AMKASMART
Parameter description
iSA

Version: 2023/27
Part no.: 205915
Translation of the "Original Dokumentation"

AMKmotion
MEMBER OF THE ARBURG FAMILY

Imprint

Name: PDK_205915_Parameter_iSA_en

Version:

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

Previous version: 2022/21

Product status:

Product	Firmware version (Part no.)
iSA	iSA V4.23 2018/37 (207252)

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 y: Bit number 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** Consequence(s) of non-observance **Steps to prevent:** • ...

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!** The incorrect entering of parameters into the controller card significantly influences the drive system characteristics and creates an increased risk of accidents and damages! **Steps to prevent:** • 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 by groups

System parameters

Parameter-ID	Name
ID265	'Language'
ID32813	'Parameter set assignment 1'
ID32901	'Global service bits'
ID32913	'Clear error'
ID33730	'System booting'
ID33732	'System reset'
ID33736	'PLC command parameter'
ID33737	'Cmd. PLC stop'

Positioning parameters

Parameter-ID	Name
ID34074	'Homing Counter 1'
ID34075	'Actual Counter 1'

Binary inputs assignment

Parameter-ID	Name
ID34100	'Binary input word'
ID34101	'Binary input word 1'
ID34304	'Communication input word'
ID34816	'Communication output word'

Binary outputs assignment

Parameter-ID	Name
ID32865	'Port 3 Bit 0'
ID32866	'Port 3 Bit 1'
ID32867	'Port 3 Bit 2'
ID32868	'Port 3 Bit 3'
ID34120	'Binary output word'
ID34121	'Binary output word 1'
ID35328	'Communication input double word'
ID35584	'Communication output double word'

Analog outputs assignment

Parameter-ID	Name
ID32897	'Analog Input A1'
ID32898	'Analog Input A2'

Inverter parameters

Parameter-ID	Name
ID32810	'Inner room temperature'
ID32836	'DC bus voltage'
ID33116	'Temperature internal'

Special applications

Parameter-ID	Name
ID32798	'User list 1'
ID34097	'Enable code'

SERCOS drive specific

Parameter-ID	Name
ID11	'Status class 1-errors'
ID12	'Status class 2-warnings'
ID13	'Status class 3-messages'
ID14	'Interface status'
ID15	'Telegram types parameter'
ID16	'Configuration list AT'
ID18	'Operational data list communication phase 2'
ID19	'Operational data list communication phase 3'
ID20	'Operational data list communication phase 4'
ID21	'Invalid data list communication phase 2'
ID22	'Invalid data list communication phase 3'
ID23	'Invalid data list communication phase 4'
ID24	'Configuration list MDT'
ID25	'All command data list'
ID28	'MST error counter'
ID29	'MDT error counter'
ID32	'Primary operating mode'
ID96	'Slave identifier (SLKN)'
ID97	'Diagnostic mask status class 2'
ID98	'Diagnostic mask status class 3'
ID99	'Diagnosis reset status class 1'
ID127	'Transition check phase 3'
ID128	'Transition check phase 4'
ID129	'Manufacturer status class 1'
ID143	'SERCOS interface version'
ID181	'Diagnosis manufacturer class 2'
ID182	'Diagnosis manufacturer status'
ID185	'Length data set AT'
ID186	'Length data set MDT'
ID187	'List of data AT'
ID188	'List of data MDT'
ID262	'Initial program load command'

General parameters

Parameter-ID	Name
ID1	'NC cycle time'
ID2	'SERCOS cycle time'
ID17	'ID-no. list all operational data'
ID30	'Software version'
ID95	'Diagnosis [ASCII text]'
ID390	'Diagnostic number'

Parameter-ID	Name
ID32840	'Diagnostic list'
ID32917	'Time zone'
ID32944	'SYADR'
ID32962	'List of error codes'
ID33114	'Process number'
ID34000	'Variable 0'
ID34001	'Variable 1'
ID34002	'Variable 2'
ID34003	'Variable 3'
ID34004	'Variable 4'
ID34005	'Variable 5'
ID34006	'Variable 6'
ID34007	'Variable 7'
ID34008	'Variable 8'
ID34009	'Variable 9'
ID34010	'Variable 10'
ID34011	'Variable 11'
ID34012	'Variable 12'
ID34013	'Variable 13'
ID34014	'Variable 14'
ID34015	'Variable 15'
ID34016	'Variable 16'
ID34017	'Variable 17'
ID34018	'Variable 18'
ID34019	'Variable 19'
ID34053	'ID transfer'
ID34060	'List SEEP 1'
ID34061	'List SEEP 2'
ID34062	'Fault statistics'
ID34063	'Time meter power'
ID34071	'System name'
ID34072	'Data set name'
ID34088	'Event trace'
ID34159	'PLC files'
ID34163	'Remanent variables'
ID34171	'Event filter'
ID34172	'PLC project info'
ID34175	'Controller settings'
ID34206	'Product code'

Communication parameters

Parameter-ID	Name
ID1204	'XML file'
ID1205	'XML file'
ID1206	'XML file'
ID1207	'XML file'
ID32939	'Bus service'
ID34023	'BUS address participant'
ID34024	'BUS transmit rate'

Parameter-ID	Name
ID34025	'BUS mode'
ID34026	'BUS mode attribute'
ID34027	'BUS failure character'
ID34028	'BUS output rate'
ID34036	'CCB-File'
ID34054	'CCB-Filename'
ID34056	'Gateway address'
ID34057	'Network mask'
ID34098	'BUS status'
ID34138	'Bus list'
ID34140	'AS BUS protocol'
ID34141	'AS card address'
ID34142	'Node list'
ID34143	'Usage port'
ID34156	'BUS mode attribute 2'
ID34173	'NTP server address'
ID34211	'Node list 2'
ID34216	'DNS server address'
ID34263	'BUS system name'

3 Parameter descriptions

ID1 'NC cycle time'

Reserved for AMK internal use!

ID2 'SERCOS cycle time'

Sphere of action:	Device-specific values	**Default value:**	1000
Access:	READING / WRITING	**Scale:**	0.001
Temporarily changeable:	NO	**Unit:**	ms
Data length:	2 byte	**Min. value:**	Device-specific values
Signed:	NO	**Max. value:**	Device-specific values
Format:	DEC		
List:	NO		

Values for iSA /

Sphere of action:	INSTANCE
Min. value:	0.000 ms
Max. value:	65.535 ms

The 'SERCOS cycle time'defines the intervals in which cyclical data is sent and received.

The master synchronises all of the participants in the network by synchronising the 'SERCOS cycle time' of the slaves with each other.

Instance	Use	Interface
0	Global cycle time	-
2	EtherCAT slave (option A-SEC)	X85 (IN) / X86 (OUT)
	EtherNet/IP Slave (option A-SIP)	X85 (IN) / X86 (OUT)
	Profibus slave (option A-SPB)	X42 (IN) / X43 (OUT)
	CAN / ACC bus slave (option A-SCN)	X136 (IN) / X137 (OUT)
3	local I/Os	X05, X06
4	1st Ethernet interface	X20
5	1st EtherCAT master	X186

The cycle time of an instance can only be a multiple of the next smaller cycle time.

Examples :	ID2 I0: 1ms, ID2 I2: 4ms, ID2 I3: 8ms	valid parameterisation
	ID2 I0: 2ms, ID2 I2: 6ms, ID2 I3: 12ms	valid parameterisation
I: Instance	ID2 I0: 2ms, ID2 I2: 4ms, ID2 I3: 12ms	valid parameterisation
	ID2 I0: 1ms, ID2 I2: 2ms, ID2 I3: 5ms	invalid parameterisation

ID11 'Status class 1-errors'

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

Construction ID11 'Status class 1-errors'

Bit no.	Condition	Meaning
0	0	Reserved
	1	Reserved
1	0	No error
	1	Error present: The parameter 'Temperature internal' is above the threshold value specified for the device longer than four seconds (SEEP device).
2	0	Reserved
	1	Reserved
3	0	Reserved
	1	Reserved
4	0	Reserved
	1	Reserved
5	0	Reserved
	1	Reserved
6	0	Reserved
	1	Reserved
7	0	Reserved
	1	Reserved
8	0	No error
	1	Error present: DC bus overvoltage The DC voltage in the DC bus has exceeded the permissible threshold value.
9-10	0	Reserved
	1	Reserved
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

ID12 'Status class 2-warnings'

Reserved for AMK internal use!

ID13 'Status class 3-messages'

Reserved for AMK internal use!

ID14 'Interface status'

Reserved for AMK internal use!

ID15 'Telegram types parameter'

Sphere of action:	Device-specific values	**Default value:**	Device-specific values
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	2 byte	**Min. value:**	0
Signed:	NO	**Max. value:**	7
Format:	DEC		
List:	NO		

Values for iSA /

Default value:	7
Sphere of action:	DRIVE

In 'Telegram types parameter', you can select between preferred telegrams and configured telegrams.

The specified type of telegram is activated in the master and in the slave starting from communication phase 3.

Construction ID15 'Telegram types parameter'

Bit no.	Condition	Meaning	
	Bit 2 Bit 1 Bit 0 (LSB)	MDT (cyclical setpoint values)	AT (cyclical actual values)
0-2	111	Configured telegram Siehe ID24 'Configuration list MDT' auf Seite 16.	Configured telegram Siehe ID16 'Configuration list AT' auf Seite 14.
3-15	0	Reserved	Reserved
	1	Reserved	Reserved

ID16 'Configuration list AT'

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

Maximum list length:	511

The 'Configuration list AT' defines what parameters are cyclically transferred into the drive telegram (AT) if in ID15 'Telegram types parameter' 'configured telegram' is selected. The configurable parameters are listed in 'List of data AT' ID187 .

Configuration ID16 'Configuration list AT'

List element	Content	Meaning
0	x	List head: Current list length without list head [x byte] (x = n elements x 2 byte / element)
1	2 x z	List head: Maximum list length without list head [byte]
2		1st parameter number
3		2nd parameter number
...	...	...
z+1		zth parameter number

z = Maximum list length

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 iSA /

Default value:	117 (current list length)
Current list length:*	117
Maximum list length:	117

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] (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

ID18 'Operational data list communication phase 2'

Reserved for AMK internal use!

ID19 'Operational data list communication phase 3'

Reserved for AMK internal use!

ID20 'Operational data list communication phase 4'

Reserved for AMK internal use!

ID21 'Invalid data list communication phase 2'

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

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

The parameters entered in the list 'Invalid data list communication phase 2' are recognized as invalid during the changeover command from the communication phase 2 to communication phase 3. The changeover command is automatically generated within the device.

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 ID21 'Invalid data list communication phase 2'

List element	Content	Meaning
0	x	List head: Current list length without list head [x byte] (x = n elements x 2 byte / element)
1	16	List head: Maximum list length without list head [byte]
2		1st parameter
3		2nd parameter
4		3rd parameter
...	...	...
9		8th parameter

ID22 'Invalid data list communication phase 3'

Reserved for AMK internal use!

ID23 'Invalid data list communication phase 4'

Reserved for AMK internal use!

ID24 'Configuration list MDT'

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

Maximum list length: 253

The 'Configuration list MDT' defines what parameters are cyclically transferred into the master data telegram (MDT) if 'Telegram types parameter' 'configured telegram' is selected in ID15. The configurable parameters are listed in ID188.

Configuration ID24 'Configuration list MDT'

List element	Content	Meaning
0	x	List head: Current list length without list head [x byte] (x = n elements x 2 byte / element)
1	2 x z	List head: Maximum list length without list head [byte]
2		1st parameter
3		2nd parameter
4		3rd parameter
...	...	...
z+1		z^{the} parameter

z = Maximum list length

ID25 'All command data list'

Sphere of action:	GLOBAL	**Default value:**	-
Access:	READING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	2 byte / element	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	DEC	Current list length:*	-
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 iSA /

Maximum list length: 12

The 'All command data list' contains all supported commands. The elements 0 and 1 of the list are head information (current and maximum list length). The first command is in element 2.

Configuration ID25 'All command data list'

List element	Content	Meaning
0	**x**	**List head: Current list length without list head [x byte] (x = n elements x 2 byte / element)**
1	**24**	**List head: Maximum list length without list head [byte]**
2		1st command
3		2nd command
4		3rd command
...	...	...
13		12th parameter

ID28 'MST error counter'

Sphere of action:	FORMAL	**Default value:**	0
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	2 byte	**Min. value:**	0
Signed:	NO	**Max. value:**	65.000
Format:	DEC		
List:	NO		

EtherCAT Slave:

The 'MST error counter' counts all of the invalid master synchronization telegrams (MST) in the communication phases 3 and 4. If more than two MST fail consecutively, the following MST failures will no longer be counted. The counting ends with the value 65,000, which means that for a highly distorted transfer, the MST error counter has a constant value of 65.000 after a long time.

EtherCAT Master:

The 'MST error counter' counts all of the invalid master synchronization telegrams (MST) in the communication phases 3 and 4. If more than two MST fail consecutively, the following MST failures will no longer be counted. The counting ends with the value 255, which means that for a highly distorted transfer, the MST error counter has a constant value of 255 after a long time.

Bit 15 High Byte Bit 8	Bit 7 Low Byte Bit 0
Failed telegrams for the counter	Counter frame errors: Error in the telegram, e.g. check sum error

ID29 'MDT error counter'

Reserved for AMK internal use!

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 iSA /

Sphere of action:	INSTANCE / FORMAL
Max. list length:	20

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] (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	Control system	Operating system	Designation code
0 - 7	iSA	Control system	GGG_vvv_yyww_tttttt

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
ttttt AMK parts no.

ID32 'Primary operating mode'

Sphere of action:	DRIVE / 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		

Reserved for AMK internal use!

ID95 'Diagnosis [ASCII text]'

Sphere of action:	GLOBAL / FORMAL	**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 iSA /

Max. list length: 4096

In the 'Diagnosis [ASCII text]', the drive's current relevant operating mode is displayed as a diagnostic number and plain text. The completion of the plain text message is marked with the symbol '\0'.

Configuration ID95 'Diagnosis [ASCII text]' example for the error message 2320 EF inactive

List element	Content	Meaning
0	x	List head: Current list length without list head [byte] (x = n elements x 1 byte / element)
1	z	List head: Maximum list length without list head [byte]
2	e.g. 2	Diagnostic number (MSB)
3	e.g. 3	Diagnostic number
4	e.g. 2	Diagnostic number
5	e.g. 0	Diagnostic number (LSB)
6	e.g. 0	Reserved
7	e.g. 0	Reserved
8	e.g. E	Plain text
9	e.g. F	Plain text
10		Plain text
11	e.g. I	Plain text
12	e.g. N	Plain text
13	e.g. A	Plain text
14	e.g. K	Plain text
15	e.g. T	Plain text
16	e.g. I	Plain text
17	e.g. V	Plain text
...	...	...

List element	Content	Meaning
n	\0	End of the plain text message

ID96 'Slave identifier (SLKN)'

Sphere of action:	DRIVE	**Default value:**	0101
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	YES / NO	**Unit:**	-
Data length:	2 byte	**Min. value:**	0
Signed:	NO	**Max. value:**	65278
Format:	HEX		
List:	NO		

During the initialisation, it is necessary to know the affiliations of physical slaves to the drives that they operate for the optimal automatic time slot calculation by the master. The master can request this information from the drive in the communication phase 2. Using the respective entry, the master detects whether additional drives are present on the same physical slave.

Valid participant addresses are the decimal values of 1 to 254 according to the hexadecimal values 0x01 to 0xFE

<table>
<tr><td>High byte</td><td>Own drive address</td><td>Here is the participant address of the participant himself.</td></tr>
<tr><td>Low byte</td><td>Next drive address</td><td>Here is the participant address of the next higher participant. If the current participant is the one with the highest participant address, then the lowest participant address of the connected participant is entered.
Example: 3 Slave participant
<table>
<tr><th colspan="2">SLKN participant 3</th></tr>
<tr><td>03</td><td>05</td></tr>
</table>
<table>
<tr><th colspan="2">SLKN participant 5</th></tr>
<tr><td>05</td><td>08</td></tr>
</table>
<table>
<tr><th colspan="2">SLKN participant 8</th></tr>
<tr><td>08</td><td>03</td></tr>
</table>
If there are no other slave participants, the individual participant address is entered.
Example: 1 Slave participant
<table>
<tr><th colspan="2">SLKN participant 3</th></tr>
<tr><td>03</td><td>03</td></tr>
</table></td></tr>
</table>

ID97 'Diagnostic mask status class 2'

Sphere of action:	DRIVE	**Default value:**	0000 0000 0000 0000
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	2 byte	**Min. value:**	0
Signed:	NO	**Max. value:**	65535
Format:	BIN		
List:	NO		

With the mask, ID12 'Status class 2-warnings' can be masked. If the condition of a masked bit changes, the bit 12 will not be set in ID135 'Drive status word'. Bits in ID12 are set or not set independent of the masking.

Bit no.	Condition	Meaning
0 - 15	0	Warning is masked, bit 12 not set in ID135
	1	Warning is not masked

ID98 'Diagnostic mask status class 3'

Sphere of action:	DRIVE	**Default value:**	0000 0000 0000 0000
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	2 byte	**Min. value:**	0
Signed:	NO	**Max. value:**	65535
Format:	BIN		
List:	NO		

With the mask, warnings of ID13 'Status class 3-messages' can be masked. If the condition of a masked bit changes, the bit 11 will not be set to ID135 'Drive status word'. Bits in ID13 are set or not set independent of the masking.

Bit no.	Condition	Meaning
0 - 15	0	Warning is masked, bit 11 not set in ID135
	1	Warning is not masked

ID99 'Diagnosis reset status class 1'

Sphere of action:	DRIVE	**Default value:**	0000 0000 0000 0000
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	2 byte	**Min. value:**	0
Signed:	NO	**Max. value:**	65535
Format:	BIN		
List:	NO		

The command 'Diagnosis reset status class 1' deletes the error bits in ID11 'Status class 1-errors' and ID129 'Manufacturer status class 1' if the cause of the error has been rectified during the command call-up. The command also causes an internal error clearing in the device.

Commands are started by the function code 0x3 being 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

After the status is 0x3 or 0xF, the value 0x0 must be written in the parameter. The command is complete once the value 0x0 is read in the status.

ID127 'Transition check phase 3'

Reserved for AMK internal use!

ID128 'Transition check phase 4'

Reserved for AMK internal use!

ID129 'Manufacturer status class 1'

Reserved for AMK internal use!

ID143 'SERCOS interface version'

Reserved for AMK internal use!

ID181 'Diagnosis manufacturer class 2'

Reserved for AMK internal use!

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	Reserved
	1	Reserved
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)

ID185 'Length data set AT'

Sphere of action:	GLOBAL	**Default value:**	Device-specific values
Access:	READING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	Byte
Data length:	2 byte	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	DEC		
List:	NO		

Values for iSA /

Default value: 1022

ID185 indicates the maximum length in byte that can be processed in the configured data set of the AT drive telegram.
Siehe ID15 'Telegram types parameter' auf Seite 14.

ID186 'Length data set MDT'

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

Values for iSA /

Default value: 1022

ID186 indicates the maximum length in byte that can be processed in the configured data set of the master data telegram MDT.
Siehe ID15 'Telegram types parameter' auf Seite 14.

ID187 'List of data AT'

Reserved for AMK internal use!

ID188 'List of data MDT'

Reserved for AMK internal use!

ID262 'Initial program load command'

Sphere of action:	GLOBAL / FORMAL	**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		

The initial program loading command resets all remanent stored parameters (also list parameters) which are not read-only (also list parameters) to the default value (factory setting).

All user-specific lists and settings are cleared!

Commands are started by the function code 0x3 being 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

After the status is 0x3 or 0xF, the value 0x0 must be written in the parameter. The command is complete once the value 0x0 is read in the status.

ID265 'Language'

Sphere of action:	GLOBAL	**Default value:**	0000
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	YES / NO	**Unit:**	-
Data length:	2 byte	**Min. value:**	0
Signed:	NO	**Max. value:**	2
Format:	HEX		
List:	NO		

ID265 defines the language of the parameter and diagnosis texts. The system must be re-started again if the language is changed.
Available languages:

0: German (default)
1: English
2: French

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.
An existing entry in ID390 is cleared by the command ID99 'Diagnosis reset status class 1' or 'Clear error.'

ID1204 'XML file'

Sphere of action:	INSTANCE	**Default value:**	0
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	1 byte / element	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	HEX	**Current list length:***	-
List:	YES	**Max. list length:***	65516

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

AIPEX PRO generates configuration files for some fieldbuses that are stored here.

Instance	Use	Interface
2	EtherCAT (CC) Slave Profinet IO Device Slave EtherNet/IP Slave	X85 / X86
	Profibus DP Slave	X42 / X43
5	1st EtherCAT Master	X186

Configuration ID1204 'XML file'

List element	Content	Meaning
0	x	List head: Current list length without list head [x byte] (x = n elements x 1 byte / element)
1	65516	List head: Maximum list length without list head [byte]
2	e.g. 3C	Part of the configuration file
3	e.g. 45	Part of the configuration file
...	...	...

ID1205 'XML file'

Sphere of action:	INSTANCE	**Default value:**	0
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	1 byte / element	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	HEX	**Current list length:***	-
List:	YES	**Max. list length:***	65516

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

AIPEX PRO generates configuration files for some fieldbuses that are stored here.

Instance	Use	Interface
2	EtherCAT (CC) Slave Profinet IO Device Slave EtherNet/IP Slave	X85 / X86
	Profibus DP Slave	X42 / X43
5	1st EtherCAT Master	X186

Configuration ID1205 'XML file'

List element	Content	Meaning
0	x	List head: Current list length without list head [x byte] (x = n elements x 1 byte / element)
1	65516	List head: Maximum list length without list head [byte]
2	e.g. 3C	Part of the configuration file
3	e.g. 45	Part of the configuration file
...	...	...

ID1206 'XML file'

Sphere of action:	INSTANCE	**Default value:**	0
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	1 byte / element	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	HEX	**Current list length:***	-
List:	YES	**Max. list length:***	65516

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

AIPEX PRO generates configuration files for some fieldbuses that are stored here.

Instance	Use	Interface
2	EtherCAT (CC) Slave Profinet IO Device Slave EtherNet/IP Slave	X85 / X86
	Profibus DP Slave	X42 / X43
5	1st EtherCAT Master	X186

Configuration ID1206 'XML file'

List element	Content	Meaning
0	x	List head: Current list length without list head [x byte] (x = n elements x 1 byte / element)
1	65516	List head: Maximum list length without list head [byte]
2	e.g. 3C	Part of the configuration file
3	e.g. 45	Part of the configuration file
...	...	...

ID1207 'XML file'

Sphere of action:	INSTANCE	**Default value:**	0
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	1 byte / element	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	HEX	**Current list length:***	-
List:	YES	**Max. list length:***	65516

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

AIPEX PRO generates configuration files for some fieldbuses that are stored here.

Instance	Use	Interface
2	EtherCAT (CC) Slave Profinet IO Device Slave EtherNet/IP Slave	X85 / X86
	Profibus DP Slave	X42 / X43
5	1st EtherCAT Master	X186

Configuration ID1207 'XML file'

List element	Content	Meaning
0	x	List head: Current list length without list head [x byte] (x = n elements x 1 byte / element)
1	65516	List head: Maximum list length without list head [byte]
2	e.g. 3C	Part of the configuration file
3	e.g. 45	Part of the configuration file
...	...	...

ID32798 'User list 1'

Sphere of action:	GLOBAL	**Default value:**	0000
Access:	READING / WRITING	**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:***	254

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

The 'User list 1' is a data set in the remanent memory area that is freely available to the user.

Configuration ID32798 'User list 1''User list 1'

List element	Content	Meaning
0	x	List head: Current list length without list head [byte] (x = n elements x 2 byte / element)
1	508	List head: Maximum list length without list head [byte]
2		
3		
4		
...		
255		

ID32810 'Inner room temperature'

Sphere of action:	GLOBAL / FORMAL	**Default value:**	0
Access:	READING	**Scale:**	0.1
Temporarily changeable:	NO	**Unit:**	°C
Data length:	2 byte	**Min. value:**	- 32768
Signed:	YES	**Max. value:**	32767
Format:	DEC		
List:	NO		

ID32810 shows the inner room air temperature closed to the IGBT. Up from 85 °C the error message 2346 'Converter temperature error' (info 1 = 1, info 2 = info 3 = 0) is generated.

ID32813 'Parameter set assignment 1'

Reserved for AMK internal use!

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.

ID32840 'Diagnostic list'

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

Max. list length: 1120

The 'Diagnostic list' contains all of the diagnostic messages that a device generates. In addition, the error messages of the connected bus slaves are saved in the devices that are configured as bus masters if they were transferred from the bus slaves to the master. The assignment of a diagnostic message to the participants is ensured through the bus participant address (element 2). The command 'Clear error' or mains on / off clears the entries in the diagnostic list.

Every diagnostic message fills the structure 'ERROR STRUCT,' as shown in table 'Configuration ID32840' element 2 to 15. The first diagnostic message is entered in ID32840 in element 2-15, the second diagnostic message in element 16-29 and so on. The current list length depends on the number of generated diagnostic messages.

Configuration ID32840 'Diagnostic list'

List element	Content	Meaning
0	x	List head: Current list length without list head [byte] (x = n elements x 2 byte / element)
1	2 x z	List head: Maximum list length without list head [byte]
2	2 byte	Bus participant address of the reporting participant
3	2 byte	4-digit diagnostic number
4	2 byte	Function number (module)
5	2 byte	Error classification (class)
6	4 byte	Error code
7		
8	4 byte	Error additional info 1
9		
10	4 byte	Error additional info 2
11		
12	4 byte	Error additional info 3
13		
14	4 byte	Time allocation (system time)
15		
...	...	...
z+1		

z = Maximum list length

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 iSA /

Default value: 0 (used as local input DI1)

ID32865 defines, if the multifunctional port is used as input or output (DI1 / DO1).

Configuration as a local input = Code 0
Configuration as a local output = Code 33942

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 iSA /

Default value: 0 (used as local input DI2)

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 iSA /

Default value: 0 (used as local input DI3)

ID32867 defines, if the multifunctional port is used as input or output (DI3 / DO2).

Configuration as a local input = Code 0
Configuration as a local output = Code 33942

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		

Values for iSA /

Default value: 0 (used as local input DI4)

ID32897 'Analog Input A1'

Sphere of action:	GLOBAL / FORMAL	**Default value:**	0
Access:	READING	**Scale:**	0.01
Temporarily changeable:	NO	**Unit:**	V
Data length:	2 byte	**Min. value:**	-10.00 V
Signed:	YES	**Max. value:**	10.00 V
Format:	DEC		
List:	NO		

ID32897 indicates the analogue voltage of the I/O option card at the analogue input A1 and can be read by the controller.

ID32898 'Analog Input A2'

Sphere of action:	GLOBAL / FORMAL	**Default value:**	0
Access:	READING	**Scale:**	0.01
Temporarily changeable:	NO	**Unit:**	V
Data length:	2 byte	**Min. value:**	-10.00 V
Signed:	YES	**Max. value:**	10.00 V
Format:	DEC		
List:	NO		

ID32898 indicates the analogue voltage of the I/O option card at the analogue input A2 and can be read by the controller.

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 iSA /

Default value: 0000 0000 0000 0000 (LSB)

Configuration ID32901 'Global service bits'

Bit no.	Condition	Meaning
0	0	Remanent data (RETAIN variables) are cleared during the first start of a changed PLC program.
	1	Remanent data (RETAIN variables) are not cleared during the first start of a changed PLC program.

Bit no.	Condition	Meaning
1	0	**CODESYS V2** Firmware iSA >V4.20 will not ignore faulty floating-point arithmetic[1] any more and will switch the plc into the stop condition. **CODESYS V3** Faulty floating-point arithmetic[1] will be not ignored, the plc will changed into the stop condition.
	1	**CODESYS V2** Faulty floating-point arithmetic[1] will be ignored, the plc will not be changed into the stop condition. **CODESYS V3** Firmware iSA ≥V4.22 The following floating-point arithmetic errors are ignored: • Floating-point overflow: Number range overflow in the selected floating-point format[1] • Floating-point underflow: Number range underflow in the selected floating-point format[1] • Floating-point invalid instruction: e. g. Conversion of too large a floating-point number into an integer data type
2-31	0	Reserved
	1	Reserved

1) Calculations with variables of the data type REAL or LREAL

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.

ID32917 'Time zone'

Sphere of action:	GLOBAL	**Default value:**	Berlin
Access:	READING / WRITING	**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:**	36

The time zone can be adjusted by entering the corresponding name.
The change to daylight saving time takes place automatically.

Africa

Abidjan	Accra	Addis_Ababa	Algiers	Asmera	Bamako
Bangui	Banjul	Bissau	Blantyre	Brazzaville	Bujumbura
Cairo	Casablanca	Ceuta	Conakry	Dakar	Dar_es_Salaam
Djibouti	Douala	El_Aaiun	Freetown	Gaborone	Harare
Johannesburg	Kampala	Khartoum	Kigali	Kinshasa	Lagos
Libreville	Lome	Luanda	Lubumbashi	Lusaka	Malabo
Maputo	Maseru	Mbabane	Mogadishu	Monrovia	Nairobi
Ndjamena	Niamey'	Nouakchott	Ouagadougou	Porto-Novo	Sao_Tome
Timbuktu	Tripoli	Tunis	Windhoek		

America

Adak	Anchorage	Anguilla	Antigua	Araguaina	Aruba
Asuncion	Atka	Bahia	Barbados	Belem	Belize
Boa_Vista	Bogota	Boise	Buenos_Aires	Cambridge_Bay	Campo_Grande
Cancun	Caracas	Catamarca	Cayenne	Cayman	Chicago
Chihuahua	Coral_Harbour	Cordoba	Costa_Rica	Cuiaba	Curacao
Danmarkshavn	Dawson	Dawson_Creek	Denver	Detroit	Dominica
Edmonton	Eirunepe	El_Salvador	Ensenada	Fort_Wayne	Fortaleza
Glace_Bay	Godthab	Goose_Bay	Grand_Turk	Grenada	Guadeloupe
Guatemala	Guayaquil	Guyana	Halifax	Havana	Hermosillo
Indianapolis	Inuvik	Iqaluit	Jamaica	Jujuy	Juneau
Knox_IN	La_Paz	Lima	Los_Angeles	Louisville	Maceio
Managua	Manaus	Martinique	Mazatlan	Mendoza	Menominee
Merida	Mexico_City	Miquelon	Monterrey	Montevideo	Montreal
Montserrat	Nassau	New_York	Nipigon	Nome	Noronha
Panama	Pangnirtung	Paramaribo	Phoenix	Port_of_Spain	Port-au-Prince
Porto_Acre	Porto_Velho	Puerto_Rico	Rainy_River	Rankin_Inlet	Recife
Regina	Rio_Branco	Rosario	Santiago	Santo_Domingo	Sao_Paulo
Scoresbysund	Shiprock	St_Johns	St_Kitts	St_Lucia	St_Thomas
St_Vincent	Swift_Current	Tegucigalpa	Thule	Thunder_Bay	Tijuana
Toronto	Tortola	Vancouver	Virgin	Whitehorse	Winnipeg
Yakutat	Yellowknife				

Asia

Amman	Aden	Almaty	Anadyr	Aqtau	Aqtobe
Ashgabat	Ashkhabad	Baghdad	Bahrain	Baku	Bangkok
Beirut	Bishkek	Brunei	Calcutta	Choibalsan	Chongqing
Chungking	Colombo	Dacca	Damascus	Dhaka	Dili
Dubai	Dushanbe	Gaza	Harbin	Hong_Kong	Hovd
Irkutsk	Istanbul	Jakarta	Jayapura	Jerusalem	Kabul
Kamchatka	Karachi	Kashgar	Katmandu	Krasnoyarsk	Kuala_Lumpur
Kuching	Kuwait	Macao	Macau	Magadan	Makassar
Manila	Muscat	Nicosia	Novosibirsk	Omsk	Oral
Phnom_Penh	Pontianak	Pyongyang	Qatar	Qyzylorda	Rangoon
Riyadh	Riyadh87	Riyadh88	Riyadh89	Saigon	Sakhalin
Samarkand	Seoul	Shanghai	Singapore	Taipei	Tashkent
Tbilisi	Tehran	Tel_Aviv	Thimbu	Thimphu	Tokyo
Ujung_Pandang	Ulaanbaatar	Ulan_Bator	Urumqi	Vientiane	Vladivostok
Yakutsk	Yekaterinburg	Yerevan			

Atlantic

Azores	Bermuda	Canary	Cape_Verde	Faeroe	Jan_Mayen
Madeira	Reykjavik	South_Georgia	St_Helena	Stanley	

Australia

ACT	Adelaide	Brisbane	Broken_Hill	Canberra	Currie
Darwin	Hobart	LHI	Lindeman	Lord_Howe	Melbourne
North	NSW	Perth	Queensland	South	Sydney
Tasmania	Victoria	West	Yancowinna		

Canada

Atlantic	Central	Eastern	East-Saskatchewan	Mountain	Newfoundland
Pacific	Saskatchewan	Yukon			

Europe

Amsterdam	Andorra	Athens	Belfast	Belgrade	Berlin
Bratislava	Brussels	Bucharest	Budapest	Chisinau	Copenhagen
Dublin	Gibraltar	Helsinki	Istanbul	Kaliningrad	Kiev
Lisbon	Ljubljana	London	Luxembourg	Madrid	Malta
Mariehamn	Minsk	Moscow	Nicosia	Oslo	Paris
Prague	Riga	Rome	Samara	Sarajevo	Simferopol
Skopje	Sofia	Stockholm	Tallinn	Tirane	Tiraspol
Uzhgorod	Vaduz	Vatican	Vienna	Vilnius	Warsaw
Zagreb	Zaporozhye	Zurich			

Pacific

Apia	Auckland	Chatham	Easter	Efate	Enderbury
Fakaofo	Fiji	Funafuti	Galapagos	Gambier	Guadalcanal
Guam	Honolulu	Johnston	Kiritimati	Kosrae	Kwajalein
Majuro	Marquesas	Midway	Nauru	Niue	Norfolk
Noumea	Pago_Pago	Palau	Pitcairn	Ponape	Port_Moresby
Rarotonga	Saipan	Samoa	Tahiti	Tarawa	Tongatapu
Truk Wake	Wallis	Yap			

USA

Alaska	Aleutian	Arizona	Central	Eastern	East-Indiana
Hawaii	Indiana-Starke	Michigan	Mountain	Pacific	Samoa

ID32939 'Bus service'

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

Using ID32939, EtherCAT fixed addresses can be stored for 'non-AMK devices' (e.g. terminals). The address is then written in the EEPROM of the EtherCAT slave. ID32939 is automatically written by AIPEX PRO.

Instance	Use	Interface
2	EtherCAT (CC) Slave	X85 / X86
5	1st EtherCAT Master	X186

ID32944 'SYADR'

Sphere of action:	GLOBAL / FORMAL	**Default value:**	00000000
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	4 byte	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	HEX		
List:	NO		

ID32944 allows controller access to participants who are connected in subordinate networks (routeing). Parameters can be read and written with the access.

Example:

An EtherCAT network consists of an EtherCAT controller and several EtherCAT slave participants (compact inverter KW). A compact power supply KE is connected via the ACC bus interface to the compact inverter, which is configured as an ACC bus master. Using ID32944, the EtherCAT master controller can access the KE by routeing the data via the KW with the ACC bus master interface.

Configuration ID32944 'SYADR'

Bit no.	Meaning
0-7 (Byte 0)	Sub address, addressing of a device that is operated on a controller card as an ACC bus slave participant.
8-15 (Byte 1)	Base address, addressing of a device on the fieldbus of a controller to which the drive is connected (e.g. KWs) (EtherCAT)
16-23 (Byte 2)	Res address, selection of the drive bus by the controller (1 = EtherCAT, 0 = ACC bus)
24-31 (Byte 3)	CC address, addressing of the routeing between controllers

Example 1:

A5 controller as EtherCAT master, 1 additional A5 controller as EtherCAT slave with the participant address 8, 1 KW with the participant address 3 to the A5 (slave) controller, 1 KE with the participant address 33 on the KW

Routeing of A5 (master) to the KE: 0x08010321

Example 2:

A5 controller as EtherCAT master, 1 IDT4 with the participant address 6 to the ACC bus interface of the A5 controller

Routeing of A5 (master) to the IDT4: 0x00000600

ID32962 'List of error codes'

Sphere of action:	GLOBAL / FORMAL	**Default value:**	0
Access:	READING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	1 byte / element	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	ASCII	**Current list length:***	0
List:	YES	**Max. list length:***	4096

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

ID32962 'List of error codes' shows external components (e.g. of a controller) internal drive diagnostic messages in ASCII format and the source of the error.

The parameter ID32962 'List of error codes' is ACC bus-specific. No function for EtherCAT.

Configuration ID32962 'List of error codes' for the example error message 2310, source of error address 5

List element	Content	Meaning
0	x	List head: Current list length without list head [x byte] (x = n elements x 1 byte / element)
1	4096	List head: Maximum list length without list head [byte]
2	e.g. 2	Diagnostic number (MSB)
3	e.g. 3	Diagnostic number
4	e.g. 1	Diagnostic number
5	e.g. 0	Diagnostic number (LSB)
6	e.g. 0	Source of error =0: Error on local device ≠0: Bus address of the reporting fieldbus participant
7	e.g. 5	Source of error =0: Error on local device ≠0: Bus address of the reporting fieldbus participant
8	e.g. G	Plain text (always 26 byte)
9	e.g. e	Plain text
10	e.g. b	Plain text
11	e.g. e	Plain text
12	e.g. r	Plain text
13	e.g. k	Plain text
14	e.g. o	Plain text
15	e.g. m	Plain text
16	e.g. m	Plain text
17	e.g. u	Plain text
18	e.g. n	Plain text
19	e.g. i	Plain text
20	e.g. k	Plain text
21	e.g. a	Plain text
22	e.g. t	Plain text
23	e.g. i	Plain text
24	e.g. o	Plain text
25	e.g. n	Plain text
26 - 33	...	...
34		Next message

ID33114 'Process number'

Sphere of action:	INSTANCE / 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		

The ID33114 'Process number' shows the EtherCAT status (instance 5).

Value	Meaning
1	Initialisation
2	Pre-operational mode
3	Bootstrap

Value	Meaning
4	Safe-operational mode
8	Operational mode

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 the limit value for the device is exceeded, the error message 2346 'Converter temperature error' (info 1 = 0) is generated.

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'

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		

A system reset is a device restart as compared to 24 VDC OFF / ON, except that the system reset, the 24 VDC are still active (software reset).

The command is started if the value 0xB007 is written in the parameter. The PLC must be in the stop state.

ID33736 'PLC command parameter'

Sphere of action:	GLOBAL / FORMAL	**Default value:**	0000 0000 0000 0000 0000 0000
Access:	READING / WRITING	**Scale:**	1

Temporarily changeable:	NO	**Unit:**	-
Data length:	4 byte	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	BIN		
List:	NO		

PLC commands can be configured with ID33736 'PLC command parameter'.

Configuration ID33736 'PLC command parameter'

Bit no.	Condition	Meaning
0	0	The PLC stops with the command 'Cmd. PLC stop'
	1	The PLC stops with the command 'Cmd. PLC stop' and remains in the 'Stop' state once after the next reset or power OFF / ON. PLC does not start
1-31	0	Reserved
	1	Reserved

ID33737 'Cmd. PLC stop'

Sphere of action:	GLOBAL / FORMAL	**Default value:**	0000 0000 0000 0000
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	2 byte	**Min. value:**	0
Signed:	NO	**Max. value:**	65535
Format:	BIN		
List:	NO		

The PLC is set to the state 'Stop' with the command 'Cmd. PLC stop'.

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.

ID34005 'Variable 5'

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.

ID34006 'Variable 6'

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.

ID34007 'Variable 7'

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.

ID34008 'Variable 8'

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.

ID34009 'Variable 9'

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.

ID34010 'Variable 10'

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.

ID34011 'Variable 11'

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.

ID34012 'Variable 12'

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.

ID34013 'Variable 13'

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.

ID34014 'Variable 14'

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.

ID34015 'Variable 15'

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.

ID34016 'Variable 16'

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.

ID34017 'Variable 17'

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.

ID34018 'Variable 18'

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.

ID34019 'Variable 19'

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.

Profinet uses the content of ID34019 to generate the Identification & Maintenance data (I & M). If ID34019 = 0, the I & M data is generated according to an internal algorithm.

I & M data is used to describe devices and their properties. Part of the I & M data is a software version. The CODESYS application can specify a version that is transferred from the application software to ID34019 and to the Profinet Stack and built into the I & M data.

Example:

To represent version V3.10.1, ID34019 = 0x56030A01 must be written.

Byte 3: Prefix	Byte 2: Extended functions	Byte 1: Bug Fix	Byte 0: Internal change
"V" corresponds to 0x56			

Profinet must be informed of the change by changing the ID34019 with the FboSetNetControl () function.

Example:

```
IF NOT g_boCtrlDone THEN
        FboSetNetControl(uiAxis:=0, uiChannel:=2, uiControl:=1, uiMask:=1);
        g_boCtrlDone:= TRUE;
END_IF
```

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 iSA /

Default value:

Instance	Use	Interface	Default value	Meaning
0	-	-	-	-
2	EtherCAT slave (option A-SEC)	X85 (IN) / X86 (OUT)	0	No address assigned
	Profibus slave (option A-SPB)	X42 / X43		
	CAN / ACC bus slave (option A-SCN)	X136 / X137		
	EtherNet/IP (option A-SIP)	X85 (IN) / X86 (OUT)	0201	Participant address xxx.xxx.2.1
	Profinet IO Device (Option A-SPN)	X85 (IN) / X86 (OUT)	0201	Participant address xxx.xxx.2.1
3	local I/Os	X05 / X06	0	no meaning
4	1st Ethernet interface	X20	0001	Participant address xxx.xxx.0.1
5	1st EtherCAT Master	X186	00FF	Participant address 255

ID34023 specifies the participant address in the bus system.

The Ethernet IP address of the instances 2 (EtherNet/IP) and 4 is composed of the content from the parameters ID34023 and ID34026.

Default setting: X20 (instance 4) 192.168.0.1

Default setting: X85 (instance 2) 192.168.2.1

Composition of the Ethernet IP address

IP address in dec					ID34026 in hex		ID34023 in hex	
[A]	[B]	[C]	[D]	=	[A]	[B]	[C]	[D]
192	168	0	1	=	C0	A8	00	01

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 iSA /

Sphere of action: INSTANCE

Default value:

Instance	Use	Interface	Default value	Meaning
0	-	-	-	-
2	EtherCAT slave (option A-SEC)	X85 (IN) / X86 (OUT)	10000000	100 MBit/s
	Profibus slave (option A-SPB)	X42 / X43		Automatic scan of the Baud rate
	CAN / ACC bus slave (option A-SCN)	X136 / X137		Corresponds 1 MBit/s max. 1 MBit/s supported
	EtherNet/IP (option A-SIP)	X85 (IN) / X86 (OUT)	10000000	100 MBit/s (not changeable)
	Profinet IO Device (option A-SPN)	X85 (IN) / X86 (OUT)	10000000	100 MBit/s
3	local I/Os	X05 / X06	-	-
4	1st Ethernet interface	X20	0	Automatic scan of the Baud rate
5	1st EtherCAT Master	X186	10000000	100 MBit/s

Max. value: 1000000.00

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
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

ID34025 'BUS mode'

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		

The 'BUS mode' defines the fieldbus-specific supported functionality.

Values for iSA / Default value:

Instance	Use	Interface	Default value	Meaning
0	-	-	-	-
2	EtherCAT slave (option A-SEC)	X85 (IN) / X86 (OUT)	0000	Slave (CC)
	Profibus slave (option A-SPB)	X42 / X43	0000	Slave
	CAN / ACC bus slave (option A-SCN)	X136 / X137	0000	Slave
	EtherNet/IP (option A-SIP)	X85 (IN) / X86 (OUT)	0000	Slave, See table 1)
	Profinet IO Device (option A-SPN)	X85 (IN) / X86 (OUT)	0	Slave, DHCP
3	local I/Os	X05 / X06	0002	-
4	1st Ethernet interface	X20	0020	See table 1)
5	1st EtherCAT Master	X186	0002	Master

1)

Bit	Value	Meaning
0	0	EtherCAT Master: Automatic bus start after 24 VDC on
	1	EtherCAT Master: Bus does not start automatically after 24 VDC on
1	0	Reserved
	1	Reserved
2	0	DHCP not active
	1	DHCP active
3	0	Ethernet class C network (subnet mask 255.255.255.0) or manual input in ID34057 'Network mask'
	1	Ethernet class B network (subnet mask 255.255.0.0)
4	0	Reserved
	1	Reserved
5-14		Reserved
15	0	Option A-SCN: Standard operation
	1	Option A-SCN: KU- / KW-PLC2 compatibility mode Application CAN slave mode: iSA as a replacement for option card KU- / KW-PLC2. (For example connected to a AZ system as a CAN master) In compatibility mode, another variant of the object dictionary is supported that is compatible with KU / KW-PLC2. In case of recreate the configuration for the CAN master, the KU / KW-PLC2 device description file must be used, for example AEPC1S_203_0330_200168.

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 iSA /
Default value:

Instance	Use	Interface	Default value	Meaning
0	-	-	-	-
2	EtherCAT slave (option A-SEC)	X85 (IN) / X86 (OUT)	0	unused
	Profibus slave (option A-SPB)	X42 / X43	0	unused
	CAN / ACC bus slave (option A-SCN)	X136 / X137	0	see table for instance 2
	EtherNet/IP (option A-SIP)	X85 (IN) / X86 (OUT)	C0A8	Participant address 192.168.xxx.xxx see table for instance 2 EtherNet/IP
	Profinet IO Device (Option A-SPN)	X85 (IN) / X86 (OUT)	C0A8	Participant address 192.168.xxx.xxx see table for instance 2 Profinet IO Device
3	local I/Os	X05 / X06	0	unused
4	1st Ethernet interface	X20	C0A8	Participant address 192.168.xxx.xxx see table for instance 4
5	1st EtherCAT Master	X186	0	see table for instance 5

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

Configuration ID34026 'BUS mode attribute' iSA - instance 2 - CAN / ACC bus slave X136 / X137

Bit no.	Condition	Meaning
0	0	Synchronisation to the software synchronisation telegram (COB-ID 80) Inactive
	1 [1)]	Synchronisation to the software synchronisation telegram (COB-ID 80) Active
1	0	SYNC-signal slave receiver - hardware synchronisation cycle processed Inactive
	1 [1)]	SYNC-signal slave receiver - hardware synchronisation cycle processed Active
2	0	SYNC-signal slave receiver - hardware synchronisation cycle is monitored Inactive
	1	SYNC-signal slave receiver - hardware synchronisation cycle is monitored Active (an error in the synchronisation generates an error message)
3-15	0	Reserved
	1	Reserved

1) If bit 0 = bit 1 = 1, bit 0 is dominante

Configuration ID34026 'BUS mode attribute' iSA - instance 4 - 1th Ethernet interface X20

Configuration ID34026 'BUS mode attribute' iSA - instance 2 - EtherNet/IP or Profinet IO Device interface X85 / X86

The Ethernet IP address of the instances 2 (EtherNet/IP or Profinet IO Device) and 4 is composed of the content from the parameters ID34023 and ID34026.

Default setting: X20 (instance 4) 192.168.0.1

Default setting: X85 (instance 2) 192.168.2.1

Composition of the Ethernet IP address

IP address in dec					ID34026 in hex		ID34023 in hex	
[A]	[B]	[C]	[D]	=	[A]	[B]	[C]	[D]
192	168	0	1	=	C0	A8	00	01

Configuration ID34026 'BUS mode attribute' A4 / A5 - instance 5 - EtherCAT Master X186

Bit no.	Condition	Meaning
0	0	Reserved
	1	Reserved
1	0	Trace outputs for the boot process Inactive
	1	Active
2	0	Check the revision number of the slave during the boot process Active
	1	Inactive
3	0	Reserved
	1	Reserved
4	0	In the event of an error, there is no shutdown of the LWR (logical write) service, but rather the slaves are switched back to the safe-operational mode. Inactive
	1	Active
5	0	Memory will reserve only for the slaves which are detected while the run-up. If there are more notes after the next bus initialization as before The diagnose message 2726 Info 1 = 46 will be generated.
	1	Memory will be reserve for all notes which are available in the configuration file.
6	0	Evaluate the product code completely
	1	Evaluate product code (Vendor ID + device type (bits 5 - 7)) Functionally similar EtherCAT slaves can be interchanged, without adapting the bus configuration. e. g. iX to iDT
7 - 10	0	Reserved
	1	Reserved
11	0	Factor for the bus booting delay (bit 12-15) Factor = 1, i.e. maximum booting delay of 15 seconds
	1	Factor = 10, i.e. maximum booting delay of 150 seconds
12 - 15	0000	Bus master (NMT network management) booting delay Waiting time before the initialisation of the slave in seconds (for factor, see bit 11) Inactive
	0001	1 or 10 seconds
	0010	2 or 20 seconds
	0011	3 or 30 seconds
	0100	4 or 40 seconds
	0101	5 or 50 seconds
	0110	6 or 60 seconds
	0111	7 or 70 seconds
	1000	8 or 80 seconds
	1001	9 or 90 seconds
	1010	10 or 100 seconds
	1011	11 or 110 seconds
	1100	12 or 120 seconds
	1101	13 or 130 seconds
	1110	14 or 140 seconds
	1111	15 or 150 seconds

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 45.

Configuration ID34027 'BUS failure character'

Code	Designation	Description
0	-	No response
1	-	Warning message
2	-	Error message, SBM is withdrawn

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

ID34028 'BUS output rate'

Reserved for AMK internal use!

ID34036 'CCB-File'

Sphere of action:	INSTANCE / FORMAL	**Default value:**	0
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	1 byte / element	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	HEX	**Current list length:***	0
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 iSA /

Max. list length:* 31996

ID34036 contains the ACC bus configuration if the device has an ACC bus master interface.

Configuration ID34036 'CCB-File'-

List element	Content	Meaning
0	x	List head: Current list length without list head [x byte] (x = n elements x 1 byte / element)
1	z	List head: Maximum list length without list head [byte]

List element	Content	Meaning
2		
3		
...	...	...
z+1		

z = Maximum list length

ID34053 'ID transfer'

Reserved for AMK internal use!

ID34054 'CCB-Filename'

Sphere of action:	INSTANCE / FORMAL	**Default value:**	0
Access:	READING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	1 byte / element	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	ASCII	**Current list length:***	0
List:	YES	**Max. list length:***	36

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

ID34054 contains the CCB file name.

Configuration ID34036 'CCB-File'

List element	Content	Meaning
0	x	List head: Current list length without list head [x byte] (x = n elements x 1 byte / element)
1	36	List head: Maximum list length without list head [byte]
2		
...		
37		

ID34056 'Gateway address'

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

ID34056 sets the gateway address.

Instance reference

Instance	Use for
4	1st Ethernet IP address X20

Composition of the gateway address

Dec					Hex			
[A]	[B]	[C]	[D]	=	[D]	[C]	[B]	[A]
255	255	255	255	=	FF	FF	FF	FF

ID34057 'Network mask'

Sphere of action:	INSTANCE	**Default value:**	00FFFFFF
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	4 byte	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	HEX		
List:	NO		

ID34057 sets the network mask (Network class A, B, or C).

If ID34057 is used, the bit 3 must = 0 in ID34025 instance 2 or 4.

Instance reference

Instance	Use for
2	EtherNet/IP X85
4	1st Ethernet IP address X20

Composition of the network mask

Gateway address in dec					ID34057 in hex			
[A]	[B]	[C]	[D]	=	[D]	[C]	[B]	[A]
255	255	255	0	=	00	FF	FF	FF

ID34060 'List SEEP 1'

Reserved for AMK internal use!

ID34061 'List SEEP 2'

Reserved for AMK internal use!

ID34062 'Fault statistics'

Reserved for AMK internal use!

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.

ID34071 'System name'

Sphere of action:	GLOBAL	**Default value:**	-
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	1 byte / element	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	ASCII	**Current list length:***	0
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 iSA /

Max. list length:* 64

Any name can be assigned to the device in ID34071. This may consist of a maximum of 64 ASCII characters. The system name is used in the networked systems, e.g. for device identification.

Configuration ID34071 'System name'

List element	Content	Meaning
0	x	List head: Current list length without list head [x byte] (x = n elements x 1 byte / element)
1	64	List head: Maximum list length without list head [byte]
2	e.g. A	1st character of the system name
3	e.g. n	2nd character of the system name
4	e.g. t	3rd character of the system name
5	e.g. r	4th character of the system name
6	e.g. i	5th character of the system name
7	e.g. e	6th character of the system name
8	e.g. b	7th character of the system name
9	e.g. 1	8th character of the system name
...	...	...
z+1		Last character of the system name

z = Maximum list length

ID34072 'Data set name'

Sphere of action:	GLOBAL	**Default value:**	-
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	1 byte / element	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	ASCII	**Current list length:***	0
List:	YES	**Max. list length:***	16

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

In ID34072, any name with a maximum length of 16 ASCII characters can be assigned to the data set (all parameters of a device).

Configuration ID34072 'Data set name'

List element	Content	Meaning
0	x	List head: Current list length without list head [x byte] (x = n elements x 1 byte / element)
1	16	List head: Maximum list length without list head [byte]
2	e.g. D	1st character of the data set name

List element	Content	Meaning
3	e.g. o	2nd character of the data set name
4	e.g. k	3rd character of the data set name
5	e.g. u	4th character of the data set name
6	e.g. P	5th character of the data set name
7	e.g. r	6th character of the data set name
8	e.g. o	7th character of the data set name
9	e.g. j	8th character of the data set name
10	e.g. e	9th character of the data set name
11	e.g. k	10th character of the data set name
12	e.g. t	11th character of the data set name
...	...	...
17		16th character of the data set name

ID34074 'Homing Counter 1'

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

For controllers with the I/O option, the 'Homing Counter 1' stores the position information of the pulse encoder input from ID34075 'Actual Counter 1' at the point where the homing signal (zero pulse) occurs.

ID34075 'Actual Counter 1'

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

For controllers with the I/O option, the current counter cyclically saves the position information of the pulse encoder input.

ID34088 'Event trace'

Sphere of action:	GLOBAL / FORMAL	**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:***	0
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 iSA /	
Max. list length:*	32000

The 'Event trace' is organized as the circular buffer. Every new entry overwrites the oldest entry. The newest entry is at the beginning of the list and the oldest event is at the end.

Every event block has the following structure:

- 18 byte time stamp
- 46 byte event text

Configuration ID34088 'Event trace'

List element	Content	Meaning
0	**x**	**List head: Current list length without list head [byte] (x = n elements x 1 byte / element)**
1	**2 x z**	**List head: Maximum list length without list head [byte]**
2		
3		
...		
z+1		

z = Maximum list length

Siehe 'ID34171 'Event filter'' auf Seite 60.

The event trace archives a maximum of 500 events (500*64 byte blocks).

The following events are logged in the 'Event trace' with precise times:

- System booting
- Diagnostic messages (number, info, info2, address, error text)
- Clear error
- Start of the plc program
- Flashing the AS-FCT1 module
- Update the AS firmware (file name)
- Initial program loading
- Soft reset
- FTP connection (IP address of the client)
- AIPEX connection (COM / Ethernet, IP address of the client)

Example:

26/09/06 09:08:07 System start-up
26/09/06 09:07:57 AIPEX connect from 172.16.6.5
26/09/06 08:31:56 E:3851 I:0 I2:0 A:0 system diagnosis

ID34097 'Enable code'

Reserved for AMK internal use!

ID34098 'BUS status'

Sphere of action:	INSTANCE / 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		

The bus status can be read by reading the ID34098. The same information is shown that is also available via the AMK IEC61131-3 block 'FuiGetNetStatus'

Configuration ID34098 'BUS status'

Bit	Value	Meaning
0	0	Inactive
	1	Bus is initialised
1	0	Inactive
	1	Pre-operational, if bit 4=0
2	0	No error (only ACC)
	1	Bus error (only ACC)
3	0	No warning (only ACC)
	1	Bus warning (only ACC)
4	0	Inactive
	1	Operational
5-15	0	Reserved
	1	Reserved

Instance	Use	Interface
0	Global cycle time	-
2	EtherCAT slave (option A-SEC)	X85 (IN) / X86 (OUT)
	Profibus slave (option A-SPB)	X42 / X43
	CAN / ACC Bus slave (option A-SCN)	X136 / X137
	EtherNet/IP slave (option A-SIP)	X85 (IN) / X86 (OUT)
3	I/O extension	X05 / X06
4	1st Ethernet interface	X20
5	1st EtherCAT master	X186

ID34100 'Binary input word'

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		

For controllers with local I/Os, ID34100 'Binary input word' is the image of the binary inputs at the connection X05 and X06.

ID34101 'Binary input word 1'

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		

The 'Binary input word 1' is the image of the binary inputs of the options box iSA-OB1

ID34120 'Binary output word'

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		

For controllers with local I/Os, ID34120 'Binary output word' is the image of the binary outputs at the connection X05 and X06. For the issuance of bit informations, the respective port bit must be configured with the code 33942.

ID34121 'Binary output word 1'

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		

The 'Binary output word 1' is the image of the binary outputs of the options box iSA-OB1

ID34138 'Bus list'

Sphere of action:	GLOBAL	**Default value:**	0
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	4 byte / element	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	HEX	**Current list length:***	-
List:	YES	**Max. list length:***	260

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

List of the available bus master interfaces.

Configuration ID34138 'Bus list'

List element	Content	Meaning
0	**x**	**List head: Current list length without list head [x byte]** **(x = n elements x 4 byte / element)**
	260	**List head: Maximum list length without list head [byte]**
1		**Expanded list header: Version**
2		**Expanded list header: Amount of bus entries**
3	first entry	Bus type
4	first entry	1. word: bus instance 2. word: bus module number
5	second entry	Bus type
6	second entry	1. word: bus instance 2. word: bus module number
7		

ID34140 'AS BUS protocol'

Sphere of action:	INSTANCE	**Default value:**	Instance-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		

ID34140 determines which fieldbus is assigned to an instance.
For initially loaded devices, the existing buses are detected automatically and assigned to the instances.

Instance	Use	Code in hex
0	-	0
2	Profibus slave (option A-SPB)	43
	EtherCAT slave (option A-SEC)	41
	CAN / ACC bus slave (option A-SCN)	40
	EtherNet/IP (option A-SIP)	46
	Profinet IO Device (option A-SPN)	47
3	local I/Os	50
4	1st Ethernet X20	2
5	EtherCAT master (option A-MEC)	41

ID34141 'AS card address'

Reserved for AMK internal use!

ID34142 'Node list'

Sphere of action:	INSTANCE / FORMAL	**Default value:**	0
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	1 byte / element	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	DEC	**Current list length:***	0
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 iSA /

Max. list length:* 512

The node list is created in each bus master (ACC bus, EtherCAT) during the system booting. The node list includes all of the detected nodes of the network (regardless of the condition of the node).

The node list is updated online. Nodes that are no longer detectable are removed from the list immediately. Newly detected nodes are added to the list immediately. The list is in RAM and is formed at run time (no image in the permanent data base).

Configuration ID34142 'Node list'

List element	Content	Meaning
0	**x**	**List head: Current list length without list head [byte] (x = n elements x 1 byte / element)**
1	**z**	**List head: Maximum list length without list head [byte]**
2		Participant address 1 Participant
3		Participant address 2 Participant

List element	Content	Meaning
0	**x**	**List head: Current list length without list head [byte] (x = n elements x 1 byte / element)**
1	**z**	**List head: Maximum list length without list head [byte]**
4		Participant address 3 Participant
...		...
		Device type 1st Participant
		Device type 2nd Participant
		Device type 3rd Participant
...		...

z = Maximum list length

Appliance type	Code	String detection according to ID30
Undefined	0	
KE	1	KE
KW	2	KW, KWZ
AS, A4, A5, A6	3	AS, AS-C, A4S, A4D, A5S, A5D, A6S, A6D
KU	4	KU
Kx-PLC1	5	PLC1, PLC2
KWF	6	KWF
IDT4	7	IDT
Reserved	8	
Reserved	9	
Ext. WAGO I/O	10	
Ext. ...reserved	11	

Example: KW with IDT 4 and KE modules

1 KW, 2 IDT 4 motors (addresses 1, 2 and 3) and a KE module (address 33) are connected to the ACC bus.
The following list is delivered when reading the ID43142 instance 0.

actual length	max. length	Addresses				Types			
12	**132**	**1**	**2**	**3**	**33**	**2**	**7**	**7**	**1**
2 byte	2 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte

Instance	Use	Interface
5	1st EtherCAT master	X186

ID34143 'Usage port'

Sphere of action:	INSTANCE	**Default value:**	Instance-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		

Multi-level network structures are possible in the communication between AMK devices. A communication level is assigned to the bus through the entry in ID34143. Three levels and the programming interface can be defined.

Instance	Use	Value in ID34143 [hex]	Meaning
0	-	-	-
2	EtherCAT slave (option A-SEC)	-	not used
	Profibus slave (option A-SPB)		
	CAN / ACC bus slave (option A-SCN)		
	EtherNet/IP (option A-SIP)		
	Profinet IO Device (Option A-SPN)		
3	Digital I/O		
4	1st Ethernet X20	4	Software AIPEX PRO (CODESYS)
5	1st EtherCAT Master X186	1	Drive bus (communication between controller and drive device)
		2	Cross communication between controllers (CC), drive communication

ID34156 'BUS mode attribute 2'

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

ID34156 specifies which events are written in the log file. The determination is exclusively valid for the respective instance. The evaluation of the additional spending takes place by AMK service.

Instance	Use	Interface
0	Global messages, independently of the bus	-
2	EtherCAT slave (option A-SEC)	X85 (IN) / X86 (OUT)
	Profibus slave (option A-SPB)	X42 / X43
	CAN / ACC bus slave (option A-SCN)	X136 / X137
	EtherNet/IP slave (option A-SIP)	X85 (IN) / X86 (OUT)
3	local I/Os	X05 / X06
4	1st Ethernet interface	X20
5	1st EtherCAT master	X186

Configuration ID34156 'BUS mode attribute 2'

Bit no.	Condition	Meaning
0	0	Power on or booting of a bus No additional spending
	1	Additional spending
1	0	Error information No additional spending
	1	Additional spending
2	0	Firmware update No additional spending
	1	Additional spending
3	0	Database access No additional spending
	1	Additional spending
4-31	0	Reserved
	1	Reserved

ID34159 'PLC files'

Sphere of action:	GLOBAL	**Default value:**	-
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	1 byte / element	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	DEC	**Current list length:***	0
List:	YES	**Max. list length:***	16380

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

The PLC program is stored in ID34159.

Configuration ID34159 'PLC files'

List element	Content	Meaning
0	x	List head: Current list length without list head [x byte] (x = n elements x 1 byte / element)
1	16380	List head: Maximum list length without list head [byte]
2		
...		
16381		

ID34163 'Remanent variables'

Sphere of action:	GLOBAL, FORMAL	**Default value:**	0
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	2 byte/element	**Min. value:**	0
Signed:	NO	**Max. value:**	65535
Format:	DEC	**Current list length:***	0
List:	YES	**Maximum list length:***	16380

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

ID34163 copies remanent variables (RETAIN variables), if the parameter set is read from one device and written into another including ID34159 'PLC files' and ID34163.

ID34171 'Event filter'

Sphere of action:	GLOBAL	**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		

Certain event classes can be filtered out with the 'Event filter'. Each event class is represented by a bit in ID34171. Bits that are assigned the value 1 in ID34171 are not registered in ID34088 'Event trace'.

The following event classes can be filtered out:

Configuration ID34171 'Event filter'

Bit no.	Condition	Meaning
0	0	'Error' event class is entered in ID34088 , e.g. error messages
	1	'Error' event class is not entered in ID34088 , e.g. error messages
1	0	'Warning' event class is entered in ID34088 , e.g. warning messages
	1	'Warning' event class is not entered in ID34088 , e.g. warning messages
2	0	Reserved
	1	Reserved
3	0	Reserved
	1	Reserved
4	0	'Clear error' event class is entered in ID34088
	1	'Clear error' event class is not entered in ID34088
5	0	'System' event class is entered in ID34088 , e.g. power on, firmware update...
	1	'System' event class is not entered in ID34088 , e.g. power on, firmware update...

Bit no.	Condition	Meaning
6	0	'External access' event class is entered in ID34088 , e.g. access to the parameter data or, for controllers, access to the file system via FTP
	1	'External access' event class is not entered in ID34088 , e.g. access to the parameter data or, for controllers, access to the file system via FTP
7-15	0	Reserved
	1	Reserved

Siehe ID34088 'Event trace' auf Seite 52.

ID34172 'PLC project info'

Sphere of action:	GLOBAL	**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:***	0
List:	YES	**Max. list length:***	996

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

The PLC project information consists of the entries:

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

Entering the project information takes place in the programming software CoDeSys under the menu item 'Project information'

Configuration ID34159 'PLC files'

List element	Content	Meaning
0	x	List head: Current list length without list head [x byte] (x = n elements x 1 byte / element)
1	996	List head: Maximum list length without list head [byte]
2		
...		
997		

ID34173 'NTP server address'

Sphere of action:	INSTANCE	**Default value:**	0100007F
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	4 byte	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	HEX		
List:	NO		

ID34173 determines the external IP address of a NTP (Network Time Protocol) server. When setting the default, the function is disabled and the internal time of the controller is used.

Default value:

Instance	Use	Interface	Default value	Meaning
0	-	-	0100007F	NTP is not supported
2	EtherCAT (CC) Slave (option A-SEC)	X85 (IN) / X86 (OUT)	0100007F	NTP is not supported
	Profibus slave (option A-SPB)	X42 / X43	0100007F	NTP is not supported
	CAN / ACC-bus slave (option A-SCN)	X136 / X137	0100007F	NTP is not supported
	EtherNet/IP slave (option A-SIP)	X85 (IN) / X86 (OUT)	0100007F	NTP is not supported
3	local I/Os	X05 / X06	0100007F	NTP is not supported
4	1st Ethernet interface	X20	0100007F	NTP not active
5	1st EtherCAT Master	X186	0100007F	NTP is not supported

Configuration of the NTP server address

Dec					Hex			
[A]	[B]	[C]	[D]	=	[D]	[C]	[B]	[A]
127	0	0	1	=	01	00	00	7F

ID34175 'Controller settings'

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:	BIN		
List:	NO		

Configuration ID34175 'Controller settings'

Bit-no.	Condition	Meaning
0	0	Mouse pointer is invisible on the visualization
	1	Mouse pointer is visible on the visualization
1	0	Landscape format
	1	Upright format

Bit-no.	Condition	Meaning
2	0	CODESYS visualization
	1	Qt visualization
3	0	Reserved
	1	Reserved
4	0	CODESYS version V2
	1	CODESYS version V3 / min. AIPEX_PRO V3.03 necessary!
5-7	0	Reserved
	1	Reserved
8	0	Option iSA-VIS (visualization) active
	1	Option / iSA-VIS (visualization) inactive
9	0	Option / iSA-PCO (PLCopen) active
	1	Option / iSA-PCO (PLCopen) inactive
10	0	Option / iSA-PNC (PLCopen CNC) active
	1	Option / iSA-PNC (PLCopen CNC) inactive
11	0	Reserved
	1	Reserved
12	0	Reserved
	1	Reserved
13	0	Reserved
	1	Reserved
14-15	0	Reserved
	1	Reserved
16	0	Reserved
	1	Reserved
17-31	0	Reserved
	1	Reserved

ID34206 'Product code'

Reserved for AMK internal use!

ID34211 'Node list 2'

Sphere of action:	INSTANCE / FORMAL	**Default value:**	-
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	4 byte / element	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	HEX	**Current list length:***	0
List:	YES	**Max. list length:***	1279

* The list length is the number of usage data elements without 4 byte head elements and 16-byte expanded list header.

The ID34211 applies to the EtherCAT bus and is structured as follows:

Configuration ID34211 'Node list 2'

List element	Content	Meaning
0	**x**	**List head: Current list length without list head [byte] (x = n elements x 4 byte / element)**
1	**5116**	**List head: Maximum list length without list head [byte]**
2		**Expanded list header: Bus type (corresponds to ID34140)**
3		**Expanded list header: Version**
4		**Expanded list header: Amount of device information per participant (current 5)**
5		**Expanded list header** **Bit 0 = 1 configuration valid** **Bit 0 = 0 configuration not available or invalid**
6		Active device address (device information for 1st slave)
7		Manufacturer code (device information for 1st slave)
8		Product code (device information for 1st slave)
9		Version code (device information for 1st slave)
10		Fixed device address (device information for 1st slave)
11		Active device address (device information for 2nd slave)
...		...

Node list and device address

The sequence of devices in the node list corresponds to the sequence on the bus.
(first device after the EtherCAT master = position 0)

The following combinations are possible:

No fixed addresses available:

Active device address = position + 1 or address assigned by the master
Fixed device address = 0

Fixed address available

Active device address = fixed device address

Several of the same fixed addresses

Active device address = next free address
Fixed device address = fixed address

ID34216 'DNS server address'

Sphere of action:	INSTANCE	**Default value:**	0100007F
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	4 byte	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	HEX		
List:	NO		

ID34216 determines the external IP address of a DNS (Domain Name System) server.

Default settings

Instance	Use for	Hex	Dec
Instance 4	1st Ethernet IP address X20	0100007F	127.0.0.1

Configuration of the DNS server address

Dec					Hex			
[A]	[B]	[C]	[D]	=	[D]	[C]	[B]	[A]
127	0	0	1	=	01	00	00	7F

ID34263 'BUS system name'

Sphere of action:	INSTANCE / FORMAL	**Default value:**	-
Access:	READING / WRITING	**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:***	256

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

Any name for each instance (bus system) can be assigned to the device in ID34263. This may consist of a maximum of 256 ASCII characters.

The name is assigned to each slave device individually via the bus configuration and is used for device identification. The bus configuration for e.g. Profinet is created centrally in the Profinet master.

Configuration ID34263 'BUS system name'

List element	Content	Meaning
0	x	List head: Current list length without list head [x byte] (x = n elements x 1 byte / element)
1	256	List head: Maximum list length without list head [byte]
2	e.g. P	1st character of the system name
3	e.g. r	2nd character of the system name
4	e.g. o	3rd character of the system name
5	e.g. f	4th character of the system name
6	e.g. i	5th character of the system name
7	e.g. n	6th character of the system name
8	e.g. e	7th character of the system name
9	e.g. t	8th character of the system name
...	...	...
z+1		Last character of the system name

z = Maximum list length

ID34304 'Communication input word'

Sphere of action:	Device-specific values	**Default value:**	00000000
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 iSA /

Sphere of action: INSTANCE

Meaning for iSA /

ID34304 is the image of the input word 0 in the asynchronous communication address range (wIn0).

Additional input words in the synchronous communication address range (wIn1, wIn2, wIn3,...) are mapped in the formal parameters ID34305... Data in the asynchronous address range is not transmitted to the device cycle (PGT) in a synchronised manner.

The communication variables are instanced for the instances 0 to 7.

Communication address range allocation for the instance 0

Communication address range	asynchronous		synchronous	
Variable	**Input**	**Output**	**Input**	**Output**
WORD Name	wIn0 ... wIn255	wOut0 ... wOut255	wSyncIn0 ... wSyncIn255	wSyncOut0 ... wSyncOut255
WORD ID no.	ID34304 ... ID34559	ID34816 ... ID35071	ID34560 ... ID34815	ID35072 ... ID35327
DOUBLEWORD Name	dwIn0 ... dwIn127	dwOut0 ...dwOut127	dwSyncIn0 ... dwSyncIn127	dwSyncOut0 ... dwSyncOut127
DOUBLEWORD ID no.	ID35328 ... ID35455	ID35584 ... ID35711	ID35456 ... ID35583	ID35712 ... ID35839

Overview of communication ranges for all instances

Type WORD

WORD IN & OUT	asynchronous		synchronous		AMK instance
wIn, wOut wSyncIn, wSyncOut	**IDs for wIn**	**IDs for wOut**	**IDs for wSyncIn**	**IDs for wSyncOut**	**SERCOS Parameter set**
0 - 255	ID34304 - ID34559	ID34816 - ID35071	ID34560 - ID34815	ID35072 - ID35327	0
256 - 511					1
512 - 767					2
768 - 1023					3
1024 - 1279					4
1280 - 1535					5
1536 - 1791					6
1792 - 2047					7

Type DOUBLEWORD

DWORD IN & OUT	asynchronous		synchronous		AMK instance
dwIn, dwOut dwSyncIn, dwSyncOut	**IDs for dwIn**	**IDs for dwOut**	**IDs for dwSyncIn**	**IDs for dwSyncOut**	**SERCOS Parameter set**
0 - 127	ID35328 - ID35455	ID35584 - ID35711	ID35456 - ID35583	ID35712 - ID35839	0
128 - 255					1
256 - 383					2
384 - 511					3
512 - 639					4
640 - 767					5
768 - 895					6
896 - 1023					7

ID34816 'Communication output word'

Sphere of action:	Device-specific values	**Default value:**	00000000
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 iSA /

Sphere of action:	INSTANCE

ID34816 is the image of the output word 0 in the asynchronous communication address range (wOut).

Additional output words in the synchronous communication address range (wOut1, wOut2, wOut3,...) are mapped in the formal parameters ID34817... Data in the asynchronous address range is not transmitted to the device cycle (PGT) in a synchronised manner.

Siehe ID34304 'Communication input word' auf Seite 66.

ID35328 'Communication input double word'

Sphere of action:	Device-specific values	**Default value:**	00000000
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	4 byte	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	HEX		
List:	NO		

Values for iSA /

Sphere of action:	INSTANCE

ID35328 is the image of the input double word 0 in the asynchronous communication address range (dwIn0).

Additional input double words in the synchronous communication address range (dwIn1, dwIn2, dwIn3,...) are mapped in the formal parameters ID34329... Data in the asynchronous address range is not transmitted to the device cycle (PGT) in a synchronised manner.

Siehe ID34304 'Communication input word' auf Seite 66.

ID35584 'Communication output double word'

Sphere of action:	Device-specific values	**Default value:**	00000000
Access:	READING / WRITING	**Scale:**	1
Temporarily changeable:	NO	**Unit:**	-
Data length:	4 byte	**Min. value:**	-
Signed:	NO	**Max. value:**	-
Format:	HEX		
List:	NO		

Values for iSA /

Sphere of action:	INSTANCE

ID35584 is the image of the output double word 0 in the asynchronous communication address range (dwOut0).

Additional output double words in the synchronous communication address range (dwOut1, dwOut2, dwOut3, ...) are mapped in the formal parameters ID35585... Data in the asynchronous address range is not transmitted to the device cycle (PGT) in a synchronised manner.

Siehe ID34304 'Communication input word' auf Seite 66.

4 Appendix

4.1 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
33942	Access via plc	The output can be written by a plc controller

Glossary

A

A1
Analog input 1

A-SIP
EtherNET/IP slave interface

A-SCN
CAN /ACC bus slave interface

A-SPN
Profinet IO Device interface

A-SEC
EtherCAT slave interface

A-MEC
EtherCAT master interface

A-SPB
Profibus DP slave interface

AT
Drive telegram from slave to master

ASCII
American Standard Code for Information Interchange

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

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

B

BIN
Binary (digital)

C

COB-ID
Communication Object Identifier (Address of a telegram in CANopen protocol)

D

DO
Digital output

DI
Digital input

Default
Factory setting

DEZ
Decimal

DHCP
Dynamic Host Configuration Protocol (The server dynamically assigns an IP address to every network participant)

DNS
Domain Name System (Internet service which shows the IP address of the corresponding internet address)

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

E

EtherCAT
Real-time Ethernet bus

F

FORMAL
Formal parameter

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

FTP
File transfer protocol

Firmware
System software, loaded by AMK

G

GLOBAL
Global parameter; valid for all parameter sets

H

HEX
Hexadecimal, 0x...

I

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)

ID
Parameter identification numbers acc. to SERCOS Standard

I/O
Input / output

iSA
AMKASMART decentralized controller with power supply

iSA-PCO
PLCopen

iSA-PNC
Numerical Control Motion

L

LSB
Least Significant Bit

LWR
Logical write

M

MSB
Most Significant Bit

MDT
Master Data Telegram from master to slave

MST
Master synchronization telegram

N

NMT
Network management (CANopen)

O

Operational
In state operational, data are transferred cyclically via fieldbus

P

PGT
Periphery basic clock Fetch cycle in the basic device to which the drive controller is synchronized (The cycle time is according to ID2)

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

Parameter
Identification number acc. to SERCOS standard

Pre-operational
In pre-operational state, the controller can access the bus participants via the service channel. No cyclic data is exchanged.

Q

QUE
Acknowledgment DC bus on; shows that DC bus is loaded

S

SEEP
Device-internal memory, serial EEPROM

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

U

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.

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