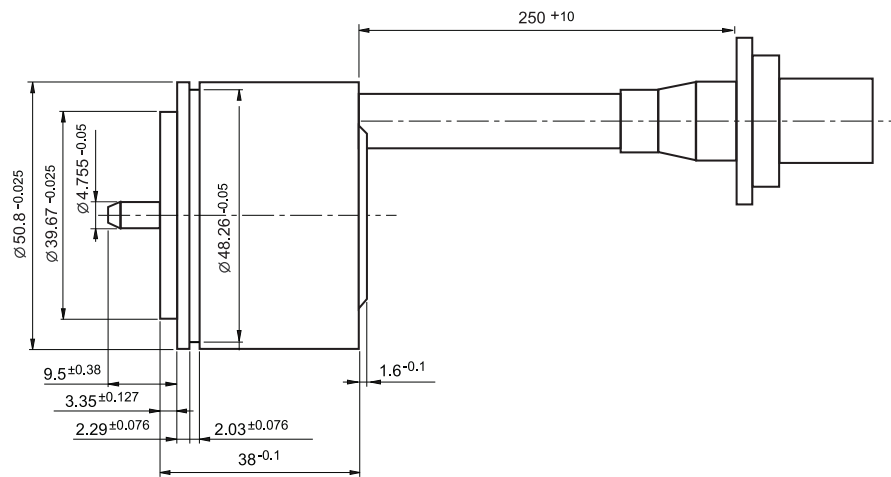
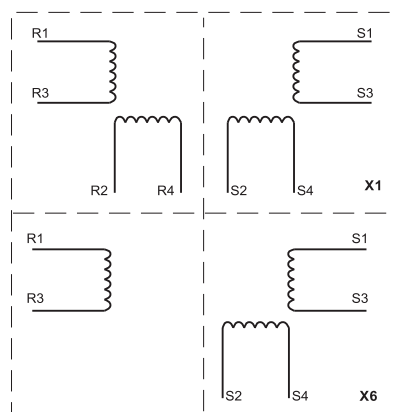


Multispeed (X1 and X6) Resolver

MR-20-03 Multi-Speed Resolver, a special design for stator/rotor slot combination optimization, common space harmonics reduction and angular accuracy improvement; the increased number of pole-pairs effectively increases system resolution, proportionately reducing the number of rotational degrees represented by one complete electrical cycle; multi-pole design has averaging effect on any local mechanical/winding perturbation; number of pole-pairs (referred to as resolver “speed”) diminishes any effect of combined system errors with, as a result, enhanced system performance, repeatability and reliability.



Wiring Diagram



Phase Equations:

$$E (S1-S3) = KE(R1-R3) \cos n\theta$$

$$E (S2-S4) = KE(R1-R3) \sin n\theta$$

where: K - transformation ratio
n - resolver speed

Specification

Parameter	Unit	Value	Tolerance
Function: CX (transmitter)			
Rotation: full			
Speeds: 1X and 6X			
Input Voltage	V (rms)	8 - 26	± 5%
Input frequency	Hz	380 - 2100	-
DC resistance:			
Rotor 1X	Ohm	215	± 10%
Stator 1X	Ohm	140	± 10%
Rotor 6X	Ohm	95	± 10%
Stator 6X	Ohm	155	± 10%
Impedance:			
1X	Ohm	$Z_{ro} = 300 + j 2100$	± 30%
	Ohm	$Z_{so} = 220 + j 70$	± 30%
	Ohm	$Z_{rs} = 800 + j 330$	± 30%
6X	Ohm	$Z_{ro} = 110 + j 70$	± 30%
	Ohm	$Z_{so} = 150 + j 150$	± 30%
	Ohm	$Z_{rs} = 120 + j 60$	± 30%
Transformation ratio	%	0.454	± 5%
Phase shift:			
1X	deg	13.5°	± 15%
6X	deg	58.0°	± 15%
Phase shift vs. temperature:			
1X	deg	4% per °C	-
6X	deg	4% per °C	-
Null Voltage:			
Rotor 1X	mV(rms)	30	max
Rotor 6X	mV(rms)	20	max
Accuracy:			
1X	arc min	≤ 10.0	-
6X	arc min	≤ 1.5	-
Zero marking coincidence	deg	±2	-
Dielectric withstanding: Per MIL-S-81963			
Insulation between windings	MΩ at 250V AC	100	min
Insulation between windings and frame	MΩ at 500V AC	100	min
Weight	gr	450	± 5%

Nov. 2010