No-shaft brushless resolver
Bürstenloser Hohlwellen Resolver

MICRONOR
automation components

Type RE 2010 rad

Radioaktiv beständig 10^9 rad
Radiation proof 10^9 rad
Nutenloser Rotor für hohe Auflösung
Rotor without slots for higher resolution
Nullspannungssignal kleiner als 0,01 %
Zero voltage signal lower than 0,01 %
Einfacher Transformator mit starkem Ausgangssignal

Single step transformer with more output power

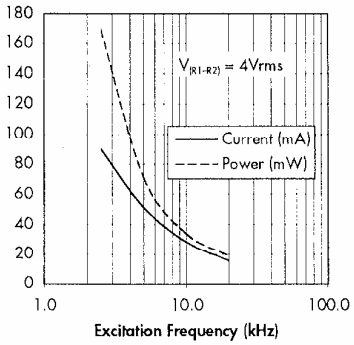
Bestelltext / How to order	Brushless Resolver (Radiation proof)
Typ / Type	**RE2010 rad**

Hohlwellen-Resolver / No-shaft brushless resolver	
Gehäusegrösse ø 20 mm / Max. dimension (DIA .7874 inch)	2010
Radioaktiv beständig / Radiation proof	R = 10^9 rad
Genauigkeit / Accuracy	10
Bohrungsdurchmesser mm / Bore diameter (inch)	ø 6-H7
Kabelausgang seitlich / Cable outlet radial	300 mm
Elektrische Daten / Electrical data	
Speisefrequenz / Excitation frequency	10 kHz and Winding E001
Amplitude / Excitation amplitude	4…12 Vrms
Eingangswiderstand / Primary DC resistance	94 Ω
Ausgangswiderstand / Secondary DC resistance	51 Ω
Übersetzungsverhältnis / Transformation ratio	0,5
Mechanische Daten / Mechanical data	
Arbeitstemperatur / Operating temperature	-60 °C +250 °C
Max. Drehzahl / Maximum speed	100'000 min^{-1} (rpm)
Luftspalt / Radial air gap	0,3 mm nominal
Rotorträgheit / Rotor inertia	10,9 gcm^2
Gewicht / Weight	~35 g

Type RE 2010 rad

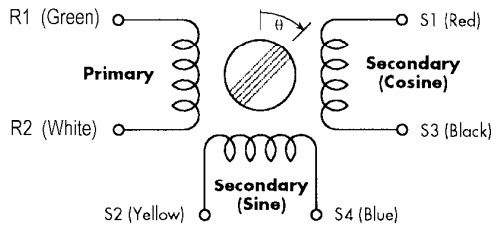
Massbild / Outline drawing

Typical Operating Conditions



Typical input current and power dissipation at 4Vrms excitation with unloaded secondaries.

Electrical Schematic

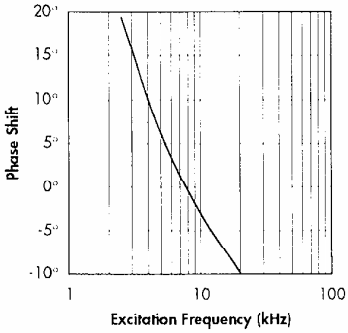


$V_{(S1-S3)} = V_{(R1-R2)} \times TR \times \cos(\theta)$

$V_{(S2-S4)} = V_{(R1-R2)} \times TR \times \sin(\theta)$

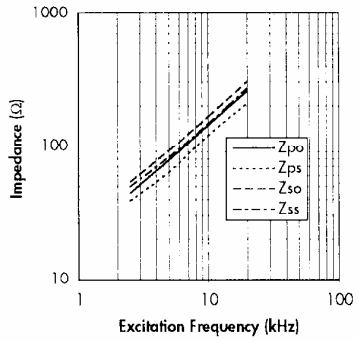
θ increases for CW rotation when viewed from rear (PC board) end

Phase Shift



Phase shift is the time phase of the secondary (output) voltage with respect to the primary excitation (input) voltage. Positive values are leading phase shift, negative values are lagging.

Impedances



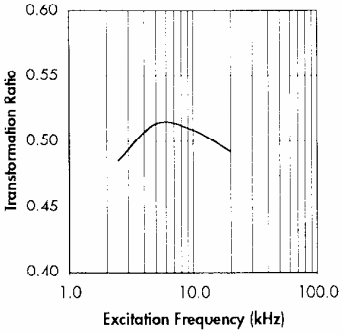
Zpo is primary impedance with both secondaries open.

Zps is primary impedance with secondaries shorted.

Zso is secondary impedance with primary open.

Zss is secondary impedance with primary shorted.

Transformation Ratio



The transformation ratio (TR) is the ratio of the secondary (output) voltage to the primary excitation (input) voltage at the rotor position of maximum coupling. The typical transformation ratio for the standard E001 winding is shown.