



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

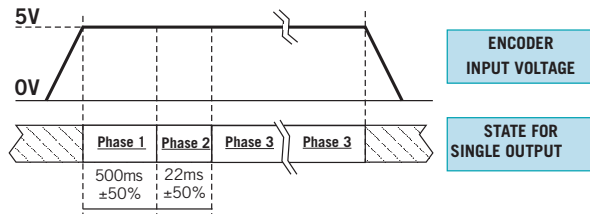
Basic version with incremental outputs
Several output types available

EF series

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

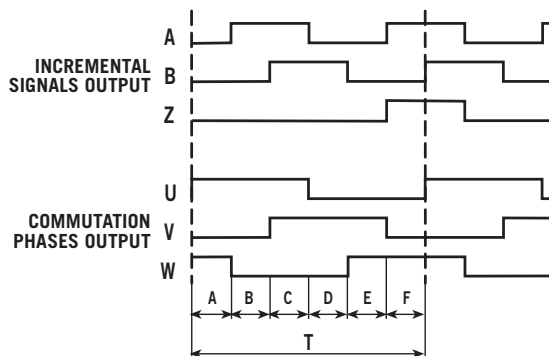
EW series

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
 $F = \frac{\text{RPM} \times \text{Resolution}}{60}$

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

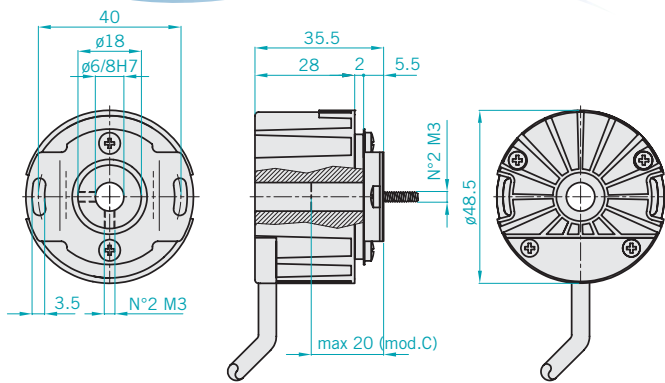
Output types for Hall phases LINE DRIVER / NPN OPEN COLLECTOR

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	A̅	•	•	•
Orange	B̅	•	•	•
White	Z̅	•	•	•
Gray	U		•	
Violet	V		•	
Gray/Pink	W		•	
Red / Blue	U̅		•	
White/Green	V̅		•	
Brown / Green	W̅		•	

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.

EF 48 C 6 L 2000 Z 5 L 6 X 6 PR . XXX

<p>Incremental encoder EL</p> <p>Incremental encoder + commutation phases EH</p> <p>version "LESS WIRED" transmission with less wire EW</p>	<p>Body dimension 48</p> <p>blind hole C</p> <p>hollow shaft P</p>	<p>N° poles of the motor</p> <p>n° 4 poles 4</p> <p>n° 6 poles 6</p> <p>n° 8 poles 8</p>	<p>Electronic for commutation phase</p> <p>NPN OPEN COLLECTOR C</p> <p>LINE DRIVER L</p> <p><i>indicates only with models EF/EW</i></p>	<p>Incremental encoder resolution</p> <p>1 to 2048 PPR</p> <p><i>Please, directly contact our offices for pulses availability</i></p>	<p>Zero pulse</p> <p>without zero pulse S</p> <p>with zero pulse Z</p>	<p>Special version code numbered from 001 to 999</p>	<p>PR cable output radial (standard length 0.3 m)</p>	<p>6 6000 R.P.M. max</p>	<p>X Enclosure rating IP40</p>	<p>Bore diameter</p> <p>6 ø 6 mm</p> <p>8 ø 8 mm</p>	<p>Electronics for mod. EF/EW</p> <p>L LINE DRIVER</p>	<p>Electronics for mod. EL</p> <p>N NPN</p> <p>C NPN OPEN COLLECTOR</p> <p>P PUSH PULL</p> <p>L LINE DRIVER</p>	<p>Input voltage for mod. EF/EW</p> <p>5 Vdc</p>	<p>Input voltage for mod. EL</p> <p>5 Vdc</p> <p>8 ÷ 24 from 8 to 24Vdc</p>
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