






EL / EF 49C-P

EL incremental encoders /
EF incremental encoders +
commutation phases

Incremental encoders for motor

The encoders of the "49" series are applied on systems of retroaction on AC servomotors; they integrate more than a traditional incremental encoder, the optic generation of "Hall effect phases".

The main characteristics are:

- Interchangeability with the Size 19 resolver, saving time and money, as it is necessary to have only one predisposition for the retromotor
- Easy mechanical assembly
- Simplification of the wiring through the use of a connector kit
- Contained dimensions
- High temperatures resistance
- Wide range of resolutions available

Serie EL

Base version with incremental encoder

Availability of various electronic output configurations.

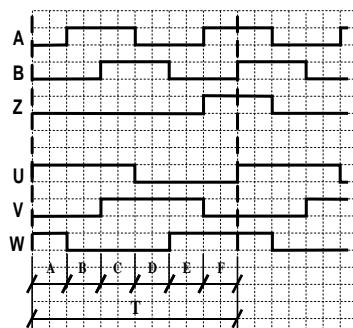
Serie EF

Optic generation of the "commutation phases" integrated to the base version.

The transmission of signals happens in a parallel way.

Signal configurations

INCREMENTAL SIGNALS



COMMUTATION PHASES

N° POLES	A/B/C/D/E/F	T
4	30° ± 1.5°	180°
6	20° ± 1.5°	120°
8	15° ± 1.5°	90°

Cable colour

COLOUR	FUNCTION	EL	EF
RED	+Vdc	●	●
BLACK	0 Volt	●	●
GREEN	A	●	●
YELLOW	B	●	●
BLUE	Z	●	●
BROWN	A	●	●
ORANGE	B	●	●
WHITE	Z	●	●
GRAY	U		●
VIOLET	V		●
GRAY / PINK	W		●
RED / BLUE	U		●
WHITE / GREEN	V		●
BROWN / GREEN	W		●



General electronic characteristics

Resolution imp./turn	From 1 to 2048
Source and Sink current	15 mA per channel with Line Driver 30 mA per channel with other electronics
Max output frequency	MAX 150KHz F = $\frac{\text{R.P.M.} \times \text{Resolution}}{60}$

"EL" Electronic characteristics

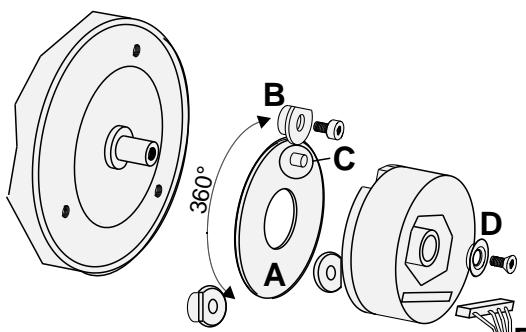
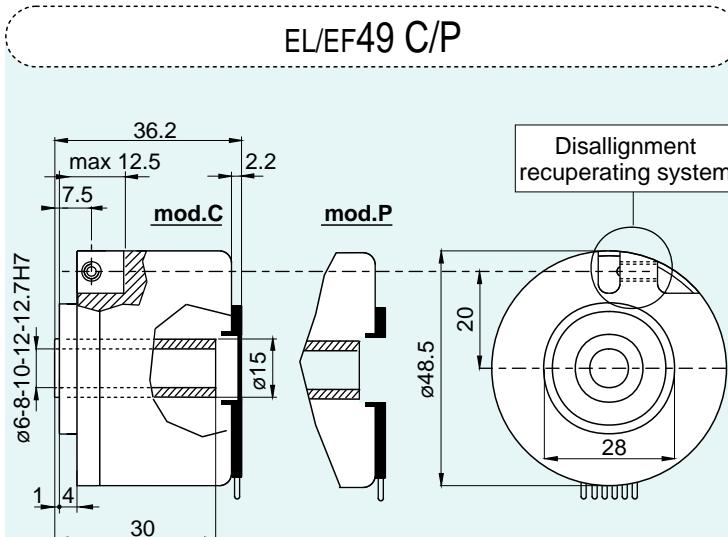
Power Supply	5 Vdc / 8-24 Vdc
Available Electronics	NPN / NPN OPEN COLLECTOR / PUSH PULL / LINE DRIVER
Current consumption without load	100 mA

"EF" Electronic characteristics

Power supply	5Vdc ± 5%
Electronics for incremental phases	LINE DRIVER
Electronics for Hall effect phases	LINE DRIVER/ NPN OPEN COLLECTOR
Current consumption without load	150 mA

Mechanical Characteristics

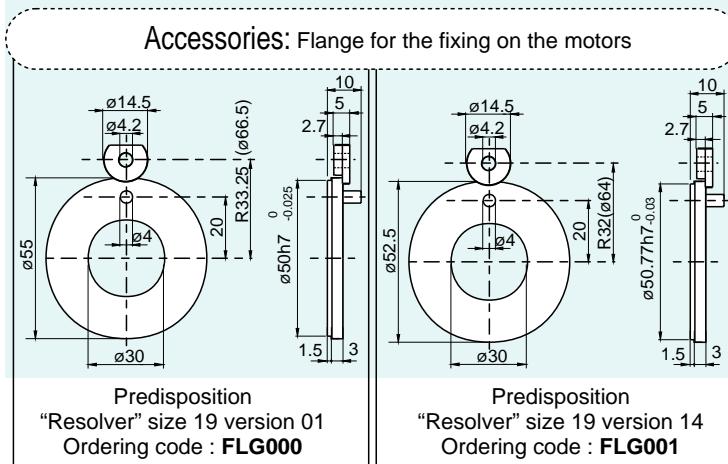
Hole diameter	ø6 / ø8 / ø10 / ø12/ø12.7(1/2") H7
R.P.M.	6000 MAX
Shock Vibrations	50 G per 11 msec 5G 10 ÷ 500 Hz
Bearings	n° 2 ball bearings
Shaft material	Stainless Steel
body material	Aluminium
cover material	Fe
Weight	100 g
Protection	IP40
Operating temp.	-10° ÷ + 85°C
Storage temp.	-25° ÷ + 85°C
Accessories	1) Set of 3 servo fasteners ordering code: 94080001 2) Flange for fixage on the predisposed motors "Resolver" size 19 version 01 and 14 (for dimensions see the back)



N.B.: Minimum distance
encoder-flanges > 0.5mm

How to install the encoder

- 1) Insert the flanges (A) on the motor.
- 2) Tighten the appropriate servo fasteners (B), without blocking them.
- 3) Insert the encoder on the motor shaft with the system of disalignment recuperation corresponding to the pegs (C). The minimum encoder-flange distance must be bigger than 0.5mm.
- 4) Insert the washer posteriorly (D) and block it using the screw of the encoder on the motor axle.
- 5) Turn for phasing
- 6) As final operation fix the servo fasteners (B). Check that the system to recuperate the disalignment works correctly
- 7) Insert the connector (E) and position the plastic lid (F) corresponding to the holes and then screw them in.



Ordering Code

EF	49	C	6	L	2000	Z	5	L	8	X	6	LR	.	XXX
EL = incremental encoder												In case of particular Customer variant separate by a full stop		
EF = incremental encoder + commutation phases												Special Customer variants XXX = indicated by a number from 001 to 999		
49 = body dimension												LR = radial output cable + thickness of cable with standard length 0.3 m Optional: thickness of wired cable length 1.5 m		
C = with blind hole												MA = radial output cable + thickness of cable with standard length 0.2 m with connector type M 19 poles		
N.B.: TO BE INDICATED ONLY FOR EF / EW MODELS												6 = 6000 R.P.M. max		
4 = n° 4 poles												X = Protection IP40		
6 = n° 6 poles												6 = Ø6H7 mm		
8 = n° 8 poles												8 = Ø8H7 mm		
C = NPN OPEN COLLECTOR												10 = Ø10H7 mm		
L = LINE DRIVER												12 = Ø12H7 mm		
5 = 5 Vdc												12.7 = Ø12.7(1/2")H7 mm		
Power supply for the EF mod.												N = NPN		
Power supply for the EL mod.												C = NPN OPEN COLLECTOR		
5 = 5 Vdc												P = PUSH PULL		
8 ÷ 24 = from 8 to 24 Vdc												L = LINE DRIVER		
Power supply for the EF mod.												L = LINE DRIVER		
Power supply for the EL mod.												Electronics for EF mod.		
from 1 to 2048 imp./turn												For the optionals on the output configurations see the incremental output connections card		
N.B.: For impulse availability contact directly our offices												Electronics for EL mod.		
S = without zero impulse														
Z = with zero impulse														
5 = 5 Vdc														
5 = 5 Vdc														
8 ÷ 24 = from 8 to 24 Vdc														

