SANGALLI SERVOMOTORI

Encoder KIT for ECOPM Series

Mounting Instructions

Motor Series ECOPM
Technical Manual

Motor Series ECOPM
Safety Instructions

v.10-2023

KIT COMPOSITION

Main components of the kit:

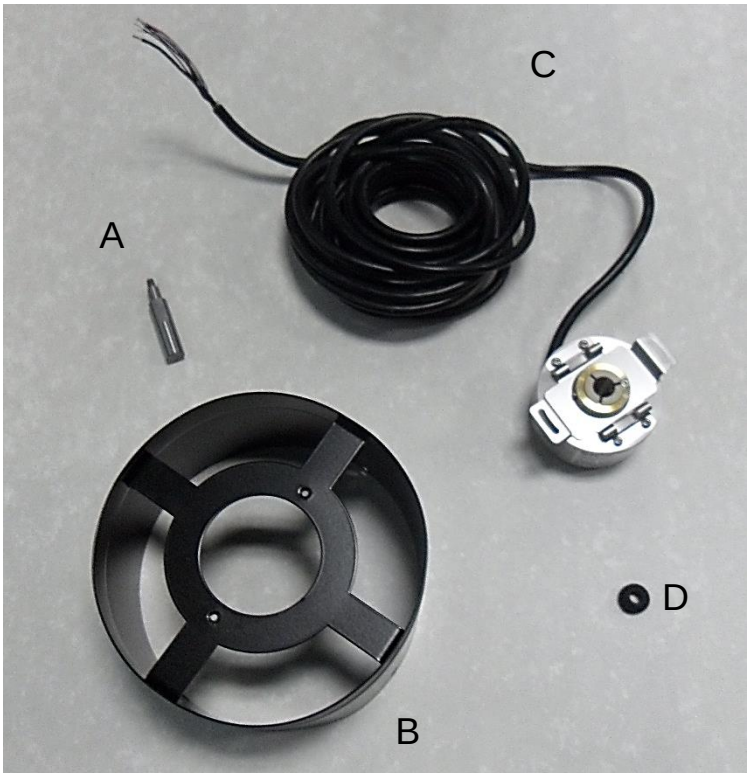
1. Shaft extension (A)
2. Fan cover extension (B)
3. Encoder DBS60E-B4FMB1024 (C)
4. Cable grommet (D)

Small parts (included in the kit)

1. Cable tie cord
2. Socket head cap screws M3x6 (n°2)
3. Self-tapping screws ST2,9x6,5 (n°4)
4. Spring washers M3 (n°2)
5. Flat washers M3 (n°2)

Tools needed:

1. Allen key n°2
2. Allen key n° 2,5
3. Philips screwdriver
4. 8 mm wrench



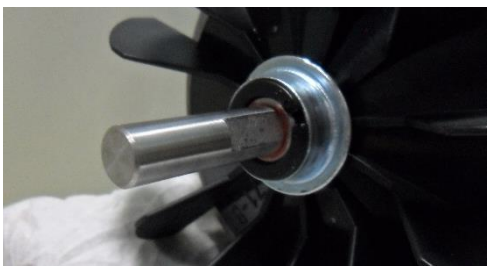
AXIAL LENGTH INCREASE AFTER ASSEMBLY

	ECO5.71	ECO5.90	ECO5.112
ΔL [mm]	+60	+50	+40

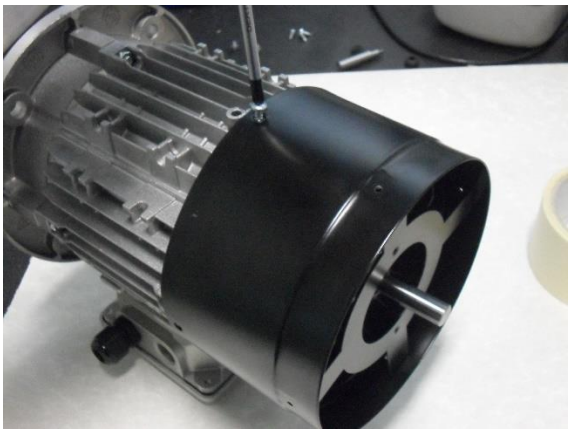
MOUNTING OPERATIONS

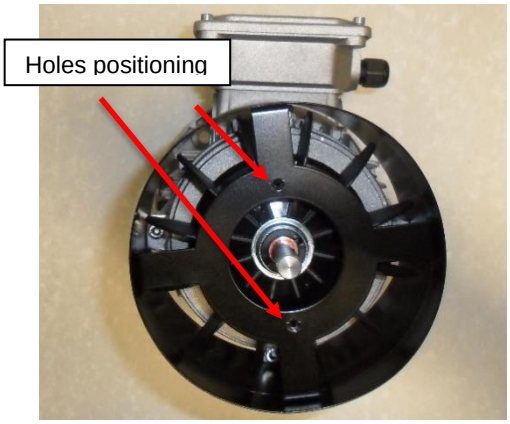
1. To proceed with the assembly of the kit, it is necessary to remove the standard fan cover already fixed on the motor. To do this, you need a Phillips screwdriver. Unscrew the 4 screws that keep it fixed and keep them aside for a later use.

2. Once the fan cover has been disassembled, proceed with the assembly of the shaft extension **(A)** by tightening it on the hole predisposition already on the shaft (NDE side). Use the 8 mm wrench to tight the extension while keeping the shaft blocked (You may need a hub to keep it blocked). Before tightening the extension on the shaft, it is recommended to apply a small amount of LOCTITE 333 (or equivalent) thread locker on the spindle thread.

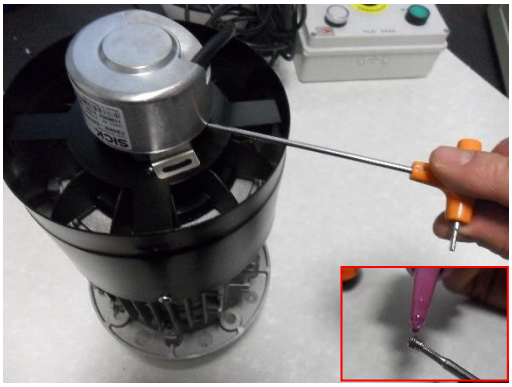


3. Once the shaft has been tightened, proceed with the assembly of the fan cover extension **(B)**. For fixing, use the previously unscrewed screws of the fan cover. For the correct positioning, look at the image below

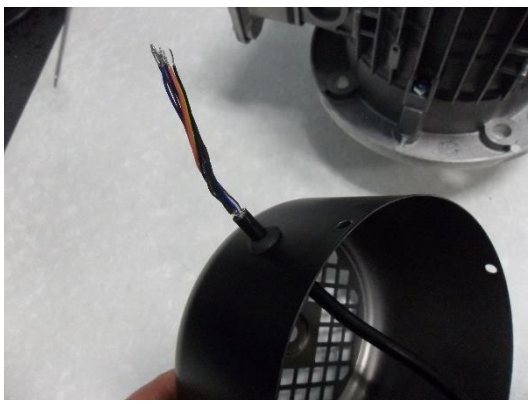




4. It is now necessary to fix the encoder on the fan cover's extension brackets. Make sure the encoder is positioned correctly before tightening the M3x6 socket head cap screws. The encoder cable should point to the upper side of the motor (terminal box). Once the encoder is fixed, proceed to tight the encoder's shaft dowel (it is recommended to use a thread locker on the fixing dowel).



5. The next step is to drill a hole (Ø8,5 mm) into the original fan cover to place the cable grommet. It is usually placed besides the encoder near the position shown below. Before drilling the hole check the effective position by mounting the fan cover on the fan cover extension. While drilling, help yourself using a support placed inside the fan cover in order to keep it still and to avoid cover bending. Now insert the cable grommet with the help of a slotted screwdriver. Insert the encoder cable and pass it all through leaving a small amount of cable inside the cover. To facilitate the passage of the cable, use a lubricant.



6. Before closing the fan cover, tighten the provided cable tie on the encoder cable just before the grommet. Once tightened, cut off the excess part. This will act as a block from the inside for unwanted pulling/tearing movements. Fix the fan cover with the 4x Self-tapping screws ST 2,9x6,5.

7. Once the motor is closed, make sure there is no mechanical interference by spinning the shaft. If everything is ok, the mounting has been completed.

ENCODER DATA - DBS60E-B4FMB1024

Interfaces

Communication interface	Incremental
Communication Interface detail	TTL / HTL [1]
Number of signal channels	6-channel
Initialization time	< 5 ms [2]
Output frequency	+ 300 kHz [3]
Load current	≤ 30 mA, per channel
Power consumption	≤ 0.5 W (without load)

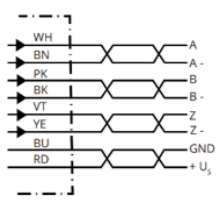
[1] Output level depends on the supply voltage.
[2] Valid signals can be read once this time has elapsed.
[3] Up to 450 kHz on request.

Electrical data

Connection type	Cable, 8-wire, universal, 5 m [1]
Supply voltage	4.5 ... 30 V
Reference signal, number	1
Reference signal, position	90°, electric, logically gated with A and B
Reverse polarity protection	✓
Short-circuit protection of the outputs	✓ [2]
MTTFd: mean time to dangerous failure	500 years (EN ISO 13849-1) [3]

Performance

Pulses per revolution	1,024
Measuring step	≤ 90° electric/pulses per revolution
Measuring step deviation	± 18° / pulses per revolution
Error limits	Measuring step deviation x 3
Duty cycle	≤ 0.5 ± 5 %

Wire colors (Cable connection)	TTL/HTL 6-channel signal	graphic scheme
Brown	A-	
White	A	
Black	B-	
Pink	B	
Yellow	Z-	
Purple	Z	
Blue	GND	
Red	$+U_S$	