



1-1414371-0  
Rev. B  
26 April 2017

## DATA SHEET - HOLLOW SHAFT RESOLVER

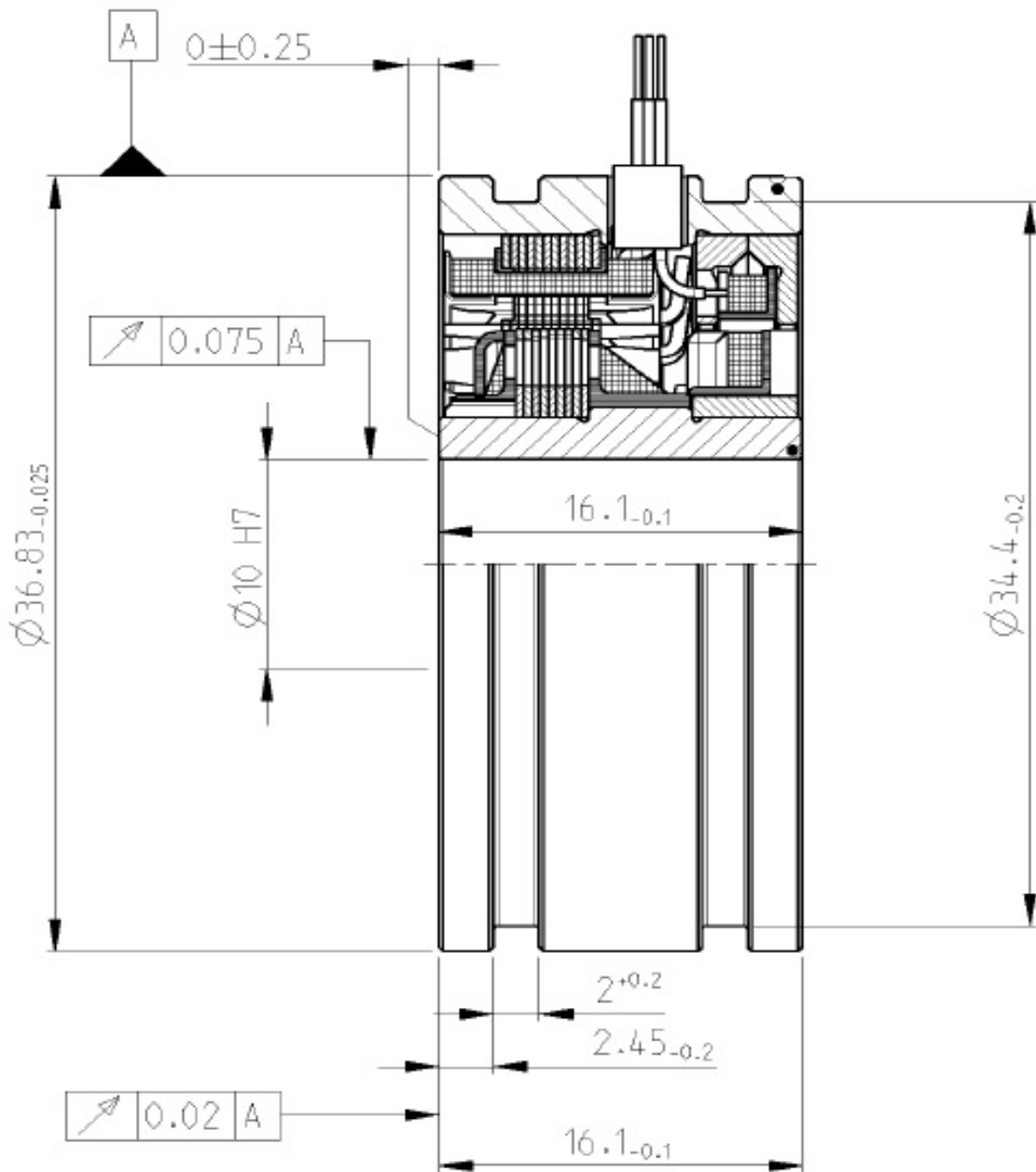
|                                        |                                                                                                                             |                                                    |                                |     |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|--------------------------------|-----|
| PN                                     | 1-1414371-0                                                                                                                 |                                                    |                                |     |
| Description:                           | V23401                                                                                                                      |                                                    | D1001-B901                     |     |
| Size                                   | 15                                                                                                                          |                                                    |                                |     |
| Shaft inner diameter [mm]              | 10 H7                                                                                                                       |                                                    |                                |     |
| Speed - pair of poles - [pp]           | 1                                                                                                                           |                                                    |                                |     |
| Application Spec                       |                                                                                                                             |                                                    |                                |     |
| Test protocol                          | 100% EOL testing, stored. Available up on request                                                                           |                                                    |                                |     |
| Electrical parameters (at 22°C):       |                                                                                                                             |                                                    |                                |     |
| Input voltage nom. [V <sub>rms</sub> ] | 7                                                                                                                           | possible 2V...10V                                  | DC resistance R1R2 [Ω]         | 48  |
| Frequency nom. [kHz]                   | 10                                                                                                                          | pos, 4kHz...20kHz                                  | R1R2 tolerance [±Ω]            | 4,8 |
| Input current max [mA]                 | 40                                                                                                                          | Based on nominal<br>Input voltage and<br>Frequency | DC resistance S1S3 or S2S4 [Ω] | 68  |
| Transformation ratio rT [±]            | 0,5                                                                                                                         |                                                    | S1S3 or S2S4 tolerance [±Ω]    | 6,8 |
| Transf. ratio tolerance [%]            | 5                                                                                                                           |                                                    |                                |     |
| Phase shift min [°]                    | -5                                                                                                                          |                                                    |                                |     |
| Phase shift max [°]                    | 5                                                                                                                           |                                                    |                                |     |
| Angular Error [±']                     | 10                                                                                                                          |                                                    |                                |     |
| Residual voltage max [mV]              | 25                                                                                                                          |                                                    |                                |     |
| Connect. Wire Lenght [mm]              | 300, 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   |     |
|                                        | Time: 1s                                                                                                                    |                                                    | Winding S1-S3 and housing      |     |
|                                        |                                                                                                                             |                                                    | Winding S2-S4 and housing      |     |
| Isolation test                         | Voltage: 500 $V_{DC} \pm 5\%$ (A, B)                                                                                        |                                                    | B: Windings S1-S3 and S2-S4    |     |
|                                        | Criterion:                                                                                                                  | $R_{isol.} > 50M\ Ohm$                             |                                |     |
| "Zero" setting:                        | Ele. "0" is when Winding Us2-s4 = 0 and Us1-s3 are in phase with Ur1-r2                                                     |                                                    |                                |     |
| Transformation function                | Function applies to the clockwise rotation of the rotor when looking at the (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                  | 20.000 rpm                                                                                                                  |                                                    |                                |     |
| Shock resistance (11ms sine)           | 1.000 m/s2                                                                                                                  |                                                    |                                |     |
| Vibration (0 ... 2 kHz)                | 200 m/s2                                                                                                                    |                                                    |                                |     |
| Operating temp.                        | -55°C...+150°C                                                                                                              |                                                    |                                |     |
|                                        |                                                                                                                             |                                                    |                                |     |

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| DATE       | PN REV. | DWN            | APP       | DS. REV |
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