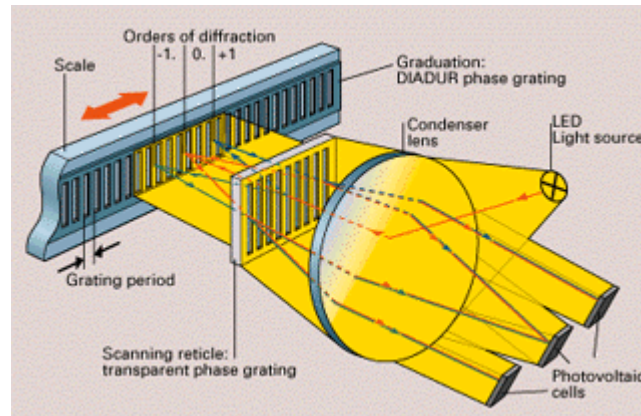
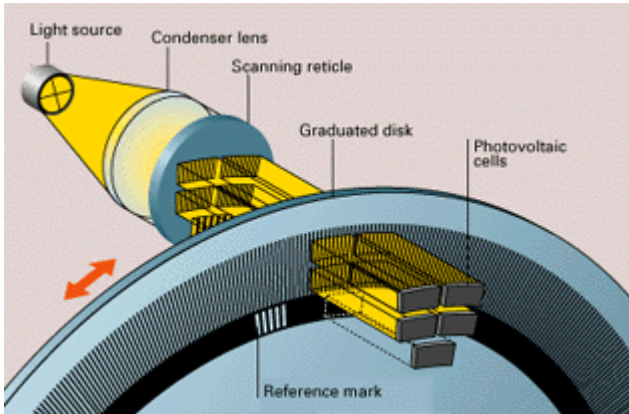
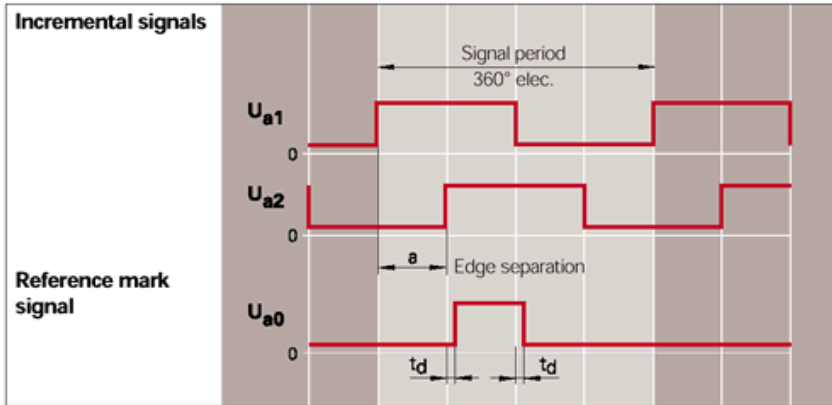


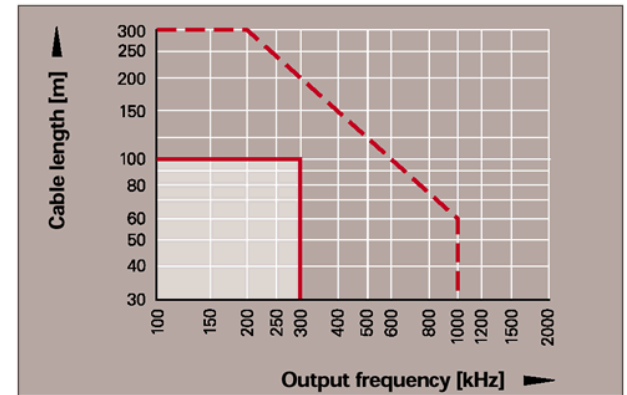
Encoder Incrementali



Encoder Incrementali



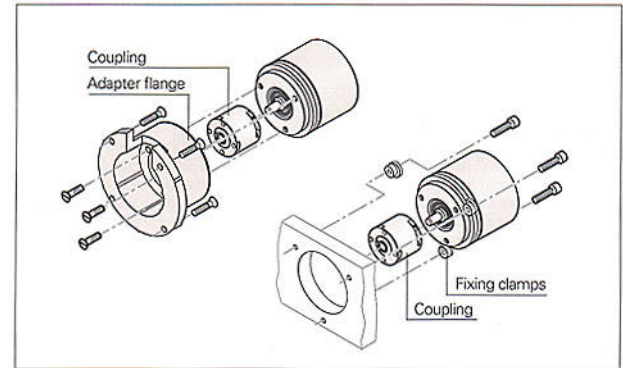
Direction of rotation: U_{a1} lags U_{a2} with clockwise rotation (viewed from flange side)



Permissible cable length in relation to output frequencies (- - - TTL specification)




Rotary Encoder of the ROD 400 Series, with Synchro Flange

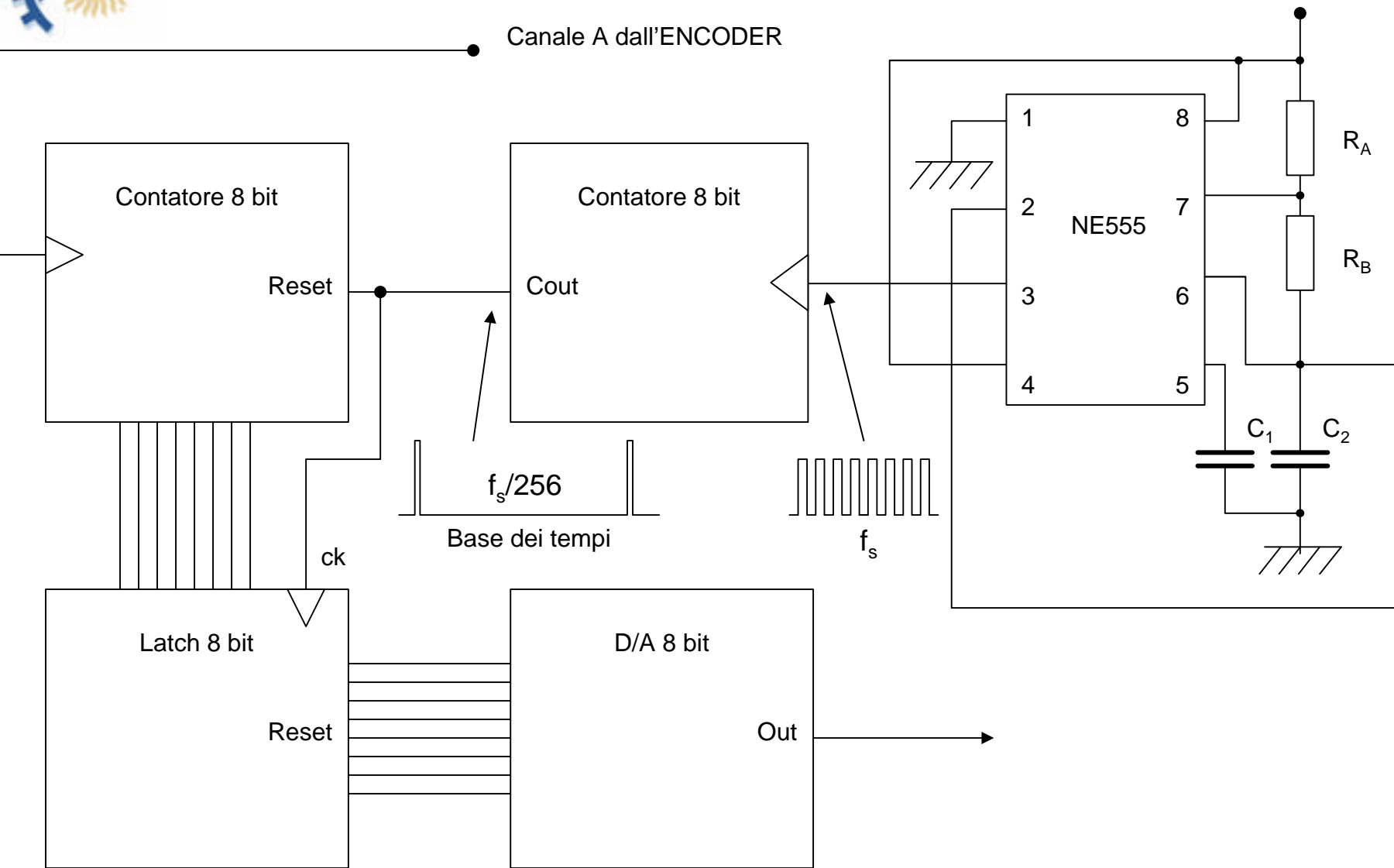




Encoder Incrementali

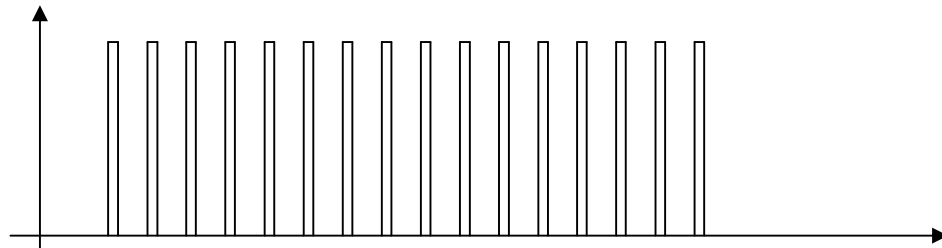
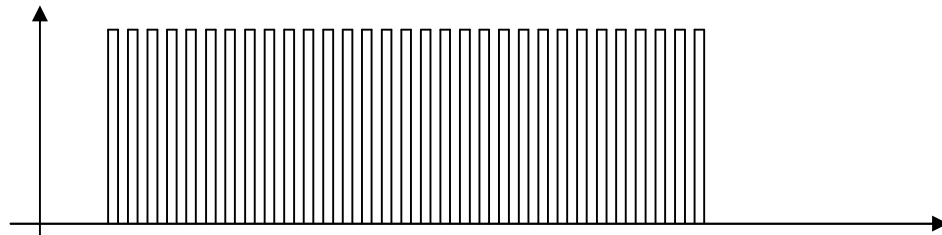
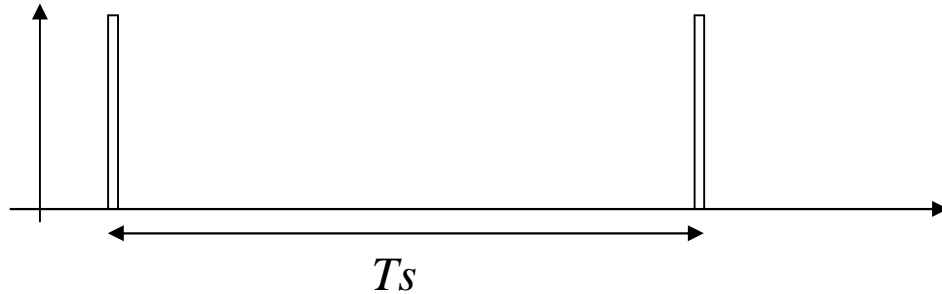
Size	36 mm
Incremental signals	TTL
Line counts	1024
Cutoff frequency (-3 dB)	-
Cutoff frequency (-6 dB)	-
Scanning frequency	Max. 300 kHz
Power supply	5 V \pm 10 %
Max. current consumption (without load)	150 mA
Electrical connection 	<- choose, please
Max. cable length	100 m
Mech. perm. speed n	Max. 10000 rpm
Starting torque	< 0.001 Nm (at 20°C)
Moment of inertia of rotor	0,5 x 10 ⁻⁶ kgm ²
Max. axial motion of drive shaft	\pm 0,5 mm
Vibration (55 - 2000 Hz)	< 100 m/s ² (IEC 68-2-6)
Shock (6 ms)	< 1000 m/s ² (IEC 86-2-27)
Max. operating temp.	100 °C
Min. operating temp.	Stationary cable: -40 °C Moving cable: -10 °C
Protection (IEC 529)	IP 64
Weight	Approx. 0.1 kg (3.5 oz)

Encoder Incrementali





Encoder Incrementali



$n_{encoder}$ = numero linee encoder

T_s = periodo di campionamento

errore = ± 1 conteggio su T_s

w_r = velocità meccanica

$$n_{T_s} \rightarrow n_{encoder} w_r \frac{60}{2p} \frac{1}{60} T_s$$

$$e_{\%} = \frac{1}{n_{T_s}} 100$$

Resolver

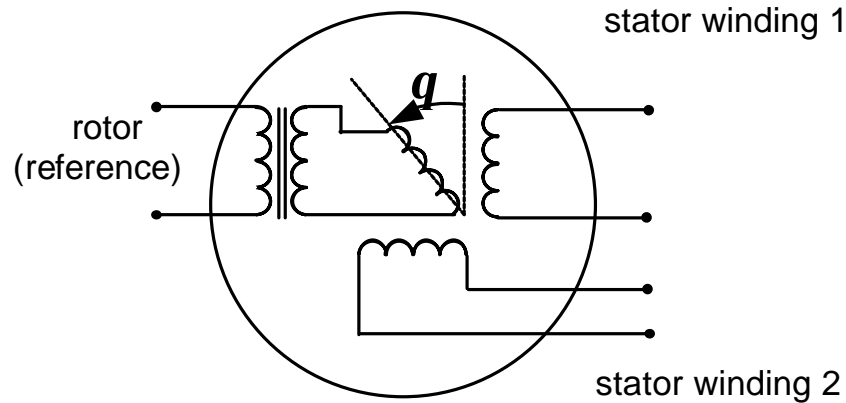


Fig. 1 – Resolver circuits.

$$\begin{cases} v_{s1} = k_e V_e \left[\sin \mathbf{q} \cos(\mathbf{wt}) + \frac{1}{\mathbf{w}} \frac{d\mathbf{q}}{dt} \cos \mathbf{q} \sin(\mathbf{wt}) \right] \\ v_{s2} = k_e V_e \left[\cos \mathbf{q} \cos(\mathbf{wt}) + \frac{1}{\mathbf{w}} \frac{d\mathbf{q}}{dt} \sin \mathbf{q} \sin(\mathbf{wt}) \right] \end{cases}$$

$$\begin{cases} v_{s1} = k_e V_e \sin \mathbf{q} \cos(\mathbf{wt}) \\ v_{s2} = k_e V_e \cos \mathbf{q} \cos(\mathbf{wt}) \end{cases}$$

Resolver

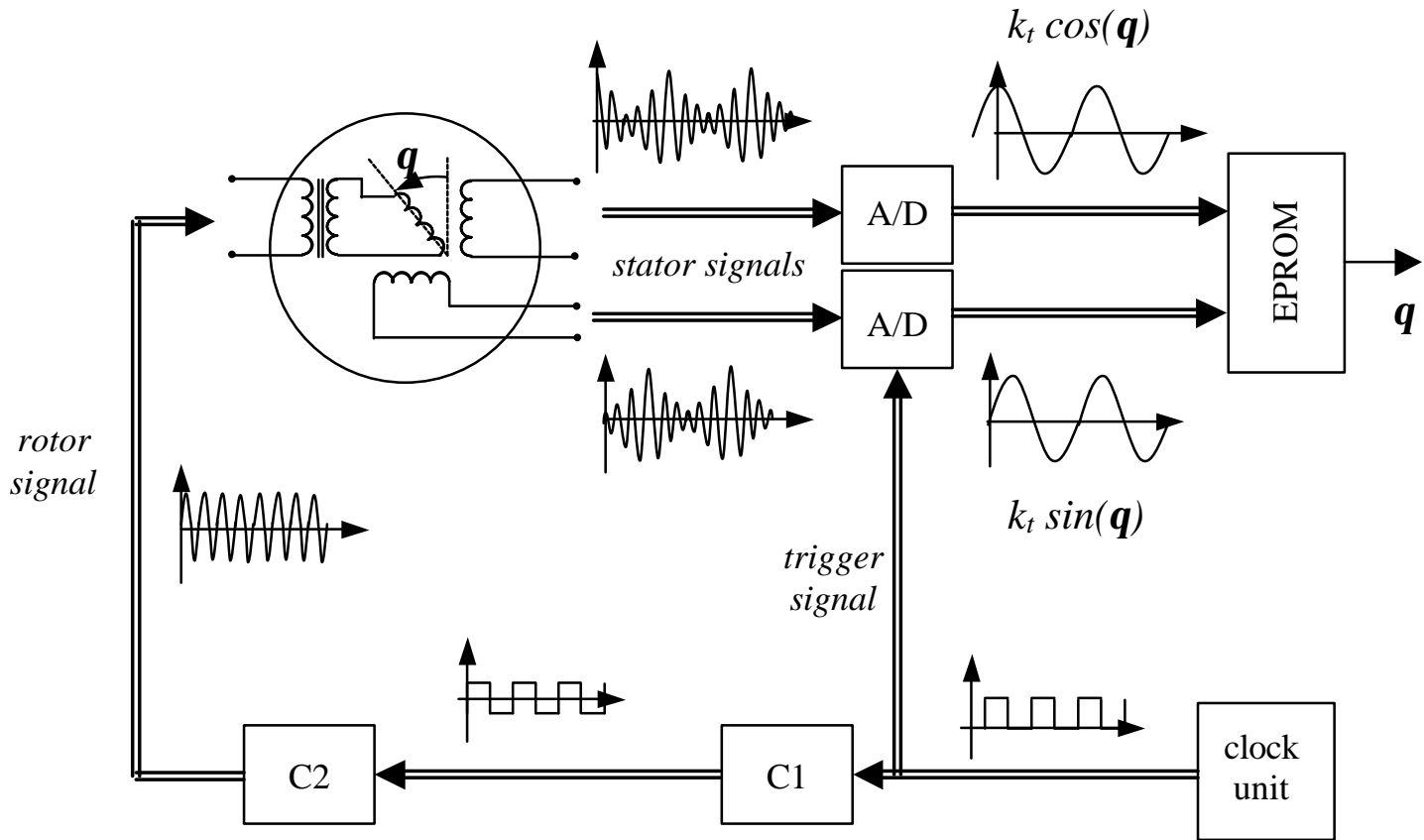


Fig. 2 – Proposed Resolver to digital converter scheme..