advintec® TCP sensors
Available in three sizes
(internal dimensions):
- 120 mm x 120 mm
- 240 mm x 240 mm
- 300 mm round
advintec® TCP precision laser sensors
Available in two sizes
(internal dimensions):
- 120 mm x 120 mm
- 300 mm round

Advantages at a glance

- Automatic absolute calculation of robotic tools and fixtures
- Auto-commissioning and ease of use
- Simplified integration
  in the production line due to small footprint
- Robust sensor available in two sizes
- Multi-sensor-system
  (connection of additional sensors possible)
- Connection of the calibration system to the robot controller,
  i.e. the calibration procedure takes place in an evaluation unit
  and transfers correction values to robot controller
- High process reliability
- No additional PC’s required
- Logging of calibration data
  Data evaluation possible at any time
- Automatic correction of the trajectory
  due to wear and tear or tool-replacement
  and no failures caused by positioning factors.
- 100 % quality assurance
- Reduction of costs
  - Prevents the production of defective parts
  - Reduces scrap and rework
  - Short setup times

Factory Automation
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The Quality Connection
The challenge
Continually securing the correct operating position for robotic tools

The solution
The advintec TCP tool calibration system calibrates the tool and fixture in up to six dimensions in the ongoing production process:
- Three translatory and three rotatory dimensions
- Electronic, precise and fast

The trajectory is automatically corrected by the measured variations and ensures that the tool always operates at the correct position.

Mobile calibration case for the initial calibration of unknown tools and fixtures (TCP & Base)
Flexible, mobile calibration for unknown tools and fixtures is now also possible with our mobile calibration case. Ideal for use when setting up new production lines.

At a glance
advintec® TCP robotic tool and fixture calibration systems

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>3D</th>
<th>5D</th>
<th>6D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calibration time</td>
<td>3 sec. complete</td>
<td>9 sec. complete</td>
<td>15 sec. complete</td>
</tr>
<tr>
<td>2D calibration</td>
<td>6 sec. complete</td>
<td>5D calibration</td>
<td>6D calibration</td>
</tr>
<tr>
<td>3D calibration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fields of application (applicable for all robot brands)</td>
<td>Arc welding, stud welding, spot welding, laser welding, tig welding, gluing, milling</td>
<td>Gripper calibration, fixture calibration, power train applications, high precision applications</td>
<td></td>
</tr>
<tr>
<td>Technical data at 20 °C / 24 V DC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensor type</td>
<td>2 channel infrared 880 nm, pulsed at 2kHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interface</td>
<td>Serial or field bus (DeviceNet, Profibus, Profinet etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measuring accuracy</td>
<td>0.02 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection class</td>
<td>IP67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dirty surroundings</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casing</td>
<td>Aluminium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automatic correction of tool data</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating voltage, Connections</td>
<td>10 – 34 V DC, IBS connector, 5 pin, PE advance conn.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>