



Ø58 mm



FEATURES

Single Turn/Multi-Turn Absolute Encoder (16 Bit ST / 43 Bit MT) SSI, CANopen®, or SAE J1939 communication Maintenance-free and environmentally friendly magnetic design Energy harvesting magnetic multi-turn technology No gears or batteries 58 mm (2.28") diameter shaft encoder Heavy duty IP69K stainless steel housing for acid and alkaline resistance Meets CE/EMC standards for immunity and emissions

The Model A58SBS absolute encoder offers a high-performance solution for your absolute feedback needs. It provides maintenance-free feedback thanks to its innovative battery-free and gear-free multi-turn technology. This encoder is especially suited for applications where position information must be retained after loss of system power. Its rugged magnetic technology and high IP69K rating, making the Model A58SBS an excellent choice, even in tough industrial environments where acidic or alkaline resistance is needed or high pressure washdown is required. Available with a heavy duty 10 mm shaft in a clamping flange mount, the Model A58SBS is easily designed into a variety of applications.

COMMON APPLICATIONS

Food and Beverage, Wash Down Environments, Oil, Gas and Chemical Processing, Material Handling, Conveyors, Robotics, Elevator Controls, Textile Machines

MODEL A58SBS ORDERING GUIDE

Blue type indicates price adder options



Notes:

- 1 Please refer to CANopen Interface Technical Reference Manual at encoder.com.
- 2 Please refer to Technical Bulletin TB-546: SAE J1939 Interface and Process Data at encoder.com.
- 3 SAE J1939 can transmit a maximum of 32 bits in process data. The sum of single turn and multiturn results in a maximum of 32 bits. This can be, for example, 12-bit MT or 16-bit ST and 16-bit MT.
- 4 Please refer to Technical Bulletin TB-529: Understanding EPC's SSI Encoders at encoder.com.
- 5 Available with SSI only.
- 6 Available with CANopen and SAE J1939 only.

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Electrical

Input Voltage	5 to 32 VDC max 5 VDC SSI Only
Input Current	50 mA typical for 5 to 32 VDC 80 mA typical for 5 VDC
Power Consumption	0.5 W max
Resolution (Single)	01 to 16 bit
Resolution (Multi)	01 to 43 bit
Accuracy	<±0.0878° (12 BIT)
Repeatability	<±0.0878° (12 BIT)
CE/EMC	Immunity tested per EN 61000-6-2:2006 Emissions tested per EN 61000-6-3:2011

Mechanical

Max Shaft Speed	3600 RPM
Shaft Rotation	Bi-directional
Radial Shaft Load	Bearing life of 1x10 ⁹ revolutions: 22 lbs (100N)
Axial Shaft Load	Bearing life of 1x10 ⁹ revolutions: 22 lbs (100N)
Starting Torque	approx. 1Ncm at ambient temperature
Housing	316 (A4) Marine Grade Stainless Steel
Flange	316 (A4) Marine Grade Stainless Steel
Shaft	316 (A4) Marine Grade Stainless Steel
Bearings	2 Precision Ball Bearings
Weight	approx. 600 grams

Programmable CANopen Transmission Modes

Synchronis	When a synchornization telegram (SYNC) is received from another bus node, PDOs are transmitted independently
Asynchronis	A PDO message is triggered by an internal event (e.g. change of measured value, internal timer, etc.)

SAE J1939

CAN physical layer	ISO 11898 (High Speed CAN)
Protocol	ISO 11898 (High Speed CAN)
Baud Rate	Auto-Baud-Detection
Standard Preset configuration	(other configurations on request)
Direction of counting	CCW (view from shaft end)
ECU-address	0x0A
Process data Identifier	0x18FF000A
PGN	0xFF00
Process data mapping	Byte 0-3 32 Bit Position Value
	Byte 4 8 Bit Error Register
	PDU timer and Position Preset can be adjusted by PGN configuration 0xEF00 (Prop. A)
PDU - Time	50ms (default)
Configuration - PGN	0xEF 00 (Prop. A)
Byte 0	0x01
Byte 1	0xFF
Byte 2	PDU time LSB
Byte 3	PDU time MSB
Byte 4	Preset LSB
Byte 5,6	Preset
Byte 7	Preset MSB

Operating Temp	-20° C to 80° C
Storage Temp -20° C to 00° C	
Vibration 300 m/s ² (10Hz up to 2000 Hz)	
Shock 5000 m/s ² (6ms)	
Sealing	IP69K, shaft sealed to IP67

CANopen Interface

Environmental

	Protocol	CANopen	
		Communication profile CiA 301	
		Device profile for encoder CiA 406 V3.2 class C2	
	Node Number	0 to 127 (default 127)	
	Baud Number	10 Kbaud to 1 Mbaud with automatic bit rate detection	
NOTE: The standard settings as well as any customization in the software can be changed via LSS (CiA 205) and the SDO protocol (e.g. PDOs, scaling, heartbeat, r ID, baud rate, etc.)		ngs as well as any customization in the software can be i) and the SDO protocol (e.g. PDOs, scaling, heartbeat, node-	

SSI Interface

Clock Input	Via opto coupler	
Clock Frequency	100Kz to 500Kz, Higher frequencies may be available. Contact Customer Service.	
Data Output	RS485/RS422 compatible	
Output Code	Gray or binary	
SSI Output	Angular position value	
Parity Bit	Optional (even/odd)	
Error Bit	Optional	
Turn On Time< 1.5 sec	< 1.5 sec	
Pos Counting Dir	Connect DIR to GND for CW Connnect DIR to VDC for CCW (when viewed from shaft end)	
Set to Zero	Yes, see Technical Bulletin TB529: Understanding EPC's SSI Encoders	
Protection	Galvanic Isolation with SSI option	



MODEL A58SBS



Primary dimensions are in mm, secondary dimensions [inches] in brackets for reference only.



WIRING TABLE

SSI Encoders

Flying Lead

Function	Gland cable wire color*
Ground (GND)	White
+VDC	Brown
SSI CLK+	Green
SSI CLK-	Yellow
SSI DATA+	Gray
SSI DATA-	Pink
PRESET	Blue
DIR	Red
Shield	Side-exit housing End-Exit N/C
*Standard cable is 24 AWG conductors with foil and braid shield.	

CANopen and	
SAE J1939	
Encoders	
Flying Lead	

Function	Gland cable wire color*
+VDC	Brown
Ground (GND)	White
CAN _{High}	Green
CAN _{Low}	Yellow
CAN _{GND} / Shield	Bare
*Standard cable is 24 AWG conductors with foil and braid shield.	