Product Information

PWT 101
Testing Device for HEIDENHAIN Encoders
PWT 101
Testing device for HEIDENHAIN encoders

The PWT 101 is a testing device for the functional testing and adjustment of incremental and absolute HEIDENHAIN encoders. Thanks to its compact and rugged design, the PWT 101 is ideal for portable use. Operation and visual display are carried out on a 4.3-inch touchscreen.

The PWT 101 supports a variety of functions depending on the encoder and the interface. With encoders featuring the EnDat interface, for example, you can display the position value, export online diagnostic data, shift datums, and perform further inspection functions.

Inspection and testing devices from HEIDENHAIN
HEIDENHAIN encoders provide all of the information needed for commissioning, monitoring, and diagnostics. For the analysis of these encoders, HEIDENHAIN offers the appropriate PWM inspection devices and PWT testing units. The PWM inspection devices, which are universally deployable, feature calibration capability and low measuring tolerances. Testing devices such as the PWT 101 provide fewer functions, have wider tolerances, and cannot be calibrated.

Available functions
The performance range of the PWT 101 can be expanded through a firmware update. Appropriate firmware files are available at www.heidenhain.com and can be uploaded into the PWT 101 via a memory card (not included in delivery).

Key new features included in firmware V3.0.0:
- Support for encoders with a DRIVE-CLiQ interface
- Support for encoders with an HTL interface
- Support for strain sensor encoders

Successor product to the PWT 100
The PWT 100 is succeeded by the PWT 101, which incorporates the functionality of the PWT 100 but also supports special firmware modules. The PWT 100 will still be supported by future firmware versions but will not permit the use of firmware modules. The PWT 101 is supported by firmware V2.2.1 or later.

Firmware modules
The module management function of the PWT 101 differentiates between firmware (basic functions) and firmware modules. The firmware modules permit the implementation of special functions and support for other encoder manufacturers. The PWT 101 permits rapid switching between modules, thus enabling the user to react flexibly to different kinds of demands. The following firmware modules are currently available for assistance while checking the function of encoders and adjusting them:
- AXO encoders (for more information, visit www.axo-gmbh.com/en)
- NUMERIK JENA encoders (for more information, visit www.numerikjena.de/en)
- RENCO rotary encoders with and without block commutation (for more information, visit www.heidenhain.com)

Mounting wizard
The PWM 21, together with the adjusting and testing software (ATS), is recommended when mounting exposed or multi-section linear encoders or modular angle encoders. The PWT 101 can also be used, if it supports the encoder’s interface. However, the scope is limited somewhat.

Range of functions

Performance range of PWT 101 with V3.0.0

<table>
<thead>
<tr>
<th>Function</th>
<th>EnDat</th>
<th>DRIVE-CLiQ</th>
<th>Fasec</th>
<th>Mitsubishi</th>
<th>Panasonic</th>
<th>Yaskawa</th>
<th>Fanuc</th>
<th>Mitsubishi</th>
<th>Panasonic</th>
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<th>Mitsubishi</th>
<th>Panasonic</th>
<th>Yaskawa</th>
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</thead>
<tbody>
<tr>
<td>Position display</td>
<td>✔</td>
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<tr>
<td>Display of the absolute position</td>
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<tr>
<td>Display of the incremental position</td>
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<tr>
<td>Display and resetting of error messages</td>
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<tr>
<td>Display and resetting of warnings</td>
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<tr>
<td>Display of the transmission status</td>
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<tr>
<td>Datum shift (&quot;electrical zeroing of position&quot;)</td>
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<td>Display of the reference mark status</td>
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<td>Display of count values between reference marks</td>
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<td>Incremental counter with adjustable counting function</td>
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Expansion of the supported interfaces or functions through future firmware versions.
1) If supported by the encoder
2) FB 3391Y is not supported
3) For encoders with additional sinusoidal commutation signals C and D (Z1 track)
4) With signal adapter ID 1093210-01
5) Refer to the operating instructions

Available functions

- Display of online diagnostics
- Display of signal level (qualitative)
- Deviation between 21 and incremental tracks
- Display of supply voltage and supply current

Memory contents

- Display of encoder information

Additional functions

- Adjustable voltage supply to encoder
- Display of homing and limit

Display of temperature (internal/external)

- Display of temperature
- Display of online diagnostics

Online diagnostics

- Online diagnostics
- Count value (steps)

Level display

- Level display
- Count value (steps)

PWT display

- PWT display
- Count value (steps)
# PWT 101 testing device

<table>
<thead>
<tr>
<th>Testing device</th>
<th>PWT 101</th>
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<tbody>
<tr>
<td><strong>Area of application</strong></td>
<td>The functional testing of absolute and incremental HEIDENHAIN encoders</td>
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</tbody>
</table>
| **Encoder input** only for HEIDENHAIN encoders | - EnDat 2.1 or EnDat 2.2 (with or without incremental signals)  
- DRIVE-CLiQ  
- Fanuc Serial Interface  
- Mitsubishi high speed interface  
- Panasonic Serial Interface  
- Yaskawa Serial Interface  
- 1 Vpp with Z1 track  
- 1 Vpp  
- 11 µApp  
- TTL  
- HTL (signal adapter ID 1093210-01 required) |
| **Display** | 4.3-inch touchscreen |
| **Supply voltage** | DC 24 V  
Power consumption: max. 15 W |
| **Operating temperature** | 0 °C to 40 °C |
| **Protection** | EN 60529  
IP20 |
| **Dimensions** | 145 mm × 85 mm × 35 mm |
| **Languages** | German, English, French, Italian, Spanish, Japanese, Korean, Chinese (simplified), Chinese (traditional) |

DRIVE-CLiQ is a registered trademark of Siemens AG

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⚠️ **Note:**  
There may be country-specific restrictions on plug-in power supplies with regard to the test standards to be complied with. A separate version is available for Japan. Consult your contact person at HEIDENHAIN if required.

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**HEIDENHAIN**

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This Product Information document supersedes all previous editions, which thereby become invalid. The basis for ordering from HEIDENHAIN is always the Product Information document edition valid when the order is placed.

🔍 **Further information:**

Comply with the requirements described in the following documents to ensure the correct and intended operation of the PWT:  
- Brochure: *Interfaces of HEIDENHAIN Encoders*  
- Brochure: *Cables and Connectors*