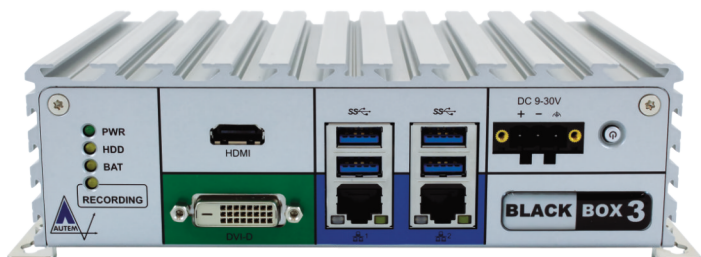# BLACKBOX 3 with PLC-ANALYZER pro 6

PLC process data recording, monitoring and remote maintenance 24/7

Fields of application

- Long term recording
- Failure diagnosis
- Objective control of operating parameters
- Warrenty: incorruptible clarification
- Clarification of plant shutdowns
- Condition monitoring
- Quality assurance
- Batch control
- Remote maintenance

With the **BLACKBOX 3**, AUTEM offers an ultra-compact system for PLC process data recording, monitoring and remote maintenance of machines and systems based on the **PLC-ANALYZER pro 6**. The industrial PC can be easily integrated thanks to its small dimensions.

The **BLACKBOX 3** can continuously record and archive process data over a very long period of time. In addition, video data can also be recorded synchronously with the PLC process data (**Videotrack module**).

After power-on, the **BLACKBOX 3** automatically starts signal recording and then runs autonomously.

For manufacturers and users of machines and plants this form of continuous recording is very advantageous. It is used in particular for troubleshooting and for documenting the operating behaviour and running of the plant. Maintenance, construction and quality assurance receive valuable information.

The stored data also serve as incorruptible evidence in the investigation of causes and analysis of malfunctions and the clarification of warranty issues.

Ideally, the machine manufacturer equips his system with **BLACKBOX 3** right from the factory in order to have immediate access to all important process data in the event of a fault.

The **BLACKBOX 3** can also be used as a condition monitoring system for predictive maintenance.

Communication with the PLC is via the paths supported by the **PLC-ANALYZER** pro **6**, e.g. TCP/IP PROFINET, PROFIBUS, PG interface, Modbus+ or OPC UA.

Process data can be acquired simultaneously from several PLCs.

The optionally available **AD_USB-Box**® also allows the acquisition of external electrical measured values that are not available in the PLC.

The **BLACKBOX 3** can be installed permanently or temporarily in the system. Locally or remotely, you can access the recorded data for further analysis at any time - even during ongoing recording.

The **BLACKBOX 3** is optimized for self-sufficient operation. An integrated watchdog ensures that the system automatically reboots in case of recording errors and continues recording. The operating status can be queried externally via a potential-free contact ("LIFE-INDICATOR"). Status messages can be transmitted automatically via SMS or e-mail ("REMOTE-STATUS-INDICATOR").

The autarkic operation allows the uninterrupted signal recording over several years. When the SSD memory capacity is reached, the oldest signal file is automatically deleted to create storage space for new signal data (FIFO).

If required, keyboard, mouse and display can be connected to **BLACKBOX 3**. The multi connective system has 4 fast USB 3.0 connections and 2 LAN ports (Gigabit Ethernet). In addition, RS232/422/485 and various other interfaces (HDMI, DP, DVI-D) are on board. The remote access via LAN connection from any PC is particularly elegant. The necessary remote software and a suitable 3 m patch cable for direct connection are included in delivery. For remote access via the mobile phone network, the **BLACKBOX 3** can be equipped with an internal 4G LTE modem.

The **BLACKBOX 3** requires 9~30 Volt DC. The included power supply unit also allows operation at 100~240 Volt AC.

The system is delivered ready-to-use with the software license **PLC-ANALYZER** pro **6** for **BLACKBOX 3** (basic module + PLC driver). Bundles for different PLC systems are available.

✔ compact ✔ autarkic ✔ incorruptible ➡ BLACKBOX 3

BLACKBOX 3 with PLC-ANALYZER pro 6
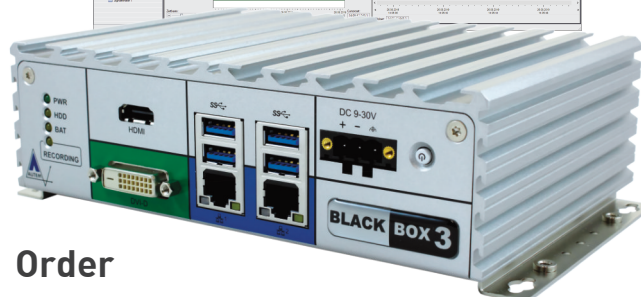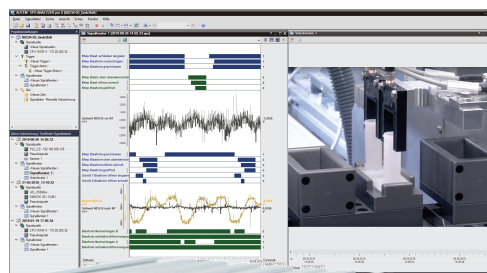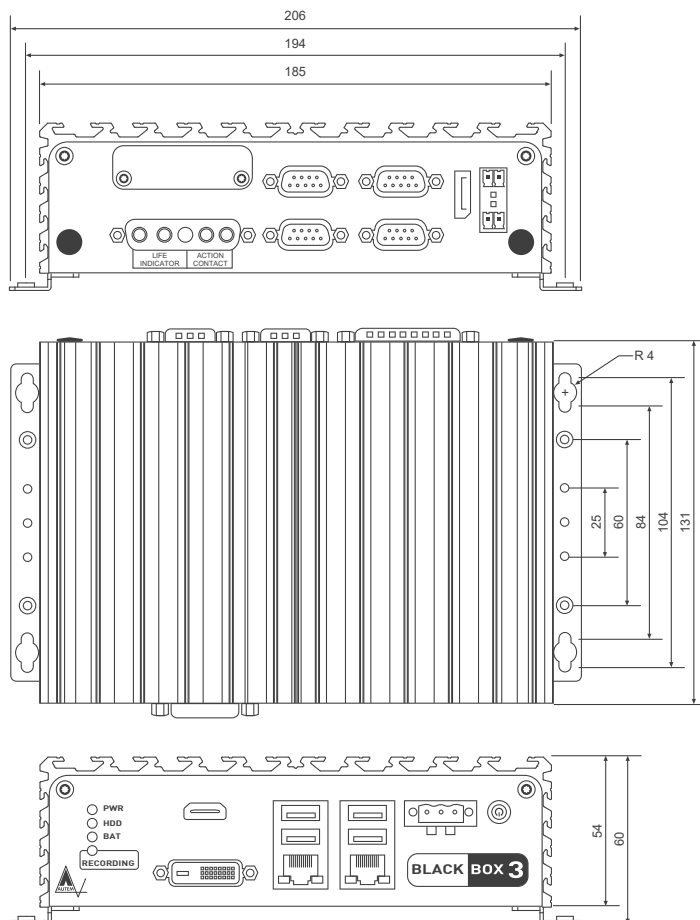
Technical Features

- Massive aluminium case
- Mini-PC (FANless) with Intel Pentium Quadcore 1.6 GHz
- 500 GB SSD / 4 GB RAM
- Dimensions (WxDxH): 185 x 131 x 54 mm / 1,35 kg
- DIN rail mounting / Adapter scope of delivery
- Control-LEDs for RECORDING, PWR, HDD, BAT, LAN
- 4 x USB 3.0 (each 900 mA load-bearing)
- 2 x GbE LAN Port (Gigabit Ethernet)
- Video output: HDMI, DVI-D, DP-Display Port
- 2 x 9 pol. D-Sub RS232/RS422/485 (COM1/COM2), 2 x 9 pol. D-Sub RS232 (COM3/COM4)
- 1 x CFast slot
- 2 x Antenna connection for opt. Wi-Fi / 4G LTE-module
- Mini-PCIe slot for opt. addit. modules (Wi-Fi / 4G LTE ...) full-size/half-size / integr. SIM card holder
- Power supply 9 ~ 30 V DC, 25 W
- Plug with cable for ext. DC power supply
- Ext. power supply 100 ~ 240 V AC, 1,5 A, 50 ~ 60 Hz
- Connection for remote PWR-ON/OFF, plug incl.
- Environment: -5°C ~ 55°C operating temperature (ambient with air flow / according to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14), 10 % ~ 95 % rel. humidity – non-condensing
- Signal recording capacity typ. Ø 3 years*
- Watchdog monitoring
- External, free floating contact ("LIFE-INDICATOR") for external indication of operating status (plug is scope of delivery)
- Status messages via E-mail or SMS (opt.) („REMOTE-STATUS-INDICATOR")
- 3 m LAN patch cable (Cat. 5e) for direct remote con-trol by external PC scope of delivery
- Windows 10 pro (64-Bit) (multi-language)
- Remote control via LAN, WAN, (Radio-) Modem/Internet (VPN) possible
- BLACKBOX-license PLC-ANALYZER pro 6 with desired PLC-driver incl. documentation
- System completely installed („ready-to-use")
- CE, FCC Class A
- 48 hour Burn-In, 12 months warranty

Accessories (optional)

- Special-UPS 24 V DC (maintenance free) for BLACKBOX 3 (UPS24MF)
- 4G LTE-Modem for BLACKBOX 3 (LTE1000E)
- WLAN-AC USB Nano Adapter (WIF1010E)
- Highspeed USB - S7 Adapter (ANA1600E)
- USB - S5 Adapter (ANA1530E)
- S7 LAN (Ethernet-Gateway MPI/PROFIBUS) (ANA1650E)
- **AD_USB-Box** (ANA6510E)
- **Videotrack module** (ANA6600E)

Dimensions

Order

Please refer to our current price list for prices and order numbers.

* significantly shorter for video recording

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