

Sidoor

Description of the manufacturer specific CANopen objects – AT40

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1 Introduction

This document describes CANopen objects for the door controller device AT40.

2 Profile specific objects

2.1 Object 6310_h Light barrier status

Bits 0 to 5 reserved (111111_b)

Bits 6 to 7 Status

VALUE DEFINITION

Bit 7	Bit 6	Description
0	0	No subject detected
0	1	Subject detected
1	0	Error indication
1	1	not available or not installed

If the input 1 of the AT40 is configured as DCPS, the status bits are always 1.

OBJECT DESCRIPTION

Index	6310 _h
Name	Light barrier status
Object code	Array
Data type	Unsigned8
Category	See <i>CiA DSP 417-2</i>

ENTRY DESCRIPTION

Sub-index	00 _h
Description	Highest sub-index supported
Access	const
PDO mapping	No
Value range	04 _h
Default value	04 _h

Sub-index	01 _h
Description	Door 1
Access	ro
PDO mapping	Default
Value range	see value definition
Default value	FF _h

Sub-index	02 _h
Description	Door 2
Access	ro
PDO mapping	Default
Value range	see value definition
Default value	FF _h

Sub-index	03 _h
Description	Door 3
Access	ro
PDO mapping	Default
Value range	see value definition
Default value	FF _h

Sub-index	04 _h
Description	Door 4
Access	ro
PDO mapping	Default
Value range	see value definition
Default value	FF _h

The Sidoor application does only control one door selected by COB 6003_h. Depending on this setting, the corresponding sub index will return the correct value, while all other sub indices will return FF_h.

3 Manufacturer-specific objects

Profile specific objects are used for setup of the driving profile and other general settings like node-ID and baudrate.

3.1 Object 3000_h Node settings

This object contains the node settings like node-ID and baudrate. These parameters are essential for communication and are protected against unintentional change. A special sequence must be followed in order to open a 60 second time window for write access to sub-index 2 and 3. Accessing any other object than this by SDO for write will immediately close the time window.

Any changes to the node settings become active after a communication reset or node reset.

SEQUENCE:

step	action	remark
1	write 340E 2231 _h to sub-index 1	sequence started, step 2 must follow within 60s
2	write A1F7 EE93 _h to sub-index 1	sequence successful, step 3 must follow within 60s
3	write desired value to sub-index 2 or 3	write enable stays active for max. 60s. Indices 2 & 3 may both be changed in this time window

VALUE DEFINITION

Node-ID

Value	Definition
00 _h	not allowed
01 _h to 7F _h	passible setting
80 _h to FF _h	not allowed

Baudrate

Value	Definition
0	1000 kBd
1	800 kBd
2	500 kBd
3	250 kBd
4	125 kBd
5	100 kBd
6	50 kBd
7	20 kBd
8	10 kBd
9	autobauding
all unmentioned values	not allowed

OBJECT DESCRIPTION

Index	3000 _h
Name	Node settings
Object code	STRUCT
Data type	VAR
Category	optional (manufacturer-specific)

ENTRY DESCRIPTION

Sub-index	00 _h
Description	Highest sub-index supported
Access	const
PDO mapping	No
Value range	03 _h
Default value	03 _h

Sub-index	01 _h
Description	sequence object for enable write access
Access	rw
PDO mapping	No
Value range	UNSIGNED32
Default value	FFFF FFFF _h

Sub-index	02 _h
Description	Node ID
Access	ro (rw timewise after special sequence)
PDO mapping	No
Value range	UNSIGNED8 (see value definition)
Default value	07 _h

Sub-index	03 _h
Description	Baudrate Index
Access	ro (rw timewise after special sequence)
PDO mapping	Default
Value range	UNSIGNED8 (see value definition)
Default value	3 (equals 250kBaud)

3.2 Object 3001_h Door 1 profile

This object contains the profile parameter for door 1. If door 1 is not selected by SDO 6003_h, this object is not available.

All sub-indices except 0 are of kind UNSIGNED16, supports rw, are not PDO mappable and have motor dependant ranges and default values (see user manual). So for ease of description, these properties are not explicitly mentioned for every sub-index.

OBJECT DESCRIPTION

Index	3001 _h
Name	Door 1 profile
Object code	ARRAY
Data type	UNSIGNED16
Category	Optional

ENTRY DESCRIPTION

Sub-index	00 _h
Description	Highest sub-index supported
Access	const
PDO mapping	No
Value range	1A _h
Default value	1A _h

Sub-index	01 _h
Description	SlowEndDistOp [mm] (Slow speed opening distance in opened position)

Sub-index	02 _h
Description	SlowStrtDistOp [mm] (Slow speed opening distance in closed position)

Sub-index	03 _h
Description	SlowStrtDistCls [mm] (Slow speed closing distance in opened position)

Sub-index	04 _h
Description	SlowEndDistCls [mm] (Slow speed closing distance in closed position)

Sub-index	05 _h
Description	MaxSpdOp [mm/s] (Max. speed in opening direction)

Sub-index	06 _h
Description	SlowEndSpdOp [mm/s] (Slow end speed in opening direction)

Sub-index	07 _h
Description	SlowStrtSpdOp [mm/s] (Slow start speed in opening direction)

Sub-index	08 _h
Description	SlowIniSpdOp [mm/s] (Slow speed in opening direction and init mode)
Sub-index	09 _h
Description	MaxSpdCls [mm/s] (Max. speed in closing direction)
Sub-index	0A _h
Description	SlowStrtSpdCls [mm/s] (Slow start speed in closing direction)
Sub-index	0B _h
Description	SlowEndSpdCls [mm/s] (Slow end speed in closing direction)
Sub-index	0C _h
Description	SlowIniSpdCls [mm/s] (Slow speed in closing direction and init mode)
Sub-index	0D _h
Description	NdgSpd [mm/s] (Nudging speed in closing direction)
Sub-index	0E _h
Description	AccRampOp [mm/s ²] (Acceleration ramp in opening direction)
Sub-index	0F _h
Description	DecRampOp [mm/s ²] (Deceleration ramp in opening direction)
Sub-index	10 _h
Description	RevRampOpToCls [mm/s ²] (Reversal deceleration ramp from OP to CLS)
Sub-index	11 _h
Description	AccRampCls [mm/s ²] (Acceleration ramp in closing direction)
Sub-index	12 _h
Description	DecRampCls [mm/s ²] (Deceleration ramp in closing direction)
Sub-index	13 _h
Description	RevRampClsToOp [mm/s ²] (Reversal deceleration ramp from CLS to OP)
Sub-index	14 _h
Description	IdleTorqueOpd [mA] (Idle torque in opened position)
Sub-index	15 _h
Description	IdleTorqueCld [mA] (Idle torque in closed position)

Sub-index	16 _h
Description	PeakTorqueCld [mA] (Peak torque in closed position for app. 2s)

Sub-index	17 _h
Description	LimForceOp [N] (Force limitation in opening direction)

Sub-index	18 _h
Description	LimForceCls [N] (Force limitation in closing direction)

Sub-index	19 _h
Description	LimForceEndCls [N] (Force limitation in end distance of closing direction)

Sub-index	1A _h
Description	LimForceNdgCls [N] (Force limitation in closing direction and nudging active)

3.3 Object 3002_h Door 2 profile

This object is functionally identical to 3001_h except that it describes the profile for door 2. It will only be available, if door 2 is selected (see object 6003_h).

3.4 Object 3003_h Door 3 profile

This object is functionally identical to 3001_h except that it describes the profile for door 3. It will only be available, if door 3 is selected (see object 6003_h).

3.5 Object 3004_h Door 4 profile

This object is functionally identical to 3001_h except that it describes the profile for door 4. It will only be available, if door 4 is selected (see object 6003_h).

3.6 Object 3005_h Door 1 parameter

This object covers the main parameter of door 1. If door 1 is not selected by SDO 6003_h, this object is not available.

OBJECT DESCRIPTION

Index	3005 _h
Name	Node settings
Object code	STRUCT
Data type	VAR
Category	optional (manufacturer-specific)

ENTRY DESCRIPTION

Sub-index	00 _h
Description	Highest sub-index supported
Access	const
PDO mapping	No
Value range	08 _h
Default value	08 _h

Sub-index	01 _h
Description	DoorWidth [mm] (detected door width from last learn run)
Access	ro
PDO mapping	No
Value range	UNSIGNED16
Default value	300 _d

Sub-index	02 _h
Description	MotorType (detected type of connected motor from last learn run)
Access	ro
PDO mapping	No
Value range	UNSIGNED16
Default value	0000 _h

Sub-index	03 _h
Description	EffDoorMass [kg] (detected effective door mass from last learn run)
Access	ro
PDO mapping	No
Value range	UNSIGNED16
Default value	depends on the motor

Sub-index	04 _h
Description	CntOperHours [h] (counter for operating hours)
Access	ro
PDO mapping	No
Value range	UNSIGNED16
Default value	n.a.

Sub-index	05 _h
Description	CntInitialLearnRuns (counter for initial learn runs)
Access	ro
PDO mapping	No
Value range	UNSIGNED16
Default value	n.a.

Sub-index	06 _h
Description	CntStartUps (counter for start up's)
Access	ro
PDO mapping	No
Value range	UNSIGNED16
Default value	n.a.

Sub-index	07 _h
Description	CntDoorOpenings(counter for openings)
Access	ro
PDO mapping	No
Value range	0 to 6553499
Default value	n.a.

Sub-index	08 _h
Description	CntDoorBlockings (counter for door blockings)
Access	ro
PDO mapping	No
Value range	0 to 6553499
Default value	n.a.

3.7 Object 3006_h Door 2 parameter

This object is functionally identical to 3005_h except that it describes the parameter for door 2. It will only be available, if door 2 is selected (see object 6003_h).

3.8 Object 3007_h Door 3 parameter

This object is functionally identical to 3005_h except that it describes the parameter for door 3. It will only be available, if door 3 is selected (see object 6003_h).

3.9 Object 3008_h Door 4 parameter

This object is functionally identical to 3005_h except that it describes the parameter for door 4. It will only be available, if door 4 is selected (see object 6003_h).

3.10 Object 3009_h Door 1 event log

This object covers the event log history of door 1. If door 1 is not selected by SDO 6003_h, this object is not available.

The event log stores the events in the order of their occurrence with respect to time. The amount may vary and can be checked with sub-index 0 (max. amount is 8 errors). The event display is done in form of a string and the event log can be cleared by writing a zero to sub-index 0.

All sub-indices except 0 are of kind STRING, supports only ro, are not PDO mappable and the default value is not applicable. So for ease of description, these properties are not explicitly mentioned for every sub-index.

OBJECT DESCRIPTION

Index	3009 _h
Name	Door 1 event log
Object code	ARRAY
Data type	STRING
Category	optional (manufacturer-specific)

ENTRY DESCRIPTION

Sub-index	00 _h
Description	Highest sub-index supported
Access	ro
PDO mapping	No
Value range	UNSIGNED8
Default value	00 _h

Sub-index	01 _h to max. stored events
Description	step from newest to oldest event

3.11 Object 300A_h Door 2 event log

This object is functionally identical to 3009_h except that it describes the parameter for door 2. It will only be available, if door 2 is selected (see object 6003_h).

3.12 Object 300B_h Door 3 event log

This object is functionally identical to 3009_h except that it describes the parameter for door 3. It will only be available, if door 3 is selected (see object 6003_h).

3.13 Object 300C_h Door 4 event log

This object is functionally identical to 3009_h except that it describes the parameter for door 4. It will only be available, if door 4 is selected (see object 6003_h).

3.14 Object 300D_h Door 1 event statistic

This object covers the event statistic of door 1. If door 1 is not selected by SDO 6003_h, this object is not available.

The event statistic stores the amount of occurrences in the order of their first occurrence. The amount may vary and can be checked with sub-index 0 (max. amount is presently 24 errors). The event statistic display is done in form of a string and the can be cleared by writing a zero to sub-index 0.

All sub-indices except 0 are of kind STRING, supports only ro, are not PDO mappable and the default value is not applicable. So for ease of description, these properties are not explicitly mentioned for every sub-index.

OBJECT DESCRIPTION

Index	300D _h
Name	Door 1 event statistic
Object code	ARRAY
Data type	STRING
Category	optional (manufacturer-specific)

ENTRY DESCRIPTION

Sub-index	00 _h
Description	Highest sub-index supported
Access	ro
PDO mapping	No
Value range	UNSIGNED8
Default value	00 _h

Sub-index	01 _h to max. stored events
Description	step from newest to oldest statistic entry

3.15 Object 300E_h Door 2 event statistic

This object is functionally identical to 300D_h except that it describes the parameter for door 2. It will only be available, if door 2 is selected (see object 6003_h).

3.16 Object 300F_h Door 3 event statistic

This object is functionally identical to 300D_h except that it describes the parameter for door 3. It will only be available, if door 3 is selected (see object 6003_h).

3.17 Object 3010_h Door 4 event statistic

This object is functionally identical to 300D_h except that it describes the parameter for door 4. It will only be available, if door 4 is selected (see object 6003_h).

3.18 Object 4000_h Intermediate link voltage

For information, the value of the intermediate link voltage can be read.

OBJECT DESCRIPTION

Index	4000 _h
Name	Intermediate link voltage
Object code	VAR
Data type	UNSIGNED16
Category	optional (manufacturer-specific)

ENTRY DESCRIPTION

Sub-index	00 _h
Description	Value of intermediate link voltage in mV
Access	ro
PDO mapping	No

3.19 Object 4001_h Motor current

For information, the value of the present motor current can be read.

All sub-indices are of kind SIGNED16, supports only ro, are not PDO mappable and the default value is not applicable. So for ease of description, these properties are not explicitly mentioned for every sub-index.

OBJECT DESCRIPTION

Index	4001 _h
Name	Motor current
Object code	ARRAY
Data type	SIGNED16
Category	optional (manufacturer-specific)

ENTRY DESCRIPTION

Sub-index	00 _h
Description	Highest sub-index supported
Access	const
PDO mapping	No
Value range	02 _h
Default value	02 _h

Sub-index	01 _h
Description	Native motor current [mA] (gives the current value without offset correction)

Sub-index	02 _h
Description	Corrected motor current [mA] (gives the current value with offset correction)



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