



**Absolute encoders
ATM90 PROFIBUS**

ATM90-PTF13X11



Model Name > ATM90-PTF13X11
Part No. > 1032654



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: PROFIBUS DP as per IEC61158 / RS -485 , electrically isolated
- 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: | 8,192 |
| Max. number of revolutions: | 2,048 |
| Resolution power: | 8,192 x 2,048 |
| Resolution: | 13 bit x 11 bit |
| Error limits: | ± 0.25 ° |
| Repeatability (Ta not constant): | 0.1 ° |
| Measuring step: | 0.043 ° |
| Initialization time: | 1,250 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 |
| Mass: | 0.6 kg |

| | |
|---------------------------------|-----------------------------------|
| Start up torque: | 0.5 Ncm |
| Operating torque: | 0.4 Ncm |
| Moment of inertia of the rotor: | 153 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 |
| Power consumption max.: | 2 W |
| MTTFd: mean time to dangerous failure: | 150 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

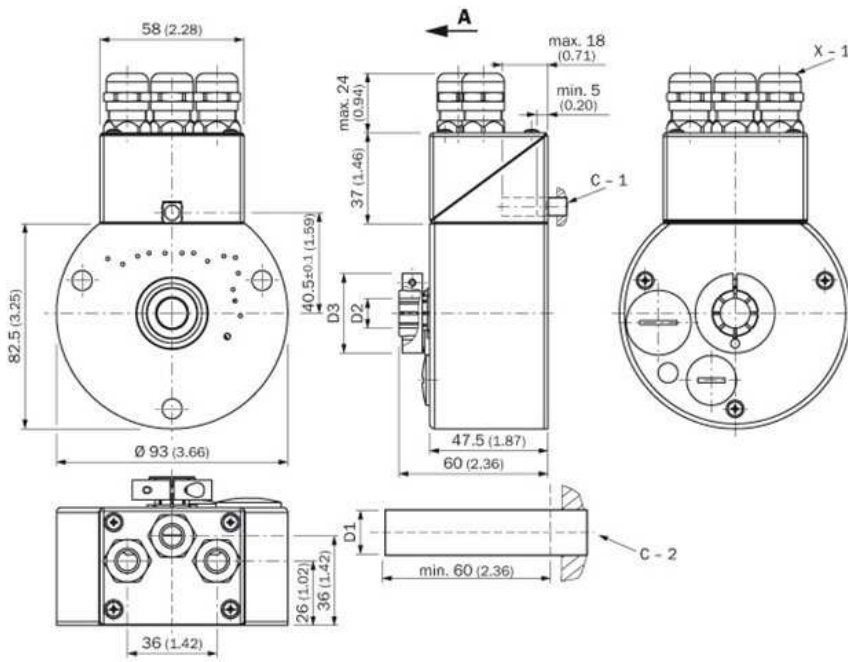
| | |
|-------------------------------------|--|
| Electrical interface: | Bus adaptor with 3 x M14 screw fixings |
| SET (electronic adjustment): | Via PRESET push button or protocol |
| Bus: | PROFIBUS DP |
| Bus interface::: | RS-485 ^{1) 2) 3)} |
| Data protocol: | Profile for encoders (07hex) - Class 2 |
| Address setting: | 0 ... 127, DIP-switches or protocol |
| Data transmission rate (baud rate): | 9.6 kBaud / 12 MBaud / automatic detection |
| Status information: | LED green (operation), LED red (bus activity) |
| Bus termination: | DIP switch |

¹⁾ EN 50 170-2 ²⁾ DIN 19245 part 1-3 ³⁾ DC isolated via opto-couplers

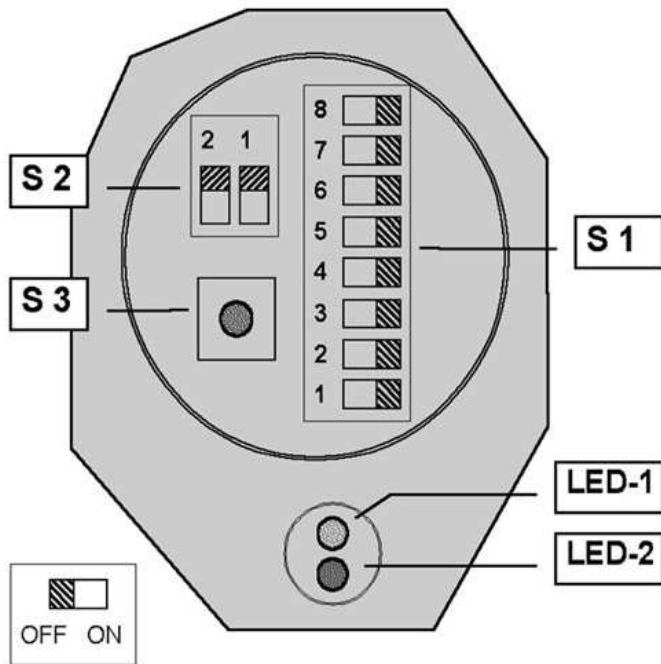
Ambient data

| | |
|--------------------------------|---|
| EMC: | (according to EN 61000-6-2 and EN 61000-6-3) |
| Enclosure rating: | IP 65 (according to IEC 60529), with shaft seal |
| Permissible relative humidity: | 98 % |
| Working temperature range: | -20 °C ... 80 °C |
| Storage temperature range: | -40 °C ... 125 °C, without package |
| Resistance to shocks: | 6 g (according to EN 60068-2-27) |
| Resistance to vibration: | 20 g, 10 Hz ... 2,000 Hz |

Dimensional drawing



Adjustments

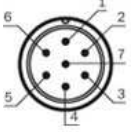


PIN assignment

| PIN | Signal | Description |
|-----|-----------------------|-------------------------------|
| 1 | U _s (24 V) | Supply voltage |
| 2 | N. C. | Not connected |
| 3 | GND (0 V) | 0 V (Gnd) |
| 4 | N. C. | Not connected |
| 5 | RTS | Request To Send ¹⁾ |
| 6 | N. C. | Not connected |
| 7 | N. C. | Not connected |

¹⁾ Signal is optional, is used to detect the direction of an optical fibre connection.

N. C. = Not connected



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