

# Sample Module *Curve*® plugged 1910H



- Module size: 39 mm x 10 mm x 1.8 mm
- Active length: 19 mm
- Module weight: 0.8 g

- Recommended bending stiffness of substrate ( $E \cdot I = E \cdot b \cdot h^3 / 12$ ): 7 500 Nmm<sup>2</sup>

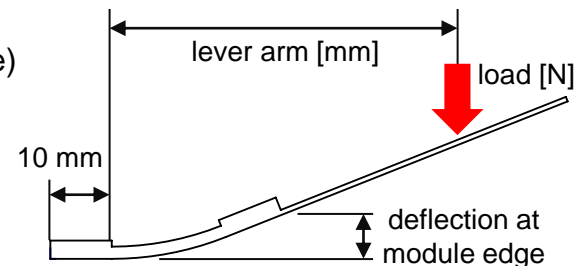
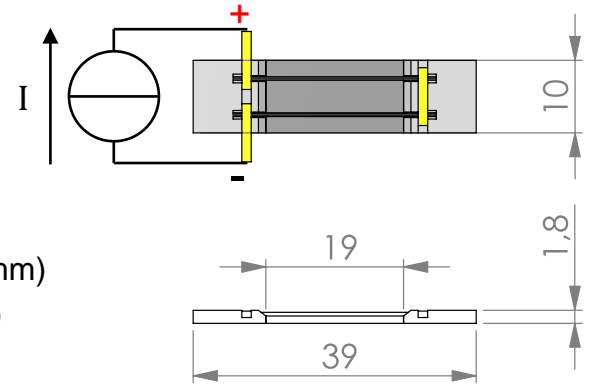
- Example thickness of substrate at module width
- high stiffness (Spring steel 210 GPa): 0.35 (0.2 – 0.45 mm)
- medium stiffness (GFRP 20 GPa): 0.85 (0.5 – 1 mm)
- low stiffness (3D-printed 2 GPa): 1.2 (1 – 1.5 mm)

- Note: If the substrate is not able to bear the bending without plastic deformation, the actuator cannot recover the original flat position on cooling
- Note: Significant higher bending stiffness is reducing the load capability and potentially the cycling stability / significant lower bending stiffness can lead to an incomplete recover of the original flat position on cooling

- Expected deflection at module edge: 4.5 – 7.4 mm (load free)

- Note: Higher deflection for lower bending stiffness / thickness of substrate

- Maximum load / torque (lever arm \* load): 40 Nmm



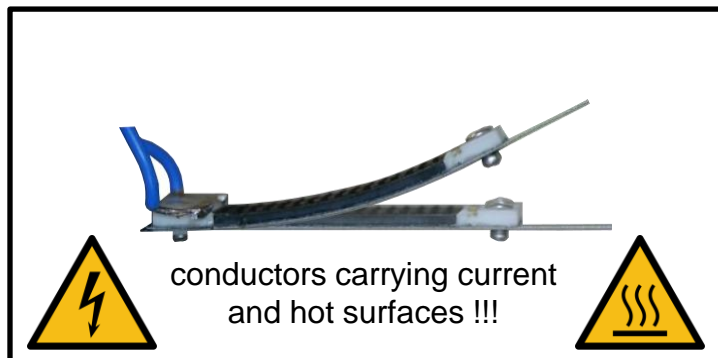
Please pay attention to the **application notes on the back** and to the **assembly instructions on our YouTube channel**

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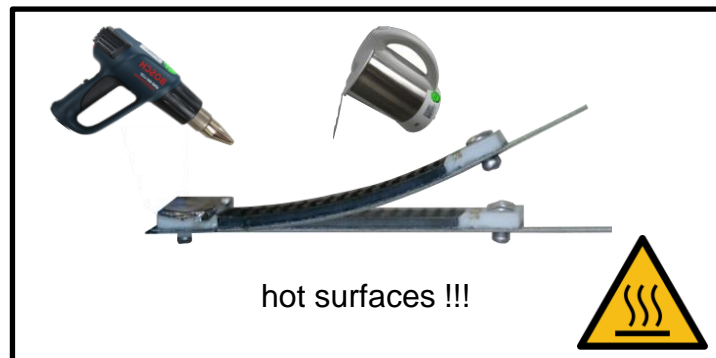
## application notes

### *Curve plugged*®



Electrical resistivity: 0.4  $\Omega$   
**Activation of a cooled down actuator in calm air at 23°C by heating current / max time:** e.g. 2.5A/45s; 3A/15s; 4A/4s; 5A/1s

### *Curve unplugged*®



**Begin of actuation:** ca. 60°C  
**End of actuation:** ca. 100°C  
**Maximum temperature:** 130°C

- **Current and time period only as a guide for a cooled down actuator in calm air at 23°C**  
→ **Risk of overheating for subsequent activation** without adaption of current and time period
- To avoid damage do not exceed maximum temperature either electrical or thermal
- Uncontrolled electrical heating can lead to overheating → **risk of fire!**
- Operate exclusively with controllable power source in the SELV (safe extra-low voltage) range