Product data sheet



ATM90-PTF12x12

ATM90 PROFIBUS

ABSOLUTE ENCODERS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

Type	Part no.
ATM90-PTF12x12	1032660

Other models and accessories ➜ www.sick.com/ATM90_PROFIBUS

Detailed technical data

Performance

Max. resolution (number of steps per revolution x number of revolutions)	12 bit x 12 bit (4,096 x 4,096)
Error limits G	0.25 ° [1]
Repeatability standard deviation σ_r	0.1 ° [2]

[1] In accordance with DIN ISO 1319-1, position of the upper and lower error limit depends on the installation situation, specified value refers to a symmetrical position, i.e. deviation in upper and lower direction is the same.
[2] In accordance with DIN ISO 55350-13; 68.3% of the measured values are inside the specified area.

Interfaces

Communication interface	PROFIBUS DP
Communication Interface detail	DPV0
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]
Initialization time	1,250 ms [2]
Position forming time	0.25 ms
SSI	
Set (electronic adjustment)	Via PRESET push button or protocol

[1] Should only be connected in the final device.
[2] Valid positional data can be read once this time has elapsed.

Electrical data

Connection type	Bus adaptor, 3 x M14, 7-pin, radial
Supply voltage	10 ... 32 V
MTTFd: mean time to dangerous failure	150 years (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.

Mechanical data

Mechanical design	Through hollow shaft
Shaft diameter	12 mm
Weight	0.6 kg
Shaft material	Stainless steel
Flange material	Aluminum
Housing material	Aluminum die cast
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
Angular acceleration	≤ 600,000 rad/s²
Operating speed	≤ 3,000 min⁻¹

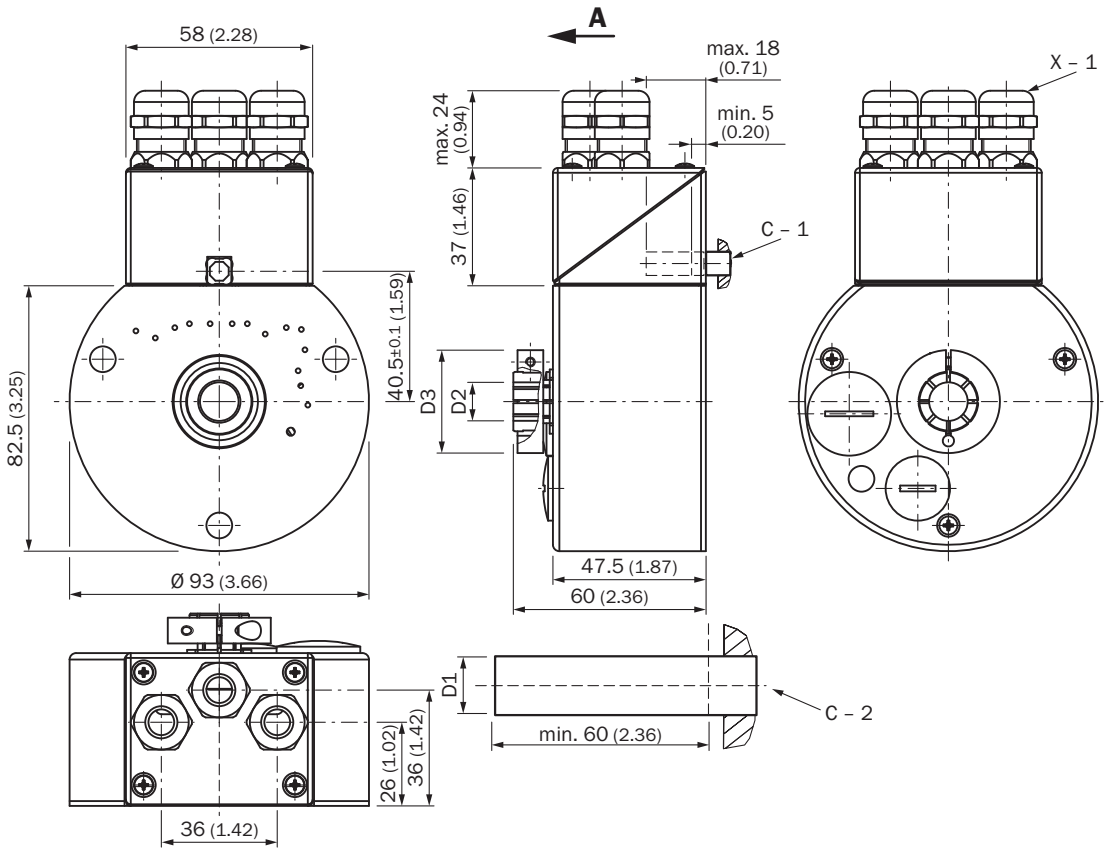
Ambient data

EMC	According to EN 61000-6-2 and EN 61000-6-3
Enclosure rating	IP65, with shaft seal (according to IEC 60529)
Permissible relative humidity	98 %
Operating temperature range	–20 °C ... +80 °C
Storage temperature range	–40 °C ... +125 °C, without package
Resistance to shocks	6 g, 20 ms (according to EN 60068-2-27)
Resistance to vibration	20 g, 10 Hz ... 2,000 Hz

Classifications

ECl@ss 5.0	27270502
ECl@ss 5.1.4	27270502
ECl@ss 6.0	27270590
ECl@ss 6.2	27270590
ECl@ss 7.0	27270502
ECl@ss 8.0	27270502
ECl@ss 8.1	27270502
ECl@ss 9.0	27270502
ETIM 5.0	EC001486
ETIM 6.0	EC001486
UNSPSC 16.0901	41112113

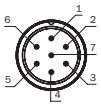
Dimensional drawing (Dimensions in mm (inch))



PIN assignment

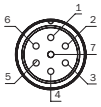
PIN	Signal	Description
1	U_s (24 V)	Supply voltage
2	N. C.	Not connected
3	GND (0 V)	0 V (Gnd)
4	N. C.	Not connected
5	RTS	Request To Send [1]
6	N. C.	Not connected
7	N. C.	Not connected

[1] Signal is optional, is used to detect the direction of an optical fibre connection.
N. C. = Not connected



PIN	Signal	Description
1	RTS	Request To Send [1]
2	A	A line PROFIBUS DP
3	N. C.	Not connected
4	B	B line PROFIBUS DP
5	2M	0 V (potential free) [2]
6	2P5	+ 5 V (potential free) [2]
7	N. C.	Not connected

[1] Use for external bus termination or to supply the transmitter/receiver of an optical fibre transmission link.
[2] Signal is optional, is used to detect the direction of an optical fibre connection.
N. C. = Not connected.



Recommended accessories

Other models and accessories ➜ www.sick.com/ATM90_PROFIBUS

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: Flying leads Head B: Flying leads Cable: PROFIBUS DP, PUR, shielded	LTG-2102-MW	6021355
	Head A: female connector, M14, 7-pin, straight Head B: - Cable: PROFIBUS DP, PROFIBUS DP, PROFIBUS DP, shielded	DOS-1507-G	6027536
	Head A: male connector, M12, 5-pin, straight, B-coded Head B: - Cable: PROFIBUS DP, shielded	STE-1205-GQ	6021354
	Head A: female connector, M14, 7-pin Cable: PROFIBUS DP, unshielded Set of connectors	DSC-1507-G	2029199

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SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

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