**TCCT**

**Test device for control and validation of contact-less throttle position sensors**

**TCCT** is a tester designed for the product validation and the production end of line test of throttle bodies equipped with contactless sensors. **TCCT** is both a compact solution, that allows an easy integration into automatic production lines, and a turn key solution for R&D laboratories.

**MAIN FEATURES:**
- Built-in programmer, to communicate with position sensors for reading and writing the calibration parameters
- Multiple outputs, to connect up to 8 models of throttle bodies with different pinout.
- Fast and accurate contact test, with capacitance measurements on sensor pins
- Throttle motor control by H-Bridge driver and encoder feedback for accurate angle measurement
- Ethernet link for the communication with the assembly line (PLC) for fast and complete production traceability

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Static test, without handling</th>
<th>Siemens STEP 7 Omron</th>
<th>Ethernet TCP/IP Available on request</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Time</td>
<td>Static test, without handling</td>
<td>Siemens STEP 7 Omron</td>
<td>Ethernet TCP/IP Available on request</td>
</tr>
<tr>
<td>Measure Accuracy</td>
<td>Sensor Output Capacitance</td>
<td>Siemens STEP 7 Omron</td>
<td>Ethernet TCP/IP Available on request</td>
</tr>
<tr>
<td>Encoder</td>
<td>Quadrature 36000 pulse/turn</td>
<td>Siemens STEP 7 Omron</td>
<td>Ethernet TCP/IP Available on request</td>
</tr>
<tr>
<td>PLC connection</td>
<td>Monitor Keyboard</td>
<td>Siemens STEP 7 Omron</td>
<td>Ethernet TCP/IP Available on request</td>
</tr>
<tr>
<td>Peripherals</td>
<td>Monitor Keyboard</td>
<td>Siemens STEP 7 Omron</td>
<td>Ethernet TCP/IP Available on request</td>
</tr>
<tr>
<td>Power</td>
<td>Voltage: 220V AC</td>
<td>Siemens STEP 7 Omron</td>
<td>Ethernet TCP/IP Available on request</td>
</tr>
<tr>
<td>Dimensions</td>
<td>WxHxD: 525 x 218 x 614 mm</td>
<td>Siemens STEP 7 Omron</td>
<td>Ethernet TCP/IP Available on request</td>
</tr>
</tbody>
</table>

**Specification**

- **Test Time:** Static test, without handling
- **Measure Accuracy**
  - Sensor Output Capacitance: 0.2%
  - Other resolutions on request
- **Encoder:** Quadrature 36000 pulse/turn
- **PLC connection:** Siemens STEP 7 Omron
- **Peripherals:** Monitor Keyboard
- **Power:** Voltage: 220V AC 50W max
- **Dimensions:** WxHxD: 525 x 218 x 614 mm Weight <10 Kg

[www.ttech.to.it](http://www.ttech.to.it)
SOFTWARE FEATURES

- Editable test sequences
- Step by step with pause function for debugging
- Multilanguage operator messages configurable by text files for easy distribution on world wide plants
- Easy to configure with editable parameter files
- Report generation. The report file can be written in any location, including remote computers, supervisor units and servers.
- Custom HMI and functionalities on request

FUNCTIONAL FEATURES

- Capacitance measurement system (typical values 10 nF, 1μF)
- Reading system of the position get from sensors compared with the encoder feedback
- Sensor programming unit to configure and dump the memory of the position sensor
- Communication module with PLC to achieve a fast synchronization with the automation handlers and a full data collection for a complete and accurate traceability. The data and measurements taken during a test are automatically written inside the PLC memory or RFID
- Remote console – monitor and keyboard – for an ergonomic setup of the human machine interface. The HMI allows diagnostic intervention and maintenance providing a continuous visual indication of the system status and of the parts being tested

CONFIGURATION AND OPTIONS

<table>
<thead>
<tr>
<th>Product code</th>
<th>Capacitance Test</th>
<th>Position Test</th>
<th>Calibration Test</th>
<th>Sensor Programming</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCCT.Cover</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>This version is designed for the test of the PCB mounting the Sensor</td>
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<tr>
<td>TCCT.Eol</td>
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<td>X</td>
<td>X</td>
<td>This version is designed for the test and the final calibration of the throttle body at the end of production line</td>
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<tr>
<td>TCCT.Lab</td>
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<td></td>
<td>X</td>
<td>X</td>
<td>This version is designed for the product validation in the R&amp;D laboratory</td>
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</tbody>
</table>