ENERGY EFFICIENCY
IS A COMPETITIVE FACTOR

FAIL-SAFE AND MAINTENANCE-FREE SYSTEMS FULLY UTILIZE THE POTENTIAL OF ENERGY EFFICIENT MANUFACTURING

▶ ENERGY EFFICIENCY HELPS TO SUSTAIN
LONG TERM COMPETITIVE ADVANTAGE

POSSIBILITIES START HERE **kontron**

THE CHALLENGE

In light of rising energy prices and the growing importance of sustainable production, energy-efficient manufacturing and treatment processes at all stations in the value chain are becoming an increasingly important competitive factor. Today all companies must improve their energy efficiency in order to sustain long term competitive advantage.

THE OPPORTUNITY:

Customized, maintenance-free systems are required in order to make it possible to fully utilize the potential to increase efficiency and reduce costs over the long term. For example, gateways such as the "Sentinel" energy analysis system from Wattics can be used for energy monitoring to retrieve the meter readings through serial and/or Ethernet communication and secure data communication towards the cloud to the system backend. With appropriate software energy use patterns are identified and energy reduction recommendations are automatically output.

THE REQUIREMENTS:

These gateways must be extremely fail-safe. The maintenance requirements play an especially important role in installations such as distributed energy management systems that call for a long service life.

Very sizeable and, in many cases, nationwide networks are the norm here. Distances of several kilometers can be common between individual installations such as those in wind turbines, substations or pumping stations. Some networks are spread out over different parts of the country. Maintenance involves travel costs which can be particularly high in the case of off-shore installations. By installing on-site maintenance-free systems this servicing would no longer be necessary. High reliability and remote monitoring and management are necessary for these types of facilities.

THE SOLUTION

Fail-safe and maintenance-free industrial computer platforms such as the KBox from Kontron facilitate durable solutions in the field of efficient energy manage-

ment. These solutions help to make significant reductions in the total cost of ownership (TCO). Kontron KBoxes require no rotating components or fans and use the most modern, energy-efficient processor technology. Another important component in this maintenance-free design is based on premium power supplies that are available throughout the entire life cycle.

They also compensate for power outages lasting several milliseconds, consequently guaranteeing system availability. The KBoxes do not need batteries and instead use non-wearing double-layer capacitors that do not have to be replaced after only two years and consequently are maintenance free.

All these features contribute to a high Mean Time Between Failure (MTBF) and to the maintenance-free design of the application provided that the MTBF is in line with the life cycle expectations of the application. The Kontron Box-PC used for the Wattics Sentinel gateway has an MTBF of 158,000 hours at 30°C. From a technical perspective, during this period the system does not require any maintenance.

The KBox A-101 is the best choice for the Wattics gateway application. Designed for cost-sensitive automation and industry computing tasks it stands out with its maintenance-free design and a robust, fast SSD. The fanless box PC with the dual-core Intel Atom CPU D2550 comes with the standard interfaces DisplayPort, two Gbit Ethernet ports, two USB 3.0 ports, two USB 2.0 ports and one RS232 port. With optional field bus support, such as for CAN bus or Profinet, the KBox A-101 enables data communication between the customer's various machine applications towards the cloud to the system backend. Two antennas enable data transfer over WIFI or 2G/4G to the cloud or other networks for further analysis.

Diverse mounting options including desktop, horizontal wall-mount, booksize or DIN RAIL guarantee high flexibility. Also important for use in harsh environments is an extended temperature range (-10°C to 60°C) and shock resistance up to 15 g.

> "For Wattics, the high MTBF in combination with fair pricing and the long-term availability of the Kontron Box-PCs of at least five years delivered the winning arguments for us to choose an industrial computer out of Kontron's new 'wartungsfrei' range. Further to this, the global availability of Kontron technologies and services fits perfectly into our long-term strategy. We're convinced that with the Kontron system we've found a really sustainable solution."
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> // Anthony Schoofs, CTO at Wattics, comments.

KBOX A-100 SERIES

The KBox A-100 series is designed to achieve ultimate price/performance ratio offering all advantages of an industrial Computer Platform.

▶ Dust-free packaging
▶ Multiple mounting possibilities
▶ Communication options

▶ **TECHNICAL INFORMATION KBOX A-101**

SYSTEM	CPU MAX. SPEED L2 CACHE SYSTEM CHIPSET BIOS	Intel® Atom™ D2550 1.86 GHz Dual Core 1.86 GHz 1 MB Intel® NM10 AMI EFI
MEMORY	TECHNOLOGY MAX. CAPACITY SOCKET	DDR3 1066 MHz 4 GB 1x 204-pin SO-DIMM
GRAPHICS	DISPLAY PORT	Max. resolution 2500 x 1600
ETHERNET	LAN1 LAN2	10/100/1000 Mbps Intel® 82583V Ethernet controller 10/100/1000 Mbps Intel® 82583V Ethernet controller
IO INTERFACE	SERIAL PORTS USB	1x RS232, optional 2nd COM (RS232 or 422 or 485) 2x USB 3.0, 2x USB 2.0
OTHERS	DIGITAL IO WATCHDOG TIMER	4x Digital In/Out TTL optional 255 levels timer interval, setup by software
EXPANSION	MINI PCIe	1x full size MINI PCIe
STORAGE	HDD/SSD	One drive bay for SATA 2.5" HDD/SSD (Compatible with 12.5 mm height HDD)
SOFTWARE SUPPORT	MICROSOFT WINDOWS LINUX	Windows 7, Windows 7 Embedded, WinCE 7.0, WIN XP Fedora
POWER	POWER TYPE POWER INPUT VOLTAGE POWER ADAPTER	AT/ATX 10,8 V DC to 28,8 V DC AC to DC 24 V / 2,5 A (60W) optional
POWER CONSUMPTION	TYPICAL	16 Watt (with Intel® Atom™ D2550 at 1.8 GHz)
MECHANICAL	CONSTRUCTION MOUNTING DIMENSIONS (W X H X D) WEIGHT	Aluminum housing DIN RAIL, Desktop, Wall, Cabinet, VESA Mounting 210 x 65 x 140 mm (8.27" x 2.56" x 5.51") 2.5 kg (5.51 lb)
ENVIRONMENT	OPERATING TEMPERATURE STORAGE TEMPERATURE RELATIVE HUMIDITY OPERATING VIBRATION OPERATING SHOCK MTBF EMC SAFETY CERTIFICATIONS	With extended temperature peripherals: -10°C to 60°C (14°F to 140°F) -40°C to 85°C (-40°F to 185°F) 95% @ 40°C (non-condensing) IEC 60068-2-6 10 - 500 Hz, 2 G IEC 60068-2-27 half sine 11 ms 15 g 158.123 h at 30°C CE/FCC Class A CB Scheme , UL

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About Kontron

Kontron, a global leader in embedded computing technology and trusted advisor in IoT, works closely with its customers, allowing them to focus on their core competencies by offering a complete and integrated portfolio of hardware, software and services designed to help them make the most of their applications.

With a significant percentage of employees in research and development, Kontron creates many of the standards that drive the world's embedded computing platforms; bringing to life numerous technologies and applications that touch millions of lives. The result is an accelerated time-to-market, reduced total-cost-of-ownership, product longevity and the best possible overall application with leading-edge, highest reliability embedded technology.

Kontron is a listed company. Its shares are traded in the Prime Standard segment of the Frankfurt Stock Exchange and on other exchanges under the symbol "KBC". For more information, please visit: **www.kontron.com**

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