

ONLINE DATA SHEET
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Absolute encoders
ATM90 PROFIBUS

ATM90-PTF12X12



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Model Name > ATM90-PTF12X12
Part No. > 1032660



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:	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:	1,250 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

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Start up torque:	0.5 Ncm
Operating torque:	0.4 Ncm
Moment of inertia of the rotor:	153 gcm²
Bearing lifetime:	3.6 x 10^9 revolutions
Max. angular acceleration:	600,000 rad/s²
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

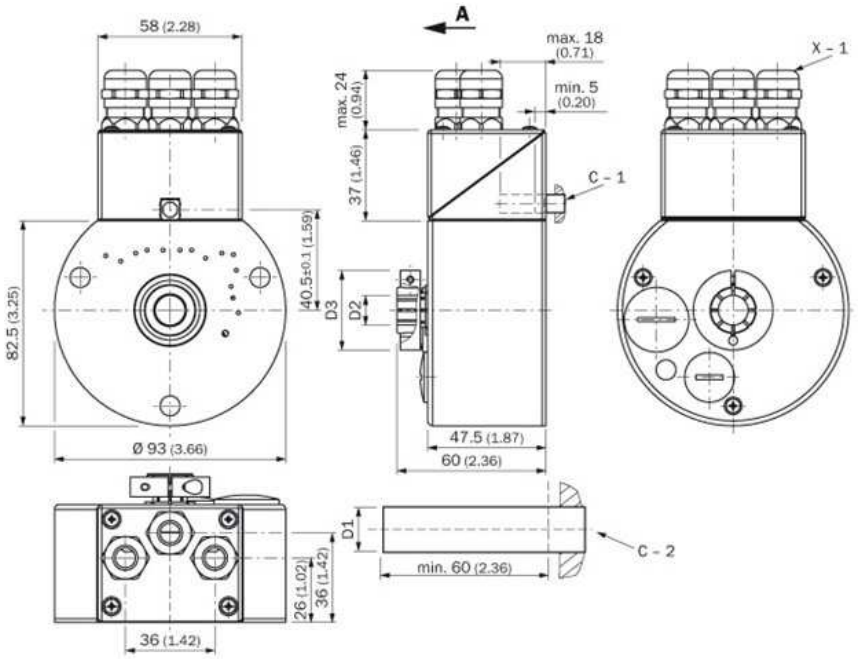
[1] EN 50 170-2 [2] DIN 19245 part 1-3 [3] DC isolated via opto-couplers

Ambient data

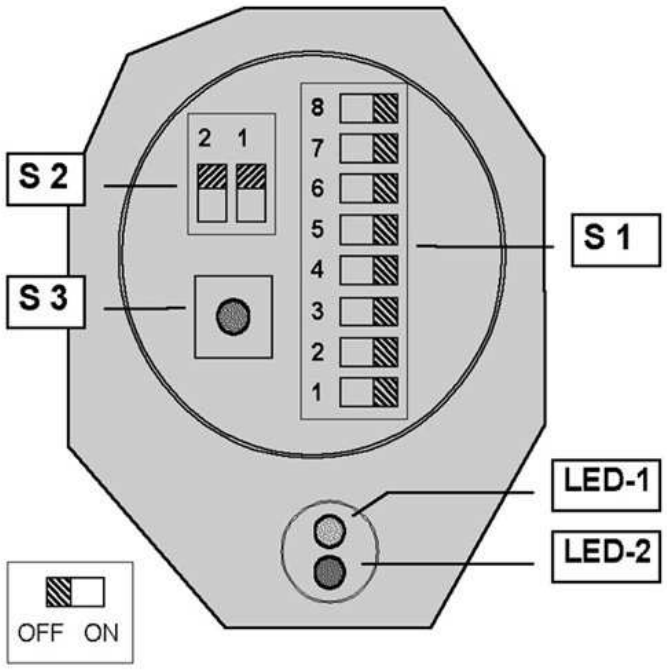
EMC:	(according to EN 61000-6-2 and EN 61000-6-3)
Enclosure rating:	IP 65 (according to IEC 60529), with shaft seal
Permissible relative humidity:	98 %
Working temperature range:	-20 °C ... 80 °C
Storage temperature range:	-40 °C ... 125 °C, without package
Resistance to shocks:	6 g (according to EN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

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Dimensional drawing



Adjustments



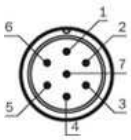
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PIN assignment

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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