



Product Information

## PWT 101

Testing Device for  
HEIDENHAIN Encoders

# PWT 101

## Testing device for HEIDENHAIN encoders

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

### Functionality

The functionality of the PWT 101 can be expanded through a firmware update. The firmware files are available at [www.heidenhain.com](http://www.heidenhain.com). They can be uploaded to the PWT 101 via a memory card (not included).

Key new features in firmware V4.0.0:

- Encoders with the EnDat 3 interface now supported
- Standardized user experience for all interfaces

### 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:

- AMO encoders (for more information, visit [www.amo-gmbh.com/en](http://www.amo-gmbh.com/en))
- NUMERIK JENA encoders (for more information, visit [www.numerikjena.de/en](http://www.numerikjena.de/en))
- RENCO rotary encoders with and without block commutation (for more information, visit [www.renco.com](http://www.renco.com))

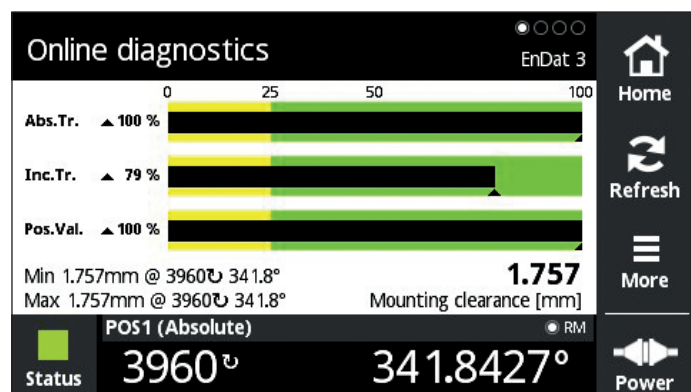
### Mounting wizard

The PWM 21, together with the adjusting and testing software (ATS), is recommended for the mounting of exposed or multi-section linear encoders and modular angle encoders. If supported by the encoder interface, the PWT 101 can be used as well, but with limitations.

Encoders	Mounting and the mounting wizard
LIC 21xx, LIC 31xx, LIF 4xx, LIF 1xx, LIDA 4xx, LIDA 2xx and ERM 2xxx	PWT 101 and PWM 21 with ATS software
LIC 41xx, LIP 3xx, LB 3xx, LC 2xx, PP 281, ECA 4xxx, ECM 24xx, ERA 4xxx, ERA 7xxx, ERA 8xxx and ERP 880	Possible with the PWT 101 to a limited extent: For optimal mounting quality, please use the PWM 21 with the ATS software
LIP 2xx, LIP 6xxx, ERP 1xxx, ERO 2xxx, PP 6xxx and MKV 1xxx	PWM 21 with ATS software required



PWT display



Online diagnostics

	PWT 101
<b>Area of application</b>	<ul style="list-style-type: none"> <li>• Functional testing of absolute and incremental HEIDENHAIN encoders</li> </ul>
<b>Encoder input</b> only for HEIDENHAIN encoders	<ul style="list-style-type: none"> <li>• EnDat 3<sup>1)</sup></li> <li>• EnDat 2.2 (with or without incremental signals) or EnDat 2.1</li> <li>• DRIVE-CLiQ</li> <li>• Fanuc Serial Interface</li> <li>• Mitsubishi high speed interface</li> <li>• Panasonic Serial Interface</li> <li>• Yaskawa serial interface</li> <li>• 1 V<sub>PP</sub> with Z1 track</li> <li>• 1 V<sub>PP</sub></li> <li>• 11 μA<sub>PP</sub></li> <li>• TTL</li> <li>• HTL (signal adapter ID 1093210-01 required)</li> </ul>
<b>Display</b>	4.3-inch touchscreen
<b>Supply voltage</b>	DC 24 V Power consumption: max. 15W
<b>Operating temperature</b>	0 °C to 40 °C
<b>Protection</b> EN 60529	IP20
<b>Dimensions</b>	≈ 145 mm × 85 mm × 35 mm
<b>Languages</b>	German, English, French, Italian, Spanish, Japanese, Korean, Chinese (simplified), Chinese (traditional)

<sup>1)</sup> An SA 1210 adapter is required for connecting encoders with the E30-R2 ordering designation. The Bus operation function is not supported.

Note: The USB connection X5 is currently not supported; in the case of AC adapters, there may be regional limitations with regard to the required testing standard.

A separate version is available for Japan. Consult your contact person at HEIDENHAIN if required.

DRIVE-CLiQ is a registered trademark of Siemens AG

#### SA 1210

Accessory for connecting encoders with the E30-R2 ordering designation



# Range of functions

Functions of the PWT 101 with V4.0.0	EnDat	DRIVE-CLIQ	Fanuc	Mitsubishi	Panasonic	Yaskawa <sup>2)</sup>	1 V <sub>PP</sub> / 11 μApp	TTL	HTL <sup>4)</sup>
<b>Position display</b>									
Display of the absolute position	✓	✓	✓	✓	✓	✓	-	-	-
Display of the incremental position <sup>1)</sup>	✓	✓	✓	✓	-	-	-	-	-
Display and resetting of error messages	✓	✓	✓	✓	✓	✓	-	-	-
Display and resetting of warnings	✓	✓	✓	✓	✓	✓	-	-	-
Display of the transmission status	(✓)	✓	✓	✓	✓	✓	-	-	-
Datum shift ("electrical zeroing of position") <sup>1)</sup>	(✓)	-	(✓)	(✓)	(✓)	(✓)	-	-	-
Display of the reference mark status	-	-	-	-	-	-	✓	✓	✓
Display of count values between reference marks	-	-	-	-	-	-	✓	✓	✓
Incremental counter with adjustable counting function	-	-	-	-	-	-	✓	✓	✓
<b>Diagnostics</b>									
Display of online diagnostics <sup>1)</sup>	✓	✓	✓	✓	✓	✓	-	-	-
PWT display of incremental signals	(✓)	-	-	-	-	-	✓	✓ <sup>1)</sup>	-
Display of signal level (qualitative)	-	-	-	-	-	-	-	✓	✓
Deviation between Z1 and incremental tracks	-	-	-	-	-	-	✓ <sup>3)</sup>	-	-
Display of supply voltage and supply current	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Memory contents</b>									
Display of encoder information <sup>1)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Documentation of the measurement results</b>									
Screenshots can be stored on an external memory card.	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Additional functions</b>									
Adjustable voltage supply to encoder	✓	✓	✓	✓	✓	✓	✓	✓	✓
Display of homing and limit	-	-	-	-	-	-	✓	✓	-
<b>Temperature display</b> (intern/extern) <sup>1)</sup>	✓	✓	-	-	-	-	-	-	-

Expansion of the supported interfaces or functions through future firmware versions.

<sup>1)</sup> If supported by the encoder

<sup>2)</sup> EIB 3391Y is not supported

<sup>3)</sup> For encoders with additional sinusoidal commutation signals C and D (Z1 track)

<sup>4)</sup> With signal adapter ID 1093210-01

(✓) Refer to the operating instructions

## Software options

The PWT 101 allows the user to expand the standard performance range of the software by entering a product key. The product key is subject to a charge and valid only for the serial number of the PWT 101.

Datum shift for encoders with the Fanuc, Mitsubishi, Panasonic and Yaskawa interfaces (ID 1403972-01)\*

Datum shift for encoders with the EnDat interface (ID 1403972-02)\*

\* If supported by the encoder. For more information, please contact HEIDENHAIN.



### Further information:

For a detailed description of functions, see the *PWT 101* Operating Instructions (ID 1162581):

[www.heidenhain.com](http://www.heidenhain.com) ▶ Service & Support ▶ Downloads ▶ Documentation.


---

# HEIDENHAIN

## DR. JOHANNES HEIDENHAIN GmbH

Dr.-Johannes-Heidenhain-Straße 5

**83301 Traunreut, Germany**

 +49 8669 31-0

 +49 8669 32-5061

info@heidenhain.de

[www.heidenhain.com](http://www.heidenhain.com)

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.



### More information:

Comply with the requirements described in the following documents to ensure correct and intended operation:

- Brochure: *Interfaces of HEIDENHAIN Encoders:* 1078628-xx
- Brochure: *Cables and Connectors:* 1206103-xx