



Absolute encoders ARS60 SSI/Parallel

ARS60-HDA03600



Model Name > ARS60-HDA03600
Part No. > 1208587



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:	3,600
Max. number of revolutions:	1
Resolution power:	3,600 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:	Through hollow shaft
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Shaft diameter:	6 mm 8 mm 10 mm 12 mm 14 mm 15 mm 1/4 " 3/8 " ¹⁾ 1/2 " ¹⁾
Mass:	0.3 kg
Start up torque:	2.2 Ncm
Operating torque:	1.6 Ncm
Maximum operating speed:	3,000 /min
Bearing lifetime:	3.6 x 10 ⁹ revolutions
Max. angular acceleration:	500,000 rad/s ²
Permissible movement axial static/dynamic:	± 0.5 mm, ± 0.2 mm
Permissible movement radial static/dynamic:	± 0.3 mm, ± 0.1 mm
Operation of zero-set:	≥ 100 ms ²⁾

¹⁾ Collets for 6, 8, 10, 12, 14 mm and 1/4 ", 3/8 " and 1/2 " as accessories, separate order item. For 15 mm shaft diameter collet is not needed. 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, radial
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Ambient data

EMC:	(according to EN 61000-6-2 and EN 61000-6-3) ¹⁾
Enclosure rating:	IP 64 (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⁾

[illegible]

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

PIN	Wire color/y cable outlet	Binary	Gray	BCD	Description
1	Lilac	2 ⁰	G ₀	2 ⁰ × 10 ¹	
2	White/brown	2 ¹	G ₁	2 ¹ × 10 ⁰	
3	White/green	2 ²	G ₂	2 ² × 10 ⁰	
4	White/yellow	2 ³	G ₃	2 ³ × 10 ⁰	
5	White/gray	2 ⁴	G ₄	2 ⁴ × 10 ⁰	
6	White/pink	2 ⁵	G ₅	2 ⁴ × 10 ¹	
7	White/blue	2 ⁶	G ₆	2 ⁴ × 10 ¹	
8	White/red	2 ⁷	G ₇	2 ⁴ × 10 ¹	
9	White/black	2 ⁸	G ₈	2 ⁴ × 10 ¹	
10	Brown/green	2 ⁹	G ₉	2 ⁴ × 10 ¹	
11	Brown/yellow	2 ¹⁰	G ₁₀	2 ⁴ × 10 ¹	
12	Brown/gray	2 ¹¹	G ₁₁	2 ⁴ × 10 ¹	
13	Brown/pink	2 ¹²	G ₁₂	2 ⁴ × 10 ¹	
14	Brown/blue	2 ¹³	G ₁₃	2 ⁴ × 10 ¹	
15	Brown/red	2 ¹⁴	G ₁₄	2 ⁴ × 10 ¹	
16	Green	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	
Hour/mn		Screen	Screen	Screen	

U_s Supply voltage to the encoder (before commissioning, note must be taken of the type label of the encoder).

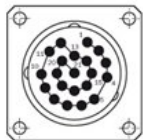
GND Zero volt connection to the encoder: electrically isolated from the housing. The voltage referred to GND is U_e .

V/R₊ Forward/reverse: this input programs the counting direction of the encoder. If not connected, this input is -high-. If the encoder shaft, as viewed on the drive shaft, rotates in the clockwise direction, it counts in an increasing sequence; if it should count upwards when the shaft rotates in the anti-clockwise direction, this connection must be connected permanently to +low-level (zero volts).

Enable_	This input activates the data output driver when a -low-level is applied. If not connected, this input is -low, in the case of a -high-level, the outputs are in the tri-state mode.
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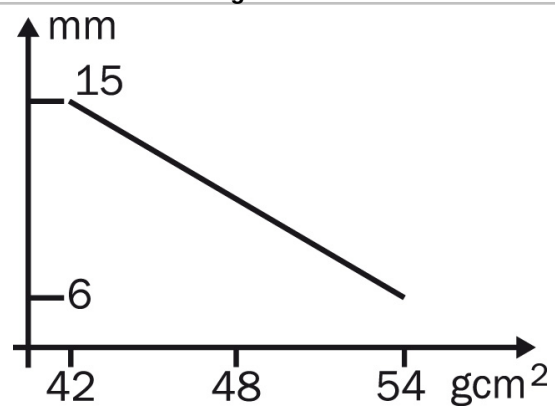
Store_{in} This input stores the encoder data in Gray code when a *slow* level is applied. This avoids a read error if the output data is requested in binary code. If this input is *slow*, the data at the encoder output is stable, irrespective of whether the input shaft rotates. If not satisfied, this input is *high*.

This output supplies a -high- level when the binary checksum of the data bits is even.



View of the connector M23 fitted to the encoder body Single, Parallel

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