PROFIBUS Tester 5 BC-700-PB
Quick and Easy Testing of Bus Physics, Bus Communication and Cabling

The PROFIBUS Tester 5 BC-700-PB is a powerful diagnostic and troubleshooting tool for testing the cables, measuring the signals and analyzing the communication of PROFIBUS networks. It is battery-powered and provides a graphical display, allowing for quick results when working in stand-alone mode. Optionally, also PROFIBUS PA network can be analyzed. In addition, the BC-700-PB supports the export of test results for advanced analysis.

**Testing Bus Cabling, Bus Physics and Bus Communication “All-In-One”**

> Combination of signal tester, storage oscilloscope, protocol analyzer, master simulator and cable tester functionality in a single diagnostics tool
> Stand-alone mode plus extended PC-based diagnostics
> Suited for installation, setup and commissioning, documentation, acceptance testing, network optimization, preventive maintenance, troubleshooting as well as laboratory tests

**Highly Mobile Bus Tester for Testing Even Without a Notebook**

> Battery-powered operation without the need for additional power supply
> Graphical display providing easy-to-understand presentation of test results
> Comprehensive network tests in stand-alone mode without requiring a notebook

**Enhanced Diagnostic Features Through Complementing PC-Based Software**

> Many additional features for executing, analyzing and managing bus tests in PC mode (Trend, Topology Scan, Master Simulator, Oscilloscope, Frame Analyzer)
> Quick Test and User-Controlled Test for easy network status assessment at the push of a button
> Generation of test reports describing the actual status of the PROFIBUS installation
> Ideal for less experienced users as well as for fieldbus specialists

**Optional Measuring Adapter for MBP (Manchester Coded Bus Powered) Physics**

> Specific signal analysis supporting MBP Physics (feeding voltage, signal deviation, signal polarity, bitrate divergence)
> Complete protocol analysis directly at PROFIBUS PA segment
### Technical Data

#### Diagnostics Functionality

<table>
<thead>
<tr>
<th>Protocol and Frame Analysis</th>
<th>PROFIBUS DP-V0 and DP-V1, automatic baud rate detection in the range of 9.6 kbit/s … 12 Mbit/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal Analysis ...</td>
<td>PROFIBUS DP-V0, DP-V1, FMS and MPI</td>
</tr>
<tr>
<td>... via EIA-485</td>
<td>Signal quality index: 0 ... 5,000, determined from signal level as well as signal/noise ratio and rise time; signal sampling with 8/16 samples per bit</td>
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<tr>
<td>... via MBP (requires optional adapter)</td>
<td>Fieldbus feeding voltage: 0 V ... 35 V at 0.1 V resolution, signal level: 100 mV ... 1,200 mV at 10 mV resolution, signal polarity, bitrate divergence: ±1.2 % at 0.01 % resolution, signal sampling with 128 samples per bit</td>
</tr>
<tr>
<td>Oscilloscope Display (Not Available for MBP)</td>
<td>Test range: ±5 V at 10 mV resolution (differential), 0 V ... 15 V at 15 mV resolution (A or B to DGND); sampling rate: up to 384 Msamples/s; sampled points: 2,400 (signal details), 6,192 (oscilloscope analysis)</td>
</tr>
<tr>
<td>Topology Scan (Not Available for MBP)</td>
<td>Active, maximum distance: 230 m, accuracy: ±2 m</td>
</tr>
<tr>
<td>Cable Test (Not Available for MBP)</td>
<td>Active, supported cable segment length: 5 m ... 1,500 m, accuracy: 5 %</td>
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<tr>
<td>Operation</td>
<td>Via graphical colour display, four function keys and scrollwheel including central push-button or via PC/notebook</td>
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<tr>
<td>Internal Memory Capacity</td>
<td>3 user-definable network directories (segment and test location) for storing quick tests, trend logs and cable test results</td>
</tr>
<tr>
<td>Trigger</td>
<td>IN: L = 0 V ... 0.8 V, H = 2.4 V ... 24 V; pulse &gt; 10 μs, active high OUT: approximately 5 V, active low (connection to storage oscilloscope)</td>
</tr>
<tr>
<td>PC Operating Software</td>
<td>PROFIBUS Diagnostics Suite, see separate datasheet for details</td>
</tr>
<tr>
<td>Connectors</td>
<td><strong>EIA-485</strong> (PROFIBUS DP) Connector, 9 pins, power supply for external bus termination</td>
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<tr>
<td></td>
<td><strong>MBP</strong> (PROFIBUS PA) Connector, 3 pins, for screw terminals at optimal measuring adapter, measuring cable set including 3 probes (adapter for MBP measurement is attached to D-sub connector)</td>
</tr>
<tr>
<td>USB</td>
<td>V 2.0, high speed 480 Mbit/s, galvanically isolated</td>
</tr>
<tr>
<td>Dimensions (H x W x D)</td>
<td>35 mm x 220 mm x 110 mm</td>
</tr>
<tr>
<td>Power Supply</td>
<td>Built-in three-cell lithium-ion battery supporting 11.1 VDC or external AC adapter 100 VAC ... 240 VAC, 50/60 Hz (galvanically isolated)</td>
</tr>
<tr>
<td>Operating/Storage Temperature</td>
<td>Operating temperature: 0 °C ... 50 °C, storage temperature: -20 °C ... 70 °C</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>Air humidity: 10 % ... 90 % without condensation</td>
</tr>
<tr>
<td>Weight</td>
<td>Test tool, no cable: approximately 0.75 kg; complete carrying case: approximately 4.2 kg</td>
</tr>
<tr>
<td>Conformity</td>
<td>CE, FCC, VCCI</td>
</tr>
</tbody>
</table>

#### Scope of Delivery

- **Hardware**: PROFIBUS Tester 5 BC-700-PB, power supply unit 100 VAC ... 240 VAC, 50/60 Hz with connecting cables for Europe and USA, adaptor cables, carrying case
- **Software**: PROFIBUS Diagnostics Suite (PC software for Windows on CD-ROM), BC-700-PB upgrade license (on CD-ROM, for PROFIBUS PA option)
- **Documentation**: Device manual, “Getting Started” manual

#### Order Numbers

- **DDA-NN-006014** PROFIBUS Tester 5 BC-700-PB
- **DDL-NL-006010** PROFIBUS PA option for BC-700-PB (BC-700-PB serial number required for order placement)

#### Additional Products and Services

- **BC-600-PB-CB-M12** D-Sub to M12 adapter set with T-piece and M12 bus termination for PROFIBUS DP
- **PB-LSZ-CHB3** Digital fieldbus leakage current clamp for locating EMC problems, 40 Hz ... 1,000 Hz, Min/Max, Data Hold, measuring cables, supplied in handy case (fits into empty compartment of carrying case)
- **BC-PBMB-PB-S** D-Sub service interface with active bus termination and 90° angled connector for PROFIBUS DP
- **BC-M12DP-PB** M12 service interface for PROFIBUS DP, comprising M12 T-piece, end cap, M12 connection cable (1 m)
- **TRA-PR-TECH** Training „PROFIBUS Technology“, 2 days
- **TRA-PB-5** Training „PROFIBUS Troubleshooting“, 3 days

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