Product Information

PWM 21
ATS Software
HEIDENHAIN offers an adjusting and testing package for diagnostics and adjustment of HEIDENHAIN encoders with absolute and incremental interfaces. It consists of the following components:

- **PWM 21**: Testing device for connection to a PC through the USB interface
- **ATS**: Adjusting and Testing Software with integrated local encoder database for automatic encoder identification

We recommend returning the PWM 21 to the HEIDENHAIN calibration service in Traunreut every two years in order to ensure traceable, accurate and error-free operation as a testing device.

The PWM 21 is the successor model to the PWM 20. The performance range and the housing are unchanged. Only the board assembly has changed. The PWM 21 is supported as of ATS version V3.2.1. Future versions of ATS will continue to support PWM 20 devices.

**Inspection and testing devices from HEIDENHAIN**

HEIDENHAIN encoders are provided with all information necessary for commissioning, monitoring and diagnostics. HEIDENHAIN offers the appropriate PWM inspection devices and PWT testing devices for encoder analysis. The PWM inspection devices can be used universally. They have low measuring tolerances and can be calibrated. Testing devices, like the PWT 100, have a simpler performance range and larger measuring tolerances. They cannot be calibrated.

**Mounting wizard**

The PWM 21 is recommended as a mounting tool for the adjustment of HEIDENHAIN encoders that require a special mounting wizard (for example LIP 2xx, ERO 2xxx). The PWT 100 test device can be used only to a limited extent for adjusting encoders.

**Available functions**

The functions supported by the ATS software vary depending on the encoder and the encoder interface. The EnDat interface makes it possible not only to display the position value, but also to read out the online diagnostics, to read or write parameters, shift datums, set write-protection and use further inspection functions, etc.

**Important new functions of the ATS software V3.2:**

- **Mounting wizard**: Prepared for new generations of encoders
- **Datum shift**: Support for additional interfaces and information display
- **DRIVE-CLiQ**: Update for the display of parameters and error messages
- **Display of online diagnostics in the control loop**: Revised listening-in with EnDat; Fanuc: Manual switchover α/αi
- **Expansion of incremental counter function**
- **Connect the encoder through the ID of the HEIDENHAIN motor**
## Available functions

### PWM 21 and ATS V3.2 — available functions

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<th>Mitsubishi</th>
<th>SSI</th>
<th>DRIVE-CLIQ</th>
<th>Yaskawa</th>
<th>Panasonic</th>
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<th>HTL</th>
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### Connection dialog, encoder connection via:
- Encoder part number
- Entry of interface and supply voltage
- HEIDENHAIN motor part number

### Diagnostics
- Display of online diagnostics
- Display of online diagnostics in the control loop
- Feed-through mode permitted with PWM 21
- Circular representation of the incremental signals (if available)
- Evaluation of reference signal
- Incremental counter
- Level measurement and logic analysis
- Display of supply voltage and supply current
- Homing and limit display
- Signal recording

### Mounting wizards/testing wizards
For ECI 11xx/13xx/1xx, EKI 11xx/13xx, EBI 11xx/1xx
For ERO 2xxx, ECA 4xxx
For LIP 2xx, LIC 4xxx, LIC 2xxx
Preparation for new encoder generations
Testing and measuring wizard for encoders with functional safety
Assistant for tensioning the scale tape

### Additional functions (if supported by the encoder)
- Comparison of absolute position with incremental position
- Datum shift ("electric zeroing of the position") including info display
- Display of additional datum: Temperature
- Display of additional datum: Position value 2
- Display of additional datum: Additional sensors
- Display of additional datum: Limit position signals
- Display of additional datum: Operating status error sources

### Memory contents
- Display of memory contents
- Modification to memory contents
- Saving the memory allocation
- Comparison of current memory contents with saved memory contents
- Saving the encoder memory

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1) In feed-through mode, preferred in connection with a signal adapter, e.g. SA 100 or SA 110
2) 25 µAPP/3 VPP for service purposes
3) Via signal adapter, for service purposes
4) License key is required and is available only for certain encoders (including EnDat)
5) Including conversion for PT 1000 sensors with properly set EnDat memory parameters

See ATS software operating instructions

DRIVE-CLIQ is a registered trademark of SIEMENS AG.
Testing and measuring device | PWM 21
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**Area of application** | • Testing the correct operation of absolute and incremental HEIDENHAIN encoders  
| | • Mounting wizard for ExI, LIP 200, LIC 4000 and others
**Encoder input** | • EnDat 2.1 or EnDat 2.2 (absolute value with or without incremental signals)  
| | • DRIVE-CLiQ  
| | • Fanuc Serial Interface  
| | • Mitsubishi High Speed Interface  
| | • Panasonic Serial Interface  
| | • Yaskawa Serial Interface  
| | • SSI  
| | • 1 VPP (3 VPP only for service purposes)  
| | • 1 VPP with Z1 track  
| | • 11 µAPP (25 µAPP only for service purposes)  
| | • TTL  
| | • HTL (via signal adapter, only for service purposes)
**Encoder output** | Feed-through mode for certain interfaces (see Available functions > Diagnostics); (an SA 100 or SA 110 signal adapter is required for galvanic isolation)
**Interface** | USB 2.0 (High Speed)
**Voltage supply** | AC 100 V to 240 V (±10 %), 50 Hz to 60 Hz (±2 Hz)  
| | DC 24 V (±2.4 V)  
| | Power consumption approx. 20 W
**Operating temperature** | 0 °C to 45 °C
**Protection** | EN 60 529  
| | IP20
**Dimensions** | ≈ 258 mm x 154 mm x 55 mm

Adjusting and testing software

Adjusting and testing software | ATS software V3.2
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**System requirements and recommendations** | • PC with dual-core processor  
| | • Clock frequency (recommended) > 2 GHz  
| | • RAM > 2 GB  
| | • Operating system: Windows Vista, 7, 8, 10 (32-bit or 64-bit)  
| | • ≈ 500 MB free space on the hard disk  
| | • Screen resolution ≥ 1024 x 768
**Product key** | Management of product keys for optional functions
**Languages** | Choice between English and German

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