Atek

SAS Singleturn Absolute Encoder

CANopen

DS406 - Device profile for encoder

USER MANUAL

INDEX

1. TECHNICAL PROPERTIES

GENERAL PROPERTIES

Supply Voltage	15… 26 V_{DC}
Supply Current	40 mA
Output	CANopen
Accuracy	±0,1°
Repeatability	0,1°
Resolution	14 bit
Refresh Rate	333 Hz.
Protection Class	IP 67
Humidity	%10 ... %90
Operating Temperature	-20… +70 °C
Electrical Connection	M12 5 pin (male) socket or cable
Body Material	Aluminium
Shaft Material	Stainless Steel
Weight	~140 grams

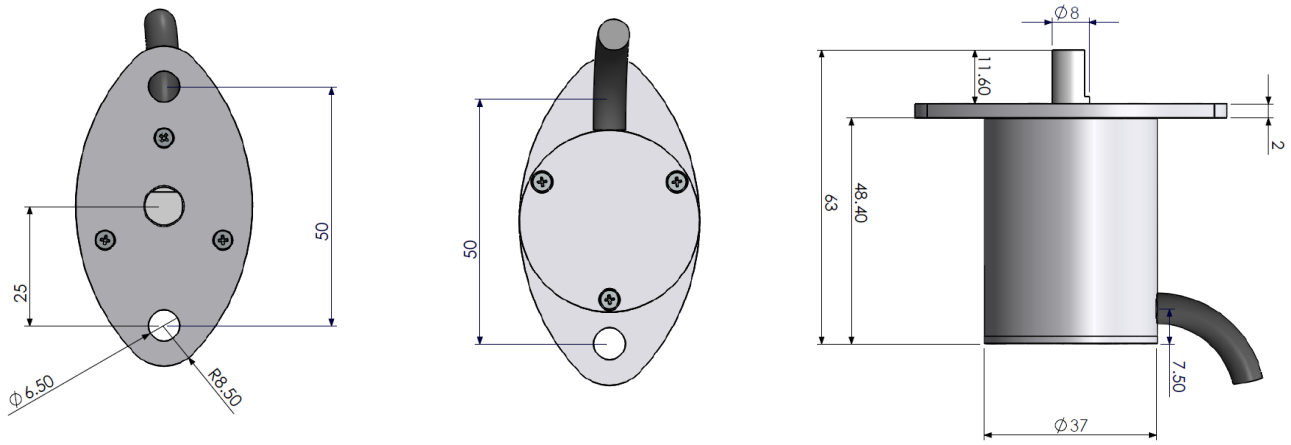
CANopen PROPERTIES

Communication Profile	CiA 301
Device Type	CANopen, CiA DS406
Node ID	Between 1 and 127, configurable via LSS or SDO. Default Node ID: 1
Baud Rate	10 kBit/s, 20 kBit/s, 50 kBit/s, 100 kBit/s, 125 kBit/s, 250 kBit/s, 500 kBit/s, 800 kBit/s, 1 Mbit/s
PDO Data Rate	100 ms
Error Check	Heartbeat, Emergency Message
PDO	3 Tx PDO
PDO Modes	Event/Time triggered, Synch/Asynch
SDO	1 server
Position data	Object Dictionary 0x6020
Terminating Resistor	Optional

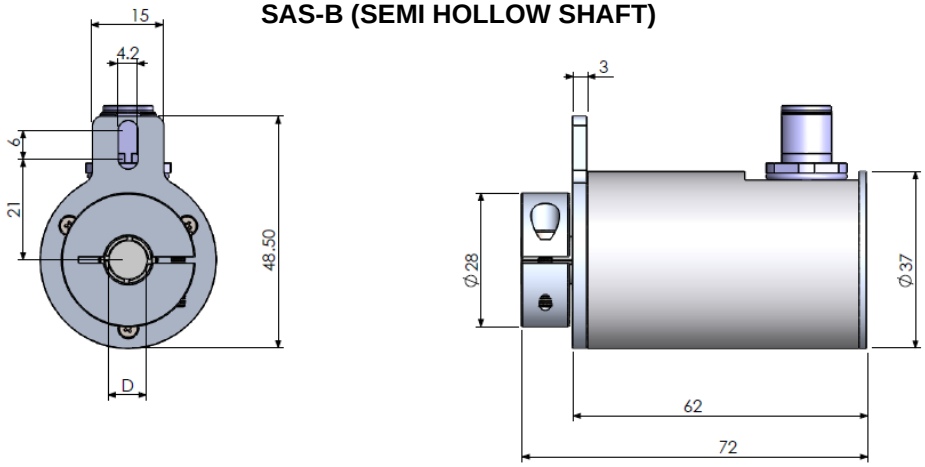
2.CONNECTIONS

2.1 Dimensions

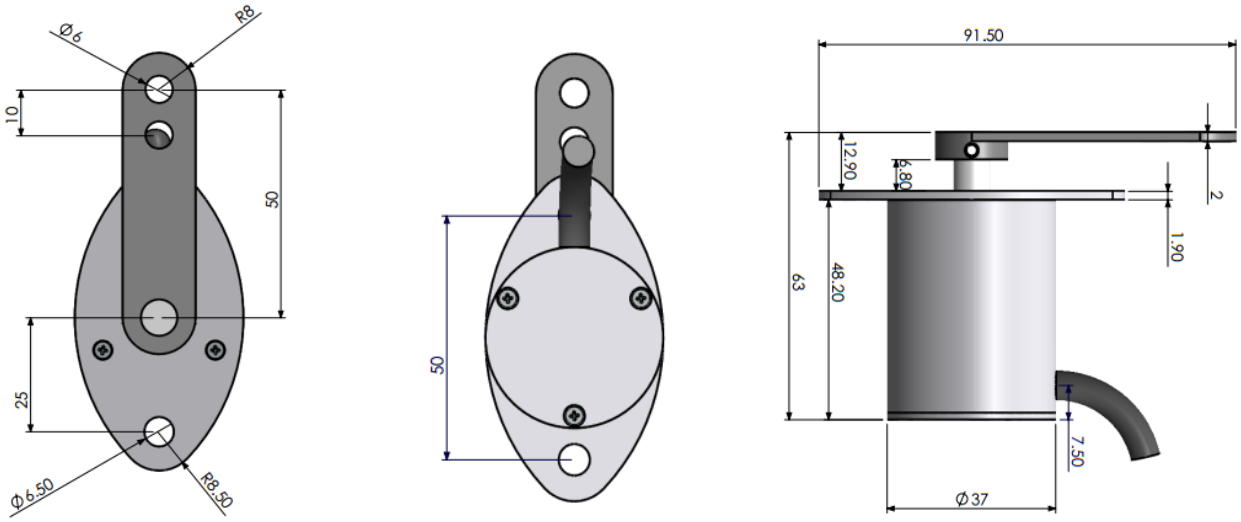
SAS-S (SHAFT)



SAS-B (SEMI HOLLOW SHAFT)



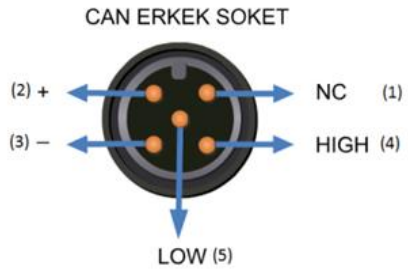
SAS-K (SLEEVED)



2.2 Electrical Connections

CANopen

Pin	M12 Socket	Wire
CAN_SHIELD	Pin 1	Shield
U+ (12..30VDC)	Pin 2	Red
GND (0V)	Pin 3	Black
CAN_H	Pin 4	Yellow
CAN_L	Pin 5	Green



2.3 Warnings

- The installation of the product is carried out by the customer who purchases the product, according to the wiring diagrams, installation information, etc. in this manual.
- Maintenance and repair should be done by the technicians authorized by the manufacturer firm.
- There must be minimum distance between the sensor and control unit. Avoid additions except the suitable connector unless it needs.
- Keep away the sensor cable from as high power energy cables, contactor, motor, switched power supplies, inductive and capacitive noisy supplies.
- Shielding edge of the sensor cable must be ground connected.
- For not to damage the sensor, supply directions and voltage must be paid attention. Don't energize before all connections completed.
- Transport and storage should be at their original packaging and an ambient temperature of -20°C / + 70°C in such a way that they will not be exposed to dust, humudity, impact, vibration, falling or water.
- Chemicals such as alcohol, thinner etc. should not be used for cleaning the product. The product should be wiped with a damp cloth.
- The product may be damaged and may become unusable if used outside of the specifications in the user manual.

ORDERING CODE

Model
SAS

Body Diameter
37 : 37 mm

Supply Voltage
PP : 15...26 V_{DC}

Output Signal
Increment Direction
CW : Clockwise
CCW : Counter Clockwise

Socket direction
Y : Side socket

SAS	B	–	037	–	14	–	PP	C	–	CW	–	S13	–	Y	–	8

Shaft
S : Shaft
B : Semi hollow shaft
K : Sleeved

Resolution
Max. 14 bit

Output Signal
C : CANopen

Electrical Connection
1.5M : 1,5m
S13 : M12 Socket 5

Shaft or Shaft Hollow Diameter (2)
6 : 6 mm
8 : 8 mm
10 : 10 mm

(1) Cable length can be requested to a minimum of 1.5 m.
(2) In SAS-S (shaft) model, the shaft diameter can be 6 mm or 8 mm,
In SAS-B (semi hollow shaft) model, the shaft diameter can be 6 mm, 8 mm or 10 mm,
In SAS-K (sleeved) model, the shaft diameter can be only 8 mm

*** Please contact us for your non-standard (special production) product requests.**

3.CONFIGURATION

Unless specified in the order, 'Default Node ID:1'
Baud Rate: 500 kBit/s These two parameters can be adjusted via 2 protocols:

1. LSS protocol
2. SDO protocol

3.1 LSS Protocol Configuration

To change Node ID and Baud Rate via LSS protocol;

- No other device should be connected to the corresponding CAN network other than LSS master device and LSS slave device whose NODE ID and Baud Rate will be changed.
- LSS Slave's Baud Rate should be known before the configuration. (Default Baud Rate is 500 kBit/s.)
- Baud Rate's of both LSS Master and Slave should be same.
- Example communications via LSS protocol are given in the Table 3 and 4.

Baud Rate parameter is set according to the table below.

Baud Rate	10 kBit/s	20 kBit/s	50 kBit/s	100 kBit/s	125 kBit/s	250 kBit/s	500 kBit/s	800 kBit/s	1 Mbit/s
Parameter Value	8	7	6	5	4	3	2	1	0

WARNING: All changes are saved automatically and will be active after any reboot.

Message	Details	COB-ID	Data (Hex)
Lss Master Request	Switch Mode Global-Configuration Mode	0x7E5	04 01 00 00 00 00 00 00
Lss Master Request	Inquire Identity – Vendor ID	0x7E5	5A 00 00 00 00 00 00 00
Lss Slave Response	Inquire Identity – Vendor ID : 0x00000000	0x7E4	5A 00 00 00 00 00 00 00
Lss Master Request	Inquire Identity – Product Code	0x7E5	5B 00 00 00 00 00 00 00
Lss Slave Response	Inquire Identity – Product Code : 0x00000000	0x7E4	5B 00 00 00 00 00 00 00
Lss Master Request	Inquire Identity – Revision Nr.	0x7E5	5C 00 00 00 00 00 00 00
Lss Slave Response	Inquire Identity – Revision Nr. : 0x00000000	0x7E4	5C 00 00 00 00 00 00 00
Lss Master Request	Inquire Identity – Serial Nr.	0x7E5	5D 00 00 00 00 00 00 00
Lss Slave Response	Inquire Identity – Serial Nr. : 0x00000000	0x7E4	5D 00 00 00 00 00 00 00
Lss Master Request	Inquire Node ID	0x7E5	5E 00 00 00 00 00 00 00
Lss Slave Response	Inquire Node ID – NID : 0x01	0x7E4	5E 01 00 00 00 00 00 00
Lss Master Request	Switch Mode Global-Operation Mode	0x7E5	04 00 00 00 00 00 00 00

Table 3. LSS auto detect

Message	Details	COB-ID	Data (Hex)
Lss Master Request	Switch Mode Selective – Vendor ID : 0x00000000	0x7E5	40 00 00 00 00 00 00 00
Lss Master Request	Switch Mode Selective – Product Code : 0x00000000	0x7E5	41 00 00 00 00 00 00 00
Lss Master Request	Switch Mode Selective – Revision Nr. :0x00000000	0x7E5	42 00 00 00 00 00 00 00
Lss Master Request	Switch Mode Selective – Serial Nr. : 0x00000000	0x7E5	43 00 00 00 00 00 00 00
Lss Slave Response	Switch Mode Selective Response	0x7E4	44 00 00 00 00 00 00 00
Lss Master Request	Configure Bit Timing Parameters – Table Selector : 0 , Table Index : 4	0x7E5	13 00 04 00 00 00 00 00
Lss Slave Response	Configure Bit Timing Parameters – Success	0x7E4	13 00 00 00 00 00 00 00
Lss Master Request	Switch Mode Global-Operation Mode	0x7E5	04 00 00 00 00 00 00 00
Lss Master Request	Switch Mode Global-Configuration Mode	0x7E5	04 01 00 00 00 00 00 00
Lss Master Request	Activate Bit Timing Parameters – Switch Delay: 100ms	0x7E5	15 64 00 00 00 00 00 00
Lss Master Request	Switch Mode Global-Operation Mode	0x7E5	04 00 00 00 00 00 00 00
Lss Master Request	Switch Mode Selective – Vendor ID : 0x00000000	0x7E5	40 00 00 00 00 00 00 00
Lss Master Request	Switch Mode Selective – Product Code : 0x00000000	0x7E5	41 00 00 00 00 00 00 00
Lss Master Request	Switch Mode Selective – Revision Nr. : 0x00000000	0x7E5	42 00 00 00 00 00 00 00
Lss Master Request	Switch Mode Selective – Serial Nr.: 0x00000000	0x7E5	43 00 00 00 00 00 00 00
Lss Slave Response	Switch Mode Selective Response	0x7E4	44 00 00 00 00 00 00 00
Lss Master Request	Configure Node ID – NID : 0x02	0x7E5	11 02 00 00 00 00 00 00
Lss Slave Response	Configure Node ID - Success	0x7E4	11 00 00 00 00 00 00 00
Lss Master Request	Store Configuration	0x7E5	17 00 00 00 00 00 00 00
Lss Slave Response	Store Configuration - Success	0x7E4	17 00 00 00 00 00 00 00
Lss Master Request	Switch Mode Global-Operation Mode	0x7E5	04 00 00 00 00 00 00 00
Reset	Reset All Nodes	0x000	81 00

Table 4. LSS configuration of NODE ID and Baud Rate

3.2 SDO Configuration

To change Node ID and Baud Rate via SDO protocol;

- LSS Slave's Baud Rate should be known before the configuration. (Default Baud Rate is 500 kBit/s.)
- Baud Rate's of all devices in the network should be same, and NODE ID's of all devices should be different.

NODE ID Configuration: NODE ID parameter is at Object Dictionary Index:3001 sub-index:0
Please change this parameter in order to change NODE ID.
Example shown below is to change NODE ID from 1 to 5.

Message	Node	COB-ID	Data (Hex)
SDO Download Request	0x01	0x601 (0x600 + Node Id)	2F 01 30 00 Node ID 00 00 00
SDO Download Response	0x01	0x581 (0x580 + Node Id)	60 01 30 00 00 00 00 00

Table 5. NODE ID configuration via SDO

Baud Rate configuration: Baud Rate paremeter is at Object Dictionary Index: 3000 sub-index : 0
Baud rate parameter is set according to the table below.

Baud Rate	10 kBit/s	20 kBit/s	50 kBit/s	100 kBit/s	125 kBit/s	250 kBit/s	500 kBit/s	800 kBit/s	1 Mbit/s
Parameter Value	8	7	6	5	4	3	2	1	0

Example shown below is to set Baud Rate to 100 kBit/s.

Message	Node	COB-ID	Data (Hex)
SDO Download Request	0x01	0x601 (0x600 + Node ID)	2F 00 30 00 Baud Rate 00 00 00
SDO Download Response	0x01	0x581 (0x581 + Node ID)	60 00 30 00 00 00 00 00

Table 6. Baud Rate configuration via SDO

WARNING: All changes are saved automatically and will be active after any reboot.

4. OBJECT DICTIONARY

4.1 Manufacturer Specific Object

Baud Rate Setting

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x3000	0x00	Baud Rate Setting	Unsigned 8	2	Read/Write	Yes	

NODE ID Setting

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x3001	0x00	NODE ID Setting	Unsigned 8	1	Read/Write	Yes	

Auto Operational

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x3002	0x00	Auto Operational	Unsigned 8	0	Read/Write	Yes	Operational mode on startup if set to "1"

Unique ID

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x3010	0x00	Number of Entries	Unsigned 8	4	Read Only	No	
	0x01	Unique ID 1	Unsigned 32		Read Only	No	
	0x02	Unique ID 2	Unsigned 32		Read Only	No	
	0x03	Unique ID 3	Unsigned 32		Read Only	No	
	0x04	Unique ID 4	Unsigned 32		Read Only	No	

Max. Difference

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x4000	0x00	Max. Difference	Unsigned 16	0X03E8	Read/Write	Yes	When the difference between two sensor's signal is over the specified value, Emergency Error message is sent and shown at 0x6503.

4.2 Standardized Device Profile

Operating Parameters

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x6000	0x00	Operating Parameters	Unsigned 16	0x04	Read/Write	Yes	

Bit No	15 ... 3	2	1	0
Value	X	SFC	0	CS

CS : 0 : CW (Clockwise)
1 : CCW (Counter-clockwise)

SFC : 0 : Scaling function off.
1 : Scaling function on.

If Scaling Function is enabled, 0x6001 and 0x6002 parameters are enabled.

Measuring Units per Revolution

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x6001	0x00	Measuring Units per Revolution	Unsigned 32	0x4000	Read/Write	Yes	Resolution in one turn.

Total Measuring Range in Measuring Unit

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x6002	0x00	Total Measuring Range in Measuring Unit	Unsigned 32	0x4000	Read/Write	Yes	Full scale value

Preset Value for Multi-Sensor Device

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x6010	0x00	Number of Entries	Unsigned 8	2	Read Only	No	
	0x01	Preset Value Channel 1	Integer 32		Read/Write	Yes	Current value is set to this preset value
	0x02	Preset Value Channel 2	Integer 32		Read/Write	Yes	

Position Value for Multi-Sensor Device

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x6020	0x00	Number of Entries	Unsigned 8	2	Read Only	No	
	0x01	Position Value Channel 1	Integer 32		Read Only	No	
	0x02	Position Value Channel 2	Integer 32		Read Only	No	

Speed Value

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x6030	0x00	Number of Entries	Unsigned 8	2	Read Only	No	
	0x01	Speed Value Channel 1	Integer 16		Read Only	No	Channel 1 speed value (rates per minute)
	0x02	Speed Value Channel 2	Integer 16		Read Only	No	Channel 2 speed value (rates per minute)

Cyclic Timer

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x6200	0x00	Cyclic Timer	Unsigned 16		Read/Write	Yes	TPDO1's event timer 0x1800/5

Operating Status

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x6500	0x00	Operating Status	Unsigned 16		Read Only	No	Index 0x6000, for read purposes.

Single Turn Resolution

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x6501	0x00	Single Turn Resolution	Unsigned 32		Read Only	No	Same with 0x6001

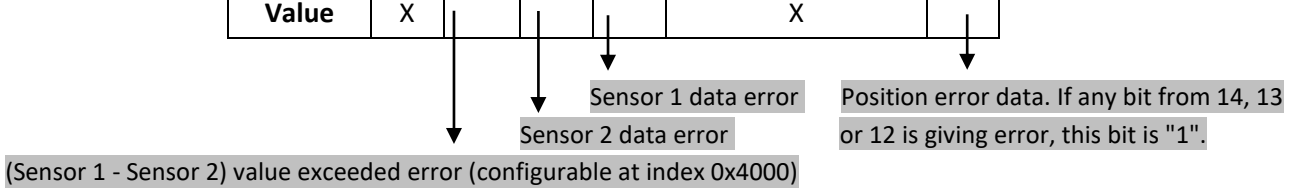
Number of Distinguishable Revolutions

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x6502	0x00	Number of Distinguishable Revolutions	Unsigned 16	1	Read Only	No	Full scale, turn count

Alarms

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x6503	0x00	Alarms	Unsigned 16		Read/Write	Yes	

Bit No	15	14	13	12	11..1	0
Value	X				X	



Note: Alarm messages are not deleted till sensor's reboot, even when the problem is solved. Alarm messages are also sent via Emergency index. It can be manually configured by setting it back to '0'.

Supported Alarms

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x6504	0x00	Supported Alarms	Unsigned 16	0x7001	Read Only	No	

Supported Alarm types.
Bit 0 : Position error bit. Any error makes it "1".
Bit 12: Sensor 1 data error
Bit 13: Sensor 2 data error
Bit 14: (Sensor 1 - Sensor 2) value exceeded error (configurable at index 0x4000)

Warnings

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x6505	0x00	Warnings	Unsigned 16		Read Only	No	

Bit No	15...1	0
value	X	overspeed

overspeed : Set to 1 when encoder speed rate is over 5000 RPM

Note: Unlike alarms, Warnings disappear after the problem is solved. It is then sent via Emergency messages.

Supported Warnings

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x6506	0x00	Supported Warnings	Unsigned 16	0x0001	Read Only	No	

Supported warnings list:
Bit 1: Overspeed warning, set to 1 when RPM is over 5000

Profile and Software Version

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x6507	0x00	Profile and Software Version	Unsigned 32	0x3020100	Read Only	No	

Operating Time

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x6508	0x00	Operating Time	Unsigned 32	0	Read Only	No	Operating time: 0.1 hour/unit. Reset to 0 every reboot.

Module Identification

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x650A	0x00	Number of Entries	Unsigned 8	3	Read Only	No	
	0x01	Manufacturer	Integer 32	0	Read Only	No	

		Offset Value					
	0x02	Manufacturer Min Position Value	Integer 32	0	Read Only	No	
	0x03	Manufacturer Max Position Value	Integer 32	0x3FFF	Read Only	No	

Serial Number

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x650B	0x00	Serial Number	Unsigned 32	0xFFFFFFFF	Read Only	No	Not supported

Offset Values for Multi-Sensor Devices

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x650C	0x00	Number of Entries	Unsigned 8	2	Read Only	No	
	0x01	Offset Value Channel 1	Integer 32		Read Only	No	Calculated offset value when preset value is given at 0x6010/01
	0x02	Offset Value Channel 2	Integer 32		Read Only	No	Calculated offset value when preset value is given at 0x6010/02

4.3 Communication Profile Area

Device Type

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x1000	0x00	Device Type	Unsigned 32	0x10196	Read Only	No	Singleturn Absolute Rotary Encoder

Error Register

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x1001	0x00	Error Register	Unsigned 8		Read Only	No	

Pre-Defined Error Field

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x1003	0x00	Number of Errors	Unsigned 8	Up to 8	Read/Write	No	
	0x01..0x08	History Errors	Unsigned 32	0	Read Only	No	

SYNC COB-ID

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x1005	0x00	SYNC COB-ID	Unsigned 32	0x80	Read/Write	Yes	

Manufacturer Device Name

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x1008	0x00	Manufacturer Device Name	String	Absolute Singleturn Encoder	Read Only	No	

Manufacturer Hardware Version

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x1009	0x00	Manufacturer Hardware Version	String	v1.0	Read Only	No	

Manufacturer Software Name

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x100A	0x00	Manufacturer Software Version	String	v1.0	Read Only	No	

Store Parameters

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x1010	0x00	Number of Entries	Unsigned 8	1	Read Only	No	
	0x01	Save all parameters	Unsigned 32	0x02	Read/Write	No	Auto save any changed parameter.

Restore Parameters

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x1011	0x00	Number of Entries	Unsigned 8	1	Read Only	No	
	0x01	Restore all parameters	Unsigned 32	1	Read/Write	No	When set to 0x64616F6C, all parameters reset to default values.

Emergency COB-ID

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x1014	0x00	Emergency COB-ID	Unsigned 32	Node ID+0x80	Read/Write	Yes	

Inhibit Time Emergency

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x1015	0x00	Inhibit Time Emergency	Unsigned 16	0	Read/Write	Yes	

Producer Heartbeat Time

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x1017	0x00	Producer Heartbeat Time	Unsigned 16	0	Read/Write	Yes	

Identity

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x1018	0x00	Number of Entries	Unsigned 8	4	Read Only	No	
	0x01	Vendor ID	Unsigned 32	0	Read Only	No	
	0x02	Product Code	Unsigned 32	0	Read Only	No	
	0x03	Revision Number	Unsigned 32	0	Read Only	No	
	0x04	Serial Number	Unsigned 32	0xFFFFFFFF	Read Only	No	

Server SDO Parameter

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x1200	0x00	Number of Entries	Unsigned 8	2	Read Only	No	
	0x01	COB-ID Client to Server	Unsigned 32	NODE ID +0x600	Read Only	No	
	0x02	COB-ID Server to Client	Unsigned 32	NODE ID +0x580	Read Only	No	

Transmit PDO 1 Parameters

Index	Sub Index	Name	Type	Value	Access	Save	Comment

0x1800	0x00	Number of Entries	Unsigned 8	6	Read Only	No	
	0x01	COB-ID	Unsigned 32	NODE ID +0x180	Read/Write	Yes	
	0x02	Transmission Type	Unsigned 8	0xFF	Read/Write	Yes	
	0x03	Inhibit Time	Unsigned 16	0	Read/Write	Yes	Asynchronous
	0x04	Compatibility Entry	Unsigned 8	0	Read/Write	Yes	
	0x05	Event Timer	Unsigned 16	0X0064	Read/Write	Yes	100 ms
	0x06	SYNC Start Value	Unsigned 8	0	Read/Write	Yes	

Transmit PDO 2 Parameters

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x1801	0x00	Number of Entries	Unsigned 8	6	Read Only	No	
	0x01	COB-ID	Unsigned 32	NODE ID +0x280	Read/Write	Yes	
	0x02	Transmission Type	Unsigned 8	0x01	Read/Write	Yes	Synchronous
	0x03	Inhibit Time	Unsigned 16	0	Read/Write	Yes	
	0x04	Compatibility Entry	Unsigned 8	0	Read/Write	Yes	
	0x05	Event Timer	Unsigned 16	0	Read/Write	Yes	
	0x06	SYNC Start Value	Unsigned 8	0	Read/Write	Yes	

Transmit PDO 3 Parameters

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x1802	0x00	Number of Entries	Unsigned 8	6	Read Only	No	
	0x01	COB-ID	Unsigned 32	NODE ID +0x380	Read/Write	Yes	
	0x02	Transmission Type	Unsigned 8	0xFF	Read/Write	Yes	Asynchronous
	0x03	Inhibit Time	Unsigned 16	0	Read/Write	Yes	
	0x04	Compatibility Entry	Unsigned 8	0	Read/Write	Yes	
	0x05	Event Timer	Unsigned 16	0X0064	Read/Write	Yes	100 ms
	0x06	SYNC Start Value	Unsigned 8	0	Read/Write	Yes	

Transmit PDO 1 Mapping

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x1A00	0x00	Number of Entries	Unsigned 8	4	Read/Write	Yes	
	0x01	PDO 1 Mapping for a process data variable 1	Unsigned 32	0x60200120	Read/Write	Yes	Position Value Ch1(0x6020 0x01)
	0x02	PDO 1 Mapping for a process data variable 2	Unsigned 32	0x60200220	Read/Write	Yes	Position Value Ch2(0x6020 0x02)
	0x03	PDO 1 Mapping for a process data variable 3	Unsigned 32	0x0	Read/Write	Yes	
	0x04	PDO 1 Mapping for a process data variable 4	Unsigned 32	0x0	Read/Write	Yes	

Transmit PDO 2 Mapping

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x1A01	0x00	Number of Entries	Unsigned 8	4	Read/Write	Yes	
	0x01	PDO 1 Mapping for a process data variable 1	Unsigned 32	0x60200120	Read/Write	Yes	Position Value Ch1(0x6020 0x01)
	0x02	PDO 1 Mapping for a process data variable 2	Unsigned 32	0x60200220	Read/Write	Yes	Position Value Ch2(0x6020 0x02)
	0x03	PDO 1 Mapping for a process data variable 3	Unsigned 32	0x0	Read/Write	Yes	
	0x04	PDO 1 Mapping for a process data variable 4	Unsigned 32	0x0	Read/Write	Yes	

Transmit PDO 3 Mapping

Index	Sub Index	Name	Type	Value	Access	Save	Comment
0x1A02	0x00	Number of Entries	Unsigned 8	4	Read/Write	Yes	
	0x01	PDO 1 Mapping for a process data variable 1	Unsigned 32	0x20000110	Read/Write	Yes	PosVal16 1
	0x02	PDO 1 Mapping for a process data variable 2	Unsigned 32	0x20000210	Read/Write	Yes	PosVal16 2
	0x03	PDO 1 Mapping for a process data variable 3	Unsigned 32	0x60300110	Read/Write	Yes	Speed Value Channel 1
	0x04	PDO 1 Mapping for a process data variable 4	Unsigned 32	0x60300210	Read/Write	Yes	Speed Value Channel 2

4.4 Manufacturer Specific Emergency Objects

Mesaj Tipi	Node	COB-ID	Data (Hex)	Comment
Emergency	0x01	0x081 (0x080 + Node Id)	00 50 80 00 00 00 00 00	High speed error
Emergency	0x01	0x081 (0x080 + Node Id)	03 50 80 00 00 00 00 00	Index 0x4000 is exceeded (Maximum difference)
Emergency	0x01	0x081 (0x080 + Node Id)	02 50 80 00 00 00 00 00	Sensor 2 Data Error
Emergency	0x01	0x081 (0x080 + Node Id)	01 50 80 00 00 00 00 00	Sensör 1 Data Error

Disposal of Packagings: Packaging materials consist of recyclable materials. For providing recycling, please dispose waste packagings to collecting points of authorized recycling facilities.
Disposal of E-Waste: This device is in conformity with WEEE Directive and consists of recyclable materials. This product should not be disposed with general waste for preventing negative effects on enviroment and human health. This product should be disposed to collecting points of authorized recycling facilities. Further information can be reached from authorized unit.

ATEK SENSOR TECHNOLOGY AS

Tuzla KOSB Organize Sanayi Bölgesi Melek Aras Bulvarı No:67

34956 Tuzla / Istanbul - TURKEY

Tel: +90 (216) 399 44 04

Fax : +90 (216) 399 44 02

Web: www.ateksensor.com

E-mail: info@ateksensor.com