

ONLINE DATA SHEET
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Absolute encoders
ATM90 PROFIBUS

ATM90-PXF13X11



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Model Name > ATM90-PXF13X11
Part No. > 1032656



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:	16 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

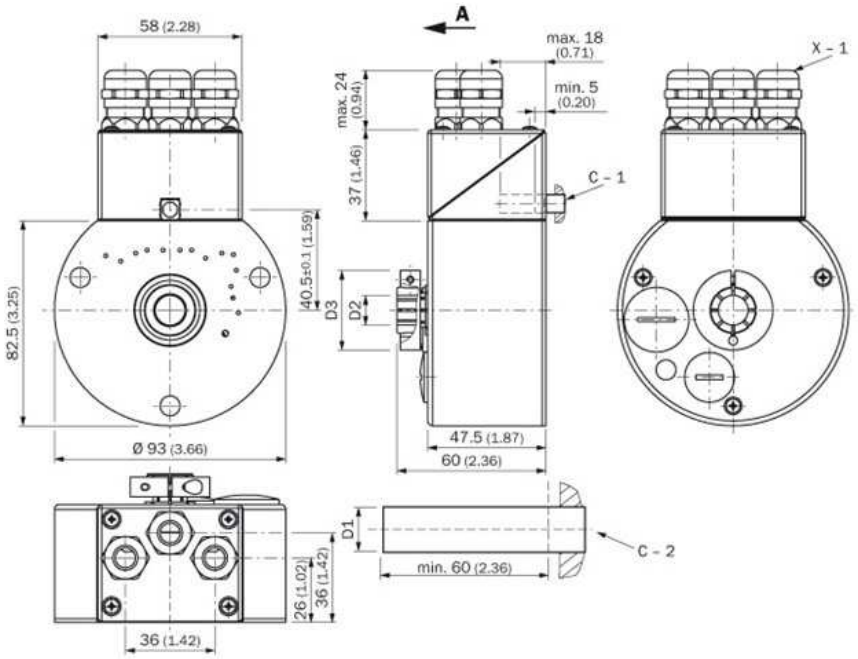
[1] EN 50 170-2 [2] DIN 19245 part 1-3 [3] DC isolated via opto-couplers

Ambient data

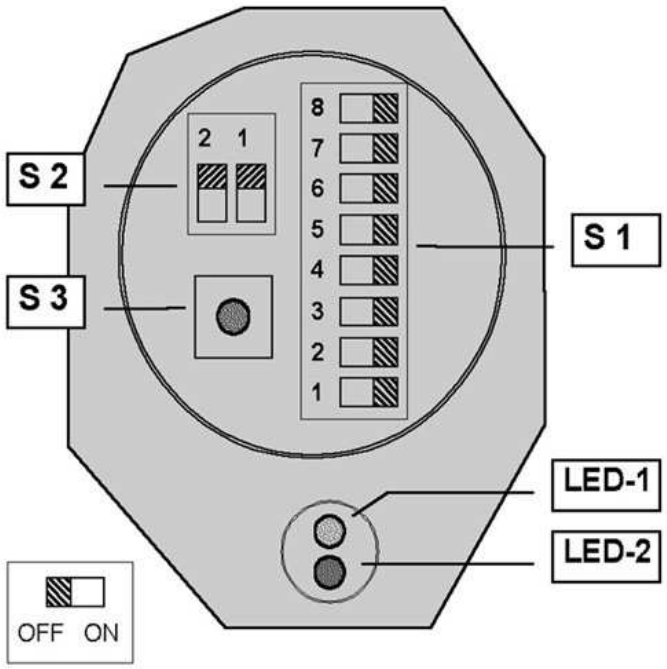
EMC:	(according to EN 61000-6-2 and EN 61000-6-3)
Enclosure rating:	IP 65 (according to IEC 60529), with shaft seal
Permissible relative humidity:	98 %
Working temperature range:	-20 °C ... 80 °C
Storage temperature range:	-40 °C ... 125 °C, without package
Resistance to shocks:	6 g (according to EN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

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Dimensional drawing



Adjustments



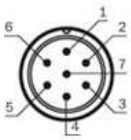
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PIN assignment

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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A4 4c int43

Australia
Phone +61 3 9457 0600
1800 33 48 02 – tollfree
E-Mail sales@sick.com.au

Belgium/Luxembourg
Phone +32 (0)2 466 55 66
E-Mail info@sick.be

Brasil
Phone +55 11 3215-4900
E-Mail marketing@sick.com.br

Canada
Phone +1 905 771 14 44
E-Mail information@sick.com

Česká republika
Phone +420 2 57 91 18 50
E-Mail sick@sick.cz

China
Phone +86 4000 121 000
E-Mail info.china@sick.net.cn
Phone +852-2153 6300
E-Mail ghk@sick.com.hk

Danmark
Phone +45 45 82 64 00
E-Mail sick@sick.dk

Deutschland
Phone +49 211 5301-301
E-Mail info@sick.de

España
Phone +34 93 480 31 00
E-Mail info@sick.es

France
Phone +33 1 64 62 35 00
E-Mail info@sick.fr

Great Britain
Phone +44 (0)1727 831121
E-Mail info@sick.co.uk

India
Phone +91–22–4033 8333
E-Mail info@sick-india.com

Israel
Phone +972-4-6881000
E-Mail info@sick-sensors.com

Italia
Phone +39 02 27 43 41
E-Mail info@sick.it

Japan
Phone +81 (0)3 5309 2112
E-Mail support@sick.jp

Magyarország
Phone +36 1 371 2680
E-Mail office@sick.hu

Nederland
Phone +31 (0)30 229 25 44
E-Mail info@sick.nl

Norge
Phone +47 67 81 50 00
E-Mail sick@sick.no

Österreich
Phone +43 (0)22 36 62 28 8-0
E-Mail office@sick.at

Polska
Phone +48 22 837 40 50
E-Mail info@sick.pl

România
Phone +40 356 171 120
E-Mail office@sick.ro

Russia
Phone +7-495-775-05-30
E-Mail info@sick.ru

Schweiz
Phone +41 41 619 29 39
E-Mail contact@sick.ch

Singapore
Phone +65 6744 3732
E-Mail sales.gsg@sick.com

Slovenija
Phone +386 (0)1-47 69 990
E-Mail office@sick.si

South Africa
Phone +27 11 472 3733
E-Mail info@sickautomation.co.za

South Korea
Phone +82 2 786 6321/4
E-Mail info@sickkorea.net

Suomi
Phone +358-9-25 15 800
E-Mail sick@sick.fi

Sverige
Phone +46 10 110 10 00
E-Mail info@sick.se

Taiwan
Phone +886 2 2375-6288
E-Mail sales@sick.com.tw

Türkiye
Phone +90 (216) 528 50 00
E-Mail info@sick.com.tr

United Arab Emirates
Phone +971 (0) 4 88 65 878
E-Mail info@sick.ae

USA/México
Phone +1(952) 941-6780
1 (800) 325-7425 – tollfree
E-Mail info@sickusa.com

More representatives and agencies
at **www.sick.com**

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