

PROFIBUS Diagnostics Suite

One software for all test tools

Product Information

Areas of Application

The PROFIBUS Diagnostics Suite is an universal PC application built around the extensive functionality of Softing's "bus-check" family of PROFIBUS test tools.

Key features:

- Wide variety of tests and analyses
- Detail analysis of fieldbus problems
- Easy-to-use test data management
- Preventive maintenance
- Creation of test reports

Easy and Intuitive Use

On program startup, the start page presents all connected tools for selection and provides the most frequently used functions. With just one click of the mouse, users can run a Quick Test that delivers full diagnostics of the PROFIBUS.

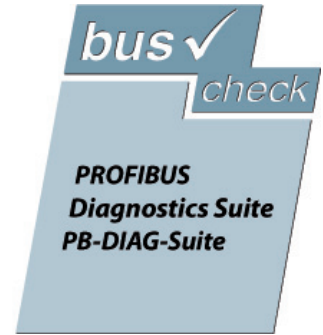
Standard Functions

The **Bus Status Bar** continually shows the bus state regardless of whether a test is currently running.

Bus State: active, 1.5 Mbit/s (AUTO) Token Rotation Time: 1.10 / 1.50 / 2.80 msec | Frame Errors: 0

The test results for the PROFIBUS network are saved as the network status. Previously collected information that is only available in specific operating states is combined with new test results and thus allows easier and more precise diagnostics. All important data at a glance: After a Quick Test or User-Controlled Test, the **Network Status Overview** displays the overall diagnostic result and presents a complete overview of the bus physics and bus communication.

OVERALL DIAGNOSTICS		Measurement at Test Location: Bus end-15	
"With restrictions" <small>Detail diagnosis required</small>	Status	Test finished!	
	Date	4/26/2010	
	Start Time	4:15:06 PM	
Bus Communication <small>For details see tab "Protocol"</small>		Protocol Diagnosis of Test Location: Bus end-15	
	Baudrate	1.5 Mbit/s (AUTO)	
	Stations		
	active stations (Masters/SP)	2	
	slaves	5	
	- thereof not answering	0	
Critical Events			
frame errors	0		
re-starts	0		
frame repetitions	0		
diagnostic messages	0		
Bus Physics <small>For details see tab "Signal Quality"</small>		Quality Indexes of Test Location: Bus end-15	
	Minimum	200	
	Average	1878	
	Maximum	4950	
	Critical quality index	2500	
	Stations with quality index below critical limit	5 of 7	
Stations not measured (time-out)	0		
Topology			
Topology:		1/26/2010 7:21:21	



Test results that might be useful to identify problems on the bus are shown in red in the right-hand column. The Protocol and Signal Quality tabs provide details for in-depth analyses. On the **Protocol** tab, a detailed overview of the bus communication is displayed. The segment, master and slave levels each provide different information.

If the appropriate GSD files are imported for identified devices, error messages (diagnostics), configuration and parameters can be displayed as plain text. The plain text decoding feature offers a completely new quality level compared to previous protocol analyzers.

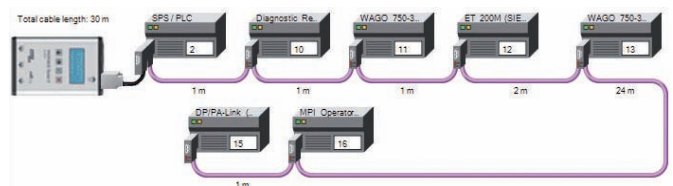
1.5 Mbit/s Segment

- (2) SPS / PLC
- (10) Diagnostic Repeater (SI)
- (11) WAGO 750-333 (WAGO)
- (12) ET 200M (SIEMENS)
- (13) WAGO 750-333 (WAGO)
- (15) DP/PA-Link (SIEMENS)
- (16) MPI Operator Panel

Bus Data	
Baud Rate	1.5 Mbit/s
Bus cycle (min./avg./max.)	1.10/1.51/2.68 ms
Bus Devices	
Total number of Masters	2
Total number of non-DP devices	0
Total number of Slaves	5
- thereof not answering	0
- thereof with diagnostic messages	0
Identification	
Total Number of Events	
Retries	0
Diagnostic messages	0
Restarts	0



The **Signal Quality** tab shows an overview of the bus physics by indicating the quality index measured for each bus device. In a **Topology Scan**, the sequence and distances of all passive bus devices are determined.



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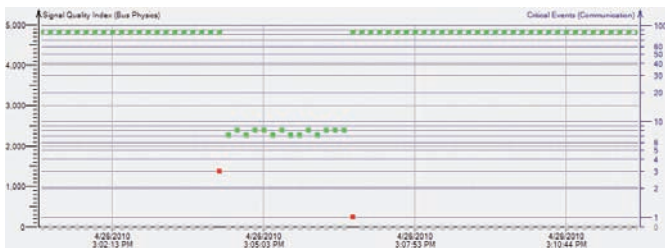
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The **Trend Test** is used for finding rare or sporadic faults over a prolonged period of time and covers both bus communication and bus physics.



Based on the network status, a detailed **Test Report** can be generated for an active test tool or for an open file. The report can be printed or exported to a PDF or Excel file.

Expert Functions

The **Oscilloscope** function allows analyzing the signal waveform.

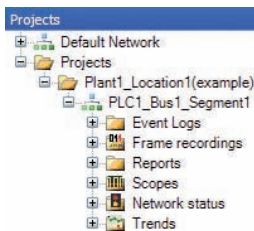


Using the **Frame Analysis** function, individual frames can be examined and analyzed.

Time	Address	Length	Direction	Device	Request	Response
41.272	13.16.35.096744	1	→ 1	FCL	Request	TOVEN
41.273	13.16.35.096744	1	→ 2	DP	Request	DATA EXCHANGE 00 00 00 00 00 00
41.274	13.16.35.096935	2	→ 1	DP	Request	DATA EXCHANGE 00 00 00 00 00 00 00
41.275	13.16.35.097146	1	→ 4	DP	Request	DATA EXCHANGE
41.276	13.16.35.097224	4	→ 1	DP	Request	DATA EXCHANGE 00
41.277	13.16.35.097556	1	→ 3	DP	Request	DATA EXCHANGE DP
41.278	13.16.35.097878	3	→ 1	DP	Request	DATA EXCHANGE DP
41.279	13.16.35.097679	1	02 → 0.60	DP	Request	DIAGNOSIS
41.280	13.16.35.097778	1	→ 10	FCL	Request	FCL STATUS
41.281	13.16.35.098027	2	→ 1	FCL	Request	TOVEN
41.282	13.16.35.098078	1	→ 2	DP	Request	DATA EXCHANGE 00 00 00 00 00 00 00
41.283	13.16.35.098269	2	→ 1	DP	Request	DATA EXCHANGE 00 00 00 00 00 00 00
41.284	13.16.35.098460	1	→ 4	DP	Request	DATA EXCHANGE
41.285	13.16.35.098558	4	→ 1	DP	Request	DATA EXCHANGE 00
41.286	13.16.35.098640	1	→ 3	DP	Request	DATA EXCHANGE DP
41.287	13.16.35.098712	3	→ 1	DP	Request	DATA EXCHANGE DP

Project Explorer

The integrated **Project Explorer** offers an easy and efficient way to manage the test results.



Functionality of Supported Test Tools

Test functions	Standard tests										Expert tests					
	Stand-alone operation	Permanent bus status	Network status					Trend		Oscilloscope analysis	Frame analysis	Trigger				
			Quick and long-term test	Overview phys. & comm.	Protocol Analysis	Signal Analysis	Topology	Master simulator	Signal quality			Critical events	Test report	Input	Output	
Protocol Analyzer BC-4x0-PB			✓	✓					✓	✓	✓					
PROFIBUS Inspektor BC-502-PB/CL			✓	✓					✓	✓	✓					
PROFIBUS Tester 4 BC-600-PB	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	in prep.	✓		
PROFIBUS Tester 3 PB-T3		✓	✓		✓	✓	✓	✓	✓							✓

System Requirements

Operating systems Windows 2000, XP and VISTA (32 Bit)

PC hardware*

RAM:

≥ 500 MByte for Windows 2000/XP

≥ 1 GByte for Windows VISTA

Screen resolution

≥ 1024x768 pixels (XGA)

USB interface 2.0

For recording at baud rates up to 1.5 Mbit/s:

Processor ≥ 1 GHz

For recording at baud rates over 1.5 Mbit/s:

Processor ≥ 2 GHz

* The above minimum requirements are only general guidelines.

Requirements may be higher depending on the PC/notebook used.

Order No.

PB-DIAG-SUITE PROFIBUS Diagnostics Suite, PC software for Windows 2000/XP/VISTA (32 Bit) on CD-ROM for PB-T3, BC-4x0-PB, BC-502-PB and BC-600-PB, supplied with Getting Started manual (English + German)