

## ANGt101/RES

goniometer with resistive encoder for closed loop operation providing  $\Theta$ -positioning

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### Technology

|                  |                      |
|------------------|----------------------|
| travel mechanism | inertial piezo drive |
|------------------|----------------------|

### Size and Dimensions

|                                       |                      |
|---------------------------------------|----------------------|
| footprint; height                     | 24 x 24; 11 mm       |
| maximum size                          | 28.7 x 24; 11.8 mm   |
| distance center of rotation to bottom | 51 mm (above center) |

### Coarse Positioning Mode

|                                  |                               |
|----------------------------------|-------------------------------|
| travel (step mode)               | 6.6°                          |
| typical minimum step size        | 0.1 m° @ 300 K, 0.02 m° @ 4 K |
| maximum speed (@ 300 K, no load) | approx. 1 °/s                 |

### Fine Positioning Mode

|            |                                |
|------------|--------------------------------|
| scan range | no fine positioning capability |
|------------|--------------------------------|

### Materials (non-magnetic)

|                  |                                       |
|------------------|---------------------------------------|
| positioner body  | Titanium (other materials on request) |
| actuator         | PZT ceramics                          |
| connecting wires | insulated twisted pair, Cu            |
| weight           | 18 g                                  |

### Load

|                                      |       |
|--------------------------------------|-------|
| maximum vertical load                | 100 g |
| maximum static forces along the axis | 3 N   |
| maximum dynamic force along the axis | 2 N   |

### Mounting

|                    |                          |
|--------------------|--------------------------|
| frontside mounting | two through holes for M2 |
| backside mounting  | two threads M2.5 x 6 mm  |
| load mounting      | six threads M2 x 3 mm    |

### Article Numbers

|              |         |                 |         |
|--------------|---------|-----------------|---------|
| /RT Version  | 1002792 | /LT Version     | 1002798 |
| /HV Version  | 1002794 | /LT/HV Version  | 1002800 |
| /UHV Version | 1002796 | /LT/UHV Version | 1002802 |

### Compatibility with Electronics

|                         |              |
|-------------------------|--------------|
| ANC350 piezo controller | all versions |
|-------------------------|--------------|

### Working Conditions

|   |                               |
|---|-------------------------------|
| mounting orientation                      | axis perpendicular to gravity |
| magnetic field range                      | 0 .. 31 T                     |
| temperature range (/RT, /HV, /UHV)        | 0 .. 100 °C                   |
| temperature range (/LT, /LT/HV, /LT/UHV)  | 10 mK .. 373 K                |
| max. bake out temperature (/UHV, /LT/UHV) | 150 °C                        |
| minimum pressure (/RT, /LT)               | 1E-4 mbar                     |
| minimum pressure (/HV, /LT/HV)            | 1E-8 mbar                     |
| minimum pressure (/UHV, /LT/UHV)          | 5E-11 mbar                    |

### Connectors and Feedthroughs

|                                 | /RT, /LT Versions   | all /HV, /UHV Versions   |
|---------------------------------|---|--|
| connector type                  | 2-pole pin plug,<br>ø 0.5 mm, d = 2 mm,<br>30 cm cable with connector | 2-pole pin plug (PEEK),<br>ø 0.5 mm, d = 2 mm,<br>30 cm cable with connector |
| electrical feedthrough solution | COC230/LT   | COC230/HV, COC230/UHV  |
| encoder connector               | additional 3-pole plug  | additional 3-pole plug (Peek)  |

### Temperature Dependent Data

|                                | @ 300K      | @ 4K (only /LT versions) |
|--------------------------------|-------------|--------------------------|
| input voltage range            | 0 .. +100 V | 0 .. +100 V              |
| typical actuator capacitance   | 1050 nF     | 150 nF                   |
| typical step size (min .. max) | 0.1 .. 3 m° | 0.02 .. 0.5 m°           |
| fine positioning range         | ---         | ---                      |

### Accuracy of Movement

|                                   |                              |
|-----------------------------------|------------------------------|
| repeatability of step sizes       | typically 5% over full range |
| forward / backward step asymmetry | typically 5%                 |

### Position Encoder

|                      |   |
|----------------------|---|
| readout mechanism    | resistive encoder, potentiometric measurement |
| encoded travel range | 6.6°  |
| sensor resolution    | approx. 0.1 m°                                |
| repeatability        | approx. 1-2 m°                                |

### Drawings

