

# Sample Module *Curve*® plugged 3920M



- Module size: 59 mm x 20 mm x 2.5 mm
- Active length: 39 mm
- Module weight: 3.2 g

- Recommended bending stiffness of substrate ( $E \cdot I = E \cdot b \cdot h^3 / 12$ ): 31 000 Nmm<sup>2</sup>
- Example thickness of substrate at module width

high stiffness (Spring steel 210 GPa): 0.45 (0.3 – 0.6 mm)

medium stiffness (GFRP 20 GPa): 1.2 (0.7 – 1.4 mm)

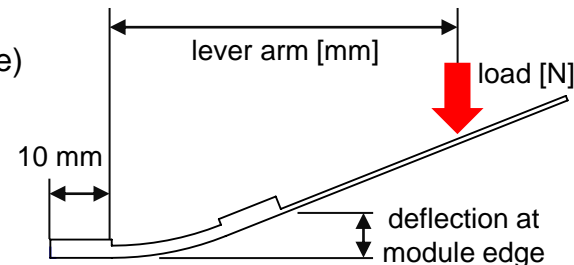
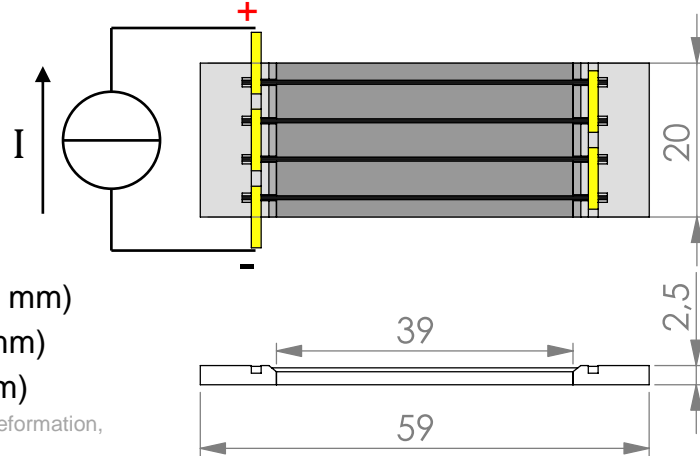
low stiffness (3D-printed 2 GPa): 1.6 (1 – 2.2 mm)

- 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: 11 – 17.5 mm (load free)

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

- Maximum load / torque (lever arm \* load): 100 Nmm



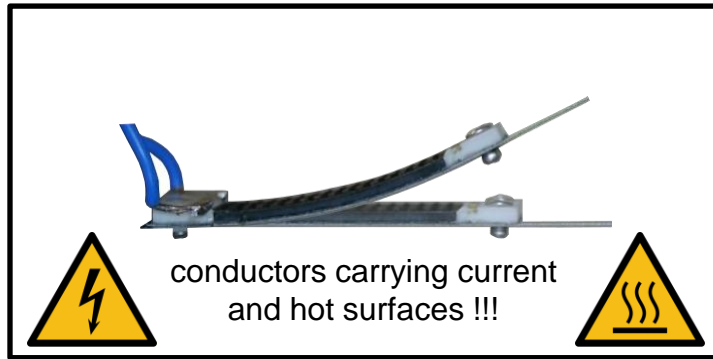
Please pay attention to the **application notes on the back** and to the **assembly instructions on our YouTube channel**

# Sample Module *Curve*<sup>®</sup> plugged 3920M



## application notes

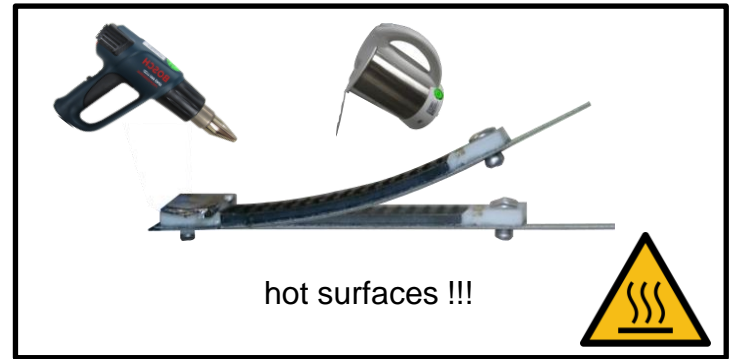
### *Curve plugged*<sup>®</sup>



conductors carrying current  
and hot surfaces !!!

Electrical resistivity: 0.9  $\Omega$   
**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*<sup>®</sup>



hot surfaces !!!

**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