



Absolute encoders ARS60 SSI/Parallel

ARS60-H1B00512



Model Name > [ARS60-H1B00512](#)
Part No. > [1035211](#)



Illustration may differ

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

- Optical and magnetic variants for the widest range of requirements
- Reduced maintenance costs thanks to magnetic, wearless scanning in single and multiturn design
- High level of productivity due to optical encoders with a high level of precision and fast calculation of positions
- Robust design for maximum system availability, even in extreme environmental conditions
- Absolutely compact - specially suited in cases where installation space is tight
- Flexible integration in all common networks



Performance

Max. number of steps per revolution:	512
Max. number of revolutions:	1
Resolution power:	512 x 1
Error limits:	0.035 ° (binary number of steps) 0.046 ° (non-binary number of steps)
Repeatability (Ta not constant):	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, Servo flange
Shaft diameter:	6 mm
Mass:	0.3 kg

Start up torque:	0.25 Ncm
Operating torque:	0.2 Ncm
Permissible Load capacity of shaft:	10 N (axial), 20 N (radial)
Maximum operating speed:	10,000 /min (without shaft seal), 6,000 /min (with shaft seal) ¹⁾
Moment of inertia of the rotor:	48 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):	90 mA
MTTFd: mean time to dangerous failure:	300 a (EN ISO 13849-1) ¹⁾

¹⁾ This product is a standard product and does not constitute a safety component as defined in the Machinery Directive.

Calculation based on nominal load of components, average ambient temperature 40°C, frequency of use 8760 h/a. All

electronic failures are considered hazardous. For more information, see document no. 8015532.

Interfaces

Electrical interface:	Connector M23, 21-pin, axial
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Ambient data

EMC:	(according to EN 61000-6-2 and EN 61000-6-3) ¹⁾
Enclosure rating:	IP 65 (according to IEC 60529), with mating connector fitted
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⁾

- Allocation for encoder with 21-pin connector Single; Parallel Interface

PIN	Wire color/cable outlet	Binary	Gray	BCD	Description
1	Lilac	2 ⁰	G ₀	2 ⁴ × 10 ³	Data lines, outputs
2	White/brown	2 ¹	G ₁	2 ⁴ × 10 ²	
3	White/green	2 ²	G ₂	2 ⁴ × 10 ¹	
4	White/yellow	2 ³	G ₃	2 ⁴ × 10 ⁰	
5	White/gray	2 ⁴	G ₄	2 ⁴ × 10 ⁻¹	
6	White/pink	2 ⁵	G ₅	2 ⁴ × 10 ⁻²	
7	White/blue	2 ⁶	G ₆	2 ⁴ × 10 ⁻³	
8	White/red	2 ⁷	G ₇	2 ⁴ × 10 ⁻⁴	
9	White/black	2 ⁸	G ₈	2 ⁴ × 10 ⁻⁵	
10	Brown/green	2 ⁹	G ₉	2 ⁴ × 10 ⁻⁶	
11	Brown/yellow	2 ¹⁰	G ₁₀	2 ⁴ × 10 ⁻⁷	
12	Brown/gray	2 ¹¹	G ₁₁	2 ⁴ × 10 ⁻⁸	
13	Brown/pink	2 ¹²	G ₁₂	2 ⁴ × 10 ⁻⁹	
14	Brown/blue	2 ¹³	G ₁₃	2 ⁴ × 10 ⁻¹⁰	
15	Brown/red	2 ¹⁴	G ₁₄	2 ⁴ × 10 ⁻¹¹	
16	Green	Parity	Parity	Parity	
17	Pink	Store ₀	Store ₀	Store ₀	
18	Yellow	Enable ₀	Enable ₀	Enable ₀	
19	Brown	V/R ₀	V/R ₀	V/R ₀	
20	Gray	SET	SET	SET	
21	Blue	GND	GND	GND	
21	Red	U ₁	U ₁	U ₁	
Housing		Screen	Screen	Screen	

Input_{in}	This input activates the data out driver when a <i>data-in</i> level is applied. If not connected, this input is <i>data-in</i> . In the case of a <i>data-high</i> level, the outputs are in the tri-state mode.
Strobe_{in}	This input stores the encoder data in <i>Gray</i> code when a <i>data-low</i> level is applied. This avoids a read error if the output data is requested in <i>binary</i> code. If this input is <i>data-low</i> , the data at the encoder output is stable, irrespective of whether the input shift rotates. If not saturated, this input is <i>data-high</i> .
Parity SET	This output supplies a <i>data-high</i> level when the binary checksum of the data bits is even. This input serves to set the zero electronically. If the SET line is connected to <i>data-low</i> for more than 100 ms, the mechanical position corresponds to the value 0.



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