



Description

AX5805

Default values for the permissible motors

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Table of contents

1 Foreword	2
1.1.1 Intended audience	2
1.1.2 Origin of the document	2
1.1.3 Currentness	2
1.1.4 Product features	2
1.1.5 Disclaimer	2
1.1.6 Trademarks	2
1.1.7 Patent Pending	2
1.1.8 Copyright	3
1.1.9 Delivery conditions	3
1.2 Safety instructions	3
1.2.1 Delivery state	3
1.2.2 Operator's obligation to exercise diligence	3
1.2.3 Description of safety symbols	4
1.2.4 Documentation issue status	4
2 System description	5
3 Prerequisites	6
3.1 TwinCAT	6
3.2 TwinCAT Drive Manager	6
3.3 EtherCAT ESI file	6
3.4 Motor string	6
4 Default values for permissible motors	8
4.1 Motor types AM30xx	8
4.2 Motor types AM35xx	21
4.3 Motor types AM80xx	22
4.4 Motor types AM85xx	28
4.5 Motor types AM88xx	32
4.6 Estimation of Motor Default Data	34
4.6.1 Filter level and motor time constant	34
4.7 ASCII table	36
5 Appendix	37
5.1 Beckhoff Support and Service	37
5.1.1 Beckhoff branches and partner companies Beckhoff Support	37
5.1.2 Beckhoff company headquarters	37
5.2 Certificate	38

1 Foreword

1.1 Notes on the documentation

1.1.1 Intended audience

This description is only intended for the use of trained specialists in control and automation engineering who are familiar with the applicable national standards.

It is essential that the following notes and explanations are followed when installing and commissioning these components.

The responsible staff must ensure that the application or use of the products described satisfy all the requirements for safety, including all the relevant laws, regulations, guidelines and standards.

1.1.2 Origin of the document

This documentation was originally written in German. All other languages are derived from the German original.

1.1.3 Currentness

Please check whether you are using the current and valid version of this document. The current version can be downloaded from the Beckhoff homepage at <http://www.beckhoff.com/english/download/twinsafe.htm>. In case of doubt, please contact the Technical Support (see chapter 5.1 Beckhoff Support and Service)

1.1.4 Product features

Only the product features specified in the current user documentation are valid. Further information given on the product pages of the Beckhoff homepage, in emails or in other publications is not authoritative.

1.1.5 Disclaimer

The documentation has been prepared with care. The products described are subject to cyclical revision. For that reason the documentation is not in every case checked for consistency with performance data, standards or other characteristics. We reserve the right to revise and change the documentation at any time and without prior announcement. No claims for the modification of products that have already been supplied may be made on the basis of the data, diagrams and descriptions in this documentation.

1.1.6 Trademarks

Beckhoff®, TwinCAT®, EtherCAT®, EtherCAT G®, EtherCAT G10®, EtherCAT P®, Safety over EtherCAT®, TwinSAFE®, XFC®, XTS® and XPlanar® are registered trademarks of and licensed by Beckhoff Automation GmbH. Other designations used in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owners.

1.1.7 Patent Pending

The EtherCAT Technology is covered, including but not limited to the following patent applications and patents: EP1590927, EP1789857, DE102004044764, DE102007017835 with corresponding applications or registrations in various other countries.

The TwinCAT Technology is covered, including but not limited to the following patent applications and patents: EP0851348, US6167425 with corresponding applications or registrations in various other countries.



EtherCAT® and Safety over EtherCAT® are registered trademarks and patented technologies, licensed by Beckhoff Automation GmbH, Germany.

1.1.8 Copyright

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The reproduction, distribution and utilization of this document as well as the communication of its contents to others without express authorization are prohibited.

Offenders will be held liable for the payment of damages. All rights reserved in the event of the grant of a patent, utility model or design.

1.1.9 Delivery conditions

In addition, the general delivery conditions of the company Beckhoff Automation GmbH & Co. KG apply.

1.2 Safety instructions

1.2.1 Delivery state

All the components are supplied in particular hardware and software configurations appropriate for the application. Modifications to hardware or software configurations other than those described in the documentation are not permitted, and nullify the liability of Beckhoff Automation GmbH & Co. KG.

1.2.2 Operator's obligation to exercise diligence

The operator must ensure that

- the TwinSAFE products are only used as intended (see chapter Product description)
- the TwinSAFE products are only operated in sound condition and in working order.
- the TwinSAFE products are operated only by suitably qualified and authorized personnel.
- the personnel is instructed regularly about relevant occupational safety and environmental protection aspects, and is familiar with the operating instructions and in particular the safety instructions contained herein.
- the operating instructions are in good condition and complete, and always available for reference at the location where the TwinSAFE products are used.
- none of the safety and warning notes attached to the TwinSAFE products are removed, and all notes remain legible.

1.2.3 Description of safety symbols

In these operating instructions the following instructions are used. These instructions must be read carefully and followed without fail!

DANGER

Serious risk of injury!

Failure to follow this safety instruction directly endangers the life and health of persons.

WARNING

Risk of injury!

Failure to follow this safety instruction endangers the life and health of persons.

CAUTION

Personal injuries!

Failure to follow this safety instruction can lead to injuries to persons.

NOTE

Damage to the environment/equipment or data loss

Failure to follow this instruction can lead to environmental damage, equipment damage or data loss.



Tip or pointer

This symbol indicates information that contributes to better understanding.

1.2.4 Documentation issue status

Version	Comment
1.4.0	<ul style="list-style-type: none">• Estimation Default value for Filter time constant added• Design of safety instructions adapted to IEC 82079-1
1.3.0	<ul style="list-style-type: none">• Foreword updated• Default values for AM801x motors added• ASCII input values removed, because not needed anymore
1.2.1	<ul style="list-style-type: none">• Certificate added
1.2.0	<ul style="list-style-type: none">• Document origin and documentation versions added• Company address amended
1.1.0	<ul style="list-style-type: none">• AM8xxx motors added
1.0.0	<ul style="list-style-type: none">• First released version

2 System description

With the integration of safety technology in the drive technology, Beckhoff consistently developed the TwinSAFE system philosophy further. TwinSAFE enables integrated automation, ranging from digital inputs and logic systems to drives or digital outputs. Simple handling, diagnostic and support functions help the user to implement the required application quickly and safely.

Significant hazards to persons arise from the dynamic movements of the electrical drive equipment of machines. The controlling of these hazards whilst achieving a smooth production flow is a big challenge.

The Beckhoff servo amplifiers from the AX5xxx series become fully-fledged safety drives with the AX5805 TwinSAFE drive option card.

The option card is able to switch the motor torque-free or to monitor speed, position and direction of rotation (in accordance with EN ISO 13849-1:2006 to PLe). No further circuits are necessary for this, such as circuit breakers or contactors in the supply lines or special external encoder systems.

This enables a very lean installation and helps to lower costs and control cabinet space. No special encoder system is required in order to implement the SDI (Safe Direction) or SLS (Safely Limited Speed) functions; all Beckhoff motors listed in the document 'AX5805 – List of permissible motors' can be used without further expenditure and without additional encoder systems for these functions. Even safe position monitoring or position range monitoring is simple to implement with the aid of the AX5805 module.

This does not result in any additional wiring, since EtherCAT communication is used in the AX5xxx basic controllers. The AX5805 TwinSAFE drive option card is a self-contained EtherCAT Slave and communicates directly via the AX controller with a TwinSAFE logic terminal existing in the network.

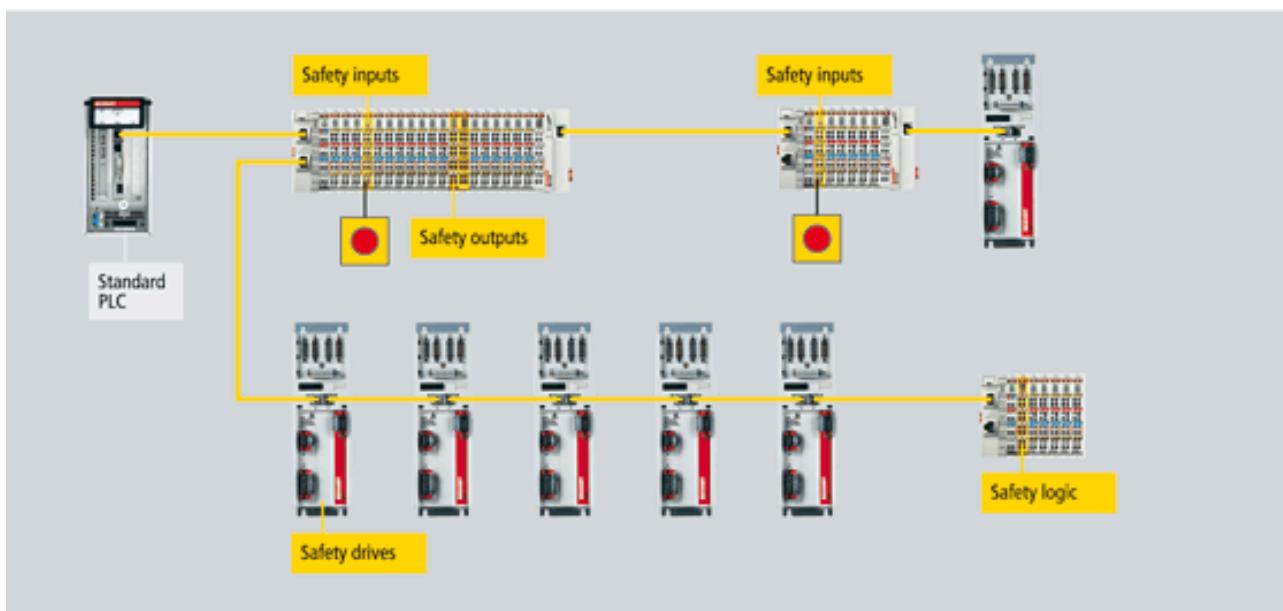


Figure 1: TwinSAFE system overview

3 Prerequisites

3.1 TwinCAT

The use of AX5805 in an AX5000 requires TwinCAT version 2.11 build 2041 or higher. The current version is always available for download from the Beckhoff website.

3.2 TwinCAT Drive Manager

The Tc Drive Manager is part of the TwinCAT installation, although it can be installed separately at any time. The current version (or a version matching the drive) is available from the drive support.

3.3 EtherCAT ESI file

Currently, a separate ESI file (AX5805-0000-0016.xml) is required for the AX5805. It is available from Beckhoff support.

From TwinCAT version 2.11 build 2046 or higher, the AX5805 will be included in the TwinCAT installation as standard. From this version, any AX5805-0000-0016.xml file that may be present in directory TwinCAT/io/EtherCAT has to be removed.

3.4 Motor string

The following tables contain the correct default values for the listed motors. The motor string can be found on the configuration tab for the AX5xxx in the TwinCAT software. In current TwinCAT versions, a distinction may be made between motor type and motor order code. In the safe parameters the motor type is entered, not the order code. In current TwinCAT versions the motor string can be entered in text form, i.e. it no longer has to be entered as an ASCII code.

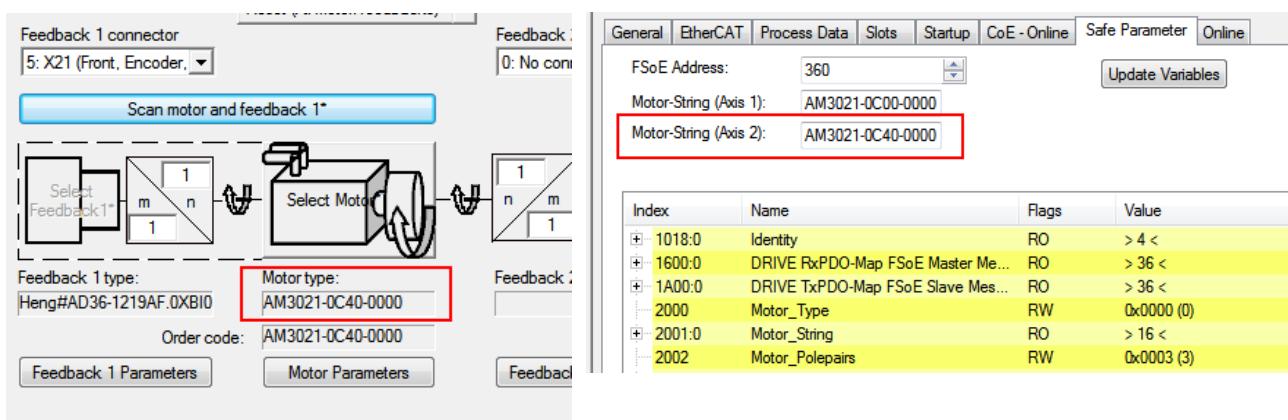


Figure 2: Motor string

Under TwinCAT 3, the settings for the motor string are entered on the alias device for the AX5805. Under the *General AX5805 Settings* tab, editing fields for Axis 1 or Axis 1 and 2 are available, depending on whether an alias device has been created for a 1-axis or 2-axis device.

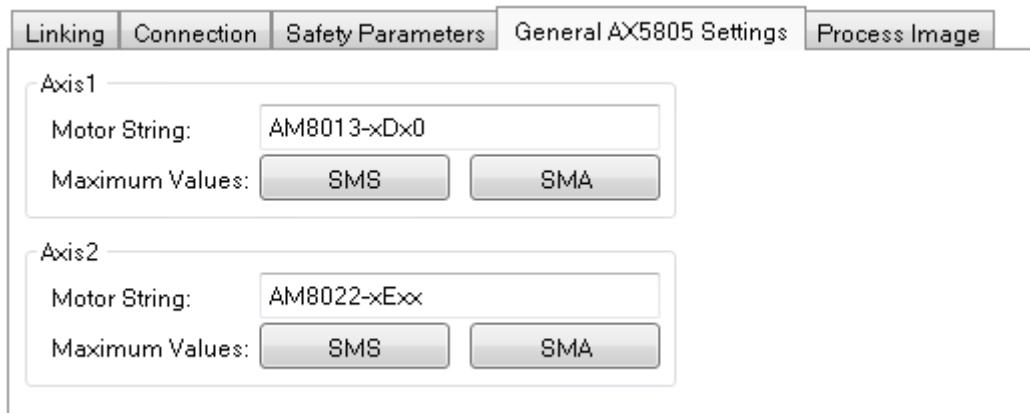


Figure 3: Motor string TwinCAT 3

4 Default values for permissible motors

NOTE

Motor default data

The specified values for the motor default data parameter may require adaptation according to the application to be implemented. Should the AX5805 issue diagnostic messages, the motor default data can be decreased or increased by 0x1000, for example (see chapter 4.6 Estimation of Motor Default Data).

⚠ CAUTION

Supported AX5000 devices!

The following motor types can be used with suitable servo drives of type AX5101 to AX5140 or AX5201 to AX5206, together with the AX5805. Other combinations are not permitted.

4.1 Motor types AM30xx

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM3011-xBxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x3028 AX5805 SW ≥ 05 0x0000
AM3011-xCxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x3028 AX5805 SW ≥ 05 0x0000
AM3011-xExx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x3028 AX5805 SW ≥ 05 0x0000
AM3012-xCxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x4028 AX5805 SW ≥ 05 0x0000
AM3012-xExx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x3028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM3013-xCxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x4028 AX5805 SW ≥ 05 0x0000
AM3013-xDxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x4028 AX5805 SW ≥ 05 0x0000
AM3021-xCxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3021-xExx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3021-xGxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3022-xCxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3022-xExx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3022-xGxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM3023-xCxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3023-xDxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3023-xExx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3023-xFxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3024-xCxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3024-xDxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3024-xExx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3024-xFxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM3031-xCxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3031-xExx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3031-xHxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3032-xCxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3032-xDxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3032-xExx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3032-xHxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3033-xCxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM3033-xExx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3033-xHxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM3041-xCxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3041-xExx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3041-xHxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3042-xCxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3042-xExx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3042-xGxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM3042-xHxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3042-xJxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3043-xExx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3043-xGxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3043-xHxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3043-xKxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3044-xExx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3044-xGxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM3044-xHxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3044-xJxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3051-xExx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3051-xGxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3051-xHxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3051-xKxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3052-xExx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3052-xGxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM3052-xHxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3052-xKxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3052-xLxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3052-xMxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3053-xGxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3053-xHxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3053-xKxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3053-xLxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM3053-xMxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3053-xPxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3054-xGxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3054-xHxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3054-xKxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3054-xLxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3054-xNxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3062-xGxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM3062-xHxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3062-xKxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3062-xMxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3062-xPxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3063-xGxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3063-xHxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3063-xKxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3063-xLxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM3063-xMxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3063-xNxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3064-xKxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3064-xLxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3064-xPxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3065-xKxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3065-xLxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3065-xMxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM3065-xNxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3065-xPxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3072-xKxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000
AM3072-xMxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000
AM3072-xPxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000
AM3072-xQxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000
AM3073-xMxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000
AM3073-xPxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM3073-xQxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000
AM3074-xLxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000
AM3074-xPxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000
AM3074-xQxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000
AM3082-xTxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x9028 AX5805 SW ≥ 05 0x0000
AM3083-xTxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x9028 AX5805 SW ≥ 05 0x0000
AM3084-xTxx-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x9028 AX5805 SW ≥ 05 0x0000

4.2 Motor types AM35xx

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM3541-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3542-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3543-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM3551-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3552-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3553-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM3562-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000
AM3563-xxxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000

4.3 Motor types AM80xx

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM8011-xBxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0xB4	0x14	AX5805 SW ≤ 04 0x3028 AX5805 SW ≥ 05 0x0000
AM8012-xCxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0xB4	0x14	AX5805 SW ≤ 04 0x4028 AX5805 SW ≥ 05 0x0000
AM8013-xDxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0xB4	0x14	AX5805 SW ≤ 04 0x4028 AX5805 SW ≥ 05 0x0000
AM8021-xBxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM8021-xDxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM8022-xDxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM8022-xExx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM8023-xExx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM8023-xFxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	3	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8031-xDxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8031-xCxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8031-xFxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8032-xExx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8032-xDxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8032-xHxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8033-xFxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM8033-xExx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8033-xJxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8041-xExx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8041-xDxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8041-xHxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM8042-xFxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8042-xExx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8042-xJxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM8043-xHxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8043-xExx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8043-xKxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8051-xGxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8051-xExx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8051-xKxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8052-xJxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8052-xFxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM8052-xLxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8053-xKxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8053-xGxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8053-xNxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8061-xJxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8061-xGxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8061-xMxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8062-xLxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM8062-xJxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000
AM8062-xPxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8063-xNxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8063-xKxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000
AM8063-xTxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8071-xNxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000
AM8072-xPxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000
AM8073-xQxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000

4.4 Motor types AM85xx

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM8531-xDxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8531-xCxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8531-xFxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8532-xExx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8532-xDxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8532-xHxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8533-xFxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8533-xExx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM8533-xJxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8541-xExx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8541-xDxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8541-xHxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x5028 AX5805 SW ≥ 05 0x0000
AM8542-xFxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8542-xExx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8542-xJxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8543-xHxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM8543-xExx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8543-xKxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8551-xGxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8551-xExx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8551-xKxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8552-xJxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8552-xFxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8552-xLxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM8553-xKxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8553-xGxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8553-xNxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8561-xJxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8561-xGxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8561-xMxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8562-xLxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8562-xJxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor Default Data
AM8562-xPxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8563-xNxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000
AM8563-xKxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000
AM8563-xTxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000

4.5 Motor types AM88xx

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor default data
AM8831-xBxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8832-xCxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8833-xDxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor default data
AM8841-xCxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8842-xDxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8843-xExx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8851-xDxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8852-xExx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x6028 AX5805 SW ≥ 05 0x0000
AM8853-xFxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	4	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8861-xExx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x7028 AX5805 SW ≥ 05 0x0000
AM8862-xFxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000

Motor	Motor type	Motor string	Number of pole pairs	Speed Compare Window	Speed Compare Violationlevel	Motor default data
AM8863-xGxx	0	TwinCAT version ≥ 2.11 R3 build 2221: Motor type in text form (see chapter 3.4)	5	0x B4	0x14	AX5805 SW ≤ 04 0x8028 AX5805 SW ≥ 05 0x0000

4.6 Estimation of Motor Default Data

As of software version 05 of the AX5805/5806 and a current AX5000, the Motor Default Data parameter can always be specified as 0x0000, as the motor nameplate is read out by the AX5000 and the relevant information is transferred to the AX5805/5806.

If no motor default data value is specified for the winding used and the user nevertheless wishes to set the motor default data unequal to 0, the value of the filter level can be estimated according to the following formula and table.

The value for parameter 0x2040 or 0x2840 consists of 2 parts. The upper nibble contains the value for the motor time constant and the lower 3 nibbles can be left at the default value of 028_{hex} or set smaller. Changing the value can improve detection at standstill and thus increase availability. The value should not be set higher than the default value (028_{hex}).

MotorDefaultData	Description
0xYZZZ	Y- filter level according to the motor time constant
0xYZZZ	ZZZ – default value 028 _{hex}

4.6.1 Filter level and motor time constant

The time constant $\tau = \frac{L}{R}$ is calculated from the winding inductance and the winding resistance. The next higher filter level should then be selected according to the result. If the results with this setting are not satisfactory, the filter level can be incremented or decremented by 1.

The data for winding inductance and resistance can be read from parameter P-0-0066 or can be found in the technical data of the motors.

P-0-0066	Electric motor model	0.45	Ohm
	Winding resistance (phase to phase)	2.10	mH

AM805x & AM855x with fan cover [+]

Electrical data	AM80xx / AM85xx								
	51F	51J	51L	52G	52K	52N	53J	53L	53P
Standstill torque* M ₀ [Nm]	6.20	6.30	6.30	10.70	10.70	9.60	15.40	15.40	13.30
Standstill current I _{0max} [A]	3.50	5.80	11.10	4.30	8.50	13.60	6.40	11.90	18.60
Maximum mechanical speed N _{max} [min ⁻¹]						9000			
Maximum rated mains voltage U _N [V _{AC}]						480			
Peak current I _{0max} [A]	12.10	20.90	37.70	17.90	33.60	60.70	26.90	50.90	89.70
Peak torque M _{0max} [Nm]	17.74	17.76	17.78	35.32	35.34	35.34	53.13	53.13	53.14
Torque constant K _{Tmax} [Nm/A]	1.77	1.09	0.57	2.48	1.30	0.72	2.42	1.29	0.73
Voltage constant K _{Erms} [mV/min]	125.0	73.00	40.00	167.0	89.00	49.00	168.0	89.00	51.00
Winding resistance Ph-Ph R ₂₀ [Ω]	11.40	3.60	1.14	8.50	2.30	0.70	5.10	1.40	0.45
Winding inductance Ph-Ph measured at 1 kHz L [mH]	42.7	14.4	4.6	36.9	10.5	3.2	23.7	6.6	2.1

Sample calculation according to the above values:

$$\tau = \frac{L}{R} = \frac{2,1mH}{0,45\Omega} = 4,67ms$$

This would select the next higher value for Motor Default Data with 0x7xxx as the first approximation.

filter level (0x2040 or 2840)	time constant τ
0x0xxx	-
0x1xxx	0,0625 ms
0x2xxx	0,1875 ms
0x3xxx	0,4375 ms
0x4xxx	0,9375 ms
0x5xxx	1,9375 ms
0x6xxx	3,9375 ms
0x7xxx	7,8750 ms
0x8xxx	15,8750 ms
0x9xxx	31,7500 ms
0xAxxx	63,5625 ms
0xBxxx	127,1875 ms
0xCxxx	254,4375 ms
0xDxxx	509,0000 ms
0xExxx	1018,0625 ms
0xFxxx	2036,0000 ms

4.7 ASCII table

Hex value	Character	Hex value	Character	Hex value	Character	Hex value	Character	Hex value	Character	Hex value	Character
0	(zero)	2E	.	5C	\	8A	è	B8	©	E6	µ
1	⌚	2F	/	5D	]	8B	í	B9	÷	E7	þ
2	❶	30	0	5E	^	8C	î	BA	||	E8	þ
3	▼	31	1	5F	_	8D	ì	BB	݂	E9	Ú
4	◆	32	2	60	`	8E	Ä	BC	݂	EA	Ù
5	♣	33	3	61	a	8F	å	BD	¢	EB	Ù
6	♠	34	4	62	b	90	É	BE	¥	EC	ý
7	•	35	5	63	c	91	æ	BF	݂	ED	Ý
8	▣	36	6	64	d	92	Æ	C0	݂	EE	-
9	○	37	7	65	e	93	ô	C1	݂	EF	'
A	▣	38	8	66	f	94	ö	C2	݂	F0	
B	♂	39	9	67	g	95	ò	C3	݂	F1	±
C	♀	3A	:	68	h	96	û	C4	—	F2	
D	♪	3B	;	69	i	97	ù	C5	+	F3	¾
E	♪	3C	<	6A	j	98	ÿ	C6	ã	F4	¶
F	☼	3D	=	6B	k	99	Ö	C7	Ā	F5	§
10	▶	3E	>	6C	l	9A	Ü	C8	܂	F6	÷
11	◀	3F		6D	m	9B	ø	C9	܂	F7	,
12	↑	40	@	6E	n	9C	£	CA	܂	F8	°
13	!!	41	A	6F	o	9D	Ø	CB	܂	F9	"
14	¶	42	B	70	p	9E	×	CC	܂	FA	.
15	§	43	C	71	q	9F	f	CD	=	FB	1
16	—	44	D	72	r	A0	á	CE	܂	FC	³
17	↑	45	E	73	s	A1	í	CF	܂	FD	²
18	↑	46	F	74	t	A2	ó	D0	ð	FE	■
19	↓	47	G	75	u	A3	ú	D1	Đ	FF	(empty)
1A	→	48	H	76	v	A4	ñ	D2	Ê		
1B	←	49	I	77	w	A5	Ñ	D3	Ë		
1C	∟	4A	J	78	x	A6	ä	D4	È		
1D	↔	4B	K	79	y	A7	ö	D5	í		
1E	▲	4C	L	7A	z	A8	¿	D6	í		
1F	▼	4D	M	7B	{	A9	®	D7	î		
20	(blank)	4E	N	7C	|	AA	¬	D8	ï		
21	!	4F	O	7D	}	AB	½	D9	݂		
22	"	50	P	7E	~	AC	¼	DA	݂		
23	#	51	Q	7F	△	AD	í	DB	■		
24	\$	52	R	80	Ç	AE	«	DC	■		
25	%	53	S	81	ü	AF	»	DD	ı		
26	&	54	T	82	é	B0	܂	DE	ì		
27		55	U	83	â	B1	܂	DF	■		
28	(	56	V	84	ä	B2	܂	E0	Ó		
29	)	57	W	85	à	B3	܂	E1	ß		
2A	*	58	X	86	å	B4	܂	E2	Ô		
2B	+	59	Y	87	ç	B5	Á	E3	Ò		
2C	,	5A	Z	88	ê	B6	Â	E4	õ		
2D	"_"	5B	[	89	ë	B7	À	E5	Ӧ		

5 Appendix

5.1 Beckhoff Support and Service

Beckhoff and their partners around the world offer comprehensive support and service, making available fast and competent assistance with all questions related to Beckhoff products and system solutions.

5.1.1 Beckhoff branches and partner companies Beckhoff Support

Please contact your Beckhoff branch office or partner company for [local support and service](#) on Beckhoff products!

The contact addresses for your country can be found in the list of Beckhoff branches and partner companies: www.beckhoff.com. You will also find further [documentation](#) for Beckhoff components there.

5.1.2 Beckhoff company headquarters

Beckhoff Automation GmbH & Co.KG
Huelshorstweg 20
33415 Verl
Germany

Phone: + 49 (0) 5246/963-0
Fax: + 49 (0) 5246/963-198
E-mail: info@beckhoff.com
Web: www.beckhoff.com

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5.2 Certificate

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ CEPTIFIКАТ ◆ CERTIFICADO ◆ CERTIFICAT



Product Service

C E R T I F I C A T E

No. Z10 18 03 62386 050

Holder of Certificate: Beckhoff Automation GmbH & Co. KG

Hülshorstweg 20
33415 Verl
GERMANY

Factory(ies): 62386

Certification Mark:



Product: Safety components

Model(s): AX5805/5806 for use in AX5000-0000-0200-Series

Parameters:
 Safety Functions:
 STO, SS1, SS2, SOS,
 SLS, SSM, SSR, SMS,
 SLP, SCA, SLI, SAR,
 SMA, SDI
 PL e, CAT 4 (EN ISO 13849)
 SIL 3 (EN 61508)
 SILCL 3 (EN 62061)

Tested according to:
 2006/42/EC
 EN ISO 13849-1:2015 (Cat.4, PL e)
 EN 61508-1:2010 (SIL 3)
 EN 61508-2:2010 (SIL 3)
 EN 61508-3:2010 (SIL 3)
 EN 61508-4:2010 (SIL 3)
 EN 62061:2005/A2:2015 (SILCL 3)
 EN 61800-5-2:2017

The product was tested on a voluntary basis and complies with the essential requirements. The certification mark shown above can be affixed on the product. It is not permitted to alter the certification mark in any way. In addition the certification holder must not transfer the certificate to third parties. See also notes overleaf.

Test report no.: BV838777

Valid until: 2023-03-26

Date, 2018-03-27

(Guido Neumann)

Page 1 of 1



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