



Absolute encoders ATM90 SSI

ATM90-ATK12X12



Model Name > ATM90-ATK12X12
Part No. > 1030031



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 ¹⁾ |

¹⁾ 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 ² |
| Bearing lifetime: | 3.6 x 10 ⁹ revolutions |
| Max. angular acceleration: | 600,000 rad/s ² |
| Shaft material: | Stainless steel |
| Flange material: | Aluminum |
| Housing material: | Die-cast aluminum |

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, 1.5 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 |

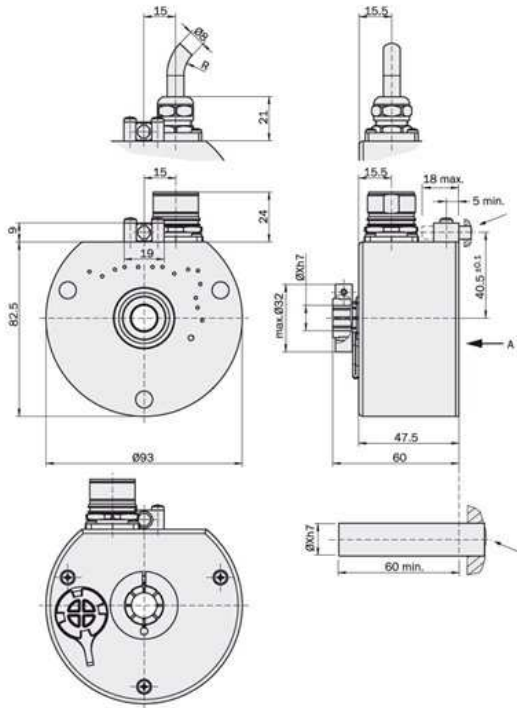
¹⁾ For higher clock frequencies, choose synchronous SSI ²⁾

Ambient data

| | |
|--------------------------------|---|
| EMC: | (according to EN 61000-6-2 and EN 61000-6-3) |
| Enclosure rating: | IP 65 (according to IEC 60529), with shaft seal ¹⁾ |
| 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) |

¹⁾ With mating connector fitted

Dimensional drawing



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