

ES49C-P

ES sinusoidal encoders + commutation phases

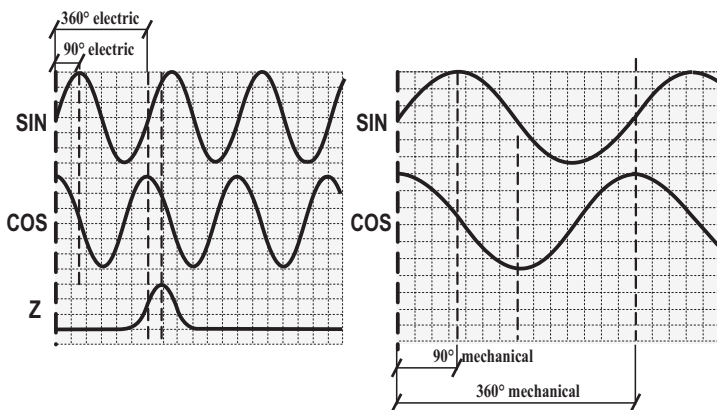
PRELIMINARY

Sinusoidal encoders

This encoder is used as retroaction system on a motor when one wants to increase the dynamic performances in comparison to other traditional systems. The ES49 series copies the mechanical characteristics from the EL/EF49 series with the advantages that follow:

- interchangeability with the size 19 resolver, saving time and money, as it is necessary to have only one predisposition for retromotor
- easy mechanical assembly
- simplification of wiring through the use of a connector kit
- contained dimensions
- high temperatures resistance
- wide range of resolutions available

It is different from the EL series as it generates sinusoidal output signals instead of digital one. It is possible starting from a 1024sin/turn encoder to obtain even more than 100.000 points of measure as the digitalization of the signals is limited only by the noise of the system. The obtained high resolutions are useful to regulate the operating of a low turn system. The outputs available are: sine and cosine at 512/1024/2048 sin/turn channel, sine and cosine at 1 sin/turn channel and channel of zero analogue configuration. The outputs with the 1 sin/turn configuration are very useful because it is possible to obtain the absolute angular position in the same way as a resolver. The wideness of the signals are of 1Vpp and are refer to a medium voltage of 2.5 Vdc; furthermore the wide through band of the system allows to reach high speed. The transmission of the signals can happen for long parts of cable because the electronics used is of differential type; in any case the frequency in play is never too high so is guaranteed an excellent immunity to disturbances.



Graphic representation of sinusoidal sine, cosine and Z signals.

Graphic representation of sin and cos commutation signals



General electrical characteristics

Resolutions (imp./turn)	512 / 1024 / 2048 1 Vpp / 2.5Vm sine and cosine
Reference of zero index	1Vpp / 2.5 Vm ± 10%
Power supply	5 Vdc ± 10%
Current consumption without load	100 mA
Output current	10 mA
Available electronics	LINE DRIVER analogics of differential type
Max output frequency	MAX 200KHz $F = \frac{R.P.M. \times Resolutions}{60}$

Mechanical Characteristics

Hole diameter	ø6 / ø8 / ø10 / 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 temperature	-10° + +100°C
Storage temperature	-25° + +100°C
Accessories	<ol style="list-style-type: none"> 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)

