September 11, 2023

DATA SHEET - HOLLOW SHAFT RESOLVER

Part Number	**4-1393048-6**			
Description	V23401- T2014-B209			
Size	21			
Shaft inner diameter [mm]	16H7 with slot			
Speed (pair of poles) [p]	4			
Number of poles	8			
Application Specification				
Test protocol	Results saved to manufacturing site archives. Available by request.			

Input voltage (V_{rms}) [V]	6.0	Based on specified Input voltage and Frequency	Input resistance R1–R2 [Ω]	36
Frequency (typical) [kHz]	8.0		R1–R2 tolerance [%]	± 10
Input current max [mA]	50		Output resistance S1–S3 or S2–S4 [Ω]	48
Transformation ratio (r_T)	0.46		S1–S3 or S2–S4 tolerance [%]	± 10
Transf. ratio tolerance [%]	± 5			
Phase shift (ψ) min [º]	0			
Phase shift (ψ) max [º]	10			
Angular Error[1] max [']	± 8 (16)			
Residual voltage max [mV]	19			

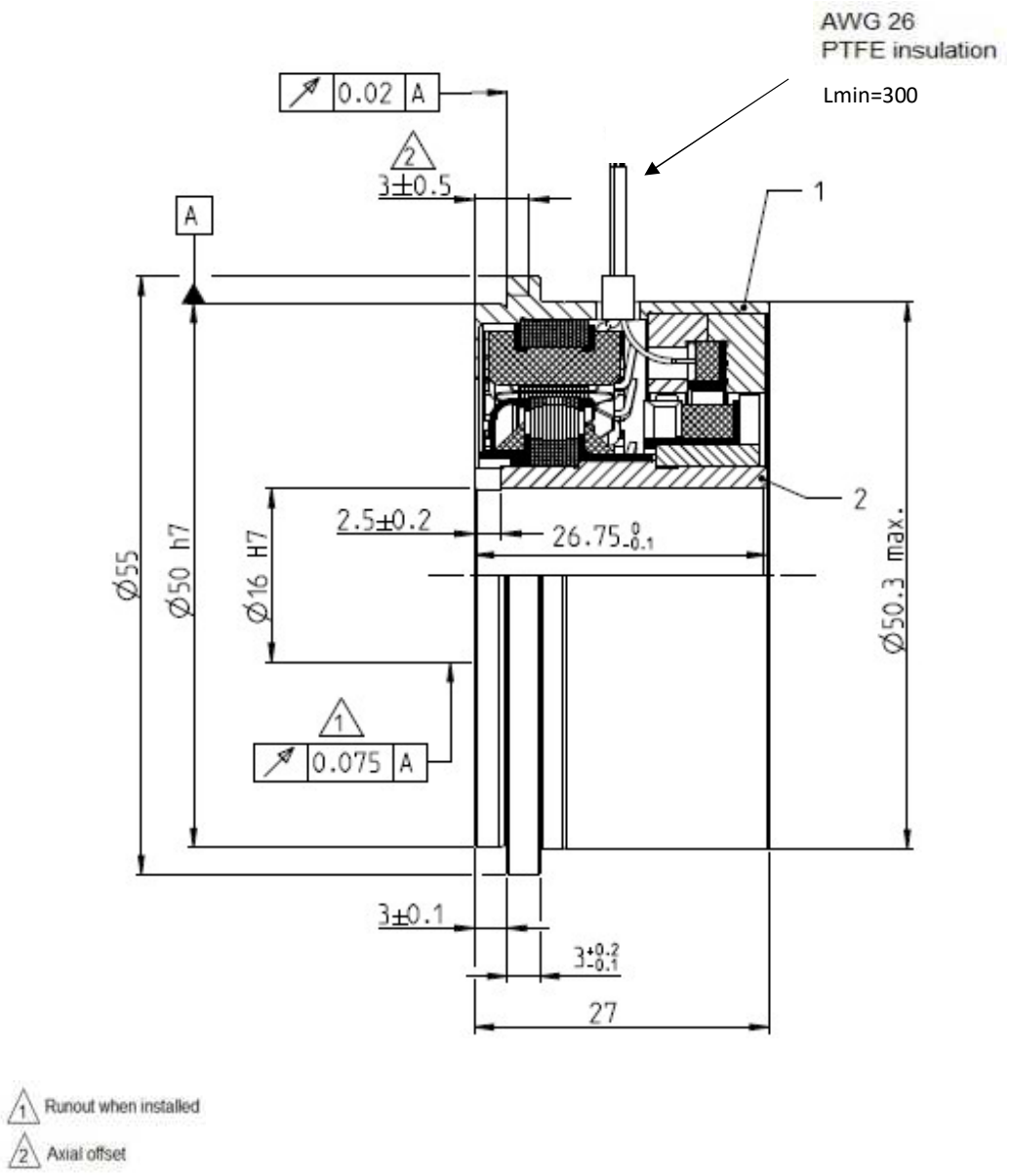
[1] *Angular error spread* $\Delta\varphi=\varphi_{el} - \varphi_{mech} \cdot p$

Electrical data measured at room temperature (22°C).

High Voltage test	Voltage: 500V_{AC} (A) 250V_{AC} (B)	Measured between: A: Winding R1–R2 and housing Winding S1–S3 and housing Winding S2–S4 and housing
	Time: 1s	
Isolation test	Voltage: 500V_{DC} (A,B)	B: Windings S1–S3 and S2–S4
	Criterium: $R_{isol.}$ > 50MΩ	
"Zero" setting	Electrical "0" is when Coils V_{S2-S4} = 0 and V_{S1-S3} are in phase with V_{R1-R2}	
Transfer function	Looking at transformation part and turning rotor clockwise	
	$V_{S1-S3}=+r_T * V_{R1-R2} * \cos(p*\alpha)$	
	$V_{S2-S4}=+r_T * V_{R1-R2} * \sin(p*\alpha)$	
Rotor Inertia	approx. 20g.cm^2	
Max. Rotational Speed	20 000 rpm	
Shock resistance (11ms sine)	1000 m/s^2	
Vibration	200 m/s^2	
Operating temperature	-55°C…+150°C	
Permissible radial runout	0.075 mm	
Permissible axial offset	± 0.50 mm	

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