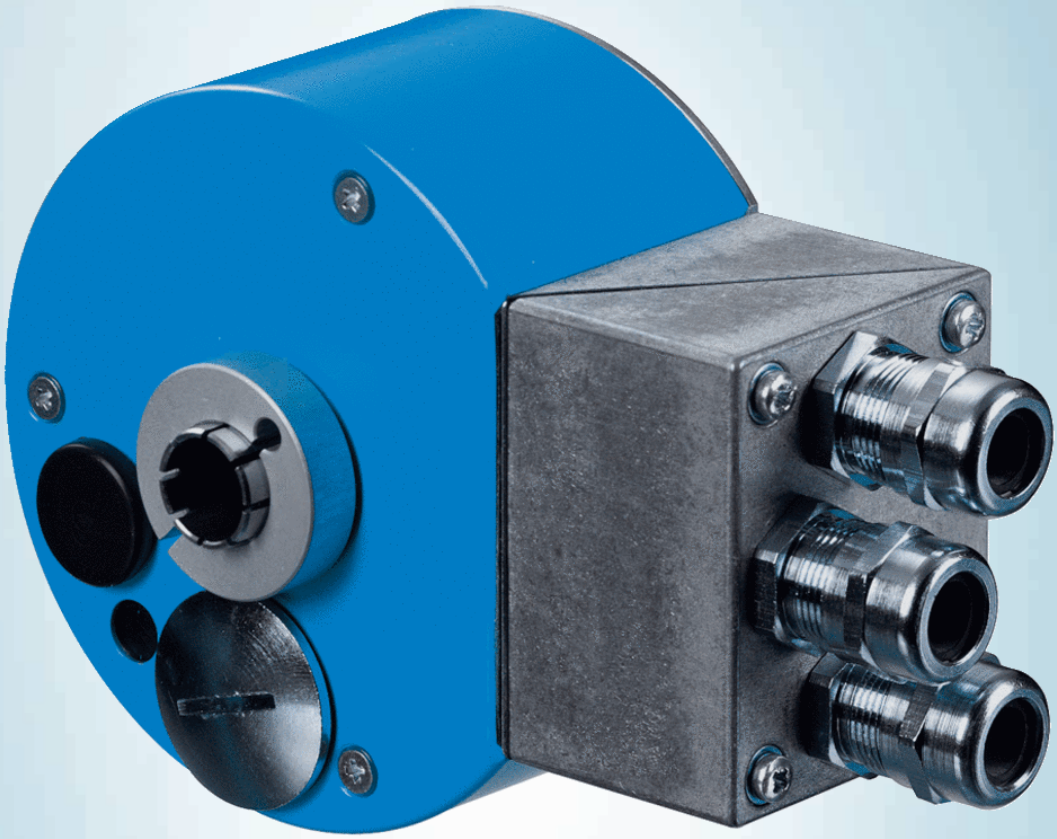
Product data sheet



ATM90-PUG13x11

ATM90

ABSOLUTE ENCODERS

SICK
Sensor Intelligence.

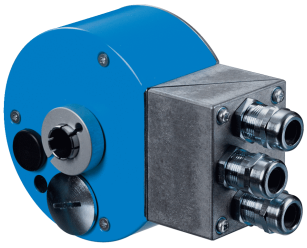


Illustration may differ

Ordering information

Type	Part no.
ATM90-PUG13x11	1032658

Other models and accessories ➜ www.sick.com/ATM90

Detailed technical data

Performance

Max. resolution (number of steps per revolution x number of revolutions)	13 bit x 11 bit (8,192 x 2,048)
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	Cable gland [1]
Supply voltage	10 ... 32 V
Power consumption	≤ 2 W (without load)

[1] Metrisch M16 x 1,5; SW17.
[2] 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.

MTTFd: mean time to dangerous failure	150 years (EN ISO 13849-1) [2]

[1] Metrisch M16 x 1,5; SW17.

[2] 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	1/2″
Weight	0.8 kg [1]
Shaft material	Stainless steel
Flange material	Aluminum
Housing material	Aluminum die cast
Start up torque	0.5 Ncm, +20 °C
Operating torque	0.4 Ncm, +20 °C
Moment of inertia of the rotor	153 gcm²
Bearing lifetime	3.6 x 10^9 revolutions
Angular acceleration	≤ 600,000 rad/s²

[1] Based on encoder with male connector.

Ambient data

EMC	According to EN 61000-6-2 and EN 61000-6-3
Enclosure rating	IP65, with shaft seal (according to IEC 60529) [1]
Permissible relative humidity	98 %
Operating temperature range	–20 °C ... +80 °C
Storage temperature range	–40 °C ... +100 °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 (according to EN 60068-2-6)

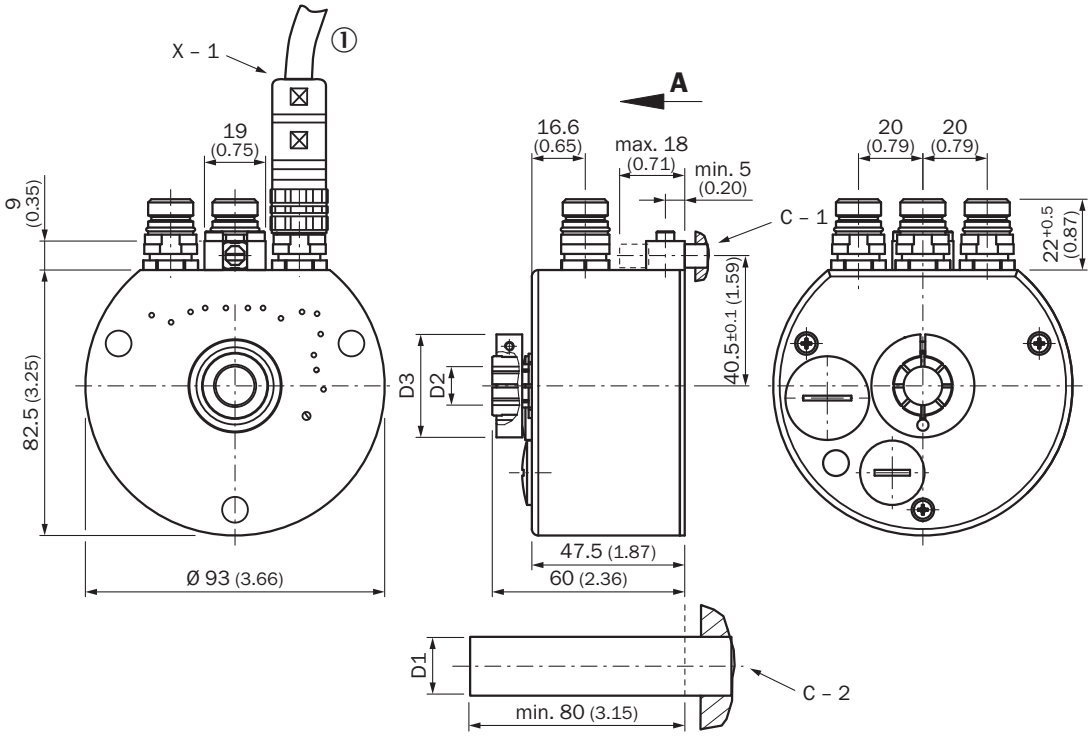
[1] With mating connector inserted.

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
ECl@ss 10.0	27270502
ECl@ss 11.0	27270502
ETIM 5.0	EC001486
ETIM 6.0	EC001486
ETIM 7.0	EC001486

ETIM 8.0	EC001486
UNSPSC 16.0901	41112113

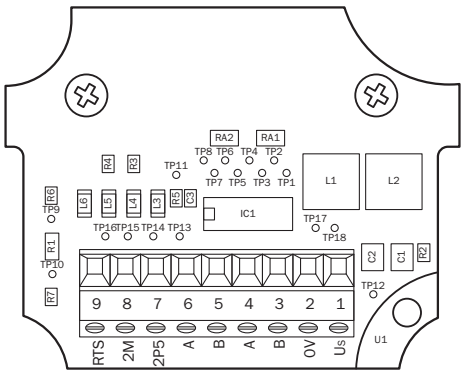
Dimensional drawing (Dimensions in mm (inch))



① Minimum bend radius 40 mm

Hollow shaft	D1	D2	D3
12 mm	$12,0^{h7}$	$12,0^{F7}$	29,5
1/2"	$12,7^{h7}$	$12,7^{F7}$	29,5
16 mm	$16,0^{h7}$	$16,0^{F7}$	32,0
C - 1			
C - 2			
X - 1			
A			

PIN assignment



PIN	Signal	Explanation
1	U_S (24 V)	Operating voltage
2	GND (0 V)	0 V (GND)
3	B	B-cable PROFIBUS DP (out)
4	A	B-cable PROFIBUS DP (out)
5	B	B-cable PROFIBUS DP (in)
6	A	B-cable PROFIBUS DP (in)
7	2P5	+ 5 V (potential free) 1)
8	2M	0 V (potential free) 1)
9	RTS	Request to Send 2)

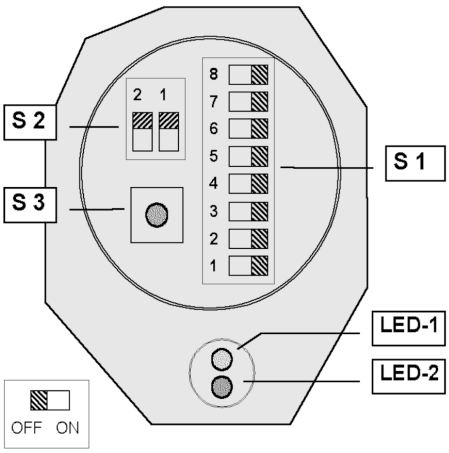
1)

Use for external bus termination or supplying the senders/receivers of fiber optic transmission

2)

Signal is optional, used for direction detection of a fiber optic connection

Adjustments



Recommended accessories

Other models and accessories ➜ www.sick.com/ATM90

	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

SICK AT A GLANCE

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.

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