

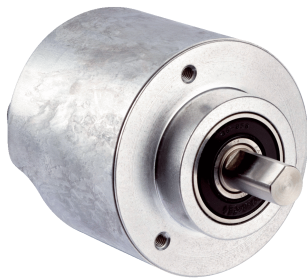


# AFS/AFM60 EtherCAT®

Intelligent, powerful, precise

**ABSOLUTE ENCODERS**

**SICK**  
Sensor Intelligence.



### Technical data overview

<b>Encoder design</b>	Multiturn / Singleturn (depending on type)						
<b>Shaft type</b>	Solid shaft, Servo flange Solid shaft, face mount flange Blind hollow shaft						
<b>Shaft diameter</b>	<table border="0"> <tr> <td>Solid shaft, Servo flange</td> <td>6 mm</td> </tr> <tr> <td>Solid shaft, face mount flange</td> <td>10 mm</td> </tr> <tr> <td>Blind hollow shaft</td> <td>12 mm 8 mm 3/8" 10 mm 1/2" 14 mm 15 mm 1/4" 5/8"</td> </tr> </table>	Solid shaft, Servo flange	6 mm	Solid shaft, face mount flange	10 mm	Blind hollow shaft	12 mm 8 mm 3/8" 10 mm 1/2" 14 mm 15 mm 1/4" 5/8"
Solid shaft, Servo flange	6 mm						
Solid shaft, face mount flange	10 mm						
Blind hollow shaft	12 mm 8 mm 3/8" 10 mm 1/2" 14 mm 15 mm 1/4" 5/8"						
<b>Connection type</b>	Male connector, 1x, M12, 4-pin, axial Female connector, 2x, M12, 4-pin, axial						
<b>Communication interface</b>	EtherCAT®						
<b>Communication Interface detail</b>	CoE (CAN over EtherCAT®)						
<b>Number of steps per revolution (max. resolution)</b>	262,144 (18 bit)						
<b>Max. resolution (number of steps per revolution x number of revolutions)</b>	18 bit x 12 bit (262,144 x 4,096)						
<b>Programmable/configurable</b>	Over PLC-Engineering-Tool						

### Product description

Intelligent diagnostic functions and rapid data transfer: High-resolution AFS/AFM60 EtherCAT® absolute encoders represent high-precision measurement of absolute position and speed in the area of industrial automation. Comprehensive functions for diagnosing parameters such as temperature or operating time and early error detection increase network reliability. Various configuration options, such as modification of resolution, rotational direction or unit of speed measurement simplify installation and enable customized adjustment to each application. Their compact design also makes AFS/AFM60 EtherCAT® absolute encoders suitable for applications in confined spaces. Embedded switch technology ensures maximum system and equipment availability and, therefore, helps increase productivity.

### At a glance

- High-resolution 30-bit absolute encoder (18-bit singleturn and 12-bit multiturn)
- Face mount flange, servo flange and blind hollow shaft
- Connection type: 3 x M12 axial male connector
- Data transfer speed "on the fly" in the range of  $\mu$ s
- EtherCAT® interface CoE (CiA DS-301) Device profile (CiA DS-406)
- Round axis functionality
- Alarms, warnings and diagnostics functions for speed, position, temperature, operating time, etc.
- Status display via 5 LEDs

### Your benefits

- Increased productivity as a result of intelligent diagnostics functions and rapid data transfer
- Increase in network reliability due to early error detection
- Simple installation with various configuration options
- Flexible, easy setup and high resolutions for various applications with binary, integer and "decimal point" values based on round axis functionality
- Maximum system availability through embedded switch technology
- Compact and cost-efficient design

## Fields of application

- Measurement of absolute position and speed in various machines and systems in the area of industrial automation as well as production and process technology, for example:
- Storage systems
- Packaging machines
- Hydraulic presses
- Printing machines
- Robots
- Rotary tables

## Ordering information

Other models and accessories → [www.sick.com/AFS\\_AFM60\\_EtherCAT](http://www.sick.com/AFS_AFM60_EtherCAT)

- **Mechanical design:** Solid shaft, Servo flange
- **Communication Interface detail:** CoE (CAN over EtherCAT®)
- **Mechanical design:** Solid shaft Servo flange 6 mm x 10 mm
- **Connection type:** male connector, 1x, M12, 4-pin, axial (A-coded.), Female connector, 2x, M12, 4-pin, axial (D-coded.)
- **Programmable/configurable:** ✓

Singleturn or multiturn version	Type	Part no.
Multiturn	AFM60A-S1EB018x12	1059061
Singleturn	AFS60A-S1E-B262144	1059072

- **Mechanical design:** Solid shaft, face mount flange
- **Communication Interface detail:** CoE (CAN over EtherCAT®)
- **Mechanical design:** Solid shaft face mount flange 10 mm x 19 mm
- **Connection type:** male connector, 1x, M12, 4-pin, axial (A-coded.), Female connector, 2x, M12, 4-pin, axial (D-coded.)
- **Programmable/configurable:** ✓

Singleturn or multiturn version	Type	Part no.
Multiturn	AFM60A-S4EB018x12	1059060
Singleturn	AFS60A-S4E-B262144	1059071

- **Mechanical design:** blind hollow shaft
- **Communication Interface detail:** CoE (CAN over EtherCAT®)
- **Connection type:** male connector, 1x, M12, 4-pin, axial (A-coded.), Female connector, 2x, M12, 4-pin, axial (D-coded.)
- **Programmable/configurable:** ✓

Singleturn or multiturn version	Mechanical design	Type	Part no.
Multiturn	Blind hollow shaft 1/2"	AFM60A-BFEB018x12	1059055
Singleturn	Blind hollow shaft 1/2"	AFS60A-BFEB262144	1059066
Multiturn	Blind hollow shaft 1/4"	AFM60A-BKEB018x12	1059052
Singleturn	Blind hollow shaft 1/4"	AFS60A-BKEB262144	1059062
Multiturn	Blind hollow shaft 10 mm	AFM60A-BDEB018x12	1059057
Singleturn	Blind hollow shaft 10 mm	AFS60A-BDEB262144	1059068
Multiturn	Blind hollow shaft 12 mm	AFM60A-BEEB018x12	1059056
Singleturn	Blind hollow shaft 12 mm	AFS60A-BEEB262144	1059067
Multiturn	Blind hollow shaft 14 mm	AFM60A-BGEB018x12	1059054
Singleturn	Blind hollow shaft 14 mm	AFS60A-BGEB262144	1059065

Singleturn or multiturn version	Mechanical design	Type	Part no.
Multiturn	Blind hollow shaft 15 mm	AFM60A-BHEB018x12	1059053
Singleturn	Blind hollow shaft 15 mm	AFS60A-BHEB262144	1059064
Multiturn	Blind hollow shaft 3/8"	AFM60A-BCEB018x12	1059058
Singleturn	Blind hollow shaft 3/8"	AFS60A-BCEB262144	1059069
	Blind hollow shaft 5/8"	AFS60A-BJEB262144	1059063
Multiturn	Blind hollow shaft 8 mm	AFM60A-BBEB018x12	1059059
Singleturn	Blind hollow shaft 8 mm	AFS60A-BBEB262144	1059070

• **Specialty:** Sales Kit

Singleturn or multiturn version	Scope of delivery	Type	Part no.
Multiturn	1 x AFM60A-BDEB018x12 (1059057), 1 x STE-1204-WZ (6048262), 1 x DOS-1204-W (6007303)	AFM60A-BDEB Sales-Kit 01	1060476
		AFM60A-BDEB Sales-Kit 03	1060497
	1 x AFM60A-BDEB018x12 (1059057), 1 x STL-1204-W05MZ90 (6048257), 1 x YG2A14-050UB3XLEAX (2095767)	AFM60A-BDEB Sales-Kit 02	1060486
	1 x AFM60A-BDEB018x12 (1059057), 2 x STL-1204-W05MZ90 (6048257), 1 x YG2A14-050UB3XLEAX (2095767)	AFM60A-BDEB Sales-Kit 04	1060507
	1 x AFM60A-BEEB018x12 (1059056), 1 x STE-1204-WZ (6048262), 1 x DOS-1204-W (6007303)	AFM60A-BEEB Sales-Kit 01	1060477
		AFM60A-BEEB Sales-Kit 03	1060498
	1 x AFM60A-BEEB018x12 (1059056), 1 x STL-1204-W05MZ90 (6048257), 1 x YG2A14-050UB3XLEAX (2095767)	AFM60A-BEEB Sales-Kit 02	1060487
	1 x AFM60A-BEEB018x12 (1059056), 2 x STL-1204-W05MZ90 (6048257), 1 x YG2A14-050UB3XLEAX (2095767)	AFM60A-BEEB Sales-Kit 04	1060508
	1 x AFM60A-BHEB018x12 (1059053), 1 x STE-1204-WZ (6048262), 1 x DOS-1204-W (6007303)	AFM60A-BHEB Sales-Kit 01	1060478
		AFM60A-BHEB Sales-Kit 03	1060499
	1 x AFM60A-BHEB018x12 (1059053), 1 x STL-1204-W05MZ90 (6048257), 1 x YG2A14-050UB3XLEAX (2095767)	AFM60A-BHEB Sales-Kit 02	1060488
	1 x AFM60A-BHEB018x12 (1059053), 2 x STL-1204-W05MZ90 (6048257), 1 x YG2A14-050UB3XLEAX (2095767)	AFM60A-BHEB Sales-Kit 04	1060509
	1 x AFM60A-S1EB018x12 (1059061), 1 x STE-1204-WZ (6048262), 1 x DOS-1204-W (6007303)	AFM60A-S1EB Sales-Kit 01	1060474
		AFM60A-S1EB Sales-Kit 03	1060495
	1 x AFM60A-S1EB018x12 (1059061), 1 x STL-1204-W05MZ90 (6048257), 1 x YG2A14-050UB3XLEAX (2095767)	AFM60A-S1EB Sales-Kit 02	1060484
	1 x AFM60A-S1EB018x12 (1059061), 2 x STL-1204-W05MZ90 (6048257), 1 x YG2A14-050UB3XLEAX (2095767)	AFM60A-S1EB Sales-Kit 04	1060505
	1 x AFM60A-S4EB018x12 (1059060), 1 x STE-1204-WZ (6048262), 1 x DOS-1204-W (6007303)	AFM60A-S4EB Sales-Kit 01	1060475
	1 x AFM60A-S4EB018x12 (1059060), 1 x STL-1204-W05MZ90 (6048257), 1 x YG2A14-050UB3XLEAX (2095767)	AFM60A-S4EB Sales-Kit 02	1060485
	1 x AFM60A-S4EB018x12 (1059060), 2 x STE-1204-WZ (6048262), 1 x DOS-1204-W (6007303)	AFM60A-S4EB Sales-Kit 03	1060496
	1 x AFM60A-S4EB018x12 (1059060), 2 x STL-1204-W05MZ90 (6048257), 1 x YG2A14-050UB3XLEAX (2095767)	AFM60A-S4EB Sales-Kit 04	1060506

Singleturn or multiturn version	Scope of delivery	Type	Part no.
Singleturn	1 x AFS60A-BDEB262144 (1059068), 1 x STE-1204-WZ (6048262), 1 x DOS-1204-W (6007303)	AFS60A-BDEB Sales-Kit 01	1060471
		AFS60A-BDEB Sales-Kit 03	1060491
	1 x AFS60A-BDEB262144 (1059068), 1 x STL-1204-W05MZ90 (6048257), 1 x YG2A14-050UB3XLEAX (2095767)	AFS60A-BDEB Sales-Kit 02	1060481
		AFS60A-BDEB Sales-Kit 04	1060502
	1 x AFS60A-BEEB262144 (1059067), 1 x STE-1204-WZ (6048262), 1 x DOS-1204-W (6007303)	AFS60A-BEEB Sales-Kit 01	1060472
		AFS60A-BEEB Sales-Kit 03	1060492
	1 x AFS60A-BEEB262144 (1059067), 1 x STL-1204-W05MZ90 (6048257), 1 x YG2A14-050UB3XLEAX (2095767)	AFS60A-BEEB Sales-Kit 02	1060482
		AFS60A-BEEB Sales-Kit 04	1060503
	1 x AFS60A-BHEB262144 (1059064), 1 x STE-1204-WZ (6048262), 1 x DOS-1204-W (6007303)	AFS60A-BHEB Sales-Kit 01	1060473
		AFS60A-BHEB Sales-Kit 03	1060493
	1 x AFS60A-BHEB262144 (1059064), 1 x STL-1204-W05MZ90 (6048257), 1 x YG2A14-050UB3XLEAX (2095767)	AFS60A-BHEB Sales-Kit 02	1060483
		AFS60A-BHEB Sales-Kit 04	1060504
	1 x AFS60A-S1EB262144 (1059072), 1 x STE-1204-WZ (6048262), 1 x DOS-1204-W (6007303)	AFS60A-S1EB Sales-Kit 01	1060469
		AFS60A-S1EB Sales-Kit 03	1060489
	1 x AFS60A-S1EB262144 (1059072), 1 x STL-1204-W05MZ90 (6048257), 1 x YG2A14-050UB3XLEAX (2095767)	AFS60A-S1EB Sales-Kit 02	1060479
		AFS60A-S1EB Sales-Kit 04	1060500
	1 x AFS60A-S4EB262144 (1059071), 1 x STE-1204-WZ (6048262), 1 x DOS-1204-W (6007303)	AFS60A-S4EB Sales-Kit 03	1060490
		AFS60A-S4EB Sales-Kit 01	1060470
	1 x AFS60A-S4EB262144 (1059071), 1 x STL-1204-W05MZ90 (6048257), 1 x YG2A14-050UB3XLEAX (2095767)	AFS60A-S4EB Sales-Kit 02	1060480
		AFS60A-S4EB Sales-Kit 04	1060501

## 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)