



TIME TO RELAX

**ADVANCED DIAGNOSTICS
EXPERT SYSTEM AT WORK**





Expert System Makes Your Life Easy

A robust FOUNDATION Fieldbus H1 and PROFIBUS PA network is the backbone on which your process plant operates. FieldConnex Advanced Diagnostics includes an expert system that deciphers measurements and precisely diagnoses physical layer issues.

The expert system is built into the FieldConnex® Diagnostic Manager and takes care of interpretation. It provides information in clear text and helps you stay in control of your fieldbus communications.

FieldConnex Advanced Diagnostics consist of the Advanced Diagnostic Module (ADM), the Diagnostic Manager and Diagnostic Bus. It helps automate working procedures in the everyday life of a plant automation system, replacing cumbersome methods and inadequate tools during commissioning, monitoring, and troubleshooting.

C SEGMENT COMMISSIONING WITH JUST A FEW MOUSE CLICKS

A few mouse clicks initiate automated testing of the installation and device communication and produce detailed documentation. This means an 80 percent reduction in the network commissioning, resulting in earlier plant start-up.

M MONITORING ONLINE WITH EARLY WARNINGS IN REAL TIME

While the ADM monitors the fieldbus infrastructure, it checks against limits set during commissioning. If the infrastructure is outside of these limits, alarms enable timely intervention rather than unwanted plant shut-downs, and it allows for truly pro-active plant upkeep. When instruments are added or after each maintenance procedure, the ADM reminds you to re-check the fieldbus infrastructure.

T TROUBLESHOOTING WITH EXPERT ADVICE

The expert system diagnoses the segment and creates easy-to-understand messages that indicate possible causes. Therefore, maintenance crews know immediately what needs to be repaired.

You can rely on the fact that your automation system works based on a solidly performing fieldbus infrastructure. The expert system is at work for you. Time to relax!

HOW ADVANCED DIAGNOSTICS WORK FOR YOU

EXPERT SYSTEM ACCELERATES WORKING PROCEDURES

The Diagnostic Manager provides an expert system that learns and interprets physical layer data. Based on a complex set of rules, it provides detailed fault analysis. Many wizards and additional functions simplify evaluation and upkeep of the physical layer: a commissioning wizard, alarm lists, segment monitoring views with NAMUR color indication, and data export function for analysis of long-term trends.

REMOTE ACCESS AVOIDS UNNECESSARY FIELD TRIPS

The Diagnostic Manager software package allows live data access to the ADM from the safety of the control room. Even analysis and consultation by an off-site fieldbus expert is possible for fast and cost-effective resolution of those sometimes hard-to-track faults.

MAIN DECISION CRITERIA

With plant availability and maintenance strategies as the major driving factors, each work step – commissioning, monitoring and troubleshooting – requires consideration. For the right choice of ADM and supporting technology additional criteria should be considered:

- The amount of information that should be available in the control room
- Retrofit of existing plants
- The engineering required for setting up physical layer diagnostics

FieldConnex also offers solutions for fieldbus practitioners on the go. The innovators at Pepperl+Fuchs, first to introduce physical layer diagnostics, will continue to bring you solutions that make it easier to work with fieldbus.



DM-AM-KIT



EXPERTS ON THE GO

The **mobile ADM** is made for the traveling fieldbus practitioners. This full-function tool supports all working procedures along the lifecycle of a fieldbus segment. With a USB connection for power and communication with any laptop, the mobile ADM is intended for work in the field. Connected to any 24-volt power supply it can even be left unattended to help diagnose a troubled segment.



KT-MB-DMA



RETROFIT FOR EXISTING INSTALLATIONS

Full function diagnostics are simple with the **Advanced Diagnostic Module Kit** consisting of motherboard and ADM. It can be wired to any fieldbus segment in parallel to the existing power supply. It includes remote software support via the Diagnostic Manager. This is the choice for retrofitting any existing fieldbus installation.



HD2-DM-A.RO



STATIONARY – MONITORING ONLY



Without software interface, this module is “plug and play”: Physical layer monitoring starts by plugging the module in without any extra engineering. Optionally the user can easily set warning levels via DIP switches. The module reports unwanted conditions via voltage-free contact – it’s a great tool in combination with the mobile ADM for commissioning and troubleshooting.



HD2-DM-A



STATIONARY – FULL FUNCTION

The **Advanced Diagnostic Module (ADM)** is at the core of FieldConnex diagnostic solutions. It plugs into the FieldConnex Power Hub. Full measurement capabilities make this module the best choice for providing highest plant availability and the lowest commissioning and maintenance costs. Passive input circuits leave the physical layer unchanged providing true, exact measurements.

The ADM detects gradual or sudden changes and helps trace even intermittent malfunctions. A dedicated diagnostic bus enables automated integration of segment information – not just the ADM – into Distributed Control Systems (DCS) or Plant Asset Management (PAM). The fieldbus physical layer itself becomes a manageable asset.

EXPERT SYSTEM PROVIDES INSIGHT

NEW



DTM-FC-AD[.UPG]

DTM-FC-AD.1[.UPG]

DTM-FC.ADM[.UPG]



The **Diagnostic Manager** is the software program that displays the data of the ADM and runs the functions that make working with fieldbus quick and easy. The Diagnostic Manager communicates simultaneously with all diagnostic modules. It runs on a PC in the safety of the control room.

The embedded Expert System learns and interprets the electrical values and behavior of each segment, and plant maintenance indicators are easy to understand. The Commissioning Wizard documents a complete segment with only a few mouse clicks. For fieldbus experts: The integrated oscilloscope triggers on fieldbus-related events and stores up to 10 consecutive shots. Working with fieldbus has never been easier.

C Commissioning

M Monitoring

T Troubleshooting

PROCESS AUTOMATION – PROTECTING YOUR PROCESS



For over a half century, Pepperl+Fuchs has been continually providing new concepts for the world of process automation. Our company sets standards in quality and innovative technology. We develop, produce and distribute electronic interface modules, Human-Machine Interfaces and hazardous location protection equipment on a global scale, meeting the most demanding needs of industry. Resulting from our world-wide presence and our high flexibility in production and customer service, we are able to individually offer complete solutions – wherever and whenever you need us. We are the recognized experts in our technologies – Pepperl+Fuchs has earned a strong reputation by supplying the world's largest process industry companies with the broadest line of proven components for a diverse range of applications.

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