



EL/EF/EW48C - P

INCREMENTAL ENCODER + COMMUTATION PHASES



Encoder series EL/EF/EW48 C-P

Ø48 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::

- Easy mechanical assembly
- Contained dimensions
- Wide resolution range available
- High temperature resistance

EL series

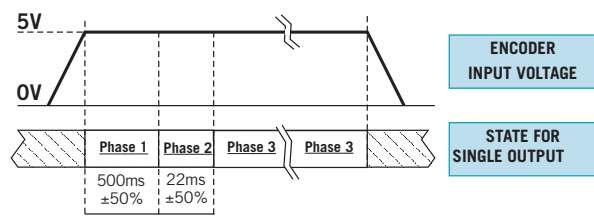
Basic version with incremental outputs
Several output types available

EF series

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

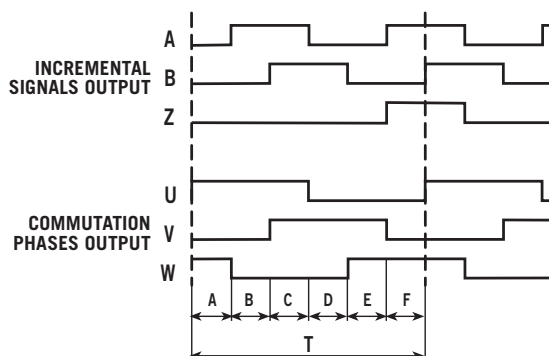
EW series

Special version of the EF series featuring a wiring simplification, obtained through the sequential transmission of the incremental and commutation phases as shown on the below graph.



Phase 1 HIGH "HZ" IMPEDANCE PHASE
Phase 2 TRANSMISSION COMMUTATION PHASES
Phase 3 INCREMENTAL OUTPUT SIGNAL TRANSMISSION

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°

Electrical specifications

Resolution from 1 to 2048 PPR

Source and sink current 15 mA for channel with LINE DRIVER
30 mA for channel with other electronics

Frequency response 150 KHz Max
 $F = \frac{RPM \times Resolution}{60}$

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 100 mA Max

EF/EW series electrical specifications

Input voltage 5Vdc ± 5%

Output types for incremental phases LINE DRIVER

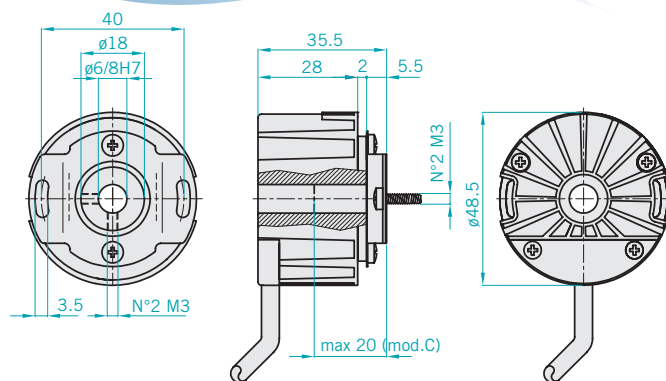
Output types for Hall phases LINE DRIVER/
NPN OPEN COLLECTOR

Input current with no output load 150 mA Max

Wire colours

COLOUR	SIGNAL	EL	EF	EW
Red	+ Vdc	•	•	•
Black	0 Volt	•	•	•
Green	A	•	•	•
Yellow	B	•	•	•
Blue	Z	•	•	•
Brown	Ā	•	•	•
Orange	B̄	•	•	•
White	Z̄	•	•	•
Gray	U		•	
Violet	V		•	
Gray/Pink	W		•	
Red / Blue	Ū		•	
White/Green	V̄		•	
Brown / Green	W̄		•	

EL/EF/EW 48 mod. C-P



HOW TO MOUNT IT

- 1) Couple the encoder shaft with the motor shaft
- 2) Fix the spring at the motor flanges without screwing it
- 3) Fix with the two grains the encoder shaft
- 4) Turn for phasing
- 5) Block the spring



Mechanical specifications

Bore diameter	ø6 / ø8 mm H7
Enclosure rating	IP40
Shaft speed	6000 RPM
Shock	50 G for 11 msec
Vibrations	10G 10 ÷ 500 Hz
Bearings	n° 2 ball bearings
Shaft material	Brass OT58 UNI 5705-65
Body material	Aluminium D11S - UNI 9002/5
Housing material	PA 66 reinforced with fiber glass
Operating temperature	-10° ÷ +85°C
Storage temperature	-25° ÷ +85°C
Weight	100 g

Ordering code

Full stop to separate special versions.									
Incremental encoder	EL								
Incremental encoder + commutation phases	EH								
version "LESS WIRED" transmission with less wire	EW								
Body dimension	48								
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								
indicates only with models EF/EW									
Incremental encoder resolution									
1 to 2048 PPR									
Please, directly contact our offices for pulses availability									
Zero pulse									
without zero pulse	S								
with zero pulse	Z								
Special version code numbered from 001 to 999									
PR cable output radial (standard length 0.3 m)									
6 6000 R.P. M. max									
X Enclosure rating IP40									
Bore diameter									
6 ø 6 mm									
8 ø 8 mm									
Electronics for mod. EF/EW									
L LINE DRIVER									
Electronics for mod. EL									
N NPN									
C NPN OPEN COLLECTOR									
P PUSH PULL									
L LINE DRIVER									
Input voltage for mod. EF/EW									
5 Vdc									
Input voltage for mod. EL									
5 Vdc									
8 ÷ 24 from 8 to 24Vdc									

hollow shaft INCREMENTAL ENCODERS

INO16IT0305A

EL/EF/EW48C-P



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