

PFV08-A1AM03B300

VarioLine

WIRE DRAW ENCODERS

SICK
Sensor Intelligence.

Ordering information

Type	part no.
PFV08-A1AM03B300	1133466

Included in delivery: DFS60A-S1AA16384 (1), MRA-V080-103D3 (1)

Other models and accessories → www.sick.com/VarioLine



Detailed technical data

Safety-related parameters

MTTF_D (mean time to dangerous failure)	300 years (EN ISO 13849-1) ¹⁾
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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.

Performance

Measurement range	0 m ... 3 m
Encoder	Incremental encoders
Resolution (wire draw + encoder)	0.01 mm ^{1) 2)}
Repeatability	≤ 0.3 mm ³⁾
Linearity	≤ ± 2 mm ³⁾
Hysteresis	≤ 1.2 mm ³⁾

¹⁾ The values shown have been rounded.

²⁾ 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).

³⁾ Value applies to wire draw mechanism.

Interfaces

Communication interface	Incremental / TTL / RS-422
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Electronics

Connection type	Male connector, M23, 12-pin, radial
Supply voltage	4.5 V ... 5.5 V
Operating current	40 mA (without load)

Mechanics

Weight	0.9 kg
Measuring wire material	Stainless steel 1.4401

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

²⁾ Average values, which depend on the application.

³⁾ 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.

Measuring wire diameter	0.81 mm
Housing material, wire draw mechanism	Stainless steel 1.4301
Spring return force	8 N ... 10 N ¹⁾
Length of wire pulled out per revolution	230 mm
Life of wire draw mechanism	Typ. 1,000,000 cycles ^{2) 3)}
Actual wire draw length	3.2 m
Operating speed	4 m/s
Mounted encoder	DFS60, DFS60A-S1AA16384, 1037565
Mounted mechanic	MRA-V080-103D3, 5347779

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²⁾ Average values, which depend on the application.

³⁾ 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	IP60, mounted mechanic IP67, Encoder (IEC 60529) ¹⁾
Operating temperature range	-30 °C ... +70 °C

¹⁾ With mating connector fitted.

Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓

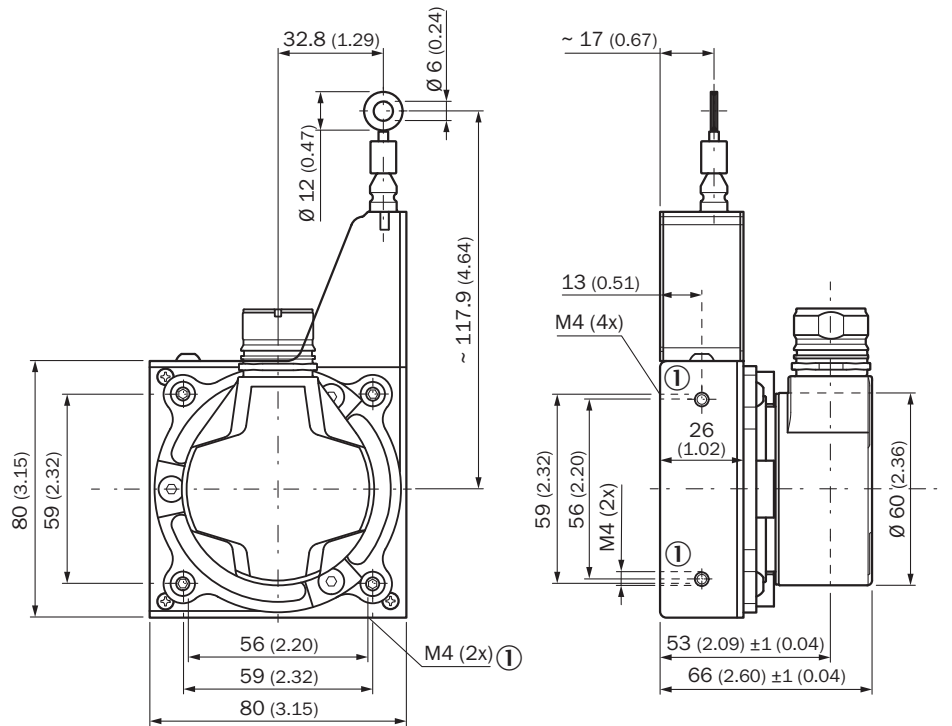
Classifications

ECLASS 5.0	27270590
ECLASS 5.1.4	27270590
ECLASS 6.0	27270590
ECLASS 6.2	27270590
ECLASS 7.0	27270590
ECLASS 8.0	27270590
ECLASS 8.1	27270590
ECLASS 9.0	27270590
ECLASS 10.0	27270613
ECLASS 11.0	27270503
ECLASS 12.0	27270503
ETIM 5.0	EC001486
ETIM 6.0	EC001486
ETIM 7.0	EC001486
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UNSPSC 16.0901

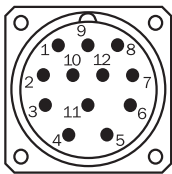
41112113

Dimensional drawing



Dimensions in mm (inch)

Anschlussbelegung



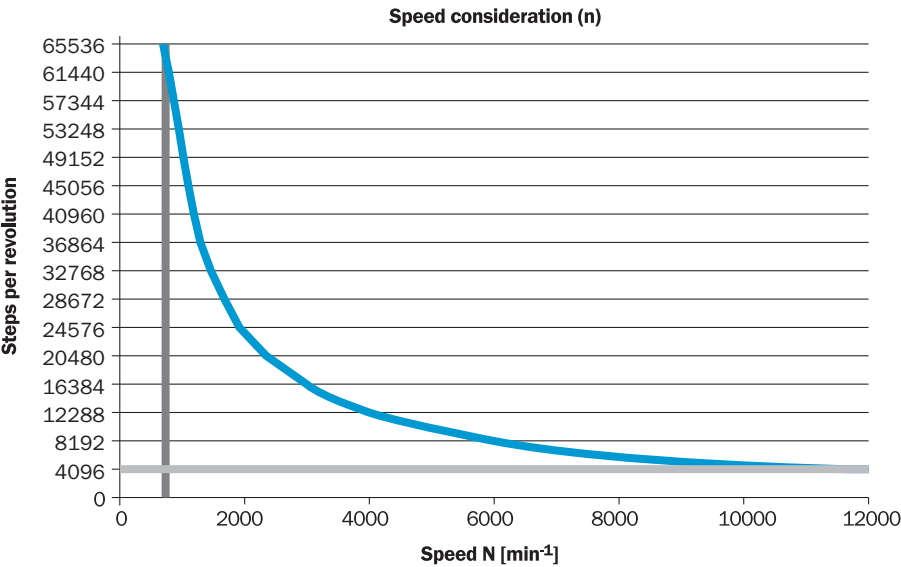
view of M23 male device connector on encoder

PINMale connector M12, 8-pin	PINMale connector M23, 12-pin	Wire colors (cable connection)	TTL/HTL signal	Sin/Cos 1.0 V _{PP}	Explanation
1	6	Brown	$\overline{A}$	COS-	Signal wire
2	5	White	A	COS+	Signal wire
3	1	Black	$\overline{B}$	SIN-	Signal wire
4	8	Pink	B	SIN+	Signal wire
5	4	Yellow	$\overline{Z}$	$\overline{Z}$	Signal wire
6	3	Purple	Z	Z	Signal wire
7	10	Blue	GND	GND	Ground connection
8	12	Red	+U _S	+U _S	Supply voltage
-	9	-	N.c.	N.c.	Not assigned

PINMale connector M12, 8-pin	PINMale connector M23, 12-pin	Wire colors (cable connection)	TTL/HTL signal	Sin/Cos 1.0 V _{PP}	Explanation
-	2	-	N.c.	N.c.	Not assigned
-	11	-	N.c.	N.c.	Not assigned
-	7 ¹⁾	Orange	0-SET ¹⁾	N.c.	Set zero pulse ¹⁾
Shielding	Shielding	Shielding	Shielding	Shielding	Screen connected to housing on encoder side. Connected to ground on control side.

¹⁾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".

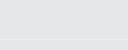
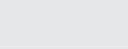
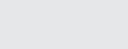
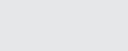
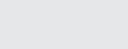
maximum revolution range



Recommended accessories

Other models and accessories → www.sick.com/VarioLine

	Brief description	Type	part no.
programming devices			
	• Product segment: Programming devices • Product family: PGT-10 Pro • Description: Programming unit display for programmable SICK DFS60, DFV60, AFS/AFM60, AHS/AHM36 encoders, and wire draw encoder with DFS60, AFS/AFM60 and AHS/AHM36. Compact dimensions, low weight, and intuitive operation. • Items supplied: 1 x PGT-10-Pro stand-alone programming tool, 4 x alkaline type batteries, 1.5 V Mignon (AA)	PGT-10-Pro	1072254
	• Product segment: Programming devices • Product family: PGT-08-S • Description: USB programming unit, for programmable SICK encoders AFS60, AFM60, DFS60, VFS60, DFV60 and wire draw encoders with programmable encoders. Not compatible with the portable SOPAS ET versions.	PGT-08-S	1036616

	Brief description	Type	part no.
connectors and cables			
	Connection type head A: Female connector, M23, 12-pin, straight, A-coded Signal type: HIPERFACE[®], SSI, Incremental Description: HIPERFACE[®], shieldedSSIIncremental Connection systems: Solder connection	DOS-2312-G02	2077057
	Connection type head A: Female connector, M23, 12-pin, angled, A-coded Signal type: HIPERFACE[®], SSI, Incremental Description: HIPERFACE[®], shieldedSSIIncremental Connection systems: Solder connection	DOS-2312-W01	2072580
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 2 m, 11-wire, PUR Description: Incremental, shielded	DOL-2312-G02MLA3	2030682
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 7 m, 11-wire, PUR Description: Incremental, shielded	DOL-2312-G07MLA3	2030685
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 10 m, 11-wire, PUR Description: Incremental, shielded	DOL-2312-G10MLA3	2030688
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 15 m, 11-wire, PUR Description: Incremental, shielded	DOL-2312-G15MLA3	2030692
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 20 m, 11-wire, PUR Description: Incremental, shielded	DOL-2312-G20MLA3	2030695
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 25 m, 11-wire, PUR Description: Incremental, shielded	DOL-2312-G25MLA3	2030699
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 30 m, 11-wire, PUR Description: Incremental, shielded	DOL-2312-G30MLA3	2030702
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 1.5 m, 12-wire, PUR, halogen-free Description: Incremental, shielded	DOL-2312-G1M5MA3	2029212
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 3 m, 12-wire, PUR, halogen-free Description: Incremental, shielded	DOL-2312-G03MMA3	2029213
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 5 m, 12-wire, PUR, halogen-free Description: Incremental, shielded	DOL-2312-G05MMA3	2029214
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 10 m, 12-wire, PUR, halogen-free	DOL-2312-G10MMA3	2029215

	Brief description	Type	part no.
	• Description: Incremental, shielded • Connection type head A: Female connector, M23, 12-pin, straight • Connection type head B: Flying leads • Signal type: Incremental • Cable: 20 m, 12-wire, PUR, halogen-free • Description: Incremental, shielded	D0L-2312-G20MMA3	2029216
		D0L-2312-G30MMA3	2029217

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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.

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For us, that is “Sensor Intelligence.”

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