

PROFIBUS PA Monitor

Test, Optimization and Troubleshooting

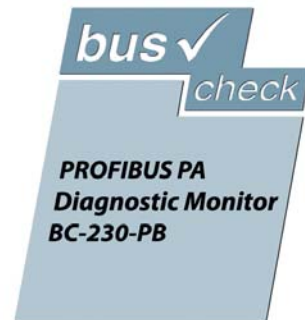
Areas of Applications

The Profibus PA Diagnostic Monitor, BC-230-PB, is used to examine the operation of a live Profibus-PA segment without interfering with its operation. It is powered by the fieldbus so that no battery or external power source is required. The monitor is useable also in hazardous areas. It is intended for maintenance personnel to verify segment operation or to troubleshoot an errant segment.

Measurement Features

- automatic segment test gives a OK/BAD indication without operator intervention
- detects number of devices on the segment
- displays device addresses decimal and hexadecimal
- indicates device add & drop
- displays number of detected retransmissions
- displays segment voltage
- displays signal level for all devices with indication of the lowest detected signal level
- detects short circuits between either of signal wires and cable shield
- measures average and peak noise in three bands: below, at and above fieldbus frequency

Product Information



Reports & Data Management

The PROFIBUS PA Diagnostic Monitor records measurement data and saves up to eight segment reports for transfer to a PC via a USB port. The reports are saved as Microsoft® Excel files as a comprehensive commissioning and operations report. Data collected from periodic segment verification testing or during troubleshooting can be simply compared to the segment baseline/history measurements. Data can be displayed as tables and graphs using Microsoft® Excel. Considerable savings can be achieved by reducing commissioning time and verifying the correct operation of the segment.

Report 4 Segment Report			
Segment Measurements	Data	Acceptable Values	OK/BAD
Voltage	31.6V	9.0V Minimum	OK
Lowest Device Signal	1358mV	151mV Minimum	OK
Lowest Device Signal Address	2 (2H)		
Avg Fieldbus Frequency Noise	0mV	74mV Maximum	OK
Peak Fieldbus Frequency Noise	0mV	74mV Maximum	OK
Avg Low Frequency Noise	0mV	149mV Maximum	OK
Peak Low Frequency Noise	5mV	149mV Maximum	OK
Avg High Frequency Noise	0mV	149mV Maximum	OK
Peak High Frequency Noise	10mV	149mV Maximum	OK
Shield Short	No Shorts	No Shorts	OK
Most Recent Add/Drop Address	No Devices Added/Dropped		
Device Add or Drop	None Added/Dropped	None Added/Dropped	OK
Number of Active Devices	3		

Device Measurements	Data	Acceptable Values	OK/BAD
Device Address	2 (2H)		
Signal Level	1392mV	151mV Minimum	OK
Added/Dropped	Not Added/Dropped	Not Added/Dropped	OK
Master or Slave	Master		
Retransmits	0	0	OK
Device Address	21 (15H)		
Signal Level	1450mV	151mV Minimum	OK
Added/Dropped	Not Added/Dropped	Not Added/Dropped	OK
Master or Slave	Slave		
Retransmits	0	0	OK
Device Address	22 (16H)		
Signal Level	1424mV	151mV Minimum	OK
Added/Dropped	Not Added/Dropped	Not Added/Dropped	OK
Master or Slave	Slave		
Retransmits	0	0	OK

Measurement Summary: All Measurements are OK

Softing AG

Industrial Automation
Richard-Reitzner-Allee 6
85540 Haar, Germany

Tel.: +49 (0)89 4 56 56-340
Fax: +49 (0)89 4 56 56-399
info.automation@softing.com
www.softing.com

Softing North America, Inc.

29 Water Street, Suite 301
Newburyport, MA 01950
USA

Fon: +1 978 499 9650
Fax: +1 978 499 9654
info.usa@softing.com
www.softing.us

Approvals

- CE
- FCC
- ATEX Ex ia IIC T4
- FM US and Canada:
 - Class I, Div 2, ABCD, T4
 - Class I, Zone 2, IIC T4
 - Class I, Div 1, ABCD, T4
 - Class I, Zone 0 and 1, AEx/Ex ia IIC T4

Specifications

Input voltage	Fieldbus Mode: 8 to 32 VDC USB Mode: 4.1 to 5.5 VDC
Input current	Fieldbus mode: 10 mA max. * USB mode: 30 mA max.
Power dissipation	Fieldbus mode: 320 mW max. (@ 32 VDC) USB mode: 165mW max. (@ 5.5 VDC)
Operating Temperature	-20 to +50°C **
Dimensions	146 x 88 x 28 mm (5.7 x 3.5 x 1.1 inches)
Weight	378 g (0.83lb)
Case Material	ABS
DC Voltage measurement range	8 to 32 ± 0.5 VDC
Signal level measurement range	0.12 to 2 Vpp ±10% ± 25mVpp
Noise measurement ranges:	
LF (50Hz to 4kHz):	0 to 1000 mVpp ±15% ± 25 mVpp ***
FF (9kHz to 40kHz):	0 to 1000 mVpp ±10% ± 25 mVpp ***
HF (90kHz to 350kHz):	0 to 250 mVpp ±20% ± 25mVpp ***

* In fieldbus mode the BC-230-PB is powered by the fieldbus and draws approximately 9.4 mA of current from the segment (depending on bus voltage and ambient temperature).

** Display update speed is impaired below -10° C

*** Vpp = Volts peak-to-peak; excessive noise adjacent to the fieldbus frequency (FF) band will prevent the BC-230-PB from reading the fieldbus data and thus reduce functionality

Product Information

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System Requirements

PC/Notebook with either Windows 2000, XP or VISTA and USB interface version 1.1 or 2.0 and Microsoft® Excel.

Scope of Supply

Hardware

- BC-230-PB with fieldbus MBP und USB interface
- fieldbus connection cables with mini-hook probes and clip-on probe
- BC-230-PB USB cable

Software

CD with driver and assistant software

Documents

- user manual
- certificate of calibration
- ATEX safety instructions
- product insert
- EC type examination certificate



Order Number

BC-230-PB