HEIDENHAIN

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 V3.0.3:
- 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:
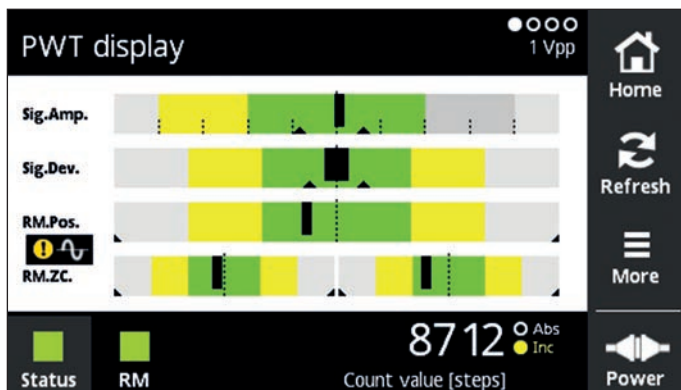- AMO encoders (for more information, visit *www.amo-gmbh.com/en*)
- NUMERIK JENA encoders (for more information, visit *www.numerikjena.de/en*)
- RENCO rotary encoders with and without block commutation (for more information, visit *www.heidenhain.com*)
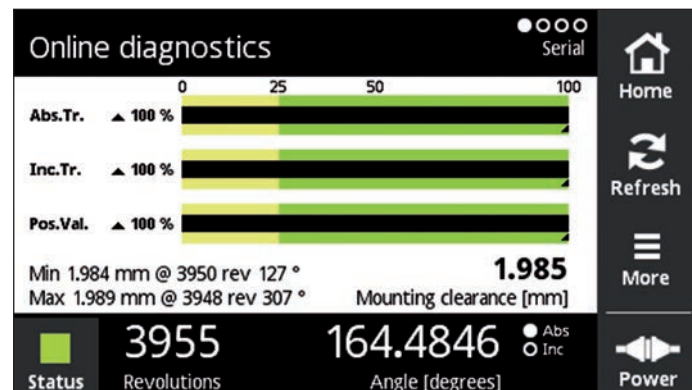
Mounting wizard
The PWM 21, together with the adjusting and testing software (ATS), is recommended for the mounting of exposed or multi-section linear encoders or modular angle encoders. If supported by the encoder interface, the PWT 101 can be used as well to a limited extent.

Encoders*	Suitability of PWT 101
LIC 21xx, LIC 31xx, LIF 4xx, LIF 1xx, LIDA 4xx, LIDA 2xx, ERM 2xxx	✓
LIC 41xx, LIP 3xx, LB 3xx, LC 2xx, PP 281, ECA 4xxx, ECM 24xx, ERA 4xxx, ERA 7xxx, ERA 8xxx, ERP 880	Limited suitability: for optimal mounting quality, please use the PWM 21 with the ATS adjusting and testing software
LIP 2xx, LIP 6xxx, ERP 1xxx, ERO 2xxx	PWM 21 and ATS adjusting and testing software required

* Please read the notes in the encoder documentation

PWT display

Online diagnostics

Range of functions

Performance range of PWT 101 with V3.0.3	EnDat	DRIVE-CLiQ	Fanuc	Mitsubishi	Panasonic	Yaskawa[2]	1 Vpp/ 11 µApp	TTL	HTL[4]
Position display									
Display of the absolute position	✓	✓	✓	✓	✓	✓	–	–	–
Display of the incremental position[1]	✓	✓	✓	✓	–	–	–	–	–
Display and resetting of error messages	✓	✓	✓	✓	✓	✓	–	–	–
Display and resetting of warnings	✓	✓	✓	✓	✓	✓	–	–	–
Display of the transmission status	✓	✓	✓	✓	✓	✓	–	–	–
Datum shift ("electrical zeroing of position")[1]	✓	–	(✓)	(✓)	(✓)	(✓)	–	–	–
Display of the reference mark status	–	–	–	–	–	–	✓	✓	✓
Display of count values between reference marks	–	–	–	–	–	–	✓	✓	✓
Incremental counter with adjustable counting function	–	–	–	–	–	–	✓	✓	✓
Diagnostics									
Display of online diagnostics[1]	✓	✓	✓	✓	✓	✓	–	–	–
PWT display of incremental signals	(✓)	–	–	–	–	–	✓	✓[1]	–
Display of signal level (qualitative)	–	–	–	–	–	–	–	✓	✓
Deviation between Z1 and incremental tracks	–	–	–	–	–	–	✓[3]	–	–
Display of supply voltage and supply current	✓	✓	✓	✓	✓	✓	✓	✓	✓
Memory contents									
Display of encoder information[1]	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additional functions									
Adjustable voltage supply to encoder	✓	✓	✓	✓	✓	✓	✓	✓	✓
Display of homing and limit	–	–	–	–	–	–	✓	✓	–
Display of temperature (internal/external)[1]	✓	✓	–	–	–	–	–	–	–

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

[1] If supported by the encoder
[2] EIB 3391Y is not supported
[3] For encoders with additional sinusoidal commutation signals C and D (Z1 track)
[4] With signal adapter (ID 1093210-01)
(✓) Refer to the operating instructions

Software options
The PWT 101 permits 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.

Available product key
Additional function integrated in the PWT 101 for encoders with Fanuc, Mitsubishi, Panasonic, and Yaskawa interfaces:

Datum shift (ID 1403972-01)*

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

PWT 101 testing device

Testing device	PWT 101
Area of application	• The functional testing of absolute and incremental HEIDENHAIN encoders
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 V_{PP} with Z1 track • 1 V_{PP} • 11 μA_{PP} • 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

⚠️ **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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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* — 1078628-xx
• Brochure: *Cables and Connectors* — 1206103-xx