** | YES | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

This parameter can be used specific to the application in order to store data.

## ID34003 'Variable 3'

| | | | |
|---|---|---|---|
| **Sphere of action:** | DRIVE | **Default value:** | 0 |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 4 byte | **Min. value:** | - |
| **Signed:** | YES | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

This parameter can be used specific to the application in order to store data.

## ID34004 'Variable 4'

| | | | |
|---|---|---|---|
| **Sphere of action:** | DRIVE | **Default value:** | 0 |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 4 byte | **Min. value:** | - |
| **Signed:** | YES | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

This parameter can be used specific to the application in order to store data.

## ID34023 'BUS address participant'

| | | | |
|---|---|---|---|
| **Sphere of action:** | INSTANCE | **Default value:** | Device-specific values |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | HEX | | |
| **List:** | NO | | |

**Values for KE(N,S) / Default value:**

| Instance | Use | Interface | Default value | Meaning |
|---|---|---|---|---|
| 0 | ACC bus slave | X236 / X237 | 0x0021 | Participant address 33 decimal |

ID34023 specifies the participant address in the bus system.

## ID34024 'BUS transmit rate'

| | | | |
|---|---|---|---|
| **Sphere of action:** | Device-specific values | **Default value:** | 0 |
| **Access:** | READING / WRITING | **Scale:** | 0.01 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 4 byte | **Min. value:** | 0.00 |
| **Signed:** | NO | **Max. value:** | Device-specific values |
| **Format:** | DEC | | |
| **List:** | NO | | |

**Values for KE(N,S) /**

**Sphere of action:** GLOBAL

**Default value:**

| Instance | Use | Interface | Default value | Meaning |
|---|---|---|---|---|
| 0 | ACC bus master | X236 / X237 | 0 | 1 MBit/s |

**Max. value:** 99000.00

The bus transmission rate must be set the same for all participants of a fieldbus system!

**Transmission rates for the ACC bus / CANopen interface**

| Value | Meaning |
|---|---|
| 1000.00 | 1000 kBit/s = 1 MBit/s |

| Value | Meaning |
|---|---|
| 800.00 | 800 kBit/s |
| 500.00 | 500 kBit/s |
| 250.00 | 250 kBit/s |
| 125.00 | 125 kBit/s |
| 50.00 | 50 kBit/s |
| 20.00 | 20 kBit/s |
| 10.00 | 10 kBit/s |

## ID34026 'BUS mode attribute'

| | | | |
|---|---|---|---|
| **Sphere of action:** | INSTANCE | **Default value:** | Device-specific values |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | HEX | | |
| **List:** | NO | | |

**Values for KE(N,S) /**

**Defaultwert:** 0

ID34026 'BUS mode attribute' defines the fieldbus-specific supported functionality.

**Configuration ID34026 'BUS mode attribute'**

| Bit no. | Condition | Meaning |
|---|---|---|
| 0-8 | 0 | Reserved |
| | 1 | Reserved |
| 9 | 0 | Waiting time for ACC bus master: 15 s |
| | 1 | Waiting time for ACC bus master: endless |
| 10-15 | 0 | Reserved |
| | 1 | Reserved |

## ID34027 'BUS failure character'

| | | | |
|---|---|---|---|
| **Sphere of action:** | INSTANCE | **Default value:** | 2 |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

The 'BUS failure character' defines the behavior of a slave bus participant in the event of a failure of the fieldbus and affects with the following diagnostic messages:

ACC Bus: 2685,2686, 2691, 2693, 2694

EtherCAT / VARAN: 2561, 2595

The following error class is displayed:

ACC:128

EtherCAT / VARAN: 2048

Tolerance at fail telegrams: Siehe ID34026 'BUS mode attribute' auf Seite 19.

**Configuration ID34027 'BUS failure character'**

| Code | Designation | Description |
|---|---|---|
| 0 | - | No response |
| 1 | - | Warning message |
| 2 | - | Error message, SBM is withdrawn<br>DC bus ON (UE) is withdrawn internally, error message is generated |

1) This parameter is used by the following function:
'Drive moves into parking position'

## ID34048 'PWM frequency'

| | | | |
|---|---|---|---|
| **Sphere of action:** | DRIVE | **Default value:** | 8 |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | kHz |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

ID34048 sets the frequency of the PWM in the converter. Only 8 kHz PWM frequency is permissible for all devices.

## ID34058 'Line output'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL / FORMAL | **Default value:** | 0 |
| **Access:** | READING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | W |
| **Data length:** | 4 byte | **Min. value:** | - |
| **Signed:** | YES | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

ID34058 'Line output' shows the mains active power. Positive values indicate the active power taken from the mains (motor operation). Negative values indicate the active power fed back into the mains (generator operation). Generator operation is only possible for devices with current regeneration.

Siehe 'ID34059 'Time filter line" auf Seite 20.

## ID34059 'Time filter line'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | 10 |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | ms |
| **Data length:** | 2 byte | **Min. value:** | 10 ms |
| **Signed:** | NO | **Max. value:** | 65535 ms |
| **Format:** | DEC | | |
| **List:** | NO | | |

For a 'quiet' display of the active power (ID34058 'Line output'), a proportional part with a delay of the 1st order (PT1 part) can be configured through the input of a filter time. The value 0 is internally set to 10 ms.

Siehe 'ID34058 'Line output" auf Seite 20.

## ID34060 'List SEEP 1'

Reserved for AMK internal use!

## ID34061 'List SEEP 2'

Reserved for AMK internal use!

## ID34062 'Fault statistics'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL / FORMAL | **Default value:** | 0 |
| **Access:** | READING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 2 byte / element | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | HEX | **Current list length:*** | 0 |
| **List:** | YES | **Max. list length:*** | 8 |

* The list length is the number of usage data elements without 4 byte head elements.

The 'Fault statistics' is managed for the product's entire life cycle and is stored in the SEEP of the device.

**Configuration ID34062 'Fault statistics'**

| List element | Content | Meaning |
|---|---|---|
| **0** | **x** | **List head: Current list length without list head [byte] (x = n elements x 2 byte(s) / element)** |
| **1** | **16** | **List head: Maximum list length without list head [byte]** |
| 2 | n | Mains |
| 3 | n | Brake transistor |
| 4 | n | Logic voltage |
| 5 | n | Overload $i^2t$ |
| 6 | n | Encoder error |
| 7 | n | Earth contact, short-circuit |
| 8 | n | Device over-temperature |
| 9 | n | Motor / brake resistor over-temperature |

n indicates how often this error has occurred

## ID34063 'Time meter power'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL / FORMAL | **Default value:** | 0 |
| **Access:** | READING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 4 byte | **Min. value:** | 0 |
| **Signed:** | NO | **Max. value:** | 200000 |
| **Format:** | DEC | | |
| **List:** | NO | | |

ID34063 indicates the number of operating hours of the device. The value of the operating hour counter is stored in the device SEEP.

## ID34144 'Nominal voltage effective'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL / FORMAL | **Default value:** | 0 |
| **Access:** | READING | **Scale:** | 0.1 |
| **Temporarily changeable:** | NO | **Unit:** | V |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

ID34144 'Nominal voltage effective' displays the effective value of the mains voltage.

## ID34145 'Line current effective'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL / FORMAL | **Default value:** | 0 |
| **Access:** | READING | **Scale:** | 0.1 |
| **Temporarily changeable:** | NO | **Unit:** | A |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

ID34145 'Line current effective' zeigt den Effektivwert des Netzstroms an.

## ID34146 'Memory address'

Reserved for AMK internal use!

## ID34147 'Memory data'

Reserved for AMK internal use!

## ID34170 'Setpoint DC bus voltage'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | 0 |
| **Access:** | READING / WRITING | **Scale:** | 0.1 |
| **Temporarily changeable:** | NO | **Unit:** | V |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

**Meaning for KES / KES-xEx**

ID34170 'Setpoint DC bus voltage' describes the setpoint to which the DC bus voltage of a KES is regulated. If the manually entered value in ID34170 is smaller than the calculated value of the equation UZK_min, the DC bus voltage is regulated to the calculated value (UZK_min).

Valid control range:

minimum setpoint = UZK_min = $\sqrt{2} * U_{\text{external conductor}} + 25$ V

maximum setpoint = 720 V

Equation for the minimum setpoint of the DC bus: UZK_min = $\sqrt{2} * U_{\text{external conductor}} + 25$ V

for 3x 400 VAC: UZK_min 590 VDC.

for 3x 480 VAC: UZK_min 704 VDC.

Depending on ID34170, the operating range of the mains input voltage is defined in the firmware:
ID34170 ≤ 650 VDC = operating range 3 x 320 VAC ... 3 x 530 VAC
ID34170 > 650 VDC = operating range 3 x 360 VAC ... 3 x 530 VAC
The operating range defines the voltage range in which the devices can operate without error.

## ID34193 'Nominal current external component'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | 0 |
| **Access:** | READING / WRITING | **Scale:** | 0.1 |
| **Temporarily changeable:** | NO | **Unit:** | A |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

The default value 0 means that internally the 'Nominal current external component' is set to equal to ID112 'Converter nominal current'.
The parameters ID34193 to ID34196 are the database of the $i^2t$-monitoring for external components, e.g. choke ALN45-SI and ALN60-SI or motor cable.

## ID34194 'Peak current external component'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | 0 |
| **Access:** | READING / WRITING | **Scale:** | 0.1 |
| **Temporarily changeable:** | NO | **Unit:** | A |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

The default value 0 means that internally the 'Peak current external component' is set to equal to ID110 'Converter peak current'.
The parameters ID34193 to ID34196 form the database of the $i^2t$-monitoring for external components, e.g. choke ALN45-SI and ALN60-SI or motor cable.

## ID34195 'Peak current time external component'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | 0 |
| **Access:** | READING / WRITING | **Scale:** | 0.1 |
| **Temporarily changeable:** | NO | **Unit:** | s |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

The default value 0 means that internally the 'Peak current time external component' is set to equal to 10s.
The parameters ID34193 to ID34196 form the database of the $i^2t$-monitoring for external components, e.g. choke ALN45-SI and ALN60-SI or motor cable.

## ID34196 'Treshold external component'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | 500 |
| **Access:** | READING / WRITING | **Scale:** | 0.1 |
| **Temporarily changeable:** | NO | **Unit:** | % |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

The default value 0 means that internally the 'Treshold external component' is set to the same value from ID32999 'Overload limit inverter'.

The parameters ID34193 to ID34196 form the database of the $i^2t$-monitoring for external components, e.g. choke ALN45-SI and ALN60-SI.

## ID34197 'Display external component'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL / FORMAL | **Default value:** | 0 |
| **Access:** | READING | **Scale:** | 0.1 |
| **Temporarily changeable:** | NO | **Unit:** | % |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

ID34197 'Display external component' indicates the current overload of the external component according to the $I^2t$-monitoring.

ID34197 = 0 : Nominal operation or below nominal operation

ID34197 > 0 : Overload operation, shutdown at 100% with the diagnostic message 1112 info 0: 'Overload error external component'.

## ID34198 'mains frequency'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL / FORMAL | **Default value:** | 0 |
| **Access:** | READING / WRITING | **Scale:** | 0.1 |
| **Temporarily changeable:** | YES / NO | **Unit:** | Hz |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | YES | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

ID34198 'mains frequency' indicates the actual mains frequency:

positive value = clockwise

negative value = counter-clockwise

## ID34207 'DC gain KP'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | 0 |
| **Access:** | READING / WRITING | **Scale:** | 0.1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

With the parameters ID34207 'DC gain KP', ID34208 'Integral time DC control' and ID34209 'Differentiation time DC control', the DC bus voltage controller can be adapted to the application.

If all 3 parameters = 0, the internal default values apply:

| | ID34207 | ID34208 | ID34209 |
|---|---|---|---|
| **KES 120** | 426.6 | 21.33 ms | 0.188 ms |
| **KES 60** | 512 | 21.33 ms | 0.188 ms |

## ID34208 'Integral time DC control'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | 0 |
| **Access:** | READING / WRITING | **Scale:** | 0.001 |
| **Temporarily changeable:** | NO | **Unit:** | ms |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

With the parameters ID34207 'DC gain KP', ID34208 'Integral time DC control' and ID34209 'Differentiation time DC control', the DC bus voltage controller can be adapted to the application.

If all 3 parameters = 0, the internal default values apply:

| | ID34207 | ID34208 | ID34209 |
|---|---|---|---|
| **KES 120** | 426.6 | 21.33 ms | 0.188 ms |
| **KES 60** | 512 | 21.33 ms | 0.188 ms |

## ID34209 'Differentiation time DC control'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | 0 |
| **Access:** | READING / WRITING | **Scale:** | 0.001 |
| **Temporarily changeable:** | NO | **Unit:** | ms |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | DEC | | |
| **List:** | NO | | |

With the parameters ID34207 'DC gain KP', ID34208 'Integral time DC control' and ID34209 'Differentiation time DC control', the DC bus voltage controller can be adapted to the application.

If all 3 parameters = 0, the internal default values apply:

| | ID34207 | ID34208 | ID34209 |
|---|---|---|---|
| **KES 120** | 426.6 | 21.33 ms | 0.188 ms |
| **KES 60** | 512 | 21.33 ms | 0.188 ms |

## ID34227 'Motion control bits'

| | | | |
|---|---|---|---|
| **Sphere of action:** | GLOBAL | **Default value:** | 0000 0000 0000 0000 |
| **Access:** | READING / WRITING | **Scale:** | 1 |
| **Temporarily changeable:** | NO | **Unit:** | - |
| **Data length:** | 2 byte | **Min. value:** | - |
| **Signed:** | NO | **Max. value:** | - |
| **Format:** | BIN | | |
| **List:** | NO | | |

**Meaning for KES (not for KE(N) /**

**Configuration ID34227 'Motion control bits'**

| Bit no. | Condition | Meaning |
|---|---|---|
| 0 | 0 | Phasing of the PWM for the hardware sync signal = 0° |
| | 1 | Phasing of the PWM for the hardware sync signal = 180° |
| 1-7 | 0 | Reserved |
| | 1 | Reserved |
| 8 | 0 | Standard device |
| | 1 | Solar inverter<br>Monitoring the discharge of the DC bus is inactive |
| 9 | 0 | MPP tracking inactive |
| | 1 | MPP tracking active: Prerequisite: Bit 8 = 1 |
| 10 | 0 | Reserved |
| | 1 | Reserved |
| 11-15 | 0 | Reserved |
| | 1 | Reserved |

## ID34270 'Net voltage'

Reserved for AMK internal use!

## ID34271 'Limit active power'

Reserved for AMK internal use!

## ID34272 'Setpoint reactive power'

Reserved for AMK internal use!

# 3 Appendix

## 3.1 Codes for the configuration of the binary outputs

**Codes for the configuration of the binary outputs**

| Code | Designation | Description |
|---|---|---|
| 0 | Function inactive | No function assigned to the binary output |
| 33016 | Warning: Converter overcurrent | Maximum load integral $i^2t$ of the converter according to ID32999 'Overload limit inverter', diagnostic message 2357 'Device overload warning' |
| 33017 | Warning: excess converter temperature | Temperature of the device rear wall or value according to the temperature model is too high, diagnostic message 2350 'Device temperature warning' |
| 33022 | Warning: excess temperature of external components | Power supply KE(N,S): Brake resistor |
| 33029 | System ready message (SBM) | System ready message |
| 33030 | Acknowledgement DC bus ON (QUE) | Acknowledgement DC bus charged |
| 33074 | Collective warning active | Collective warning (all warning messages OR linked)<br>The warning bit is generated for each warning and remains active until the error is deleted by the user. |
| 33075 | Fan triggering | Signal for triggering a fan at the compact power supply; the signal is switched on at 78% of the shutdown temperature. If the temperature is fallen below, the fan runs for another 1 minute. AMK service (shutdown temperature [0.1%] SEEP ID34060 Element 39) (special lift feature) |
| 33123 | VBNX | For the uninterruptible power supply triggering (extend mains failure display) |
| 33919 | 'Warning: overload of external mains components' | |
| 33920 | 'Warning: BRN readiness of the mains regeneration' | This output is logically 1 when the regeneration in compact power supply(S) is briefly inactive due to the mains voltage or overcurrent error. The pulse duration is at least 22 ms. |
| 33942 | Access via plc | The output can be written by a plc controller |

# Glossary

## A

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

**ASCII**
American Standard Code for Information Interchange

## B

**BIN**
Binary (digital)

## C

**CAN**
Controller Area Network

## D

**DO**
Digital output

**Default**
Factory setting

**DEZ**
Decimal

**DRIVE**
Drive-specific parameter (Value is valid inside only one parameter set)

## F

**Firmware**
System software, loaded by AMK

**FORMAL**
Formal parameter

**Formal parameter**
Formal parameters don't have remanent values in parameter handling

## G

**GLOBAL**
Global parameter; valid for all parameter sets

## H

**HEX**
Hexadecimal, 0x...

## I

**IGBT**
Power electronic component, e. g. transistor

**Instance**
Parameters, depending on the fieldbus, are instanced. For each bus, different values can be parameterized (bus depending participant address, transmission rate etc.). Field bus interfaces and slots where field bus option cards can be installed are allocated to instances (see product documentation)

**$i^2t$**
Integral of the squared current over time

**ID**
Parameter identification numbers acc. to SERCOS Standard

## K

**KE**
AMKASYN compact power supply with recovery

**KEN**
AMKASYN compact power supply without recovery

**KES**
AMKASYN compact power supply with sinusoidal voltage and current

**KP**
Proportional gain (speed control, PID controller)

## L

**LSB**
Least Significant Bit

## M

**MPP**
Maximum Power Point

**MSB**
Most Significant Bit

## P

**PWM**
Pulse width modulation

**Parameter**
Identification number acc. to SERCOS standard

**PDK_xxxxxx_abcdefgh**
Product documentation; xxxxxx - AMK part no. , abcdefgh - name

## S

**SBM**
System ready message; shows that the device is error-free In case of error. SBM will be reset

**SEEP**
Device-internal memory, serial EEPROM

## T

**Td**
Differentiating time in speed control (PID controller)

**Tn**
Integral-action time in speed control (PID controller)

## U

**UPS**
Uninterruptible power supply

**UE**
Command 'DC bus on' control signal to load the DC bus e.g. in KE. DC bus on can only be set if the device is error-free (SBM = TRUE). After the DC bus is loaded, the acknowledgement message QUE is set.

## V

**VBNX**
Extended mains phase failure signal VBNX to trigger an UPS

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With our documentation we want to offer you the highest quality support in handling the AMKmotion products.
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Your comments or suggestions are always of interest to us.
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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 AMKmotion?

   (1) very good (2) good (3) satisfactory (4) less than satisfactory (5) poor

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