



EL - EF 49 C / P

INCREMENTAL ENCODER / INCREMENTAL ENCODER + COMMUTATION PHASES



Motor's line incremental encoders

Ø49 encoder series used in feedback systems on AC servomotor. They integrate a traditional incremental encoder with the optic generation of "Hall effect phases". Main characteristics are:

- Interchangeability with size 19 resolver representing a cost-effective solution because it is sufficient to have only one predisposition on the motor.
- Wiring simplification using the connector kit
- Contained dimensions
- Wide resolution range available
- High temperature resistance

Serie EL

Basic version with incremental outputs
Several output types available

Serie EF

Optic engendering of the "commutation phases" integrated to the basic version. Signals transmission by parallel connection



Electrical specifications

Resolution	from 1 to 2048
Source and sink current	15 mA for channel with LINE DRIVER 30 mA for channel with other electronics
Output frequency	150 KHz Max
Frequency response	$F = \frac{RPM \times Resolution}{60}$

EL series electrical specifications

Input voltage	5Vdc / 8-24 Vdc
Output type	NPN / NPN OPEN COLLECTOR / PUSH PULL / LINE DRIVER
Input current with no output load	Max 100 mA

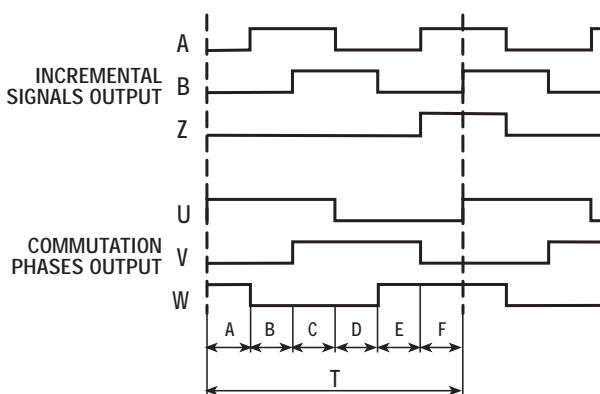
EF series electrical specifications

Input voltage	5Vdc ± 5%
Output types for incremental phases	LINE DRIVER
Output types for Hall phases	LINE DRIVER/ NPN OPEN COLLECTOR
Input current with no output load	150 mA Max

Mechanical specifications

Bore diameter	ø6 / ø8 / ø10 / ø12 / ø12.7 (1/2") H7
Shaft speed	6000 Max
Shock	50 G per 11 msec
Vibrations	5G 10 ÷ 500 Hz
Bearings life	10 ⁹ revolutions
Bearings	n° 2 ball bearings
Shaft material	Stainless steel
Body material	Aluminium
Housing material	Fe
Enclosure rating	IP 40
Operating temperature	-10° + 85°C
Storage temperature	-25° + 85°C
Weight	100 g
Accessories	1) Set n° 3 fasteners. Ordering code: 9408001 2) Flanges for fixing on motors with "Resolver" size 19 versions 01 and 14

Signal configuration



POLES	A / B / C / D / E / F	T
4	30° ± 1,5°	180°
6	20° ± 1,5°	120°
8	15° ± 1,5°	90°

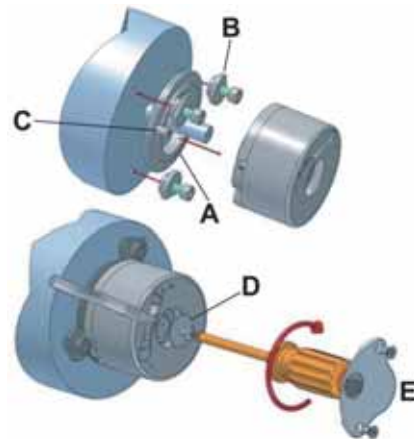
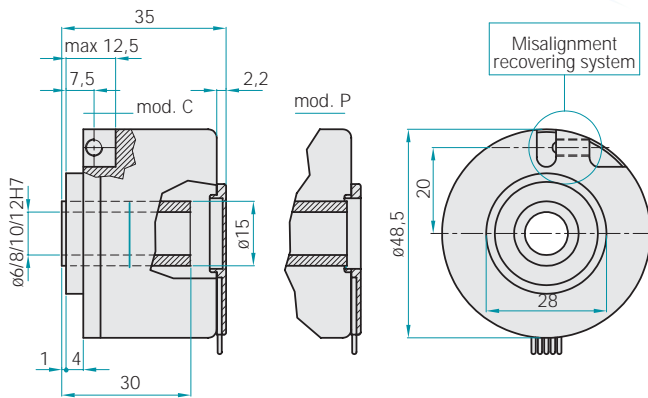
Wire colours

COLOUR	SIGNAL	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	.	.

Hollow shaft incremental encoder

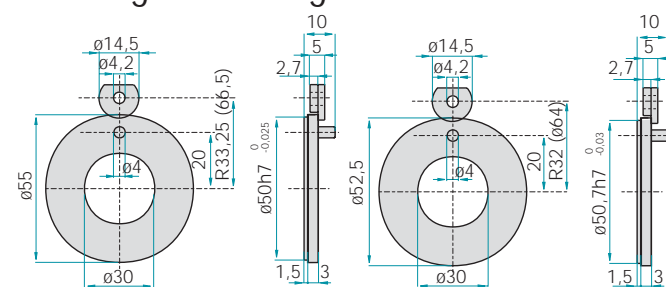
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ACCESSORIES

Flanges for fixing on motors



Size 19 resolver
predisposition version 01
Ordering code: **FLG000**

Size 19 resolver
predisposition version 14
Ordering code: **FLG001**

HOW TO MOUNT IT

- 1) Insert the flange (A) on the motor
- 2) Tighten the appropriate servo fasteners (B) blocking them
- 3) Insert the encoder on the motor shaft with the system of misalignment recuperation corresponding to the pegs (C)
- 4) Insert the washer on the rear and block it using the encoder screw on the motor axle
- 5) Turn for phasing
- 6) As final step, fix the servo-fasteners (B).
Check if the misalignment recovery system works correctly
- 7) Verify the correct functioning of the disalignment recovery system.
Check if the misalignment recovery system works correctly
- 8) Insert the connector (E) and place the plastic lid (F) corresponding to the holes and then screw them.

Ordering code

Incremental encoder	EL	Incremental encoder + commutation phases	EF	Body dimension	49	blind hole	C	Hollow shaft	P	N° poles of the motor	n° 4 poles: 4 n° 6 poles: 6 n° 8 poles: 8	Electronic for commutation phase	NPN OPEN COLLECTOR: C LINE DRIVER: L <i>indicates only with models EF</i>	Incremental encoder resolution	PPR: from 1 to 2048 <i>Please, directly contact our offices for pulses availability</i>	Zero pulse	without zero pulse: S with zero pulse: Z	Input voltage mod. EF	5 Vdc: 5	Input voltage mod. EL	5 Vdc: 5 from 8 to 24Vdc: 8 ÷ 24	Full stop to separate special versions.	EF 49 C 6 L 2000 Z 5 L 8 X 3 LR . XXX	Special version code numbered from 001 to 999	LR: radial output cable 0,3 m long MA: radial output cable 0,2 m with M19 poles type cconnector	R.P.M.	6: 6000 max	Enclosure rating	X: IP40	Bore diameter	6: ø 6 H7 mm 8: ø 8 H7 mm 9: ø 9,52 H7 mm (3/8") 10: ø 10 H7 mm 12: ø 12 H7 mm 12.7: ø 12.7 H7 mm (1/2")	Electronics for mod. EL	N: NPN C: NPN OPEN COLLECTOR P: PUSH PULL L: LINE DRIVER	Electronics for mod. EF	L: LINE DRIVER <i>For optionals about output types please refer to incremental outputs section</i>
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