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MOTION CONTROL & OPTICS **USA**

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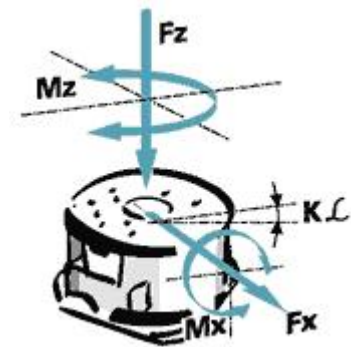
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◀◀ 4.026 ▶▶ **Ultra Precision Rotation Stage UPR-100 AIR** Direct Drives



Key features

- High precision air bearings
- Free center hole 20 mm diameter
- Torque motor
- Flatness < 0.2 μm
- Eccentricity < 0.2 μm
- Wobble < 5 μrad
- Repeatability 0.0002°
- Angular scale
- Speed up to 360°/sec
- Load up to 1.5 kg
- Clean room compatibility
- [Download PDF data sheet ...](#)



FACTS

| Load Characteristics | Fx (N) | Fz (N) | Mx (Nm) | Mz (Nm) (Peak) | Mz (Nm) (Con.) | ka ($\mu\text{rad}/\text{Nm}$) |
|----------------------|--------|--------|---------|----------------|----------------|----------------------------------|
| TM-030 | 7.5 | 15 | 0.16 | 0.5 | 0.25 | - |

DESCRIPTION

Air bearing Ultra-Precision-Rotation Stages of the structural series **UPR-100 AIR** and **UPR-160 AIR** are utilized wherever a maximum of quality concerning running and positioning accuracy is requested. UPR-100 AIR Rotation Stages are mainly

employed for measuring-, calibrate-, inspection systems and they are perfectly suited for mask exposition in semiconductor technologies. All Rotation Stages UPR-100 AIR are directly driven by a torque motor. Standard Rotation Stages UPR-100 AIR are equipped with angular systems. Standard resolutions up to 0.0002° can be achieved. For need of better positioning accuracies, resolutions Rotation Stages UPR-100 FAIR can be offered with different angular systems. All Ultra-Precision-Rotation Stages UPR-100 AIR are equipped with a contactless reference- and limit switch.



Technical data

| | |
|---------------------------|---------------------|
| Rotation Range (°) | 360, endless |
| Worm Gear reduction | - |
| Accuracy (°) | +/- 0.002776 |
| Repeatability (°) | +/- 0.0002 |
| Reversal Error (°) | - |
| Velocity Range (°/sec) | 0.02 ... 360 |
| Flatness (µm) | +/- 0.1 |
| Eccentricity (µm) | +/- 0.1 |
| Wobble (µrad) | +/- 2.5 |

Speed max. (°/ sec)

| | |
|--------|-----|
| TM-030 | 360 |
|--------|-----|

Resolution Closed-Loop (°)

| | |
|--|--------|
| AE-080, Angular scale (50-times interpolation) | 0.0002 |
|--|--------|

Winding Constant

| | |
|--|---|
| Torque constant (Nm/Ams) | - |
| Back EMF constant, peak value V/(rads/sec) | - |
| Electrical resistance at 80° (Ohm) | - |
| Electrical inductance (mH) | - |
| Continuous current at 80° (Ams) | - |

Compressed Air compare DIN ISO 8573-1

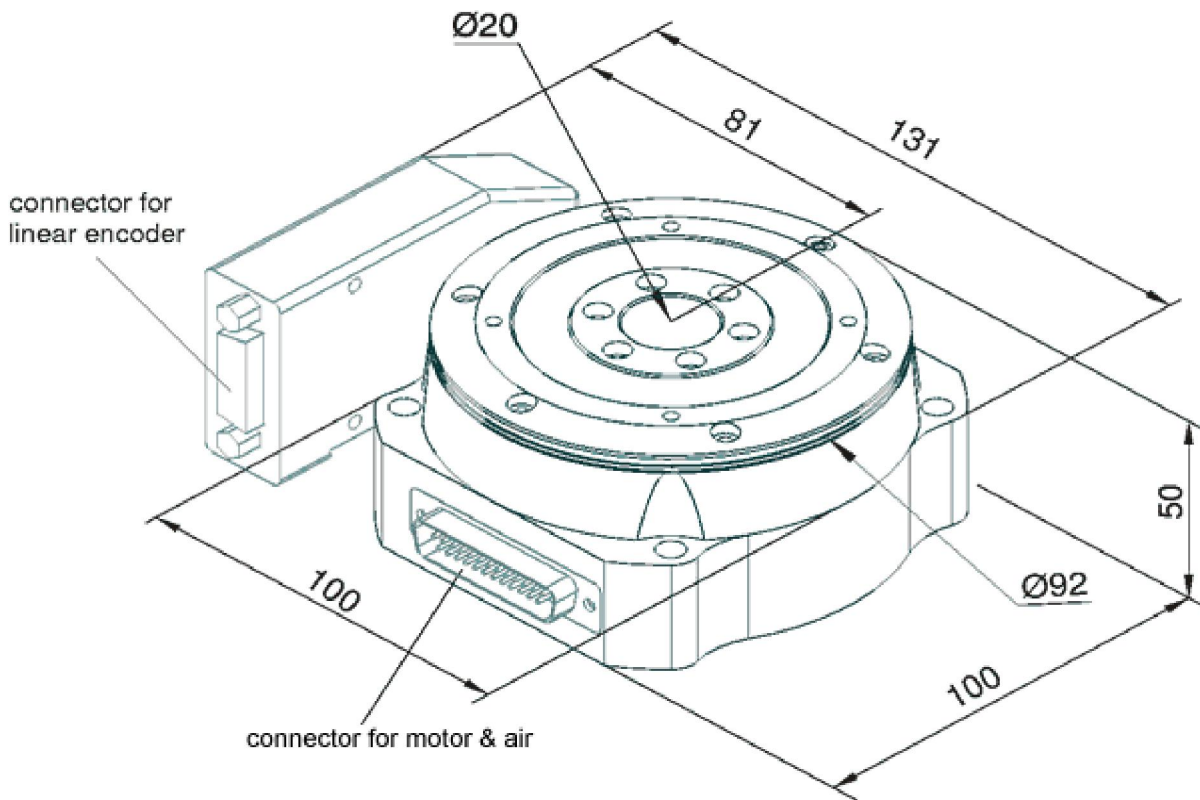
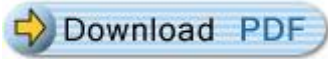
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|----------------------|-----------|
| Leakage rate (L/min) | 18 ... 20 |
|----------------------|-----------|

| | |
|----------------------------|-----------------------------------|
| Compressed Air range (bar) | 4.5 ... 5.5 |
| Material | Special Aluminium, black anodized |
| Weight (kg) | 1.2 |

UPR-100 AIR Base & Motors

Rotation range


360°, endless



UPR-100 AIR Ordering information

| | |
|---------------------------------------|------------------|
| Ultra Precision Rotation Stage | Order-No. |
| UPR-100 AIR | 6823-9-1111 |

| | | |
|---|---|--|
| Ultra Precision Rotation Stage AIR options | | Order-No. |
| Air Supply | Technical data: |  K700-4-001 |
| compare DIN ISO 8573-1 Compressed Air | Particular size Class 1 Contained Oil Class 1 Condensing point Class 2-3 | |
| Air Checker | Pressure Sensor with motor disable | 7160-9-123 |

Founded in 1990, MICOS specializes in the development, manufacturing and marketing of ultra-high precision positioning components and systems for research and industry. We are experts in vacuum, ultra-high vacuum, clean room, and extreme climate environments down to 77 Kelvin. 

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