

DATA SHEET - HOLLOW SHAFT RESOLVER

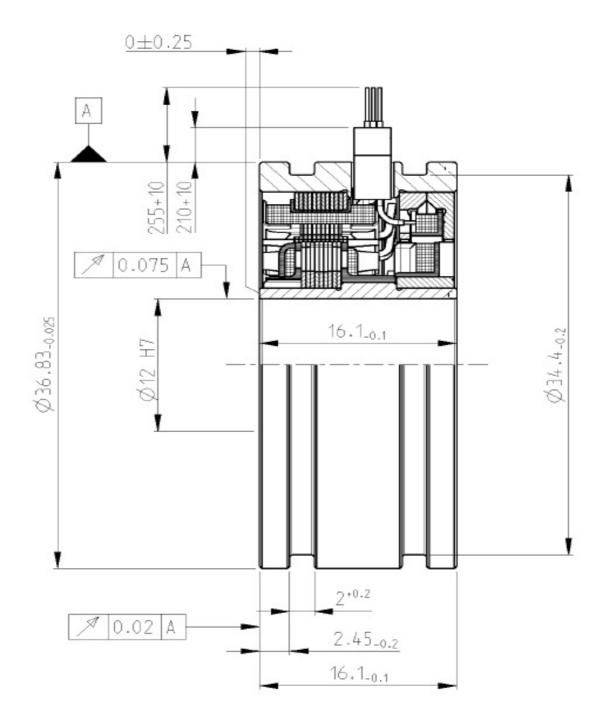
Description: V23401 S1401-C610	PN		1-1414305-0				
ShaftC6Speed - pair of poles - [pp]1Application Spec1Test protocol100% EOL testing, stored. Available up on requestElectrical parameters (at 22°C):100% EOL testing, stored. Available up on requestInput voltage nom. [Vrms]7.0DC resistance R1R2 [Ω]82Frequency nom. [kHz]10.0R1R2 tolerance [\pm %]10Input current max [mA]40DC resistance S1S3 or S2S4 [Ω]68Transformation ratio rT [\pm]0.50Based on nominal Input voltage and Input voltage and Phase shift min [α]PrequencyPhase shift max [α]8FrequencyAngular Error max [α]12Residual voltage max [α]A: Winding R1-R2 and housingConnect. Wire Lenght [mm]255, AWG 26 Teflon IsolatedVoltage: 500 $V_{AC} \pm 3\%$ (A) Measured between:1sWinding S1-S3 and housingWinding S1-S3 and housingWinding S2-S4 and housingWinding S2-S4 and housingWinding S2-S4 and housingTransformation functionEle. "O" is when Winding Us2-S4 = 0 and Us1-s3 are in phase with Ur1-r2Function applies to the clockwise rotation of the rotor when looking at the (grooveless) transformer componnent from the top $U_{S2-S4} = + rr * U_{R1-R2} * sin(pp * \phi)Max. Rotational Speed20.000 rpmMax. Rotational Speed20.000 rpmVibration (0 2 kHz)200 m/s2$	Description:		V23401	S1401-C610			
Speed - pair of poles - [pp] 1 1 1 1 1 1 1 1 1	Size	15					
Application Spec100% EOL testing, stored. Available up on requestTest protocol100% EOL testing, stored. Available up on requestElectrical parameters (at 22°C):Input voltage nom. [Vrms]7.0DC resistance R1R2 [Ω]82Frequency nom. [kHz]10.0R1R2 tolerance [\pm %]10Input current max [mA]40DC resistance 51S3 or 52S4 [Ω]68Transformation ratio rT [\pm]0.50Eased on nominal Input voltage and Phase shift min [θ]-2Input voltage and Phase shift min [θ]-2Phase shift max [θ]8Frequency	Shaft	C6					
Test protocol100% EOL testing, stored. Available up on requestElectrical parameters (at 22°C):Input voltage nom. [Vrms]7.0DC resistance R1R2 [Ω]82Frequency nom. [kHz]10.0R1R2 tolerance [±%]10Input current max [mA]40DC resistance S1S3 or S2S4 [Ω]68Transformation ratio rT [±]0.50S1S3 or S2S4 tolerance [±%]10Transf. ratio tolerance [%]4Based on nominal Input voltage and Prequency10Phase shift min [a]-2Phase shift max [a]8Angular Error max [b]12FrequencyConnect. Wire Lenght [mm]25Awac ± 3% (A)Measured between:Winding S1-S3 and housingAwac ± 3% (B)Awac ± 3% (B)Awac ± 3% (B)Time:1sWinding S1-S3 and housingUsolation testVoltage: $500 V_{DC} \pm 5\%$ (A, B)By Winding S2-S4 and housing"Zero" setting:Ele. "0" is when Winding Us2-S4 = 0 and Us1-S3 are in phase with Ur1-r2Function applies to the clockwise rotation of the rotor when looking at the (grooveless) transformer componnent from the topUs1-S3 = + rT * Us1-R2 * sin(pp * φ)Us2-S4 = rT * Us1-R2 * sin(pp * φ)Us2-S4 = + rT * Us1-R2 * sin(pp * φ)Us2-S4 = rT * Us1-R2 * sin(pp * φ)Shock resistance (11ms sine)1000 m/s2Vibration (0 2 kHz)200 m/s2	Speed - pair of poles - [pp]	1					
Electrical parameters (at 22°C): Input voltage nom. [Vrms] 7.0 DC resistance R1R2 [Ω] 82 Frequency nom. [kHz] 10.0 R1R2 tolerance [\pm %] 10 Input current max [mA] 40 Transformation ratio rT [\pm] 0.50 Transf. ratio tolerance [%] 4 Phase shift min [9] 8 Angular Error max [7] 12 Residual voltage max [8] 12 Residual voltage max [8] 255 Connect. Wire Lenght [8] 255 Woltage: 500 $V_{AC} \pm 3\%$ (B) A: Winding R1-R2 and housing Winding S2-S4 and housing Voltage: 8 500 $V_{AC} \pm 3\%$ (A) B: Winding S1-S3 and S2-S4 Time: 1s Winding S2-S4 and housing Voltage: 8 500 $V_{AC} \pm 3\%$ (A) B: Winding S1-S3 are in phase with Ur1-r2 Function applies to the clockwise rotation of the rotor when looking at the (grooveless) transformer componnent from the top $V_{S2-S4} = r$ r r r r r r r r r	Application Spec						
Input voltage nom. [V/ms] 7.0 DC resistance R1R2 [Ω] 82	Test protocol		100% EOL testing,	stored. Available up on request			
Frequency nom. [kHz] 10.0 R1R2 tolerance [±%] 10 lnput current max [mA] 40	Electrical parameters (at 22°	C):					
Input current max [mA] 40 Transformation ratio rT [\pm] 0.50 Transf. ratio tolerance [%] 4 Phase shift min [9] -2 Phase shift max [9] 8 Angular Error max [1] 12 Residual voltage max [mV] 25 Connect. Wire Lenght [mm] 255, AWG 26 Teflon Isolated Voltage: $500 \ V_{AC} \pm 3\%$ (B) Trime: 1s Winding S1-S3 and housing Winding S2-S4 and housing Winding S3-S3 are in phase with Ur1-r2 Function applies to the clockwise rotation of the rotor when looking at the (grooveless) transformer componnent from the top $U_{S1-S3} = + rT * U_{R1-R2} * cos(pp * \varphi)$ Rotor Inertia approx. $20 \ g/cm^2$ Max. Rotational Speed 20.000 rpm Tool m/s2 Vibration (0 2 kHz) 200 m/s2	Input voltage nom. [Vrms]	7.0		DC resistance R1R2 [Ω]	82		
Transformation ratio rT [\pm] 0.50 Transf. ratio tolerance [%] 4 Phase shift min [9] -2 Phase shift max [9] 8 Angular Error max [1] 12 Residual voltage max [mV] 25 Connect. Wire Lenght [mm] 255, AWG 26 Teflon Isolated Woltage: $500 \ V_{AC} \pm 3\%$ (B) Time: 1s Winding R1-R2 and housing Winding S1-S3 and housing Winding S2-S4 and housing Winding S2-S4 and housing Winding S2-S4 and housing Winding S1-S3 and S2-S4 Criterium: $R_{isol.} > 50M \ Ohm$ "Zero" setting: Ele. "0" is when Winding Us2-s4 = 0 and Us1-s3 are in phase with Ur1-r2 Function applies to the clockwise rotation of the rotor when looking at the (grooveless) transformer componnent from the top $U_{S1-S3} = + rT * U_{R1-R2} * cos(pp * \varphi)$ $U_{S2-S4} = + rT * U_{R1-R2} * sin(pp * \varphi)$ Rotor Inertia approx. $20 \ g/cm^2$ Max. Rotational Speed 20.000 rpm Shock resistance (11ms sine) Vibration (0 2 kHz) 200 m/s2	Frequency nom. [kHz]	10.0		R1R2 tolerance [±%]	10		
Transf. ratio tolerance [%]4Based on nominal Input voltage and Phase shift min [$^{\circ}$]4Based on nominal Input voltage and PrequencyPhase shift max [$^{\circ}$]8Frequency-2Angular Error max [$^{\circ}$]12-2Residual voltage max [mV]25-2Connect. Wire Lenght [mm]255, AWG 26 Teflon IsolatedHigh Voltage testVoltage: $500 \ V_{AC} \pm 3\%$ (A) $250 \ V_{AC} \pm 3\%$ (B) A: Winding R1-R2 and housing Winding S1-S3 and housing Winding S2-S4 and housin	Input current max [mA]	40		DC resistance S1S3 or S2S4 [Ω]	68		
Phase shift min [9]	Transformation ratio rT [±]	0.50		S1S3 or S2S4 tolerance [±%]	10		
Phase shift max $[^{\circ}]$ 8 Angular Error max $[^{\circ}]$ 12 Residual voltage max $[mV]$ 25 Connect. Wire Lenght $[mm]$ 255, AWG 26 Teflon Isolated High Voltage test Voltage: $500 \ V_{AC} \pm 3\%$ (A) Measured between: $250 \ V_{AC} \pm 3\%$ (B) A: Winding R1-R2 and housing Winding S1-S3 and housing Winding S2-S4 and housing Winding S2-S4 and housing Voltage: $500 \ V_{AC} \pm 5\%$ (A, B) B: Windings S1-S3 and S2-S4 Criterium: $R_{isol.} > 50M \ Ohm$ Transformation function Transformation function Fig. (grooveless) transformer component from the top $U_{S1-S3} = + rT * U_{R1-R2} * cos(pp * \varphi)$ $U_{S2-S4} = + rT * U_{R1-R2} * sin(pp * \varphi)$ Rotor Inertia approx. $20 \ g/cm^2$ Max. Rotational Speed Shock resistance (11ms sine) Voltage: $500 \ V_{AC} \pm 3\%$ (B) A: Winding R1-R2 and housing Winding S1-S3 and housing Winding S2-S4 and F2-S4 and F	Transf. ratio tolerance [%]	4	Based on nominal				
Angular Error max ['] 12 Residual voltage max [mV] 25 Connect. Wire Lenght [mm] 255, AWG 26 Teflon Isolated Woltage: $500 \ V_{AC} \pm 3\%$ (A) Measured between:	Phase shift min [º]	-2	Input voltage and				
Residual voltage max [mV] 25 Connect. Wire Lenght [mm] 255, AWG 26 Teflon Isolated Voltage: $500 \ V_{AC} \pm 3\%$ (A) Measured between:	Phase shift max [º]	8	Frequency				
Connect. Wire Lenght [mm]	Angular Error max [']	12					
High Voltage test	Residual voltage max [mV]	25					
High Voltage test	Connect. Wire Lenght [mm]		255, AW	VG 26 Teflon Isolated			
High Voltage test							
Time: 1s	High Voltage test	Voltage: 500 $V_{AC} \pm 3\%$ (A) Measured between:					
Isolation test		250 $V_{AC} \pm 3\%$ (B)		A: Winding R1-R2 and housing			
Voltage: $500 V_{DC} \pm 5\%$ (A, B) B: Windings S1-S3 and S2-S4 Criterium: $R_{isol.} > 50M Ohm$ Ele. "0" is when Winding Us2-s4 = 0 and Us1-s3 are in phase with Ur1-r2 Function applies to the clockwise rotation of the rotor when looking at the (grooveless) transformer component from the top		Time: 1s		Winding S1-S3 and housing			
Transformation function Transformation function Transformation function Risol. > $50M \ Ohm$ Ele. "0" is when Winding Us2-s4 = 0 and Us1-s3 are in phase with Ur1-r2 Function applies to the clockwise rotation of the rotor when looking at the (grooveless) transformer componnent from the top $ U_{S1-S3} = + rT * U_{R1-R2} * cos(pp * \varphi) \\ U_{S2-S4} = + rT * U_{R1-R2} * sin(pp * \varphi) $ Rotor Inertia approx. $20 \ g/cm^2$ Max. Rotational Speed Shock resistance (11ms sine) Vibration (0 2 kHz) $200 \ m/s2$		· · ·					
Transformation function Transformation function Transformation function Transformation function Transformation function $ \frac{U_{S1-S3} = + rT * U_{R1-R2} * cos(pp * \varphi)}{U_{S2-S4} = + rT * U_{R1-R2} * sin(pp * \varphi)} $ Rotor Inertia Approx. $20 \ g/cm^2$ Max. Rotational Speed Shock resistance (11ms sine) Vibration (0 2 kHz) Criterium: $R_{isol.} > 50M \ Ohm$ Ele. "0" is when Winding Us2-s4 = 0 and Us1-s3 are in phase with Ur1-r2 Function applies to the clockwise rotation of the rotor when looking at the (grooveless) transformer componnent from the top $U_{S1-S3} = + rT * U_{R1-R2} * sin(pp * \varphi)$ $U_{S2-S4} = + rT * U_{R1-R2} * sin(pp * \varphi)$ $U_{S2-S4} = + rT * U_{R1-R2} * sin(pp * \varphi)$ $U_{S2-S4} = + rT * U_{R1-R2} * sin(pp * \varphi)$ $U_{S2-S4} = + rT * U_{R1-R2} * sin(pp * \varphi)$ $U_{S2-S4} = + rT * U_{R1-R2} * sin(pp * \varphi)$ $U_{S2-S4} = + rT * U_{R1-R2} * sin(pp * \varphi)$ $U_{S2-S4} = + rT * U_{R1-R2} * sin(pp * \varphi)$ $U_{S2-S4} = + rT * U_{R1-R2} * sin(pp * \varphi)$ $U_{S2-S4} = + rT * U_{R1-R2} * sin(pp * \varphi)$ $U_{S2-S4} = + rT * U_{R1-R2} * sin(pp * \varphi)$ $U_{S2-S4} = + rT * U_{R1-R2} * sin(pp * \varphi)$ $U_{S2-S4} = + rT * U_{R1-R2} * sin(pp * \varphi)$ $U_{S2-S4} = + rT * U_{R1-R2} * sin(pp * \varphi)$ $U_{S2-S4} = + rT * U_{R1-R2} * sin(pp * \varphi)$	Isolation test	Voltage: 500 $V_{DC} \pm 5\%$ (A, B) B: Windings S1-S3 and S2-S4					
Transformation function		Criterium: $R_{isol.} > 50M \ Ohm$					
Transformation function	"Zero" setting:	Ele. "0" is when Winding Us2-s4 = 0 and Us1-s3 are in phase with Ur1-r2					
$U_{S1-S3} = + \text{rT} * U_{R1-R2} * \cos(pp * \varphi)$ $U_{S2-S4} = + \text{rT} * U_{R1-R2} * \sin(pp * \varphi)$ Rotor Inertia approx. 20 g/cm^2 Max. Rotational Speed 20.000 rpm Shock resistance (11ms sine) 1000 m/s2 Vibration (0 2 kHz) 200 m/s2		Function applies to the clockwise rotation of the rotor when looking at the					
$U_{S1-S3} = + \text{rT} * U_{R1-R2} * \cos(pp * \varphi)$ $U_{S2-S4} = + \text{rT} * U_{R1-R2} * \sin(pp * \varphi)$ Rotor Inertia approx. 20 g/cm^2 Max. Rotational Speed 20.000 rpm Shock resistance (11ms sine) 1000 m/s2	Transformation function	(grooveless) transformer componnent from the top					
Rotor Inertia approx. 20 g/cm² Max. Rotational Speed 20.000 rpm Shock resistance (11ms sine) 1000 m/s2 Vibration (0 2 kHz) 200 m/s2		$U_{S1-S3} = + rT * U_{R1-R2} * cos(pp * \overline{\varphi})$					
Rotor Inertia approx. 20 g/cm² Max. Rotational Speed 20.000 rpm Shock resistance (11ms sine) 1000 m/s2 Vibration (0 2 kHz) 200 m/s2		$U_{S2-S4} = + rT * U_{R1-R2} * sin(pp * \varphi)$					
Shock resistance (11ms sine) 1000 m/s2 Vibration (0 2 kHz) 200 m/s2	Rotor Inertia	approx. 20 <i>g/cm</i> ²					
(11ms sine) 1000 m/s2 Vibration (0 2 kHz) 200 m/s2	Max. Rotational Speed						
(11ms sine) Vibration (0 2 kHz) 200 m/s2		1000 m/s2					
Operating temp55°C+150°C	Vibration (0 2 kHz)	•					
	Operating temp.	-55°C+1	150°C				

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<u>DATE</u>	REV.	<u>DWN</u>	<u>APP</u>	<u>LTR</u>
2015-06-25	Α	P. Lerchenfeld	D. Ondrej	1