

ONLINE DATA SHEET
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Absolute encoders
ATM60 SSI

ATM60-AAL12X12



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Model Name > ATM60-AAL12X12
Part No. > 1030011



Illustration may differ

At a glance

- Extremely rugged, tried-and-tested absolute multiturn encoder with a resolution of up to 26 bits
- Mechanical interface: face mount flange, servo flange, blind hollow shaft and extensive adapter accessories
- Zero-set and preset functions via hardware or software
- No battery required
- Electrical interface: SSI with gray or binary code type
- Electronically adjustable, configurable resolution
- Rotary axis function (optional) also for non-binary resolutions (per revolution) and decimal numbers (number of revolutions)
- Magnetic scanning

Your benefits

- Fewer variants are required since one freely programmable encoder offers all singleturn and multiturn resolutions
- Easy setup due to various connectivity options (cable, M23)
- Less maintenance and a long service life reduce overall costs
- Application flexibility due to easily interchangeable collets for the blind hollow shaft
- Quick commissioning using the zero set/preset function either at the press of the button on the device or via software
- Increased productivity due to highly reliable shock and vibration resistance
- Worldwide availability and service ensure quick and reliable customer service

Performance

Max. number of steps per revolution:	4,096
Max. number of revolutions:	4,096
Resolution power:	4,096 x 4,096
Resolution:	12 bit x 12 bit
Error limits:	± 0.25 °
Repeatability (Ta not constant):	0.1 °
Measuring step:	0.043 °
Initialization time:	1,050 ms [1)]

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

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Mechanical data

Mechanical interface:	Blind hollow shaft
Shaft diameter:	6 mm, 1/4 " 8 mm, 3/8 " 10 mm, 1/2 " 12 mm 14 mm 15 mm [1)]
Mass:	0.4 kg
Moment of inertia of the rotor:	55 gcm²
Bearing lifetime:	3.6 x 10^9 revolutions
Max. angular acceleration:	500,000 rad/s²
Permissible movement axial static/dynamic:	± 0.5 mm, ± 0.2 mm
Permissible movement radial static/dynamic:	± 0.3 mm, ± 0.1 mm
Shaft material:	Stainless steel
Flange material:	Aluminum
Housing material:	Die-cast aluminum
Start up torque with shaft seal:	1.2 Ncm
Operating torque with shaft seal:	0.8 Ncm

[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.

Electrical data

Operating voltage range:	10 V ... 32 V
MTTFd: mean time to dangerous failure:	150 a (EN ISO 13849-1) [1)]
Connection type:	Cable, 12-pin, radial, 3 m
Code type:	Binary, Gray
Code sequence:	CW/CCW
Power consumption max. without load:	0.8 W

[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:	SSI
Interface signals:	Clock +, Clock -, Data +, Data-, Programming interface: RS-422 [1)]
Clock frequency:	1 MHz [2)]
SET (electronic adjustment):	H-active (L ≡ 0 - 4,7 V, H ≡ 10 - Us V)
CW/CCW (counting sequence when turning):	L-active (L ≡ 0 - 1,5 V, H ≡ 2,0 - Us V)
Parameterising data:	Number of revolutions, Code type, Electronic adjustment, Number of steps per revolution

[1)] For higher clock frequencies, choose synchronous SSI [2)]

Ambient data

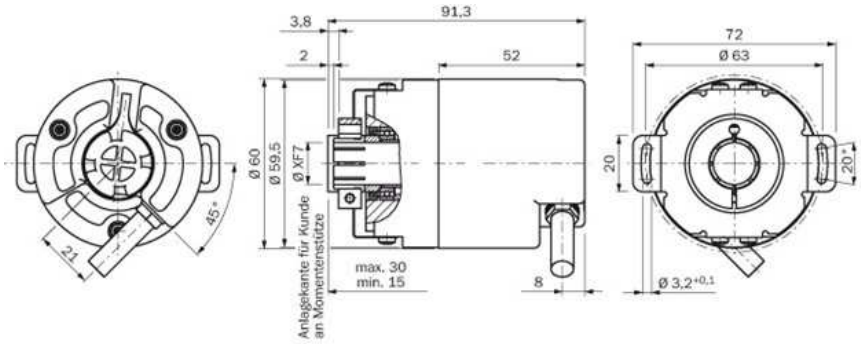
EMC:	(according to EN 61000-6-2 and EN 61000-6-3)
Enclosure rating:::	IP 43 (according to IEC 60529), without shaft seal, on encoder flange not sealed, IP 65 (according to IEC 60529), without shaft seal, on encoder flange sealed, IP 67 (according to IEC 60529), with shaft seal [1) 2) 3)]
Permissible relative humidity:	98 %

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Working temperature range:	-20 °C ... +85 °C
Storage temperature range:	-40 °C ... +100 °C, without package
Resistance to shocks:	100 g, 6 ms (according to EN 60068-2-27)
Resistance to vibration:	20 g, 10 Hz ... 2,000 Hz (according to EN 60068-2-6)

1) 2) 3) With mating connector fitted

Dimensional drawing



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