



# PRF08-P1CM0340

HighLine

WIRE DRAW ENCODERS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
PRF08-P1CM0340	1100153

**Included in delivery:** MRA-F080-103D2 (1), DFS60B-S1PC10000 (1)

Product is supplied fully assembled. See individual components for further technical data

Other models and accessories → [www.sick.com/HighLine](http://www.sick.com/HighLine)

### Detailed technical data

#### Performance

PRF

<b>Measurement range</b>	0 m ... 3 m
<b>Encoder</b>	Incremental encoders
<b>Resolution (wire draw + encoder)</b>	0.03 mm <sup>1) 2)</sup>
<b>Repeatability</b>	≤ 1 mm <sup>3)</sup>
<b>Linearity</b>	≤ ± 2 mm <sup>3)</sup>
<b>Hysteresis</b>	≤ 2 mm <sup>3)</sup>

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

<sup>2)</sup> Example calculation based on the PRF08 with HTL Push Pull: 200 mm (wire draw length per revolution - see Mechanical data): 2,000 (pulses per revolution) = 0.1 mm (resolution of wire draw + encoder combination).

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

#### Interfaces

PRF

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

#### Electrical data

PRF

<b>Connection type</b>	Male connector, M12, 8-pin, radial
<b>Supply voltage</b>	4.5 V ... 32 V
<b>Power consumption</b>	≤ 0.7 W (without load)
<b>MTTFd: mean time to dangerous failure</b>	300 years (EN ISO 13849-1) <sup>1)</sup>

<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.

## Mechanical data

PRF

<b>Weight</b>	1.8 kg
<b>Measuring wire material</b>	Highly flexible stranded steel 1,4401 stainless steel V4A
<b>Weight (measuring wire)</b>	7.1 g/m
<b>Housing material, wire draw mechanism</b>	Aluminum (anodized), zinc die cast
<b>Spring return force</b>	6 N ... 14 N <sup>1)</sup>
<b>Length of wire pulled out per revolution</b>	200 mm
<b>Life of wire draw mechanism</b>	Typ. 1,000,000 cycles <sup>2) 3)</sup>
<b>Actual wire draw length</b>	3.2 m
<b>Wire acceleration</b>	40 m/s <sup>2</sup>
<b>Operating speed</b>	8 m/s
<b>Mounted encoder</b>	DFS60, DFS60B-S1PC10000, 1036756
<b>Mounted mechanic</b>	MRA-F080-103D2, 6030125

<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

PRF

<b>EMC</b>	According to EN 61000-6-2 and EN 61000-6-3
<b>Enclosure rating</b>	IP64
<b>Operating temperature range</b>	-30 °C ... +70 °C

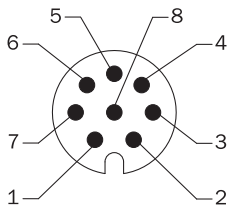
## Classifications

<b>ECl@ss 5.0</b>	27270590
<b>ECl@ss 5.1.4</b>	27270590
<b>ECl@ss 6.0</b>	27270590
<b>ECl@ss 6.2</b>	27270590
<b>ECl@ss 7.0</b>	27270590
<b>ECl@ss 8.0</b>	27270590
<b>ECl@ss 8.1</b>	27270590
<b>ECl@ss 9.0</b>	27270590
<b>ECl@ss 10.0</b>	27270613
<b>ECl@ss 11.0</b>	27270503
<b>ETIM 5.0</b>	EC001486
<b>ETIM 6.0</b>	EC001486
<b>ETIM 7.0</b>	EC001486
<b>UNSPSC 16.0901</b>	41112113

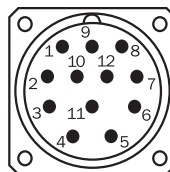
PIN assignment

Cable, 8-wire

View of M12 male device connector on encoder



View of M23 male device connector on encoder







PIN, 8-pin, M12 male connector	PIN, 12-pin, M23 male connector	Color of the wires for encoders with cable outlet	TTL/HTL signal	Sin/cos 1.0 V <sub>SS</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	Violet	Z	Z	Signal wire
7	10	Blue	GND	GND	Ground connection of the encoder
8	12	Red	+U <sub>s</sub>	+U <sub>s</sub>	Supply voltage (volt-free to housing)
-	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>	-	O-SET <sup>1)</sup>	n.c.	Set zero pulse <sup>1)</sup>
Screen	Screen	Screen	Screen	Screen	Screen connected to housing on encoder side. Connected to ground on control side.

<sup>1)</sup> For electrical interfaces only: M, U, V, W with O-SET function on PIN 7 on M23 male connector. The O-SET input is used to set the zero pulse on the current shaft position. If the O-SET input is connected to U<sub>s</sub> for longer than 250 ms after it had previously been unassigned for at least 1,000 ms or had been connected to the GND, the current position of the shaft is assigned to the zero pulse signal "Z".

Recommended accessories

Other models and accessories → [www.sick.com/HighLine](http://www.sick.com/HighLine)

	Brief description	Type	Part no.
<b>Other mounting accessories</b>			
	Joint ball for later insertion in wire end ring with 20 mm diameter. The use of this joint ball enables movement in multiple levels of freedom.	Joint protection for wire rope BTF/PRF/MRA	5318683
	Compressed air attachment for MRA-F080... and MRA-F130... HighLine wire draw mechanism	MRA-F-P	6073769
	Additional brush attachment for wire draw mechanism MRA-F080 (2 m and 3 m from HighLine series)	MRA-F080-B	6045341

	Brief description	Type	Part no.
	Wire draw deflection pulley for wire draw mechanism MRA-F080 (2m and 3m from High-Line series)	MRA-F080-R	6028632
Programming and configuration tools			
	USB programming unit, for programmable SICK encoders AFS60, AFM60, DFS60, VFS60, DVF60 and wire draw encoders with programmable encoders	PGT-08-S	1036616
	Programming unit display for programmable SICK DFS60, DVF60, AFS/AFM60, AHS/AHM36 encoders, and wire draw encoder with DFS60, AFS/AFM60 and AHS/AHM36. Compact dimensions, low weight, and intuitive operation.	PGT-10-Pro	1072254
Wire draw mechanism			
	HighLine wire draw mechanism for servo flange with 6 mm shaft, measuring range 0 m ... 3 m	MRA-F080-103D2	6030125
Plug connectors and cables			
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: Incremental, SSI, PUR, halogen-free, shielded, 2 m	DOL-1208-G02MAC1	6032866
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: Incremental, SSI, PUR, halogen-free, shielded, 5 m	DOL-1208-G05MAC1	6032867
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: Incremental, SSI, PUR, halogen-free, shielded, 10 m	DOL-1208-G10MAC1	6032868
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: Incremental, SSI, PUR, halogen-free, shielded, 20 m	DOL-1208-G20MAC1	6032869
	Head A: female connector, M12, 8-pin, straight, A-coded Head B: - Cable: Incremental, SSI, shielded	DOS-1208-GA01	6045001

## 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.

For us, that is “Sensor Intelligence.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)