



## Absolute encoders ATM90 SSI

ATM90-ATM12X12



**Model Name** > ATM90-ATM12X12  
**Part No.** > 1030033



*Illustration may differ*

**At a glance**

- Extremely rugged, tried-and-tested absolute multiturn encoder with a resolution of up to 26 bits
- Mechanical interface: through hollow shaft with shallow installation depth
- 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
- Magnetic scanning

**Your benefits**

- Fewer variants are required since one freely programmable encoder offers all singleturn and multiturn resolutions
- Easy setup due to various electrical connection adapters (cable, M23)
- 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 <sup>1)</sup>

<sup>1)</sup> Valid positional data can be read once this time has elapsed

**Mechanical data**

Mechanical interface:	Through hollow shaft
Shaft diameter:	12 mm
Start up torque:	0.5 Ncm
Operating torque:	0.4 Ncm

Moment of inertia of the rotor:	153.77 gcm <sup>2</sup>
Bearing lifetime:	3.6 x 10 <sup>9</sup> revolutions
Max. angular acceleration:	600,000 rad/s <sup>2</sup>
Shaft material:	Stainless steel
Flange material:	Aluminum
Housing material:	Die-cast aluminum

### Electrical data

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Operating voltage range:	10 V ... 32 V
MTTFd: mean time to dangerous failure:	150 a (EN ISO 13849-1) <sup>1)</sup>
Connection type:	Cable, 12-pin, radial, 5 m
Code type:	Binary, Gray
Code sequence:	CW/CCW
Power consumption max. without load:	0.8 W

<sup>1)</sup> 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

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Electrical interface:	SSI
Interface signals:	Clock +, Clock -, Data +, Data-, Programming interface: RS-422 <sup>1)</sup>
Clock frequency:	1 MHz <sup>2)</sup>
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

<sup>1)</sup> For higher clock frequencies, choose synchronous SSI <sup>2)</sup>

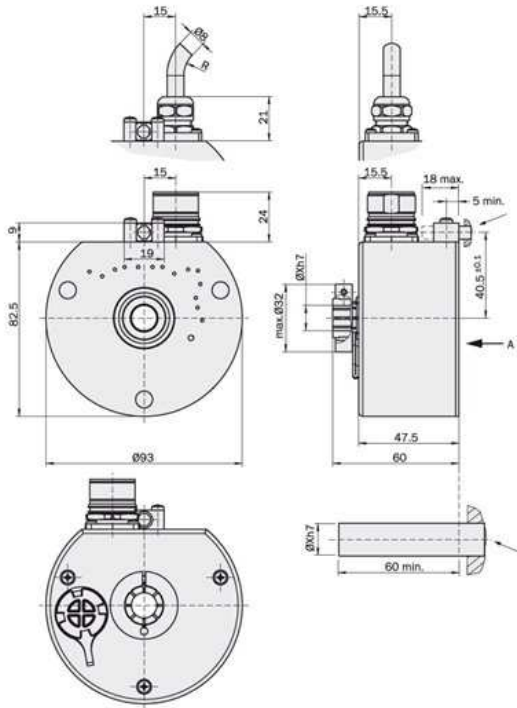
### Ambient data

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EMC:	(according to EN 61000-6-2 and EN 61000-6-3)
Enclosure rating:	IP 65 (according to IEC 60529), with shaft seal <sup>1)</sup>
Permissible relative humidity:	98 %
Working temperature range:	-20 °C ... +70 °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)

<sup>1)</sup> With mating connector fitted

Dimensional drawing



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