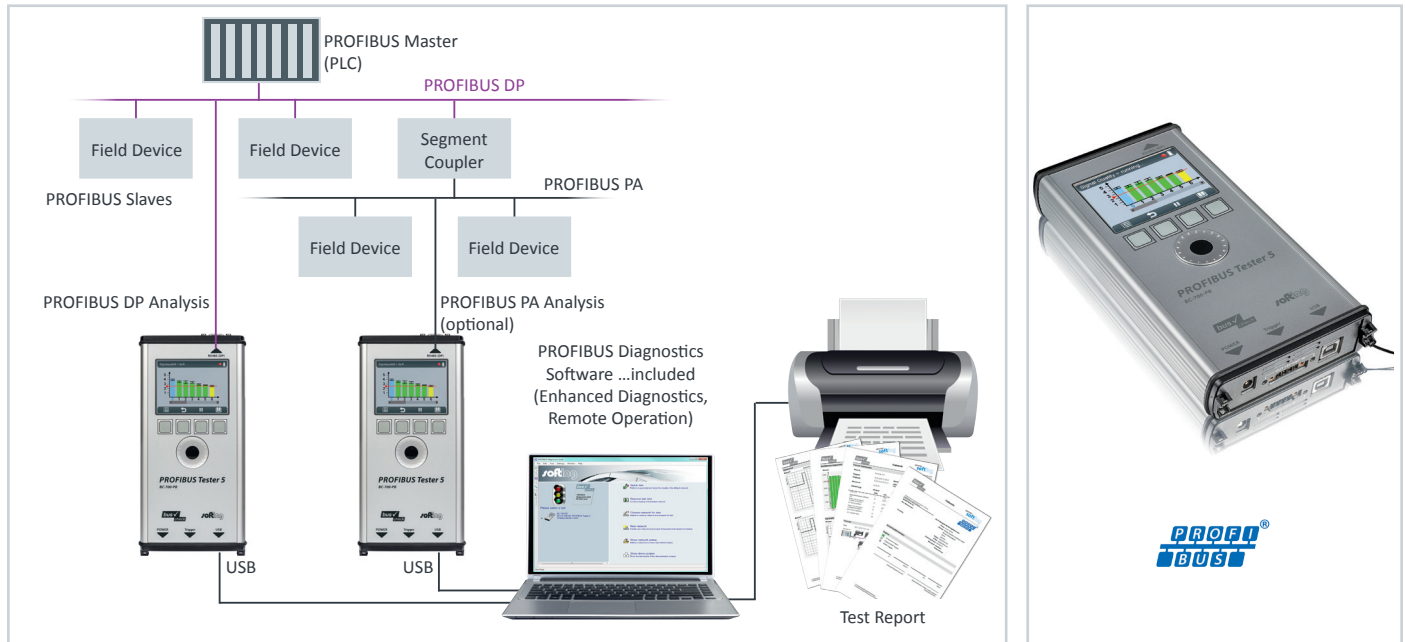


PROFIBUS Tester 5 (BC-700-PB)

Quick and Easy Testing of Bus Physics, Bus Communication and Cabling

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, PROFIBUS Tester 5 (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 ...Computer Optional

- 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 (no computer required): bus status, signal quality, cable test, station localization, oscilloscope

Enhanced Diagnostic Features Through PC-Based Software (Included)

- Many additional features for executing, analyzing and managing tests (Trend, Topology Scan, Master Simulator, Oscilloscope, Frame Analyzer)
- Quick Test and User-Controlled Test for easy network status at the push of a button
- Generation of test reports describing status of the PROFIBUS installation
- Suitable for range of user types: novice to 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

	Stand-alone Operation	PC-based Operation
Measurement Methods		
Cable test	✓	
Bus status (measurement of important parameters)	✓	✓
Signal quality	✓	✓
Quick test (network status)	¹	✓
User-controlled test (network status)		✓
Trend (long-term recording of quality index and errors)	¹	✓
Topology (sequence of stations and distances)	✓	✓
Oszilloscope	✓	✓
Frame recording and displaying		✓
Master Simulator	✓	✓
Cable Test		
Cable Length	✓	
Check of bus termination	✓	
Detection wire break, shield break, short circuit	✓	
Report of cable test results		✓
Bus and Network Status		
Idle voltage/baudrate, plugged to station ...	✓	✓
Number of masters/slaves/commissioned but not active	✓	✓
Network evaluation (protocol, signal quality, errors)	✓	✓
Network statistics (repetitions, diagnostic messages, TTR)	✓	✓
Station scan (Live List) including changes	✓	✓
Station evaluation (protocol, signal quality)	✓	✓
Station statistics (repetitions, diagnostic messages, quality index)	✓	✓
Comprehensive evaluation of network health		✓
Comprehensive protocol analysis including Live List and statistics		✓
GSD-based decoding of diagnostic messages		✓
Signal Quality		
Quality Index as bar graph	✓	✓
Signal-to-noise ratio and rise times		✓
Trending		
Long-term recording of quality index and errors	¹	✓
Topology		
Active TDR measurement with graphical representation		✓
Passive station localization (non-interacting)	✓	
Oszilloscope		
Signal representation A–B up to 384 MHz scan rate	✓	✓
Signal representation A-GND und B-GND up to 192 MHz scan rate		✓
Zoom/shift	✓	✓
Trigger: no trigger/level/address/error frames	✓	✓
Saving oscilloscope recordings		✓
Frame Recording		
Instant recording (ring buffer)		✓
Long-term recording (to files)		✓
Frame-controlled recording (trigger)		✓
Recording filter and display filter		✓
Comprehensive frame decoding		✓

¹ Test can be conducted and stored in stand-alone operation, evaluation of test results in PC mode only

Technical Data

Diagnostics Functionality

Protocol and Frame Analysis PROFIBUS DP-V0 and DP-V1, automatic baud rate detection in the range of 9.6 kbit/s ... 12 Mbit/s

Signal Analysis ... PROFIBUS DP-V0, DP-V1, FMS and MPI

... via EIA-485 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

... via MBP (requires optional adapter) 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: $\pm 1.2\%$ at 0.01 % resolution, signal sampling with 128 samples per bit

Oscilloscope Display (not available for MBP) 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), 8,192 (oscilloscope analysis)

Topology Scan (not available for MBP) Active, maximum distance: 230 m, accuracy: ± 2 m

Cable Test (not available for MBP) Active, supported cable segment length: 5 m ... 1,500 m, accuracy: 5 %

Operation Via graphical colour display, four function keys and scrollwheel including central push-button or via PC/notebook
Display localization: EN, DE, ES, FR, IT, PL, PT

Internal Memory Capacity 3 user-definable network directories (segment and test location) for storing quick tests, trend logs and cable test results
Trend logging: max. 99 hours

Trigger IN: L = 0 V .. 0.8 V; H = 2.4 V .. 24 V; pulse > 10 μ s, active high
OUT: approximately 5 V, active low (connection to storage oscilloscope)

PC Operating Software PROFIBUS Diagnostics Suite, see separate datasheet for details

Connectors EIA-485 (PROFIBUS DP) PROFIBUS D-sub connector, 9 pins, power supply for external bus termination

MBP (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)

USB V 2.0, high speed 480 Mbit/s, galvanically isolated

Dimensions (H x W x D) 35 mm x 220 mm x 110 mm

Power Supply Built-in three-cell lithium-ion battery supporting 11.1 VDC or external AC adapter 100 VAC ... 240 VAC, 50/60 Hz (galvanically isolated)
The rechargeable battery has a runtime of up to 5 hours (runtime depends on the performed test functionality and rate of wear of the rechargeable battery), battery is charged via external AC adapter

Operating/Storage Temperature Operating temperature: 0 °C ... 50 °C, storage temperature: -20 °C ... 70 °C

Relative Humidity Air humidity: 10 % ... 90 % without condensation

Weight Test tool, no cable: approximately 0.75 kg; complete carrying case: approximately 4.2 kg

Conformity CE, FCC, VCCI

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
Measuring adapter BC-700-H1, measuring cable set (for PROFIBUS PA option)

Software PROFIBUS Diagnostics Suite (PC software for Windows on CD-ROM)
PROFIBUS Tester 5 (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-NN-006012 PROFIBUS Tester 5 (BC-700-PB) with oscilloscope option

LRA-NN-006011 Oscilloscope option (oscilloscope view in stand-alone mode)

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

Additional Products and Services

ACA-NN-006031 EIA-485 D-Sub adapter cable for testing operational networks with reduced influence on segment operation

ACA-NN-006033 D-Sub to M12 adapter set with T-piece and M12 bus termination for PROFIBUS DP

DDA-ZZ-004010 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)

ACL-NN-006037 D-Sub service interface with active bus termination and 90° angled connector for PROFIBUS DP

ACA-NN-006034 M12 service interface for PROFIBUS DP, comprising M12 T-piece, end cap, M12 connection cable (1 m)

TRA-PB-TECH Training „PROFIBUS Technology“, 2 days

TRA-PB-TS Training „PROFIBUS Troubleshooting“, 3 days

optimize!



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