CANopen

Reference Manual

stepIM

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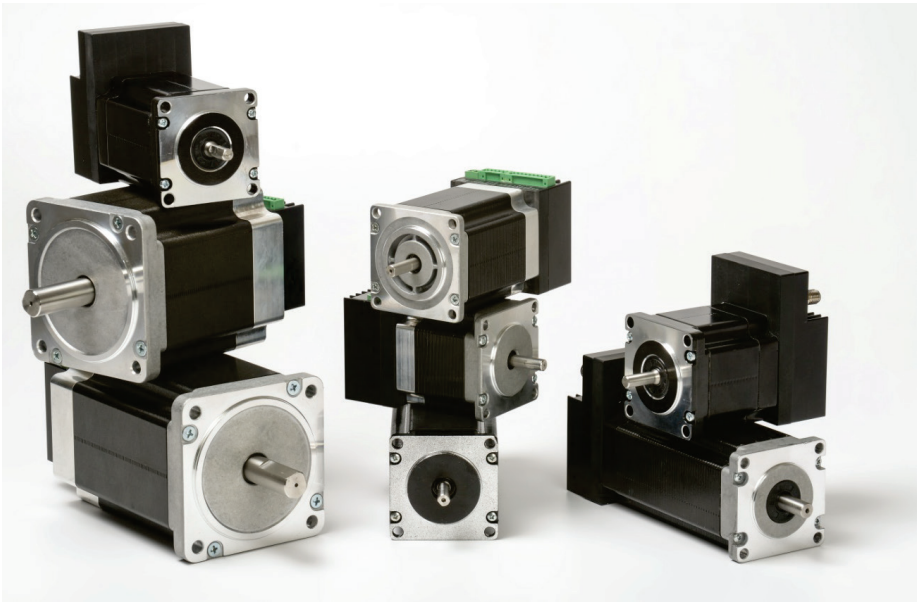

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Revision History

Document Revision	Date	Remarks
1.3	Mar. 2016	Update. Firmware 0.0.2.85
1.2	28 Feb. 2016	Update. Firmware 0.0.2.79
1.1	28 May 2015	Update. Firmware 0.0.2.35
1.0	16 Apr. 2015	Initial release. Firmware 0.0.2.28
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Firmware Revision
0.0.2.79

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Contents

1 Introduction

1.1 About This Manual

This manual describes the implementation of CiA 402 and CiA 301 CANopen protocols in the stepIM digital servo drive. This manual is not meant to replace the CANopen specifications, or to reproduce them.

This manual is intended for skilled personnel who have been trained to work with the equipment described.

1.2 Documentation Format – Object Dictionary

The CAN objects are presented and described in the following format:

0xnnnn – Example Name

Object Description

Index	nnnn
Description	Description of the object
Object Code	Variable | Array | Record
Data Type	Integer8 | Integer16 | Integer32 Unsigned8 | Unsigned16 | Unsigned32 Real32 | Visible_String PDO_COMM_PAR | PDO_MAPPING IDENTITY

Entry Description for Variable and Record Objects

Access	Read/Write| Read Only | Constant
PDO Mapping	Yes | No
Default Value	The object's default value.
Value Range	Discrete values and ranges of values.
Unit	When the object value implies units of measure, these units are specified.
Lower Limit	Lowest value in the object's ranges of values.
Upper Limit	Highest value in the object's ranges of values.

Entry Description for Array Objects

Sub-Index	nnn
Description	Description of the sub-index
Data Type	Integer8 | Integer16 | Integer32 Unsigned8 | Unsigned16 Unsigned32 | Real32 | Visible_String
Access	Read/Write| Read Only | Constant
PDO Mapping	Yes | No
Default Value	The object's default value.
Unit	When the object value implies units of measure, these units are specified.
Lower Limit	Lowest value in the object's ranges of values.
Upper Limit	Highest value in the object's ranges of values.
Value Range	Discrete values and ranges of values.

2 Communication Segment

1000h – Device Type

Object Description

Index	1000
Description	This object describes the type of the logical device and its functionality. It is comprised of a 16 bit field that describes the device profile, and a second 16 bit field that gives additional information about the specific functionality of the device.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Constant
PDO Mapping	No
Default Value	0x00020192
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

1001h – Error Register

Object Description

Index	1001
Description	This object is an error register for the device. It is a field of 8 bits, each of which indicates a particular type of error. If a bit is set to 1, the specified error has occurred. The bits have the following meaning: 0: generic error 1: current 2: voltage 3: temperature 4: communication error (overrun, error state) 5: device profile specific 6: reserved 7: manufacturer specific
Object Code	Variable
Data Type	Unsigned8

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFF

1003h – Predefined Error Field

Object Description

Index	1003
Description	This object holds errors that have occurred on the device and have been signaled via the Emergency object. It is an error history. Writing to sub-index 0 deletes the entire error history
Object Code	Array
Data Type	Unsigned32

Entry Description

Sub-Index	000
Description	Number of Errors
Access	Read/Write
PDO Mapping	No
Default Value	0
Lower Limit	0x0
Upper Limit	0xFE

Sub-Index	001
Description	Standard Error Field
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Standard Error Field
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	003
Description	Standard Error Field
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	004
Description	Standard Error Field
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	005
Description	Standard Error Field
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	006
Description	Standard Error Field
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	007
Description	Standard Error Field
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	008
Description	Standard Error Field
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	009
Description	Standard Error Field
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	010
Description	Standard Error Field
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

1005h – COB-ID SYNC

Object Description

Index	1005
Description	This object defines the COB ID of the synchronization object (SYNC). The device generates a SYNC message if bit 30 is set. The meaning of other bits is the same as for other communication objects.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x80000080
Lower Limit	0x00000001
Upper Limit	0xFFFFFFFF

1006h – Communication Cycle Period

Object Description

Index	1006
Description	This object defines the communication cycle period, in microseconds. Its value is 0 if it is not used.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No

Default Value	0x00000FA0
Unit	microseconds
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

1007h – Synchronous Window Length

Object Description

Index	1007
Description	This object contains the length of the time window for synchronous messages, in microseconds. Its value is 0 if it is not used.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x000003E8
Unit	microseconds
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

1008h – Manufacturer Device Name

Object Description

Index	1008
Description	This object contains the name of the device as given by the manufacturer.
Object Code	Variable
Data Type	Visible_String

Entry Description

Access	Constant
PDO Mapping	No
Default Value	stepIM
Lower Limit	-
Upper Limit	-

1009h – Manufacturer Hardware Version

Object Description

Index	1009
Description	This object contains the manufacturer hardware version description.
Object Code	Variable
Data Type	Visible_String

Entry Description

Access	Constant
PDO Mapping	No
Default Value	00
Lower Limit	-
Upper Limit	-

100Ah – Manufacturer Software Version

Object Description

Index	100A
Description	This object contains the manufacturer software version description.
Object Code	Variable
Data Type	Visible_String

Entry Description

Access	Constant
PDO Mapping	No
Default Value	-
Lower Limit	0
Upper Limit	0

1010h – Store Parameter Field

Object Description

Index	1010

Description	This object controls the saving of parameters in non-volatile memory. With read access, the device provides information about its save capabilities. Sub-indexes reference different groups of parameters. Sub-index 1: all parameters Parameters are saved when 0x65766173 (ASCII value of "SAVE") is written to the appropriate sub-index.
Object Code	Array
Data Type	Unsigned32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x1
Lower Limit	0x0
Upper Limit	0x7F

Sub-Index	001
Description	Save all Parameters
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

1011h – Restore Default Parameters

Object Description

Index	1011
Description	This object controls the restoring of default parameters. With read access, the device provides information about its restore capabilities. Sub-indexes reference different groups of parameters. Sub-index 1: all parameters Parameters are restored when 0x64616F6C (ASCII value of "LOAD") is written to the appropriate sub-index.
Object Code	Array
Data Type	Unsigned32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x1
Lower Limit	0x0
Upper Limit	0x7F

Sub-Index	001
Description	Restore all Default Parameters
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

1013h – High Resolution Time Stamp

Object Description

Index	1013
Description	This object contains the drives internal time at a resolution of microseconds. It can be mapped into a PDO in order to define a high resolution time stamp. It can be used to synchronize clocks of multiple drives over CANopen network as follows: map object 1013h to RPDO, a high-resolution time stamp producer transmits a time stamp over the CANopen network, and each drive adjusts its internal clock according to the value that the producer sent.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	**SDO**: Read/Write **PDO**: Read
PDO Mapping	Yes
Default Value	0x00000000
Unit	microsecond
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

1014h – COB-ID EMCY

Object Description

Index	1014
Description	This object defines the COB-ID used for the emergency message (EMCY).
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x80
Lower Limit	0x1
Upper Limit	0xFFFFFFFF

1015h – Inhibit Time Emergency

Object Description

Index	1015
Description	This object defines the inhibit time used for the emergency message. The time must be a multiple of 100 milliseconds.
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	100 millisecond (ms)
Lower Limit	0x0
Upper Limit	0xFFFF

1016h – Heartbeat Consumer Entries

Object Description

Index	1016
Description	The consumer heartbeat time defines the expected heartbeat cycle time and thus has to be higher than the corresponding producer heartbeat time configured on the device producing this heartbeat. Bits 31 - 24 of each sub-index must be 0. Bits 23 - 16 contain the node-ID. The lower 16 bits contain the heartbeat time.
Object Code	Array
Data Type	Unsigned32

Entry Description

Sub-Index	000

Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x2
Lower Limit	0x1
Upper Limit	0x7F

Sub-Index	001
Description	Consumer Heartbeat Time 1
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x2FFFFFF

Sub-Index	002
Description	Consumer Heartbeat Time 2
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0x2FFFFFF

1017h – Producer Heartbeat Time

Object Description

Index	1017
Description	This object defines the cycle time of the heartbeat. If its value is 0 it is not used. The time must be a multiple of 1 millisecond.
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x000007D0
Unit	1 millisecond (ms)
Lower Limit	0x0
Upper Limit	0xFFFF

1018h – Identity Object

Object Description

Index	1018
Description	This object contains general information about the device. Sub-index 1 contains a unique value allocated each manufacturer. Sub-index 2 defines the manufacturer specific product code (device version). Sub-index 3 defines the revision number. Bit 31-16 is the major revision number Bit 15-0 the minor revision number. Sub-index 4 defines a manufacturer specific serial number.

Object Code	Record
Data Type	IDENTITY

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x4
Lower Limit	0x1
Upper Limit	0x4

Sub-Index	001
Description	Vendor Id
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x02e1
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Product Code
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0xA5A5
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	003
Description	Revision number
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	004
Description	Serial number
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

1200h – Server SDO Parameter 1

Object Description

Index	1200
Description	The object contains the parameters for the SDOs for which the device is the server.
Object Code	Record
Data Type	SDO_PARAMETER

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x02
Lower Limit	0x02
Upper Limit	0x02

Sub-Index	001
Description	COB-ID Client -> Server
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x00000600
Lower Limit	0x00000600
Upper Limit	0xBFFFFFFF

Sub-Index	002
Description	COB-ID Server -> Client
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x00000580
Lower Limit	0x00000580
Upper Limit	0xBFFFFFFF

1400h – Receive PDO Communication Parameter 1

Object Description

Index	1400
Description	The object contains the communication parameters for the PDOs that the device is able to receive. Sub-index 0 defines the number of PDO-parameters implemented. Sub-index 1 defines the COB-ID. If bit 31 is set, the PDO is disabled. Sub-index 2 defines the transmission type.
Object Code	Record
Data Type	PDO_COMM_PAR

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x02
Lower Limit	0x2
Upper Limit	0x5

Sub-Index	001
Description	COB-ID
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x200
Lower Limit	0x1
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Transmission Type
Data Type	Unsigned8
Access	Read/Write
PDO Mapping	No
Default Value	0x1
Lower Limit	0x0
Upper Limit	0xFF

1401h – Receive PDO Communication Parameter 2

Object Description

Index	1401
Description	The object contains the communication parameters for the PDOs that the device is able to receive. Sub-index 0 defines the number of PDO-parameters implemented. Sub-index 1 defines the COB-ID. If bit 31 is set, the PDO is disabled. Sub-index 2 defines the transmission type.
Object Code	Record
Data Type	PDO_COMM_PAR

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x02
Lower Limit	0x02
Upper Limit	0x05

Sub-Index	001
Description	COB-ID
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000300
Lower Limit	0x00000001
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Transmission Type
Data Type	Unsigned8
Access	Read/Write
PDO Mapping	No
Default Value	0x1
Lower Limit	0x00
Upper Limit	0xFF

1402h – Receive PDO Communication Parameter 3

Object Description

Index	1402
Description	The object contains the communication parameters for the PDOs that the device is able to receive. Sub-index 0 defines the number of PDO-parameters implemented. Sub-index 1 defines the COB-ID. If bit 31 is set, the PDO is disabled. Sub-index 2 defines the transmission type.
Object Code	Record
Data Type	PDO_COMM_PAR

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x02
Lower Limit	0x02
Upper Limit	0x05

Sub-Index	001
Description	COB-ID
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000400
Lower Limit	0x00000001
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Transmission Type
Data Type	Unsigned8
Access	Read/Write
PDO Mapping	No
Default Value	0x1
Lower Limit	0x00
Upper Limit	0xFF

1403h – Receive PDO Communication Parameter 4

Object Description

Index	1403
Description	The object contains the communication parameters for the PDOs that the device is able to receive. Sub-index 0 defines the number of PDO-parameters implemented. Sub-index 1 defines the COB-ID. If bit 31 is set, the PDO is disabled. Sub-index 2 defines the transmission type.
Object Code	Record
Data Type	PDO_COMM_PAR

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x02
Lower Limit	0x02
Upper Limit	0x05

Sub-Index	001
Description	COB-ID
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000500
Lower Limit	0x00000001
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Transmission Type
Data Type	Unsigned8
Access	Read/Write
PDO Mapping	No
Default Value	0xFF
Lower Limit	0x00
Upper Limit	0xFF

1404h – Receive PDO Communication Parameter 5

Object Description

Index	1404
Description	The object contains the communication parameters for the PDOs that the device is able to receive. Sub-index 0 defines the number of PDO-parameters implemented. Sub-index 1 defines the COB-ID. If bit 31 is set, the PDO is disabled. Sub-index 2 defines the transmission type.
Object Code	Record
Data Type	PDO_COMM_PAR

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x02
Lower Limit	0x02
Upper Limit	0x05

Sub-Index	001
Description	COB-ID
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000500
Lower Limit	0x00000001
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Transmission Type
Data Type	Unsigned8
Access	Read/Write
PDO Mapping	No
Default Value	0xFF
Lower Limit	0x00
Upper Limit	0xFF

1405h – Receive PDO Communication Parameter 6

Object Description

Index	1405
Description	The object contains the communication parameters for the PDOs that the device is able to receive. Sub-index 0 defines the number of PDO-parameters implemented. Sub-index 1 defines the COB-ID. If bit 31 is set, the PDO is disabled. Sub-index 2 defines the transmission type.
Object Code	Record
Data Type	PDO_COMM_PAR

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x02
Lower Limit	0x02
Upper Limit	0x05

Sub-Index	001
Description	COB-ID
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000500
Lower Limit	0x00000001
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Transmission Type
Data Type	Unsigned8
Access	Read/Write
PDO Mapping	No
Default Value	0xFF
Lower Limit	0x00
Upper Limit	0xFF

1406h – Receive PDO Communication Parameter 7

Object Description

Index	1406
Description	The object contains the communication parameters for the PDOs that the device is able to receive. Sub-index 0 defines the number of PDO-parameters implemented. Sub-index 1 defines the COB-ID. If bit 31 is set, the PDO is disabled. Sub-index 2 defines the transmission type.
Object Code	Record
Data Type	PDO_COMM_PAR

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x02
Lower Limit	0x02
Upper Limit	0x05

Sub-Index	001
Description	COB-ID
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000500
Lower Limit	0x00000001
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Transmission Type
Data Type	Unsigned8
Access	Read/Write
PDO Mapping	No
Default Value	0xFF
Lower Limit	0x00
Upper Limit	0xFF

1407h – Receive PDO Communication Parameter 8

Object Description

Index	1407
Description	The object contains the communication parameters for the PDOs that the device is able to receive. Sub-index 0 defines the number of PDO-parameters implemented. Sub-index 1 defines the COB-ID. If bit 31 is set, the PDO is disabled. Sub-index 2 defines the transmission type.
Object Code	Record
Data Type	PDO_COMM_PAR

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x02
Lower Limit	0x02
Upper Limit	0x05

Sub-Index	001
Description	COB-ID
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000500
Lower Limit	0x00000001
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Transmission Type
Data Type	Unsigned8
Access	Read/Write
PDO Mapping	No
Default Value	0xFF
Lower Limit	0x00
Upper Limit	0xFF

1600h – Receive PDO Mapping Parameter 1

Object Description

Index	1600
Description	This object contains the mapping for the PDOs the device is able to receive. Sub-index 0 defines the number of valid entries in the mapping record. This Number of entries is also the number of the application variables that are received with the corresponding PDO. Sub-indexes 1 to number of mapped entries contain information about the mapped application variables. These entries describe the PDO contents by their index, sub-index and length. All three values are hexadecimal coded. The length entry defines the length of the object in bits.
Object Code	Record
Data Type	PDO_MAPPING

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read/Write
PDO Mapping	No
Default Value	0x02
Lower Limit	0x0
Upper Limit	0x40

Sub-Index	001
Description	Mapping Entry 1
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x60400010
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Mapping Entry 2
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x60600008
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	003
Description	Mapping Entry 3
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	004
Description	Mapping Entry 4
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

1601h – Receive PDO Mapping Parameter 2

Object Description

Index	1601
Description	This object contains the mapping for the PDOs the device is able to receive. Sub-index 0 defines the number of valid entries in the mapping record. This Number of entries is also the number of the application variables that are received with the corresponding PDO. Sub-indexes 1 to number of mapped entries contain information about the mapped application variables. These entries describe the PDO contents by their index, sub-index and length. All three values are hexadecimal coded. The length entry defines the length of the object in bits.
Object Code	Record
Data Type	PDO_MAPPING

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read/Write
PDO Mapping	No
Default Value	0x02
Lower Limit	0x0
Upper Limit	0x40

Sub-Index	001
Description	Mapping Entry 1
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x607A0020
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Mapping Entry 2
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x60810020
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	003
Description	Mapping Entry 3
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	004
Description	Mapping Entry 4
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

1602h – Receive PDO Mapping Parameter 3

Object Description

Index	1602
Description	This object contains the mapping for the PDOs the device is able to receive. Sub index 0 defines the number of valid entries in the mapping record. This Number of entries is also the number of the application variables that are received with the corresponding PDO. Sub indexes 1 to number of mapped entries contain information about the mapped application variables. These entries describe the PDO contents by their index, sub index and length. All three values are hexadecimal coded. The length entry defines the length of the object in bits.
Object Code	Record
Data Type	PDO_MAPPING

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read/Write
PDO Mapping	No
Default Value	0x02
Lower Limit	0x0
Upper Limit	0x40

Sub-Index	001
Description	Mapping Entry 1
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x60710010
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Mapping Entry 2
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x60FF0020
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	003
Description	Mapping Entry 3
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	004
Description	Mapping Entry 4
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

1603h – Receive PDO Mapping Parameter 4

Object Description

Index	1603
Description	This object contains the mapping for the PDOs the device is able to receive. Sub-index 0 defines the number of valid entries in the mapping record. This Number of entries is also the number of the application variables that are received with the corresponding PDO. Sub-indexes 1 to number of mapped entries contain information about the mapped application variables. These entries describe the PDO contents by their index, sub-index and length. All three values are hexadecimal coded. The length entry defines the length of the object in bits.
Object Code	Record
Data Type	PDO_MAPPING

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read/Write
PDO Mapping	No
Default Value	0x01
Lower Limit	0x0
Upper Limit	0x40

Sub-Index	001
Description	Mapping Entry 1
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x20070020
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Mapping Entry 2
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	003
Description	Mapping Entry 3
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	004
Description	Mapping Entry 4
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

1604h – Receive PDO Mapping Parameter 5

Object Description

Index	1604
Description	This object contains the mapping for the PDOs the device is able to receive. Sub-index 0 defines the number of valid entries in the mapping record. This Number of entries is also the number of the application variables that are received with the corresponding PDO. Sub-indexes from 1 to the number of mapped entries contain information about the mapped application variables. These entries describe the PDO contents by their index, sub-index and length. All three values are hexadecimal coded. The length entry defines the length of the object in bits.
Object Code	Record
Data Type	PDO_MAPPING

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read/Write
PDO Mapping	No
Default Value	0x00
Lower Limit	0x0
Upper Limit	0x40

Sub-Index	001
Description	Mapping Entry 1
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Mapping Entry 2
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	003
Description	Mapping Entry 3
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	004
Description	Mapping Entry 4
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

1605h – Receive PDO Mapping Parameter 6

Object Description

Index	1605
Description	This object contains the mapping for the PDOs the device is able to receive. Sub-index 0 defines the number of valid entries in the mapping record. This Number of entries is also the number of the application variables that are received with the corresponding PDO. Sub-indexes from 1 to the number of mapped entries contain information about the mapped application variables. These entries describe the PDO contents by their index, sub-index and length. All three values are hexadecimal coded. The length entry defines the length of the object in bits.
Object Code	Record
Data Type	PDO_MAPPING

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read/Write
PDO Mapping	No
Default Value	0x00
Lower Limit	0x0
Upper Limit	0x40

Sub-Index	001
Description	Mapping Entry 1
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Mapping Entry 2
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	003
Description	Mapping Entry 3
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	004
Description	Mapping Entry 4
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

1606h – Receive PDO Mapping Parameter 7

Object Description

Index	1606
Description	This object contains the mapping for the PDOs the device is able to receive. Sub-index 0 defines the number of valid entries in the mapping record. This Number of entries is also the number of the application variables that are received with the corresponding PDO. Sub-indexes from 1 to the number of mapped entries contain information about the mapped application variables. These entries describe the PDO contents by their index, sub-index and length. All three values are hexadecimal coded. The length entry defines the length of the object in bits.
Object Code	Record
Data Type	PDO_MAPPING

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read/Write
PDO Mapping	No
Default Value	0x00
Lower Limit	0x0
Upper Limit	0x40

Sub-Index	001
Description	Mapping Entry 1
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Mapping Entry 2
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	003
Description	Mapping Entry 3
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	004
Description	Mapping Entry 4
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

1607h – Receive PDO Mapping Parameter 8

Object Description

Index	1607
Description	This object contains the mapping for the PDOs the device is able to receive. Sub-index 0 defines the number of valid entries in the mapping record. This Number of entries is also the number of the application variables that are received with the corresponding PDO. Sub-indexes from 1 to the number of mapped entries contain information about the mapped application variables. These entries describe the PDO contents by their index, sub-index and length. All three values are hexadecimal coded. The length entry defines the length of the object in bits.
Object Code	Record
Data Type	PDO_MAPPING

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read/Write
PDO Mapping	No
Default Value	0x00
Lower Limit	0x0
Upper Limit	0x40

Sub-Index	001
Description	Mapping Entry 1
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Mapping Entry 2
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	003
Description	Mapping Entry 3
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	004
Description	Mapping Entry 4
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

1800h – Transmit PDO Communication Parameter 1

Object Description

Index	1800
Description	Contains the communication parameters of the current PDO the device is able to transmit. Sub-index 0 defines the number of PDO parameters implemented. Sub-index 1 describes the COB ID. If bit 31 is set, the PDO is disabled. Sub-index 2 defines the transmission type.
Object Code	Record
Data Type	PDO_COMM_PAR

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x03
Lower Limit	0x02
Upper Limit	0x06

Sub-Index	001
Description	COB-ID
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x180
Lower Limit	0x1
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Transmission Type
Data Type	Unsigned8
Access	Read/Write
PDO Mapping	No
Default Value	0xFF
Lower Limit	0x0
Upper Limit	0xFF

Sub-Index	003
Description	Inhibit Time
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x7D0
Unit	100 us
Lower Limit	0x0000
Upper Limit	0xFFFF

1801h – Transmit PDO Communication Parameter 2

Object Description

Index	1801
Description	Contains the communication parameters of the current PDO the device is able to transmit. Sub-index 0 defines the number of PDO parameters implemented. Sub-index 1 describes the COB ID. If bit 31 is set, the PDO is disabled. Sub-index 2 defines the transmission type.
Object Code	Record
Data Type	PDO_COMM_PAR

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x03
Lower Limit	0x02
Upper Limit	0x06

Sub-Index	001
Description	COB-ID
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000280
Lower Limit	0x00000001
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Transmission Type
Data Type	Unsigned8
Access	Read/Write
PDO Mapping	No
Default Value	0xFF
Lower Limit	0x00
Upper Limit	0xFF

Sub-Index	003
Description	Inhibit Time
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x7D0
Unit	100 us
Lower Limit	0x0000
Upper Limit	0xFFFF

1802h – Transmit PDO Communication Parameter 3

Object Description

Index	1802
Description	Contains the communication parameters of the current PDO the device is able to transmit. Sub-index 0 defines the number of PDO parameters implemented. Sub-index 1 describes the COB ID. If bit 31 is set, the PDO is disabled. Sub-index 2 defines the transmission type.
Object Code	Record
Data Type	PDO_COMM_PAR

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x03
Lower Limit	0x02
Upper Limit	0x06

Sub-Index	001
Description	COB-ID
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000380
Lower Limit	0x00000001
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Transmission Type
Data Type	Unsigned8
Access	Read/Write
PDO Mapping	No
Default Value	0xFF
Lower Limit	0x00
Upper Limit	0xFF

Sub-Index	003
Description	Inhibit Time
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x7D0
Unit	100 us
Lower Limit	0x0000
Upper Limit	0xFFFF

1803h – Transmit PDO Communication Parameter 4

Object Description

Index	1803
Description	Contains the communication parameters of the current PDO the device is able to transmit. Sub-index 0 defines the number of PDO parameters implemented. Sub-index 1 describes the COB ID. If bit 31 is set, the PDO is disabled. Sub-index 2 defines the transmission type.
Object Code	Record
Data Type	PDO_COMM_PAR

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x03
Lower Limit	0x02
Upper Limit	0x06

Sub-Index	001
Description	COB-ID
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000480
Lower Limit	0x00000001
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Transmission Type
Data Type	Unsigned8
Access	Read/Write
PDO Mapping	No
Default Value	0xFF
Lower Limit	0x00
Upper Limit	0xFF

Sub-Index	003
Description	Inhibit Time
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x7D0
Unit	100 us
Lower Limit	0x0000
Upper Limit	0xFFFF

1804h – Transmit PDO Communication Parameter 5

Object Description

Index	1804
Description	Contains the communication parameters of the current PDO the device is able to transmit. Sub-index 0 defines the number of PDO parameters implemented. Sub-index 1 describes the COB ID. If bit 31 is set, the PDO is disabled. Sub-index 2 defines the transmission type.
Object Code	Record
Data Type	PDO_COMM_PAR

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x03
Lower Limit	0x02
Upper Limit	0x06

Sub-Index	001
Description	COB-ID
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000480
Lower Limit	0x00000001
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Transmission Type
Data Type	Unsigned8
Access	Read/Write
PDO Mapping	No
Default Value	0xFF
Lower Limit	0x00
Upper Limit	0xFF

Sub-Index	003
Description	Inhibit Time
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x7D0
Unit	100 us
Lower Limit	0x0000
Upper Limit	0xFFFF

1805h – Transmit PDO Communication Parameter 6

Object Description

Index	1805
Description	Contains the communication parameters of the current PDO the device is able to transmit. Sub-index 0 defines the number of PDO parameters implemented. Sub-index 1 describes the COB ID. If bit 31 is set, the PDO is disabled. Sub-index 2 defines the transmission type.
Object Code	Record
Data Type	PDO_COMM_PAR

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x03
Lower Limit	0x02
Upper Limit	0x06

Sub-Index	001
Description	COB-ID
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000480
Lower Limit	0x00000001
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Transmission Type
Data Type	Unsigned8
Access	Read/Write
PDO Mapping	No
Default Value	0xFF
Lower Limit	0x00
Upper Limit	0xFF

Sub-Index	003
Description	Inhibit Time
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x7D0
Unit	100 us
Lower Limit	0x0000
Upper Limit	0xFFFF

1806h – Transmit PDO Communication Parameter 7

Object Description

Index	1806
Description	Contains the communication parameters of the current PDO the device is able to transmit. Sub-index 0 defines the number of PDO parameters implemented. Sub-index 1 describes the COB ID. If bit 31 is set, the PDO is disabled. Sub-index 2 defines the transmission type.
Object Code	Record
Data Type	PDO_COMM_PAR

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x03
Lower Limit	0x02
Upper Limit	0x06

Sub-Index	001
Description	COB-ID
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000480
Lower Limit	0x00000001
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Transmission Type
Data Type	Unsigned8
Access	Read/Write
PDO Mapping	No
Default Value	0xFF
Lower Limit	0x00
Upper Limit	0xFF

Sub-Index	003
Description	Inhibit Time
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x7D0
Unit	100 us
Lower Limit	0x0000
Upper Limit	0xFFFF

1807h – Transmit PDO Communication Parameter 8

Object Description

Index	1807
Description	Contains the communication parameters of the current PDO the device is able to transmit. Sub-index 0 defines the number of PDO parameters implemented. Sub-index 1 describes the COB ID. If bit 31 is set, the PDO is disabled. Sub-index 2 defines the transmission type.
Object Code	Record
Data Type	PDO_COMM_PAR

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x03
Lower Limit	0x02
Upper Limit	0x06

Sub-Index	001
Description	COB-ID
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000480
Lower Limit	0x00000001
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Transmission Type
Data Type	Unsigned8
Access	Read/Write
PDO Mapping	No
Default Value	0xFF
Lower Limit	0x00
Upper Limit	0xFF

Sub-Index	003
Description	Inhibit Time
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x7D0
Unit	100 us
Lower Limit	0x0000
Upper Limit	0xFFFF

1A00h – Transmit PDO Mapping Parameter 1

Object Description

Index	1A00
Description	Contains the mapping for the PDOs the device is able to transmit. Sub-index 0 defines the number of valid entries in the mapping record. This Number of entries is also the number of the application variables that are transmitted with the corresponding PDO. Sub-indexes 1 to Number of entries: Contain information about the mapped application variables. These entries describe the PDO contents by their index, sub-index and length. All three values are hexadecimal coded. The length entry defines the length of the object in bits. The type of the PDO mapping parameter is at index 21h. This parameter can be used to verify the overall mapping length. It is mandatory.
Object Code	Record
Data Type	PDO_MAPPING

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read/Write
PDO Mapping	No
Default Value	0x02
Lower Limit	0x0
Upper Limit	0xFF

Sub-Index	001
Description	Mapping Entry 1
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x60410010
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Mapping Entry 2
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x60610008
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	003
Description	Mapping Entry 3
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	004
Description	Mapping Entry 4
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

1A01h – Transmit PDO Mapping Parameter 2

Object Description

Index	1A01
Description	Contains the mapping for the PDOs the device is able to transmit. Sub-index 0 defines the number of valid entries in the mapping record. This Number of entries is also the number of the application variables that are transmitted with the corresponding PDO. Sub-indexes 1 to Number of entries: Contain information about the mapped application variables. These entries describe the PDO contents by their index, sub-index and length. All three values are hexadecimal coded. The length entry defines the length of the object in bits. The type of the PDO mapping parameter is at index 21h. This parameter can be used to verify the overall mapping length. It is mandatory.
Object Code	Record
Data Type	PDO_MAPPING

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read/Write
PDO Mapping	No
Default Value	0x02
Lower Limit	0x0
Upper Limit	0xFF

Sub-Index	001
Description	Mapping Entry 1
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x60640020
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Mapping Entry 2
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x606C0020
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	003
Description	Mapping Entry 3
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	004
Description	Mapping Entry 4
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

1A02h – Transmit PDO Mapping Parameter 3

Object Description

Index	1A02
Description	Contains the mapping for the PDOs the device is able to transmit. Sub-index 0 defines the number of valid entries in the mapping record. This Number of entries is also the number of the application variables that are transmitted with the corresponding PDO. Sub-indexes 1 to Number of entries: Contain information about the mapped application variables. These entries describe the PDO contents by their index, sub-index and length. All three values are hexadecimal coded. The length entry defines the length of the object in bits. The type of the PDO mapping parameter is at index 21h. This parameter can be used to verify the overall mapping length. It is mandatory.
Object Code	Record
Data Type	PDO_MAPPING

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read/Write
PDO Mapping	No
Default Value	0x03
Lower Limit	0x0
Upper Limit	0xFF

Sub-Index	001
Description	Mapping Entry 1
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x60780010
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Mapping Entry 2
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x60740010
Lower Limit	-
Upper Limit	-

Sub-Index	003
Description	Mapping Entry 3
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x606B0020
Lower Limit	-
Upper Limit	-

Sub-Index	004
Description	Mapping Entry 4
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	-
Upper Limit	-

1A03h – Transmit PDO Mapping Parameter 4

Object Description

Index	1A03
Description	Contains the mapping for the PDOs the device is able to transmit. Sub-index 0 defines the number of valid entries in the mapping record. This Number of entries is also the number of the application variables that are transmitted with the corresponding PDO. Sub-indexes 1 to Number of entries: Contain information about the mapped application variables. These entries describe the PDO contents by their index, sub-index and length. All three values are hexadecimal coded. The length entry defines the length of the object in bits. The type of the PDO mapping parameter is at index 21h. This parameter can be used to verify the overall mapping length. It is mandatory.
Object Code	Record
Data Type	PDO_MAPPING

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read/Write
PDO Mapping	No
Default Value	0x01
Lower Limit	0x0
Upper Limit	0xFF

Sub-Index	001
Description	Mapping Entry 1
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x60FA0020
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Mapping Entry 2
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x60F40020
Lower Limit	-
Upper Limit	-

Sub-Index	003
Description	Mapping Entry 3
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	-
Upper Limit	-

Sub-Index	004
Description	Mapping Entry 4
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	-
Upper Limit	-

1A04h – Transmit PDO Mapping Parameter 5

Object Description

Index	1A04
Description	Contains the mapping for the PDOs the device is able to transmit. Sub-index 0 defines the number of valid entries in the mapping record. This Number of entries is also the number of the application variables that are transmitted with the corresponding PDO. Sub-indexes 1 to Number of entries: Contain information about the mapped application variables. These entries describe the PDO contents by their index, sub-index and length. All three values are hexadecimal coded. The length entry defines the length of the object in bits. The type of the PDO mapping parameter is at index 21h. This parameter can be used to verify the overall mapping length. It is mandatory.
Object Code	Record
Data Type	PDO_MAPPING

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read/Write
PDO Mapping	No
Default Value	0x00
Lower Limit	0x0
Upper Limit	0xFF

Sub-Index	001
Description	Mapping Entry 1
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Mapping Entry 2
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	003
Description	Mapping Entry 3
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	-
Upper Limit	-

Sub-Index	004
Description	Mapping Entry 4
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	-
Upper Limit	-

1A05h – Transmit PDO Mapping Parameter 6

Object Description

Index	1A05
Description	Contains the mapping for the PDOs the device is able to transmit. Sub-index 0 defines the number of valid entries in the mapping record. This Number of entries is also the number of the application variables that are transmitted with the corresponding PDO. Sub-indexes 1 to Number of entries: Contain information about the mapped application variables. These entries describe the PDO contents by their index, sub-index and length. All three values are hexadecimal coded. The length entry defines the length of the object in bits. The type of the PDO mapping parameter is at index 21h. This parameter can be used to verify the overall mapping length. It is mandatory.
Object Code	Record
Data Type	PDO_MAPPING

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read/Write
PDO Mapping	No
Default Value	0x00
Lower Limit	0x0
Upper Limit	0xFF

Sub-Index	001
Description	Mapping Entry 1
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Mapping Entry 2
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	-
Upper Limit	-

Sub-Index	003
Description	Mapping Entry 3
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	-
Upper Limit	-

Sub-Index	004
Description	Mapping Entry 4
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	-
Upper Limit	-

1A06h – Transmit PDO Mapping Parameter 7

Object Description

Index	1A06
Description	Contains the mapping for the PDOs the device is able to transmit. Sub-index 0 defines the number of valid entries in the mapping record. This Number of entries is also the number of the application variables that are transmitted with the corresponding PDO. Sub-indexes 1 to Number of entries: Contain information about the mapped application variables. These entries describe the PDO contents by their index, sub-index and length. All three values are hexadecimal coded. The length entry defines the length of the object in bits. The type of the PDO mapping parameter is at index 21h. This parameter can be used to verify the overall mapping length. It is mandatory.
Object Code	Record
Data Type	PDO_MAPPING

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read/Write
PDO Mapping	No
Default Value	0x00
Lower Limit	0x0
Upper Limit	0xFF

Sub-Index	001
Description	Mapping Entry 1
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Mapping Entry 2
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	-
Upper Limit	-

Sub-Index	003
Description	Mapping Entry 3
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	-
Upper Limit	-

Sub-Index	004
Description	Mapping Entry 4
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	-
Upper Limit	-

1A07h – Transmit PDO Mapping Parameter 8

Object Description

Index	1A07
Description	Contains the mapping for the PDOs the device is able to transmit. Sub-index 0 defines the number of valid entries in the mapping record. This Number of entries is also the number of the application variables that are transmitted with the corresponding PDO. Sub-indexes 1 to Number of entries: Contain information about the mapped application variables. These entries describe the PDO contents by their index, sub-index and length. All three values are hexadecimal coded. The length entry defines the length of the object in bits. The type of the PDO mapping parameter is at index 21h. This parameter can be used to verify the overall mapping length. It is mandatory.
Object Code	Record
Data Type	PDO_MAPPING

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read/Write
PDO Mapping	No
Default Value	0x00
Lower Limit	0x0
Upper Limit	0xFF

Sub-Index	001
Description	Mapping Entry 1
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Mapping Entry 2
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	-
Upper Limit	-

Sub-Index	003
Description	Mapping Entry 3
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	-
Upper Limit	-

Sub-Index	004
Description	Mapping Entry 4
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x00000000
Lower Limit	-
Upper Limit	-

3 Manufacturer Segment

2006h – Current Integral Gain

Object Description

Index	2006
Description	This object indicates the current controller integral gain.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0x7D0
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

2007h – Current Proportional Gain

Object Description

Index	2007
Description	This object indicates the current controller proportional gain.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0x9C40
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

2011h – Warning bits

Object Description

Index	2011
Description	This object logs the drive warnings. To clear the warnings, set fault reset bit (#7) in Controlword. The bits have the following meaning: bit 1: CW limit switch on bit 2: CCW limit switch on bit 3: Encoder sensor detected disturbance in the force
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x00
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

201Eh – Position Derivative Gain

Object Description

Index	201E
Description	This object indicates the position derivative gain.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

2020h – Position Integral Gain

Object Description

Index	2020
Description	This object indicates the position integral gain.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

2022h – Position Proportional Gain

Object Description

Index	2022
Description	This object indicates the position proportional gain.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x2710
Unit	RPM/100/Encoder Counts/2^16
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

2023h – Position Velocity Feedforward Gain

Object Description

Index	2023
Description	This object indicates the velocity feed forward gain.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x100
Unit	RPM/256
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

2026h – Velocity Integral Gain

Object Description

Index	2026
Description	This object indicates the velocity integral gain.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x5
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0x1000000

2027h – Velocity Proportional Gain

Object Description

Index	2027
Description	This object indicates the velocity proportional gain.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x1388
Unit	mA/(RPM/100) /2^16
Lower Limit	0x0
Upper Limit	0x1000000

2028h – Mechanical Position

Object Description

Index	2028

Description	This object indicates the mechanical angle position in 16-bit resolution. It gets the position (angle) of the motor shaft within one mechanical motor revolution. The mechanical angle position increments from 0 to 65535 in the course of one mechanical motor shaft revolution (360 degrees). The range of the mechanical angle position does not change. Its resolution is dependent upon the feedback device resolution. (mechanical angle position)/65535 * 360 = Angle [degrees]
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0
Unit	360/2^16 deg
Lower Limit	0x0
Upper Limit	0xFFFF

2033h – I2T Value

Object Description

Index	2033
Description	This object indicates the current I2T value. It is calculated by integrating [actual current (object 6078h) - rated current (object 6075h)] to the second power, over time. Fault condition occurs when the I2T value (object 2033h) exceeds I2T Fault Threshold (object 2034h)
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0
Unit	ampere^2*millisecond(ms)
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

2034h – I2T Fault Threshold

Object Description

Index	2034
Description	This object indicates the threshold for I2T fault. Setting it to zero disables this function.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	ampere^2*millisecond(ms)
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

2036h – Peak Current

Object Description

Index	2036
Description	This object indicates the peak rated current.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x1770
Unit	milliampere
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

2043h – Commutation Offset

Object Description

Index	2043
Description	This object indicates the encoder phase relative to the standard commutation table.
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x5A
Unit	Degree
Lower Limit	0x0
Upper Limit	0x168

2044h – Drive Temperature

This object indicates the temperature of the drive electronics board (Celsius degrees).

Object Description

Index	2044
Description	Drive Temperature
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x0000
Unit	degree Celsius
Lower Limit	0x8000
Upper Limit	0x7FFF

2045h – Feedback Direction

Object Description

Index	2045
Description	This object indicates the feedback positive direction. 1 = CW is considered positive 0 = CCW is considered positive
Object Code	Variable
Data Type	Integer8

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x01
Unit	Not Applicable
Lower Limit	0x00
Upper Limit	0x01

204Ch – Factory Restore

Object Description

Index	204C
Description	This object restores all configuration variables to factory default settings. Writing 0x64616F6C (ASCII "load") initiates the factory restore command.

Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

204Dh – Feedback Type

Object Description

Index	204D
Description	This object indicates the type of motor feedback. 1 = Absolute single turn encoder
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x1
Unit	Not Applicable
Lower Limit	0x1
Upper Limit	0x1

2070h – Digital Inputs Polarity

Object Description

Index	2070
Description	This object inverts the polarity of each digital input. 0 = Polarity inverted 1 = Polarity not inverted
Object Code	Array
Data Type	Unsigned16

Entry Description

Sub-Index	000
Description	Number of entries

Access	Read Only
PDO Mapping	No
Default Value	0x4
Lower Limit	0x0
Upper Limit	0x4

Sub-Index	001
Description	Polarity of Input Number 1
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x1
Lower Limit	0x0
Upper Limit	0x1

Sub-Index	002
Description	Polarity of Input Number 2
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x1
Lower Limit	0x0
Upper Limit	0x1

Sub-Index	003
Description	Polarity of Input Number 3
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x1
Lower Limit	0x0
Upper Limit	0x1

Sub-Index	004
Description	Polarity of Input Number 4
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x1
Lower Limit	0x0
Upper Limit	0x1

2072h – Phase A Actual Current

Object Description

Index	2072
Description	This object indicates the actual current at phase A.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0000
Unit	milliampere
Lower Limit	0x8000
Upper Limit	0x7FFF

2073h – Phase A Current Offset 1

Object Description

Index	2073
Description	This object indicates the current offset of phase A.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0xF801
Unit	milliampere
Lower Limit	0x8000

Upper Limit	0x7FFF

2074h – Phase B Actual Current

Object Description

Index	2074
Description	This object indicates the actual current at phase B.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0000
Unit	milliampere
Lower Limit	0x8000
Upper Limit	0x7FFF

2075h – Phase B Current Offset 1

Object Description

Index	2075
Description	This object indicates the current offset of phase B.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0xF801
Unit	milliampere
Lower Limit	0x8000
Upper Limit	0x7FFF

2076h – Phase A Current Offset 2

Object Description

Index	2076
Description	This object indicates the current offset of phase A.
Object Code	Variable

Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0xF801
Unit	milliampere
Lower Limit	0x8000
Upper Limit	0x7FFF

2077h – Position Integral Input Saturation

Object Description

Index	2077
Description	This object indicates the position integral input saturation.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x186A0
Unit	counts
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

2078h – Phase B Current Offset 2

Object Description

Index	2078
Description	This object indicates the current offset of phase B.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0xF801
Unit	milliampere

Lower Limit	0x8000
Upper Limit	0x7FFF

207Dh – Motor Pitch

Object Description

Index	207D
Description	This object indicates the pitch of a linear motor.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x800
Unit	mm
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

207Eh – Motor Poles

Object Description

Index	207E
Description	This object indicates the number of individual poles (not pairs) in the motor.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0064
Lower Limit	0x0002
Upper Limit	0x0190

2090h – Home Status

Object Description

Index	2090

Description	This object indicates the status of the homing procedure. 0 = Not Homed 1 = Homed 2 = Failed
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x0000
Unit	Not Applicable
Lower Limit	0x8000
Upper Limit	0x7FFF

2099h – Current Level 1 for Digital Output Definition

Object Description

Index	2099
Description	The value of this object is used by the Digital Outputs Functionality object (209Ch) as the first current value for a condition that controls a digital output.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	milliampere
Lower Limit	0x0
Upper Limit	0x2EE0

209Ah – Current Level 2 for Digital Output Definition

Object Description

Index	209A
Description	The value of this object is used by the Digital Outputs Functionality object (209Ch) as the second current value for a condition that controls a digital output.

Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x2EE0
Unit	milliampere
Lower Limit	0x0
Upper Limit	0x2EE0

209Bh – Digital Outputs Polarity

Object Description

Index	209B
Description	This object inverts the polarity of each digital output. 0 = Polarity not inverted 1 = Polarity inverted
Object Code	Array
Data Type	Unsigned16

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x2
Lower Limit	0x0
Upper Limit	0x2

Sub-Index	001
Description	Polarity of Output Number 1
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x1

Sub-Index	002
Description	Polarity of Output Number 2
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x1

209Ch – Digital Output Functionality

Object Description

Index	209C
Description	This object defines the function of each digital output. 0 = Disabled 1 = Motor Speed Set 2 = Current 3 = Reserved1 4 = Motor Speed Set Clear 5 = Over Voltage 6 = Motion Completed 7 = In Position 8 = Zero Speed 9 = Limit Switch 10 = Active 11 = Reserved2 12 = Reserved3 13 = User
Object Code	Array
Data Type	Unsigned16

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x2
Lower Limit	0x0
Upper Limit	0x2

Sub-Index	001
Description	Functionality of Output Number 1
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xD

Sub-Index	002
Description	Functionality of Output Number 2
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xD

209Dh – Position Level 1 for Digital Output Definition

Object Description

Index	209D
Description	The value of this object is used by the Digital Outputs Functionality object (Object 209Ch) as the first position value for a condition that controls a digital output.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	user-defined position
Lower Limit	0x80000001
Upper Limit	0x7FFFFFFF

209Eh – Position Level 2 for Digital Output Definition

Object Description

Index	209E
Description	The value of this object is used by the Digital Outputs Functionality object (Object 209Ch) as the second position value for a condition that controls a digital output.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No

Default Value	0x0
Unit	user-defined position
Lower Limit	0x80000001
Upper Limit	0x7FFFFFFF

209Fh – Velocity Level 1 for Digital Output Definition

Object Description

Index	209F
Description	The value of this object is used by the Digital Outputs Functionality object (Object 209Ch) as the first velocity value for a condition that controls a digital output.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	user-defined velocity
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

20A0h – Velocity Level 2 for Digital Output Definition

Object Description

Index	20A0
Description	The value of this object is used by the Digital Outputs Functionality object (Object 209Ch) as the second velocity value for a condition that controls a digital output.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	user-defined velocity
Lower Limit	0x80000001
Upper Limit	0x7FFFFFFF

20A1h – Over-Voltage Threshold

Object Description

Index	20A1
Description	This object indicates the level for detection of the bus over-voltage condition.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0xCB20
Unit	millivolt
Lower Limit	0x2CEC
Upper Limit	0xCB20

20ACh – Software Position Limit Mode

Object Description

Index	20AC
Description	This object enables/disables software position limits. It enables/disables the absolute position limits for the position demand value and the position actual value. Every new target position is checked against these limits. 0 = Limits disabled 1 = Limits enabled 2 = Limits enabled with Stop position functionality
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0000
Unit	Not Applicable
Lower Limit	0x0000
Upper Limit	0x0002

20B5h – Position In Window

Object Description

Index	20B5
Description	This object indicates the "in position" flag. The in position window is set in object 6067h
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x0000
Unit	Not Applicable
Lower Limit	0x8000
Upper Limit	0x7FFF

20BAh – Remote Hardware Enable Status

Object Description

Index	20BA
Description	This object indicates the state of the Remote enable input, which is digital input mode number 5 in object 20E0h (Digital Input Mode). 0 = Remote enable input off 1 = Remote enable input on
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x0000
Unit	Not Applicable
Lower Limit	0x0000
Upper Limit	0x0001

20CCh – Run Time

Object Description

Index	20CC

Description	This object indicates the total elapsed run time of the drive since production. The value of this object cannot be reset.
Object Code	Variable
Data Type	Visible_String

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0
Lower Limit	0
Upper Limit	0

20CFh – Under-Voltage Threshold

Object Description

Index	20CF
Description	This object indicates the level for detection of an under-voltage condition.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x3138
Unit	millivolt
Lower Limit	0x3138
Upper Limit	0xCB20

20D9h – Velocity Loop Input Filter

Object Description

Index	20D9
Description	This object indicates the low pass filter cutoff frequency for the velocity loop.
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read/Write

PDO Mapping	No
Default Value	0x64
Unit	Hz
Lower Limit	0x1
Upper Limit	0x7530

20DEh – Load Encoder Resolution

Object Description

Index	20DE
Description	This object indicates the configured encoder increments and number of load revolutions. It is calculated by the following formula: position encoder resolution = (encoder increments/motor revolutions)
Object Code	Array
Data Type	Unsigned32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x2
Lower Limit	0x2
Upper Limit	0x2

Sub-Index	001
Description	Encoder Increments
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x1
Unit	counts
Lower Limit	0x1
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Load Revolutions
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x1
Unit	Not Applicable
Lower Limit	0x1
Upper Limit	0xFFFFFFFF

20E0h – Digital Input Mode

Object Description

Index	20E0
Description	This object defines the function of each digital input. 0 = Disabled 1 = General 2 = Homing 3 = Limit switch clockwise 4 = Limit switch counterclockwise 5 = Remote enable 6 =Start motion command for profiled position operation mode. 7 = Touch probe 1 8 = Touch probe 2 9 = Motion select 0 10 = Motion select 1 11 = Motion select 2 12 = Motion select 3 13 = Motion Start 14 = Motion Stop
Object Code	Array
Data Type	Unsigned16

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x4
Lower Limit	0x0

Upper Limit	0x4

Sub-Index	001
Description	Functionality of Input Number 1
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xE

Sub-Index	002
Description	Functionality of Input Number 2
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xE

Sub-Index	003
Description	Functionality of Input Number 3
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xE

Sub-Index	004
Description	Functionality of Input Number 4
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xE

20E6h – Record Done Indicator

Object Description

Index	20E6
Description	This object indicates whether the recording is complete and data is available. 0 = Record in progress 1 = Record done
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x1
Lower Limit	0x0
Upper Limit	0x1

20EEh – Velocity Limit

Object Description

Index	20EE
Description	This object indicates the maximum velocity for a drive and motor.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0xF4240

Unit	RPM/100
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

20F1h – Motor Encoder Resolution

Object Description

Index	20F1
Description	This object indicates the resolution of the motor encoder in number of lines per revolution of the motor.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x1000
Unit	counts per revolution
Lower Limit	0x1000
Upper Limit	0x1000

20F2h – Analog Input

Object Description

Index	20F2
Description	This object returns the value of the analog input.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0000
Unit	millivolt
Lower Limit	0x8000
Upper Limit	0x7FFF

20F4h – Analog Input Current Scaling

Object Description

Index	20F4
Description	This object indicates the scaling value of the analog current command from analog input.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	ampere/volt
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

20F6h – Analog Input Offset

Object Description

Index	20F6
Description	This object indicates a value that is added to the analog input to the drive, to compensate for offset in the analog input signal. The analog input offset can be automatically set to the current analog input value by calling the analog zero function (object 2462h).
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x30AA
Unit	millivolt
Lower Limit	0x8000
Upper Limit	0x7FFF

20F7h – Analog Input Velocity Scaling

Object Description

Index	20F7
Description	This object indicates the scaling value of the analog velocity command from the analog input.

Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	RPM/100/millivolt
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

20F8h – Analog Input Zero

Object Description

Index	20F8
Description	This object sets the value of the analog input offset (object 20F6h) so that the current analog input value reading will return zero. The offset value is calculated from an average of 64 samples of the drive analog input. To perform the zeroing, the object must be written with the value of the analog input number; for example, write 1 to the object to zero analog input 1.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0000
Unit	Not Applicable
Lower Limit	0x0000
Upper Limit	0x0001

2116h – Point to Point Generator Status

Object Description

Index	2116

Description	This object indicates the state of the point to point trajectory generator. 0 = Acceleration or constant speed 1 = Deceleration 2 = Finished 3 = Idle
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0000
Lower Limit	0x8000
Upper Limit	0x7FFF

2614h – PDO Address Tx

Object Description

Index	2614
Description	This object can be used to monitor memory for production and testing purposes
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

2615h – PDO Data Tx

Object Description

Index	2615
Description	This object can be used to monitor memory for production and testing purposes
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

2616h – PDO Address Rx

Object Description

Index	2616
Description	This object can be used to monitor memory for production and testing purposes.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

2617h – PDO Data Rx

Object Description

Index	2617
Description	This object can be used to monitor memory for production and testing purposes.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0x0
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

2618h – Sync Counter Out

Object Description

Index	2618
Description	This object indicates the PLL error in synchronous operation.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

2619h – PFB Sync Delay

Object Description

Index	2619
Description	This object indicates the delay for sending the PFB in synchronous operation.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0000
Lower Limit	0x8000
Upper Limit	0x7FFF

261Ah – PCMD Sync Delay

Object Description

Index	261A
Description	This object indicates the delay for reading the PCMD in synchronous operation.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	No

Default Value	0x0000
Lower Limit	0x8000
Upper Limit	0x7FFF

261Bh – PLL State

Object Description

Index	261B
Description	PLL state in synchronous operation. 0 = Unlocked 1 = Locking 2 = Locked 3 = Lost
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFF

2626h – Sync Lost Counter

Object Description

Index	2626
Description	This object indicates the number of lost sync messages in synchronized operation.
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFF

2627h – RPDO Lost Counter

Object Description

Index	2627
Description	This object indicates the number of lost PDO messages in synchronized operation.
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFF

2628h – Position Derivative for Missing RPDO

Object Description

Index	2628
Description	This object indicates the change in position at the last received synced PDO, which can be used in the event of a lost PDO.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

2629h – Custom TBPRD

Object Description

Index	2629
Description	This object indicates the time base of the drive real-time interrupt.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0000
Lower Limit	0x8000
Upper Limit	0x7FFF

262Ah – Sync RT Counter

Object Description

Index	262A
Description	This object indicates the number of real-time interrupts between two sync messages
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

262Bh – Allowed Lost Syncs

Object Description

Index	262B
Description	This object indicates the maximum number of lost sync messages before a PLL lost fault is generated.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x000F
Lower Limit	0x0000
Upper Limit	0x7FFF

262Ch – Sync Allowed Window

Object Description

Index	262C
Description	This object indicates the maximum deviation of a sync message before a PLL lost fault is generated.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x30D4
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

262Dh – High Resolution Timer Difference

Object Description

Index	262D
Description	This object indicates the difference between the internal timer and the received value.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

2F01h – Calibration Data Status

Object Description

Index	2F01
Description	This object indicates the state of the calibration data: 0 = Calibration saved -2 = No calibration saved
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write

PDO Mapping	No
Default Value	0x0000
Lower Limit	0xFFFE
Upper Limit	0x0001

2F05h – Drive Enabled Time

Object Description

Index	2F05
Description	This object indicates the accumulative time of the drive in Enabled state.
Object Code	Variable
Data Type	Visible_String

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	-
Lower Limit	-
Upper Limit	-

2F06h – Phase A PWM

Object Description

Index	2F06
Description	This object indicates the value of Phase A PWM.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x0000
Lower Limit	0x8000
Upper Limit	0x7FFF

2F07h – Phase B PWM

Object Description

Index	2F07

Description	This object indicates the value of Phase B PWM.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x0000
Lower Limit	0x8000
Upper Limit	0x7FFF

2F08h – Maximum Velocity Error

Object Description

Index	2F08
Description	This object indicates the maximum value for the velocity error. Writing a value of 0 disables velocity error monitoring.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	RPM/100
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

2F09h – Velocity Loop Out

Object Description

Index	2F09
Description	This object indicates the value of the velocity loop output (control effort). This value is the input of the current loop in all operation modes except Torque mode (operation mode 4).
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x0000
Unit	milliampere
Lower Limit	0x8000
Upper Limit	0x7FFF

2F0Ah – Velocity Over-Speed

Object Description

Index	2F0A
Description	This object indicates the velocity value that triggers the over-speed protection fault.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x1E8480
Unit	RPM/100
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

2F0Bh – Maximum Position Derivative

Object Description

Index	2F0B
Description	This object indicates the value of the maximum position derivative for the position command that is received from the CANopen master in Interpolated Position mode (operation mode 7). Writing a value of 0 disables this functionality.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	counts

Lower Limit	0x0
Upper Limit	0x7FFFFFFF

2F0Ch – Parameter Help String1

Object Description

Index	2F0C
Description	Returns the help string for a command (a CANopen object). The help string is divided into 2 strings, which are located in objects 2F0Ch (first string) and 2F0Dh (second string). The command's CANopen index is written to object 2F0Eh and the help string is read in objects 2F0Ch and 2F0Dh.
Object Code	Variable
Data Type	Visible_String

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	-
Upper Limit	-

2F0Dh – Parameter Help String2

Object Description

Index	2F0D
Description	Returns the help string for a command (a CANopen object). The help string is divided into 2 strings, which are located in objects 2F0Ch (first string) and 2F0Dh (second string). The command's CANopen index is written to object 2F0Eh and the help string is read in objects 2F0Ch and 2F0Dh.
Object Code	Variable
Data Type	Visible_String

Entry Description

Access	Read Only
PDO Mapping	No

Default Value	-
Lower Limit	-
Upper Limit	-

2F0Eh – Parameter Help Index

Object Description

Index	2F0E
Description	This object indicates the CANopen index of the command for which a help string is requested. The help string is divided into 2 strings, which are located in objects 2F0Ch (first string) and 2F0Dh (second string). The command's CANopen index is written to object 2F0Eh and the help string is read in objects 2F0Ch and 2F0Dh.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

2F0Fh – Parameter Index List

Object Description

Index	2F0F
Description	Lists the indexes of all the parameters that are saved in the non-volatile memory (EEPROM). Writing 0 to sub-index 1 starts enumeration. Reading sub-index 2 retrieves the CANopen index of the EEPROM parameter. Upon each read the enumerator automatically advances. Enumeration ends when reading 0xFFFFFFFF.
Object Code	Array
Data Type	Unsigned32

Entry Description

Sub-Index	000
Description	Number of entries

Access	Read Only
PDO Mapping	No
Default Value	0x2
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	001
Description	**Parameter In List Index**
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Parameter In List
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

2F10h – Recorder Channels

Object Description

Index	2F10
Description	This object selects the recorded data (sub-index 1 is Number of Records, sub-index 2 is the CANopen index of the first channel, sub-index 3 is the CANopen index of the second channel, etc.). Up to 4 channels are available for recording simultaneously. The total length of the recording depends on the number of channels selected.
Object Code	Array
Data Type	Unsigned32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x5
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	001
Description	Number of Records
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x4

Sub-Index	002
Description	Channel1 Index
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	003
Description	Channel2 Index
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	004
Description	Channel3 Index
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	005
Description	Channel4 Index
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

2F11h – Recorder Sample Cycle

Object Description

Index	2F11
Description	This object is multiplied by 62.5 microseconds to produce the recording sample period. For every 62.5 microseconds sample cycle, the recorder adds a new sample to its recording buffer.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0000
Unit	Not Applicable
Lower Limit	0x0000
Upper Limit	0x7FFF

2F12h – Recorder Trigger

Object Description

Index	2F12

Description	This object indicates the trigger for the recording process. Sub-index 1 determines whether the recording will start immediately or after a condition is fulfilled .The remaining sub-indexes are used for conditional recording. 0 = Immediate recording 1 = Conditional recording 2 = Recording initiated by fault Sub-index 2 indicates the CANopen index for the channel. Sub-index 3 indicates the value of the condition. Sub-index 4 indicates the direction of the comparator (1 for rising edge, 0 for falling edge). Sub-index 5 indicates the location of the condition in the recording buffer.
Object Code	Array
Data Type	Integer32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x5
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	001
Description	Recorder Trigger Condition
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x2

Sub-Index	002
Description	**Recorder Condition Channel Index**
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

Sub-Index	003
Description	Recorder Condition Value
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	004
Description	Recorder Condition Comparator
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x1

Sub-Index	005
Description	Recorder Buffer Location
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x7A120

2F13h – Recorder Total Number of Points

Object Description

Index	2F13
Description	This object indicates the total number of points available for recording.
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFF

2F14h – Recordable Parameters

Object Description

Index	2F14
Description	This object indicates the list of parameters available for recording. Writing 0 to sub-index 1 starts enumeration. Reading sub-index 2 retrieves the CANopen index of the recordable parameter. Upon each read the enumerator automatically advances. Enumeration ends when reading 0xFFFFFFFF.
Object Code	Array
Data Type	Unsigned32

Entry Description

Sub-Index	000

Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x2
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	001
Description	Recordable List Index
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Recordable Parameter
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

2F15h – Recorder Number of Points per Channel

Object Description

Index	2F15
Description	The object indicates the number of points per channel to be recorded. This value multiplied by the number of recorded channels cannot exceed the total number of points (object 2F13h).
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0000
Upper Limit	0xFFFF

2F16h – Recorder Start

Object Description

Index	2F16
Description	Writing 1 to this object starts recording. Writing 0 cancels recording if in progress.
Object Code	Variable
Data Type	Unsigned8

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0

Lower Limit	0x0
Upper Limit	0x1

2F17h – Number of Recorded Points

Object Description

Index	2F17
Description	This object indicates the number of recorded points for a channel.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

2F18h – Recorder Results

Object Description

Index	2F18

Description	This object holds the results of the recording. Setting sub-index 1 to zero starts enumeration. Reading sub-index 2 retrieves the recorded point. Upon each read the next point is retrieved. Reading is repeated according to the value of object 2F15h (Recorder Number of Points per Channel). If more than a single channel was recorded, the recorded points are arranged as follows: 1st channel 1st point 2nd channel 1st point 3rd channel 1st point 1st channel 2nd point 2nd channel 2nd point 3rd channel 2nd point . . . 1st channel last point 2nd channel last point 3rd channel last point
Object Code	Array
Data Type	Integer32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x3
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

Sub-Index	001
Description	Reset Results Index
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x1

Sub-Index	002
Description	Recorder Channel Result
Data Type	Integer32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	003
Description	Result Index
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

2F19h – Phase Advance Factor

Object Description

Index	2F19
Description	This object indicates the factor of the phase advance as a function of velocity.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0xBB8
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

2F1Ah – Phase Advance Limit

Object Description

Index	2F1A
Description	This object indicates the limit of the phase advance in degrees.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x46
Unit	Deg

Lower Limit	0x0
Upper Limit	0x5A

2F1Bh – Drive Address

Object Description

Index	2F1B
Description	This object indicates the address of the drive in the CANopen network. To apply a change in the address, save the new address to EEPROM (Store Parameter Field process object 1010h) and reset the drive.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0065
Unit	Deg
Lower Limit	0x0001
Upper Limit	0x007F

2F1Ch – PLL Factor

Object Description

Index	2F1C
Description	This object indicates the factor for CANopen synchronized operation PLL.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x10000
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

2F1Dh – Field Weakening Factor

Object Description

Index	2F1D
Description	This object indicates the field weakening as a function of velocity.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0xC8
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

2F1Eh – Field Weakening Limit

Object Description

Index	2F1E
Description	This object indicates the field weakening current limit in mA.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x2BC
Unit	milliampere
Lower Limit	0x0
Upper Limit	0x2EE0

2F1Fh – CAN Open Baudrate

This object indicates the baudrate of the drive in the CANopen network.

To apply a change in the baudrate, save the new baudrate to EEPROM (Store Parameter Field process object 1010h) and reset the drive.

Object Description

Index	2F1F
Description	0 = 1 Mbit/s 1 = Reserved 2 = 500 Kbit/s 3 = 250 Kbit/s 4 = 125 Kbit/s 5 = Reserved 6 = 50 Kbit/s 7 = 20 Kbit/s 8 = 10 Kbit/s
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0000
Unit	Not Applicable
Lower Limit	0x0000
Upper Limit	0x0008

2F20h – Phase Advance Start Velocity

Object Description

Index	2F20
Description	This object indicates the phase advance start velocity.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

2F21h – Save Process Active

Object Description

Index	2F21
Description	This object indicates whether the Store Parameter Field process (object 1010h) is running. 0 = Store Parameter Field process is not active 1 = Store Parameter Field process is active
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x0000
Unit	Not Applicable
Lower Limit	0x0000
Upper Limit	0x0001

2F22h – Home On Edge Current Saturation

Object Description

Index	2F22
Description	This object indicates the current saturation for homing on edge method (home methods -1, -2, -3, -4).
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0x07D0
Unit	mA
Lower Limit	0x0000
Upper Limit	0x2EE0

2F23h – Home On Edge Time

Object Description

Index	2F23
Description	This object indicates the minimum time to wait in stall position before setting home, for homing on edge method (home methods -1, -2, -3, -4).
Object Code	Variable

Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0x07D0
Unit	millisecond
Lower Limit	0x0000
Upper Limit	0x2EE0

2F24h – Reserved1

Object Description

Index	2F24
Description	Reserved1
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0x07D0
Unit	millisecond
Lower Limit	0x0000
Upper Limit	0x2EE0

2F25h – Reserved2

Object Description

Index	2F25
Description	Reserved2
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0x07D0
Unit	millisecond

Lower Limit	0x0000
Upper Limit	0x2EE0

2F26h – Reserved3

Object Description

Index	2F26
Description	Reserved3
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0x07D0
Unit	millisecond
Lower Limit	0x0000
Upper Limit	0x2EE0

2F27h – Reserved4

Object Description

Index	2F27
Description	Reserved4
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0x07D0
Unit	millisecond
Lower Limit	0x0000
Upper Limit	0x2EE0

2F28h – Home End Position Offset

Object Description

Index	2F28

Description	This object indicates the difference between the zero position for the application and the machine home position. After the machine home position is found and homing is completed, the zero position is offset from the home position by adding the home offset value to the home position. All subsequent absolute moves are executed relative to this new zero position. If this object is not implemented, home offset is considered to be 0. Negative values indicate the opposite direction.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	user-defined position
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

2F29h – Current High Limit

Object Description

Index	2F29
Description	This object indicates the maximum current for generating torque n the motor.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0x2EE0
Unit	mA
Lower Limit	0x8000
Upper Limit	0x7FFF

2F2Ah – Current Low Limit

Object Description

Index	2F2A

Description	This object indicates the minimum current for generating torque in the motor.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0xD120
Unit	mA
Lower Limit	0x8000
Upper Limit	0x7FFF

2F30h – CAN Buffer Overflow Counter

Object Description

Index	2F30
Description	CAN buffer overflow counter.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x00
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

2F70h – LED Color Select

Object Description

Index	2F70
Description	Selects standby LED configuration 0 = Blinking green 1 = Constant yellow
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write

PDO Mapping	No
Default Value	0x0000
Unit	Not Applicable
Lower Limit	0x0000
Upper Limit	0x0001

2F76h – Reset to Bootloader

Object Description

Index	2F76
Description	This object initiates reset to boot loader. The drive is reset to bootloader when 0x00747372 (ASCII value of "rst") is written.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

2F77h – Stop Position

Object Description

Index	2F77
Description	If object 0x20AC (Software Position Limit Mode) is set to 2, drive will stop on crossing of stop position value.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	counts
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

2F78h – Motor Ke

Object Description

Index	2F78
Description	This object indicates the BEMF/velocity ratio of the motor. (KE)
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0
Unit	Volts/Radians/sec (= Kt in [A/Nm])
Lower Limit	0x0
Upper Limit	10000

2F7Ah – Serial Number

Object Description

Index	2F7A
Description	This object contains the serial number of the device, including non-integer characters.
Object Code	Variable
Data Type	Visible_String

Entry Description

Access	Constant
PDO Mapping	No
Default Value	SN:000000-000000
Lower Limit	-
Upper Limit	-

2F7Bh – Boot Version

Object Description

Index	2F7B
Description	This object contains the version number of the boot software
Object Code	Variable
Data Type	Visible_String

Entry Description

Access	Constant
PDO Mapping	No
Default Value	No version
Lower Limit	-
Upper Limit	-

2F7Ch – Motor Info

Object Description

Index	2F7C
Description	This object contains pre-programmed motor parameters and info.
Object Code	Array
Data Type	Unsigned32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x18
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	001
Description	'M'
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	'O'
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x4F
Upper Limit	0xFFFFFFFF

Sub-Index	003
Description	'T'
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x54
Upper Limit	0xFFFFFFFF

Sub-Index	004
Description	'O'
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	005
Description	'R'
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	006
Description	Current Integral Gain
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	007
Description	Current Proportional Gain
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	008
Description	Motor Pitch
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0
Unit	Not Applicable
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	009
Description	Motor Poles
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	010
Description	Phase Advance Factor
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	011
Description	Phase Advance Limit
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Unit	degree
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	012
Description	Field Weakening Factor
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0
Unit	Not Applicable
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	013
Description	Field Weakening Limit
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Unit	milliampere
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	014
Description	Motor Ke
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0
Unit	volt/RPM
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	015
Description	Peak Current
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Unit	milliampere
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	016
Description	Peak Current Limit
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Unit	milliampere
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	017
Description	Max Current
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Unit	milliampere
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	018
Description	Max Current Limit
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Unit	milliampere
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	019
Description	Motor Rated Current
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Unit	milliampere
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	020
Description	I2T Fault Threshold
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	021
Description	Motor Model
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	022
Description	HW revision
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0
Unit	Not Applicable
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	023
Description	Motor Size
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0
Unit	Not Applicable
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	024
Description	Password for protected values
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

2F7Dh – Serial Number For CAN ID

Object Description

Index	2F7D
Description	This object indicates the serial number to be configured.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x00
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

2F7Eh – New CAN ID

Object Description

Index	2F7E
Description	This object indicates the new CAN ID to be configured for a specific serial number in 0x2F7D.
Object Code	Variable
Data Type	Unsigned8

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	101
Unit	Not Applicable
Lower Limit	0x00

Upper Limit	0xFF

2F7Fh – CAN ID Configuration

Object Description

Index	2F7F
Description	This object completes the CAN ID configuration process 0. Update CAN Node ID 1. Save in EEPROM
Object Code	Variable
Data Type	Unsigned8

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0
Unit	Not Applicable
Lower Limit	0x00
Upper Limit	0xFF

2F80h – User Parameters

Object Description

Index	2F80
Description	Parameters that can be programmed by user. These parameters are stored in drive EEPROM by the store parameters command.
Object Code	Array
Data Type	Unsigned32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x5
Unit	Not Applicable
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	001
Description	Parameter 0
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Parameter 1
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	003
Description	Parameter 2
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	004
Description	Parameter 3
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x00000000
Upper Limit	0xFFFFFFFF

Sub-Index	005
Description	Parameter 4
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	Not Applicable
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

2F81h – Savable Parameters

Object Description

Index	2F81
Description	This object indicates the list of parameters available for saving. Setting sub-index 1 to zero starts enumeration. Reading sub-index 2 retrieves the CANopen index of the recordable parameter. For each read the enumerator automatically advances. Enumeration ends when 0xFFFFFFFF is read.
Object Code	Array
Data Type	Unsigned32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x2
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	001
Description	**Recordable List Index**
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Recordable Parameter
Data Type	Unsigned32
Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

2F82h – PLL Lock

Object Description

Index	2F82
Description	This object controls the synchronization method of the drives PLL. 0 = PLL is not synchronized 1 = PLL is synchronized with CANopen sync message - this mode creates a fault at Sync Lost in operation mode 8. 2 = PLL is synchronized with the high resolution time stamp (object 1013h) 3 = PLL is synchronized with CANopen sync message - this mode creates a fault at Sync Lost in any operation mode.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0001
Unit	Not Applicable
Lower Limit	0x0000
Upper Limit	0x0003

2F83h – Motion Time

Object Description

Index	2F83

Description	Allows motion to start at a specific time in profile position operation mode (1). The time is based on object 1013h (High Resolution Time Stamp). To start motion at a specific time: - Set bit 11 in Controlword (object 6040h) to 1 to enable starting motion at a given time - Set object 2F82h (PLL Lock) to 2 (optional) - Set start time in object 2F83h. - The motion will start according to the time specified.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x1
Unit	microsecond
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

2F84h – Backlash Compensation Distance

Object Description

Index	2F84
Description	Sets the backlash compensation distance. Applicable in profile position operation mode (1).
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	counts
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

2F85h – Voltage Level for Digital Output Definition

Object Description

Index	2F85

Description	The value of this object is used by the over-voltage functionality of object 209Ch (Digital Output Functionality). As the voltage rises above the set value it will set the digital output. This voltage has a hysteresis of +/- 500 millivolt.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0xCB20
Unit	user-defined position
Lower Limit	0x0
Upper Limit	0xCB20

2F86h – Save Pfb On Power Off

Object Description

Index	2F86
Description	This object indicates whether the actual position value (object 6063h) is saved in EEPROM at power off of the bus voltage supply, and restored at the next power on. This feature is not active at shutdown of the auxiliary power supply. 1 = Save enabled 0 = Save disabled
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0
Unit	Not Applicable
Lower Limit	0x0000
Upper Limit	0x7FFF

2F87h – Manufacture Specific Bits Mode

Object Description

Index	2F87

Description	This object defines the function of each manufacturer specific bit in the controlword (bits 11-15). 0 = Disabled 1 = In profile position mode, the profile velocity will be reduced by 50% 2 = Begin on time select bit for profile position mode
Object Code	Array
Data Type	Unsigned16

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x5
Lower Limit	0x0
Upper Limit	0x5

Sub-Index	001
Description	Functionality of controlword bit 11
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x2
Lower Limit	0x0
Upper Limit	0x2

Sub-Index	002
Description	Functionality of controlword bit 12
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x2

Sub-Index	003
Description	Functionality of controlword bit 13
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x2

Sub-Index	004
Description	Functionality of controlword bit 14
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x2

Sub-Index	005
Description	Functionality of controlword bit 15
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x2

2F88h – Backlash Compensation Mode

Object Description

Index	2F88
Description	The drive has two types of backlash compensation. Type 1. Prior to starting the first movement after enable, and upon every direction change, the backlash compensation distance is added to the target position. Upon the first movement after enable, the drive will first move the backlash compensation distance in the opposite direction of the move command, and then it will execute the move command. Type 2. At the end of every movement in the direction of the backlash, the backlash compensation distance is added to the target position.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0000
Unit	counts
Lower Limit	0x0000
Upper Limit	0x0001

2F89h – Position Backup Restore Window

Object Description

Index	2F89

Description	Sets position restore verification window. Applicable only when object 0x2F86 =1. On bootup, the restored encoder position and actual encoder position are compared. If the difference is within the window, the Position Backup Restore Status (object 0x2F8A) is set to 1.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	counts
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

2F8Ah – Position Backup Restore Status

Object Description

Index	2F8A
Description	0 = Position was not restored correctly 1 = Position was restored correctly
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x0000
Unit	counts
Lower Limit	0x0000
Upper Limit	0x0001

2F8Bh – Reduced Control Loop Frequency

Object Description

Index	2F8B
Description	0 = Normal operation (Velocity loop 8 kHz, Position Loop 16 kHz) 1 = Reduced frequency (Velocity loop 16 kHz, Position Loop 32 kHz)

Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0000
Unit	Not Applicable
Lower Limit	0x0000
Upper Limit	0x0001

2F90h – Path Segment 0

Motion path

Object Description

Index	2F90
Description	Path Segment 0
Object Code	Array
Data Type	Integer32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x8
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	001
Description	Target Position
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	002
Description	Cruise Velocity
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	003
Description	Acceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	004
Description	Deceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	005
Description	Controlword
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	006
Description	Delay
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	007
Description	Number of Iterations
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	008
Description	Next Segment Index
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

2F91h – Path Segment 1

Object Description

Index	2F91
Description	Path Segment 1
Object Code	Array
Data Type	Integer32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x8
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	001
Description	Target Position
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	002
Description	Cruise Velocity
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	003
Description	Acceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	004
Description	Deceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	005
Description	Controlword
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	006
Description	Delay
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	007
Description	Number of Iterations
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	008
Description	Next Segment Index
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

2F92h – Path Segment 2

Object Description

Index	2F92
Description	Path Segment 2
Object Code	Array
Data Type	Integer32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x8
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	001
Description	Target Position
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	002
Description	Cruise Velocity
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	003
Description	Acceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	004
Description	Deceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	005
Description	Controlword
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	006
Description	Delay
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	007
Description	Number of Iterations
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	008
Description	Next Segment Index
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

2F93h – Path Segment 3

Object Description

Index	2F93
Description	Path Segment 3
Object Code	Array
Data Type	Integer32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x8
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	001
Description	Target Position
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	002
Description	Cruise Velocity
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	003
Description	Acceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	004
Description	Deceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	005
Description	Controlword
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	006
Description	Delay
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	007
Description	Number of Iterations
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	008
Description	Next Segment Index
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

2F94h – Path Segment 4

Object Description

Index	2F94
Description	Path Segment 4
Object Code	Array
Data Type	Integer32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x8
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	001
Description	Target Position
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	002
Description	Cruise Velocity
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	003
Description	Acceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	004
Description	Deceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	005
Description	Controlword
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	006
Description	Delay
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	007
Description	Number of Iterations
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	008
Description	Next Segment Index
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

2F95h – Path Segment 5

Object Description

Index	2F95
Description	Path Segment 5
Object Code	Array
Data Type	Integer32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x8
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	001
Description	Target Position
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	002
Description	Cruise Velocity
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	003
Description	Acceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	004
Description	Deceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	005
Description	Controlword
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	006
Description	Delay
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	007
Description	Number of Iterations
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	008
Description	Next Segment Index
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

2F96h – Path Segment 6

Object Description

Index	2F96
Description	Path Segment 6
Object Code	Array
Data Type	Integer32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x8
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	001
Description	Target Position
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	002
Description	Cruise Velocity
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	003
Description	Acceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	004
Description	Deceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	005
Description	Controlword
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	006
Description	Delay
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	007
Description	Number of Iterations
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	008
Description	Next Segment Index
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

2F97h – Path Segment 7

Object Description

Index	2F97
Description	Path Segment 7
Object Code	Array
Data Type	Integer32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x8
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	001
Description	Target Position
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	002
Description	Cruise Velocity
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	003
Description	Acceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	004
Description	Deceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	005
Description	Controlword
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	006
Description	Delay
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	007
Description	Number of Iterations
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	008
Description	Next Segment Index
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

2F98h – Path Segment 8

Object Description

Index	2F98
Description	Path Segment 8
Object Code	Array
Data Type	Integer32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x8
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	001
Description	Target Position
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	002
Description	Cruise Velocity
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	003
Description	Acceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	004
Description	Deceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	005
Description	Controlword
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	006
Description	Delay
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	007
Description	Number of Iterations
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	008
Description	Next Segment Index
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

2F99h – Path Segment 9

Object Description

Index	2F99
Description	Path Segment 9
Object Code	Array
Data Type	Integer32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x8
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	001
Description	Target Position
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	002
Description	Cruise Velocity
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	003
Description	Acceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	004
Description	Deceleration
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	005
Description	Controlword
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	006
Description	Delay
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	007
Description	Number of Iterations
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

Sub-Index	008
Description	Next Segment Index
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

2F9Ah – Path Segment Index

Object Description

Index	2F9A
Description	Path Segment Index
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	Volts/Radians/sec (= Kt in [A/Nm])
Lower Limit	0x0
Upper Limit	0x10000

2FC0h – Calibration Table

Object Description

Index	2FC0
Description	Calibration Table
Object Code	Variable
Data Type	DOMAIN

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	NULL
Lower Limit	0x0
Upper Limit	0x0

2FC1h – Calibration Sector Erase

Object Description

Index	2FC1
Description	Set 0x6563616c to erase calibration sector
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

2FC2h – Data Sector

Object Description

Index	2FC2
Description	Data Sector
Object Code	Variable
Data Type	DOMAIN

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	NULL
Lower Limit	0x0
Upper Limit	0x0

2FC3h – Data Sector Erase

Object Description

Index	2FC3
Description	Set 0x65646174 to erase calibration sector
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write

PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

2FC4h – CAN Error Counter

Object Description

Index	2FC4
Description	This object keeps count of communication errors. The value of the counter can be reset by writing 0 to appropriate sub-index.
Object Code	Array
Data Type	Unsigned16

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x7
Lower Limit	0x0000
Upper Limit	0xFFFF

Sub-Index	001
Description	CAN controller is error active
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0000
Upper Limit	0xFFFF

6 sub indices with same parameters follow.

Sub-Index	002
Description	CAN controller is busoff
Sub-Index	003
Description	CAN controller receive buffer hardware overrun
Sub-Index	004
Description	CAN controller is error passive
Sub-Index	005
Description	CAN transmit software buffer overflow
Sub-Index	006
Description	CAN receive software buffer overflow
Sub-Index	007
Description	CAN form error flag

2FC5h – Virtual Inputs

Object Description

Index	2FC5
Description	This object provides virtual inputs. This object is organized bit-wise. The bits have the following meaning: bit 0: negative limit switch bit 1: positive limit switch bit 2: home switch bit 3: reserved bit 16-31: manufacturer-specific The bit values have the following meaning: 0 = Switch is off 1 = Switch is on
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

2FC6h – Virtual Input Mode

Object Description

Index	2FC6
Description	This object defines the function of each virtual input. 0 = Disabled 1 = General 2 = Homing 3 = Limit switch clockwise 4 = Limit switch counterclockwise 5 = Remote enable 6 = Start motion command for profiled position operation mode. 7 = Touch probe 1 8 = Touch probe 2
Object Code	Array
Data Type	Unsigned16

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x4
Lower Limit	0x0
Upper Limit	0x4

Sub-Index	001
Description	Functionality of Input Number 1
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x8

Sub-Index	002
Description	Functionality of Input Number 2
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x8

Sub-Index	003
Description	Functionality of Input Number 3
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x8

Sub-Index	004
Description	Functionality of Input Number 4
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x8

2FC7h – Virtual Input Setting

Object Description

Index	2FC7
Description	This object defines the setting of each virtual input. 0 = Disabled 1 = Current saturated 2 = Current saturated low 3 = Current saturated high
Object Code	Array
Data Type	Unsigned16

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x4
Lower Limit	0x0
Upper Limit	0x4

Sub-Index	001
Description	Functionality of Input Number 1
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x3

Sub-Index	002
Description	Functionality of Input Number 2
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x3

Sub-Index	003
Description	Functionality of Input Number 3
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x3

Sub-Index	004
Description	Functionality of Input Number 4
Data Type	Unsigned16
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x3

2FC8h – Input Start Motion Mode

Object Description

Index	2FC8
Description	This object defines the functionality of Motion Select; that is, the combination of digital inputs that sets the motion segment/s to be executed. If the value of object 0x2FC8 is **1** (input starts motion), each digital input represents one motion path segment (0, 1, 2 or 3). If Motion Select 0 is set to 0, motion segment 0 is executed, if Motion Select 1 is set to 1, motion segment #1 is executed, and so on. If the value of object 0x2FC8 is **0** (binary value starts motion), the binary value of the combined Motion Select inputs represents one single motion path segment (0, 1, 2, 3, 4, 5, 6 or 7).
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x1

4 Device Profile Segment

6007h – Abort Connection Option Code

Object Description

Index	6007
Description	This object indicates the action to be performed when one of the following events occurs: CAN bus off Heartbeat lost Node guarding lost NMT stopped (stop remote node indication activated) Reset communication (reset communication indication activated) Reset application (reset node indication activated) The following value definitions are valid: 0 = No action 1 = Fault signal 2 = Disable voltage command 3 = Quick Stop command -x = Manufacturer-specific
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0001
Lower Limit	0x8000
Upper Limit	0x0003

603Fh – Error Code

Object Description

Index	603F
Description	This object indicates the error code of the last error that occurred in the drive device.
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFF

6040h – Controlword

Object Description

Index	6040
Description	This object controls the CiA-402 FSA, CiA-402 modes and manufacturer-specific entities. This object is organized bit-wise. The bits have the following meaning: bit 0: switch on bit 1: enable voltage bit 2: quick stop bit 3: enable operation bit 4-6: mode-specific bit 7: fault reset bit 8: halt bit 9: mode-specific bit 10: reserved bit 11: begin on time bit 12-15: manufacturer-specific
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFF

6041h – Statusword

Object Description

Index	6041

Description	This object indicates the current state of the FSA, the operation mode and manufacturer-specific entities. This object is organized bit-wise. The bits have the following meaning: bit 0: ready to switch on bit 1: switched on bit 2: operation enabled bit 3: fault bit 4: voltage enabled bit 5: quick stop bit 6: switch on disabled bit 7: warning bit 8: manufacturer-specific bit 9: remote bit 10: target reached bit 11: internal limit active bit 12-13: mode-specific bit 14-15: manufacturer-specific
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0000
Lower Limit	0x0000
Upper Limit	0xFFFF

6060h – Modes of Operation

Object Description

Index	6060

Description	The object selects the operational mode. This object shows only the value of the requested operation mode. The actual operation mode of the PDS is reflected in the Modes of Operation Display object (6061h) The following value definitions are valid: 0 = no mode change / no mode assigned 1 = profile position mode 2 = velocity mode 3 = profile velocity mode 4 = profile torque mode 5 = reserved 6 = homing mode 7 = interpolated position mode 8 = cyclic synchronous position mode 9 = cyclic synchronous velocity mode 10 = cyclic synchronous torque mode -x = manufacturer-specific
Object Code	Variable
Data Type	Integer8

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0x04
Lower Limit	0xFA
Upper Limit	0x08

6061h – Modes of Operation Display

Object Description

Index	6061

Description	This object indicates the actual operation mode. The following value definitions are valid: 0 = no mode change / no mode assigned 1 = profile position mode 2 = velocity mode 3 = profile velocity mode 4 = profile torque mode 5 = reserved 6 = homing mode 7 = interpolated position mode 8 = cyclic synchronous position mode 9 = cyclic synchronous velocity mode 10 = cyclic synchronous torque mode -x = manufacturer-specific
Object Code	Variable
Data Type	Integer8

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x00
Lower Limit	0x80
Upper Limit	0x0A

6062h – Position Demand Value

Object Description

Index	6062
Description	This object indicates the demanded position value.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0
Unit	user-defined position
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

6063h – Position Actual Value

Object Description

Index	6063
Description	This object indicates the actual value of the position measurement device.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0
Unit	user-defined position
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

6064h – Position Actual Internal Value

Object Description

Index	6064
Description	This object indicates the actual value of the position measurement device.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0
Unit	user-defined position
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

6065h – Following Error Window

Object Description

Index	6065

Description	This object indicates the symmetrical range of tolerated position values relative to the target position. If the current position is out of range a following error occurs. This object indicates the range of tolerated position values symmetrically to the position demand value (object 6062h). If the following error actual value (object 60F4h) is out of the following error window, a following error occurs. A following error may occur when a drive is blocked, or an unreachable profile velocity occurs, or due to incorrect closed-loop coefficients. If the value of the following error window is FFFFFFFFh, following control is disabled.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x2710
Unit	user-defined position
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

6067h – Position Window

Object Description

Index	6067
Description	This object indicates the symmetrical range of accepted positions relative to the target position. If the actual value of the position encoder is within the position window, the target position is regarded as reached. If the value of the position window is FFFFFFFFh, position window control is disabled.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x64
Unit	user-defined position
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

606Bh – Velocity Demand Value

Object Description

Index	606B
Description	This object indicates the output value of the trajectory generator.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0
Unit	user-defined velocity
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

606Ch – Velocity Actual Value

Object Description

Index	606C
Description	This object indicates the actual velocity value derived either from the velocity sensor or the position sensor.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0
Unit	user-defined velocity
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

606Dh – Velocity Window

Object Description

Index	606D
Description	This object indicates the velocity window.
Object Code	Variable

Data Type	Unsigned16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	user-defined velocity
Lower Limit	0x0
Upper Limit	0x7FFF

606Fh – Velocity Threshold

Object Description

Index	606F
Description	This object indicates the velocity threshold.
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0000
Unit	user-defined velocity
Lower Limit	0x0000
Upper Limit	0xFFFF

6070h – Velocity Threshold Time

Object Description

Index	6070
Description	This object indicates the velocity threshold time.
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	millisecond

Lower Limit	0x0
Upper Limit	0xFFFF

6071h – Target Torque

Object Description

Index	6071
Description	This object indicates the input value for the torque controller in profile torque mode.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0x0000
Unit	mNm
Lower Limit	0x8AD0
Upper Limit	0x7530

6073h – Max Current

Object Description

Index	6073
Description	This object indicates the maximum permissible torque creating current in the motor.
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0x1194
Unit	mA
Lower Limit	0x0
Upper Limit	0x2EE0

6074h – Torque Demand Value

Object Description

Index	6074
Description	This object provides the command value for the current loop.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0000
Unit	mA
Lower Limit	0x8000
Upper Limit	0x7FFF

6075h – Motor Rated Current

Object Description

Index	6075
Description	This object provides the motor rated current.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0xBB8
Unit	mA
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

6078h – Current Actual Value

Object Description

Index	6078
Description	This object indicates the actual value of the current. It corresponds to the current in the motor.
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0000
Unit	mA
Lower Limit	0x8000
Upper Limit	0x7FFF

6079h – DC Link Circuit Voltage

Object Description

Index	6079
Description	This object indicates the instantaneous DC link current voltage at the drive device.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x0
Unit	mV
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

607Ah – Target Position

Object Description

Index	607A
Description	This object indicates the commanded position to which the drive will move in position profile mode or cyclic synchronous position mode. The value of this object can be interpreted as absolute or relative depending on bit 6 of the controlword.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0x0
Unit	user-defined position

Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

607Bh – Position Range Limit

Object Description

Index	607B
Description	This object indicates the maximum and minimum position range limits. It limits the numerical range of the input value. Upon reaching or exceeding these limits, the input value automatically wraps to the other end of the range. Wrap-around of the input value may be prevented by setting software position limits as defined in the software position limit object (607Dh).
Object Code	Array
Data Type	Integer32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x2
Lower Limit	0x2
Upper Limit	0x2

Sub-Index	001
Description	Min Position Range Limit
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x80000000
Unit	user-defined position
Lower Limit	0x80000000
Upper Limit	0x80000000

Sub-Index	002
Description	Max Position Range Limit
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x7FFFFFFF
Unit	user-defined position
Lower Limit	0x7FFFFFFF
Upper Limit	0x7FFFFFFF

607Ch – Home Offset

Object Description

Index	607C
Description	This object indicates the difference between the zero position for the application and the machine home position. After the machine home position is found and homing is completed, the zero position is offset from the home position by adding the home offset value to the home position. All subsequent absolute moves are executed relative to this new zero position. If this object is not implemented, home offset is considered to be 0. Negative values indicate the opposite direction.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	user-defined position
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

607Dh – Software Position Limit

Object Description

Index	607D

Description	This object indicates the maximum and minimum software position limits. These parameters define the absolute position limits for the position demand value and the position actual value. Every new target position is checked against these limits. The limit positions are always relative to the machine home position. Before being compared to the target position, they are corrected internally by the home offset, as follows: Corrected min position limit = (min position limit - home offset) Corrected max position limit = (max position limit - home offset)
Object Code	Array
Data Type	Integer32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x2
Lower Limit	0x2
Upper Limit	0x2

Sub-Index	001
Description	Minimum Software Position Limit
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x80000001
Unit	user-defined position
Lower Limit	0x80000001
Upper Limit	0x7FFFFFFF

Sub-Index	002
Description	Maximum Software Position Limit
Data Type	Integer32
Access	Read/Write
PDO Mapping	No
Default Value	0x7FFFFFFF
Unit	user-defined position
Lower Limit	0x80000001
Upper Limit	0x7FFFFFFF

607Eh – Polarity

Object Description

Index	607E
Description	Position demand value and position actual value are multiplied by 1 or -1, depending on the value of the polarity flag.
Object Code	Variable
Data Type	Unsigned8

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x1

6081h – Profile Velocity

Object Description

Index	6081
Description	This object indicates the commanded velocity normally attained at the end of the acceleration ramp during a profiled motion. It is valid for both directions of motion. This object is used in profile position mode and interpolated position mode.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write

PDO Mapping	Yes
Default Value	0x2710
Unit	user-defined velocity
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

6083h – Profile Acceleration

Object Description

Index	6083
Description	This object indicates the commanded acceleration. This object is used in the profile position mode, profile velocity mode, and interpolated position mode.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0x3E8
Unit	user-defined acceleration
Lower Limit	0x1
Upper Limit	0x1FBD0

6084h – Profile Deceleration

Object Description

Index	6084
Description	This object indicates the deceleration. This object is used in the profile position mode, profile velocity mode, and interpolated position mode.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0x3E8
Unit	user-defined acceleration
Lower Limit	0x1

Upper Limit	0x1FBD0

6085h – Quick Stop Deceleration

Object Description

Index	6085
Description	This object indicates the deceleration used to stop the motor when the quick stop function is activated and the quick stop option code is set to 2 or 6. The quick stop deceleration is also used if the fault reaction option code is 2 and the halt option code is 2.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x2710
Unit	user-defined acceleration
Lower Limit	0x0
Upper Limit	0x1FBD0

6086h – Motion Profile Type

Object Description

Index	6086
Description	This object indicates the type of motion profile used to perform a profiled motion. The following value definitions are valid: 0 = linear ramp (trapezoidal profile)
Object Code	Variable
Data Type	Integer16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0000
Lower Limit	0x0000
Upper Limit	0x0000

6089h – Position Notation Index

Object Description

Index	6089
Description	The position notation index is used to scale the objects for which it mandatory. Note: the value of this object is fixed to factor = 1.
Object Code	Variable
Data Type	Integer8

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0x0

608Ah – Position Dimension Index

Object Description

Index	608A
Description	This object indicates position units. Note: the value of this object is fixed to steps.
Object Code	Variable
Data Type	Unsigned8

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0xAC
Lower Limit	0xAC
Upper Limit	0xAC

608Bh – Velocity Notation Index

Object Description

Index	608B
Description	The velocity notation index is used to scale the objects for which it mandatory. Note: the value of this object is fixed at 0.01.
Object Code	Variable
Data Type	Integer8

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0xFE
Lower Limit	0xFE
Upper Limit	0xFE

608Ch – Velocity Dimension Index

Object Description

Index	608C
Description	This object indicates velocity units. Note: the value of this object is fixed at rpm.
Object Code	Variable
Data Type	Unsigned8

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0xA4
Lower Limit	0xA4
Upper Limit	0xA4

608Dh – Acceleration Notation Index

Object Description

Index	608D
Description	The acceleration notation index is used to scale the objects for which it mandatory. Note: the value of this object is fixed tat 0.01.
Object Code	Variable
Data Type	Integer8

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0xFE
Lower Limit	0xFE
Upper Limit	0xFE

608Eh – Acceleration Dimension Index

Object Description

Index	608E
Description	This object indicates acceleration units. Note: the value of this object is fixed at rpm/second
Object Code	Variable
Data Type	Unsigned8

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0xA4
Lower Limit	0xA4
Upper Limit	0xA4

608Fh – Position Encoder Resolution

Object Description

Index	608F
Description	This object indicates the configured encoder increments and number of motor revolutions. It is calculated by the following formula: position encoder resolution = (encoder increments/motor revolutions)
Object Code	Array
Data Type	Unsigned32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x2
Lower Limit	0x2
Upper Limit	0x2

Sub-Index	001
Description	Encoder Increments
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x1
Unit	counts
Lower Limit	0x1
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Motor Revolutions
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x1
Unit	Not Applicable
Lower Limit	0x1
Upper Limit	0xFFFFFFFF

6098h – Homing Method

Object Description

Index	6098
Description	This object indicates the homing method to be used. The following value definitions are valid: -4 = homing on hard stop in positive direction with Index -3 = homing on hard stop in negative direction with Index -2 = homing on hard stop in positive direction -1 = homing on hard stop in negative direction 0 = no homing method assigned 1 = homing method 1 to be used . . 36 = homing method 36 to used -x = manufacturer-specific
Object Code	Variable
Data Type	Integer8

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x01
Lower Limit	0xFC
Upper Limit	0x23

6099h – Homing Speeds

Object Description

Index	6099
Description	This object indicates the commanded speeds used during homing procedure.
Object Code	Array
Data Type	Unsigned32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	No
Default Value	0x2
Lower Limit	0x2
Upper Limit	0x2

Sub-Index	001
Description	Fast Homing Speed
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	Yes
Default Value	0x3E8
Unit	user-defined velocity
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

Sub-Index	002
Description	Slow Homing Speed
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	Yes
Default Value	0x3E8
Unit	user-defined velocity
Lower Limit	0x0
Upper Limit	0x7FFFFFFF

609Ah – Homing Acceleration

Object Description

Index	609A
Description	This object indicates the acceleration and deceleration to be used during homing operation.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0x3E8
Unit	user-defined acceleration
Lower Limit	0x0
Upper Limit	0x1FBD0

60B8h – Touch Probe Function

Object Description

Index	60B8

Description	Indicates the configured function of the touch probe. This object is organized bit-wise. The bits have the following meaning: **Bit Description** 0: 0 = switch off touch probe 1 1 = enable touch probe 1 1: 0 = trigger first event 1 = continuous 2: 0 = trigger touch probe 1 input 1 = trigger with zero pulse signal or position encoder 3: Reserved 4: 0 = switch off sampling at positive edge of touch probe 1 1 = enable sampling at positive edge of touch probe 1 5: 0 = switch off sampling at negative edge of touch probe 1 1 = enable sampling at negative edge of touch probe 1 6,7: User-defined (e.g. for testing) 8: 0 = switch off touch probe 2 1 = enable touch probe 2 9: 0 = trigger first event 1 = continuous 10: 0 = trigger with touch probe 2 input 1 = trigger with zero pulse signal or position encoder 11: Reserved 12: 0 = switch off sampling at positive edge of touch probe 2 1 = enable sampling at positive edge of touch probe 2 13: 0 = switch off sampling on negative edge of touch probe 2 1 =enable sampling at negative edge of touch probe 2 14,15: user-defined (e.g., for testing)
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x00
Lower Limit	0x0000
Upper Limit	0xFFFF

60B9h – Touch Probe Status

Object Description

Index	60B9
Description	Indicates the status of the touch probe. This object is organized bit-wise. The bits have the following meaning: **Bit Description** 0: 0 = touch probe 1 is switched off 1 = touch probe 1 is enabled 1: 0 = touch probe 1 no positive edge value stored 1 = touch probe 1 negative edge position stored 2: 0 = touch probe 1 no negative edge value stored 1 = touch probe 1 positive edge position stored 3-5: Reserved 6,7: User-defined (e.g. for testing) 8: 0 = touch probe 2 is switched off 1 =touch probe 2 is enabled 9: 0 = touch probe 2 no positive edge value stored 1 = touch probe 2 negative edge position stored 10: 0 = touch probe 2 no negative edge value stored 1 = touch probe 2 positive edge position stored 11-13: Reserved 14,15: User-defined (e.g. for testing)
Object Code	Variable
Data Type	Unsigned16

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x00
Lower Limit	0x0000
Upper Limit	0xFFFF

60BAh – Touch Probe 1 Position Positive Value

Object Description

Index	60BA
Description	The position value of touch probe 1 at the positive edge.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x00
Unit	user-defined position
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

60BBh – Touch Probe 1 Position Negative Value

Object Description

Index	60BB
Description	The position value of touch probe 1 at the negative edge.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x00
Unit	user-defined position
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

60BCh – Touch Probe 2 Position Positive Value

Object Description

Index	60BC
Description	The position value of touch probe 2 at the positive edge.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x00
Unit	user-defined position
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

60BDh – Touch Probe 2 Position Negative Value

Object Description

Index	60BD
Description	The position value of touch probe 2 at the negative edge.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x00
Unit	user-defined position
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

60C2h – Interpolation Time Period

Object Description

Index	60C2
Description	This object indicates the configured interpolation cycle time. This object has the following sub-indexes: sub-index 1: value of the time sub-index 2: dimension index of the time value in sub-index 1
Object Code	Record
Data Type	P402_IP_PERIOD_T

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read/Write
PDO Mapping	No
Default Value	0x2
Unit	time units
Lower Limit	0x0
Upper Limit	0xFF

Sub-Index	001
Description	time units
Data Type	Unsigned8
Access	Read/Write
PDO Mapping	No
Default Value	0x4
Unit	milliseconds
Lower Limit	0x1
Upper Limit	0x10

Sub-Index	002
Description	time index
Data Type	Integer8
Access	Read/Write
PDO Mapping	No
Default Value	0xFD
Unit	Not Applicable
Lower Limit	0xFD
Upper Limit	0xFD

60C5h – Max Acceleration

Object Description

Index	60C5
Description	This object indicates the maximum acceleration. It is used to limit the acceleration to an acceptable value in order to prevent the motor and the moved mechanics from being damaged.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	user-defined acceleration
Lower Limit	0x0
Upper Limit	0x1FBD0

60C6h – Max Deceleration

Object Description

Index	60C6
Description	This object indicates the maximum deceleration. It is used to limit the deceleration to an acceptable value in order to prevent the motor and the moved mechanics from being damaged.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x0
Unit	user-defined acceleration
Lower Limit	0x0
Upper Limit	0x1FBD0

60F4h – Following Error Actual Value

Object Description

Index	60F4
Description	This object indicates the actual value of the following error.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0
Unit	user-defined position
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

60FAh – Control Effort

Object Description

Index	60FA
Description	This object indicates the control effort as the output of the position control loop. In the position control function, notation of the control effort is mode-dependent and therefore not specified.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x00000000
Unit	user-defined velocity
Lower Limit	0x80000000

Upper Limit	0x7FFFFFFF

60FDh – Digital Inputs

Object Description

Index	60FD
Description	This object provides digital inputs. This object is organized bit-wise. The bits have the following meaning: bit 0: negative limit switch bit 1: positive limit switch bit 2: home switch bit 3: reserved bit 16-31: manufacturer-specific The bit values have the following meaning: 0 = switch is off 1 = switch is on
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read Only
PDO Mapping	Yes
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

60FEh – Digital Outputs

Object Description

Index	60FE
Description	This object commands simple digital outputs. This object is organized bit-wise. The bits have the following meaning: bit 16-31: manufacturer-specific This object includes the following sub-indexes: sub-index 1: the physical output value sub-index 2: mask for the physical outputs
Object Code	Array
Data Type	Unsigned32

Entry Description

Sub-Index	000
Description	Number of entries
Access	Read Only
PDO Mapping	Yes
Default Value	0x2
Lower Limit	0x1
Upper Limit	0x2

Sub-Index	001
Description	Physical Outputs The bit values for sub-index 1 have the following meaning: 0 = output is off, brake is not set 1 = output is on, brake is set
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	Yes
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

Sub-Index	002
Description	Output Mask The bit values for sub-index 2 have the following meaning: 0 = disable output (output will not change) 1 = enable output (output will change)
Data Type	Unsigned32
Access	Read/Write
PDO Mapping	No
Default Value	0x0
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

60FFh – Target Velocity

Object Description

Index	60FF
Description	This object indicates the configured target velocity and is used as input for the trajectory generator.
Object Code	Variable
Data Type	Integer32

Entry Description

Access	Read/Write
PDO Mapping	Yes
Default Value	0x0
Unit	user-defined velocity
Lower Limit	0x80000000
Upper Limit	0x7FFFFFFF

6402h – Motor Type

Object Description

Index	6402
Description	This object indicates the type of motor attached to and driven by the drive device. The following value definition is valid: 0008h = stepper motor 0009h = micro-step stepper motor
Object Code	Variable

Data Type	Unsigned16

Entry Description

Access	Read/Write
PDO Mapping	No
Default Value	0x8
Lower Limit	0x8
Upper Limit	0x9

6502h – Supported Drive Modes

Object Description

Index	6502
Description	This object provides information about the supported drive modes. This object is organized bit-wise. The bits have the following meaning: bit 0: profile position mode bit 1: velocity mode bit 2: profile velocity mode bit 3: profile torque mode bit 4: reserved bit 5: homing mode bit 6: interpolated position mode bit 7: cyclic synchronous position mode bit 8: cyclic synchronous velocity mode bit 9: cyclic synchronous torque mode bit 10-15: reserved bit 16-31: manufacturer-specific The bit values have the following meaning: 0 = mode is not supported 1 = mode is supported
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0xAF
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

67FFh – Single Device Type

Object Description

Index	67FF
Description	This object defines the type of the specific drive within a multi-device module. This object has the same structure as object 1000h (device type). This object is organized bit-wise.
Object Code	Variable
Data Type	Unsigned32

Entry Description

Access	Read Only
PDO Mapping	No
Default Value	0x00000192
Lower Limit	0x0
Upper Limit	0xFFFFFFFF

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