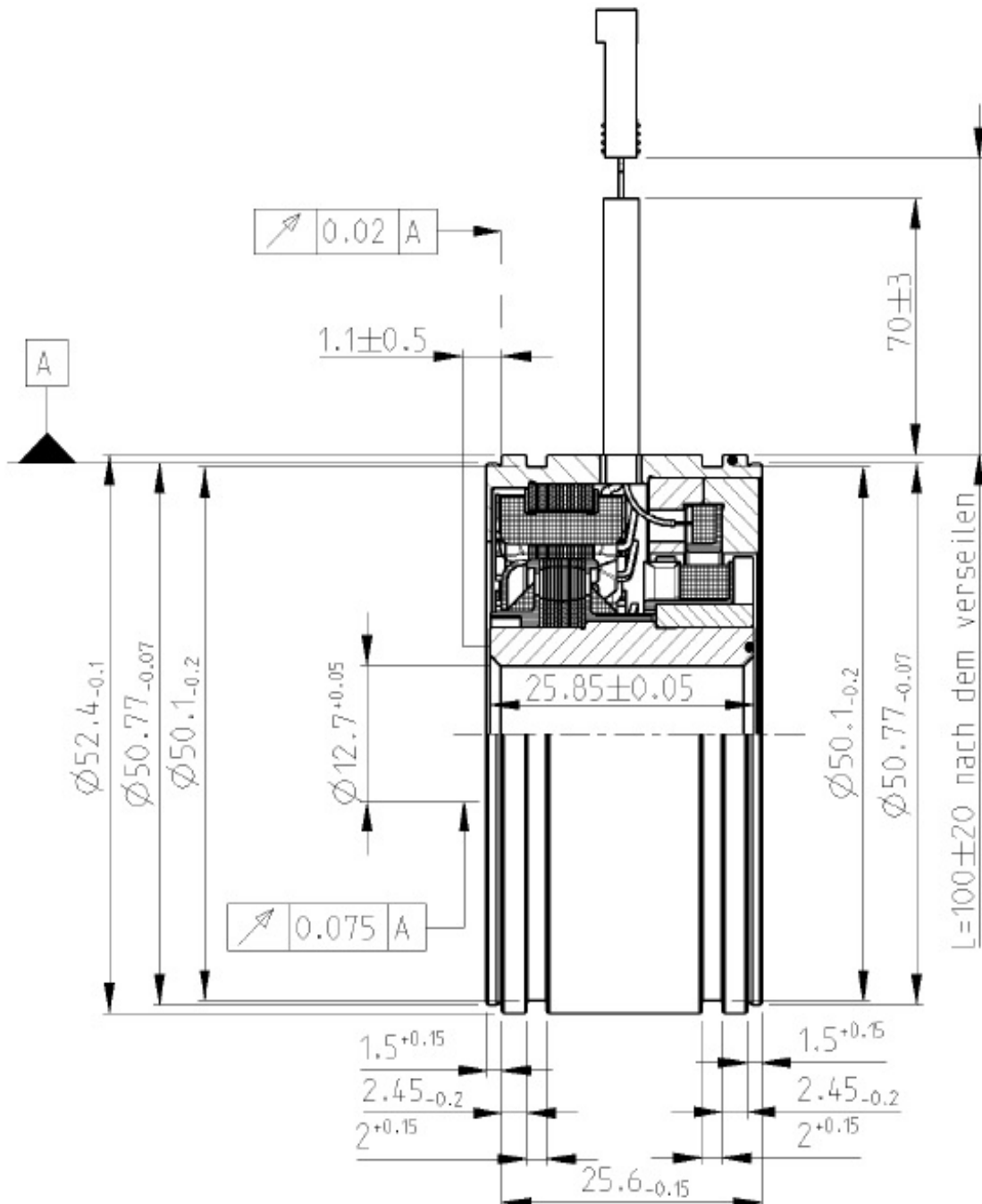


## DATA SHEET - HOLLOW SHAFT RESOLVER

|   |   |  |                                |    |
|---|---|--|--------------------------------|----|
| <b>PN</b>                               | 1-1393048-6   |  |                                |    |
| <b>Description:</b>                     | V23401  | H1409-B101   |                                |    |
| <b>Size</b>                             | 21  |  |                                |    |
| <b>Shaft</b>                            | B1  |  |                                |    |
| <b>Speed - pair of poles - [pp]</b>     | 1   |  |                                |    |
| <b>Application Spec</b>                 |   |  |                                |    |
| <b>Test protocol</b>                    | 100% EOL testing, stored. Available up on request   |  |                                |    |
| <b>Electrical parameters (at 22°C):</b> |   |  |                                |    |
| Input voltage nom. [V <sub>rms</sub> ]  | 7.0   | Based on nominal<br>Input voltage and<br>Frequency     | DC resistance R1R2 [Ω]         | 21 |
| Frequency nom. [kHz]                    | 8.0   |  | R1R2 tolerance [±%]            | 10 |
| Input current max [mA]                  | 46  |  | DC resistance S1S3 or S2S4 [Ω] | 22 |
| Transformation ratio rT [±]             | 0.48  |  | S1S3 or S2S4 tolerance [±%]    | 10 |
| Transf. ratio tolerance [%]             | 5   |  |                                |    |
| Phase shift min [°]                     | -13   |  |                                |    |
| Phase shift max [°]                     | -3  |  |                                |    |
| Angular Error max [']                   | 20  |  |                                |    |
| Residual voltage max [mV]               | 25  |  |                                |    |
| <b>Connect. Wire Lenght [mm]</b>        | 100, AWG 26 Teflon Isolated   |  |                                |    |
| <b>High Voltage test</b>                | Voltage: 500 V <sub>AC</sub> ± 3% (A)   | Measured between:                                      |                                |    |
|   | 250 V <sub>AC</sub> ± 3% (B)  | A: Winding R1-R2 and housing                           |                                |    |
|   | Time: 1s  | Winding S1-S3 and housing<br>Winding S2-S4 and housing |                                |    |
| <b>Isolation test</b>                   | Voltage: 500 V <sub>DC</sub> ± 5% (A, B)  | B: Windings S1-S3 and S2-S4                            |                                |    |
|   | Criterion: R <sub>isol.</sub> > 50M Ohm   |  |                                |    |
| <b>"Zero" setting:</b>                  | Ele. "0" is when Winding Us2-s4 = 0 and Us1-s3 are in phase with Ur1-r2   |  |                                |    |
| <b>Transformation function</b>          | Function applies to the clockwise rotation of the rotor when looking at the (grooveless) transformer component from the top |  |                                |    |
|   | $U_{S1-S3} = +rT * U_{R1-R2} * \cos(pp * \varphi)$  |  |                                |    |
|   | $U_{S2-S4} = +rT * U_{R1-R2} * \sin(pp * \varphi)$  |  |                                |    |
| <b>Rotor Inertia</b>                    | approx. 20 g/cm <sup>2</sup>  |  |                                |    |
| <b>Max. Rotational Speed</b>            | 20.000 rpm  |  |                                |    |
| <b>Shock resistance (11ms sine)</b>     | 1000 m/s <sup>2</sup>   |  |                                |    |
| <b>Vibration (0 ... 2 kHz)</b>          | 200 m/s <sup>2</sup>  |  |                                |    |
| <b>Operating temp.</b>                  | -55°C...+150°C  |  |                                |    |



| DATE       | REV. | DWN            | APP       | LTR |
|------------|------|----------------|-----------|-----|
|            |      |                |           |     |
|            |      |                |           |     |
| 2015-06-25 | A    | P. Lerchenfeld | D. Ondrej | 1   |