

BLACKBOX for PLC-ANALYZER pro 5

Machinery detective on duty 24 hours a day



BLACKBOX clears up equipment trouble

Gearbox damage on a press! Faulty batch in cosmetics production! A bottling system produces excessive waste! Who is at fault? Who is going to have to pay for the damages?

Long-term recording of PLC signals is not only a good idea but is mandatory for some industrial processes. Besides tracing sporadic errors, the archived measurement data can clarify other essential questions as well. Therefore AUTEM offers the new BLACKBOX 2 - a perfect and complete recording system for PLC signals. This Mini-PC archives all decisive PLC-variables of your machinery for several years.

Increasing complexity of automated systems as well as increased time pressure during installation and maintenance are common these days. Excellent availability and productivity is only guaranteed if errors can be detected and rectified quickly. It is incisive that most of all possible failures have to be diagnosed significantly and to keep the effort for diagnosis in a minimal way.

Service personnel normally do not have real time signal waveforms of PLCs, yet this information is needed to diagnose complex logic errors or analyse sporadic error. Sporadic errors can only be detected efficiently if all signals are recorded in real time and can be

displayed at any time. The production planner also needs a precise overview of the timing for the progression of functions in a system, to detect and eliminate unnecessary downtimes in the machine.

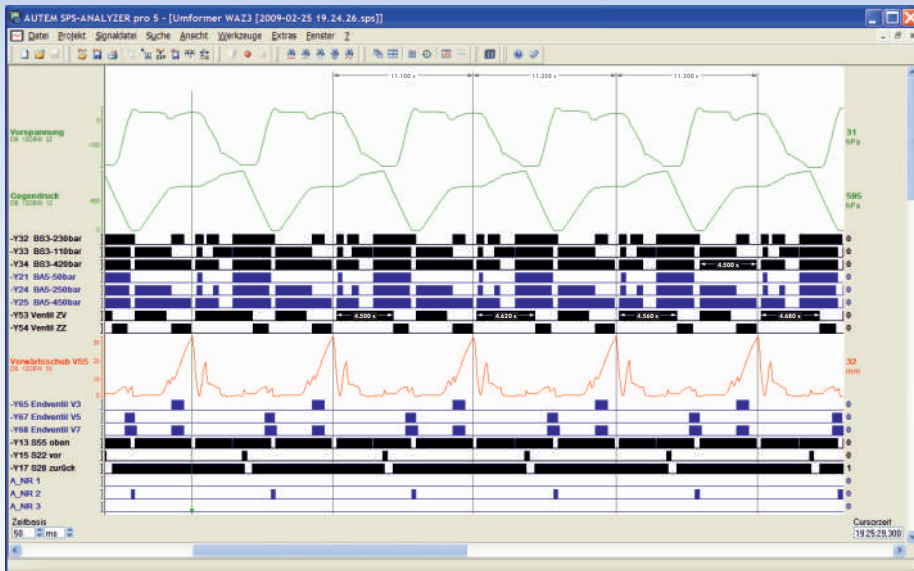
In practice the signals must often be recorded for a long time (several months) with no interruptions until the respective error occurs. A special recording computer is required, which can remain attached to the system for weeks or perhaps permanently. Therefore a special system is necessary which remains at the machinery and works autarkical and is optimized for stand-alone operation.

A more elegant solution

To satisfy this need AUTEM offers an ultra-compact recording system called 'BLACKBOX 2' that can be integrated easily and everywhere.

It is a complete computing system recorder in a massive aluminum housing. Fanless operation allows using it on places with dirt and dust where you of course cannot use normal PC systems.

The BLACKBOX can be directly equipped with a PCI card. Equipped with a high performance bus connection, e.g. for MPI/PROFIBUS (CP5611) or Modbus+ (PCI-85). If necessary, a keyboard, mouse and display can be connected.



PLC-ANALYZER pro 5: easy recording of PLC-variables

The data recording is done with a special version of the PLC-Analyzer pro 5, which has been expanded with several special functions for stand-alone long-term recording. The connection with the PLC is done via the respective programming interface or that of an automation network. The process data can be recorded and archived continuously with no interruptions over a very long period of time. The recording capacity of the hard drive is normally 3 years.

The BLACKBOX is optimized for atarkical stand-alone operation. An integrated Watchdog ensures that the BLACKBOX is automatically rebooted in the case of a recording fault. The operating status of the BLACKBOX can also be requested at any time from outside by a floating contact („LIFE-INDICATOR“). Extensive operating informations can be transferred by E-mail / SMS - optional also via GSM-modem - („REMOTE-STATUS-INDICATOR“).

The high degree of operational reliability enables a practically continuous recording of signals over several years. When the storage capacity of the internal hard disk has been reached, the oldest signal file is

automatically deleted to create space for new signal data

Service by „remote control“

A particularly sophisticated feature is remote operation from any PC via a LAN, Internet or via a modem connection. Maintenance, construction and quality assurance get valuable information concerning the system. Via remote control it is possible to access the recorded signal data for analysis and evaluation - even during running data acquisition.

Simultaneous recording from different PLC systems

Complex production systems often have mixtures of PLCs, such as Siemens S7 and Pilz safety control systems. Since properly timed processing of these individual controllers must be guaranteed throughout the production process.

AUTEM's modular software PLC-ANALYZER pro 5 offers numerous interfaces to different PLC systems and allows to record signals from different PLCs simultaneously.

PLC-driver for PLC-ANALYZER pro 5

- Siemens SIMATIC S7***
MPI/PPI + PROFIBUS (cycle precise)
 - Siemens SIMATIC S7***
Ethernet TCP/IP / PROFINET (cycle precise)
 - Siemens SIMATIC S5**
PG-interface (cycle precise) / Ethernet TCP/IP
 - Siemens LOGO!**
PG-interface
 - Siemens SINUMERIK (S5)**
PG-interface (cycle precise)
 - Siemens SIMOTION C/P/D**
MPI/PROFIBUS/Ethernet TCP/IP (servo cycle p.)
 - BOSCH CL**
PG-interface (BUEP19E)
 - CoDeSys**
Ethernet TCP/IP
 - PILZ PSS**
PG-interface
 - PILZ PSS**
Ethernet TCP/IP
 - PHOENIX ILC**
Ethernet TCP/IP
 - Jetter JetControl / Delta / Nano**
Serial / Jetway / PC-PPLC
 - Jetter JetControl**
Ethernet TCP/IP
 - B & R**
Ethernet TCP/IP / serial
 - Allen-Bradley ControlLogix / PLC / SLC**
DF1 / DH+ / DH-485
 - Allen-Bradley Compact/ControlLogix PLC / SLC** - Ethernet TCP/IP
 - GE Fanuc Serie 90 / Versamax / Nano Micro** - PG-interface (SNP)
 - Ge Fanuc CNC/PMC**
Ethernet TCP/IP / HSSB
 - HITACHI H / EH-150 / Micro-EH**
PG-interface
 - HITACHI H / EH-150 / Micro-EH**
Ethernet TCP/IP
 - MITSUBISHI MELSEC Q / A / FX**
PG-interface
 - MITSUBISHI MELSEC Q / A**
Ethernet TCP/IP
 - Schneider Modicon TSX Quantum Momentum Compact** - Modbus I / Modbus+
 - Schneider Modicon TSX Quantum Moment./Compact/M340** - Modbus TCP/IP
 - Schneider Modicon TSX Premium Atrium/Micro/Nano** - TCP/IP / Uni-Telway
 - Schneider AEG TSX A250/A120/Micro**
PG-interface (KS)
 - OMRON C / CV / CS1**
PG-interface (Host Link)
 - Beckhoff TwinCAT I/O**
Recording of TwinCAT-I/O-variables
 - AUTEM AD_USB-Box**
USB-Port (Recording ext. voltage/current)
- * also suitable for SIMATIC C7, M7, SINUMERIK (S7), SAIA xx7, VIPA S7



BLACKBOX 2: compact, rugged, various interfaces

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