



Absolute encoders ARS60 SSI/Parallel

ARS60-A4R08192



Model Name > ARS60-A4R08192
Part No. > 1031743



At a glance

- Absolute singleturn encoder
- Resolution: up to 15 bits (32,768 increments)
- Electrical interface: SSI with gray code type or gray capped
- Electrical interface: Parallel with gray, gray capped, binary, BCD code type
- Zero-set function
- Mechanical interfaces: face mount flange, servo flange, blind and through hollow shaft
- Enclosure rating: Up to IP66

Your benefits

- Freely programmable resolution (up to 15 bits)
- Simple zero adjustment directly by press of a button on the encoder or via signal line (cable version)
- Suitable for all mounting methods thanks to individual mechanical interfaces
- A basic device for flexible use thanks to simple interchangeable collets for blind hollow shaft and through hollow shaft
- Versions with cable and M23 connector outlet available in axial and radial designs



Performance

Max. number of steps per revolution:	8,192
Max. number of revolutions:	1
Resolution power:	8,192 x 1
Error limits:	0.035 ° (binary number of steps) 0.046 ° (non-binary number of steps)
Repeat accuracy:	0.005 °
Measuring step deviation:	0.005 °, 0.016 °
Measuring step:	360 ° /number of lines
Initialization time:	80 ms ¹⁾

¹⁾ Valid positional data can be read once this time has elapsed

Mechanical data

Mechanical interface:	Solid shaft, Face mount flange
Shaft diameter:	10 mm
Start up torque:	0.4 Ncm
Operating torque:	0.3 Ncm

Permissible Load capacity of shaft:	20 N (radial) 10 N (axial)
Maximum operating speed:	10,000 /min (without shaft seal) 6,000 /min (with shaft seal) ¹⁾
Moment of inertia of the rotor:	54 gcm ²
Bearing lifetime:	3.6 x 10 ⁹ revolutions
Max. angular acceleration:	500,000 rad/s ²
Operation of zero-set:	≥ 100 ms ²⁾

¹⁾ If the shaft seal has been removed by the customer ²⁾ Only with shaft stationary (note initialisation time)

Electrical data

Operating voltage range:	10 V DC ... 32 V DC
Operating power consumption (no load):	60 mA

Interfaces

Electrical interface:	Cable, 11-pin, axial, 1.5 m
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Ambient data

EMC:	According to EN 61000-6-2 and EN 61000-6-3 ¹⁾
Enclosure rating:	IP 66, according to IEC 60529
Permissible relative humidity:	90 % (condensation of the optical scanning not permitted)
Working temperature range:	-20 °C ... 85 °C
Storage temperature range:	-40 °C ... 100 °C
Resistance to shocks:	50 g (according to EN 60068-2-27)
Resistance to vibration:	20 g, 10 Hz ... 2,000 Hz (according to EN 60068-2-6)

¹⁾

Figure 10-10 Data format singleturn

The diagram illustrates the data format for a singleturn. It shows a sequence of 13 data bits (1 through 13) and a final singleturn bit. The data is organized into a table with 4 rows and 13 columns. The first 12 columns represent data bits, and the 13th column represents the singleturn bit. The data is as follows:

A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11	A-12	A-13	tm-T/2	2 ^a	A
x	x	x	x	x	x	x	x	x	x	x	x	x	0	1	8192 13
x	x	x	x	x	x	x	x	x	x	x	x	0	0	1	4096 12
x	x	x	x	x	x	x	x	x	x	x	0	0	0	1	2048 11
x	x	x	x	x	x	x	x	x	x	0	0	0	0	1	1024 10

The diagram also shows a clock signal (Clock +) and a data format singleturn signal. The data format singleturn signal is a single pulse that occurs at the end of the data sequence. The clock signal is a periodic square wave that is used to sample the data bits.

Code disc for 1 revolution

The diagram shows a code disc for 1 revolution. The data is organized into a table with 4 rows and 13 columns. The first 12 columns represent data bits, and the 13th column represents the singleturn bit. The data is as follows:

A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11	A-12	A-13	tm-T/2	2 ^a	A
x	x	x	x	x	x	x	x	x	x	x	x	x	0	1	8192 13
x	x	x	x	x	x	x	x	x	x	x	x	0	0	1	4096 12
x	x	x	x	x	x	x	x	x	x	x	0	0	0	1	2048 11
x	x	x	x	x	x	x	x	x	x	0	0	0	0	1	1024 10

The diagram also shows a clock signal (Clock +) and a data format singleturn signal. The data format singleturn signal is a single pulse that occurs at the end of the data sequence. The clock signal is a periodic square wave that is used to sample the data bits.

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