



Mobile tool for commissioning and troubleshooting of fieldbus segments

- Complete Kit for comprehensive Physical Layer measurements
- Efficient troubleshooting
- For FOUNDATION Fieldbus H1 and PROFIBUS PA
- Installation in Zone 2/Class I, Div. 2
- Simplified commissioning

Function

The Mobile Advanced Diagnostic Module DM-AM is a comprehensive measurement tool for fieldbus. It is well suited for commissioning and maintenance personnel, as well as other fieldbus experts. Passive input circuits and external power supply leave the physical layer untouched, avoiding alteration of the signal when connected. The module can be set up at any point on the fieldbus segment.

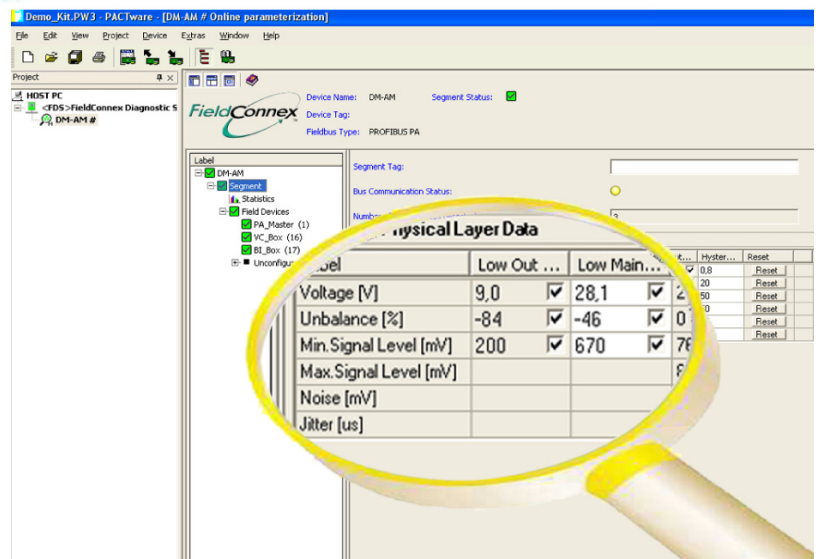
The module communicates directly with a laptop and receives power via the USB 2.0 full-speed port. A mounting bracket and connection for an external power supply enable temporary installation into a cabinet for long-term monitoring. The module provides the exact segment and individual device data needed for analysis of the fieldbus physical layer. Intermittent segment malfunctions can be traced without the need for permanent connection. The basic Diagnostic Manager is included and displays all measurement values with fast screen updates.

The optional Diagnostic Manager - Professional Edition offers additional functionality: the Commissioning Wizard generates automated reports. The software displays clear-text messages for troubleshooting of out-of-spec behavior. The powerful built-in oscilloscope, which can be triggered even on seldom occurring events displays wave forms of fieldbus signals for maximum detail.

Connection



Composition



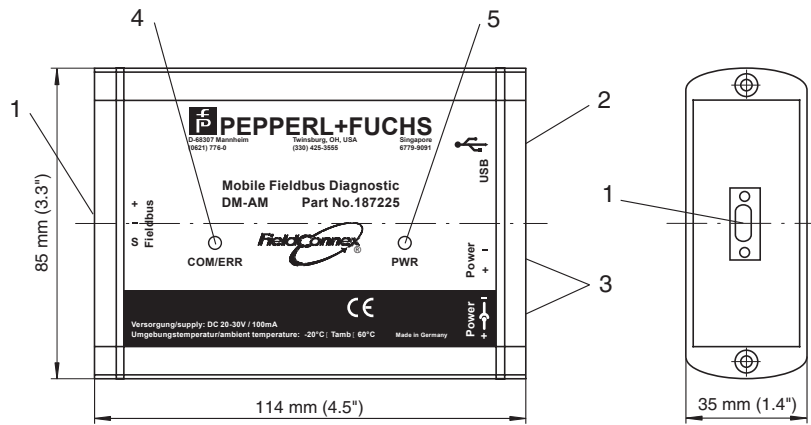
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Supply	
Rated voltage	20 ... 30 V
Rated current	70 ... 30 mA
Power loss	0.7 W
Fieldbus interface	
Number of segments	1
Fieldbus type	FOUNDATION Fieldbus/PROFIBUS PA
Rated voltage	9 ... 32 V
Indicators/operating means	
LED PWR	green: Power on
LED COM ERR	yellow: bus activity; red 2 Hz flashing: alarm; red: hardware error
Interface	
Interface type	USB: square type B socket
Directive conformity	
Electromagnetic compatibility	standards
Directive 89/336/EC	EN 61326
Standard conformity	
Electromagnetic compatibility	NE 21
Protection degree	IEC 60529
Shock resistance	EN 60068-2-27
Vibration resistance	EN 60068-2-6
Ambient conditions	
Ambient temperature	-20 ... 60 °C (253 ... 333 K)
Storage temperature	-40 ... 85 °C (233 ... 358 K)
Relative humidity	< 95 % non-condensing
Shock resistance	15 g , 11 ms
Vibration resistance	1 g , 10 ... 150 Hz
Mechanical specifications	
Connection type	fieldbus: screw terminals, removable with retaining screws external power: screw terminals, removable with retaining screws USB: square type B socket
Core cross-section	2.5 mm ²
Housing material	aluminium
Housing width	35 mm
Height of housing	114 mm
Housing depth	85 mm
Protection degree	IP20
Mass	device 100 g , transport case, incl. accessories 1000 g
Data for application in conjunction with hazardous areas	
Statement of conformity	TÜV 05 ATEX 2923 X
Group, category, type of protection, temperature classification	⊕ II 3G EEx nA [nL] IIC T4
Directive conformity	
Directive 94/9 EC	IEC 60079-15

Supplementary information

Statement of Conformity, Declaration of Conformity and instructions have to be observed. For information see www.pepperl-fuchs.com.

Dimensions



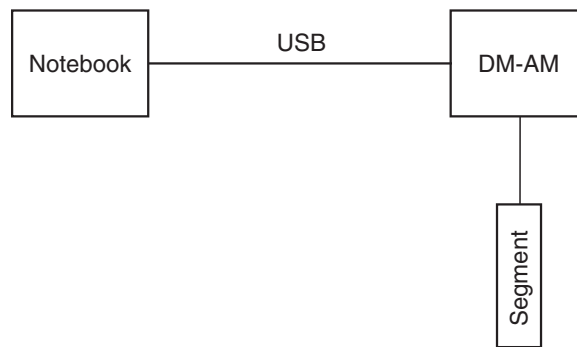
all dimensions without tolerance indication

Description:

- 1 Connection for fieldbus
- 2 USB connection
- 3 Connections for power supply

- 4 LED Communication/Error
- 5 LED Power

Installation note



Installation notes see manual.

Scope of delivery

- Transport case
- USB 2.0 cable
- Fieldbus cable with test clamps and DM-AM Fieldbus connector
- Mounting clamp for DIN rail
- Software package (inclusive Diagnostic Manager, Basic Edition)

Accessories

- Software User Interface: Diagnostic Manager, Professional Edition DTM-FC.ADM
- Wall Power supply DM-AM-WPS,
AC Input: FRIWO exchangeable main plug (EURO, UK, USA / Japan, Australia, IEC)
DC Output: Universal output plug system

Functional overview

Fieldbus voltage
Unbalance detection

The segment voltage is measured in a range of 0 V ... 35 V.
A capacitive or resistive short between any fieldbus wire and shield is measured and given in a range between -100 % ... +100 %.
(-100% = short against - wire, +100% = short against +wire)

Termination	Over- and Undertermination are detected and reported.
Communication level	Node specific communication levels are measured in a range of 0 V ... 2.5 V.
Jitter	The jitter level of a fieldbus segment is directly related to the quality of the communication of a segment. The quality of the power supply, field devices and other equipment as well as cable length and types could influence the jitter level. The jitter is either segment or device specific measured in a range of 0 μ sec ... 8 μ sec.
Signal polarity	For each node the polarity of the signal modulation is given.
Noise measurement	The noise is measured in a frequency range between 100 Hz ... 140 kHz. The noise measurement is node address specific to detect device specific noise emission.
Communication errors statistics	Segment-specific error counters e.g. for CRC errors and framing errors are displayed.