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DATA SHEET

**PFG08-P1AM03S01**

EcoLine  
Wire draw encoders

**SICK** Sensor Intelligence

## WIRE DRAW ENCODERS

## PFG08-P1AM03S01



## ORDERING INFORMATION

Type	part no.
PFG08-P1AM03S01	1079060

Further device versions and accessories at [www.sick.com/EcoLine](http://www.sick.com/EcoLine)



## DETAILED TECHNICAL DATA

## FEATURES

Special device	✓
Specialty	Programmable resolution up to 65536 Lines Preprogrammed to 40'000 lines TTL or HTL programmable Preprogrammed to HTL
Standard reference device	PFG08-P1AM03PP, 1075495

## SAFETY-RELATED PARAMETERS

MTTF <sub>D</sub> (mean time to dangerous failure)	300 years (EN ISO 13849-1) <sup>1)</sup>
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<sup>1)</sup> 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.

## PERFORMANCE

Measurement range	0 m ... 3 m
Encoder	Incremental encoders
Resolution (wire draw + encoder)	0.0035 mm <sup>1) 2)</sup>
Repeatability	≤ 0.2 mm <sup>3)</sup>
Linearity	≤ ± 2 mm <sup>3)</sup>

<sup>1)</sup> The values shown have been rounded.

<sup>2)</sup> Example calculation based on the PFG08 with HTL Push Pull: 230 mm (wire draw length per revolution - see Mechanical data): 16,384 (pulses per revolution) = 0.014 mm (resolution of wire draw + encoder combination).

<sup>3)</sup> Value applies to wire draw mechanism.

Hysteresis	$\leq 0.4 \text{ mm}^3$
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<sup>3)</sup> Value applies to wire draw mechanism.

## INTERFACES

Communication interface	Incremental / TTL / HTL
Programmable/configurable	✓
Factory setting	Factory setting: output level TTL

## ELECTRONICS

Connection type	Male connector, M23, 12-pin, radial
Supply voltage	4.5 V ... 32 V
Power consumption	$\leq 0.7 \text{ W}$ (without load)

## MECHANICS

Weight	0.55 kg
Measuring wire material	Highly flexible stranded steel 1,4401 stainless steel V4A
Measuring wire diameter	0.55 mm
Weight (measuring wire)	1.2 g/m
Housing material, wire draw mechanism	Plastic, Noryl
Spring return force	3.3 N ... 4.4 N <sup>1)</sup>
Length of wire pulled out per revolution	230 mm
Life of wire draw mechanism	Typ. 1,000,000 cycles <sup>2) 3)</sup>
Actual wire draw length	3.2 m
Wire acceleration	10 m/s <sup>2</sup>
Operating speed	6 m/s
Mounted encoder	DFS60, DFS60A-S1ZA00S07, 1079059
Mounted mechanic	MRA-G080-103D3, 5322778

<sup>1)</sup> These values were measured at an ambient temperature of 25 °C. There may be variations at other temperatures.

<sup>2)</sup> Average values, which depend on the application.

<sup>3)</sup> The service life depends on the type of load. This is influenced by environmental conditions, the installation location, the measuring range in use, the traversing speed, and acceleration.

## AMBIENT DATA

EMC	According to EN 61000-6-2 and EN 61000-6-3
Enclosure rating	IP50, mounted mechanic IP67, Encoder (IEC 60529) <sup>1)</sup>
Operating temperature range	-30 °C ... +70 °C

<sup>1)</sup> With mating connector fitted.

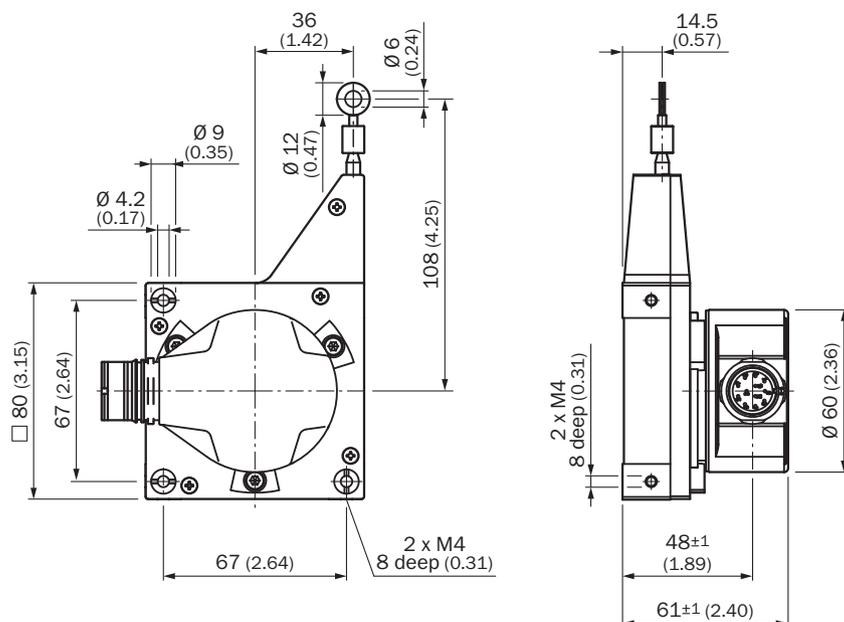
## CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓

China RoHS

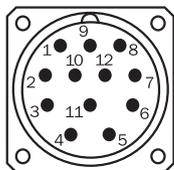


**DIMENSIONAL DRAWING**



Dimensions in mm (inch)

**ANSCHLUSSBELEGUNG**

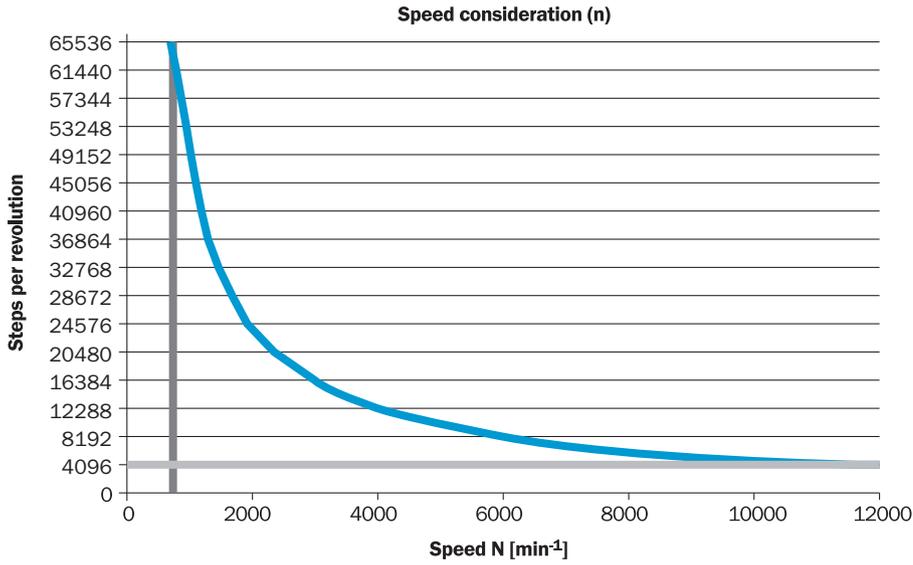


view of M23 male device connector on encoder

PINMale connector M12, 8-pin	PINMale connector M23, 12-pin	Wire colors (cable connection)	TTL/HTL signal	Sin/Cos 1.0 V <sub>pp</sub>	Explanation
1	6	Brown	$\bar{A}$	COS-	Signal wire
2	5	White	A	COS+	Signal wire
3	1	Black	$\bar{B}$	SIN-	Signal wire
4	8	Pink	B	SIN+	Signal wire
5	4	Yellow	$\bar{Z}$	$\bar{Z}$	Signal wire
6	3	Purple	Z	Z	Signal wire
7	10	Blue	GND	GND	Ground connection
8	12	Red	+U <sub>s</sub>	+U <sub>s</sub>	Supply voltage
-	9	-	N.c.	N.c.	Not assigned
-	2	-	N.c.	N.c.	Not assigned
-	11	-	N.c.	N.c.	Not assigned
-	7 <sup>1)</sup>	Orange	0-SET <sup>1)</sup>	N.c.	Set zero pulse <sup>1)</sup>
Shielding	Shielding	Shielding	Shielding	Shielding	Shielding connected to housing on encoder side. Connected to ground on control side.

PINMale connector M12, 8-pin	PINMale connector M23, 12-pin	Wire colors (cable connection)	TTL/HTL signal	Sin/Cos 1.0 V <sub>pp</sub>	Explanation
<sup>1)</sup> For electrical interfaces only: M, U, V, W with 0-SET function on PIN 7 on M23 plug. The 0-SET input is used to set the zero pulse to the current shaft position. If the 0-SET input is applied to US for longer than 250 ms after it has previously been open or applied to GND for at least 1,000 ms, the current shaft position is assigned zero pulse signal "Z".					

**MAXIMUM REVOLUTION RANGE**



Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at [www.sick.com/1079060](http://www.sick.com/1079060)



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# SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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