MODEL A58SBS - STAINLESS STEEL ABSOLUTE SHAFT ENCODER

Ø58 mm

SAE INTERNATIONAL J1939

CANopen®

SSI Synchronous Serial Interface

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

Model	Mechanical			Electrical								Environmental
A58SBS	10	MH	SS	10	18	CO	A	B	V2	RMJ	NR	S8

MODEL
A58SBS Absolute series

SHAFT SIZE
10 10mm

MOUNTING TYPE
MH Clamping flange

HOUSING TYPE
SS Stainless Steel

SINGLE TURN RESOLUTION
01 to 16 Bit

MULTI- TURN RESOLUTION
00 Single Turn
01 to 43 Multi-Turn

COMMUNICATION PROTOCOL
CO CANopen[1]
CJ SAE J1939[2,3]
SI SSI[4]

SOFTWARE REV
A Revision A

OUTPUT CODE
B Binary
G Gray[5]

INPUT VOLTAGE
5 5 VDC[5]
V2 5 to 32 VDC

CONNECTOR TYPE
RC6 6-ft Radial Mount Cable

Terminating Resistor[6]
NR None (Std)
RS Internal resistor option (fixed 120 Ohm)

Sealing
S8 IP67+IP69K

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.

1-800-366-5412 | encoder.com | sales@encoder.com

MODEL A58SBS - STAINLESS STEEL ABSOLUTE SHAFT ENCODER

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	Stainless steel, V4A
Flange	Stainless steel, V4A
Shaft	Stainless steel, V4A
Bearings	2 Precision Ball Bearings
Weight	approx. 600 grams

Environmental

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

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, node-ID, baud rate, etc.)	

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

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
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

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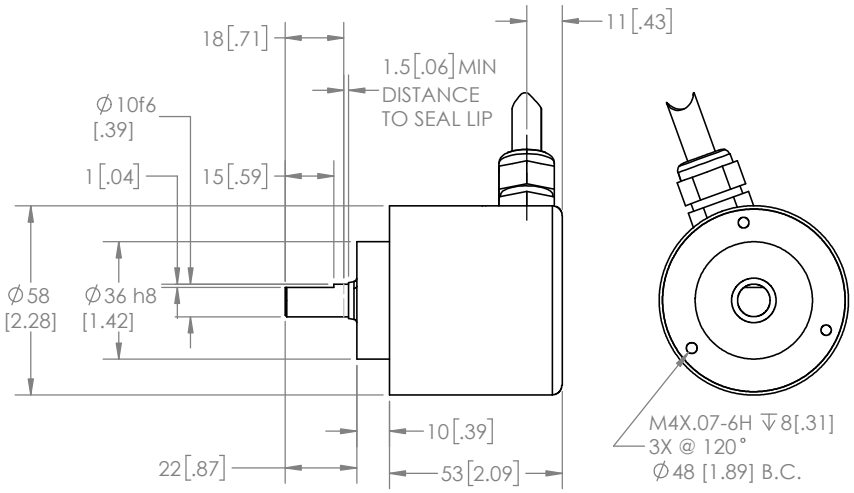
MODEL A58SBS



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

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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.*

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